

*C*ontents



Contents

Chapter	Page
S. SUMMARY	S-1
S.1 PROPOSED ACTION.....	S-1
S.2 OTHER MAJOR GOVERNMENT ACTIONS	S-9
S.3 ALTERNATIVES CONSIDERED	S-13
S.3.1 No Action Alternative.....	S-14
S.3.2 Transportation System Management Alternative.....	S-14
S.3.3 Mass Transit Alternative.....	S-15
S.3.4 Preferred Alternative.....	S-15
S.4 MAJOR ENVIRONMENTAL IMPACTS.....	S-29
S.4.1 Land Use Impacts	S-29
S.4.2 Displacements and Relocations	S-30
S.4.3 Neighborhoods.....	S-31
S.4.4 Community Facilities	S-31
S.4.5 Neighborhood and Community Cohesion	S-32
S.4.6 Environmental Justice	S-33
S.4.7 Protection of Children.....	S-33
S.4.8 Cultural Resources	S-33
S.4.9 Parks and Recreational Facilities	S-35
S.4.10 Section 4(f) Impacts.....	S-35
S.4.11 Bicycle, Greenway, and Trail Facilities	S-36
S.4.12 Pedestrian Facilities	S-36
S.4.13 Water Quality.....	S-36
S.4.14 Outstanding Florida Waters (OFW).....	S-36
S.4.15 Wild and Scenic Rivers	S-36
S.4.16 Aquatic Preserves	S-36
S.4.17 Coastal Zone Consistency.....	S-36
S.4.18 Wetlands.....	S-36
S.4.19 Uplands	S-37
S.4.20 Threatened and Endangered Species.....	S-37
S.4.21 Visual Impacts	S-37
S.4.22 Air Quality.....	S-38
S.4.23 Noise.....	S-38
S.4.24 Contamination	S-38
S.4.25 Floodplains and Floodways	S-38
S.4.26 Farmlands	S-38
S.4.27 Utilities	S-38
S.4.28 Construction Impacts	S-38
S.4.29 Indirect and Cumulative Effects.....	S-43
S.5 AREAS OF CONTROVERSY.....	S-44
S.6 LIST OF OTHER GOVERNMENT ACTIONS REQUIRED	S-44
S.7 PROBABLE ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED	S-45
S.8 IRRETRIEVABLE AND IRREVERSIBLE COMMITMENT OF RESOURCES.....	S-45

S.9	FEASIBLE MEASURE TO AVOID OR MINIMIZE POTENTIAL ADVERSE IMPACT	S-46
S.9.1	Land Use Impacts	S-46
S.9.2	Displacements and Relocations	S-46
S.9.3	Community Facilities	S-46
S.9.4	Neighborhood and Community Cohesion	S-48
S.9.5	Environmental Justice	S-50
S.9.6	Historic Resources	S-50
S.9.7	Section 4(f) Impacts	S-51
S.9.8	Bicycle, Greenway, and Trail Facilities	S-51
S.9.9	Pedestrian Facilities	S-52
S.9.10	Groundwater	S-52
S.9.11	Surface Water	S-53
S.9.12	Water Quality	S-53
S.9.13	Wetlands	S-53
S.9.14	Threatened and Endangered Species	S-54
S.9.15	Visual	S-54
S.9.16	Noise	S-55
S.9.17	Contamination	S-55
S.9.18	Floodplains	S-56
S.9.19	Utilities	S-56
S.9.20	Construction Impacts	S-56
S.10	SHORT-TERM IMPACTS VERSUS LONG-TERM BENEFITS	S-56
1.	PURPOSE OF AND NEED FOR PROPOSED ACTION	1-1
1.1	PURPOSE	1-1
1.2	PROJECT OVERVIEW	1-6
1.2.1	Background	1-7
1.2.2	Description of Project	1-9
1.3	NEED FOR TRANSPORTATION IMPROVEMENTS	1-10
1.3.1	System Linkage	1-13
1.3.2	Capacity Deficiencies	1-16
1.3.3	Transportation Demand	1-37
1.3.4	Governmental Authority	1-39
1.3.5	Social Demands and Economic Development	1-39
1.3.6	Modal Interrelationships	1-54
1.3.7	Safety	1-73
1.3.8	Navigation	1-75
1.4	SUMMARY OF RELATED STUDIES	1-88
2.	ALTERNATIVES INCLUDING PROPOSED ACTION	2-1
2.1	NO ACTION ALTERNATIVE	2-1
2.2	I-4 MMMP ALTERNATIVE DEVELOPMENT PROCESS	2-2
2.2.1	Tier 1 Evaluation	2-2
2.2.2	Tier 2 Evaluation	2-7
2.2.3	Tier 3 Evaluation	2-11
2.3	TRANSPORTATION SYSTEM MANAGEMENT ALTERNATIVE	2-12
2.4	MASS TRANSIT ALTERNATIVE	2-19
2.5	SUMMARY OF PROJECT ALTERNATIVE DEVELOPMENT PROCESS	2-20
2.5.1	Concept Refinement Analysis	2-20
2.5.2	Second Level Alternative Concept Refinement	2-37

2.6	DEIS ULTIMATE BUILD ALTERNATIVES	2-53
2.6.1	Segment 1	2-53
2.6.2	Segment 2	2-62
2.6.3	Segment 3	2-79
2.6.4	Segments 4 and 5	2-82
2.6.5	Segment 6	2-85
2.6.6	Evaluation of Ultimate Build Alternatives	2-87
2.7	STAGING OF ULTIMATE I-4 IMPROVEMENTS	2-87
2.8	PROPOSED CONCEPT CHANGES FROM THE DEIS	2-93
2.8.1	Add Gore Street Westbound Entrance Ramp	2-93
2.8.2	Maintain the Existing Eastbound SR 408 Exit Ramp to Mills Avenue.....	2-93
2.8.3	Revise Hughey Avenue and Garland Avenue to Three-Lane Facilities	2-93
2.8.4	Provide Channelization for Intersection Pinehurst Avenue/Par Street/Eastbound I-4 Exit Ramp	2-94
2.8.5	Widen Padgett Creek Bridge	2-94
2.8.6	Add Dual Left Turn Lanes at the SR 472 Interchange.....	2-94
2.8.7	I-4/John Young Parkway Interchange	2-94
2.8.8	I-4/SR 408 (East/West Expressway) Interim Interchange.....	2-94
2.9	PREFERRED ALTERNATIVE	2-94
2.9.1	Rationale for Selection of the Preferred Alternative	2-95
2.9.2	Description of Preferred Alternative.....	2-97
2.9.3	Evaluation of Preferred Alternative	2-120
3.	AFFECTED ENVIRONMENT.....	3-1
3.1	SOCIOECONOMIC CONDITIONS.....	3-1
3.1.1	Population, Economics, and Land Use.....	3-1
3.1.2	Neighborhoods and Community Facilities.....	3-39
3.1.3	Environmental Justice	3-113
3.2	CULTURAL RESOURCES.....	3-125
3.2.1	Archaeological Sites.....	3-126
3.2.2	Historic Sites.....	3-131
3.2.3	Parks and Recreation	3-136
3.2.4	Bicycle, Trail, and Greenway Facilities	3-138
3.2.5	Pedestrian Facilities	3-145
3.3	NATURAL RESOURCES	3-173
3.3.1	Water Resources.....	3-173
3.3.2	Biotic Communities.....	3-186
3.3.3	Threatened and Endangered Species.....	3-214
3.4	PHYSICAL ENVIRONMENT.....	3-226
3.4.1	Visual Quality and Aesthetic Character.....	3-226
3.4.2	Air Quality.....	3-226
3.4.3	Noise Study.....	3-230
3.4.4	Contamination	3-243
3.4.5	Floodplains and Regulatory Floodways	3-253
3.4.6	Soils.....	3-270
3.4.7	Drainage and Hydrology.....	3-272
3.5	UTILITIES AND RAILROADS.....	3-276
3.5.1	Utilities	3-276
3.5.2	Railroads	3-276
3.6	NAVIGATION	3-276

4.	ENVIRONMENTAL CONSEQUENCES.....	4-1
4.1	SOCIOECONOMIC CONDITIONS	4-2
4.1.1	Population and Community Growth Characteristics	4-2
4.1.2	Displacements and Relocations	4-11
4.1.3	Community Effects	4-27
4.1.4	Neighborhood and Community Cohesion	4-42
4.1.5	Environmental Justice.....	4-51
4.1.6	Protection of Children	4-60
4.1.7	Title VI and VIII.....	4-69
4.2	CULTURAL RESOURCES	4-70
4.2.1	Archaeological and Historic Resources	4-70
4.2.2	Parks and Recreational Facilities	4-86
4.2.3	Section 4(f) Impacts	4-86
4.2.4	Bicycle, Greenway, and Trail Facilities	4-91
4.2.5	Pedestrian Facilities	4-97
4.3	NATURAL RESOURCES	4-98
4.3.1	Water Resources	4-98
4.3.2	Biotic Communities	4-100
4.3.3	Threatened and Endangered Species	4-117
4.4	PHYSICAL ENVIRONMENT	4-127
4.4.1	Visual Quality and Aesthetic Quality.....	4-127
4.4.2	Air Quality.....	4-130
4.4.3	Noise.....	4-141
4.4.4	Contamination.....	4-159
4.4.5	Floodplains and Regulatory Floodways.....	4-173
4.4.6	Drainage and Hydrology.....	4-183
4.4.7	Farmlands	4-184
4.5	UTILITIES IMPACTS.....	4-185
4.5.1	Cost.....	4-185
4.5.2	Mitigation.....	4-185
4.6	NAVIGATION	4-185
4.7	REQUIRED PERMITS.....	4-194
4.7.1	Federal Dredge and Fill Permit	4-194
4.7.2	National Pollution Discharge Prevention and Elimination System Permit.....	4-196
4.7.3	Bridge Permit.....	4-196
4.7.4	No-Rise Certification (FEMA).....	4-196
4.7.5	Wildlife Take Permit(s).....	4-197
4.7.6	Environmental Resource Permit	4-197
4.7.7	Water Use Permit.....	4-198
4.7.8	Sovereign Submerged State Lands.....	4-199
4.8	CONSTRUCTION IMPACTS.....	4-200
4.8.1	At-Grade and Bridge Construction Impacts	4-200
4.8.2	Disruption to Existing Businesses	4-201
4.8.3	Neighborhoods and Community Cohesion	4-202
4.8.4	Visual and Aesthetic Quality.....	4-203
4.8.5	Air Quality.....	4-204
4.8.6	Noise and Vibration	4-204
4.8.7	Ecosystems	4-208
4.8.8	Water Resources	4-209
4.8.9	Infrastructure.....	4-211
4.8.10	Contamination.....	4-211
4.8.11	Construction Material Transport, Storage, and Disposal.....	4-212

4.9	INDIRECT AND CUMULATIVE EFFECTS.....	4-212
4.9.1	Indirect Effects	4-212
4.9.2	Cumulative Effects	4-214
4.10	RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY	4-215
4.11	IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS	4-216
5.	COMMENTS AND COORDINATION.....	5-1
5.1	SCOPING PROCESS	5-1
5.1.1	Advance Notification	5-1
5.1.2	Class of Action Determination	5-2
5.1.3	Notice of Intent.....	5-2
5.1.4	Scoping Meeting.....	5-2
5.2	PUBLIC INVOLVEMENT PROGRAM.....	5-3
5.2.1	Public Information Office.....	5-4
5.2.2	Study Sponsors and Advisory Groups.....	5-5
5.2.3	Community Participation	5-11
5.2.4	Information Elements.....	5-52
5.3	AGENCY COORDINATION	5-56
5.4	PUBLIC HEARING.....	5-57
6.	COMMITMENTS AND RECOMMENDATIONS	6-1
6.1	COMMITMENTS.....	6-1
6.1.1	Land Use Impacts	6-1
6.1.2	Displacements and Relocations	6-1
6.1.3	Community Facilities	6-2
6.1.4	Neighborhood and Community Cohesion	6-2
6.1.5	Environmental Justice	6-4
6.1.6	Historic Resources.....	6-5
6.1.7	Section 4(f) Impacts.....	6-5
6.1.8	Bicycle, Greenway, and Trail Facilities	6-6
6.1.9	Pedestrian Facilities	6-6
6.1.10	Groundwater.....	6-7
6.1.11	Surface Water.....	6-7
6.1.12	Water Quality.....	6-7
6.1.13	Wetlands.....	6-8
6.1.14	Threatened and Endangered Species.....	6-8
6.1.15	Visual.....	6-9
6.1.16	Noise.....	6-9
6.1.17	Contamination.....	6-10
6.1.18	Floodplains.....	6-10
6.1.19	Utilities	6-11
6.1.20	Required Permits	6-11
6.1.21	Construction Impacts	6-12
6.1.22	Other Commitments	6-12
6.2	RECOMMENDATIONS.....	6-12
6.2.1	Rationale for Selection of the Preferred Alternative	6-12
6.2.2	Summary of Preferred Alternative	6-15

7.	LIST OF PREPARERS.....	7-1
7.1	FEDERAL HIGHWAY ADMINISTRATION.....	7-1
7.2	FLORIDA DEPARTMENT OF TRANSPORTATION - DISTRICT 5.....	7-1
7.3	URS TEAM.....	7-1
7.3.1	URS Corporation	7-1
7.3.2	CH2MHILL	7-2
7.3.3	Geotechnical and Environmental Consultants, Inc.	7-3
7.3.4	Geotechnical Professional Associates, Inc.....	7-3
7.3.5	Archaeological Consultants, Inc.....	7-4
7.3.6	Janus Research	7-4
7.3.7	Environmental Management and Design, Inc.....	7-4
7.3.8	DKS Associates, Inc.	7-4
7.3.9	Transportation Engineering, Inc.	7-4
7.3.10	Ardaman & Associates	7-4
7.3.11	Keith and Schnars, P.A.	7-5
8.	LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS TO WHOM COPIES OF THE STATEMENT ARE SENT	8-1
8.1	FEDERAL AGENCIES.....	8-1
8.2	STATE AGENCIES	8-2
8.3	REGIONAL AGENCIES	8-2
8.4	COUNTY AND LOCAL AGENCIES/JURISDICTIONS.....	8-2
8.5	OTHER.....	8-3
	RECIPIENTS OF EXECUTIVE SUMMARY	8-4
8.1	STATE AGENCIES.....	8-4
8.2	REGIONAL AGENCIES	8-4
8.3	COUNTY AGENCIES.....	8-4
8.4	OTHERS.....	8-4
8.4.1	U.S. Legislators.....	8-4
8.4.2	State Elected Officials	8-4
8.4.3	Local Elected Officials	8-5
8.4.4	Chambers of Commerce.....	8-5
8.4.5	Environmental Interest Groups.....	8-6
8.4.6	Other Interest Groups.....	8-6
9.	INDEX.....	9-1

APPENDICES (UNDER SEPARATE COVER)

- A TECHNICAL REPORTS
- B REFERENCES
- C AGENCY CORRESPONDENCE
- D GLOSSARY
- E ACRONYMS AND ABBREVIATIONS
- F ADVANCE NOTIFICATION MAILING LIST
- G ADVANCE NOTIFICATION COMMENTS AND RESPONSES
- H SCOPING PROCESS COMMENTS AND RESPONSES
- I PUBLIC INVOLVEMENT MEETING LIST
- J MANATEE WATCH PROGRAM (MWP) GUIDELINES
- K PUBLIC HEARING COMMENTS AND RESPONSES
- L MEMORANDUM OF AGREEMENT

List of Tables

Table	Page
Table S-1. Summary of Preferred Alternative Proposed Improvements	S-25
Table S-2. Summary of Community Facilities.....	S-32
Table S-3. Potential Effects to Historic Resources	S-34
Table S-4. Summary of Cumulative Impacts	S-43
Table S-5. Potentially Required Permits for the I-4 Improvements	S-45
Table S-6. Estimated Impact Evaluation For Preferred Alternative: I-4 PD&E Study - Section 2 Based On February 25, 2002 Preliminary Concept Plans	S-47
Table 1-1. I-4 MMMP Goals and Objectives.....	1-6
Table 1-2. METROPLAN ORLANDO 2020 Long Range Transportation Plan Update (adopted December 2000).....	1-23
Table 1-3. Volusia County MPO 2020 Long Range Transportation Plan Refinement (adopted November 2000).....	1-25
Table 1-4. METROPLAN ORLANDO Transportation Improvement Program FY 2001/02 – 2005/06 (adopted December 2001).....	1-26
Table 1-5. Volusia County MPO Transportation Improvement Program FY 2001/2002 – 2005/2006 (adopted June 26, 2001; amended January 22, 2002).....	1-28
Table 1-6. Orlando-Orange County Expressway Authority Five-Year Work Plan FY 02 – FY 06 (adopted July 25, 2001).....	1-29
Table 1-7. Project Area Overall Crash Type Summary.....	1-76
Table 1-8. Segment 1 Crash Data	1-77
Table 1-9. Segments 2 and 3 Crash Data	1-80
Table 1-10. Segments 4 and 5 Crash Data	1-82
Table 1-11. Segment 6 Crash Data	1-85
Table 1-12. Crash Breakdown on SR 408 (East/West Expressway).....	1-86
Table 1-13. Areas along I-4 with a Safety Ration Greater than 1.00.....	1-87
Table 2-1. Tier 1 Conceptual Mobility Enhancement Alternatives (CMEA).....	2-3
Table 2-2. Tier 1 Criteria and Measures of Effectiveness.....	2-6
Table 2-3. Tier 2 MIS Evaluation Criteria and Measures of Effectiveness	2-8
Table 2-4. Proposed I-4 MMMP Interchange.....	2-13
Table 2-5. Refined Bridge Recommendations	2-34
Table 2-6. Summary of DEIS Proposed Ultimate Improvements	2-57
Table 2-7. Estimated Impact Evaluation for DEIS Ultimate Build Alternatives: I-4 PD&E Study - Section 2 Based on June 16, 2000 Preliminary Engineering Plan Set.....	2-88
Table 2-8. Estimate Impact Evaluation for Interim I-4/SR 408 (East/West Expressway) Interchange Improvements	2-90
Table 2-9. Summary of Preferred Alternative Proposed Improvements	2-99
Table 2-10. Estimated Impact Evaluation For Preferred Alternative: I-4 PD&E Study - Section 2 Based On February 25, 2002 Preliminary Concept Plans.....	2-121
Table 2-11. Estimated Impact Evaluation For Ultimate Build Alternatives: I-4 PD&E Study - Section 2 Based On February 25, 2002 Preliminary Concept Plans	2-122

Table 3-1.	Tri-County Resident Population	3-2
Table 3-2.	Resident Population Projections	3-2
Table 3-3.	Visitor Population Projections	3-9
Table 3-4.	Ethnicity Percentages Summary	3-9
Table 3-5.	Tri-County Ethnicity Percentages by Jurisdiction	3-10
Table 3-6.	Project Study Ethnicity Percentages by Jurisdiction	3-10
Table 3-7.	Population by Age	3-11
Table 3-8.	Employment Projections	3-12
Table 3-9.	Employment Projections by Segment	3-13
Table 3-10.	Housing Projections	3-13
Table 3-11.	Housing Projections by Segment	3-13
Table 3-12.	Income and Poverty	3-14
Table 3-13.	Average Monthly Employment by Industry (1990)	3-15
Table 3-14.	Wages and Employment by Industry (1996)	3-16
Table 3-15.	Employment by Sector	3-16
Table 3-16.	1996 Personal Income and Earnings by Industry (thousands of dollars)	3-17
Table 3-17.	Top Ten Non-Governmental Employers	3-17
Table 3-18.	Ad Valorem Tax Revenues FY 1996-1997	3-18
Table 3-19.	Actual County Revenues FY 1996-1997	3-18
Table 3-20.	Summary of Funds FY 1996-1997	3-18
Table 3-21.	Proposed Development and Employment Expansions	3-31
Table 3-22.	DRI Summary	3-34
Table 3-23.	Affected Neighborhoods	3-40
Table 3-24.	Summary of Corridor Community Facilities	3-52
Table 3-25.	Schools	3-59
Table 3-26.	Higher Education Facilities	3-65
Table 3-27.	Day Care Facilities	3-66
Table 3-28.	Churches, Religious Centers and Cemeteries	3-73
Table 3-29.	Social Service Agencies	3-77
Table 3-30.	Community Centers	3-88
Table 3-31.	Government Facilities	3-89
Table 3-32.	Medical Facilities	3-97
Table 3-33.	Police, Sheriff, Fire, and EMS	3-111
Table 3-34.	Emergency Shelters	3-113
Table 3-35.	Minority Communities and Populations	3-114
Table 3-36.	Listed or Potentially Eligible NRHP Sites	3-125
Table 3-37.	Recreation Inventory within One-half Mile of I-4	3-136
Table 3-38.	Bicycle, Trail, and Greenway Facilities	3-146
Table 3-39.	Pedestrian/Sidewalk Facilities	3-153
Table 3-40.	Summary of Drainage Basins and Ultimate Surface Waters	3-183
Table 3-41.	Jurisdictional Wetland Areas by Segment	3-188
Table 3-42.	Summary of Wetland Classifications within the Ultimate Project Study Area	3-195
Table 3-43.	Wetland Community Classification and Percent Cover of Total Wetland Area within the Ultimate Project Study Corridor	3-207
Table 3-44.	Wetland Community Classification and Percent Cover of Total Wetland Area within Segment 1	3-210
Table 3-45.	Lakes along the Study Corridor within Segment 1	3-210
Table 3-46.	Wetland Community Classification and Percent Cover of Total Wetland Area within Segments 2 and 3	3-210
Table 3-47.	Named Lakes along the Study Corridor within Segments 2 and 3	3-211
Table 3-48.	Wetland Community Classification and Percent Cover of Total Wetland Area within Segments 4 and 5	3-211

Table 3-49.	Lakes along the Study Corridor within Segments 4 and 5	3-211
Table 3-50.	Wetland Community Classification and Percent Cover of Total Wetland Area within Segment 6	3-212
Table 3-51.	Lakes along the Study Corridor within Segment 6	3-212
Table 3-52.	Existing Undeveloped Uplands within the Ultimate Project Study Corridor by Segment.....	3-213
Table 3-53.	Observed Listed Vegetative Species within, or adjacent to, the Ultimate Project Study Area	3-215
Table 3-54.	Observed or High Potential Listed Wildlife Species within, or adjacent to, the Ultimate Project Study Area	3-216
Table 3-55.	Visually Sensitive Resources.....	3-229
Table 3-56.	National and State Ambient Air Quality Standards.....	3-229
Table 3-57.	1998 Air Monitoring Data	3-230
Table 3-58.	FHWA Noise Abatement Criteria.....	3-232
Table 3-59.	Noise Sensitive Areas.....	3-233
Table 3-60.	Summary of Existing Noise Monitoring.....	3-241
Table 3-61.	Potential Contamination Sites by Risk Rating and Type.....	3-244
Table 3-62.	List of Potential Contamination Sites.....	3-244
Table 3-63.	Description of Soil Types in Orange County.....	3-270
Table 3-64.	Description of Soil Types in Seminole County.....	3-271
Table 3-65.	Description of Soil Types in Volusia County	3-272
Table 3-66.	Summary of Existing Drainage Structures.....	3-274
Table 3-67.	Utility Contacts with Utilities Present.....	3-277
Table 3-68.	Major Utilities	3-278
Table 4-1.	Property Tax Revenue Loss Due to Acquisitions	4-5
Table 4-2.	Summary of Parcel Relocations	4-12
Table 4-3.	Non-Residential Impacts Due To Acquisitions.....	4-16
Table 4-4.	Summary of Housing Supply and Employment Impact (as a percentage of totals).....	4-18
Table 4-5.	Neighborhood Impacts.....	4-28
Table 4-6.	Summary of Community Facilities.....	4-30
Table 4-7.	Community Facilities Impacted.....	4-37
Table 4-8.	Environmental Justice Displaced Population	4-57
Table 4-9.	Environmental Justice Severe and Disproportionate Impacts for Preferred Alternative.....	4-59
Table 4-10.	Protection of Children.....	4-62
Table 4-11.	Protection of Children Severe and Disproportionate Impacts	4-69
Table 4-12.	Potential Effects to Historic Resources	4-72
Table 4-13.	Griffin Park Impacts	4-87
Table 4-14.	Downtown Orlando Historic District Impacts	4-88
Table 4-15.	Harry P. Leu, Inc. Impacts	4-89
Table 4-16.	Summary of Impacts I-4/SR 408 Interchange Preferred Alternative.....	4-90
Table 4-17.	College Park Historic District Impacts	4-91
Table 4-18.	Impacted Bicycle, Greenway, and Trail Facilities.....	4-92
Table 4-19.	Total Wetland Impact Area and Percent Cover by Community Classification	4-107
Table 4-20.	Wetland Community Impact Area and Percent Cover of Total Wetland Area.....	4-111
Table 4-21.	Listed Plant Species Potentially Impacted by the I-4 PD&E Study - Section 2 Project	4-118
Table 4-22.	Listed Animal Species Potentially Impacted by the I-4 PD&E Study - Section 2 Project.....	4-119
Table 4-23.	Summary of Impacts to Visually Sensitive Resources	4-127
Table 4-24.	Summary of Microscale Analysis Modeling Parameters	4-139
Table 4-25.	Sensitive Receptor Descriptions	4-140

Table 4-26.	Predicted Worst-Case Carbon Monoxide Levels for the I-4 Segments near College Park, John Young Parkway, and SR 408 for 2010 and 2020.....	4-141
Table 4-27.	FHWA Highway Noise Abatement Criteria.....	4-142
Table 4-28.	Noise Sensitive Areas	4-143
Table 4-29.	Criteria Matrix.....	4-147
Table 4-30.	Potential Impacted Contamination Sites by Risk Rating and Type.....	4-159
Table 4-31.	Summary of Potential Contamination Site Impacts	4-171
Table 4-32.	Impacts to Floodplains.....	4-174
Table 4-33.	Recommended Stormwater Management Systems	4-184
Table 4-34.	Major I-4 Utilities.....	4-186
Table 4-35.	Potentially Required Permits for the Ultimate Project and the <i>Preferred Alternative</i>	4-195
Table 4-36.	Construction Equipment Noise Levels.....	4-205
Table 4-37.	Vibration Source Levels for Construction.....	4-206
Table 4-38.	Summary of Cumulative Impacts.....	4-215
Table 5-1.	Neighborhoods	5-16
Table 5-2.	Government Officials.....	5-26
Table 5-3.	Environmental Justice.....	5-42
Table 5-4.	Special Interest Groups	5-45
Table 5-5.	Civic Groups.....	5-50

List of Figures

Figure	Page
Figure S-1. Regional Location Map.....	S-3
Figure S-2. Project Study Limits.....	S-4
Figure S-3. Preferred Alternative - Typical Section C.....	S-7
Figure S-4. Jurisdiction Boundaries.....	S-8
Figure S-5. Project Limits for I-4 PD&E Studies and LRT.....	S-11
Figure S-6. Other Related Studies.....	S-12
Figure S-7. Design Year (2020) No Build Level of Service on I-4 and Interchanges Over Capacity.....	S-17
Figure S-8. Proposed HOV Access.....	S-23
Figure S-9. Noise Walls.....	S-39
Figure 1-1. Regional Location Map.....	1-3
Figure 1-2. Project Study Limits.....	1-4
Figure 1-3. Project Limits for I-4 PD&E Studies and LRT.....	1-11
Figure 1-4. Jurisdiction Boundaries.....	1-12
Figure 1-5. Number of Lanes on Existing Highway System.....	1-17
Figure 1-6. Proposed HOV Access.....	1-18
Figure 1-7. METROPLAN ORLANDO 2020 Long Range Transportation Plan.....	1-19
Figure 1-8. Volusia County MPO 2020 Long Range Transportation Plan.....	1-20
Figure 1-9. METROPLAN ORLANDO Transportation Improvement Program.....	1-21
Figure 1-10. Volusia County MPO Transportation Improvement Program.....	1-22
Figure 1-11. Existing Level of Service on I-4 and Interchanges over Capacity.....	1-33
Figure 1-12. Design Year (2020) No Build Level of Service on I-4 and Interchanges Over Capacity.....	1-34
Figure 1-13. Design Year (2020) Build HOV Lanes Level of Service on I-4 and Interchanges Over Capacity.....	1-35
Figure 1-14. Design Year (2020) Build General Use Lanes Level of Service on I-4 and Interchanges Over Capacity.....	1-36
Figure 1-15. Activity Centers.....	1-43
Figure 1-16. Concentrations of Proposed Development and Major Employment.....	1-44
Figure 1-17. Development of Regional Impact.....	1-45
Figure 1-18. Generalized Existing Land Use.....	1-47
Figure 1-19. Existing LYNX Service Area.....	1-57
Figure 1-20. Existing VOTRAN Service Area.....	1-58
Figure 1-21. Existing Park & Ride Lots.....	1-59
Figure 1-22. LYNX Transit Facility Improvements.....	1-60
Figure 1-23. Proposed Park & Ride Lots.....	1-63
Figure 1-24. Existing Railroad Network.....	1-64
Figure 1-25. Locally Preferred Alternative Alignment and Station Locations.....	1-65
Figure 1-26. Minimum Operable Segment Alignment and Station Locations.....	1-66
Figure 1-27. Regional Airport Locations.....	1-71
Figure 1-28. Regional Port Locations.....	1-72
Figure 1-29. Other Related Studies.....	1-91

Figure 2-1.	CMEA Typical Sections.....	2-9
Figure 2-2.	Tier 2/MIS CMEA Characteristics	2-10
Figure 2-3.	I-4 Multi-Modal Master Plan - Tier 3 Typical Sections.....	2-15
Figure 2-4.	I-4 Multi-Modal Master Plan - Tier 3 Typical Sections.....	2-16
Figure 2-5.	I-4 MMMP Recommended HOV Access Plan.....	2-17
Figure 2-6.	Typical Section/Concept Refinements Evaluation Process.....	2-23
Figure 2-7.	Preliminary Typical Sections - Alternatives A, B, and C.....	2-24
Figure 2-8.	Preliminary Typical Section - Alternative D.....	2-25
Figure 2-9.	Preliminary Typical Section - Alternative E.....	2-26
Figure 2-10.	Preliminary Typical Section - Alternative E Over Ramps	2-27
Figure 2-11.	Preliminary Typical Section - Alternative F.....	2-28
Figure 2-12.	Preliminary Typical Section - Alternative F'	2-29
Figure 2-13.	I-4/SR 408 Interchange Improvements - Alternative 1A1	2-45
Figure 2-14.	I-4/SR 408 Interchange Improvements - Alternative 1A2	2-46
Figure 2-15.	I-4/SR 408 Interchange Improvements - Alternative 2B1.....	2-47
Figure 2-16.	I-4/SR 408 Interchange Improvements - Alternative 2B2.....	2-48
Figure 2-17.	I-4/SR 408 Interchange Improvements - Alternative 4.....	2-49
Figure 2-18.	Build Alternative - Typical Section C.....	2-55
Figure 2-19.	Build Alternative - Typical Section F'	2-56
Figure 2-20.	Downtown Orlando - No Action Existing Access from Lake Eola to I-4.....	2-67
Figure 2-21.	Downtown Orlando - Build Proposed Access from Lake Eola to I-4.....	2-68
Figure 2-22.	Downtown Orlando - No Action Existing Access from I-4 to Lake Eola.....	2-69
Figure 2-23.	Downtown Orlando - Build Proposed Access from I-4 to Lake Eola.....	2-70
Figure 2-24.	Holden-Parramore - No Action Existing Access from Jones High School to I-4.....	2-71
Figure 2-25.	Holden-Parramore - Build Proposed Access from Jones High School to I-4.....	2-72
Figure 2-26.	Holden-Parramore - No Action Existing Access from I-4 to Jones High School.....	2-73
Figure 2-27.	Holden-Parramore - Build Proposed Access from I-4 to Jones High School.....	2-74
Figure 2-28.	Lake Cherokee - No Action Existing Access from Lake Cherokee to I-4.....	2-75
Figure 2-29.	Lake Cherokee - Build Proposed Access from Lake Cherokee to I-4.....	2-76
Figure 2-30.	Lake Cherokee - No Action Existing Access from I-4 to Lake Cherokee.....	2-77
Figure 2-31.	Lake Cherokee - Build Proposed Access from I-4 to Lake Cherokee.....	2-78
Figure 2-32.	I-4/SR 408 Interchange Interim Improvements	2-91
Figure 2-33.	Downtown Orlando - No Action Existing Access from Lake Eola to I-4	2-107
Figure 2-34.	Downtown Orlando - Preferred Alternative Proposed Access from Lake Eola to I-4	2-108
Figure 2-35.	Downtown Orlando - No Action Existing Access from I-4 to Lake Eola	2-109
Figure 2-36.	Downtown Orlando - Preferred Alternative Proposed Access from I-4 to Lake Eola	2-110
Figure 2-37.	Holden-Parramore - No Action Existing Access from Jones High School to I-4.....	2-111
Figure 2-38.	Holden-Parramore - Preferred Alternative Proposed Access from Jones High School to I-4	2-112
Figure 2-39.	Holden-Parramore - No Action Existing Access from I-4 to Jones High School.....	2-113
Figure 2-40.	Holden-Parramore - Preferred Alternative Proposed Access from I-4 to Jones High School.....	2-114
Figure 2-41.	Lake Cherokee - No Action Existing Access from Lake Cherokee to I-4.....	2-115
Figure 2-42.	Lake Cherokee - Preferred Alternative Proposed Access from Lake Cherokee to I-4.....	2-116
Figure 2-43.	Lake Cherokee - No Action Existing Access from I-4 to Lake Cherokee.....	2-117
Figure 2-44.	Lake Cherokee - Preferred Alternative Proposed Access from I-4 to Lake Cherokee.....	2-118

Figure 3-1.	Ultimate and Preferred Alternative Project Study Areas Census Block Groups	3-3
Figure 3-2.	Generalized Future Land Use.....	3-23
Figure 3-3.	Neighborhoods.....	3-43
Figure 3-4.	School and Higher Educational Facilities.....	3-53
Figure 3-5.	Day Care Facilities and Churches/Cemeteries	3-67
Figure 3-6.	Social Service Agencies, Community Centers and Commercial Community Centers	3-81
Figure 3-7.	Government Facilities	3-91
Figure 3-8.	Medical Facilities	3-99
Figure 3-9.	Police/Fire/EMS/Emergency Shelters	3-105
Figure 3-10.	Concentrations of Minorities and Other Special Groups.....	3-117
Figure 3-11.	Minority and Low-Income Neighborhoods.....	3-123
Figure 3-12.	Cultural and Historic Resources.....	3-127
Figure 3-13.	Parks and Recreational Facilities	3-139
Figure 3-14.	Bikeway/Trail/Greenway Facilities	3-161
Figure 3-15.	Pedestrian Facilities	3-167
Figure 3-16.	Groundwater Recharge/Discharge Characteristics.....	3-175
Figure 3-17.	Surface Waters	3-177
Figure 3-18.	Existing Wetlands.....	3-189
Figure 3-19.	Threatened and Endangered Wildlife Species.....	3-217
Figure 3-20.	Representative Visually Sensitive Resources	3-227
Figure 3-21.	Common Indoor and Outdoor Noise Levels.....	3-231
Figure 3-22.	Noise Monitoring Locations	3-235
Figure 3-23.	Potential Contamination Sites	3-247
Figure 3-24.	Floodplains and Floodways	3-255
Figure 3-25.	Existing Drainage Characteristics.....	3-261
Figure 4-1.	Neighborhood Impacts.....	4-19
Figure 4-2.	Impacted Community Facilities	4-31
Figure 4-3.	Environmental Justice Census Block Groups.....	4-53
Figure 4-4.	Protection of Children Census Block Groups	4-63
Figure 4-5.	Potentially Affected Cultural and Historic Resources	4-73
Figure 4-6.	Impacted Wetlands.....	4-101
Figure 4-7.	Potential Impacts to Threatened and Endangered Wildlife Species	4-121
Figure 4-8.	I-4/SR 408 (East/West Expressway) Interchange	4-131
Figure 4-9.	Dunbar Court.....	4-132
Figure 4-10.	Garland Avenue at Church Street.....	4-133
Figure 4-11.	Long Street.....	4-134
Figure 4-12.	Lake Ivanhoe.....	4-135
Figure 4-13.	Yale Street.....	4-136
Figure 4-14.	Matthews Park.....	4-137
Figure 4-15.	Eaton Street.....	4-138
Figure 4-16.	Noise Walls.....	4-161
Figure 4-17.	Impacted Contamination Sites	4-167
Figure 4-18.	Potentially Affected Base Floodplains and Floodways	4-175
Figure 5-1.	The Basic Steps of Section 106 Review	5-53
Figure 5-2.	The Revised Section 106 Process: Flow Chart May 1999.....	5-54

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*S*ummary



S. Summary

This summary highlights the contents and findings of the Preferred Alternative for the Interstate 4 (I-4) Project Development and Environment (PD&E) Study – Section 2 Final Environmental Impact Statement (FEIS). The intent of the summary is to provide a basic overview of the Preferred Alternative and the potential impacts. The items discussed in the summary include:

- Proposed Action (Section S.1)
- Other Major Government Actions (Section S.2)
- Alternatives Considered (Section S.3)
- Major Environmental Impacts (Section S.4)
- Areas of Controversy (Section S.5)
- List of Other Government Actions Required (Section S.6)
- Probable Adverse Environmental Effects Which Cannot Be Avoided (Section S.7)
- Irretrievable and Irreversible Commitment of Resources (Section S.8)
- Feasible Measures to Avoid or Minimize Potential Adverse Impact (Section S.9)
- Short-Term Impacts Versus Long-Term Benefits (Section S.10)

S.1 Proposed Action

The Federal Highway Administration (FHWA), in consultation with the Florida Department of Transportation (FDOT), proposes to upgrade the safety and mobility of the existing I-4 corridor that services the Orlando Metropolitan area while maintaining access to the surrounding community. The Preferred Alternative study limits are located within the Ultimate project study limits. Refer to Figure S-1 for a regional location map. The Preferred Alternative limits extend from just south of Kirkman Road (SR 435) to just north of Maitland Boulevard (SR 414) in Orange County, a length of approximately 15.4 miles. In addition, the Preferred Alternative includes improvements to portions of SR 408 (East/West Expressway). The limits along SR 408 (East/West Expressway) extend from approximately Tampa Avenue to Bumby Avenue. Refer to Figure S-2 for the Preferred Alternative study limits.

At the initiation of the I-4 PD&E Study – Section 2, the Long Range Transportation Plans (LRTPs) for METROPLAN ORLANDO and the Volusia County MPO included the proposed improvements to I-4 from just west of the SR 528 (Bee Line Expressway) interchange in Orange County to just east of the SR 472 interchange in Volusia County, a distance of 43 miles. Figure S-2 presents the Ultimate project study limits. However, the 2020 LRTPs Update performed by METROPLAN ORLANDO and the Volusia County Metropolitan Planning Organization (MPO) identified additional financial constraints, which dictated that the Ultimate improvements for I-4 not be included in the cost feasible plan for 2020. Therefore, METROPLAN ORLANDO reduced the limits of the Ultimate improvements on I-4 to include the segment extending from Kirkman Road to Maitland Boulevard in Orange County (identified as the Preferred Alternative).

Given the actions of METROPLAN ORLANDO and the Volusia County MPO on their respective cost feasible elements for the 2020 LRTPs, FDOT coordinated with FHWA regarding the consequences of the current adopted plans with respect to the environmental action (in the form of a Record of Decision [ROD]) for the I-4 PD&E Study – Section 2 EIS. Through this coordination, it was determined that FHWA will consider environmental action for a Preferred Alternative with limits consistent with METROPLAN ORLANDO's Cost Feasible Element of the LRTP.

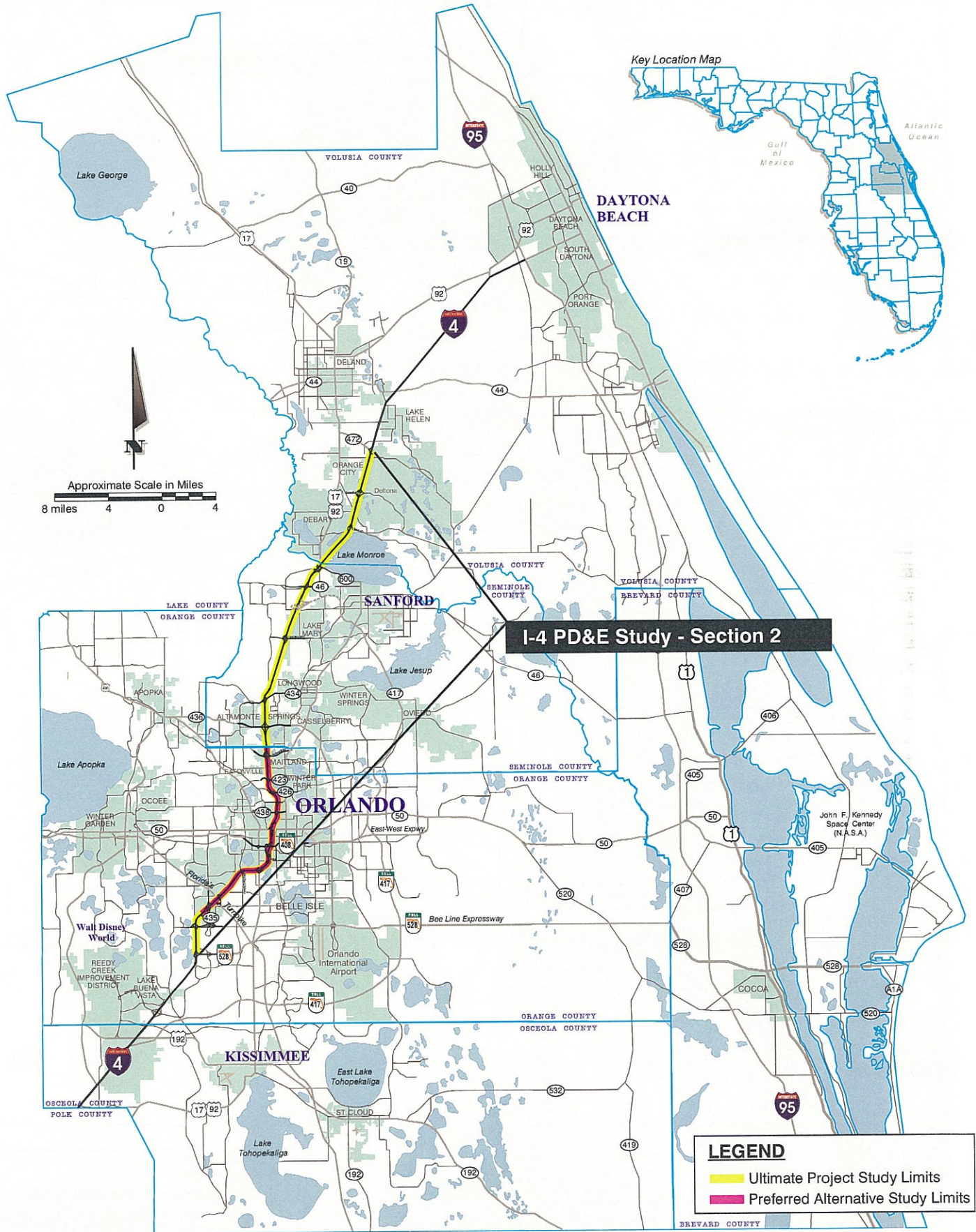
In light of this direction, the FEIS includes discussions and assessments on the improvements for the entire 43-mile project. However, a Preferred Alternative has been identified and presented for environmental action consideration, which extends from Kirkman Road (SR 435) to Maitland Boulevard. This Summary includes only discussions and assessments on the improvements for the 15.4-mile Preferred Alternative project. The Preferred Alternative limits are consistent with METROPLAN ORLANDO's LRTP.

The intent of FHWA and FDOT is to construct the Ultimate project. However, the construction of the Ultimate project will have to be completed in phases, as portions of the corridor are included in future updates of METROPLAN ORLANDO's 2020 LRTP Update and the Volusia County MPO's 2020 LRTP Refinement. The intent of the Preferred Alternative is to meet the purpose and need of the Ultimate project, but to a lesser scale.

The specific purpose of the Preferred Alternative is to improve mobility within the tourist related-development in Orange County, Orlando Central Business District (CBD), and the commuter-shed of Orlando, Maitland, and Altamonte Springs. The project will also enhance the connectivity between I-4 and SR 408. As funding becomes available for additional portions of the corridor, appropriate environmental studies, re-evaluations, and Federal requirements will be completed. Logical termini will be required for each portion of the corridor advanced to obtain Location and Design Concept Acceptance (LDCA). The project limits were identified based on the traffic influence area of the tourist-related development in Orange County, Orlando CBD, and commuters traveling to the Orlando metropolitan area.

The south terminus of the Preferred Alternative at Kirkman Road (SR 435) provides tourists and residents increased mobility into and out of the Orlando CBD. The improvements tie into the Universal Boulevard interchange improvements and the programmed I-4/John Young Parkway Interchange project improvements. Adding high occupancy vehicle (HOV) lanes from south of Kirkman Road (SR 435) through the Orlando CBD and into northern Orange County will increase the movement of tourists, commuters, and goods into and out of the tourist-related development in Orange County and the Orlando Metropolitan area. The results of existing (1996) traffic capacity analyses indicate that I-4 is operating over capacity [level of service (LOS) F] from Kirkman Road (SR 435) through the CBD and northern Orange County. Projected (2020) traffic volumes anticipated on the HOV lanes through the CBD between Kirkman Road (SR 435) and Ivanhoe Boulevard is approximately 10,500 to 13,600 vehicles per day. Traffic analyses indicate that HOV lanes will operate at acceptable levels of service (LOS C and D) from Kirkman Road (SR 435) to Ivanhoe Boulevard in 2020. From Kirkman Road (SR 435) to John Young Parkway, HOV lanes are expected to operate at LOS D. From John Young Parkway to Ivanhoe Boulevard, HOV lanes are expected to operate at LOS C. The reduction in LOS between Kirkman Road (SR 435) and John Young Parkway is due to the high number of tourists and commuters traveling to tourist-related activities and the Orlando CBD.

The north terminus of the Preferred Alternative north of Maitland Boulevard provides northern Orange County and southern Seminole County commuters direct access to the HOV lanes. Existing and projected traffic patterns indicate that the majority of commuters to and from northern Orange County and southern Seminole County are accessing I-4 from the slip ramps located north of the Lee Road and Maitland Boulevard interchanges. Providing HOV lanes from north of Maitland Boulevard will enable northern Orange County and southern Seminole County commuters increased mobility when traveling to the Orlando metropolitan area. Projected (2020) traffic volumes north of Maitland Boulevard indicate that vehicles traveling in the HOV lanes range from approximately 10,000 to 14,000 vehicles per day. Traffic analyses indicate that the HOV lanes are projected to operate at LOS D from Ivanhoe Boulevard to Lee Road and LOS C from Lee Road to Maitland Boulevard in 2020. The reduction in LOS between Ivanhoe Boulevard and Lee Road is due to the high number of commuters traveling to the Orlando CBD from the south and north. North of Maitland Boulevard, the number of vehicles traveling in the HOV lanes drops to approximately 3,700 to 11,900 vehicles per day.



LEGEND
 Ultimate Project Study Limits
 Preferred Alternative Study Limits

Figure S-1
Regional Location Map

I-4 PD&E Study - Section 2

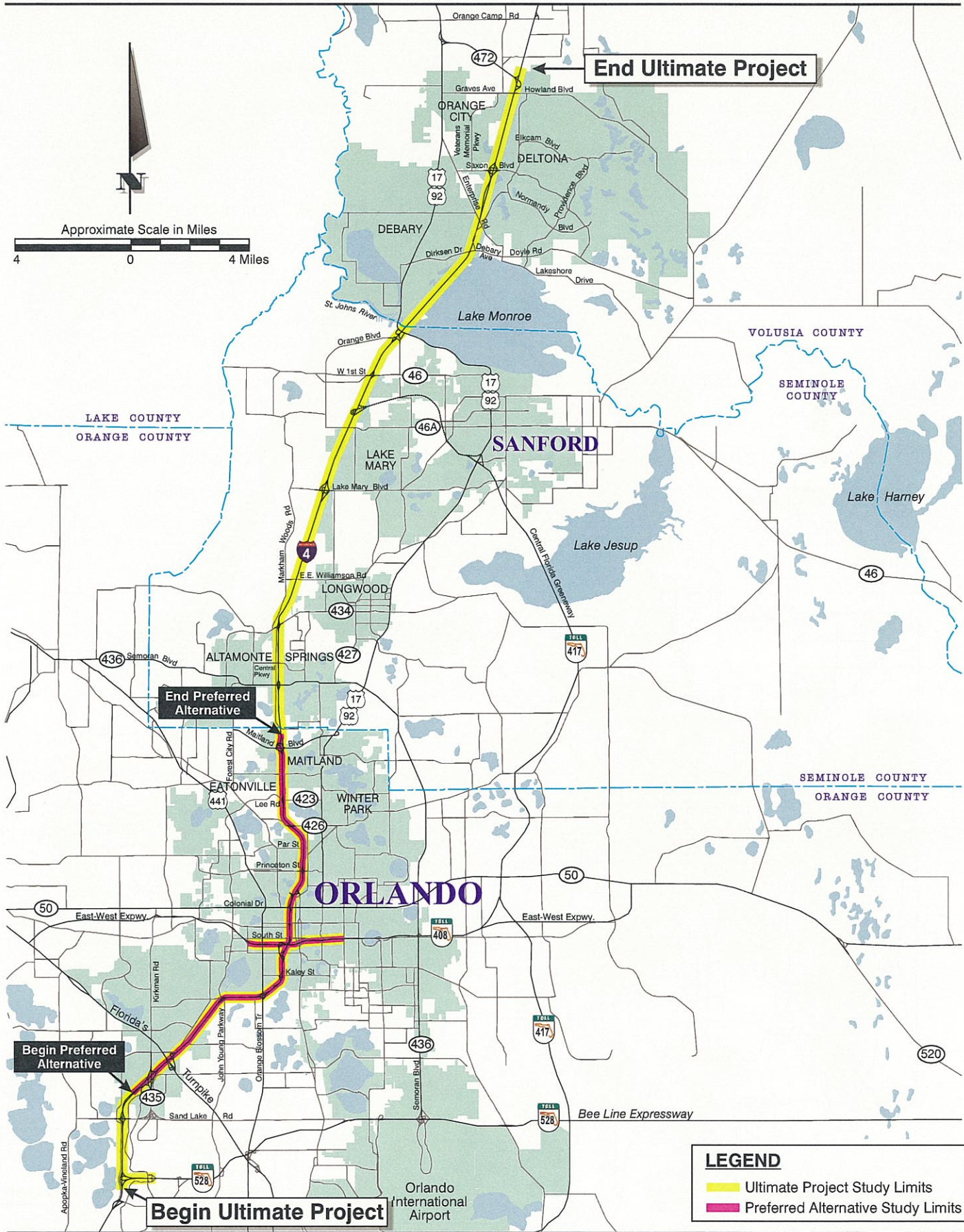


Figure S-2
Project Study Limits

I-4 PD&E Study - Section 2



The I-4 PD&E Study – Section 2 FEIS has been prepared to address comments, issues, and concerns identified during the public hearing comment period for the DEIS; revise the DEIS to include the Preferred Alternative; identify avoidance or mitigation measures for adverse social, economic, and environmental impacts; and complete the environmental review process under the National Environmental Policy Act (NEPA).

The preparation and approval of the FEIS is required prior to obtaining the ROD and subsequently the LDCA. The ROD is the formal environmental approval action allowing the project to move forward into the next phase, design, and construction.

The I-4 PD&E Study – Section 2 is a direct outgrowth of prior transportation planning activities in the study area. In November 1989, FDOT completed a Master Plan for improvements to I-4 from the Polk/Osceola County Line to US 17-92 in Seminole County. The original I-4 Master Plan proposed highway improvements through 2010. The Master Plan recommended that the existing roadway be widened up to 16 lanes with an envelope for transit in the median. In addition, it recommended modifications to several interchanges. The Master Plan was approved by METROPLAN ORLANDO, formerly the Orlando Urban Area MPO, in November 1989.

As tourism and population continued to grow within the State of Florida, travel demand surpassed interstate capacity in many sections of the state's 1,500-mile system. To address the expansion and preservation of the state's interstate system, FDOT established an Interstate Highway Policy in November 1991. The Policy ensures that Florida's interstate system adequately serves the needs of both commercial and personal mobility within the framework of environmental preservation, restoration of air quality, and support of growth management goals.

The Interstate Highway Policy represented a profound change from the traditional single mode planning orientation of the past by promoting urban interstate highways as multi-modal corridors and optimizing the movement of people rather than the flow of vehicles. Under the Policy, the number of lanes is limited to no more than six general-purpose lanes and up to four special purpose lanes. Public transportation modes, including buses and light rail transit (LRT) and ride-sharing strategies such as HOV lanes, are encouraged as long-term solutions to urban mobility challenges. In addition, interstate corridors allow high-speed, and high volume traffic movements to facilitate commerce and long distance trips through the provision of additional right-of-way within the corridor for high speed rail, where appropriate.

In March 2001, FDOT consolidated a number of policies including the Interstate Highway Policy into a new streamlined policy entitled "*Florida Intrastate Highway System (FIHS) Program Development Procedure*." The policy states that the construction of additional lanes on the intrastate highway system is set forth in Chapter 335.02(3) of the Florida Statutes. Chapter 335.02(3) states, "In determining the number of lanes for any regional corridor or section of highway on the State Highway System to be funded by the department with state or federal funds, the Department shall evaluate all alternatives and seek to achieve the highest degree of efficient mobility for corridor users."

Guided by the Interstate Highway Policy, FDOT completed the I-4 Multi-Modal Master Plan (MMMP) for the 73-mile I-4 corridor through Central Florida in October 1996. The I-4 MMMP limits extended from the Polk/Osceola County line to Interstate 95 in Volusia County. The I-4 MMMP was developed to identify the specific components of the I-4 improvements through 2020.

It should be noted that FHWA participated in the development of the I-4 MMMP in an advisory role. The I-4 MMMP has not been approved by FHWA; therefore, does not constitute a Federal action or endorsement. The I-4 PD&E Study – Section 2 DEIS and subsequent FEIS, together with their required circulation and review, are the Federal action for the project.

The I-4 MMMP was performed using a three tier analysis, in which a broad range of alternatives were evaluated and narrowed. Tier 1 dealt with a broad array of potential investment strategies, including roadway investments outside the I-4 corridor. Nine alternatives were selected for further analysis in Tier 2.

Tier 2 was conducted as a Major Investment Study (MIS), in accordance with Federal law. The recommended design concept and scope were adopted by both METROPLAN ORLANDO and the Volusia County MPO. Tier 3 refined the basic Tier 2 design concept and scope into a Master Plan, which adheres to the FDOT Interstate Highway Policy.

In September 1995, METROPLAN ORLANDO and the Volusia County MPO voted to adopt the I-4 MIS design concept and scope. In December 1995, both MPOs approved their respective 2020 L RTPs, which included the recommended I-4 MIS improvements to the I-4 corridor.

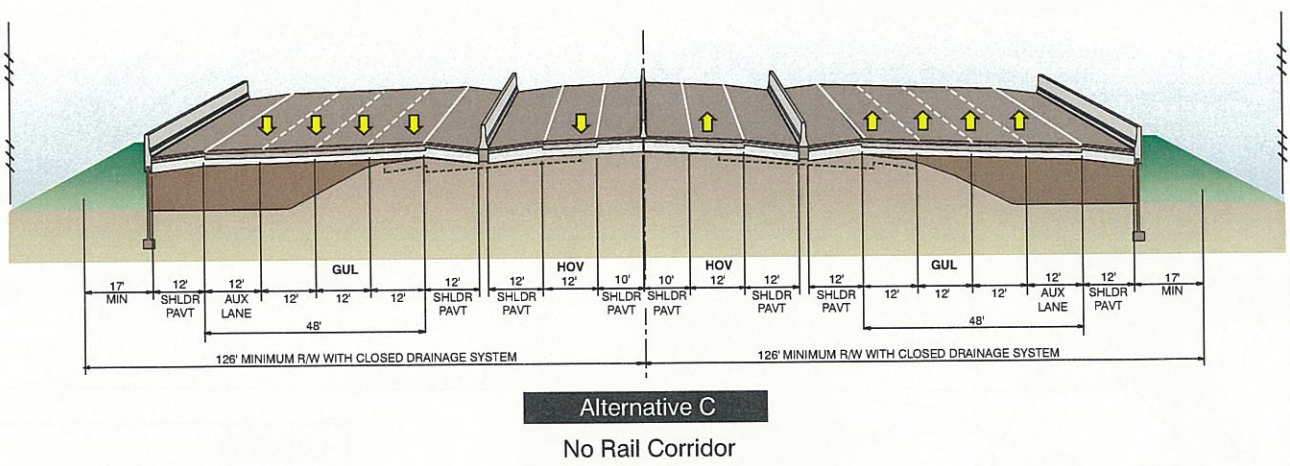
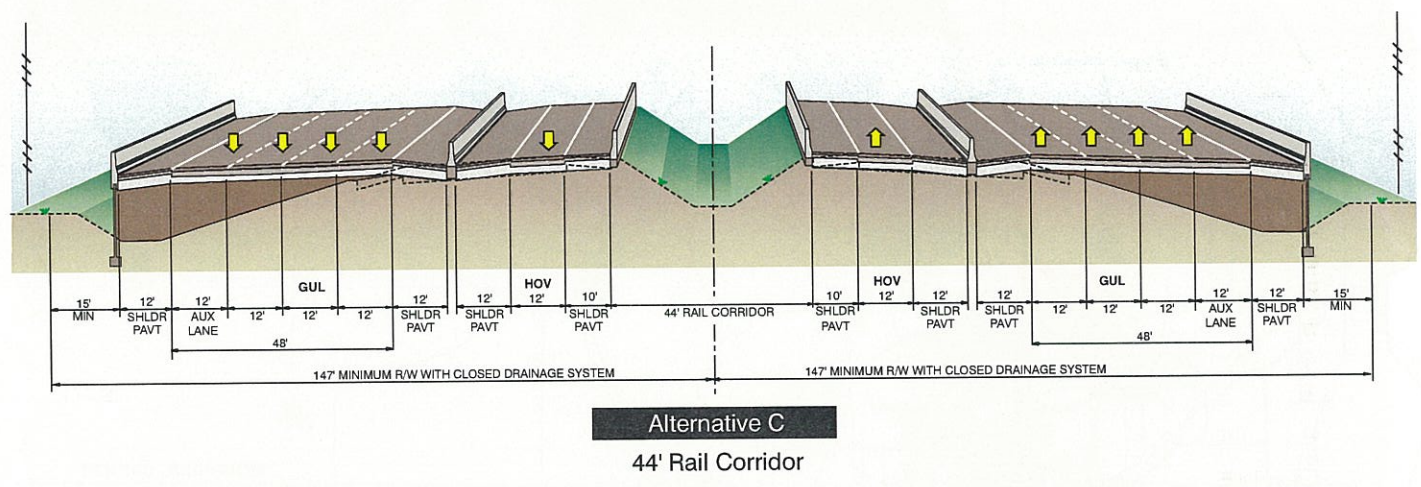
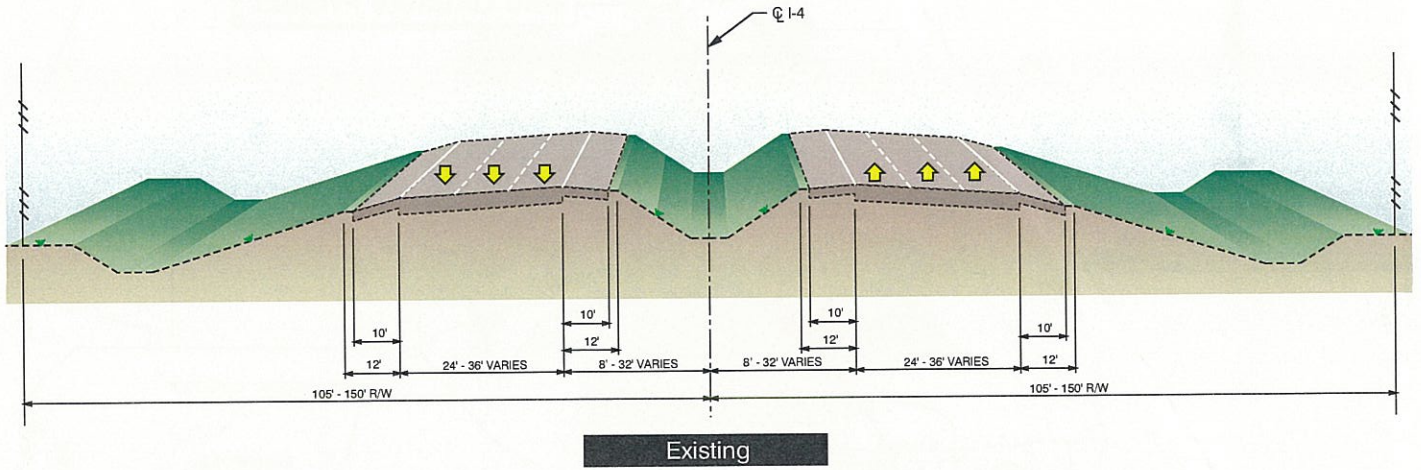
As a result of the recommendations presented in the I-4 MMMP and MIS, the FDOT elected to go forward with the next phase of the I-4 corridor facility development process through four closely coordinated studies. These studies included three PD&E studies for the I-4 highway sections and the production of a Preliminary Engineering (PE) Report and an Environmental Impact Statement (EIS) for the LRT system. The LRT and I-4 studies represent freestanding projects capable of independent operation.

In 1996, FDOT, in consultation with FHWA, initiated the I-4 PD&E Study – Section 2. FDOT is proposing to widen I-4 to six general use lanes (GULs) and two HOV lanes (6+2) within the Ultimate project and Preferred Alternative limits. The proposed typical section for the roadway improvements is presented in Figure S-3. A 44-foot rail corridor will be provided in the median in portions of the Ultimate project and Preferred Alternative study areas. The HOV lanes will be barrier separated from the general lanes throughout the Ultimate project and Preferred Alternative limits. Access to the HOV lanes will be provided through the use of slip ramps, direct flyovers, and HOV-only interchanges. Where necessary, the general use lanes will be supplemented by auxiliary lanes. Drainage improvements and stormwater management facilities will be constructed as part of the project. Existing interchanges along the corridor were evaluated to determine compliance with current FDOT (January 2000) or American Association of State Highway Transportation Officials (AASHTO) (1994) design criteria.

The 43-mile Ultimate project study area included portions of 14 jurisdictions including three counties. The 15.4-mile Preferred Alternative study area includes portions of five jurisdictions. The jurisdictions impacted by the Ultimate project and the Preferred Alternative are shown in Figure S-4 and listed below.

- Orange County*
- City of Orlando*
- City of Winter Park*
- Town of Eatonville*
- City of Maitland*
- Seminole County
- City of Altamonte Springs
- City of Longwood
- City of Lake Mary
- City of Sanford
- Volusia County
- City of DeBary
- City of Deltona
- City of Orange City

*Jurisdictions included within the Ultimate project and Preferred Alternative study areas.



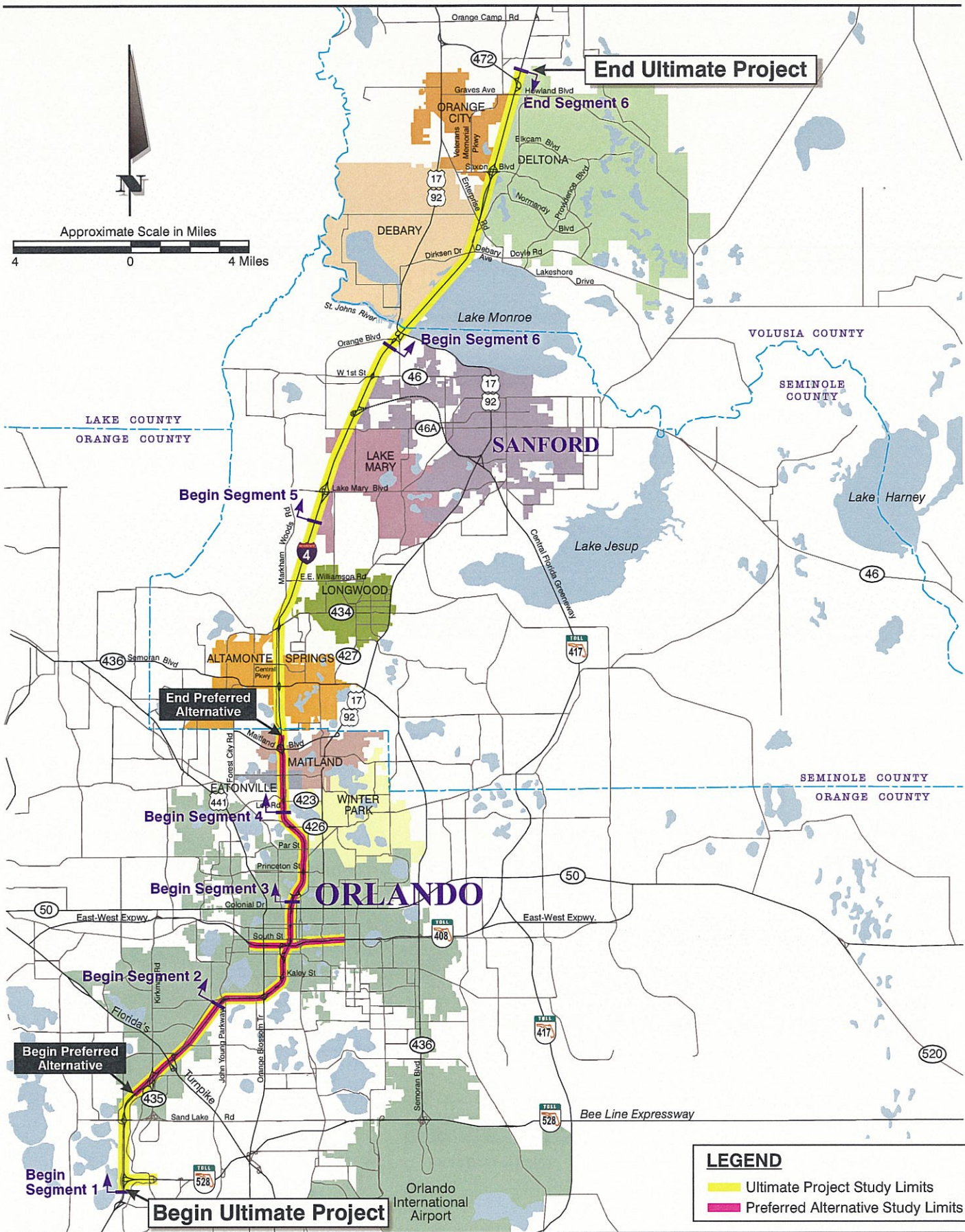


Figure S-4
Jurisdiction Boundaries

I-4 PD&E Study - Section 2



To facilitate the engineering and environmental analyses as well as the preparation of the Preliminary Engineering Report and EIS, the Ultimate project study area was divided into six segments. The locations of the segments are summarized below and provided on Figure S-4.

- **Segment 1** - Extends from west of SR 528 (Bee Line Expressway) to west of John Young Parkway (SR 423) in Orange County.
- **Segment 1 (Preferred Alternative)** - Extends from west of Kirkman Road (SR 435) to west of John Young Parkway (SR 423) in Orange County.
- **Segment 2** - Extends from west of John Young Parkway to west of Ivanhoe Boulevard in Orange County.
- **Segment 3** - Begins west of Ivanhoe Boulevard and ends east of Fairbanks Avenue in Orange County.
- **Segment 4 (Preferred Alternative)** - Extends from east of Fairbanks Avenue in Orange County to west of Maitland Boulevard in Seminole County.
- **Segment 4** - Extends from east of Fairbanks Avenue in Orange County to west of Lake Mary Boulevard in Seminole County.
- **Segment 5** - Extends from west of Lake Mary Boulevard to south of US 17-92 in Seminole County.
- **Segment 6** - Extends from south of US 17-92 in Seminole County to north of SR 472 in Volusia County.

As indicated, the Preferred Alternative study area is within Segments 1, 2, 3, and 4. Refer to Figure S-4 for the location of the Preferred Alternative in relation to the project segments.

S.2 Other Major Government Actions

Several related transportation studies are currently planned within the Ultimate project and Preferred Alternative study areas. The following presents descriptions of the related transportation projects. The locations of the related studies is presented in Figure S-5.

- **I-4 PD&E Study - Section 1** - The I-4 PD&E Study - Section 1 involves the preparation of an Environmental Assessment/Finding of No Significant Impact (EA/FONSI) for improvements on I-4 from CR 532 in Osceola County to SR 528 (Bee Line Expressway) in Orange County. Detailed information on the Section 1 improvements is contained in the FONSI (June 2000) and the *Preliminary Engineering Report* (July 1999). The US 192 improvements are programmed for construction in FY 2003/2004.
- **I-4 PD&E Study - Section 3** - The I-4 PD&E Study - Section 3 initially involved the preparation of an EA/FONSI for improvements on I-4 from SR 472 to I-95 in Volusia County. Detailed information on the Section 3 improvements is contained in the FONSI (June 2000) and the *Preliminary Engineering Report* (April 2000).

In September 1999, FDOT performed the reassessment of I-4 PD&E Study - Section 3. The reassessment of the study involved expanding the project limits to establish an independent six-laning project from US 17-92 in Seminole County to I-95 in Volusia County.

- **Central Florida Light Rail Transit System (CFLRTS) Study** - The CFLRTS involved the preparation of an EIS for a new LRT system in Orange County. The limits of the project extend from Central Florida Parkway (just south of Sea World) through downtown Orlando to the Loch Haven/Princeton Street area. FTA approved the ROD for the project and the project has moved into final design. The *CFLRTS Final EIS* (November 1998) contains detailed information on the LRT improvements.

Other related transportation studies within the Ultimate project and Preferred Alternative study areas are discussed below and shown in Figure S-6.

- **Auxiliary Lane** – This project involves the construction of auxiliary lanes from SR 535 to SR 528 and the resurfacing of I-4 from SR 536 to SR 535 in Orange County. The design/build for the project began in August 2001. Construction is expected to be complete in FY 2003/2004.
- **Auxiliary Lane** – This project involves the construction of auxiliary lanes and the resurfacing of the I-4 mainline from SR 528 to SR 482 (Sand Lake Road) in Orange County. The design/build contract was awarded in February 2002. Construction is expected to begin in Spring/Summer 2002 and expected to be complete in FY 2002/2003.
- **Auxiliary Lane** - FDOT is constructing auxiliary lanes from Kirkman Road (SR 435) to west of Florida's Turnpike in Orange County. Construction for the project began in November 2001 and is expected to be complete in FY 2003/2004.
- **Auxiliary Lane** – This project involves the addition of auxiliary lanes from US 441 (Orange Blossom Trail) to Maitland Boulevard in Orange County. The design/build phase of the project began in September 2001. Construction is expected to be complete in FY 2004/2005.
- **John Young Parkway Interchange** – This project involves modifications to the John Young Parkway/I-4 interchange in Orange County. A categorical exclusion has been prepared and approved. The project is in design. Right-of-way acquisition is scheduled to begin in FY 2001/2002 and construction in FY 2003/2004.
- **Six Laning from CR 532 to US 192** – This project involves the widening of I-4 from four lanes to six lanes from CR 532 to US 192 in Osceola County. This segment is currently in design and is programmed for construction in FY 2002/2003. Construction is estimated to be complete by FY 2006/2007.
- **Six Laning from Lake Mary Boulevard to US 17-92** – This project involves the widening of I-4 from four lanes to six lanes from Lake Mary Boulevard to US 17-92 in Seminole County. This segment is currently in design and is programmed for construction in FY 2002/2003. Construction is estimated to be complete by FY 2005/2006.
- **Rest Area Improvements** – This project involves the rehabilitation of a rest area along I-4 in the westbound direction. The improvements are being evaluated by FDOT to address neighborhood concerns.
- **SR 417 (Central Florida GreeneWay)** – This project involves the construction of a new interchange at the intersection of I-4 and SR 417 (Central Florida GreeneWay) in Seminole County. The new interchange is located between CR 46A and SR 46. This interchange has been designed and construction is underway. Construction is expected to be complete in FY 2002/2003.
- **I-4 Six Laning and St. Johns River Bridge** – The I-4 Six Laning and St. Johns River Bridge project involved the preparation of an EA for improvements on I-4 from west of the US 17-92 interchange in Seminole County to the I-95 interchange in Volusia County. Improvements to I-4 will include widening the roadway from four to six GULs, interchange modifications, and the reconstruction of the bridge over the St. Johns River. Portions of the project are located within the study limits of the I-4 PD&E Study – Section 2. Detailed information on this project is contained in the approved EA/FONSI. Design/build for the St. Johns River Bridge project is currently underway with an expected completion date of Spring 2004. Six laning from Saxon Boulevard to SR 472 is currently in design and is programmed for construction in FY 2004/2005. Six laning from SR 472 to SR 44 is in design and programmed for construction in FY 2007/2008. Finally, six laning from SR 44 to I-95 is in design with right-of-way acquisition programmed for FY 2003/2004.

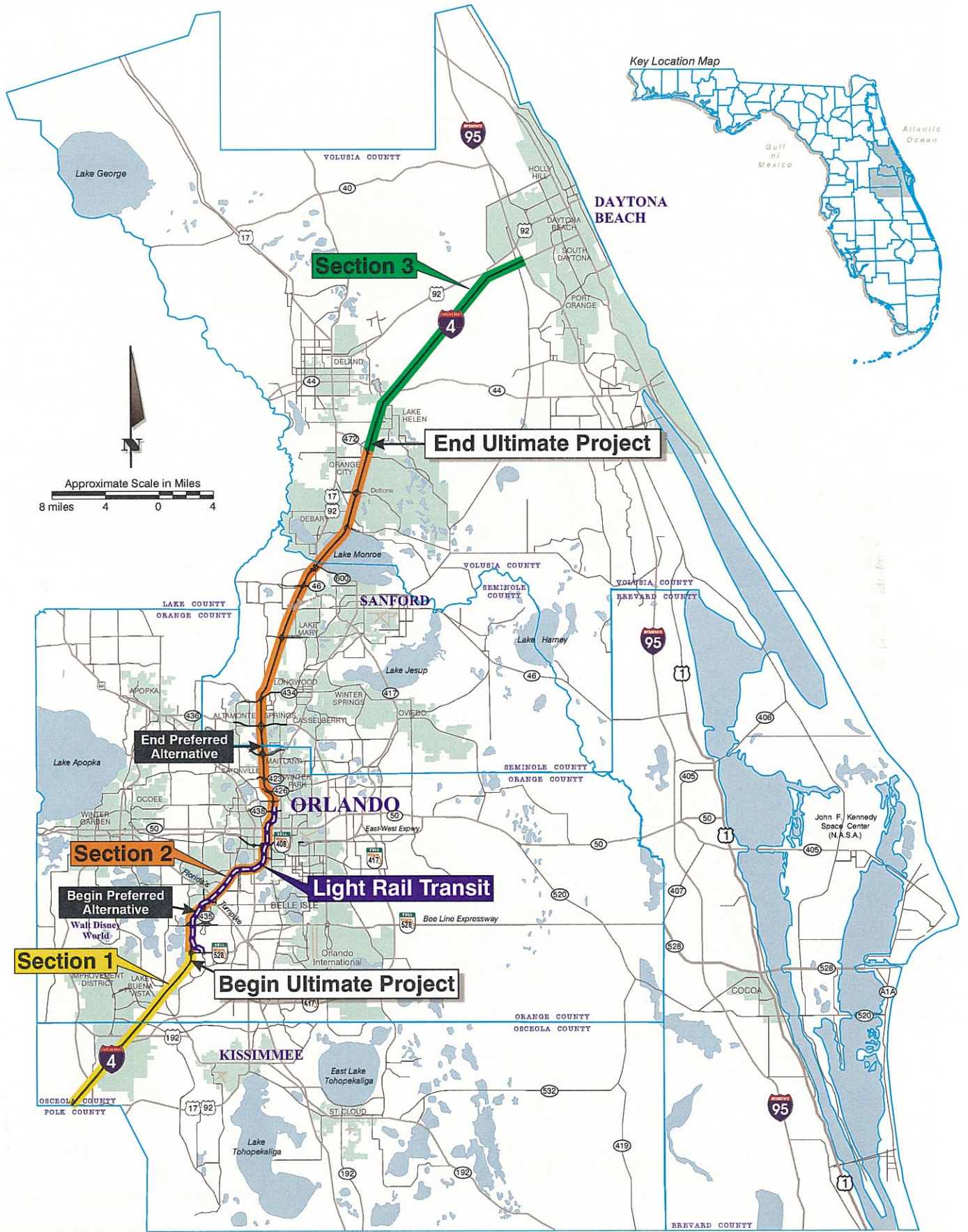


Figure S-5
Project Limits for I-4 PD&E Studies and LRT

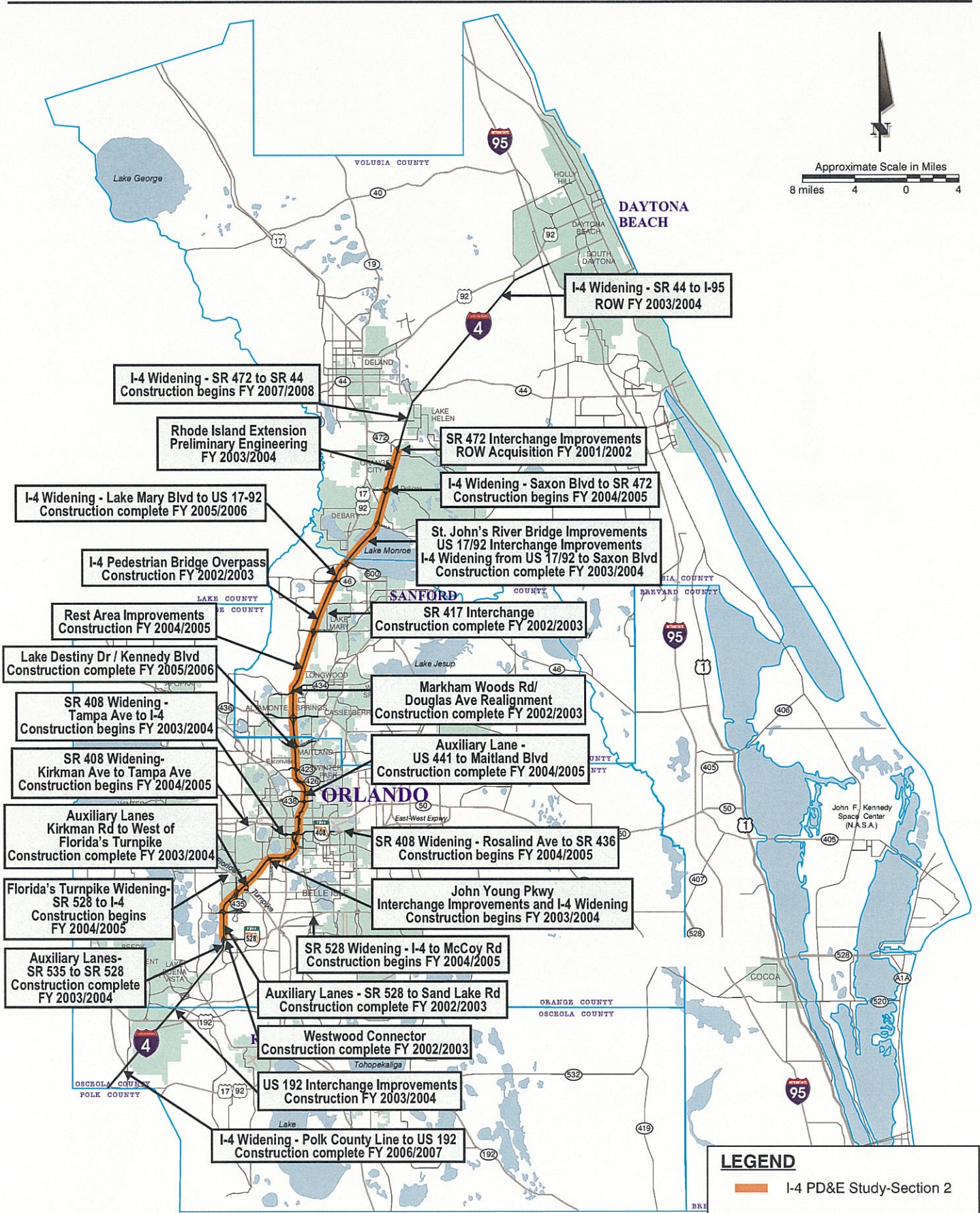


Figure S-6
Other Related Studies

I-4 PD&E Study - Section 2



- **SR 472 Interchange** – This project involves improvements to the eastbound I-4 on-ramp. Design for the interchange ramp is complete and right-of-way acquisition is scheduled for FY 2001/2002.
- **I-4 Pedestrian Bridge Overpass** – This project involves the construction of a new bridge crossing of the Seminole Wekiva Trail over I-4 just south of Paola Road (CR 46A) in Seminole County. The project is currently in the design/build phase and construction is expected to be complete by FY 2002/2003.
- **Florida's Turnpike from Kissimmee-St. Cloud to SR 50** – This project consists of the widening of Florida's Turnpike from four to six or eight lanes from US 192 to SR 50. The project is in the PD&E phase of project development. Design for the portion of the project from SR 528 to I-4 is scheduled for FY 2002/2003 and construction is scheduled for FY 2004/2005.
- **SR 528 (Bee Line Expressway) from I-4 to McCoy Road** – This project consists of widening SR 528 from four to eight lanes from I-4 to McCoy Road. The project is in the PD&E phase of project development. The project is scheduled for design in December 2002 and programmed for construction in FY 2004/2005.
- **SR 408 (East/West Expressway) from Kirkman Road (SR 435) to Tampa Avenue** – The OOCEA is currently designing the widening of SR 408 from four to six lanes from Kirkman Road (SR 435) to Tampa Avenue. Construction is planned for FY 2004/2005.
- **SR 408 (East/West Expressway) from Tampa Avenue to I-4** – The OOCEA is currently designing the widening of SR 408 from four to six lanes from Tampa Avenue to I-4. Construction is planned for FY 2003/2004.
- **SR 408 (East/West Expressway) from Rosalind Avenue to SR 436** – The OOCEA is currently designing the widening of SR 408 from six to eight lanes from Rosalind Avenue to SR 436. Construction is planned for FY 2004/2005.
- **Westwood Connector** – Orange County is currently constructing a new two-lane road from Westwood Boulevard to the Orange County Convention Center. The project is currently in design. Construction is estimated to be complete by FY 2002/2003.
- **Lake Destiny Drive/Kennedy Boulevard** – This project consists of the realignment of Lake Destiny Drive under the Kennedy Boulevard four-lane widening project in Orange County. The project is currently in design. Construction is estimated to be complete by FY 2005/2006.
- **Markham Woods Road/Douglas Avenue Realignment** – This project consists of the realignment of Markham Woods Road and Douglas Avenue in the vicinity of SR 434 in Seminole County. The project is currently under construction with an estimated completion date of FY 2002/2003.
- **Rhode Island Extension** – Volusia County is planning to construct a new two-lane roadway from Veterans Memorial Parkway to Normandy Boulevard. The preliminary engineering phase of project development is scheduled for FY 2003/2004. Right-of-way acquisition is programmed for FY 2004/2005 and construction is estimated to begin in FY 2005/2006.

S.3 Alternatives Considered

There are four alternatives being carried forward as part of the I-4 PD&E Study – Section 2 Ultimate project and Preferred Alternative. These include the No Action, Transportation Systems Management (TSM), Mass Transit, and Preferred Alternative. A summary of each alternative is provided below.

S.3.1 No Action Alternative

The No Action (No Build) Alternative includes highway facilities that are likely to exist in 2020. This includes the existing highway network, plus the highway improvements that are identified in METROPLAN ORLANDO's 2020 LRTP Update and the Volusia County MPO's 2020 LRTP Refinement. The No Action Alternative includes those projects that provide for an increase in capacity, such as new roadway construction, widening projects, and major interchanges. The No Action Alternative does not include improvements proposed as part of the I-4 PD&E Study - Section 2.

The No Action Alternative would avoid right-of-way and construction costs associated with the proposed improvements, eliminate the short-term disruption that would occur along the existing roadways during construction activities, and prevent business or residential impacts or impacts to undeveloped lands or wetlands.

However, the No Action Alternative does not fulfill the purpose and need of the Ultimate project and Preferred Alternative, as established in Chapter 1 of the I-4 PD&E Study - Section 2 FEIS (August 2002). The disadvantage of the No Action Alternative is that there would be no provision to accommodate the anticipated growth in traffic volumes.

The results of the freeway operational analyses for the 2020 No Build scenario indicate that I-4 will operate over capacity in the majority of the study area. Of the 27 basic freeway segments [as defined in the I-4 System Access Modification Report (SAMR) (April 2000) and the I-4 SAMR Update (May 2002)] analyzed, five will operate at LOS D or better, two will operate at LOS E, and 20 will operate at LOS F. Figure S-7 presents the LOS along I-4 for the freeway segments. As shown, I-4 will operate at a LOS F from SR 528 (Bee Line Expressway) to Florida's Turnpike, from Conroy Road to John Young Parkway, from Orange Blossom Trail (US 441) to Lake Mary Boulevard, and from US 17-92 to SR 472. LOS E will occur from Florida's Turnpike to Conroy Road (eastbound), John Young Parkway to Orange Blossom Trail (US 441) and from Lake Mary Boulevard to CR 46A. LOS D will occur from Conroy Road to Florida's Turnpike (westbound) and from CR 46A to US 17-92. Finally, LOS C is projected to occur from CR 46A to SR 46 (eastbound).

The results of the freeway ramp junction analyses for the 2020 No Build conditions indicate that the majority of the ramps will operate over capacity. The analyses were conducted for 106 ramp junctions along the study area. Out of the 88 ramp junctions analyzed, five will operate at LOS D or better, one will operate at LOS E, and 83 will operate at LOS F. Of the 18 major merge/diverge locations, 12 are projected to operate under capacity and six are projected to operate over capacity. Figure S-7 presents the interchanges that will operate over capacity in 2020. As shown in Figure S-7, most of the interchanges along the I-4 corridor within the study area will operate over capacity. The only I-4 interchanges that will not operate over capacity in 2020 include CR 46A, SR 417 (Central Florida GreeneWay), and SR 46. It should be noted that some of the ramp junctions for the interchanges shown on Figure S-7 operate at a LOS E or better. However, since the majority of the ramp junctions at an interchange operate at LOS F, the interchange is considered over capacity.

Without mobility improvements to I-4, operating conditions of the facility would deteriorate. The increased traffic congestion on I-4 would increase commuter travel times, delay the movement of goods through the urban area, and the delivery of goods within the urban area will be forced to other times throughout the day.

The No Action Alternative remained under consideration through the public hearing process during which a Preferred Alternative was proposed. The final selection of the Preferred Alternative was made after consideration of the impacts and public hearing comments were received.

S.3.2 Transportation System Management Alternative

The TSM Alternative involves low capital cost transportation improvements designed to maximize the utilization and efficiency of the present system. TSM options were considered during the

development of the I-4 PD&E Study – Section 2 project. The following are TSM options that are being carried forward as part of the proposed Ultimate project and Preferred Alternative:

- Traffic signal improvements
- Intersection/interchange improvements
- HOV lanes
- Ridesharing programs
- Provision for transit
- Ramp-to-ramp auxiliary lanes
- Intelligent transportation system (ITS)
- Demand Pricing

The Ultimate project and Preferred Alternative do not preclude the use of TSM measures to enhance operations of the interstate facility. As indicated above, the proposed improvements incorporate several TSM strategies as part of the Build Alternatives and the Preferred Alternative. Since these TSM strategies have been incorporated as part of the Build Alternatives and the Preferred Alternative, no further evaluation of the TSM Alternative will be conducted as part of the study.

S.3.3 Mass Transit Alternative

As a result of the I-4 MIS recommended design concept and scope, FDOT, in consultation with LYNX, initiated the production of an EIS for the CFLRTS project. The project consisted of a new LRT system extending from Central Florida Parkway in Orange County to Longwood in Seminole County.

Based on input received during the DEIS comment period, the limits of the proposed LRT system were adjusted to extend from Central Florida Parkway to the Loch Haven/Princeton Street area.

The proposed I-4 PD&E Study – Section 2 Ultimate project and Preferred Alternative roadway improvements include provisions for the inclusion of rail service and bus systems within the I-4 corridor. A 44-foot rail corridor has been set aside in areas within the project limits for rail service. In addition, bus systems, including express bus, will be allowed to use the HOV lanes. However, the Mass Transit Alternative was not carried forward for further evaluation as part of the I-4 PD&E Study – Section 2 Ultimate project and Preferred Alternative, since it was assessed as a separate action. The CFLRTS project is a free-standing project capable of independent operation.

S.3.4 Preferred Alternative

This section of the Summary provides the rationale for the selection of the Preferred Alternative and a description of the Preferred Alternative.

As indicated previously, at the initiation of the I-4 PD&E Study – Section 2, the LRTPs for METROPLAN ORLANDO and the Volusia County MPO included the proposed improvements to I-4. However, the 2020 LRTP Update performed by METROPLAN ORLANDO and the Volusia County MPO identified additional financial constraints, which dictated that the Ultimate improvements for I-4 not be included in the cost feasible plan for 2020. Therefore, METROPLAN ORLANDO reduced the limits of the Ultimate improvements on I-4 to include the segment extending from Kirkman Road (SR 435) to Maitland Boulevard in Orange County (identified as the Preferred Alternative).

S.3.4.1 Rationale for Selection of the Preferred Alternative

The basic improvements for the Preferred Alternative involve reconstruction of existing I-4 and implementation of the following:

- Six general use lanes, three in each direction
- Two HOV lanes, one in each direction
- Auxiliary lanes between interchanges as needed for traffic operations
- Reconstruction of arterial interchanges along I-4 including:
 - Kirkman Road (SR 435)
 - Orange Blossom Trail (US 441)
 - Michigan Street
 - Kaley Street
 - Anderson Street
 - South Street
 - Robinson Street (SR 526)
 - Amelia Street
 - SR 50 (Colonial Drive)
 - Ivanhoe Boulevard
 - Princeton Street (SR 438)
 - Par Street
 - Fairbanks Avenue (SR 426)
 - Lee Road (SR 423)
 - Maitland Boulevard (SR 414)
- Construction of drainage and retention pond facilities
- Mitigation components identified to ameliorate significant impacts

As part of the DEIS, viable Ultimate Build Alternatives were proposed within the Preferred Alternative limits. These viable Ultimate Build Alternatives included:

- Kaley-Michigan Stormwater Treatment Alternatives
- I-4/SR 408 Interchange and Downtown Access Alternatives
- I-4/SR 50 (Colonial Drive) Alternatives
- College Park Typical Section and Stormwater Treatment Alternatives

The following discussions provide a recommendation along with the rationale for the recommendations related to the Preferred Alternative for each of the above locations.

Kaley-Michigan Stormwater Treatment Alternatives

Two alternatives were carried in the DEIS for this portion of the I-4 corridor:

- Kaley-Michigan Pond
- Kaley-Michigan Exfiltration

The assessment of these alternatives indicated that the Kaley-Michigan Pond Alternative impacted more businesses (22 versus 9), more residential dwelling units (29 versus 21), more total parcels impacted (62 versus 44), and higher project costs than the Kaley-Michigan Exfiltration Alternative.

Given the lower impacts and costs for the Kaley-Michigan Exfiltration Alternative, this alternative was included as part of the Preferred Alternative.

I-4/SR 408 Interchange Alternatives

Five alternatives were carried in the DEIS for this interchange area:

- Alternative 1A1 – Ramp Tunnel with Amelia Street Access
- Alternative 1A2 – Ramp Tunnel without Amelia Street Access
- Alternative 2B1 – Ramp Flyover with Amelia Street Access
- Alternative 2B2 – Ramp Flyover without Amelia Street Access
- Alternative 4 – Griffin Park Avoidance Alternative

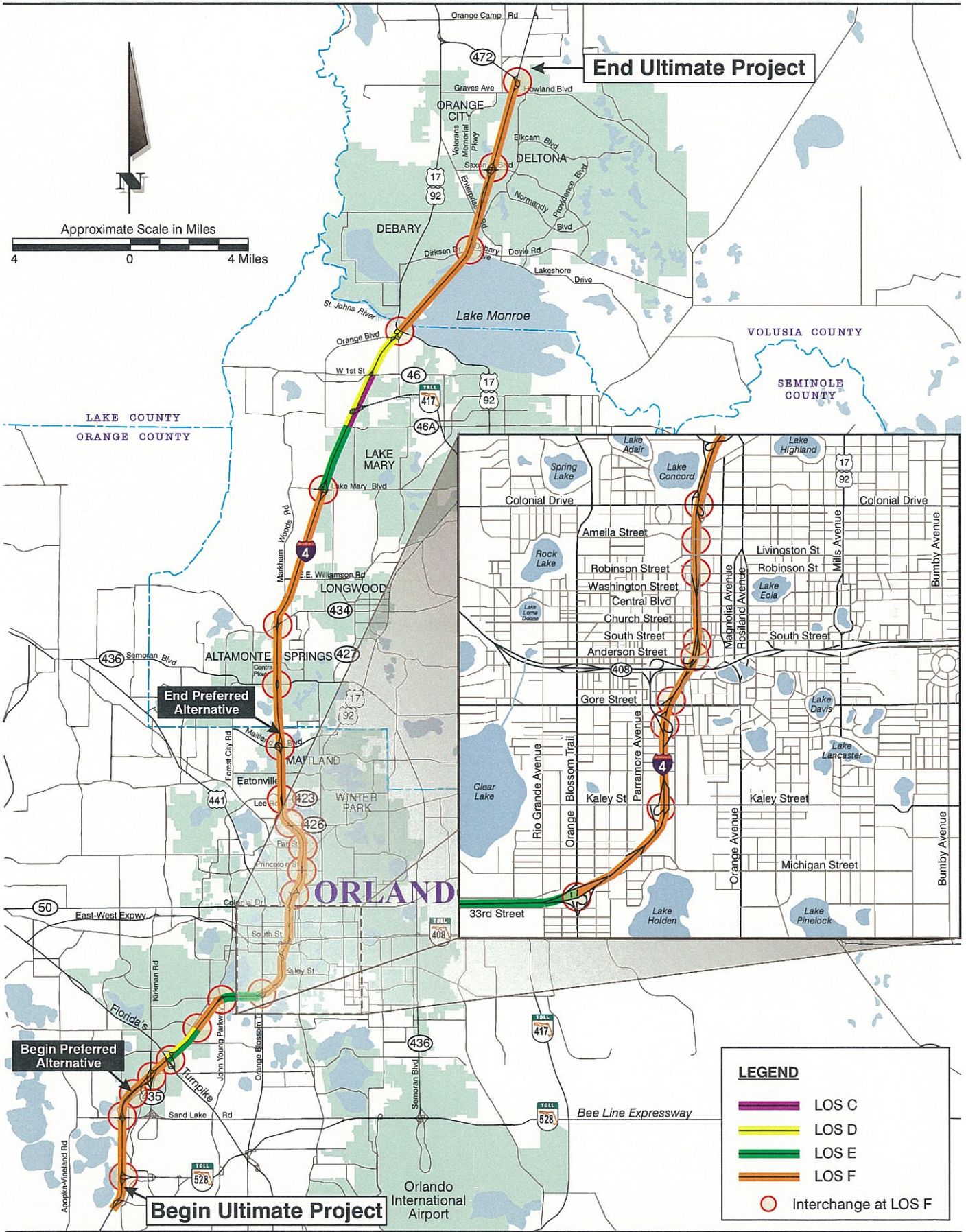


Figure S-7
Design Year (2020) No-Build Level of Service
on I-4 and Interchanges Over Capacity
I-4 PD&E Study - Section 2

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In general, Alternative 4 had the least impacts and Alternatives 2B1 and 2B2 had slightly greater impacts of the five alternatives evaluated. The primary impacts associated with the alternatives were related to historic resources, most notably the Griffin Park Historic District.

An extensive coordination effort was undertaken to identify potential solutions to the transportation needs in the downtown Orlando area. A technical group of primary stakeholders was assembled to assist in the development and assessment of alternatives for the I-4/SR 408 (East/West Expressway) interchange. Participating parties included representatives from FDOT, City of Orlando, Orange County, Orlando-Orange County Expressway Authority, Orlando Housing Authority, Downtown Development Board, and Orlando Community Redevelopment Agency. Through these efforts, Alternatives 1A1, 1A2, 2B1, and 2B2 were developed.

In addition, significant community outreach was undertaken as a part of the alternatives development. As the technical group defined concepts and alternatives, coordination with neighborhoods, community agencies, and historic interests was accomplished, which resulted in further refinements of the alternatives. In general, the conclusions of the stakeholders group indicated the following:

- Alternative 4, although avoiding direct use impacts to the Griffin Park area, was not consistent or acceptable to the City of Orlando due to sustaining impacts to access and economic opportunity in this area of downtown. Furthermore, Alternative 4 was not consistent and did not support redevelopment plans of the City and the Orlando Housing Authority.
- Alternatives 1A1 and 1A2 involved the use of a short tunnel for one of the ramp movements. The Orlando-Orange County Expressway Authority did not support Alternatives 1A1 and 1A2 due to maintenance and operation concerns. These alternatives are also more costly than the Flyover Alternatives (Alternatives 2B1 and 2B2), given the construction requirements of the tunnel.
- The City of Orlando indicated a strong support for alternatives that include the I-4 access ramps at Amelia Street. Based on traffic circulation assessments, the City indicated that this access is essential for downtown traffic circulation.
- Furthermore, through deliberations after circulation of the DEIS, the City of Orlando and the Orlando Housing Authority have indicated their specific preference for the Flyover Alternatives, and most specifically with the City, Alternative 2B1.

Given the wide range of support for the Flyover Alternatives, the importance of the Amelia Street access, and the land use incompatibility of Alternative 4; Alternative 2B1 was included as part of the Preferred Alternative.

I-4/SR 50 (Colonial Drive) Alternatives

Two alternatives were carried in the DEIS for the SR 50 improvements:

- Alternative 1 – Judge Cheney Avoidance, improve SR 50 to south
- Alternative 2 – Colonial Garage Avoidance, improve SR 50 to the north

Alternative 1 had higher impacts as compared to Alternative 2. Most notably, Alternative 1 resulted in an adverse effect to the Colonial Garage [eligible for listing on the National Register of Historic Places (NRHP)] and the alternative impacted two buildings within the Salvation Army campus west of I-4. Alternative 2 impacted several businesses and required right-of-way near the NRHP-eligible Judge Cheney house. However, coordination with the State Historic Preservation Office (SHPO) indicated that Alternative 2 did not involve adverse effects to this resource. The City of Orlando indicated support for Alternative 2.

Given the lower impacts with Alternative 2 and the local government support for Alternative 2, this alternative was included as a part of the Preferred Alternative.

College Park Typical Section and Stormwater Treatment Alternatives

Four alternatives were carried in the DEIS for the College Park area improvements:

- Typical Section C Ponds
- Typical Section C Exfiltration
- Typical Section F' Ponds
- Typical Section F' Exfiltration

The Typical Section F' alternatives involved maintaining the existing centerline alignment of I-4, which in turn created impacts to Matthews Park, which is owned by the City of Orlando. The Typical Section F' alternatives also required more new right-of-way, impacted more parcels, relocated more businesses, and relocated more residential dwellings than the respective Typical Section C alternatives. In contrast, the Typical Section F' alternatives were less costly than the Typical Section C alternatives.

The impact comparisons of the Pond alternatives versus the Exfiltration alternatives indicated that the Pond alternatives have more impacts. Most notably, the Pond alternatives involved 79 to 97 more residential dwelling unit relocations than the Exfiltration alternatives. In addition, the Exfiltration alternatives were less costly.

Given the Section 4(f) impacts at Matthews Park associated with the Typical Section F' alternatives, these alternatives will be eliminated as part of the Preferred Alternative. In consideration of the lower cost and fewer impacts of the Pond alternatives, the Typical Section C Exfiltration Alternative was included as part of the Preferred Alternative.

S.3.4.2 Description of the Preferred Alternative

The preliminary concept plans, submitted as part of the *Preliminary Engineering Report* (June 2002), illustrate the proposed alternatives that are being carried forward as part of the FEIS. The preliminary concept plans include proposed alternatives for the entire 43-mile project corridor. However, this section only provides a description of the proposed improvements within the limits of the Preferred Alternative. For a description of the proposed improvements outside the limits of the Preferred Alternative, refer to Section 2.6 of the FEIS (August 2002).

The preliminary concept plans for the Preferred Alternative are composed of three main components, which consist of the I-4 mainline improvements (both GUL and HOV lanes), interchanges for the GUL system, and interchanges for the HOV system. In addition, the proposed improvements to the I-4/SR 408 (East/West Expressway) interchange will impact the SR 408 (East/West Expressway) mainline.

Typical section C is being proposed for the entire length of the Preferred Alternative. Typical section C provides three GULs in each direction, one barrier-separated 34-foot HOV facility in each direction, and a 44-foot rail corridor in portions of the Preferred Alternative project corridor. To satisfy operational requirements such as lane balance, additional auxiliary lanes are also proposed. Figure S-3 presents typical section C with and without a rail corridor. In addition, the existing I-4 typical section is presented on the figure.

The GULs will serve all vehicle components of the traffic mix while the HOV lanes will be dedicated for multiple occupant vehicles. It is the intent to open the facility to vehicles with two or more occupants (HOV2+). If the demand in the HOV system results in operations less than LOS D, then the occupancy requirements will be increased to three or more persons (HOV3+). As stated in the approved SAMR (April 2000) and SAMR Update (May 2002), FDOT is committed to maintaining LOS D or better traffic operations in the HOV system. This will be accomplished by continuous monitoring of the system and making appropriate adjustments to the access and/or user groups in the facility. The concept for the HOV system incorporates a flexibility to accommodate future

enhancements for ITS and other strategies. In addition, an Origin-Destination Study will be conducted during the design phase of the project to verify HOV access locations.

An HOV corridor is proposed for the entire length of the Preferred Alternative. Seven access points to and from the HOV system are proposed – three direct connections to intersecting surface streets and four slip ramp locations for GUL access. The locations of the HOV interchanges are provided in Figure S-8.

The proposed Preferred Alternative is described by segment in the following sections and summarized in Table S-1.

S.3.4.2.1 Segment 1 (Kirkman Road to John Young Parkway)

The limits of the Preferred Alternative begin within the Segment 1 limits and extend from just south of Kirkman Road (SR 435) to John Young Parkway. The following is a summary of the Preferred Alternative for Segment 1:

I-4 Mainline Improvements

Proposed improvements to the I-4 mainline include:

- Providing three GULs, one HOV lane, and one auxiliary lane in each direction;
- Providing a 44-foot rail corridor east of the Kirkman Road (SR 435) interchange to the end of the Segment 1 limits;
- Providing retention ponds to treat stormwater runoff; and
- Tying into the existing conditions at the Universal Boulevard interchange.

GUL Interchange Improvements

Improvements to the GUL interchanges within Segment 1 include:

- Kirkman Road – Replacing existing interchange with a partial access four-level directional interchange with one loop ramp;
- Florida's Turnpike – Existing interchange configuration will remain the same; and
- Conroy Road – Existing interchange configuration will remain the same.

HOV Interchange Improvements

The Preferred Alternative will provide HOV interchanges at the following locations:

- Kirkman Road – Providing HOV slip ramps south of the Kirkman Road interchange. These slip ramps signify the start/end of the HOV system;
- Kirkman Road – Providing full directional HOV direct access ramps at the Kirkman Road interchange; and
- Conroy Road – Providing full directional HOV slip ramps at the Conroy Road interchange.

S.3.4.2.2 Segment 2 (John Young Parkway to Ivanhoe Boulevard)

The following is a summary of the Preferred Alternative for Segment 2:

I-4 Mainline Improvements

Proposed improvements to the I-4 mainline include:

- Providing three GULs, one HOV lane, and one auxiliary lane in each direction;
- One additional auxiliary lane will be provided in portions of Segment 2 for lane balance;

- Providing a 44-foot rail corridor to approximately 2,600 feet south of Rio Grande Avenue. The 44-foot rail corridor will then be closed for the remaining portion of Segment 2; and
- Providing a combination of retention ponds and exfiltration to treat stormwater runoff.

Proposed improvements in Segment 2 will also impact the SR 408 (East/West Expressway) mainline. These impacts affect interchanges along SR 408 (East/West Expressway) from Tampa Avenue to Bumby Avenue.

GUL Interchange Improvements

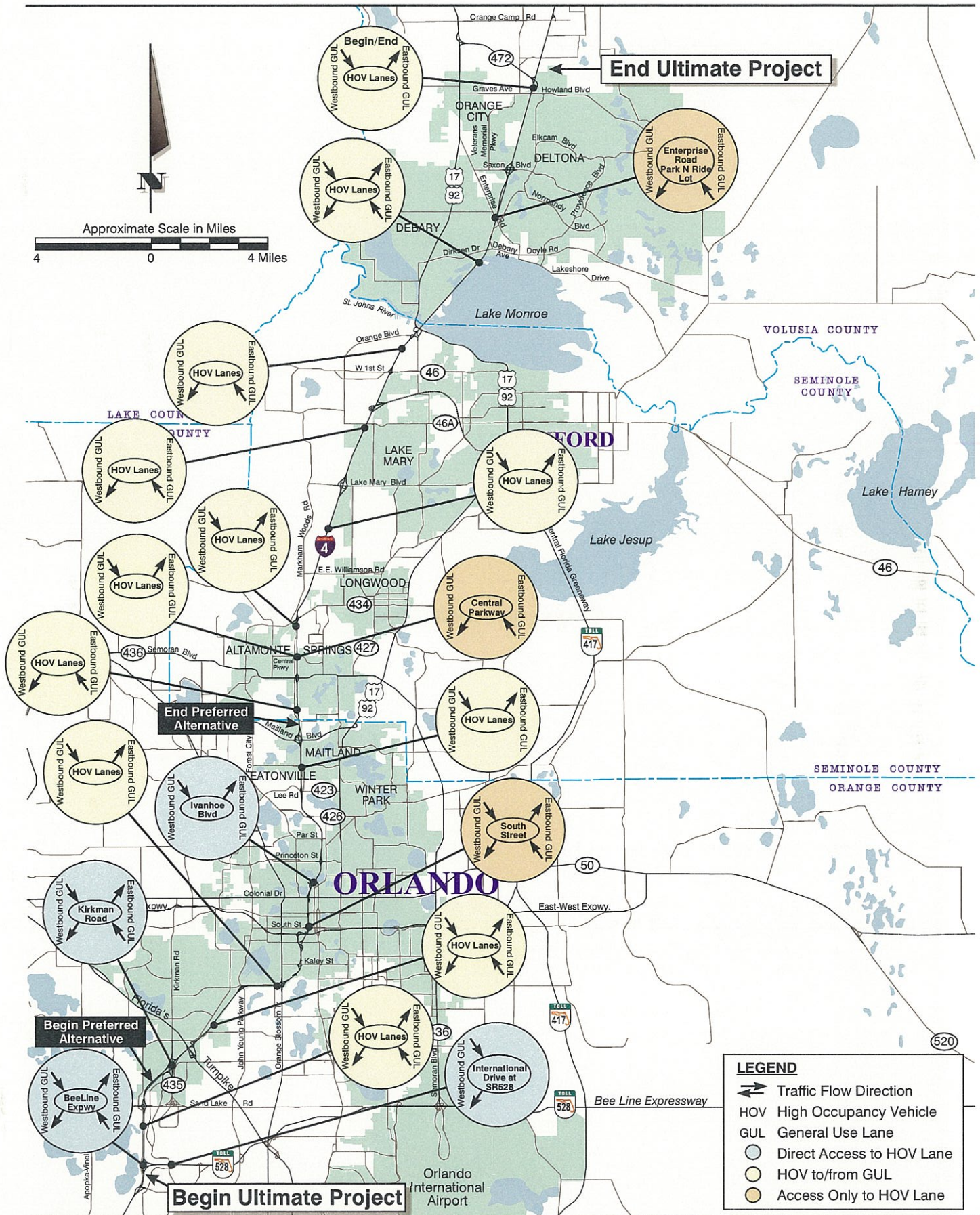
Improvements to the GUL interchanges within Segment 2 include:

- John Young Parkway - Maintaining the approved interchange concept;
- Orange Blossom Trail - Modifying the westbound left-side exit to a right-side exit. Maintaining all other movements;
- Michigan Street/Kaley Street - Combining Michigan Street and Kaley Street into a full access, inverted diamond interchange. Providing two-lane, one-way frontage road connections between Kaley and Michigan with U-turns;
Interchange modifications will require closure of Unitah Avenue at Michigan Street and Tallokas Avenue at Kaley Street. In addition, Avondale Avenue will be closed at Kaley Street and from Miller Street to Indiana Street;
- SR 408 (East/West Expressway) - Providing a full access directional four-level interchange with loop ramp and flyover ramp;
- Gore Street - Eliminating I-4 westbound off-ramp. The I-4 westbound on-ramp will be provided. The westbound Gore Street on-ramp will result in the closure of Avondale Avenue from Columbia Street to Miller Street. Avondale Avenue will be reopened at Gore Street;
- Hughey Avenue/Garland Avenue - Providing direct access ramp from eastbound I-4 to Garland Avenue and from Hughey Avenue to westbound I-4;
- Anderson Street - Modifying existing interchange to a partial access diamond interchange for westbound I-4 to Anderson Street and Anderson Street to eastbound I-4. Relocating Anderson Street and providing a two-way street from Orange Avenue to Division Avenue;
- Robinson Street - Eliminating eastbound I-4 off-ramp and westbound I-4 on-ramp;
- Amelia Street - Modifying existing interchange to a partial access diamond interchange for eastbound I-4 to Amelia Street and Amelia Street to westbound I-4; and
- SR 50 (Colonial Drive) - Replacing existing interchange with a full access single point interchange. Providing direct access to Hughey Avenue and Garland Avenue. Garland Avenue converted to one-way north of SR 50. Hughey Avenue will be realigned between Concord Street and SR 50. Interchange modifications will result in closure of Concord Street at Garland Avenue.

HOV Interchange Improvements

The Preferred Alternative will provide HOV interchanges at the following locations:

- Orange Blossom Trail - Providing HOV slip ramps to and from the HOV system at the Orange Blossom Trail interchange; and
- South Street - Modifying existing interchange to a full access diamond interchange for HOV access only. Providing a two-way street from Orange Avenue to Division Street.



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Table S-1. Summary of Preferred Alternative Proposed Improvements

Description	Typical Section		Transit Envelope		Auxillary Lanes		HOV Interchanges		Drainage Alternatives		Type of Proposed Interchange
	C	F'	No	Yes	No	Yes	Direct Access	Slip Ramps	Ponds	Exfiltration	
Segment 1											
Kirkman Road to Florida's Turnpike	√			√		√	√	√	√		Kirkman Road – The proposed improvements replace existing interchange with a partial access 4-level directional interchange with one loop ramp (Kirkman SB to EB I-4). NB Kirkman to WB I-4 not provided. Full direct HOV access ramps.
Florida's Turnpike to Conroy Road	√			√		√			√		Florida's Turnpike – The existing interchange concept will remain the same.
Conroy Road to John Young Parkway	√			√		√		√	√		Conroy Road – The existing interchange concept will remain the same.
Segment 2											
John Young Parkway to Orange Blossom Trail	√			√		√			√		John Young Parkway – The previously approved improvements will modify the existing diamond interchange by adding a flyover ramp for WB I-4 exit to John Young Parkway.
Orange Blossom Trail to Michigan Street/Kaley Street	√		√			√		√	√		Orange Blossom Trail – The WB I-4 to SB OBT left-side exit will be modified to right-side exit; all other movements remain the same. WB I-4 to NB OBT movement ramp is not provided under either existing or proposed interchanges.
Michigan Street/Kaley Street to SR 408 (East/West Expressway)	√		√			√				√	Michigan Street/Kaley Street – Proposed improvements combine Michigan Street and Kaley Street into a full access, inverted diamond interchange. Two-lane, one-way frontage road connections between Kaley and Michigan with U-turns to provide full movements.

S-25

Table S-1. Summary of Preferred Alternative Proposed Improvements (Continued)

Description	Typical Section		Transit Envelope		Auxiliary Lanes		HOV Interchanges		Drainage Alternatives		Type of Proposed Interchange
	C	F'	No	Yes	No	Yes	Direct Access	Slip Ramps	Ponds	Exfiltration	
SR 408 (East/West Expressway) to SR 50 (Colonial Drive)	√		√			√	√		√	√	SR 408 (East/West Expressway) – Full access directional four-level interchange with loop ramp (EB SR 408 to EB I-4). Modifies access to and from the downtown core area. Alternative 2B1 recommended. Hughey Avenue/Garland Avenue – Proposed improvements provide direct access ramps from EB I-4 to Garland Avenue and from Hughey Avenue to WB I-4. Anderson Street – The existing interchange will be modified to a partial access diamond interchange for WB I-4 to Anderson Street and Anderson Street to EB I-4. Anderson will be relocated and revised to a two-way street from Orange Avenue to Division Avenue.
SR 408 (East/West Expressway) to SR 50 (Colonial Drive) (continued)											South Street – Modified to a full access diamond interchange for HOV access only; will be revised to a two-way street from Orange Avenue to Division Avenue. Robinson Street – Existing interchange eliminated. Access relocated to Amelia Street and Hughey and Garland Avenues. Amelia Street – The existing interchange will be modified to a partial access diamond interchange (EB I-4 to Amelia Street and Amelia Street to WB I-4).
SR 408 (East/West Expressway) Mainline			√			√				√	Limit of improvement extends for approximately 1.5 miles on both sides of I-4 along East/West Expressway, impacting interchanges from Tampa Street to Bumby Avenue on SR 408.
SR 50 (Colonial Drive) to Ivanhoe Boulevard	√		√		√				√	√	SR 50 (Colonial Drive) – The existing interchange will be replaced with a full access single point diamond interchange. Alternative 2 recommended. Provides direct access to Hughey Avenue and Garland Avenue. Garland Avenue converted to one-way north of Colonial Drive.

Table S-1. Summary of Preferred Alternative Proposed Improvements (Continued)

Description	Typical Section		Transit Envelope		Auxiliary Lanes		HOV Interchanges		Drainage Alternatives		Type of Proposed Interchange
	C	F'	No	Yes	No	Yes	Direct Access	Slip Ramps	Ponds	Exfiltration	
Segment 3											
Ivanhoe Boulevard to Princeton Street	√		√			√	√		√	√	Ivanhoe Boulevard – The proposed improvements replace the existing interchange with a partial access directional interchange for WB I-4 to Ivanhoe Boulevard and Ivanhoe Boulevard to EB I-4. The WB I-4 on-ramp will be replaced with a frontage road to Colonial Drive. Proposed interchange includes HOV access ramps to and from the east
Princeton Street to Par Street	√		√			√				√	Princeton Street – The existing interchange concept will remain the same. Provide 2-lane EB and WB off-ramps.
Par Street to Fairbanks Avenue	√		√			√				√	Par Street – The existing interchange concept will remain the same.
Fairbanks Avenue to Lee Road	√		√			√				√	Fairbanks Avenue – The existing interchange concept will remain the same. Provide 2-lane EB and WB off-ramps.
Segment 4											
Lee Road to Maitland Boulevard	√		√			√		√	√	√	Lee Road – The existing interchange concept will remain the same. Provide 2-lane EB and WB off-ramps.
Maitland Boulevard to SR 436	√		√			√		√	√		Maitland Boulevard – The existing interchange will be replaced with loop ramps in northeast and southwest quadrants. Directional unsignalized left-turn ramps from Maitland Boulevard to WB and EB I-4. Existing EB I-4 dual exits revised to single point exit.

S-27

S.3.4.2.3 Segment 3 (Ivanhoe Boulevard to Lee Road)

The following is a summary of the Preferred Alternative for Segment 3:

I-4 Mainline Improvements

Proposed improvements to the I-4 mainline include:

- Providing three GULs, one HOV lane, and one auxiliary lane in each direction;
- Closing 44-foot rail corridor throughout Segment 3; and
- Providing exfiltration to treat stormwater runoff with the exception of the Ivanhoe Boulevard interchange. At this interchange, a combination of exfiltration and retention ponds will treat stormwater.

GUL Interchange Improvements

Improvements to the GUL interchanges within Segment 3 include:

- Ivanhoe Boulevard – Modifying the existing interchange to a partial access directional interchange for westbound I-4 to Ivanhoe Boulevard and Ivanhoe Boulevard to eastbound I-4;
- Princeton Street – Existing interchange configuration will remain the same. Interchange modifications will acquire right-of-way on Cornell Avenue south of Princeton Street and Dade Avenue north of Princeton Street;
- Par Street – Existing interchange configuration will remain the same. Interchange modifications will close Cornell Avenue at Par Street; and
- Fairbanks Avenue – Existing interchange configuration will remain the same.

HOV Interchange Improvements

The Preferred Alternative will provide an HOV interchange at the following location:

- Ivanhoe Boulevard – Providing HOV direct access ramps to and from the east.

S.3.4.2.4 Segment 4 (Lee Road to Maitland Boulevard)

The limits of the Preferred Alternative end within the Segment 4 limits and extend from just south of Lee Road to just north of Maitland Boulevard. The following is a summary of the Preferred Alternative for Segment 4:

I-4 Mainline Improvements

Proposed improvements to the I-4 mainline include:

- Providing three GULs, one HOV lane, and one auxiliary lane in each direction;
- Closing 44-foot rail corridor within this portion of Segment 4;
- Providing retention ponds to treat stormwater runoff with the exception of south of Lee Road to the Lee Road interchange. At this location, exfiltration will treat stormwater runoff; and
- Tying into the existing north of Maitland Boulevard interchange.

GUL Interchange Improvements

Improvements to the GUL interchanges within Segment 1 include:

- Lee Road – Existing interchange configuration will remain the same; and
- Maitland Boulevard – Replacing existing interchange with loop ramps in northeast and southwest quadrants. Directional unsignalized left-turn ramps from Maitland Boulevard to westbound and eastbound I-4.

HOV Interchange Improvements

The Preferred Alternative will provide HOV interchanges at the following locations:

- Lee Road - Providing HOV slip ramps to and from the west north of the Lee Road interchange; and
- Maitland Boulevard - Providing HOV slip ramps north of the Maitland Boulevard interchange. These slip ramps signify the start/end of the HOV system.

S.4 Major Environmental Impacts

This section summarizes the potential effects on the social, cultural, natural, and physical environment that would result from the construction of the I-4 improvement project.

S.4.1 Land Use Impacts

The Preferred Alternative is not expected to substantially alter future land use designation as established in the regional and local government comprehensive plans. The majority of the Preferred Alternative corridor has been developed with only limited pockets of vacant land. Consequently, most of the land use patterns have already been established.

The Preferred Alternative will require approximately 97 acres of right-of-way for public transportation use. Approximately 57 acres are required for roadway and approximately 40 acres are required for stormwater ponds.

Segment 1 (Kirkman Road to John Young Parkway)

Land use impacts within this segment are expected to be minimal. There may be some localized land use changes as a result of additional right-of-way needed for roadway and ponds. However, the impacts will not significantly affect the future land use plans for this area.

Segment 2 (John Young Parkway to Ivanhoe Boulevard)

Segment 2 may experience the largest land use impacts of all the segments along the project corridor. This is primarily due to the reconstruction of the I-4/SR 408 (East/West Expressway) interchange. Modifications to the Kaley-Michigan interchange and SR 50 (Colonial Drive) interchange are also expected to incur land use changes.

The modifications to the Kaley-Michigan interchanges provide increased access to the interstate, which may provide for commercial land use transitions adjacent to the neighborhoods. In addition, the right-of-way required for the roadway and ponds extend into the neighborhoods, providing potential opportunities for land use transitions. However, these changes in land uses will be localized and are not expected to change the type of land use patterns significantly.

The I-4/SR 408 (East/West Expressway) interchange modifications alter downtown Orlando access and require a number of residential and business relocations. As indicated in Chapter 2 of the FEIS, the I-4/SR 408 (East/West Expressway) interchange will alter access to downtown Orlando. Businesses located adjacent to existing interchanges may experience land use impacts due to the proposed improvements. These impacts will be significant due to the number of relocations, change in access, and Section 106 impacts as a result of the proposed improvements. Through these impacts, pressure for land use transitions may occur.

The proposed SR 50 (Colonial Drive) interchange improvements will potentially impact several businesses, and community facilities. Localized land use impacts in the vicinity of these relocations may occur. However, these localized land use impacts are not expected to be significant.

Segment 3 (Ivanhoe Boulevard to Lee Road)

The proposed improvements will require additional right-of-way for roadway and ponds. This additional right-of-way will impact several residences, commercial buildings, and community services located along the Preferred Alternative corridor. Localized land use impacts surrounding these relocations may occur.

Community access in Segment 3 will essentially remain the same. Modifications to the Ivanhoe Boulevard interchange may cause localized land use impacts due to the change in access at this interchange. However, these localized land use impacts are not expected to be significant.

Segment 4 (Lee Road to Maitland Boulevard)

Land use impacts are expected to be minimal. There may be some localized land use changes as a result of additional right-of-way acquisition for roadway and ponds. However, the impacts will not significantly affect the future land use plans for this area.

Interchange modifications are not expected to impact the land use within the surrounding areas.

S.4.2 Displacements and Relocations

The Preferred Alternative will result in the right-of-way impact of 362 parcels (approximately 97 acres). Most of these parcel impacts are related to roadway improvements, which impact 309 parcels (approximately 57 acres); whereas, stormwater pond improvements impact 53 parcels (approximately 40 acres). The Preferred Alternative will result in 111 full acquisitions and 251 partial acquisitions. Most of the impacted parcels are non-residential (244 parcels, mostly commercial businesses). The non-residential impacts involve the relocation of 63 businesses (this includes community facilities). Business relocations consist of approximately 90 percent of commercial facilities. The residential impacts involve the relocation of 195 residential units (118 parcels).

According to the *Conceptual Stage Relocation Plan* (April 2001), there is an abundance of replacement dwellings for residents displaced from single-family units to relocate. In addition, there are enough vacancies in apartment complexes located within the study area for residents displaced from multi-family units. Plausible residential and apartment relocation sites are included as part of the *Conceptual Stage Relocation Plan* (April 2001).

The Preferred Alternative is expected to impact 244 business properties (excluding 98 vacant commercial properties). This impact involves the relocation of 63 businesses (this includes community facilities discussed later in this section). Business relocations consist of approximately 90 percent of commercial facilities. The businesses can be classified as follows:

- Industrial/light manufacturing
- Small retail convenience/gas
- Small service related
- Healthcare
- Community organizations
- Auto/equipment retail
- Professional office

Modifications to the SR 408 interchange accounts for approximately 48 percent of the total Preferred Alternative relocations.

Approximately 49 percent of the total Preferred Alternative employees displaced are due to the SR 408 Alternative 2B1 and approximately 20 percent are associated with the SR 50 Alternative 2 in Segment 2.

According to the *Conceptual State Relocation Plan* (April 2001), there are an adequate number of sites available along the project corridor where the affected businesses may relocate. Plausible business relocation sites are included as part of the *Conceptual State Relocation Plan* (April 2001).

A check of the multiple listings for the immediate area reveals that there are six properties leasing space, one entire business for sale, and five vacant sites. It is not anticipated that all of the impacted businesses will be relocating at one time. It appears that the market will be able to absorb all the displaced businesses as they enter the real estate market. It is also estimated that 15 percent to 20 percent of the downtown businesses are minority-owned.

In addition, the Preferred Alternative will result in the right-of-way impact of an additional 45 parcels (including five relocations) due to limited access impacts.

Vehicle and pedestrian access impacts will occur to businesses along the I-4 corridor. Another important issue related to non-residential property impacts is acquisitions that involve existing parking spaces. The Preferred Alternative is expected to impact approximately 882 non-residential parking spaces. Impacts to parking spaces may result in a loss of businesses to non-residential properties. Mitigation for the impacted non-residential parking spaces will be through financial compensation.

S.4.3 Neighborhoods

The Preferred Alternative impacts populations from various neighborhoods located adjacent to the I-4 corridor. The neighborhoods with direct use impacts include the following in Orange County:

- Angebilt
- South Division
- Holden Heights
- Holden-Parramore
- College Park
- North Orange

The neighborhoods that have a significant impact include Angebilt, Holden Heights, and Holden-Parramore including the Griffin Park Historic District.

Indirect and cumulative impacts include land use changes that may result from the acquisition of properties within these neighborhoods and communities adjacent to I-4. The project will require the acquisition of properties for roadway improvements and stormwater retention ponds. These acquisitions may result in a change in land use for the properties located adjacent to the proposed I-4 right-of-way. This change in land use may include the transition from owner-occupied homes to rental properties. The pattern of rental properties located adjacent to I-4 is evident along the project corridor, especially in the Holden-Parramore area. Section 4.9 of the FEIS discusses specific areas along the project corridor that a shift in land uses may occur as a result of the proposed improvements.

Other indirect and cumulative impacts may be due to the enhanced access and mobility attributed to the project. Existing access will be modified at several interchanges along the I-4 corridor, most significantly the SR 408 (East/West Expressway) and Kaley-Michigan interchanges. Alternate routes where feasible will be provided to compensate for the changes in access. Where access is eliminated, changes in traffic patterns will result.

S.4.4 Community Facilities

Community facilities include schools; day care; places of worship; residential shelters and crisis centers; social service agencies; cultural centers; hospitals; senior citizen centers; public services; and fire, evacuation, and police stations. Such facilities are generally important in shaping a neighborhood's identity and sense of togetherness. Table S-2 summarizes the number of impacted community facilities.

The Preferred Alternative will impact a total of 17 community facilities including 9 relocations.

The removal of community services in the target neighborhoods would likely alter the existing character of the neighborhood. Measures will be undertaken to relocate noted community services within the general neighborhood area.

Table S-2. Summary of Community Facilities

Type	Preferred Alternative	
	No. of Impacted Facilities	No. of Relocations
Schools and Higher Education Facilities	2	0
Day Care Facilities	2	2
Churches	6	1
Cemeteries	0	0
Social Service Agencies	3	3
Community Centers	1	1
Government Facilities	0	0
Medical Facilities	3	2
Sheriff, Police, Fire Protection and EMS	0	0
Total*	17	9

* The total presented above includes limited access impacts.

S.4.5 Neighborhood and Community Cohesion

An assessment was performed to identify impacts to neighborhoods and communities in the Preferred Alternative study areas. Specific information on relocations and displacements was previously provided above. In terms of specific impacts related to neighborhood and community cohesion, the following issues were examined:

Physical Barriers - Does the proposed action create a physical barrier that separates or splits integral community facilities?

Access Changes - Does the proposed action decrease neighborhood or community access?

Land Impacts - Does the project create large pieces of vacant lands within the community that are out of context to the neighborhood function?

Community Services - Does the project directly or indirectly impact community facilities that are important to the functionality and operation of the community?

Segment 1 (Kirkman Road to John Young Parkway)

Overall, the neighborhood and community cohesion impacts for the Preferred Alternative are not expected to be significant within this portion of Segment 1.

Segment 2 (John Young Parkway to Ivanhoe Boulevard)

The neighborhood and community cohesion impacts are expected to be significant within Segment 2, especially in the vicinity of the I-4/SR 408 (East/West Expressway) interchange.

Segment 3 (Ivanhoe Boulevard to Lee Road)

The neighborhood and community cohesion impacts are not significant for the Preferred Alternative in Segment 3.

Segment 4 (Lee Road to Maitland Boulevard)

Overall, the neighborhood and community cohesion impacts for the Preferred Alternative are not expected to be significant within this portion of Segment 4.

S.4.6 Environmental Justice

The Preferred Alternative will result in disproportionate Environmental Justice impacts primarily due to the large numbers of individuals impacted in Segment 2, a segment with relatively high number of minority and low-income residents. This preliminary determination of disproportionate impacts does not take into account any offsetting benefits.

The project impacts that could become an Environmental Justice concern are the neighborhood impact in Angebilt (BG 144.00-3), Holden Heights (BG 115.00-1, BG 115.00-2), and Holden-Parramore (BG 104.00-1, BG 105.00-1, and BG 105.00-2). The removal of community services in these neighborhoods would likely alter the existing character of the neighborhood. Measures will be undertaken to relocate noted community services within the general neighborhood area.

S.4.7 Protection of Children

The majority of the targeted populations are located in the vicinity of the I-4/SR 408 interchange in Segment 2. The displaced children population within the target population is approximately 27 percent of the Preferred Alternative project corridor population.

The Preferred Alternative will not result in disproportionate impacts to children. This situation comes about primarily due to the large number of displacements that would occur in Segments 2 and 3.

S.4.8 Cultural Resources

Historic resources with the greatest potential to be impacted or adversely affected by the I-4 Ultimate Project and Preferred Alternative include 19 NRHP-listed, NRHP-eligible, or NRHP-contributing cultural resources – six historic districts and 13 individual properties. There are no NRHP-eligible archaeological sites impacted by the Preferred Alternative. Effects to historic districts or individual resources within the Preferred Alternative corridor would be primarily visual and associated with the introduction of new ramps, noise walls, and in some areas elevated general use lanes and HOV lanes. However, the possibility exists for direct use impacts to several cultural resources.

The impacts to historic resources in each segment are summarized in Table S-3.

FDOT is committed to provide a higher level of urban design treatment for publicly sensitive historic resources that have potential impacts due to the proposed improvements and a determination of no adverse effect. These publicly sensitive historic resources include Lake Cherokee Historic District, Peckham-Phillips House, Downtown Orlando Historic District, Woodford James Maxey House, Parramore Avenue and Conley Street Historic District, and the Eatonville Historic District. Higher levels of urban design treatments may include:

- Ensuring that bridge structures are architecturally compatible with the design and with all other design elements;
- Reducing visual effect of retaining walls and noise walls using landscaping, texture, color, or lighting;
- Providing landscaping where possible;
- Including aquatic plantings and fountains for stormwater treatment ponds;
- Painting the right-of-way fence to blend into the surrounding context;
- Incorporating public art into appropriate areas;
- Placing utilities underground, where feasible; and
- Ensuring that color and finish of sign columns compliment surrounding vertical structure elements.

Table S-3. Potential Effects to Historic Resources

FSF No.	Historic Resource	NRHP Status	Summary Description of Impacts	Determination of Effect
Segment 1				
No historic resources identified in this segment.				
Segment 2				
I-4/SR 408 INTERCHANGE ALTERNATIVE 2B1 FLYOVER WITH AMELIA ST RAMPS				
8OR4306	Griffin Park Historic District	NRHP Listed in 1996	Visual/Noise/Direct Use	Adverse Effect
8OR258	Lake Cherokee Historic District	NPS Certified in 1982	Visual/Noise/Direct Use	No Adverse Effect
8OR111	Peckham-Phillips House/135 N. Lucerne Circle	NRHP Listed in 1979	Visual	No Adverse Effect
8OR8731	Downtown Orlando Historic District	NPS Certified in 1982	Visual/Direct Use	No Adverse Effect
8OR25	Old Orlando Railroad Depot	NRHP Listed in 1976	No Impacts	
8OR20	Bumby Hardware	Determined Eligible in 1999	No Impacts	
8OR183	Harry P. Leu, Inc./100 W. Livingston Street	Determined Eligible in 1999	Direct Use	No Adverse Effect
8OR1293	Woodford James Maxey House	Determined Eligible in 1999	Visual/Noise	No Adverse Effect
8OR1947	Dr. W.M. Wells House	Determined Eligible in 1999	No Impacts	
8OR8699	Parramore Avenue and Conley Street Historic District	Determined Eligible in 1999	Visual/Noise	No Adverse Effect
8OR110	J.J. Bridges House	NRHP Listed in 1984	No Impacts	
8OR3394	Masonry Vernacular Building, 116 America Street	Determine Eligible in 1999	No Impacts	
8OR3377	Westminster Retirement	Determine Eligible in 1999	No Impacts	
8OR9088	Greenwood Cemetery	Determined Eligible in 1999	No Impacts	
ALTERNATIVE SR 50-2 NORTHERN ALIGNMENT				
8OR3447	Colonial Garage/62-70 W. Colonial Drive	Determined Eligible in 1998	No Impacts	
8OR177	Judge Cheney House/715 N. Garland Avenue	Determined Eligible in 1998	Access	No Adverse Effect
Segment 3				
ALTERNATIVE C - EXFILTRATION				
8OR8483	College Park Historic District	Determined Eligible in 1999	Visual/Noise/Direct Use	Adverse Effect
8OR8498	Folk Victorian Style Residence, 2739 Riddle Drive	Determined Eligible in 1998	No Impacts	
Segment 4				
ALTERNATIVE C				
8OR9101	Eatonville Historic District	NRHP Listed in 1998	Visual	No Adverse Effect

During the design phase, FDOT will coordinate with the Urban Design Committee. The Urban Design Committee consists of representatives from each of the jurisdictions potentially impacted by the proposed improvements.

Potential impacts to historic resources were reviewed with SHPO on January 30, 2001 and April 23, 2002. Comments made by SHPO during these meetings have been incorporated into this document. A copy of the meeting minutes are provided in Appendix C. Three determinations of effect were identified at the January 30, 2001 meeting. This was reduced to two determinations of effect at the April 23, 2002 meeting. The reduction was due to the Carter Street Historic District no longer being eligible for inclusion in the NRHP.

Subsequent to the April 23, 2002 meeting, SHPO performed a field review of historic resources within the Preferred Alternative in May 2002. As a result of the field review, SHPO signed a concurrence letter indicating that the Preferred Alternative will have an adverse effect on two historic resources. A copy of the letter is provided in Appendix C.

A determination of no effect was made if the proposed improvements would have no impact on the identified resource either by direct use or constructive use. A determination of no adverse effect was made if there were some direct or constructive use but it would not impact the integrity of the historic resource. A determination of adverse effect was made for those resources that would be impacted by the proposed improvements.

The following resources are impacted by the Preferred Alternative:

- Griffin Park Historic District
- Lake Cherokee Historic District
- Peckham-Phillips House
- Downtown Orlando Historic District
- Parramore Avenue and Conley Street Historic District
- Harry P. Leu, Inc.
- Woodford James Maxey House
- Judge Cheney House
- College Park Historic District
- Eatonville Historic District

Historic resources that will not be impacted by the Preferred Alternative include:

- Old Orlando Railroad Depot
- Bumby Hardware
- Dr. W.M. Wells House
- J.J. Bridges House
- Masonry Vernacular Building/
116 America Street
- Westminster Retirement
- Greenwood Cemetery
- Folk Victorian Style Residence/
2739 Riddle Drive
- Colonial Garage

S.4.9 Parks and Recreational Facilities

No publicly or privately owned parks and recreational facilities will be impacted by the Preferred Alternative. Short-term construction impacts are anticipated to occur at parks and recreational areas located adjacent to the I-4 corridor.

S.4.10 Section 4(f) Impacts

One park and 19 historic resources were evaluated as part of the Section 4(f) analyses. The Preferred Alternative will not impact any publicly owned parks and recreational facilities.

As indicated above, two historic resources are adversely affected. These include the Griffin Park Historic District and the College Park Historic District.

In addition, the Preferred Alternative has a direct use impact on the Harry P. Leu, Inc. and the Downtown Orlando Historic District.

Based on the Section 4(f) evaluation, there is no feasible and prudent alternative to the use of land from the Griffin Park Historic District, the Harry P. Leu, Inc., and the Downtown Orlando Historic District. The Preferred Alternative includes all possible planning to minimize harm to these Section 4(f) resources resulting from such use. Refer to the *Section 4(f) Evaluation* (August 2002) for detailed information on avoidance alternatives and measures to minimize harm for impacted facilities.

S.4.11 Bicycle, Greenway, and Trail Facilities

The Preferred Alternative will impact 28 existing and proposed bicycle, greenway, and trail facilities. Out of these 28 facilities, there are six existing and 18 proposed bikeway facilities that may be impacted by the proposed improvements. In addition, four proposed trail facilities may be impacted by the proposed improvements. There are no existing or proposed greenway facilities impacted by the Preferred Alternative. During the design phase, existing and proposed facilities impacted by the proposed improvement will be coordinated with local jurisdictions.

S.4.12 Pedestrian Facilities

The Preferred Alternative will impact 72 sidewalk facilities that cross or are adjacent to I-4. In addition, there is a pedestrian overpass, located in Segment 2, which crosses I-4 and will be impacted by the Preferred Alternative. The pedestrian overpass is located approximately 2,150 feet north of the I-4/Kaley Street interchange. This pedestrian crosswalk connects Indiana Street and Grand Avenue, which leads to the Grand Avenue Elementary School. The bridge crossing is a 10-foot wide concrete structure.

S.4.13 Water Quality

This Preferred Alternative will not have any significant long-term effect on the quality of surface waters and groundwater within the project area. Short-term, construction-related impacts will be minimized to the maximum degree possible through the use of Best Management Practices (BMPs), control of surface water runoff, and strict adherence to FDOT's *Standard Specifications for Road and Bridge Construction*.

There are no drinking water supply wells located within the Preferred Alternative.

S.4.14 Outstanding Florida Waters (OFW)

The Preferred Alternative will not impact any OFWs.

S.4.15 Wild and Scenic Rivers

The Preferred Alternative will not impact any Wild and Scenic Rivers.

S.4.16 Aquatic Preserves

There are no aquatic preserves located in the vicinity of I-4 within the limits of the Preferred Alternative.

S.4.17 Coastal Zone Consistency

The Office of Planning and Budget, Office of the Governor has determined that the Preferred Alternative is consistent with the Florida Coastal Zone Management Program (CZMP).

S.4.18 Wetlands

A summary of impacts to wetlands as a result of the Preferred Alternative is as follow:

- Based on the proposed roadway improvement design plans, approximately 82 acres, or 19 percent, of the total existing wetlands for the Preferred Alternative would be directly impacted by the proposed improvements.
- 36 percent of the total proposed wetland impacts will be due to construction of stormwater ponds. Thus, the impact to these wetland acres would not be a permanent loss of wetland acres (as in filling a wetland), rather it would be a change in habitat type or a temporary impact during construction.
- 51 percent of the total wetlands impact will be to man-made wetlands (wetlands that were not in existence prior to the initial construction of I-4).
- Secondary or cumulative impacts to wetlands are not anticipated to any significant extent, because this project consists of widening an existing interstate system with no new interchange construction being proposed, and is not a new roadway being constructed through wetlands.
- Forested wetland impacts account for seven percent of the total Preferred Alternative wetland impacts.
- Open-water impacts account for 32 percent of the total Preferred Alternative wetland impacts.
- Emergent marsh impacts account for 27 percent of the total Preferred Alternative wetland impacts.
- Scrub-shrub wetland impacts account for 34 percent of the total Preferred Alternative wetland impacts.
- 92 percent of the forested wetlands will not be impacted.
- 68 percent of the open-water communities will not be impacted.
- 74 percent of the marsh communities will not be impacted.
- 66 percent of the scrub-shrub wetlands will not be impacted.

S.4.19 Uplands

There are no significant natural uplands that occur within the limits of the Preferred Alternative.

S.4.20 Threatened and Endangered Species

No significant impacts to regional populations of protected plant and animal species are anticipated at this time as a result of the Preferred Alternative roadway improvements.

S.4.21 Visual Impacts

Visual impacts will occur throughout the Preferred Alternative; however, the most significant visual impacts will occur in Segments 1, 2, and 3.

Visual impacts to neighborhoods and commercial centers will primarily occur at the I-4/Kirkman Road interchange. At this location, the interchange will be at a higher elevation than the existing interchange.

Segments 2 and 3 will experience the greatest visual impacts of all the segments along the Ultimate project and Preferred Alternative corridor. Neighborhoods, historic resources, and commercial centers located adjacent to the I-4 corridor can expect an increase in the elevation of I-4 from Orange Blossom Trail to Lee Road, the replacement of vegetated sloped embankments with retaining walls, and the roadway closer to the right-of-way.

Options to mitigate the visual impacts of the proposed improvements are assessed in the *Urban Design Guidelines* (February 2000) developed for the project. A list of mitigation options to help reduce the visual impacts is provided in Section 4.4.1.2 of the FEIS.

S.4.22 Air Quality

Results of the air quality analyses indicate that the Preferred Alternative will not have a significant impact on air quality. Construction activities will cause minor short-term air quality impacts in the form of dust from earthwork and unpaved roads and smoke from open burning.

The Preferred Alternative is in an area that has been designated as attainment for the ozone standards under the criteria provided in the Clean Air Act Amendments (CAAA) of 1990. This project is in conformance with the State Implementation Plan because it will not cause violations of the National Ambient Air Quality Standards (NAAQS).

S.4.23 Noise

A total of 4,209 sites were modeled as part of the noise study within the Preferred Alternative study limits. The predicted noise level at each noise sensitive site was compared to the impact criteria. A total of 1,494 noise sensitive sites are predicted to experience traffic noise impacts for the Preferred Alternative. Noise walls can be constructed to help mitigate noise impacts where it is reasonable and feasible. The locations of the reasonable and feasible noise barriers are shown in Figure S-9. The heights of the noise barriers are expected to range from 12 to 24 feet.

S.4.24 Contamination

The Preferred Alternative could require partial or total right-of-way acquisition of 21 Medium or High rated sites.

S.4.25 Floodplains and Floodways

The proposed improvements to I-4 will minimally impact several floodplains and floodways along the corridor. The Preferred Alternative will impact approximately 40 acre-feet of floodplains and one regulated floodway.

S.4.26 Farmlands

The Preferred Alternative will have no impact on farmlands. Through coordination with the Natural Resources Conservation Service (NRCS), it has been determined that no farmlands as defined in 7 CFR 658 are located in the project vicinity.

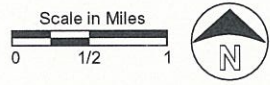
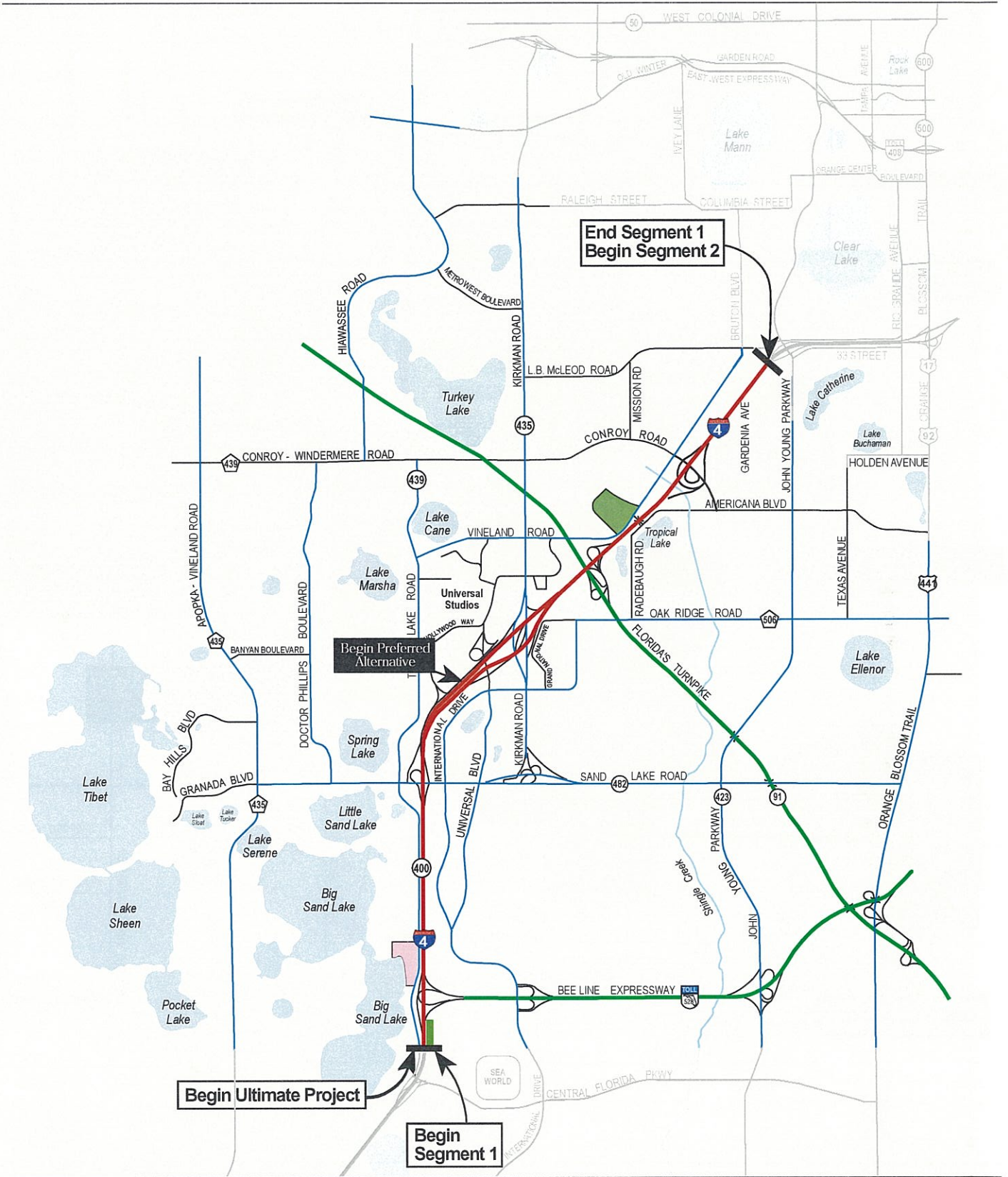
S.4.27 Utilities

Existing utilities within the project area include electrical transmission lines, gas lines, water mains, sanitary sewer pipes, cable television lines, telecommunication lines, railroads, and FDOT SMIS structures. It is anticipated that approximately 113 of these existing utilities will be impacted by the proposed improvements. Refer to Table 4-35 of the FEIS for information on the major utilities potentially impacted by this project.

S.4.28 Construction Impacts

The construction activities for the I-4 improvements will result in temporary air, noise, water quality, traffic flow, and visual impacts for those residents, businesses, and travelers within the vicinity of the construction areas of the project. In addition, consideration of construction staging needs, disposal of materials, and required borrow material are important.

Several areas along the project will be especially impacted by the construction of the I-4 project. Special care will be provided to avoid unreasonable impact to neighborhoods located adjacent to the Preferred Alternative corridor. Construction impact controls will be integrated into the project's contract specifications, which will contain construction phasing and traffic control plans. In general, the most complex construction with the greatest extent of sensitive adjacent land uses is located in Segments 2 and 3 incorporating downtown Orlando and the numerous neighborhoods in the area. Section 4.8 of the FEIS discusses specific mitigation measures for construction impacts.



— Noise Walls



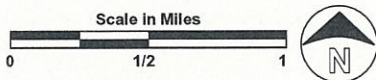
**Figure S-9
Noise Walls**

*I-4 PD&E Study - Section 2
Segment 1 of 6*



Figure S-9
Noise Walls
SR 408 Alternative 2B1
 I-4 PD&E Study - Section 2
 Segment 2 of 6



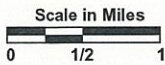
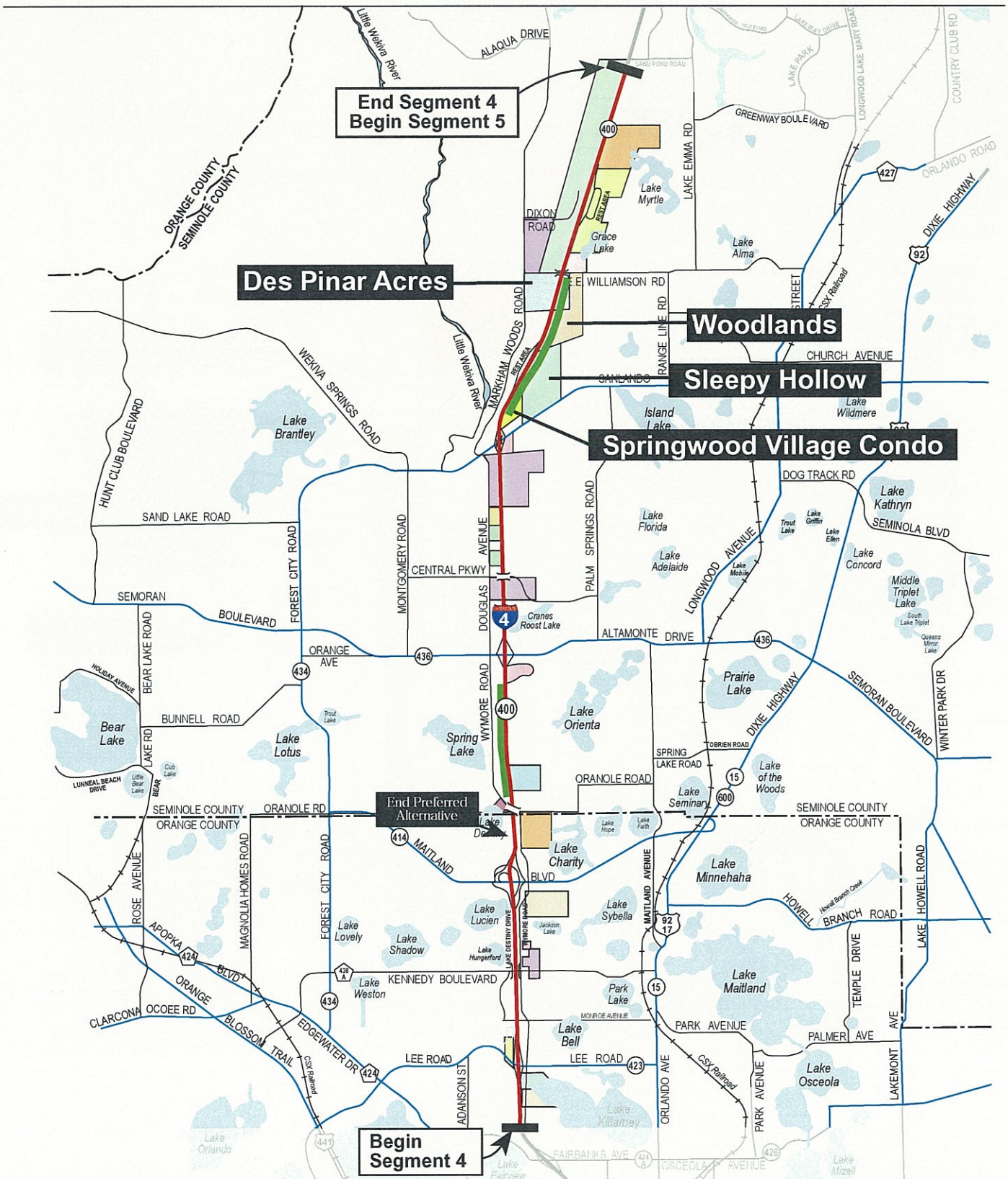


Noise Walls

**Figure S-9
Noise Walls**



*I-4 PD&E Study - Section 2
Segment 3 of 6*



— Noise Walls

**Figure S-9
Noise Walls**

I-4 PD&E Study - Section 2
Segment 4 of 6



S.4.29 Indirect and Cumulative Effects

- The proposed improvements to I-4 will generate several effects and impacts that are directly attributable to the Preferred Alternative. In addition, the Preferred Alternative may produce effects that, in turn, cause a reaction that has additional consequences to the human environment. The general areas where such indirect issues may occur include:
- **Air Quality:** Emissions associated with project-related traffic may cause regional air quality impacts and contribute to exceedance of the NAAQS.
- **Land Use:** Land use changes may occur due to the degradation of the community fabric adjacent to the project, or due to the enhanced access and mobility attributed to the project.

Table S-4 summarizes the cumulative environmental impacts of the I-4 PD&E Study – Section 2 and related studies within the Preferred Alternative corridor as described in Section S.2. In addition, environmental impacts associated with the four separate I-4 Auxiliary Lane projects have already been included as part of the I-4 PD&E Study – Section 2. As a result, these projects are not shown in Table S-4. The Lake Destiny Drive/Kennedy Boulevard Realignment project has not been included in Table S-4. Since these projects either have no impacts or do not require an environmental action, there are no associated environmental impacts to consider. Finally, the Florida’s Turnpike project has also been omitted from the table. These projects are currently in the PD&E phase of project development; therefore, environmental impacts have not been assessed.

An examination of total effects associated with each of the projects listed, along with the proposed I-4 improvements, indicates that the cumulative effects will not have major local, regional, or national impact to the human environment.

Table S-4. Summary of Cumulative Impacts

Evaluation Criteria	I-4 PD&E Study – Section 2 Preferred Alternative	Central Florida Light Rail Transit System Study	I-4/John Young Parkway Interchange	SR 408 (East/West Expressway) from Kirkman Rd to Tampa Ave	SR 408 (East/West Expressway) from Tampa Ave to I-4	SR 408 (East/West Expressway) from Rosalind Ave to SR 436
Business and Residential Impacts						
• Number of Business Relocations	63	55	0	0	0	2
• Number of Residential Relocations	195	3	0	0	0	4
Cultural & Historic Structures						
• Number of Historic Structures/Properties	10	8	0	0	0	0
• Number of Archaeological Sites	0	0	0	0	0	0
• Number of Parks/Recreational Facilities	0	2	0	0	0	0
Natural Environment & Physical Impacts						
• Wetlands (acres)	82	8.41	6.96	0	0	0.80
• T&E (low, med, high)	Low	Low	Low	Low	Low	Low
• Floodplains (acre-feet)	40	0	4.18	0	0	Min
• Number of Contamination Sites	21	11	2	0	0	N/A
Noise Impacts						
• Number of Noise Sensitive Sites	1,506	38	64	0	0	363

N/A = Not available.

All impacts presented above are approximate estimates only.

S.5 Areas of Controversy

The Preferred Alternative is being coordinated with federal, state, and local agencies, project advisory committees, representatives of the impacted jurisdictions, and the public. The public is comprised of several groups including citizens who live and work along the corridor, civic groups, neighborhood and homeowner associations, environmental groups, business interests, government agencies, and elected/appointed officials. Efforts have included a series of public information workshops, focus group meetings with local interests, and local government briefings. Additionally, hundreds of meetings with property owners, homeowners groups, special interest groups, and businesses along the corridor have been conducted.

As part of the project, several advisory committees were formed to obtain project consensus. These committees included the Project Advisory Group (PAG), Environmental Advisory Committee (EAC), I-4/SR 408 Interchange Technical Committee, Urban Design Guidelines Committee, Cultural Resource Committee, and College Park Neighborhood Association Interstate 4 Technical Committee. Chapter 5 of the FEIS outlines the history of public coordination for the project.

During the informational meetings, the public expressed their opinions regarding potential impacts and environmental concerns that could result from this project. The issues of specific importance to this study are listed below:

- Proposed locations of stormwater retention ponds
- Increase aesthetics around stormwater retention ponds
- Provide noise abatement along project corridor
- Validity of HOV lanes
- Changes in access along project corridor especially to downtown Orlando
- Impacts to neighborhoods
- Impacts to historic resources
- Emergency response to HOV lanes
- Visual impacts
- Profile changes along corridor
- Staging of construction
- Funding source for proposed improvements

Informational meetings with the public will continue through the design phase of the project. Any additional concerns from the public will be reviewed and incorporated into the proposed improvements to the maximum extent possible.

S.6 List of Other Government Actions Required

The construction and operation of the Preferred Alternative will require permits from federal and state regulatory agencies prior to the construction of the project. Permits will be required for wetland impacts, stormwater discharge, and treatment and attenuation.

FDOT has sovereign immunity from local permits within its jurisdiction and, therefore, the I-4 PD&E Study - Section 2 project will not require permits from Orange County. Complying with all federal and state regulations concerning impacts to wetlands and water resources will satisfy County ordinances pertaining to such impacts.

A list of the potential permits required prior to commencement of the I-4 PD&E Study - Section 2 construction activities and the respective issuing agency are presented in Table S-5.

Table S-5. Potentially Required Permits for the I-4 Improvements

Potentially Required Permits	Issuing Agency	Review and Commenting Agencies	Jurisdiction
Federal Dredge and Fill Permit, filed jointly with Environmental Resource Permit (ERP)	US Army Corps of Engineers (USACE)	US Fish and Wildlife Service (USFWS), US Environmental Protection Agency (EPA)	Federal
National Pollution Discharge Prevention and Elimination System (NPDES) Permit	US Environmental Protection Agency (EPA)	none	Federal
No-Rise Certification, or a Conditional Letter of Map Revision (CLOMR)	Federal Emergency Management Agency (FEMA), (and Orange County)	none	Federal
Protected Wildlife Take Permit (not anticipated to be needed)	US Fish and Wildlife Service (USFWS)	none	Federal
Protected Wildlife Take Permit (not anticipated to be needed)	Florida Fish and Wildlife Conservation Commission (FWC—formerly FGFWFC)	none	State
Environmental Resource Permit (ERP)	St. Johns River Water Management District (SJRWMD), South Florida Water Management District (SFWMD)	Florida Department of State Division of Historic Resources (FDHR), Florida Department of Environmental Protection (FDEP)	State
Water Use Permit (dewatering)	St. Johns River Water Management District (SJRWMD), South Florida Water Management District (SFWMD)	none	State

S.7 Probable Adverse Environmental Effects Which Cannot Be Avoided

Table S-6 summarizes the estimated impact evaluation for the proposed Preferred Alternative. In addition, preliminary construction costs and right-of-way costs are included in Table S-6.

S.8 Irretrievable and Irreversible Commitment of Resources

Implementation of the Preferred Alternative will involve the commitment of a range of natural, physical, human, and fiscal resources. Land used in the construction of the Preferred Alternative is considered an irreversible commitment during the time period that the land is used for a highway facility. However, if a greater need arises for use of the land or if the highway facility is no longer needed, the land can be converted to another use. At present, there is no reason to believe such a conversion will ever be necessary or desirable.

Considerable amounts of fossil fuels, labor, and highway construction materials such as cement, aggregate, and bituminous materials will be expended. Additionally, large amounts of labor and natural resources will be used in the fabrication and preparation of construction materials for the I-4 improvements. These materials will generally not be retrievable. However, they are not in short supply and their use will not have an adverse effect upon continued availability of these resources. Any construction will also require a substantial one-time expenditure of both state and federal funds, which are not retrievable.

The commitment of these resources is based on the concept that residents in the immediate area, state, and region will benefit by the improved quality of the transportation system. These benefits

will consist of improved accessibility and safety, savings in time, and greater availability of quality services, which are anticipated to outweigh the commitment of these resources.

S.9 Feasible Measure to Avoid or Minimize Potential Adverse Impact

As indicated in Section S.4, the Preferred Alternative associated with I-4 PD&E Study - Section 2 will result in impacts to the social, cultural, natural, and physical environment. Although some significant impacts will occur, every effort will be made to minimize impacts through the institution of feasible measures applicable to each situation. The following paragraphs describe the measures that will be enacted to minimize potential adverse impacts.

S.9.1 Land Use Impacts

Mitigation measures for the land use impacts at the I-4/SR 408 (East/West Expressway) interchange will include several techniques. As indicated, the land use impacts at the I-4/SR 408 (East/West Expressway) interchange will be significant due to the number of relocations, change in access, and Section 106 impacts. The relocations will be mitigated through the FDOT relocation program. A description of the relocation program is presented in Section S.9.2.

To limit the impacts associated with change in access at the I-4/SR 408 (East/West Expressway), Alternative 2B1 was chosen as the Preferred Alternative. This alternative maintains a westbound on-ramp at Gore Street and provides an eastbound off-ramp and a westbound on-ramp at Amelia Street.

A Memorandum of Agreement (MOA) has been developed among SHPO, FHWA, and FDOT regarding adverse effects to cultural resources and suitable mitigation measures for the Preferred Alternative. Mitigation measures for historical resource impacts have been coordinated according to the Section 106 process and the agreed upon commitments with SHPO and appropriate consulting parties as documented in the MOA. A copy of the MOA is included in Appendix L of the FEIS.

S.9.2 Displacements and Relocations

The Preferred Alternative will result in the relocation of 63 businesses (this includes community facilities) and 195 residential units (118 parcels).

Five additional relocations will be due to limited access impacts.

In order to minimize the unavoidable effects of right-of-way acquisition and displacement of people, FDOT will carry out a right-of-way and relocation program in accordance with Florida Statute 339.09 and the Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970 (Public Law 91-646 as amended by Public Law 100-17).

FDOT provides advance notification of impending right-of-way acquisition. Before acquiring right-of-way, all properties are appraised on the basis of comparable sales and land use values in the area. Owners of property to be acquired will be offered and paid fair market value for their property rights.

It should be noted that FDOT has proceeded with advanced right-of-way acquisition for a number of the parcels affected by the Ultimate project. However, this advanced right-of-way acquisition has not affected the selection of the Preferred Alternative.

S.9.3 Community Facilities

The neighborhoods that have a significant direct use impact include Angebilt, Holden Heights, and Holden-Parramore including the Griffin Park Historic District.

The Preferred Alternative will impact a total of 17 community facilities including 9 relocations.

**Table S-6. Estimated Impact Evaluation For Preferred Alternative:
I-4 PD&E Study - Section 2 Based On February 25, 2002 Preliminary Concept Plans**

Categories	Evaluation Criteria	SEGMENT 1	SEGMENT 2			SEGMENT 3	SEGMENT 4	PREFERRED ALTERNATIVE TOTAL	
		From Kirkman Rd to John Young Pkwy	Kaley/ Michigan Exfiltration	SR 408 Alternative 2B1	SR 50 Alternative 2	Typical Section C Exfiltration	From Lee Rd to Maitland Blvd		
Human Environment	BUSINESS IMPACTS								
	Total number of businesses property impacts (no. parcels)	21	22	113	21	33	34	244	
	- Number of property impacts due to roadway impacts	20	6	104	15	33	28	206	
	- Number of property impacts due to pond impacts	1	16	9	6	0	6	38	
	Total number of potential business relocations (units)	1	9	30	13	8	2	63	
	- Number of relocations due to roadway impacts	1	2	29	9	8	2	51	
	- Number of relocations due to pond impacts	0	7	1	4	0	0	12	
	Number of displaced employees	28	105	458	188	30	128	937	
	RESIDENTIAL IMPACTS								
	Total number of residential property impacts (no. parcels)	0	22	28	0	66	2	118	
	- Number of property impacts due to roadway impacts	0	9	26	0	66	2	103	
	- Number of property impacts due to pond impacts	0	13	2	0	0	0	15	
	Total number of potential residential relocations (units)	0	21	114	0	60	0	195	
	- Number of relocations due to roadway impacts	0	6	111	0	60	0	177	
	- Number of relocations due to pond impacts	0	15	3	0	0	0	18	
	COMMUNITY FACILITY IMPACTS								
	Total number of facilities with impacts	1	4	4	1	5	2	17	
	- Number of property impacts due to roadway impacts	1	2	4	1	5	2	15	
	- Number of property impacts due to pond impacts	0	2	0	0	0	0	2	
	Total number of relocations	0	4	3	1	2	0	10	
	- Number of relocations due to roadway impacts	0	2	3	0	2	0	7	
	- Number of relocations due to pond impacts	0	2	0	1	0	0	3	
	NOISE IMPACTS WITHIN 65 dBA CONTOUR (DESIGN YEAR 2020)								
	Total number of noise sensitive sites	978	381	1245	319	1199	87	4209	
	Number of noise sensitive sites (residences) impacted ¹	182	241	613	2	427	29	1494	
	CULTURAL & HISTORIC IMPACTS								
	Number of historic resources	0	0	14	2	2	1	19	
	Number of historic resources potentially affected	0	0	7	1	1	1	10	
	- Number of Direct Use Impacts	0	0	4	0	1	0	5	
	Number of resources Adversely Affected	0	0	1	0	1	0	2	
	Number of archaeological sites	0	0	0	0	0	0	0	
	Archaeological site potential (low, medium, high)	low	low	low	low	low	low	LOW	
	Number of parks and recreational areas impacted	0	0	0	0	0	0	0	
	RIGHT-OF-WAY IMPACTS								
	Total number of impacted parcels	21	44	141	21	99	38	362	
	- Number of roadway impacts	20	15	130	15	99	30	309	
	- Number of pond impacts	1	29	11	6	0	6	53	
	- Number of full acquisitions	0	28	55	6	20	2	111	
	- Number of partial acquisitions	21	16	86	15	79	34	251	
	Area of impacted ROW in acres	8.16	21.31	31.29	3.59	10.34	22.25	96.94	
	- Area of roadway impacts (acres)	3.71	7.50	27.66	1.19	10.34	6.51	58.91	
	- Area of pond impacts (acres)	4.45	13.81	3.63	2.39	0.00	15.74	40.02	
	LIMITED ACCESS (LA) IMPACTS								
	Total number of parcels with LA severance damages	0	21	0	5	19	0	45	
	Total number of parcels with LA relocations	0	1	0	0	4	0	5	
Natural Environment	NATURAL ENVIRONMENT & PHYSICAL IMPACTS								
	Number of wetland systems		5	8	4	0		15	
	Area of impacted wetlands in acres	44.95	6.71	3.31	8.95	0.00	18.29	82.21	
	- Area of Roadway impacted wetlands (acres)	27.50	6.71	1.13	8.44	0.00	9.13	52.91	
	- Area of Pond impacted wetlands (acres)	17.45	0.00	2.18	0.51	0.00	9.16	29.30	
	Threatened & endangered species potential (low, medium, high)	low	low	low	low	low	low	LOW	
	Base floodplain encroachment - acre-ft	40.01	minimal	minimal	minimal	minimal	0	40.01	
	Number of impacted contamination sites	0	0	19	2	0	0	21	
	Project Costs	PROJECT COSTS (IN 2000 \$ MILLIONS)							
		Preliminary construction costs (in 2000 \$ Millions)	\$159.01	\$101.99	\$301.32	\$34.85	\$172.38	\$124.94	\$894.49
Right-of-way (in 2000 \$ Millions)		\$11.14	\$31.12	\$98.77	\$18.63	\$33.82	\$49.07	\$242.56	
Subtotal Construction + ROW Costs (in 2000 \$ Millions)		\$170.15	\$133.11	\$400.09	\$53.48	\$206.20	\$174.01	\$1,137.05	
Engineering, Legal, Admin, CEI, Post Design (27% of Preliminary Construction Cost)		\$42.93	\$27.54	\$81.36	\$9.41	\$46.54	\$33.73	\$241.51	
TOTAL PROJECT COSTS (in 2000 \$ Millions)		\$213.08	\$160.65	\$481.44	\$62.89	\$252.75	\$207.75	\$1,378.56	

S-47

I-4 PD&E Study - Section 2
Final Environmental Impact Statement
August 2002

The neighborhood impacts of the Preferred Alternative will be evaluated on a case-by-case basis. There are several mitigation measures being proposed for the impacted neighborhoods and community facilities.

The community facilities impacted by the I-4 improvements provide important local and/or regional community services. Although the impacts to these facilities are not considered a significant regional impact to community services, loss of these facilities would reduce important neighborhood and regional services. Through the assessment efforts of these impacts, coordination has been undertaken with each facility.

As indicated in Section S.9.2, displacements and relocations as a result of the Preferred Alternative will be mitigated through FDOT's relocation program. Before acquiring right-of-way, all properties are appraised on the basis of comparable sales and land use values in the area. Owners of property to be acquired will be offered and paid fair market value for their property rights.

To soften significant visual impacts associated with the Preferred Alternative, urban design amenities will be implemented along the I-4 corridor. A description of proposed urban design amenities is provided in Section S.9.15. Detailed information of the urban design amenities proposed for the Preferred Alternative is provided in the *Urban Design Guidelines* (February 2000).

Noise walls have been determined to be reasonable and feasible in several of the neighborhoods with significant impacts. These include Holden Heights, Holden-Parramore, and College Park. The noise walls will mitigate noise impacts associated with the Preferred Alternative. The locations of the reasonable and feasible noise walls is provided on Figure S-9. Prior to implementing noise walls, a detailed noise evaluation, including the desires of the benefited receptors will be completed.

S.9.4 Neighborhood and Community Cohesion

The neighborhood and community cohesion impacts are expected to be significant within Segment 2, especially in the vicinity of the I-4/SR 408 (East/West Expressway) interchange.

Adverse effects on neighborhood and community cohesion have been a principal concern since the study began in 1996. FDOT and FHWA coordinated a public outreach effort to gain a clear understanding of potential mitigation options desired by the affected residents, businesses, and organization in order to help strengthen the community. Extensive public involvement and creative community suggestions regarding design and mitigation measures have led to the protection of, and in many instances the enhancement of, community cohesion. FDOT has conducted over 400 meetings with jurisdictions, neighborhoods, agencies, and special interest groups during the PD&E phase in order to gather public input. As a result, proposed mitigation measures including noise walls, urban design guidelines, pedestrian enhancements, and relocation efforts will help minimize residential and non-residential effects, and improve the quality of life in each affected neighborhood.

It is anticipated that the interstate improvements, combined with the proposed mitigation plans and design amenities, will help stimulate the urban renewal process in some depressed areas along the I-4 corridor, facilitating new development. The anticipated new development will be fueled, in part, by better neighborhood and community access, improved safety and mobility, provision for maintaining public services, and enhancements to visual and audible environments. The proposed improvements in combination with the urban design amenities are intended to increase property values and improve the quality of life for area residents.

The alternatives that comprise the Preferred Alternative were selected to minimize impacts to neighborhood and community cohesion. In Segment 2, the Kaley-Michigan Exfiltration Alternative was chosen because it had the least number of impacts to residents and businesses.

The SR 408 interchange Alternative 2B1 was chosen because it provided access to downtown Orlando with the Amelia Street ramps. In addition, the alternative reconfigures the interchange to eliminate the physical barrier between the Griffin Park and Holden-Parramore neighborhoods and

open the area to redevelopment. Alternative 2B1 also provides for a westbound Gore Street on-ramp for better access to I-4 from the neighborhoods.

The SR 50 Alternative 2 minimizes impacts to community facilities such as the Salvation Army Community Center and historic resources such as Colonial Garage.

In Segment 3, the Preferred Alternative results in a limited number of neighborhood and community cohesion impacts. The Typical C Alternative with Exfiltration minimizes impacts to residents and businesses. In addition, the Preferred Alternative maintains access to Pinehurst Avenue. As a result, access to the Calvary Assembly of God is maintained.

To minimize neighborhood and community cohesion impacts and improve the quality of life adjacent to the interstate, the use of urban design treatments, noise barrier walls, enhanced pedestrian access, and relocation efforts in the vicinity of the I-4/SR 408 (East/West Expressway) Interchange are being proposed as part of the Preferred Alternative. These urban design treatments may include:

- Ensuring that bridge structures are architecturally compatible with the design and with all other design elements;
- Reducing visual effect of retaining walls and noise walls using landscaping, texture, color, or lighting;
- Providing landscaping where possible;
- Including aquatic plantings and fountains for stormwater treatment ponds;
- Painting the right-of-way fence to blend into the surrounding context;
- Incorporating public art into appropriate areas;
- Placing utilities underground, where feasible; and
- Ensuring that color and finish of sign columns compliment surrounding vertical structure elements.

Refer to the *Urban Design Guidelines* (February 2000) for a complete description of possible urban design amenities.

Noise walls have been determined to be reasonable and feasible to mitigate noise impacts and soften visual impacts. The proposed locations of the reasonable and feasible noise walls are shown on Figure S-9.

As indicated in Section S.9.8 and S.9.9, the Preferred Alternative includes provision for future development of bikeway, trail, greenway, and pedestrian facilities on cross streets. Future road widening projects within the state have been recommended to include roadway facilities to accommodate bicycle and pedestrian traffic. All interstate overpasses proposed for reconstruction as part of this project have been designed to ensure that all cross streets will have sufficient room to incorporate proposed bikeway, trail, greenway, and pedestrian facilities during future cross street improvement projects. In addition, cross street overpasses proposed for reconstruction will be designed to accommodate proposed bikeway, trail, greenway, and pedestrian facilities.

The pedestrian overpass located just north of the I-4/Kaley Street interchange will not be reconstructed to accommodate the wider interstate facility. However, FDOT has committed to provide funding for sidewalk and pedestrian facilities that allow for pedestrian access from the current overpass location to Gore Street underpass. FDOT will coordinate with the City of Orlando during the design phase to determine the location of the sidewalk and pedestrian facilities.

As indicated in Section S.9.2, displacements and relocations as a result of the Preferred Alternative will be mitigated through FDOT's relocation program. Before acquiring right-of-way, all properties

are appraised on the basis of comparable sales and land use values in the area. Owners of property to be acquired will be offered and paid fair market value for their property rights.

S.9.5 Environmental Justice

The Preferred Alternative will result in disproportionate environmental justice impacts primarily due to the large numbers of individuals impacted in Segment 2, a segment with relatively high numbers of minority and low-income residents. This preliminary determination of disproportionate impacts does not take into account any offsetting benefits.

The project impacts that could become an Environmental Justice concern are the neighborhood impacts in Angebilt (BG 144.00-3), Holden Heights (BG 115.00-1, BG 115.00-2), and Holden-Parramore (BG 104.00-1, BG 105.00-1, and BG 105.00-2). The removal of community services in these neighborhoods would likely alter the existing character of the neighborhood. Measures will be undertaken to relocate noted community services within the general neighborhood area.

Those impacts that can and will be mitigated sufficiently would not translate into adverse and disproportionate Environmental Justice impacts. Applicable mitigation is discussed above in Section S.9.4.

In addition to the mitigation measures discussed in Section S.9.4, FDOT will continue the community outreach program during project design and construction to ensure community concerns continue to be addressed. Specifically, the following measures are recommended, particularly in the Environmental Justice target populations.

- Continue to provide a telephone hotline to receive and respond to neighborhood concerns. In particular, this service should be available during active construction periods so that residents have an opportunity to express concerns over any acute problems that may arise in their neighborhoods. At best, this hotline should be available 24 hours per day if construction is planned for evening and early morning hours. If project personnel are not available 24 hours per day, an answering service should be provided to ensure that residents' comments can be received.
- Set up an information booth in the construction vicinity to provide a communication line between construction management and residents. This booth could disseminate information regarding specific construction activities as well as provide residents with the opportunity to express their concerns about construction activity.
- Provide for direct mailings or community postings of any construction activity that is anticipated to be a particular nuisance (e.g., to inform residents of the period of pile driving in their neighborhood).

The I-4 Project Team has made every effort to identify and address impacts to target populations. The project is expected to have an overall positive and beneficial effect on local and regional transportation needs of target populations by improving access to transportation.

S.9.6 Historic Resources

The Preferred Alternative will adversely affect two historic resources: Griffin Park Historic District and College Park Historic District.

A MOA has been developed among SHPO, FHWA, and FDOT regarding adverse effects to cultural resources and suitable mitigation measures for the Preferred Alternative as part of the FEIS phase of the project. Mitigation measures for historical resource impacts have been coordinated according to the Section 106 process and the agreed upon commitments with SHPO and appropriate consulting parties as documented in the MOA. A copy of the MOA is included in Appendix L of the *I-4 PD&E Study - Section 2 FEIS* (August 2002).

In addition, the FDOT is committed to provide a higher level of urban design treatment for publicly sensitive historic resources that have potential impacts due to the proposed improvements and a determination of no adverse effect. These publicly sensitive historic resources include Lake Cherokee Historic District, Peckham-Phillips House, Downtown Orlando Historic District, Woodford James Maxey House, Parramore Avenue and Conley Street Historic District, and the Eatonville Historic District. Higher levels of urban design treatments may include:

- Ensuring that bridge structures are architecturally compatible with the design and with all other design elements;
- Reducing visual effect of retaining walls and noise walls using landscaping, texture, color, or lighting;
- Providing landscaping where possible;
- Including aquatic plantings and fountains for stormwater treatment ponds;
- Painting the right-of-way fence to blend into the surrounding context;
- Incorporating public art into appropriate areas;
- Placing utilities underground, where feasible; and
- Ensuring that color and finish of sign columns compliment surrounding vertical structure elements.

During the design phase, FDOT will coordinate with the Urban Design Committee. The Urban Design Committee consists of representatives from each of the jurisdictions potentially impacted by the proposed improvements.

S.9.7 Section 4(f) Impacts

As indicated in Section S.9.6, the Griffin Park Historic District and the College Park Historic District are adversely affected by the Preferred Alternative.

In addition, the Preferred Alternative has a direct use impact on the Harry P. Leu, Inc. and the Downtown Orlando Historic District.

Section S.9.6 describes potential mitigation measures for the adversely affected historic resources and publicly sensitive historic resources.

Based on the Section 4(f) evaluation, there is no feasible and prudent alternative to the use of land from the Griffin Park Historic District, the Harry P. Leu, Inc., and the Downtown Orlando Historic District. The Preferred Alternative includes all possible planning to minimize harm to these Section 4(f) resources resulting from such use. Refer to the *Section 4(f) Evaluation* (August 2002) for detailed information on avoidance alternatives and measures to minimize harm for impacted facilities.

S.9.8 Bicycle, Greenway, and Trail Facilities

The Preferred Alternative will impact 28 existing and proposed bicycle, greenway, and trail facilities.

The Preferred Alternative includes provision for future development of bikeway, trail, and greenway facilities on cross streets. Future road widening projects within the state have been recommended to include roadway facilities to accommodate bicycle and pedestrian traffic.

All interstate overpasses proposed for reconstruction as part of this project have been designed to ensure that all cross streets will have sufficient room to incorporate proposed bikeway, trail, and greenway facilities during future cross street improvement projects. In addition, cross street overpasses proposed for reconstruction will be designed to accommodate proposed bikeway, trail, and greenway facilities.

Construction of the Preferred Alternative is not expected to have significant long-term impacts to any of the bikeway and trail facilities existing or proposed along the Preferred Alternative. FDOT has committed to installing a fence around the limited access right-of-way and stormwater ponds adjacent to the I-4 corridor for the protection of trail users. Any additional fencing requested will be coordinated with the local jurisdictions and FDOT during the design phase of the project. All negative impacts to any of these facilities will only be temporary during construction of the proposed improvements. Temporary re-routings may be required due to construction activities.

A public involvement program will be implemented and maintained during the construction phase to ensure information regarding construction issues reaches the public and to accommodate questions or concerns during construction.

S.9.9 Pedestrian Facilities

The Preferred Alternative will impact 72 sidewalk facilities that cross or are adjacent to I-4. In addition, there is a pedestrian overpass, located in Segment 2, which crosses I-4 and will be impacted by the Preferred Alternative.

The Preferred Alternative includes provision for future development of pedestrian facilities on cross streets. Future road widening projects within the state have been recommended to include roadway facilities to accommodate pedestrian traffic. All interstate overpasses proposed for reconstruction as part of this project have been designed to ensure that all cross streets will have sufficient room to incorporate pedestrian facilities during future cross street improvement projects. In addition, cross street overpasses proposed for reconstruction will be designed to accommodate pedestrian facilities.

The pedestrian overpass located just north of the I-4/Kaley Street interchange will not be reconstructed to accommodate the wider interstate facility. However, FDOT has committed to provide funding for sidewalk and pedestrian facilities that allow for pedestrian access from the current overpass location to Gore Street underpass. FDOT will coordinate with the City of Orlando during the design phase to determine the location of the sidewalk and pedestrian facilities.

Construction of the Preferred Alternative is not expected to have significant long-term impacts to any pedestrian facilities. FDOT has committed to installing a fence around the limited access right-of-way and stormwater ponds adjacent to the I-4 corridor for the protection of pedestrian users. Any additional fencing requested will be coordinated with the local jurisdictions and the FDOT during the design phase of the project. All negative impacts to any of the pedestrian facilities will only be temporary impacts during construction of the proposed improvements. Temporary re-routings may be required due to construction activities.

S.9.10 Groundwater

The effect of the Preferred Alternative on area groundwater resources will be minimal.

The Preferred Alternative will adhere to all state requirements for providing stormwater treatment and attenuation per Section 40C-4.302 F.A.C., or local agency regulations if more stringent. The proposed stormwater management systems will be maintained to remain in compliance with state and local agency permitting requirements.

Groundwater resources in the Preferred Alternative will be protected according to the requirements of EPA and the local and state agencies having jurisdiction. Surface runoff discharges to groundwater will be avoided, since stormwater management systems will be constructed to provide the required stormwater treatment and attenuation. Prior to design and construction activities, further coordination with FDEP will be initiated to develop action plans with respect to existing interceptor wells, bridge pilings, borings, stormwater ponds, and other related construction activities. FDOT is also committed to repairing and/or replacing any interceptor wells damaged and/or disturbed due to construction activities.

Management practices that describe spill response procedures and methods to minimize the potential for impacts due to spills will be developed during design and further finalized in construction in accordance with requirements and regulations of EPA and the local and state agencies having jurisdiction. The EPA requires a National Pollutant Discharge Elimination System (NPDES) General Permit for construction activities that require more than five acres of land disturbance. The Preferred Alternative will adhere to these permit requirements by establishing BMPs and implementing a stormwater management plan.

S.9.11 Surface Water

The water quality impacts in relation to surface waters will be temporary and associated with construction. The proposed improvements will not have any significant long-term effect on the quality of surface waters within the Preferred Alternative. BMPs will be maintained in accordance with Section 40C-4.301, 4.302, F.A.C., and will be used to minimize water quality impacts during construction and achieve a no-net effect on water quality in the system.

Avoidance, minimization, and compensation measures will be conducted during the design phase of the project to avoid surface and groundwater quality impacts. A stormwater management plan will be established and implemented during construction in accordance with the EPA NPDES General Permit for construction projects with greater than five acres of land disturbance. As required by local and state agencies, stormwater management systems, such as stormwater ponds, are required to be constructed initially, and may serve as sedimentation basins during construction if necessary.

S.9.12 Water Quality

The Preferred Alternative will not have any significant long-term effect on the quality of surface waters and groundwater (Refer to Sections S.9.10 and S.9.11). Short-term, construction-related impacts will be minimized to the maximum extent possible through the use of BMPs, control of surface water runoff, and strict adherence to *FDOT's Standard Specifications for Road and Bridge Construction*.

S.9.13 Wetlands

Approximately 19 percent of the total wetland area (82 out of 437 acres) within the Preferred Alternative will be impacted. These impacts will be due to roadway construction or pond construction.

Wetland impacts that will result from the construction of the Preferred Alternative will be mitigated pursuant to Section 373.4137 F.S. to satisfy all mitigation requirements of Part VI, Chapter 373, F.S. and 33 U.S.C. Section 1344. The use of the Section 373.4137 F.S. for mitigation of wetland impacts associated with the Preferred Alternative has been coordinated with USACE, SJRWMD, and SFWMD. Coordination efforts have included sit-down meetings and field reviews with these agencies. At the meetings, potential impacts, minimization techniques, and mitigation measures were discussed. Refer to Section 5.3 of the FEIS for additional information on agency coordination.

Application for the permits will occur during the design phase of the project. Design will occur after the completion of the PD&E Study. Impacts to wetlands will be minimized and avoided where possible based on safe and sound engineering and construction practices.

Coordination with the regulatory agencies will continue during the permitting phases of the project. Wetland mitigation concepts will be determined through pre-application meetings with USACE and the water management districts. Typically, mitigation requirements are based on a compilation of wetland parameters including quality, type, function, and size. All of the Preferred Alternative wetlands have been previously impacted by development. Some of the wetlands are man-made. Based on preliminary design, it is determined that there are no practicable alternatives to the proposed construction in these wetland areas, and that avoidance of wetlands has been maximized to the extent possible at this time. Further impact minimization efforts will include detailed design

considerations such as steep-ended side slopes or the use of retaining walls to reduce/prevent wetland encroachment. The use of silt screens, hay bales, and other discharge prevention measures during construction will minimize impacts to wetlands within the vicinity of the Preferred Alternative. In addition, during final design, minor alignment shifts will be examined to minimize impacts to wetlands.

S.9.14 Threatened and Endangered Species

No significant impacts to regional populations of protected plant and animal species are anticipated at this time as a result of the Preferred Alternative roadway improvements.

Coordination with federal, state, and local agencies and mitigation planning will continue during the permitting phases of the project.

FDOT will, prior to construction activities, have a qualified biologist survey all the undeveloped lands within the Preferred Alternative footprint, with a focus on appropriate habitat, to determine the presence or absence of the flora species. If new or existing occupied plants are found, the locations of the individual plants will be marked in the field. FDOT will contact USFWS within three days to consult on the potential removal and relocation of the plants to a suitable habitat.

For the Preferred Alternative, survey and assessment efforts will be conducted on all undeveloped lands, with a focus on those habitats of high potential, such as:

- Two large parcels of vacant land located along Segment 1 north of Kirkman Road that contain a diverse assemblage of upland and wetland ecosystems.

If protected species are identified, permits will be obtained, if needed. Prior to construction, the locations of the individual plants will be marked in the field so they can be protected until removed and relocated to a suitable habitat.

Discussions and coordination meetings have taken place with agencies and special interest groups including Orange County, FDOT, Habitat for Bears Campaign, FDEP, FWC, FNAI, and USFWS. Where federally protected fauna species are determined to be present, the timing and location of construction activities will be in accordance with accepted regulatory guidelines where applicable, and as established with agencies during the permitting process.

S.9.15 Visual

Visual impacts will occur through out the Preferred Alternative; however, the most significant visual impacts will occur in Segments 1, 2, and 3.

Options to mitigate the visual impacts of the Preferred Alternative are assessed in the *Urban Design Guidelines* (February 2000). The following is a list of mitigation options that may be used to reduce the visual impacts:

- Ensuring that bridge structures are architecturally compatible with the design and with all other design elements;
- Reducing perceived height of retaining walls using terracing, landscaping, texture, color, or lighting;
- Providing landscaping where possible;
- Including aquatic plantings and fountains for stormwater treatment ponds;
- Ensuring that placement of lighting reflects a relationship with other structural elements;
- Painting the right-of-way fence dark green or black to blend into the surrounding communities;
- Incorporating public art into appropriate areas;
- Placing utilities underground, where feasible;

- Ensuring that color and finish of sign columns compliment surrounding vertical structure elements; and
- Ensuring close coordination with the public for input.

S.9.16 Noise

A total of 1,506 noise sensitive sites are predicted to experience traffic noise impacts for the Preferred Alternative.

Noise barriers are considered reasonable and feasible at the noise sensitive areas: NSA 2-E, 2-F, 2-H, 2-I, 2-J, 3-B, 3-C, 3-D, 3-E, and 3-F (refer to Figure S-9). The implementation of reasonable and feasible noise abatement is contingent upon the Preferred Alternative meeting the following conditions during the final design phase of the project:

- Detailed noise analyses during the final design process support the need for abatement.
- Reasonable cost analyses indicate that the economic cost of the barriers will not exceed the guidelines.
- Community input regarding desires, types, heights, and locations of barriers has been solicited by FDOT.
- Preferences regarding compatibility with adjacent land uses, particularly as addressed by officials having jurisdiction over such land uses, has been noted.
- Safety and engineering aspects as related to the roadway user and the adjacent property owner have been reviewed.
- Any mitigating circumstances found in Part 2, Chapter 17-4.6.1 of FDOT's *PD&E Manual* have been analyzed.

S.9.17 Contamination

The Preferred Alternative could require partial or total right-of-way acquisition of 21 Medium or High rated sites.

It is recommended that the data accumulated in the project files for all sites within the 600-foot corridor rated No or Low for potential contamination be revisited during final design prior to project right-of-way acquisition and construction. This examination should include an updated review of agency files and the public record to determine if any significant change in status has occurred since the report was prepared.

In addition, a Phase II site assessment will be conducted during the design phase of the project for those sites identified as having a potential to affect the project. Select sampling of the soil and groundwater will be conducted at those sites to help determine the absence or presence of contamination. At a minimum, soil and groundwater investigations will be conducted at those sites affected by project right-of-way acquisition to determine if additional, more in-depth testing is required to identify the actual extent of contamination. A preferred method of testing will be determined on a site-by-site basis during final design.

Resolution of problems associated with contamination will be coordinated with the appropriate regulatory agencies and, prior to right-of-way acquisition, appropriate action will be taken, where applicable.

S.9.17.1 Hazardous Materials/Petroleum Transport

The State of Florida has no designated routes for hazardous materials transport; however, interstate travel is considered to be the safest. Improvements to the interstate will improve safety on the freeway and help to reduce the possibility of accidents and hazardous material spills. A Health and Safety Plan and a Hazardous Materials Management Plan, which describe the spill response

procedures and minimize the potential for impacts due to spills, will be developed during the design phase of the project in accordance with the requirements and regulations of EPA and the local and state agencies having jurisdiction. In addition, FDOT is committed to obtaining the necessary permits for storage of hazardous wastes associated with the construction of the Preferred Alternative.

S.9.18 Floodplains

The Preferred Alternative will impact approximately 40 acre-feet of floodplains and one regulated floodway.

Impacts to floodplains may be mitigated using the following measures:

- Stormwater management ponds; and
- Excavating existing fill adjacent to the interstate.

Potential impacts to the regulated floodway, Shingle Creek, will be mitigated during the design phase of the project. Refer to Figure S-9 (Segment 1) for the location of Shingle Creek. As part of the proposed improvements, a bridge will be constructed over Shingle Creek. The construction of the bridge will include the placement of bridge piles within the floodway to accommodate the roadway widening. The piles will be placed and oriented so that no impact to this floodway will occur. A hydraulic analysis will be conducted during final design to determine if there will be any encroachment into the floodway due to the bridge piers. Any impacts to the floodway will be permitted through Orange County and FEMA. A discussion of the permits required is included in Section S.6.

S.9.19 Utilities

Most utility companies have technologies to alter facilities without inconveniences to the customers. However, to the extent feasible, mitigation measures for utility disruptions will include:

- Maintaining utility connections in temporary locations;
- Minimizing the time without service;
- Installing alternative service before disconnecting the existing service; and
- Allowing service disruption only during periods of non-usage or minimum usage.

S.9.20 Construction Impacts

The construction activities for the Preferred Alternative will result in temporary air, noise, water quality, traffic flow, and visual impacts for those residents, businesses, and travelers within the vicinity of the construction areas of the proposed improvements.

Construction impacts will be minimized to the maximum extent possible by adherence to all state and local regulations and FDOT's *Standard Specifications for Road and Bridge Construction*. Detailed minimization techniques that will be employed are described in Section 4.8 of the *I-4 PD&E Study - Section 2 FEIS* (August 2002).

S.10 Short-Term Impacts Versus Long-Term Benefits

The Preferred Alternative will clearly involve impacts to the human environment within the greater Orlando metropolitan area. Previous discussions have provided much detail on the socioeconomic, cultural, natural, and physical impacts that are attributed to the Preferred Alternative. The level of impact for the proposed improvements varies to a moderate degree; however, the types and general extent of the build alternative impacts are similar.

The primary impacts to the human environment include uses of existing land use such as residential, commercial, and natural systems. These impacts will be mitigated through appropriate actions defined through commitments included this environmental action.

The impacts caused by the Preferred Alternative, along with the associated actions to minimize or mitigate these impacts, are balanced with the benefits derived through enhancement of long-term productivity associated with improving I-4, likely the most critical transportation link in Central Florida, with commensurate improvement in travel time and travel efficiency.

METROPLAN ORLANDO and the Volusia County MPO respective 2020 LRTPs identify improvements to I-4 as a top priority for the region to enhance connectivity and mobility. Furthermore, each of the study area local government Comprehensive Plans clearly identifies improvements to I-4 as an important priority to serve sustained positive economic conditions for the region.

Enhancement of the mobility and safety of I-4 through focusing on the movement of people and goods within the Preferred Alternative corridor has required careful consideration of the type of improvement, the operation of the facility, and the design criteria applied to the Build Alternatives. Through that effort, it is concluded that the local short-term impacts and the use of resources associated with implementation of the Preferred Alternative is consistent with the maintenance and enhancement of long-term productivity within the region, which will be realized with the proposed improvements.

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Chapter 1

Purpose of and Need for
Proposed Action



1. Purpose of and Need for Proposed Action

This section outlines the purpose of the proposed project and summarizes the need for transportation improvements in the Ultimate project study area and the Preferred Alternative study area. The items discussed in this section include the following:

- Purpose (Section 1.1)
- Project Overview (Section 1.2)
 - Background (Section 1.2.1)
 - Description of Project (Section 1.2.2)
- Need for Transportation Improvements (Section 1.3)
 - System Linkage (Section 1.3.1)
 - Capacity Deficiencies (Section 1.3.2)
 - Transportation Demand (Section 1.3.3)
 - Governmental Authority (Section 1.3.4)
 - Social Demands and Economic Development (Section 1.3.5)
 - Modal Interrelationships (Section 1.3.6)
 - Safety (Section 1.3.7)
 - Navigation (Section 1.3.8)
- Summary of Related Studies (1.4)

1.1 Purpose

The Federal Highway Administration (FHWA), in consultation with the Florida Department of Transportation (FDOT), proposes to upgrade the safety and mobility of the existing Interstate 4 (I-4) corridor that services the Orlando metropolitan area while maintaining access to the surrounding community. The Ultimate project limits extend from just west of the SR 528 (Bee Line Expressway) interchange in Orange County to just east of the SR 472 interchange in Volusia County. This represents a distance of approximately 43 miles. Figure 1-1 presents a regional location map. In addition, the Ultimate project includes improvements to portions of SR 528 (Bee Line Expressway) and SR 408 (East/West Expressway). The Ultimate project limits along SR 528 (Bee Line Expressway) extend from the interchange with I-4 to approximately 3,200 feet east of the interchange with International Drive and the project limits along SR 408 (East/West Expressway) extend from approximately Tampa Avenue to Bumby Avenue. Figure 1-2 shows the Ultimate project study limits.

The Preferred Alternative study limits are located within the Ultimate project study limits. The Preferred Alternative limits extend from just south of Kirkman Road (SR 435) to just north of Maitland Boulevard (SR 414) in Orange County, a length of approximately 15.4 miles. Refer to Figure 1-2 for the Preferred Alternative study limits.

At the initiation of the I-4 Project Development and Environment (PD&E) Study – Section 2, the Long Range Transportation Plans (LRTPs) for METROPLAN ORLANDO and the Volusia County Metropolitan Planning Organization (MPO) included the proposed improvements to I-4 (6+special use lanes). However, the 2020 LRTP Updates performed by METROPLAN ORLANDO and the Volusia County MPO identified additional financial constraints, which dictated that the Ultimate improvements for I-4 are not included in the cost feasible plan for 2020. Therefore, METROPLAN ORLANDO reduced the limits of the Ultimate improvements on I-4 to consist of the segment extending from Kirkman Road to Maitland Boulevard in Orange County.

Given the actions of METROPLAN ORLANDO and the Volusia County MPO on their respective cost feasible elements for the 2020 LRTP updates, FDOT coordinated with FHWA regarding the consequences of the current adopted plans with respect to the environmental action (in the form of a Record of Decision [ROD]) for the I-4 PD&E Study – Section 2 Environmental Impact Statement (EIS). Through this coordination, it was determined that FHWA will consider environmental action for a Preferred Alternative with limits consistent with METROPLAN ORLANDO's Cost Feasible Element of the LRTP.

In light of this direction, the Final Environmental Impact Statement (FEIS) will include discussions and assessments on the improvements for the entire 43-mile project. However, a Preferred Alternative will be identified and presented for environmental action consideration, which extends from Kirkman Road to Maitland Boulevard. These limits are consistent with the METROPLAN ORLANDO 2020 LRTP Update.

The intent of FHWA and FDOT is to construct the Ultimate project. However, the construction of the Ultimate project will have to be completed in phases, as portions of the corridor are included in future updates of METROPLAN ORLANDO's 2020 LRTP Update and the Volusia County MPO's 2020 LRTP Refinement. As funding becomes available for additional portions of the corridor, appropriate environmental studies, reevaluations, and Federal requirements will be completed. Logical termini will be required for each portion of the corridor advanced to obtain Location and Design Concept Acceptance (LDCA). The intent of the Preferred Alternative is to meet the purpose and need of the Ultimate project, but to a lesser scale.

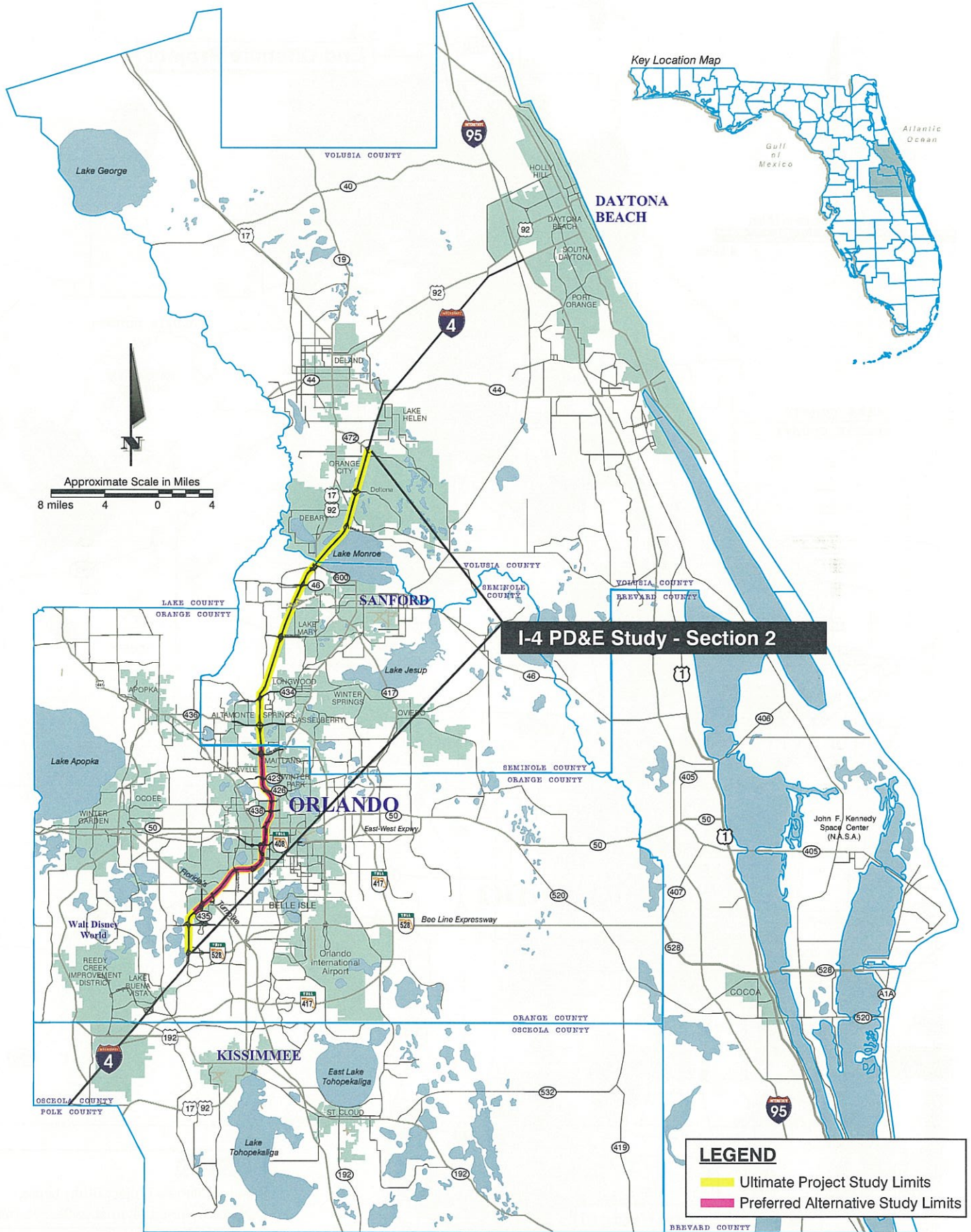
The specific purpose of the Ultimate project is to enhance mobility on the interstate in the primary commuter-shed of the Orlando metropolitan area. The Ultimate improvements will serve the developed business districts of Orlando, Maitland, Altamonte Springs, and Lake Mary.

The south terminus of the Ultimate project at the SR 528 (Bee Line Expressway) interchange represents a system-to-system connection with I-4, including access to intermodal facilities such as the Orlando International Airport (OIA), Port Canaveral, and the Taft rail yards. Traffic interaction at this interchange indicates a predominance of tourist-related traffic on I-4 south of SR 528 (Bee Line Expressway). North of SR 528 (Bee Line Expressway), traffic conditions change due to a mixture of tourist-related resort development and residential development located west of I-4. Given the change in traffic characteristics on I-4 at SR 528 (Bee Line Expressway), and given the basic shift of land development near this interchange, this point was established as the southern (west) terminus of the Ultimate project.

The north terminus of the Ultimate project at SR 472 represents the proposed end of the high occupancy vehicle (HOV) system on I-4, which will access the Orlando metropolitan area to the south. Emerging residential development in west Volusia County has increased commuting patterns to Seminole and Orange Counties near the SR 472 interchange. Traffic patterns at the SR 472 interchange indicate a fairly high demand to/from the west. Given the traffic conditions and the HOV lane terminus at the SR 472 interchange, this interchange was established as the northern (east) terminus of the Ultimate project.

The specific purpose of the Preferred Alternative is to improve mobility within the tourist related-development in Orange County, Orlando Central Business District (CBD), and the commuter-shed of Orlando, Maitland, and Altamonte Springs. The project will also enhance the connectivity between I-4 and SR 408. The project limits were identified based on the traffic influence area of the tourist-related development in Orange County, Orlando CBD, and commuters traveling to the Orlando metropolitan area.

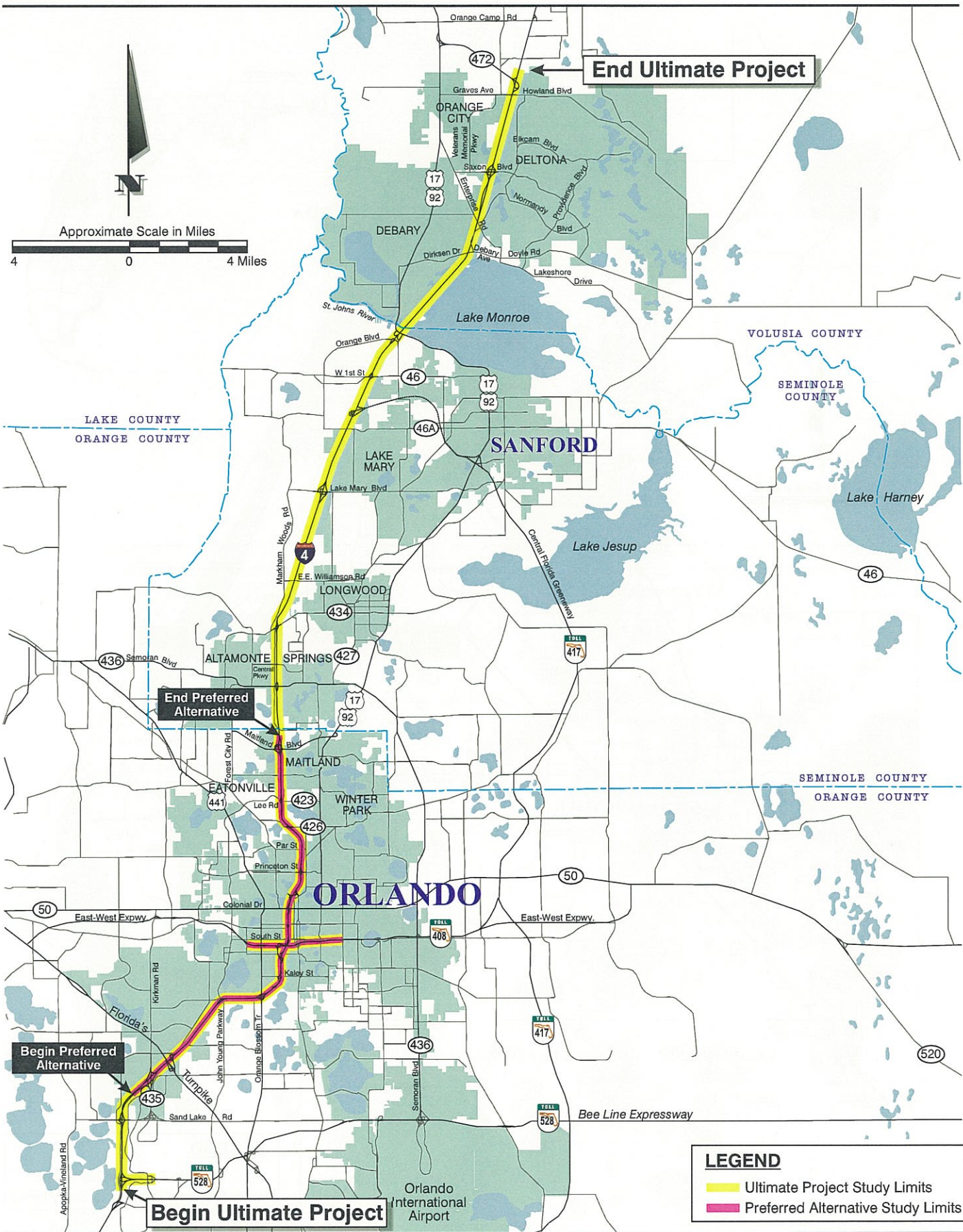
The south terminus of the Preferred Alternative at Kirkman Road provides tourists and residents increased mobility into and out of the Orlando CBD. The improvements tie into the Universal Boulevard interchange improvements and the programmed I-4/John Young Parkway Interchange



I-4 PD&E Study - Section 2

LEGEND

- Ultimate Project Study Limits
- Preferred Alternative Study Limits



**Figure 1-2
Project Study Limits**

project improvements. Adding HOV lanes from south of Kirkman Road through the Orlando CBD and into northern Orange County will increase the movement of tourists, commuters, and goods into and out of the tourist-related development in Orange County and the Orlando metropolitan area. The results of existing (1996) traffic capacity analyses indicate that I-4 is operating over capacity (level of service [LOS] F) from Kirkman Road through the Orlando CBD and northern Orange County. Projected (2020) traffic volumes anticipated on the HOV lanes through the CBD (between Kirkman Road and Ivanhoe Boulevard) is approximately 10,500 to 13,600 vehicles per day. Traffic analyses indicate that HOV lanes will operate at acceptable levels of service (LOS C and D) from Kirkman Road to Ivanhoe Boulevard in 2020. From Kirkman Road to John Young Parkway, HOV lanes are expected to operate at LOS D. From John Young Parkway to Ivanhoe Boulevard, HOV lanes are expected to operate at LOS C. The reduction in LOS between Kirkman Road to John Young Parkway is due to the high number of tourists and commuters traveling to tourist-related activities and the Orlando CBD.

The north terminus of the Preferred Alternative north of Maitland Boulevard provides northern Orange County and southern Seminole County commuters direct access to the HOV lanes. Existing and projected traffic patterns indicate that the majority of commuters to and from northern Orange County and southern Seminole County are accessing I-4 from the slip ramps located north of the Lee Road and Maitland Boulevard interchanges. Providing HOV lanes from north of Maitland Boulevard will enable northern Orange County and southern Seminole County commuters increased mobility when traveling to the Orlando metropolitan area. Projected (2020) traffic volumes north of Maitland Boulevard indicate that vehicles traveling in the HOV lanes range from approximately 10,000 to 14,000 vehicles per day. Traffic analyses indicate that the HOV lanes are projected to operate at LOS D from Ivanhoe Boulevard to Lee Road and LOS C from Lee Road to Maitland Boulevard in 2020. The reduction in LOS between Ivanhoe Boulevard to Lee Road is due to the high number of commuters traveling to the Orlando CBD from the south and north. North of Maitland Boulevard the number of vehicles traveling in the HOV lanes drops to approximately 3,700 to 11,900 vehicles per day.

The intent of the I-4 PD&E Study - Section 2 study is to fulfill the goals and objectives developed during the I-4 Multi-Modal Master Plan (I-4 MMMP) Study and recommended by the I-4 MMMP Project Advisory Group (PAG). The I-4 MMMP PAG consisted of a group of representatives from local governments, METROPLAN ORLANDO, Volusia County MPO, transit providers, state agencies, and special interest groups. The PAG provided input, reviewed study results, and aided in the formation of study recommendations. Table 1-1 lists the I-4 MMMP goals and objectives.

It should be noted that the I-4 MMMP has not been approved by FHWA and, therefore, does not constitute a federal action or endorsement. The I-4 PD&E Study - Section 2 DEIS and FEIS, together with their required circulation and review, are the federal action for the project. The DEIS ensures that an evaluation is conducted of all reasonable design alternatives, that all significant transportation and environmental impacts are assessed, and that public participation and comments are solicited to help guide the decision-making process. More specifically, the evaluation of alternatives helps to ensure that the costs, benefits, and concessions among the alternatives are addressed according to FHWA, the Intermodal Surface Transportation Efficiency Act (ISTEA), and the Transportation Equity Act for the 21st Century (TEA-21) requirements. The identification and analysis of impacts of all reasonable alternatives are necessary to meet the requirements of the National Environmental Policy Act (NEPA) environmental regulations. The assessment of significant environmental concerns for each of the alternatives identifies the type and severity of environmental impacts.

The I-4 PD&E Study - Section 2 FEIS has been prepared to address comments, issues, and concerns identified during the public hearing comment period for the DEIS; revise the DEIS to include the Preferred Alternative; identify avoidance or mitigation measures for adverse social, economic, and environmental impacts; and complete the environmental review process under NEPA.

Table 1-1. I-4 MMMP Goals and Objectives

Goals	Objectives
<p>1. Present strategies to increase mobility and decrease travel time within the I-4 corridor in an effort to promote quality of life and economic viability in Central Florida.</p>	<ol style="list-style-type: none"> 1. Present strategies that shall result in increased vehicle occupancy. 2. Provide strategies for effective connection of I-4 with other Florida Intrastate Highway System facilities. 3. Facilitate multi-modal and inter-modal access to the region's activity and employment centers located along I-4. 4. Evaluate existing interchanges to identify deficiencies and propose strategies to resolve identified deficiencies. 5. Recommend future interchange locations and closures needed to provide efficient vehicle movement. 6. Identify transportation system and demand management strategies to ensure increased efficiency of existing capacity. 7. Provide a high service level for both longer distance intra-regional travel and long distance trips traveling through FDOT District 5. 8. Provide effective management strategies for incidents on I-4. 9. Provide effective strategies for mobility management during the implementation of the chosen improvements. 10. Provide strategies that are cost feasible and consistent with the region's total long-range transportation budget. 11. Provide a phased and coordinated implementation plan to minimize the need for future reconstruction.
<p>2. Present strategies to promote protection of sensitive environmental areas and neighborhoods within the study area.</p>	<ol style="list-style-type: none"> 1. Target strategies to ensure compliance with the Clean Air Act Amendment. 2. Protect threatened and endangered species' habitats and wetlands. 3. Improve water quality along I-4. 4. Identify physical and noise impacts to adjacent neighborhoods.

The preparation and approval of the FEIS is required prior to obtaining the ROD and subsequently LDCA. The ROD is the formal environmental approval action allowing the project to move forward into the next phase, design, and construction.

The objective of the I-4 PD&E Study - Section 2 is to refine and expand the work of the I-4 MMMP to meet the requirements of NEPA and gain LDCA from FHWA. The study includes those engineering services required for location/design studies, including consideration of all social, economic, and environmental impacts and mitigation of those impacts as required by FHWA and FDOT's *PD&E Manual* (FDOT, 1988 and revisions), along with the required environmental documents, engineering reports, preliminary plans, and public involvement.

The study has been conducted in accordance with the *PD&E Manual*, which incorporates all requirements of the following:

- NEPA;
- Federal law and executive orders;
- Applicable federal regulations included in the Federal Highway Administration Federal-Aid Policy Guide; and
- Applicable State laws and regulations including Chapter 339.155 of the Florida Statutes.

Therefore, all project documentation prepared in accordance with the *PD&E Manual* will be in compliance with all applicable state and federal laws, executive orders, and regulations.

1.2 Project Overview

This section provides an overview of the project including the history of I-4 planning activities and a description of the project.

1.2.1 Background

The I-4 PD&E Study – Section 2 is a direct outgrowth of prior transportation planning activities in the study area. In November 1989, FDOT completed a Master Plan for improvements to I-4 from the Polk/Osceola County line to US 17-92 in Seminole County. The original I-4 Master Plan proposed highway improvements through 2010. The Master Plan recommended that the existing roadway be widened up to 16 lanes with an envelope for transit in the median. In addition, it recommended modifications to several interchanges. The Master Plan was approved by METROPLAN ORLANDO, formerly the Orlando Urban Area MPO, in November 1989.

As tourism and population continued to grow within the State of Florida, travel demand surpassed interstate capacity in many sections of the state's 1,500-mile system. To address the expansion and preservation of the state's interstate system, FDOT established an Interstate Highway Policy in November 1991. The Policy ensures that Florida's interstate system adequately serves the needs of both commercial and personal mobility within the framework of environmental preservation, restoration of air quality, and support of growth management goals.

The Interstate Highway Policy represented a profound change from the traditional single mode planning orientation of the past by promoting urban interstate highways as multi-modal corridors and optimizing the movement of people rather than the flow of vehicles. Under the Policy, the number of lanes is limited to no more than six general-purpose lanes and up to four special purpose lanes. Public transportation modes, including buses and light rail transit (LRT), and ride-sharing strategies such as HOV lanes, are encouraged as long-term solutions to urban mobility challenges. In addition, interstate corridors allow high speed and high volume traffic movements to facilitate commerce and long distance trips through the provision of additional right-of-way within the corridor for high speed rail, where appropriate.

The Interstate Highway Policy intends to provide the following benefits:

- **Environmental Benefits:** meeting requirements of the Clean Air Act and adding capacity to the interstate system with minimum right-of-way addition and minimum environmental impact;
- **Growth Management Benefits:** supporting the development of livable communities by providing incentives for ride-sharing and supporting public transit initiatives;
- **Economic Benefits:** providing for a more efficient movement of people and goods;
- **Capacity:** increasing the "people-moving" capabilities of the interstate corridor;
- **Reliability:** providing local governments and developers a stable, long-term build-out plan for regional planning and ensuring that public facilities and services required to support development are available concurrent with the impacts of development, as required by Florida's Growth Management Laws (F.S. 163); and
- **Constructability and Affordability:** providing a reasonably affordable program consisting of a realistic implementation plan.

In March 2001, FDOT consolidated a number of policies including the Interstate Highway Policy into a new streamlined policy titled "*Florida Intrastate Highway System (FIHS) Program Development Procedure.*" The policy states that the construction of additional lanes on the intrastate highway system is set forth in Chapter 335.02(3) of the Florida Statutes. Chapter 335.02(3) states, "In determining the number of lanes for any regional corridor or section of highway on the State Highway System to be funded by the Department with state or federal funds, the Department shall evaluate all alternatives and seek to achieve the highest degree of efficient mobility for corridor users."

Guided by the Interstate Highway Policy, FDOT completed the I-4 MMMP for the 73-mile I-4 corridor through Central Florida in October 1996. The limits of I-4 MMMP extended from the

Polk/Osceola County line to Interstate 95 in Volusia County. The I-4 MMMP was developed to identify the specific components of the I-4 improvements through 2020.

The I-4 MMMP was performed using a three-tier analysis, in which a broad range of alternatives was evaluated and narrowed. Tier 1 dealt with a broad array of potential investment strategies, including roadway investments outside the I-4 corridor. Nine alternatives were selected for further analysis in Tier 2.

Tier 2 was conducted as a Major Investment Study (MIS), in accordance with federal law. The recommended design concept and scope were adopted by both METROPLAN ORLANDO and Volusia County MPO. The recommended design concept and scope included:

- Widening I-4 to six general use lanes (GULs) plus two HOV lanes (6+2) from the Polk/Osceola County line to just west of SR 472 in Volusia County, with the HOV lanes separated from the GULs by buffer and/or barrier (no trucks or single occupant vehicles will be allowed on the HOV facility);
- Widening from four to six lanes from SR 472 to I-95 through Volusia County;
- Reserved right-of-way for rail envelope south of SR 528 (Bee Line Expressway) and through Volusia County;
- LRT from Osceola County's Celebration Development to Sanford; and
- Express bus service between Volusia County and the Orlando metropolitan area.

Tier 3 refined the basic Tier 2 design concept and scope (6+2+LRT) into a Master Plan, which adheres to FDOT's Interstate Highway Policy. Functional concept plans depicting the recommended I-4 improvements were prepared and included typical sections, HOV access treatments, interchange improvement concepts, support facilities (e.g., Park & Ride lots), right-of-way impacts, and drainage.

In September 1995, METROPLAN ORLANDO and the Volusia County MPO voted to adopt the I-4 MIS design concept and scope of 6+2+LRT. In December 1995, both MPOs approved their respective Year 2020 LRTPs, which included the recommended I-4 MIS improvements to the I-4 corridor.

As a result of the recommendations presented in the I-4 MMMP and MIS, FDOT elected to proceed with the next phase of the I-4 corridor facility development process through four closely coordinated studies. These studies included three PD&E studies for the I-4 highway sections and the production of a Preliminary Engineering (PE) Report and an EIS for the LRT system. The LRT and I-4 studies represent freestanding projects capable of independent operation.

In 1996, FDOT, in consultation with the Federal Transit Administration (FTA) and FHWA, initiated the LRT and I-4 PD&E studies for proposed transportation improvements in Osceola, Orange, Seminole, and Volusia Counties. The studies consisted of the following:

- **Central Florida Light Rail Transit System Study (CFLRTS)** - The CFLRTS involved the preparation of an EIS for a new LRT in Central Florida. The limits of the DEIS extended from Central Florida Parkway to the City of Longwood. The limits for the FEIS were refined and extended from Central Florida Parkway to the Loch Haven/Princeton Street area.
- **I-4 PD&E Study - Section 1** - The I-4 PD&E Study - Section 1 involves the preparation of an Environmental Assessment (EA) for improvements to I-4 from CR 532 in Osceola County to SR 528 (Bee Line Expressway) in Orange County.
- **I-4 PD&E Study - Section 2** - The I-4 PD&E Study - Section 2 involves the preparation of an EIS for improvements to I-4 from SR 528 (Bee Line Expressway) in Orange County to SR 472 in Volusia County.
- **I-4 PD&E Study - Section 3** - The I-4 PD&E Study - Section 3 involves the preparation of an EA for improvements to I-4 from SR 472 to I-95 in Volusia County.

Figure 1-3 presents the study limits for the three I-4 highway sections and the LRT system as presented in the CFLRTS FEIS. Detailed descriptions of these studies are provided in Section 1.4.

1.2.2 Description of Project

FHWA, in consultation with FDOT, has prepared this EIS for a proposal to improve I-4 in Orange County, Seminole County, and Volusia County, Florida. This project is commonly referred to as the I-4 PD&E Study - Section 2. FDOT is proposing to widen I-4 to six GUL and two HOV lanes (6+2) within the Ultimate project and Preferred Alternative limits. A 44-foot rail corridor is provided in the median in portions of the study area. The HOV lanes are barrier separated from the general lanes throughout the Ultimate project and Preferred Alternative limits. Slip ramps, direct flyovers, and HOV-only interchanges provide access to the HOV lanes. Where necessary, the GULs are supplemented by auxiliary lanes. Drainage improvements and stormwater management facilities are constructed as part of the Ultimate project and Preferred Alternative. Existing interchanges along the corridor were evaluated to determine compliance with current FDOT (January 2000) or American Association of State Highway Transportation Officials (AASHTO) (1994) design criteria.

Detailed information on the preliminary design of the proposed improvements is contained in the *I-4 PD&E Study - Section 2 Preliminary Engineering Report* (June 2002). Detailed information on the drainage improvements and stormwater management facilities is contained in the *I-4 PD&E Study - Section 2 Pond Siting Report* (August 2000). Other technical reports associated with the project include:

- Section 4(f) Evaluation (August 2002)
- Noise Study Report (April 2001)
- Intelligent Transportation Systems (ITS) Plan (November 2000)
- Prototype I-4 Ramp Metering Feasibility Analysis (November 2000)
- Constructability Assessment (September 2000)
- Socioeconomic and Environment Report (August 2000)
- Location Hydraulics Report (August 2000)
- Exfiltration Trench Report (August 2000)
- Endangered Species Biological Assessment (May 2000)
- Wetland Evaluation Report (May 2000)
- Conceptual Stage Relocation Plan (April 2001)
- I-4 System Access Modification Report (SAMR) (April 2000) and SAMR Update (May 2002)
- Air Quality Report (April 2000)
- Urban Design Guidelines (February 2000)
- Cultural Resource Assessment Report (July 1999)
- Water Quality Impact Evaluation (May 1999)
- Typical Section and Concept Refinement Technical Memorandum (January 1999)
- Geotechnical Report (June 2000)
- Preliminary Roadway Soil Survey (June 2000)
- Utility Impact Report (September 1998)
- Alternatives Public Information Workshop Summary (August 1998)
- Contamination Screening Evaluation Report (May 1999)
- Scoping Summary Report (September 1997)
- Area of Potential Effect Plans (February 2002)

- Public Hearing Summary (July 2002)

The 43-mile Ultimate project study area includes portions of 14 jurisdictions including three counties. The 15.4-mile Preferred Alternative study area includes portions of five jurisdictions. The jurisdictions impacted by the Ultimate project and the Preferred Alternative are shown in Figure 1-4 and listed below.

- | | |
|-----------------------------|-----------------------|
| • Orange County* | • City of Longwood |
| • City of Orlando* | • City of Lake Mary |
| • City of Winter Park* | • City of Sanford |
| • Town of Eatonville* | • Volusia County |
| • City of Maitland* | • City of DeBary |
| • Seminole County | • City of Deltona |
| • City of Altamonte Springs | • City of Orange City |

*Jurisdictions included within the Ultimate project and Preferred Alternative study areas.

To facilitate the engineering and environmental analyses as well as the preparation of the PE Report and EIS, the Ultimate study area was divided into six segments. The locations of the segments are summarized below and provided on Figure 1-4.

- **Segment 1** - Extends from west of SR 528 (Bee Line Expressway) to west of John Young Parkway (SR 423) in Orange County.
- **Segment 2** - Extends from west of John Young Parkway to west of Ivanhoe Boulevard in Orange County.
- **Segment 3** - Begins west of Ivanhoe Boulevard and ends east of Fairbanks Avenue in Orange County.
- **Segment 4** - Extends from east of Fairbanks Avenue in Orange County to west of Lake Mary Boulevard in Seminole County.
- **Segment 5** - Extends from west of Lake Mary Boulevard to south of US 17-92 in Seminole County.
- **Segment 6** - Extends from south of US 17-92 in Seminole County to north of SR 472 in Volusia County.

The Preferred Alternative study area is within Segments 1, 2, 3, and 4. Refer to Figure 1-4 for the location of the Preferred Alternative in relation to the project segments.

1.3 Need for Transportation Improvements

I-4 is an integral part of Central Florida's transportation system. The interstate carries the greatest number of people and vehicles of any transportation facility in the region and serves many of the primary activity centers of the area. When the interstate opened in February 1965, it was designed to serve intrastate and interstate travel by providing a critical link between the east and west coasts of Central Florida. Although this role continues to be a crucial transportation function of I-4, the highway has evolved into one that serves many shorter trips. Today, the highway serves as the primary link between hotel/motel complexes and tourist attractions such as Walt Disney World, Universal Studios, Sea World, the International Drive Resort Area, and downtown Orlando. In addition, since I-4 is the only north-south limited-access facility that is radially oriented between the predominant employment centers and the major suburbs, it has become the primary commuting corridor in the Orlando metropolitan area.

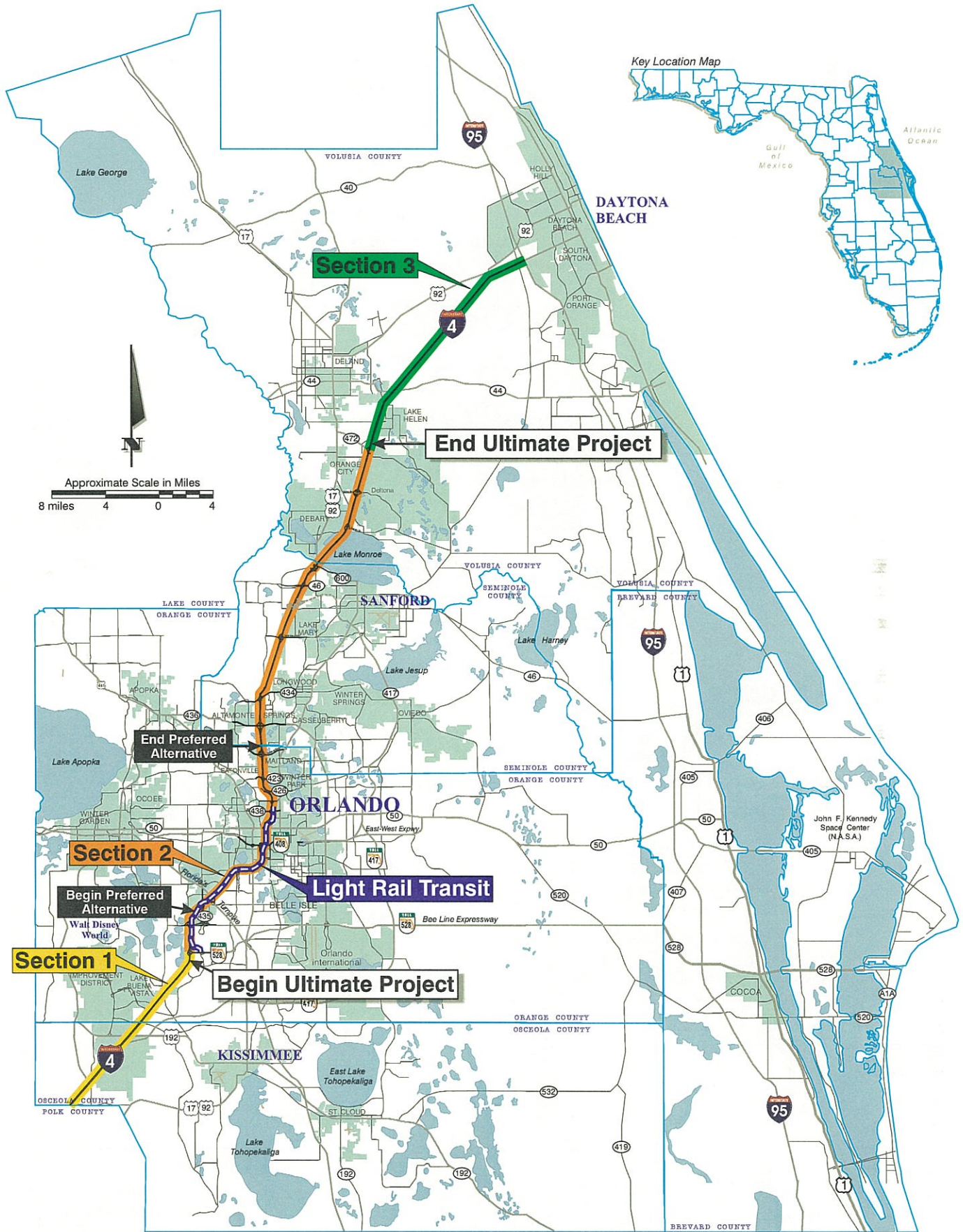


Figure 1-3
Project Limits for I-4 PD&E Studies and LRT



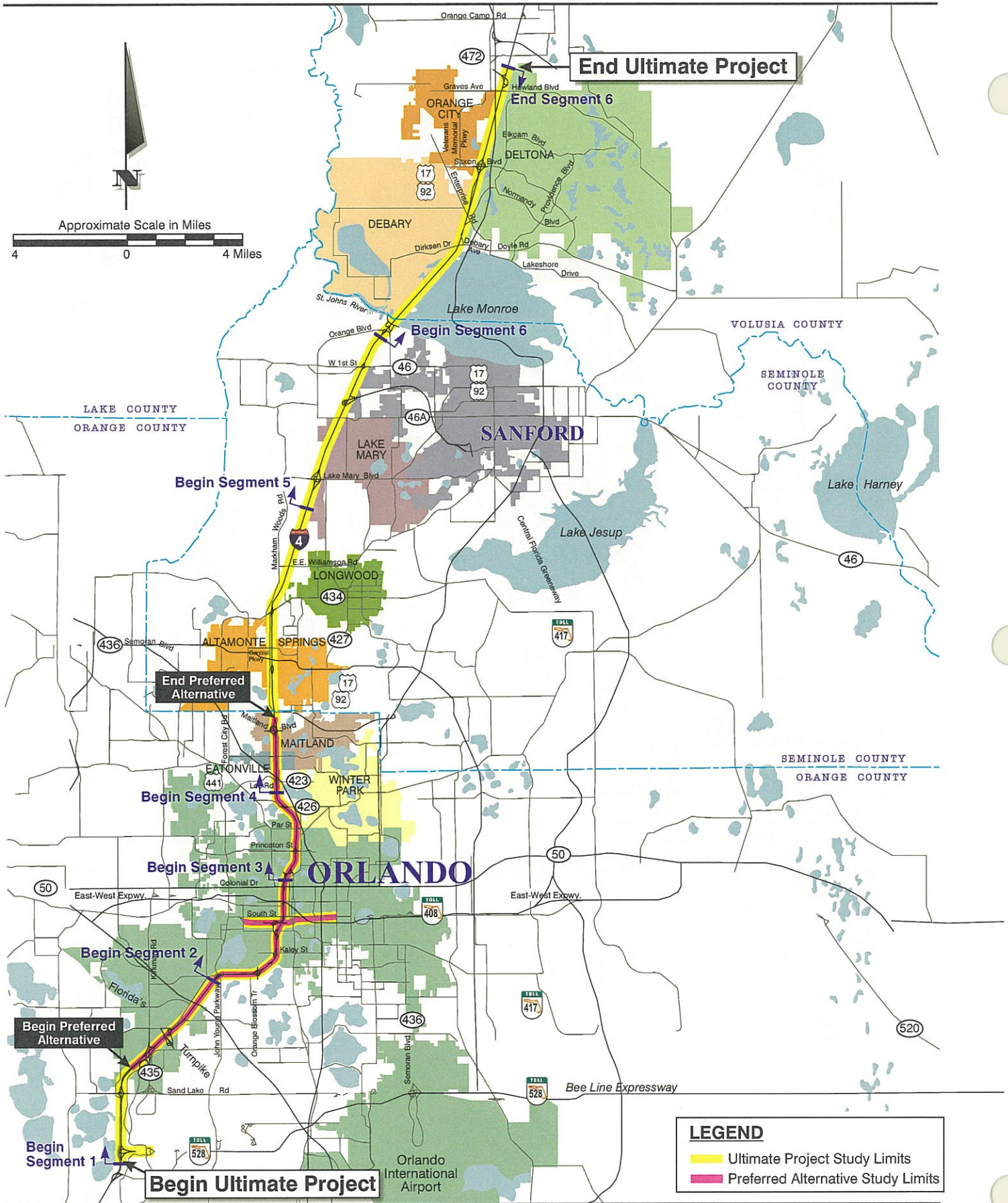


Figure 1-4
Jurisdiction Boundaries

I-4 PD&E Study - Section 2



Tremendous growth in Central Florida for the past two decades has made it difficult for the transportation system to keep abreast with travel demand. A significant amount of this growth is occurring within close proximity to I-4. In recent years, congestion on I-4 has extended well beyond normal peak hours and major crashes have closed I-4, resulting in traffic congestion throughout the metropolitan area. Congestion and delays on I-4 and the parallel arterial highways are now considered to be the major transportation problem facing the region. The congestion on I-4 is further evidenced by the less than desirable levels of service on the interstate as well as the crossroads.

Projections of future population and employment in the region indicate that travel demand will continue to increase well into the 21st Century. The ability to accommodate the new travel patterns resulting from growth must be provided to sustain the economy of the region. Without the improvements, extremely congested conditions are expected to occur for extended periods of time (up to four hours) in both the morning and evening peak periods. Due to these congested conditions, commuter travel times will continue to increase, the movement of goods through the urban area will be slower, and the deliveries of goods within the urban area will be forced to other times throughout the day.

The need for improvements to I-4 is illustrated by the important transportation roles I-4 serves to the Orlando metropolitan region, Central Florida, and the State of Florida. If no improvements are made to the interstate, a loss in mobility for the area's residents, visitors, and employees can be expected, resulting in a severe threat to the continued viability of the economy and the quality of life.

1.3.1 System Linkage

System linkage is generally defined as how the project fits into the existing and future transportation system of the area. The following discussion summarizes how the project links travelers to local and regional roadways.

1.3.1.1 Local

The existing roadway network within the Ultimate project and Preferred Alternative study areas consists of local roads, collectors and arterials, toll expressways, and I-4. Figure 1-5 presents the existing highway system within the project study area and the number of lanes on the major streets.

I-4 is the primary freeway serving the Ultimate project and Preferred Alternative study areas. The roadway is a limited-access, divided highway that runs in a north-south direction over the length of the project area. I-4 has six lanes from SR 528 (Bee Line Expressway) in Orange County to Lake Mary Boulevard in Seminole County. From Lake Mary Boulevard to SR 472 in Volusia County, the highway has four lanes.

The only other north-south expressway within the Ultimate project study area is SR 417 (Central Florida GreeneWay). This toll highway is a limited-access four lane divided freeway that serves as an eastern beltway around the Orlando metropolitan area. The highway currently connects with I-4 south of US 192 in Osceola County, which is outside the project study limits. The existing facility currently terminates near US 17-92 in the City of Sanford. A new I-4 interchange between CR 46A and SR 46 in Seminole County is under construction as of May 2002. Refer to Section 1.4 for the location and a description of this related project.

East-west expressways within the Ultimate project and Preferred Alternative study areas include SR 528 (Bee Line Expressway), SR 91 (Florida's Turnpike), and SR 408 (East/West Expressway). These expressways are limited-access, divided, toll highways that connect I-4 within the project study area. SR 408 (East/West Expressway) has six lanes and Florida's Turnpike has four lanes. SR 528 (Bee Line Expressway) has six lanes from I-4 to International Drive, then reduces to four lanes. SR 528 (Bee Line Expressway) is not included in the Preferred Alternative study area.

Several arterials intersect I-4 within the Ultimate project and Preferred Alternative study areas. The following is a list of arterial interchanges along I-4 from south to north:

- Sand Lake Road (SR 482)
- Universal Boulevard
- Kirkman Road (SR 435)*
- Conroy Road*
- John Young Parkway (SR 423)*
- Orange Blossom Trail (US 441/SR 500)*
- Michigan Street*
- Kaley Street*
- Anderson Street*
- South Street*
- Robinson Street (SR 526)*
- Amelia Street*
- SR 50 (Colonial Drive)*
- Ivanhoe Boulevard*
- Princeton Street (SR 438)*
- Par Street*
- Fairbanks Avenue (SR 426)*
- Lee Road (SR 423)*
- Maitland Avenue (SR 414)*
- Semoran Boulevard (SR 436)
- Sanlando Springs Road (SR 434)
- Lake Mary Boulevard
- Paola Road (CR 46A)
- SR 46
- US 17-92 (SR 15/600)
- Dirksen Drive/DeBary Avenue
- Saxon Boulevard
- SR 472

*Arterial interchanges located within the Preferred Alternative and Ultimate project study areas.

The number of lanes on these roadways varies from two to six lanes.

The ability to widen the arterial roadways is limited. The same Florida policy that limits the number of lanes on interstate highways also limits the number of lanes on FDOT surface arterials to six lanes.

The proposed improvements will provide the opportunity for vehicles with two or more passengers to use HOV lanes, increasing mobility within the study area. The proposed improvements will link HOV travelers to local roadways through HOV-access only interchanges, direct HOV access interchanges, and slip ramps. The HOV-access only interchanges are located at the following locations:

- South Street*
- Central Parkway
- Enterprise Road

*HOV-access only interchange located within the Ultimate project and Preferred Alternative study areas.

These interchanges provide access to I-4 for the motorists travelling in the HOV lanes; however, they do not provide access to the GULs.

Access to the HOV lanes is also provided by direct HOV interchanges. These interchanges also provide access to I-4 for motorists using the GULs. The direct HOV-access interchanges include from south to north:

- International Drive at SR 528 (Bee Line Expressway)
- SR 528 (Bee Line Expressway)
- Kirkman Road*
- Ivanhoe Boulevard*

*Direct HOV access interchanges located in the Ultimate project and Preferred Alternative study areas.

In addition, slip ramps are provided at numerous locations throughout the study area. The slip ramps enable motorists to access the HOV lanes and the GULs. Access to the HOV slip ramps are provided in the vicinity of the following I-4 interchanges (from south to north):

- Sand Lake Road
- Conroy Road*
- Orange Blossom Trail*
- Maitland Boulevard*
- Semoran Boulevard*
- SR 434
- Lake Mary Boulevard
- CR 46A
- US 17-92
- Dirksen Drive/DeBary Avenue
- SR 472

*Slip ramps located in the Ultimate project and Preferred Alternative study areas.

In addition to the slip ramps listed above, HOV slip ramps will be provided south of the Kirkman Road interchange. The eastbound slip ramp signifies the start of the HOV system for the Preferred Alternative and will provide access to the HOV lane from the GULs. The westbound slip ramp signifies the end of the HOV system for the Preferred Alternative and will provide access to the GULs from the HOV lane. The slip ramps will be removed once the Ultimate project improvements south of the Preferred Alternative are constructed.

The proposed HOV slip ramps located north of the Maitland Boulevard interchange will signify the beginning/end of the HOV system for the northern limits of the Preferred Alternative. For the Preferred Alternative, the eastbound slip ramp will signify the end of the HOV system and will provide access to the GULs from the HOV lane. The westbound slip ramp will signify the start of the HOV system and will provide access to the HOV lane from the GULs. Once the Ultimate project improvements are constructed to the north of the Preferred Alternative, the slip ramps will be turned around to provide access to the HOV lane from the south and access to the GULs from the north. Refer to the Preliminary Concept Plans for the layout of the slip ramps for the Ultimate project.

Figure 1-6 presents the locations of the HOV-access only interchanges, direct HOV access interchanges, and slip ramps.

The proposed improvements also include the addition of auxiliary lanes, modifications to existing interchanges, and other roadway improvements. As part of the Ultimate project improvements, the SR 528 (Bee Line Expressway) mainline will be reconstructed from the I-4 interchange to east of the International Drive interchange. SR 408 (East/West Expressway) will be reconstructed from Tampa Avenue to Bumby Avenue. Improvements to local roadways will include upgrading traffic signals at the I-4 interchanges and reconstructing I-4 on-ramps and off-ramps. These improvements are summarized in Chapter 2 of this report and are described in detail in the *Preliminary Engineering Report* (June 2002).

1.3.1.2 Regional

I-4 carries by far the greatest number of people and vehicles of any transportation facility in the region. The highway serves as the connection link between the City of Tampa on Florida's west coast and the City of Daytona Beach on Florida's east coast. I-4 terminates on the west coast at the junction with I-275, and on the east coast at the junction with I-95. I-4 is the only continuous east-west, limited-access facility in Central Florida that connects Florida's east and west coasts.

I-4 intersects with SR 528 (Bee Line Expressway) and Florida's Turnpike within the Ultimate project study area. SR 528 (Bee Line Expressway) is a regional roadway that connects Central Florida to the Atlantic Seaboard on the east coast of Florida and serves motorists traveling to many popular destinations such as Cocoa Beach, Cape Canaveral, Port Canaveral, and the Kennedy Space Center.

Florida's Turnpike extends from the I-75 junction in Wildwood to Miami. Travelers on I-4 may access I-75 through Florida's Turnpike and travel north toward Ocala, Gainesville, and the State of Georgia or south to West Palm Beach, Fort Lauderdale, and Miami.

1.3.1.3 Programmed and Planned Transportation Improvements

The proposed improvements included within the I-4 PD&E Study – Section 2 project have been coordinated with and are consistent with numerous other transportation improvements planned for the project study area. The transportation improvements planned for the study area are included in the region's long-range transportation plans and five-year transportation plans.

1.3.1.3.1 Long Range Transportation Plans

The following is a summary of transportation improvements contained within the LRTPs for METROPLAN ORLANDO and the Volusia County MPO through 2020.

METROPLAN ORLANDO 2020 Long Range Transportation Plan Update (adopted December 2000) – Transportation issues for Central Florida, including Osceola, Orange, Seminole, and Lake Counties, are addressed by METROPLAN ORLANDO. Major planned improvements of the surrounding roadway network within Orange and Seminole Counties are listed in Table 1-2 and presented in Figure 1-7.

Volusia County MPO 2020 Long Range Transportation Plan Refinement (adopted November 2000) – Transportation issues for Volusia County are addressed by the Volusia County MPO. Planned transportation improvements for Volusia County within the project study area are listed in Table 1-3 and presented in Figure 1-8.

1.3.1.3.2 Funded Transportation Improvements

Funded transportation improvements for the next five years within the vicinity of the project are listed in the following plans.

- **METROPLAN ORLANDO Transportation Improvement Program (TIP) FY 2001/02 – 2005/06** (adopted December 2001) – METROPLAN ORLANDO develops and approves the five-year TIP for the Central Florida region. Major roadway improvements in the vicinity of the study area are listed in Table 1-4 and presented in Figure 1-9.
- **Volusia County MPO Transportation Improvement Program FY 2001/2002 – 2005/2006** (adopted June 26, 2001; amended January 22, 2002) – The Volusia County MPO develops and approves the five-year TIP for Volusia County. Roadway improvements included within the plan near the study area are included in Table 1-5 and presented in Figure 1-10.
- **Orlando-Orange County Expressway Authority (OOCEA) Five Year Work Plan FY 2002 – 2006** (adopted July 25, 2001) – The OOCEA develops and approves the five-year road program for funded Expressway Authority projects. Projects included in the OOCEA five-year work plan are summarized in Table 1-6 and are included in Figure 1-7.

1.3.2 Capacity Deficiencies

The concept of levels of service (LOS) is defined as a qualitative measure describing operational conditions within a traffic stream, and the perception by motorists and/or passengers. Six LOS are defined for each type of facility for which analysis procedures are available. The six LOS are given letter designations, A through F, with LOS A representing the best operating conditions and LOS F the worst. In general, the various LOS are defined as follows for uninterrupted flow freeways:

- LOS A represents free flow. Individual users are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to maneuver within the traffic stream is extremely high.

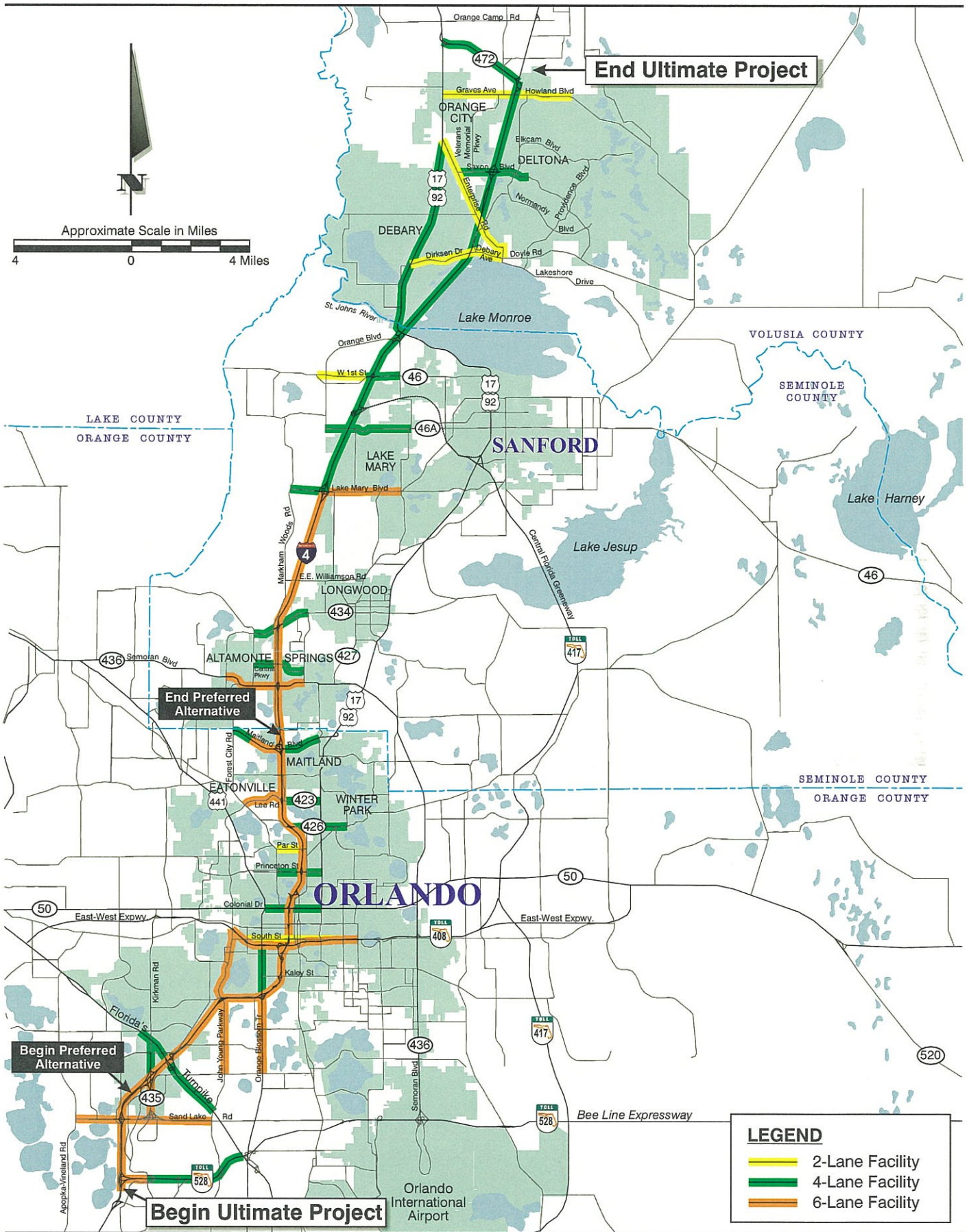


Figure 1-5
Number of Lanes on Existing Highway System

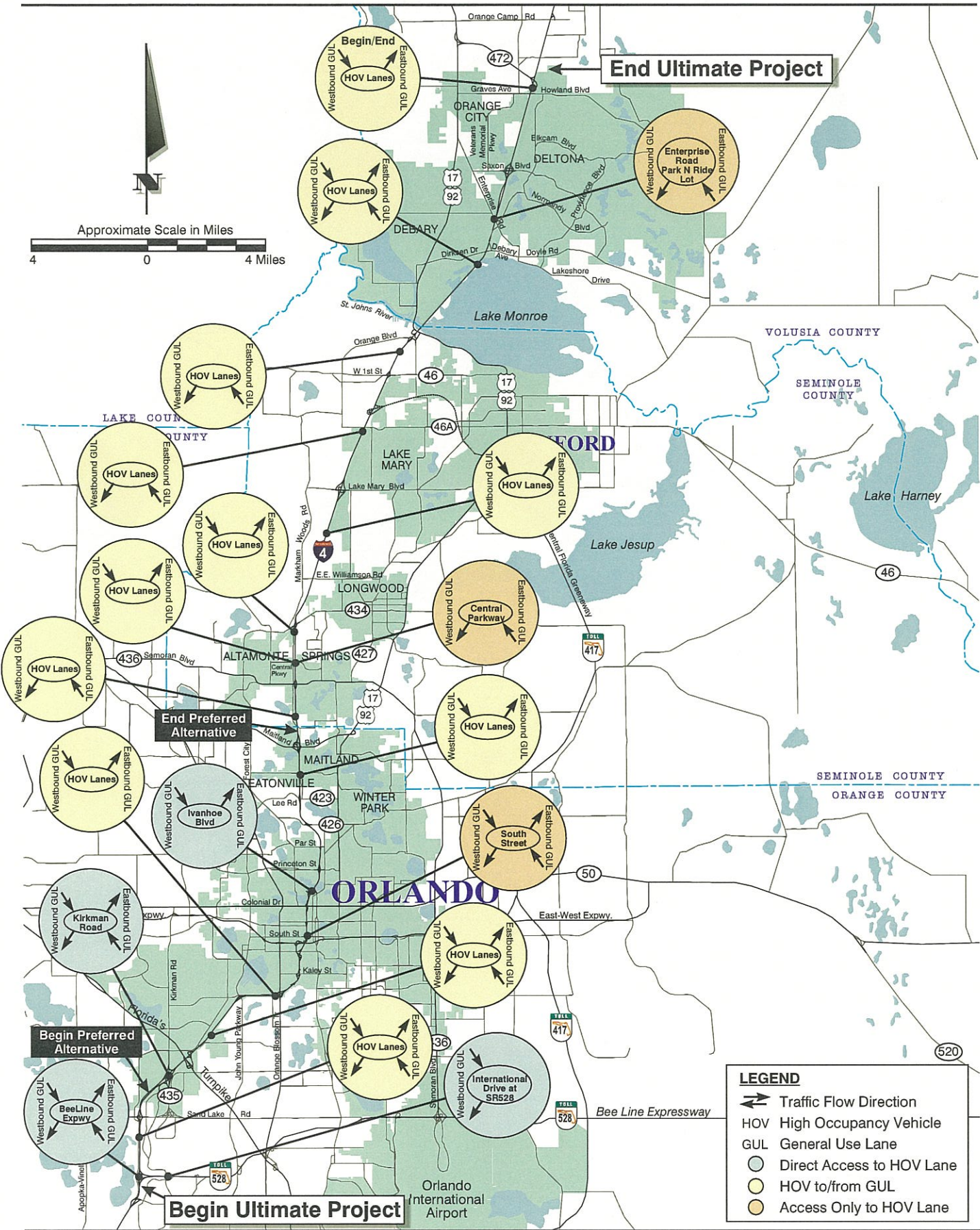
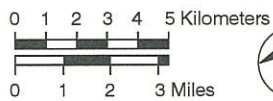
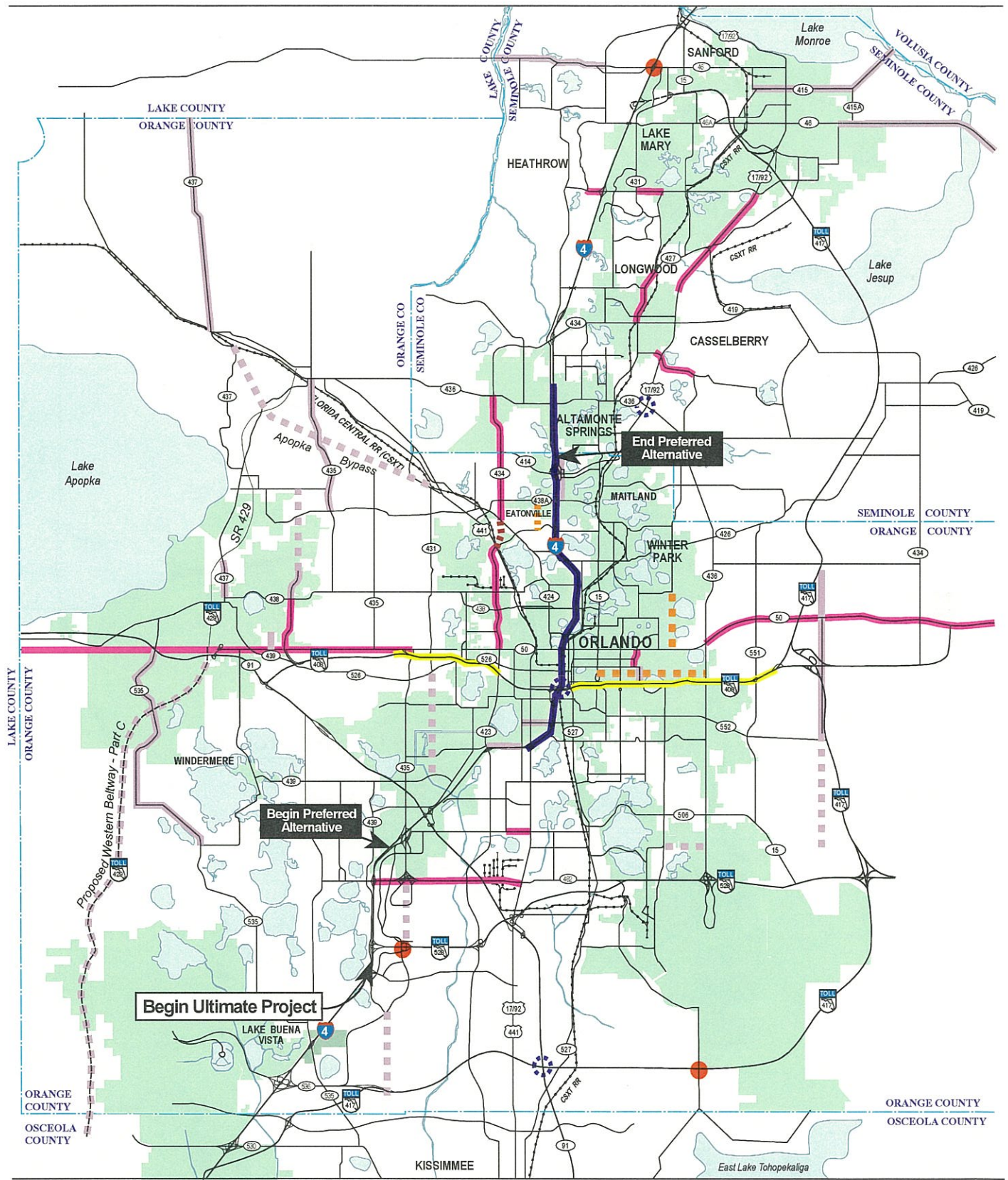


Figure 1-6
Proposed HOV Access



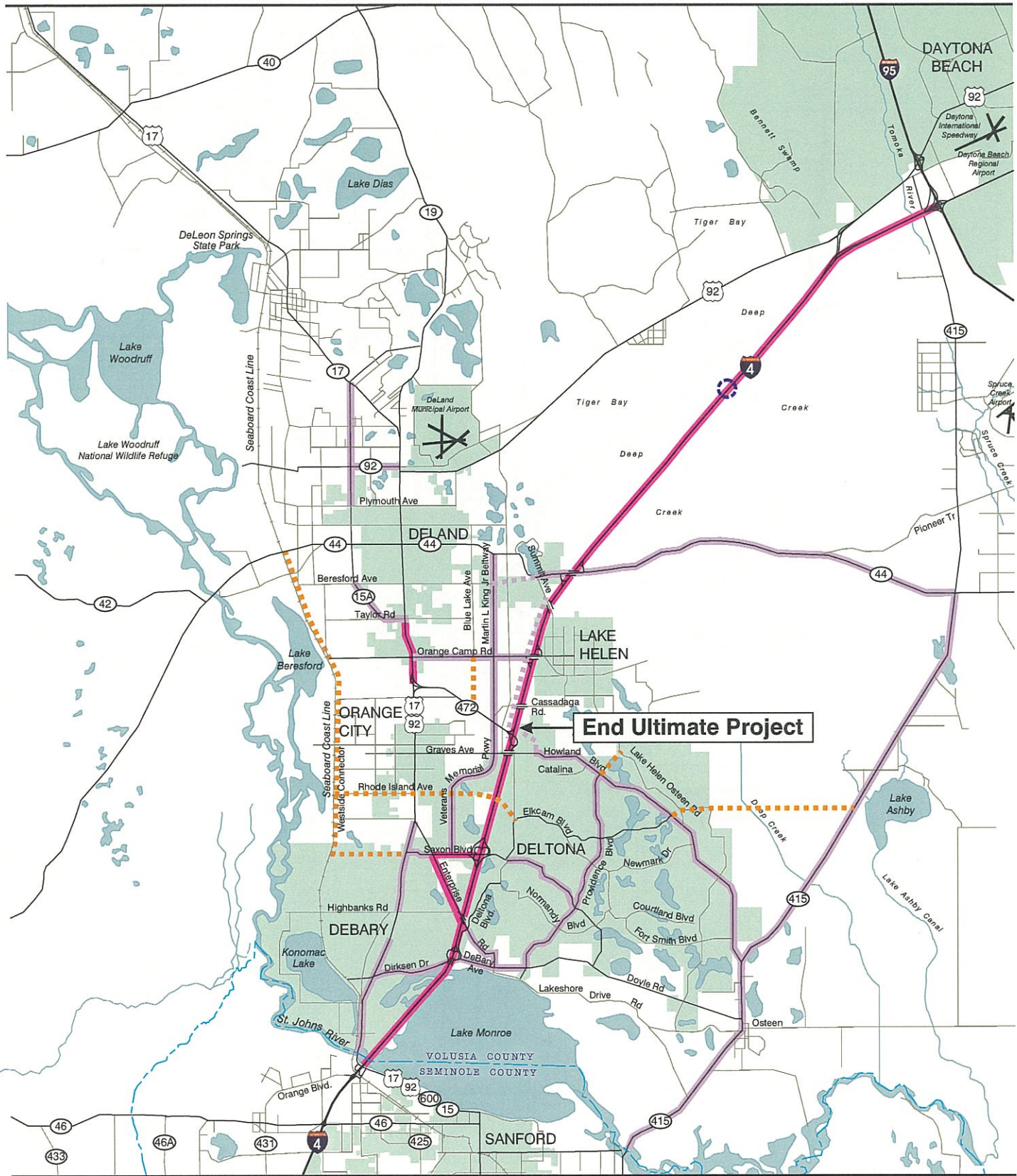
- Widen to 4-Lanes
- Widen to 6-Lanes
- Widen to 8-Lanes
- New 2-Lane Road
- New 4-Lane Road
- New 6-Lane Road
- 6+ Special Use Lanes
- New Interchange
- Interchange Improvements

Source: METROPLAN ORLANDO 2020 LRTP (Adopted December 2000)



METROPLAN ORLANDO 2020 Long Range Transportation Plan

I-4 PD&E Study - Section 2
Orange and Seminole County

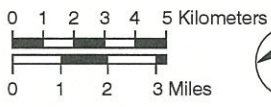
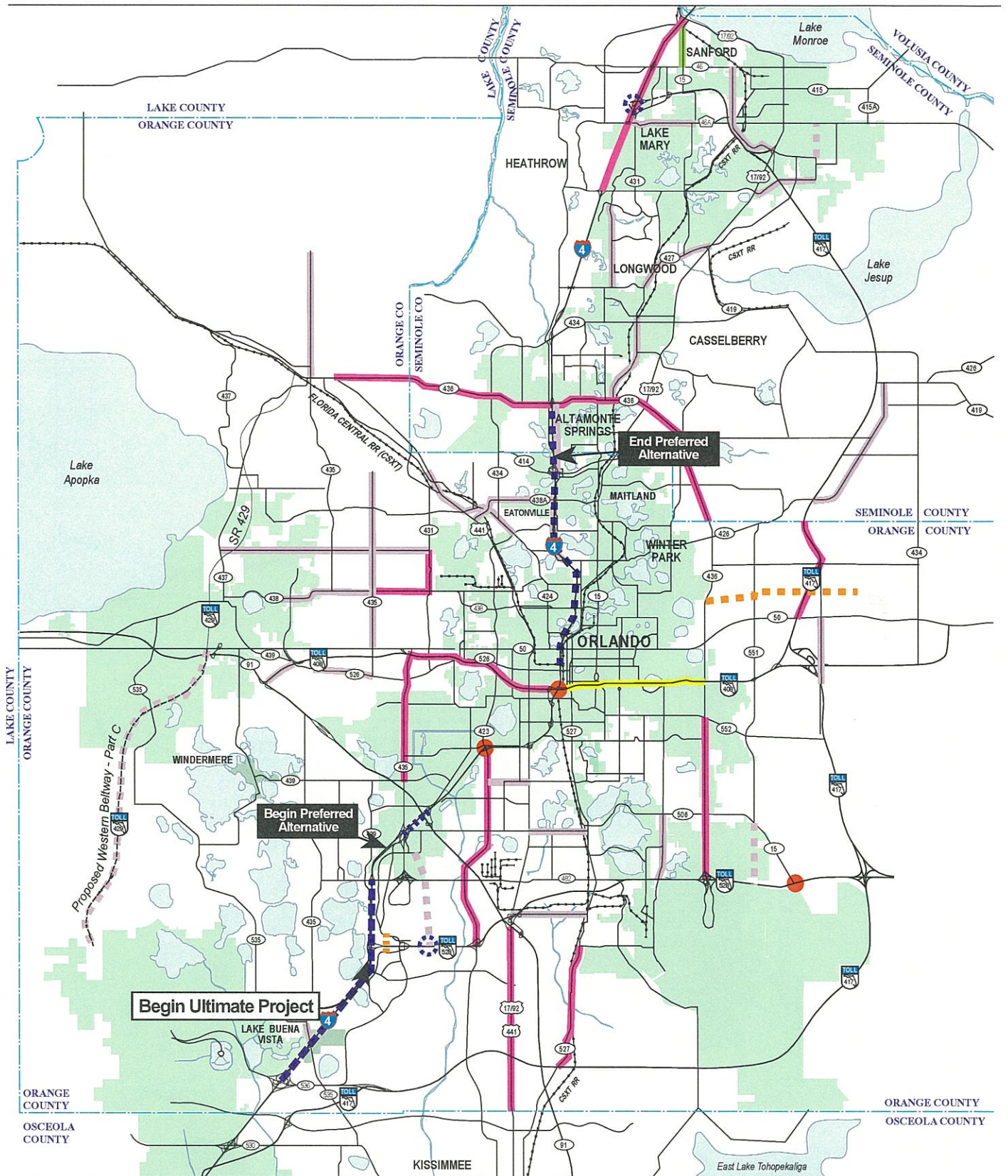


- Widen to 4-Lanes
- Widen to 6-Lanes
- New 2-Lane Road
- New Interchange
- Interchange Improvements

Source: Volusia County MPO 2020 L RTP Refinement (adopted November 2000)

Figure 1-8
Volusia County MPO 2020 Long Range Transportation Plan
 I-4 PD&E Study - Section 2
 Volusia County





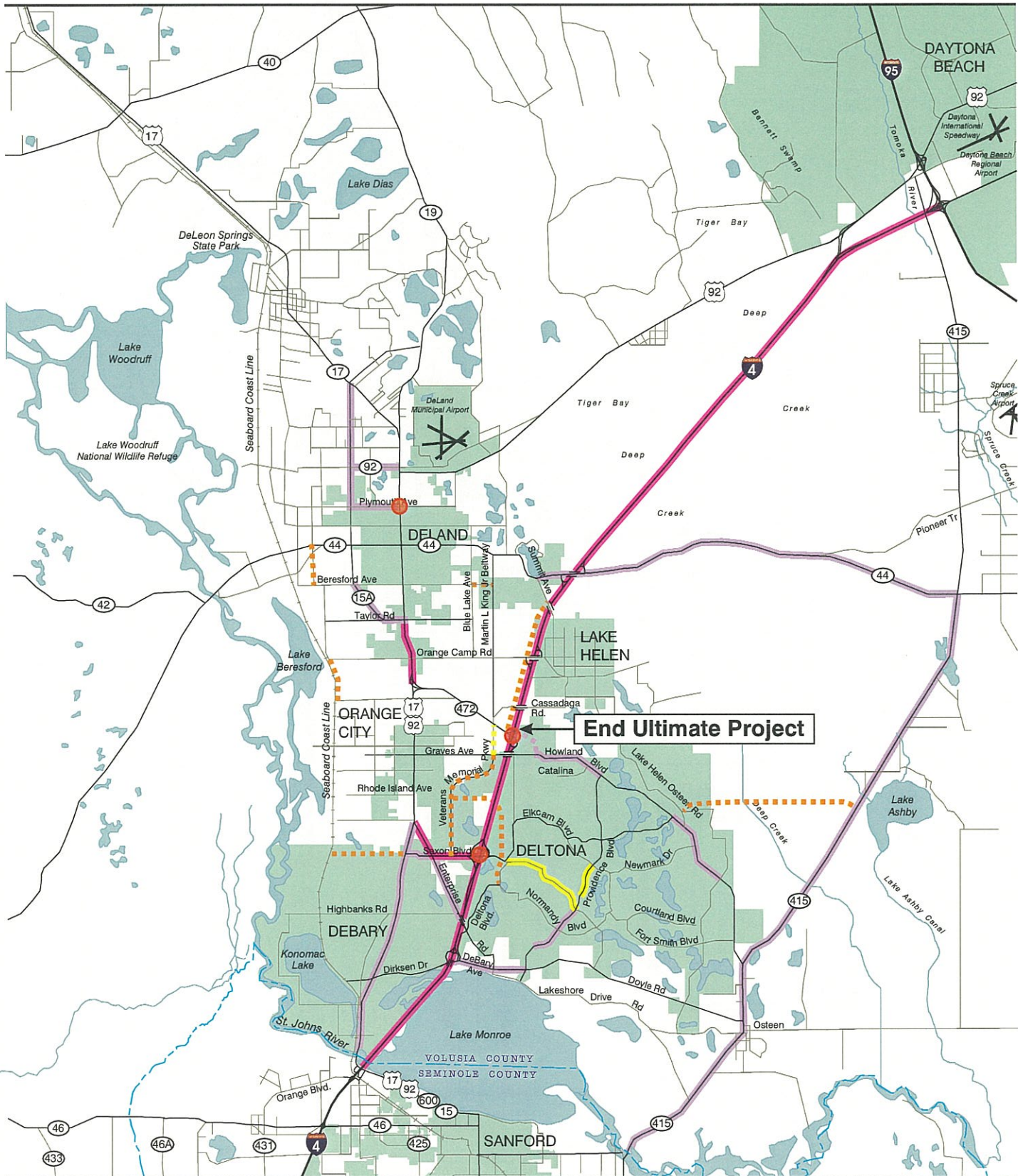
- Widen to 4-Lanes
- Widen to 5-Lanes
- Widen to 6-Lanes
- Widen to 8-Lanes
- New 2-Lane Road
- New 4-Lane Road
- New Interchange
- Interchange Improvements
- Add Auxiliary Lanes

Source: METROPLAN ORLANDO Transportation Improvements Program FY 2001/02 - 2005/06 (Adopted December 2001)



Figure 1-9 METROPLAN ORLANDO Transportation Improvements Program

I-4 PD&E Study - Section 2
Orange and Seminole County



- Widen to 4-Lanes
- Widen to 5-Lanes
- Widen to 6-Lanes
- New 2-Lane Road
- New 4-Lane Road
- New 5-Lane Road
- Interchange Improvements

Source: Volusia County MPO TIP FY 2001/2002-2005/2006 (adopted June 26, 2001; amended January 22, 2002)

Figure 1-10
Volusia County MPO Transportation Improvement Program
 I-4 PD&E Study - Section 2
 Volusia County



**Table 1-2. METROPLAN ORLANDO 2020 Long Range Transportation Plan Update
(adopted December 2000)**

County	Project Name	From	To	Description
Federal and State				
Orange	I-4	Kirkman Road (SR 435)	Maitland Boulevard (SR 414)	6 + special use lanes
Orange	I-4	SR 408 (East/West Expwy)	--	New interchange
Orange	I-4	SR 46	--	Interchange improvements
Orange	Apopka Bypass	US 441 (north of Apopka)	US 441 (at Maitland Blvd Extension)	New 4-lane road
Orange	Kirkman Rd	Sand Lake Rd	SR 528 (East/West Expwy)	New 4-lane road
Seminole	SR 46	Mellonville Ave	Volusia County line	Widen to 4 lanes
Seminole	SR 46	Lake County line	Orange Blvd	Widen to 4 lanes
Orange	SR 50 (Colonial Dr)	Lake County line	Kirkman Rd	Widen to 6 lanes
Orange	SR 50 (Colonial Dr)	SR 436	Old Cheney Hwy	Widen to 6 lanes
Orange	SR 408 (East/West Expwy)	Hiawassee Rd	John Young Pkwy (SR 423)	Widen to 8 lanes
Orange	SR 408 (East/West Expwy)	Rosalind Ave	SR 417 (Central Florida Gnwy)	Widen to 8 lanes
Seminole	SR 415	SR 46	Volusia County line	Widen to 4 lanes
Orange	SR 417 (Central Florida Gnwy)	Boggy Creek Rd	--	Interchange improvements
Orange	SR 417 (Central Florida Gnwy)	Florida's Turnpike	--	New interchange
Orange	SR 423 (John Young Pkwy)	SR 50	Lee Rd	Widen to 6 lanes
Orange	SR 423 (John Young Pkwy)	Lee Rd/Lake Breeze Dr	Forest City Rd	New 6-lane road
Orange	SR 429	Florida's Turnpike	I-4	New 4-lane expwy
Seminole	SR 434	Orange County line	SR 436	Widen to 6 lanes
Orange	SR 434 (Forest City Rd)	Edgewater Dr	Maitland Blvd	Widen to 6 lanes
Seminole	SR 436 (Semoran Blvd)	US 17/92	--	New interchange
Orange	SR 482 (Sand Lake Rd)	Orange Blossom Tr	International Dr	Widen to 6 lanes
Orange	SR 528 (East/West Expwy)	International Dr	--	Interchange improvements
Seminole	US 17/92	Shepard Rd	Lake Mary Blvd	Widen to 6 lanes
Local				
Seminole	CR 427	SR 434	Longwood-Lake Mary Rd	Widen to 6 lanes
Orange	Clarcona Rd	Clarcona-Ocoee Rd	Orange Blossom Tr	Widen to 4 lanes

1-23

**Table 1-2. METROPLAN ORLANDO 2020 Long Range Transportation Plan Update
(adopted December 2000) (Continued)**

County	Project Name	From	To	Description
Orange	Clark Rd	SR 50	Silver Star Rd	Widen to 6 lanes
Orange	Clark Rd	AD Mims Rd	Clarcona-Ocoee Rd	Widen to 4 lanes
Orange	Clark Rd	Clarcona-Ocoee Rd	McCormick Rd	New 4-lane road
Orange	Crystal Lake Dr/Maguire Blvd	South St	Maguire Blvd	Widen to 4 lanes
Orange	Crystal Lake Dr/Maguire Blvd	Maguire Blvd	SR 50	Widen to 6 lanes
Orange	Econlockhatchee Tr	Curry Ford Rd	University Blvd	Widen to 4 lanes
Orange	Econlockhatchee Tr Extension	Lee Vista Blvd	Curry Ford Rd	New 4-lane road
Orange	Good Homes Rd	West SR 50	Silver Star Rd	Widen to 4 lanes
Orange	International Dr Extension	SR 536	SR 535	New 6-lane road
Orange	Kaley St	Rio Grande Ave	I-4	Widen to 4 lanes
Orange	L.B. McLeod Rd	John Young Pkwy	Rio Grande Ave	Widen to 4 lanes
Orange	Lake Destiny Dr	Lee Rd	Kennedy Blvd	New 2-lane road
Seminole	Lake Mary Blvd	Rinehart Rd	Country Club Rd	Widen to 6 lanes
Seminole	Lake Mary Blvd	Markham Woods Rd	I-4	Widen to 6 lanes
Orange	Lee Vista Blvd	Conway Rd	SR 436 (Semoran Blvd)	New 4-lane road
Orange	Naval Training Center (NTC) East-West Rd	Bennett Rd	SR 436 (Semoran Blvd)	New 2-lane road
Orange	NTC North-South Rd	SR 50	Lakemont Ave	New 2-lane road
Orange	North-South Rd	Westwood Blvd Extension	SR 417 (Central Florida Gwny)	New 4-lane road
Orange	Oak Ridge Rd	Texas Ave	US 441	Widen to 6 lanes
Orange	Ocoee-Apopka Rd	Silver Star Rd	Clarcona-Ocoee Rd	Widen to 4 lanes
Orange	Pine Hills Rd Extension (north)	Beggs Rd	Apopka Bypass	New 4-lane road
Orange	Pine Hills Rd Extension (south)	Conroy Rd	Old Winter Garden Rd	New 4-lane road
Orange	Plymouth Sorrento Rd	US 441	Lake County line	Widen to 4 lanes
Seminole	Seminole Blvd	US 17/92	Lake Dr	Widen to 6 lanes
Orange	Westwood Blvd Extension	Westwood Blvd	International Dr	New 4-lane road
Orange	Winter Garden-Vineland (CR 535)	Chase Rd	SR 50	Widen to 4 lanes
Orange	Wymore Rd	Kennedy Blvd/Lake Ave	Seminole County line	Widen to 4 lanes

Table 1-3. Volusia County MPO 2020 Long Range Transportation Plan Refinement
(adopted November 2000)

County	Project Name	From	To	Description
Federal and State				
Volusia	I-4	St Johns River Bridge	I-95	Widen to 6 lanes
Volusia	I-4	Taylor Rd Extension	--	New interchange
Volusia	SR 15A	US 17	Plymouth Ave	Widen to 4 lanes
Volusia	SR 15A	Beresford Ave	US 17/92	Widen to 4 lanes
Volusia	SR 44	Summit Ave	SR 415	Widen to 4 lanes
Volusia	SR 415	SR 44	Seminole County line	Widen to 4 lanes
Volusia	US 17/92	Enterprise Rd	Highbanks Rd	Widen to 4 lanes
Volusia	US 17/92	Plantation Rd	Seminole County line	Widen to 4 lanes
Volusia	US 17/92	SR 15A (Taylor Rd)	SR 472	Widen to 6 lanes
Local				
Volusia	Beresford Ave	Blue Lake Ave	Summit Ave	New 2-lane road
Volusia	Blue Lake Ave	Orange Camp Rd	SR 472	New 2-lane road
Volusia	CR 92	SR 15A	US 17/92	Widen to 4 lanes
Volusia	Deltona Blvd	Enterprise Rd	DeBary Ave	Widen to 4 lanes
Volusia	Dirksen Dr	US 17/92	I-4	Widen to 4 lanes
Volusia	Dirksen/DeBary Rd (realignment)	I-4	Providence Blvd	Widen to 4 lanes
Volusia	Elkcam Blvd	Riverhead Dr	SR 415	New 2-lane road
Volusia	Enterprise Rd	US 17/92	Saxon Blvd	Widen to 6 lanes
Volusia	Enterprise Rd	Saxon Blvd	Main St/Lexington Ave	Widen to 4 lanes
Volusia	Frontage Rd (along I-4)	Summit Ave	SR 472	New 2-lane road
Volusia	Howland Blvd	Deltona High School	SR 415	Widen to 4 lanes
Volusia	Howland Blvd Extension	SR 472/I-4	Deltona High School	New 4-lane road
Volusia	Orange Camp Rd	US 17/92	I-4	Widen to 4 lanes
Volusia	Providence/Idlewise/Sixma	Lake Helen Osteen Rd	Howland Blvd	New 2-lane road
Volusia	Providence Blvd	Howland Blvd	Doyle Rd	Widen to 4 lanes
Volusia	Rhode Island Ave	Westside Connector	US 17/92	New 2-lane road
Volusia	Rhode Island Ave	Veterans Memorial Pkwy	Normandy Blvd	New 2-lane road
Volusia	Saxon Blvd	US 17/92	W of Enterprise Rd	Widen to 4 lanes
Volusia	Saxon Blvd	Enterprise Rd	I-4	Widen to 6 lanes
Volusia	Saxon Blvd	Normandy Blvd	Providence Blvd	Widen to 4 lanes
Volusia	Saxon Blvd	Westside Connector	US 17/92	New 2-lane road
Volusia	Westside Connector	SR 44	Saxon Blvd	New 2-lane road
Volusia	Veterans Memorial Pkwy	SR 44	Harley Strickland Blvd	Widen to 4 lanes

1-25

**Table 1-4. METROPLAN ORLANDO Transportation Improvement Program FY 2001/02 – 2005/06
(adopted December 2001)**

County	Project Name	From	To	Description
Federal and State				
Orange	I-4	Orange Blossom Tr	Seminole County line	Add auxiliary lanes
Orange	I-4	SR 536	SR 528 (Bee Line Expwy)	Add auxiliary lanes
Orange	I-4	Kirkman Rd	W of Florida's Turnpike	Add auxiliary lanes
Orange	I-4	SR 528 (Bee Line Expwy)	Sand Lake Rd	Add auxiliary lanes
Orange	I-4	John Young Pkwy	--	Interchange improvements
Orange	I-4	SR 408 (East/West Expwy)	--	Interchange improvements
Seminole	I-4	Orange County line	SR 436	Add auxiliary lanes
Seminole	I-4	SR 417 (Central Florida Gnwy)	--	New interchange
Seminole	I-4	W of Lake Mary Blvd	W of US 17/92	Widen to 6 lanes
Seminole	Aloma Ave (SR 426)	SR 417 (Central Florida Gnwy)	Mitchell Hammock Rd	Widen to 4 lanes
Orange	Conway Rd	SR 528 (Bee Line Expwy)	Hoffner Rd	Widen to 4 lanes
Orange	Goldenrod Rd Extension	SR 528 (Bee Line Expwy)	SR 15	New 4-lane road
Orange	Kirkman Rd	S of Conroy Rd	SR 50	Widen to 6 lanes
Orange	Orange Blossom Tr	Osceola County line	Taft-Vineland Rd	Widen to 6 lanes
Orange	Silver Star Rd	W of Clarke Rd	Apopka-Vineland Rd	Widen to 4 lanes
Orange	Silver Star Rd	Apopka-Vineland Rd	Hiwassee Rd	Widen to 6 lanes
Orange	SR 408 (East/West Expwy)	W of Kirkman Rd	I-4	Widen to 6 lanes
Orange	SR 408 (East/West Expwy)	Rosalind Ave	SR 436	Widen to 8 lanes
Orange	SR 417 (Central Florida Gnwy)	SR 50	Seminole County line	Widen to 6 lanes
Seminole	SR 417 (Central Florida Gnwy)	E of US 17/92	E of Rinehart Rd	New 4-lane expwy
Orange	SR 429	Seidel Rd	SR 50	New 4-lane expwy
Orange	SR 436 (Semoran Blvd)	US 441	Seminole County line	Widen to 6 lanes
Orange	SR 436 (Semoran Blvd)	SR 528 (Bee Line Expwy)	Curry Ford Rd	Widen to 6 lanes
Orange	SR 528 (Bee Line Expwy)	Narcoossee Rd	--	Interchange improvements
Local				
Seminole	Airport Blvd	US 17/92	SR 46	Widen to 4 lanes
Orange	All American Blvd	Clarcona-Ocoee Rd	Kennedy Blvd	Widen to 4 lanes
Orange	Apopka Blvd	Piedmont-Wekiva Rd	US 441	Widen to 4 lanes
Orange	Clarcona-Ocoee Rd	Ocoee-Apopka Rd	Hiwassee Rd	Widen to 4 lanes

Table 1-4. METROPLAN ORLANDO Transportation Improvement Program FY 2001/02 – 2005/06
(adopted December 2001) (Continued)

County	Project Name	From	To	Description
Seminole	CR 46A	Rinehart Rd	Old Lake Mary Rd	Widen to 4 lanes
Seminole	CR 427	SR 436	North St	Widen to 4 lanes
Seminole	CR 427	US 17/92	Lake Mary Blvd	Widen to 4 lanes
Orange	CR 535	Apopka-Vineland Rd	Buena Vista Dr	Widen to 4 lanes
Orange	East-West Roadway	SR 436	Dean Rd	New 2-lane road
Orange	Econlockhatchee Tr	Lake Underhill Rd	Trevarthon Rd	Widen to 4 lanes
Orange	Edgewater Dr	Pine Hills Rd	Clarcona-Ocoee Rd	Widen to 4 lanes
Seminole	E Lake Mary Blvd	US 17/92	Airport Entrance	Widen to 4 lanes
Seminole	E Lake Mary Blvd	Airport Entrance	SR 46/SR 415	New 4-lane road
Orange	Hiawassee Rd	Clarcona-Ocoee Rd	Beggs Rd	Widen to 4 lanes
Orange	Hiawassee Rd	Beggs Rd	US 441	New 4-lane road
Orange	Holden Ave	John Young Pkwy	US 441	Widen to 4 lanes
Orange	John Young Pkwy (SR 423)	SR 528 (Bee Line Expwy)	I-4	Widen to 6 lanes
Orange	Kennedy Blvd	Forest City Rd	Wymore Rd	Widen to 4 lanes
Seminole	Lake Emma Rd	Sand Pond Rd	Longwood Hills Rd	Widen to 4 lanes
Orange	Lancaster Rd	US 441	Orange Ave	Widen to 4 lanes
Orange	Landstreet Rd	US 441	Orange Ave	Widen to 4 lanes
Orange	Old Winter Garden Rd	Hemple Ave	Friendship Dr	Widen to 4 lanes
Orange	Old Winter Garden Rd	Apopka-Vineland Rd	Hiawassee Rd	Widen to 4 lanes
Orange	Orange Ave	SR 417 (Central Florida Gwvy)	Taft-Vineland Rd	Widen to 6 lanes
Orange	Pine Hills Rd	Silver Star Rd	North Ln	Widen to 6 lanes
Orange	Rock Springs Rd	Ponkan Rd	Kelly Park Rd	Widen to 4 lanes
Orange	Taft-Vineland Rd	US 441	Orange Ave	Widen to 4 lanes
Orange	Universal Blvd	Orangewood Blvd	–	New interchange
Orange	Universal Blvd Extension	Universal Blvd	SR 528 (Bee Line Expwy)	New 4-lane road
Seminole	Upsala Rd (CR 15)	SR 46	US 17/92	Widen to 5 lanes
Orange	Westwood Connector	Westwood Blvd	Orange County Convention Ctr	New 2-lane road
Orange	Wymore Rd	Fairbanks Ave	Kennedy Blvd	Widen to 4 lanes
Seminole	Wymore Rd	Orange County line	SR 436	Widen to 4 lanes

Table 1-5. Volusia County MPO Transportation Improvement Program FY 2001/2002 – 2005/2006
(adopted June 26, 2001; amended January 22, 2002)

County	Project Name	From	To	Work Description
Federal and State				
Volusia	I-4	St Johns River Bridge	I-95	Widen to 6 lanes
Volusia	I-4	Saxon Blvd	--	Interchange improvements
Volusia	I-4	SR 472	--	Interchange improvements
Volusia	SR 15A	Plymouth Ave	US 17 (SR 15)	Widen to 4 lanes
Volusia	SR 15A	US 17/92	Beresford Ave	Widen to 4 lanes
Volusia	SR 44	CR 4139 (Summit Ave)	SR 415	Widen to 4 lanes
Volusia	SR 415	Seminole County line	SR 44	Widen to 4 lanes
Volusia	US 17/92	Old DeLand Rd	Enterprise Rd	Widen to 4 lanes
Volusia	US 17/92	SR 472	SR 15A	Widen to 6 lanes
Local				
Volusia	Beresford Ave	Blue Lake Ave	Kepler Rd	New 2-lane road
Volusia	CR 92	SR 15A	US 17/92	Widen to 4 lanes
Volusia	DeBary Ave/Doyle Rd	I-4	Providence Blvd	Widen to 4 lanes
Volusia	Elkcam Blvd Extension	Riverhead Dr	SR 415	New 2-lane road
Volusia	Enterprise Rd	Saxon Blvd	US 17/92	Widen to 6 lanes
Volusia	Enterprise Rd	Saxon Blvd	Deltona Blvd	Widen to 4 lanes
Volusia	Fatio Rd Extension	SR 44	Beresford Ave	New 2-lane road
Volusia	Frontage Rd (along I-4)	SR 472	CR 4139 (Summit Ave)	New 2-lane road
Volusia	Harley Strickland Blvd Extension	Veterans Memorial Pkwy	Saxon Blvd	New 2-lane road
Volusia	Howland Blvd	Deltona High School	Providence Blvd	Widen to 4 lanes
Volusia	Howland Blvd	Elkcam Blvd	Courtland Blvd	Widen to 4 lanes
Volusia	Plymouth Ave	SR 15A	US 17/92	Widen to 4 lanes
Volusia	Plymouth Ave	US 17/92	--	Interchange improvements
Volusia	Providence Blvd	Alexander Ave	Saxon Blvd	Widen to 4 lanes
Volusia	Providence Blvd	Fort Smith Blvd	Tivoli Dr	Widen to 5 lanes
Volusia	Providence Blvd	Fort Smith Blvd	Elkcam Blvd	Widen to 4 lanes
Volusia	Rhode Island Extension	Veterans Memorial Pkwy	Normandy Blvd	New 2-lane road
Volusia	SR 472/Howland Extension	I-4	Howland Blvd	New 4-lane road
Volusia	Saxon Blvd	Enterprise Rd	I-4	Widen to 6 lanes
Volusia	Saxon Blvd	Normandy Blvd	Tivoli Dr	Widen to 5 lanes
Volusia	Saxon Blvd	US 17	Enterprise Rd	Widen to 4 lanes
Volusia	Saxon Blvd Extension	US 17	Westside Connector	New 2-lane road
Volusia	Veterans Memorial Pkwy	Saxon Blvd	Graves Ave	New 2-lane road
Volusia	Veterans Memorial Pkwy Extension	SR 472	Graves Ave	New 5-lane road
Volusia	Westside Connector	Fatio Rd	Hamilton Ave	New 2-lane road

Table 1-6. Orlando-Orange County Expressway Authority Five-Year Work Plan FY 02 – FY 06
(Adopted July 25, 2001)

County	Project Name	From	To	Work Description
Existing System Improvements Summary				
Orange	SR 408 (East/West Expwy)	W of Kirkman Rd	I-4	Widen to 6 lanes
Orange	SR 408 (East/West Expwy)	Rosalind Ave	SR 417	Widen to 8 lanes
Orange	SR 417 (Central Florida Gnwy)	SR 50	Seminole County Line	Widen to 6 lanes
System Expansion Projects Summary				
Orange	SR 429	Seidel Rd	SR 50	New 4-lane expwy
Orange	SR 429 Northern Extension	US 441	SR 44	New 4-lane expwy
Interchange Projects Summary				
Orange	SR 408 (East/West Expwy)	I-4	--	Interchange improvements
Orange	SR 417 (Central Florida Gnwy)	Florida's Turnpike	--	New interchange
Orange	SR 417 (Central Florida Gnwy)	Lee Vista Blvd	--	New interchange
Orange	SR 528 (Bee Line Expwy)	Narcoossee Rd	--	Interchange improvements
Non-System Projects Summary				
Orange	Goldenrod Rd Extension	SR 15	SR 528 (Bee Line Expwy)	New 4-lane road

- LOS B is in the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver within the traffic stream from LOS A.
- LOS C is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream.
- LOS D represents high-density, but stable, flow. Speed and freedom to maneuver are severely restricted, and the driver or pedestrian experiences a generally poor level of comfort and convenience.
- LOS E represents operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform value. Freedom to maneuver within the traffic stream is extremely difficult, and it is generally accomplished by forcing a vehicle or pedestrian to "give way" to accommodate such maneuvers.
- LOS F is used to define forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount that can traverse the point.

The following sections summarize existing capacity constraints and projected future capacity constraints in relation to the need for the proposed improvements. A detailed discussion of existing and future traffic conditions is provided in the *I-4 System Access Modification Report (SAMR)* (April 2000) and the *I-4 SAMR Update* (May 2002). For the purposes of the SAMR, the limits of the I-4 PD&E Studies were combined to provide an in-depth understanding of the operation of the I-4 corridor from CR 532 in Osceola County to I-95 in Volusia County. However, only traffic analyses for the Ultimate study limits of the I-4 PD&E Study – Section 2 have been provided in these reports.

1.3.2.1 Existing Conditions

Traffic capacity analyses were performed as part of the SAMR (April 2000) to ascertain the existing (1996) operating conditions and LOS along the I-4 corridor and interchanging arterials. The LOS analyses were completed in accordance with the procedures outlined in the *Highway Capacity Manual*, Transportation Research Board Special Report 209, 1994.

Capacity analyses were conducted for the existing freeway, intersections, and cross streets. The freeway analyses included ramp merges and diverges, weaving sections, and basic freeway segments. The intersection analyses included ramp termini and intersections adjacent to the ramp termini for the various crossroads along I-4. Cross street analyses consisted of ramp merges and diverges and weaving sections.

Existing traffic conditions in the project study area are discussed in the following paragraphs.

1.3.2.1.1 Freeway

The results of the freeway operational analyses indicate that sections of the freeway are operating near capacity and others are operating over capacity, resulting in excessive delays and congestion. Of the 23 basic freeway segments analyzed, two operate at LOS D or better, four operate at LOS E, and 17 operate at LOS F. Figure 1-11 presents the LOS for the freeway sections. As shown on Figure 1-11, I-4 is operating at LOS F from SR 528 (Bee Line Expressway) to SR 436, from SR 434 to Lake Mary Boulevard, and from US 17-92 to Dirksen Drive/DeBary Avenue. LOS E conditions occur from SR 436 to SR 434 and from Lake Mary Boulevard to US 17-92. LOS D conditions occur from Dirksen Drive/DeBary Avenue to SR 472, the end of the project limits.

The results of the ramp junction analyses indicate that the majority of the ramps are operating over capacity, resulting in queues on the I-4 mainline and associated cross streets. Of the 98 ramp junctions analyzed, 22 operate at LOS D or better, two operate at LOS E, and 74 operate at LOS F. Both major merge/diverge locations operate under capacity. Figure 1-11 shows the I-4 interchanges that operate over capacity. It should be noted that some of the failing ramp junctions for the interchanges shown on Figure 1-11 operate at LOS E or better. However, if a majority of ramp junctions at an interchange operate at LOS F, the interchange is considered to be over capacity.

Five weaving sections including Michigan Street to Kaley Street (eastbound and westbound), Kaley Street to SR 408 (East/West Expressway) (eastbound and westbound), and Anderson Street to Robinson Street (eastbound) were also analyzed. The results of the analyses indicate that the Anderson Street to Robinson Street weave is operating at LOS D; the Kaley Street to SR 408 (East/West Expressway) weaves are operating at LOS E; and the Michigan Street to Kaley Street weaves are operating at LOS F.

1.3.2.1.2 Intersections

A total of 91 intersections were analyzed to determine operating conditions in the peak AM and PM periods. Seventy-three intersections were signalized and 18 were unsignalized.

The signalized intersection analyses for the AM and PM peak periods show the majority of the intersections operating with a stable flow. During the AM peak period, 43 intersections operate at LOS D or better, one operates at LOS E, and 29 operate at LOS F. The PM peak period has similar results. Forty-seven of the intersections operate at LOS D or better and 26 operate at LOS F.

The unsignalized intersection analyses also determined that the majority of the intersections operate with a stable flow for both the AM and the PM peak periods. During the AM peak period, 15 intersections operate at LOS D or better and three intersections operate at LOS F. For the PM peak period, 12 intersections operate at LOS D or better, one operates at LOS E, and five operate at LOS F.

1.3.2.1.3 Crossroads

The existing cross street ramp analyses indicate that most of the ramps and weaving sections on the cross streets operate at an acceptable LOS. Of the 40 ramp junctions analyzed, 38 are operating at acceptable LOS (LOS D or better), and two are operating over capacity. Of the six weaving sections analyzed, three operate at LOS D and three operate at LOS F.

1.3.2.2 Future Conditions

Traffic capacity analyses were performed as part of the *SAMR* (April 2000) and *SAMR Update* (May 2002) to ascertain the future (2020) operating conditions and LOS along the I-4 corridor and

interchanging arterials. The LOS analyses were completed in accordance with the procedures outlined in the *Highway Capacity Manual*, Transportation Research Board Special Report 209, 1994.

Capacity analyses were conducted for No Build and Build scenarios. The future roadway network for the 2020 No Build scenario includes all the improvements identified in the adopted LRTPs (refer to Section 1.3.1.3.1) except those improvements identified as part of this study. The 2020 Build scenario includes all the improvements identified in the No Build scenario and the recommended improvements from this study (refer to Chapter 2 Alternative Analysis, for a description of the proposed improvements).

The operational analyses were conducted for the freeway, intersections, and cross streets. The freeway analyses included ramp merges and diverges, weaving sections, and basic freeway segments. The intersection analyses included ramp termini and intersections adjacent to the ramp termini for the various crossroads along I-4. Cross street analyses consisted of ramp merges and diverges and weaving sections.

Future traffic conditions for the No Build and Build scenarios are discussed in the following paragraphs.

1.3.2.2.1 Freeway

No Build Scenario

The results of the freeway operational analyses for 2020 No Build scenario indicate that I-4 will operate over capacity in the majority of the Ultimate study area. Of the 27 basic freeway segments analyzed, five will operate at LOS D or better, two will operate at LOS E, and 20 will operate at LOS F. Figure 1-12 presents the LOS along I-4 for the freeway segments. As shown, I-4 will operate at LOS F from SR 528 (Bee Line Expressway) to Florida's Turnpike, from Conroy Road to John Young Parkway, from Orange Blossom Trail (US 441) to Lake Mary Boulevard, and from US 17-92 to SR 472. LOS E will occur from Florida's Turnpike to Conroy Road (eastbound), from John Young Parkway to Orange Blossom Trail and from Lake Mary Boulevard to CR 46A. LOS D will occur from Conroy Road to Florida's Turnpike (westbound) and from CR 46A to US 17-92. Finally, LOS C is projected to occur from CR 46A to SR 46 (eastbound).

The results of the freeway ramp junction analyses for the 2020 No Build conditions indicate that the majority of the ramps will operate over capacity. The analyses were conducted for 88 ramp junctions along the Ultimate study area. Of the 88 ramp junctions analyzed, five will operate at LOS D or better, one will operate at LOS E, and 82 will operate at LOS F. Of the 18 major merge/diverge locations, 12 are projected to operate under capacity and six are projected to operate over capacity. Figure 1-12 presents the interchanges that will operate over capacity in 2020. As shown in Figure 1-12, most of the interchanges along the I-4 corridor within the study area will operate over capacity. The only I-4 interchanges that will not operate over capacity in 2020 include CR 46A, SR 417, and SR 46. It should be noted that some of the ramp junctions for the interchanges shown on Figure 1-12 operate at LOS E or better. However, since the majority of the ramp junctions at an interchange operate at LOS F, the interchange is considered over capacity.

Eight weave sections were analyzed including Kirkman Road to Florida's Turnpike (eastbound), Florida's Turnpike to Conroy Road (eastbound and westbound), Michigan Street to Kaley Street (eastbound and westbound), Kaley Street to SR 408 (East/West Expressway) (eastbound and westbound), and Anderson Street to Robinson Street. Of these eight weave sections, three will operate at LOS D or better, one will operate at LOS E, and four will operate at LOS F by 2020.

Build Scenario

Capacity calculations were conducted for the HOV and GULs for the Design Year (2020) Build conditions. The following paragraphs discuss the results of the capacity analyses for the HOV lanes and GULs, respectively.

HOV Lanes

The results of the HOV analysis indicate all the basic freeway segments and the ramp merges and diverges on the HOV lanes will operate at acceptable levels of service. All the 19 basic freeway segments analyzed will operate at LOS D or better in 2020. In addition, all 46 ramp junctions analyzed will operate at LOS D or better in 2020.

Figure 1-13 presents the generalized LOS for the HOV lanes along the project corridor for 2020. As shown in Figure 1-13, the HOV lanes will operate at LOS A from Lake Mary Boulevard to CR 46A; LOS B from SR 528 (Bee Line Expressway) to west of Sand Lake Road, from Central Parkway to west of Lake Mary Boulevard, from CR 46A to Orange Boulevard, and from Enterprise Road to the terminus of the HOV lanes west of SR 472; LOS C from John Young Parkway to Ivanhoe Boulevard, from east of Lee Road to Central Parkway, and from Orange Boulevard to Enterprise Road; and finally at LOS D from west of Sand Lake Road to John Young Parkway and from Ivanhoe Boulevard to east of Lee Road. None of the HOV-access only ramps, direct-access ramps, or slip ramps are projected to operate over capacity in 2020.

General Use Lanes

The analysis performed for the basic freeway segments, ramp merges and diverges, and weaving section operations for the GULs indicate that most of the basic freeway segments and ramp junctions are projected to operate at LOS E or better. Of the 37 basic freeway segments analyzed, 16 are projected to operate at LOS D or better, 14 at LOS E, and seven at LOS F. A total of 88 ramp junctions were analyzed to determine LOS at the interchanges. Of the 47 ramp junctions analyzed, 32 are projected to operate at LOS D or better and 15 are projected to operate at LOS F. Of the 41 major merge/diverge locations, 25 are projected to operate under capacity and 16 are projected to operate over capacity. Analysis performed on the weave sections along the project study area indicate that of the 25 weave sections, two will operate at LOS D or better, nine will operate at LOS E, and 14 will operate at LOS F in 2020.

Figure 1-14 presents the projected LOS for the I-4 general use lanes and the interchanges operating over capacity (LOS F) for 2020 within the Ultimate project corridor. As shown in Figure 1-14, I-4 will operate at LOS D or better from Conroy Road to Florida's Turnpike (westbound), from Ivanhoe Boulevard to SR 50 (Colonial Drive) (westbound), from Lake Mary Boulevard to US 17-92, and from Dirksen Drive/DeBary Avenue to SR 472. LOS E will exist from Florida's Turnpike to Kirkman Road (westbound), from John Young Parkway to South Street (eastbound), from John Young Parkway to Kaley Street/Michigan Street (eastbound), from Gore Street to SR 408 (eastbound) from SR 50 (Colonial Drive) to Princeton Street (eastbound), from Maitland Boulevard to Lake Mary Boulevard, and from Orange Boulevard to Dirksen Drive/DeBary Avenue. Finally, I-4 is projected to operate over capacity (LOS F) from SR 528 (Bee Line Expressway) to Kirkman Road, from Conroy Road to John Young Parkway, from Kaley Street/Michigan Street to SR 50 (Colonial Drive) (eastbound), from SR 50 to South Street (westbound), from Kaley Street/Michigan Street to Gore Street (eastbound), from SR 408 to SR 50 (eastbound), from Princeton Street to Maitland Boulevard (eastbound), from Princeton Street to SR 426 (westbound), and from Lee Road to Maitland Boulevard (eastbound). These segments are expected to fail due to the high demand volumes and limited capacity of the GULs in these areas.

I-4 interchanges projected to operate over capacity (LOS F) in 2020 with the Build scenario include SR 528 (Bee Line Expressway), Sand Lake Road, Universal Boulevard, Kirkman Road, Conroy Road, John Young Parkway, Orange Blossom Trail, Princeton Street, Par Street, Fairbanks Avenue, Lee Road, Maitland Boulevard, and SR 434. Refer to Figure 1-14 for the locations of the interchanges operating over capacity.

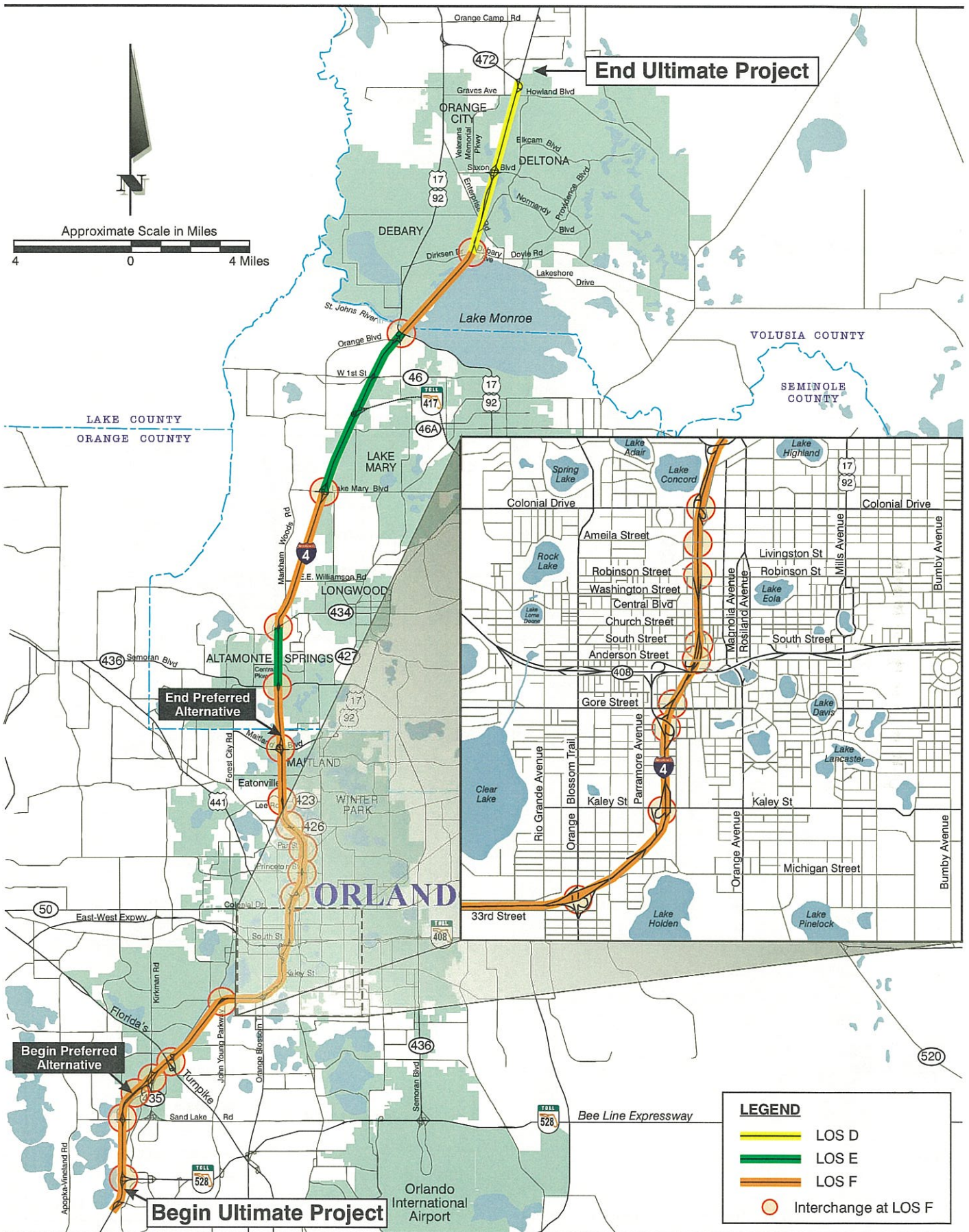


Figure 1-11
Existing Level of Service
on I-4 and Interchanges Over Capacity
I-4 PD&E Study - Section 2

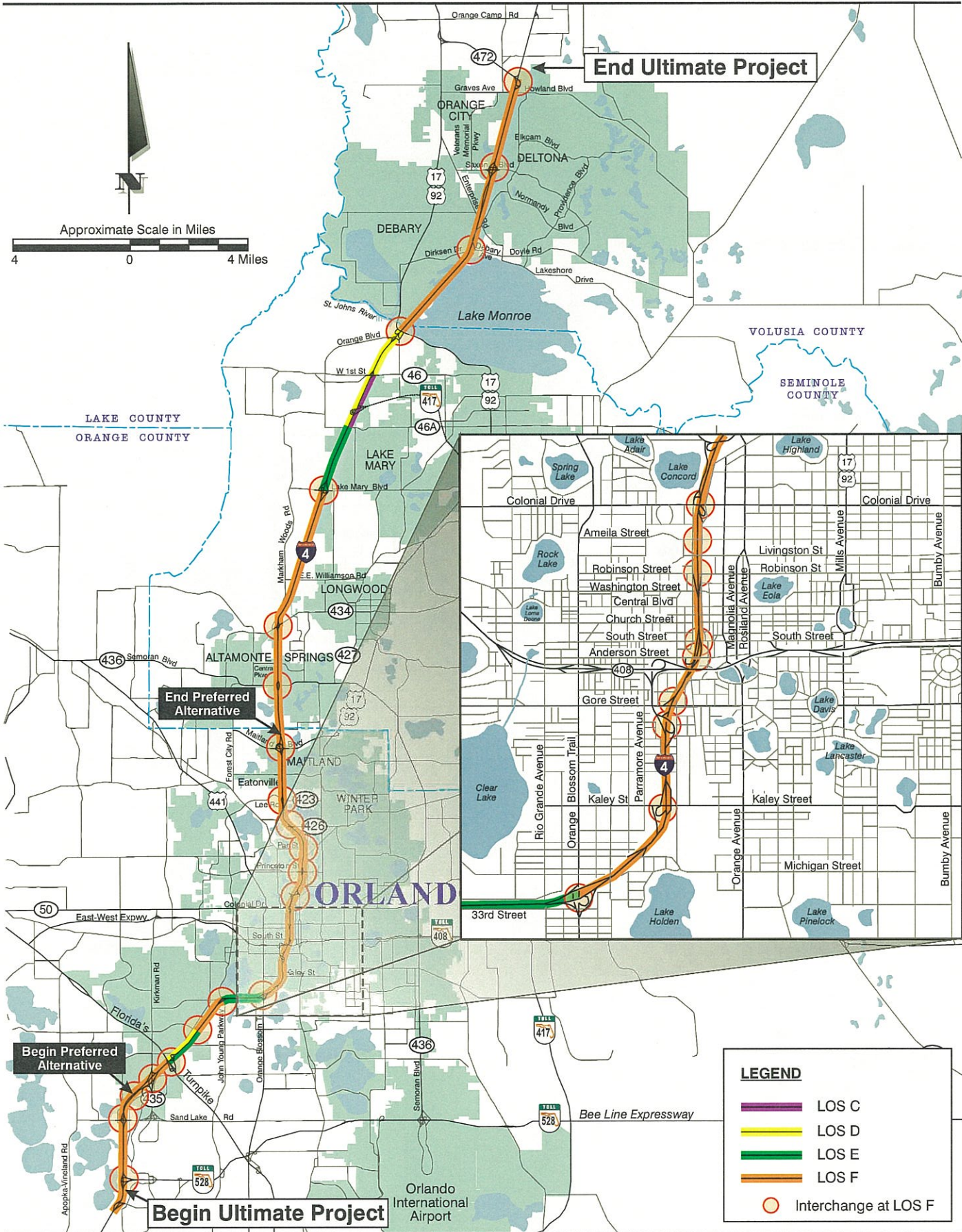


Figure 1-12
Design Year (2020) No-Build Level of Service
on I-4 and Interchanges Over Capacity
I-4 PD&E Study - Section 2



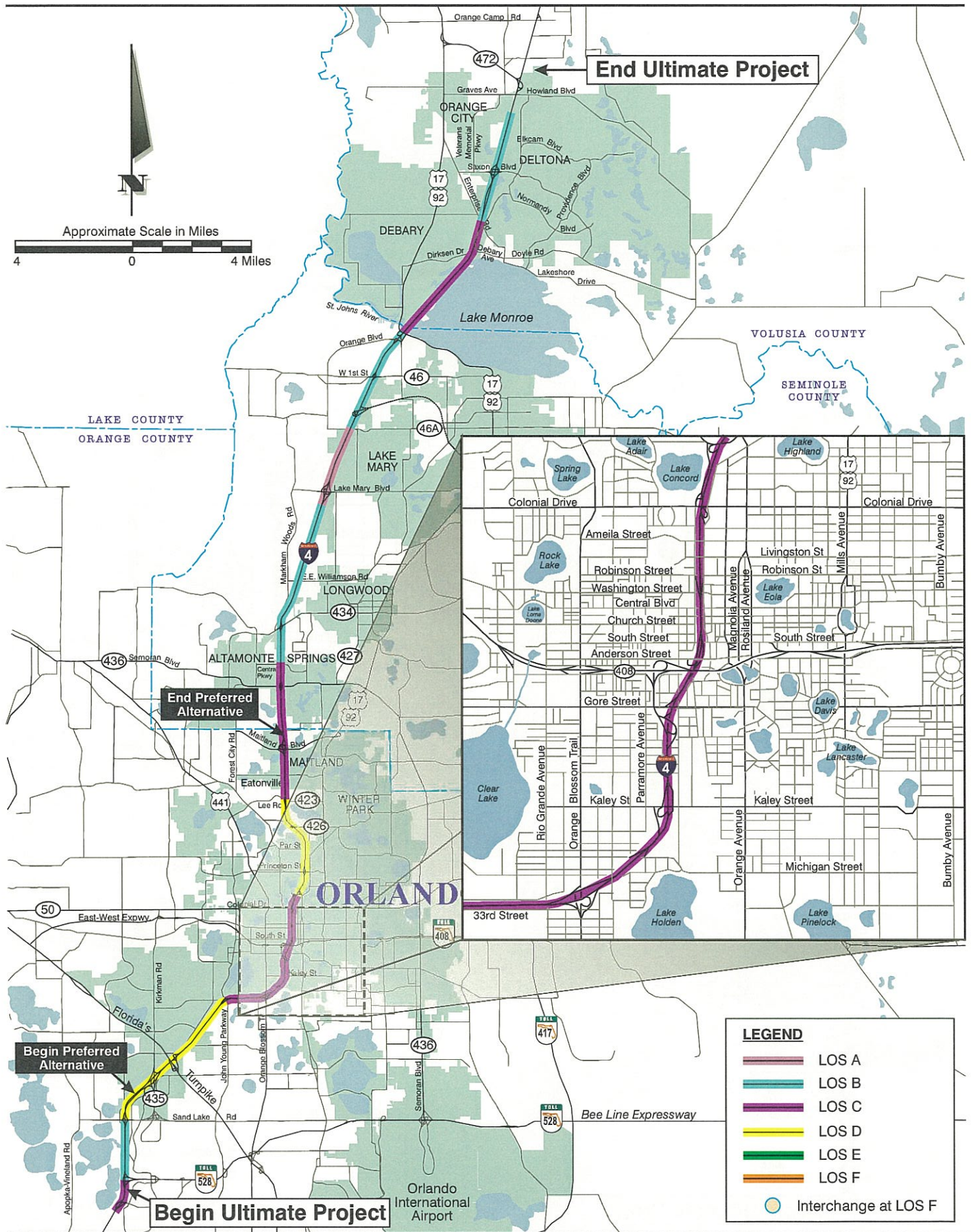


Figure 1-13
Design Year (2020) Build HOV Lanes Level of Service
on I-4 and Interchanges Over Capacity
I-4 PD&E Study - Section 2

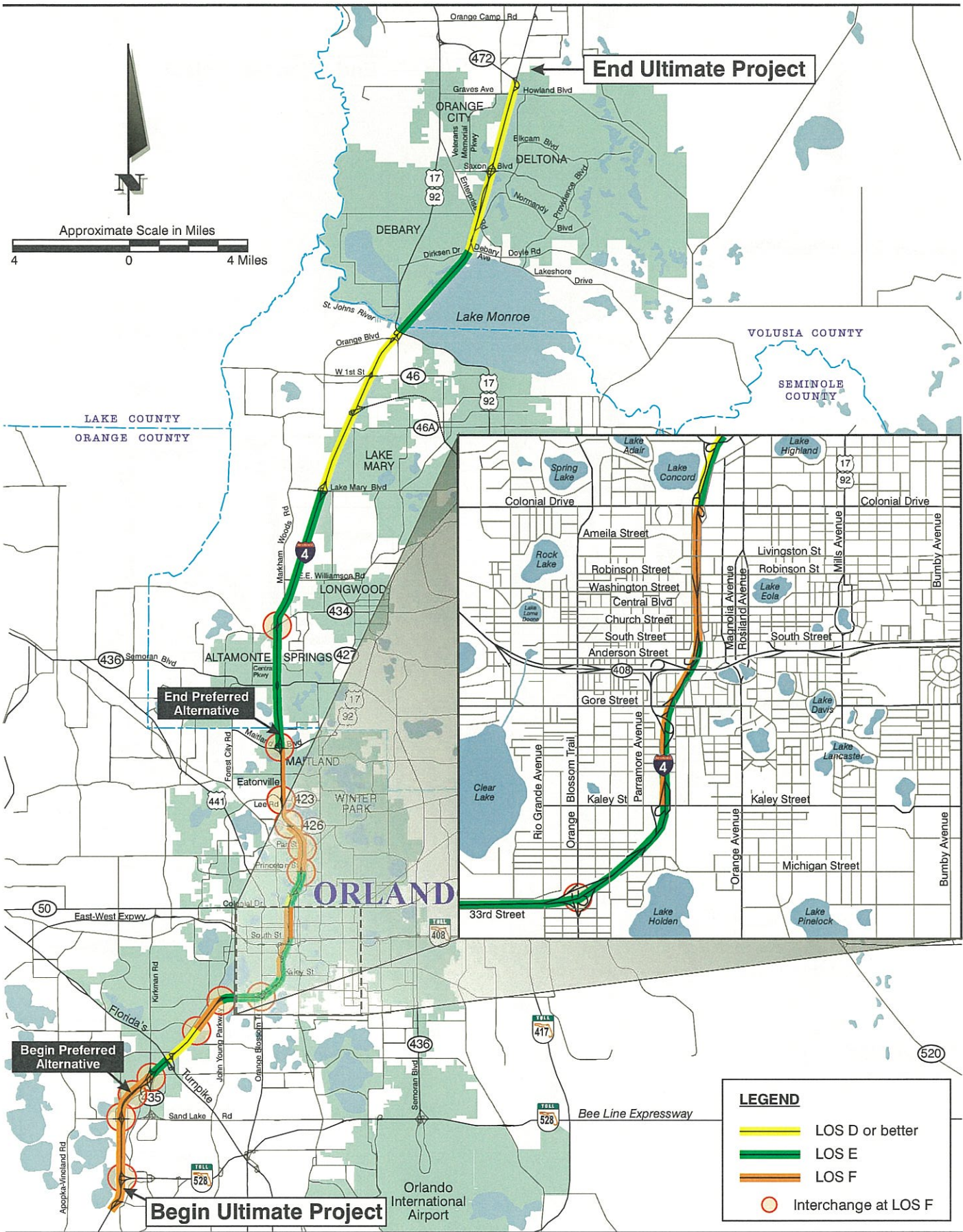


Figure 1-14
Design Year (2020) Build General Use Lanes Level of Service
on I-4 and Interchanges Over Capacity
I-4 PD&E Study - Section 2



1.3.2.2 Intersections

No Build Scenario

A total of 103 intersections were analyzed to determine operating conditions in the peak AM and PM period for 2020 No Build scenario. All of the intersections analyzed were signalized. The results of the analyses indicate that without the proposed improvements, the majority of the intersections along the project corridor are expected to operate below the LOS D standard. For the AM peak period, 37 intersections will operate at LOS D or better, four at LOS E, and 62 at LOS F. The results of the analyses for the PM peak period were similar to the AM period. Of the 103 intersections analyzed, 39 will operate at LOS D or better, and 64 will operate at LOS F.

Build Scenario

The intersection analysis for the Build scenario yielded results similar to the No Build scenario for 2020. A total of 100 intersections were analyzed for the peak AM and PM period. As with the No Build scenario, all of the intersections were signalized. The results of the analyses indicate that with the proposed improvements, the majority of the intersections along the project corridor are expected to operate over capacity (LOS F). For the AM peak period, 35 intersections will operate at LOS D or better, and 65 at LOS F. The results of the analyses for the PM peak period were similar to the AM period. Of the 100 intersections analyzed, 35 will operate at LOS D or better, one will operate at LOS E, and 64 will operate at LOS F. The intersections are expected to fail due to the expected high demand volumes along the I-4 Ultimate project corridor.

1.3.2.3 Crossroads

No Build Scenario

The results of the cross street ramp merge, diverge, and weave analyses for the No Build scenario indicate that approximately 40 percent of the ramp junctions will operate near or over capacity (LOS F) and 83 percent of the weave sections will operate near or over capacity (LOS F). Of the 38 ramp junctions analyzed, 23 will operate at LOS D or better, one at LOS E, and 14 at LOS F without the proposed improvements. Of the six weave sections analyzed, one will operate at LOS D or better, two will operate at LOS E, and three will operate at LOS F without the proposed improvements.

Build Scenario

The results of the cross street ramp merge, diverge, and weave analyses for 2020 Build scenario indicate that most the ramp junctions will operate at an acceptable LOS (LOS D or better) and all of the weave sections will operate near capacity. Of the 66 ramp junctions analyzed, 65 will operate at LOS D or better and one at LOS F with the proposed improvements. Finally, all four of the weave sections analyzed will operate at LOS E with the proposed improvements.

1.3.3 Transportation Demand

The I-4 PD&E Study - Section 2 is within the local government jurisdictions of Orange, Seminole, and Volusia Counties; 11 city jurisdictions; and within the transportation planning jurisdictions of FDOT - District V, METROPLAN ORLANDO, and the Volusia County MPO. The FDOT transportation plan provides the basis for the development of a statewide transportation system by prioritizing state projects listed in the LRTPs of regional and local jurisdictions. METROPLAN ORLANDO and the Volusia County MPO are responsible for developing and updating the LRTP and for addressing all the transportation needs of the region. All local government comprehensive plans must be consistent with the LRTP of METROPLAN ORLANDO and the Volusia County MPO.

The current adopted comprehensive planning documents of the regional and local government jurisdictions within the project study area were reviewed to determine their transportation policies, goals, and objectives. The plans reviewed include the following:

- I-4 Multi-Modal Master Plan/Major Investment Study (September 1996)
- FDOT's 2020 Florida Transportation Plan (March 2000)

- METROPLAN ORLANDO 2020 Long Range Transportation Plan Update (adopted December 2000)
- Volusia County MPO 2020 Long Range Transportation Plan Refinement (adopted November 2000)
- Orange County, Florida 2000 – 2020 Comprehensive Policy Plan (adopted July 1991; amended through December 2000)
- Orange County Comprehensive Plan, International Drive Activity Center Strategic Development Plan (adopted July 1991; amended through October 1994)
- North International Drive Urban Design Plan (adopted July 1994)
- City of Orlando, Florida Growth Management Plan (GMP) Policy Document (approved August 1991; amended through October 2001)
- Winter Park Comprehensive Plan 1990 (adopted August 1991; amended through May 1995)
- The Town of Eatonville Community Redevelopment Plan (adopted August 1997)
- City of Maitland Comprehensive Development Plan 2001 – 2020 (adopted 1985; amended through April 2002)
- Vision 2020 Comprehensive Plan Seminole County, Florida (adopted 1991; amended through February 2002)
- The City of Altamonte Springs City Plan 2005 (adopted April 1991; amended through 1997)
- The City of Longwood, Florida – 1991 – 1996 Comprehensive Plan (adopted 1991; amended through February 1997)
- The City of Lake Mary Comprehensive Plan (adopted September 2000)
- The City of Sanford Comprehensive Plan (adopted December 2000)
- Volusia County Comprehensive Plan (adopted April 1990; amended through April 2000)
- The City of DeBary, Florida Comprehensive Plan (adopted July 1996; amended through August 2001)
- The City of Deltona Comprehensive Plan (adopted November 1999)
- The City of Orange City, Florida Comprehensive Plan (adopted January 2002)

Overall, the regional and local government comprehensive plans were found to be consistent with the project goals and objectives. Each independent comprehensive plan has a common transportation goal to create an efficient multi-modal transportation system that will promote increased public safety and greater economic viability, in coordination with existing and future land use activities. A summary of the relevant transportation-related goals and improvements identified in each of the documents reviewed are discussed in Section 3.1.1.4.1.

It should be noted that the regional and local government comprehensive plans have not been approved by FHWA and, therefore, do not constitute a Federal action or an endorsement.

The public has been involved throughout the project development process. A project Public Involvement Plan (PIP) was developed at the beginning of the study to help ensure that the appropriate input from all concerned citizens, agencies, private groups, and governmental entities was obtained and incorporated into the project development process. The following list includes the various public involvement techniques and methodologies employed during the I-4 PD&E Study – Section 2:

- Community Involvement and Public Information Office
- Study Sponsors and Advisory Groups
- Scoping Meeting

- Project Alternatives Public Workshops
- Neighborhoods, Businesses, and Special Interest Group Meetings
- Federal, State and Local Government and Agency Briefings

Detailed information on the project public involvement program is presented in Chapter 5 of this report.

1.3.4 Governmental Authority

The project has been incorporated into the planning activities for Orange, Seminole, and Volusia Counties. As discussed, the proposed improvements have been included in the LRTPs for METROPLAN ORLANDO and the Volusia County MPO, as well as local government comprehensive plans. The project is also being coordinated with federal, state, and local agencies, project advisory committees, representatives of the impacted jurisdictions, and the public. Chapter 5 - Comments and Coordination, of this document outlines the history of public coordination for the entire project. Appendix C contains copies of federal, state, and local agency coordination letters; Appendix G contains the advance notification comments and responses; Appendix H contains the scoping process comments and responses; and Appendix K contains the public hearing comments and responses. As part of the project, several advisory committees were formed to obtain project consensus. These committees included the PAG, Environmental Advisory Committee (EAC), I-4/SR 408 Interchange Technical Committee, Urban Design Guidelines Committee, Cultural Resource Committee, and the College Park Neighborhood Association Interstate Four Committee.

Regional and local government planning documents reviewed for consistency with the project are described in Sections 1.3.3 and 3.1.1.4.1. As indicated in these sections, the regional and local government comprehensive plans were found to be consistent with the project goals and objectives.

Public meetings, community workshops, and a public hearing were also held as part of the development of the proposed project. Topics discussed at these meetings included relocations; air, noise, and visual impacts; potential impacts to historical structures and neighborhoods; and the inclusion of urban design amenities. These meetings are discussed further in Chapter 5.

1.3.5 Social Demands and Economic Development

This section provides an overview of population, economics, and land use characteristics of the tri-county (i.e., Orange, Seminole, and Volusia) area, which includes the Ultimate project and Preferred Alternative study areas. A detailed discussion of socioeconomic conditions within the tri-county area is presented in Section 3.1 and the *I-4 PD&E Study - Section 2 Socioeconomic and Environment Report* (August 2000).

In general, the tri-county area population is growing rapidly and has a diverse ethnicity and age constituency. The regional growth is anticipated to be greater than any other area in Florida through 2020.

The rapidly expanding population has caused an increase in housing, commercial, employment, and industrial growth and construction in recent years. The major developments and employment centers are summarized within this section.

1.3.5.1 Population and Employment

Growth in resident population, visitor population, and employment, combined with the choice of where to live and where to work, are the primary factors contributing to increases in travel demand in the tri-county area. Projections of future population and employment in the region indicate that travel demand will continue to increase well into the 21st Century.

Population

In 1996, the tri-county area had a population of approximately 1.5 million, representing approximately 11 percent of the State of Florida's total population. By 2020, the population of the tri-county area is expected to increase by 57 percent to approximately 2.4 million persons. Orange County has a higher, more densely structured resident population than Seminole and Volusia Counties. Between 1996 and 2020, a 24-year period, the population of Orange County is projected to increase from 777,556 to 1,197,964, a 54 percent increase. Seminole County is expected to see an increase from 329,031 to 565,712, a 72 percent increase. Volusia County's population is projected to be 613,973 in 2020, from 407,199 in 1996, a 51 percent increase.

The 1996 population information was obtained from the Bureau of Economic and Business Research, *1997 Florida Statistical Abstract*. The projected 2020 population information was determined using traffic analysis zones (TAZs) from METROPLAN ORLANDO's *2020 LRTP Update* and Volusia County MPO's *2020 LRTP Refinement*.

The visitor population of the tri-county area visitor population is expected to increase significantly by 2020. Orange County's visitor population is projected to increase 84 percent to 324,277 in 2020 from 176,041 in 1996. Seminole County is expected to increase its visitor population by 97 percent, to 11,563 in 2020 from 5,882 in 1996. Volusia County's visitor population is projected to increase eight percent from 16,260 in 1996 to 17,486. The high percentage increase in visitor population to Orange and Seminole Counties can be largely attributed to a high concentration of tourist venues, hotel/motel units, and expansions of OIA and the Orlando Sanford Airport.

Visitor population to Osceola County also affects traffic conditions within the project study area. In 1996, visitors to Osceola County were 53,329. Osceola County's visitor population is projected to increase 76 percent to 93,621 by 2020.

Information on the visitor population was determined using TAZs from METROPLAN ORLANDO's *2020 LRTP Update* and Volusia County MPO's *2020 LRTP Refinement*.

Employment

Employment within the tri-county area is expected to continue its strong rate of growth. This is partially attributed to the job opportunities created by the increase in the number of visitors to the area. From 1996 to 2020, employment in the tri-county area is expected to increase 68 percent from 928,468 in 1996 to 1,563,322 by 2020.

In 1996, employment in Orange County was approximately 596,709. This represents approximately 64 percent of the tri-county area total of 928,468. Through 2020, Orange County will account for almost two-thirds of the increase in the tri-county area employment growth, increasing by 71 percent to 1,022,401.

Although Orange County is the center for population and economic growth for the tri-county area, Seminole County has the highest projected increase in employment. In Seminole County, employment is projected to increase 80 percent from 157,239 in 1996 to 283,080 in 2020. This represents approximately 20 percent of the total employment growth for tri-county area.

In 1996, employment in Volusia County was approximately 174,520. Through 2020, Volusia County employment is projected to increase by 48 percent to 257,841. This represents approximately 13.1 percent of the total employment growth for the tri-county area.

The 1996 and 2020 employment information was determined using TAZs from METROPLAN ORLANDO's *2020 LRTP Update* and Volusia County MPO's *2020 LRTP Refinement*.

Employment Industry

Tourism is the leading employment industry in the tri-county area, evidenced by the fact that services and retail trade account for over half of the employment in the region. In 1990, the services and retail trade sectors accounted for 61 percent of all employment for Orange County. In Seminole and Volusia Counties, these sectors accounted for 59 percent of the employment. Manufacturing, the

third largest employment sector, accounted for ten percent of the employment for Orange County, 12 percent for Seminole County, and 11 percent for Volusia County.

Most of the top ten non-government employers in the tri-county area are concentrated within or near the project area. In 1995, Orange County's top employer was Walt Disney World with 40,000 employees. By 1997, with the addition of Downtown Disney and Disney's Animal Kingdom, the number of employees has increased to 51,000. Orlando Regional Healthcare System and Publix Supermarkets, Inc. rank second and third with 7,131 and 6,371 employees, respectively. In Seminole County, the major employer is Florida Hospital with 2,513 employees. Publix Supermarkets and Siemens Stromberg-Carlson follow closely with 2,079 and 1,570 employees, respectively. Volusia County's top employer is Halifax Community Health Systems with 3,097 employees. Halifax Community Health Systems is followed by Memorial Health Systems carrying 2,174 employees and Embry Riddle University with 960 employees. Increased mobility on I-4 would benefit a large majority of these employment centers.

1.3.5.2 Activity Centers

Activity centers are defined as high intensity developments representing residential, business, and industrial land use. They are becoming one of the most dominant land use planning features for the Central Florida region. Local jurisdictions are using activity centers to help develop local comprehensive GMPs. They are becoming the primary focus for promoting higher density development in the region.

The activity centers located within the project corridor include the International Drive Resort Area (IDRA), the Orlando CBD, and portions of the cities of Winter Park, Altamonte Springs/Maitland, Lake Mary/Sanford/Northwest Seminole, and SR 472/Howland Boulevard. Figure 1-15 presents these centers.

1.3.5.3 Development of Regional Impacts and Other Development Activity

Growth in resident population, visitor population, and employment, combined with the choice of where to live and where to work, are the primary factors causing an increase in development activities throughout the project corridor.

A summary of development activity and development of regional impacts (DRIs) are described by project segment below. Figure 1-16 identifies the major developments and employment centers within the project corridor. Detailed information on these developments and employment centers is later introduced in Chapter 3, Table 3-21. The locations of the DRIs are shown in Figure 1-17. Detailed information on the DRIs is contained within Table 3-22.

Segment 1

Segment 1 has primarily experienced commercial growth over the past few years. Much of this growth is concentrated along the tourist corridors of International Drive and Kirkman Road.

It is anticipated that Segment 1 will continue to expand commercially with the primary areas along International Drive, Kirkman Road, and Conroy Road. In 1999, Universal Studios Florida opened their newest theme park, Islands of Adventure. Another major commercial center located near the I-4/Conroy Road interchange is the proposed Millenia Mall. The mall is under construction and is expected to open to the public by mid 2003.

Segment 2

Segment 2 includes downtown Orlando and portions of College Park. Downtown Orlando is currently the largest employment center in the region, with primary growth focusing on commercial development.

It is anticipated that growth will continue to occur within downtown Orlando. Plans call for the redevelopment of existing property including office space and high-rise residential properties.

Segment 3

The bulk of residential neighborhoods along the project corridor are located within this segment. Historical structures are located within College Park. In addition, the Orlando Science Center and the Historical Museum are located in this segment.

Land adjacent to the project corridor within this segment is highly developed. However, plans call for the redevelopment of existing property.

Segment 4

There are several residential communities, commercial sites, and office complexes located within this segment. Historic structures are located in the Town of Eatonville.

Major office centers include Maitland Center, Cranes Roost Office Park, and Sanlando Center Office Park. The large commercial centers are primarily located in Altamonte Springs, and include the Altamonte Mall and the Renaissance Center. Future development activity within the segment consists primarily of commercial centers and residential developments.

Segment 5

Developments within Segment 5 consist of large residential communities and recently constructed commercial and office centers. One of the largest residential areas located along the project corridor is Heathrow. Office centers include Primera, Heathrow International Business Center, and the Lake Mary Business Park. The Seminole Towne Center is also located within this segment.

It is anticipated that this segment will experience the greatest changes in development activity. Several residential developments and commercial centers are proposed for this area.

Segment 6

This segment is comprised primarily of residential areas and tracts of undeveloped land and open space. The Summer Haven residential community is located directly adjacent to the project corridor in Orange City.

Residential and commercial developments are planned for this portion of the project corridor.

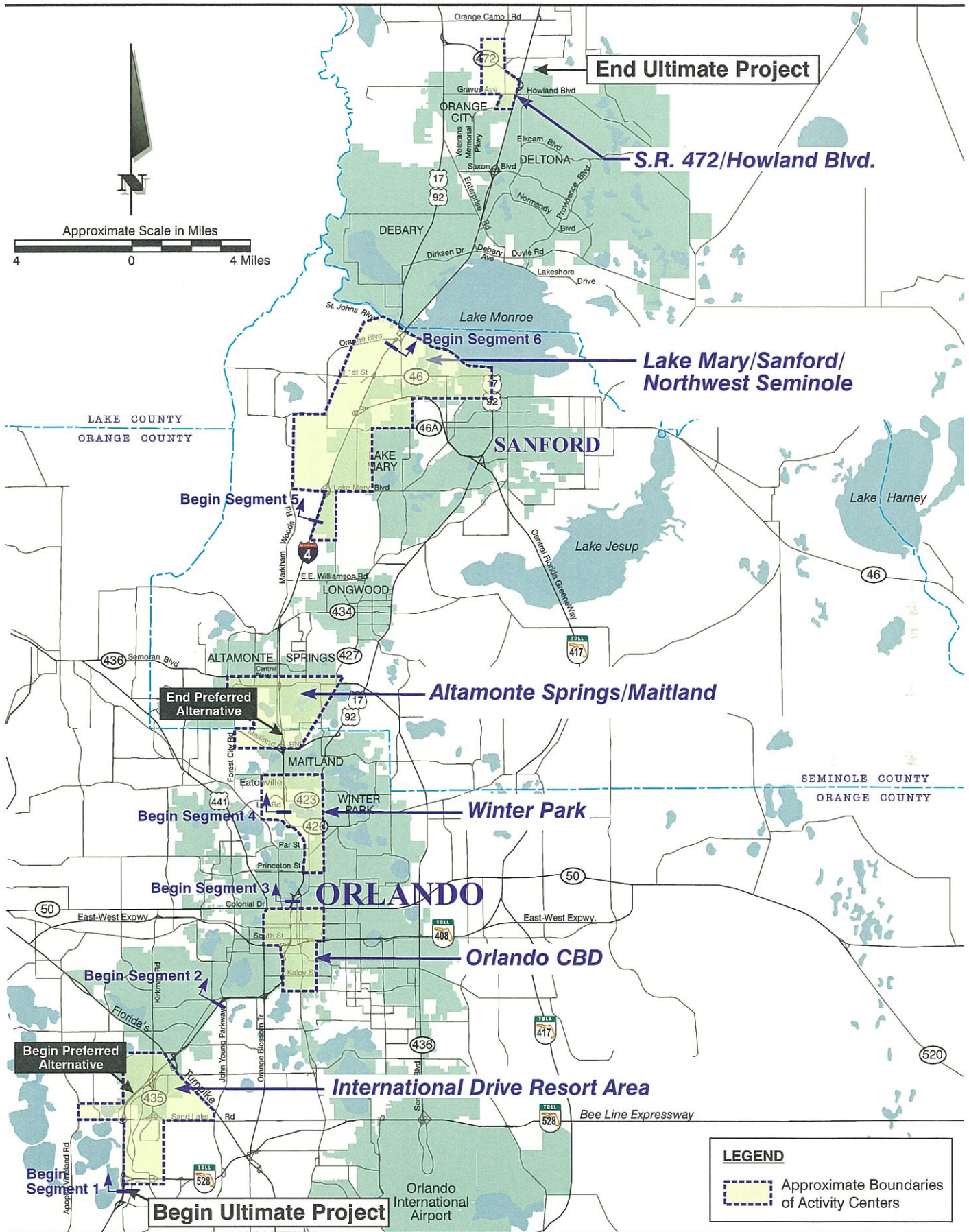
1.3.5.4 Land Use

As shown in Figure 1-18, the Ultimate project and Preferred Alternative study area are characterized by diverse land use patterns, including densely developed areas and large tracts of vacant land.

Segment 1

Segment 1 contains a variety of land uses, including areas within unincorporated Orange County and the City of Orlando. The southern portion is characterized by tourist attractions, hotels, resorts, restaurants, and other tourist-related activities. Residential developments are located outside the immediate I-4 study area. The remaining portions within Segment 1 consist of predominantly industrial and commercial land uses.

The area along International Drive extending from SR 528 (Bee Line Expressway) to Florida's Turnpike is primarily the IDRA tourist-oriented activity center. The major employers near this area include Sea World; the Orange County Convention Center (OCCC); Universal Studios; and other attractions, hotels, and vacation resorts. Retail centers, such as Pointe Orlando and the Belz Factory



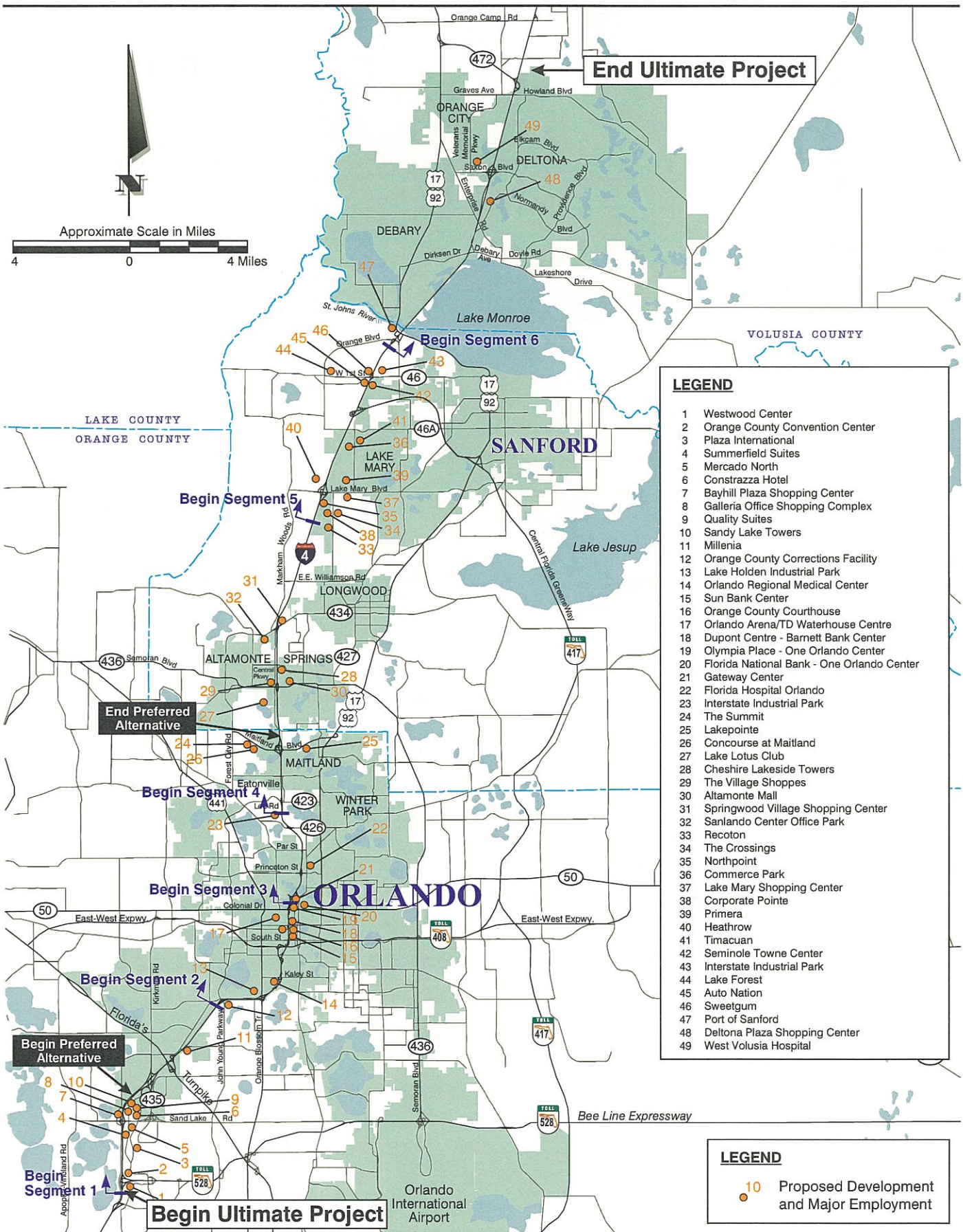


Figure 1-16
Concentrations of Proposed Development
and Major Employment
 I-4 PD&E Study - Section 2



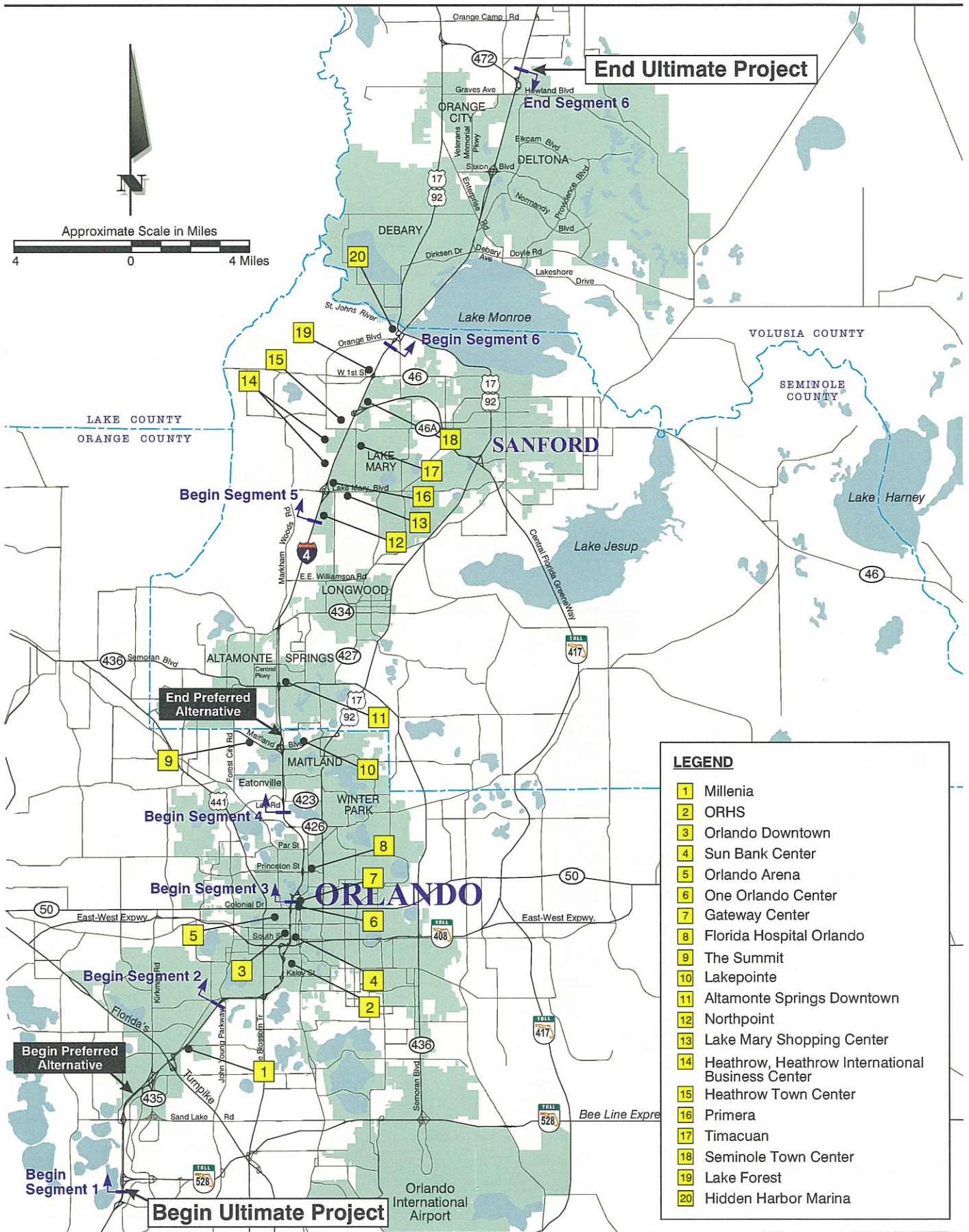
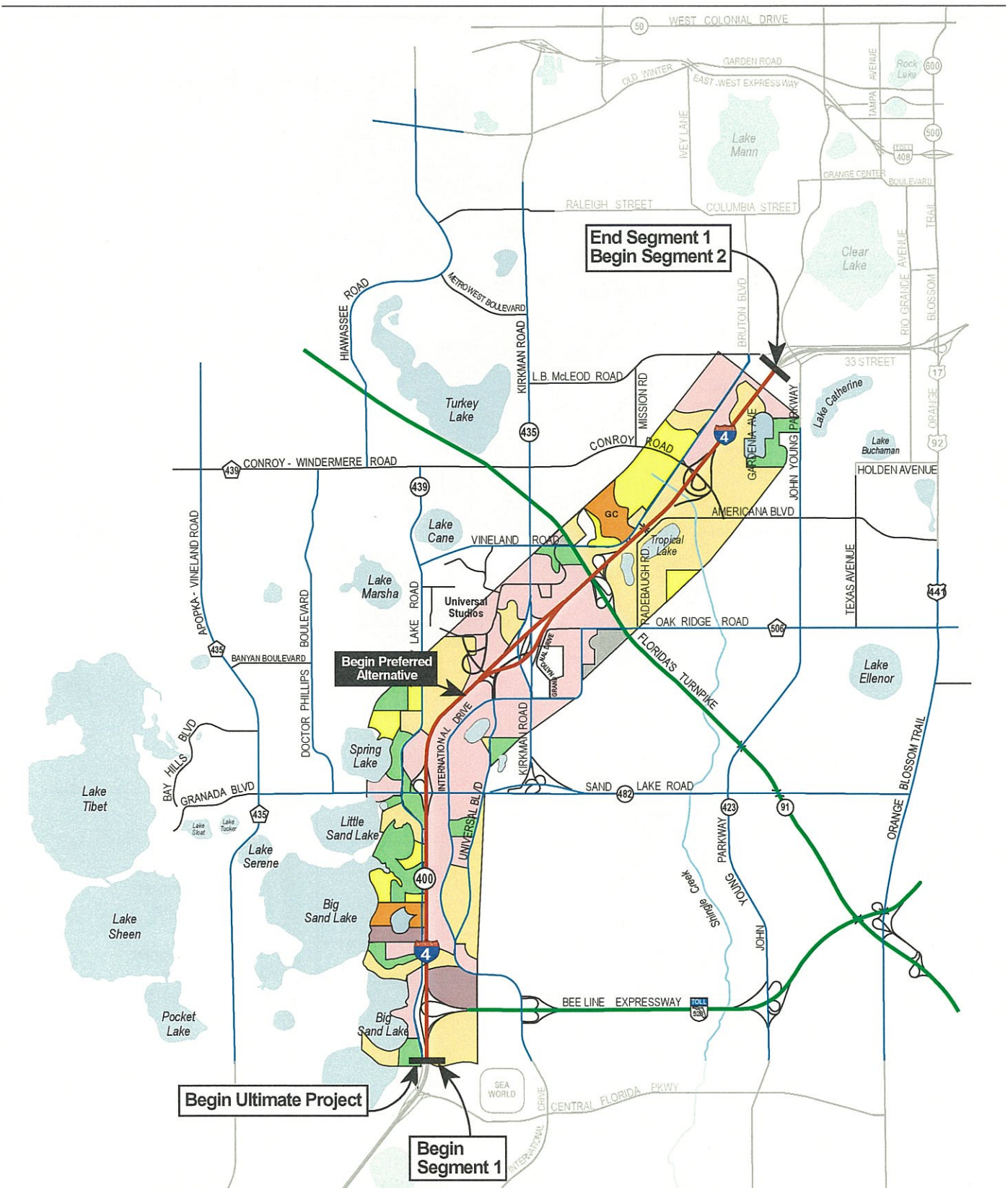


Figure 1-17
Development of Regional Impact



Scale in Miles: 0, 1/2, 1

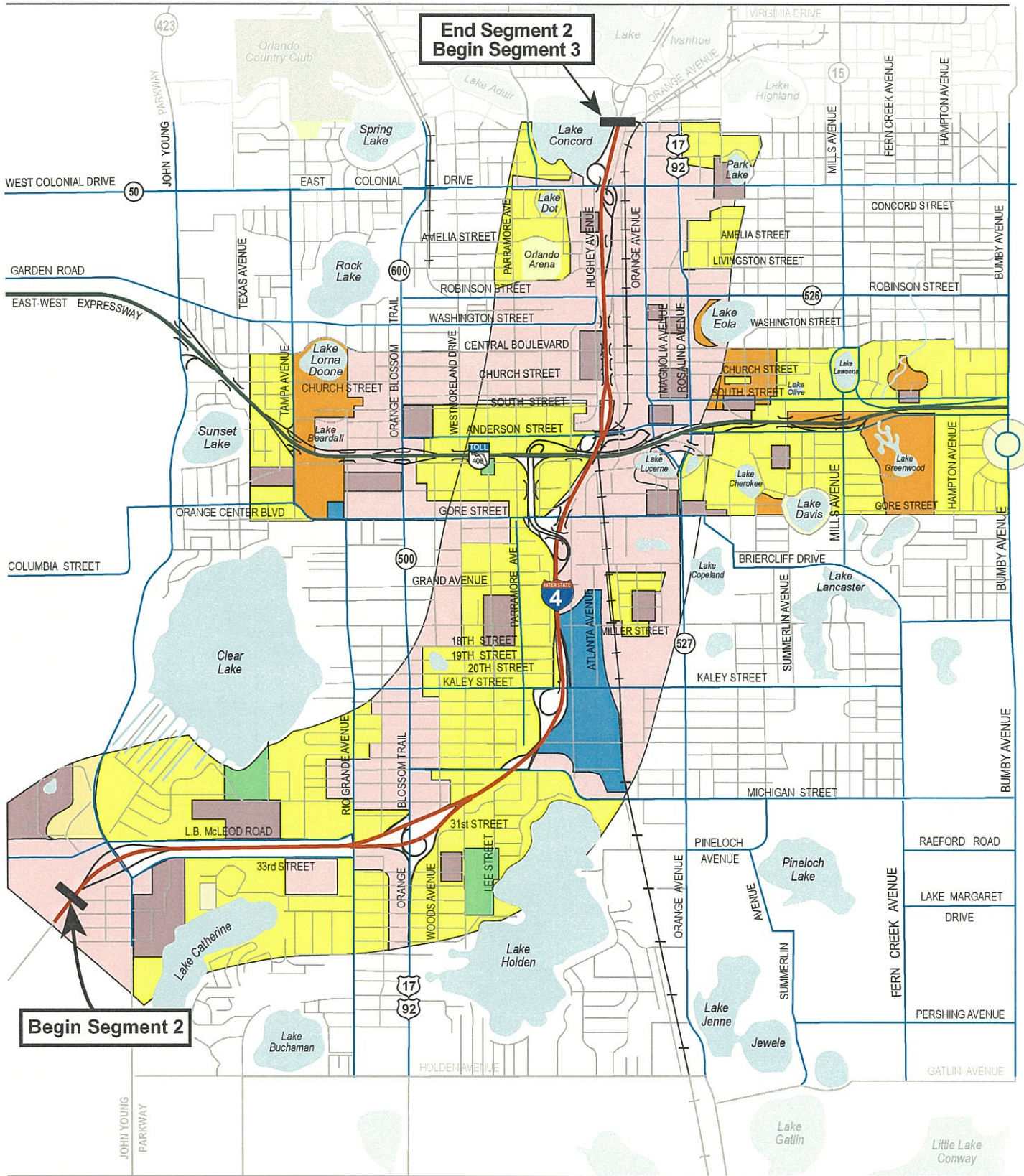
Residential
 Commercial/Office
 Institutional/Public
 Industrial
 Natural Community
 Agricultural/Pasture
 Recreational Facility/
Golf Course/Park
 Transportation/Utility
 Undeveloped
 Water

GC - Golf Course
 RF - Recreational Facility
 Source: Orange Co. Future Land Use Map Series, 05196 14A, 13B, 6B, 6A
 City of Orlando, Future Land Use Concept, Maps 12, 17, 11

Figure 1-18
Generalized Existing Land Use

I-4 PD&E Study - Section 2
 Segment 1 of 6

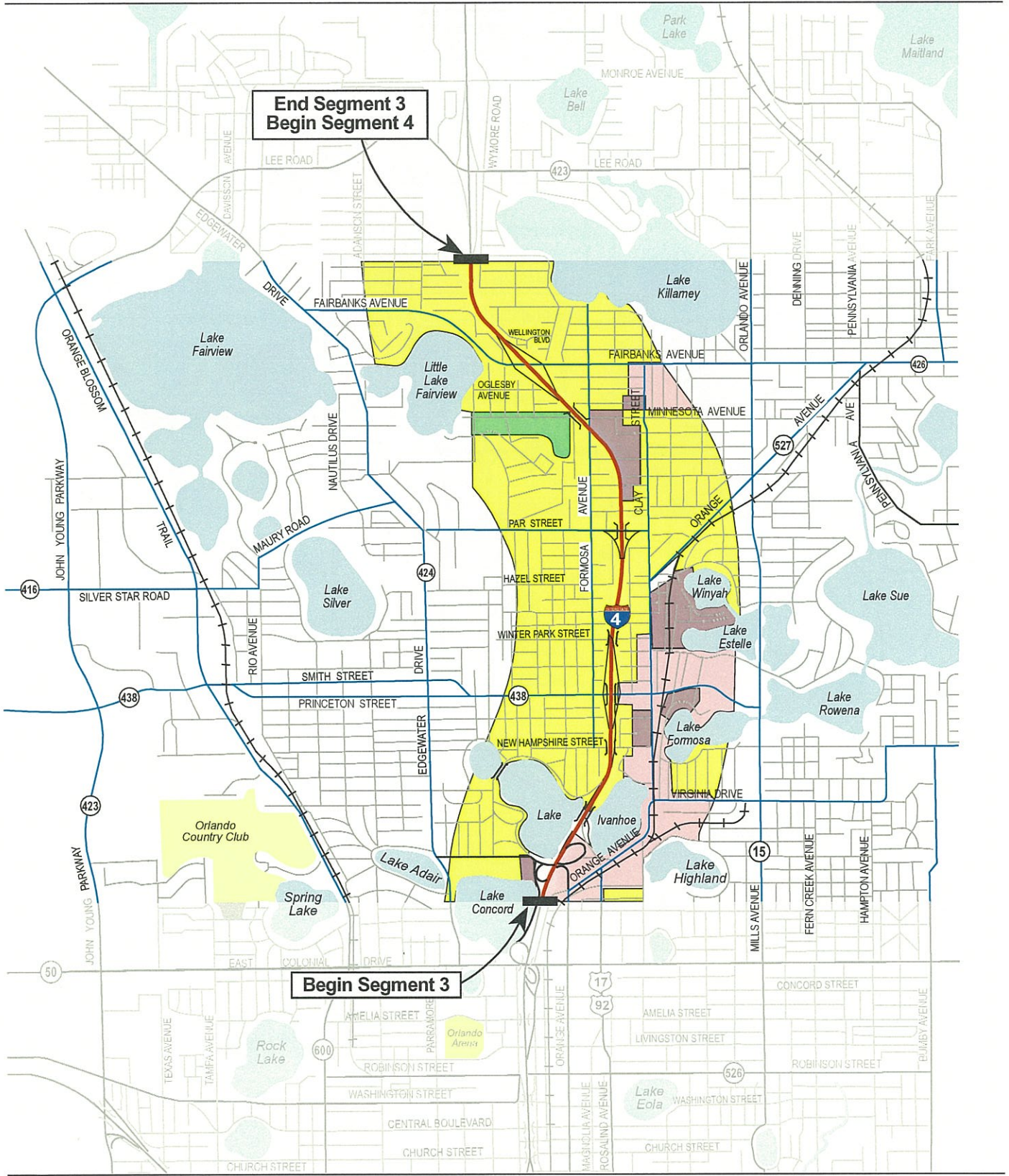




**Figure 1-18
Generalized Existing Land Use**

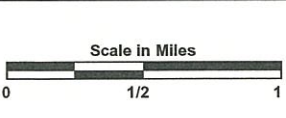
I-4 PD&E Study - Section 2
Segment 2 of 6





**End Segment 3
Begin Segment 4**

Begin Segment 3



- | | | |
|---|--|---|
| Residential | Natural Community | Transportation/Utility |
| Commercial/Office | Agricultural/Pasture | Undeveloped |
| Institutional/Public | Recreational Facility/
Golf Course/Park | Water |
| Industrial | | GC - Golf Course |
| | | RF - Recreational Facility |

Source:
1996 CH2M HILL Aerials
Orange Co. 1987 Future Land Use
Map Series 05/96, 6A, 3A

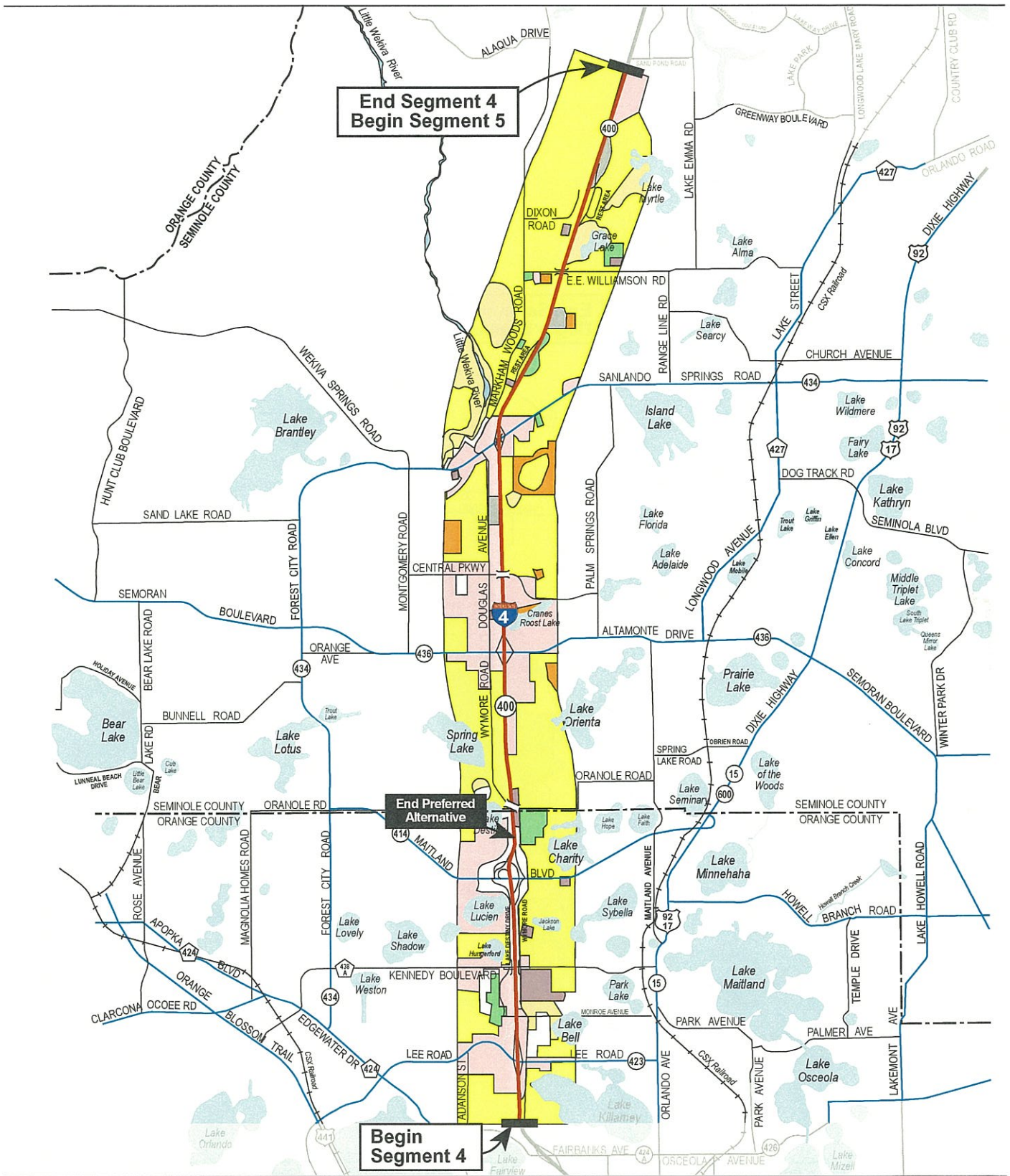
City of Winter Park Comprehensive Plan
Future Land Use Map, Maps 12, 8, 13, 2

City of Eaton Future Land Use and Existing Zoning

**Figure 1-18
Generalized Existing Land Use**

I-4 PD&E Study - Section 2
Segment 3 of 6





Scale in Miles
 0 1/2 1

Legend:

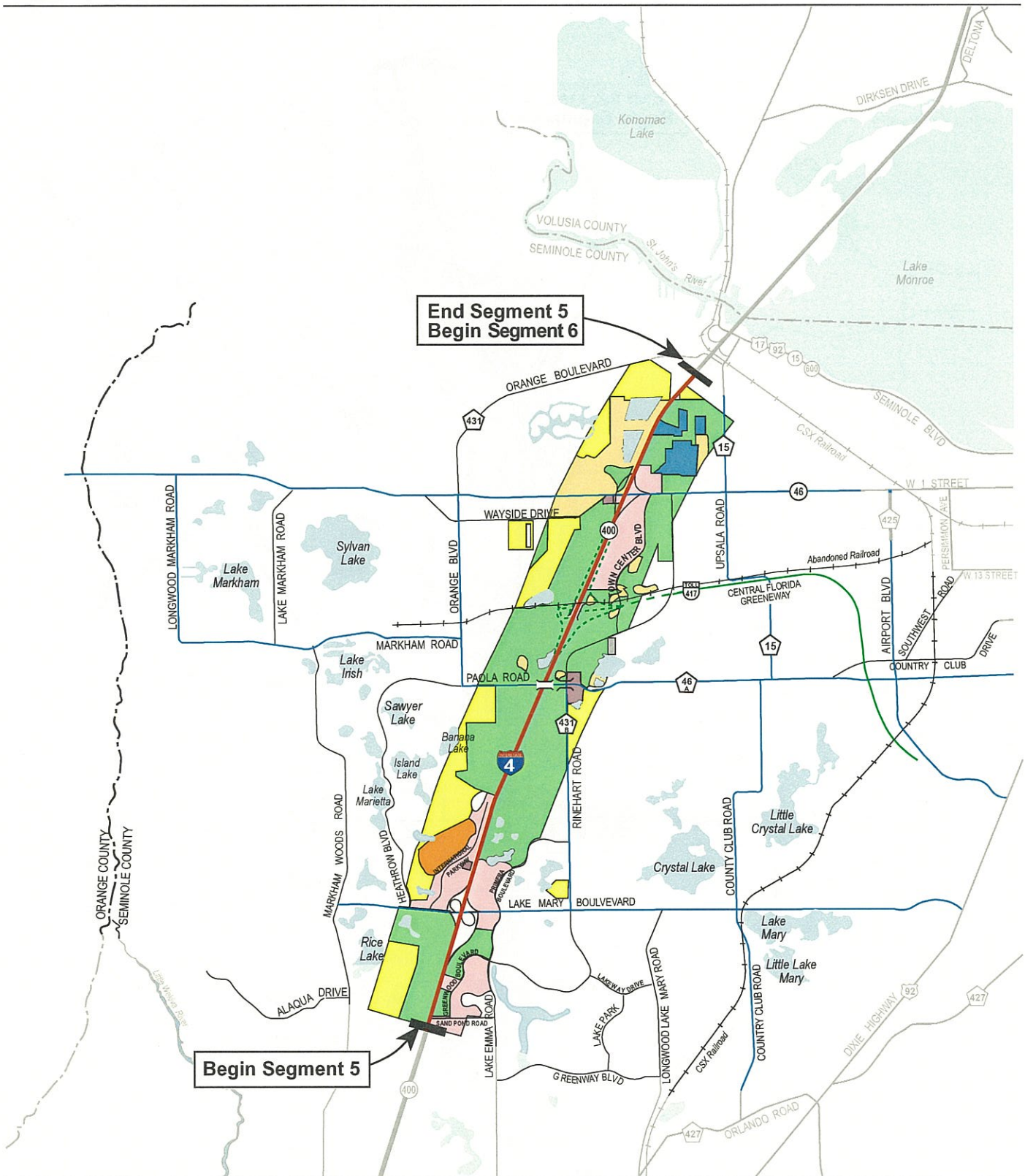
 Residential	 Natural Community	 Transportation/Utility
 Commercial/Office	 Agricultural/Pasture	 Undeveloped
 Institutional/Public	 Recreational Facility/Golf Course/Park	 Water
 Industrial		 GC - Golf Course
		 RF - Recreational Facility

Source:

- Figure 2.0.1 Seminole Co. 1991 Comp. Plan Update Jan. 1996
- City of Lake Mary, Future Land Use 2010
- City of Longwood, Future Land Use Map Year 2005, 09/91
- City of Altamonte Springs Comprehensive Plan, April 1991, Future Land Use Map 1991 - 1996 & 1996 - 2005 Figure 3.2a
- City of Maitland, Future Land Use Map Series (Maps 1&2)
- City of Eatonville
- Orange County Future Land Use Map Series, 05/96, Map 2, p22

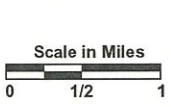
Figure 1-18
Generalized Existing Land Use
 I-4 PD&E Study - Section 2
 Segment 4 of 6





End Segment 5
Begin Segment 6

Begin Segment 5



Residential	Natural Community	Transportation/Utility
Commercial/Office	Agricultural/Pasture	Undeveloped
Institutional/Public	Recreational Facility/ Golf Course/Park	Water
Industrial		GC - Golf Course
		RF - Recreational Facility

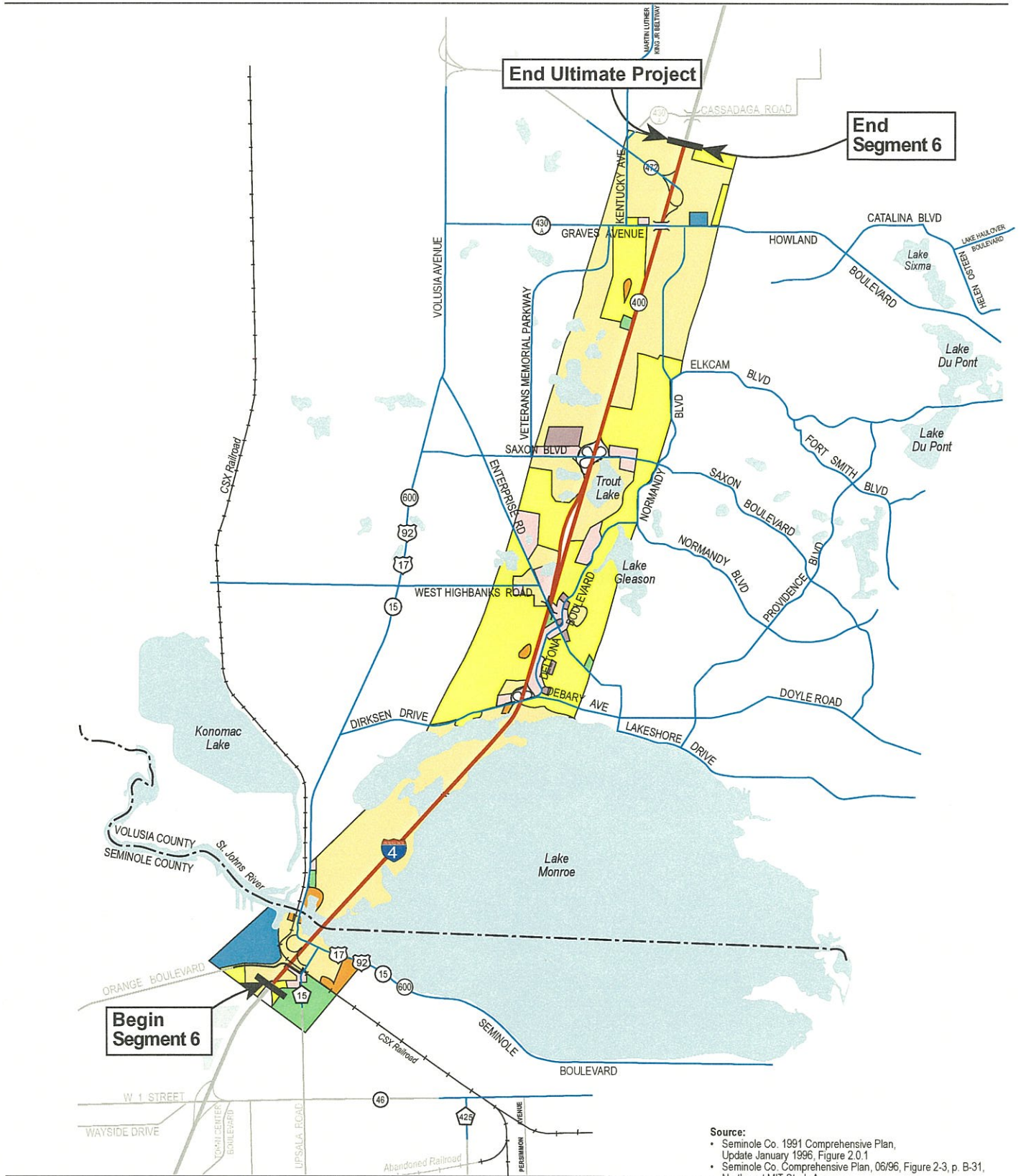
Source:

- Seminole Co. 1991 Comprehensive Plan, Update January 1996, Figure 2.0.1
- Seminole Co. Comprehensive Plan, 06/96, Figure 2-3, p. B-31, Northwest HIP Study Area
- City of Sanford, Future Land Use Plan, 04/95
- City of Lake Mary, Future Land Use, 2010

Figure 1-18
Generalized Existing Land Use

I-4 PD&E Study - Section 2
Segment 5 of 6





Source:

- Seminole Co. 1991 Comprehensive Plan, Update January 1996, Figure 2.0.1
- Seminole Co. Comprehensive Plan, 06/96, Figure 2-3, p. B-31, Northwest MIT Study Area
- City of DeBary, Figure 12.1, Future Land Use Map, 08/96
- City of DeBary Comprehensive Plan, Vol II, Draft
- Orange City Future Land Use Map, 2010, Comprehensive Plan, Amendment 94-01, 10/94 and Memo, Orange City, Future Land Use; Volusia Co. Growth Management Dept., 09/96
- Volusia Co. Figure 1-11, Generalized Future Land Use
- Volusia Co. Southwest Activity Center, Figure 1-15, Volusia Co. Comprehensive Plan, Ord. 95-33

Figure 1-18
Generalized Existing Land Use
 I-4 PD&E Study - Section 2
 Segment 6 of 6



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Outlet, help to enhance this area as a major activity center. Due to the nature of its tourist-based economy, this area of International Drive is defined as predominantly commercial land use.

Segment 2

Within Segment 2, commercial, residential, industrial, and institutional uses primarily comprise the land adjacent to I-4 throughout Orlando and areas of unincorporated Orange County. The residential areas include some minority and low-income census tracts. The neighborhoods adjacent to I-4 and SR 408 (East/West Expressway) within the study area have some historical significance and were previously divided due to the original roadway construction.

The Orlando CBD surrounds the I-4/SR 408 (East/West Expressway) interchange and is composed primarily of office complexes, industrial, and commercial facilities. Facilities include corporate offices for large employers such as the First Union Bank, SunTrust, Southern Bell, and the Orlando Sentinel. In addition to these facilities, city, county, state, and federal government offices are located within the CBD. Church Street Station is a tourist attraction located within the Downtown Orlando Historic District.

Segment 3

Segment 3 traverses the jurisdictions of Orlando and unincorporated Orange County. Segment 3 is mostly commercial and institutional east of I-4 and south of Orange Avenue. The remaining portion of Segment 3 is primarily residential. The adjacent neighborhoods have some historical significance and were previously divided by the original I-4 construction.

Winter Park, located just east of the interstate, serves as a residential, cultural, and retail activity center. This center extends along the I-4 corridor on the south from Princeton Street to just north of Lee Road. Near the outer limits of Winter Park lies the Ivanhoe Row Antique District, which is abundant with antique shops, restaurants, and many cultural amenities.

Segment 4

Segment 4 land use designations are primarily residential, with areas of commercial use, recreational facilities, and institutional facilities. Segment 4 traverses the jurisdictions of Eatonville, Maitland, Altamonte Springs, Longwood, and Lake Mary.

The Altamonte Springs/Maitland area serves as a primarily business-oriented activity center. This area includes large tracts of land used for office space and/or retail operations. The Maitland Center supports a vast area of multi-story office buildings. Cranes Roost and other office complexes surround the project corridor along with expanding retail centers including the Altamonte Mall, the Interstate Mall, and the Renaissance Center. Florida Hospital Altamonte also lies within this activity center located on the east side of I-4 on SR 436.

Segment 5

Segment 5 is located in Seminole County within the jurisdictions of Lake Mary and Sanford. The land uses adjacent to I-4 are mostly agricultural and residential with areas of commercial, industrial, and recreational land uses. The commercial use is primarily focused in office centers, including the Heathrow International Business Center on Lake Mary Boulevard, and in retail centers including the Seminole Towne Center on SR 46. Major employers along the corridor include the American Automobile Association (AAA) off International Parkway, the Recoton Corporation on Lake Emma Road, Siemens Telecom Networks, and the U.S. Postal Processing Plant located on Rinehart Road. Recreational land uses in the area include the Heathrow Country Club.

Segment 6

Segment 6 includes the jurisdictions of Sanford, DeBary, Deltona, and Orange City. Land uses adjacent to I-4 are primarily agricultural, residential, and commercial with areas of industrial, institutional, and recreational land uses. Most of the residential areas are located along Deltona Boulevard, Enterprise Road, Saxon Boulevard, and Graves Avenue. The residential area consists mostly of single-family units. The retirement community of the Country Village mobile home park is

located near Graves Avenue. Commercial developments located on US 17-92, Deltona Boulevard, Enterprise Road, and Saxon Boulevard consist mostly of offices and retail facilities including Uncle Bob's Self Storage adjacent to I-4 on Enterprise Road. Industrial land uses include the Sanford Port Authority on Orange Boulevard, a major employer in Sanford, and areas on Graves Boulevard. Institutional uses include churches, cemeteries, and the sheriff's office. Recreational uses include Lake Monroe Wayside Park and other areas on Lake Monroe.

SR 472/Howland Boulevard is a primarily commercial area located at the northern limits of the project corridor. No official boundaries are defined for this activity center; however, it is generally composed of a few commercial centers surrounding the I-4/SR 472 interchange. Outside the interchange area, land use primarily consists of undeveloped areas and residential land uses.

1.3.5.5 Travel Demand

Population and employment growth are important contributing factors to the decreasing mobility in the Central Florida region. One of the principal causes is the increase in daily person-trips resulting from choices of where to live and where to work.

On a regional basis, the total number of daily person-trips made in 1990 was estimated at 3.18 million. The person-trips are projected to increase to approximately 5.5 million in 2010 and 6.47 million in 2020. This represents an increase in total daily person-trips by nearly 75 percent over a 20-year period and more than double in a 30-year period.

This projected increase in daily person-trips will further overburden the highway system and will cause increased delays due to congestion and increasing environmental impacts such as air quality.

1.3.6 Modal Interrelationships

The project study area is served by several travel modes including public and private transit services, Park & Ride facilities, railroad lines with freight and passenger rail service, airports, ports, bikeway, greenway and trail facilities, and pedestrian facilities.

1.3.6.1 Mass Transit

Existing mass transit services within the Ultimate project and Preferred Alternative study area include bus services, van pooling, car pooling, paratransit services, and Park & Ride facilities. Future plans include an enhancement of bus routes, express bus, and car/van pooling services. The following text discusses existing and future mass transit services as well as how the proposed improvements complement these services.

1.3.6.1.1 Existing Services

Existing transit services within the Ultimate project corridor include the services of LYNX, VOTRAN, and several private transportation providers. In addition, FDOT owns two Park & Ride facilities within the project limits.

LYNX

LYNX provides existing public transportation service within Orange, Seminole, and Osceola Counties. LYNX, an agency of the State of Florida, was created in 1989 by the Florida Legislature to plan, design and construct, maintain, and operate public regional bus and rail service in the tri-county area.

The existing LYNX transit system consists of 57 bus routes that link residential areas with major employment sites, downtown Orlando, hospitals, and shopping centers. Service on these routes is operated using a fleet of 222 buses. Figure 1-19 shows LYNX's service system within the project study area.

Other services operated by LYNX include the Mobility Assistance Program and paratransit services. The Mobility Assistance Program includes operation of a computerized matching program for carpools and vanpools and a van-leasing program. Also included under the Mobility Assistance

Program is a school pool matching service for parents who drive their children to school and a highway helper program, which provides assistance to stranded motorists on I-4.

VOTRAN

VOTRAN provides public transportation service within Volusia County. VOTRAN is a county-wide, tax-supported, public transit system that began operation in 1975. The existing VOTRAN transit system consists of a fleet of 55 fixed-route buses, four rubber-tire trolleys, and 41 paratransit units. Figure 1-20 shows VOTRAN's existing service area.

Other services operated by VOTRAN include VOTRAN Gold and the Commuter Assistance Program. VOTRAN Gold provides door-to-door transportation service for people who require personal special assistance and who are unable to use scheduled bus service. The Commuter Assistance Programs consists of Park & Ride facilities, rideshare matching, van pooling, and XL 200, which is an express bus service that runs from Orange City to downtown Orlando.

Private Transportation Providers

Because of the high influx of tourists in the Orlando urban area, there are a large number of private companies that provide specialized transit services. The LYNX *Transit Development Plan (TDP) FY 2001 Update* contains an inventory of most of the private transportation providers in Osceola, Orange, and Seminole Counties. This inventory lists a total of 353 providers that offer an array of fixed route, charter, scheduled, and non-scheduled services, transporting tourists between OIA, International Drive Resort Area, Walt Disney World, and other attractions.

Private transportation providers within west Volusia County include Med-Shuttle, TransMED, and Daytona/Orlando Transportation Service (DOTS). Med-Shuttle and TransMED provide out-of-county Medicaid trips to Orange and Seminole Counties. DOTS provides shuttle service to and from OIA.

FDOT

FDOT oversees and, in conjunction with the local transit providers, administers various federal and state funds and helps coordinate various interfaces of public transportation. There are two existing Park & Ride lots currently owned by FDOT within the project limits. Figure 1-21 shows the locations of the two Park & Ride lots.

The Deltona Park & Ride lot serves as the staging area for XL 200. The lot features 120 parking spaces with provisions for six spaces for handicapped drivers. It is located in the northwest quadrant of the I-4/Saxon Boulevard interchange and encompasses approximately 1.17 acres (see Figure 1-21).

The second lot is located in the southeast quadrant of the I-4/Dirksen Drive/DeBary Avenue interchange directly opposite the eastbound I-4 on-ramp and off-ramp (see Figure 1-21). The lot has 50 spaces with five spaces for handicapped drivers and is approximately 0.37 acres. The lot has no fixed transit service associated with it; however, it serves as a park and pool staging area for various rideshare commuters between Volusia County and the Orlando metropolitan area.

1.3.6.1.2 Future Service

LYNX and VOTRAN have plans to increase transit services within the project study area. The following paragraphs provide a discussion of the proposed service and facility improvements transit providers plan to make.

LYNX

The short range transit plan in LYNX's *TDP FY 2001 Update* contains proposed service and facility improvements. The following is a summary of proposed improvements:

- Peak bus requirement increase to 244, resulting in a total fleet of 293 buses (with a 20 percent spare ratio) by FY 2005.
- Expansion and replacement of vans for the commuter van program.

- Eleven transit centers/super stops (on-street stops with additional passenger amenities where several routes stop).
- Twelve Park & Ride lots to serve planned express bus routes, including passenger shelters, and 100 to 150 parking spaces.
- Proposed downtown Orlando intermodal facility, which will replace the existing downtown bus station.
- Sanford Intermodal Center for bus, rail, and private sector transportation.
- Three new garages for bus storage and/or maintenance.
- Passenger amenities including shelters, signage, benches, information kiosks, vending machines, and other conveniences.
- Corridor Express Services including the design, construction, and operation of services and facilities related to FDOT HOV lanes.
- Community circulator services including the design, development, and implementation of flexible fixed route transit bus service.
- The use of intelligent transportation systems.

Figure 1-22 shows the locations of LYNX's proposed transit centers, super stops, and Park & Ride lots.

In addition, LYNX is proposing an ITS Flex Bus Circular for north Orange and Seminole Counties. The following provides a description and status of the project.

ITS Flex Bus Circulator

The circulator would connect activity centers in suburban North Orange/Seminole Counties and take advantage of traditional Bus Rapid Transit (BRT) — a system that provides high-frequency reserve lanes, signal priority, a high level of amenities and ease of use — with the added benefit of serving pre-designated secondary off-route locations on demand. The preliminary estimated costs are \$23.8 million (capital) and \$3.3 million (annual operations and maintenance).

Status

A feasibility study validated the ITS Flex Bus Circulator and recommended implementing connecting centers in Altamonte Springs and Maitland Center or West Town Center as the first phase. The LYNX Board of Directors will select a consultant for the Project Development and Environmental Study and Engineering Design in May (the study will begin in June and should be completed by mid-2003). Service is projected to launch in 2006.

VOTRAN

VOTRAN has identified various programs for implementation within the 1999 to 2002 *Transit Development Plan*, FY 1999 Update. The proposed multi-modal programs are identified below.

- Identify appropriate locations for Park & Ride lots and implement express bus service.
- Increase or implement super stops for west and southeast Volusia County.
- Continue replacement and new vehicle expansion.
- Conduct complete bus stop inventory.
- Provide information kiosks at major transfer centers.
- Construct light maintenance facility in west Volusia County.
- Increase frequency and extended trolley service into downtown Daytona.
- Implement Route 7 extension.

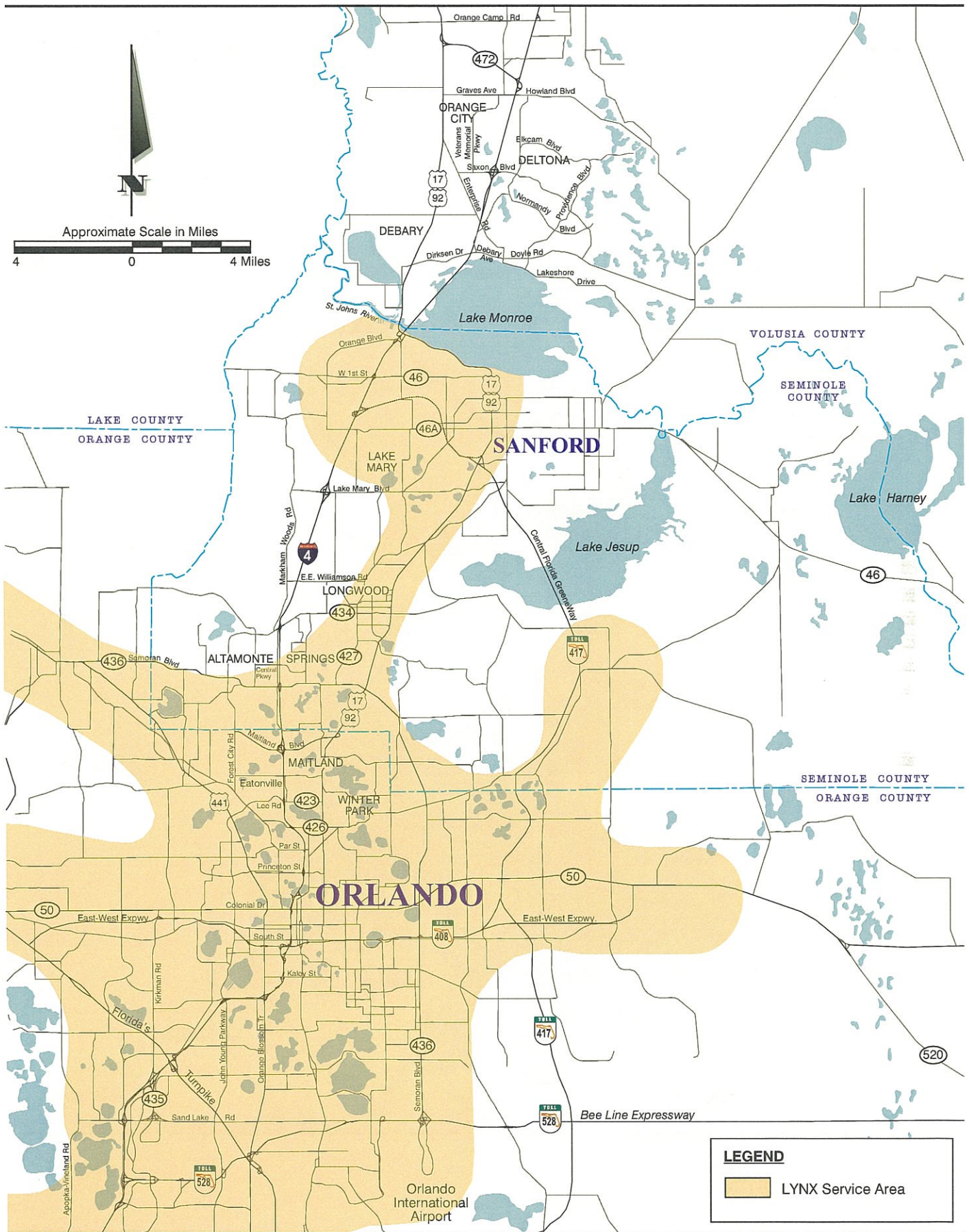


Figure 1-19
Existing LYNX Service Area

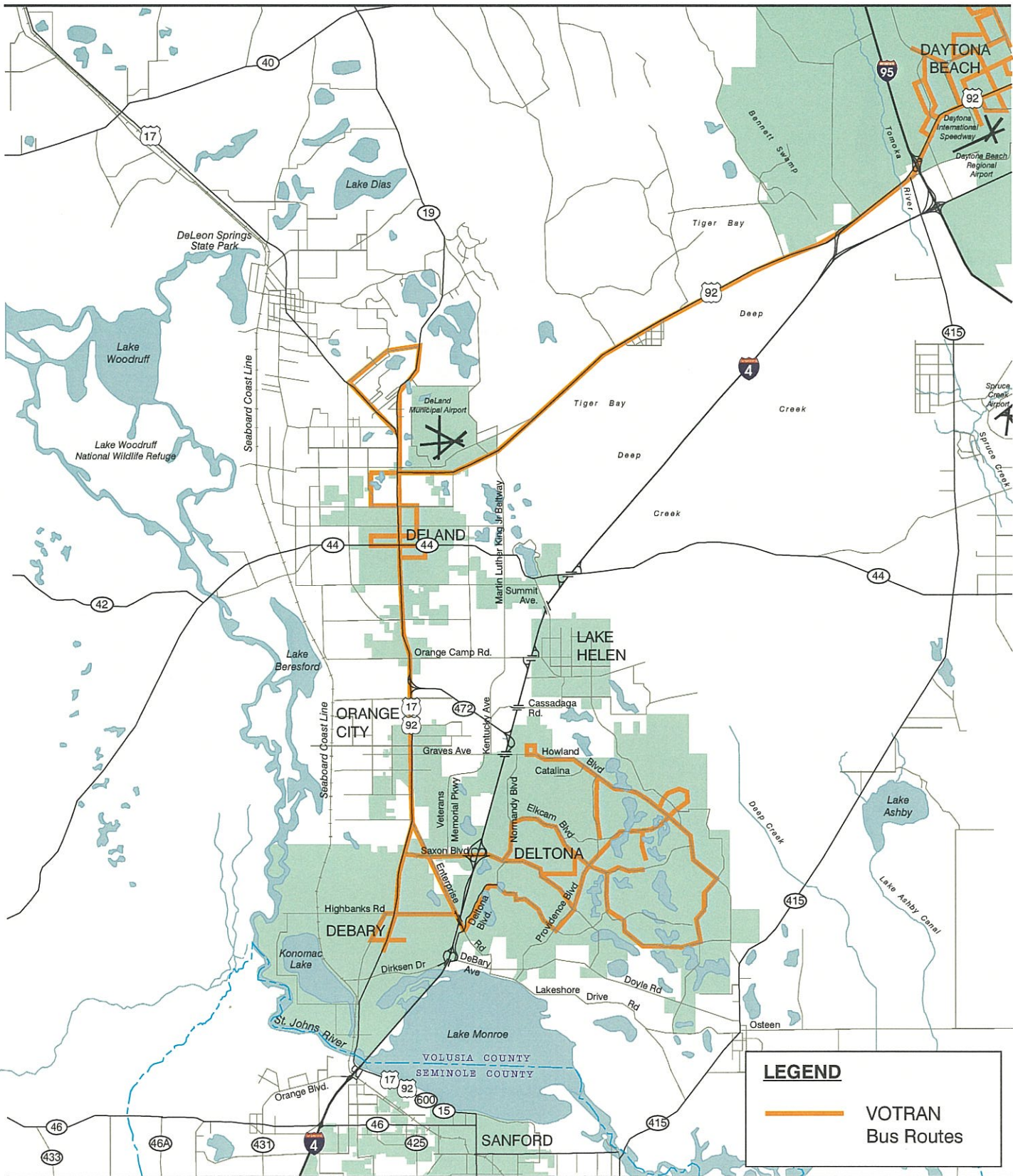
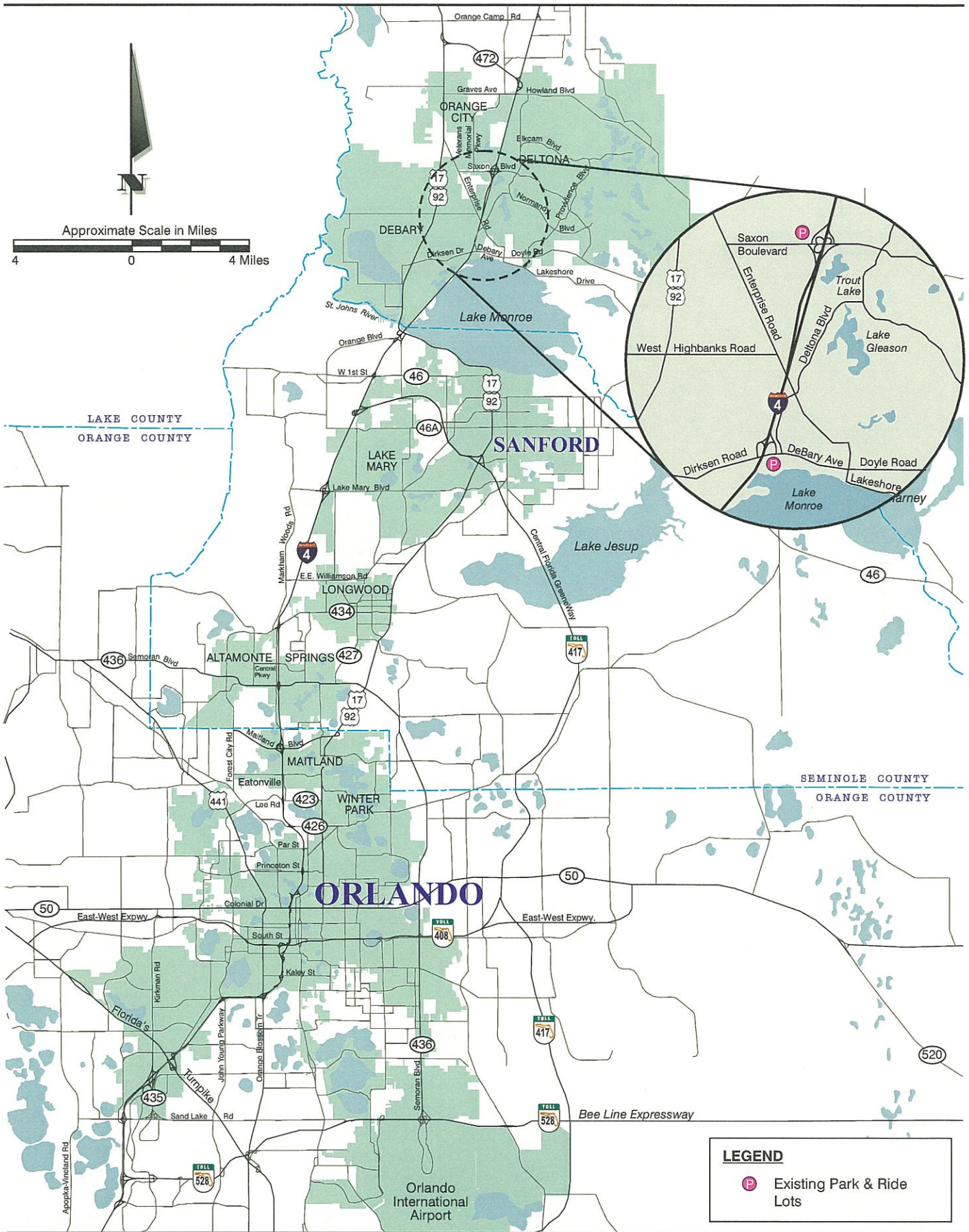


Figure 1-20
Existing VOTRAN Service Area
 I-4 PD&E Study - Section 2
 Volusia County





LEGEND

- P Existing Park & Ride Lots

Figure 1-21
Existing Park & Ride Lots



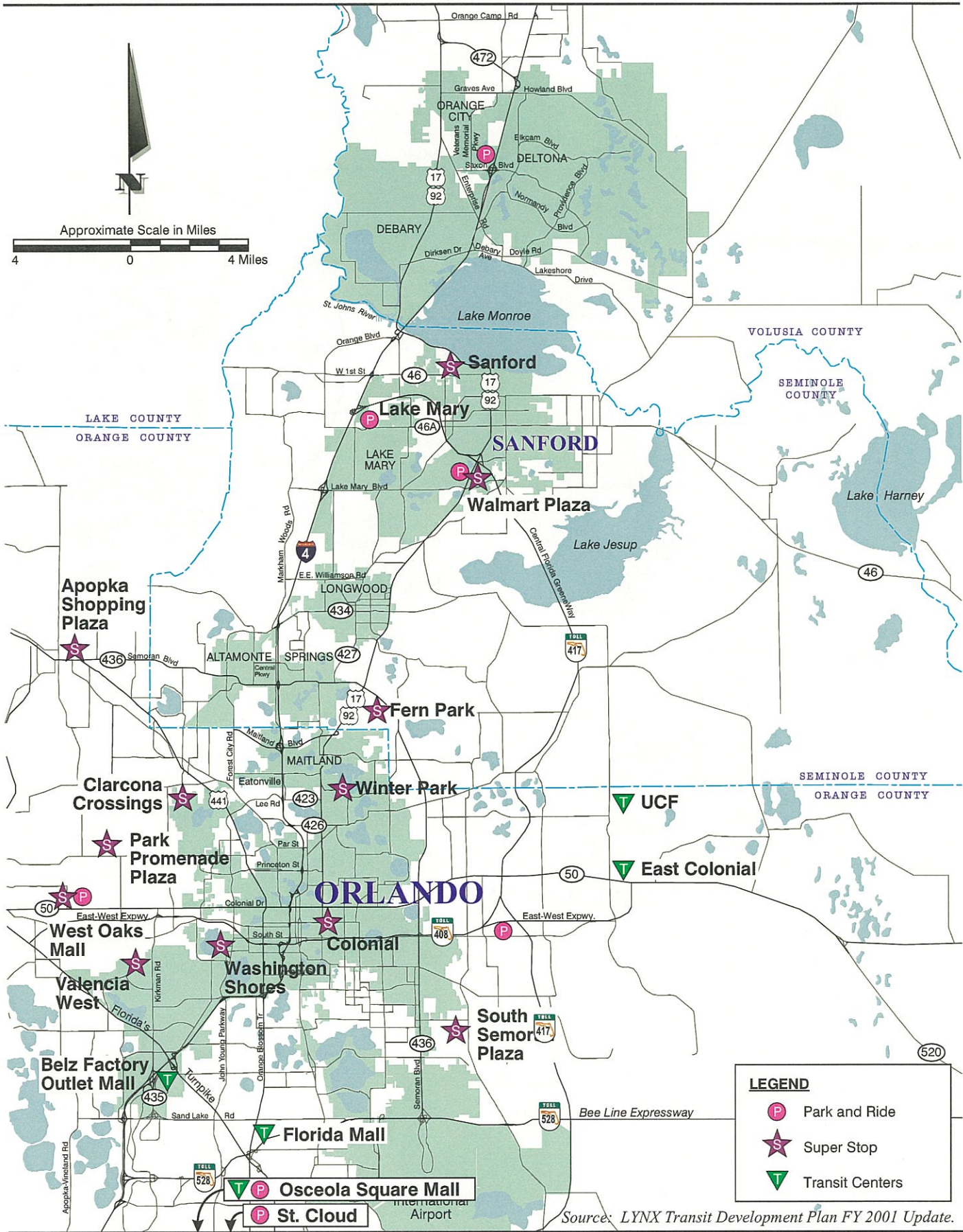


Figure 1-22
LYNX Transit Facility Improvements

- Implement new route on Clyde Morris Boulevard.
- Implement Saturday service on Route 18 connector.
- Implement west and southeast route deviation service.
- Increase frequency on VOTRAN's busiest routes.
- Access the opportunity for rail options in Volusia County.
- Implement Route 5 extension.
- Implement Route 12 extension.
- Implement higher frequency of service on Route 18 connector.
- Initiate later evening service on all routes.

The above transit improvements are planned to be implemented within the next five years.

1.3.6.1.3 Complement to Mass Transit

Mass transit services will be complemented by improved mobility on the interstate as a result of the proposed project. The proposed improvements encourage the use of mass transit by providing exclusive HOV lanes, HOV access ramps, and Park & Ride lots for buses and carpools. By 2020, the HOV lanes are expected to carry eight to 12 percent of the average annual daily traffic within the project limits. Refer to Figure 1-6 for the locations of proposed HOV access.

As shown on Figure 1-23, two locations that have been proposed as project Park & Ride lots are directly adjacent to HOV interchanges. The first is located in the southwest quadrant of the I-4 and Central Parkway overpass. This lot is approximately 5.2 acres and can provide up to 220 parking spaces or support other multi-modal uses with reduced parking. There is an HOV-access only interchange to the Park & Ride lot.

The second Park & Ride lot is located in the northwest quadrant of the I-4 and Enterprise Road overpass. The lot is proposed to be located at an existing mini-warehouse facility. The site is approximately 8.5 acres and can provide up to 350 parking spaces or support other multi-modal services. There is an HOV-access only interchange with I-4 at the site.

The proposed action encourages the use of mass transit by offering a more environmentally sound, cost-effective, and time-efficient means of travel.

1.3.6.2 Rail Service

Existing rail service in the project region is limited to freight and passenger operations. However, future plans for expansion in rail services include light rail, commuter rail, and high speed rail. The following sections describe the existing and future rail services in the project study area.

Existing Services

Existing railroad operations in the project corridor include both freight and passenger operations. Figure 1-24 presents the existing railroad network within the project study area.

Freight Railroads

Both the CSXT Railroad and the Florida Central Railroad (FCEN) provide rail freight operations in the project corridor. The CSXT railroad main line through Orange, Seminole, and Volusia Counties constitute the majority of tracks in the network. The other CSXT railroad trackage in the Central Florida region is the section currently leased to FCEN, which extends from downtown Orlando to the Orange/Lake County line with a branch to Ocoee.

Passenger Railroads

Amtrak provides passenger railroad services within the project corridor. Amtrak operates three daily round trips of the Miami-New York *Silver Service* through the corridor via track rights with CSXT railroad.

1.3.6.2.1 Future Service

There are several rail initiatives being proposed for the project area. There is an approved ROD for a light rail system in portions of the City of Orlando and Orange County; commuter rail is proposed to extend from Deland to Kissimmee and from Eustis to Orlando; high speed rail is proposed from Tampa to Orlando and the Orange County Convention Center to Port Canaveral along SR 528 (Bee Line Expressway); and Volusia County is currently preparing a rail feasibility study to examine rail options within the County. Rail options in Volusia County may include light rail and/or commuter rail. The following paragraphs provide a summary of the proposed rail initiatives within the project area.

Light Rail

The FTA, in consultation with the Central Florida Regional Transportation Authority (locally known as LYNX), has approved a ROD for the development of LRT system facilities in portions of the City of Orlando and Orange County. The project also includes the expansion of bus services to support the system. The project is known as the CFLRTS project.

The limits of the light rail project corridor extend from Central Florida Parkway (just south of Sea World) through downtown Orlando to the Loch Haven/Princeton Street area. The corridor is bounded by I-4 on the west and International Drive, SR 528 (Bee Line Expressway), and CSXT railroad on the east. The project corridor is approximately 16.33 miles in length.

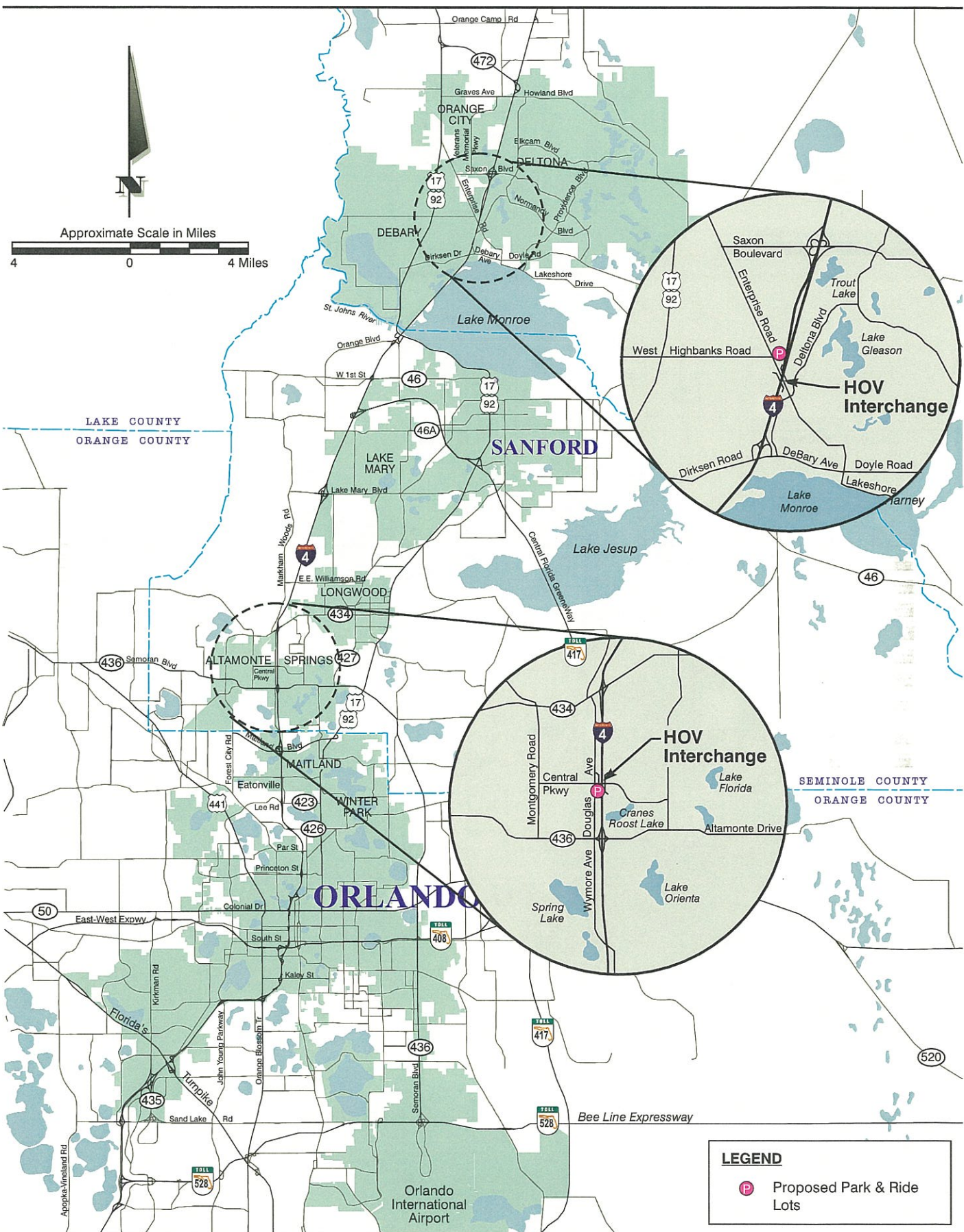
Description of the Locally Preferred Alternative (LPA)

The LPA provides for light rail service along an alignment extending from I-4 and Central Florida Parkway near Sea World on the south through downtown Orlando to the Loch Haven/Princeton Street area on the north. Access to the service would be provided from 20 stations. The total length of the alignment is 16.33 miles. The LRT project alignment and stations approved as part of the *CFLRTS Final Environmental Impact Statement* (November 1998) are shown in Figure 1-25 for the LPA. The LRT alignment would be double tracked along its entire length. However, if CSXT determines that rail operations mandate two CSXT tracks between America Street and Livingston Street, the LRT will be reduced to a single track in that general area.

The new LRT service would be provided by 70 percent low-floor articulated light rail vehicles powered by electricity distributed via an overhead contact system. The vehicles, operating in trains up to three cars in length, would run along a new double-track guideway located in a combination of exclusive, semi-exclusive, and shared rights-of-way. The new LRT system would include 20 stations and a maintenance facility and storage yard for the vehicles and systems and structures requirements. In addition to the new LRT service, LYNX proposes to expand bus service in the project corridor. The expanded bus service would consist of a feeder bus system providing access to the stations along the LRT line and a background system of local and express bus routes to serve areas not accessible by the rail system.

Minimum Operating Segment (MOS) – Central Florida Parkway to Livingston Street

The initial MOS, or "Starter Line," encompasses the segment of the LPA alignment from Central Florida Parkway to Livingston Street in downtown Orlando. The MOS is 14.0 miles in length and includes 17 stations, three of which would be in downtown Orlando. Figure 1-26 shows the LRT alignment and station locations for the MOS. This segment is considered to represent the shortest length of the LRT alignment that is cost effective, will have a significant effect of the transportation problems in the corridor, and is financially feasible.



LEGEND

P Proposed Park & Ride Lots

Figure 1-23
Proposed Park & Ride Lots



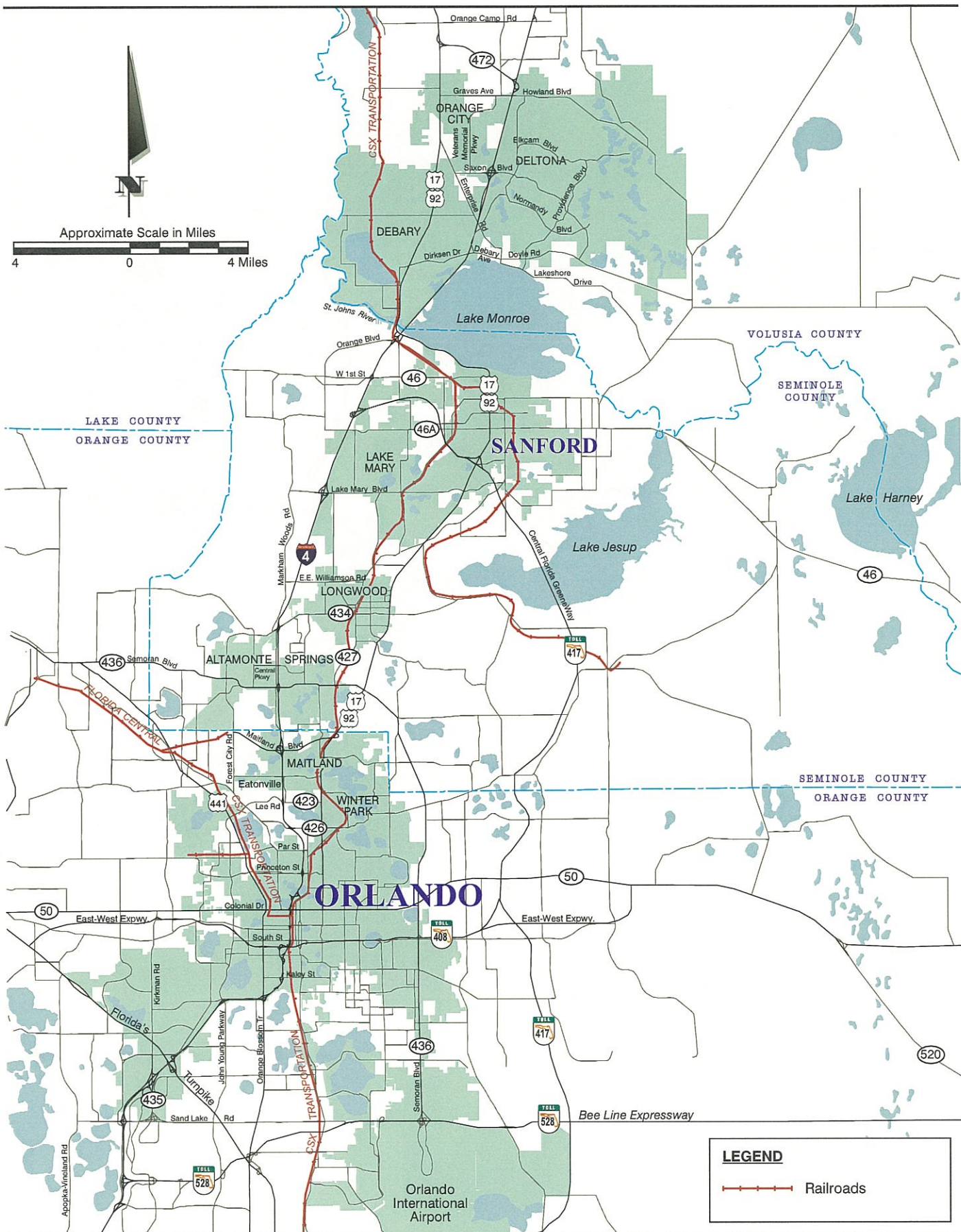


Figure 1-24
Existing Railroad Network

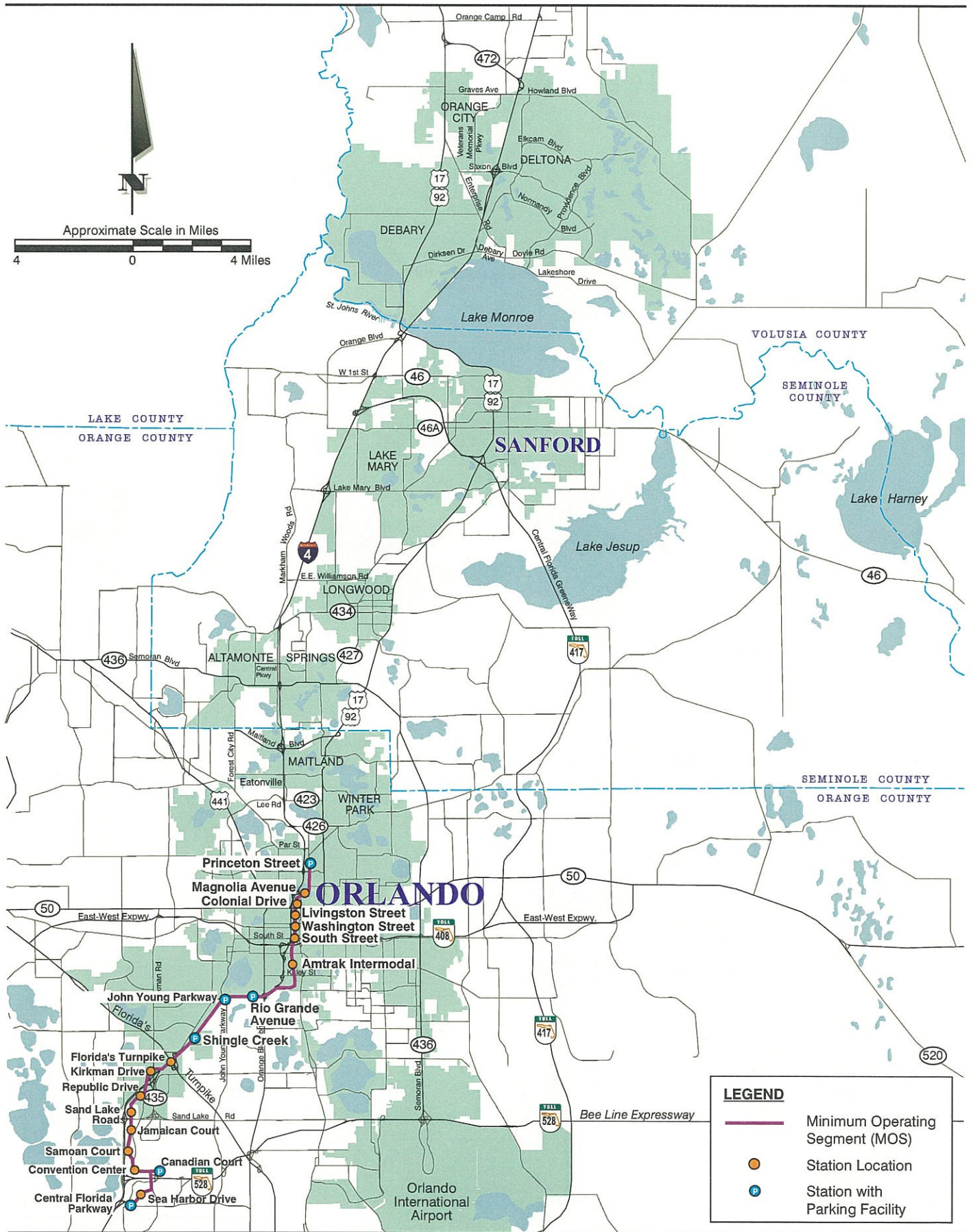


Figure 1-25
Locally Preferred Alternative Alignment and Station Locations

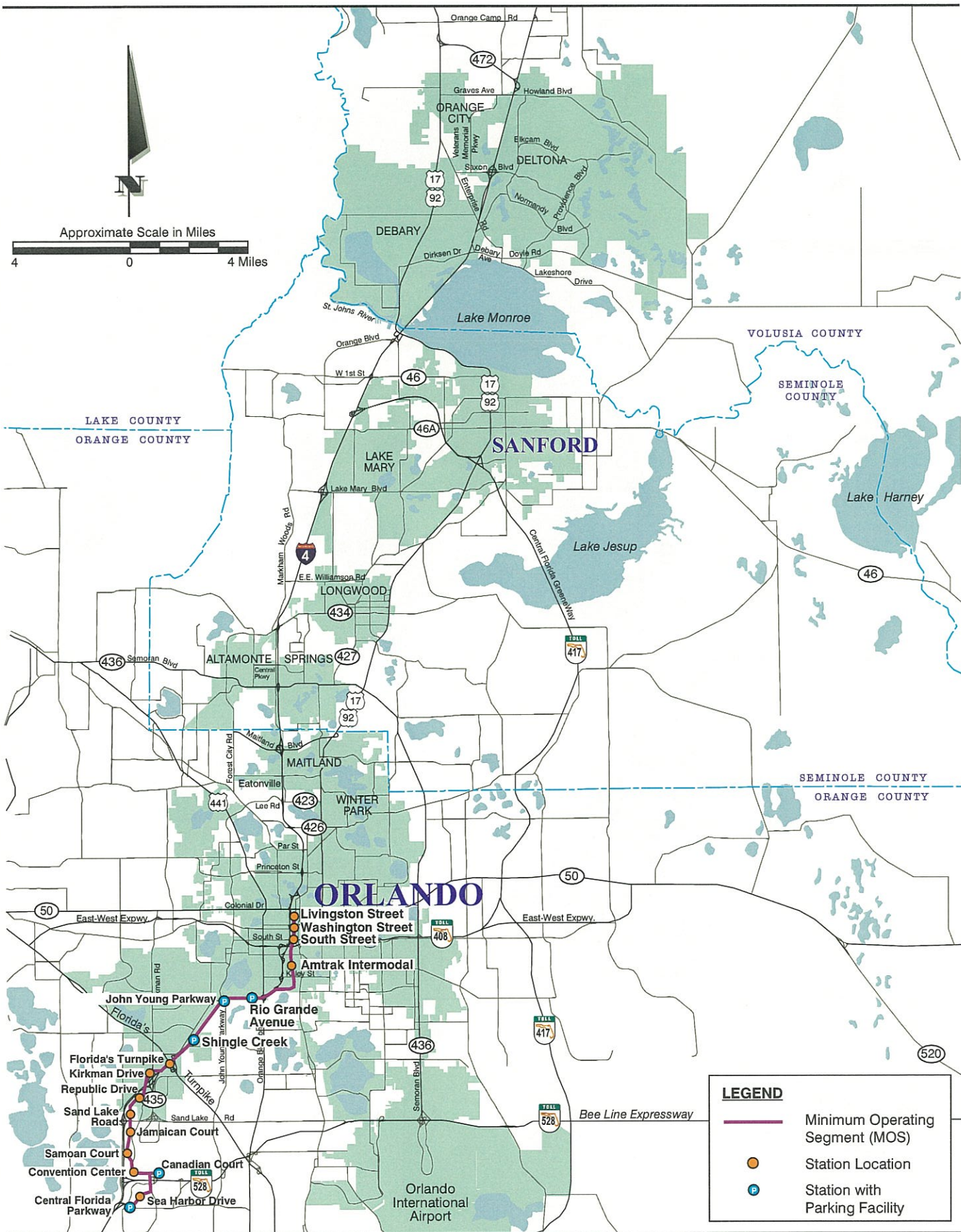


Figure 1-26
Minimum Operable Segment Alignment and Station Locations

Expansion of Light Rail

The proposed 20 miles of light rail from Altamonte Springs to Orlando and the planned intermodal center at the Orange County Convention Center is still under development. The service would run on a 10-15 minute operating frequency. Two task forces have been set up to develop and implement the northern and southern alignments. The preliminary estimated costs are \$750 million (capital) and \$18 million (annual operation and maintenance).

Status

A Supplemental Draft Environmental Impact Statement (SDEIS) has begun that will examine the alignments developed by the Northern and Southern Stakeholders Task Force. LYNX and METROPLAN ORLANDO adopted the Northern Stakeholders Task Force recommendation to implement the Alden Road/I-4 alignment as the preferred alignment north of Orlando. The Southern Alignment Stakeholders Task Force is currently researching a southern alignment terminating at or near the Orange County Convention Center – to be completed by May 2002. When it is adopted by the LYNX and METROPLAN ORLANDO boards, it will become a part of the SDEIS effort.

A Financing Task Force will address the capital and operations/maintenance funding. The project will be positioned by September 2002 for submission as part of the re-authorization of the Federal Surface Transportation Act.

Commuter Rail

There are two commuter rail initiatives currently underway. The north/south commuter rail corridor and the north/west commuter rail corridor. The following contains a brief description and status of each of the commuter rail corridors.

North/South Commuter Rail

The proposed project consists of approximately 55 miles of commuter rail service using existing CSXT railroad tracks between Deland, Orlando, and Kissimmee. The optimum service plan would provide seven through-trips starting from Deland and Kissimmee. Service would operate at a 30-minute frequency during the peak morning and afternoon commute times. LYNX was named project lead and grant recipient.

Status

A Capacity Analysis determined that CSXT will use all current available track capacity resulting in a need for additional tracking and signaling systems for the project. A contract to perform an Alternative Analysis – documenting demand, operating requirements and capital and operating cost – will be awarded to a consultant selected by the LYNX Board of Directors at the March meeting (study should be completed by December 2002). Additionally, Representative John Mica has proposed an interim project using a single diesel-powered train on CSXT rails from Deland or DeBary to Orlando while the original proposal moves forward.

North/West Commuter Rail

In 1999, the Florida Central Railroad (FCEN) developed a plan to run commuter rail service from Eustis to Orlando using 33 miles of existing freight rail. Service would operate at a 30-minute frequency and travel time would be 54 minutes. The preliminary estimated costs are \$64 million (capital) and \$3.5 million (annual operations and maintenance).

Status

The FDOT sponsored a feasibility study to analyze the operating plans and requirements, demand, and operating and maintenance costs. The analysis concluded that the project is not competitive for federal funding. The FCEN revised the project based on the analysis and submitted a scaled-down proposal. However, the scaled-back service was not placed on the recommended list of projects by the Transportation Outreach Program committee.

High Speed Rail

Florida voters passed a constitutional amendment to develop and operate high speed (125-150 mph) rail between the state's five major metropolitan areas. A High Speed Rail (HSR) Authority was created to study how to implement the system. The preliminary estimated costs are \$1.3-\$1.6 billion (capital) and \$3.5 million (annual operations and maintenance).

Status

The HSR Authority submitted their findings to the Legislature on January 1, 2002. The Authority has authorized project development and environment studies and ridership studies for the Tampa to Orlando portion of the project. Implementation of HSR is contingent on the outcome of these ongoing efforts.

1.3.6.2.2 Complement to Rail Service

The I-4 PD&E Study - Section 2 has been developed in coordination with the I-4 MMMP, CFLRTS, and other rail initiatives. The project reserves a 44-foot rail corridor in portions of the median of I-4. The rail corridor has been closed between SR 528 (Bee Line Expressway) and Kirkman Road since the LRT alignment in this area is along International Drive. The rail corridor is open between Kirkman Road and Rio Grande Avenue. At this point, the LRT alignment moves out of the I-4 median and runs eastbound along the I-4 right-of-way to Grant Avenue. The rail corridor is closed from Rio Grande Avenue to just north of Central Parkway in Seminole County. From just north of Central Parkway to SR 472 in Volusia County, the project terminus, the rail corridor is open.

In addition, the Park & Ride lots developed for the project may be utilized in the future for multi-modal transportation terminals.

1.3.6.3 Airports

There are three airports located within the project corridor. The Greater Orlando Aviation Authority (GOAA) manages OIA and Orlando Executive Airport. The Orlando-Sanford Airport is managed by Sanford Airport Authority. Locations of the airports are shown in Figure 1-27.

1.3.6.3.1 Existing Services

The three airports within the project study area offer convenient air travel for the tourism industry and business travelers. The following is a summary of the existing services offered by each of the airports.

Orlando International Airport

OIA, located in the City of Orlando, is the fastest growing major international airport in the world, ranking it the 15th busiest in the nation and 24th busiest in the world. OIA is the fourth largest port of entry for international visitors in the continental United States. It schedules service to 33 international destinations, and has scheduled non-stop service to 75 domestic U.S. destinations. Cargo tonnage at OIA has increased an overall 73.9 percent since 1990, including a 371.8 percentage increase in international cargo and an increase of 58 percent in domestic cargo. More than 38 million passengers were served at OIA in 2000, including more than 1,000 arrivals and departures daily. Only 30 percent of the 15,000 acres of land owned by the airport is currently developed. Access to OIA from the I-4 corridor is via SR 528 (Bee Line Expressway).

Orlando-Sanford Airport

Orlando-Sanford Airport, located in the City of Sanford, has expanded to become the third busiest international port of entry in Florida. Expansion has included the enlargement of the domestic terminal and the opening of an international complex. The two-story international terminal can handle up to 1,000 incoming passengers per hour. The airport boasted an increase in charter arrivals and departures from 50,000 in 1995 to 1.1 million in 2000. The airport has a Federal Aviation Authority Air Traffic Control Tower and three paved runways, with the main runway providing an all-weather, Category I approved instrument approach. The airport also houses a 150-acre industrial

park serving aviation and non-aviation industries. Rail service is available to the western sector of the park. Access to Orlando-Sanford Airport from the I-4 corridor is via Lake Mary Boulevard or CR 46A.

Orlando Executive Airport

Orlando Executive Airport, located about two miles east of downtown Orlando, is the 25th busiest general aviation airport in the United States. Services include providing for personal and corporate flying needs, flight instruction, aircraft sales and rentals, maintenance, charter, storage, and air ambulance services. Federal Aviation Authority offices are also located on-site at this airport. Access to Orlando Executive Airport from the I-4 corridor is via SR 408 (East/West Expressway).

1.3.6.3.2 Future Service

According to GOAA, OIA has development plans in place to significantly expand the services of the airport in the future. GOAA has also indicated that Orlando Executive Airport will not expand their services significantly, but will maintain existing services. Orlando-Sanford Airport is in the process of building new facilities to accommodate increasing flight operations. A summary of the future services at the airports is provided below.

Orlando International Airport

OIA is currently in the design phase of the new South Terminal Complex. The complex will be developed to handle 40 million passengers annually. The concept creates a terminal building and attached gate areas for ease of passenger flow. The initial terminal and subsequent terminal will be directly connected to the concourses containing aircraft gates on the north and south sides of the terminal complex. This design, planned primarily for international passengers, brings landside building functions, particularly Immigration and Naturalization Services, United States Department of Agriculture, and Customs facilities, as close to the international gates as possible.

In 2000, the airport served more than 38 million passengers annually with 94 gates. By 2005, the airport is projected to serve approximately 40 million passengers annually. When fully developed, OIA will have the capacity to serve 70 million domestic and international passengers annually.

Orlando-Sanford Airport

The master plan of the airport was updated in January 1995 and revised in 1997. Highlights of infrastructure development during the last five years include a main runway declared distance enhancement, an international arrivals building, an expansion to the international arrivals building, taxiway improvements, new PAPI-2 and PAPI-4 systems, a Part 150 noise study, FAA control tower, air carrier ramp expansion, a general aviation runway, a new fire station, the Cargo Centre, a parking lot transition project, and a Taxiway "B" West extension. Current projects include installation of a new instrument landing system (ILS), terminal and hangar facilities for SunJet Aviation, and a new hangar for C.E. Avionics. Future development calls for a planned expansion to the domestic terminal building.

On January 26, 1999, Orlando-Sanford Airport broke ground on the new ILS. The ILS provides navigational assistance for aircraft landing on 27R, the main runway of the airport, during inclement weather.

Orlando Executive Airport

Orlando Executive Airport does not have any new infrastructure projects planned for the future. Improvements at the airport will be to upgrade and maintain existing facilities.

1.3.6.3.3 Complement to Airports

The proposed improvements will complement the increased facility development at OIA and Orlando-Sanford Airport by improving access to the airports. Surface transportation vehicles such as buses, carpools, and shuttle providers destined for the airports will have the ability to use the HOV lanes, allowing increased mobility.

1.3.6.4 Ports

Two ports may be accessed from the I-4 corridor: Port Canaveral and the Port of Sanford. The locations of these ports are shown on Figure 1-28.

1.3.6.4.1 Existing Services

The existing services at Port Canaveral include dry and liquid cargo, cruise facilities, and industrial and distribution space. The existing services at the Port of Sanford include a small craft marina and industrial and distribution space. The following is a summary of the existing services offered at each facility.

Port Canaveral

Port Canaveral, the world's only quadramodal (sea, land, air, and space) transportation hub, is located 50 miles east of Orlando, near Cocoa Beach in Brevard County. This port has direct access to highways traveling north/south and east/west, connecting to state-wide markets. The port has two liquid bulk facilities and eight dry cargo berths with 3,800 feet of berthing space - including two Roll On/Roll Off (RO/RO) ramps - available for its customers. In addition, seven cruise terminals serve more than 1.6 million passengers at this port annually. Access to the port from the I-4 corridor is via SR 528 (Bee Line Expressway).

Port of Sanford

Port of Sanford has river barge access from the Atlantic Intercoastal Waterway in Jacksonville via the St. Johns River to Lake Monroe. It is located in Seminole County near the I-4/US 17-92 interchange. This port includes 250,000 square feet of industrial and distribution space, a 350-foot main pier, and a 100-foot bulk unloading pier. Access to the port from the I-4 corridor is via the US 17-92 interchange.

1.3.6.4.2 Future Service

Future services at the ports are discussed in the following paragraphs. Future services include the expansion of cargo facilities, cruise terminals, and industrial and distribution space.

Port Canaveral

Future plans call for the construction of two additional cargo berths in the port's West Turning Basin. In addition, there are plans for the addition of two more cruise terminals at the port.

In 1998, Port Canaveral began construction of a small container yard on the north side of the port. This new \$6 million facility will allow Port Canaveral to serve as a feeder port to the much larger container hub being constructed at Freeport, Bahamas. Phase 1 of the new facility will be configured to accommodate 160 ground slots for 40-foot equivalent (FEU) containers on chassis. The site will also have the ability to be reconfigured to use a three-high straddle stacker, which will allow the site to accommodate up to 450 FEUs. In addition, 40 ground slots will be equipped with electrical plug connections for refrigerated containers.

Port of Sanford

Plans for the Port of Sanford include the expansion of industrial and distribution space. The port is actively seeking tenants for their facilities.

1.3.6.4.3 Complement to Ports

The proposed action includes improvements to I-4 that will increase mobility on the interstate and provide access that is more efficient to Port Canaveral and the Port of Sanford. No marine expansion is proposed.

1.3.6.5 Bicycle and Pedestrian Facilities

According to Florida Statute, pedestrian and bicycle facilities are prohibited on limited-access interstate facilities such as I-4. The following is a discussion of bicycle facilities (bikeways, trails,

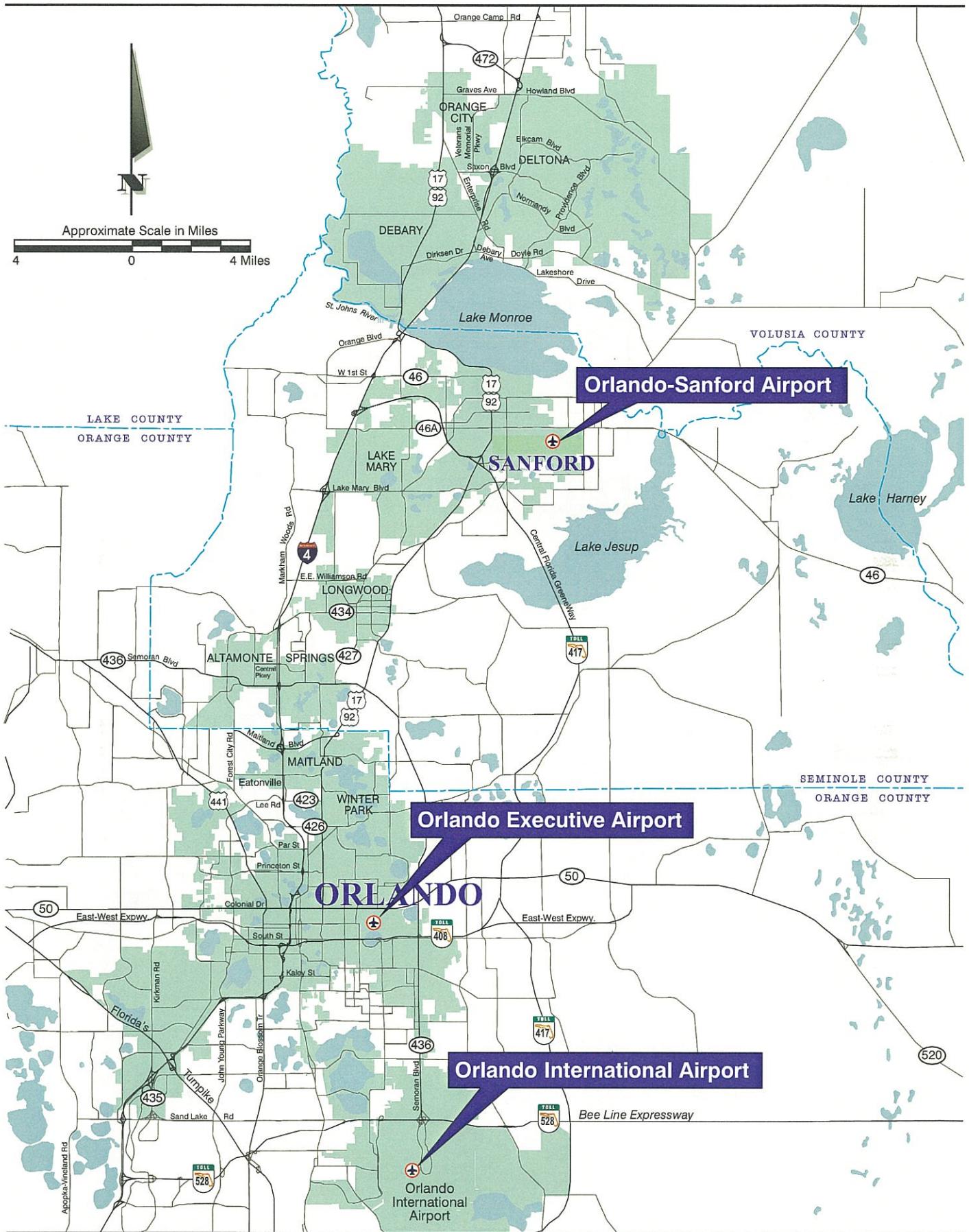


Figure 1-27
Regional Airport Locations

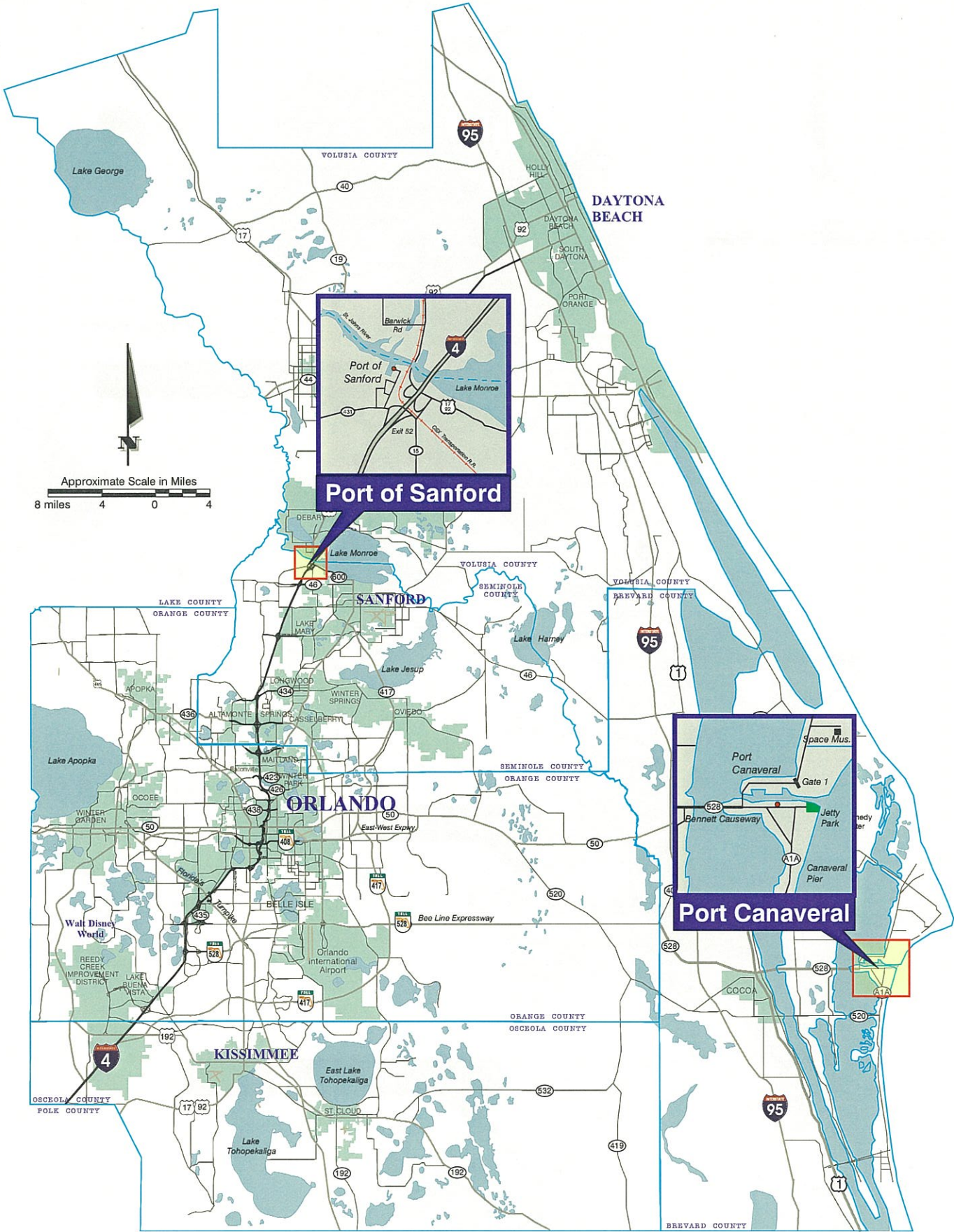


Figure 1-28
Regional Port Locations

and greenways) and pedestrian facilities within the Ultimate project and Preferred Alternative study areas.

1.3.6.5.1 Existing Services

Bikeway, trail, and greenway facilities are located throughout the project study area on crossroads and roadways adjacent to I-4. These facilities are categorized by use. Bikeway facilities include bike lanes, bike routes, and/or paved shoulders. Trail facilities include paved multiple use trails for walking, bicycling, and skating, and unpaved multiple use trails for hiking, horseback riding, and off-road bicycling. Greenway facilities are corridors of protected open space that are managed for conservation and/or recreation. Table 3-38 catalogues 44 existing and proposed facilities that either cross I-4 or are linked to facilities that cross I-4 within the Ultimate project and Preferred Alternative study areas. These facilities are presented graphically on Figure 3-14.

A summary of information for sidewalks crossing I-4 and for sidewalks in areas adjacent to I-4 within the study area is presented in Table 3-39 and Figure 3-15. The majority of the information was obtained from field surveys conducted in December 1996. In addition, METROPLAN ORLANDO's 2020 LRTP Update and Volusia County MPO's 2020 LRTP Refinement were reviewed for information on existing sidewalks within the vicinity of I-4.

1.3.6.5.2 Future Service

A number of new bicycle and pedestrian facilities have been proposed by the various jurisdictions within the project study area. These proposed facilities are included within Tables 3-38 and 3-39 and shown on Figures 3-14 and 3-15, respectively.

1.3.6.5.3 Complement to Bicycle and Pedestrian Facilities

The proposed improvements include provision for future development of bicycle and pedestrian facilities on cross streets. Future road widening projects within the state have been recommended to include roadway bicycle lanes to accommodate bicycle traffic. All interstate overpasses proposed for reconstruction as part of this project have been designed to ensure that all cross streets will have sufficient room to incorporate pedestrian and bicycle facilities during future cross street improvement projects. In addition, cross street overpasses proposed for reconstruction will be designed to accommodate pedestrian and bicycle facilities.

1.3.7 Safety

Crash data was provided by FDOT for I-4 for a three-year period from 1997 through 1999 and for SR 408 (East/West Expressway) from 1997 through 1999 (*Note: This three-year period summarizes the most recent crash data available to date*). The crash data provided includes the I-4 corridor from just west of the I-4/SR 528 (Bee Line Expressway) interchange in Orange County to just east of the I-4/SR 472 interchange in Volusia County, and the SR 408 (East/West Expressway) corridor from just west of the SR 408 (East/West Expressway)/Tampa Avenue interchange to just west of the SR 408 (East/West Expressway)/Bumby Avenue interchange.

Crash data was analyzed to determine high crash roadway sections, the types of crashes that occurred, and the associated economic loss per year associated with those roadway sections on I-4 and SR 408 (East/West Expressway) within the project study area. A summary of crash types on I-4 is presented in Table 1-7. Tables 1-8 through 1-11 summarize the I-4 crash data by segment in and include information on location, the number of fatalities/injuries, crash rates, safety ratios, and economic loss. Table 1-12 provides a summary of similar information for the SR 408 (East/West Expressway) crash data.

The safety ratio is defined as the ratio between the actual crash rate and the critical crash rate. The actual crash rate is a function of the roadway section length times the annual number of vehicles in relation to the number of crashes. The critical crash rate is a function of the roadway section length, the traffic volume, and the statewide average crash rate for similar roadway facilities. A safety ratio equal to or greater than one (1.00) indicates that the facility is experiencing more crashes than would

be typically anticipated on this type of facility, and that the roadway section is considered a high hazard location. The higher the safety ratio, the greater the hazard. The areas within the project area that experience a safety ratio greater than 1.00 are presented in Table 1-13.

As shown in Table 1-7, the most common type of crash on I-4 through this three-year period was rear-end collisions. A total of 2,490 rear-end collisions or 52.0 percent of the total number of crashes, occurred within the project area between 1997 and 1999. The second most frequent crash type was vehicle sideswipes, totaling 414 or 8.6 percent of the total number of crashes within the project area. The third most frequent type of crash was angled collisions, totaling 364 or 7.6 percent of the total number of crashes for the same three-year period.

Overall, the Ultimate project study area demonstrates a gradual increase in traffic crashes in urban areas over the past few years corresponding to annual increases in daily traffic volumes and area growth. The proposed improvements will involve the reconstruction of I-4 to current design standards to improve driver safety. The following sections discuss the crash data analysis by segment.

1.3.7.1 Segment 1

As shown in Table 1-8, the safety ratios for I-4 in Segment 1 range from 0.085 to 2.356. One interchange recorded a safety ratio greater than 1.00. The I-4/Kirkman Road (SR 435) interchange had a safety ratio of 2.356 in 1997, for a roadway section of approximately 0.009 miles (48 feet).

The high safety ratio for this roadway section along I-4 can be attributed to the short segment length. Roadway segment lengths less than one-mile result in an artificially high safety ratio. A total of six crashes occurred at the I-4/Kirkman Road interchange in 1997.

Another area with a high number of crashes is the section of I-4 between the interchanges of Florida's Turnpike and Orange Blossom Trail (US 441), a length of approximately 3.9 miles. Although this section of roadway had a safety ratio less than 0.400, the number of crashes were high totaling 88, 89, and 125 in 1997, 1998, and 1999, respectively.

1.3.7.2 Segments 2 and 3

As shown in Table 1-9, the safety ratios for I-4 within Segments 2 and 3 range from 0.077 to 1.275. One section had a safety ratio greater than 1.00. The I-4/Orange Blossom Trail (US 441) interchange had a high safety ratio of 1.275 in 1999 for a short roadway section approximately 0.007 miles (37 feet) in length. The high safety ratio for this roadway section is due to the short segment length. Roadway segment lengths less than one-half mile result in artificially high safety ratios. This section only experienced three crashes in 1997. Another high accident area within Segments 2 and 3 is along I-4 from Robinson Street to Lee Road.

Although the safety ratios in this area are less than 0.600, the number of crashes that occurred annually generally exceeds 131. This high number of crashes may be due to the less than desirable vertical and horizontal curves along I-4 and higher traffic volumes in that area.

Crash data for SR 408 (East/West Expressway) is presented in Table 1-12. The safety ratios for this facility were well below 1.00 for the same three-year period from 1997 to 1999. The safety ratios ranged from 0.158 to 0.259 for a roadway section of 3.1 miles in length. However, the number of crashes that have occurred on SR 408 (East/West Expressway) within the study area have increased approximately 20 percent between 1997 and 1999.

1.3.7.3 Segments 4 and 5

Safety ratios for sections on I-4 located in Segments 4 and 5 are presented in Table 1-10. The safety ratios fall within the range of 0.050 to 6.563. The Lake Mary Boulevard interchange had a safety ratio greater than 1.00 in a three-year period. The high safety ratio for this roadway section is due to the short segment length. Roadway segment lengths less than one-half mile result in artificially high safety ratios.

A high number of crashes were also identified within the section of I-4 between Lake Mary Boulevard and the Seminole/Volusia County line, a total length of approximately 5.8 miles. Although this section of roadway had a safety ratio less than 0.600, the number of crashes were high totaling 162, 121, and 120 in 1997, 1998, and 1999, respectively.

1.3.7.4 Segment 6

As shown in Table 1-11, safety ratios along I-4 within Segment 6 ranged from 0.295 to 1.315. Two sections of the roadway experienced safety ratios higher than 1.00. The section of I-4 from the Seminole/Volusia County line to Dirksen Drive resulted in high safety ratios of 1.119 and 1.090 in 1998 and 1999, respectively. The section of I-4 from approximately 0.50 miles west of SR 472 to the SR 472 interchange also resulted in high safety ratios of 1.315 and 1.231 in 1998 and 1999, respectively.

A high number of crashes were also identified within the section of I-4 between Dirksen Drive and SR 472, a total length of approximately 5.5 miles. Although this section of roadway had a safety ratio less than 0.400, the number of crashes were high totaling 67, 88, and 69 in 1997, 1998, and 1999, respectively.

1.3.8 Navigation

I-4 crosses the St. Johns River/Lake Monroe at the Seminole/Volusia County line, located just north of the I-4/US 17-92 interchange. In this section of I-4, the mainline currently operates at a LOS F (refer to Figure 1-11). There are several public and private facilities located downstream within 0.5 miles of the crossing. These facilities include Wayside Park and Dock, Port of Sanford, Hidden Harbor Marina, and Lake Monroe Park.

The St. Johns River is a navigable waterway. Major cargo, including fertilizer, oil and gasoline, phosphate rock, cement, motor vehicles, paper, and fruit, are transported on the river. The majority of the marine traffic consists of sailboats, cabin cruisers, pontoon boats, and small outboard motorboats.

The United States Coast Guard (USCG) regulates clearances for the St. Johns River. The minimum guide clearance for a fixed, high level structure over the St. Johns River is 45 feet above the mean high water line. The USCG also requires a minimum horizontal clearance of 110 feet. The existing bridge provides 45.3 feet of mean vertical clearance and 91.0 feet of mean horizontal clearance.

The St. Johns River is a tidal river, but is considered to be a federal project. The channel depth is maintained by the U.S. Army Corps of Engineers (USACE). The regulated channel depth near the I-4 crossing is approximately five feet deep and 200 feet wide.

While no navigational deficiencies exist with the current bridge, the bridge is both structurally and functionally deficient with regard to I-4. The existing bridge was constructed in 1950, and currently has a structural evaluation number of 5, on a scale of 1 to 10, with 10 being structurally sound. The existing bridge allows four lanes of traffic over the St. Johns River.

The USCG has been a part of the proposed improvements throughout project development. A representative from the USCG attended the project's scoping meeting. Issues of concern raised by the representative from the USCG are summarized in the *Scoping Summary Report* (September 1997). In addition, a USCG bridge project questionnaire was completed and forwarded to the USCG. Correspondence from the USCG is contained in Appendix C.

The proposed project will not block access of any vessel presently using local service facilities during construction. It should be noted that the St. Johns River bridge substructure and the superstructure for the general use lanes and the foundation for the HOV lanes are being advanced as part of the I-4 Six Laning and St. Johns River Bridge project. Therefore, the minimum horizontal and vertical clearances for the bridge superstructure for the HOV lanes will most likely be established as part of the St. Johns River Bridge project.

Table 1-7. Project Area Overall Crash Type Summary

Type of Crash	1997			1998			1999			Total	Percent
	Orange County	Seminole County	Volusia County	Orange County	Seminole County	Volusia County	Orange County	Seminole County	Volusia County		
Collision Rear End	595	272	45	570	177	74	540	160	57	2490	52.0%
Collision Head On	6	3	0	3	2	1	9	2	1	27	0.6%
Collision Angle	68	26	14	77	23	14	99	29	14	364	7.6%
Collision Left Turn	13	2	4	7	2	1	11	2	3	45	0.9%
Collision Right Turn	0	0	0	2	0	0	1	0	0	3	0.1%
Collision Sideswipe	94	38	12	78	37	11	86	41	17	414	8.6%
Collision Backed Into	0	1	0	2	0	0	2	2	0	7	0.1%
Collision Parked Car	5	1	0	4	3	0	6	1	0	20	0.4%
Collision w/MV on Other Road	1	0	1	1	1	0	0	2	0	6	0.1%
Collision w/Pedestrian	5	3	1	4	3	0	2	2	1	21	0.4%
Collision w/Bike	0	0	0	0	0	0	0	0	0	0	0.0%
Collision w/Bike (Bike Lane)	0	0	0	0	0	0	0	0	0	0	0.0%
Collision w/Moped	0	0	0	0	0	0	0	0	0	0	0.0%
Collision w/Train	0	0	0	0	0	0	0	0	0	0	0.0%
Collision w/Animal	1	0	0	0	0	0	0	0	0	1	0.0%
MV H/Sign/Sign Post	5	1	2	8	1	5	10	3	3	38	0.8%
MV H/Utility Pole/Light Pole	11	0	0	1	0	3	17	0	2	34	0.7%
MV H/Guardrail	58	25	5	62	17	13	66	15	9	270	5.6%
MV H/Fence	5	1	3	8	0	4	2	1	4	28	0.6%
MV H/Concrete Barrier Wall	49	2	1	68	4	6	47	4	7	188	3.9%
MV H/Bridge/Pier/Abutment	1	2	3	1	1	0	1	0	2	11	0.2%
MV H/Tree/Shrub	12	3	7	9	3	7	6	3	6	56	1.2%
Collision w/Construction Barricade/Sign	2	4	1	2	1	0	4	2	0	16	0.3%
Collision w/Traffic Gate	0	0	0	0	0	0	0	0	0	0	0.0%
Collision w/Crash Attenuators	1	0	0	0	0	0	1	0	0	2	0.0%
Collision w/Fixed Object Above Road	0	0	3	3	3	0	1	0	0	10	0.2%
MV H/Other Fixed Object	1	0	0	5	2	0	7	1	1	17	0.4%
Collision w/Moveable Object on Road	9	7	0	9	9	3	8	2	4	51	1.1%
MV Ran Into Ditch/Culvert	13	10	3	20	14	5	12	11	9	97	2.0%
Ran Off Road Into Water	3	0	2	3	0	2	1	2	5	18	0.4%
Overtuned	33	23	14	36	23	22	31	37	23	242	5.1%
Occupant Fell From Vehicle	2	2	1	0	0	0	3	3	2	13	0.3%
Tractor/Trailer Jackknifed	3	2	2	3	3	2	1	3	6	25	0.5%
Fire	2	0	0	1	0	1	0	0	0	4	0.1%
Explosion	0	0	0	0	0	0	0	0	0	0	0.0%
All Other	69	22	11	38	23	14	56	28	10	271	5.7%
Sub Total:	1067	450	135	1025	352	188	1030	356	186	4789	100.0%
Year End Total:	1652			1565			1572				

Note: The most recent accident data available were for the three-year period of 1997 through 1999.
Most common type of crash: 1st - rear end; 2nd - sideswipe; 3rd - angle

Table 1-8. Segment 1 Crash Data

Description	Begin MP	End MP	Length (miles)	No. of Lanes	Type (Urban/Rural)	Divided (Y/N)	Average Daily Traffic	No. of Crashes	No. of Fatalities	No. of Injuries	Actual Crash Rate	Critical Crash Rate	Safety Ratio	Property	Property Damage	Economic Loss
1997																
SR 528 (Bee Line Expwy) Interchange	5.971	6.014	0.043	7	U	Y	155,000	6	0	5	2.467	3.661	0.673	2	N/A	\$501,600
SR 528 Interchange to approx. 1 mile west of Sand Lake Rd Interchange	6.014	7.376	1.376	6	U	Y	133,685	26	0	29	0.391	1.852	0.211	7	\$5,400	\$2,173,600
Approx. 1 mile west of SR 482 interchange to Sand Lake Rd Interchange	7.376	8.413	1.037	7	U	Y	124,357	38	1	45	0.807	1.938	0.416	16	N/A	\$3,176,800
Sand Lake Rd Interchange	8.413	8.444	0.031	14	U	Y	125,000	2	0	0	1.414	4.287	0.329	2	N/A	\$167,200
Sand Lake Rd Interchange to approx. 0.60 miles west of International Dr Interchange	8.444	9.042	0.598	7	U	Y	125,000	7	0	4	0.256	2.107	0.121	4	N/A	\$585,200
Approx. 0.60 miles west of International Dr Interchange to International Dr Interchange	9.042	9.592	0.550	6	U	Y	125,000	14	1	14	0.557	2.137	0.260	5	\$3,000	\$1,170,400
International Dr Interchange	9.592	9.659	0.067	10	U	Y	125,000	1	0	1	0.327	3.436	0.095	0	\$0	\$83,600
Kirkman Rd Interchange	9.659	9.939	0.280	7	U	Y	125,000	15	0	6	1.174	2.429	0.483	10	\$500	\$1,254,000
Kirkman Rd Interchange	9.939	9.948	0.009	10	U	Y	125,000	6	0	4	14.634	6.209	2.356	2	N/A	\$501,600
Kirkman Rd Interchange	9.948	10.153	0.205	6	U	Y	115,813	8	0	5	0.923	2.642	0.349	5	N/A	\$668,800
Kirkman Rd Interchange	10.153	10.192	0.039	10	U	Y	114,500	1	0	1	0.613	4.111	0.149	0	\$0	\$83,600
Kirkman Rd Interchange to Florida Turnpike Interchange	10.192	10.711	0.519	7	U	Y	114,500	8	0	5	0.368	2.193	0.167	4	N/A	\$668,800
Florida Turnpike Interchange to approx. 0.50 miles west of Orange Blossom Tr Interchange	10.711	14.571	3.860	6	U	Y	127,386	88	0	108	0.490	1.671	0.293	32	\$11,140	\$7,356,800
Approx. 0.50 miles west of Orange Blossom Tr Interchange to Orange Blossom Tr Interchange	14.571	14.960	0.389	7	U	Y	141,500	27	0	24	1.343	2.223	0.604	12	\$2,000	\$2,257,200

1-77

Table 1-8. Segment 1 Crash Data (Continued)

Description	Begin MP	End MP	Length (miles)	No. of Lanes	Type (Urban/Rural)	Divided (Y/N)	Average Daily Traffic	No. of Crashes	No. of Fatalities	No. of Injuries	Actual Crash Rate	Critical Crash Rate	Safety Ratio	Property	Property Damage	Economic Loss
1998																
SR 528 (Bee Line Expwy) Interchange	5.971	6.008	0.037	7	U	Y	161,200	4	0	1	1.837	3.891	0.472	3	N/A	\$334,400
SR 528 Interchange to approx. 2.5 miles west of Sand Lake Rd Interchange	6.008	6.063	0.055	10	U	Y	161,200	2	0	2	0.618	3.484	0.177	0	\$0	\$167,200
Approx. 2.5 miles west of Sand Lake Rd interchange to Sand Lake Rd Interchange	6.063	7.548	1.485	6	U	Y	138,536	21	0	16	0.279	1.891	0.147	11	\$11,600	\$1,755,600
Sand Lake Rd Interchange	7.548	8.347	0.799	7	U	Y	131,453	16	0	22	0.417	2.067	0.201	3	N/A	\$1,337,600
Sand Lake Rd Interchange	8.347	8.444	0.097	14	U	Y	130,800	4	0	0	0.863	3.170	0.272	4	N/A	\$334,400
Sand Lake Rd. Interchange to approx. 0.60 miles west of International Dr Interchange	8.444	8.979	0.535	7	U	Y	130,800	9	0	11	0.352	2.204	0.159	2	\$32,500	\$752,400
Approx. 0.60 miles west of International Dr Interchange to International Dr Interchange	8.979	9.589	0.610	6	U	Y	130,800	11	0	16	0.377	2.157	0.174	2	N/A	\$919,600
International Dr Interchange to Kirkman Rd Interchange	9.589	9.940	0.351	7	U	Y	130,800	15	0	11	0.895	2.377	0.376	7	N/A	\$1,254,000
Kirkman Rd Interchange	9.940	9.949	0.009	10	U	Y	130,800	2	0	0	4.662	6.307	0.739	2	N/A	\$167,200
Kirkman Rd Interchange	9.949	10.162	0.213	6	U	Y	119,900	12	0	13	1.287	2.683	0.479	5	N/A	\$1,003,200
Kirkman Rd Interchange	10.162	10.186	0.24	10	U	Y	119,900	4	0	4	3.809	4.822	0.789	1	N/A	\$334,400
Kirkman Rd Interchange to Florida Turnpike Interchange	10.186	10.754	0.568	7	U	Y	119,900	13	0	11	0.522	2.214	0.235	4	\$1,500	\$1,086,800
Florida Turnpike Interchange to Orange Blossom Tr Interchange	10.754	14.679	3.925	6	U	Y	127,400	89	0	84	0.487	1.732	0.281	30	\$7,900	\$7,440,400
Orange Blossom Tr Interchange	14.679	14.941	0.262	7	U	Y	148,700	14	0	14	0.984	2.455	0.400	4	\$750	\$1,170,400
Orange Blossom Tr Interchange	14.941	14.970	0.029	14	U	Y	148,700	5	0	2	3.178	4.274	0.743	3	\$1,200	\$418,000

Table 1-8. Segment 1 Crash Data (Continued)

Description	Begin MP	End MP	Length (miles)	No. of Lanes	Type (Urban/Rural)	Divided (Y/N)	Average Daily Traffic	No. of Crashes	No. of Fatalities	No. of Injuries	Actual Crash Rate	Critical Crash Rate	Safety Ratio	Property	Property Damage	Economic Loss
1999																
SR 528 (Bee Line Expwy) Interchange	5.971	6.015	0.044	7	U	Y	137,000	1	0	0	0.454	3.743	0.121	1	N/A	\$83,600
SR 528 Interchange to approx. 0.5 miles west of Sand Lake Rd Interchange	6.015	7.548	1.533	6	U	Y	137,141	26	0	34	0.338	1.805	0.187	8	N/A	\$2,173,600
Approx. 0.5 miles west of Sand Lake Rd interchange to Sand Lake Rd Interchange	7.548	8.425	0.877	7	U	Y	137,080	21	1	15	0.478	1.942	0.246	9	\$300	\$1,755,600
Sand Lake Rd Interchange	8.425	8.444	0.019	14	U	Y	136,500	1	0	0	1.057	4.805	0.219	1	\$1,500	\$83,600
Sand Lake Rd Interchange to approx. 0.5 miles west of International Dr Interchange	8.444	9.056	0.612	7	U	Y	136,500	7	1	8	0.229	2.054	0.111	3	\$5,000	\$585,200
Approx. 0.5 miles west of International Dr Interchange to International Dr Interchange	9.056	9.573	0.517	6	U	Y	136,500	25	0	34	0.970	2.112	0.459	8	N/A	\$2,090,000
International Dr Interchange	9.573	9.645	0.072	10	U	Y	136,500	1	0	0	0.278	3.268	0.085	1	N/A	\$83,600
International Dr Interchange to Kirkman Rd Interchange	9.645	9.922	0.277	7	U	Y	136,500	9	0	11	0.652	2.373	0.274	1	\$2,500	\$752,400
Kirkman Rd Interchange	9.922	9.948	0.026	10	U	Y	136,500	2	0	3	1.544	4.373	0.353	N/A	\$1,000	\$167,200
Kirkman Rd Interchange	9.948	10.167	0.219	6	U	Y	132,692	13	2	13	1.225	2.508	0.488	3	\$6,950	\$1,086,800
Kirkman Rd Interchange	10.167	10.216	0.049	10	U	Y	132,000	2	0	2	0.847	3.669	0.230	1	N/A	\$167,200
Kirkman Rd Interchange to Florida Turnpike Interchange	10.216	10.741	0.525	7	U	Y	132,000	12	0	8	0.474	2.119	0.223	5	\$650	\$1,003,200
Florida Turnpike Interchange to Orange Blossom Tr Interchange	10.741	14.646	3.905	6	U	Y	139,904	125	2	108	0.626	1.642	0.381	53	\$6,880	\$10,450,000
Orange Blossom Tr Interchange	14.646	14.960	0.314	7	U	Y	145,000	30	1	30	1.805	2.287	0.789	9	\$200	\$2,508,000

N/A = Not available

Table 1-9. Segments 2 and 3 Crash Data

Description	Begin MP	End MP	Length (miles)	No. of Lanes	Type (Urban/Rural)	Divided (Y/N)	Average Daily Traffic	No. of Crashes	No. of Fatalities	No. of Injuries	Actual Crash Rate	Critical Crash Rate	Safety Ratio	Property	Property Damage	Economic Loss
1997																
Orange Blossom Tr Interchange	14.960	15.004	0.044	14	U	Y	141,500	5	0	3	2.200	3.733	0.589	2	\$900	\$418,000
Orange Blossom Tr Interchange to Michigan St Interchange	15.004	15.510	0.506	7	U	Y	153,000	22	0	22	0.778	2.095	0.371	7	\$800	\$1,839,200
Michigan St Interchange	15.510	15.533	0.023	10	U	Y	169,500	1	0	2	0.703	4.279	0.164	0	\$0	\$83,600
Michigan St Interchange to Kaley Ave Interchange	15.533	16.174	0.641	6	U	Y	169,500	43	0	40	1.084	1.987	0.545	15	\$700	\$3,594,800
Kaley Ave Interchange to SR 408 Interchange	16.174	16.544	0.370	8	U	Y	169,500	39	0	48	1.703	2.172	0.784	10	\$3,900	\$3,260,400
SR 408 Interchange to Anderson St Interchange	16.544	17.163	0.619	6	U	Y	164,053	43	0	34	1.160	2.007	0.577	22	\$500	\$3,594,800
Anderson St Interchange to South St Interchange	17.163	17.414	0.251	7	U	Y	165,117	26	0	15	1.718	2.347	0.731	15	\$900	\$2,173,600
South St Interchange	17.414	17.451	0.037	10	U	Y	152,000	1	0	1	0.487	3.843	0.126	0	\$0	\$83,600
South St Interchange to Robinson St Interchange	17.451	17.663	0.212	6	U	Y	152,000	6	0	6	0.510	2.471	0.206	2	\$100	\$501,600
Robinson St Interchange to Ivanhoe Blvd Interchange	17.663	19.264	1.601	7	U	Y	160,429	91	1	80	0.970	1.779	0.545	34	\$1,801	\$7,607,600
Ivanhoe Blvd Interchange to Lee Rd Interchange	19.264	22.587	3.323	6	U	Y	160,762	185	0	162	0.948	1.659	0.571	71	\$10,350	\$15,466,000
1998																
Orange Blossom Tr Interchange to Michigan St Interchange	14.970	15.524	0.554	7	U	Y	158,973	22	0	22	0.684	2.123	0.322	7	\$750	\$1,839,200
Michigan St Interchange	15.524	15.540	0.016	10	U	Y	177,300	1	0	1	0.966	4.843	0.199	0	\$0	\$83,600
Michigan St Interchange to Kaley Ave Interchange	15.540	16.184	0.644	6	U	Y	177,300	39	0	27	0.935	2.042	0.457	16	\$1,900	\$3,260,400
Kaley Ave Interchange to SR 408 Interchange	16.184	16.556	0.372	8	U	Y	177,300	30	0	30	1.246	2.227	0.559	8	N/A	\$2,508,000
SR 408 Interchange to Anderson St Interchange	16.556	17.143	0.587	6	U	Y	173,802	42	0	39	1.127	2.076	0.542	10	\$1,500	\$3,511,200
Anderson St Interchange to South St Interchange	17.143	17.167	0.024	10	U	Y	166,000	1	0	1	0.687	4.375	0.157	0	\$0	\$83,600
South St Interchange	17.167	17.420	0.253	7	U	Y	166,000	18	0	14	1.174	2.419	0.485	9	N/A	\$1,504,800
South St Interchange to Robinson St Interchange	17.420	17.671	0.251	6	U	Y	154,400	6	0	5	0.424	2.457	0.172	1	N/A	\$501,600

Table 1-9. Segments 2 and 3 Crash Data (Continued)

Description	Begin MP	End MP	Length (miles)	No. of Lanes	Type (Urban/Rural)	Divided (Y/N)	Average Daily Traffic	No. of Crashes	No. of Fatalities	No. of Injuries	Actual Crash Rate	Critical Crash Rate	Safety Ratio	Property	Property Damage	Economic Loss
Robinson St Interchange to Ivanhoe Blvd Interchange	17.671	19.178	1.507	7	U	Y	156,443	91	3	102	1.057	1.862	0.567	29	\$3,550	\$7,607,600
Ivanhoe Blvd Interchange to Lee Rd Interchange	19.178	22.587	3.409	6	U	Y	165,658	193	1	210	0.936	1.715	0.545	46	\$5,475	\$16,134,800
1999																
Orange Blossom Tr Interchange	14.960	14.967	0.007	14	U	Y	145,000	3	0	3	8.108	6.355	1.275	1	N/A	\$250,800
Orange Blossom Tr Interchange to Michigan St Interchange	14.967	15.510	0.543	7	U	Y	164,130	23	0	20	0.707	2.032	0.347	6	\$1,600	\$1,922,800
Michigan St Interchange	15.510	15.570	0.060	10	U	Y	185,000	1	0	1	0.246	3.163	0.077	0	\$0	\$83,600
Michigan St Interchange to Kaley Ave Interchange	15.570	16.174	0.604	6	U	Y	185,000	31	1	22	0.760	1.963	0.387	12	N/A	\$2,591,600
Kaley Ave Interchange to SR 408 Interchange	16.174	16.553	0.379	8	U	Y	185,000	36	0	24	1.406	2.114	0.665	13	\$425	\$3,009,600
SR 408 Interchange to Anderson St Interchange	16.553	17.153	0.600	6	U	Y	181,308	39	0	29	0.982	1.971	0.498	14	\$1,950	\$3,260,400
Anderson St Interchange to South St Interchange	17.153	17.162	0.009	10	U	Y	173,000	1	0	2	1.760	5.605	0.314	0	\$0	\$83,600
South St Interchange	17.162	17.418	0.256	7	U	Y	173,247	17	0	11	1.050	2.299	0.456	6	N/A	\$1,421,200
South St Interchange to Robinson St Interchange	17.418	17.672	0.254	6	U	Y	161,100	14	0	9	0.937	2.336	0.401	5	\$80	\$1,170,400
Robinson St Interchange	17.672	17.675	0.003	10	U	Y	161,100	1	0	0	5.681	7.715	0.736	1	N/A	\$83,600
Robinson St Interchange to Ivanhoe Blvd Interchange	17.675	19.163	1.488	7	U	Y	165,168	88	0	78	0.980	1.773	0.552	33	\$10,010	\$7,356,800
Ivanhoe Blvd Interchange to Lee Rd Interchange	19.163	22.587	3.424	6	U	Y	173,035	142	0	130	0.656	1.632	0.401	54	\$3,725	\$11,871,200

N/A = Not available

Table 1-10. Segments 4 and 5 Crash Data

Description	Begin MP	End MP	Length (miles)	No. of Lanes	Type (Urban/Rural)	Divided (Y/N)	Average Daily Traffic	No. of Crashes	No. of Fatalities	No. of Injuries	Actual Crash Rate	Critical Crash Rate	Safety Ratio	Property	Property Damage	Economic Loss
1997																
Lee Rd Interchange	22.587	22.612	0.025	10	U	Y	159,500	6	0	4	4.123	4.250	0.970	3	N/A	\$501,600
Lee Rd Interchange to approx. 0.5 miles west of Maitland Blvd Interchange	22.612	23.159	0.547	7	U	Y	159,500	6	0	4	0.188	2.055	0.091	3	\$800	\$501,600
Approx. 0.5 miles west of Maitland Blvd Interchange	23.159	23.222	0.063	11	U	Y	159,500	2	0	1	0.545	3.270	0.166	1	N/A	\$167,200
Approx. 0.5 miles west of Maitland Blvd Interchange to Maitland Blvd Interchange	23.222	23.916	0.694	8	U	Y	159,500	14	0	10	0.346	1.981	0.174	6	\$2,100	\$1,170,400
Maitland Blvd Interchange	23.916	24.066	0.150	7	U	Y	136,833	3	0	2	0.400	2.732	0.146	2	N/A	\$250,800
Maitland Blvd Interchange	24.066	24.673	0.607	6	U	Y	125,500	4	0	1	0.143	2.101	0.068	3	\$500	\$334,400
Seminole County Line to approx. 0.7 miles west of SR 436 Interchange	0.000	0.662	0.662	6	U	Y	125,500	5	0	2	0.164	2.071	0.079	4	N/A	\$418,000
Approx. 0.7 miles west of SR 436 Interchange to SR 436 Interchange	0.662	1.341	0.679	8	U	Y	125,500	11	0	12	0.353	2.063	0.171	3	\$2,000	\$919,600
SR 436 Interchange to SR 434 Interchange	1.341	3.261	1.920	6	U	Y	125,500	35	0	24	0.397	1.792	0.221	15	\$300	\$2,926,000
SR 434 Interchange to approx. 0.5 miles west of Lake Mary Blvd Interchange	3.261	7.380	4.119	4	U	Y	103,349	73	3	64	0.469	1.692	0.277	27	\$3,800	\$6,102,800
Approx. 0.5 miles west of Lake Mary Blvd Interchange to Lake Mary Blvd Interchange	7.380	7.772	0.392	6	U	Y	101,000	5	0	4	0.345	2.368	0.145	3	N/A	\$418,000
Lake Mary Blvd Interchange	7.772	7.897	0.125	8	U	Y	101,000	56	0	22	12.152	3.080	3.945	39	N/A	\$4,681,600
Lake Mary Blvd Interchange	7.897	8.328	0.431	5	U	Y	93,300	30	0	8	2.044	2.361	0.865	22	\$165	\$2,508,000
Lake Mary Blvd Interchange	8.328	8.337	0.009	7	U	Y	80,000	2	0	2	7.633	7.035	1.085	1	N/A	\$167,200
Lake Mary Blvd Interchange to Volusia County Line	8.337	14.135	5.798	4	U	Y	77,722	162	3	132	0.984	1.683	0.584	91	\$1,500	\$13,543,200

Table 1-10. Segments 4 and 5 Crash Data (Continued)

Description	Begin MP	End MP	Length (miles)	No. of Lanes	Type (Urban/Rural)	Divided (Y/N)	Average Daily Traffic	No. of Crashes	No. of Fatalities	No. of Injuries	Actual Crash Rate	Critical Crash Rate	Safety Ratio	Property	Property Damage	Economic Loss
1998																
Lee Rd Interchange	22.587	22.604	0.017	10	U	Y	166,200	4	0	3	3.879	4.849	0.799	2	N/A	\$334,400
Lee Rd Interchange to approx. 0.6 miles west of Maitland Blvd Interchange	22.604	23.152	0.548	7	U	Y	166,200	6	0	9	0.180	2.112	0.085	1	\$500	\$501,600
Approx. 0.6 miles west of Maitland Blvd Interchange to Maitland Blvd Interchange	23.152	23.918	0.766	8	U	Y	166,200	16	2	9	0.344	2.011	0.171	7	\$2,700	\$1,337,600
Maitland Blvd Interchange	23.918	24.051	0.133	7	U	Y	159,550	4	0	7	0.516	2.797	0.184	1	\$900	\$334,400
Maitland Blvd Interchange	24.051	24.153	0.102	10	U	Y	139,600	1	0	0	0.192	3.079	0.062	1	N/A	\$83,600
Maitland Blvd Interchange	24.153	24.673	0.520	6	U	Y	139,600	8	0	8	0.301	2.191	0.137	3	\$500	\$668,800
Seminole County Line to approx. 0.6 miles west of SR 436 Interchange	0.000	0.763	0.763	6	U	Y	139,600	7	0	2	0.180	2.063	0.087	5	N/A	\$585,200
Approx. 0.6 miles west of SR 436 Interchange to SR 436 Interchange	0.763	1.301	0.538	8	U	Y	139,600	3	0	2	0.109	2.178	0.050	1	\$500	\$250,800
SR 436 Interchange to Lake Mary Blvd Interchange	1.301	7.772	6.471	6	U	Y	111,122	81	2	75	0.308	1.684	0.182	32	\$14,125	\$6,771,600
Lake Mary Blvd Interchange	7.772	7.822	0.050	8	U	Y	105,700	51	0	21	26.438	4.028	6.563	34	N/A	\$4,263,600
Lake Mary Blvd Interchange	7.822	8.328	0.506	5	U	Y	100,830	23	0	7	1.235	2.331	0.529	17	\$500	\$1,922,800
Lake Mary Blvd Interchange	8.328	8.334	0.006	7	U	Y	83,300	3	0	2	16.483	7.954	2.072	2	N/A	\$250,800
Lake Mary Blvd Interchange to Volusia County Line	8.334	14.135	5.801	4	U	Y	79,921	121	0	151	0.715	1.743	0.410	52	\$1,100	\$10,115,600

Table 1-10. Segments 4 and 5 Crash Data (Continued)

Description	Begin MP	End MP	Length (miles)	No. of Lanes	Type (Urban/Rural)	Divided (Y/N)	Average Daily Traffic	No. of Crashes	No. of Fatalities	No. of Injuries	Actual Crash Rate	Critical Crash Rate	Safety Ratio	Property	Property Damage	Economic Loss
1999																
Lee Rd Interchange	22.587	22.712	0.125	10	U	Y	158,500	2	0	2	0.276	2.736	0.100	1	N/A	\$167,200
Lee Rd Interchange to approx. 0.5 miles west of Maitland Blvd Interchange	22.712	23.206	0.494	7	U	Y	158,500	8	0	4	0.279	2.075	0.134	4	\$200	\$668,800
Approx. 0.5 miles west of Maitland Blvd Interchange to Maitland Blvd. Interchange	23.206	23.897	0.691	8	U	Y	158,500	9	0	9	0.225	1.969	0.114	3	\$4,000	\$752,400
Maitland Blvd Interchange	23.897	24.117	0.220	7	U	Y	158,500	4	0	0	0.314	2.413	0.130	4	N/A	\$334,400
Maitland Blvd Interchange	24.117	24.673	0.556	6	U	Y	129,500	8	0	6	0.304	2.105	0.144	3	\$1,150	\$668,800
Seminole County Line to approx. 0.9 miles west of SR 436 Interchange	0.000	0.499	0.499	6	U	Y	129,500	3	0	2	0.127	2.144	0.059	2	N/A	\$250,800
Approx. 0.9 miles west of SR 436 Interchange to SR 436 Interchange	0.499	1.377	0.878	8	U	Y	129,500	9	0	8	0.216	1.958	0.110	5	N/A	\$752,400
SR 436 Interchange to Lake Mary Blvd Interchange	1.377	7.783	6.406	6	U	Y	109,459	90	2	63	0.351	1.611	0.217	42	\$18,700	\$7,524,000
Lake Mary Blvd Interchange	7.783	7.897	0.114	8	U	Y	105,793	25	0	13	5.679	3.095	1.834	19	\$100	\$2,090,000
Lake Mary Blvd Interchange	7.897	8.328	0.431	5	U	Y	103,339	29	0	21	1.783	2.297	0.776	15	\$1,500	\$2,424,400
Lake Mary Blvd Interchange	8.328	8.337	0.009	7	U	Y	88,000	2	1	2	6.920	6.811	1.016	1	N/A	\$167,200
Lake Mary Blvd Interchange to Volusia County Line	8.328	14.135	5.798	4	U	Y	85,467	120	2	106	0.663	1.656	0.400	56	\$5,800	\$10,032,000

N/A = Not available

Table 1-11. Segment 6 Crash Data

Description	Begin MP	End MP	Length (miles)	No. of Lanes	Type (Urban/Rural)	Divided (Y/N)	Average Daily Traffic	No. of Crashes	No. of Fatalities	No. of Injuries	Actual Crash Rate	Critical Crash Rate	Safety Ratio	Property	Property Damage	Economic Loss
1997																
Seminole County Line to Dirksen Dr Interchange	0.000	3.415	3.415	4	R	Y	70,500	29	1	45	0.330	0.435	0.758	6	\$3,050	\$5,675,300
Dirksen Dr Interchange to SR 472 Interchange	3.415	9.035	5.620	4	R	Y	62,993	67	1	101	0.518	1.721	0.300	15	\$2,600	\$5,601,200
SR 472 Interchange	9.035	9.648	0.613	4	R	Y	53,700	5	0	3	0.416	0.573	0.726	2	\$201,400	\$978,500
1998																
Seminole County Line to Dirksen Dr Interchange	0.000	3.451	3.451	4	R	Y	74,800	46	0	41	0.488	0.436	1.119	22	\$900	\$9,002,200
Dirksen Dr Interchange to approx. 0.5 miles west of SR 472 Interchange	3.451	8.764	5.313	4	U	Y	65,388	88	0	83	0.693	1.789	0.387	46	\$18,200	\$7,356,800
Approx. 0.5 miles west of SR 472 Interchange to SR 472 Interchange	8.764	9.648	0.884	4	R	Y	56,777	13	1	16	0.709	0.539	1.315	4	N/A	\$2,544,100
1999																
Seminole County Line to Dirksen Dr Interchange	0.000	3.536	3.536	4	R	Y	86,000	51	1	64	0.459	0.421	1.090	16	\$4,075	\$9,980,700
Dirksen Dr Interchange to SR 472 Interchange	3.536	9.060	5.524	4	U	Y	68,051	69	2	76	0.502	1.697	0.295	27	\$13,600	\$5,768,400
SR 472 Interchange	9.060	9.648	0.588	4	R	Y	60,667	9	0	6	0.691	0.561	1.231	3	N/A	\$1,761,300

N/A = Not available

Table 1-12. Crash Breakdown on SR 408 (East/West Expressway)

Begin MP	End MP	Length (miles)	No. of Lanes	Type (Urban/Rural)	Divided (Y/N)	Average Daily Traffic	No. of Crashes	No. of Fatalities	No. of Injuries	Actual Crash Rate	Critical Crash Rate	Safety Ratio	Property	Property Damage	Economic Loss	
1997																
3.900	5.095	1.195	4	U	Y	49,045	11	0	12	0.514	3.239	0.158	3	N/A	\$819,500	
5.095	6.969	1.874	6	U	Y	83,550	50	0	45	0.874	4.610	0.189	14	\$8,600	\$3,165,000	
1998																
3.900	5.100	1.200	4	U	Y	54,088	17	0	12	0.717	3.247	0.220	7	\$4,035	\$1,266,500	
5.100	6.969	1.869	6	U	Y	83,333	54	0	47	0.949	4.484	0.211	19	\$5,850	\$3,418,200	
1999																
3.900	5.132	1.232	4	U	Y	64,263	19	0	10	0.657	2.952	0.222	9	\$25,850	\$1,415,500	
5.132	6.969	1.837	6	U	Y	83,959	61	1	50	1.083	4.181	0.259	24	\$7,500	\$3,861,300	

Table 1-13. Areas along I-4 with a Safety Ratio Greater than 1.00

I-4 Interchange Description	Year	County	Begin MP	End MP	Length (miles)	No. of Lanes	Type (Urban/Rural)	Divided (Y/N)	Average Daily Traffic	No. of Crashes	No. of Fatalities	No. of Injuries	Actual Crash Rate	Critical Crash Rate	Safety Ratio	Property	Property Damage	Economic Loss
Segment 1																		
Kirkman Rd	1997	Orange	9.939	9.948	0.009	10	U	Y	125,000	6	0	4	14,634	6.209	2.356	2	N/A	\$501,600
Segments 2 and 3																		
Orange Blossom Tr	1999	Orange	14.960	14.967	0.007	14	U	Y	145,000	3	0	3	8,108	6.355	1.275	1	N/A	\$250,800
Segments 4 and 5																		
Lake Mary Blvd	1997	Seminole	7.772	7.897	0.125	8	U	Y	101,000	56	0	22	12,152	3.080	3.945	39	N/A	\$4,681,600
Lake Mary Blvd	1997	Seminole	8.328	8.337	0.009	7	U	Y	80,000	2	0	2	7,633	7.035	1.085	1	N/A	\$167,200
Lake Mary Blvd	1998	Seminole	7.772	7.822	0.050	8	U	Y	105,700	51	0	21	26,438	4.028	6.563	34	N/A	\$4,263,600
Lake Mary Blvd	1998	Seminole	8.328	8.334	0.006	7	U	Y	83,300	3	0	2	16,483	7.954	2.072	2	N/A	\$250,800
Lake Mary Blvd	1999	Seminole	7.783	7.897	0.114	8	U	Y	105,793	25	0	13	5,679	3.095	1.834	19	\$100	\$2,090,000
Lake Mary Blvd	1999	Seminole	8.328	8.337	0.009	7	U	Y	88,000	2	1	2	6,920	6.811	1.016	1	N/A	\$167,200
Segment 6																		
Seminole County line to Dirksen Dr	1998	Seminole	0.000	3.451	3.451	4	R	Y	74,800	46	0	41	0.488	0.436	1.119	22	\$900	\$9,002,200
Seminole County line to Dirksen Dr	1998	Seminole	8.764	9.648	0.884	4	R	Y	56,777	13	1	16	0.709	0.539	1.315	4	N/A	\$2,544,100
Seminole County line to Dirksen Dr	1999	Seminole	0.000	3.536	3.536	4	R	Y	86,000	51	1	64	0.459	0.421	1.090	16	\$4,075	\$9,980,700
Seminole County line to Dirksen Dr	1999	Seminole	9.060	9.648	0.588	4	R	Y	60,667	9	0	6	0.691	0.551	1.231	3	N/A	\$1,761,300

N/A = Not available

1.4 Summary of Related Studies

Several related transportation studies are currently planned within the Central Florida region and the Ultimate project and Preferred Alternative study areas. The following presents descriptions of the related transportation projects.

As a result of recommendations presented in the I-4 MMMP and MIS, FDOT elected to proceed with the next phase of the I-4 corridor facility development process through four closely coordinated studies. These studies include three PD&E studies for the I-4 highway sections and the production of a Preliminary Engineering report and an EIS for the LRT system. The I-4 and LRT studies represent free-standing projects capable of independent operation. Figure 1-3 presents the study limits for the three I-4 highway sections and the LRT system. Detailed descriptions of these related studies are presented below:

- **I-4 PD&E Study - Section 1** - The I-4 PD&E Study - Section 1 involves the preparation of an Environmental Assessment/Finding of No Significant Impact (EA/FONSI) for improvements on I-4 from CR 532 in Osceola County to SR 528 (Bee Line Expressway) in Orange County. Detailed information on the Section 1 improvements is contained in the *FONSI* (June 2000) and the *Preliminary Engineering Report* (July 1999). The US 192 improvements are programmed for construction in FY 2003/2004.
- **I-4 PD&E Study - Section 3** - The I-4 PD&E Study - Section 3 initially involved the preparation of an EA/FONSI for improvements on I-4 from SR 472 to I-95 in Volusia County. Detailed information on the Section 3 improvements is contained in the *FONSI* (June 2000) and the *Preliminary Engineering Report* (April 2000).

In September 1999, FDOT performed the reassessment of I-4 PD&E Study - Section 3. The reassessment of the study involved expanding the project limits to establish an independent six-laning project from US 17-92 in Seminole County to I-95 in Volusia County.

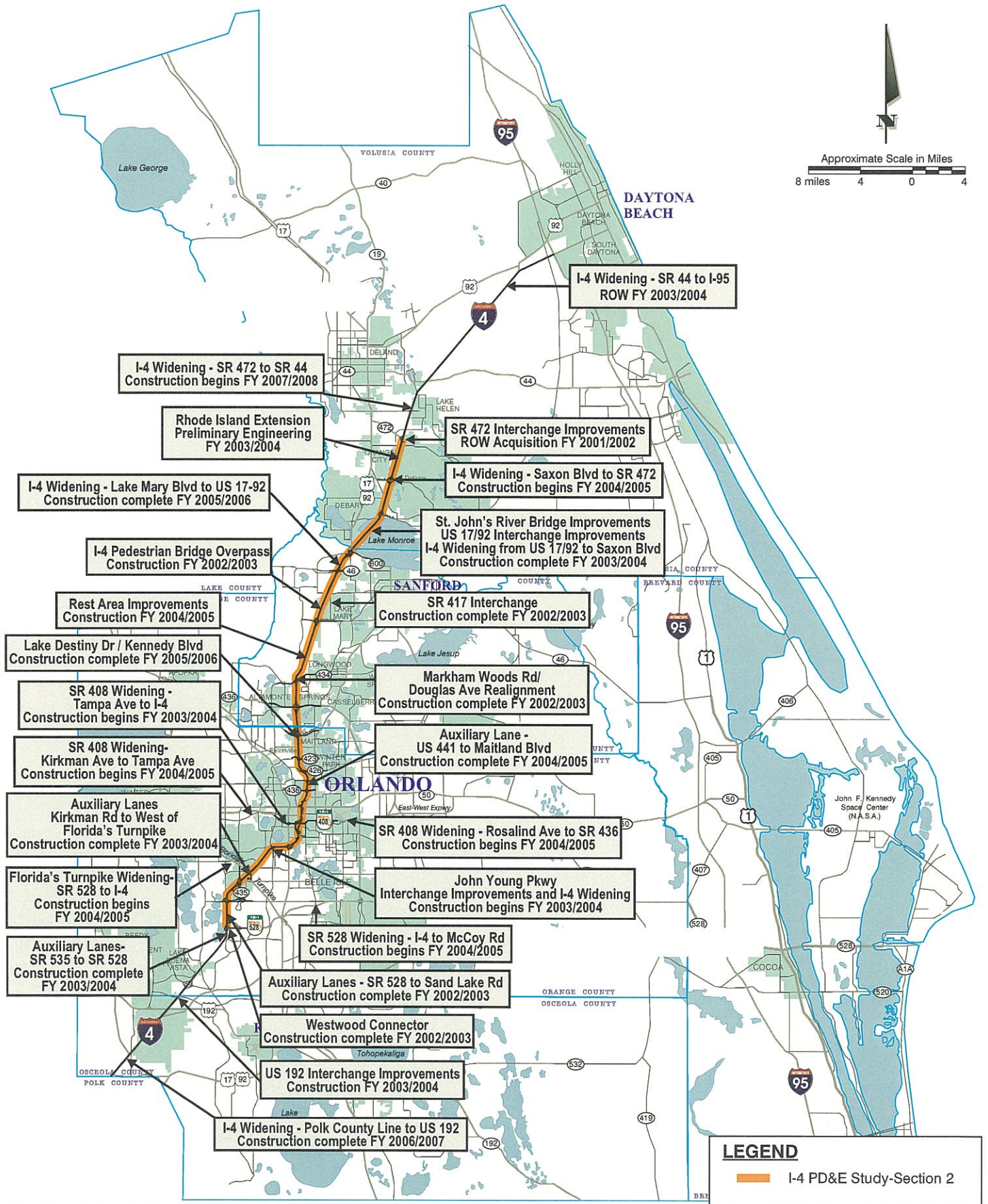
- **Central Florida Light Rail Transit System Study (CFLRTS)** - The CFLRTS involved the preparation of an EIS for a new LRT system in Orange County. The limits of the project extend from Central Florida Parkway (just south of Sea World) through downtown Orlando to the Loch Haven/Princeton Street area. The ROD for the project was approved by FTA and the project has moved into final design. The *CFLRTS Final EIS* (November 1998) contains detailed information on the LRT improvements.

Other related transportation studies within the Ultimate project and Preferred Alternative study areas are described below and shown in Figure 1-29:

- **Auxiliary Lane** - This project involves the construction of auxiliary lanes from SR 535 to SR 528 and the resurfacing of I-4 from SR 536 to SR 535 in Orange County. The design/build for the project began in August 2001. Construction is expected to be complete in FY 2003/2004.
- **Auxiliary Lane** - This project involves the construction of auxiliary lanes and the resurfacing of the I-4 mainline from SR 528 to SR 482 (Sand Lake Road) in Orange County. The design/build contract was awarded in February 2002. Construction is expected to begin in Spring/Summer 2002 and expected to be complete in FY 2002/2003.
- **Auxiliary Lane** - FDOT is constructing auxiliary lanes from Kirkman Road to west of Florida's Turnpike in Orange County. Construction for the project began in November 2001 and is expected to be complete in FY 2003/2004.
- **Auxiliary Lane** - This project involves the addition of auxiliary lanes from US 441 (Orange Blossom Trail) to Maitland Boulevard in Orange County. The design/build phase of the project began in September 2001. Construction is expected to be complete in FY 2004/2005.
- **John Young Parkway Interchange** - This project involves modifications to the John Young Parkway/I-4 interchange in Orange County. A categorical exclusion has been prepared and approved. The project is in design. Right-of-way acquisition is scheduled to begin in FY 2001/2002 and construction in FY 2003/2004.

- **Six Laning from CR 532 to US 192** – This project involves the widening of I-4 from four lanes to six lanes from CR 532 to US 192 in Osceola County. This segment is currently in design and is programmed for construction in FY 2002/2003. Construction is estimated to be complete by FY 2006/2007.
- **Six Laning from Lake Mary Boulevard to US 17-92** – This project involves the widening of I-4 from four lanes to six lanes from Lake Mary Boulevard to US 17-92 in Seminole County. This segment is currently in design and is programmed for construction in FY 2002/2003. Construction is estimated to be complete by FY 2005/2006.
- **Rest Area Improvements** – This project involves the rehabilitation of a rest area along I-4 in the westbound direction. The improvements are being evaluated by FDOT to address neighborhood concerns.
- **SR 417 (Central Florida GreeneWay)** – This project involves the construction of a new interchange at the intersection of I-4 and SR 417 (Central Florida GreeneWay) in Seminole County. The new interchange is located between CR 46A and SR 46. This interchange has been designed and construction is underway. Construction is expected to be complete in FY 2002/2003.
- **I-4 Six Laning and St. Johns River Bridge** – The I-4 Six Laning and St. Johns River Bridge project involved the preparation of an EA for improvements on I-4 from west of the US 17-92 interchange in Seminole County to the I-95 interchange in Volusia County. Improvements to I-4 will include widening the roadway from four to six GULs, interchange modifications, and the reconstruction of the bridge over the St. Johns River. Portions of the project are located within the study limits of the I-4 PD&E Study – Section 2. Detailed information on this project is contained in the approved EA/FONSI. Design/Build for the St. Johns River Bridge project is currently underway with an expected completion date of Spring 2004. Six laning from Saxon Boulevard to SR 472 is currently in design and is programmed for construction in FY 2004/2005. Six laning from SR 472 to SR 44 is in design and programmed for construction in FY 2007/2008. Finally, six laning from SR 44 to I-95 is in design with right-of-way acquisition programmed for FY 2003/2004.
- **SR 472 Interchange** – This project involves improvements to the eastbound I-4 on-ramp. Design for the interchange ramp is complete and right-of-way acquisition is scheduled for FY 2001/2002.
- **I-4 Pedestrian Bridge Overpass** – This project involves the construction of the Seminole Wekiva Trail over I-4 just south of Paola Road (CR 46A) in Seminole County. The project is currently in the design/build phase and construction is expected to be complete by FY 2002/2003.
- **Florida's Turnpike from Kissimmee-St. Cloud to SR 50** – This project consists of the widening of Florida's Turnpike from four to six or eight lanes from US 192 to SR 50. The project is in the PD&E phase of project development. Design for the portion of the project from SR 528 to I-4 is scheduled for FY 2002/2003 and construction is scheduled for FY 2004/2005.
- **SR 528 (Bee Line Expressway) from I-4 to McCoy Road** – This project consists of widening SR 528 from four to eight lanes from I-4 to McCoy Road. The project is in the PD&E phase of project development. The project is scheduled for design in December 2002 and programmed for construction in FY 2004/2005.
- **SR 408 (East/West Expressway) from Kirkman Road to Tampa Avenue** – The OOCEA is currently designing the widening of SR 408 from four to six lanes from Kirkman Road to Tampa Avenue. Construction is planned for FY 2004/2005.
- **SR 408 (East/West Expressway) from Tampa Avenue to I-4** – The OOCEA is currently designing the widening of SR 408 from four to six lanes from Tampa Avenue to I-4. Construction is planned for FY 2003/2004.

- **SR 408 (East/West Expressway) from Rosalind Avenue to SR 436** – The OOCEA is currently designing the widening of SR 408 from six to eight lanes from Rosalind Avenue to SR 436. Construction is planned for FY 2004/2005.
- **Westwood Connector** – Orange County is currently constructing a new two-lane road from Westwood Boulevard to the Orange County Convention Center. The project is currently in design. Construction is estimated to be complete by FY 2002/2003.
- **Lake Destiny Drive/Kennedy Boulevard** – This project consists of the realignment of Lake Destiny Drive under the Kennedy Boulevard four-lane widening project in Orange County. The project is currently in design. Construction is estimated to be complete by FY 2005/2006.
- **Markham Woods Road/Douglas Avenue Realignment** – This project consists of the realignment of Markham Woods Road and Douglas Avenue in the vicinity of SR 434 in Seminole County. The project is currently under construction with an estimated completion date of FY 2002/2003.
- **Rhode Island Extension** – Volusia County is planning to construct a new two-lane roadway from Veterans Memorial Parkway to Normandy Boulevard. The preliminary engineering phase of project development is scheduled for FY 2003/2004. Right-of-way acquisition is programmed for FY 2004/2005 and construction is estimated to begin in FY 2005/2006.



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Chapter 2

Alternatives Including
Proposed Action



2. Alternatives Including Proposed Action

This chapter of the FEIS describes the alternative development and assessment process for the I-4 PD&E Study - Section 2. The chapter describes the following:

- No Action Alternative (Section 2.1)
- I-4 MMMP Alternative Development Process (Section 2.2)
- Transportation Systems Management (TSM) Alternative (Section 2.3)
- Mass Transit Alternative (Section 2.4)
- Summary of Project Alternative Development Process (Section 2.5)
- DEIS Ultimate Build Alternatives (Section 2.6)
- Staging of Ultimate I-4 Improvements (Section 2.7)
- Proposed Concept Changes from DEIS (Section 2.8)
- Preferred Alternative (Section 2.9)

In addition, evaluation matrices summarizing the impacts, preliminary construction costs, and right-of-way costs for the DEIS Ultimate Build Alternatives and the Preferred Alternative are included herein.

2.1 No Action Alternative

The No Action (No Build) Alternative includes highway facilities that are likely to exist in 2020. This includes the existing highway network, in addition to the highway improvements that are identified in METROPLAN ORLANDO's *2020 Long Range Transportation Plan Update* and the Volusia County MPO's *2020 Long Range Transportation Plan Refinement*. The No Action Alternative includes those projects that provide for an increase in capacity, such as new roadway construction, widening projects, and major interchanges.

The No Action Alternative provides a baseline for comparing the travel benefits of other alternatives. The improvements contained in the TSM, Mass Transit, DEIS Ultimate Build Alternatives, and the Preferred Alternative are improvements that could be made in addition to those contained in the No Action Alternative.

The No Action Alternative does not include improvements proposed as part of the I-4 PD&E Study - Section 2. However, other roadway improvement projects identified in METROPLAN ORLANDO's *2020 LRTP Update* and the Volusia County MPO's *2020 LRTP Refinement* are included in the No Action Alternative. A listing of the projects contained in the respective LRTPs is presented in Tables 1-2 and 1-3, respectively, and shown on Figures 1-7 and 1-8, respectively. Programmed improvements for I-4 included as part of the No Action Alternative are as follows:

- Auxiliary Lanes from SR 528 (Bee Line Expressway) to Sand Lake Road (SR 482);
- Auxiliary Lanes from Kirkman Road (SR 435) to west of Florida's Turnpike;
- Auxiliary Lanes from Orange Blossom Trail (US 441) to Maitland Boulevard;
- John Young Parkway Interchange Modifications;
- Six-Laning from Lake Mary Boulevard to US 17-92;
- SR 417 (Central Florida GreeneWay) Interchange;
- SR 472 Interchange Modifications; and

- Six-Laning US 17-92 to SR 472, including the replacement of the St. Johns River bridge.

The No Action Alternative would avoid right-of-way and construction costs associated with the proposed improvements, eliminate the short-term disruption that would occur along the existing roadways during construction activities, and prevent business or residential impacts or impacts to undeveloped lands or wetlands.

However, the No Action Alternative does not fulfill the purpose and need of the project, as established in Chapter 1. The disadvantage of the No Action Alternative is that there would be no provision to accommodate the anticipated growth in traffic volumes. Without mobility improvements to I-4, operating conditions of the facility would deteriorate. The increased traffic congestion on I-4 would delay motorists and increase the potential for crashes.

The No Action Alternative remained under consideration through the public hearing process during which a Preferred Alternative was proposed. The final selection of the Preferred Alternative was made after consideration of the impacts and public hearing comments were received. Refer to Section 2.9 for a description of the Preferred Alternative.

2.2 I-4 MMMP Alternative Development Process

FDOT initiated the preparation of the I-4 MMMP in August of 1992. The I-4 MMMP was originally devised as a three-tier evaluation process. The Tier process was initiated to reduce and refine a wide range of Conceptual Mobility Enhancement Alternatives (CMEAs) down to a specific improvement program, eliminating from consideration infeasible or non-viable alternatives. The I-4 MMMP was finalized in October 1996. During the first tier evaluation process, 14 CMEAs were developed. These CMEAs offered a broad range of transportation solutions and satisfied corridor needs while focusing on the I-4 alignment. The CMEAs were also responsive to mobility objectives specified in the new Interstate Highway Policy. Through the Tier 1 evaluation process, the 14 CMEAs were reduced to five. Results of the Tier 1 evaluation process are described in the *Tier Simulation Evaluation Paper* (PBS&J Team, July 1993).

The CMEAs developed during Tier 2 (MIS phase) provided a range of treatments of transit service, highway lanes, special use lane access and eligibility requirements, treatment of through-trips, and a provision for a high speed inter-city rail envelope. The Tier 2 evaluation analysis determined adherence to accepted engineering standards, impacts of implementation, and the likelihood of success in achieving study goals. To evaluate the extent to which the CMEAs satisfied study objectives, evaluation criteria were developed. These criteria reflect the FDOT Interstate Highway Policy along with local transportation and development goals. The results of the Tier 2 evaluation are described in the *I-4 MIS* (PBS&J Team, May 1996). Nine CMEAs (seven CMEAs with one having three scenarios) were evaluated as part of the Tier 2 analysis.

Tier 3 focused on refining the design concept and scope approved by the METROPLAN ORLANDO and the Volusia County MPO. Interchange improvements, special use lane access, support facilities, and freeway operations were evaluated within the context of both freeway operations and crossroad conditions. The Tier 3 analysis also refined the phasing/staging and financing strategies for the selected alternative. The results of the Tier 3 evaluation are documented in the *Conceptual Engineering Report* (PBS&J Team, October 1996).

The following sections summarize the results of the three-tier evaluation process.

2.2.1 Tier 1 Evaluation

As part of the Tier 1 analysis, the I-4 corridor was analyzed based on generalized and easily measured data or factors available at the initiation of the alternative development stage. Brief descriptions of the 14 alternatives evaluated as part of Tier 1 are provided below and summarized in Table 2-1.

Table 2-1. Tier 1 Conceptual Mobility Enhancement Alternatives (CMEA)

Description	Interstate 4 General Use Lanes			High Occupancy Vehicle (HOV) Lane Configuration				C/D and/or Auxiliary Lanes		Other Surface Streets		Express Bus		Metro Rail Transit (MRT)		High Speed Rail (HSR)	
	4-Lane	6-Lane	8-Lane	2-Lane: SOV Access for Inter-Regional Trips Only	4-Lane: SOV Access for Inter-Regional Trips Only	4-Lane: Limited SOV Access for Inter-Regional Trips	4-Lane: Frequent SOV Access for Inter-Regional Trips	No	Yes	Financially Feasible (1)	Enhanced System (2)	Low	High	No	Yes	No	Yes
1) 8 + 0 BASE CONFIGURATION WITH CONVENTIONAL IMPROVEMENTS -Includes large regional bus system. HOV lanes and rail services not included.			√					√		√			√	√		√	
2) 6 + 4 CONFIGURATION -Includes multiple rail services. -HOV lanes restricted to HOV & inter-regional SOV trips only.		√			√				√	√		√			√		√
3) 6 + 4 CONFIGURATION -Includes multiple rail services. -Frequent HOV lane access points for inter-regional SOV trips.		√					√		√	√		√			√		√
4) 6 + 4 CONFIGURATION -Includes multiple rail services. -Limited HOV lane access points for inter-regional SOV trips.		√				√			√	√		√			√		√
5) 6 + 4 CONFIGURATION -Includes large regional bus system. Rail services not included. -Frequent HOV lane access points for inter-regional SOV trips.		√					√		√	√			√	√		√	
6) 6 + 4 CONFIGURATION -Includes large regional bus system. Rail services not included. -HOV lanes restricted to HOV & inter-regional SOV trips only.		√			√				√	√			√	√		√	
7) 6 + 4 CONFIGURATION -Includes MRT. HSR not included. -Frequent HOV lane access points for inter-regional SOV trips.		√					√		√	√		√			√	√	
8) 6 + 2 CONFIGURATION -Includes large regional bus system with no rail services. -HOV lanes restricted to HOV & inter-regional trips only. Trucks not permitted in HOV lanes.		√		√				√		√			√	√		√	

2-3

Table 2-1. Tier 1 Conceptual Mobility Enhancement Alternatives (CMEA) (Continued)

Description	Interstate 4 General Use Lanes			High Occupancy Vehicle (HOV) Lane Configuration				C/D and/or Auxiliary Lanes		Other Surface Streets		Express Bus		Metro Rail Transit (MRT)		High Speed Rail (HSR)	
	4-Lane	6-Lane	8-Lane	2-Lane: SOV Access for Inter-Regional Trips Only	4-Lane: SOV Access for Inter-Regional Trips Only	4-Lane: Limited SOV Access for Inter-Regional Trips	4-Lane: Frequent SOV Access for Inter-Regional Trips	No	Yes	Financially Feasible (1)	Enhanced System (2)	Low	High	No	Yes	No	Yes
9) 6 + 2 CONFIGURATION -Includes large regional bus system with no rail services. -HOV lanes restricted to HOV & inter-regional SOV trips. Trucks not permitted in HOV lanes.		√		√				√			√		√	√		√	
10) 6 + 2 CONFIGURATION -Includes large regional bus system and multiple rail services. -HOV lanes restricted to HOV & inter-regional SOV trips only. Trucks not permitted in HOV lanes.		√		√				√		√			√		√		√
11) 4 + 4 CONFIGURATION -Includes large regional bus system. Rail services not included. -HOV lanes restricted to HOV & inter-regional SOV trips only.	√				√				√		√		√	√		√	
12) 4 + 4 CONFIGURATION -Includes large regional bus system. Rail services not included. -Frequent HOV lane access points for inter-regional SOV trips.	√						√		√	√			√	√		√	
13) 6 + 4 CONFIGURATION -Includes large regional bus system and HSR. MRT not included. HOV lanes restricted to HOV & inter-regional SOV trips only.		√			√				√	√			√	√			√
14) 6 + 2 CONFIGURATION -Includes large regional bus system and MRT. HSR not included. -HOV lanes restricted to HOV & inter-regional SOV trips only.		√		√					√	√			√		√	√	

Surface street improvements consistent with METROPLAN ORLANDO's 2005 financially feasible plan. Additional arterial capacity improvements to support reduced I-4 investment
 - Concurrent flow assumed for all HOV facilities
 - An inter-regional trip is defined as a long distance through trip between regions (e.g. I-95 to Tampa)
 - An inter-regional trip is defined as a long distance trip with one trip end within the region (e.g., Lake Mary Blvd. to downtown Orlando)
 CMEA 13 and 14 were included in the Tier 1 analysis at the recommendation of the following: CMEA 13 - by the FDOT High Speed Transportation Program, CMEA 14 - by the I-4 Master Plan Project Advisory Group

CMEA 1

CMEA 1 served as the base condition from which all other alternatives were evaluated. The alternative consisted of an 8-lane corridor with a large regional bus system. The alternative contained no HOV lanes, metro rail transit (MRT), or high-speed rail (HSR).

CMEA 2

CMEA 2 consisted of 6 GULs plus 4 HOV lanes, MRT, and HSR with provisions for collector/distributor (C/D) lanes and/or auxiliary lanes. HOV lanes were restricted to HOV and inter-regional single occupant vehicle (SOV) trips, with no access for inter-regional SOVs.

CMEA 3

CMEA 3 consisted of the same typical section as CMEA 2 with the exception that HOV lanes allowed frequent access points for inter-regional SOV trips.

CMEA 4

CMEA 4 consisted of the same typical section as CMEA 2 with the exception that HOV lanes allowed a limited number of access points for inter-regional SOV trips.

CMEA 5

CMEA 5 consisted of a large regional bus system and 6 GULs plus 4 HOV lanes. MRT and HSR were not included. C/D and auxiliary lanes were included. The HOV lanes allowed frequent access points for inter-regional SOV trips.

CMEA 6

CMEA 6 consisted of the same typical section as CMEA 5 with the exception that the HOV lanes were restricted to HOV and inter-regional SOV trips, with no access for inter-regional SOV trips.

CMEA 7

CMEA 7 included 6 GULs plus 4 HOV lanes, MRT, C/D lanes, and/or auxiliary lanes. No HSR was included within this alternative. The HOV lanes allowed frequent access points for inter-regional SOV trips.

CMEA 8

CMEA 8 consisted of 6 GULs plus 2 HOV lanes. The alternative allowed for the evaluation of a large regional bus system with a reduced HOV capacity. The HOV lanes allowed for only HOV and inter-regional SOV trips. Trucks were not allowed.

CMEA 9

CMEA 9 consisted of the same typical section as CMEA 8 with the exception that enhanced surface street improvements are included.

CMEA 10

CMEA 10 maximized mass transit by including a large regional bus system, MRT, and HSR. The typical section for the alternative included 6 GULs and 2 HOV lanes. The HOV lanes allowed only HOV and inter-regional SOV trips. Trucks were not allowed in the HOV lanes.

CMEA 11

The typical section for CMEA 11 included 4 GULs and 4 HOV lanes. CMEA 11 maximized HOV capacity and reduced GUL capacity. The alternative included enhanced surface street improvements and provisions for C/D and/or auxiliary lanes. The HOV lanes allowed only HOV and inter-regional SOV trips.

CMEA 12

The typical section for CMEA 12 is the same as CMEA 11 except enhanced surface street improvements were not included. In addition, the HOV lanes allowed frequent access points for inter-regional SOV trips.

CMEA 13

CMEA 13 consisted of 6 GULs and 4 HOV lanes. The alternative allowed for the evaluation of HOV, HSR, and a large regional bus system in the absence of MRT. CMEA 13 includes provisions for C/D and/or auxiliary lanes. The HOV lanes only allowed HOV and inter-regional SOV trips.

CMEA 14

The typical section for CMEA 14 consisted of 6 GULs and 2 HOV lanes. The alternative included MRT, a large regional bus system, and provisions for C/D and/or auxiliary lanes. HSR was not included in the alternative. The HOV lanes were restricted to HOV and inter-regional SOV trips. Trucks were not allowed in the HOV lanes.

The 14 CMEAs were analyzed using a set of evaluation criteria, with corresponding measures of effectiveness (MOE). The criteria were assigned weightings, as a measure of relative importance, and then an overall rating for each CMEA was determined by summing the weighted rating of each criteria. Table 2-2 presents the evaluation criteria and MOEs used in the Tier 1 analysis.

Results of the analyses indicated that CMEAs 2, 3, 4, 5, 7, 10, and 13 were rated the highest. A review of the CMEAs that scored the highest indicated that the five most important and influential criteria included:

- LOS and person-trip capacity;
- Enhancement of transit viability and multi-modal uses;
- Provide HOV lane access for long distance trips;
- Access to intermodal facilities; and
- Cost minimization.

These five criteria, as well as the major components of the best performing Tier 1 CMEAs, were used to develop the Tier 2 CMEAs, as described in Section 2.2.2.

Table 2-2. Tier 1 Criteria and Measures of Effectiveness

Evaluation Criteria	Tier 1 Measures of Effectiveness (MOE)
Environmental Benefits	
Enhance wetland quality	Acreage of wetland encroachments
Produce acceptable vehicle emissions	Reduction in total regional work trips for reduced "cold starts"
Growth Management Benefits	
Accommodate high speed rail	High speed rail in corridor (Yes/No)
Minimize relocation impacts	Residential acreage required
	Business acreage required
Economic Benefits	
Provide access to intermodal facilities	Directness of access to intermodal facility access points
Provide HOV lane access for long distance trips	Availability of HOV lanes for SOV trips
Improve Corridor vehicle occupancy rates (VOR)	Maximize VOR (Corridor)
Mobility	
Maximize person trip throughout (Demand)	Corridor person trip throughout
Maximize person trip capacity	Added hourly person trip capacity (Corridor)
Enhance transit viability and availability	Regional transit person – trips (2010)
Provide acceptable vehicle level of service (LOS) on general use lanes	GUL LOS
Provide acceptable vehicle LOS on special use lanes	HOV lane LOS
Minimize capital costs (Transit & Highway)	Capital Costs – highway & corridor transit (Alternatives ranked by costs)
Maximize revenue sources	Revenue funding opportunities

2.2.2 Tier 2 Evaluation

Nine alternatives were analyzed as part of the Tier 2 evaluation. All of the CMEAs evaluated as part of Tier 2 were considered to represent viable solutions for the transportation problems in the I-4 corridor. Figure 2-1 presents the typical sections for the CMEAs evaluated as part of the Tier 2 analysis. A prevailing typical section is generally identified for the CMEAs; however, each CMEA consists of a combination of typical sections that vary throughout the corridor. The use of a particular typical section is dependent upon the type of highway treatments, the type of public transit improvements, whether I-4 is located within an urban or rural area, and identified right-of-way or other construction constraints. Key components of each of the CMEAs include the presence of a rail envelope and special use lane separation.

A brief description of the nine alternatives evaluated as part of Tier 2 is provided below and summarized in Figure 2-2.

CMEA 1

The prevailing typical section for CMEA 1 consisted of four GULs and four special use lanes (4+4) with concrete barrier separation between the two lane types. The special use lanes were limited to HOVs with two or more passengers per vehicle, SOV inter-regional through-trips, and through-trucks. The alternative also included enhancements to the arterial network, a light rail system, and a high speed rail alignment within the I-4 median for the entire length of the project corridor. No express bus was included within the alternative.

CMEA 2

CMEA 2 was considered the buildout option. The alternative included a 6+4 typical section with a barrier separation between the GULs and the special use lanes. The special use lanes were limited to HOVs with two or more passengers per vehicle, SOV inter-regional through trips, and through-trucks. The alternative also included a light rail system and a high speed rail alignment within the I-4 median for the entire length of the project corridor. No express bus service was included within the alternative.

CMEA 3

The typical section for CMEA 3 was the same as CMEA 2 with the exception that there was no provision for light rail. For this alternative, high capacity transit is provided via express bus service. A high-speed rail alignment is provided in portions of the I-4 corridor.

CMEA 4

CMEA 4 was the "retro-fit" alternative, with both minimum highway and transit investments. The alternative maximized the use of the existing facility. The typical section for CMEA 4 consisted of a 6+2 configuration. The special use lanes were buffer separated from the GULs. SOV through-trips and trucks were not allowed and only HOVs with three or more persons were permitted. High capacity transit is provided by express bus service with no provision for light rail. A high speed rail alignment is provided in portions of the corridor.

CMEA 5 A, B, and C

The typical section for alternatives CMEA 5 A, B, and C consisted of a 6+2 configuration with a combination of buffer and barrier separation between the GULs and special use lanes. The buffer separation was primarily used throughout the urban area. Only vehicles with three or more persons were permitted to use the special use lanes and SOV through-trips and trucks were not allowed. Light rail transit and high speed rail was provided for CMEA 5 A, B, and C. No express bus service was provided.

CMEA 6

CMEA 6 is the same as CMEA 4 with the exception that the alternative provides for light rail transit rather than express bus service.

CMEA 7

CMEA 7 was considered the TSM Alternative. The prevailing typical section for the alternative was 6+2 with a combination of buffer and barrier separation between the GULs and special use lanes. Only vehicles with three or more persons were permitted to use the special use lanes and SOV through-trips and trucks were not allowed. High capacity transit is provided by express bus service with no provision for light rail. A high speed rail alignment is provided in portions of the corridor.

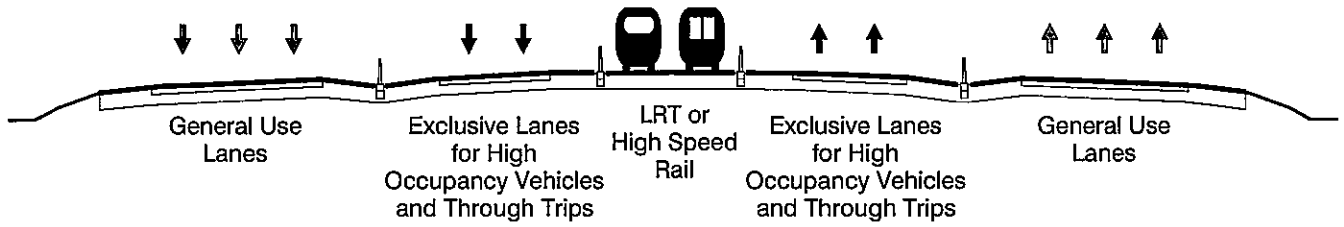
To analyze the nine CMEAs, evaluation criteria, with corresponding MOEs, were established reflecting the goals and objectives for the study. The evaluation criteria and MOEs used in the analysis are presented in Table 2-3. The evaluation criteria and MOEs were rated as to performance in achieving the study goals and objectives. The rating scale for all the evaluation criteria ranged from one (worst) to five (best).

Table 2-3. Tier 2 MIS Evaluation Criteria and Measures of Effectiveness

Interstate Policy Benefits Evaluation Criteria	Tier 2 Major Investment Study Measures of Effectiveness (MOE)
Environmental Benefits	
Minimize wetland impacts	Acres of wetland encroachments
	Acres of outstanding Florida waters encroachment
Minimize noise impacts	Number of noise sensitive sites (residences) within 65 dBA contour (for I-4) and within 300 ft. of LRT alignment (outside I-4), versus the baseline alternative
Reduce emissions of CO, NO _x	Reduction in vehicle miles traveled for CO (VMT as measure)
	Reduction in "cold starts," total trips, for NO _x (use total vehicle trips as measure)
Growth Management Benefits	
Support activity center development through multi-modal opportunity	Number of activity centers w/LRT or direct HOV/Express Bus access
Provide adequate LOS on corridor access roads at HOV access points	LOS on HOV access roads (Standard v/cs 1.0)
Increase I-4 corridor ridesharing (non-SOV) person-trips	Ratio of non-SOV (HOV & Transit) person-trips to total person trips at peak hour, outline average: (HOV+Transit)/(SOV+HOV+Transit)
Maximize transit accessibility	Number of communities served by premium transit (stops)
	Residential & employee walking population within ¼ mile of premium transit station
Accommodate high speed rail	High speed rail in I-4 corridor (Yes/No)
Minimize relocation impacts	Number of dwelling units displaced, direct count of residential structures located within expanded I-4 and LRT R/W from CMEA plans at 1"=200' scale
	Number of businesses displaced
Economic Benefits	
Minimize trucking delay	Truck use on special use lanes (prohibited/allowed)
Maximize exclusive through/HOV lane access for through trips	Availability of special use lanes for SOV through trips (prohibited/allowed)
Minimize fuel consumption	Systemwide (regional) VMT, (as surrogate for consumption)
Mobility Benefits	
Provide system management	Ease and cost of enforcement of special use lanes
	Accommodates incident & traffic management, advanced technology to manage traffic, facilitates evacuation efforts
Maximize person-trip capacity	Hourly corridor person-trip capacity
Provide acceptable LOS	I-4 general use lane LOS, peak hour (vehicle v/c, weighted average)
	Corridor person-trip LOS, peak hour (person-trip v/c, average of selected cutlines)
	I-4 special use lane LOS, peak hour (vehicle v/c, weighted average)
Maximize transportation opportunities	Number of transportation disadvantaged communities served
Affordability & Construction Benefits	
Minimize incremental public costs of adding transportation capacity	Incremental cost per new unit of person-trip capacity provided (versus baseline)
	Incremental cost per new non-SOV regional passenger trip (versus baseline)
Maximize net public benefits	Benefit cost ratio
Optimize constructability	Ease of maintenance of traffic (complex-less complex)
	Ultimate constructability and staging (extensive-minimal)

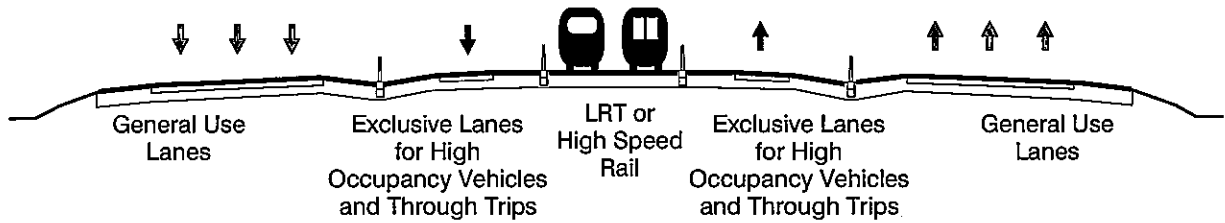
6 General Use + 4 Special Use Lanes - Barrier Separated

With or Without Rail Envelopes

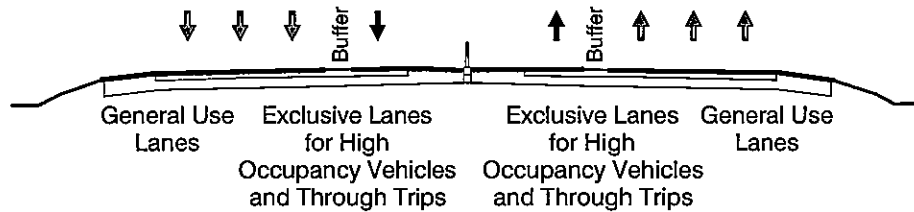


6 General Use + 2 Special Use Lanes - Barrier Separated

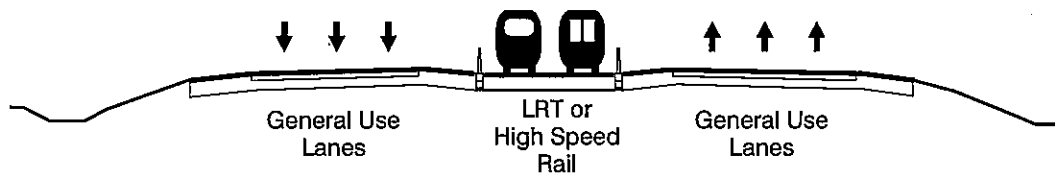
With or Without Rail Envelopes



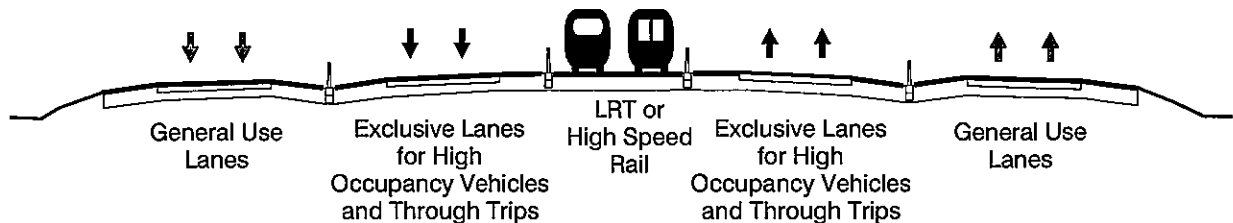
6 General Use + 2 Special Use Lanes - Buffer Separated (Retrofit)



6 General Use + 0 Special Use Lanes

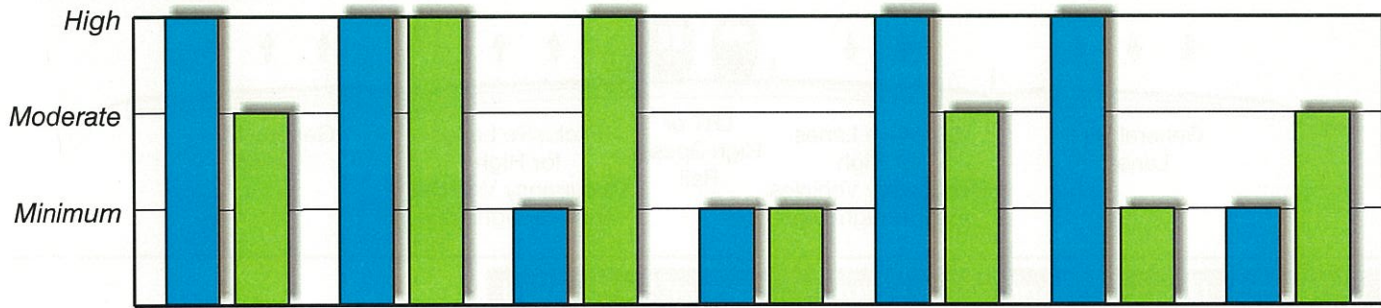


4 General Use + 4 Special Use Lanes - Barrier Separated



Source: I-4 MMMP Conceptual Engineering Report, October 1996



Investment Strategy



Basic CMEA Characteristics

	CMEA 1	CMEA 2	CMEA 3 (1)	CMEA 4	CMEA 5 A, B, C (1)	CMEA 6	CMEA 7
Prevailing Highway Configuration	4 General Use + 4 Special Use Lanes, Barrier Separated	6 General Use + 4 Special Use Lanes; Barrier Separated	6 General Use + 4 Special Use Lanes, Barrier Separated	6 General Use + 2 Special Use Lanes, Buffer Separated Retrofit	6 General Use + 2 Special Use Lanes, Buffer/Barrier Separated	6 General Use + 2 Special Use Lanes, Buffer Separated Retrofit	6 General Use + 2 Special Use Lanes, Buffer/Barrier Separated
Premium Corridor Transit Service	Light Rail Transit (Alignment B)	Light Rail Transit (Alignment B)	Express Bus Service in Special Use Lanes	Express Bus Service in Special Use Lanes	Light Rail Transit (Alignment A, B, E)	Light Rail Transit Outside I-4 (Alignment F)	Express Bus Service in Special Use Lanes
Intercity High Speed Rail	In I-4 Through Entire Corridor	In I-4 Through Entire Corridor	From West, Exits in South Corridor; Re-enters at Sanford	From West, Exits in South Corridor; Proceeds East to Brevard County	From West, Exits in South Corridor; Re-enters at Sanford	From West, Exits in South Corridor; Re-enters at Sanford	From West, Exits in South Corridor; Proceeds East to Brevard County
Special Use Lane Conditions	2+ HOV; Through Trucks & SOVs Allowed in Special Lanes; Assumes Enhanced Arterials	2+ HOV; Through Trucks & SOVs Allowed in Special Use Lanes	2+ HOV; Through Trucks & SOVs Allowed in Special Use Lanes	3 + HOV; No SOVs or Trucks Allowed in Special Use Lanes	3 + HOV; No SOVs or Trucks Allowed in Special Use Lanes	3 + HOV; No SOVs or Trucks Allowed in Special Use Lanes	3 + HOV; No SOVs or Trucks Allowed in Special Use Lanes
Cost (2)	\$3,540 M	\$3,360 M	\$2,340 M	\$1,420 M	A - \$2,750 M B - \$2,830 M C - \$2,730 M	\$2,660 M	\$1,610 M

Notes: (1) CMEA 5 tests 3 Alternative LRT Alignments between Sanford and Celebration.
 (2) Cost represents millions of 1995\$.

LEGEND:	
	Transit Investment
	Highway Investment

Source: I-4 MMMP Conceptual Engineering Report, October 1996

Figure 2-2
Tier 2/MIS CMEA Characteristics

The results of the evaluation criteria coupled with capital program shortfalls produced the following conclusions:

- The loss of an existing general use lane for the 4+4 alternative (CMEA 1) was not justified due to the capacity constraints and the additional expense required to enhance the surrounding arterial system; public acceptance of such an improvement seemed remote;
- The 6+4 alternatives (CMEA 2 and 3) added cost was too high for the added benefit;
- The 6+2 alternatives with express bus (CMEA 4 and 7) were reasonably affordable; however, the alternatives limited the long-term flexibility of modal options; and
- The 6+2 alternatives with light rail (CMEA 5A, 5B, 5C, and 6) are reasonably affordable. These alternatives maximized corridor flexibility in terms of modal options and provided optimum financing flexibility.

FDOT, in conjunction with the other coordinating agencies, developed a recommended design concept and scope based on the CMEA evaluations. Both METROPLAN ORLANDO and the Volusia County MPO adopted the recommended design concept and scope. Components of the recommended design concept and scope include:

- Widening I-4 to six GULs plus two HOV lanes (6+2) from the Polk/Osceola County line to just west of SR 472 in Volusia County, with the HOV lanes separated from the GULs by buffer and/or barrier (no trucks or SOVs will be allowed on the HOV facility);
- Widening from four to six lanes from SR 472 to I-95 through Volusia County;
- Reserved right-of-way for rail envelope from south of SR 528 (Bee Line Expressway) and through Volusia County;
- LRT from Osceola County's Celebration Development to Sanford; and
- Express bus service between Volusia County and the Orlando metropolitan area.

The recommended design concept and scope were developed as a 20-year program with a capital cost estimated at approximately \$2.7 billion in 1995 dollars.

The recommended design concept and scope were carried forward into the Tier 3 evaluation.

2.2.3 Tier 3 Evaluation

The Tier 3 evaluation refined the basic Tier 2 design concept and scope (6+2+LRT) into a Master Plan, which adheres to the FDOT Interstate Highway Policy. The objective of the Master Plan was to define the type of improvements that were appropriate to serve the region's needs while being responsive to financial and environmental concerns.

The following summarizes the typical sections, HOV access treatments, and interchange improvement concepts that were recommended as part of the I-4 MMMP and are within the I-4 PD&E Study - Section 2 Ultimate project corridor. These typical sections, HOV access treatments, and interchange improvement concepts as well as right-of-way impacts, and drainage are presented on design plans in Appendix N of the I-4 MMMP (PBS&J Team, October 1996).

2.2.3.1 Typical Section Elements

The typical sections generally consisted of six GULs and two HOV lanes with either a concrete barrier or painted buffer separation. The majority of the corridor was recommended for buffer separation with a barrier separation limited to areas with significant operation and safety issues.

An envelope within the I-4 median was provided for either high speed rail or LRT throughout the corridor with the exception of Michigan Street to Par Street. The rail envelope was 44 feet for the corridor within Orange and Seminole Counties and 64 feet for Volusia County.

I-4 MMMP typical sections for the portion of I-4 from SR 528 (Bee Line Expressway) in Orange County to SR 472 in Volusia County are presented in Figures 2-3 and 2-4.

2.2.3.2 HOV Access Types and Locations

The results of the Tier 3 analysis identified several locations where demand for HOV access was apparent enough to warrant the investment in direct access via flyover ramps or drop ramps to the HOV lanes. Figure 2-5 presents the recommended I-4 MMMP HOV access plan within the I-4 PD&E Study – Section 2 project corridor.

In addition to the direct access, several at-grade slip ramps were recommended where demand was not strong enough to justify direct access. Refer to Figure 2-5 for recommended slip-ramp locations.

2.2.3.3 Interchange Improvements

The I-4 MMMP recommended improvements to several interchanges located within the I-4 PD&E Study – Section 2 project corridor. Table 2-4 summarizes the proposed interchange improvements. Concept plans of the proposed interchange improvements are included in the I-4 MMMP design plans (Appendix N).

In addition to the interchange improvements identified in Table 2-4, optional interchange treatments were identified for several interchanges within the I-4 PD&E Study – Section 2. The optional interchange treatments include:

- **John Young Parkway** – This alternative included a loop ramp in the northwest quadrant that replaced a flyover.
- **Anderson Street** – The alternative concept maintained Anderson Street as a one-way, similar to the existing configuration.
- **SR 50 (Colonial Drive)/Ivanhoe Boulevard** – This alternative eliminated the southwest quadrant loop at Ivanhoe Boulevard and maintained the existing southeast loop at SR 50 (Colonial Drive).
- **SR 434** – The alternative design provided loop ramps in the northwest and southeast quadrants to accommodate the heavy left turn movements of the interchange.

These interchanges were included within the I-4 MMMP design plans. Once the I-4 MMMP was finalized, the proposed improvements to the I-4 corridor moved into the PD&E phase of project development.

2.3 Transportation System Management Alternative

The TSM Alternative involves low capital cost transportation improvements designed to maximize the utilization and efficiency of the present system. The TSM Alternative includes such activities as:

- Traffic signal improvements
- Intersection/interchange improvements
- Widening of parallel arterials
- HOV lanes
- Ridesharing programs
- Reversible flow roadway systems
- Transit
- Ramp-to-ramp auxiliary lanes
- Intelligent transportation system (ITS)
- Demand pricing

Table 2-4. Proposed I-4 MMMP Interchange

Interchange	I-4 Master Plan Tier 3 Interchange Improvements
SR 528 (Bee Line Expressway)	Construction of new HOV direct access ramps to/from west; reconstruction of flyover bridges and ramp connections
Sand Lake Road (SR 482)	Reconstruction of mainline bridges and existing ramp connections
Universal Boulevard	None
Kirkman Road (SR 435)	Complete reconstruction of interchange; modification to left-hand exits; addition of NB Kirkman to WB I-4 loop; addition of SB Kirkman to EB I-4 loop; HOV drop ramps to/from the east/west
Florida's Turnpike	Reconstruction of crossroad bridges and existing ramp connections
Conroy Road	Reconstruction of ramp connections
John Young Parkway	Construction of interchange improvement concept
Orange Blossom Trail (US 441)	Reconstruction of mainline bridges, modification of left-hand exit ramp; consolidation of EB I-4 exits; other ramp modifications to accommodate I-4 mainline improvements
Michigan Street	Reconstruction of mainline bridges; construction of EB/WB C-D lanes from Michigan Avenue to Kaley Street; reconstruction of ramps to/from the east connected to C-D lanes
Kaley Street	Reconstruction of mainline bridges and existing ramps
SR 408 (East/West Expressway)/ Anderson Street	Total reconstruction of E/W interchange; reconstruction of Anderson Street crossroad bridge and ramp connections; reflects OOCEA interchange concepts Anderson Street reconstructed as two-way from Division Avenue to Orange Avenue
South Street	Reconstruction of mainline bridge; construction of HOV drop ramps to/from the east and west; South Street reconstructed as two-way from Division Avenue to Orange Avenue
SR 50 (Colonial Drive)	Removal of loop ramps in NW and SE quadrants; modification to Garland Avenue, construction of I-4 EB entrance ramp
Ivanhoe Boulevard	Reconstruction of mainline bridges and existing ramps; construction of HOV flyover ramps to/from the east
Princeton Street	Reconstruction of mainline bridges and ramp connections
Par Street	Reconstruction of mainline bridges and ramp connections
Fairbanks Avenue (SR 426)	Reconstruction of mainline bridges and ramp connections
Lee Road (SR 423)	Reconstruction of mainline bridges and ramp connections
Maitland Boulevard (SR 414)	Reconstruction of interchange ramp connections; modification to ramp configuration
SR 436	Reconstruction of mainline bridges and ramp connections
Central Parkway	Construction of HOV drop ramps (to/from the east and west); reconstruction of crossroad bridge
SR 434	Reconstruction of ramp connections
Lake Mary Boulevard	Reconstruction of crossroad bridges and existing ramp connections; construction of flyover HOV ramps (to/from the west)
CR 46A	Extension of C/D road in the I-4 WB direction
SR 417 (Central Florida GreeneWay)	Widening of C/D road structures over SR 417
SR 46	Construction of loop ramp in NW quadrant; reconstruction of I-4 WB exit ramp; construction of C/D road to SR 417 in the I-4 WB direction
Orange Boulevard	Removal of ramps to/from the west
US 17-92	Reconstruction of mainline bridges; construction of ramps to/from west; reconstruction of existing ramp connections
Dirksen Drive	Reconstruction of ramp connections
Enterprise Road	Reconstruction of crossroad bridge; construction of HOV drop ramps to/from the west
Saxon Boulevard	Reconstruction of crossroad bridge and ramp connections
SR 472	Reconstruction of cross bridges; completion of interchange with extension of Howland Boulevard; reconstruction of ramp connections

TSM was considered extensively during the development of the I-4 MMMP. As indicated in Section 2.2.2, CMEA 7 was considered the TSM Alternative for the I-4 MMMP. The alternative consisted of a 6+2 typical section with high capacity transit provided by express bus service. The alternative permitted only vehicles with three or more persons to use the special use lanes. In addition, SOV through-trips and trucks were not allowed. The alternative provided for a high speed rail alignment in portions of the corridor. Results of the alternative analysis indicated that CMEA 7 was reasonably affordable; however, the alternative limited the long-term flexibility of modal options.

TSM options were also considered during the development of the I-4 PD&E Study – Section 2 project. The following paragraphs describe the TSM options that are being carried forward as part of the proposed improvements.

Traffic signal improvements on the cross streets are proposed for all the interchange ramps. These improvements are expected to improve traffic flow approaching and departing I-4.

As part of the proposed improvements, several interchanges along the project corridor will be modified to enhance traffic operations. Descriptions of interchange modifications are summarized in Section 2.6 for the Ultimate Build Alternatives and Section 2.9 for the Preferred Alternative.

The widening of parallel arterials is not proposed as part of the Ultimate project or the Preferred Alternative. However, the widening of some of the parallel arterials is included in the LRTPs for METROPLAN ORLANDO and Volusia County MPO. Refer to Section 1.3.1 for information on the projects included within the LRTPs.

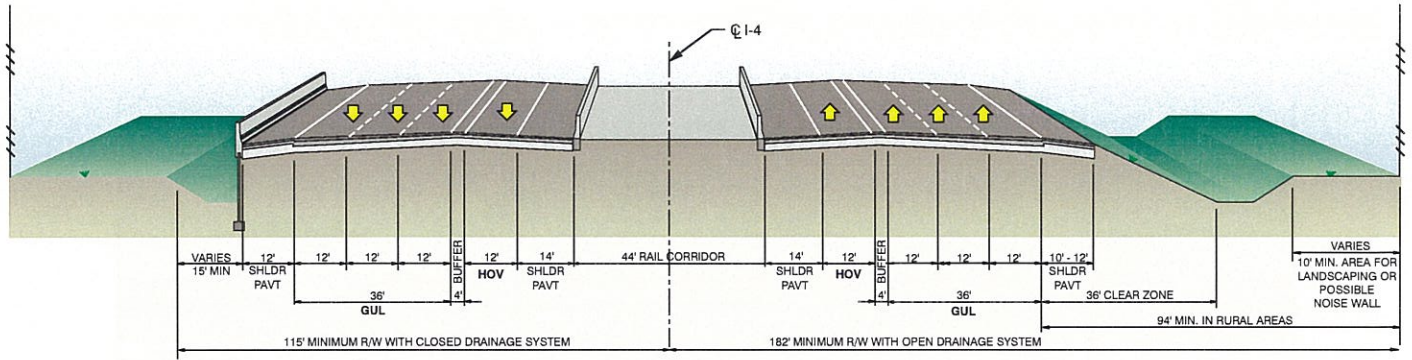
The proposed improvements will include the addition of two HOV lanes (one in each direction) separated from the general use lanes by a barrier system. Initially, vehicles with two or more occupants will be allowed to use the HOV lanes. However, as traffic demand increases, only vehicles with three or more occupants will be allowed to use the HOV lanes to maintain LOS D or better operations. Ridesharing programs will be available to commuters using the HOV lanes.

Ridesharing is a TSM option that has the ability to increase person-trip capacity without requiring an increase in vehicle-trip capacity. Park & Ride lots are one of several methods that can be used to encourage ridesharing. As indicated in Section 1.3.6, FDOT owns two Park & Ride lots within the project study limits (refer to Figure 1-21). The first Park & Ride lot is located adjacent to the I-4/Saxon Boulevard interchange in the northwest quadrant. The second Park & Ride lot is located adjacent to the I-4/Dirksen Drive/DeBary Avenue interchange in the southeast quadrant directly opposite the eastbound I-4 on-ramp and off-ramp. In addition, as shown in Figure 1-23, two Park & Ride lots are proposed as part of the Ultimate improvements. The first Park & Ride lot is proposed in the southwest quadrant of the I-4 and Central Parkway overpass. The second Park & Ride lot is located in the northwest quadrant of the I-4 and Enterprise Road overpass. Refer to Section 1.3.6 for detailed information on the proposed Park & Ride lots.

A reversible roadway system is not being proposed as part of the proposed improvements. An interim reversible express lane was being proposed in the median of I-4 from South Street in Orange County to SR 436 in Seminole County. However, public support for the project was not obtained and, as of July 2000, the project has been dropped from the FDOT work program.

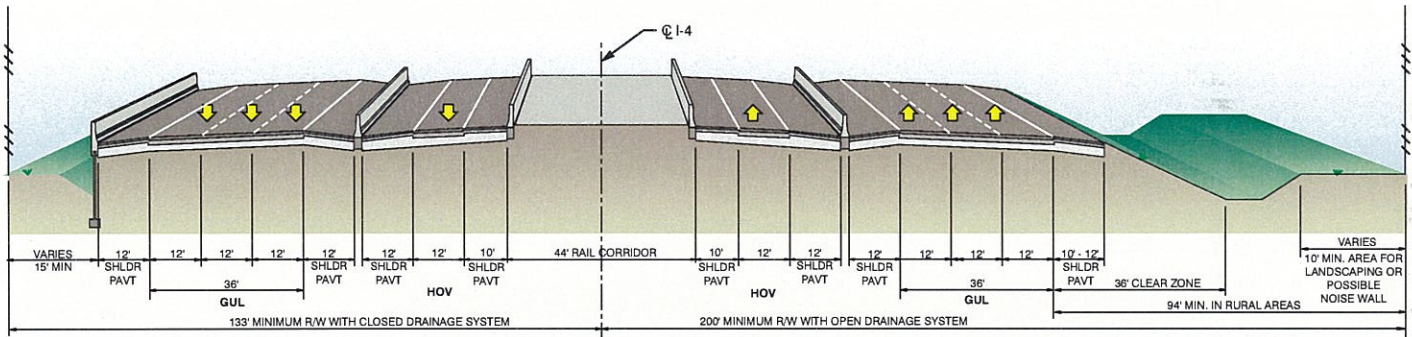
The I-4 MMMP recommended a typical section including a 44-foot rail corridor within the median of the I-4 corridor from SR 528 (Bee Line Expressway) to Michigan Street and from Princeton Street to SR 472 in Volusia County. The transit envelope is intended to provide the opportunity for future rail facilities to use the I-4 corridor.

The proposed improvements have incorporated the recommended transit envelope within portions of the project corridor. A 44-foot rail corridor is provided from just north of the Kirkman Road interchange to south of Rio Grande Avenue in Orange County and from north of Central Parkway in Seminole County to SR 472 in Volusia County. Additional transit corridor provisions within the I-4 corridor are provided from Lee Road to Central Parkway in Orange and Seminole Counties. This area generally provides space within the I-4 corridor for transit in the outer separation. The I-4 Six Laning and St. Johns River Bridge project proposes to use a portion of the transit median corridor extending from north of the St. Johns River to SR 472. This use will be for an interim period, after which time the Ultimate I-4 improvements re-establish the 44-foot rail corridor.



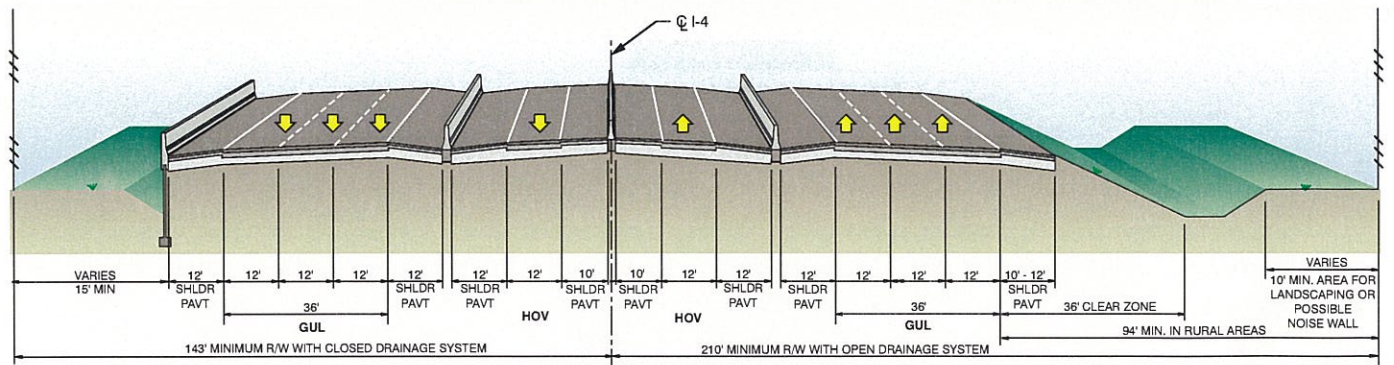
Typical Section

Bee Line Expressway (S.R. 528) to Orange Blossom Trail (U.S. 441)
Lee Road (S.R. 423) to U.S. 17-92



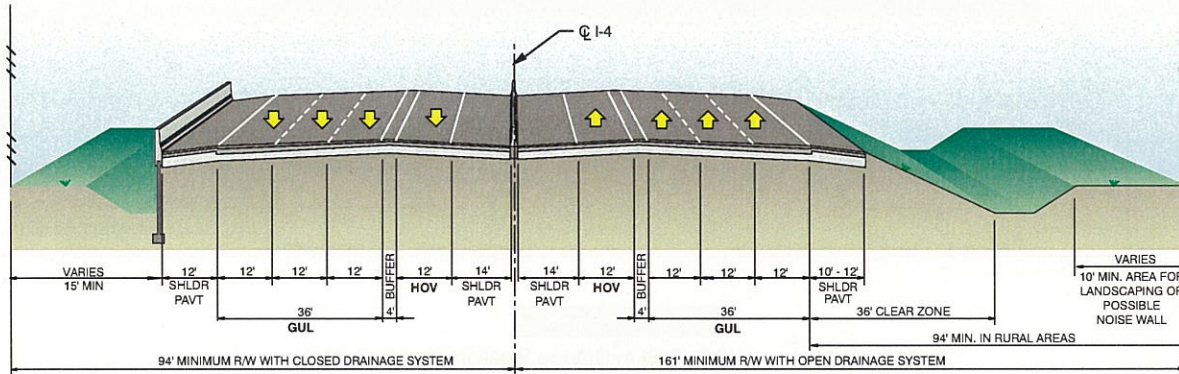
Typical Section

Orange Blossom Trail (U.S. 441) to Michigan Street
Par Avenue to Lee Road (S.R. 423)



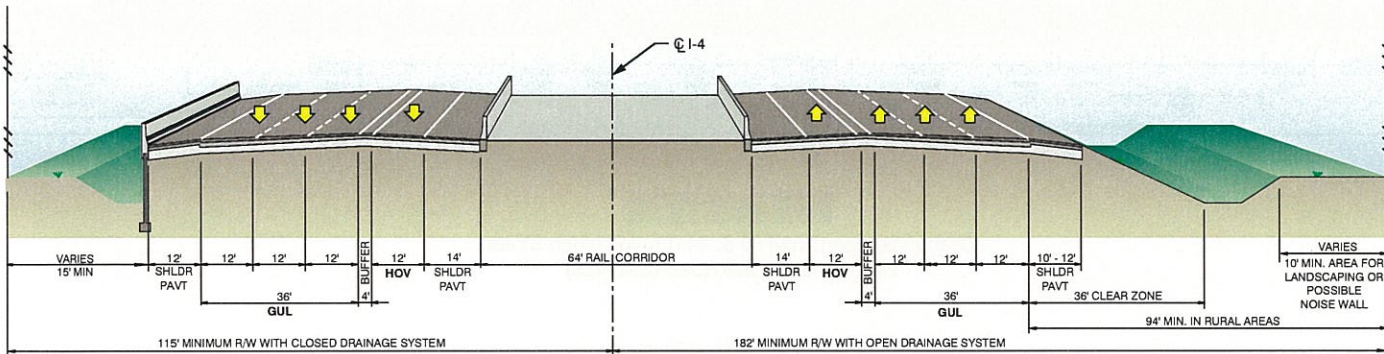
Typical Section

Michigan Street to Anderson Street
Ivanhoe Boulevard to Par Avenue



Typical Section

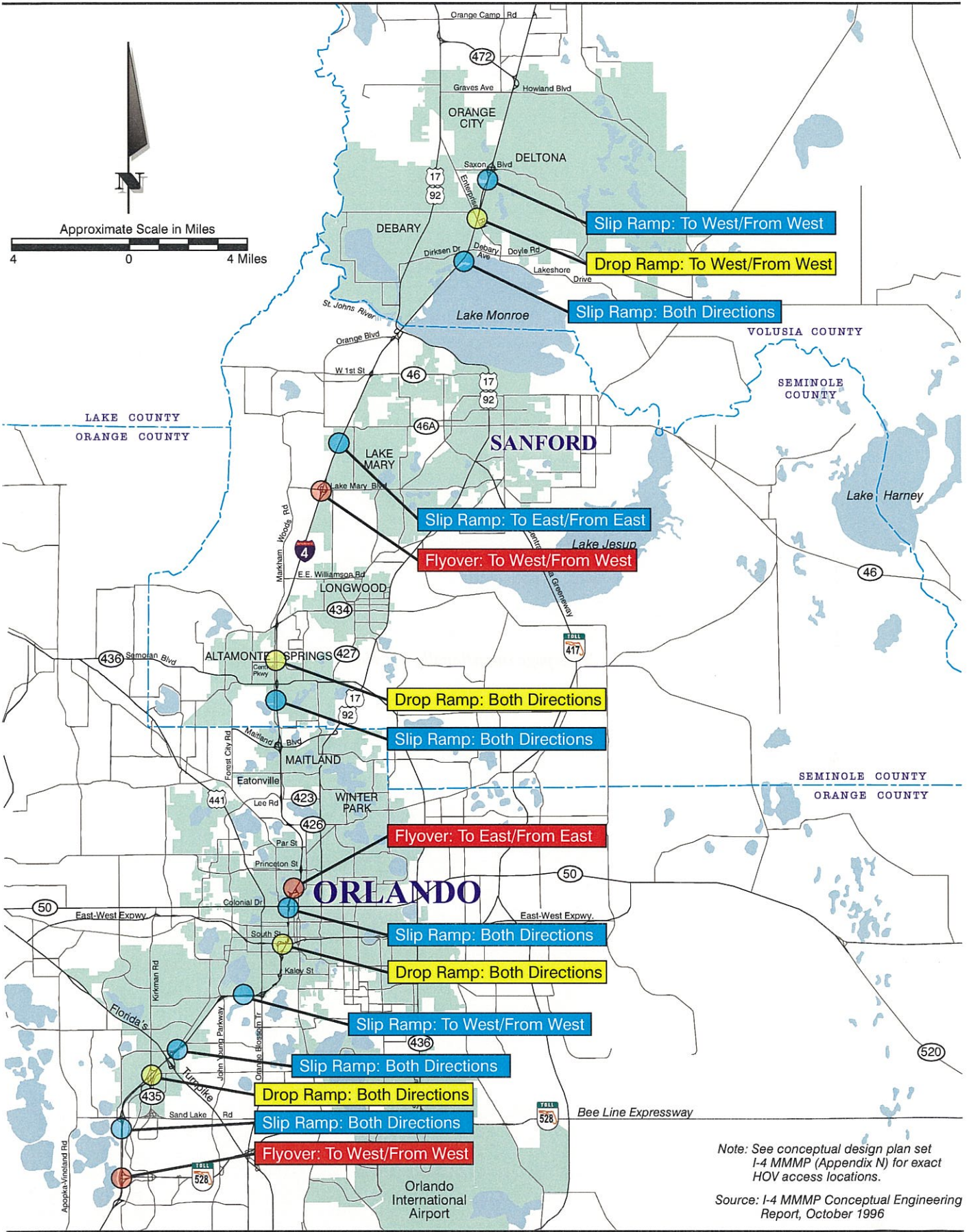
Anderson Street to Ivanhoe Boulevard



Typical Section

From U.S. 17-92 to North of S.R. 472

Figure 2-4
I-4 Multi-Modal Master Plan - Tier 3 Typical Sections



Note: See conceptual design plan set I-4 MMMP (Appendix N) for exact HOV access locations.
 Source: I-4 MMMP Conceptual Engineering Report, October 1996

Figure 2-5
I-4 MMMP Recommended HOV Access Plan



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Auxiliary lanes are also provided as part of the proposed improvements within portions of the project corridor. The locations of the auxiliary lanes are described in further detail in Section 2.6 for the Ultimate Build Alternatives and Section 2.9 for the Preferred Alternative. In addition, as indicated in Section 1.4, FDOT is currently constructing auxiliary lane projects from SR 528 (Bee Line Expressway) to Sand Lake Road, from Kirkman Road to west of Florida's Turnpike, and from Orange Blossom Trail (US 441) to Maitland Boulevard. These auxiliary lane projects are not a part of the I-4 PD&E Study – Section 2 proposed improvements.

ITS features currently exist within the corridor. FDOT has implemented ITS measures along I-4 within the Ultimate project limits from SR 528 (Bee Line Expressway) in Orange County to Lake Mary Boulevard in Seminole County. This system is commonly referred to as the Surveillance and Motorist Information System (SMIS) and includes remote controlled variable message signs, cameras, and vehicle detector stations. The SMIS enhances the management of incidents, recurring congestion, and maintenance of traffic issues during construction. FDOT is planning to expand SMIS along I-4 from Lake Mary Boulevard in Seminole County to Saxon Boulevard in Volusia County. This project is incorporated in the I-4 Six Laning and St. Johns River Bridge project.

The ITS measures proposed as part of the Ultimate project include enhancing the existing SMIS and extending the SMIS from Saxon Boulevard to SR 472 in Volusia County. Detailed information on the proposed ITS measures is provided in the *I-4 PD&E Study – Section 2 ITS Plan* (November 2000).

Demand pricing is not being proposed as part of the Ultimate improvements or the Preferred Alternative improvements. FHWA policy allows a few states throughout the country to toll the Interstate. The tolls can be on the general use lanes, special use lanes (SULs), or both. However, the toll facility would have to be part of a reconstruction or rehabilitation project on the interstate. The process to allow this requires an application. The I-4 MMMP examined several options for the use of the SULs. Based on the conclusions of the MMMP, a decision was made to move forward with HOV. The work in the EIS is presented in a manner consistent with the I-4 MMMP design scope and concept conclusion. However, there has been a suggestion that SULs be considered for different operational treatments (HOT Lanes, Tolloed Express Lanes, Express Bus Lanes). In some cases, institutional and/or regulatory barriers may exist for specific uses on the interstate. However, FDOT is committed to reassess and define the appropriate operational use for the SULs based on technical, regulatory and public input as implementation of the Ultimate improvements on I-4 progress. Such re-assessments will include transportation and mobility effects as well as any environmental impact changes. One of the advantages to the proposed barrier-separated HOV lanes is that the envelope provided by this concept is flexible and will likely allow for operational changes with minimal changes in environmental effects.

The roadway improvements discussed herein do not preclude the use of TSM measures to enhance operations of the interstate facility. As indicated above, the proposed improvements incorporate several TSM strategies as part of the Ultimate Build Alternatives and the Preferred Alternative. Since these TSM strategies have been incorporated as part of the Ultimate Build Alternatives and the Preferred Alternative, no further evaluation of the TSM Alternative will be conducted as part of the study.

2.4 Mass Transit Alternative

As part of the I-4 MMMP/MIS, FDOT studied Mass Transit Alternatives to gain an understanding of the relationship between transit and highway improvements in meeting travel demand in the I-4 corridor. As indicated in Section 2.2.2, the I-4 MIS recommended design concept and scope including several mass transit initiatives.

As a result of the I-4 MIS recommended design concept and scope, FDOT, in consultation with LYNX, initiated the production of an EIS for the CFLRTS project. The project consisted of a new LRT system extending from Central Florida Parkway in Orange County to Longwood in Seminole County.

Based on input received during the DEIS comment period, the limits of the proposed LRT system were redefined to extend from Central Florida Parkway to the Loch Haven/Princeton Street area. A description and location of the LPA and MOS for the CFLRTS project are presented in Section 1.3.6.

The proposed I-4 PD&E Study – Section 2 roadway improvements include provisions for the inclusion of rail service and bus systems within the I-4 corridor. A 44-foot rail corridor has been set aside in areas within the project limits for rail service. In addition, bus systems, including express bus, will be allowed to use the HOV lanes. However, the Mass Transit Alternative was not carried forward for further evaluation as part of the I-4 PD&E Study – Section 2, since it was assessed as a separate action. The CFLRTS project is a free-standing project capable of independent operation.

2.5 Summary of Project Alternative Development Process

Subsequent to the completion of the I-4 MMMP, FDOT initiated the I-4 PD&E Study – Section 2 in 1996 to address improvements to I-4 from SR 528 (Bee Line Expressway) in Orange County to SR 472 in Volusia County, a distance of 43 miles.

The following sections summarize the alternatives analyses prepared for the Ultimate project. Section 2.5.1 discusses the concept refinement analysis conducted and Section 2.5.2 presents the second level concept refinement analysis conducted as part of the study efforts.

2.5.1 Concept Refinement Analysis

The work activities initiated at the outset of the I-4 PD&E Study – Section 2 included evaluations of the I-4 MMMP relative to constructability, design speeds, and the type of separation between the HOV and GULs (buffer vs. barrier). The preliminary results of the design speed evaluation indicated that significant reconstruction of the existing facility is required to meet a 60 mph design speed.

The results of the preliminary evaluations were reviewed with FDOT – District 5 staff in November and December 1996. After reviewing the data and information, FDOT determined that additional consideration was required of the proposed typical sections and concepts shown in the I-4 MMMP documents to address additional project objectives. The additional project objectives included:

- Use the existing infrastructure to the maximum extent possible;
- Evaluate a barrier-separated HOV facility within the Section 2 limits;
- Provide a refined concept that minimizes traffic disruptions during construction;
- Minimize construction costs and right-of-way requirements; and
- Avoid and/or minimize impacts especially for wetlands, floodplains, Section 4(f) properties, and Section 106 properties.

To assist in the development, review, and decision making process for the typical section and concept refinement work efforts, FDOT in consultation with FHWA, established a Core Team comprised of District staff. The Core Team was composed of District representatives from Administration, Consultant Project Management, Design, Environmental Management, Maintenance, Structures Design, and Traffic Operations. The Core Team met numerous times throughout typical section and concept refinement analysis.

The following sections summarize the process used to develop and evaluate the typical sections and concept refinement alternatives, the typical sections analyzed, design speed evaluations, bridge clearance evaluations, and alternative concepts that will be carried forward through the PD&E process. A detailed assessment of the typical section and concept refinement work efforts are presented in the *I-4 PD&E Study – Section 2 Typical Section Concept Refinement Technical Memorandum* (January 1999).

2.5.1.1 Concept Refinement and Assessment Process

To evaluate proposed typical sections and concept refinements, a three level screening process was developed by the project team. This process initially focused on the recommended concept of the I-4 MMMP, specifically, interchange configurations and HOV access. Figure 2-6 presents the three-level screening evaluation process. The Core Team reviewed and adopted this evaluation process in January 1997.

The first level screening involved typical section and bridge clearance evaluations. The process began with a review of the I-4 MMMP typical sections and development of a variety of alternative sections. These typical sections were evaluated to identify the viable typical section alternatives to be carried into the concept refinement stage of the process.

The typical roadway sections were also used to evaluate the existing bridge clearances on and over I-4. The bridges were evaluated for adequate horizontal and vertical clearances based on the proposed I-4 improvements as well as crossroad improvements included in the adopted LRTPs and the I-4 MMMP. The widening, rehabilitation, or replacement of each bridge was part of the evaluation process.

The second level screening involved assessments of the I-4 improvements with the selected typical sections from the first level screening. The interchange configurations shown in the I-4 MMMP were used for this level screening. Preliminary concept plans and profiles were developed for each segment for each of the selected typical sections. These preliminary concept plans were evaluated to assure that adequate access to and from I-4 was provided, including HOV access. Use and rehabilitation of existing bridges versus the complete replacement of structures was also considered in the second level screening process.

The Core Team then reviewed the preliminary concept plans and identified refinements that could minimize environmental impacts, costs, and right-of-way impacts. After the Core Team reviewed the refined concept plans, input from local jurisdictions was sought on the concept plans. In several instances, multiple concepts were presented to the local jurisdictions for input on the proposed I-4 improvements.

This iterative process continued into the third level screening with further refinements to the concept plans and profiles, as well as improvements to HOV access and interchange configurations. Input on the refinements was again obtained from the Core Team and local jurisdictions. The recommendations from the Core Team were refined and incorporated into the concept plans. The recommended concept plans then moved forward through the PD&E process. The recommended concept plans for each segment reflect concurrence of FDOT as well as the local jurisdictions.

2.5.1.2 Typical Sections

At FDOT request, the I-4 MMMP typical sections within the I-4 PD&E Study - Section 2 study limits (Refer to Figures 2-3 and 2-4) were refined to include a 44-foot rail corridor in the median, a 34-foot barrier separated HOV facility, and three GULs in each direction. In addition, the project alternative typical sections were developed to reflect the following revisions from the I-4 MMMP:

- Maximize the use of the existing pavement and bridges;
- Minimize potential right-of-way impacts;
- Minimize construction costs; and
- Minimize traffic disruption during construction.

Six typical sections (A through F) were developed to meet FDOT criteria. Each alternative centers on the existing I-4 alignment and presents various methods of providing the rail envelope, HOV envelope, and GULs. Upon further review and discussion, typical section F was revised and renamed F-prime (F'). The following paragraphs contain a brief description of each of the typical sections analyzed.

Typical Sections A, B, and C

Typical sections A, B, and C have the same lane configuration. These typical sections are centered on the existing alignment with a different design speed for each typical section. Both the HOV lanes and GULs meet the same design speed criteria. Typical section A meets the requirements of AASHTO 50 mph design speed; typical section B meets the requirements of AASHTO 60 mph criteria; and typical section C meets FDOT criteria for 60 mph (AASHTO 70 mph). Depending on the location within the corridor, these alternatives either use the existing pavement or require the complete reconstruction of both the HOV and GULs to meet the design speed criteria. Figure 2-7 presents preliminary typical sections A, B, and C with and without the 44-foot rail corridor and the existing I-4 typical section.

Typical Section D

Typical section D provides for an elevated 68-foot HOV facility located in the median of I-4. This typical section splits the rail corridor into two 22-foot corridors, one on either side of the HOV center pier. The existing pavement is used for the GULs where the median is of sufficient width to accommodate the HOV center pier and the rail corridor. Where there is not sufficient space in the existing median, new GULs are constructed. Figure 2-8 presents typical section D with and without the rail envelope and the existing I-4 typical section.

Typical Section E

Typical section E locates the two directional 34-foot HOV facilities on new alignment on each side of the existing freeway lanes. This alternative section uses the existing pavement for the GULs. The HOV facilities will be grade separated over the ramps to/from the GULs and the crossroads. Figure 2-9 presents typical section E with and without the rail envelope and the existing I-4 typical section. Figure 2-10 presents a grade separated typical section E with and without the rail envelope and the existing I-4 typical section.

Typical Section F

Typical section F uses a portion of the existing travel pavement (approximately 36 feet) for the HOV facility and constructs new GULs outside of the existing pavement. The new general use facilities would be constructed following the design speed criteria determined by FDOT.

Under typical section F, the width of the HOV corridor varies throughout the project limits. Where the existing paved median is greater than 22 feet, the area available for the HOV envelope is larger.

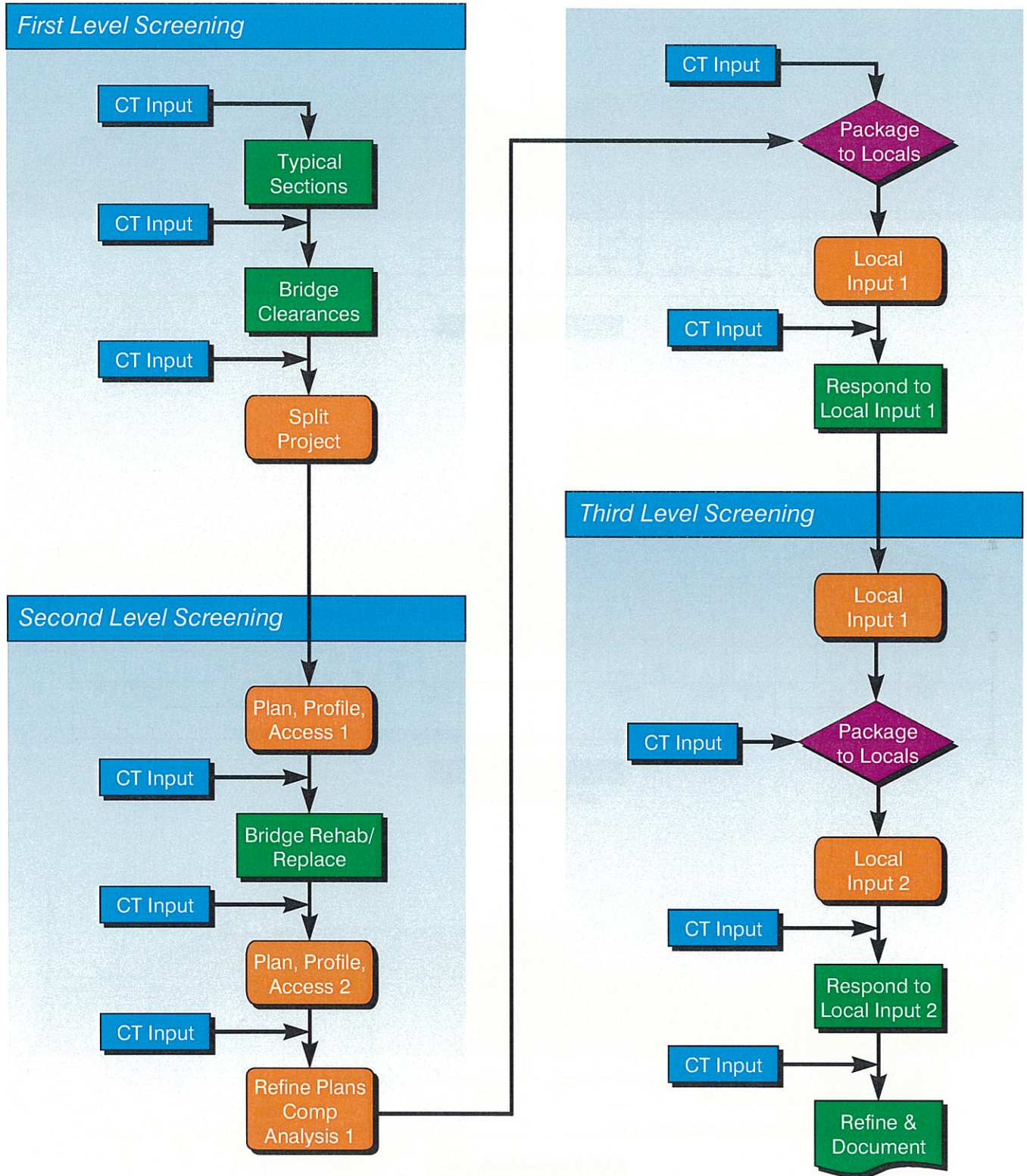
Figure 2-11 presents the I-4 existing typical section, typical section F with the rail envelope, and typical section F without the rail envelope.

Typical Section F'

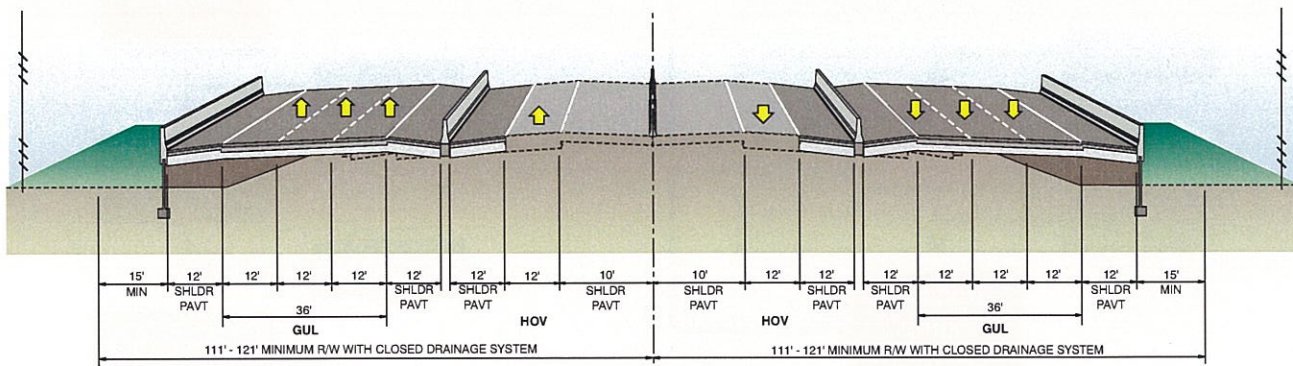
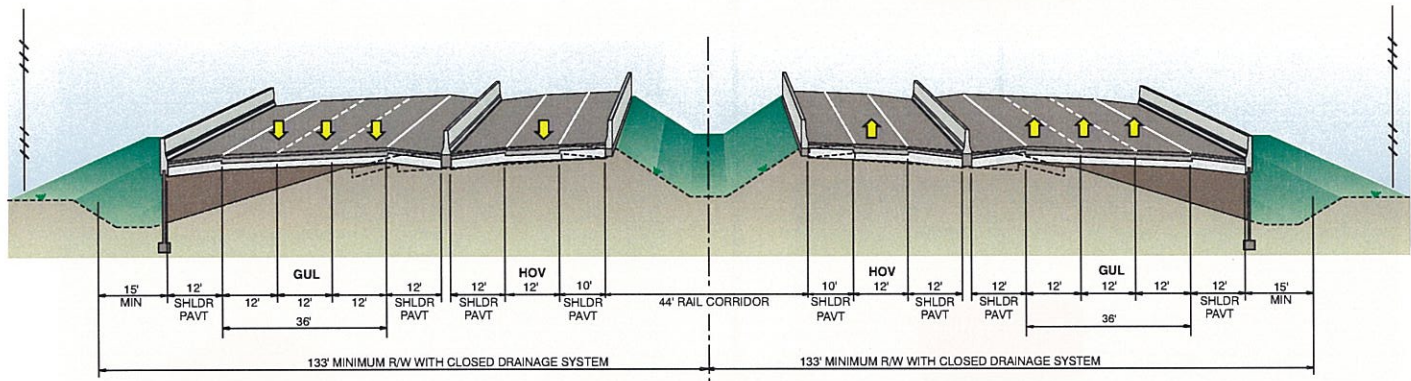
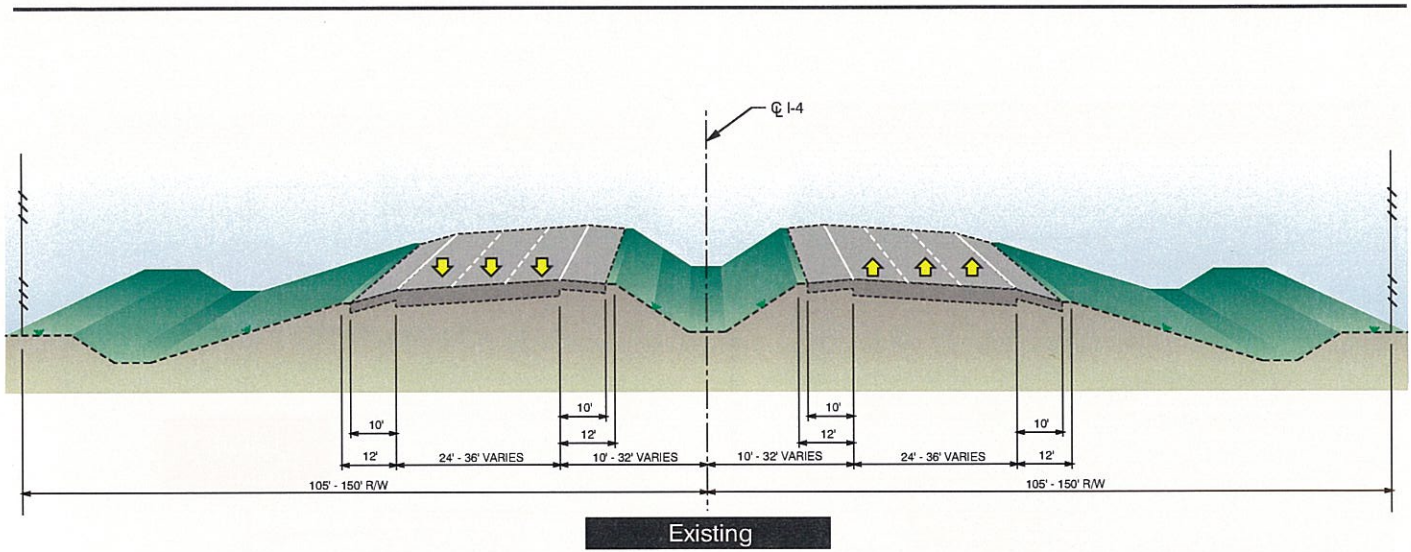
After review and discussion, Alternative F was revised by the Core Team to leave the existing inside shoulder and the three travel lanes of pavement in place and use this pavement area as the HOV facility. A new facility would be constructed outside of the existing pavement for the new GULs. This revised alternative was named F-prime (F'). Typical section F' generally replaced typical section F. Figure 2-12 presents the I-4 existing typical section, typical section F' with the rail envelope, and typical section F' without the rail envelope.

To assist in the evaluation of typical section alternatives, a comparison matrix was prepared for the typical sections in each of the six project segments. For each element in the matrix, the Core Team rated the importance of the elements. The following elements were used in the evaluation of the typical section alternatives:

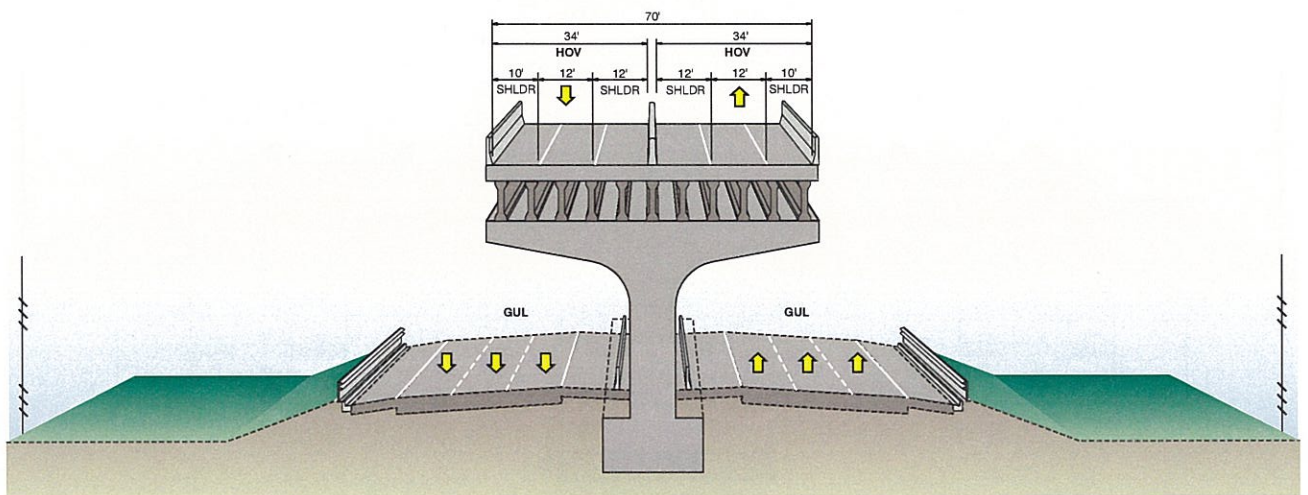
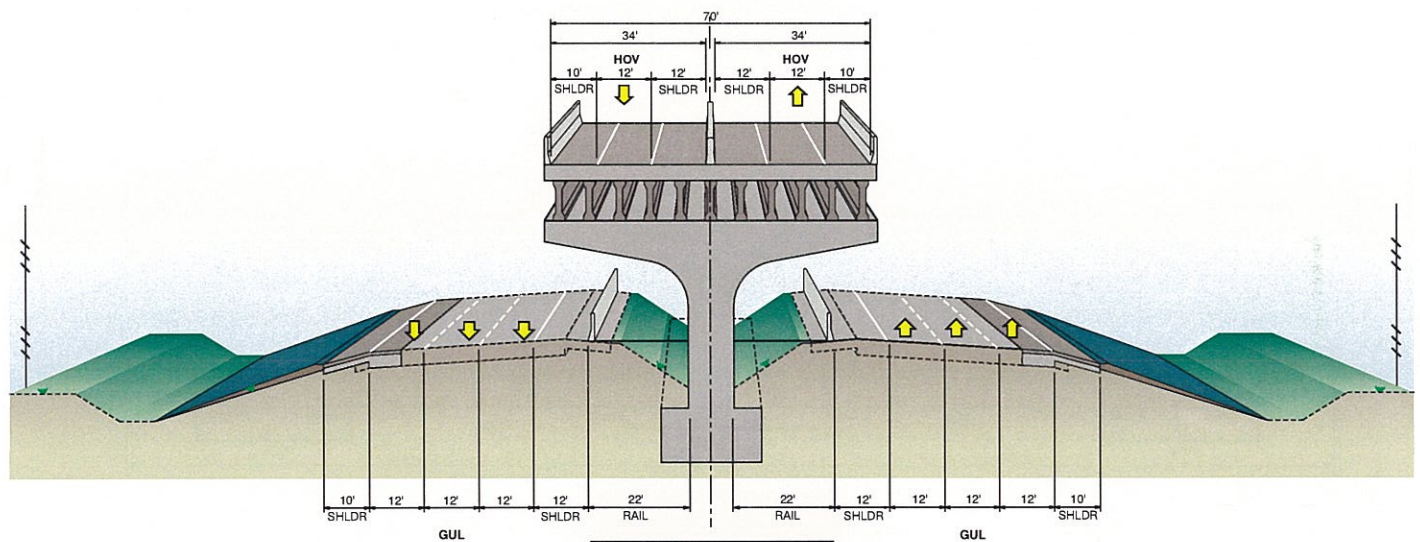
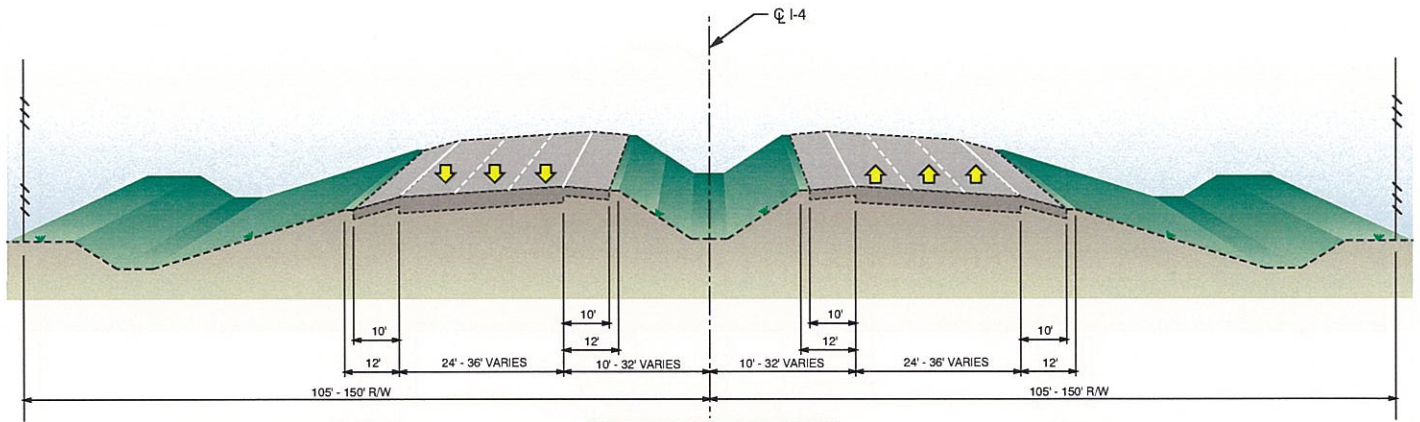
- Maintenance of traffic during construction of mainline, ramps, and interchanges;
- Access ramps between the HOV and GULs;
- Design speed on the HOV and GULs;
- Maximize use of the existing pavement and bridge structures;
- Right-of-way impacts for the I-4 improvements;

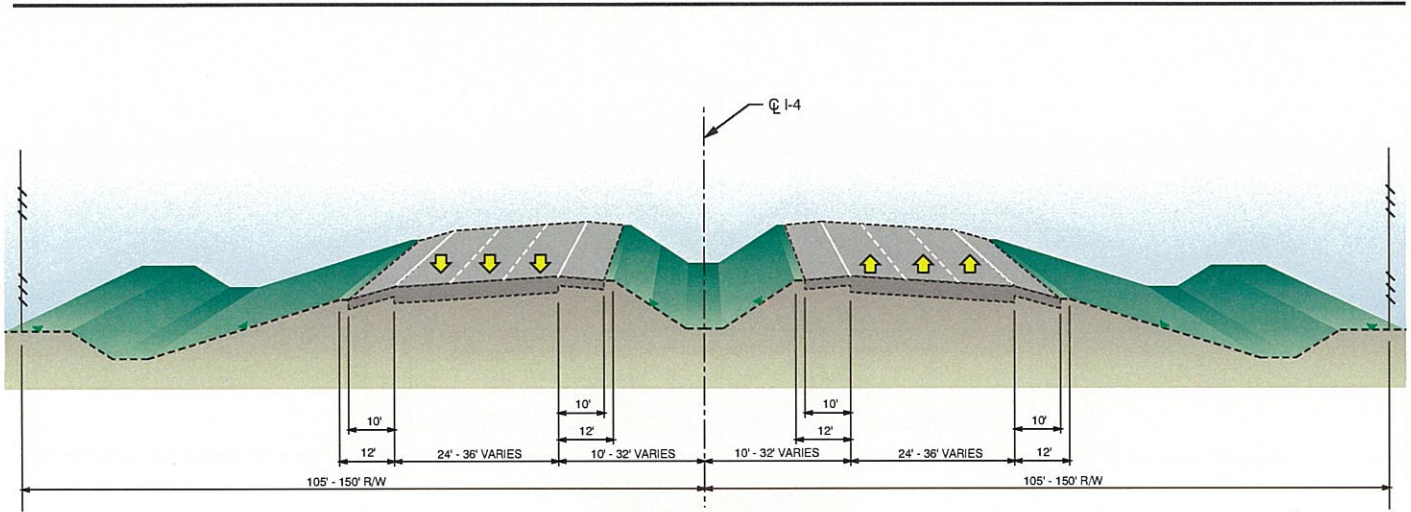


CT = Core Team

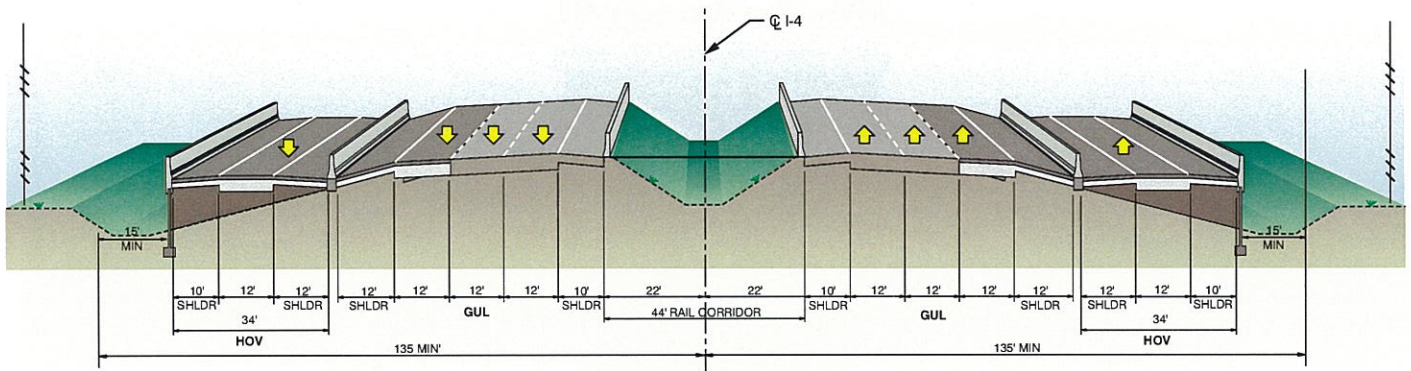


**Figure 2-7
Preliminary Typical Sections - Alternative A, B, and C**

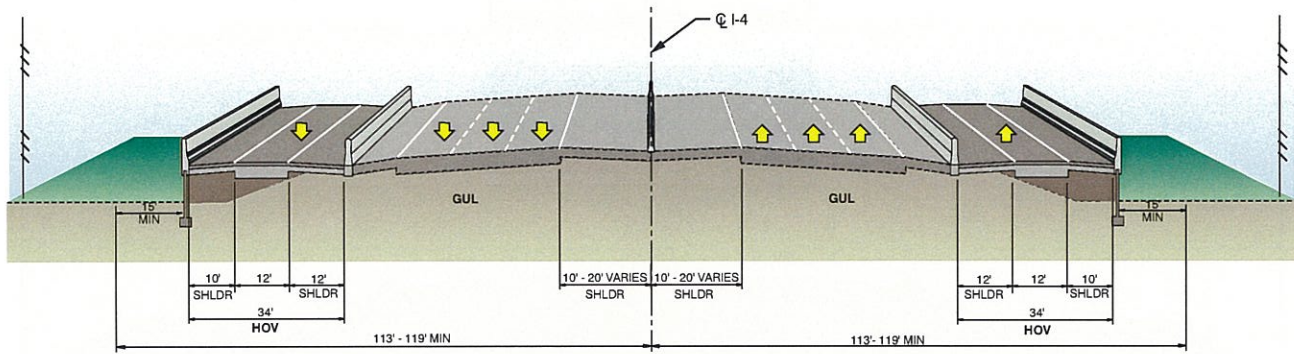




Existing

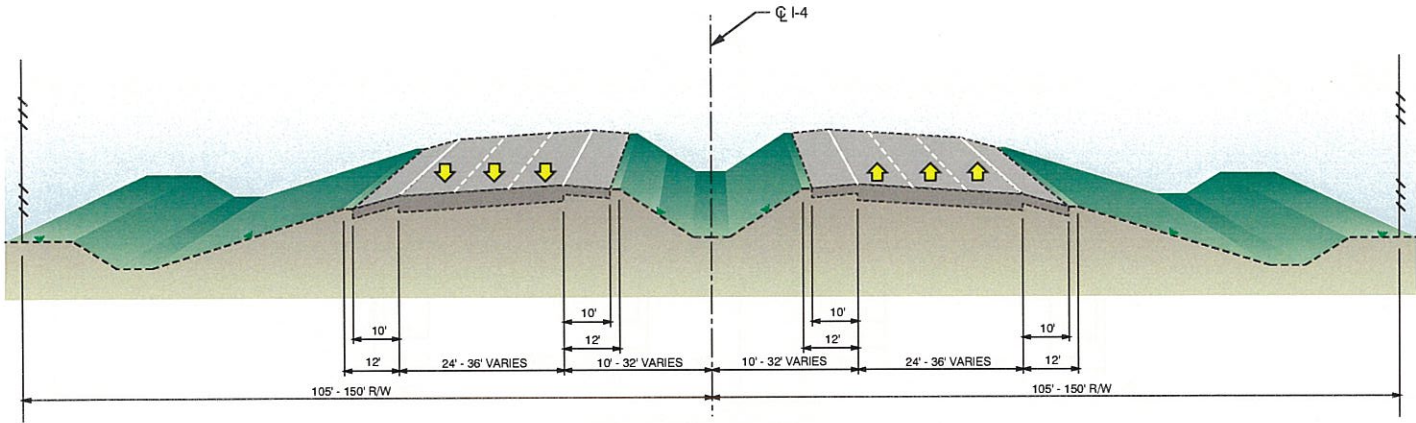


Alternative E
With Rail Corridor

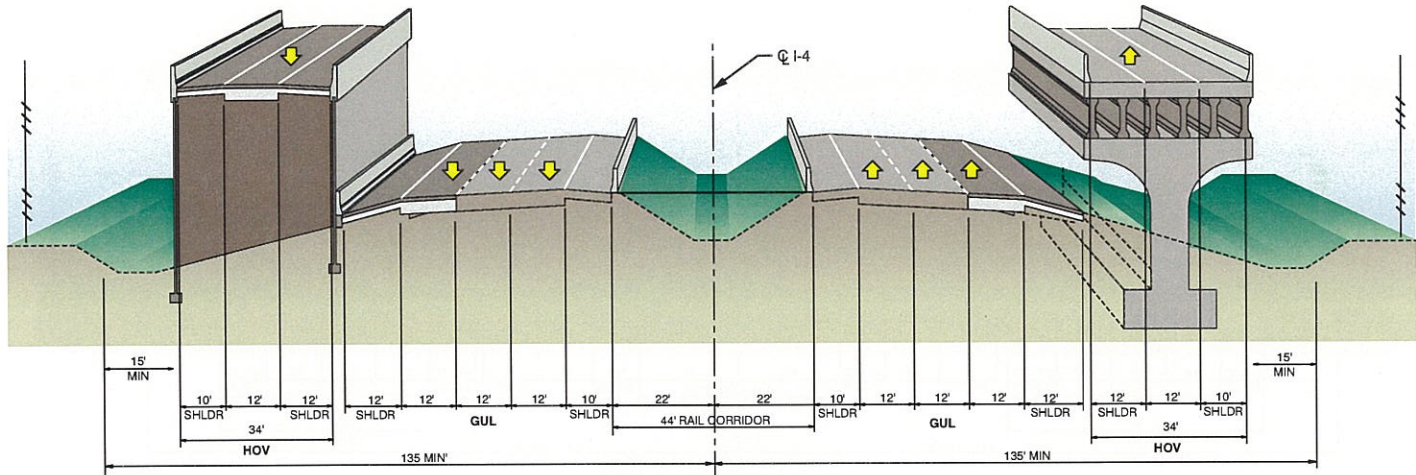


Alternative E
No Rail Corridor

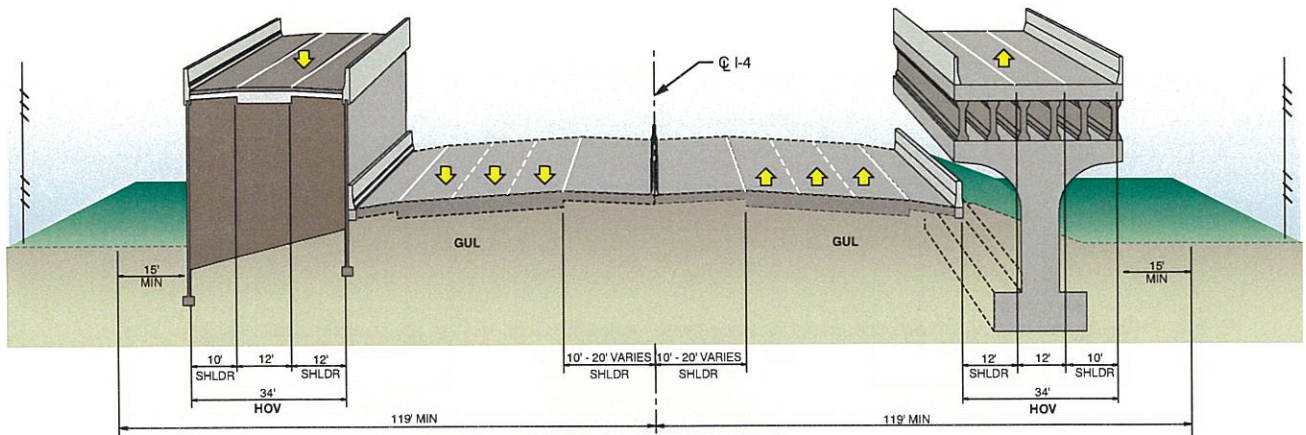
Figure 2-9
Preliminary Typical Section - Alternative E



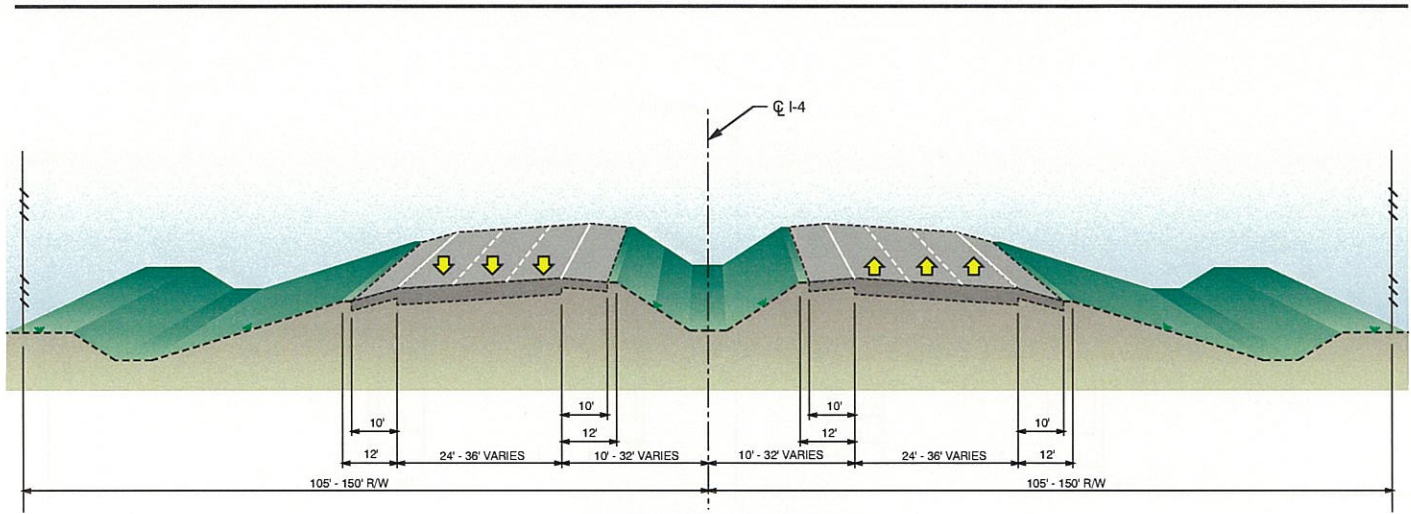
Existing



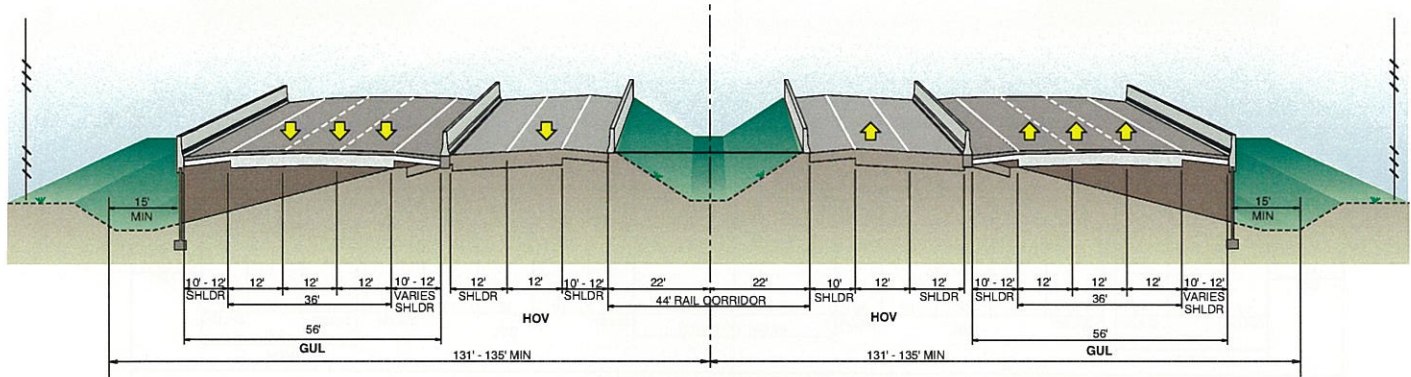
Alternative E
With Rail Corridor



Alternative E
No Rail Corridor

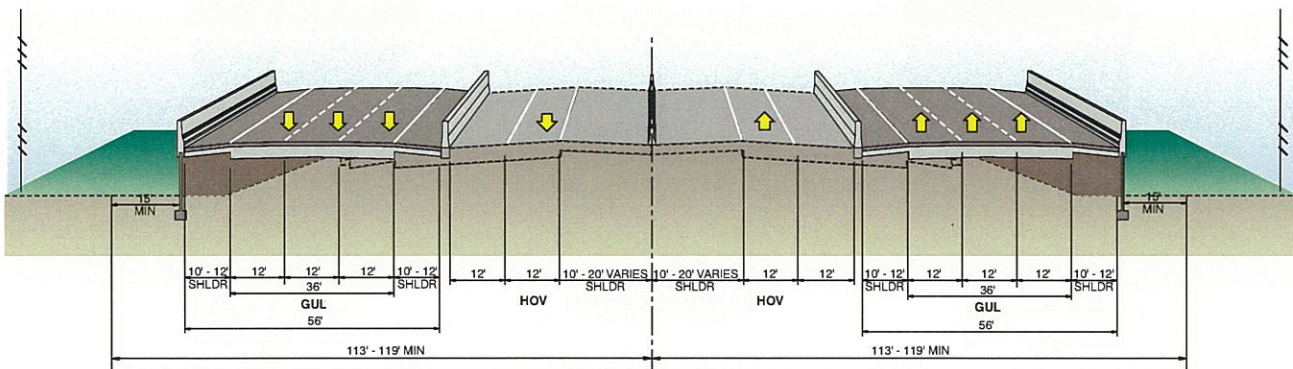


Existing



Alternative F

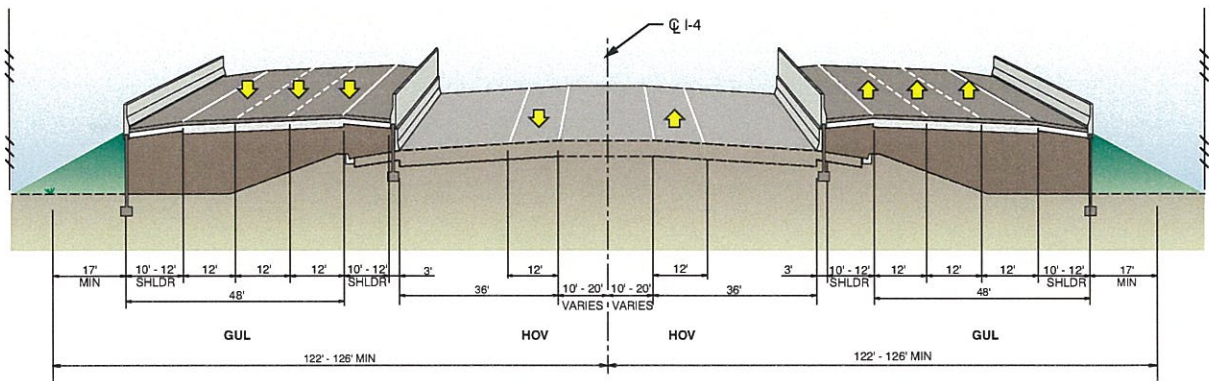
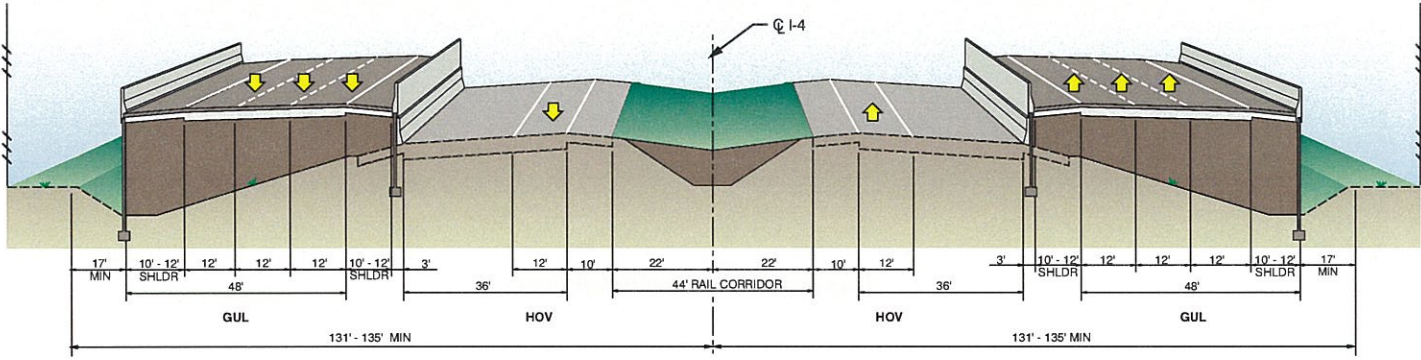
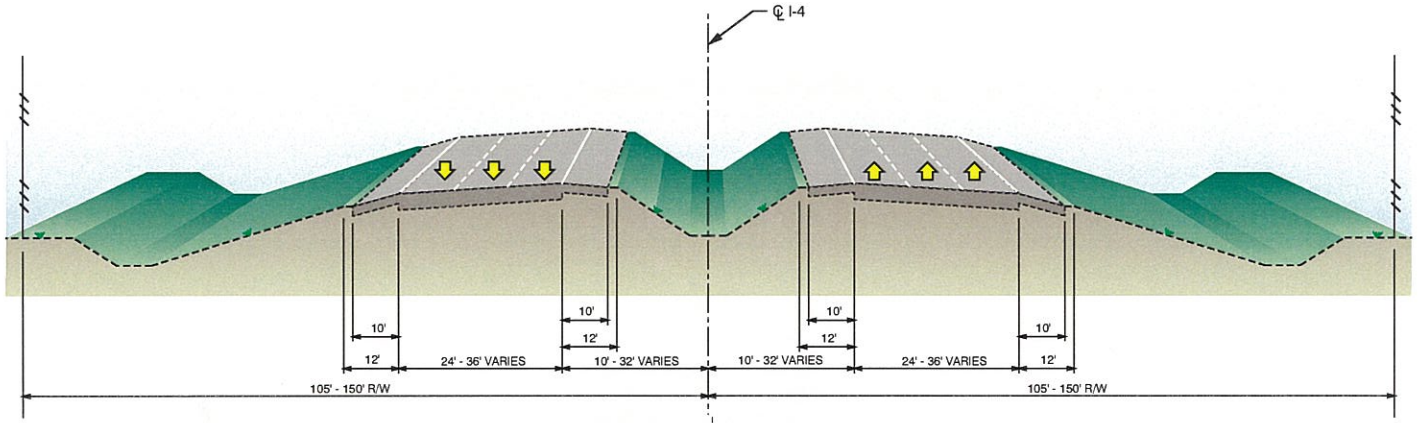
With Rail Corridor



Alternative F

No Rail Corridor

Figure 2-11
Preliminary Typical Section - Alternative F



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- Visual impacts both from the facility and of the improvements from adjacent development;
- Ability to accommodate LRT;
- Construction costs; and
- Requirement for variations and exceptions.

For each typical section and segment in the corridor, the individual elements were rated on a scale of -2 to +2. A negative score indicated a potentially significant problem or issue with that element. A zero rating indicated no apparent problem/issue. A positive rating reflected that the typical section addressed the element.

Based upon the Core Team's evaluations, typical sections C, E, and F' were selected for further consideration during the concept refinement phase of the project. Typical section C is centered on the existing alignment and provides for a 60 mph design speed based on FDOT criteria. Typical Section E locates the HOV lanes on a new alignment on each side of the existing freeway lanes. Typical section F' uses the existing travel lanes and inside shoulders to provide for the HOV facility. The GULs would be constructed to the outside of the existing pavement. Refer to Figure 2-7 for an illustration of typical section C, Figures 2-9 and 2-10 for typical section E, and Figure 2-12 for typical section F'.

2.5.1.3 Design Speed Evaluations

In conjunction with the typical section evaluation, the design speeds of the existing I-4 facility and the I-4 MMMP conceptual design were assessed utilizing current FDOT and AASHTO design criteria. The results of the analysis are presented in the following paragraphs by segment.

Segment 1

The existing I-4 vertical alignment within this segment typically meets or exceeds the design criteria for FDOT 60 mph (AASHTO 70 mph).

Segments 2 and 3

Within these segments, the existing I-4 vertical alignment consists of a series of crest and sag vertical curves simulating a "roller coaster" type profile. Design speeds for the existing roadway vary from 45 mph to 60 mph according to current AASHTO criteria. Nearly all of the vertical curves along the existing alignment fall well below the 60 mph design speed criteria established by FDOT for interstate designs.

Segments 4 and 5

The vertical alignment within Segments 4 and 5 generally follows the existing terrain, particularly where the crossroads overpass I-4. With the exception of Lee Road, the vertical alignment exceeds FDOT 55 mph criteria. For major portions of Segments 4 and 5, the existing alignment meets or exceeds 60 mph FDOT criteria.

Segment 6

The existing vertical alignment generally meets the criteria for FDOT 70 mph for Segment 6 with the exception of where the I-4 alignment crosses local roadways. At these crossroad locations, the existing vertical profile varies from a design speed of 56 mph to 64 mph.

The existing vertical profile evaluations were presented to the Core Team for input in a series of meetings. The Core Team evaluated alternative design speeds to be used in the development of preliminary concept plans and profiles. The Core Team recommended FDOT 60 mph (70 mph AASHTO) criteria for Segments 1 through 5 and FDOT 70 mph criteria for Segment 6.

2.5.1.4 Bridge Clearance Evaluations

The purpose of the preliminary bridge evaluation was to determine the feasibility of widening and/or rehabilitating the existing bridges versus complete replacement. A two-step process was used to evaluate each bridge on the project. The first step was to identify those existing bridges that would require replacement based on structural deficiencies and/or a structural evaluation of less

than seven. This evaluation was based on the Bridge Management Inventory Systems (BMIS) reports provided by FDOT. The second step evaluated the horizontal and vertical clearances for each bridge based on design criteria and crossroad improvements listed in the adopted LRTP.

The preliminary bridge evaluation was conducted for typical sections C, E, and F'. The results of the evaluation indicated that a substantial number of bridges would require replacement using typical section C. This is primarily due to complete reconstruction of the existing facility to meet current horizontal/vertical clearance and alignment criteria. Typical section E required the least number of bridge replacements due to the proposed HOV lanes being constructed adjacent to the existing I-4 facility, thereby maintaining the majority of the existing bridges. Typical section F' requires fewer bridge replacements than typical section C due to the utilization of the existing I-4 facility for the proposed HOV lanes.

After the preliminary plans were developed and reviewed with the Core Team and local jurisdictions, the preliminary bridge evaluations were updated. The update was completed after typical section E was eliminated from further consideration. Refer to Section 2.5.1.5 for information on the iterative process through which typical section E was eliminated from further consideration. Table 2-5 lists the refined bridge recommendations for the project for typical sections C and F'. The criteria used included horizontal clearance, vertical clearance, concept alignment, and structural deficiencies.

There is a potential to defer bridge construction with typical section F'. The potential deferral applies to those bridges on the I-4 mainline over crossroads. The construction could be deferred until the crossroad requires widening or until the bridge needs replacement for structural reason. These locations are also identified in Table 2-5.

2.5.1.5 Preliminary Concept Plans and Profiles

Using the three typical sections (Alternatives C, E, and F'), design speed evaluations, and the preliminary bridge evaluations from the corridor level evaluations, preliminary concept plans and working interstate mainline profiles were developed for each of the six segments in the corridor. The preliminary plans were developed centered on the existing I-4 alignment to maximize the potential use of the existing pavement. Other elements included in the development of the concept plans and profiles included the HOV lane access ramp treatments and interchange configurations.

Once the concepts were developed for the various typical sections, the concepts were analyzed for various impacts including wetland acreage, floodplain acreage, relocations, right-of-way, and construction costs. The concept plans and impact analyses were reviewed with the Core Team and concept refinements were developed and the impacts reanalyzed. The concept refinements and impact analyses were then reviewed with the Core Team for approval. Once the Core Team approved the concepts, the preliminary plans and impact analyses were presented to the local jurisdictions for review and comment. Any revisions requested by the local jurisdictions were taken back to the Core Team for consideration.

An iterative process of refinement and review was followed for each of the six segments in the corridor. When necessary, multiple meetings were held with the local jurisdictions to ensure that their concerns and issues were adequately addressed. In addition, the team held meetings with multiple jurisdictions together to ensure consensus of the proposed concepts. Meetings held with the City of Orlando and the OOCEA were used to achieve consensus on the common and conflicting objectives within the downtown Orlando area.

Through this iterative process, typical section E was eliminated from further consideration. Elimination of typical section E was based on the large number of environmental impacts and high construction costs associated with the alternative.

The following is a summary, by segment, of the refinements from the three level screening process that was advanced through the PD&E Study. A detailed description of these refinements is included in the *I-4 PD&E Study – Section 2 Typical Section Concept Refinement Technical Memorandum* (January 1999).

Segment 1

The concept plans for Segment 1 incorporated the following refinements from the three level screening process:

- Typical section C will be used throughout Segment 1 except in the area of I-4 over Tropical Trail. Within this area, Typical Section F' will be proposed as an alternative roadway section.
- The SR 528 (Bee Line Expressway) interchange concept will include direct HOV ramps to/from the east and to/from the west on I-4. This concept shall also include direct HOV ramps to/from the west along SR 528 (Bee Line Expressway) at International Drive.
- Between SR 528 (Bee Line Expressway) and Sand Lake Road, the centerline of I-4 improvements will be offset west of the existing I-4 centerline, holding the east limited-access right-of-way line.
- No provisions for a rail corridor will be included in the I-4 typical roadway section between SR 528 (Bee Line Expressway) and Kirkman Road.
- Two Kirkman Road interchange alternatives will be advanced through the PD&E process.
- Eastbound HOV slip ramp design will be modified under the future Conroy Road bridge to accommodate the designed horizontal clearance between bridge abutments.
- The auxiliary lane from Florida's Turnpike to John Young Parkway will not be continuous through the Conroy Road interchange. The auxiliary lane will be dropped at the interchange exits and added at the entrance ramps to accommodate the designed horizontal clearance between bridge abutments.

Segments 2 and 3

The concept plans for Segments 2 and 3 incorporated the following refinements from the three level screening process:

- Typical section C will be used throughout Segments 2 and 3. Typical Section F' is proposed as an additional alternative through the Kaley Street interchange and from New Hampshire Avenue to Lee Road.
- All mainline I-4 horizontal and vertical alignments will use an FDOT 60 mph design speed to reflect worst case conditions.
- A consensus alternative for the SR 408 (East/West Expressway) interchange, reflecting input from FDOT, Orlando, and OOCEA will be carried forward into the PD&E phase.
- The SR 408 (East/West Expressway) interchange improvements include improvements on SR 408 (East/West Expressway) from Tampa Avenue to Mills Avenue.
- Downtown access and circulation will be modified to provide direct access ramps from eastbound I-4 to Garland Avenue and from Hughey Avenue to westbound I-4. South Street and Anderson Street will be two-way street from Division Avenue to Orange Avenue.
- Typical section C realigns the I-4 mainline through the Kaley Street/Michigan Street interchange and through the Fairbanks curves to maintain a 60 mph (FDOT) design speed.
- Three alternatives were selected for the Kaley Street/Michigan Street interchange.
- The SR 50 (Colonial Drive) interchange is a single point urban interchange with full access to/from I-4.
- The Ivanhoe Boulevard interchange was reevaluated to determine whether full access at the proposed interchange could be accommodated. After further review, full access could not be provided at Ivanhoe Boulevard.
- The 44-foot rail corridor was eliminated from Princeton Street to Lee Road. The LRT alignment in this section will be accommodated along the CSXT corridor.

Table 2-5. Refined Bridge Recommendations

Facility	Description	Bridge Number	Existing Vertical Clearance (ft)	Replace for Clearances		Replace for Concepts		Deferred Construction Potential		Replacement Recommendation/ Clearance	
				Section C	Section F'	Section C	Section F'	Section C	Section F'	Section C	Section F'
Segment 1											
SR 528 (Bee Line Expressway)	Flyover from WB I-4	750180	16.35	Y/H	Y/H					Y/16.5	N/A
SR 528 (Bee Line Expressway)	Flyover to WB I-4	750087	16.45	Y/H	Y/H					Y/16.5	N/A
Sand Lake (SR 482)	WB I-4 Bridge	750336(R)	16.78								
Sand Lake (SR 482)	EB I-4 Bridge	750335(L)	16.78								
Universal Boulevard South	NB/SB over I-4	Under Cnstr.	>16.5								
Kirkman Road (SR 435)	SB over EB I-4	750941(L)	15.36	Y/H	Y/H	Y/A	Y/A			Y/16.5	N/A
Kirkman Road (SR 435)	NB over EB I-4	750174(R)	15.26	Y/H	Y/H	Y/A	Y/A			Y/16.5	N/A
Kirkman Road (SR 435)	SB over WB I-4	750042(L)	15.43	Y/H	Y/H	Y/A	Y/A			Y/16.5	N/A
Kirkman Road (SR 435)	NB over WB I-4	750175(R)	15.43	Y/H	Y/H	Y/A	Y/A			Y/16.5	N/A
Florida's Turnpike	NB Turnpike	750268(R)	16.45	Y/H	Y/H	Y/D	Y/D			Y/16.5	Y/16.5
Florida's Turnpike	SB Turnpike	750187(L)	16.35	Y/H	Y/H					Y/16.5	Y/16.5
Florida's Turnpike	Turnpike Ramp over I-4	750284	16.51	Y/H	Y/H					Y/16.5	Y/16.5
Conroy Road	EB/WB over I-4	To Be Cnstr.	>16.5	To be determined with HOV ramp aux lanes							
Tropical Drive	WB I-4 Bridge	750151(L)	15.79	Y/V					Y	Y/16/5	
Tropical Drive	EB I-4 Bridge	750154(R)	14.61	Y/V	Y/V					Y/16.5	Y/16.5
Shingle Creek Canal	WB I-4 Bridge	750005(L)	0.00					Y	Y		
Shingle Creek Canal	EB I-4 Bridge	750155(R)	0.00					Y	Y		
Segment 2											
JYP/33 rd Street	WB I-4 Bridge	750156(L)	14.44	Y/VH	Y/H	Y/AP	Y/AP			Y/16.5	N/A
JYP/33 rd Street	EB I-4 Bridge	750202(R)	14.44	Y/VH	Y/H	Y/AP	Y/AP			Y/16.5	N/A
Rio Grande Avenue	WB I-4 Bridge	750157(L)	14.93	Y/V		Y/A	Y/A			Y/16.5	N/A
Rio Grande Avenue	EB I-4 Bridge	750203(R)	14.93	Y/V		Y/A	Y/A			Y/16.5	N/A
OBT (US 441/17-92)	WB I-4 Bridge	750158(L)	15.36	Y/V	Y/V	Y/A	Y/A			Y/16.5	N/A
OBT (US 441/17-92)	EB I-4 Bridge	750204(R)	15.2	Y/V	Y/V	Y/A	Y/A			Y/16.5	N/A
Westmoreland Drive	WB I-4 Bridge	750159(L)	14.01	Y/V		Y/P	Y/AP			Y/16.5	N/A
Westmoreland Drive	EB I-4 Bridge	750205(R)	14.01	Y/V		Y/P	Y/AP			Y/16.5	N/A
Michigan Street	WB I-4 Bridge	750160(L)	14.18	Y/V		Y/P		Y		Y/16.5	
Michigan Street	EB I-4 Bridge	750206(R)	14.18	Y/V		Y/P		Y		Y/16.5	
Kaley Street	WB I-4 Bridge	750161(L)	15.26	Y/V		Y/P		Y		Y/16.5	
Kaley Street	EB I-4 Bridge	750207(R)	15.26	Y/V		Y/P		Y		Y/16.5	
Pedestrian Overpass	Bridge over I-4	759001	16.28	Y/H	Y/H					Y/16.5	Y/16.5
I-4 Connector Ramp of SR 408	Ramp over I-4	750130	17.53	Y/H	Y/H					N/A	N/A
Gore Street	WB I-4 Bridge	750162(L)	15.10	Y/V		Y/P	Y/P			Y/16.5	N/A
Gore Street	EB I-4 Bridge	750208(R)	15.26	Y/V		Y/P	Y/P			Y/16.5	N/A
Division Avenue	WB I-4 Bridge	750014(L)	14.87	Y/V		Y/P	Y/P			Y/16.5	N/A
Division Avenue	EB I-4 Bridge	750038(R)	14.87	Y/V		Y/P	Y/P			Y/16.5	N/A
SR 408 Downtown Viaduct (WB)	WB SR 408 Exit Ramp to I-4	750114(L)	17.20	Y/H	Y/H					Y/16.5	N/A
SR 408 Downtown Viaduct (EB)	EB SR 408 Bridge	750183(R)	18.29	Y/H	Y/H					Y/16.5	N/A
Anderson Street	One-Way Bridge	750259	16.18	Y/H	Y/H	Y/AP	Y/AP			Y/16.5	N/A

I-4 PD&E Study - Section 2
Final Environmental Impact Statement
August 2002

Table 2-5. Refined Bridge Recommendations (Continued)

Facility	Description	Bridge Number	Existing Vertical Clearance (ft)	Replace for Clearances		Replace for Concepts		Deferred Construction Potential		Replacement Recommendation/ Clearance	
				Section C	Section F'	Section C	Section F'	Section C	Section F'	Section C	Section F'
South Street	WB I-4 Bridge	750050(L)	16.35	Y/H	Y/H	Y/APD	Y/APD			Y/16.5	N/A
South Street	EB I-4 Bridge	750062(R)	30.49			Y/P	Y/P			Y/16.5	N/A
Church Street	I-4 Bridge	750064	14.51	Y/V		Y/AP	Y/AP			Y/16.5	N/A
Pine Street	I-4 Bridge	750064	14.51	Y/V		Y/AP	Y/AP			Y/16.5	N/A
Central Street	I-4 Bridge	750064	14.51	Y/V		Y/AP	Y/AP			Y/16.5	N/A
Washington Street	I-4 Bridge	750064	14.51	Y/V		Y/AP	Y/AP			Y/16.5	N/A
Robinson Street	WB I-4 Bridge	750066(L)	22.63	Y/V		Y/P			Y	Y/230	
Robinson Street	EB I-4 Bridge	750260(R)	22.63	Y/V		Y/P			Y	Y/23.0	
Livingston Street	EB I-4 Exit Ramp to Amelia	750299	14.77	Y/V		Y/A	Y/A			Y/16.5	Y/16.5
Livingston Street	WB I-4 Bridge	750067(L)	14.77	Y/V		Y/P			Y	Y/16.5	
Livingston Street	EB I-4 Bridge	750068(R)	14.77	Y/V		Y/P			Y	Y/16.5	
Amelia Street	WB I-4 Bridge	750069(L)	14.77	Y/V		Y/P			Y	Y/16.5	
Amelia Street	EB I-4 Bridge	750070(R)	14.77	Y/V		Y/P			Y	Y/16.5	
SR 50 (Colonial Drive)	WB I-4 Bridge	750072(L)	16.28			Y/AP	Y/AP			Y/16.5	N/A
SR 50 (Colonial Drive)	EB I-4 Bridge	750189(R)	16.94	Y/V		Y/APD	Y/APD			Y/16.3	N/A
SR 50 (Colonial Drive)	WB Exit Ramp	750163	0.00	Y/H	Y/H	Y/A	Y/A			Y/16.5	N/A
SR 50 (Colonial Drive)	EB Entrance Ramp	750164	0.00	Y/H	Y/H	Y/A	Y/A			Y/16.5	N/A
Lake Ivanhoe	Utility Outfall	750165	0.00			Y/A	Y/A			Y/0.00	N/A
Segment 3											
Ivanhoe Boulevard	WB I-4 Bridge	750074(L)	14.44			Y/AP	Y/AP			Y/16.5	N/A
Ivanhoe Boulevard	EB I-4 Bridge	750190(R)	14.44	Y/V	Y/V	Y/AP	Y/AP			Y/16.5	N/A
Lake Ivanhoe	Boat Pass	750191(R)	UNK			Y/AP	Y/AP			Y	N/A
Lake Ivanhoe	Boat Pass	750076(L)	UNK			Y/AP	Y/AP			Y	N/A
New Hampshire Street	WB I-4 Bridge	750079(L)	14.44	Y/V		Y/P			Y	Y/16.5	
New Hampshire Street	EB I-4 Bridge	750192(R)	14.44	Y/V		Y/P			Y	Y/16.5	
Princeton Street	WB I-4 Bridge	750080(L)	14.34	Y/V		Y/P			Y	Y/16.5	
Princeton Street	EB I-4 Bridge	750193(R)	14.34	Y/V		Y/P			Y	Y/16.5	
Winter Park Street	WB I-4 Bridge	750081(L)	13.95	Y/V		Y/P			Y	Y/16.5	
Winter Park Street	EB I-4 Bridge	750194(R)	13.96	Y/V		Y/P			Y	Y/16.5	
Par Street	WB I-4 Bridge	750082(L)	14.11	Y/V		Y/P			Y	Y/16.5	
Par Street	EB I-4 Bridge	750195(R)	14.11	Y/V		Y/P			Y	Y/16.5	
Formosa and Minnesota Avenue	WB I-4 Bridge	750084(L)	13.38	Y/V		Y/P			Y	Y/16.5	
Formosa and Minnesota Avenue	EB I-4 Bridge	750196(R)	13.38	Y/V		Y/P			Y	Y/16.5	
Fairbanks Avenue	WB I-4 Bridge	750258(L)	15.10	Y/V		Y/P			Y	Y/16.5	
Fairbanks Avenue	EB I-4 Bridge	750261(R)	15.10	Y/V		Y/P			Y	Y/16.5	
Pedestrian Overpass		759002	16.28	Y/H	Y/H					Y/16.5	Y/16.5
Wymore Road	WB I-4 Bridge	750029(L)	14.18			Y/P				Y/16.5	Y/16.5
Wymore Road	EB I-4 Bridge	750127(R)	14.18			Y/PD	Y/D			Y/16.5	Y/16.5
Segment 4											
Lee Road (SR 423)	WB I-4 Bridge	750139	15.03	Y/V		Y/P			Y	Y/16.5	

2-35

I-4 PD&E Study - Section 2
Final Environmental Impact Statement
August 2002

Table 2-5. Refined Bridge Recommendations (Continued)

Facility	Description	Bridge Number	Existing Vertical Clearance (ft)	Replace for Clearances		Replace for Concepts		Deferred Construction Potential		Replacement Recommendation/ Clearance		
				Section C	Section F'	Section C	Section F'	Section C	Section F'	Section C	Section F'	
Lee Road (SR 423)	EB I-4 Bridge	750197(R)	15.03	Y/V		Y/P			Y	Y/16.5		
CR 438/Kennedy Boulevard/ Eatonville Road	I-4 Bridge	750198	15.26	Y/VH	Y/H	Y/P			Y	Y/16.5		
	I-4 Bridge	750198	15.26	Y/VH	Y/H	Y/P			Y	Y/16.5		
Maitland Boulevard (SR 414)	WB SR 414	750287(L)	16.88	Y/H	Y/H					Y/16.5	Y/16.5	
Maitland Boulevard (SR 414)	EB SR 414	750290(R)	16.51	Y/H	Y/H					Y/16.5	Y/16.5	
Maitland Boulevard	Flyover Ramp	750286	16.28	Y/H	Y/H					Y/16.5	Y/16.5	
Wymore Road/Douglas Avenue	Wymore Road Bridge	770023	16.02	Y/H	Y/H					Y/16.5	Y/16.5	
Semorán Boulevard (SR 436)	SR 436 Bridge	770006	15.95	Y/H	Y/H					Y/16.5	Y/16.5	
Central Parkway	Central Parkway Bridge	770038	16.78	Y/H	Y/H					Y/16.5	Y/16.5	
SR 434	WB I-4 Bridge	770021(L)	15.10	Y/VH	Y/H	Y/P			Y	Y/16.5		
SR 434	EB I-4 Bridge	770022(R)	15.10	Y/VH	Y/H	Y/DP	Y/D		Y	Y/16.5		
E.E. Williamson Road	E.E. Williamson Bridge	770018	16.35	Y/H	Y/H					Y/16.5	Y/16.5	
Segment 5												
Lake Mary Boulevard	WB Lake Mary Boulevard	770039(L)	16.51	Y/H	Y/H					Y/16.5	Y/16.5	
Lake Mary Boulevard	EB Lake Mary Boulevard	770040(R)	16.51	Y/H	Y/H					Y/16.5	Y/16.5	
CR 46A/Paola Road	CR 46A Bridge	770012	16.35	Being Replaced with Interchange								
SCL Railroad (abandoned)	WB I-4 Bridge	770008(L)				Y/P			Y	Y/16.5		
SCL Railroad (abandoned)	EB I-4 Bridge	770910(R)				Y/P			Y	Y/16.5		
SR 46	WB I-4 Bridge	770025(L)	15.20	Y/V	Y/H	Y/DP	Y/D		Y	Y/16.5		
SR 46	EB I-4 Bridge	770026(R)	15.20	Y/VH	Y/H	Y/DP	Y/D		Y	Y/16.5		
Segment 6												
Orange Boulevard/CSX	I-4 Bridge	770024	21.55	Y/V	N/A	Y/AP	N/A		N/A	Y/23.0	N/A	
Lake Monroe High Level/ St. Johns River Bridge/ US 17-92	EB I-4 Bridge	790940	14.61		N/A	Y/AP	N/A		N/A	Y/Nav	N/A	
	WB I-4 Bridge	790940	14.61		N/A	Y/AP	N/A		N/A	Y/Nav	N/A	
Padgett Creek	I-4 Bridge WB	790941(L)	0.00		N/A	Y/P	N/A		N/A	Y	N/A	
Padgett Creek	I-4 Bridge EB	790099(R)	0.00		N/A	Y/P	N/A		N/A	Y	N/A	
DeBary Avenue/CR 4162	WB I-4 Bridge	790042(L)	22.14		N/A		N/A	Y	N/A		N/A	
DeBary Avenue/CR 4162	EB I-4 Bridge	790100(R)	22.14		N/A		N/A	Y	N/A		N/A	
Enterprise Road/CR 4156	Enterprise Road Bridge	790101	15.59	Y/H	N/A		N/A		N/A	Y/16.5	N/A	
Saxon Boulevard	EB Saxon Boulevard Bridge	790166(L)	17.20	Y/H	N/A		N/A		N/A	Y/16.5	N/A	
Saxon Boulevard	WB Saxon Boulevard Bridge	790167(R)	17.20	Y/H	N/A		N/A		N/A	Y/16.5	N/A	
Graves Avenue/Howland Avenue/ CR 4145	Graves Avenue Bridge	790044	15.43	Y/H	N/A		N/A		N/A	Y/16.5	N/A	
SR 472	SR 472 Bridge	790053	15.36	Y/H	N/A		N/A		N/A	Y/16.5	N/A	

Source: FDOT Bridge Plans
FDOT BMIS files (1996)

A = Alignment
D = Structurally Deficient
H = Horizontal Clearance
P = Profile
V = Vertical Clearance

Segments 4 and 5

The concept plans for Segments 4 and 5 incorporated the following refinements from the three level screening process:

- Typical section C will be used throughout Segments 4 and 5. Typical section F' is proposed as an alternative from north of SR 434 to north of Lake Mary Boulevard. Typical section F is proposed as an alternative from north of Lake Mary Boulevard to north of SR 46.
- The exclusive HOV access at Lake Mary Boulevard is replaced with slip ramps south of the interchange.
- Two Maitland Boulevard interchange alternatives will be carried into the PD&E Study.
- The 44-foot rail corridor was eliminated from Lee Road to Central Parkway, consistent with the LRT DEIS. Allowance for transit was carried in the east side I-4 outer separation within this segment.
- The proposed median transit envelope transitions from 44 feet to 64 feet south of the US 17-92 interchange.
- The mainline alignment alternative that was proposed shifted I-4 west (maintaining the existing east side right-of-way) between Maitland Boulevard and SR 436.
- The HOV slip ramps between Maitland Boulevard and SR 436 were revised to remove the westbound slip ramp from the GULs to the HOV lane and the eastbound slip ramp from the HOV lane to the GUL.

Segment 6

The Segment 6 concept plans incorporated the following refinements from the screening process:

- Typical section C with a 64-foot transit envelope will be used throughout Segment 6.
- The HOV lanes will begin/end south of the SR 472 interchange.
- The alignment in the vicinity of Enterprise Road is shifted west to limit right-of-way acquisition and relocations.
- The direct HOV access are located north of the existing Enterprise Road alignment, serving a proposed Park & Ride lot located on the existing Uncle Bob's Storage site.
- The US 17-92 interchange is reconfigured to provide direct access.
- The SR 472 interchange is reconfigured while maintaining acceptable traffic operations.

The typical section and concept refinement process concluded with a final Core Team Meeting on February 25, 1998.

2.5.2 Second Level Alternative Concept Refinement

The concepts carried forward from the typical section concept refinement analysis were reevaluated in greater detail to select alternatives to be carried forward into the DEIS. Coordination with stakeholders, local municipalities, FDOT, and FHWA resulted in new alternatives and refinements to the concepts outlined in the *Typical Section Concept Refinement Technical Memorandum (TSCRTM)* (January 1999).

In addition, a Project Team Partnering session was conducted in February 1999 to facilitate the review of the concept refinements and completion of the I-4 PD&E Study. The Project Partnering Team consisted of representatives from FDOT, FHWA, FTA, and the Consultants for the I-4 PD&E Studies - Sections 1 and 2. During the Project Team Partnering session, the typical sections, concept refinements, proposed profiles, potential impacts, and agency/public input were reviewed with the agencies to determine whether the concepts should be carried forward as part of the DEIS.

The alternative typical sections carried forward from the TSCRTM are Alternative C for the entire length of the project and Alternative F' from Princeton Street to Lee Road, Alternative F' from SR 434 to Lake Mary Boulevard and Alternative F from Lake Mary Boulevard to US 17-92. Alternative C requires the reconstruction of I-4. Alternative F' maintains the existing travel lanes of I-4 as the HOV corridor and constructs new GULs outside the existing pavement. Alternative F has the same alignment and impacts as Alternative C. The alternative also requires widening of the existing pavement. Figures 2-7, 2-11, and 2-12 illustrate the typical section alternatives.

The second level alternative concept analysis for each segment is described in the following sections.

2.5.2.1 Segment 1

The Project Team Partnering Session identified concerns with the geometry at two locations, Sand Lake Road and Kirkman Road. The following discusses the second level concept refinements.

2.5.2.1.1 Sand Lake Road Interchange

Concerns with the TSCRTM alternative were raised regarding lane balance between the westbound Kirkman Road on-ramp and the SR 528 (Bee Line Expressway) off-ramp. Additional concerns were raised regarding the two westbound merge points from the Sand Lake Road on-ramps. Two alternatives were developed to provide for improved traffic operation conditions on I-4 near Sand Lake Road by providing lane balance at the ramp junctions and by reducing the number of mainline conflict points.

Alternative 1

Alternative 1 provides four lanes on westbound I-4 approaching the Sand Lake Road interchange and maintains the existing Sand Lake Road two-lane on-ramp, which merges with I-4 (in an add lane condition). After one lane merges, five lanes continue westbound. The one-lane eastbound Sand Lake Road to westbound I-4 on-ramp merges into the five-lane section approximately 700 feet south of the interchange. The five-lane section is carried to SR 528 (Bee Line Expressway) where a two-lane exit ramp to SR 528 (Bee Line Expressway) diverges leaving four mainline lanes. Two more lanes diverge from I-4 to Central Florida Parkway, leaving three mainline lanes through the interchange.

Alternative 2

Alternative 2 provides four lanes on I-4 westbound approaching the Sand Lake Road interchange. The alternative merges the existing Sand Lake Road two-lane loop ramp to one-lane and merges both Sand Lake Road on-ramps into a single two-lane ramp that merges onto I-4 at one access point. One lane merges and five lanes continue south to SR 528 (Bee Line Expressway). The five-lane section is carried to SR 528 (Bee Line Expressway) where a two-lane exit ramp to SR 528 (Bee Line Expressway) diverges with four mainline lanes continuing west to Central Florida Parkway. Two more lanes diverge from I-4 to Central Florida Parkway with three mainline lanes continuing through the interchange.

Evaluations of the two alternatives indicate no additional social, natural, or physical environmental impacts compared to the TSCRTM concept. Construction costs for Alternative 1 are \$164.55 million and the costs for Alternative 2 are \$164.47 million. The impact and cost analyses for the two alternatives are provided in the project files.

The operational analysis for the two alternatives indicates a slight increase in operating speeds as compared to the TSCRTM concept. Alternative 2 reduces the number of weaves and conflict points on I-4 from two to one at Sand Lake Road.

Alternative 2 was selected as the Preferred Alternative that will be carried forward into the DEIS due to the reduced number of weave and conflict points on I-4. In addition, Alternative 2 provides lane balance at Sand Lake Road and at SR 528 (Bee Line Expressway).

2.5.2.1.2 Kirkman Road Interchange

The original I-4 MMMP Alternative, designated as Alternative 2, and the TSCRTM Alternative 3 carried forward from the typical section concept analysis were reevaluated in greater detail during the second level concept refinement to determine which alternative will be carried forward into the DEIS. The refined alternatives are described as follows:

Alternative 2

Alternative 2 is a two and one half level partial interchange with direct access HOV ramps connected to Kirkman Road. Access is provided to southbound Kirkman Road from eastbound I-4 and to westbound I-4 from northbound Kirkman Road. These movements are not provided by the existing interchange. The proposed interchange concept is shown in the *Preliminary Engineering Report* (June 2002).

Alternative 3

Alternative 3 is a three level partial interchange with a HOV only intersection at level two with ramp access to Kirkman Road. No access is provided for northbound Kirkman Road to westbound I-4. The proposed interchange concept is shown in the *Preliminary Engineering Report* (June 2002).

Impact and cost analyses were conducted on these alternatives and the results were presented to the Core Team for review. The consensus of the Core Team was that Alternative 3 provided more desirable operating conditions for the HOV access that is easier to sign due to the separated HOV direct connect ramps and intersection. Alternative 2 was eliminated from further study. The impact and cost analyses for the two alternatives are provided in the project files.

2.5.2.2 Segment 2

Five areas were identified for further evaluations in this segment. These include investigating drainage requirements to minimize right-of-way impacts and alternatives for four interchange locations. The following sections summarize each area assessed.

2.5.2.2.1 Drainage Alternatives

Exfiltration alternatives are proposed for stormwater treatment along I-4 from Orange Blossom Trail to Kaley Street to reduce right-of-way and relocation impacts. The alternatives are shown on the Preliminary Concept Plans and are described as Alternative C – Ponds and Alternative C – Exfiltration. The evaluations included in the *Pond Siting Report* (August 2000), indicate that the exfiltration alternative is cost effective, even if higher maintenance costs are included, due to the high cost of right-of-way and relocations associated with retention/detention ponds. An exfiltration trench is a subsurface drainage system that consists of a perforated pipe surrounded by aggregate material. Stormwater is directed to the perforated pipe via a surface inlet system. The perforated pipe provides temporary storage in order to facilitate infiltration through the trench walls and bottom into the shallow groundwater aquifer. Also known as a french drain, an exfiltration system is used where space is limited and/or there are high land costs such as in downtown urban areas. Both the exfiltration and pond alternatives were carried forward as part of the DEIS.

2.5.2.2.2 Michigan/Kaley Interchange

Concerns with the TSCRTM alternatives were raised regarding the operational performance at this interchange. Specifically, the operational concerns involve the weave condition between the Michigan/Kaley interchange and the SR 408 (East/West Expressway) interchange for Alternatives 1 – C and 1 – F' and the ramp terminal intersection operation for Alternative 2.

An additional alternative was developed similar to Alternative 2 that braids the Michigan/Kaley on- and off-ramps in lieu of a signalized intersection. The original alternative creates a full access, inverted diamond interchange with frontage road connections between Michigan and Kaley with Texas U-turns under I-4. The revised alternative eliminates the signalized intersections associated with the inverted diamond and provides for improved operations on the ramps.

The revised alternative increases the weave distance between the Michigan/Kaley ramps and SR 408 (East/West Expressway). Due to the improved operations of the revised alternative, all TSCRTM alternatives were eliminated from further study and the braided ramp is carried forward as part of the DEIS and the FEIS.

2.5.2.2.3 I-4 /SR 408 (East/West Expressway) Interchange

The City of Orlando and several stakeholders in the downtown Orlando area raised concerns regarding the I-4/SR 408 (East/West Expressway) interchange and downtown access developed in the TSCRTM. These concerns include consistency with potential redevelopment plans in the Parramore area, access changes to neighborhoods and downtown Orlando, and impacts to historic areas. A reevaluation of the I-4 /SR 408 (East/West Expressway) interchange and the downtown access was initiated.

The process involved defining the objectives for the project, verifying stakeholder issues and concerns, developing and evaluating alternatives, reviewing alternatives with stakeholders, and iterations of refinements. Objectives for the alternatives were established, an I-4/SR 408 Interchange Technical Committee was formed, and a list of other stakeholders for coordination and review of alternatives was developed.

The following objectives for the alternatives were developed:

- Provide system-to-system access between I-4 and SR 408 (East/West Expressway).
- Provide an affordable interchange system.
- Provide an interchange concept that allows for a phased improvement.
- Provide acceptable access to downtown Orlando.
- Provide acceptable local access to surrounding neighborhoods.
- Minimize impacts to surrounding neighborhoods.
- Complement redevelopment of the Parramore Neighborhood.
- Preserve/enhance livability in the area of the interchange.
- Provide a sustainable neighborhood in terms of urban design considerations.
- Provide urban design enhancements to continue to improve aesthetics.
- Improve pedestrian connections.
- Preserve/enhance pedestrian/bicycle access across I-4 and SR 408 (East/West Expressway).
- Promote positive use of public owned land.
- Achieve consensus among the stakeholders within the interchange area of influence.

2.5.2.2.4 I-4/SR 408 Interchange Technical Committee

The I-4/SR 408 Interchange Technical Committee included representatives from the following agencies:

- City of Orlando
- Orange County
- Orlando Housing Authority
- Orlando-Orange County Expressway Authority
- Downtown Development Board
- Parramore Heritage Development Corporation

The I-4/SR 408 met on several occasions to review and discuss the alternatives developed by the project team. Information on the meetings is presented in Section 5.2.2 of this document.

Stakeholders

In addition to the members of the I-4/SR 408 Interchange Technical Committee, several local, state, and federal stakeholders were identified. The project teams held several meetings with the stakeholders to assist in the development of the alternatives at the I-4/SR 408 (East/West Expressway) interchange. These meetings have been included in Sections 5.2 and 5.3 of this document.

Local

- Parramore Neighborhood
- Griffin Park Neighborhood
- Carter Street Association
- Jones High School
- Business interests on Long Street
- Holden Heights Neighborhood Groups
- Holden Heights Redevelopment Group
- Business interests on Division Avenue
- Callahan Neighborhood Association
- Lake Cherokee Neighborhood
- Lake Lawsona Neighborhood
- Downtown business interests
- Carolina Properties

State and Regional

- FDOT
- METROPLAN ORLANDO
- St. Johns River Water Management District
- State Historic Preservation Office

Federal

- FHWA
- Housing and Urban Development
- Advisory Council on Historic Preservation

The meetings held with the I-4/SR 408 Interchange Technical Committee and stakeholders established certain alternative conditions within the I-4/SR 408 (East/West Expressway) interchange and downtown Orlando that would help meet the established objectives. The following conditions were developed:

- The Orlando Housing Authority requested an alternative relocating the eastbound SR 408 (East/West Expressway) to westbound I-4 and westbound SR 408 (East/West Expressway) to westbound I-4 ramps. The TSCRTM alternative ramps maintain the existing physical barrier between Griffin Park and the Parramore Neighborhood. Relocating the ramps would allow for the redevelopment and connectivity of the neighborhood.
- Several stakeholders requested access between I-4 and Orange Blossom Trail via SR 408 (East/West Expressway). This access is provided with the existing interchange configuration. The TSCRTM alternative does not provide this connection. In addition, access at Gore Street is eliminated with the TSCRTM alternative and the stakeholders requested additional access to the local street network be provided to replicate existing access options.

- Operational concerns on I-4 through downtown Orlando are a concern to FHWA and FDOT because of the multiple ramp connections and short weaving sections.
- Other stakeholders expressed concerns about the reduction in the number of ramp connections to the downtown area.

In response to the stakeholders' requests, six additional interchange alternative concepts were developed in schematic detail on aerial maps for the I-4/SR 408 (East/West Expressway) interchange. In addition, one additional alternative concept was developed for access to Downtown Orlando. The alternative concepts were presented to the stakeholders during two workshop sessions. The stakeholders selected for further evaluation (in addition to the TSCRTM Consensus Alternative) two additional interchange concepts for the I-4/SR 408 (East/West Expressway) interchange (Alternatives 1A and 2B) and two alternative concepts for downtown Orlando access (Alternatives 1 and 2). All the alternatives have varying degrees of impacts to the historic Griffin Park neighborhood. Minor revisions have been incorporated into the TSCRTM Consensus Alternative to avoid impacts to the historic Griffin Park neighborhood. The alternative has been renamed Alternative 4.

Alternative 4 is an avoidance alternative to Griffin Park Historic District and is a viable alternative for Section 106 and Section 4(f) impacts. All alternatives were carried forward as part of the DEIS.

Each I-4/SR 408 (East/West Expressway) interchange alternative provides a full access multilevel interchange with a loop ramp in the southeast quadrant for the eastbound SR 408 (East/West Expressway) to eastbound I-4 movement. Braided ramps are proposed along SR 408 (East/West Expressway) at Orange Blossom Trail (US 441) and at Orange Avenue. Slip ramps are provided from the braided ramps over Orange Blossom Trail (US 441) to provide access to Orange Blossom Trail (US 441) from I-4 via Long Street (Alternatives 1A, 2B and 4) and to provide access to I-4 from US 441 via Carter Street (Alternatives 1A and 2B). The eastbound SR 408 (East/West Expressway) to the Orange Avenue ramp has been braided over I-4 to eastbound SR 408 (East/West Expressway) ramp to avoid the historic Peckham-Philips House property. The limits of the improvements extend approximately 1.5 miles east and west of I-4 along SR 408 (East/West Expressway), impacting interchanges from Tampa Avenue to Bumby Avenue. All system-to-system ramps for each alternative are similar except for the westbound SR 408 (East/West Expressway) to westbound I-4 connection. A tunnel connection is proposed in Alternative 1A, a flyover connection is proposed in Alternative 2B, and an alignment on the bridge and fill is proposed for Alternative 4.

The downtown Orlando access Alternative 1 proposes to relocate Anderson Street and provide access to and from downtown Orlando from the west via ramps from Hughey Avenue and to Garland Avenue, and to and from the east at Anderson Street. Additional access is proposed at Amelia Street, SR 50 (Colonial Drive), and Ivanhoe Boulevard. HOV direct access is proposed at South Street and at Ivanhoe Boulevard. In Alternative 2, access to Amelia Street is eliminated and additional lanes will be added to Hughey Avenue and Garland Avenue. In addition, the ramps to Garland Avenue from I-4 and from Hughey Avenue to I-4 will be widened to two-lane ramps. All other access will be the same as in Alternative 1.

Combining the I-4/SR 408 (East/West Expressway) alternatives with the downtown alternatives results in four new alternatives (Alternatives 1A1, 1A2, 2B1, and 2B2). The following discussion summarizes the alternatives:

Alternative 1A1 – I-4/SR 408 (East/West Expressway) Interchange Tunnel Alternative with Amelia Street Ramps

The primary component of this alternative is a tunnel adjacent to the existing ramp connector that serves westbound SR 408 (East/West Expressway) to westbound I-4 traffic. The tunnel begins north of Callahan Drive and extends south of Gore Street. The eastbound SR 408 (East/West Expressway) to westbound I-4 ramp connection is moved eastward and connects to I-4 east of Griffin Park. The existing ramp connection is removed and the Griffin Park Historic District is reincorporated into the Holden-Parramore neighborhood. The alternative eliminates the I-4 westbound exit ramp and entrance ramp to/from Gore Street.

This alternative requires acquiring right-of-way from the historic Griffin Park neighborhood. Amelia Street ramps are provided with this alternative. This alternative provides a four-level interchange, with one level below grade and three levels at or above grade. Alternative 1A1 is graphically presented on Figure 2-13.

Alternative 1A2 – I-4/SR 408 (East/West Expressway) Interchange Tunnel Alternative without Amelia Street Ramps

The primary component of this alternative is a tunnel adjacent to the existing ramp connector that serves westbound SR 408 (East/West Expressway) to westbound I-4 traffic. The tunnel begins north of Callahan Drive and extends south of Gore Street. The eastbound SR 408 (East/West Expressway) to westbound I-4 ramp connection is moved eastward and connects to I-4 east of Griffin Park. The existing ramp connection is removed and the Griffin Park Historic District is reincorporated into the Holden-Parramore neighborhood. The alternative eliminates the I-4 westbound exit ramp and entrance ramp to/from Gore Street.

This alternative requires the acquisition of additional right-of-way from the historic Griffin Park neighborhood when compared to Alternative 1A1. The Amelia Street ramps are eliminated and the ramp from eastbound I-4 to Garland Avenue and the ramp from Hughey Avenue to westbound I-4 are widened to two lanes. The proposed I-4 centerline is shifted to the west to accommodate the two-lane ramp to Garland Avenue. This alternative provides a four-level interchange, with one level below grade and three levels at or above grade. Figure 2-14 presents Alternative 1A2.

Alternative 2B1 – I-4/SR 408 (East/West Expressway) Interchange Flyover Alternative with Amelia Street Ramps

The primary component of this alternative is a fourth-level flyover connection for the westbound SR 408 (East/West Expressway) to westbound I-4 movement. The eastbound SR 408 (East/West Expressway) to westbound I-4 ramp connection is moved eastward and connects to I-4 east of Griffin Park. The existing ramp connection is removed and the Griffin Park Historic District is reincorporated into the Holden-Parramore neighborhood. The alternative eliminates the I-4 westbound exit ramp and entrance ramp to/from Gore Street.

This alternative requires acquisition of right-of-way from the historic Griffin Park neighborhood. Amelia Street ramps are provided with this alternative. This alternative is a four-level interchange. Figure 2-15 presents Alternative 2B1.

Alternative 2B2 – I-4/SR 408 (East/West Expressway) Interchange Flyover Alternative without Amelia Street Ramps

The primary component of this alternative is a fourth-level flyover connection for the westbound SR 408 (East/West Expressway) to westbound I-4 movement. The eastbound SR 408 (East/West Expressway) to westbound I-4 ramp connection is moved eastward and connects to I-4 east of Griffin Park. The existing ramp connection is removed and the Griffin Park Historic District is reincorporated into the Holden-Parramore neighborhood. The Amelia Street ramps are eliminated and the ramp from I-4 eastbound to Garland Avenue and the ramp from Hughey Avenue to I-4 westbound are widened to two lanes. The proposed I-4 centerline is shifted to the west to accommodate the two-lane ramp to Garland Avenue. The alternative eliminates the I-4 westbound exit ramp and entrance ramp to/from Gore Street.

This alternative requires acquisition of the most right-of-way from the historic Griffin Park neighborhood. This alternative is a four-level interchange. Alternative 2B2 is presented on Figure 2-16.

Alternative 4 – I-4/SR 408 (East/West Expressway) Interchange Avoidance Alternative

This alternative is identical to the alternative proposed in the TSCRTM with the few exceptions noted above that have been incorporated into all alternatives. The alternative is similar to the movements provided in Alternatives 1A1 and 1A2. However, with this alternative the I-4 westbound on-ramp from eastbound and westbound SR 408 (East/West Expressway) will be located above ground in the same location as the existing ramp weave to I-4 and the SR 408 (East/West Expressway). The alternative eliminates the I-4 westbound exit ramp and entrance ramp to/from Gore Street.

The alternative avoids impacts to the historic Griffin Park neighborhood. This alternative is a three-level interchange. Figure 2-17 presents Alternative 4.

2.5.2.2.5 SR 50 (Colonial Drive)

The Cultural Resource Assessment identified two properties along SR 50 (Colonial Drive) as being listed or eligible for listing on the National Register of Historic Places (NRHP). The Judge Cheney House located east of I-4 on the north side of SR 50 (Colonial Drive) and the Colonial Garage located east of I-4 on the south side of SR 50 (Colonial Drive). The alignment of SR 50 (Colonial Drive) through the single point TSCRTM interchange alternative impacts both properties. Avoidance alternatives (Alternatives 1 and 2) were developed that realign SR 50 (Colonial Drive) through the single point interchange.

Alternative 1

Alternative 1 maintains the existing SR 50 (Colonial Drive) north right-of-way line and shifts the SR 50 (Colonial Drive) alignment and right-of-way acquisition to the south. This alternative impacts the Colonial Garage structure and property.

Alternative 2

Alternative 2 maintains the existing SR 50 (Colonial Drive) south right-of-way line and shifts the SR 50 (Colonial Drive) alignment and right-of-way acquisition to the north. This alternative impacts the Judge Cheney House property. The Judge Cheney House structure will not be impacted.

2.5.2.2.6 Ivanhoe Boulevard

Concerns with the TSCRTM alternative have been raised regarding the short weaving distance on the I-4 westbound GULs between the on-ramp from Princeton Street and the off-ramp to Ivanhoe Boulevard. An issue was raised concerning the impacts to Beth Johnson Park located on Ivanhoe Boulevard. Alternatives were developed to increase the weaving distance between Princeton Street and Ivanhoe Boulevard and avoid impacts to Beth Johnson Park.

Alternative 1

Alternative 1 maintains the one-lane on-ramp and auxiliary lane at the Princeton Street interchange and provides a one-lane off-ramp to Ivanhoe Boulevard. The one-lane ramp bridges Lake Ivanhoe and widens to two lanes terminating at a signalized intersection on Ivanhoe Boulevard west of I-4. This ramp intersection aligns with the westbound frontage road between Ivanhoe Boulevard and SR 50 (Colonial Drive). The westbound I-4 HOV off-ramp to Ivanhoe Boulevard terminates at a signalized intersection on Ivanhoe Boulevard between the I-4 eastbound and westbound lanes.

Alternative 2

Alternative 2 maintains the one-lane on-ramp and auxiliary lane at the Princeton Street interchange and provides a one-lane off-ramp bridging Ivanhoe Boulevard. The one-lane ramp widens to two-lanes terminating at a signalized intersection on Ivanhoe Boulevard west of I-4.

This ramp intersection aligns with the westbound frontage road between Ivanhoe Boulevard and SR 50 (Colonial Drive). The westbound I-4 HOV off-ramp to Ivanhoe Boulevard crosses under the westbound I-4 lanes and terminates at the same intersection with Ivanhoe Boulevard as the general use lane ramp. This concept creates a five-legged intersection between the I-4 off-ramps, the frontage road, and Ivanhoe Boulevard.

The weave distance for westbound I-4 is improved with both alternatives. Alternative 1 requires an additional signalized intersection on Ivanhoe Boulevard and impacts nine existing recreational parking spaces under the I-4 bridge over Lake Ivanhoe. Alternative 2 adds an additional phase to one traffic signal and does not impact the existing parking. Alternative 2 was selected to be carried forward as part of the DEIS and the FEIS.

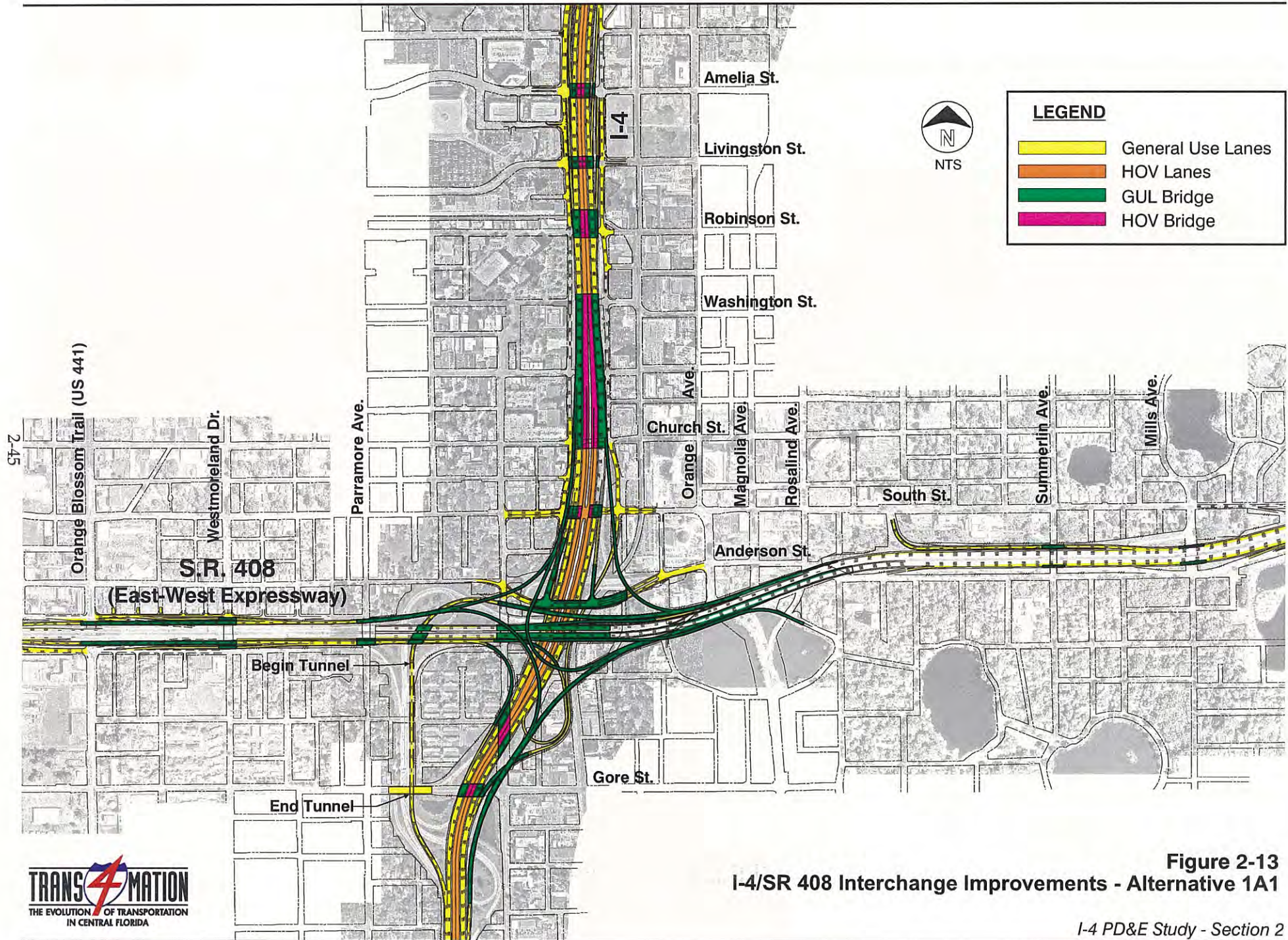
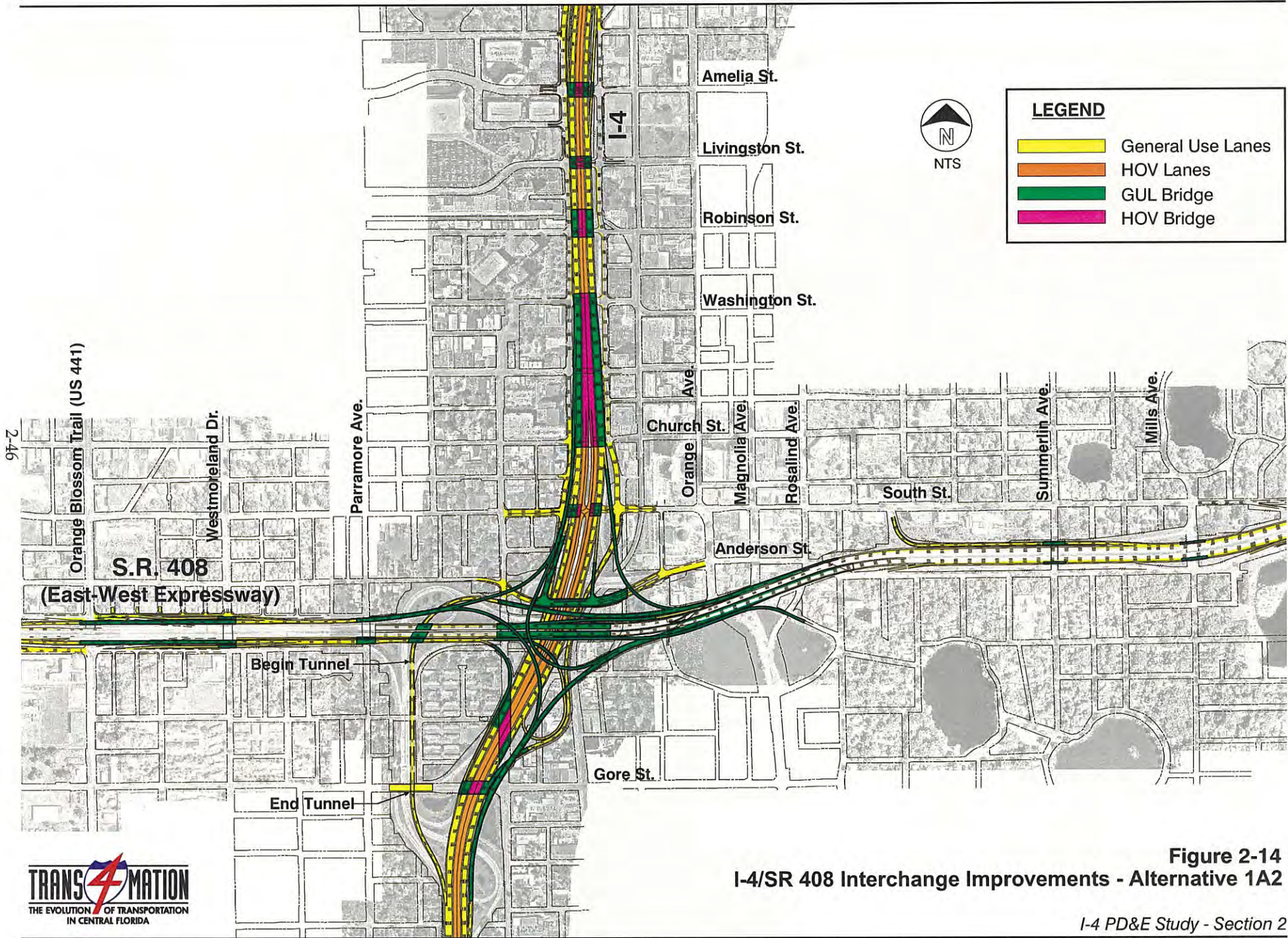


Figure 2-13
I-4/SR 408 Interchange Improvements - Alternative 1A1



LEGEND

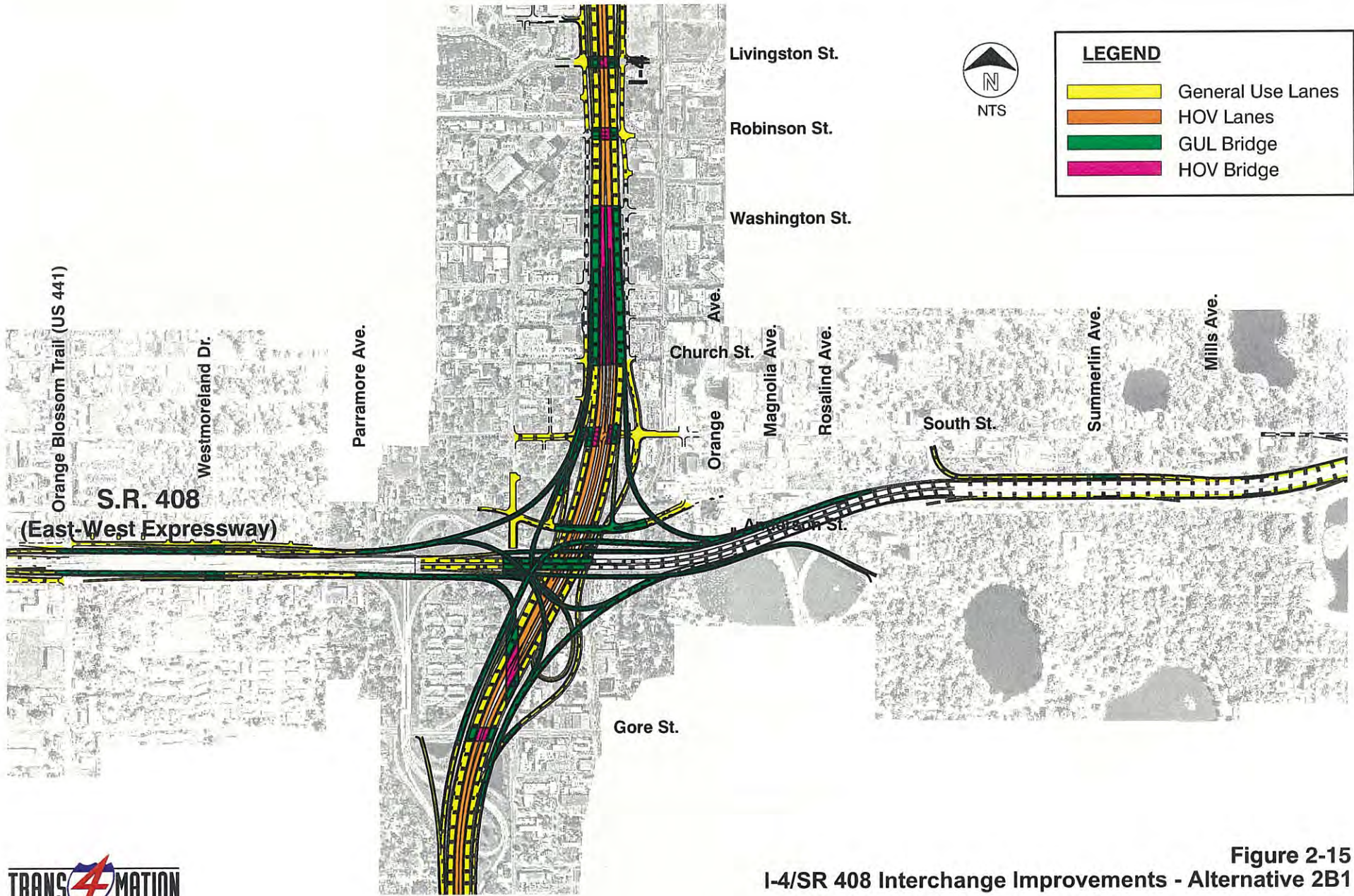
- General Use Lanes
- HOV Lanes
- GUL Bridge
- HOV Bridge



Figure 2-14
I-4/SR 408 Interchange Improvements - Alternative 1A2



2-47

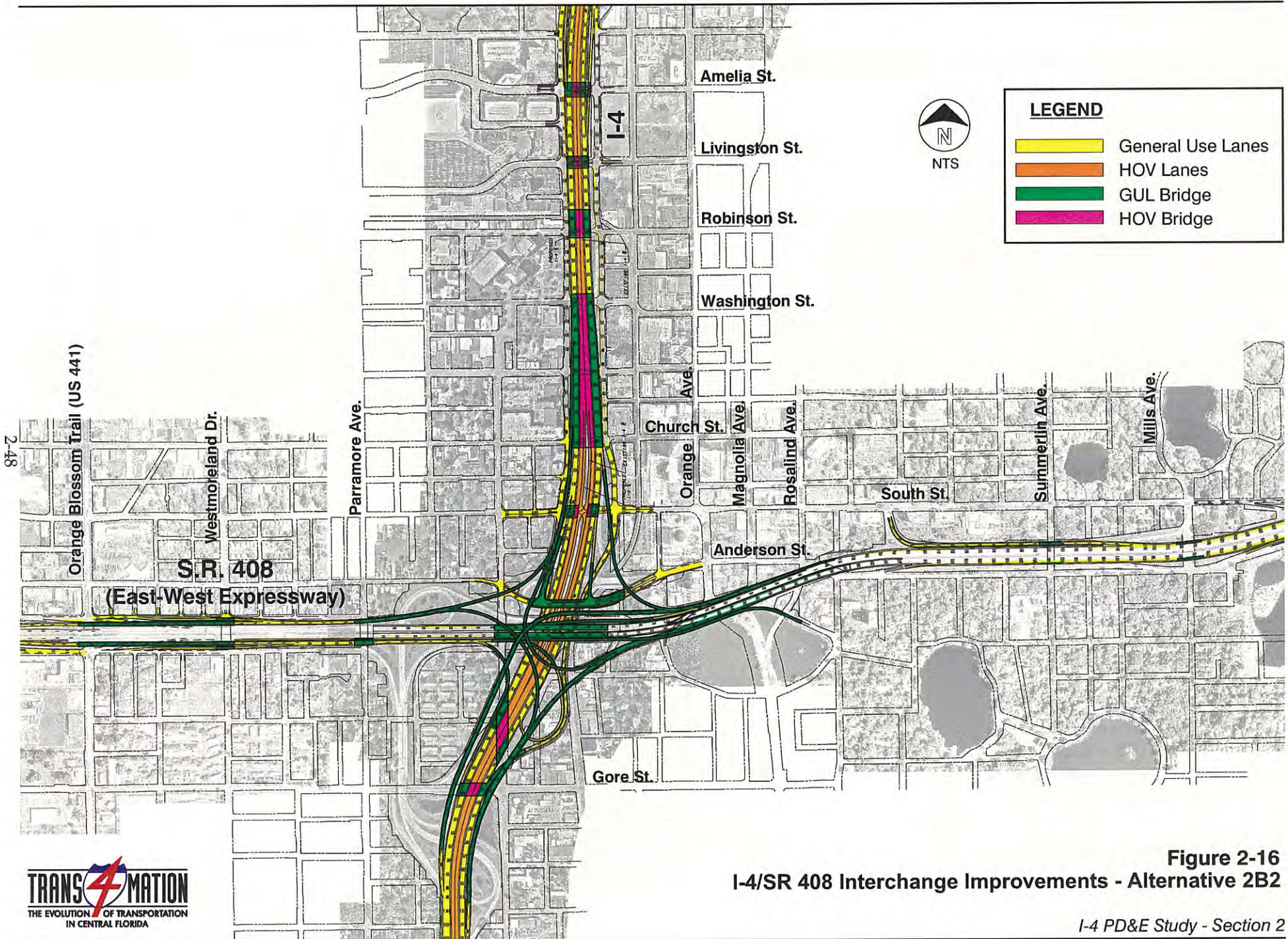


LEGEND

- General Use Lanes
- HOV Lanes
- GUL Bridge
- HOV Bridge



Figure 2-15
I-4/SR 408 Interchange Improvements - Alternative 2B1



LEGEND

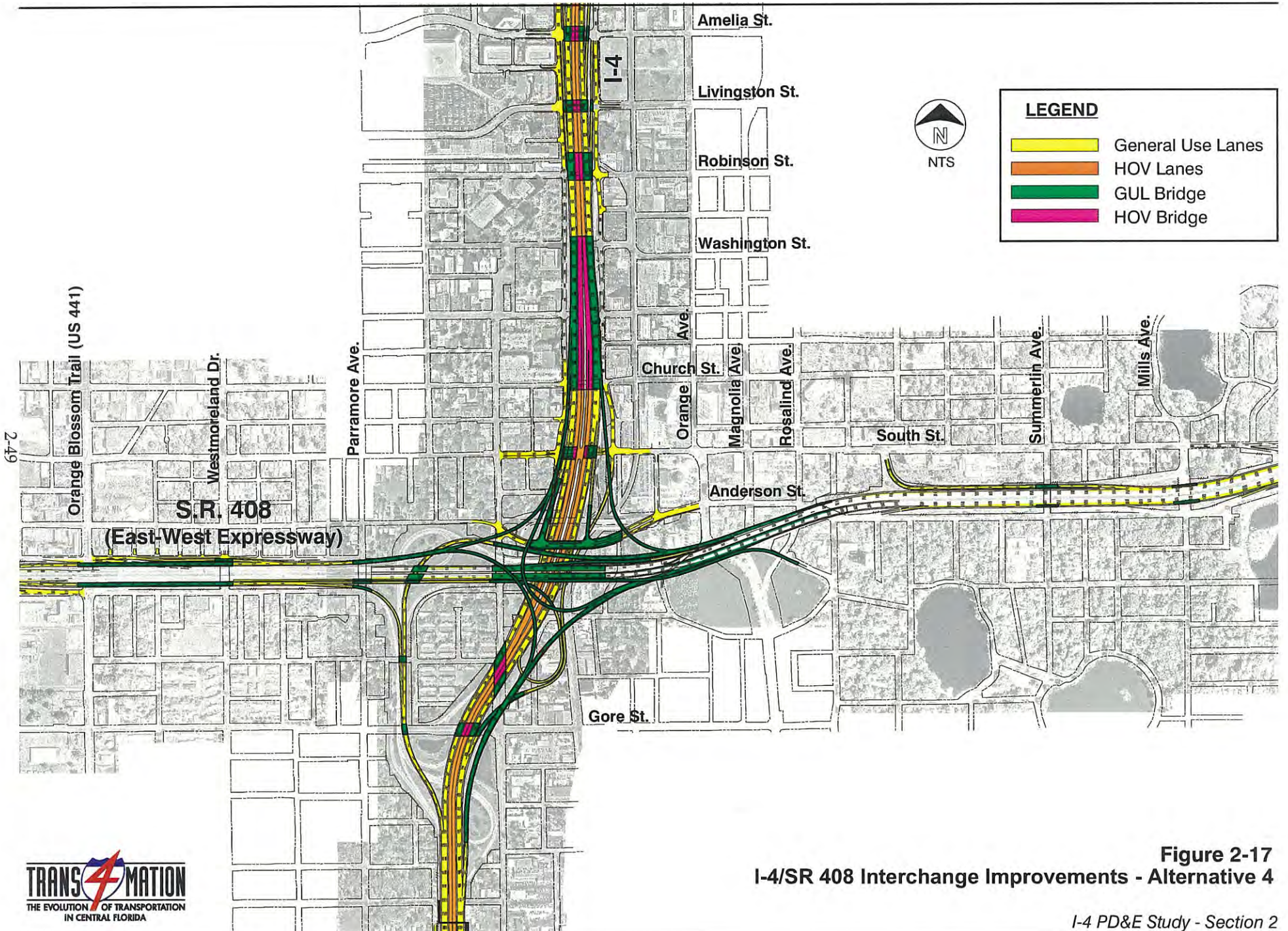
- General Use Lanes
- HOV Lanes
- GUL Bridge
- HOV Bridge



Figure 2-16

I-4/SR 408 Interchange Improvements - Alternative 2B2





LEGEND

- General Use Lanes
- HOV Lanes
- GUL Bridge
- HOV Bridge



Figure 2-17
I-4/SR 408 Interchange Improvements - Alternative 4

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2.5.2.3 Segment 3

The TSCRTM concept improvements for alternatives C and F' require significant changes in the existing profile of I-4. The profile changes, up to 20 feet in some locations, are required to provide the 16.5-foot vertical clearance for bridges for I-4 over crossroads and to meet the 60 mph design speed. Coordination with the College Park Neighborhood Association (CPNA) resulted in the formation of an I-4 Technical Committee by CPNA to review and evaluate the proposed improvement alternatives between Ivanhoe Boulevard and Lee Road. The specific concerns raised by both the City of Orlando and the CPNA I-4 Technical Committee involve the impacts of raising the profile grade on I-4 and the right-of-way acquisition and relocations associated with stormwater treatment requirements. Information discussed at the meetings with the City of Orlando and the CPNA I-4 Technical Committee is provided in Section 5.2 of this document. The following summarizes the concept revisions responding to the issues discussed at the meetings.

2.5.2.3.1 Vertical and Horizontal Alignment

The bridge vertical clearance criteria for I-4 over New Hampshire Street, Princeton Street, Winter Park Street, Par Street, Minnesota Avenue/Formosa Avenue, and Wymore Road was reduced from 16.5 feet to 14.5 feet. This reduction in vertical clearance is consistent with AASHTO criteria for crossing over local roads. In addition, a design speed adjustment was proposed to reduce the vertical and horizontal alignment criteria from 60 mph based on FDOT desirable criteria to 60 mph based on AASHTO criteria. These revisions result in significant lowering of the roadway profile and the associated reduction in roadway fill and wall heights through the College Park neighborhood. These changes are carried forward as a part of the DEIS and the FEIS.

2.5.2.3.2 Drainage Alternatives

Exfiltration alternatives were proposed as part of the DEIS for stormwater treatment through the College Park neighborhood to reduce right-of-way acquisition requirements and relocation impacts. The alternatives are described as Alternative C - Ponds, Alternative C - Exfiltration, Alternative F' - Ponds, and Alternative F' - Exfiltration.

2.5.2.4 Segment 4

Further discussions with the Town of Eatonville and the City of Maitland resulted in analyses of concepts for a proposed interchange at Kennedy Boulevard and the proposed improvements to the Maitland Boulevard interchange. In addition, HOV access locations were modified. The following discussion presents the analyses performed as part of the second level concept refinement.

2.5.2.4.1 Kennedy Boulevard

Coordination with the Town of Eatonville resulted in the request by the Town for FDOT to evaluate an I-4 interchange at Kennedy Boulevard. In addition, the Project Team Partnering session recommended that the feasibility of an interchange at this location be evaluated. The Town of Eatonville formed an Interchange Review Committee to assist in the review of alternative interchange concepts. Two alternative interchange concepts were developed for the intersection of I-4 and Kennedy Boulevard and presented to the Eatonville Interchange Review Committee.

The proposed interchanges significantly impacted commercial property and traffic circulation within the Town of Eatonville. Consequently, the Town of Eatonville has not pursued their original request. Coordination is continuing with Eatonville on this issue. A new interchange at Kennedy Boulevard is not carried forward as part of the DEIS or the FEIS.

2.5.2.4.2 Maitland Boulevard

The TSCRTM Alternatives 2B and 7 were initially developed in schematic detail on aerial maps. The schematic interchange concepts were developed in detail to ensure compliance with design criteria and assist in the more accurate analysis of potential impacts. The public outreach program with the

City of Maitland solicited input on the refined concepts (refer to Section 5.2 for information on the public involvement meetings with the City of Maitland).

The concepts at Maitland Boulevard were reviewed with a Transportation Committee established by the City. The committee raised concerns regarding the impacts to development along Wymore Road, the distance between the westbound I-4 off-ramp and Lake Destiny Drive, and maintaining two signalized intersections on Maitland Boulevard at the I-4 ramp terminal intersections. A reevaluation of the Maitland Boulevard interchange was initiated.

The impacts to the commercial development along Wymore Road could not be avoided with Alternative 7; therefore, it was eliminated from further study.

Alternative 2B was modified to provide a three-level partial cloverleaf interchange. This modification eliminated the two signalized intersections on Maitland Boulevard at the ramp terminal intersections. In addition, the westbound Maitland Boulevard to westbound I-4 and the westbound I-4 to westbound Maitland Boulevard ramps were reconfigured to allow greater distance between the I-4 off-ramp and the Lake Destiny Drive intersection. The modifications to Alternative 2B satisfied the City of Maitland Transportation Committee's concerns. The modified alternative has no additional right-of-way impacts and minimal wetland impacts within the existing right-of-way. Construction costs for the modified alternative increased by approximately \$5.9 million.

The modified version of Alternative 2B was selected as the alternative to be carried forward as part of the DEIS due to the improved traffic operations on Maitland Boulevard.

2.5.2.4.3 HOV Access Modifications

In response to coordination with Orange and Seminole Counties, alternative HOV slip ramp access was evaluated between Lee Road and Maitland Boulevard and at the Central Parkway HOV interchange. Modifications proposed for the HOV system between Lee Road and Maitland Boulevard include slip ramps from I-4 eastbound HOV lanes to I-4 eastbound GULs and from I-4 westbound GULs to I-4 westbound HOV lanes. Modifications proposed for the Central Parkway HOV interchange includes replacing the direct connection-ramps to/from the east with slip ramps. The slip ramps will provide access from the I-4 eastbound HOV lanes to the I-4 eastbound GULs and from the I-4 westbound GULs to the I-4 westbound HOV lanes. These access modifications did not cause any operational impacts and were carried forward as part of the DEIS and the FEIS.

2.5.2.5 Segment 5

In response to a Value Engineering recommendation, the 64-foot median transit envelope proposed in portions of Segment 5 was reduced to 44 feet. Modifications were required at the US 17-92/I-4 interchange to adjust the median width to 44 feet. No additional impacts resulted from this modification.

In response to coordination with Seminole County, alternative HOV slip ramp access was evaluated between SR 46 and US 17-92. Modifications proposed for the HOV system between SR 46 and US 17-92 include slip ramps from I-4 eastbound GULs to I-4 eastbound HOV and from I-4 westbound HOV lanes to I-4 westbound GULs. These access modifications did not cause any operational impacts and were carried forward as part of the DEIS and the FEIS.

2.5.2.6 Segment 6

In response to a Value Engineering recommendation, the 64-foot median transit envelope proposed in Segment 6 was reduced to 44 feet. The reduced median transit envelope can accommodate transit while reducing impacts.

2.5.2.7 I-4 Six Laning and St. Johns River Bridge Replacement

An EA/FONSI (May 2000) was prepared for the six laning of I-4 and replacement of the St. Johns River Bridge from US 17-92 to I-95. The proposed improvements include the addition of two GULs to the existing four lanes and the replacement of the I-4 bridge over the St. Johns River. The project was approved and is under construction as of May 2002. The two GULs are being constructed in the median from north of the St. Johns River to SR 472. The four-lane St. Johns River Bridge is being replaced with a six-lane bridge in the Ultimate location of the GULs proposed in this project. Section 1.4 contains additional information on the I-4 Six Laning and St. Johns River Bridge project.

2.6 DEIS Ultimate Build Alternatives

The preliminary concept plans, submitted as part of the *Preliminary Engineering Report* (June 2002), illustrate the proposed alternatives that were carried forward as part of the DEIS. Three main components comprised the preliminary concept plans: the I-4 mainline improvements (both GUL and HOV lanes), interchanges for the GUL system, and interchanges for the HOV system. In addition, some segments also included drainage alternatives and improvements to the mainline of other roadways impacted by the proposed interchange modifications [SR 528 (Bee Line Expressway) and SR 408 (East/West Expressway)].

The proposed Alternative C and Alternative F' typical sections for I-4 provided three GULs and one barrier-separated, 34-foot HOV facility in each direction. In addition, a 44-foot rail corridor was provided in portions of the I-4 Ultimate project corridor. To satisfy operational requirements such as lane balance along specific segments of roadway, additional auxiliary lanes were proposed. Figures 2-18 and 2-19 present typical sections C and F', respectively, with and without a rail envelope. In addition, the existing I-4 typical section is presented on the figures.

The GULs would serve all vehicle components of the traffic mix while the HOV lanes would be dedicated for multiple occupant vehicles. It was the intent to open the facility to vehicles with two or more occupants (HOV2+). If the demand in the HOV system resulted in operations less than LOS D, then the occupancy requirements would be increased to three or more persons (HOV3+). As stated in the approved SAMR (April 2000) and SAMR Update (May 2002), FDOT is committed to maintaining LOS D or better traffic operations in the HOV system. This will be accomplished by continuous monitoring of the system and making appropriate adjustments to the access and/or user groups in the facility. The concept for the HOV system incorporates the flexibility to accommodate future enhancements for ITS and other strategies. In addition, an Origin-Destination study will be conducted during the design phase of the project to verify HOV access locations.

An HOV corridor was proposed for nearly the entire length of the Ultimate project, from SR 528 (Bee Line Expressway) to approximately 1.85 miles south of SR 472 in Volusia County. Seventeen access points to and from the HOV system were proposed; six direct connections to intersecting surface streets and 11 slip ramp locations for GULs access. The locations of the HOV interchanges are provided in Figure 1-6.

The proposed DEIS Ultimate Build Alternatives along the project corridor are described by segment in the following sections and are summarized in Table 2-6.

2.6.1 Segment 1

Two alternatives were evaluated in Segment 1:

- Ultimate Bee Line Expressway interchange
- Existing Bee Line Expressway interchange

Tying to the Ultimate Bee Line Expressway alternative reconstructs the I-4/SR 528 (Bee Line Expressway) interchange. Tying to the existing Bee Line Expressway alternative begins the I-4 improvements east of the I-4/SR 528 (Bee Line Expressway) interchange, keeping the existing interchange in-place.

Typical section C was carried forward throughout Segment 1. The following sections summarize the Ultimate improvements, by interchange, proposed for Segment 1.

2.6.1.1 SR 528 (Bee Line Expressway) to Sand Lake Road

Depending on when the improvements proposed in the I-4 PD&E Study – Section 1 are implemented, two alternatives were proposed for the SR 528 (Bee Line Expressway) interchange. If no improvements are implemented south of the SR 528 (Bee Line Expressway) interchange, the I-4 mainline improvements would begin just north of SR 528 (Bee Line Expressway) where three GULs and one auxiliary lane would tie into the existing three lanes in each direction. The auxiliary lanes would continue to Sand Lake Road. HOV slip ramps would be provided in both directions north of SR 528 (Bee Line Expressway). The eastbound slip ramp would signify the start of the HOV system and the westbound slip ramp would signify the end of the HOV system.

If the I-4 PD&E Study – Section 1 Preferred Alternative were constructed, improvements to I-4 would begin south of the SR 528 (Bee Line Expressway) interchange with three GULs and one auxiliary lane in each direction. The auxiliary lanes would be dropped through the interchange. North of the interchange, one auxiliary lane would be added eastbound and two auxiliary lanes would be added westbound to Sand Lake Road. Full directional access slip ramps would be provided south of Sand Lake Road.

The proposed SR 528 (Bee Line Expressway) interchange is a three-level, three-leg, directional system-to-system interchange with direct HOV access flyover ramps. Two-lane ramps serving the GULs would be provided for the following movements: eastbound I-4 to eastbound SR 528 (Bee Line Expressway), westbound I-4 to eastbound SR 528 (Bee Line Expressway) and westbound SR 528 (Bee Line Expressway), to westbound I-4. Single lane ramps would be provided for the remaining movements. The improvements to the interchange would result in the realignment of Turkey Lake Road near Sand Lake Hospital.

For both alternatives, the 44-foot rail corridor would be closed. Retention ponds would provide treatment for stormwater runoff.

2.6.1.2 SR 528 (Bee Line Expressway) Mainline

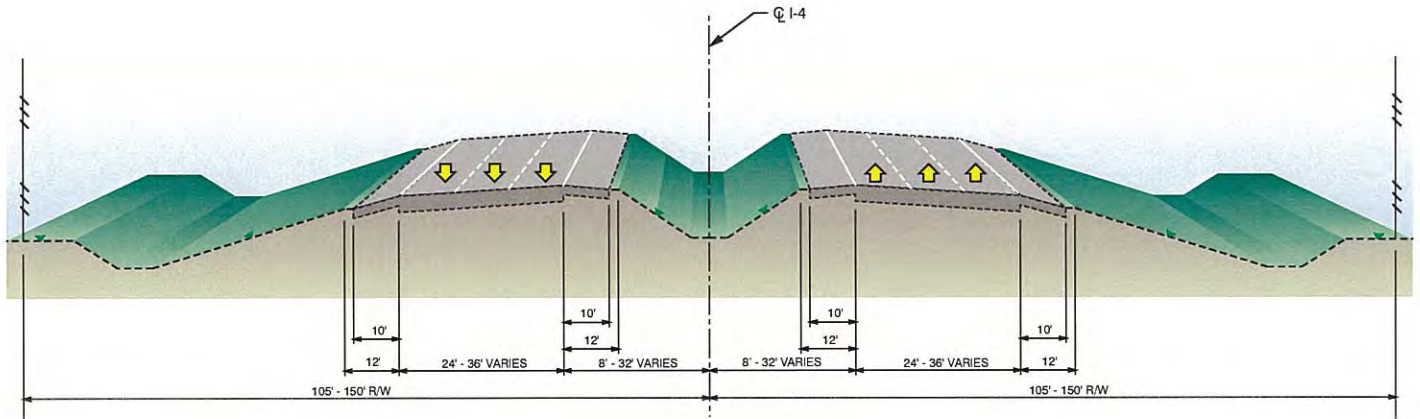
Because of improvements to the I-4/SR 528 (Bee Line Expressway) interchange, the SR 528 (Bee Line Expressway) mainline would be upgraded to a six-lane limited-access highway with one auxiliary lane in each direction. Minor adjustments to the International Drive ramps and replacement of the SR 528 (Bee Line Expressway) bridge over International Drive would be required.

HOV lanes would be provided as a continuation of the I-4 direct access ramps in the median of SR 528 (Bee Line Expressway) from I-4 to International Drive. The HOV lanes would end by providing direct access ramps to International Drive and merging into the SR 528 (Bee Line Expressway) mainline lanes east of International Drive.

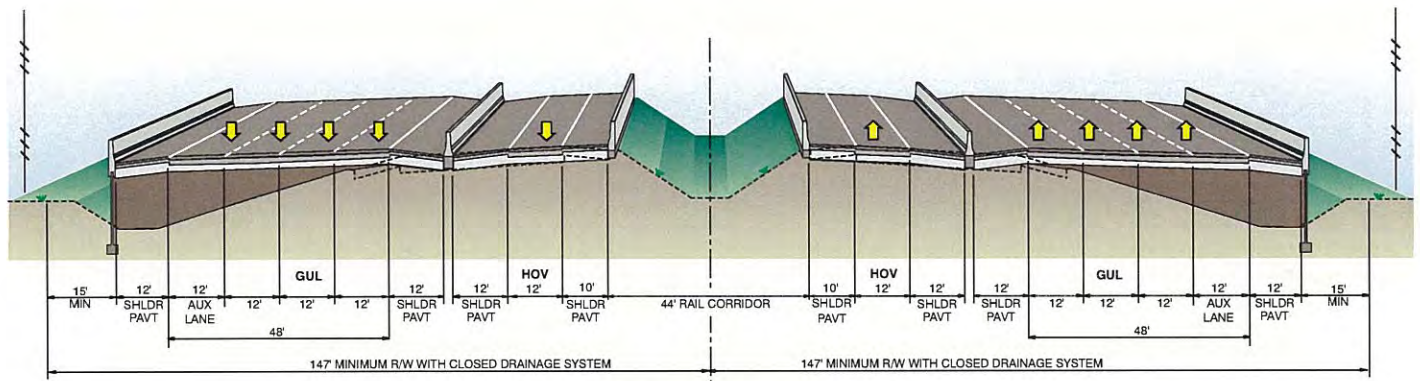
Retention ponds would provide treatment for stormwater runoff.

2.6.1.3 Sand Lake Road to Kirkman Road

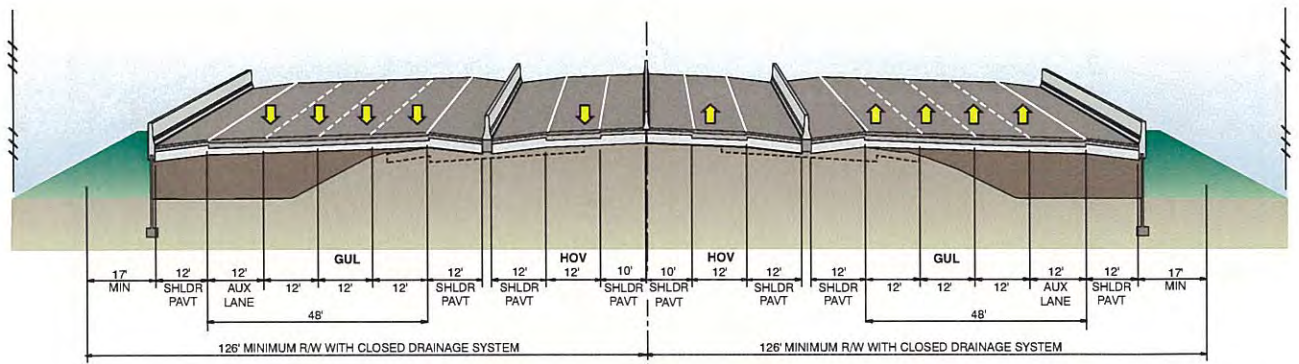
For the portion of I-4 between Sand Lake Road and Kirkman Road, the I-4 mainline would consist of three GULs and one HOV lane in each direction. In the eastbound direction, one auxiliary lane would be provided from the Sand Lake Road on-ramp to the Kirkman Road off-ramp. In the westbound direction, one auxiliary lane would continue through the Sand Lake Road interchange from the Universal Boulevard on-ramp.



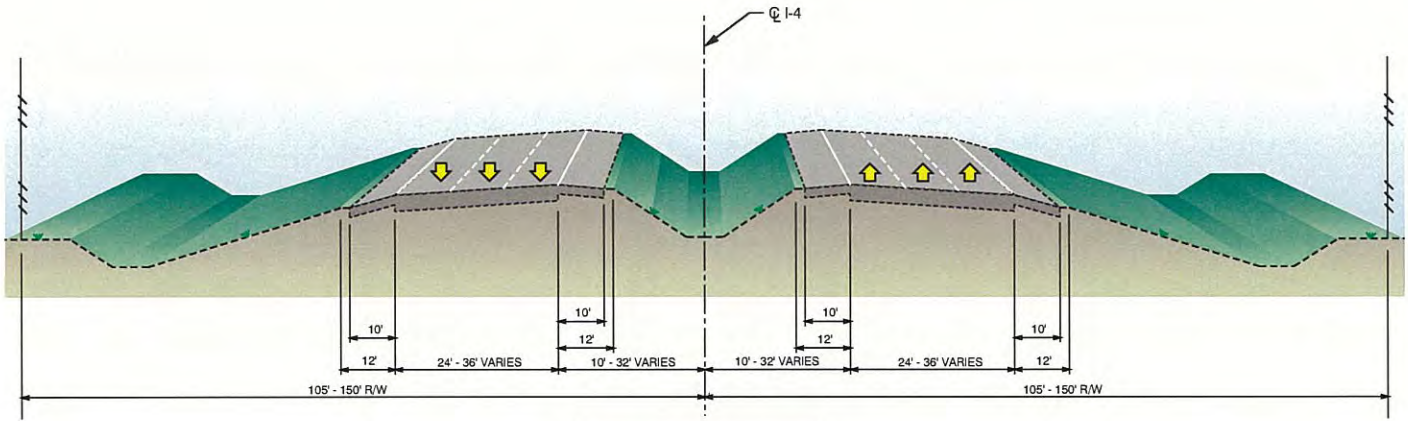
Existing



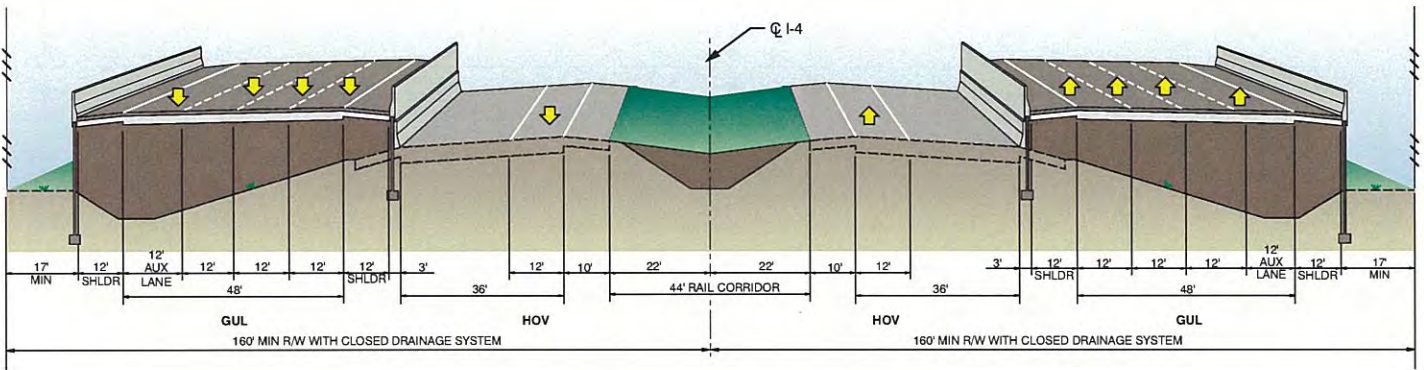
Alternative C
44' Rail Corridor



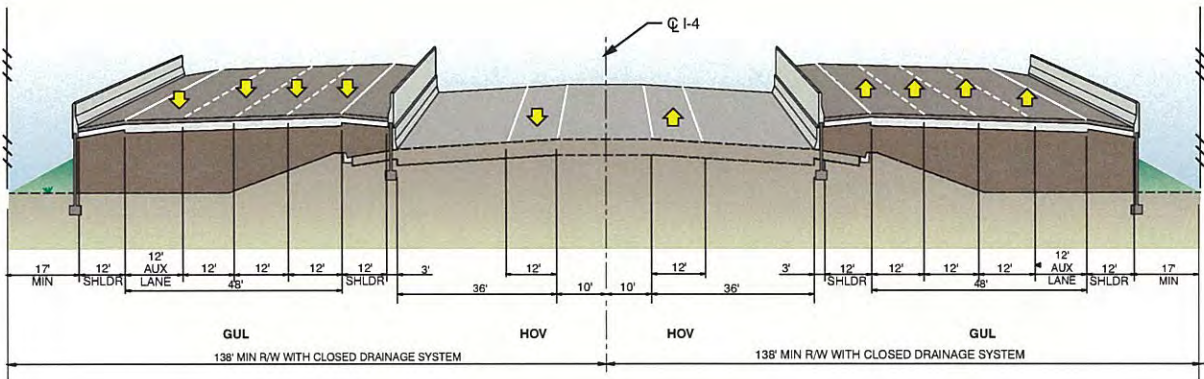
Alternative C
No Rail Corridor



Existing



Alternative F'
44' Rail Corridor



Alternative F'
No Rail Corridor

Figure 2-19
Build Alternative - Typical Section F'

Table 2-6. Summary of DEIS Proposed Ultimate Improvements

Description	Typical Section		Transit Envelope		Auxiliary Lanes		HOV Interchanges		Drainage Alternatives		Type of Proposed Interchange
	C	F'	No	Yes	No	Yes	Direct Access	Slip Ramps	Ponds	Exfiltration	
Segment 1											
SR 528 (Bee Line Expressway to Sand Lake Road)	√		√			√	√	√	√		SR 528 (Bee Line Expressway) – The Ultimate proposed improvements replace existing interchange with three-leg fully directional, three-level interchange with direct HOV access flyover ramps.
SR 528 (Bee Line Expressway) Mainline			√			√	√	√	√		International Drive – The existing interchange concept remains the same.
Sand Lake Road to Kirkman Road	√		√			√			√		Sand Lake Road – The WB Sand Lake to WB I-4 loop will connect to EB Sand Lake to WB I-4 ramp for a single access point on I-4 WB. Universal Boulevard – The existing interchange will remain the same.
Kirkman Road to Florida's Turnpike	√			√		√	√		√		Kirkman Road – The proposed improvements replace existing interchange with a partial access 4-level directional interchange with one loop ramp (Kirkman SB to EB I-4). NB Kirkman to WB I-4 not provided. Full direct HOV access ramps.
Florida's Turnpike to Conroy Road	√			√		√			√		Florida's Turnpike – The existing interchange concept will remain the same.
Conroy Road to John Young Parkway	√			√		√		√	√		Conroy Road – The existing interchange concept will remain the same.
John Young Parkway to Orange Blossom Trail	√			√		√			√		John Young Parkway – The previously approved improvements will modify the existing diamond interchange by adding a flyover ramp for WB I-4 exit to John Young Parkway.
Orange Blossom Trail to Michigan Street/Kaley Street	√		√			√		√	√		Orange Blossom Trail – The WB I-4 to SB OBT left-side exit will be modified to right-side exit; all other movements remain the same. WB I-4 to NB OBT movement ramp is not provided under either existing or proposed interchanges.
Michigan Street/Kaley Street to SR 408 (East/West Expressway)	√		√			√			√	√	Michigan Street/Kaley Street – Proposed improvements combine Michigan Street and Kaley Street into a full access, inverted diamond interchange. Two-lane, one-way frontage road connections between Kaley and Michigan with U-turns to provide full movements.

2-57

Table 2-6. Summary of DEIS Proposed Ultimate Improvements (Continued)

Description	Typical Section		Transit Envelope		Auxiliary Lanes		HOV Interchanges		Drainage Alternatives		Type of Proposed Interchange
	C	F'	No	Yes	No	Yes	Direct Access	Slip Ramps	Ponds	Exfiltration	
SR 408 (East/West Expressway) to SR 50 (Colonial Drive)	√		√			√	√		√	√	SR 408 (East/West Expressway) – Full access directional four-level interchange with loop ramp (EB SR 408 to EB I-4). Modifies access to and from the downtown core area. Five alternatives being proposed. Hughey Avenue/Garland Avenue – Proposed improvements provide direct access ramps from EB I-4 to Garland Avenue and from Hughey Avenue to WB I-4. Anderson Street – The existing interchange will be modified to a partial access diamond interchange for WB I-4 to Anderson Street and Anderson Street to EB I-4. Anderson will be relocated and revised to a two-way street from Orange Avenue to Division Avenue. South Street – Modified to a full access diamond interchange for HOV access only; will be revised to a two-way street from Orange Avenue to Division Avenue. Amelia Street – The existing interchange will be modified to a partial access diamond interchange (EB I-4 to Amelia Street and Amelia Street to WB I-4) with Alternatives 1A1, 2B1 and 4. The existing access will be eliminated and diverted to Hughey and Garland Avenues and Colonial Drive with Alternatives 1A2 and 2B2.
SR 408 (East/West Expressway) Mainline			√			√				√	Limit of improvement extends for approximately 1.5 miles on both sides of I-4 along East/West Expressway, impacting interchanges from Tampa Street to Bumby Avenue on SR 408.
SR 50 (Colonial Drive) to Ivanhoe Boulevard	√		√		√				√	√	SR 50 (Colonial Drive) – The existing interchange will be replaced with a full access single point diamond interchange. Provides direct access to Hughey Avenue and Garland Avenue. Garland Avenue converted to one-way north of Colonial Drive.

Table 2-6. Summary of DEIS Proposed Ultimate Improvements (Continued)

Description	Typical Section		Transit Envelope		Auxiliary Lanes		HOV Interchanges		Drainage Alternatives		Type of Proposed Interchange
	C	F'	No	Yes	No	Yes	Direct Access	Slip Ramps	Ponds	Exfiltration	
Ivanhoe Boulevard to Princeton Street	√		√			√	√		√	√	Ivanhoe Boulevard – The proposed improvements replace the existing interchange with a partial access directional interchange for WB I-4 to Ivanhoe Boulevard and Ivanhoe Boulevard to EB I-4. The WB I-4 on-ramp will be replaced with a frontage road to Colonial Drive. Proposed interchange includes HOV access ramps to and from the east
Princeton Street to Par Street	√	√	√			√			√	√	Princeton Street – The existing interchange concept will remain the same. Provide 2-lane EB and WB off-ramps.
Par Street to Fairbanks Avenue	√	√	√			√			√	√	Par Street – The existing interchange concept will remain the same.
Fairbanks Avenue to Lee Road	√	√	√			√			√	√	Fairbanks Avenue – The existing interchange concept will remain the same. Provide 2-lane EB and WB off-ramps.
Segments 4 and 5											
Lee Road to Maitland Boulevard	√	√	√			√		√	√	√	Lee Road – The existing interchange concept will remain the same. Provide 2-lane EB and WB off-ramps.
Maitland Boulevard to SR 436	√		√			√		√	√		Maitland Boulevard – The existing interchange will be replaced with loop ramps in northeast and southwest quadrants. Directional unsignalized left-turn ramps from Maitland Boulevard to WB and EB I-4. Existing EB I-4 dual exits revised to single point exit.
SR 436 to SR 434	√			√		√	√	√	√		SR 436 – The existing interchange will be replaced with a single point diamond interchange. Two-lane ramps remain for all movements. Central Parkway – Direct HOV access ramps are proposed for direct access to and from the west.
SR 434 to Lake Mary Boulevard	√			√		√		√	√		SR 434 – The existing interchange concept will remain the same. Alternative interchange configuration with loop ramp in northwest quadrant. Provide 2-lane WB off-ramp.

Table 2-6. Summary of DEIS Proposed Ultimate Improvements (Continued)

Description	Typical Section		Transit Envelope		Auxiliary Lanes		HOV Interchanges		Drainage Alternatives		Type of Proposed Interchange
	C	F'	No	Yes	No	Yes	Direct Access	Slip Ramps	Ponds	Exfiltration	
Lake Mary Boulevard to CR 46A	√			√		√		√	√		Lake Mary Boulevard – The existing interchange concept will remain the same. WB on-ramps revised to a single entrance ramp.
CR 46A to SR 46	√			√		√			√		CR 46A – Modified for continuation of WB CD in the southwest quadrant. Provide 2-lane EB off-ramp. SR 417 – The existing interchange concept will remain the same. WB CD connection between SR 417 and SR 46 will be added.
SR 46 to US 17-92	√			√		√		√	√		SR 46 – Modified to add a loop ramp for WB SR 46 to WB I-4 movement to start WB CD roadway.
Segment 6											
US 17-92 to Dirksen Drive/DeBary Avenue	√			√	√			√	√		US 17-92 – The existing interchange will be replaced with a full access interchange at US 17-92. Eliminates existing ramps at Orange Boulevard.
Dirksen Drive/DeBary Avenue to Saxon Boulevard	√			√	√		√		√		Dirksen Drive/DeBary Avenue – The existing interchange concept will remain the same. EB exit ramp widened to two lanes. Enterprise Road – Adds direct HOV access ramps to and from the west serving a proposed Park & Ride facility.
Saxon Boulevard to SR 472	√			√	√			√	√		Saxon Boulevard – The existing interchange concept will remain the same. Existing EB I-4 exits will be reconstructed to a single off-ramp.
SR 472 to End of Project (STA 3510+00)	√			√	√				√		SR 472 – The existing configuration will remain the same.

There are two interchanges within this portion of the project corridor: Sand Lake Road and Universal Boulevard. The existing Sand Lake Road interchange is two-level, full-access diamond interchange with a loop ramp (Ramp D) for westbound Sand Lake Road to westbound I-4 traffic. The proposed Ultimate improvements would keep this basic configuration. However, the interchange would be modified to connect the loop ramp with the eastbound Sand Lake Road to westbound I-4 ramp (Ramp A) to create a single access point on I-4. Ramps A and D would require reconstruction. The remaining interchange ramps would be modified at their I-4 access points.

Access to Universal Boulevard from I-4 is through a partial access diamond with a loop ramp for westbound I-4 to southbound Universal Boulevard traffic. This newly constructed interchange would not be modified as a part of this project with the exception of adjustment to the ramp gore areas on I-4.

The 44-foot rail corridor would be closed in this portion of the project corridor. Retention ponds would provide treatment for stormwater runoff.

2.6.1.4 Kirkman Road to Florida's Turnpike

The three GULs and one HOV lane in each direction would be continued through the Kirkman Road interchange where auxiliary lanes would be added to the GULs. In the eastbound direction, one auxiliary lane would be provided from the southbound Kirkman Road on-ramp to the Florida's Turnpike off-ramp. In the westbound direction, one auxiliary lane would be provided to the Kirkman Road off-ramp from the Florida's Turnpike on-ramp.

The Kirkman Road interchange would be totally reconstructed as a part of this project. The proposed interchange is a partial access four-level directional interchange with a loop ramp for southbound Kirkman Road to eastbound I-4 traffic. There would be no access to westbound I-4 from northbound Kirkman Road. Southbound Kirkman Road to westbound I-4 traffic would be routed onto a collector/distributor ramp, which would merge into I-4 just east of Sand Lake Road. Full directional HOV access ramps would also be provided with the proposed interchange concept.

The 44-foot rail corridor would be opened east of the Kirkman Road interchange. Retention ponds would provide treatment for stormwater runoff.

2.6.1.5 Florida's Turnpike to Conroy Road

Three GULs, one auxiliary lane, and one HOV lane in each direction would be provided in this portion of the project corridor. The eastbound auxiliary lane would extend from the Florida's Turnpike on-ramp to the Conroy Road off-ramp. In the westbound direction, the auxiliary lane would extend to the Florida's Turnpike off-ramp from the Conroy Road on-ramp.

All ramp movements for the Florida's Turnpike interchange would remain as they are in the existing double trumpet configuration. However, a new ramp bridge over I-4 would be required.

The 44-foot rail corridor would be provided through this portion of the project corridor. Retention ponds would provide treatment for stormwater runoff.

2.6.1.6 Conroy Road to John Young Parkway

Three GULs, one auxiliary lane, and one HOV lane in each direction would be provided from Conroy Road through the end of Segment 1. In the eastbound direction, the auxiliary lane would start at the southbound Conroy Road on-ramp and continue through the end of the Segment 1 limits. In the westbound direction, the auxiliary lane would extend to the Conroy Road off-ramp from the Segment 1 limits. Full directional HOV slip ramps would be provided in this portion of the project corridor.

The Conroy Road interchange has two levels and is a full access diamond with a loop ramp serving eastbound Conroy Road to eastbound I-4 traffic. No improvements are required for this interchange, with the exception of minor ramp modifications at the access points with I-4.

The 44-foot rail corridor would be provided through this portion of the project corridor. Retention ponds would provide treatment for stormwater runoff.

2.6.2 Segment 2

The following paragraphs describe the alternatives evaluated within Segment 2.

2.6.2.1 John Young Parkway to Orange Blossom Trail

The three GULs, one HOV lane, and one auxiliary lane in each direction would be carried forward from Segment 1 into Segment 2 to approximately 1,400 feet west of the John Young Parkway interchange. At this point, the GULs and auxiliary lanes would be reconstructed as part of the I-4/John Young Parkway Interchange project. The bridges and embankment for the HOV lanes would also be constructed as part of the I-4/John Young Parkway Interchange project. However, the pavement for the HOV lanes are included as part of the proposed improvements for this project. Refer to Section 1.4 for more information regarding the I-4/John Young Parkway Interchange project.

The GULs, HOV lanes, and auxiliary lanes would continue approximately 1,300 feet east of the John Young Parkway interchange to the Orange Blossom Trail interchange. The eastbound auxiliary lane would be dropped at the Orange Blossom Trail off-ramp and westbound auxiliary lane would continue from the Orange Blossom Trail interchange and be dropped at the John Young Parkway off-ramp.

Improvements for the I-4/John Young Parkway interchange are under design as of May 2002. The improvements involve enhancing the full access diamond by providing a flyover ramp for westbound I-4 traffic exiting to John Young Parkway.

The 44-foot rail corridor would be provided to approximately 2,600 feet south of Rio Grande Avenue. The rail envelope would then be closed through the remaining portion of Segment 2. Retention ponds would provide treatment for stormwater runoff for this portion of the project corridor.

2.6.2.2 Orange Blossom Trail to Michigan Street/Kaley Street

Three GULs and one HOV lane would be carried forward through this portion of the project corridor. Auxiliary lanes would also be provided. In the eastbound direction, one auxiliary lane would be added at the Orange Blossom Trail on-ramp and would continue through the Michigan Street/Kaley Street interchange. In the westbound direction, one auxiliary lane would be carried forward to the John Young Parkway interchange through the Michigan Street/Kaley Street interchange. An additional westbound auxiliary lane would be provided between the Kaley Street on-ramp and the Orange Blossom Trail off-ramp to provide lane balance in the area.

The existing Orange Blossom Trail interchange is a two-level partial diamond with a loop ramp provided for eastbound I-4 to northbound Orange Blossom Trail traffic. Westbound I-4 motorists exiting to southbound Orange Blossom Trail do so via a left-hand exit, which is less than desirable. The proposed alternative would modify the existing interchange by exiting westbound I-4 to southbound Orange Blossom Trail traffic from the right side and connecting to the existing ramp. The I-4 alignment would be shifted southeast in order to accomplish this modification. As in the existing configuration, a westbound I-4 to northbound Orange Blossom Trail movement would not be provided with the proposed alternative. This movement can be accommodated at the Michigan Street access point.

The proposed improvements to the Orange Blossom Trail interchange would result in access changes to properties located along 30th Street and 34th Street. To meet design criteria, 30th Street would be closed at Orange Blossom Trail. Owners of property located along 30th Street would be

required to travel west on 30th Street, north on Nashville Avenue, and east on 29th Street to gain access to Orange Blossom Trail.

In addition, 34th Street would be closed on both sides of Orange Blossom Trail. To gain access to Orange Blossom Trail, properties located on 34th Street west of Orange Blossom Trail would be required to travel west on 34th Street, south on Nashville Avenue, and east on 35th Street. Properties located along 34th east of Orange Blossom Trail would be required to travel east on 34th Street, south on Woods Street, and west on 35th Street. Information on potential impacts of the street closures is provided in Section 4.1.2.

Slip ramps for access to and from the HOV system would be provided at the Orange Blossom Trail interchange. In the eastbound direction, a slip ramp would be provided from the HOV lane to the GULs. In the westbound direction, a slip ramp would be provided from the GULs to the HOV lane.

The 44-foot rail corridor would be closed within this portion of the project corridor. Retention ponds would provide treatment for stormwater runoff.

2.6.2.3 Michigan Street/Kaley Street to SR 408 (East/West Expressway)

The proposed configuration of I-4 within this portion of the project corridor would consist of three GULs, an HOV lane, and two auxiliary lanes in each direction. One auxiliary lane would be provided in the eastbound direction from the Michigan Street on-ramp to the Garland Avenue off-ramp. An additional auxiliary lane would be provided eastbound from the US 441 interchange to the SR 408 (East/West Expressway) interchange. In the westbound direction, two auxiliary lanes would begin at the SR 408 on-ramp. One auxiliary lane would drop at the Michigan Street off-ramp and the second would drop at the Orange Blossom Trail off-ramp.

The existing I-4 facility consists of an interchange at Michigan Street and one at Kaley Street. Traffic exiting I-4 westbound and entering I-4 eastbound are currently served by a partial access half diamond interchange at Michigan Street. The existing Kaley Street interchange is a full access diamond with a loop ramp for westbound I-4 to eastbound Kaley Street traffic. The proposed improvements would combine the Michigan Street interchange with the Kaley Street interchange to create a new full access, braided ramp interchange with frontage road connections and Texas U-turns. This interchange would allow for full access to and from I-4 at Michigan Street and Kaley Street.

Two alternatives were analyzed at the Kaley-Michigan interchange:

- Kaley-Michigan Pond
- Kaley-Michigan Exfiltration

Both of these alternatives proposed the same roadway improvements. The difference between the two alternatives is that the Kaley-Michigan pond alternative proposed stormwater retention ponds and the Kaley-Michigan exfiltration alternative proposed exfiltration to treat the stormwater runoff.

Typical section C was carried forward throughout this portion of the corridor.

The proposed improvements would require the closure of Unitah Avenue at Michigan Street and Tallokas Avenue at Kaley Street. In addition, Avondale Avenue would be closed at Kaley Street and from Miller Street to Indiana Street. Motorists accessing properties along Unitah Avenue from Michigan Street would be required to travel south on Alamo Drive, west on 29th Street, and north on Unitah Avenue. Properties located along Tallokas Avenue would be required to travel north on Tallokas Avenue, and south on Division Avenue to gain access to Kaley Street. Finally, motorists would no longer be able to gain access to Kaley Street through Avondale Avenue. Motorists would be required to access Kaley Street via Parramore Avenue. Section 4.1.2 provides potential impacts to businesses and neighborhoods as a result of the roadway closures.

The proposed improvements would also require removal of the pedestrian overpass located north of Kaley Street to accommodate the wider typical section. Students attending Grand Avenue Elementary School utilize the pedestrian facility.

The 44-foot rail corridor would be closed within this portion of the project corridor.

2.6.2.4 SR 408 (East/West Expressway) Interchange to SR 50 (Colonial Drive)

There were five alternatives carried forward for the I-4/SR 408 interchange. These included the following I-4/SR 408 (East/West Expressway) interchange improvements:

- Alternative 1A1 - I-4/SR 408 (East/West Expressway) Interchange Tunnel Alternative with Amelia Street ramps,
- Alternative 1A2 - I-4/SR 408 (East/West Expressway) Interchange Tunnel Alternative without Amelia Street Ramps,
- Alternative 2B1 - I-4/SR 408 (East/West Expressway) Interchange Flyover Alternative with Amelia Street Ramps,
- Alternative 2B2 - I-4/SR 408 (East/West Expressway) Interchange Flyover Alternative without Amelia Street Ramps, and
- Alternative 4 - I-4/SR 408 (East/West Expressway) Interchange TSCRTM Consensus Alternative.

Each of the alternatives was a combination of an interchange improvement and a downtown Orlando access improvement.

Typical section C was carried forward throughout this portion of the project.

Through downtown Orlando, three GULs, one HOV lane, and one auxiliary lane in both directions were proposed. The eastbound auxiliary lane would extend from the Anderson Street on-ramp to the SR 50 (Colonial Drive) off-ramp. In the westbound direction, the auxiliary lane would extend to the Anderson Street off-ramp from the SR 50 (Colonial Drive) on-ramp.

The proposed I-4/SR 408 (East/West Expressway) interchange is a full access directional interchange with a loop ramp provided for the eastbound SR 408 (East/West Expressway) to eastbound I-4 movement. As indicated, there were five proposed interchange alternatives under consideration for the I-4/SR 408 (East/West Expressway) interchange. Detailed descriptions of the five proposed interchange alternatives are provided in Section 2.5.2.2.4.

The proposed I-4/SR 408 (East/West Expressway) interchange concepts would have reconstruction and widening impacts to the SR 408 (East/West Expressway) mainline from west of Tampa Street to Bumby Avenue. Information on the proposed improvements to the SR 408 (East/West Expressway) mainline is provided below.

Due to the close proximity of the I-4/SR 408 (East/West Expressway) interchange to the Orlando CBD, access modifications would be required at the following interchange locations within this portion of the project corridor: Gore Street, Anderson Street, Hughey Avenue, Garland Avenue, South Street, Robinson Street, and Amelia Street.

Gore Street - The Gore Street interchange is a partial access diamond that serves entering and exiting westbound I-4 traffic. This interchange would be eliminated as part of the proposed alternatives due to ramp spacing issues with the SR 408 (East/West Expressway) interchange and the Michigan Street/Kaley Street interchange.

Hughey Avenue/Garland Avenue - There is no existing direct access between the interstate and the Hughey Avenue/Garland Avenue one-way frontage pair. The proposed alternatives would provide an exit from eastbound I-4 to Garland Avenue and an entrance from Hughey Avenue to westbound I-4. Both ramps would connect to the existing frontage roads at their intersections with South Street.

The Garland Avenue ramp would replace the existing I-4 eastbound to Anderson Street off-ramp and the Hughey Avenue ramp would replace the South Street to I-4 westbound on-ramp.

Hughey Avenue and Garland Avenue would be realigned as part of the proposed improvements. The realignment of Hughey Avenue would result in closing Hughey Court at South Street. Hughey Court would become a cul-de-sac and access from South Street would be denied. The realignment of Garland Avenue would affect access to parcels located south of South Street. Access to Garland Avenue would be denied and access to South Street would be via Boone Avenue.

Anderson Street - The existing I-4/Anderson Street interchange is a partial access diamond configuration that directs traffic from both directions of I-4 to Anderson Street, and from Anderson Street to eastbound I-4. Anderson Street is currently one-way eastbound. The proposed alternative would relocate Anderson Street to the south of its current alignment and allow two-way traffic on the roadway between Orange Avenue and Division Avenue. The Anderson Street interchange would be a partial diamond, but modified to allow access to eastbound I-4 from Anderson Street and to Anderson Street from westbound I-4. The I-4 eastbound exit to Anderson Street would be eliminated. This access would be replaced by the Garland Avenue on-ramp.

South Street - The existing South Street interchange is a partial access diamond serving westbound I-4 entering and exiting traffic and eastbound traffic entering I-4, all via left-hand ramps. The interchange would be modified to a full access diamond for HOV traffic only; general use traffic would not be accommodated. South Street would become a two-way street between Division Avenue and Orange Avenue to accommodate both directions of traffic to and from the HOV lane.

Robinson Street - The existing configuration of the Robinson Street interchange is a partial access diamond. Eastbound I-4 traffic can exit to Robinson Street and Robinson Street traffic can access westbound I-4. This interchange would be eliminated in the proposed alternatives and downtown Orlando access would be diverted to Garland Avenue, Hughey Avenue, Amelia Street, and SR 50 (Colonial Drive).

Amelia Street - Existing access at Amelia Street is provided for eastbound I-4 traffic exiting to Amelia Street, which ties into Amelia Street at Garland Avenue. In addition, an eastbound I-4 on-ramp is provided from Garland Avenue just north of Amelia Street. The I-4/SR 408 (East/West Expressway) alternatives 1A1, 2B1, and 4 would modify this interchange to a partial access diamond that would allow traffic to exit from eastbound I-4 to Amelia Street and enter westbound I-4 from Amelia Street. The Amelia Street access to I-4 would be eliminated with I-4/SR 408 (East/West Expressway) interchange alternatives 1A2 and 2B2 and access to downtown Orlando would be diverted to Hughey Avenue, Garland Avenue, and SR 50 (Colonial Drive).

The proposed modifications to the SR 408 (East/West Expressway), Hughey Avenue/Garland Avenue, Anderson Street, South Street, and Amelia Street interchanges would change the access to and from the downtown Orlando core area. To illustrate the access impacts for three areas within the Orlando core area (downtown Orlando, Holden-Parramore, and Lake Cherokee), the No Action scenario was compared to the Build scenario and graphically shown in Figures 2-20 through 2-31. For the Build scenario, Alternative 4 was chosen to illustrate proposed access locations. However, the access locations for the other four alternatives (1A1, 1A2, 2B1, and 2B2) were the same as Alternative 4 with the exception of the closure of the Amelia Street ramps for Alternatives 1A2 and 2B2 and the closure of the I-4 to Orange Blossom Trail ramp for Alternative 4.

Figures 2-20 and 2-21 present access onto I-4 from Lake Eola for the No Action and Build scenarios, respectively. As shown in Figure 2-21, the proposed improvements would provide access for vehicles traveling in the GULs at Anderson Street (eastbound only), Amelia Street (westbound only for Alternatives 4, 1A1, and 2B1), and Hughey Avenue (westbound only). In addition, vehicles using the HOV lanes would be able to access I-4 at South Street (eastbound and westbound). The proposed improvements would eliminate the westbound on-ramp at Robinson Street.

Figures 2-22 and 2-23 present access to Lake Eola from I-4 for the No Action and Build scenarios, respectively. Vehicles traveling eastbound I-4 in the GULs to Lake Eola would either exit the highway at the Garland Avenue off-ramp or the Amelia Street off-ramp (Alternatives 4, 1A1, and 2B1 only). GUL westbound travelers would exit the highway at Anderson Street. Eastbound and westbound vehicles in the HOV lane would have the opportunity to exit at the South Street ramps. The proposed improvements would eliminate the eastbound off-ramp at Anderson Street, and the westbound on-ramp at Robinson Street. In addition, GUL travelers exiting I-4 to eastbound SR 408 would no longer be able to exit at Orange Avenue.

For the Holden-Parramore area, Figures 2-24 and 2-25 present access from Jones High School to I-4 for the No Action and Build scenarios, respectively. As shown in Figure 2-25, the proposed improvements would provide access to I-4 from Orange Blossom Trail via SR 408 (Alternatives 1A1, 1A2, 2B1, and 2B2 only), Anderson Street (eastbound only), and Hughey Avenue (westbound only). HOV travelers could access I-4 at South Street. The proposed improvements would eliminate access to I-4 at Gore Street.

Figures 2-26 and 2-27 present access to Jones High School from I-4 for the No Action and Build scenarios, respectively. As shown in Figure 2-27, Jones High School would be accessed from the Anderson Street westbound off-ramp, and the Orange Blossom Trail westbound off-ramp from SR 408. In addition, travelers in the HOV lanes could exit I-4 at the South Street off-ramps (eastbound and westbound). The Gore Street on-ramps and off-ramps would be eliminated with the proposed improvements.

Access from Lake Cherokee to I-4 is provided for the No Action and Build scenarios on Figures 2-28 and 2-29, respectively. GUL travelers would gain access to I-4 at Anderson Street (eastbound only) and Hughey Avenue (westbound only). HOV lane travelers would be able to access I-4 at the South Street interchange. The proposed improvements would eliminate access to SR 408 (East/West Expressway) at Mills Avenue and I-4 at Gore Street.

Figures 2-30 and 2-31 provide access information to Lake Cherokee from I-4. As shown in Figure 2-31, access from I-4 would be provided at Anderson Street (westbound only) and Garland Avenue (eastbound only). Access would be eliminated along SR 408 at the Mills Avenue off-ramps and from I-4 at the eastbound Anderson Street off-ramp. In addition, GUL travelers exiting I-4 to eastbound SR 408 would no longer be able to exit at Orange Avenue.

Section 4.1.2 describes potential impacts to neighborhoods and businesses as a result of the proposed access changes.

The 44-foot rail corridor would be closed within this portion of the project corridor. Stormwater runoff would be treated through a combination of retention ponds and exfiltration.

2.6.2.5 SR 408 (East/West Expressway) Mainline

The limits of improvements along the SR 408 (East/West Expressway) would extend from approximately 1.5 miles east and west of I-4 along SR 408 (East/West Expressway). Modifications would be required to the following interchanges along the SR 408 (East/West Expressway): Tampa Avenue, Orange Blossom Trail (US 441), Orange Avenue, Anderson Street, Rosalind Avenue/South Street, Mills Avenue, and Bumby Avenue. In order to provide adequate lane balance and ramp access spacing, the Mills Avenue ramps to and from the west would be removed.

The SR 408 (East/West Expressway) bridge over I-4 would be replaced to accommodate the wider I-4 typical section. In addition, SR 408 (East/West Expressway) would be widened from four lanes to six lanes and auxiliary lanes would be required between Tampa Avenue and US 441 and between Anderson Street and Bumby Avenue.

KEY

- ① Robinson Street Entrance to I-4 WB
- ② South Street Entrance to I-4 WB
- ③ South Street Entrance to I-4 EB
- ④ Anderson Street Entrance to I-4 EB

LEGEND

— Entrance to I-4



**Location 1
Lake Eola**

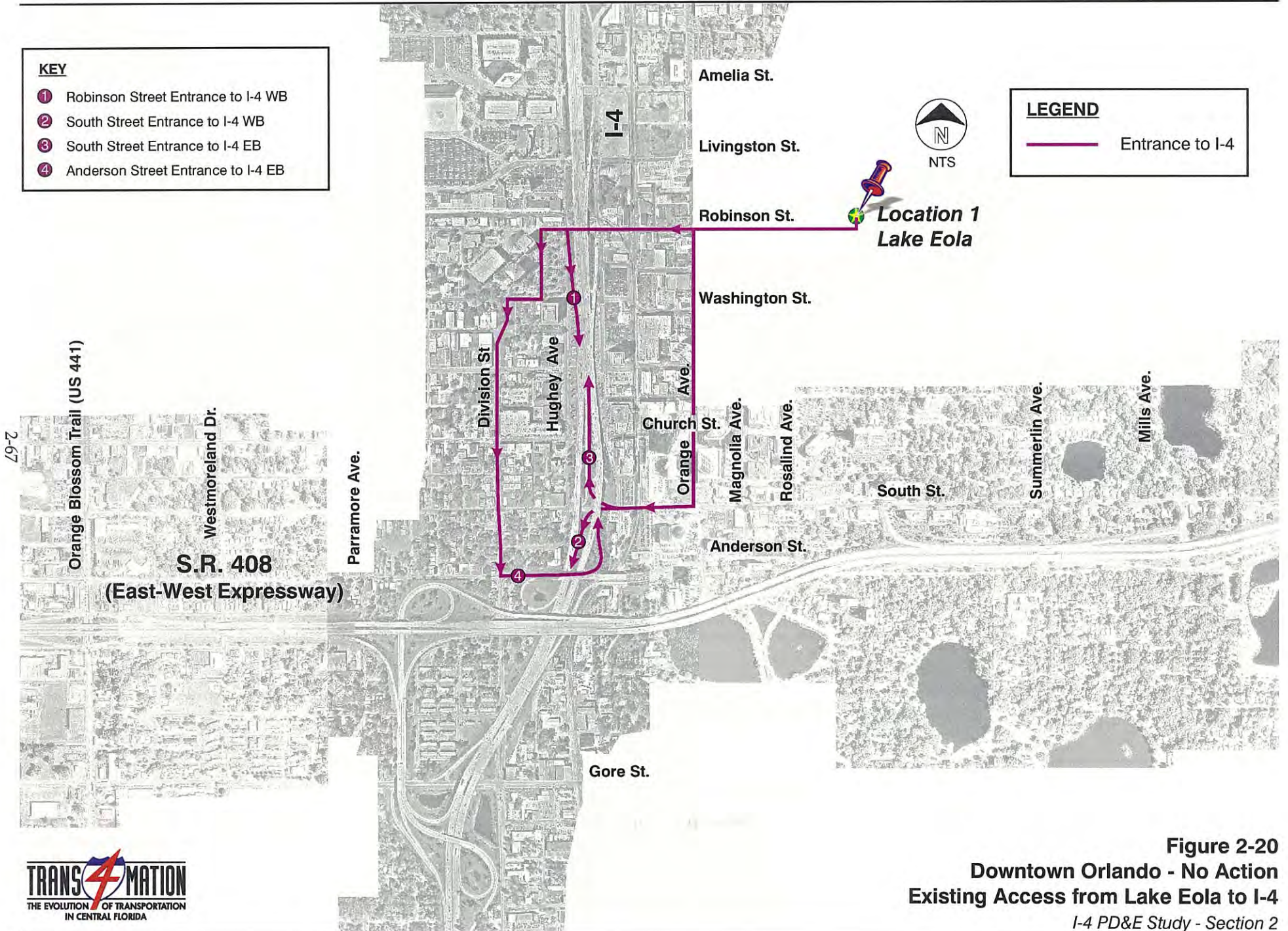


Figure 2-20
Downtown Orlando - No Action
Existing Access from Lake Eola to I-4

KEY

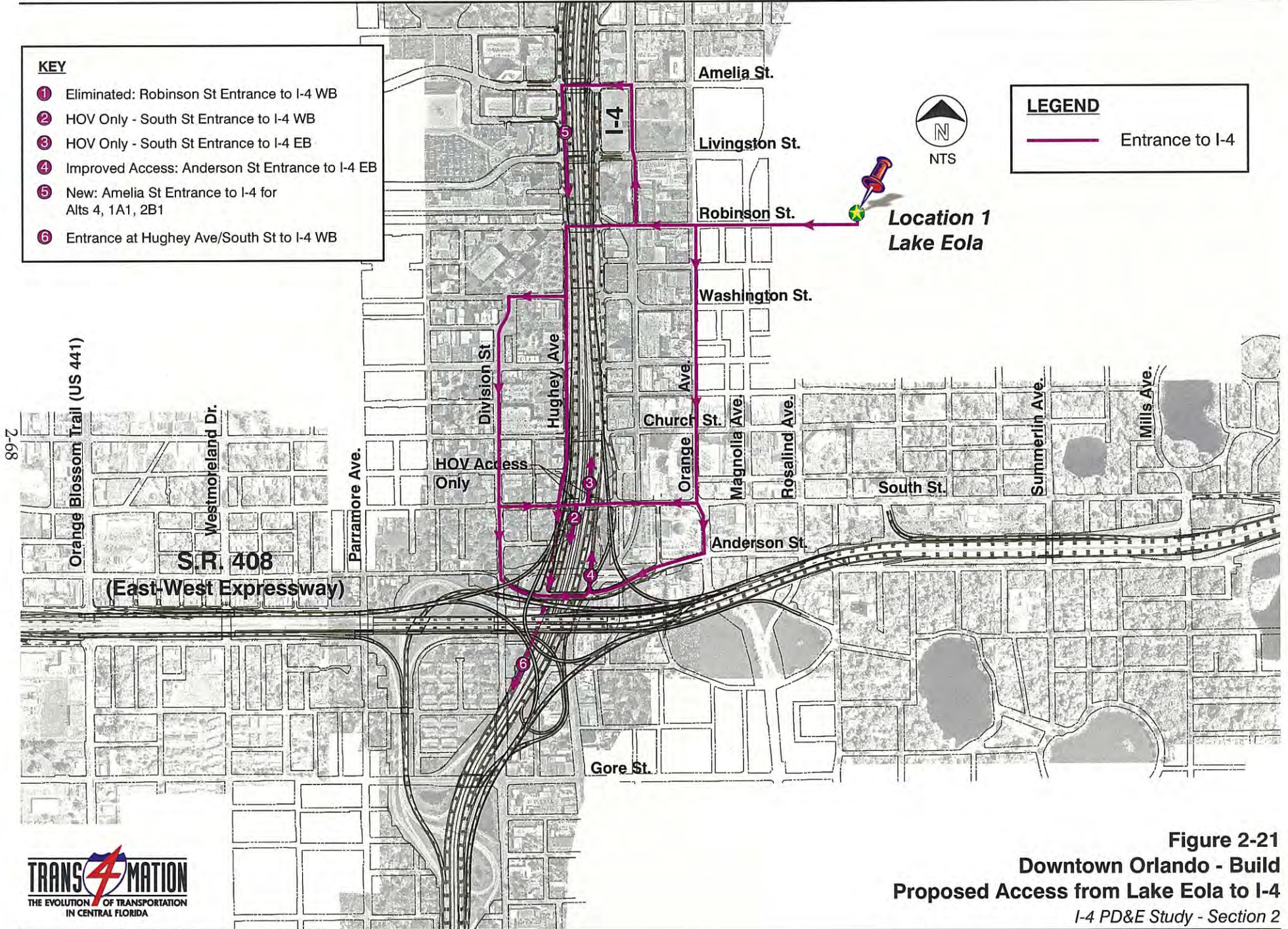
- ① Eliminated: Robinson St Entrance to I-4 WB
- ② HOV Only - South St Entrance to I-4 WB
- ③ HOV Only - South St Entrance to I-4 EB
- ④ Improved Access: Anderson St Entrance to I-4 EB
- ⑤ New: Amelia St Entrance to I-4 for Alts 4, 1A1, 2B1
- ⑥ Entrance at Hughey Ave/South St to I-4 WB

LEGEND

— Entrance to I-4



**Location 1
Lake Eola**



**Figure 2-21
Downtown Orlando - Build
Proposed Access from Lake Eola to I-4**

I-4 PD&E Study - Section 2

KEY

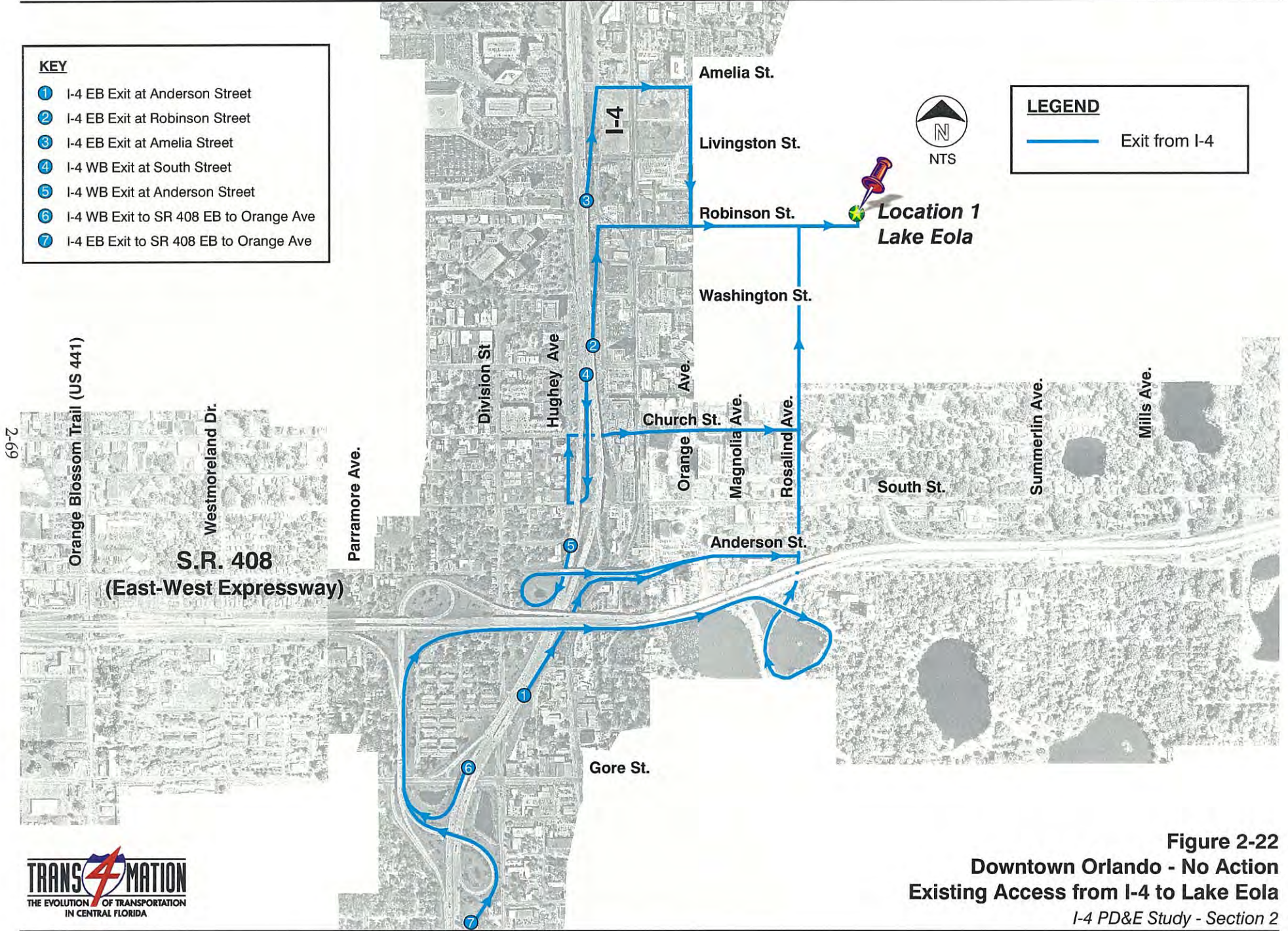
- ① I-4 EB Exit at Anderson Street
- ② I-4 EB Exit at Robinson Street
- ③ I-4 EB Exit at Amelia Street
- ④ I-4 WB Exit at South Street
- ⑤ I-4 WB Exit at Anderson Street
- ⑥ I-4 WB Exit to SR 408 EB to Orange Ave
- ⑦ I-4 EB Exit to SR 408 EB to Orange Ave

LEGEND

— Exit from I-4



Location 1
Lake Eola



69-2



Figure 2-22
Downtown Orlando - No Action
Existing Access from I-4 to Lake Eola
I-4 PD&E Study - Section 2

KEY

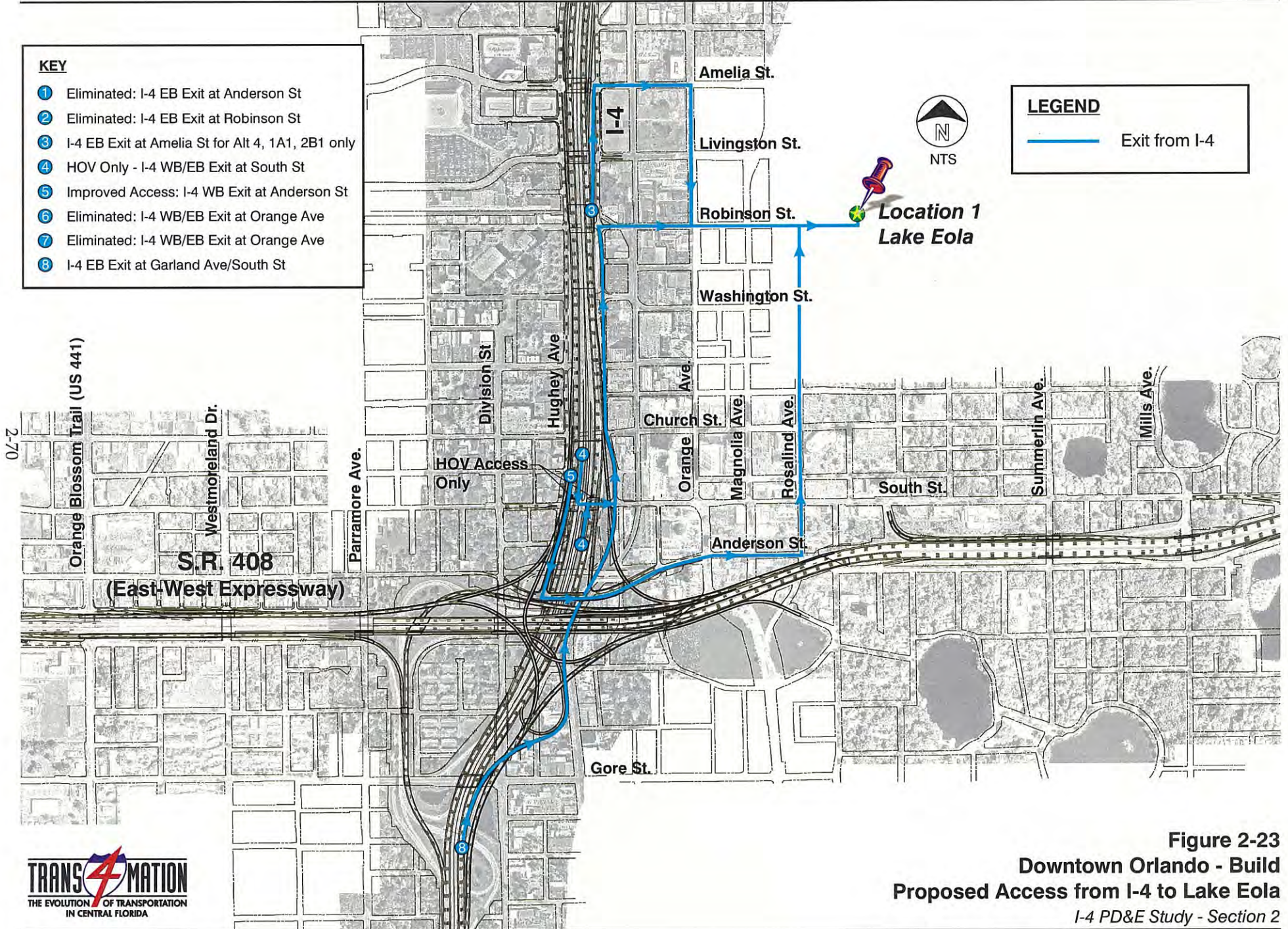
- ① Eliminated: I-4 EB Exit at Anderson St
- ② Eliminated: I-4 EB Exit at Robinson St
- ③ I-4 EB Exit at Amelia St for Alt 4, 1A1, 2B1 only
- ④ HOV Only - I-4 WB/EB Exit at South St
- ⑤ Improved Access: I-4 WB Exit at Anderson St
- ⑥ Eliminated: I-4 WB/EB Exit at Orange Ave
- ⑦ Eliminated: I-4 WB/EB Exit at Orange Ave
- ⑧ I-4 EB Exit at Garland Ave/South St

LEGEND

— Exit from I-4



**Location 1
Lake Eola**



**Figure 2-23
Downtown Orlando - Build
Proposed Access from I-4 to Lake Eola**

I-4 PD&E Study - Section 2

KEY

- ① Gore Street Entrance to I-4 WB
- ② Anderson Street Entrance to I-4 EB
- ③ OBT Entrance to SR 408 EB to I-4 WB/EB

LEGEND

— Entrance to I-4

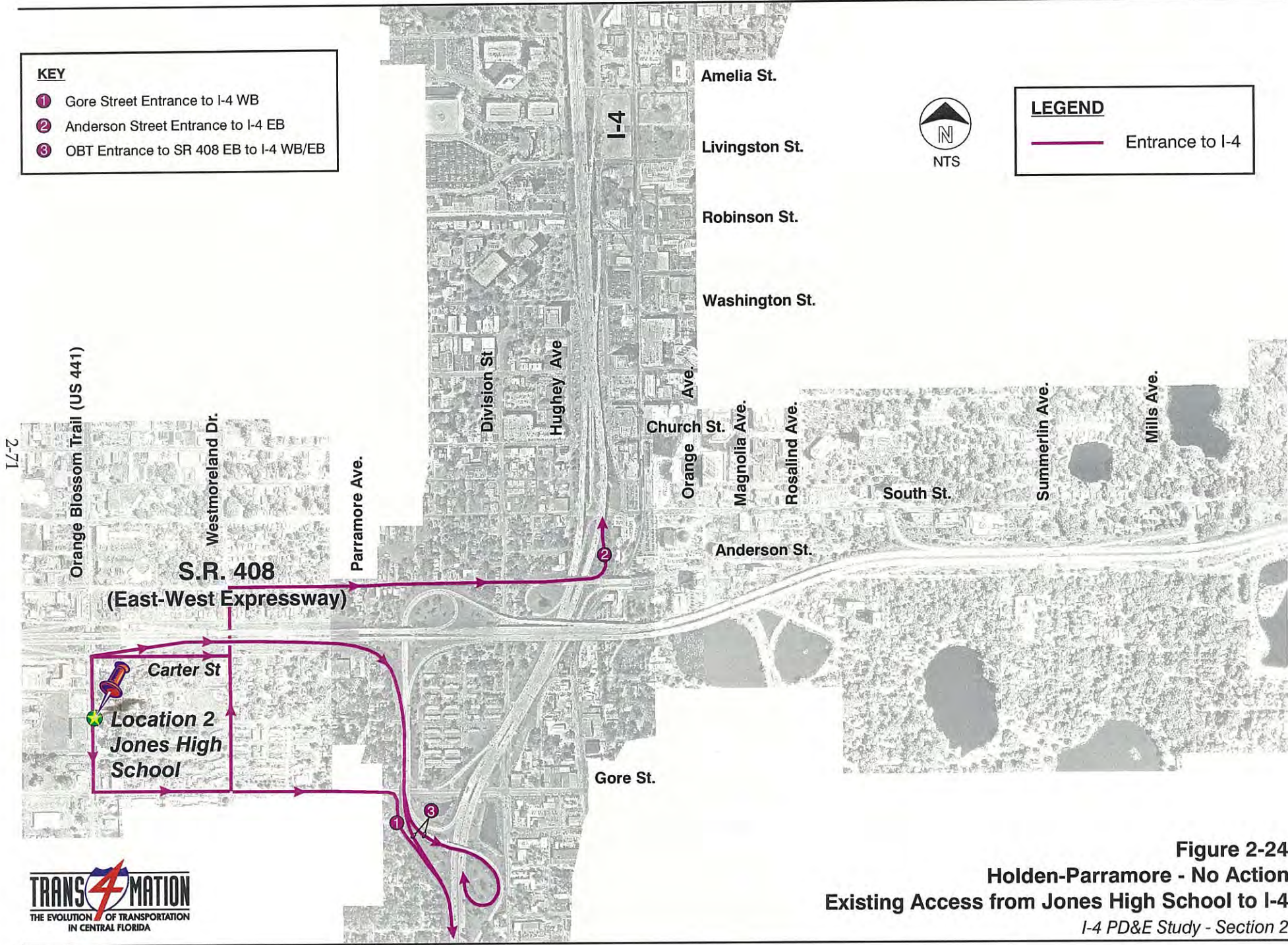


Figure 2-24
Holden-Parramore - No Action
Existing Access from Jones High School to I-4
I-4 PD&E Study - Section 2

KEY

- ① Eliminated: Gore St Entrance to I-4 WB
- ② Anderson St Entrance to I-4 EB
- ③ OBT Entrance to I-4 WB/EB for Alt 1A1, 1A2, 2B1, and 2B2 only
- ④ Hughey Ave Ramp to I-4 WB

LEGEND

- Entrance to I-4
- Alt 1A1, 1A2, 2B1, 2B2 Entrance to I-4 only

Note:

- (1) For the purpose of this figure, the I-4/SR 408 Interchange Alternative 4 design concept is shown. The access to and from I-4 for Alternatives 1A1, 1A2, 2B1, 2B2 is the same as Alternative 4 unless otherwise noted in the KEY.
- (2) Access routes shown are only one example of routes to and from I-4 entrance and exit ramps.

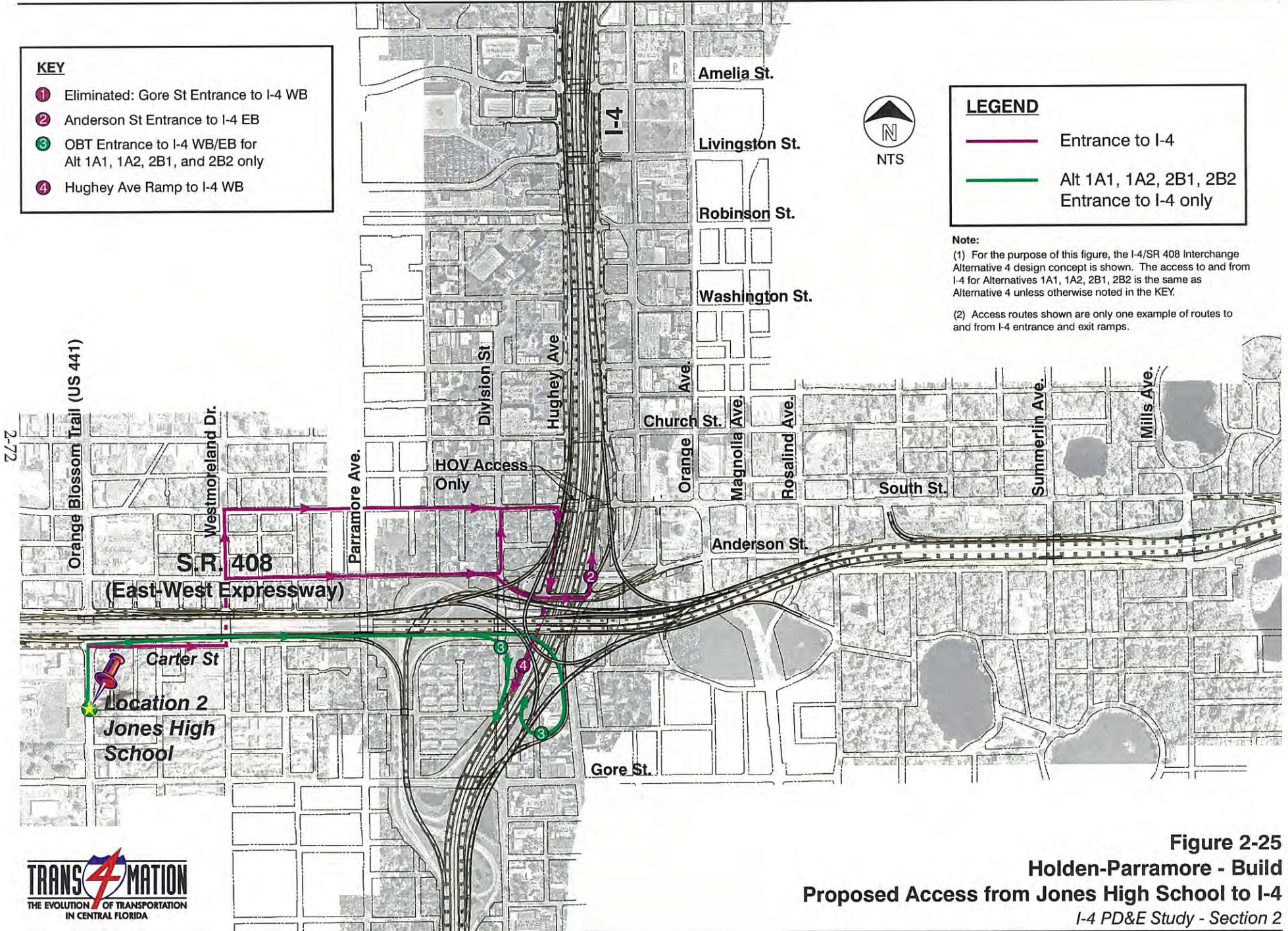


Figure 2-25
Holden-Parramore - Build
Proposed Access from Jones High School to I-4
I-4 PD&E Study - Section 2

- KEY**
- ① I-4 WB Exit at South Street
 - ② I-4 WB Exit at Gore Street
 - ③ I-4 EB Exit to SR 408 WB, Exit at OBT

- LEGEND**
-  Exit from I-4

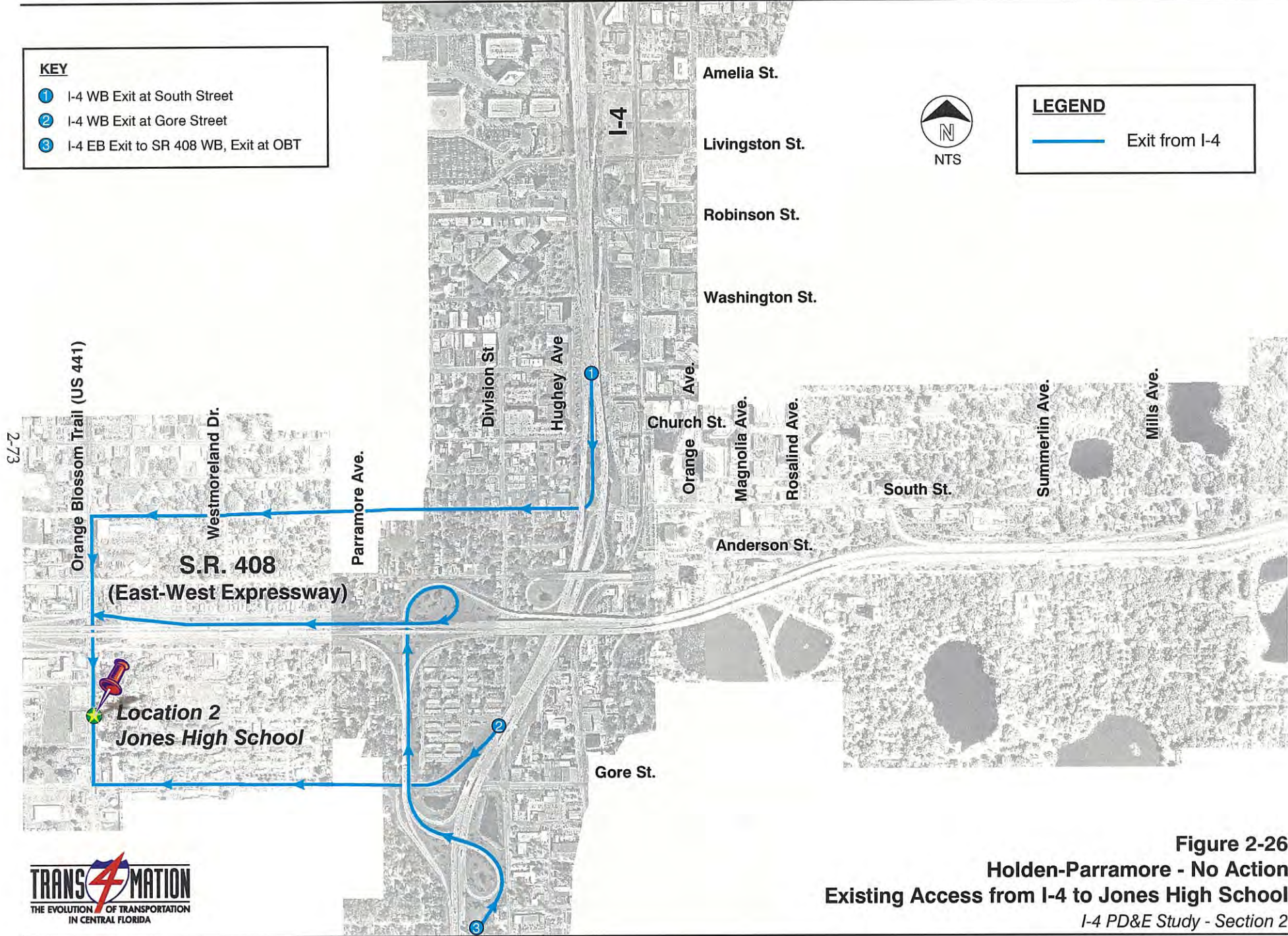


Figure 2-26
Holden-Parramore - No Action
Existing Access from I-4 to Jones High School
I-4 PD&E Study - Section 2

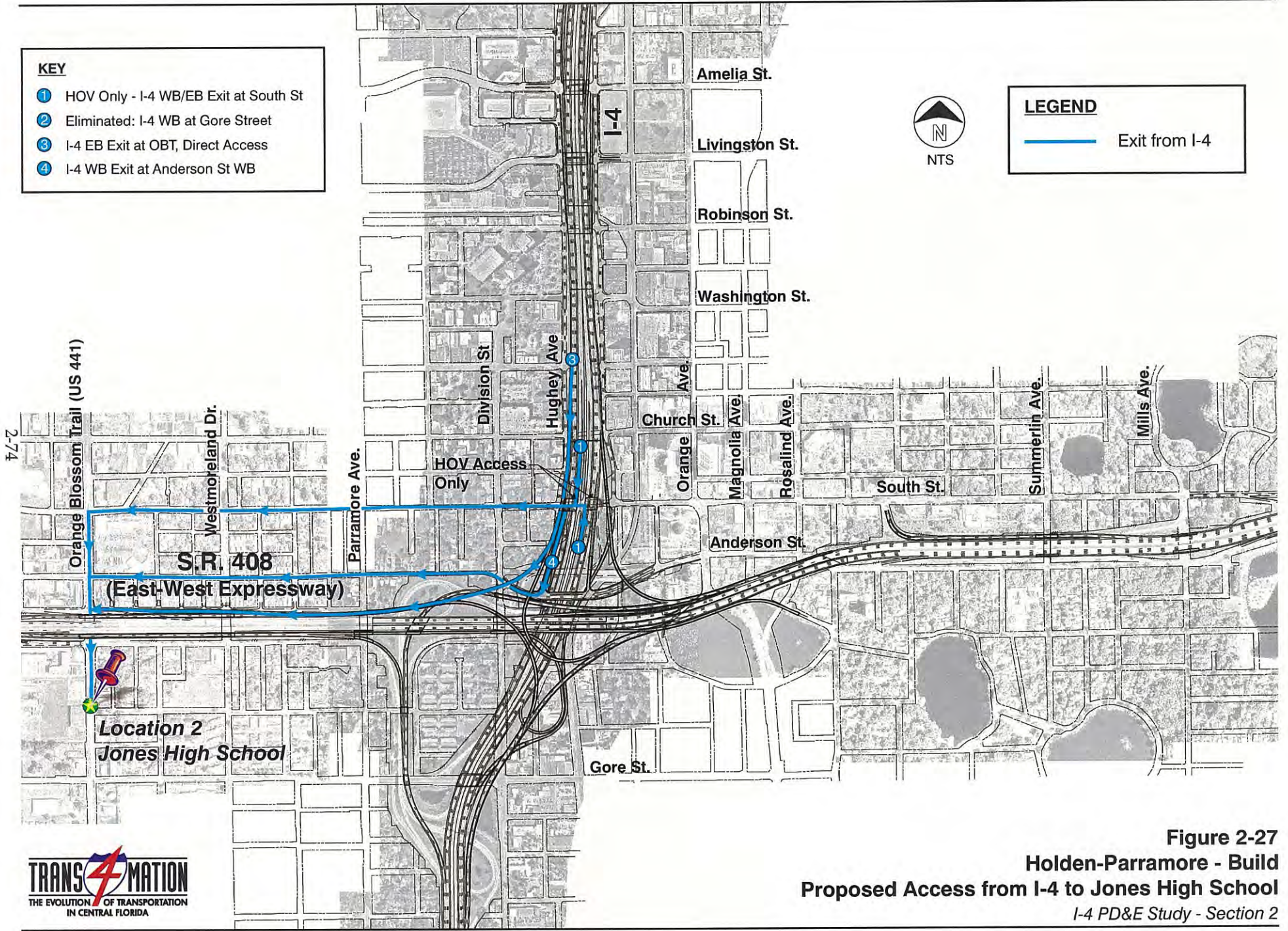


KEY

- ① HOV Only - I-4 WB/EB Exit at South St
- ② Eliminated: I-4 WB at Gore Street
- ③ I-4 EB Exit at OB, Direct Access
- ④ I-4 WB Exit at Anderson St WB

LEGEND

— Exit from I-4



2-74



Figure 2-27
Holden-Parramore - Build
Proposed Access from I-4 to Jones High School

I-4 PD&E Study - Section 2

- KEY**
- ① Mills Ave Entrance to SR 408 WB to I-4 WB
 - ② Mills Ave Entrance to SR 408 WB to I-4 EB
 - ③ South Street to I-4 EB
 - ④ South Street to I-4 WB
 - ⑤ Anderson Street to I-4 EB
 - ⑥ Gore Ave to I-4 WB

LEGEND

— Entrance to I-4

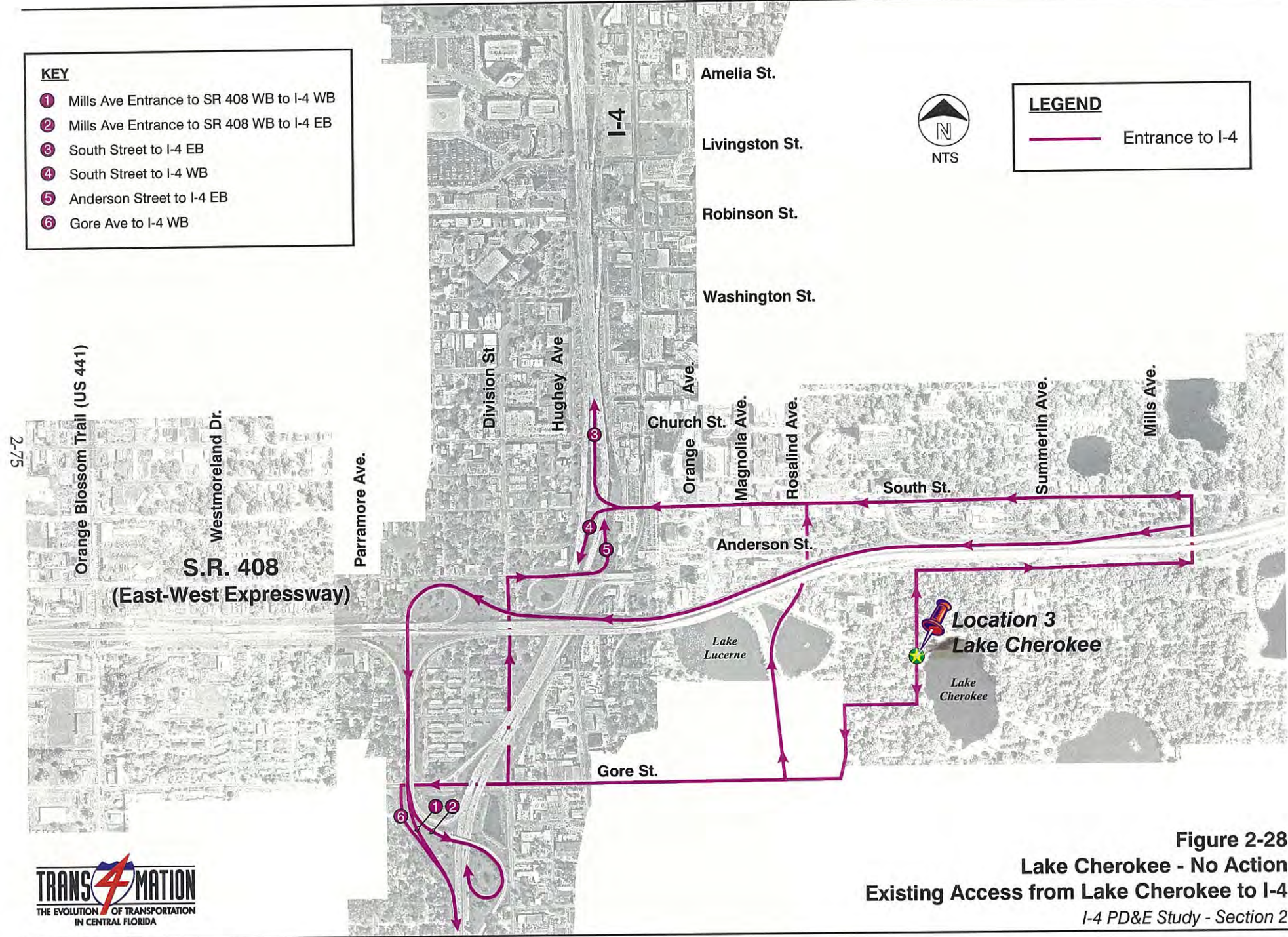


Figure 2-28
Lake Cherokee - No Action
Existing Access from Lake Cherokee to I-4
I-4 PD&E Study - Section 2

KEY

- ① Eliminated: Entrance at Mills Ave
- ② Eliminated: Entrance at Mills Ave
- ③ HOV Only - South St Entrance to I-4 EB
- ④ HOV Only - South St Entrance to I-4 WB
- ⑤ Improved Access: Anderson St to I-4 EB
- ⑥ Eliminated: Gore St to I-4 WB
- ⑦ Entrance at Hughey Ave/South St to I-4 WB

LEGEND

— Entrance to I-4

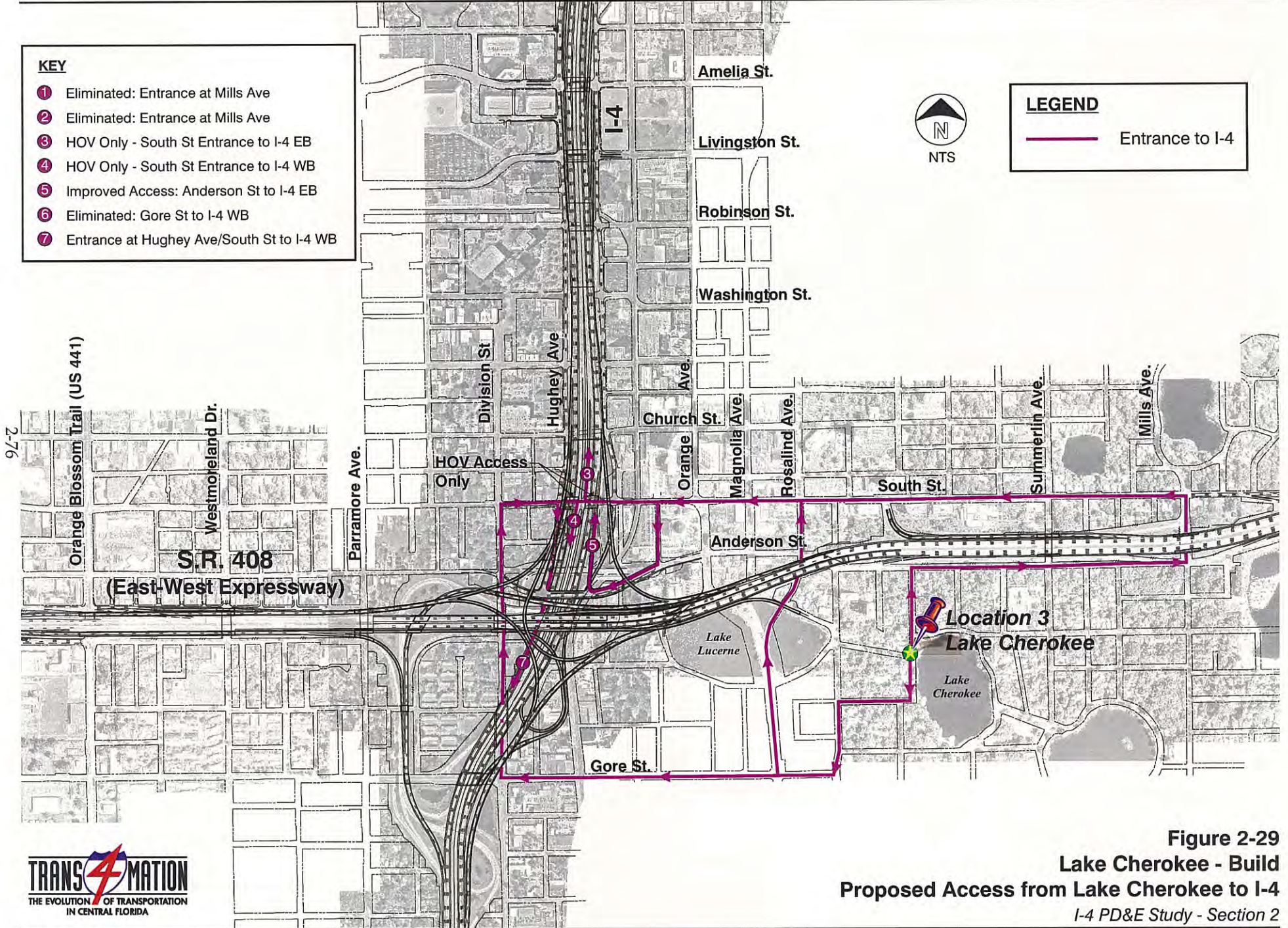


Figure 2-29
Lake Cherokee - Build
Proposed Access from Lake Cherokee to I-4
I-4 PD&E Study - Section 2

KEY

- 1 I-4 WB Exit to SR 408 EB to Orange Ave & Mills Ave
- 2 I-4 EB Exit to SR 408 EB to Orange Ave & Mills Ave
- 3 I-4 WB Exit at Anderson Street
- 4 I-4 EB Exit at Anderson Street
- 5 I-4 WB Exit at South Street

LEGEND

— Exit from I-4

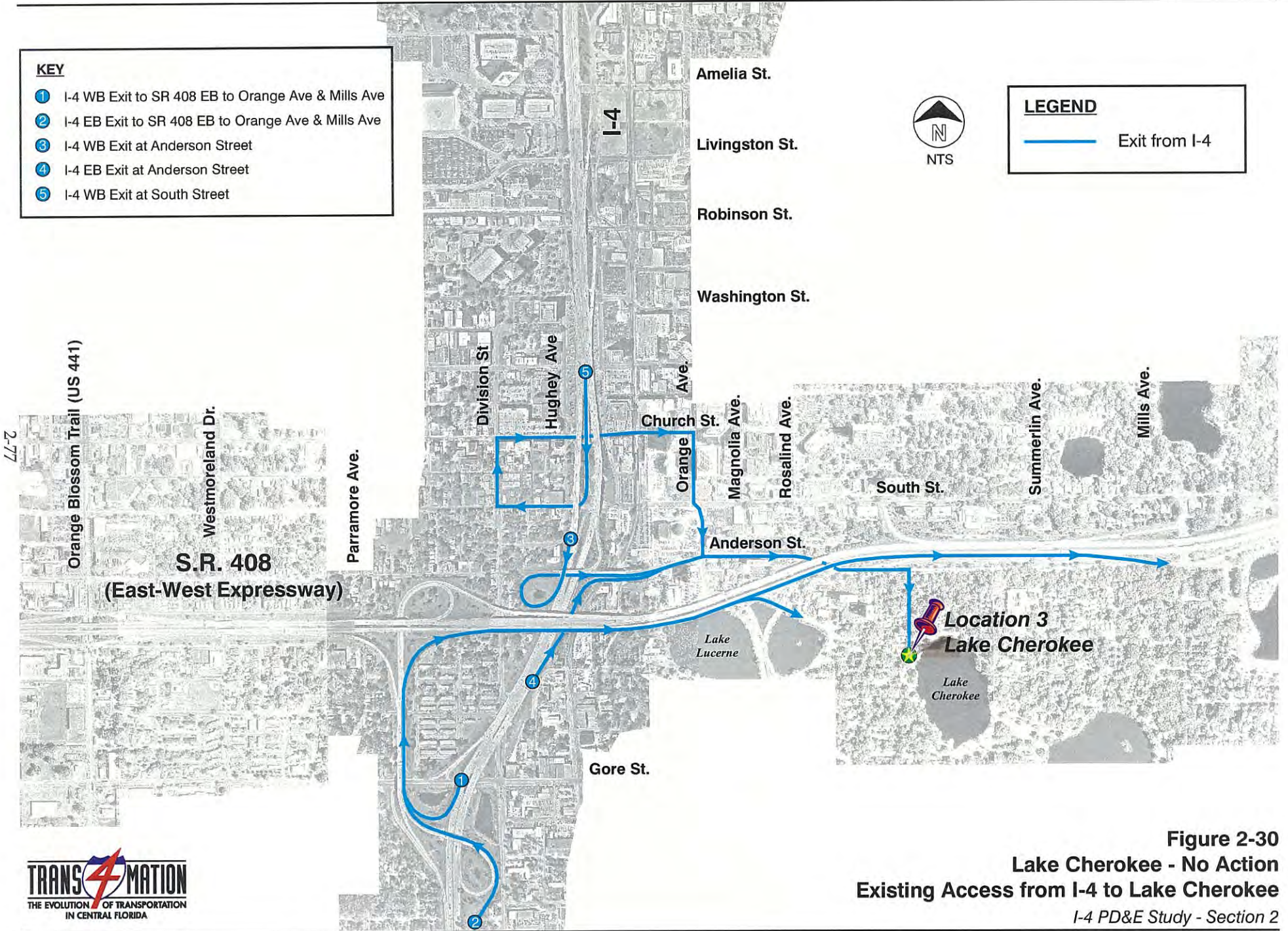


Figure 2-30
Lake Cherokee - No Action
Existing Access from I-4 to Lake Cherokee
I-4 PD&E Study - Section 2



KEY

- ① Eliminated: Exit at Orange Ave & Mills Ave
- ② Eliminated: Exit at Orange Ave & Mills Ave
- ③ Improved Access: I-4 WB Exit at Anderson St
- ④ Eliminated: I-4 EB Exit at Anderson St
- ⑤ HOV Only - I-4 WB/EB Exit at South Street
- ⑥ Exit at Garland Ave/South Street

LEGEND

— Exit from I-4

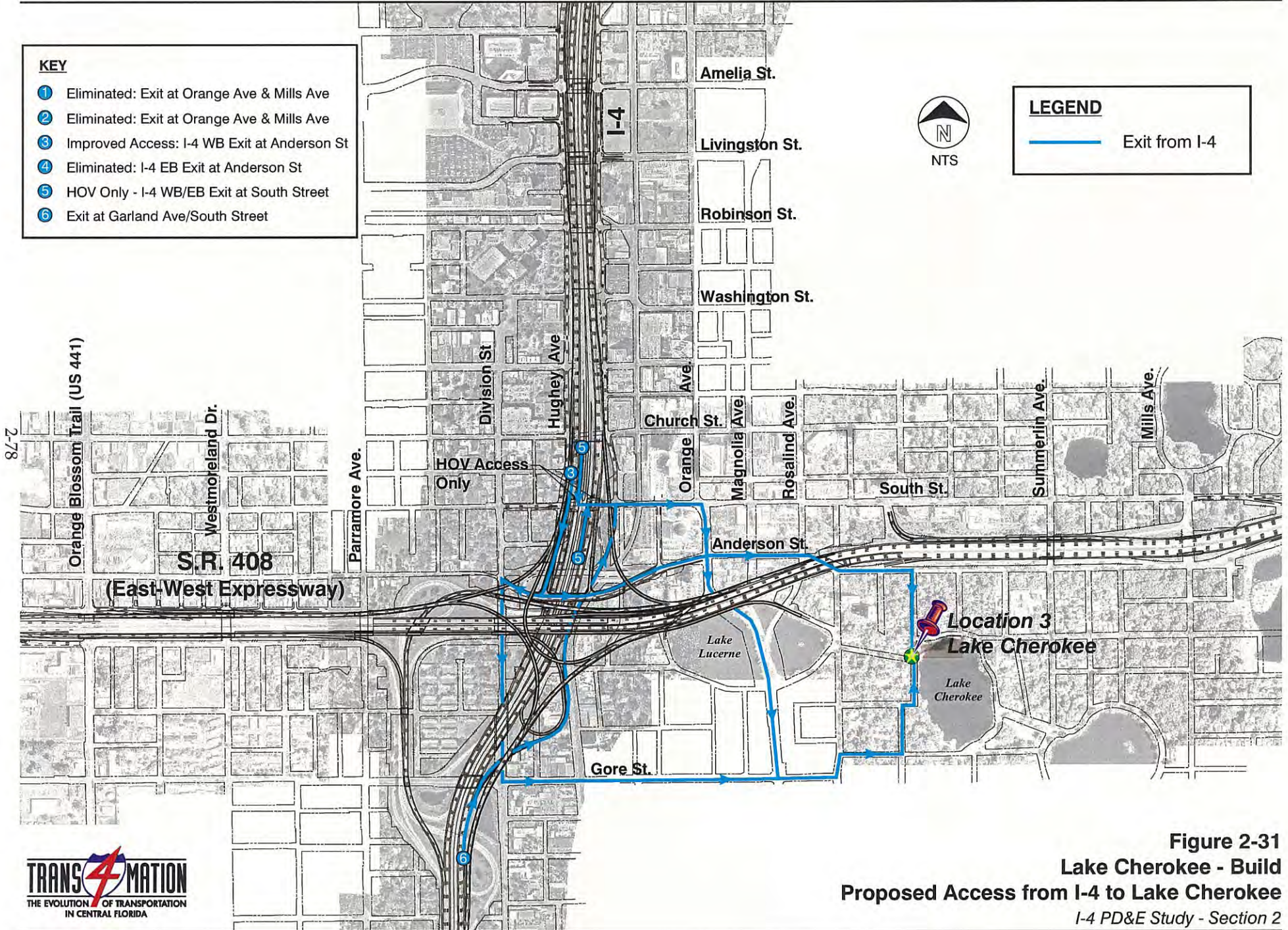


Figure 2-31
Lake Cherokee - Build
Proposed Access from I-4 to Lake Cherokee

I-4 PD&E Study - Section 2

The improvements to the SR 408 (East/West Expressway) mainline would restrict local and property access to Long Street east of Parramore Avenue and between Orange Blossom Trail and Boston Avenue. Easy Avenue, Grove Avenue, and Woods Avenue would become cul-de-sacs and would not have direct access to Long Street. Refer to Section 4.1.2 for information on potential impacts resulting from access changes.

2.6.2.6 SR 50 (Colonial Drive) to Ivanhoe Boulevard

Three GULs and one HOV lane would travel through the SR 50 (Colonial Drive) interchange. In the eastbound direction, one auxiliary lane would be provided from the SR 50 (Colonial Drive) on-ramp through the Ivanhoe Boulevard interchange to the Princeton Street off-ramp. In the westbound direction, one auxiliary lane would be provided to the SR 50 (Colonial Drive) off-ramp, through the Ivanhoe Boulevard interchange, from the Princeton Street on-ramp.

The existing partial access, partial cloverleaf interchange at SR 50 (Colonial Drive) allows for all traffic movements except for exiting eastbound I-4 traffic, which is currently accommodated at Amelia Street. The interchange would be replaced with a full access, single-point diamond interchange that would provide direct access to Garland and Hughey Avenues. Garland Avenue and Hughey Avenue would be a one-way frontage road pair through the interchange area.

Two alternatives were carried forward at the I-4/SR 50 (Colonial Drive) interchange. Both of these alternatives avoided historic resources. The two alternatives were designated as follows:

- Alternative 1 - Judge Cheney House Avoidance
- Alternative 2 - Colonial Garage Avoidance

Alternative 1 avoided encroaching on the property where the Judge Cheney House (a NRHP eligible site) is located. However, Alternative 1 impacted Colonial Garage, also a NRHP eligible site.

Alternative 2 avoided Colonial Garage, but had encroachments on the property where the Judge Cheney House is located. However, Alternative 2 did not impact what has been designated as the Judge Cheney House historic resource.

Hughey Avenue would be realigned between Concord Street and SR 50 (Colonial Drive). Properties located along Hughey Avenue between these two roadways would not be able to access Hughey Avenue. An access road for the Holiday Inn, located in the southwest quadrant of SR 50 (Colonial Drive) and Hughey Avenue, would be constructed. This proposed roadway would provide the hotel with access to SR 50 (Colonial Drive) (refer to the preliminary concept plans for the location of the proposed access road).

The proposed Ultimate improvements to the interchange would result in the closure of Concord Street at Garland Avenue. Properties located along Concord Street would access Garland Avenue and SR 50 (Colonial Drive) via Orange Avenue or Magnolia Avenue (refer to Section 4.1.2 for information on access impacts).

The 44-foot rail corridor would be closed within this portion of the project corridor. Stormwater runoff would be treated through a combination of retention ponds and exfiltration.

2.6.3 Segment 3

Four alternatives were evaluated for impacts within Segment 3:

- Alternative C with Ponds
- Alternative F' with Ponds
- Alternative C with Exfiltration
- Alternative F' with Ponds

There were two typical sections carried forward in portions of Segment 3. Typical section C was carried forward throughout Segment 3. Typical section F' was also carried forward from north of New Hampshire Street to the terminus of Segment 3. With these two typical sections, there were two drainage improvements proposed: ponds and exfiltration. The following sections summarize the proposed Ultimate improvements for Segment 3.

2.6.3.1 Ivanhoe Boulevard to Princeton Street

The mainline configuration of three GULs, one auxiliary lane, and one HOV lane would travel through the Ivanhoe Boulevard interchange to the Princeton Street interchange. The eastbound auxiliary lane would terminate at the Princeton Street off-ramp and the westbound auxiliary lane would begin at the Princeton Street on-ramp.

The existing Ivanhoe Boulevard interchange provides full access through a partial cloverleaf configuration. The proposed improvements would replace the existing interchange with a partial access diamond serving westbound I-4 to Ivanhoe Boulevard and Ivanhoe Boulevard to eastbound I-4 traffic. Motorists on Ivanhoe Boulevard wishing to access westbound I-4 would follow a frontage road south to the next access point at SR 50 (Colonial Drive). Eastbound I-4 traffic wishing to access Ivanhoe Boulevard would exit at SR 50 (Colonial Drive) and follow Garland Avenue north to Orange Avenue and Ivanhoe Boulevard.

The proposed interchange provided direct access ramps to the HOV system to and from the east.

The 44-foot rail corridor would not be provided through this portion of the project corridor due to the relatively narrow existing right-of-way. Stormwater runoff would be treated through a combination of retention ponds and exfiltration.

2.6.3.2 Princeton Street to Par Street

Three GULs, one HOV lane, and one auxiliary lane in each direction would be carried forward through this portion of the project corridor. In the eastbound direction, the auxiliary lane would extend from the Princeton Street on-ramp through the Par Street interchange. In the westbound direction, the auxiliary lane would extend to the Princeton Street off-ramp through the Par Street interchange.

The existing configuration of the Princeton Street interchange is a full access diamond. The interchange would remain a full access diamond interchange and would be modified to provide two-lane ramps for exiting I-4 traffic.

Improvements to the interchange would acquire right-of-way on Cornell Avenue south of Princeton Street. Access to Cornell Avenue between Vanderbilt Street and Yale Street would be restricted. Section 4.1.2 provides information on potential impacts due to access changes.

The 44-foot rail corridor would not be provided through this portion of the project corridor due to the relatively narrow existing right-of-way. Stormwater runoff would be treated through a combination of retention ponds and exfiltration.

In this portion of the project corridor, typical section F' would also be carried forward from just south of the Princeton Street interchange through the Segment 3 limits. The two drainage alternatives, ponds and exfiltration, would also be carried forward from Princeton Street to Par Street.

2.6.3.3 Par Street to Fairbanks Avenue

The three GULs, one HOV lane, and one auxiliary lane in each direction would be provided to the Fairbanks Avenue interchange. The eastbound auxiliary lane would be dropped at the Fairbanks Avenue off-ramp and the westbound auxiliary lane would begin at the Fairbanks Avenue on-ramp.

The existing configuration of the Par Street interchange is a partial access half diamond with access to westbound I-4 and from eastbound I-4. The interchange configuration would be maintained and the I-4 ramp connections would be modified to accommodate the widened mainline.

Improvements to the Par Street interchange would result in access changes to properties located along Cornell Avenue and Pinehurst Avenue. With the proposed improvements, Cornell Avenue would not connect with Par Street. From Par Street, access to properties along Cornell Avenue between Hazel Street and Par Street would be via Formosa Avenue and Hazel Street.

The proposed improvements would also require the closing of Pinehurst Avenue at Par Street. Properties located along Pinehurst Avenue would be required to access Par Street via Dartmouth Avenue and Clay Street. Pinehurst Avenue is a route for parishioners attending the Calvary Assembly of God. As indicated in Section 3.1.2, this church serves a congregation of approximately 3,000 people. Parishioners would be required to gain access to the church via Clay Street. This change in access may increase cut-through traffic in the neighborhoods located east of Clay Street such as Orwin Manor. Refer to Section 4.1.2 for information on potential access impacts.

The 44-foot rail corridor would not be provided through this portion of the project corridor due to the relatively narrow existing right-of-way. The two alternatives (ponds and exfiltration) for treating the stormwater runoff would be carried forward.

The typical section C alternative would require the reconstruction of the horizontal curve between Par Street and Fairbanks Avenue. To meet current criteria, additional right-of-way would be required and a number of properties would be impacted. More information on displacements and relocations is provided in Section 4.1.2.

2.6.3.4 Fairbanks Avenue to Lee Road

Three GULs and one HOV lane in each direction would be carried forward from Fairbanks Avenue to Lee Road. In addition, one auxiliary lane in each direction would be provided in this portion of the project corridor. In the eastbound direction, the auxiliary lane would extend from the Fairbanks Avenue on-ramp to the Lee Road off-ramp. In the westbound direction, the auxiliary lane would extend to the Fairbanks Avenue off-ramp from the Lee Road on-ramp.

The existing Fairbanks Avenue interchange provides full access to I-4 through a diamond interchange. The interchange would remain a full access diamond and would provide two-lane ramps for exiting I-4 traffic.

The proposed improvements to the interchange would realign Stanley Street and Granada Drive. The realignment of the roadways would require additional right-of-way. However, access to the properties located along the roadways, including Killarney Elementary School, would remain the same.

The 44-foot rail corridor would not be provided through this portion of the project corridor due to the relatively narrow existing right-of-way. The two alternatives (ponds and exfiltration) for treating the stormwater runoff were carried forward.

The typical section C alternative would require the reconstruction of the horizontal curve between Fairbanks Avenue and Lee Road. To meet current criteria, additional right-of-way would be required and a number of properties would be impacted. More information on displacements and relocations is provided in Section 4.1.2.

The improvements associated with typical section C would include the extension of Riddle Drive under I-4. An existing pedestrian overpass that is used by students attending Killarney Elementary School is located north of Fairbanks Avenue. Typical section C would replace the pedestrian facility with a new walkway constructed adjacent to Riddle Drive.

The improvements associated with typical section F' would require the reconstruction of the pedestrian facility to accommodate the wider typical section.

2.6.4 Segments 4 and 5

Segments 4 and 5 were combined for the evaluation of impacts since the land use along these segments are similar. There were four alternatives proposed within Segments 4 and 5 and included:

- Alternative C with SR 434 Alternative 1
- Alternative F' with SR 434 Alternative 1
- Alternative C with SR 434 Alternative 2
- Alternative F' with SR 434 Alternative 2

There were two alternatives at SR 434 carried forward. The two alternatives at SR 434 were combined with the two typical sections to determine the impacts within Segments 4 and 5.

As with the other segments, typical section C was proposed throughout Segments 4 and 5. In addition, typical section F' was proposed from beginning of the Segment 4 limits to north of Lee Road (Station 430+59). The following sections summarize the proposed Ultimate improvements for Segments 4 and 5.

2.6.4.1 Lee Road to Maitland Boulevard

The three GULs, one HOV lane, and one auxiliary lane between interchanges would continue through Segments 4 and 5. In this portion of the project corridor, the eastbound auxiliary lane would begin at the Lee Road on-ramp and continue to the Maitland Boulevard off-ramp. In the westbound direction, the auxiliary lane would extend to the Lee Road off-ramp from the Maitland Boulevard on-ramp. Three GULs and one HOV lane would be carried forward through the Lee Road interchange.

The existing configuration of the Lee Road interchange is a full access diamond. The proposed improvement would also provide a full access diamond with the addition of two-lane ramps for exiting I-4 traffic.

The improvements to the Lee Road interchange would require the construction of an access road to Lee Road for the properties located in the southwest quadrant of the interchange. Refer to the preliminary concept plans for the location of the new access road.

HOV slip ramps would be provided south of Maitland Boulevard. In the eastbound direction, a slip ramp would be provided from the HOV lane to the GULs. In the westbound direction, a slip ramp would be provided from the GULs to the HOV lane.

As mentioned previously, typical section F' was proposed from the start of the Segment 4 limits to north of Lee Road (Station 430+59). In addition, exfiltration was proposed from the beginning of the Segment 4 limits through the Lee Road interchange (Basin AA). North of the Lee Road interchange, retention ponds would be provided for the treatment of stormwater.

The 44-foot rail corridor would not be provided in this portion of the project corridor. However, there would be a limited provision for transit north of Lee Road within the outer separation of the east side of the right-of-way.

2.6.4.2 Maitland Boulevard to SR 436

Three GULs, one auxiliary lane, and one HOV lane in each direction would be provided from Maitland Boulevard to SR 436. The eastbound auxiliary lane would extend from the Maitland Boulevard on-ramp to the SR 436 off-ramp. Similarly, the westbound auxiliary lane would extend to the Maitland Boulevard off-ramp from the SR 436 on-ramp.

The existing Maitland Boulevard interchange is a full access interchange. A loop ramp is provided for westbound Maitland Boulevard to westbound I-4 traffic and a directional flyover ramp serves eastbound I-4 to westbound Maitland Boulevard traffic. The remaining movements are accommodated with diamond ramps. The proposed Maitland Boulevard interchange alternative would replace the existing interchange with a three-level partial cloverleaf. The profile for eastbound and westbound Maitland Boulevard would be bifurcated over I-4. Directional ramps for traffic traveling from eastbound Maitland Boulevard to eastbound I-4 and from westbound Maitland Boulevard to westbound I-4 would be grade separated from the opposing traffic with the bifurcated profile of Maitland Boulevard. The loop ramps would serve traffic traveling from eastbound I-4 to westbound Maitland Boulevard and from westbound I-4 to eastbound Maitland Boulevard. The existing eastbound I-4 dual off-ramp, which exits to eastbound and westbound Maitland Boulevard, would be revised to one single point exit serving both directions. Similarly, the dual westbound on-ramps would be modified to a single entrance ramp.

HOV slip ramps would be provided north of the Wymore Road overpass. In the eastbound direction, a slip ramp would be provided from the GULs to the HOV lane. In the westbound direction, a slip ramp would be provided from the HOV lane to the GULs. In addition, the Wymore Road overpass would be reconstructed to accommodate the wider typical section.

The 44-foot rail corridor would not be provided in this portion of the project corridor. However, there would be a limited provision for transit within the outer separation of the east side of the right-of-way throughout this portion of the project corridor. Stormwater treatment would be handled using retention ponds.

2.6.4.3 SR 436 to SR 434

Three GULs and one HOV lane in each direction would be provided through the SR 436 interchange. In addition, one auxiliary lane in each direction would be provided with the GULs. In the eastbound direction, the auxiliary lane would extend from the SR 436 on-ramp to the SR 434 off-ramp. In the westbound direction, the auxiliary lane would extend to the SR 436 off-ramp from the SR 434 on-ramp.

There are two interchanges within this portion of the project corridor: SR 436 and Central Parkway. The existing SR 436 interchange is a full access diamond with two-lane ramps. The interchange would be reconstructed as a single-point diamond with two-lane ramps for all movements.

A direct access HOV interchange would be constructed at Central Parkway. At this location, HOV ramps to/from the west would be provided. The existing Central Parkway bridge over I-4 would be reconstructed to accommodate the proposed Ultimate improvements. A Park & Ride lot was proposed at Central Parkway and Douglas Avenue. Refer to Figure 1-23 for the proposed location of the Park & Ride lot.

In addition to the direct access HOV interchange, HOV slips ramps would be provided north of Central Parkway. In the eastbound direction, a slip ramp would be provided from the HOV lane to the GULs. In the westbound direction, a slip ramp would be provided from the GULs to the HOV lane.

The 44-foot rail corridor within the median of I-4 would remain closed until just north of Central Parkway. At this point, the transit envelope would be provided in the median throughout the remaining portion of the project corridor.

In addition, stormwater treatment would be handled using retention ponds.

2.6.4.4 SR 434 to Lake Mary Boulevard

Three GULs, one auxiliary lane, and one HOV lane in each direction would extend throughout this portion of the project corridor. The eastbound auxiliary lane would extend from the SR 434 on-ramp

to the Lake Mary Boulevard off-ramp. The westbound auxiliary lane would extend to the SR 434 off-ramp from the Lake Mary Boulevard on-ramp.

Two alternatives were proposed for the SR 434 interchange. The existing interchange consists of a full access diamond interchange with two-lane ramps for all movements except for the westbound off-ramp. The first alternative (Alternative 1) modified the existing diamond concept and provided two-lane ramps for all movements. The second alternative (Alternative 2) also proposed a full access diamond but added a loop ramp for westbound SR 434 to westbound I-4 traffic. Two-lane ramps would be provided for all movements except from SR 434 to westbound I-4, which would be provided by a one-lane loop ramp (from westbound SR 434) and a one-lane diamond ramp (from eastbound SR 434).

Both alternatives would result in the realignment of Howard Avenue. The proposed roadway improvements would result in closure of Howard Avenue between Adams Street and Barton Street. Vehicles traveling north of Howard Avenue would be required to merge onto Adams Street. Properties along Howard Avenue between Adams Street and Barton Street would be relocated. Refer to Section 4.1.2 for information on displacements and relocations.

HOV slip ramps were provided north of the E.E. Williamson Road overpass. In the eastbound direction, a slip ramp would be provided from the HOV lane to the GULs. In the westbound direction, a slip ramp would be provided from the GULs to the HOV lane.

The 44-foot rail corridor would be provided through this portion of the project corridor. Retention ponds would provide treatment for stormwater runoff.

In addition, the E.E. Williamson Road overpass would be reconstructed to accommodate the wider typical section. The on-ramp and off-ramp for the westbound rest area would be realigned. However, modifications to the rest area are currently under design and are independent of this project.

2.6.4.5 Lake Mary Boulevard to CR 46A

Three GULs and one HOV lane in each direction would be provided through the Lake Mary Boulevard interchange. One auxiliary lane in the eastbound direction would extend from the Lake Mary Boulevard on-ramp through the CR 46A interchange. In the westbound direction, the auxiliary lane would extend to the Lake Mary Boulevard off-ramp from the CR 46A/SR 46 on-ramp.

The existing Lake Mary Boulevard interchange partial cloverleaf design would remain the same with the proposed I-4 improvements. Modifications to the interchange would include improvements to ramp gore areas and the two westbound I-4 on-ramps would merge into a single ramp before connecting to I-4.

HOV slip ramps would be provided just south of the CR 46A interchange. In the eastbound direction, a slip ramp would be provided from the GULs to the HOV lane. In the westbound direction, a slip ramp would be provided from the HOV lane to the GULs.

The 44-foot rail corridor would be provided through this portion of the project corridor. Retention ponds would provide treatment for stormwater runoff.

2.6.4.6 CR 46A to SR 46

Three GULs and one HOV lane in each direction would be provided throughout this portion of the project corridor. In addition, one auxiliary lane in the eastbound direction would be provided in portions of the project corridor. The eastbound auxiliary lane would continue through the CR 46A interchange to the SR 46/SR 417 off-ramp. An auxiliary lane would be added at the SR 417 eastbound on-ramp through the SR 46 interchange. There would be no auxiliary lanes in the westbound direction in this portion of the project corridor.

There are two interchanges within this portion of the project limits: CR46A and SR 417. Construction of the existing CR 46A (Paola Road) interchange was completed in late 1999. The interchange is a full access diamond with a loop ramp provided for the westbound I-4 to CR 46A movements. With the proposed Ultimate improvements, the interchange would be modified to allow for the continuation of the westbound collector-distributor ramp from SR 46. West of the interchange this collector-distributor ramp would merge with the westbound I-4 on-ramp from CR 46A.

Ramp movements for the proposed SR 417 (Central Florida GreeneWay) interchange would remain as in the programmed existing conditions. Construction for the proposed interchange is currently underway and expected to be complete by FY 2002/2003. Ramp junctions to and from I-4 would be modified slightly to connect to the reconstructed freeway. The westbound I-4 to SR 417 ramp junction would be moved east from its current proposed location to approximately 2,100 feet west of SR 46. This ramp would merge with the SR 46 to SR 417/I-4 collector-distributor ramp and form a three-lane facility adjacent to I-4.

No slip ramps or HOV direct access interchanges would be provided in this portion of the project corridor. However, the 44-foot rail corridor would remain open. Stormwater would be treated using retention ponds.

2.6.4.7 SR 46 to US 17-92

Three GULs, one auxiliary lane, and one HOV lane in each direction would be provided throughout this portion of the project corridor. The eastbound auxiliary lane would continue through the SR 46 interchange and end at the US 17-92 off-ramp. The westbound auxiliary ramp would end at the SR 417 off-ramp, continue through the SR 46 interchange, and begin at the US 17-92 on-ramp.

The existing SR 46 interchange is a standard full access diamond. The interchange would be slightly modified with the programmed construction of the SR 417 interchange. The programmed existing condition is a full access diamond; however, the eastbound I-4 to SR 46 movement is provided via a collector-distributor ramp that exits just east of CR 46A. The proposed alternative would keep the full access diamond concept, but would add a loop ramp for westbound SR 46 to westbound I-4 traffic. This loop ramp would begin the westbound collector-distributor roadway that would serve the SR 46, SR 417, and CR 46A interchanges.

The proposed SR 46 interchange improvements would realign Oregon Street in the northwest quadrant. One structure currently abuts Oregon Street and would have to be relocated. Refer to Section 4.1.2 for information on displacements and relocations.

HOV slip ramps would be provided just south of the US 17-92 interchange. In the eastbound direction, a slip ramp would be provided from the GULs to the HOV lane. In the westbound direction, a slip ramp would be provided from the HOV lane to the GULs.

The 44-foot rail corridor would be provided throughout this portion of the project corridor. Retention ponds would treat the stormwater runoff.

2.6.5 Segment 6

Two alternatives were evaluated in Segment 6:

- Tie to Ultimate north of SR 472
- Tie to Existing north of SR 472

The Tie to Ultimate north of SR 472 alternative would tie the Section 2 improvements to the Ultimate six-lane improvements north of 472. The Tie to Existing north of SR 472 alternative would tie the Section 2 improvements to the existing four-lane roadway north of SR 472.

Typical section C was carried forward throughout the Segment 6 limits. The following sections summarize the proposed improvements for Segment 6.

2.6.5.1 US 17-92 to Dirksen Drive/DeBary Avenue

Three GULs and one HOV lane in each direction would be provided throughout this portion of the project corridor. Auxiliary lanes would not be provided. The I-4 Six Laning and St. Johns River Bridge project will construct the bridge substructure and superstructure for GULs and the substructure for the HOV lanes. In addition, the I-4 Six Laning and St. Johns River Bridge project will construct the Ultimate improvements to the I-4 mainline, with the exception of the HOV pavement, to a point approximately 900 feet north of the St. Johns River Bridge (approximately Station 2998+00).

The full access partial cloverleaf design of the existing US 17-92 interchange is split between US 17-92 and Orange Boulevard. Access for traffic from eastbound I-4 and to westbound I-4 is currently provided via Orange Boulevard while traffic to eastbound I-4 and from westbound I-4 travels along loop ramps connecting to US 17-92. The proposed interchange would replace the existing ramps. With the exception of traffic wishing to enter onto eastbound I-4, all movements would be shifted to US 17-92. Traffic entering eastbound I-4 would do so via CR 15, a collector road parallel to I-4 connecting US 17-92 and Orange Boulevard.

The eastbound I-4 to US 17-92 exit would be at approximately the same location as in the existing conditions; however, instead of terminating at Orange Boulevard, the ramp would continue over Orange Boulevard, the CSXT railroad, and US 17-92 before looping back toward US 17-92 along the Lake Monroe shoreline. As in the existing conditions, a loop ramp would be provided for exiting traffic from westbound I-4. Motorists wishing to enter westbound I-4 would do so via a direct ramp from US 17-92 instead of Orange Boulevard.

The US 17-92 to eastbound I-4 and westbound I-4 to US 17-92 ramps will be constructed as part of the I-4 Six Laning and St. Johns River Bridge project.

Full directional HOV access slip ramps would be provided south of the Dirksen Drive/DeBary Avenue interchange.

The 44-foot rail corridor would be provided throughout this portion of the project corridor. Retention ponds would treat the stormwater runoff.

2.6.5.2 Dirksen Drive/DeBary Avenue to Saxon Boulevard

Three GULs and one HOV lane in each direction would be provided throughout this portion of the project corridor. Auxiliary lanes would not be provided.

There are two interchanges within this portion of the project corridor: Dirksen Drive/DeBary Avenue and Enterprise Road. The existing Dirksen Drive/DeBary Avenue interchange is a full access partial cloverleaf. This concept will remain the same with the proposed interchange concept. Minor improvements to the interchange would include ramp modifications at the I-4 gore locations and the eastbound I-4 off-ramp would be widened to a two lane ramp.

A direct access HOV interchange would be constructed just north of Enterprise Road. At this location, HOV ramps to/from the west would be provided. In addition, a Park & Ride lot would be constructed at the existing location of Uncle Bob's Storage. Refer to Figure 1-23 for the proposed location of the Park & Ride lot.

The 44-foot rail corridor would be provided throughout this portion of the project corridor. Retention ponds would treat the stormwater runoff.

2.6.5.3 Saxon Boulevard to SR 472

Three GULs in each direction would be provided throughout this portion of the project corridor. One HOV lane in each direction would be provided to a point just north of the proposed Rhode Island Road overpass south of the SR 472 interchange. Auxiliary lanes would not be provided.

The existing Saxon Boulevard interchange is a full access partial cloverleaf with loop ramps in the southwest, northwest, and northeast quadrants. This configuration will be retained with minor ramp gore modifications. In addition, the two eastbound I-4 off-ramps would be consolidated to a single point exit and the two movements would diverge once clear of the mainline.

The Saxon Boulevard bridge over I-4 would be reconstructed to accommodate the proposed improvements. In addition, the Graves Avenue/Howland Boulevard bridge over I-4 would be reconstructed to accommodate the wider typical section.

HOV slips ramps are provided south of the SR 472 interchange just north of the proposed Rhode Island Road. The eastbound left side ramp signifies the end of the HOV system and would provide access to the GULs from the HOV lane. The westbound left side ramp signifies the start of the HOV system and would provide access to the HOV lane from the GULs.

The 44-foot rail corridor would be provided throughout this portion of the project corridor. Retention ponds would treat the stormwater runoff.

2.6.5.4 SR 472 to End of Project Limits

Three GULs in each direction would be provided to the end of the project limits (approximately Station 3510+00). No auxiliary lanes or HOV lanes would be provided in this portion of the project corridor.

The existing configuration of the SR 472 interchange is a full access diamond with a loop ramp provided for eastbound SR 472 to eastbound I-4 traffic. The proposed improvements would preserve this design with only minor modifications to the ramp gore areas on I-4. As indicated in Section 1.4, FDOT has designed minor improvements to the eastbound on-ramp. Right-of-way acquisition for the project is programmed for FY 2001/2002.

To accommodate the wider typical section, the SR 472 bridge over I-4 would be reconstructed.

The 44-foot rail corridor would remain open through the end of the project limits. Stormwater runoff would be treated via retention ponds.

As indicated, there were two alternatives evaluated within this portion of the project limits. The Tie to Ultimate north of SR 472 alternative would tie the Section 2 improvements to the Ultimate six-lane improvements at the end of the project limits. The Tie to Existing north of SR 472 alternative would tie the Section 2 improvements to the existing four-lane roadway (approximately Station 3515+00).

2.6.6 Evaluation of Ultimate Build Alternatives

The proposed Ultimate Build Alternatives for each segment were evaluated for impacts to businesses and residences, community facilities, noise, cultural and historic resources, right-of-way, and the natural and physical environment. In addition, preliminary construction costs and right-of-way costs were evaluated. Table 2-7 presents the estimated impact evaluation for the proposed Ultimate build alternatives. A detailed discussion of the impacts for the Ultimate Build Alternatives is presented in Chapter 4 of this document.

To determine the lowest number of impacts and the highest number of impacts for the entire 43-mile project corridor, impacts for the Ultimate Build Alternatives were totaled and are presented in Table 2-7. The Ultimate Build Alternatives that were combined to determine the low and high impact evaluation matrix are noted on Table 2-7.

2.7 Staging of Ultimate I-4 Improvements

The construction of the Ultimate I-4 improvements will occur in stages. The determination of which portions of the project corridor are constructed first will be based on availability of funding, highway capacity constraints, and input from the community.

Table 2-7. Estimated Impact Evaluation for DEIS Ultimate Build Alternatives: I-4 PD&E Study - Section 2
Based on June 16, 2000 Preliminary Engineering Plan Set

Categories	Evaluation Criteria	SEGMENT 1		Sub-segment 1		SEGMENT 2					Sub-segment 3	
		Tie to Ultimate Bee Line	Tie to Existing Bee Line	Kaley/ Michigan Ponds	Kaley/ Michigan Exfiltration	SR 408 Alternative 4 (Griffin Park Avoidance)	SR 408 Alternative 1A1	SR 408 Alternative 1A2	SR 408 Alternative 2B1	SR 408 Alternative 2B2	SR 50 Alternative 1 (Judge Cheney Avoidance)	SR 50 Alternative 2 (Colonial Garage Avoidance)
Human Environment	BUSINESS IMPACTS											
	Total number of businesses property impacts (no. parcels)	35	25	37	22	107	107	107	109	109	21	21
	- No. property impacts due to roadway impacts	26	18	5	6	98	98	98	100	100	15	15
	- No. property impacts due to pond impacts	9	7	32	16	9	9	9	9	9	6	6
	Number of potential business relocations (units)	2	1	22	9	28	28	28	30	30	13	13
	- Number of relocations due to roadway impacts	2	1	2	2	27	27	27	29	29	9	9
	- Number of relocations due to pond impacts	0	0	20	7	1	1	1	1	1	4	4
	Number of displaced employees	173	28	263	105	458	458	458	458	458	320	188
	RESIDENTIAL IMPACTS											
	Total number of residential property impacts (no. parcels)	3	2	25	22	26	28	28	27	27	0	0
	- No. property impacts due to roadway impacts	2	1	11	9	24	26	26	25	25	0	0
	- No. property impacts due to pond impacts	1	1	14	13	2	2	2	2	2	0	0
	Total number of potential residential relocations (units)	1	1	29	21	86	95	103	113	113	0	0
	- Number of relocations due to roadway impacts	0	0	6	6	83	92	100	110	110	0	0
	- Number of relocations due to pond impacts	1	1	23	15	3	3	3	3	3	0	0
	COMMUNITY FACILITIES IMPACTS											
	Total number of facilities with impacts	3	1	3	3	4	4	4	4	4	2	1
	- Number of property impacts due to roadway impacts	3	1	1	1	4	4	4	4	4	2	1
	- Number of property impacts due to pond impacts	0	0	2	2	0	0	0	0	0	0	0
	Total number of relocations	1	0	3	3	3	3	3	3	3	1	0
	- Number relocations due to roadway impacts	1	0	1	1	3	3	3	3	3	1	0
	- Number relocations due to pond impacts	0	0	2	2	0	0	0	0	0	0	0
	NOISE IMPACTS WITHIN 65 dBA CONTOUR (DESIGN YEAR 2020)											
	Total number of noise sensitive sites	4572	4572	381	381	1245	1245	1245	1245	1245	319	319
	Number of noise sensitive sites (residences) impacted ¹	409	409	253	253	660	689	689	584	584	2	2
	CULTURAL & HISTORIC IMPACTS											
	Number of historic resources	0	0	0	0	15	15	15	15	15	2	2
	Number of historic resources potentially affected	0	0	0	0	8	8	7	8	7	2	2
	- Number of Direct Use Impacts	0	0	0	0	3	5	4	5	4	1	0
	- Number of resources with Adverse Affects	0	0	0	0	0	2	2	2	2	1	0
	Number of archaeological sites	0	0	0	0	0	0	0	0	0	0	0
	Archaeological site potential (low, medium, high)	low	low	low	low	low	low	low	low	low	low	low
	Number of parks and recreational areas impacted	0	0	0	0	0	0	0	0	0	0	0
	RIGHT-OF-WAY IMPACTS											
	Total number of impacted parcels	38	27	62	44	133	135	135	136	136	21	21
	- Number of roadway impacts	28	19	16	15	122	124	124	125	125	15	15
	- Number of pond impacts	10	8	46	29	11	11	11	11	11	6	6
	- Number of full acquisitions	6	8	48	28	54	54	54	54	54	8	6
	- Number of partial acquisitions	32	21	14	16	79	81	81	82	82	15	15
	Area of impacted ROW in acres	40.66	16.48	28.42	21.31	25.94	26.29	26.12	28.32	27.72	3.52	3.59
	- Area of roadway impacts (acres)	11.35	3.71	7.50	7.50	22.31	22.66	22.49	24.69	24.69	1.13	1.19
	- Area of pond impacts (acres)	29.31	12.77	20.92	13.81	3.63	3.63	3.63	3.63	3.63	2.39	2.39
	LIMITED ACCESS (LA) IMPACTS											
	Total number of parcels with LA severance damages	0	0	17	21	0	0	0	0	0	5	5
	Total number of parcels with LA relocation	0	0	1	1	0	0	0	0	0	0	0
NATURAL ENVIRONMENT & PHYSICAL IMPACTS												
Number of wetland systems	57	57	5	5	6	6	6	6	6	4	4	
Area of impacted wetlands in acres	57.54	57.54	6.71	6.71	3.31	3.31	3.31	3.31	3.31	8.95	8.95	
- Area of roadway impacted wetlands (acres)	38.23	38.23	6.71	6.71	1.28	1.13	1.13	1.13	1.13	8.44	8.44	
- Area of pond impacted wetlands (acres)	19.31	19.31	0.00	0.00	2.05	2.18	2.18	2.18	2.18	0.51	0.51	
Threatened & endangered species potential (low, medium, high)	low	low	low	low	low	low	low	low	low	low	low	
Base floodplain encroachment - acre-ft	40.01	40.01	minimal	minimal	minimal	minimal	minimal	minimal	minimal	minimal	minimal	
Number of impacted contamination sites	0	0	1	0	21	21	21	21	21	2	2	
Project Costs												
PROJECT COSTS (IN 2000 \$)												
Preliminary construction costs (in 2000 \$)	\$281,247,855	\$187,885,211	\$97,677,747	\$101,991,390	\$270,349,590	\$318,255,631	\$313,387,344	\$297,580,858	\$293,042,268	\$34,860,289	\$34,849,928	
Right-of-way (in 2000 \$)	\$48,934,000	\$21,210,000	\$39,178,000	\$31,121,000	\$85,608,899	\$86,023,000	\$87,542,000	\$95,773,300	\$100,114,000	\$22,451,000	\$18,631,000	
Subtotal Construction + ROW Costs (in 2000 \$)	\$330,181,855	\$209,095,211	\$136,855,747	\$133,112,390	\$355,958,489	\$404,278,631	\$400,929,344	\$396,354,158	\$393,156,268	\$57,311,289	\$53,480,928	
Engineering, Legal, Admin, CEI, Post Design (27% of Preliminary Construction Cost)	\$75,936,921	\$50,729,007	\$26,372,992	\$27,537,675	\$72,994,389	\$85,929,020	\$84,614,883	\$80,346,832	\$79,121,412	\$9,412,278	\$9,409,481	
TOTAL PROJECT COSTS (in 2000 \$)	\$406,118,776	\$259,824,218	\$163,228,739	\$160,650,065	\$428,950,878	\$490,270,651	\$485,543,927	\$476,700,990	\$472,277,678	\$66,723,567	\$62,890,409	

**Table 2-7. Estimated Impact Evaluation for DEIS Ultimate Build Alternatives: I-4 PD&E Study - Section 2 (Continued)
Based on June 16, 2000 Preliminary Engineering Plan Set**

1 Categories	Evaluation Criteria	SEGMENT 3				SEGMENTS 4 & 5				SEGMENT 6		TOTAL	
		Typical Section C Ponds	Typical Section F' Ponds	Typical Section C Exfiltration	Typical Section F' Exfiltration	Typical Section C & SR 434 Alternative 1	Typical Section F' & SR 434 Alternative 1	Typical Section C & SR 434 Alternative 2	Typical Section F' & SR 434 Alternative 2	Tie to Ultimate North SR 472	Tie to Existing North SR 472	LOW	HIGH
Human Environment	BUSINESS IMPACTS												
	Total number of businesses property impacts (no. parcels)	47	74	33	59	115	113	122	120	51	51	372	449
	- No. property impacts due to roadway impacts	34	54	33	59	99	97	106	104	35	35	302	341
	- No. property impacts due to pond impacts	13	20	0	0	16	16	16	16	16	16	70	108
	Number of potential business relocations (units)	8	11	8	8	7	7	11	11	10	10	76	99
	- Number of relocations due to roadway impacts	8	8	8	8	7	7	11	11	10	10	64	71
	- Number of relocations due to pond impacts	0	3	0	0	0	0	0	0	0	0	12	28
	Number of displaced employees	30	63	30	33	203	203	604	604	191	191	1335	1940
	RESIDENTIAL IMPACTS												
	Total number of residential property impacts (no. parcels)	127	144	66	70	21	21	21	21	2	2	139	222
	- No. property impacts due to roadway impacts	60	61	66	70	16	16	16	16	2	2	118	117
	- No. property impacts due to pond impacts	67	83	0	0	5	5	5	5	0	0	21	105
	Total number of potential residential relocations (units)	139	177	60	81	196	196	196	196	0	0	364	516
	- Number of relocations due to roadway impacts	60	80	60	81	4	4	4	4	0	0	153	200
	- Number of relocations due to pond impacts	79	97	0	0	192	192	192	192	0	0	211	316
	COMMUNITY FACILITIES IMPACTS												
	Total number of facilities with impacts	7	5	7	4	9	8	9	8	1	1	26	26
	- Number of property impacts due to roadway impacts	6	4	7	4	9	8	9	8	1	1	24	23
	- Number of property impacts due to pond impacts	1	1	0	0	0	0	0	0	0	0	2	3
	Total number of relocations	3	4	3	3	0	0	0	0	1	1	11	12
	- Number relocations due to roadway impacts	3	3	3	3	0	0	0	0	1	1	9	9
	- Number relocations due to pond impacts	0	1	0	0	0	0	0	0	0	0	2	3
	NOISE IMPACTS WITHIN 65 dBA CONTOUR (DESIGN YEAR 2020)												
	Total number of noise sensitive sites	1199	1199	1199	1199	2253	2253	2253	2253	763	763	10732	10732
	Number of noise sensitive sites (residences) impacted	409	409	427	427	1323	1323	1323	1323	329	329	3403	3309
	CULTURAL & HISTORIC IMPACTS												
	Number of historic resources	2	2	2	2	1	1	1	1	0	0	20	20
	Number of historic resources potentially affected	1	1	1	1	1	1	1	1	0	0	11	12
	- Number of Direct Use impacts	1	1	1	1	0	0	0	0	0	0	5	6
	- Number of resources with Adverse Affects	1	1	1	1	0	0	0	0	0	0	2	3
	Number of archaeological sites	0	0	0	0	0	0	0	0	0	0	0	0
	Archaeological site potential (low, medium, high)	low	low	low	low	low	low	low	low	low	low	low	low
	Number of parks and recreational areas impacted	0	1	0	1	0	0	0	0	0	0	0	1
	RIGHT-OF-WAY IMPACTS												
	Total number of impacted parcels	174	218	99	129	136	134	143	141	53	53	511	671
	- Number of roadway impacts	94	115	99	129	115	113	122	120	37	37	420	458
	- Number of pond impacts	80	103	0	0	21	21	21	21	16	16	91	213
	- Number of full acquisitions	117	129	20	11	15	15	17	17	14	14	143	274
	- Number of partial acquisitions	57	89	79	118	121	119	126	124	39	39	368	397
	Area of impacted ROW in acres	29.84	31.90	10.34	7.52	66.72	66.85	72.78	72.91	60.65	60.65	205.09	266.32
	- Area of roadway impacts (acres)	10.33	7.54	10.34	7.52	29.59	29.71	35.38	35.50	28.62	28.62	103.32	116.27
	- Area of pond impacts (acres)	19.51	24.36	0.00	0.00	37.13	37.14	37.40	37.41	32.03	32.03	101.77	150.04
	LIMITED ACCESS (LA) IMPACTS												
Total number of parcels with LA severance damages	22	22	22	22	12	12	15	15	19	19	79	78	
Total number of parcels with LA relocation	4	4	4	4	4	4	5	5	0	0	9	10	
NATURAL ENVIRONMENT & PHYSICAL IMPACTS													
Number of wetland systems	0	0	0	0	42	42	42	42	29	29	143	143	
Area of impacted wetlands in acres	0.00	0.00	0.00	0.00	29.80	29.80	29.80	29.80	25.05	25.05	131.36	131.36	
- Area of roadway impacted wetlands (acres)	0.00	0.00	0.00	0.00	20.61	20.61	20.61	20.61	24.82	24.82	100.07	99.94	
- Area of pond impacted wetlands (acres)	0.00	0.00	0.00	0.00	9.19	9.19	9.19	9.19	0.23	0.23	31.29	31.42	
Threatened & endangered species potential (low, medium, high)	low	low	low	low	low	low	low	low	medium	medium	low	medium	
Base floodplain encroachment - acre-ft	minimal	minimal	minimal	minimal	6.29	6.29	6.29	6.29	292.02	292.02	338.32	338.32	
Number of impacted contamination sites	0	2	0	2	3	3	4	4	0	0	26	30	
Project Costs													
PROJECT COSTS (IN 2000 \$)													
Preliminary construction costs (in 2000 \$)	\$160,758.7	\$144,383,882	\$172,384,532	\$155,144,176	\$369,649,488	\$367,923,104	\$370,953,631	\$369,227,446	\$210,281,895	\$213,232,963	\$1,328,425,296	\$1,476,987,020	
Right-of-way (in 2000 \$)	\$56,871.0	\$61,142,000	\$34,240,000	\$32,321,000	\$132,351,000	\$133,753,000	\$158,669,000	\$160,071,000	\$38,707,000	\$38,707,000	\$361,349,999	\$450,833,000	
Subtotal Construction + ROW Costs (in 2000 \$)	\$217,629.7	\$205,525,882	\$206,624,532	\$187,465,176	\$502,000,488	\$501,676,104	\$529,622,631	\$529,298,446	\$248,988,895	\$251,939,963	\$1,689,775,295	\$1,927,820,020	
Engineering, Legal, Admin, CEI, Post Design (27% of Preliminary Construction Cost)	\$43,404.8	\$38,983,648	\$46,543,824	\$41,888,928	\$99,805,362	\$99,339,238	\$100,157,534	\$99,691,410	\$56,776,112	\$57,572,900	\$358,674,829	\$398,786,495	
TOTAL PROJECT COSTS (in 2000 \$)	\$261,034.5	\$244,509,530	\$253,168,356	\$229,354,104	\$601,805,850	\$601,015,342	\$629,780,165	\$628,989,856	\$305,765,007	\$309,512,863	\$2,048,450,125	\$2,326,606,515	

Note:
For Human and Natural Environment Impacts:
LOW PROJECT TOTAL = EXISTING BEE LINE+KM EXFIL+SR 408 ALT 4+SR 50 ALT 1+C-EXFIL+ SR 434 ALT 1+EXISTING SR 472
HIGH PROJECT TOTAL = ULTIMATE BEE LINE+KM POND+SR 408 ALT 2B1+SR 50 ALT 2+F-POND+ SR 434 ALT 2+ULTIMATE SR 472
1 Alternative 4 impacts more noise sensitive sites than Alternative 2B1.
For Project Costs:
LOW PROJECT TOTAL = EXISTING BEE LINE+KM EXFIL+SR 408 ALT 4+SR 50 ALT 2+F-EXFIL+F SR 434 ALT 1+ULTIMATE SR 472
HIGH PROJECT TOTAL = ULTIMATE BEE LINE+KM POND+SR 408 ALT 1A1+SR 50 ALT 1+C-POND+C SR 434 ALT 2+EXISTING SR 472

2-89

I-4 PD&E Study - Section 2
Final Environmental Impact Statement
August 2002

To address increased capacity constraints along I-4, FDOT will advance interim projects prior to the construction of the Ultimate improvements. These interim improvements will include six laning I-4 from US 17-92 to SR 472 in Volusia County (as presented in the *I-4 Six Laning and St Johns River Bridge Environmental Assessment* (May 2000)), I-4 auxiliary lanes as discussed in Section 1.4, and interim improvements to the I-4/SR 408 (East/West Expressway) interchange.

Interim improvements to the I-4/SR 408 (East/West Expressway) interchange will consist of a new direct access ramp from westbound SR 408 (East/West Expressway) to eastbound I-4 and a new loop ramp from eastbound SR 408 (East/West Expressway) to eastbound I-4. The alternative will keep the existing westbound SR 408 (East/West Expressway) to westbound I-4 ramp and the existing eastbound SR 408 (East/West Expressway) to westbound I-4 ramp. In addition, the eastbound and westbound I-4 ramps to eastbound and westbound SR 408 (East/West Expressway) will remain the same.

The interim I-4/SR 408 (East/West Expressway) interchange proposes to relocate Anderson Street and provide access to and from downtown Orlando from the west via ramps from Hughey Avenue and to Garland Avenue, and to and from the east at Anderson Street. Additional access is provided at South Street, Amelia Street, SR 50 (Colonial Drive), and Ivanhoe Boulevard. The I-4 ramps at Gore Street and Robinson Street will be eliminated with this alternative. The westbound SR 408 (East/West Expressway) on-ramp at Orange Avenue will remain. Figure 2-32 presents an illustration of the proposed interim I-4/SR 408 (East/West Expressway) interchange alternative. Information on the impacts and costs associated with the interim I-4/SR 408 (East/West Expressway) interchange is presented in Table 2-8.

Table 2-8. Estimate Impact Evaluation for Interim I-4/SR 408 (East/West Expressway) Interchange Improvements

Acreage	
Roadway	11.7
Pond	3.6
Total	15.3
Business Impacts	
Total number of businesses property impacts (no. parcels)	53
- Number of property impacts due to roadway impacts	44
- Number of property impacts due to pond impacts	9
Number of potential business relocations (units)	16
- Number of relocations due to roadway impacts	14
- Number of relocations due to pond impacts	2
Number of displaced employees	217
Residential Impacts	
Total number of residential property impacts (no. parcels)	9
- Number of property impacts due to roadway impacts	7
- Number of property impacts due to pond impacts	2
Total number of potential residential relocations (units)	9
- Number of relocations due to roadway impacts	7
- Number of relocations due to pond impacts	2
Community Facilities Impacts	
Total number of facilities with impacts	3
- Number of property impacts due to roadway impacts	2
- Number of property impacts due to pond impacts	1
Total number of relocations	2
- Number of relocations due to roadway impacts	1
- Number of relocations due to pond impacts	1
Project Costs (In 2000 \$ Millions)	
- Preliminary Construction Costs (in 2,000 \$ Millions)	\$68.59
- Right-of-Way (in 2,000 \$ Millions)	\$41.45
Subtotal Construction & ROW (in 2,000 \$ Millions)	\$110.04
Engineering, Legal, Administration, CEI, Post Design (27% of Preliminary Construction Cost) (in 2,000 \$ Millions)	\$18.52
Total Project Costs (in 2000 \$ Millions)	\$128.56

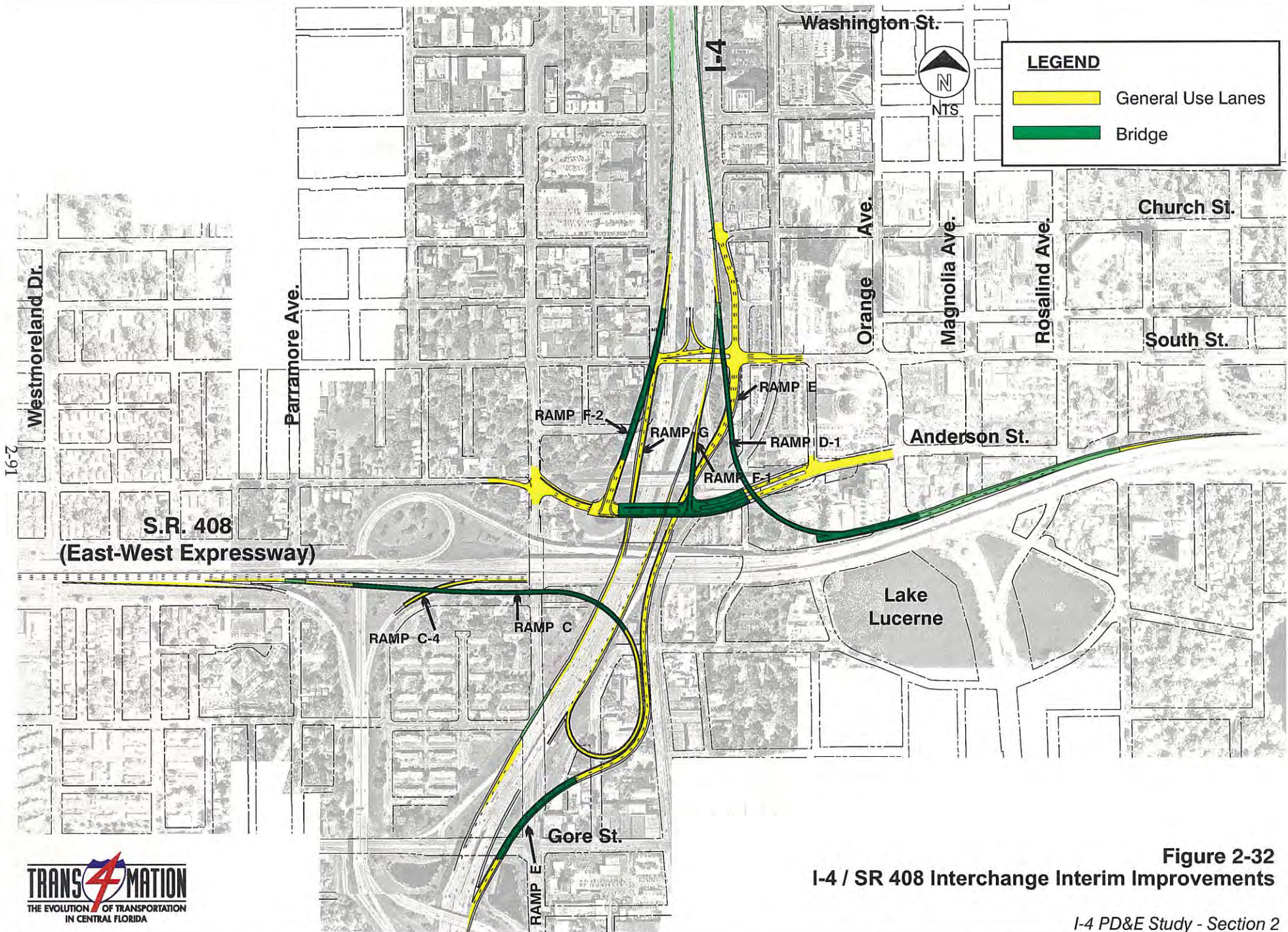


Figure 2-32
I-4 / SR 408 Interchange Interim Improvements

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2.8 Proposed Concept Changes from the DEIS

The DEIS was distributed in May 2001 for public and agency comments and questions. A Public Hearing was conducted in June 2001 with a comment period extending through August 1, 2001. Based on comments received as a part of the DEIS, six major concept refinements are recommended for the proposed improvements. In addition, modifications are recommended to be consistent with the I-4/John Young Parkway interchange and the I-4/SR 408 Interim interchange design concepts. The following discussions provide descriptions of and the rationale for the proposed concept changes.

2.8.1 Add Gore Street Westbound Entrance Ramp

The City of Orlando and community input from the Holden/Parramore neighborhoods indicated that the existing I-4 access at Gore Street is an important feature for the businesses and residents in the area. Based on this input, FDOT examined the opportunity for maintaining both the existing movements at this location (westbound I-4 exit ramp and westbound I-4 entrance ramp). This portion of I-4 through downtown Orlando has several access points. Coupled with the proposed reconstruction of the I-4/SR 408 (East/West Expressway) interchange, ramp spacing and traffic operations are most critical.

The examination of the westbound I-4 exit ramp to Gore Street revealed that weave conflicts with the westbound Hughey Avenue entrance ramp are extremely restrictive. Major adjustments in this vicinity to accommodate the existing movement do not appear to be viable from a traffic operations standpoint.

However, in the evaluation of the Gore Street entrance ramp to westbound I-4, it was determined that this movement could be provided with a ramp that ties to the I-4 entrance ramp from SR 408 (East/West Expressway) with minimal added impact. Furthermore, such an adjustment could be provided in conjunction with the opening of Avondale Avenue at Gore Street supporting development efforts in this area. As a result, impacts to the interstate traffic flow were assessed and documented in the *SAMR Update* (May 2002).

Consequently, in light of concerns from the City of Orlando and the community residents in this area, a Gore Street entrance ramp to westbound I-4 was added as a part of the Preferred Alternative.

2.8.2 Maintain the Existing Eastbound SR 408 Exit Ramp to Mills Avenue

Comments received from the Lake Cherokee neighborhood requested consideration of maintaining the existing eastbound SR 408 (East/West Expressway) off-ramp to Mills Avenue. Initial concerns of weaving operations between the Anderson Street entrance ramp to eastbound SR 408 (East/West Expressway) and the eastbound SR 408 (East/West Expressway) exit ramp to Mills Avenue resulted in the proposal to eliminate the exit ramp to Mills Avenue. However, with the revisions to the grades for the Orange Avenue off-ramp and the I-4 on-ramp, the gore areas moved and the weaving distance increased through coordination with OOCEA, this ramp is maintained.

Therefore, given the community concern and the determination of minimal traffic operation impacts, the SR 408 (East/West Expressway) eastbound exit ramp to Mills Avenue will be maintained as part of the Preferred Alternative.

2.8.3 Revise Hughey Avenue and Garland Avenue to Three-Lane Facilities

FDOT and the City of Orlando have undertaken a more in-depth assessment of the local street operations in downtown Orlando with the proposed I-4 access changes. As a result of this assessment, it was determined that providing a four-lane Hughey Avenue and Garland Avenue for Alternatives 1A2 and 2B2 did not appreciably assist traffic operations.

Therefore, the Preferred Alternative concepts reflect a three-lane facility for Hughey Avenue and Garland Avenue.

2.8.4 Provide Channelization for Intersection Pinehurst Avenue/Par Street/Eastbound I-4 Exit Ramp

The City of Orlando, the Calvary Assembly of God, area residents and businesses expressed significant concerns regarding the potential closing of Pinehurst Avenue at Par Street. The basis of the concern is that loss of this access will create a traffic impact within several adjacent neighborhoods and also greatly impact the church and local businesses. The primary concern of maintaining this access is the potential for a wrong way maneuver onto the I-4 exit ramp. FDOT examined the specific situation and identified the potential for channelization islands that would reduce the potential for the wrong way movement.

Therefore, given this concern over closing the Pinehurst Avenue connection to Par Street, the Preferred Alternative will provide a channelization concept that will allow access while reducing the potential for a wrong way movement onto the eastbound I-4 exit ramp.

2.8.5 Widen Padgett Creek Bridge

The US Army Corps of Engineers (USACE) raised concerns about wildlife being able to pass under the Padgett Creek bridge in Volusia County. To alleviate the USACE concerns, the Padgett Creek bridge has been lengthened an additional 20 feet to enable wildlife to cross under the bridge.

2.8.6 Add Dual Left Turn Lanes at the SR 472 Interchange

Volusia County raised concerns regarding the long-term operations at the I-4 interchange at SR 472. Based on assessment of the traffic operations, it was determined that the development of two left turn lanes for the westbound SR 472 to the westbound I-4 entrance ramp is beneficial.

Consequently, based on comments from Volusia County, dual left-turn lanes for the referenced movement will be provided.

2.8.7 I-4/John Young Parkway Interchange

FDOT is preparing final design plans for the I-4/John Young Parkway interchange. Modifications to the proposed concepts as part of the Preferred Alternative will be required to be consistent with the interchange design.

The updated preliminary engineering concepts submitted as part of the FEIS will include the latest proposed modifications to the I-4/John Young Parkway interchange.

2.8.8 I-4/SR 408 (East/West Expressway) Interim Interchange

Due to the I-4/SR 408 (East/West Expressway) Interim interchange advanced preliminary engineering, modifications to the proposed concepts as part of the Preferred Alternative will be required to be consistent with the proposed interim interchange design.

The updated preliminary engineering concepts submitted as part of the FEIS will include the latest proposed modifications to the I-4/SR 408 (East/West Expressway) Interim interchange.

2.9 Preferred Alternative

This section of Chapter 2 provides the rationale for the selection of the Preferred Alternative, a description of the Preferred Alternative, and the impacts associated with the Preferred Alternative.

As indicated in Chapter 1, at the initiation of the I-4 PD&E Study - Section 2, the LRTPs for METROPLAN ORLANDO and the Volusia County MPO included the proposed improvements to I-4. However, the Year 2020 LRTP Update performed by METROPLAN ORLANDO and the Volusia County MPO identified additional financial constraints, which dictated that the Ultimate improvements for I-4 not be included in the cost feasible plan for 2020. Therefore, METROPLAN ORLANDO reduced the limits of the Ultimate improvements on I-4 to include the segment extending from Kirkman Road to Maitland Boulevard in Orange County (identified as the Preferred Alternative).

2.9.1 Rationale for Selection of the Preferred Alternative

The basic improvements for the Preferred Alternative involve reconstruction of existing I-4 and implementation of the following:

- Six general use lanes, three in each direction
- Two HOV lanes, one in each direction
- Auxiliary lanes between interchanges as needed for traffic operations
- Reconstruction of arterial interchanges along I-4 including:
 - Kirkman Road
 - Orange Blossom Trail (US 441)
 - Michigan Street
 - Kaley Street
 - Anderson Street
 - South Street
 - Robinson Street (SR 526)
 - Amelia Street
 - SR 50 (Colonial Drive)
 - Ivanhoe Boulevard
 - Princeton Street (SR 438)
 - Par Street
 - Fairbanks Avenue (SR 426)
 - Lee Road (SR 423)
 - Maitland Boulevard (SR 414)
- Construction of drainage and retention pond facilities
- Mitigation components identified to ameliorate significant impacts

As part of the DEIS, viable Ultimate Build Alternatives were proposed within the Preferred Alternative limits. These viable Ultimate Build Alternatives included:

- Kaley-Michigan Stormwater Treatment Alternatives
- I-4/SR 408 Interchange and Downtown Access Alternatives
- I-4/SR 50 (Colonial Drive) Alternatives
- College Park Typical Section and Stormwater Treatment Alternatives

The following discussions provide a recommendation along with the rationale for the recommendations related to the Preferred Alternative for each of the above locations.

2.9.1.1 Kaley-Michigan Stormwater Treatment Alternatives

Two alternatives were carried in the DEIS for this portion of the I-4 corridor:

- Kaley-Michigan Pond
- Kaley-Michigan Exfiltration

The assessment of these alternatives indicated that the Kaley-Michigan Pond Alternative impacted more businesses (22 versus 9), more residential dwelling units (29 versus 21), more total parcels impacted (62 versus 44), and higher project costs than the Kaley-Michigan Exfiltration Alternative.

Given the lower impacts and costs for the Kaley-Michigan Exfiltration Alternative, this alternative will be included as part of the Preferred Alternative.

2.9.1.2 I-4/SR 408 Interchange Alternatives

Five alternatives were carried in the DEIS for this interchange area:

- Alternative 1A1 – Ramp Tunnel with Amelia Street Access
- Alternative 1A2 – Ramp Tunnel without Amelia Street Access
- Alternative 2B1 – Ramp Flyover with Amelia Street Access
- Alternative 2B2 – Ramp Flyover without Amelia Street Access
- Alternative 4 – Griffin Park Avoidance Alternative

In general, Alternative 4 had the least impacts and Alternatives 2B1 and 2B2 had slightly greater impacts of the five alternatives evaluated. The primary impacts associated with the alternatives were related to historic resources, most notably the Griffin Park Historic District.

As indicated in Section 2.5.2.2, an extensive coordination effort was undertaken to identify potential solutions to the transportation needs in the downtown Orlando area. A technical group of primary stakeholders was assembled to assist in the development and assessment of alternatives for the I-4/SR 408 (East/West Expressway) interchange. Participating parties included representatives from FDOT, City of Orlando, Orange County, Orlando-Orange County Expressway Authority, Orlando Housing Authority, Downtown Development Board, and Orlando Community Redevelopment Agency. Through these efforts, Alternatives 1A1, 1A2, 2B1, and 2B2 were developed.

In addition, significant community outreach was undertaken as a part of the alternatives development. As the technical group defined concepts and alternatives, coordination with neighborhoods, community agencies, and historic interests was accomplished, which resulted in further refinements of the alternatives. In general, the conclusions of the stakeholders group indicated the following:

- Alternative 4, although avoiding direct use impacts to Griffin Park area, was not consistent or acceptable to the City of Orlando due to sustaining impacts to access and economic opportunity in this area of downtown. Furthermore, Alternative 4 was not consistent and did not support redevelopment plans of the City and the Orlando Housing Authority.
- Alternatives 1A1 and 1A2 involved the use of a short tunnel for one of the ramp movements. The Orlando-Orange County Expressway Authority did not support Alternatives 1A1 and 1A2 due to maintenance and operation concerns. These alternatives are also more costly than the Flyover Alternatives (Alternatives 2B1 and 2B2), given the construction requirements of the tunnel.
- The City of Orlando indicated a strong support for alternatives that include the I-4 access ramps at Amelia Street. Based on traffic circulation assessments, the City indicated that this access is essential for downtown traffic circulation.
- Furthermore, through deliberations after circulation of the DEIS, the City of Orlando and the Orlando Housing Authority have indicated their specific preference for the Flyover Alternatives, and most specifically with the City, Alternative 2B1.

Given the wide range of support for the Flyover Alternatives, the importance of the Amelia Street access, and the land use incompatibility of Alternative 4; Alternative 2B1 will be included as part of the Preferred Alternative.

2.9.1.3 I-4/SR 50 (Colonial Drive) Alternatives

Two alternatives were carried in the DEIS for the SR 50 improvements:

- Alternative 1 – Judge Cheney Avoidance, improve SR 50 to south
- Alternative 2 – Colonial Garage Avoidance, improve SR 50 to the north

Alternative 1 had higher impacts as compared to Alternative 2. Most notably, Alternative 1 resulted in an adverse effect to the Colonial Garage (eligible for listing on the NRHP) and the alternative

impacted two buildings within the Salvation Army campus west of I-4. Alternative 2 impacted several businesses and required right-of-way near the NRHP-eligible Judge Cheney house. However, coordination with the State Historic Preservation Office (SHPO) indicated that Alternative 2 did not involve adverse effects to this resource. The City of Orlando indicated support for Alternative 2.

Given the lower impacts with Alternative 2 and the local government support for Alternative 2, this alternative will be included as a part of the Preferred Alternative.

2.9.1.4 College Park Typical Section and Stormwater Treatment Alternatives

Four alternatives were carried in the DEIS for the College Park area improvements:

- Typical Section C Ponds
- Typical Section C Exfiltration
- Typical Section F' Ponds
- Typical Section F' Exfiltration

The Typical Section F' alternatives involved maintaining the existing centerline alignment of I-4, which in turn created impacts to Matthews Park, which is owned by the City of Orlando. The Typical Section F' alternatives also required more new right-of-way, impacted more parcels, relocated more businesses, and relocated more residential dwellings than the respective Typical Section C alternatives. In contrast, the Typical Section F' alternatives were less costly than the Typical Section C alternatives.

The impact comparisons of the Pond alternatives versus the Exfiltration alternatives indicated that the Pond alternatives have more impacts. Most notably, the Pond alternatives involved 79 to 97 more residential dwelling unit relocations than the Exfiltration alternatives. In addition, the Exfiltration alternatives were less costly.

Given the Section 4(f) impacts at Matthews Park associated with the Typical Section F' alternatives, these alternatives will be eliminated as part of the Preferred Alternative. In consideration of the lower cost and fewer impacts of the Exfiltration alternatives, the Typical Section C Exfiltration Alternative will be included as part of the Preferred Alternative.

2.9.2 Description of Preferred Alternative

The preliminary concept plans, submitted as part of the *Preliminary Engineering Report* (June 2002), illustrate the proposed alternatives that are being carried forward as part of the FEIS. The preliminary concept plans include proposed alternatives for the entire 43-mile project corridor. However, this section only provides a description of the proposed improvements within the limits of the Preferred Alternative. For a description of the proposed improvements outside the limits of the Preferred Alternative, refer to Section 2.6.

The preliminary concept plans for the Preferred Alternative are composed of three main components, which consist of the I-4 mainline improvements (both GUL and HOV lanes), interchanges for the GUL system, and interchanges for the HOV system. In addition, the proposed improvements to the I-4/SR 408 (East/West Expressway) interchange will impact the SR 408 (East/West Expressway) mainline.

Typical section C is being proposed for the entire length of the Preferred Alternative. Typical section C provides three GULs in each direction, one barrier-separated 34-foot HOV facility in each direction, and a 44-foot rail corridor in portions of the Preferred Alternative project corridor. To satisfy operational requirements such as lane balance, additional auxiliary lanes are also proposed. Figure 2-18 presents typical section C with and without a rail envelope. In addition, the existing I-4 typical section is presented on the figure.

The GULs will serve all vehicle components of the traffic mix while the HOV lanes will be dedicated for multiple occupant vehicles. It is the intent to open the facility to vehicles with two or more occupants (HOV2+). If the demand in the HOV system results in operations less than LOS D, then the occupancy requirements will be increased to three or more persons (HOV3+). As stated in the approved *SAMR* (April 2000) and *SAMR Update* (May 2002), FDOT is committed to maintaining LOS D or better traffic operations in the HOV system. This will be accomplished by continuous monitoring of the system and making appropriate adjustments to the access and/or user groups in the facility. The concept for the HOV system incorporates a flexibility to accommodate future enhancements for ITS and other strategies. In addition, an Origin-Destination Study will be conducted during the design phase of the project to verify HOV access locations.

An HOV corridor is proposed for the entire length of the Preferred Alternative. Seven access points to and from the HOV system are proposed – three direct connections to intersecting surface streets and four slip ramp locations for GUL access. The locations of the HOV interchanges are provided in Figure 1-6.

The proposed Preferred Alternative is described by segment in the following sections and summarized in Table 2-9.

2.9.2.1 Segment 1 (Kirkman Road to John Young Parkway)

The limits of the Preferred Alternative begin within the Segment 1 limits. Refer to Figure 1-4 for the location of the Preferred Alternative limits in relation to the project segment limits.

Typical section C with ponds will extend from Kirkman Road to the end of the Segment 1 limits (just south of John Young Parkway). Three GULs, one HOV lane, and one auxiliary lane in each direction will be provided. The proposed Preferred Alternative improvements will tie into the existing conditions at the Universal Boulevard interchange.

The 44-foot rail corridor will be provided east of the Kirkman Road interchange to the end of the Segment 1 limits. Retention ponds will provide treatment for stormwater runoff.

Kirkman Road to Florida's Turnpike

The Kirkman Road interchange will be completely reconstructed as part of this project. The proposed interchange is a partial access four-level directional interchange with a loop ramp for southbound Kirkman Road to eastbound I-4 traffic. There will be no access to westbound I-4 from northbound Kirkman Road. Southbound Kirkman Road to westbound I-4 traffic will be routed onto a collector/distributor ramp, which merges into I-4 just east of Sand Lake Road. Direct HOV access ramps to and from the east will also be provided with the proposed interchange concept.

In the eastbound direction, one auxiliary lane will be provided from the southbound Kirkman Road on-ramp to the Florida's Turnpike off-ramp. In the westbound direction, one auxiliary lane will be provided to the Kirkman Road off-ramp from the Florida's Turnpike on-ramp.

HOV slip ramps will be provided south of the Kirkman Road interchange. The eastbound slip ramp signifies the start of the HOV system for the Preferred Alternative and will provide access to the HOV lane from the GULs. The westbound slip ramp signifies the end of the HOV system for the Preferred Alternative and will provide access to the GULs from the HOV lane. The slip ramps will be removed once the Ultimate improvements south of the Preferred Alternative are constructed.

Florida's Turnpike to Conroy Road

All ramp movements for the Florida's Turnpike interchange will remain as they are in the existing double trumpet configuration. However, to accommodate the wider typical section on I-4, a new ramp bridge over I-4 will be constructed.

The eastbound auxiliary lane will extend from the Florida's Turnpike on-ramp to the Conroy Road off-ramp. In the westbound direction, the auxiliary lane will extend to the Florida's Turnpike off-ramp from the Conroy Road on-ramp.

Table 2-9. Summary of Preferred Alternative Proposed Improvements

	Typical Section		Transit Envelope		Auxiliary Lanes		HOV Interchanges		Drainage Alternatives		Type of Proposed Interchange
	C	F'	No	Yes	No	Yes	Direct Access	Slip Ramps	Ponds	Exfiltration	
Segment 1											
Kirkman Road to Florida's Turnpike	√			√		√	√	√	√		Kirkman Road – The proposed improvements replace existing interchange with a partial access 4-level directional interchange with one loop ramp (Kirkman SB to EB I-4). NB Kirkman to WB I-4 not provided. Full direct HOV access ramps.
Florida's Turnpike to Conroy Road	√			√		√			√		Florida's Turnpike – The existing interchange concept will remain the same.
Conroy Road to John Young Parkway	√			√		√		√	√		Conroy Road – The existing interchange concept will remain the same.
Segment 2											
John Young Parkway to Orange Blossom Trail	√			√		√			√		John Young Parkway – The previously approved improvements will modify the existing diamond interchange by adding a flyover ramp for WB I-4 exit to John Young Parkway.
Orange Blossom Trail to Michigan Street/Kaley Street	√		√			√		√	√		Orange Blossom Trail – The WB I-4 to SB OBT left-side exit will be modified to right-side exit; all other movements remain the same. WB I-4 to NB OBT movement ramp is not provided under either existing or proposed interchanges.
Michigan Street/Kaley Street to SR 408 (East/West Expressway)	√		√			√				√	Michigan Street/Kaley Street – Proposed improvements combine Michigan Street and Kaley Street into a full access, inverted diamond interchange. Two-lane, one-way frontage road connections between Kaley and Michigan with U-turns to provide full movements.
SR 408 (East/West Expressway) to SR 50 (Colonial Drive)	√		√			√	√		√	√	SR 408 (East/West Expressway) – Full access directional four-level interchange with loop ramp (EB SR 408 to EB I-4). Modifies access to and from the downtown core area. Alternative 2B1 recommended. Hughey Avenue/Garland Avenue – Proposed improvements provide direct access ramps from EB I-4 to Garland Avenue and from Hughey Avenue to WB I-4. Anderson Street – The existing interchange will be modified to a partial access diamond interchange for WB I-4 to Anderson Street and Anderson Street to EB I-4. Anderson will be relocated and revised to a two-way street from Orange Avenue to Division Avenue.

Table 2-9. Summary of Preferred Alternative Proposed Improvements (Continued)

Description	Typical Section		Transit Envelope		Auxiliary Lanes		HOV Interchanges		Drainage Alternatives		Type of Proposed Interchange
	C	F'	No	Yes	No	Yes	Direct Access	Slip Ramps	Ponds	Exfiltration	
SR 408 (East/West Expressway) to SR 50 (Colonial Drive) (continued)											South Street – Modified to a full access diamond interchange for HOV access only; will be revised to a two-way street from Orange Avenue to Division Avenue. Robinson Street – Existing interchange eliminated. Access relocated to Amelia Street and Hughey and Garland Avenues. Amelia Street – The existing interchange will be modified to a partial access diamond interchange (EB I-4 to Amelia Street and Amelia Street to WB I-4).
SR 408 (East/West Expressway) Mainline			√			√				√	Limit of improvement extends for approximately 1.5 miles on both sides of I-4 along East/West Expressway, impacting interchanges from Tampa Street to Bumby Avenue on SR 408.
SR 50 (Colonial Drive) to Ivanhoe Boulevard	√		√		√				√	√	SR 50 (Colonial Drive) – The existing interchange will be replaced with a full access single point diamond interchange. Alternative 2 recommended. Provides direct access to Hughey Avenue and Garland Avenue. Garland Avenue converted to one-way north of Colonial Drive.
Segment 3											
Ivanhoe Boulevard to Princeton Street	√		√			√	√		√	√	Ivanhoe Boulevard – The proposed improvements replace the existing interchange with a partial access directional interchange for WB I-4 to Ivanhoe Boulevard and Ivanhoe Boulevard to EB I-4. The WB I-4 on-ramp will be replaced with a frontage road to Colonial Drive. Proposed interchange includes HOV access ramps to and from the east
Princeton Street to Par Street	√		√			√				√	Princeton Street – The existing interchange concept will remain the same. Provide 2-lane EB and WB off-ramps.
Par Street to Fairbanks Avenue	√		√			√				√	Par Street – The existing interchange concept will remain the same.
Fairbanks Avenue to Lee Road	√		√			√				√	Fairbanks Avenue – The existing interchange concept will remain the same. Provide 2-lane EB and WB off-ramps.
Segment 4											
Lee Road to Maitland Boulevard	√		√			√		√	√	√	Lee Road – The existing interchange concept will remain the same. Provide 2-lane EB and WB off-ramps.
Maitland Boulevard to SR 436	√		√			√		√	√		Maitland Boulevard – The existing interchange will be replaced with loop ramps in northeast and southwest quadrants. Directional unsignalized left-turn ramps from Maitland Boulevard to WB and EB I-4. Existing EB I-4 dual exits revised to single point exit.

Conroy Road to John Young Parkway

The Conroy Road interchange has two levels and is a full access diamond with a loop ramp serving eastbound Conroy Road to eastbound I-4 traffic. No improvements are required for this interchange, with the exception of minor ramp modifications at the access points with I-4.

In the eastbound direction, the auxiliary lane will start at the southbound Conroy Road on-ramp and continue through the end of the Segment 1 limits. In the westbound direction, the auxiliary lane will extend to the Conroy Road off-ramp from the Segment 1 limits. Full directional HOV slip ramps will be provided in this portion of the project corridor.

Full directional HOV slip ramps will be provided at the Conroy Road interchange.

2.9.2.2 Segment 2 (John Young Parkway to Ivanhoe Boulevard)

Typical section C is being carried forward throughout Segment 2. The 44-foot rail corridor will be provided from the start of the Segment 2 limits to approximately 2,600 feet south of Rio Grande Avenue. The rail envelope will then be closed through the remaining portion of Segment 2.

The following paragraphs describe the Preferred Alternative for Segment 2.

John Young Parkway to Orange Blossom Trail

The three GULs, one HOV lane, and one auxiliary lane in each direction will be carried forward from Segment 1 into Segment 2 to approximately 1,700 feet west of the John Young Parkway interchange for the westbound GULs and approximately 2,400 feet for the eastbound GULs. At this point, the GULs and auxiliary lanes will be reconstructed as part of the I-4/John Young Parkway Interchange project. The bridges and embankment for the HOV lanes will also be constructed as part of the I-4/John Young Parkway Interchange project. However, the pavement for the HOV lanes are included as part of the Preferred Alternative.

The GULs, HOV lanes, and auxiliary lanes will continue approximately 3,100 feet east of the John Young Parkway interchange to the Orange Blossom Trail interchange. The eastbound auxiliary lane will be dropped at the Orange Blossom Trail off-ramp and westbound auxiliary lane will continue from the Orange Blossom Trail interchange and be dropped at the John Young Parkway off-ramp.

Improvements for the I-4/John Young Parkway interchange are currently under design. The improvements involve enhancing the full access diamond by providing a flyover ramp for westbound I-4 traffic exiting to John Young Parkway.

Retention ponds will provide treatment for stormwater runoff.

Orange Blossom Trail to Michigan Street/Kaley Street

Three GULs and one HOV lane will be carried forward through this portion of the project corridor. Auxiliary lanes will also be provided. In the eastbound direction, one auxiliary lane will be added at the Orange Blossom Trail on-ramp and will continue through the Michigan Street/Kaley Street interchange. In the westbound direction, one auxiliary lane will be carried forward to the John Young Parkway interchange through the Michigan Street/Kaley Street interchange. An additional westbound auxiliary lane is provided between the Kaley Street on-ramp and the Orange Blossom Trail off-ramp to provide lane balance in the area.

The existing Orange Blossom Trail interchange is a two-level partial diamond with a loop ramp provided for eastbound I-4 to northbound Orange Blossom Trail traffic. Westbound I-4 motorists exiting to southbound Orange Blossom Trail do so via a left-hand exit, which is less than desirable. The proposed alternative will modify the existing interchange by exiting westbound I-4 to southbound Orange Blossom Trail traffic from the right side and connecting to the existing ramp. The I-4 alignment will be shifted southeast in order to accomplish this modification. As in the existing configuration, a westbound I-4 to northbound Orange Blossom Trail movement will not be provided with the proposed alternative. This movement can be accommodated at the Michigan Street access point.

The proposed improvements to the Orange Blossom Trail interchange will result in access changes to properties located along 30th Street and 34th Street. To meet design criteria, 30th Street will be closed at Orange Blossom Trail. Owners of property located along 30th Street will be required to travel west on 30th Street, north on Nashville Avenue, and east on 29th Street to gain access to Orange Blossom Trail.

In addition, 34th Street will be closed on both sides of Orange Blossom Trail. To gain access to Orange Blossom Trail, properties located on 34th Street west of Orange Blossom Trail will be required to travel west on 34th Street, south on Nashville Avenue, and east on 35th Street. Properties located along 34th Street east of Orange Blossom Trail will be required to travel east on 34th Street, south on Woods Street, and west on 35th Street. Information on potential impacts of the street closures is provided in Section 4.1.2.

Slip ramps for access to and from the HOV system will be provided at the Orange Blossom Trail interchange. In the eastbound direction, a slip ramp will be provided from the HOV lane to the GULs. In the westbound direction, a slip ramp will be provided from the GULs to the HOV lane. Retention ponds will provide treatment for stormwater runoff.

Michigan Street/Kaley Street to SR 408 (East/West Expressway)

The proposed configuration of I-4 within this portion of the project corridor will consist of three GULs, an HOV lane, and two auxiliary lanes in each direction. One auxiliary lane will be provided in the eastbound direction from the Michigan Street on-ramp to the Garland Avenue off-ramp. An additional auxiliary lane will be provided eastbound from the Orange Blossom Trail interchange to the SR 408 (East/West Expressway) interchange. In the westbound direction, one auxiliary lane begins at the Hughey Avenue on-ramp and the other begins at the SR 408 on-ramp. One auxiliary lane drops at the Michigan Street off-ramp and the other continues through the Orange Blossom Trail interchange.

The existing I-4 facility consists of an interchange at Michigan Street and one at Kaley Street. Traffic exiting I-4 westbound and entering I-4 eastbound are currently served by a partial access half diamond interchange at Michigan Street. The existing Kaley Street interchange is a full access diamond with a loop ramp for westbound I-4 to eastbound Kaley Street traffic. The proposed improvements will combine the Michigan Street interchange with the Kaley Street interchange to create a new full access, braided ramp interchange with frontage road connections and Texas U-turns. This interchange will allow for full access to and from I-4 at Michigan Street and Kaley Street.

The proposed improvements will require the closure of Unitah Avenue at Michigan Street and Tallokas Avenue at Kaley Street. In addition, Avondale Avenue will be closed at Kaley Street and from Miller Street to Indiana Street. Motorists accessing properties along Unitah Avenue from Michigan Street will be required to travel south on Alamo Drive, west on 29th Street, and north on Unitah Avenue. Properties located along Tallokas Avenue will be required to travel north on Tallokas Avenue, and south on Division Avenue to gain access to Kaley Street. Finally, motorists will no longer be able to gain access to Kaley Street through Avondale Avenue. Motorists will be required to access Kaley Street via Parramore Avenue. Section 4.1.2 provides potential impacts to businesses and neighborhoods as a result of the roadway closures.

The proposed improvements will require the removal of the pedestrian overpass located north of Kaley Street to accommodate the wider typical section. To compensate for the loss of the pedestrian facility, FDOT has committed to enhancing sidewalks on side streets for pedestrian access to Gore Street. Refer to Section 4.2.5 for detailed information on mitigation measures for pedestrian facilities.

Exfiltration will provide stormwater treatment at the Kaley-Michigan interchange. North of the interchange, a combination of exfiltration and retention ponds will treat the stormwater.

SR 408 (East/West Expressway) Interchange to SR 50 (Colonial Drive)

Through downtown Orlando, three GULs, one HOV lane, and one auxiliary lane in both directions are proposed. The eastbound auxiliary lane will extend from the Anderson Street on-ramp to the SR

50 (Colonial Drive) off-ramp. In the westbound direction, the auxiliary lane will extend to the Anderson Street off-ramp from the SR 50 (Colonial Drive) on-ramp.

The Alternative 2B1 - I-4/SR 408 (East/West Expressway) Interchange Flyover Alternative with Amelia Street Ramps is the Preferred Alternative at the I-4/SR 408 (East/West Expressway) interchange. The primary component of this alternative is a fourth-level flyover connection for the westbound SR 408 (East/West Expressway) to westbound I-4 movement. The eastbound SR 408 (East/West Expressway) to westbound I-4 ramp connection is moved eastward and connects to I-4 east of Griffin Park. The existing ramp connection is removed and the Griffin Park Historic District is reincorporated into the Holden-Parramore neighborhood. The alternative eliminates the I-4 westbound off-ramp to Gore Street, but provides an I-4 westbound entrance ramp from Gore Street.

This alternative requires acquisition of right-of-way from the historic Griffin Park neighborhood.

The preferred I-4/SR 408 (East/West Expressway) interchange alternative will have reconstruction and widening impacts to the SR 408 (East/West Expressway) mainline from west of Tampa Street to Bumby Avenue. Information on the proposed improvements to the SR 408 (East/West Expressway) mainline is provided below.

Due to the close proximity of the I-4/SR 408 (East/West Expressway) interchange to the Orlando CBD, access modifications will be required at the following interchange locations within this portion of the project corridor: Gore Street, Anderson Street, Hughey Avenue, Garland Avenue, South Street, Robinson Street, and Amelia Street.

Gore Street - The Gore Street interchange is a partial access diamond that serves entering and exiting westbound I-4 traffic. The westbound off-ramp will be eliminated as part of the proposed improvements due to the weave conflicts with the westbound Hughey Avenue entrance ramp. However, an I-4 westbound on-ramp will be provided.

The Gore Street ramp will result in the closure of Avondale Avenue from Columbia Street to Miller Street. Properties along Conroy Street, Indiana Street, and Grand Avenue will be accessed through Parramore Avenue.

Hughey Avenue/Garland Avenue - There is no existing direct access between the interstate and the Hughey Avenue/Garland Avenue one-way frontage pair. The Preferred Alternative will provide an exit from eastbound I-4 to Garland Avenue and an entrance from Hughey Avenue to westbound I-4. Both ramps will connect to the existing frontage roads at their intersections with South Street. The Garland Avenue ramp will replace the existing I-4 eastbound to Anderson Street off-ramp and the Hughey Avenue ramp will replace the South Street to I-4 westbound on-ramp. Both the Garland Avenue and Hughey Avenue ramps will be two-lane ramps.

Hughey Avenue and Garland Avenue will be realigned as part of the proposed improvements. The realignment of Hughey Avenue will result in closing Hughey Court at South Street. Hughey Court will become a cul-de-sac and access from South Street will be denied. The realignment of Garland Avenue affects access to parcels located south of South Street. Access to Garland Avenue will be denied and access to South Street will be via Boone Avenue.

Anderson Street - The existing I-4/ Anderson Street interchange is a partial access diamond configuration that directs traffic from both directions of I-4 to Anderson Street, and from Anderson Street to eastbound I-4. Anderson Street is currently one-way eastbound. The Preferred Alternative will relocate Anderson Street to the south of its current alignment and allow two-way traffic on the roadway between Orange Avenue and Division Avenue. The Anderson Street interchange will be a partial diamond, but modified to allow access to eastbound I-4 from Anderson Street and to Anderson Street from westbound I-4. The I-4 eastbound exit to Anderson Street will be eliminated. This access will be replaced by the Garland Avenue on-ramp.

South Street - The existing South Street interchange is a partial access diamond serving westbound I-4 entering and exiting traffic and eastbound traffic entering I-4, all via left-hand ramps. The

interchange will be modified to a full access diamond for HOV traffic only; general use traffic will not be accommodated. South Street will become a two-way street between Division Avenue and Orange Avenue to accommodate both directions of traffic to and from the HOV lane.

Robinson Street - The existing configuration of the Robinson Street interchange is a partial access diamond. Eastbound I-4 traffic can exit to Robinson Street and Robinson Street traffic can access westbound I-4. This interchange will be eliminated in the Preferred Alternative and downtown Orlando access will be diverted to Garland Avenue, Hughey Avenue, Amelia Street, and SR 50 (Colonial Drive).

Amelia Street - Existing access at Amelia Street is provided for eastbound I-4 traffic exiting to Amelia Street, which ties into Amelia Street at Garland Avenue. In addition, an eastbound I-4 on-ramp is provided from Garland Avenue just north of Amelia Street. The I-4/SR 408 (East/West Expressway) Preferred Alternative will modify this interchange to a partial access diamond that will allow traffic to exit from eastbound I-4 to Amelia Street and enter westbound I-4 from Amelia Street.

The proposed modifications to the SR 408 (East/West Expressway), Hughey Avenue/Garland Avenue, Anderson Street, South Street, and Amelia Street interchanges will change the access to and from the downtown Orlando core area. To illustrate the access impacts for three areas within the Orlando core area (downtown Orlando, Holden-Parramore, and Lake Cherokee), the No Action scenario was compared to the Preferred Alternative and graphically shown in Figures 2-33 through 2-44.

Figures 2-33 and 2-34 present access onto I-4 from Lake Eola for the No Action and Preferred Alternative, respectively. As shown in Figure 2-34, the proposed improvements will provide access for vehicles traveling in the GULs at Anderson Street (eastbound only), Amelia Street, and Hughey Avenue (westbound only). In addition, vehicles utilizing the HOV lanes will be able to access I-4 at South Street (eastbound and westbound). The Preferred Alternative eliminates the westbound on-ramp at Robinson Street.

Figures 2-35 and 2-36 present access to Lake Eola from I-4 for the No Action and Preferred Alternative, respectively. Vehicles traveling eastbound I-4 in the GULs to Lake Eola will either exit the highway at the Garland Avenue off-ramp or the Amelia Street off-ramp. GUL westbound travelers will exit the highway at Anderson Street. Eastbound and westbound vehicles in the HOV lane will have the opportunity to exit at the South Street ramps. The Preferred Alternative will eliminate the eastbound off-ramp at Anderson Street, and the westbound on-ramp at Robinson Street. Also, GUL travelers exiting I-4 to eastbound SR 408 will no longer be able to exit at Orange Avenue.

For the Holden-Parramore area, Figures 2-37 and 2-38 present access from Jones High School to I-4 for the No Action and Preferred Alternative, respectively. As shown in Figure 2-38, the proposed improvements will provide access to I-4 from Gore Street, Orange Blossom Trail via SR 408, Anderson Street (eastbound only), and Hughey Avenue (westbound only). HOV travelers can access I-4 at South Street.

Figures 2-39 and 2-40 present access to Jones High School from I-4 for the No Action and Preferred Alternative, respectively. As shown in Figure 2-40, Jones High School will be accessed from the Anderson Street westbound off-ramp, Garland Avenue eastbound off-ramp, and the Orange Blossom Trail westbound off-ramp from SR 408. In addition, travelers in the HOV lanes may exit I-4 at the South Street off-ramps (eastbound and westbound). The Gore Street off-ramp will be eliminated with the proposed improvements.

Access from Lake Cherokee to I-4 is provided for the No Action and Preferred Alternative scenarios on Figures 2-41 and 2-42, respectively. GUL travelers will gain access to I-4 at Anderson Street (eastbound only), and Gore Street (westbound only). In addition, GUL travelers will be able to gain access to I-4 (eastbound and westbound) via Mills Avenue on SR 408. HOV lane travelers will be able to access I-4 at the South Street interchange.

Figures 2-43 and 2-44 provide access information to Lake Cherokee from I-4. As shown in Figure 2-44, access from I-4 will be provided at Anderson Street (westbound only) and Garland Avenue

(eastbound only). Access is also provided along SR 408 at the Mills Avenue off-ramp. Access is eliminated from I-4 at the eastbound Anderson Street off-ramp. In addition, GUL travelers exiting I-4 to eastbound SR 408 will no longer be able to exit at Orange Avenue.

Section 4.1.2 describes potential impacts to neighborhoods and businesses as a result of the proposed access changes.

Stormwater runoff will be treated through a combination of retention ponds and exfiltration.

SR 408 (East/West Expressway) Mainline

The limits of improvements along the SR 408 (East/West Expressway) will extend from approximately 1.5 miles east and west of I-4 along SR 408 (East/West Expressway). Modifications will be required to the following interchanges along the SR 408 (East/West Expressway): Tampa Avenue, Orange Blossom Trail (US 441), Orange Avenue, Anderson Street, Rosalind Avenue/South Street, Mills Avenue, and Bumby Avenue. The Mills Avenue ramps to and from the west will be maintained.

The SR 408 (East/West Expressway) bridge over I-4 will be replaced to accommodate the wider I-4 typical section. In addition, SR 408 (East/West Expressway) will be widened from four lanes to six lanes and auxiliary lanes will be required between Tampa Avenue and Orange Blossom Trail (US 441) and between Anderson Street and Bumby Avenue.

The improvements to the SR 408 (East/West Expressway) mainline will restrict local and property access to Long Street east of Parramore Avenue and between Orange Blossom Trail and Boston Avenue. Easy Avenue, Grove Avenue, and Woods Avenue will become cul-de-sacs and will not have direct access to Long Street. Refer to Section 4.1.2 for information on potential impacts resulting from access changes.

SR 50 (Colonial Drive) to Ivanhoe Boulevard

Three GULs and one HOV lane will travel through the SR 50 (Colonial Drive) interchange. In the eastbound direction, one auxiliary lane will be provided from the SR 50 (Colonial Drive) on-ramp through the Ivanhoe Boulevard interchange to the Princeton Street off-ramp. In the westbound direction, one auxiliary lane will be provided to the SR 50 (Colonial Drive) off-ramp, through the Ivanhoe Boulevard interchange, from the Princeton Street on-ramp.

The existing partial access, partial cloverleaf interchange at SR 50 (Colonial Drive) allows for all traffic movements except for exiting eastbound I-4 traffic, which is currently accommodated at Amelia Street. The interchange will be replaced with a full access, single-point diamond interchange that will provide direct access to Garland and Hughey Avenues. Hughey Avenue and Garland Avenue will be a one-way frontage road pair through the interchange area. Alternative 2 was chosen as the Preferred Alternative at the SR 50 (Colonial Drive) interchange.

Alternative 2 maintains the existing SR 50 (Colonial Drive) south right-of-way line and shifts the SR 50 (Colonial Drive) alignment and right-of-way acquisition to the north. This alternative impacts the area near the Judge Cheney House property. However, the Judge Cheney House structure will not be impacted. In addition, Alternative 2 does not impact Colonial Garage (a NRHP-eligible historic resource) and avoids the Women and Children Center of the Salvation Army.

Hughey Avenue will be realigned between Concord Street and SR 50 (Colonial Drive). Properties located along Hughey Avenue between these two roadways will not be able to access Hughey Avenue. An access road for the Holiday Inn, located in the southwest quadrant of SR 50 (Colonial Drive) and Hughey Avenue, will be constructed. This proposed roadway will provide the hotel with access to SR 50 (Colonial Drive) (refer to the preliminary concept plans for the location of the proposed access road).

The Preferred Alternative will result in the closure of Concord Street at Garland Avenue. Properties located along Concord Street will access Garland Avenue and SR 50 (Colonial Drive) via Orange Avenue or Magnolia Avenue (refer to Section 4.1.2 for information on access impacts).

Stormwater runoff will be treated through a combination of retention ponds and exfiltration.

2.9.2.3 Segment 3 (Ivanhoe Boulevard to Lee Road)

Typical section C with exfiltration is the Preferred Alternative for Segment 3. This alternative provides three GULs, one HOV lane, and one auxiliary lane in each direction throughout Segment 3 limits. The 44-foot rail corridor is not provided in Segment 3 due to the relatively narrow existing right-of-way.

Ivanhoe Boulevard to Princeton Street

The existing Ivanhoe Boulevard interchange provides full access through a partial cloverleaf configuration. The proposed improvements will replace the existing interchange with a partial access diamond serving westbound I-4 to Ivanhoe Boulevard and Ivanhoe Boulevard to eastbound I-4 traffic. Motorists on Ivanhoe Boulevard wishing to access westbound I-4 will follow a frontage road south to the next access point south of SR 50 (Colonial Drive). Eastbound I-4 traffic wishing to access Ivanhoe Boulevard will exit at SR 50 (Colonial Drive) and follow Garland Avenue north to Legion Place.

The eastbound auxiliary lane will terminate at the Princeton Street off-ramp and the westbound auxiliary lane will begin at the Princeton Street on-ramp.

Direct access ramps to the HOV system to and from the east are provided with the proposed Ivanhoe Boulevard interchange.

Stormwater runoff will be treated through a combination of retention ponds and exfiltration at the Ivanhoe Boulevard interchange. North of the interchange, exfiltration will treat stormwater runoff.

Princeton Street to Par Street

The existing configuration of the Princeton Street interchange is a full access diamond. The interchange will remain a full access diamond interchange and will be modified to provide two-lane ramps for exiting I-4 traffic.

In the eastbound direction, the auxiliary lane will extend from the Princeton Street on-ramp through the Par Street interchange. In the westbound direction, the auxiliary lane will extend to the Princeton Street off-ramp through the Par Street interchange.

Improvements to the interchange will acquire right-of-way on Cornell Avenue south of Princeton Street and Dade Avenue north of Princeton Street. Access to Cornell Avenue between Vanderbilt Street and Yale Street will be restricted. Access to Dade Avenue will be restricted south of Bay Run Street. Section 4.1.2 provides information on potential impacts due to access changes.

Exfiltration will treat stormwater runoff.

Par Street to Fairbanks Avenue

The existing configuration of the Par Avenue interchange is a partial access half diamond with access to westbound I-4 and from eastbound I-4. The interchange configuration will be maintained and the I-4 ramp connections will be modified to accommodate the widened mainline.

The eastbound auxiliary lane will be dropped at the Fairbanks Avenue off-ramp and the westbound auxiliary lane will begin at the Fairbanks Avenue on-ramp.

KEY

- ① Robinson Street Entrance to I-4 WB
- ② South Street Entrance to I-4 WB
- ③ South Street Entrance to I-4 EB
- ④ Anderson Street Entrance to I-4 EB

LEGEND

— Entrance to I-4

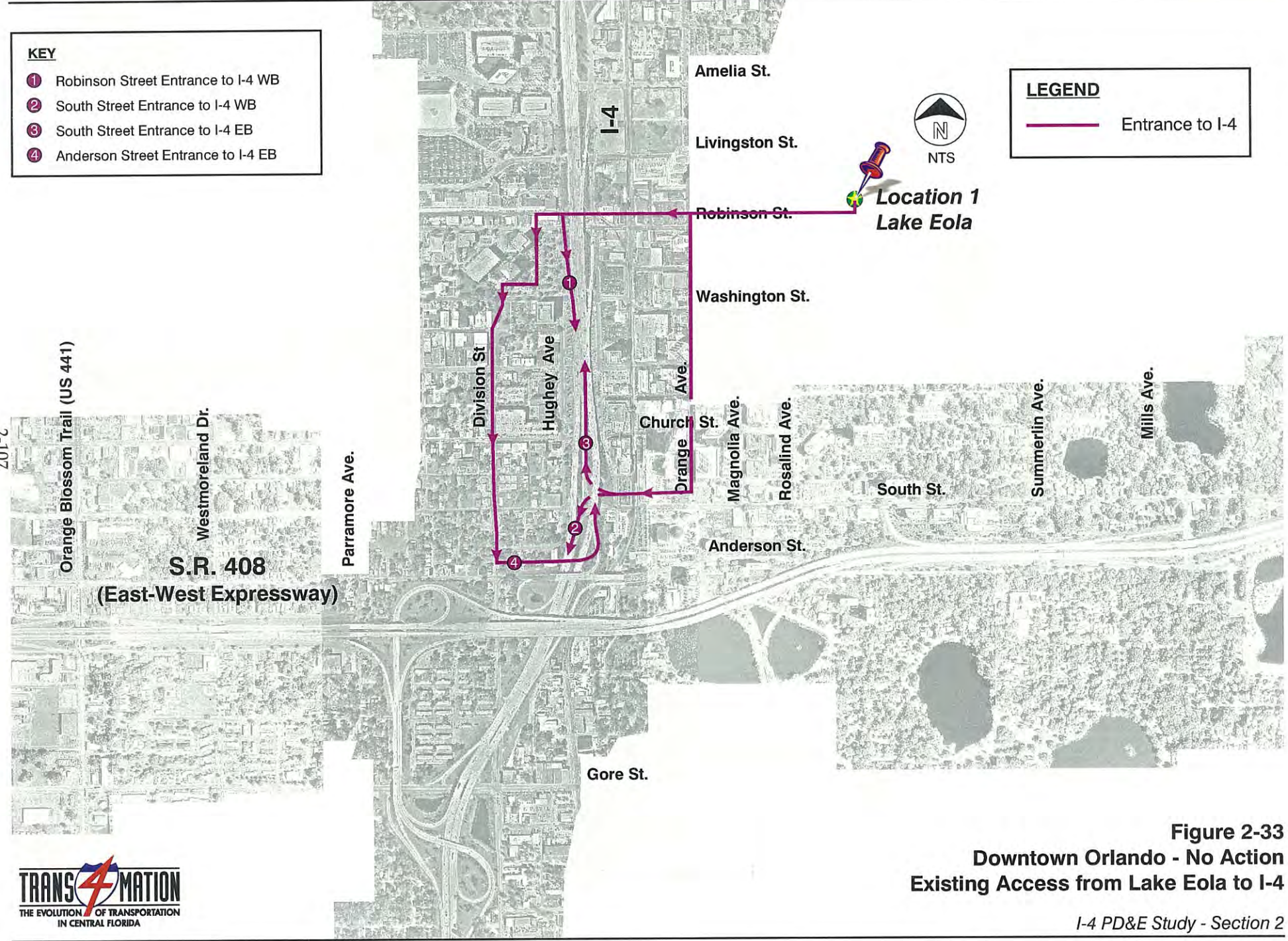







Figure 2-33
Downtown Orlando - No Action
Existing Access from Lake Eola to I-4

KEY

- ① Eliminated: Robinson St Entrance to I-4 WB
- ② HOV Only - South St Entrance to I-4 WB
- ③ HOV Only - South St Entrance to I-4 EB
- ④ Improved Access: Anderson St Entrance to I-4 EB
- ⑤ New: Amelia St Entrance to I-4
- ⑥ Entrance at Hughey Ave/South St to I-4 WB

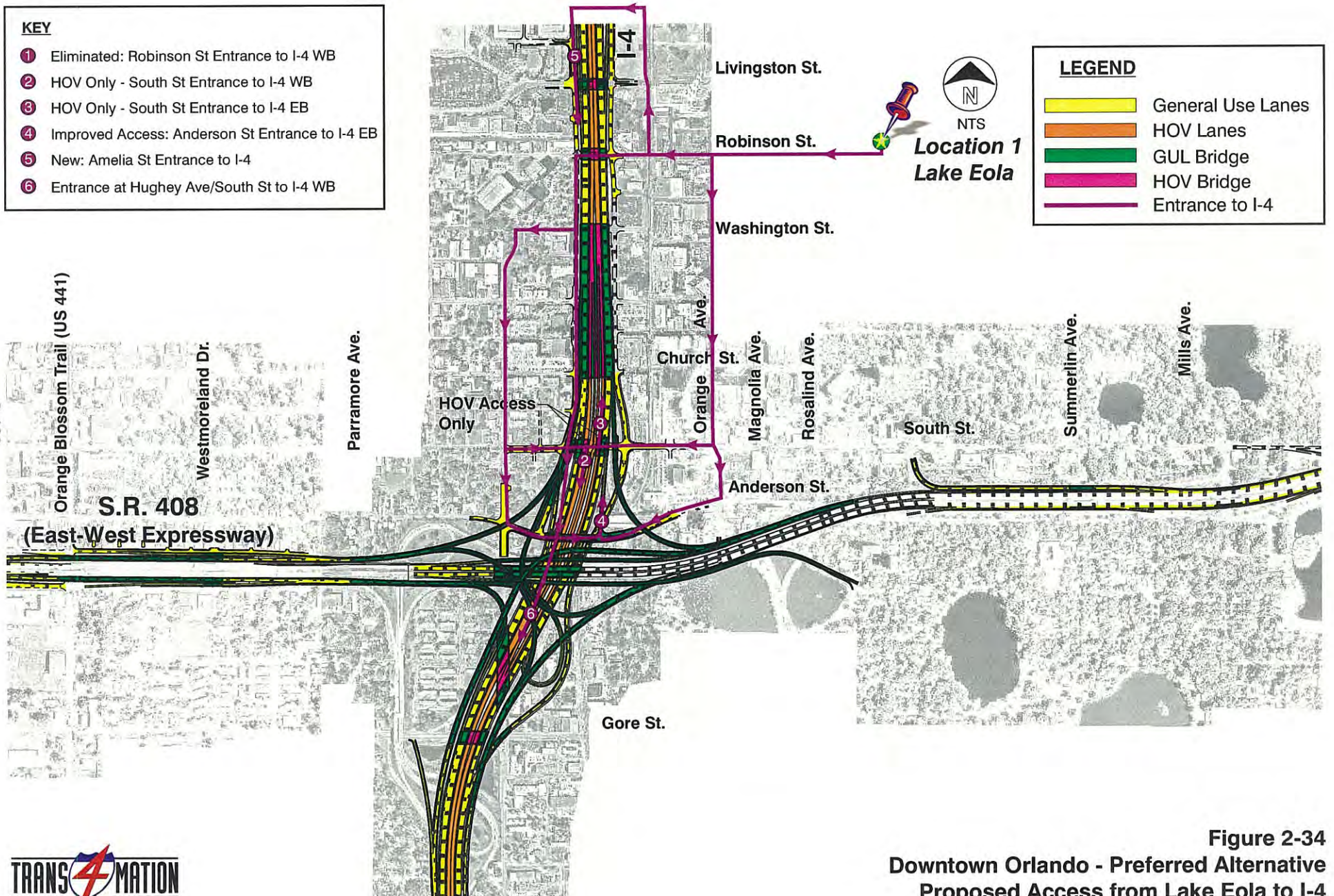
LEGEND

-  General Use Lanes
-  HOV Lanes
-  GUL Bridge
-  HOV Bridge
-  Entrance to I-4



**Location 1
Lake Eola**

2-108



**Figure 2-34
Downtown Orlando - Preferred Alternative
Proposed Access from Lake Eola to I-4**

I-4 PD&E Study - Section 2

- KEY**
- ① I-4 EB Exit at Anderson Street
 - ② I-4 EB Exit at Robinson Street
 - ③ I-4 EB Exit at Amelia Street
 - ④ I-4 WB Exit at South Street
 - ⑤ I-4 WB Exit at Anderson Street
 - ⑥ I-4 WB Exit to SR 408 EB to Orange Ave
 - ⑦ I-4 EB Exit to SR 408 EB to Orange Ave

- LEGEND**
- Exit from I-4



**Location 1
Lake Eola**

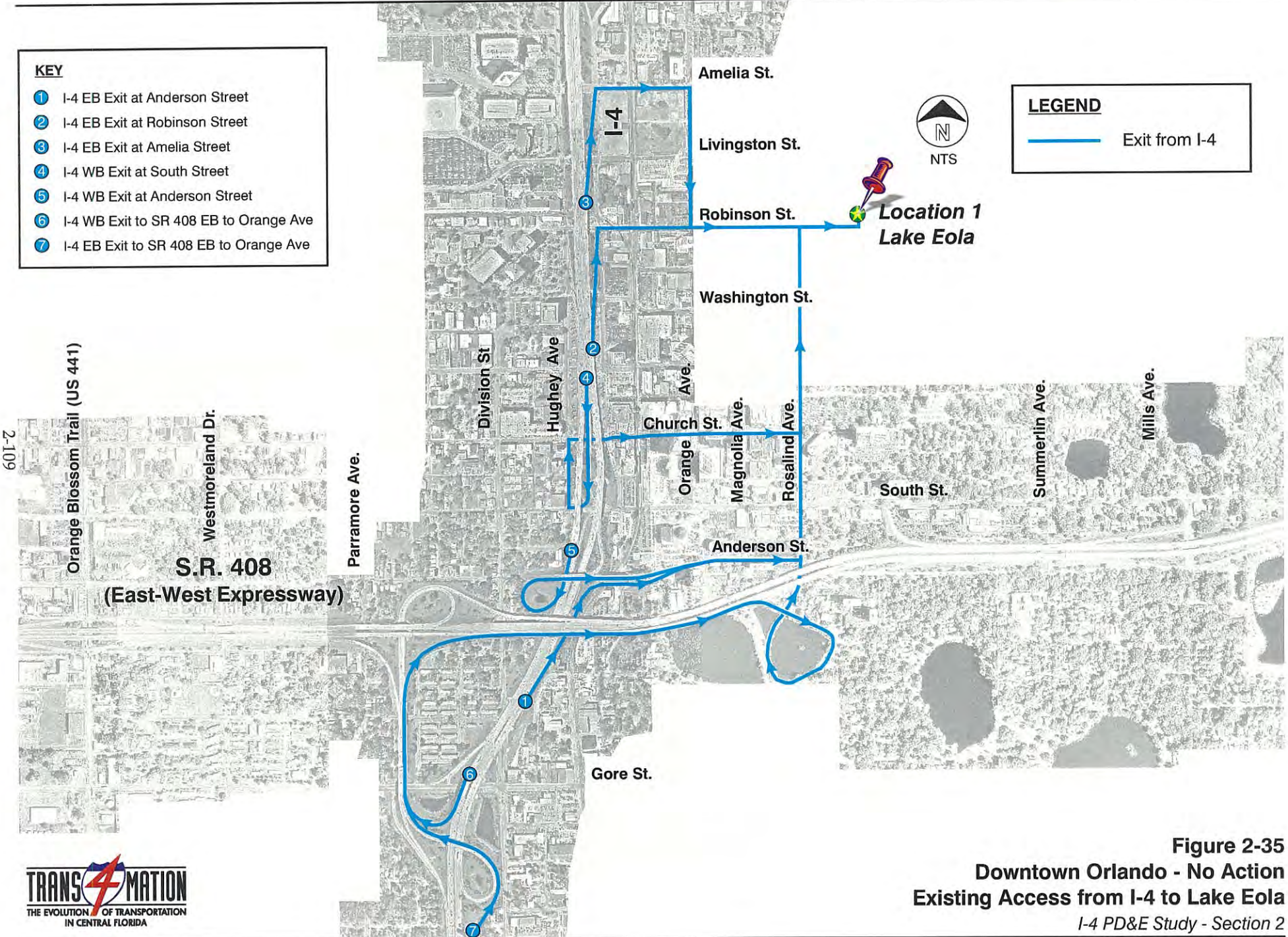


Figure 2-35
Downtown Orlando - No Action
Existing Access from I-4 to Lake Eola
I-4 PD&E Study - Section 2

KEY

- ① Eliminated: I-4 EB Exit at Anderson St
- ② Eliminated: I-4 EB Exit at Robinson St
- ③ I-4 EB Exit at Amelia St
- ④ HOV Only - I-4 WB/EB Exit at South St
- ⑤ Improved Access: I-4 WB Exit at Anderson St
- ⑥ Eliminated: I-4 WB/EB Exit at Orange Ave
- ⑦ Eliminated: I-4 WB/EB Exit at Orange Ave
- ⑧ I-4 EB Exit at Garland Ave/South St

LEGEND






-  General Use Lanes
-  HOV Lanes
-  GUL Bridge
-  HOV Bridge
-  Exit from I-4



Figure 2-36
Downtown Orlando - Preferred Alternative
Proposed Access from I-4 to Lake Eola

I-4 PD&E Study - Section 2

2-111

KEY

- ① Gore Street Entrance to I-4 WB
- ② Anderson Street Entrance to I-4 EB
- ③ OBT Entrance to SR 408 EB to I-4 WB/EB



LEGEND

— Entrance to I-4

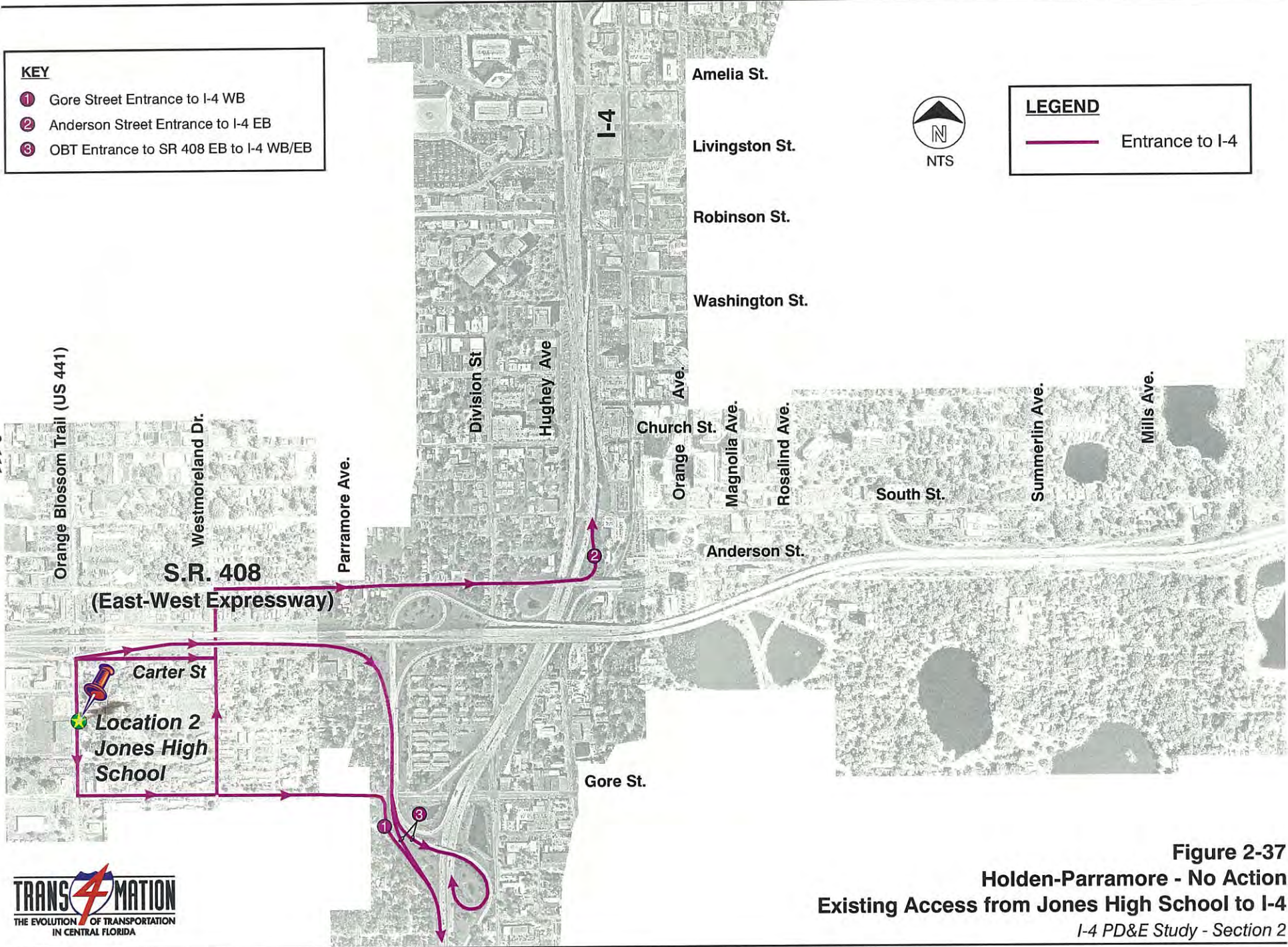


Figure 2-37
Holden-Parramore - No Action
Existing Access from Jones High School to I-4
I-4 PD&E Study - Section 2

KEY

- ① Gore St Entrance to I-4 WB
- ② Anderson St Entrance to I-4 EB
- ③ OBT Entrance to I-4 WB/EB
- ④ Hughey Ave Ramp to I-4 WB



LEGEND

- General Use Lanes
- HOV Lanes
- GUL Bridge
- HOV Bridge
- Entrance to I-4

Note: Access routes shown are only one example of routes to and from I-4 entrance and exit ramps.

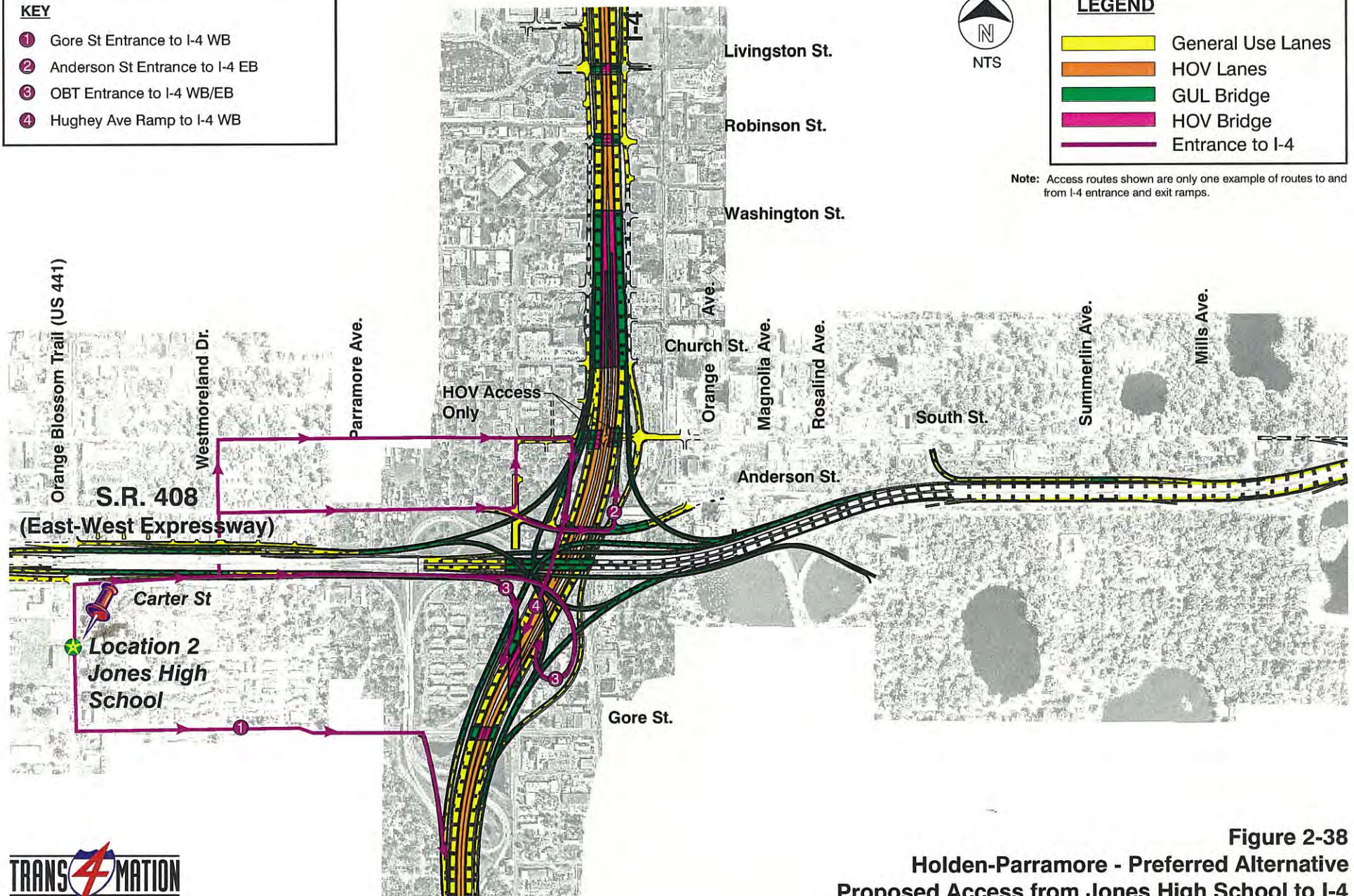


Figure 2-38
Holden-Parramore - Preferred Alternative
Proposed Access from Jones High School to I-4

KEY

- ① I-4 WB Exit at South Street
- ② I-4 WB Exit at Gore Street
- ③ I-4 EB Exit to SR 408 WB, Exit at OBT

LEGEND

— Exit from I-4

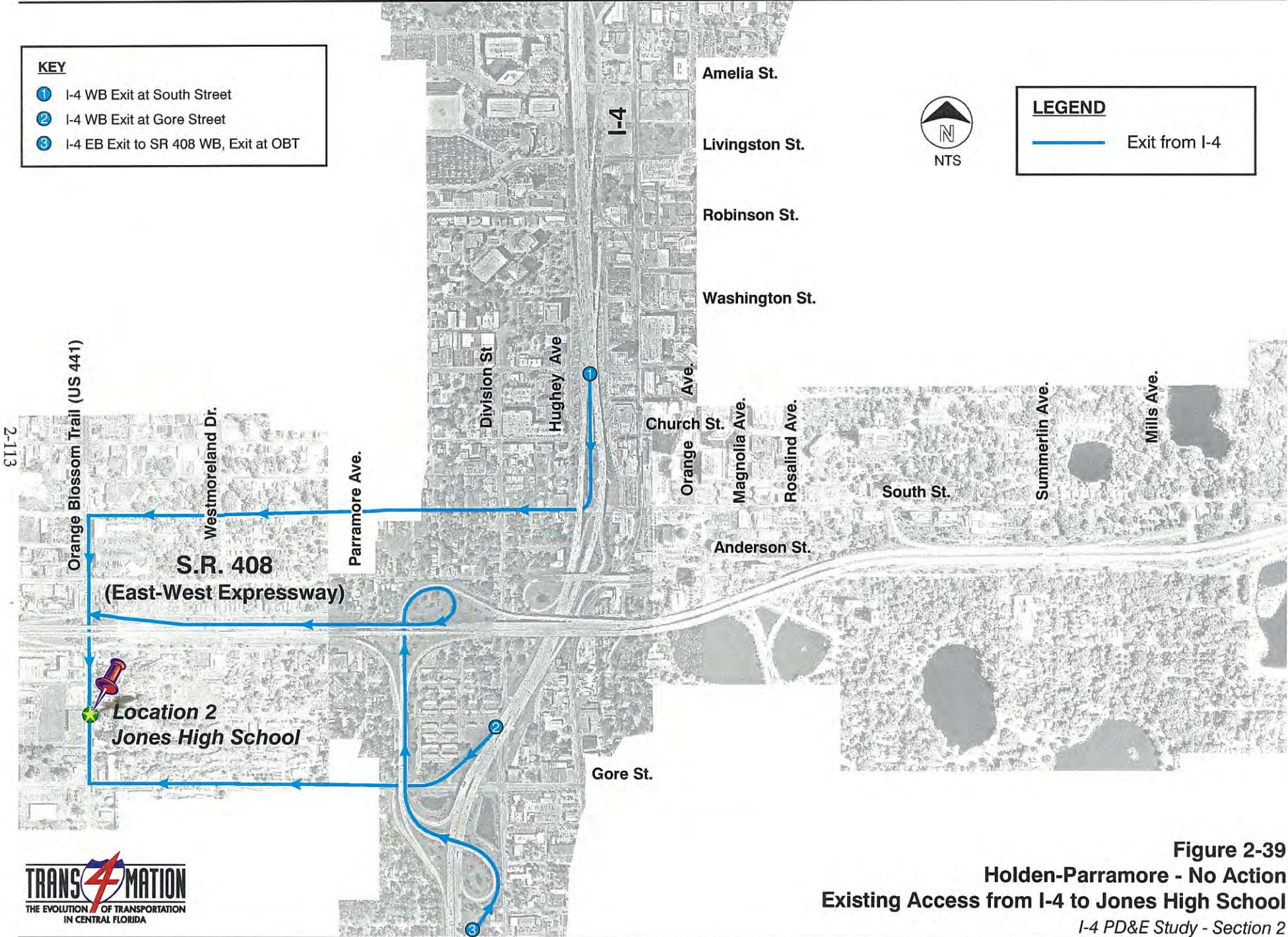




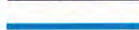


Figure 2-39
Holden-Parramore - No Action
Existing Access from I-4 to Jones High School
I-4 PD&E Study - Section 2

KEY

- ① HOV Only - I-4 WB/EB Exit at South St
- ② Eliminated: I-4 WB at Gore Street
- ③ I-4 EB Exit at OBT, Direct Access
- ④ I-4 WB Exit at Anderson St WB
- ⑤ I-4 EB Exit at Garland Ave

LEGEND

-  General Use Lanes
-  HOV Lanes
-  GUL Bridge
-  HOV Bridge
-  Exit from I-4

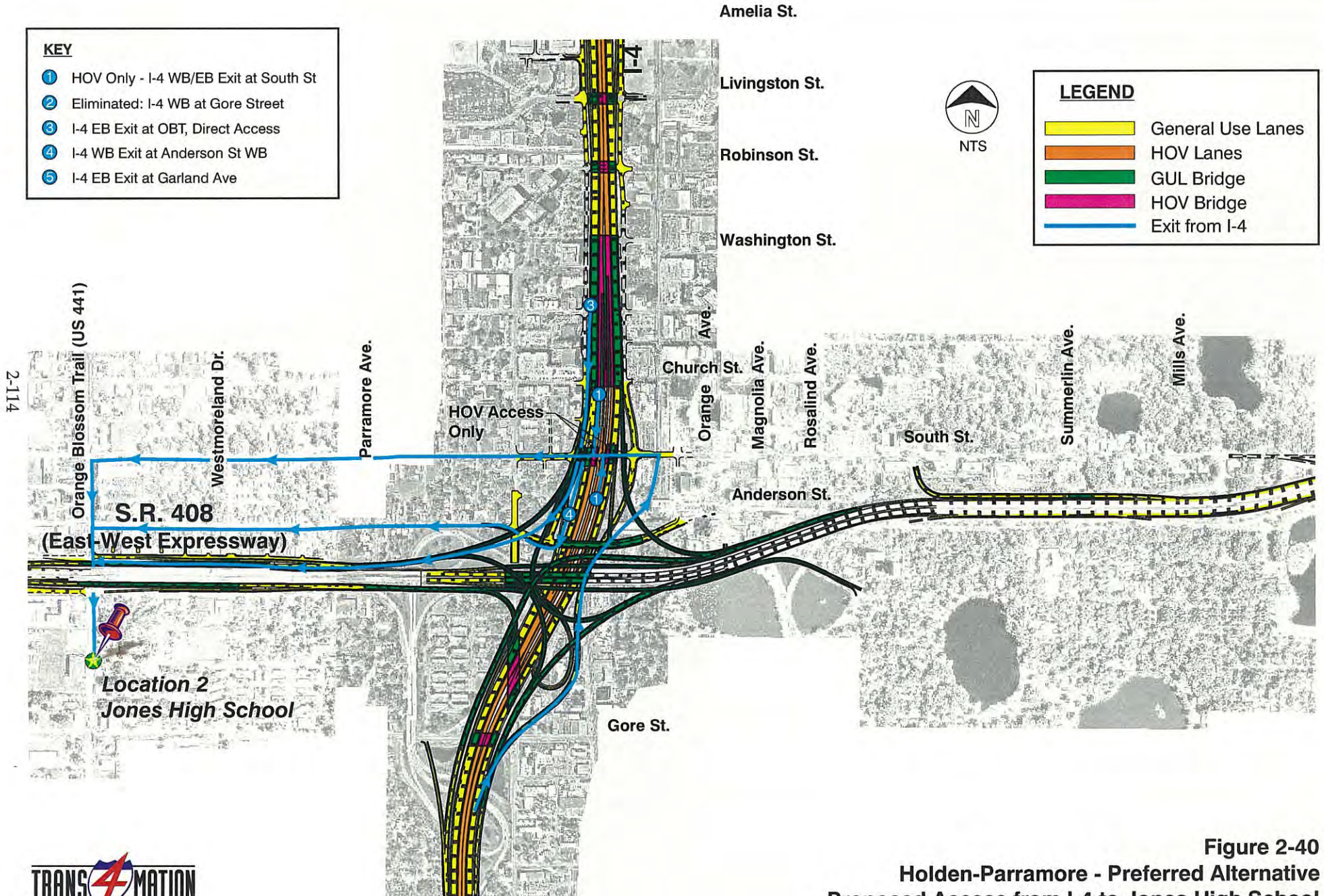


Figure 2-40
Holden-Parramore - Preferred Alternative
Proposed Access from I-4 to Jones High School

I-4 PD&E Study - Section 2

2-115

- KEY**
- ① Mills Ave Entrance to SR 408 WB to I-4 WB
 - ② Mills Ave Entrance to SR 408 WB to I-4 EB
 - ③ South Street to I-4 EB
 - ④ South Street to I-4 WB
 - ⑤ Anderson Street to I-4 EB
 - ⑥ Gore Ave to I-4 WB

- LEGEND**
-  Entrance to I-4

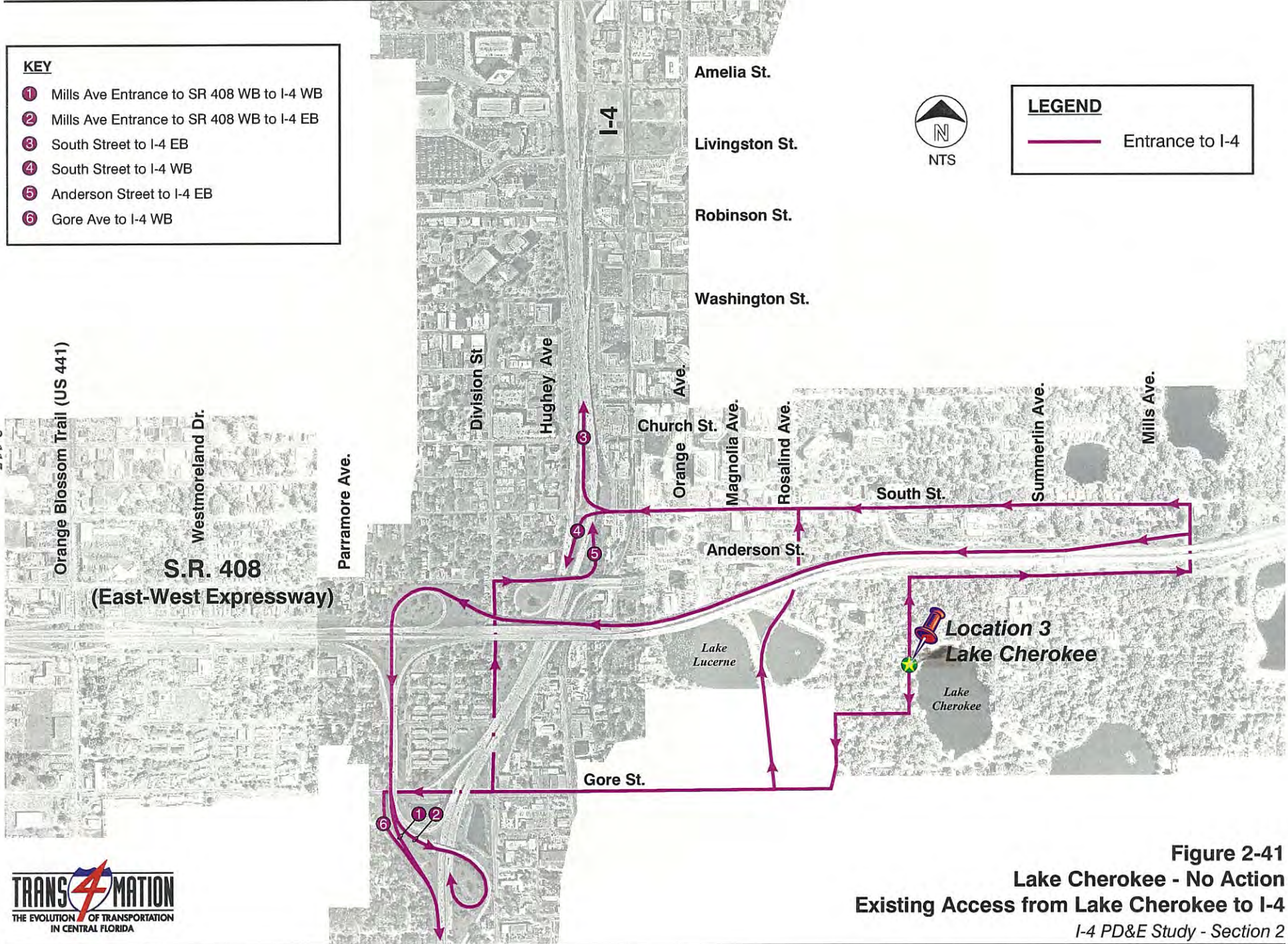


Figure 2-41
Lake Cherokee - No Action
Existing Access from Lake Cherokee to I-4
I-4 PD&E Study - Section 2

KEY

- ① Entrance at Mills Ave to SR 408 WB to I-4 WB
- ② Entrance at Mills Ave SR 408 WB to I-4 EB
- ③ HOV Only - South St Entrance to I-4 EB
- ④ HOV Only - South St Entrance to I-4 WB
- ⑤ Improved Access: Anderson St to I-4 EB
- ⑥ Gore St to I-4 WB

LEGEND

- General Use Lanes
- HOV Lanes
- GUL Bridge
- HOV Bridge
- Entrance to I-4



2-116



Figure 2-42
Lake Cherokee - Preferred Alternative
Proposed Access from Lake Cherokee to I-4

I-4 PD&E Study - Section 2

2-117

- KEY**
- ① I-4 WB Exit to SR 408 EB to Orange Ave & Mills Ave
 - ② I-4 EB Exit to SR 408 EB to Orange Ave & Mills Ave
 - ③ I-4 WB Exit at Anderson Street
 - ④ I-4 EB Exit at Anderson Street
 - ⑤ I-4 WB Exit at South Street

- LEGEND**
-  Exit from I-4

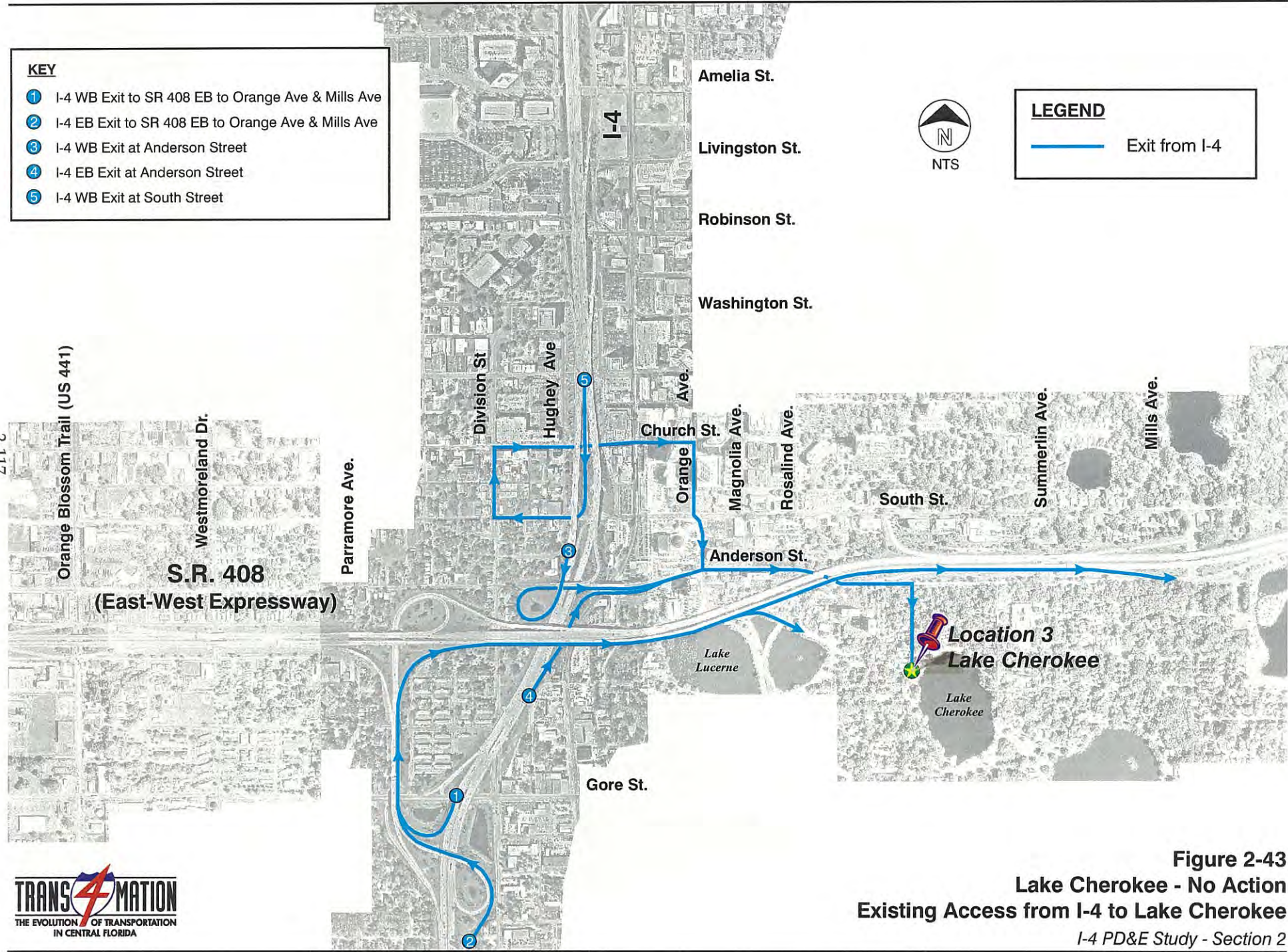







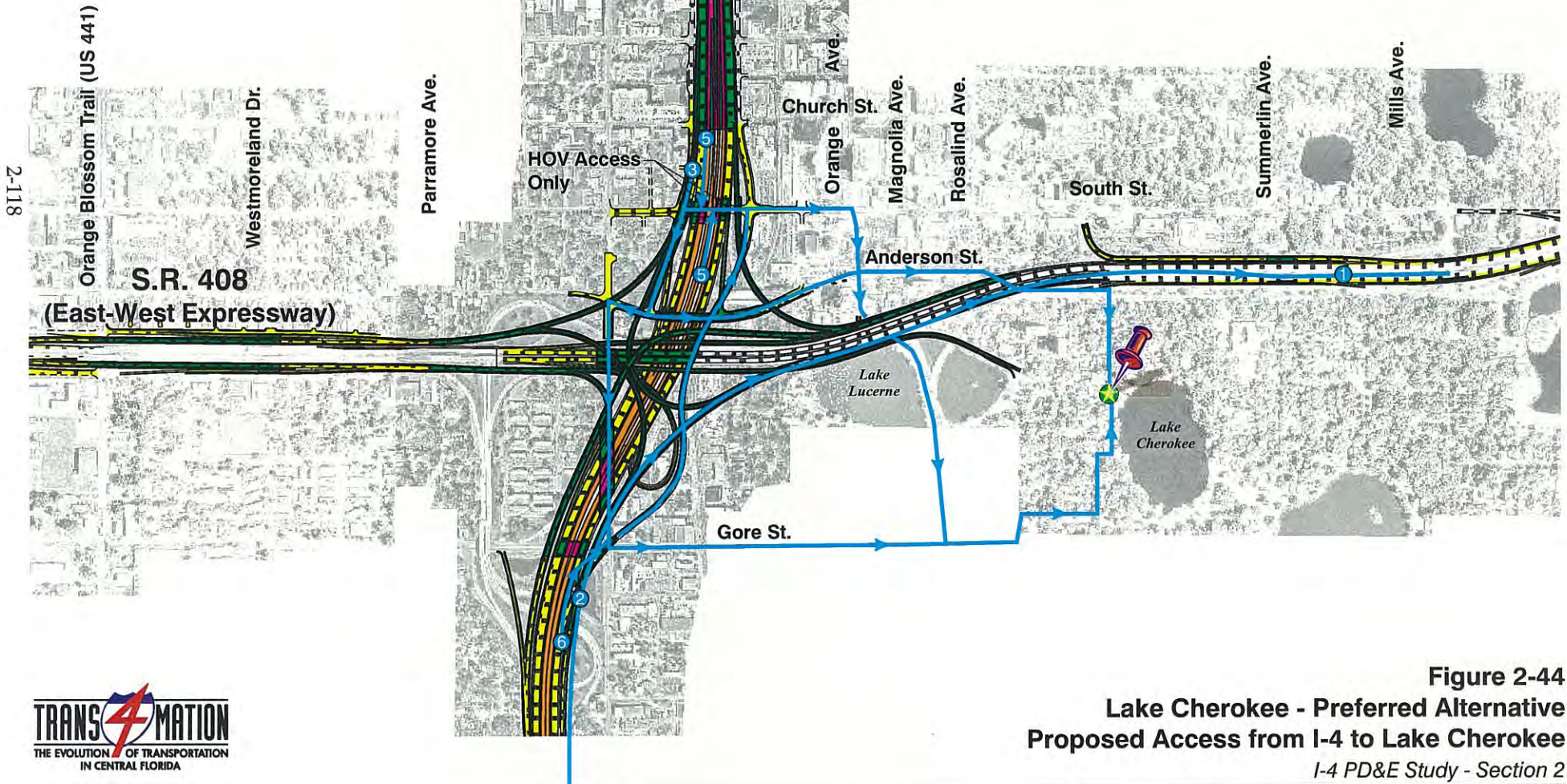
Figure 2-43
Lake Cherokee - No Action
Existing Access from I-4 to Lake Cherokee
I-4 PD&E Study - Section 2

KEY

- ① I-4 WB Exit to SR 408 EB to Mills Ave
- ② I-4 EB Exit to SR 408 EB to Mills Ave
- ③ Improved Access: I-4 WB Exit at Anderson St
- ④ Eliminated: I-4 EB Exit at Anderson St
- ⑤ HOV Only - I-4 WB/EB Exit at South Street
- ⑥ Exit at Garland Ave/South Street

LEGEND

-  General Use Lanes
-  HOV Lanes
-  GUL Bridge
-  HOV Bridge
-  Exit from I-4



2-118

Figure 2-44
Lake Cherokee - Preferred Alternative
Proposed Access from I-4 to Lake Cherokee

Improvements to the Par Street interchange will result in access changes to properties located along Cornell Avenue and Pinehurst Avenue. With the proposed improvements, Cornell Avenue will not connect with Par Street. From Par Street, access to properties along Cornell Avenue between Hazel Street and Par Street will be via Formosa Avenue and Hazel Street.

As part of the Preferred Alternative, Pinehurst Avenue at Par Street will remain open. A channelization island will be placed at the entrance of Pinehurst Avenue at the intersection with Par Street to reduce the potential for a wrong way maneuver onto the I-4 eastbound off-ramp. Refer to the preliminary concept plans for an illustration of the channelization island.

The Preferred Alternative will require the reconstruction of the horizontal curve between Par Street and Fairbanks Avenue. To meet current criteria, additional right-of-way will be required and a number of properties will be impacted. Refer to the preliminary concept plans for a graphical representation of the improvements. More information on displacements and relocations is provided Section 4.1.2.

Exfiltration will treat stormwater runoff.

Fairbanks Avenue to Lee Road

The existing Fairbanks Avenue interchange provides full access to I-4 through a diamond interchange. The interchange will remain a full access diamond and will provide two-lane ramps for exiting I-4 traffic.

In the eastbound direction, the auxiliary lane will extend from the Fairbanks Avenue on-ramp to the Lee Road off-ramp. In the westbound direction, the auxiliary lane will extend to the Fairbanks Avenue off-ramp from the Lee Road on-ramp.

The proposed improvements to the interchange will realign Stanley Street and Granada Drive. The realignment of the roadways will require additional right-of-way. However, access to the properties located along the roadways, including Killarney Elementary School, will remain the same.

The Preferred Alternative will require the reconstruction of the horizontal curve between Fairbanks Avenue and Lee Road. To meet current criteria, additional right-of-way will be required and a number of properties will be impacted. Refer to the preliminary concept plans for a graphical representation of the improvements. More information on displacements and relocations is provided in Section 4.1.2.

The Preferred Alternative improvements will also include the extension of Riddle Drive under I-4.

Exfiltration will treat stormwater runoff.

2.9.2.4 Segment 4 (Lee Road to Maitland Boulevard)

The limits of the Preferred Alternative end within the Segment 4 limits. Refer to Figure 1-4 for the location of the Preferred Alternative limits in relation to the project segment limits.

Typical section C with exfiltration will extend from south of Lee Road to the Lee Road interchange. Then, typical section C with ponds will extend from the Lee Road interchange to the end of the Preferred Alternative limits (just north of Maitland Boulevard). Three GULs, one HOV lane, and one auxiliary lane in each direction will be provided.

The 44-foot rail corridor will not be provided in this portion of the project corridor. However, there will be a limited provision for LRT north of Lee Road to the end of the Preferred Alternative limits within the outer separation of the east side of the right-of-way.

Lee Road to Maitland Boulevard

The existing configuration of the Lee Road interchange is a full access diamond. The proposed improvement will also provide a full access diamond with the addition of two-lane ramps for exiting I-4 traffic.

In this portion of the Preferred Alternative, the eastbound auxiliary lane will begin at the Lee Road on-ramp and continue to the Maitland Boulevard off-ramp. In the westbound direction, the auxiliary lane will extend to the Lee Road off-ramp from the Maitland Boulevard on-ramp.

The improvements to the Lee Road interchange will require the construction of an access road to Lee Road for the properties located in the southwest quadrant of the interchange. Refer to the preliminary concept plans for the location of the new access road.

HOV slip ramps will be provided south of Maitland Boulevard. In the eastbound direction, a slip ramp will be provided from the HOV lane to the GULs. In the westbound direction, a slip ramp will be provided from the GULs to the HOV lane.

Exfiltration is being proposed from the beginning of the Segment 4 limits through the Lee Road interchange (Basin AA). North of the Lee Road interchange, retention ponds will be provided for the treatment of stormwater.

Maitland Boulevard to End of Preferred Alternative

The existing Maitland Boulevard interchange is a full access interchange. A loop ramp is provided for westbound Maitland Boulevard to westbound I-4 traffic and a directional flyover ramp serves eastbound I-4 to westbound Maitland Boulevard traffic. The remaining movements are accommodated with diamond ramps. The proposed Maitland interchange alternative will replace the existing interchange with a three-level partial cloverleaf. The profile for eastbound and westbound Maitland Boulevard will be bifurcated over I-4. Directional ramps for traffic traveling from eastbound Maitland Boulevard to eastbound I-4 and from westbound Maitland Boulevard to westbound I-4 will be grade separated from the opposing traffic with the bifurcated profile of Maitland Boulevard. The loop ramps will serve traffic traveling from eastbound I-4 to westbound Maitland Boulevard and from westbound I-4 to eastbound Maitland Boulevard. The existing eastbound I-4 dual exits to eastbound and westbound Maitland Boulevard will be revised to one single point exit serving both directions. Similarly, the dual westbound on-ramps will be modified to a single entrance ramp.

Auxiliary lanes are not proposed as part of the Preferred Alternative north of the Maitland Boulevard interchange. The GULs will tie into the existing roadway configuration north of the interchange.

The proposed HOV slip ramps located north of the Maitland Boulevard interchange will signify the beginning/end of the HOV system for the northern limits of the Preferred Alternative. For the Preferred Alternative, the eastbound slip ramp will signify the end of the HOV system and will provide access to the GULs from the HOV lane. The westbound slip ramp will signify the start of the HOV system and will provide access to the HOV lane from the GULs.

Retention ponds will treat the stormwater runoff.

2.9.3 Evaluation of Preferred Alternative

The proposed Preferred Alternative for each segment was evaluated for impacts to businesses and residences, community facilities, noise, cultural and historic resources, right-of-way, and the natural and physical environment. In addition, preliminary construction costs and right-of-way costs were evaluated. Table 2-10 presents the estimated impact evaluation for the proposed Preferred Alternative. A detailed discussion of the impacts for the Preferred Alternative is presented in Chapter 4 of this document.

As indicated previously, the FEIS includes discussions and assessments on the improvements for the entire 43-mile project (Ultimate project). Table 2-11 presents the estimated impact evaluation for the Ultimate Build Alternatives for the entire 43-mile corridor including the Preferred Alternative corridor. Table 2-11 updates the information contained in Table 2-7 with the Preferred Alternative impact evaluations and the concept changes described in Section 2.8.

**Table 2-10. Estimated Impact Evaluation For Preferred Alternative:
I-4 PD&E Study - Section 2 Based On February 25, 2002 Preliminary Concept Plans**

Categories	Evaluation Criteria	SEGMENT 1		SEGMENT 2		SEGMENT 3	SEGMENT 4	PREFERRED ALTERNATIVE TOTAL	
		From Kirkman Rd to John Young Pkwy	Kaley/ Michigan Exfiltration	SR 408 Alternative 2B1	SR 50 Alternative 2	Typical Section C Exfiltration	From Lee Rd to Maitland Blvd		
Human Environment	BUSINESS IMPACTS								
	Total number of businesses property Impacts (no. parcels)	21	22	113	21	33	34	244	
	- Number of property Impacts due to roadway Impacts	20	6	104	15	33	28	206	
	- Number of property Impacts due to pond Impacts	1	16	9	6	0	6	38	
	Total number of potential business relocations (units)	1	9	30	13	8	2	63	
	- Number of relocations due to roadway Impacts	1	2	29	9	8	2	51	
	- Number of relocations due to pond Impacts	0	7	1	4	0	0	12	
	Number of displaced employees	28	105	458	188	30	128	937	
	RESIDENTIAL IMPACTS								
	Total number of residential property Impacts (no. parcels)	0	22	28	0	66	2	118	
	- Number of property Impacts due to roadway Impacts	0	9	28	0	66	2	103	
	- Number of property Impacts due to pond Impacts	0	13	2	0	0	0	15	
	Total number of potential residential relocations (units)	0	21	114	0	60	0	195	
	- Number of relocations due to roadway Impacts	0	6	111	0	60	0	177	
	- Number of relocations due to pond Impacts	0	15	3	0	0	0	18	
	COMMUNITY FACILITY IMPACTS								
	Total number of facilities with Impacts	1	4	4	1	5	2	17	
	- Number of property Impacts due to roadway Impacts	1	2	4	1	5	2	15	
	- Number of property Impacts due to pond Impacts	0	2	0	0	0	0	2	
	Total number of relocations	0	4	3	1	4	0	10	
	- Number of relocations due to roadway Impacts	0	2	3	0	4	0	7	
	- Number of relocations due to pond Impacts	0	2	0	1	0	0	3	
	NOISE IMPACTS WITHIN 65 dBA CONTOUR (DESIGN YEAR 2020)								
	Total number of noise sensitive sites	978	381	1245	319	1199	87	4209	
	Number of noise sensitive sites (residences) impacted ¹	162	241	613	2	427	29	1494	
	CULTURAL & HISTORIC IMPACTS								
	Number of historic resources	0	0	14	2	2	1	19	
	Number of historic resources potentially affected	0	0	7	1	1	1	10	
	- Number of Direct Use Impacts	0	0	4	0	1	0	5	
	Number of resources Adversely Affected	0	0	1	0	1	0	2	
	Number of archaeological sites	0	0	0	0	0	0	0	
	Archaeological site potential (low, medium, high)	low	low	low	low	low	low	LOW	
	Number of parks and recreational areas impacted	0	0	0	0	0	0	0	
	RIGHT-OF-WAY IMPACTS								
	Total number of Impacted parcels	21	44	141	21	99	36	362	
	- Number of roadway Impacts	20	15	130	15	99	30	309	
	- Number of pond Impacts	1	29	11	6	0	6	53	
	- Number of full acquisitions	0	28	55	6	20	2	111	
	- Number of partial acquisitions	21	16	86	15	79	34	251	
	Area of Impacted ROW in acres	8.16	21.31	31.29	3.59	10.34	22.25	96.94	
	- Area of roadway Impacts (acres)	3.71	7.50	27.66	1.19	10.34	6.51	58.91	
	- Area of pond Impacts (acres)	4.45	13.81	3.63	2.39	0.00	15.74	40.02	
	LIMITED ACCESS (LA) IMPACTS								
	Total number of parcels with LA severance damages	0	21	0	5	19	0	45	
	Total number of parcels with LA relocations	0	1	0	0	4	0	5	
Natural Environment	NATURAL ENVIRONMENT & PHYSICAL IMPACTS								
	Number of wetland systems		5	6	4	0		15	
	Area of Impacted wetlands in acres	44.95	6.71	3.31	8.95	0.00	18.29	82.21	
	- Area of Roadway Impacted wetlands (acres)	27.50	6.71	1.13	8.44	0.00	9.13	52.91	
	- Area of Pond Impacted wetlands (acres)	17.45	0.00	2.18	0.51	0.00	9.16	29.30	
	Threatened & endangered species potential (low, medium, high)	low	low	low	low	low	low	LOW	
	Base floodplain encroachment - acre-ft	40.01	minimal	minimal	minimal	minimal	0	40.01	
	Number of impacted contamination sites	0	0	19	2	0	0	21	
	Project Costs	PROJECT COSTS (IN 2000 \$ MILLIONS)							
		Preliminary construction costs (in 2000 \$ Millions)	\$159.01	\$101.99	\$301.32	\$34.95	\$172.38	\$124.94	\$894.49
Right-of-way (in 2000 \$ Millions)		\$11.14	\$31.12	\$99.77	\$18.63	\$33.82	\$49.07	\$242.56	
Subtotal Construction + ROW Costs (in 2000 \$ Millions)		\$170.15	\$133.11	\$400.09	\$53.48	\$206.20	\$174.01	\$1,137.05	
Engineering, Legal, Admin, CEI, Post Design (27% of Preliminary Construction Cost)		\$42.93	\$27.54	\$81.36	\$9.41	\$46.54	\$33.73	\$241.51	
TOTAL PROJECT COSTS (in 2000 \$ Millions)		\$213.08	\$160.65	\$481.44	\$62.89	\$252.75	\$207.75	\$1,378.56	

2-121

I-4 PD&E Study - Section 2
Final Environmental Impact Statement
August 2002

Table 2-11. Estimated Impact Evaluation For Ultimate Build Alternatives: I-4 PD&E Study - Section 2
Based On February 25, 2002 Preliminary Concept Plans

I-4 PD&E Study - Section 2
Final Environmental Impact Statement
August 2002

2-122

Categories	Evaluation Criteria	SEGMENT 1		SEGMENT 2			SEGMENT 3	SEGMENT 4		SEGMENT 5	SEGMENT 6		TOTAL		
		Tie to Ultimate Bee Line	Tie to Existing Bee Line	Kaley/ Michigan Exfiltration	SR 408 Alternative 2B1	SR 50 Alternative 2	Typical Section C Exfiltration	Typical Section C & SR 434 Alternative 1	Typical Section C & SR 434 Alternative 2	Typical Section C	Tie to Ultimate North SR 472	Tie to Existing North SR 472	LOW	HIGH	
Human Environment	BUSINESS IMPACTS														
	Total number of businesses property Impacts (no. parcels)	37	27	22	113	21	33	80	87	33	53	53	382	399	
	- Number of property impacts due to roadway impacts	28	20	6	104	15	33	64	71	33	37	37	312	327	
	- Number of property impacts due to pond impacts	9	7	16	9	6	0	16	16	0	16	16	70	72	
	Total number of potential business relocations (units)	2	1	9	30	13	8	4	8	1	10	10	76	81	
	- Number of relocations due to roadway impacts	2	1	2	29	9	8	4	8	1	10	10	64	69	
	- Number of relocations due to pond impacts	0	0	7	1	4	0	0	0	0	0	0	12	12	
	Number of displaced employees	172	28	105	458	188	30	192	594	6	191	191	1198	1744	
	RESIDENTIAL IMPACTS														
	Total number of residential property Impacts (no. parcels)	1	1	22	28	0	66	15	15	5	0	0	137	137	
	- Number of property impacts due to roadway impacts	0	0	9	26	0	66	10	10	5	0	0	116	116	
	- Number of property impacts due to pond impacts	1	1	13	2	0	0	5	5	0	0	0	21	21	
	Total number of potential residential relocations (units)	1	1	21	114	0	60	193	193	3	0	0	392	392	
	- Number of relocations due to roadway impacts	0	0	6	111	0	60	1	1	3	0	0	181	181	
	- Number of relocations due to pond impacts	1	1	15	3	0	0	192	192	0	0	0	211	211	
COMMUNITY FACILITY IMPACTS															
Total number of facilities with Impacts	3	1	4	4	1	5	5	5	2	1	1	23	25		
- Number of property impacts due to roadway impacts	3	1	2	4	1	5	5	5	2	1	1	21	23		
- Number of property impacts due to pond impacts	0	0	2	0	0	0	0	0	0	0	0	2	2		
Total number of relocations	1	0	4	3	1	2	0	0	0	1	1	11	12		
- Number of relocations due to roadway impacts	1	0	2	3	0	2	0	0	0	1	1	8	9		
- Number of relocations due to pond impacts	0	0	2	0	1	0	0	0	0	0	0	3	3		
NOISE IMPACTS WITHIN 65 dBA CONTOUR (DESIGN YEAR 2020)															
Total number of noise sensitive sites	4572	4572	381	1245	319	1199	2176	2176	77	763	763	10732	10732		
Number of noise sensitive sites (residences) Impacted	409	409	241	613	2	427	1305	1305	18	329	329	3344	3344		
CULTURAL & HISTORIC IMPACTS															
Number of historic resources	0	0	0	14	2	2	1	1	1	0	0	20	20		
Number of historic resources potentially affected	0	0	0	7	1	1	1	1	0	0	0	10	10		
- Number of Direct Use Impacts	0	0	0	4	0	1	0	0	0	0	0	5	5		
Number of resources Adversely Affected	0	0	0	1	0	1	0	0	0	0	0	2	2		
Number of archaeological sites	0	0	0	0	0	0	0	0	0	0	0	0	0		
Archaeological site potential (low, medium, high)	low	low	low	low	low	low	low	low	low	low	low	LOW	LOW		
Number of parks and recreational areas impacted	0	0	0	0	0	0	0	0	0	0	0	0	0		
RIGHT-OF-WAY IMPACTS															
Total number of impacted parcels	38	28	44	141	21	99	96	102	38	53	53	519	536		
- Number of roadway impacts	28	20	15	130	15	99	74	81	38	37	37	428	443		
- Number of pond impacts	10	8	29	11	6	0	21	21	0	16	16	91	93		
- Number of full acquisitions	6	6	28	55	6	20	14	16	1	14	14	144	146		
- Number of partial acquisitions	32	22	18	88	15	79	81	86	37	39	39	375	390		
Area of Impacted ROW in acres	40.66	16.48	21.31	31.29	3.59	10.34	50.40	56.16	16.62	60.65	60.65	210.38	240.62		
- Area of roadway impacts (acres)	11.35	3.71	7.50	27.66	1.19	10.34	12.97	18.76	16.62	28.62	28.62	108.61	122.04		
- Area of pond impacts (acres)	29.31	12.77	13.81	3.63	2.39	0.00	37.13	37.40	0.00	32.03	32.03	101.76	118.57		
LIMITED ACCESS (LA) IMPACTS															
Total number of parcels with LA severance damages	0	0	21	0	5	19	11	14	1	19	19	76	79		
Total number of parcels with LA relocations	0	0	1	0	0	4	4	5	0	0	0	9	10		
NATURAL ENVIRONMENT & PHYSICAL IMPACTS															
Number of wetland systems	57	57	5	6	4	0	26	26	16	29	29	143	143		
Area of Impacted wetlands in acres	57.54	57.54	6.71	3.31	8.95	0.00	21.46	21.46	8.34	25.52	25.52	131.83	131.83		
- Area of Roadway impacted wetlands (acres)	38.23	38.23	6.71	1.13	8.44	0.00	12.27	12.27	8.34	25.29	25.29	100.41	100.41		
- Area of Pond impacted wetlands (acres)	19.31	19.31	0.00	2.18	0.51	0.00	9.19	9.19	0.00	0.23	0.23	31.42	31.42		
Threatened & endangered species potential (low, medium, high)	low	low	low	low	low	low	low	low	low	medium	medium	LOW	MEDIUM		
Base floodplain encroachment - acre-ft	40.01	40.01	minimal	minimal	minimal	minimal	6.03	6.03	0.26	292.02	292.02	338.32	338.32		
Number of impacted contamination sites	0	0	0	19	2	0	2	3	1	0	0	24	25		
PROJECT COSTS (IN 2000 \$ MILLIONS)															
Preliminary construction costs (in 2000 \$ Millions)	\$281.25	\$187.89	\$101.99	\$301.32	\$34.85	\$172.38	\$256.75	\$258.06	\$112.90	\$210.59	\$213.54	\$1,378.67	\$1,478.29		
Right-of-way (in 2000 \$ Millions)	\$48.93	\$21.21	\$31.12	\$98.77	\$18.63	\$33.82	\$117.66	\$143.98	\$14.69	\$38.71	\$38.71	\$374.61	\$428.68		
Subtotal Construction + ROW Costs (in 2000 \$ Millions)	\$330.18	\$209.10	\$133.11	\$400.09	\$53.48	\$206.20	\$374.41	\$402.04	\$127.59	\$249.30	\$252.25	\$1,753.28	\$1,906.94		
Engineering, Legal, Admin, CEI, Post Design (27% of Preliminary Construction Cost)	\$75.94	\$50.73	\$27.54	\$81.36	\$9.41	\$46.54	\$69.32	\$69.67	\$30.48	\$56.86	\$57.66	\$372.24	\$396.60		
TOTAL PROJECT COSTS (in 2000 \$ Millions)	\$406.12	\$259.82	\$160.65	\$481.44	\$62.89	\$252.75	\$443.74	\$471.71	\$158.07	\$306.16	\$309.91	\$2,125.52	\$2,303.54		

Note:
For Human and Natural Environment Impacts:
LOW PROJECT TOTAL = EXISTING BEE LINE+KM EXFIL+SR 408 ALT 2B1+SR 50 ALT 2+C-EXFIL+C SR 434 ALT 1+EXISTING SR 472
HIGH PROJECT TOTAL = ULTIMATE BEE LINE+KM EXFIL+SR 408 ALT 2B1+SR 50 ALT 2+C-POND+C SR 434 ALT 2+ULTIMATE SR 472
For Project Costs:
LOW PROJECT TOTAL = EXISTING BEE LINE+KM EXFIL+SR 408 ALT 2B1+SR 50 ALT 2+C-EXFIL+C SR 434 ALT 1+ULTIMATE SR 472

Chapter 3

Affected Environment



3. Affected Environment

This chapter summarizes the existing and anticipated future conditions of the tri-county area (Orange, Seminole, and Volusia Counties), the Ultimate project study area (the I-4 corridor), and the Preferred Alternative study area. In addition, this chapter establishes the baseline conditions necessary to determine the Environmental Consequences as discussed in Chapter 4 of this report. Existing and future conditions are described with reference to the base year of 1996 and the forecast year of 2020. A detailed discussion of existing and anticipated future conditions of the tri-county area and the project study area is provided in the I-4 PD&E Study *Socioeconomic & Environment Report* (August 2000).

The conditions summarized herein include:

- Socioeconomic Conditions (Section 3.1)
- Cultural Resources (Section 3.2)
- Natural Resources (Section 3.3)
- Physical Environment (Section 3.4)
- Utilities and Railroads (Section 3.5)
- Navigation (Section 3.6)

3.1 Socioeconomic Conditions

This section provides a summary of population, economics, and land use in 1996 and growth projections for 2020 for the state, tri-county, Ultimate project, and Preferred Alternative study areas. Also included herein is a discussion of the relevant elements of area comprehensive plans.

3.1.1 Population, Economics, and Land Use

Demographic projections for the state, tri-county area, Ultimate project study area, and Preferred Alternative study area were developed using information obtained from the Bureau of Economic and Business Research, *1997 Statistical Abstract*, U.S. Census data (1980 and 1990), and the East Central Florida Regional Planning Council's *Orlando Urban Area Transportation Study 1990/2020*. Traffic analysis zones (TAZs), census tracts, and census tract block groups were all researched in determining the demographic projections for specific geographic areas.

The tri-county area is composed of Orange, Seminole, and Volusia Counties and is bounded by jurisdiction boundaries (refer to Figure 1-3). The Ultimate project and Preferred Alternative study areas consist of census tract block groups directly adjacent to the I-4 alignment and are shown in Figure 3-1.

3.1.1.1 Population and Community Growth Characteristics

Population historical trends and 2020 growth projections for the state, tri-county area, the Ultimate project study area, and the Preferred Alternative study area are described in this section. In general, the tri-county area population is growing rapidly and has a diverse ethnicity and age constituency. Through 2020, the regional growth is anticipated to be greater than any other area in Florida.

3.1.1.1.1 Population (State, Counties, Study Areas)

In 1996, the tri-county area had a population of approximately 1.5 million, representing approximately 11 percent of Florida's total population. In the same year, the Ultimate project study area contained a population of approximately 211,000, representing approximately 1.5 percent of the state's total population and 14 percent of the population within the tri-county area. The Preferred Alternative study area contained a population of approximately 85,000, representing approximately 40 percent of the Ultimate project's total population. Generally, Orange County has a higher, more

densely structured resident population than Seminole and Volusia Counties. However, there are areas along the I-4 corridor that contain few or almost no residents. From south to north, these sparsely populated areas include the following:

- Segment 1: Between SR 528 (Bee Line Expressway) and the Florida's Turnpike; just east of the Florida's Turnpike and John Young Parkway;
- Segments 2 and 3: The downtown area between Church Street and SR 50 (Colonial Drive);
- Segment 4: Portions between Lee Road and Maitland Boulevard; and between SR 436 and Central Parkway;
- Segments 5 and 6: Between Sand Pond Road and Dirksen Drive/DeBary Avenue.

Table 3-1 shows tri-county resident population trends for 1980, 1990, and 1996 by state, county, and jurisdiction. As shown in Table 3-1, significant population increases are observed between 1980 and 1990 for most of the jurisdictions within the tri-county area. Table 3-2 contains resident population projections for the tri-county, Ultimate project, and Preferred Alternative study areas by county for 1990, 1996, and 2020. The change in resident population within the Ultimate project study area is generally less than the growth expected in the overall tri-county area.

Table 3-1. Tri-County Resident Population

Area	1980 ¹	1990 ¹	1996 ²	% Increase 1980-1990	% Increase 1990-1996
Florida	9,746,424	12,937,926	14,411,563	33%	11%
Unincorporated Orange County	282,813	433,443	506,732	53%	17%
Eatonville	2,185	2,192	2,506	0%	14%
Maitland	8,763	9,088	9,871	4%	9%
Orlando	128,291	164,693	173,122	28%	5%
Winter Park	22,339	22,242	24,750	0%	11%
Orange County	471,016	677,491	777,556	44%	15%
Unincorporated Seminole County	92,870	148,842	164,370	60%	10%
Altamonte Springs	22,028	34,879	38,200	58%	10%
Lake Mary	2,853	5,929	7,470	108%	26%
Longwood	10,029	13,316	13,598	33%	2%
Sanford	23,176	32,387	35,279	40%	9%
Seminole County	179,752	287,529	329,031	60%	14%
Unincorporated Volusia County	98,358	156,100	108,441	59%	-31%
DeBary	4,980	7,176	11,568	44%	61%
Deltona	15,710	50,857	56,148	224%	10%
Orange City	2,795	5,347	6,137	91%	15%
Volusia County	258,762	370,712	407,199	43%	10%
Tri-County Area Totals	909,530	1,335,732	1,513,786	47%	13%

Sources: ¹U.S. Department of Commerce Bureau of the Census, 1980 and 1990 Consensus of Population and Housing, Orange, Seminole and Volusia Counties.

²Bureau of Economic and Business Research, 1997 Florida Statistical Abstract.

Table 3-2. Resident Population Projections

Geographic Area	Year 1996	Year 2020	% Increase 1996-2020
Tri-County Area*			
Orange County	777,556	1,197,964	54%
Seminole County	329,031	565,712	72%
Volusia County	407,199	613,973	51%
Tri-County Area Total	1,513,786	2,377,649	57%
Project Study Area**			
Orange County	103,676	132,528	28%
Seminole County	75,850	118,182	56%
Volusia County	31,190	41,944	34%
Ultimate Project Study Area Totals	210,716	292,654	39%
Preferred Alternative Project Study Area Totals	84,857	92,536	9%

*Tri-County Area was determined using TAZs for 1990 and 2020 (1996 data was interpolated).

**Project Study Area was defined approximately by the width of two TAZs abutting the alignment for 1990 and 2020 (1996 data was interpolated).

Note: Volusia County statistics do not include time share condominiums.

Source: METROPLAN ORLANDO OUATS 2020, adopted 1996; and Volusia County MPO 2020 Transportation Plan Update, adopted 1995.

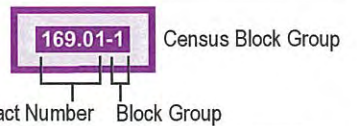
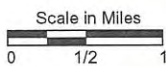
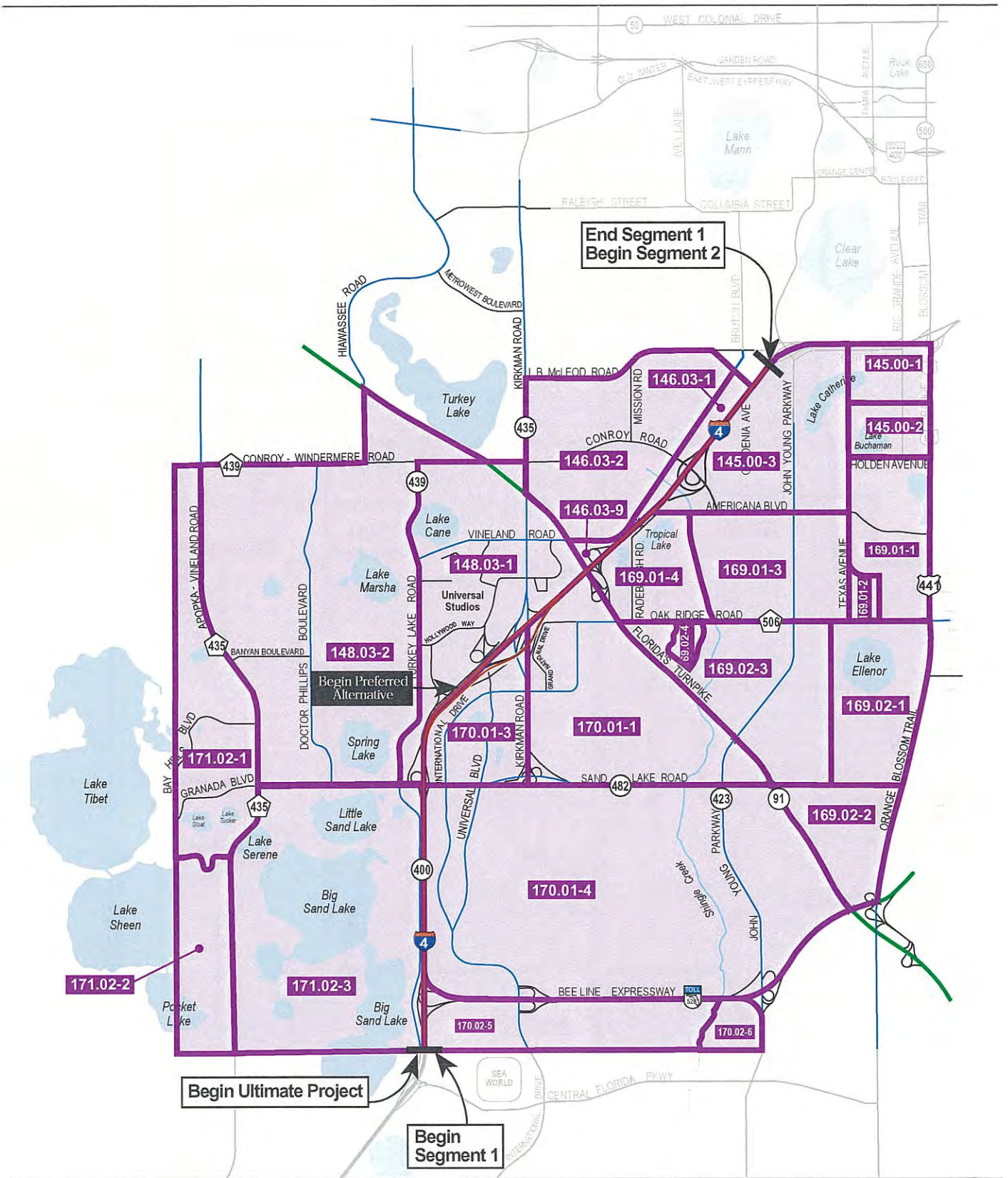


Figure 3-1
Ultimate and Preferred Alternative Project Study Areas
Census Block Groups
 I-4 PD&E Study - Section 2
 Segment 1 of 6

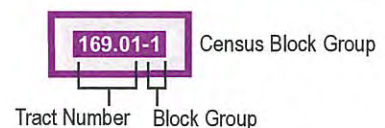
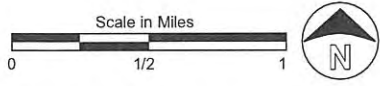
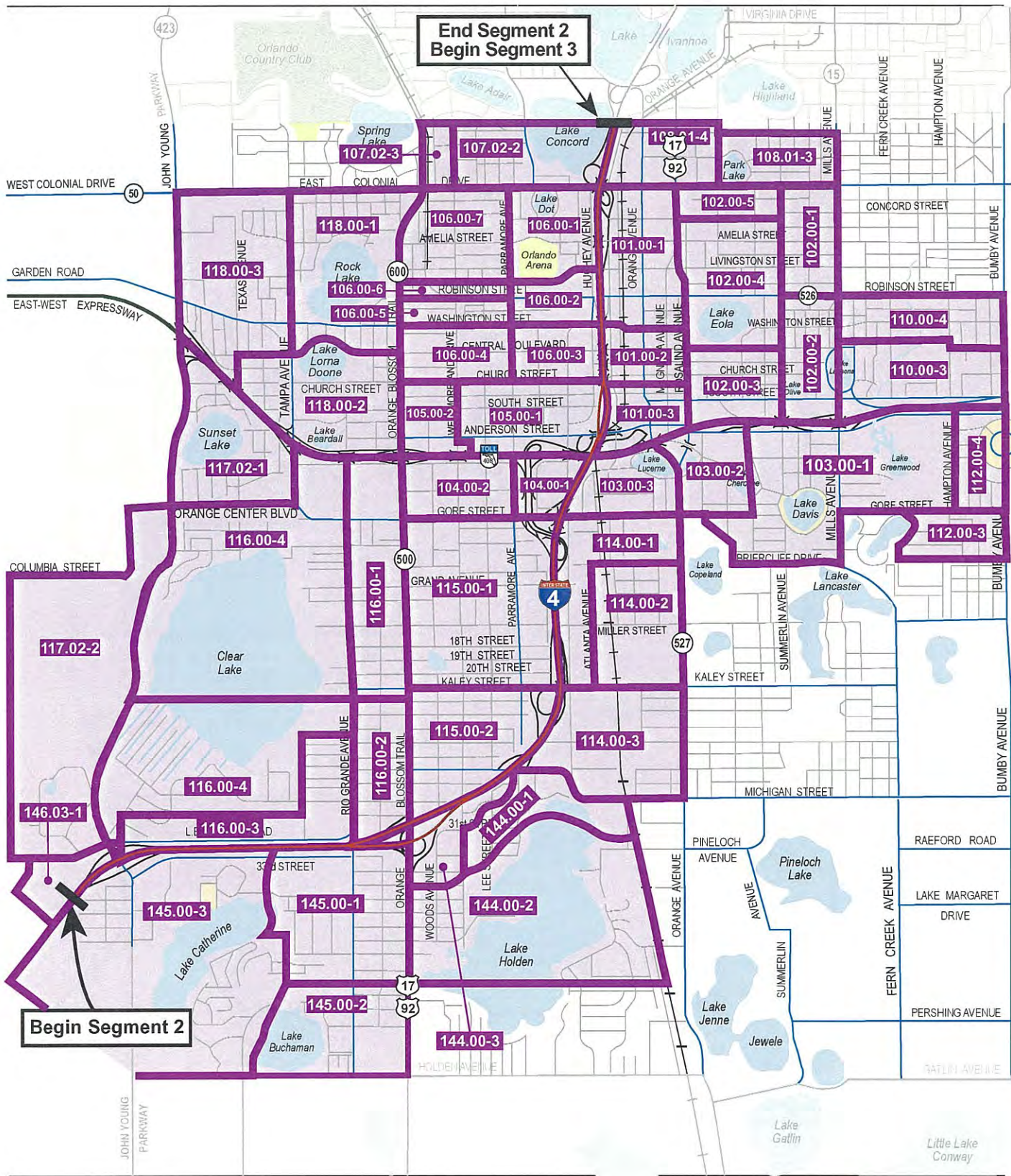
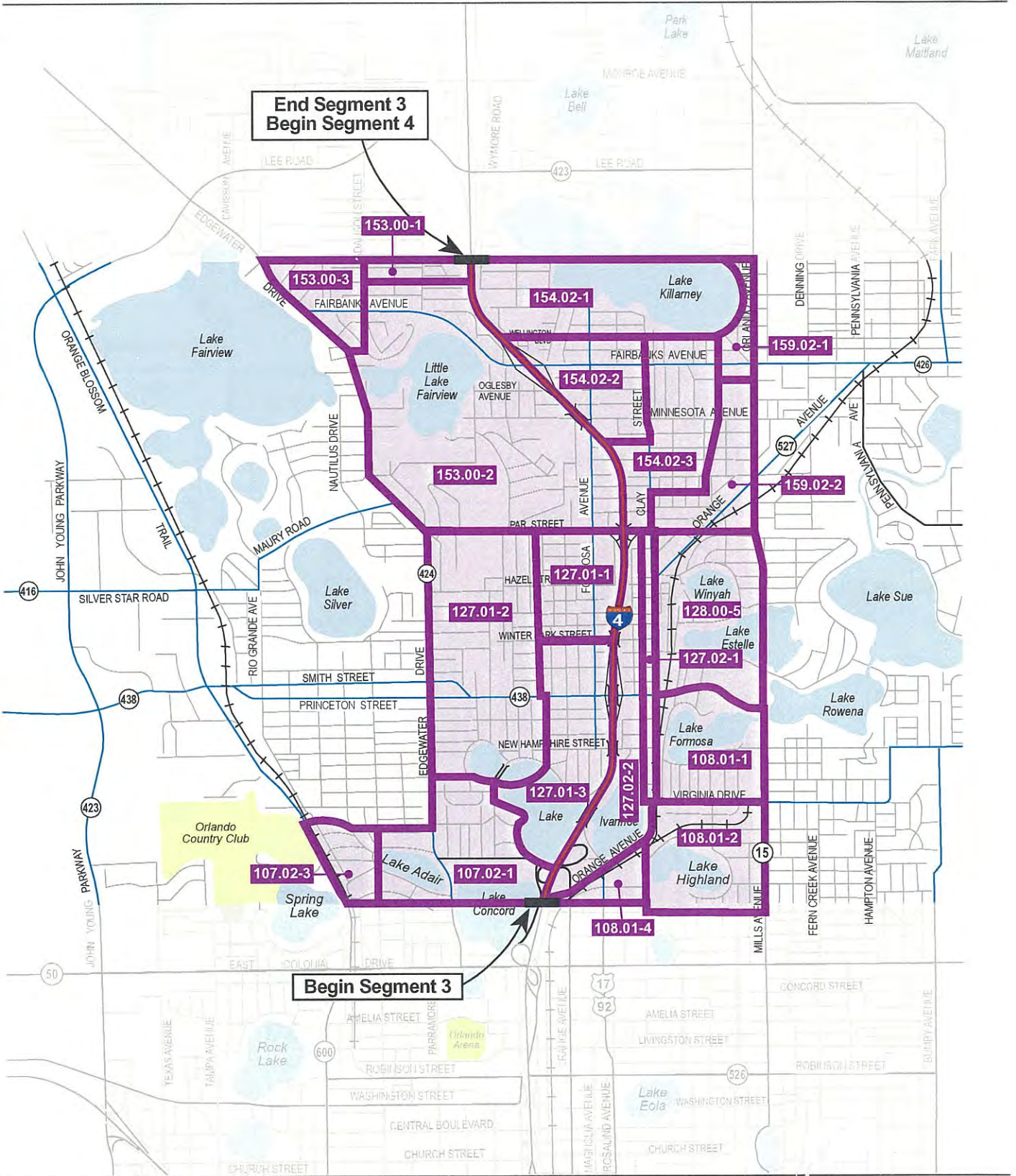


Figure 3-1
Ultimate and Preferred Alternative Project Study Areas
Census Block Groups
 I-4 PD&E Study - Section 2
 Segment 2 of 6





**End Segment 3
Begin Segment 4**

Begin Segment 3

169.01-1 Census Block Group
 Tract Number Block Group

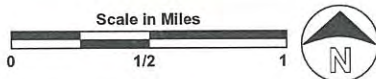


Figure 3-1
Ultimate and Preferred Alternative Project Study Areas
Census Block Groups
 I-4 PD&E Study - Section 2
 Segment 3 of 6

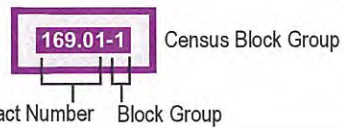
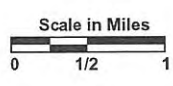
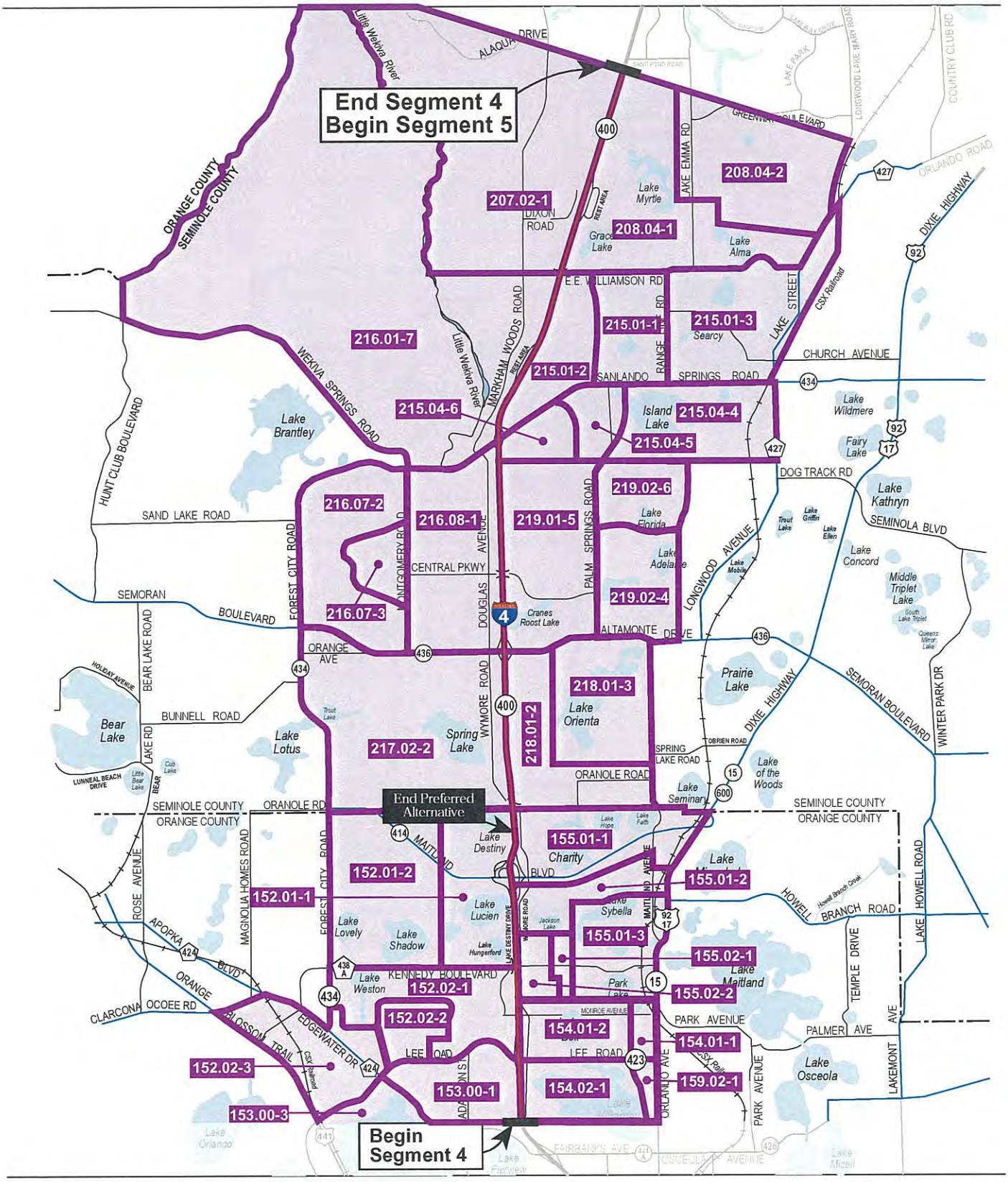


Figure 3-1
Ultimate and Preferred Alternative Project Study Areas
Census Block Groups
 I-4 PD&E Study - Section 2
 Segment 4 of 6



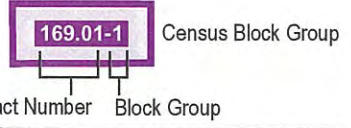
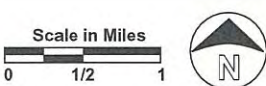
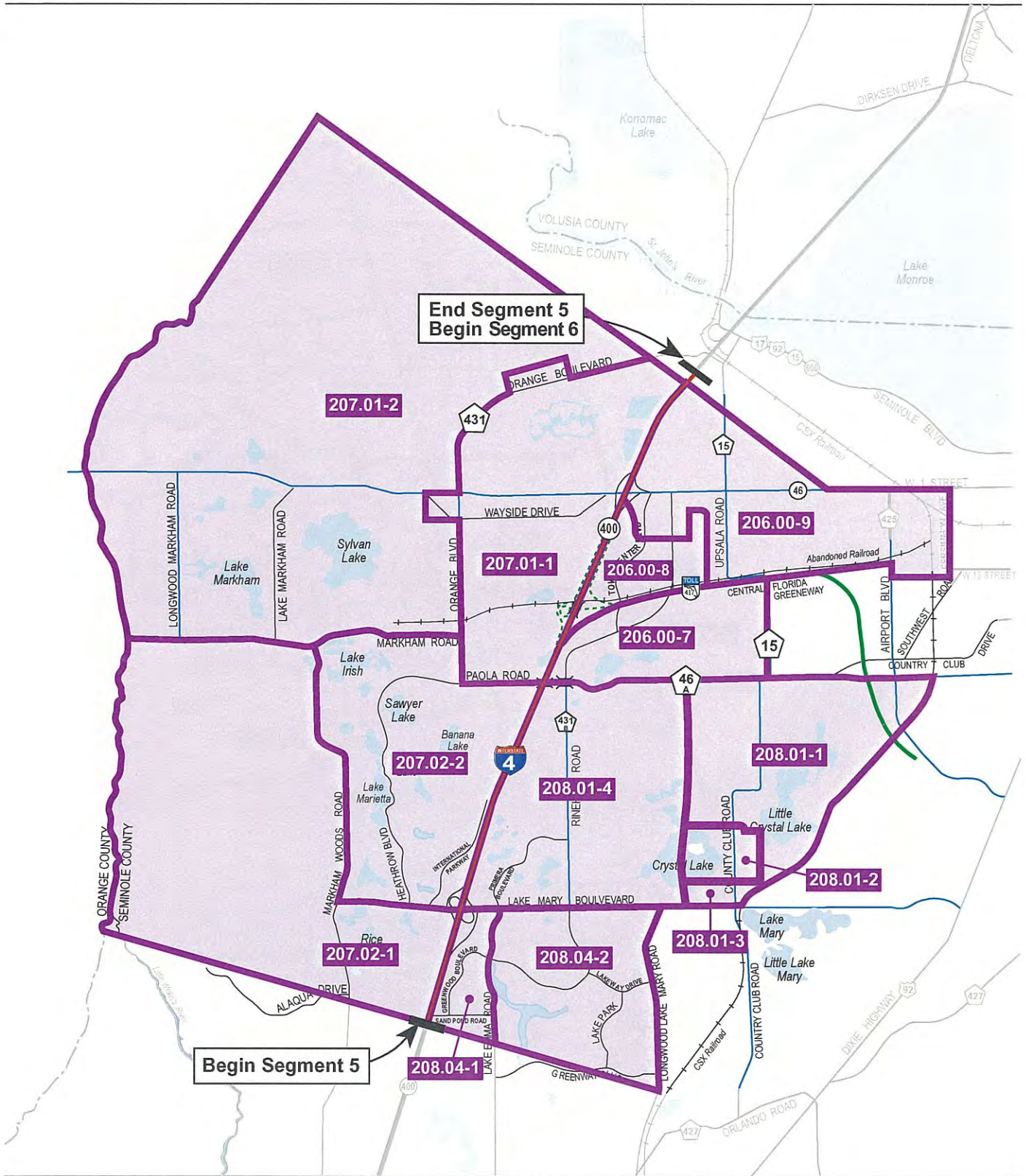


Figure 3-1
Ultimate and Preferred Alternative Project Study Areas
Census Block Groups
 I-4 PD&E Study - Section 2
 Segment 5 of 6

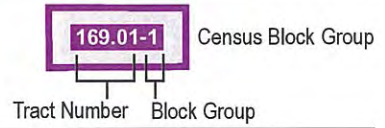
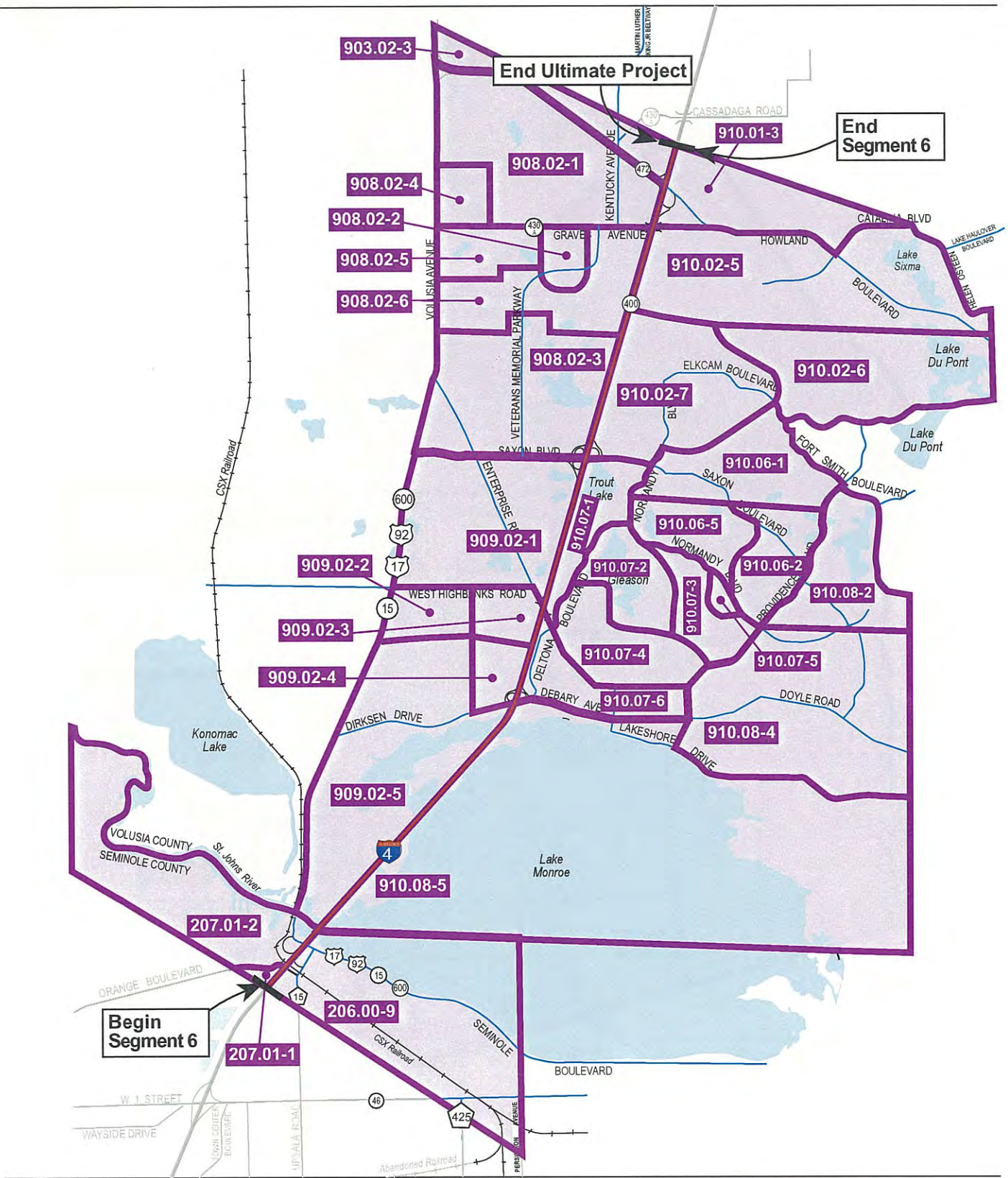


Figure 3-1
Ultimate and Preferred Alternative Project Study Areas
Census Block Groups
 I-4 PD&E Study - Section 2
 Segment 6 of 6



Table 3-3 contains visitor population projections for the tri-county, Ultimate project, and Preferred Alternative study areas. The high percentage increase in visitor population in Orange and Seminole Counties, the Ultimate project study area, and the Preferred Alternative study area can be largely attributed to a high concentration of tourist venues, hotel/motel units, and expansions of the OIA and the Orlando-Sanford Airport.

Table 3-3. Visitor Population Projections

Geographic Area	Year 1996	Year 2020	% Change
Tri-County Area*			
Orange County	153,899	295,228	92%
Seminole County	5,882	11,563	97%
Volusia County	16,260	17,486	8%
Tri-County Area Total	176,041	324,277	84%
Project Study Area**			
Orange County	54,102	74,136	37%
Seminole County	4,824	9,399	95%
Volusia County	180	180	0%
Ultimate Project Study Area Totals	59,106	83,715	42%
Preferred Alternative Project Study Area Totals	14,023	25,787	84%

*Tri-County Area was determined using TAZs for 1990 and 2020 (1996 data was interpolated).

**Project Study Area was defined approximately by the width of two TAZs abutting the alignment for 1990 and 2020 (1996 data was interpolated).

Note: Volusia County statistics do not include time share condominiums.

Source: METROPLAN ORLANDO OUATS 2020, adopted 1996; and Volusia County MPO 2020 Transportation Plan Update, adopted 1996

3.1.1.1.2 Population by Ethnicity

As shown in Table 3-4, the ethnicity compositions within the tri-county area and the Ultimate project study area are similar. The Preferred Alternative study area has a higher concentration of minority population than the Ultimate project study area. The racial composition of the jurisdictions within the tri-county area and the project study area are shown in Table 3-5 and Table 3-6, respectively.

The predominant racial group within the geographic areas is white. The remaining population within the jurisdictions of the Ultimate project and Preferred Alternative study areas is classified as non-white (minority) persons. These are identified as black, American Indian/Eskimo, Asian/Pacific Island, or other races. In all geographic locations, blacks form the largest group of minorities. The Hispanic population accounts for the second largest minority group. Other ethnic groups are represented sparsely throughout the study area.

Table 3-4. Ethnicity Percentages Summary

Geographic Area	White	Non-White	Black	American Indian/ Eskimo	Asian/ Pacific Island	Other Race	(Hispanic)*
Tri-County Area**							
Orange County	79.5%	20.5%	15.2%	0.3%	2.1%	2.9%	9.3%
Seminole County	88.2%	11.8%	8.3%	0.4%	1.7%	1.5%	6.5%
Volusia County	88.7%	11.3%	9.0%	0.3%	0.6%	1.4%	4.0%
Tri-County Area***	78.7%	21.3%	15.9%	0.5%	2.1%	2.8%	9.6%
Project Study Area***							
Orange County	67.4%	32.6%	28.5%	0.3%	1.7%	2.1%	6.9%
Seminole County	90.4%	9.6%	5.9%	0.2%	2.1%	1.4%	7.0%
Volusia County	94.6%	5.4%	2.9%	0.4%	0.8%	1.3%	8.3%
Ultimate Project Study Area	81.2%	18.8%	15.2%	0.3%	1.6%	1.7%	7.2%
Preferred Alternative Project Study Area Totals	64.7%	35.3%	30.5%	0.2%	1.8%	2.8%	8.8%

*Hispanic population figures are included in the White race population and are broken out for general reference.

**Tri-County Area was determined using Census Data.

***Project Study Area was determined using Census Tracts abutting the alignment.

Source: U.S. Department of Commerce Bureau of the Census, 1990 Census of Population and Housing, Orange, Seminole, and Volusia Counties.

Table 3-5. Tri-County Ethnicity Percentages by Jurisdiction

Area	White %	Non-White %	Black %	American Indian/ Eskimo %	Asian/ Pacific Island %	Other Race %	(Hispanic)* %
Florida	83.1%	16.9%	13.6%	0.3%	1.2%	1.8%	(12.0%)
Unincorporated Orange County	82.6%	17.4	11.3%	0.4%	2.5%	3.2%	(10.4%)
Eatonville	7.5%	92.5%	92.5%	0%	0%	0%	(1.6%)
Maitland	90.6%	9.4%	8.3%	0.4%	0.4%	0.3%	(2.1%)
Orlando	68.6%	31.4%	26.9%	0.3%	1.5%	2.7%	(8.6%)
Winter Park	85.3%	14.7%	13.4%	0.1%	1.0%	0.2%	(2.5%)
Orange County	79.5%	20.5%	15.2%	0.3%	2.1%	2.9%	(9.3%)
Unincorporated Seminole County	89.8%	10.2%	6.7%	0.4%	1.8%	1.3%	(6.4%)
Altamonte Springs	89.9%	10.1%	5.9%	0.3%	1.9%	2.0%	(8.2%)
Lake Mary	96.4%	3.6%	1.2%	0.6%	1.7%	0.1%	(2.7%)
Longwood	94.7%	5.3%	1.7%	0.2%	1.5%	1.9%	(6.5%)
Sanford	68.4%	31.6%	28.5%	0.6%	0.9%	1.6%	(4.8%)
Seminole County	88.2%	11.8%	8.3%	0.4%	1.6%	1.5%	(6.5%)
Unincorporated Volusia County	93.7%	6.3%	3.9%	0.4%	0.6%	1.4%	(5.4%)
DeBary	97.9%	2.1%	0.4%	0.8%	0.5%	0.4%	(2.2%)
Deltona	94.2%	5.8%	3.3%	0.3%	0.5%	1.7%	(9.9%)
Orange City	95.9%	4.1%	3.2%	0%	0.2%	0.7%	(3.0%)
Volusia County	88.7%	11.3%	9.0%	0.3%	0.6%	1.4%	(4.0%)

*Hispanic population figures are included in the White race population and are broken out for general reference.

Source: U.S. Department of Commerce Bureau of the Census, 1990 Census of Population and Housing, Orange, Seminole and Volusia Counties.

Table 3-6. Project Study Ethnicity Percentages by Jurisdiction

Geographic Area	White	Non-White/Black		American Indian/ Eskimo	Asian/ Pacific Island	Other Race	(Hispanic) **
Unincorporated Orange County	76.4%	23.6%	17.9%	0.3%	2.4%	3.0%	9.2%
Eatonville	7.5%	92.5%	92.5%	0.0%	0.0%	0.0%	1.6%
Maitland	83.4%	16.6%	15.9%	0.2%	0.5%	0.0%	1.7%
Orlando	62.7%	37.3%	33.9%	0.3%	1.3%	1.8%	6.2%
Winter Park	76.8%	23.2%	19.2%	0.0%	3.1%	0.9%	5.9%
Unincorporated Seminole County	89.8%	10.2%	6.8%	0.2%	2.3%	0.9%	6.3%
Altamonte Springs	89.5%	10.5%	6.5%	0.3%	1.7%	2.0%	8.7%
Lake Mary	95.2%	4.8%	2.6%	1.3%	0.8%	0.0%	1.1%
Longwood	94.2%	5.8%	1.8%	0.1%	2.0%	2.0%	6.7%
Sanford	91.8%	8.2%	4.0%	0.0%	2.1%	2.1%	7.2%
Unincorporated Volusia County	95.2%	4.8%	2.5%	0.5%	1.3%	0.6%	2.6%
DeBary	97.1%	2.9%	0.7%	0.6%	0.9%	0.8%	3.5%
Deltona	94.3%	5.7%	3.0%	0.4%	0.7%	1.6%	10.7%
Orange City	93.7%	6.3%	5.2%	0.0%	0.4%	0.7%	2.5%

**Hispanic population figures are included in the white race population and are broken out for general reference.

Source: U.S. Department of Commerce Bureau of the Census, 1990 Census of Population and Housing, Orange, Seminole and Volusia Counties.

3.1.1.1.3 Population by Age

As shown on Table 3-7, the tri-county, Ultimate project, and Preferred Alternative study areas have similar percentages of child and elderly populations. The child population is defined as those persons 16 years of age and younger. The elderly population is defined as those persons 65 years of age or older. Orange and Seminole Counties have similar child and elderly population distributions. Overall, Volusia County has the highest elderly population, and Eatonville had the highest child population within the tri-county, Ultimate project, and Preferred Alternative study areas.

Table 3-7. Population by Age

Geographic Area	Total Resident Population	% Children (Age 16 or under)	% Elderly (Age 65 or over)
Eatonville	2,192	32%	11%
Maitland	9,088	20%	17%
Orlando	164,693	20%	11%
Winter Park	22,242	16%	23%
Orange County	677,491	23%	11%
Altamonte Springs	34,879	19%	9%
Lake Mary	5,929	25%	12%
Longwood	13,316	25%	11%
Sanford	32,387	25%	13%
Seminole County	287,529	24%	10%
DeBary CDP**	7,176	18%	27%
Deltona CDP	50,857	24%	19%
Orange City	5,347	17%	32%
Volusia County	370,712	19%	23%
Tri-County Area*	1,335,732	22%	14%
Eatonville	2,192	32%	11%
Maitland	3,965	19%	15%
Orlando	61,296	19%	15%
Winter Park	3,246	23%	16%
Orange County	107,564	20%	13%
Altamonte Springs	25,480	19%	10%
Lake Mary	2,797	17%	19%
Longwood	7,437	24%	11%
Sanford	6,142	24%	7%
Seminole County	83,126	22%	10%
DeBary	3,993	21%	20%
Deltona	36,899	23%	22%
Orange City	3,212	15%	38%
Volusia County	52,827	21%	25%
Ultimate Project Study Area***	243,517	21%	14%
Preferred Alternative Project Study Area Totals	117,592	21%	12%

*Tri-County Area was determined using Census Data from 1990.

**CDP denotes a Census Designated Place, an unincorporated area.

***Project Study Area was determined using Census Tracts abutting the alignment.

Source: U.S. Department of Commerce Bureau of the Census, 1990 Census of Population and Housing, Orange, Seminole and Volusia Counties.

3.1.1.1.4 Growth Characteristics

As shown in Table 3-1, the population of Florida and the jurisdictions within the Ultimate project and Preferred Alternative study areas have increased significantly between 1980 and 1996.

The largest population increases within the tri-county area occurred in Deltona, Lake Mary, and Orange City between 1980 and 1990. From 1990 to 1996, the largest population increases in the tri-county area occurred in DeBary, Lake Mary, and unincorporated Orange County. The population growth in Orange County has predominantly been within the City of Orlando and the unincorporated areas of Orange County. Several published surveys of major U.S. markets rate Orlando among the top ten in growth categories including population and employment growth (according to the Economic Development Commission of Mid-Florida (EDC)).

The largest population growth in Seminole County has occurred in the jurisdictions of Lake Mary, Altamonte Springs, and areas in unincorporated Seminole County. These jurisdictions have seen significant increases in population between 1980 and 1990. The population of unincorporated Volusia County decreased between 1990 and 1996. This is due to the annexation of unincorporated areas of Volusia County into the local jurisdictions, which would also explain the high population increases in Deltona, Orange City, and DeBary. Deltona, which was an unincorporated Census Designated Place (CDP) as late as 1995, became incorporated in 1996.

As shown in Table 3-2, the growth in population in Orange, Seminole, and Volusia Counties is expected to increase through 2020. The largest percentage growth in population is expected in Seminole County followed by Orange County, then Volusia County.

3.1.1.2 Economic Conditions

3.1.1.2.1 Employment

As shown in Table 3-8, employment growth within the tri-county, Ultimate project, and Preferred Alternative study areas is expected to continue at a strong rate. This may be partially attributable to the job opportunities created by the increase in the number of visitors to the area.

Table 3-8. Employment Projections

Geographic Area	1996	2020	Absolute Gain	Percent Increase
Tri-County Area*				
Orange	596,719	1,022,454	425,735	71%
Seminole	157,242	283,095	125,853	80%
Volusia	174,520	257,841	83,321	48%
Tri-County Totals	928,481	1,563,390	634,909	68%
Project Study Area**				
Orange	192,383	288,603	96,220	50%
Seminole	56,148	118,859	62,711	112%
Volusia	10,104	18,872	8,768	87%
Ultimate Project Study Area Totals	258,635	426,334	167,699	65%
Preferred Alternative Project Study Area Totals	140,869	217,583	76,714	54%

*Tri-County Area was determined using (TAZs) from 1990 and 2020 (1996 data was interpolated).

**Project Study Area was defined approximately by the width of two TAZs abutting the alignment for 1990 and 2020 (1996 data was interpolated).

TAZ Source: METROPOLITAN ORLANDO OUATS 2020, adopted 1996; and Volusia County MPO 2020 Transportation Plan Update, adopted 1995.

In 1996, the Ultimate project study area had almost one-third (27 percent) of the total employment in the tri-county area. From 1996 to 2020, employment in the tri-county area is expected to increase by 68 percent. In that same period, the employment in the Ultimate project study area is projected to increase approximately 65 percent. Through 2020, Orange County will account for almost two-thirds of the increase in the tri-county area employment growth, increasing by 71 percent. In addition, Orange County represents over half (57 percent) of the total employment growth for the Ultimate project study area.

Although Orange County is the center for population and economic growth for the tri-county and Ultimate project study areas, Seminole County has the highest projected increase in employment in both the tri-county and Ultimate project study areas (80 percent and 112 percent, respectively). In 1996, employment in Volusia County was approximately 174,520. Through 2020, Volusia County employment increased 48 percent. Within the Ultimate project study area, the employment growth in Volusia County is projected to increase 87 percent, from 1996 to 2020.

Employment projections for each of the project segments are provided in Table 3-9. Employment in Segments 1, 2, 3, and 4 is expected to increase greater than 50 percent by 2020. The largest gain in employment in the Ultimate project study area is expected to occur in Segment 2 with an increase of almost 40,000 jobs. Segment 2 is located between John Young Parkway and Ivanhoe Boulevard, through the Orlando CBD, where the majority of jobs are located. Employment projections in Segment 1, which is predominantly residential, exhibits the lowest percentage increase at 52 percent. The largest percentage gains in employment are expected to occur in Segments 5 and 6 within Seminole and Volusia Counties. Employment for Segment 5 in Seminole County is expected to increase by 161 percent. Employment in Segment 6, located in Volusia County, is expected to increase by 87 percent.

Table 3-9. Employment Projections by Segment

Project Study Area* Segments	1996	2020	Absolute Gain	Percent Increase
Segment 1	72,180	109,774	37,594	52%
Segment 2	74,129	114,044	39,915	54%
Segment 3	26,020	40,145	14,125	54%
Segment 4	51,928	80,050	28,122	54%
Segment 5	24,274	63,449	39,175	161%
Segment 6	10,104	18,872	8,768	87%
Ultimate Project Study Area Totals	258,635	426,334	167,699	65%
Preferred Alternative Project Study Area Totals	140,869	217,583	76,714	54%

*Project Study Area was defined approximately by the width of two TAZs abutting the alignment.
Source: METROPLAN ORLANDO, OUAITS 2020, adopted 1996.

3.1.1.2.2 Housing

Table 3-10 shows the housing growth projections for dwelling units in the tri-county, Ultimate project, and Preferred Alternative study areas for 1996 and 2020. The housing supply within the tri-county and Ultimate project study area is expected to increase by 56 percent and 48 percent, respectively, between 1996 and 2020.

Table 3-10. Housing Projections

Area	1996	2020	Absolute Gain	Percent, Increase
Tri-County Area*				
Orange	328,252	512,920	184,668	56%
Seminole	145,665	248,330	102,665	70%
Volusia	204,609	299,476	94,867	46%
Tri-County	678,526	1,060,726	382,200	56%
Project Study Area**				
Orange	45,862	62,652	16,790	37%
Seminole	33,973	58,072	24,099	71%
Volusia	14,878	19,883	5,005	34%
Ultimate Project Study Area	94,713	140,607	45,894	48%
Preferred Alternative Project Study Area Totals	37,743	45,269	7,526	20%

Source: East Central Florida Regional Planning Council, 1998; METROPLAN ORLANDO, 1998.

*Tri-County Area was determined using TAZs.

**Project Study Area was defined approximately by the width of two TAZs abutting the alignment.

In 1996, housing supply in Orange County represented approximately 48 percent of the tri-county area total. Through 2020, Orange County will account for almost half of the increase in the tri-county area housing growth. Orange County represents a higher percentage of the housing supply within the tri-county and Ultimate project study areas; however, Seminole County has the highest projected increase in housing in the tri-county and Ultimate project study areas of 70 percent and 71 percent, respectively.

The Ultimate project and Preferred Alternative study area segments were used to determine the housing growth projections between the years 1996 and 2020. These housing projections are shown in Table 3-11. In 1996, the largest percentages of housing were located in Segment 2 and Segment 4.

Table 3-11. Housing Projections by Segment

Project Study Area* Segments	1996	2020	Absolute Gain	Percent Increase
Segment 1	13,058	26,546	13,488	103%
Segment 2	19,492	21,591	2,099	11%
Segment 3	7,821	8,540	719	9%
Segment 4	31,744	42,466	10,722	34%
Segment 5	7,720	21,581	13,861	180%
Segment 6	14,878	19,883	5,005	34%
Ultimate Project Study Area Totals	94,713	140,607	45,894	48%
Preferred Alternative Project Study Area Totals	37,743	45,269	7,526	20%

*Project Study Area was defined approximately by the width of two TAZs abutting the alignment.
Source: METROPLAN ORLANDO, OUAITS 2020, adopted 1996.

By 2020, the largest increase in housing units is expected in Segment 5 (180 percent increase) followed by Segment 1 (103 percent increase). The lowest predicted increase in housing growth is found in Segment 3. This low increase can be attributed to an established existing residential area.

3.1.1.2.3 Income and Poverty Data

The average median household income for the tri-county, Ultimate project, and Preferred Alternative study areas was determined using information from the U.S. Census Bureau (1990) and is shown in Table 3-12.

Table 3-12. Income and Poverty

Geographic Area	Median Household Income	Percent Persons in Poverty
Orange County	\$30,252	11%
Eatonville	\$21,094	25%
Maitland	\$42,028	6%
Orlando	\$26,119	16%
Winter Park	\$37,080	10%
Seminole County	\$35,637	7%
Altamonte Springs	\$31,538	8%
Lake Mary	\$39,098	6%
Longwood	\$35,374	5%
Sanford	\$25,029	16%
Volusia County	\$24,818	12%
DeBary	\$24,120	7%
Deltona	\$28,882	7%
Orange City	\$20,000	12%
Ultimate Project Study Area	\$29,218	11%
Preferred Alternative Project Study Area Totals	\$24,498	17%

Source: U.S. Department of Commerce Bureau of the Census, 1990 Census of Population and Housing, Orange, Seminole and Volusia Counties.

As shown in 1990, the average median income per year in the Ultimate project and Preferred Alternative study areas was approximately \$29,218 and \$24,498, respectively. The average median household income for the Ultimate project study area was 4 percent more than the median household income for the tri-county area.

Of the three counties in the Ultimate project study area, Seminole County has the highest median household income (\$35,637) and the lowest percentage of persons living below poverty (7 percent). Conversely, Volusia County has the lowest median household income (\$24,818) and the highest percentage of persons living below poverty level (12 percent).

Within the Ultimate project study area, the highest percentages of total population living below poverty level are found in Census Tracts 104 (55 percent), 105 (48 percent), 106 (52 percent), 115 (33 percent), and 117.02 (37 percent) (refer to Figure 3-1 for Census Block Groups location map). All these census tracts are located in Orange County in Segment 2, bordering either I-4 or SR 408. The Census Block Groups (BGs) with the highest percentages of persons living below the poverty level are located in the vicinity of the I-4/SR 408 interchange within the neighborhoods of Holden Heights, Griffin Park, Holden-Parramore, and Callahan. Areas within the Ultimate project study area with high levels of persons living below poverty level are discussed further in Section 3.1.3 Environmental Justice of this document.

3.1.1.2.4 Economic Generators, Employment and Income

An analysis was conducted of the tri-county area to determine the region's total employment of all industries covered by unemployment compensation law in the State of Florida. In 1990, the estimated average monthly employment for all industries was 350,953 in Orange County, 151,377 in Seminole County, and 155,529 in Volusia County. Overall, the service industry provided the largest number of employees in the tri-county, Ultimate project, and Preferred Alternative study areas. The retail trade sector ranked second while the manufacturing industry ranked third for the largest

number of employees in the tri-county area. Table 3-13 shows the average monthly employment by industry for the tri-county area.

Table 3-13. Average Monthly Employment by Industry (1990)

Type	Orange County	Seminole County	Volusia County	Tri-County Area Total
Agriculture, Forestry, Fisheries	7,682	3,095	5,468	16,245
Mining	215	46	138	399
Construction	26,863	11,660	13,254	51,777
Manufacturing	34,663	18,014	16,799	69,476
Transportation	17,333	5,398	5,128	27,859
Utilities/Communications	10,585	4,897	4,189	19,671
Wholesale Trade	17,169	8,848	5,477	31,494
Retail Trade	65,210	29,513	34,590	129,313
Financial/Insurance/Real Estate	25,976	13,789	10,693	50,458
Services	132,571	50,319	52,004	234,894
Public/Government	12,686	5,798	7,789	26,273
All Industries	350,953	151,377	155,529	657,859

Source: U.S Department of Commerce Bureau of the Census, 1990 Census of Population and Housing, Orange, Seminole and Volusia Counties.

Table 3-14 identifies total annual wages and employment for 1996 for Orange, Seminole, and Volusia Counties. In Orange County, the service industry accounted for the highest annual average employment and wages. In Seminole County, the retail industry provided the highest annual average employment; however, the service industry provided the highest total annual wages. In Volusia County, the service industry again accounted for the highest average annual employment and total wages. Overall in 1996, Orange County accounted for approximately 70 percent of the wages (\$13.5 billion) and 67 percent of the employment (515,807 persons) in the tri-county area.

Table 3-15 presents the projected average monthly employment by sector for tri-county, Ultimate project, and Preferred Alternative study areas for years 1996 and 2020. The majority of jobs in the tri-county, Ultimate project, and Preferred Alternative study areas are in the service sector, followed by the commercial and industrial sectors. With the region's strong tourist industry, the majority of jobs are anticipated to remain in the service industry until at least year 2020. Significant gains in the industrial sector are expected over the next two decades.

The 1996 total personal income, per capita personal income, and total workplace earnings are presented for the tri-county area in Table 3-16. Personal income is defined as the sum of income received by persons from all sources (e.g., wages, interest, and social security). Per capita personal income is the total personal income of persons within the county divided by the total population of the county. Total workplace earnings are those earnings derived from employment wages only.

The Ultimate project study area includes a population with a wide variety of income groups. Based on 1990 Census data, the 1990 per capita income of the Census Tracts that comprise the Ultimate project study area ranged from a low of \$4,723 in Census Tract 104, located within the Holden-Parramore neighborhood in Orange County, to a high of \$33,518 in Census Tract 207.02, located west of I-4 between E.E. Williamson Road and Lake Mary Boulevard in Seminole County.

The primary special economic activity centers in the Ultimate project study area are found in Orange County. These special economic activity centers include the Orlando CBD, the tourist-related activities, the Orange County Convention Center, medical facilities, and other activity centers and major employers.

The top ten non-government employers in the tri-county area are listed in Table 3-17. Most of these employers are concentrated within or near the Ultimate project area. In 1995, Orange County's top employer was Walt Disney World with 40,000 employees. By 1997, with the addition of Downtown Disney and Disney's Animal Kingdom, the number of employees had increased to 51,000. Orlando Regional Healthcare System and Publix Supermarkets, Inc. rank second and third with 7,131 and 6,371 employees, respectively.

Table 3-14. Wages and Employment by Industry (1996)

Sector	Orange County		Seminole County		Volusia County		Tri-County Area	
	Total Annual Wages	Annual Average Employment	Total Annual Wages	Annual Average Employment	Total Annual Wages	Annual Average Employment	Total Annual Wages	Annual Average Employment
Agriculture, Forestry and Fishing	\$167,545,928	8,650	\$35,678,907	1,839	\$49,473,149	3,805	\$252,697,984	14,294
Mining	\$3,457,894	91	-	-	-	-	\$3,457,894	91
Construction	\$695,704,011	25,018	\$254,831,250	9,104	\$158,727,117	6,781	\$1,109,262,378	40,903
Manufacturing	\$1,315,454,746	35,347	\$316,396,398	9,806	\$360,487,230	12,389	\$1,992,338,374	57,542
Transportation and Public Utilities	\$956,627,245	30,026	\$195,546,213	5,533	\$98,761,882	3,398	\$1,250,935,340	38,957
Whole Trade	\$1,076,826,913	29,308	\$238,640,758	6,862	\$124,256,412	4,947	\$1,439,724,083	41,117
Retail Trade	\$1,468,800,063	88,124	\$470,973,261	30,942	\$472,031,405	34,532	\$2,411,804,729	153,598
Finance, Insurance and Real Estate	\$1,052,738,052	30,901	\$212,424,752	6,082	\$155,110,175	5,848	\$1,420,272,979	42,831
Services	\$5,238,963,064	214,680	\$747,765,177	29,404	\$935,310,876	43,196	\$6,922,039,117	287,280
Government	\$1,476,385,104	51,945	\$372,586,469	13,448	\$520,054,746	21,029	\$2,369,026,319	86,422
Non Class Establishments	\$41,434,101	1,717	\$11,181,412	614	\$5,561,159	302	\$58,176,672	2,633
Total All Industries	\$13,493,937,121	515,807	\$2,820,345,690	111,795	\$2,830,301,002	132,422	\$19,229,735,869	765,668

Source: Florida Department of Labor and Employment Security, Bureau of Labor Market Information, ES-202 Program.

Table 3-15. Employment by Sector

Geographic Area	Industrial			Commercial			Service		
	1996	2020	% Increase	1996	2020	% Increase	1996	2020	% Increase
Tri-County Area Totals*									
Orange	136,200	246,088	81%	125,151	191,957	53%	335,368	584,409	74%
Seminole	34,582	68,460	98%	39,883	65,447	64%	82,777	149,188	80%
Volusia	31,768	45,766	44%	46,122	68,296	48%	96,630	143,779	49%
Tri-County	202,550	360,314	78%	211,156	325,700	54%	514,775	877,376	70%
Project Study Area Totals**									
Orange	30,315	39,589	31%	36,192	50,759	40%	125,876	198,255	58%
Seminole	11,714	27,852	138%	12,261	23,810	94%	32,173	67,197	109%
Volusia	1,245	2,529	103%	3,945	7,224	83%	4,914	9,119	86%
Ultimate Project Study Area	43,274	69,970	62%	52,398	81,793	56%	162,963	274,571	68%
Preferred Alternative Project Study Area Totals	16,674	22,561	35%	26,798	36,171	35%	97,397	158,851	63%

Source: East Central Florida Regional Planning Council, 1998; METROPLAN ORLANDO, 1998.

*Tri-County Area was determined using TAZs.

**Project Study Area was defined approximately by the width of two TAZs abutting the alignment.

Table 3-16. 1996 Personal Income and Earnings by Industry (thousands of dollars)

Item	Orange County	Seminole County	Volusia County
Total Personal Income	\$17,545,140	\$8,365,607	\$8,199,713
Per Capita Income*	\$22,951	\$24,852	\$19,787
Total Earnings (workplace)	\$17,560,108	\$3,743,234	\$3,738,868
Agriculture (non-farm)	\$126,015	\$39,813	\$28,107
Farm	\$106,531	\$11,758	\$50,077
Mining	\$8,288	\$345	\$149
Construction	\$1,030,260	\$367,224	\$242,077
Manufacturing	\$1,597,963	\$380,849	\$433,829
Nondurable Goods	\$481,808	\$65,874	\$108,176
Durable Goods	\$1,116,155	\$314,975	\$325,653
Trans., Comm., and Public Utilities	\$1,322,670	\$250,227	\$140,691
Wholesale Trade	\$1,325,589	\$300,610	\$158,391
Retail Trade	\$1,826,106	\$578,255	\$577,393
Finance, Insurance, and Real Estate	\$1,416,722	\$302,607	\$201,290
Services	\$6,996,483	\$1,087,293	\$1,310,945
Government	\$1,803,481	\$424,253	\$595,919

*In dollars

Source: Florida Department of Labor and Employment Security, Bureau of Labor Market Information, ES-202 Program.

Table 3-17. Top Ten Non-Governmental Employers

Area	Employees
Orange County	
Walt Disney World Company	40,000 (51,000)*
Florida Hospital	11,600**
Orlando Regional Healthcare System	8,100
Universal Studios Florida	6,000***
Lockheed Martin	5,920
AT&T (Wireless)	5,000
Publix Supermarkets, Inc.	4,878
University of Central Florida	4,655
Central Florida Investments	4,000
SunTrust	3,216
Seminole County	
Publix Supermarkets, Inc.	2,344
Siemens Telecom Networks	1,500
Florida Hospital-Altamonte	1,476
Seminole Community College	1,250
American Automobile Association	1,200
Columbia/HCA Healthcare	1,200
Albertsons	880
Matrixx Marketing	853
Recoton Corporation	850
U.S. Postal Processing Plant	823
Volusia County	
Halifax Community Health Systems	2,995
Memorial Health Systems	1,650
Sherwood, Davis, and Geck	1,050
Embry Riddle University	950
The News Journal	837
Columbia Medical Center	780
Stetson University	610
Volusia Medical Center	560
Boston Whaler, Inc.	550
Memtec America Corporation	450

Note: This list excludes government employment and school districts.

*Walt Disney World figures include Animal Kingdom and Downtown Disney employees.

**Source: Greater Orlando Chamber of Commerce (September 1999).

***The number of employees for Universal Studios Florida does not include Islands of Adventure.

Source: 1998 Opportunity Orlando (EDC, Inc. 1997 data) Volusia County Profile Business Development Corporation.

In Seminole County, the major employer is Florida Hospital with 2,513 employees. Publix Supermarkets and Siemens Stromberg-Carlson follow closely with 2,079 and 1,570 employees, respectively. Volusia County's top employer is Halifax Community Health Systems with 3,097 employees followed by Memorial Health Systems carrying 2,174 employees and Embry Riddle University with 960 employees.

3.1.1.2.5 Government Finance

The ad valorem taxes, county revenues, and a summary of funds by funding source are identified in the following sections.

Ad Valorem Taxes

The ad valorem tax revenues for Orange, Seminole, and Volusia Counties are given in Table 3-18. Taxes levied include those for the county base services, fire and rescue, library, and voter services. For the fiscal year 1996-1997, Orange County had the highest ad valorem tax revenues in the tri-county area; Volusia County had the lowest ad valorem tax revenues.

Table 3-18. Ad Valorem Tax Revenues FY 1996-1997

Ad Valorem Tax	Orange County	Seminole County	Volusia County
County Base Services	\$196,782,328	\$111,505,786	\$69,451,474
Fire and Rescue	\$52,710,946	\$11,821,498	\$6,743,275
Library	\$14,201,177	\$853,567	\$6,893,402
Voter	\$988,058	\$2,538,149	\$2,289,376
Total	\$264,682,509	\$126,719,000	\$85,377,527

Source: Budget Offices of Orange, Seminole, and Volusia Counties.

County Revenue

Table 3-19 lists the revenues of Orange, Seminole, and Volusia Counties for the fiscal year 1996-1997. The revenue sources within the tables include the categories of taxes, fees, and other intergovernmental transfers and enterprise fund income. Orange County had the highest tax revenues in the tri-county area. Seminole County's tax revenues were slightly less than those of Volusia County.

Table 3-19. Actual County Revenues FY 1996-1997

Revenue Source	Orange County	Seminole County	Volusia County
Taxes, Fees and Other	\$951,819,566	\$182,275,000	\$173,961,518
Intergovernmental Transfers	\$152,001,958	\$36,473,000	\$34,161,100
Enterprise Fund Income	\$447,775,718	\$28,699,000	\$42,609,900
Total	\$1,551,597,242	\$247,447,000	\$250,732,518

Source: Budget Offices of Orange, Seminole, and Volusia Counties.

Budget Expenditures

The adopted budget specified funds are summarized in Table 3-20. Orange County has the highest combined total of all funds with approximately \$1.6 billion. Volusia County has approximately \$280 million and Seminole County has the lowest combined total of all funds with an estimated \$235 million. This information reveals the financial status of the counties based on budget expenditures. Orange County had the highest adopted budget in the tri-county area.

Table 3-20. Summary of Funds FY 1996-1997

Summary of Funds (adopted budget)	Orange County	Seminole County	Volusia County
General Funds	\$341,631,494	\$94,661,000	\$135,993,625
Special Revenue Funds	\$423,812,382	\$106,918,000	\$53,508,979
Debt Service Funds	\$191,554,173	\$2,687,000	\$21,125,115
Capital Project Funds	\$36,924,194	\$1,021,000	\$3,409,797
Enterprise Funds	\$524,259,403	\$28,699,000	\$47,025,660
Internal Service Funds	\$71,209,475	\$1,278,000	\$17,677,892
Total	\$1,589,391,121	\$235,264,000	\$278,741,068

Source: Budget Offices of Orange, Seminole, and Volusia Counties.

3.1.1.3 Land Use and Development Activity

This section provides a description of existing land use, activity centers, future land use, major development activities, and land use controls.

3.1.1.3.1 Existing Land Use

As shown in Figure 1-18, the 43-mile stretch of I-4 that extends from the SR 528 (Bee Line Expressway) interchange in Orange County to SR 472 in Volusia County is characterized by diverse land use patterns, including densely developed areas and vacant tracts of land. Detailed land use information is included in the *Socioeconomic and Environment Report* (August 2000) and summarized by segment below.

Segment 1

A variety of land uses within Segment 1 include areas in unincorporated Orange County and the City of Orlando. The southern portion is characterized by tourist attractions, hotels, resorts, restaurants, and other tourist-related activities. Residential developments are located outside the immediate I-4 study area. The remaining portions within Segment 1 consist of predominantly industrial and commercial land uses. The following paragraphs present a more detailed description of the land uses within Segment 1 of the I-4 project study area.

SR 528 (Bee Line Expressway) to Florida's Turnpike - This area supports much of the tourist-based economy in Central Florida. Much of the area along International Drive, Universal Boulevard, and Kirkman Road within the project study area is designated for commercial use and office space including hotels and resorts, restaurants, shopping centers, strip malls, and other tourist-related activities. In addition to the major tourist attractions in the area, a variety of amusement parks are located adjacent to I-4.

Florida's Turnpike to John Young Parkway - The areas adjacent to I-4 are predominantly characterized by undeveloped land, industrial, and institutional uses. The area also has residential sites, recreational facilities, agricultural land, and institutional designations that are found in areas beyond the I-4 study area.

Segment 2

Within Segment 2, the land uses adjacent to I-4 are primarily commercial, residential, industrial, and institutional through the City of Orlando and areas of unincorporated Orange County. The residential areas include some minority and low-income census tracts. The commercial land uses are mostly found at interchanges and within the downtown Orlando CBD. The neighborhoods adjacent to I-4 and SR 408 (East/West Expressway) within the study area have some historical significance and were previously split due to the original roadway construction. The following paragraphs present a more detailed description of the land uses within Segment 2 of the I-4 project study area.

John Young Parkway to Rio Grande Avenue - In the area of the John Young Parkway interchange, land uses are predominantly commercial, residential, industrial, and institutional.

Rio Grande Avenue to SR 408 - The areas adjacent to Orange Blossom Trail (US 441) are mostly commercial land uses. The area north of Michigan Street and east of I-4 is largely industrial and commercial, and includes the Orlando Regional Medical Center. The area west of I-4 and south of Gore Street consists of predominantly single-family residential units within the neighborhood of Holden Heights. The residential neighborhood east of I-4 is also generally considered part of the Holden Heights neighborhood. The population within these neighborhoods is of mixed ethnicity and falls within some minority census tracts. These neighborhoods contain a number of social service providers. The neighborhood west of I-4 and north of Gore Street is Holden-Parramore, a predominantly minority community.

SR 408 to Livingston Street - In the downtown Orlando area, land uses are largely commercial and institutional.

The area from South Street north to Washington Street, and primarily east of I-4, is considered part of the Downtown Orlando Historic District. The area is listed with the National Park Service (NPS). There are several historic resources located within this area. Church Street Station and Exchange is a major restaurant and shopping center, and a major tourist attraction. North of Washington Street, the land adjacent to I-4 is predominantly commercial.

West of I-4, within the Holden-Parramore neighborhood, there are many churches and several social service providers, including the Coalition for the Homeless and Goodwill Industries. The Callahan Neighborhood and the Callahan Neighborhood Center is located within the area of the project corridor.

SR 408 - Tampa Avenue to I-4 - The land uses adjacent to SR 408 within the study area are predominantly residential, commercial, institutional, and recreational. The original construction of SR 408 divided the neighborhoods of Holden-Parramore, Lake Sunset, and Lorna Doone, which are predominantly minority, low-income census tracts. Holden-Parramore has a high potential for listing on the NRHP. Institutional uses include Jones High School. Recreational land uses include the Citrus Bowl and Tinker Field. Access ramps to SR 408 are provided at Tampa Avenue and Orange Blossom Trail (US 441).

SR 408 - I-4 to Bumby Avenue - The land uses between I-4 and Orange Avenue are mostly commercial and institutional within downtown Orlando. The land uses adjacent to SR 408, east of Orange Avenue, are mostly residential and recreational. The adjacent neighborhoods include the historic districts of Lake Cherokee, which is NPS certified, and Lake Lawsona, which has high potential for NRHP listing. The Greenwood Cemetery and Cherokee School, which have a high potential for NRHP listing, are located within this area.

Livingston Street to just west of Ivanhoe Boulevard - The area south of SR 50 (Colonial Drive) is also considered part of downtown Orlando and consists of primarily commercial and institutional land uses. There are a number of cultural event facilities including TD Waterhouse Centre, Expo Center, Bob Carr Performing Arts Center, and Orlando Centroplex. The area along SR 50 (Colonial Drive) consists of mostly commercial/office land uses. Between SR 50 and Ivanhoe Boulevard, land uses adjacent to I-4 are commercial. There are also several historic resources.

Segment 3

This segment is mostly commercial and institutional east of I-4 and south of Orange Avenue. The remaining portion of Segment 3 is primarily residential. The adjacent neighborhoods have some historic significance and were previously divided by the original I-4 construction.

Ivanhoe Boulevard to Princeton Street - This area is predominantly residential, commercial, and institutional. The neighborhood of College Park is located primarily west of I-4 and is composed of single family residences. College Park has a high potential for NRHP listing. The area along Orange Avenue, east of I-4, is mostly commercial. The Doctor Phillips Performing Arts Center on Orange Avenue also has high potential for NRHP listing.

Princeton Street to just east of Fairbanks Avenue - The land uses are primarily residential, commercial, institutional, and recreational. The residential areas adjacent to I-4 are within the neighborhood and subdivisions of College Park. Matthews Park and the Orlando Junior Academy are located west of I-4. Commercial land uses are located along Princeton Street, east of I-4. The Dubsdread Golf Course is located along Minnesota Avenue.

Segment 4

Segment 4 land use designations are primarily residential, with designated areas of commercial use, recreational facilities, and institutional facilities. Segment 4 traverses the jurisdictions of Eatonville, Maitland, Altamonte Springs, Longwood, and Lake Mary. Commercial land uses consist of primarily office centers.

Just east of Fairbanks Avenue to Orange County/Seminole County line - The area north of Fairbanks Avenue is predominantly residential on both sides of I-4. Areas of commercial properties

are located adjacent to I-4 along Wymore Road, Lee Road, and south of Kennedy Boulevard. Residential land uses are located north of Kennedy Boulevard within Eatonville and around Lake Hungerford. These neighborhoods are within minority census tracts. The Town of Eatonville, located east of I-4, is a historic district registered on the NRHP. Commercial land uses located on the west side of I-4 along Maitland Boulevard incorporate several office developments, including the Maitland Center. Many of the residential neighborhoods near Maitland Boulevard are relatively new, and several more developments are proposed in the area.

Orange County/Seminole County line to SR 434 – Land uses in this area are predominantly residential, commercial, and institutional. Single family residences are located west of Wymore Road and east of I-4. Several apartment and condominiums complexes are located along Wymore Road, west of I-4. On the east side of I-4, south of SR 436, land uses are mostly commercial office and retail. Commercial land uses continue along SR 436 including several office parks, hotels, restaurants, and retail centers. Between SR 436 and Central Parkway, land uses are predominantly commercial adjacent to I-4 including the Cranes Roost Park office complex. North of Central Parkway, land uses are mostly single and multi-family residential east of I-4 and west of Douglas Avenue. Additional commercial land uses are located along the east side of Douglas Avenue, along Central Parkway, and along SR 434.

SR 434 to Sand Pond Road – This area is mostly residential, with areas of commercial, institutional, and recreational land uses. The residences west of I-4 are mostly single-family residences. The east side of I-4 has single and multi-family residences. The commercial land uses are located along SR 434 and along E.E. Williamson Road. Several areas of conservation are located along the Little Wekiva River and nearby lakes.

Segment 5

Segment 5 is located in Seminole County within the jurisdictions of Lake Mary and Sanford. The land uses adjacent to I-4 are mostly vacant agricultural and residential with areas of commercial, industrial, and recreational land uses. The commercial use is primarily focused in office centers, and in retail centers.

Segment 6

Segment 6 is located in Seminole and Volusia Counties within the jurisdiction of Sanford, DeBary, Deltona, and Orange City. Land uses adjacent to I-4 are primarily vacant agricultural, residential, and commercial with areas of industrial, institutional, and recreational land uses. Most of the residential areas are located along Deltona Boulevard, Enterprise Road, Saxon Boulevard, and Graves Avenue and consist mostly of single-family units. Commercial developments located on US 17-92, Deltona Boulevard, Enterprise Road, and Saxon Boulevard consist mostly of offices and retail. Industrial land uses include the Sanford Port Authority on Orange Boulevard, and areas on Graves Boulevard.

3.1.1.3.2 Future Land Use

Future land use data was collected from local jurisdictions along the I-4 corridor. As shown in Figure 3-2, the I-4 study area will be characterized by diverse land use patterns, including areas targeted for activity centers and areas of conservation. In general, most of the vacant land along the I-4 corridor (with the exception of area for conservation and recreation) is targeted for activity centers, mixed use, and planned unit developments (PUDs), which include residential, commercial, office, and industrial land uses. The locations of the proposed developments are greatly determined by access to existing and proposed I-4 interchanges. In areas where vacant land is limited, such as in Segments 2, 3, and 4, land use patterns have already been established and changes in land designation are less significant. The following paragraphs discuss the changes proposed in the future land use plans of the adjacent local jurisdictions.

Segment 1

Segment 1 of I-4 between the SR 528 (Bee Line Expressway) and John Young Parkway interchanges proposes significant land use changes in the future. Much of the area designated as natural community and agricultural will be re-classified to include a greater commercial and residential area, public institution, and additional industrial and mixed land uses. Most of the area east of I-4 and south of the Florida's Turnpike, and west of I-4 between Turkey Lake Road and the Florida's Turnpike is designated as an Activity Center/Target Area, which includes a mix of commercial, office, and industrial sites.

Future land use changes expand the existing International Drive activity area south of SR 528 (Bee Line Expressway). Universal Studios expands to the area south of its existing site to Turkey Lake Road. Most of the agricultural areas on the west of Turkey Lake Road are proposed for residential and commercial developments. With the proposed improvement at Central Florida Parkway and Turkey Lake Road, there is one area designated as a Mixed Use/PUD just south of SR 528 (Bee Line Expressway), a mixture of residential, commercial, and office uses. Another major target area for future development is in the area of the proposed Conroy/I-4 interchange. This development includes commercial, industrial, residential, and recreational areas.

Segments 2 and 3

As discussed in Section 3.1.1.3.1, the existing land use patterns within these segments is composed primarily of commercial, residential, industrial, and institutional uses throughout the City of Orlando and areas of unincorporated Orange County.

Since only a minimal amount of vacant land exists within Segments 2 and 3, most of the land use patterns have already been established. Therefore, land use changes are less significant within these segments. Additional land is proposed to be zoned for industrial uses. Land use changes involve an increase of commercial developments along 33rd Street, Rio Grande Avenue, and Orange Blossom Trail.

Segments 4 and 5

Although no significant land use changes are proposed for Segment 4, significant changes in land use designation are proposed for Segment 5. Segment 4 will see a slight increase in commercially zoned areas, the removal of agriculture zoning along the corridor, and the increase of mixed use zoning and institutional/public facilities. Areas of conservation will remain primarily along the Little Wekiva River.

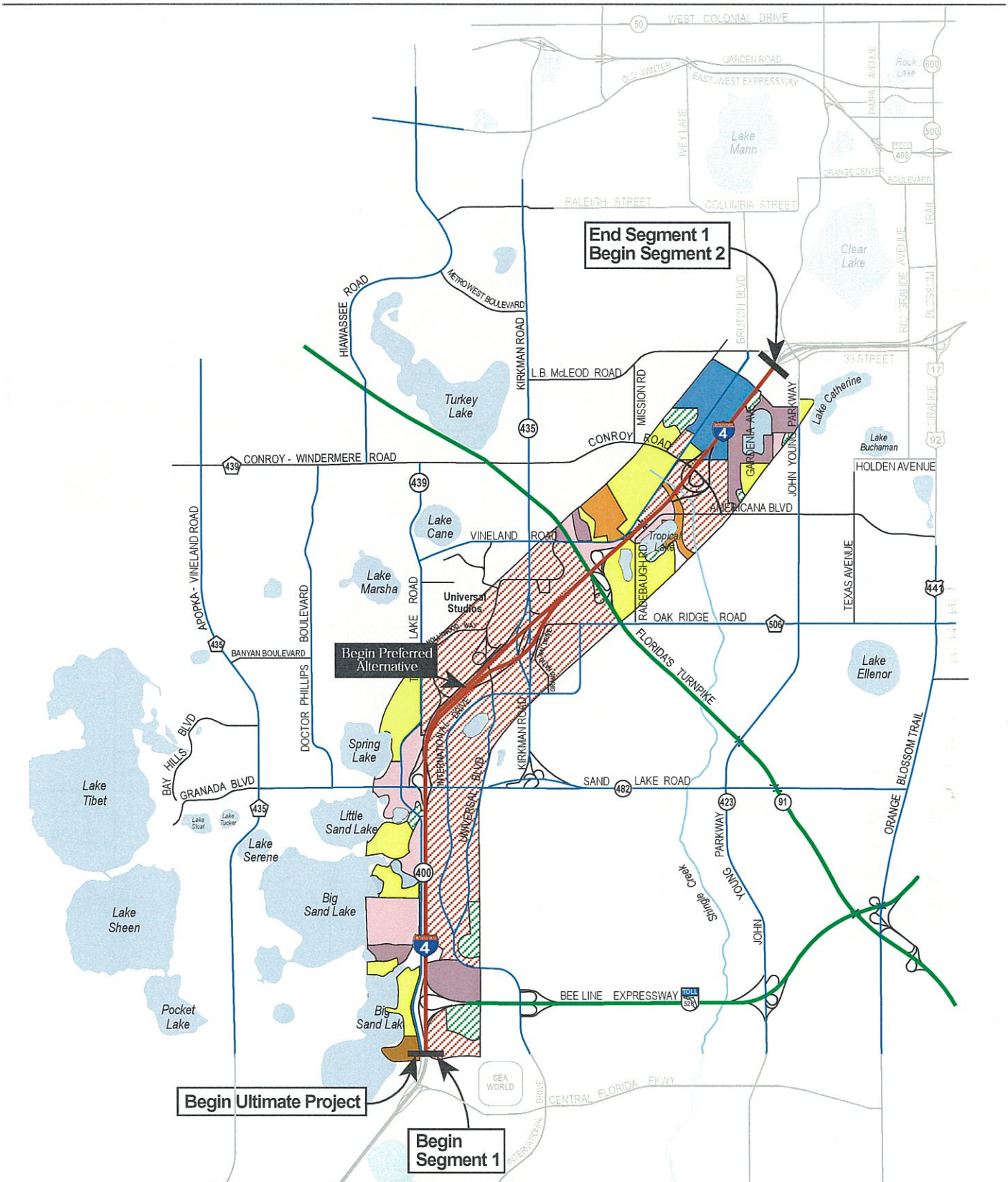
Within Segment 5, land use changes involve the redesignation of existing agricultural areas to industrial, commercial, and mixed uses (Activity Centers/Target Areas and Mixed Use/PUD). Most of the proposed developments are located in the areas along Rinehart Road and near the I-4 interchange with the Central Florida GreeneWay and Paola Road (CR 46A). Smaller areas of conservation will remain scattered along the corridor.

Segment 6

The majority of the land uses within Segment 6 will remain residential. Large areas of land, mostly wetlands, along the Lake Monroe/St. Johns River will remain as conservation areas. Future land uses within Segment 6 will retain and expand areas located near the I-4 interchanges of US 17-92, DeBary Avenue, Enterprise Road, Saxon Boulevard, and SR 472 that are zoned for industrial, commercial, agricultural, recreational facilities, and public/institutional uses. Areas near the I-4 interchanges of US 17-92, Saxon Boulevard, and SR 472 will be zoned as Activity Centers/Target Areas and Mixed Use/PUD.

3.1.1.3.3 Activity Centers

As indicated in Section 1.3.5.2, the activity centers located within the project corridor include the IDRA, the Orlando CBD, and portions of Winter Park, Altamonte Springs, Maitland, Lake Mary, Sanford, Northwest Seminole, and SR 472/Howland Boulevard. These activity centers are briefly discussed below and are presented in Figure 1-15.



End Segment 1
Begin Segment 2

Begin Preferred
Alternative

Begin Ultimate Project

Begin
Segment 1

Scale in Miles
0 1/2 1

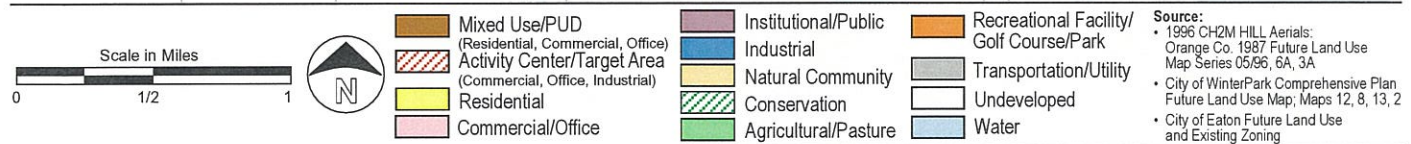
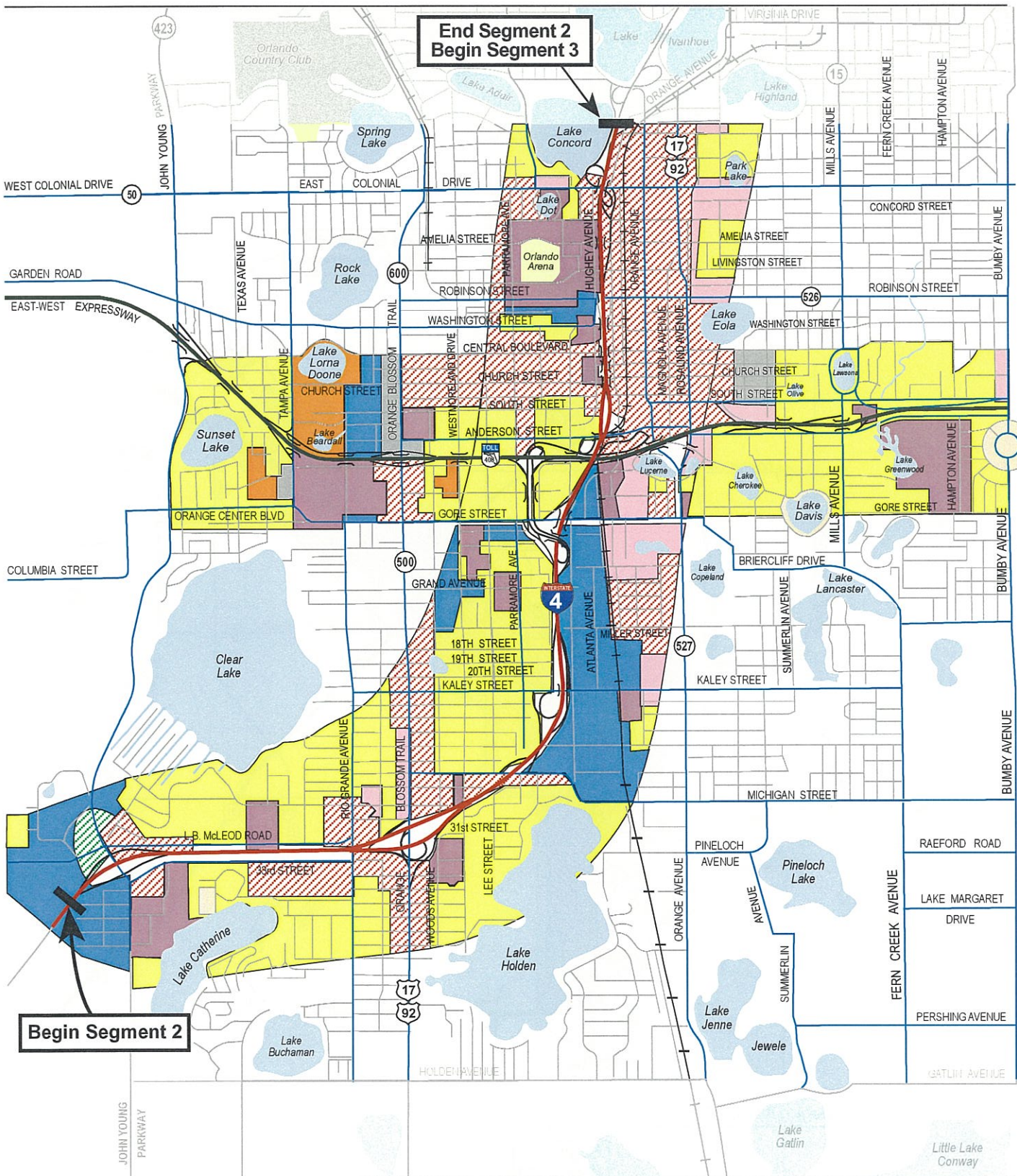
Mixed Use/PUD (Residential, Commercial, Office)	Institutional/Public	Recreational Facility/ Golf Course/Park
Activity Center/Target Area (Commercial, Office, Industrial)	Industrial	Transportation/Utility
Residential	Natural Community	Undeveloped
Commercial/Office	Conservation	Water
	Agricultural/Pasture	

Source:
 • Orange Co. Future Land Use Map Series, 05196 14A, 13B, 6B, 6A
 • City of Orlando, Future Land Use Concept, Maps 12, 17, 11



Figure 3-2
Generalized Future Land Use

I-4 PD&E Study - Section 2
Segment 1 of 6

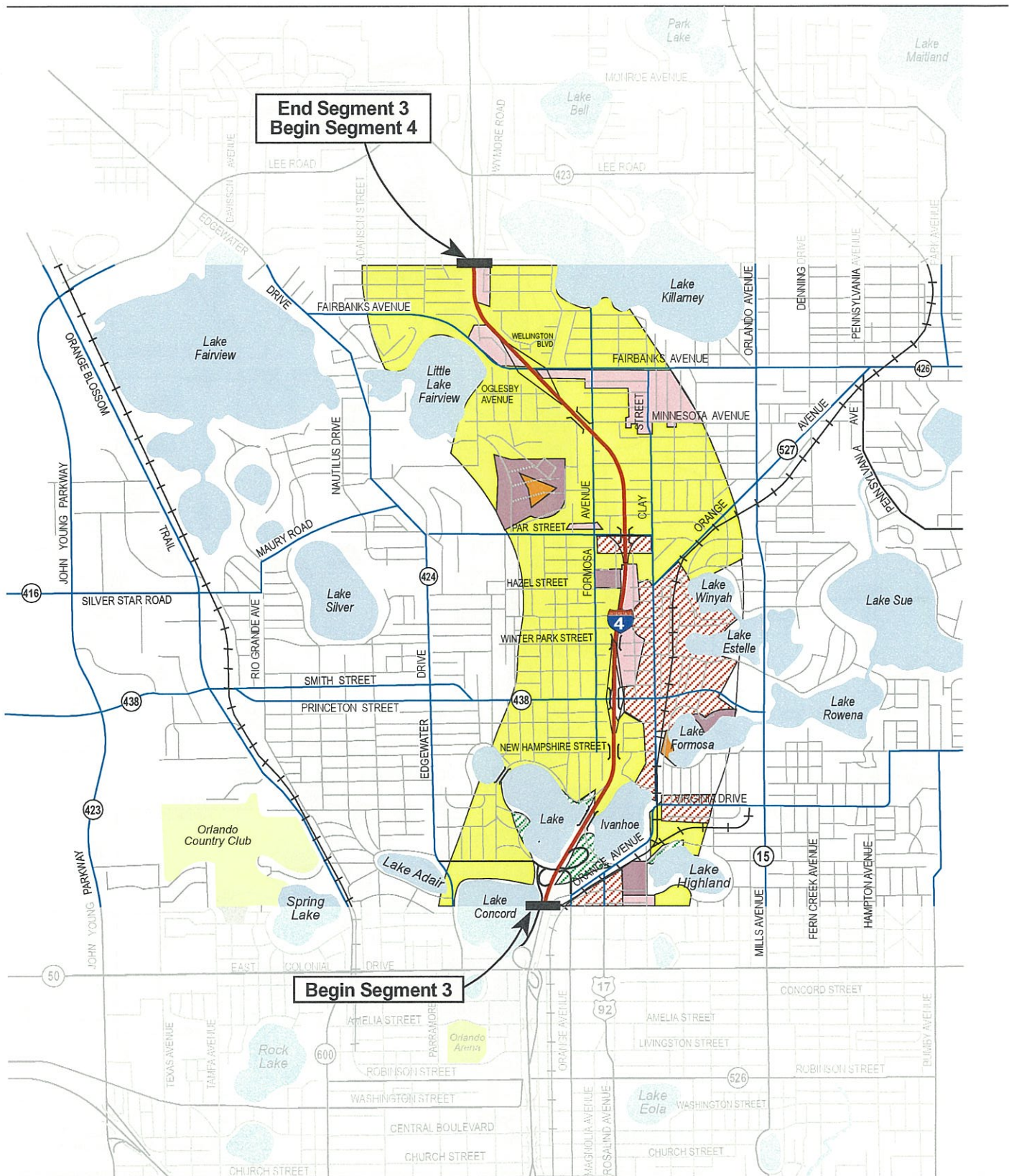


Source:
 • 1996 CH2M HILL Aerials:
 Orange Co. 1987 Future Land Use
 Map Series 05/96, 6A, 3A
 • City of WinterPark Comprehensive Plan
 Future Land Use Map; Maps 12, 8, 13, 2
 • City of Eaton Future Land Use
 and Existing Zoning

Figure 3-2
Generalized Future Land Use

I-4 PD&E Study - Section 2
 Segment 2 of 6





Scale in Miles
 0 — 1/2 — 1

Legend:

Mixed Use/PUD (Residential, Commercial, Office)	Institutional/Public	Recreational Facility/ Golf Course/Park
Activity Center/Target Area (Commercial, Office, Industrial)	Industrial	Transportation/Utility
Residential	Natural Community	Undeveloped
Commercial/Office	Conservation	Water
	Agricultural/Pasture	

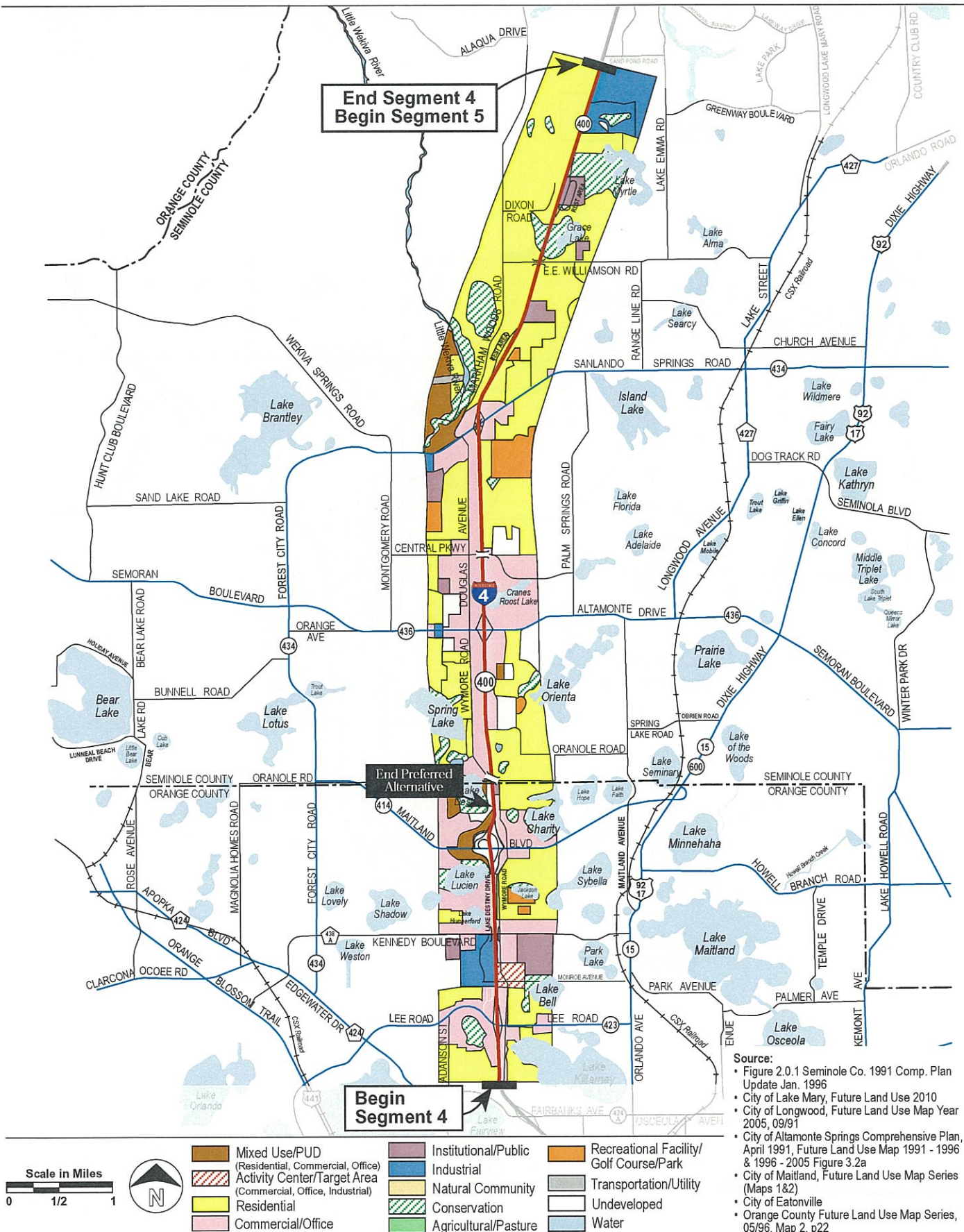
Source:

- 1996 CH2M HILL Aerials
- Orange Co. 1987 Future Land Use Map Series 05/96, 6A, 3A
- City of Winter Park Comprehensive Plan Future Land Use Map, Maps 12, 8, 13, 2
- City of Eaton Future Land Use and Existing Zoning



Figure 3-2
Generalized Future Land Use

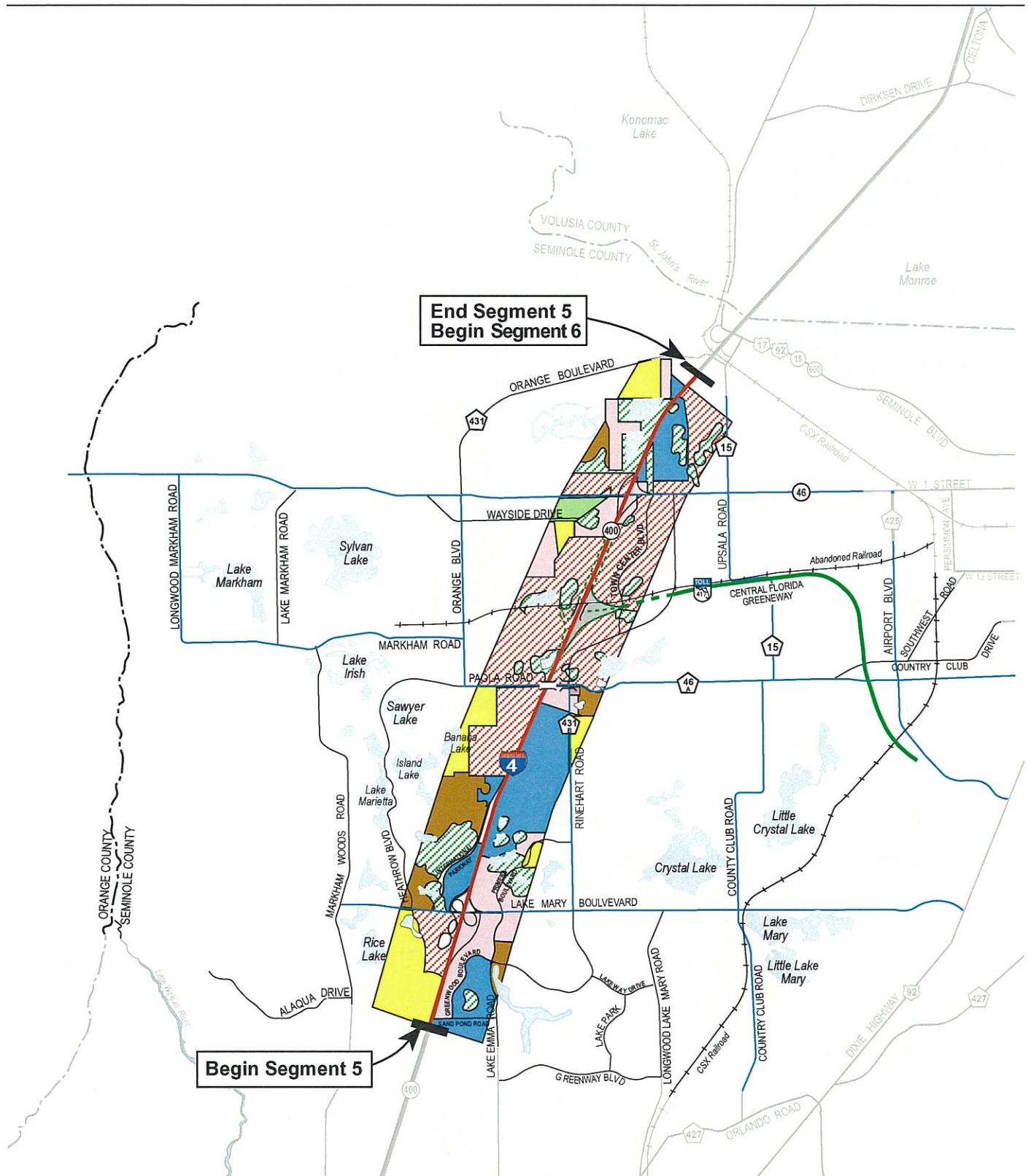
I-4 PD&E Study - Section 2
Segment 3 of 6



**Figure 3-2
Generalized Future Land Use**

I-4 PD&E Study - Section 2
Segment 4 of 6





- | | | |
|---|----------------------|--|
| Mixed Use/PUD
(Residential, Commercial, Office) | Institutional/Public | Recreational Facility/
Golf Course/Park |
| Activity Center/Target Area
(Commercial, Office, Industrial) | Industrial | Transportation/Utility |
| Residential | Natural Community | Undeveloped |
| Commercial/Office | Conservation | Water |
| | Agricultural/Pasture | |

Source:

- Seminole Co. 1991 Comprehensive Plan, Update January 1996, Figure 2.0.1
- Seminole Co. Comprehensive Plan, 06/96, Figure 2-3, p. B-31, Northwest HIP Study Area
- City of Sanford, Future Land Use Plan, 04/95
- City of Lake Mary, Future Land Use, 2010



**Figure 3-2
Generalized Future Land Use**

I-4 PD&E Study - Section 2
Segment 5 of 6

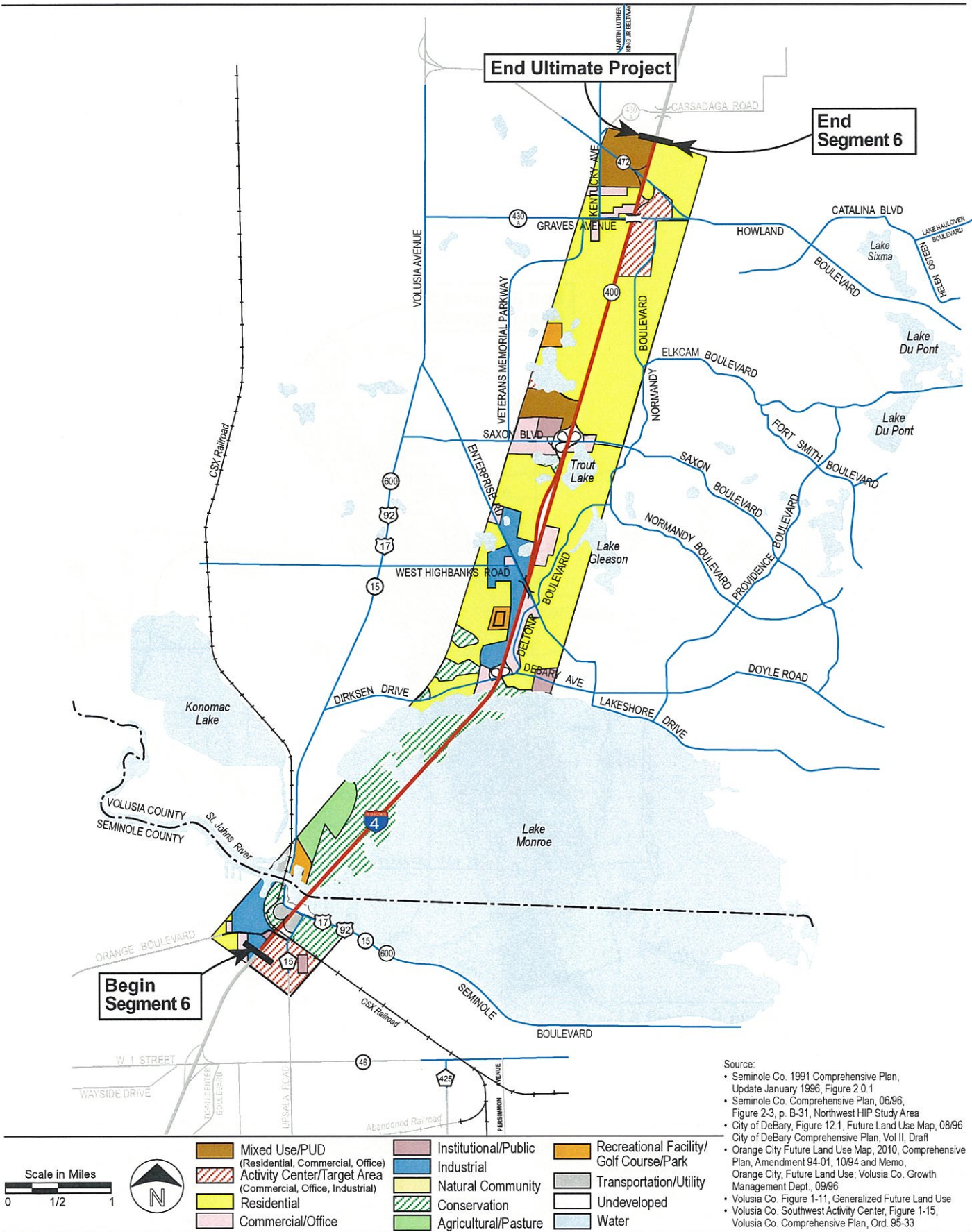


Figure 3-2
Generalized Future Land Use

I-4 PD&E Study - Section 2
Segment 6 of 6



International Drive Resort Area (IDRA)

The area along International Drive extending from SR 528 (Bee Line Expressway) and the Florida's Turnpike is primarily a tourist-oriented activity center. The major employers near this area include Sea World; the OCCC; Universal Studios; and other attractions, hotels, and vacation resorts. Retail centers, such as Pointe Orlando and the Belz Factory Outlet, help to enhance this area as a major activity center. Due to the nature of its tourist-based economy, this area of International Drive is defined as predominantly commercial land use.

Orlando Central Business District

The Orlando CBD surrounds the I-4/SR 408 (East/West Expressway) interchange in downtown Orlando and is primarily composed of office complexes and industrial and commercial facilities. Facilities include main corporate offices for large employers such as First Union Bank, SunTrust, BellSouth, and the Orlando Sentinel. In addition to these facilities, there are city, county, state, and federal government offices within the CBD. Church Street Station is a tourist attraction located within the Downtown Orlando Historic District.

Winter Park

The City of Winter Park serves as a residential, cultural, and retail activity center. This area is east of I-4 from Princeton Street to just north of Lee Road. The boundary limits include several active residential neighborhood associations.

Altamonte Springs/Maitland

The Altamonte Springs/Maitland area serves as a primarily business-oriented activity center. This area includes large tracts of land used for office space and/or retail operations. The Maitland Center supports a vast area of multiple-story office buildings. Cranes Roost and other office complexes surround the project corridor along with expanding retail centers including the Altamonte Mall, the Interstate Mall, and the Renaissance Center. Florida Hospital Altamonte also lies within this activity center located on the north side of I-4 on SR 436.

Lake Mary/Sanford/Northwest Seminole

The Lake Mary/Sanford/Northwest Seminole areas are composed of a mixture of land use types including residential, commercial, and industrial sites. This designated activity center stretches from Lake Mary Boulevard on the south to the Orange/Seminole County border at Lake Monroe on the north. The largest business center adjacent to the project corridor encompasses office space on the outer limits of Lake Mary and Heathrow. Both Lake Mary and Heathrow fall under Seminole County's jurisdiction. Also located within the project corridor is the Seminole Towne Center and surrounding retail stores located between SR 46 and Rinehart Road.

SR 472 (Howland Boulevard)

SR 472 (Howland Boulevard) is a primarily commercial area located at the northern limits of the project corridor. No official boundaries are defined for this activity center; however, it is generally composed of a few commercial centers surrounding the I-4/SR 472 interchange. Outside the interchange area, land use primarily consists of open space and residential use.

3.1.1.3.4 Development Activity

Central Florida has experienced tremendous growth that is expected to continue over the next two decades. The rapidly expanding population has caused an increase in housing, commercial, employment, and industrial growth and construction in recent years. Table 3-21 and Figure 1-16 identify the major developments and employment conditions within the Ultimate project corridor.

Segment 1

Segment 1 has primarily experienced commercial growth over the past few years. Much of this growth and commercial development is concentrated along the tourist corridors of International Drive, Kirkman Road, and Conroy Road. Several new commercial construction sites were identified

in the 1992–1996 *Perspective on Regional Growth*, the most recently published study by the East Central Florida Regional Planning Council (ECFRPC).

Segment 2

Downtown Orlando is the largest employment center in the region, with primary growth focusing on commercial development of office space. Commercial developers continue to focus on plans to provide downtown high-rise apartment living.

Segment 3

Development activity proposed for Segment 3 includes the expansion of Florida Hospital Orlando.

Segment 4

Proposed development activity for Segment 4 includes the expansion of existing office centers and retail centers. As shown in Table 3-21, this development activity will occur at facilities along Maitland Boulevard, SR 436, and SR 434.

Segment 5

The expansion of existing commercial office, retail, and hotel centers is proposed in Segment 5. Those development activities will occur along Lake Mary Boulevard, CR 46A, and SR 46.

Segment 6

Development activities for Segment 6 included a proposed commercial/mixed use facility at SR 46 and the expansion of West Volusia Hospital.

3.1.1.3.5 Development of Regional Impact Areas

The future pattern of land use will be a combination of the existing pattern and proposed layers of new growth that will occur during future years. The project corridor will be a reflection of the success of the regional/local government planning efforts to divert the higher density uses into the activity centers. As the property values continue to rise, a majority of the growth will focus on vacant tracts of land that are adjacent to already developed areas. Other tracts of land, devoted to uses that are or will become economically obsolete, will contribute to the redevelopment of land.

Under provisions of state law, the ECFRPC has a primary role in the approval of major land development initiatives under the DRI program. Segments 1 through 6 of the I-4 PD&E Study – Section 2 fall under its provisions. Table 3-22 highlights the inventory of units that are proposed for development within the limits of the Ultimate project corridor. A summary of the DRIs within the project segments is provided in Section 1.3.5.3 and shown on Figure 1-17.

3.1.1.3.6 Land Use Controls

Zoning regulations continue to be the dominant tool used by all local/federal governments and jurisdictions in the land use regulatory process. Zoning regulations restrict the use of property to a range of approved land uses; however, additional controls may affect the utility of the permitted uses.

One of the governmental powers exercised today is the subdivision process. This process allows for the division of land and the creation of public streets. Environmental regulations and the location and availability of public utilities may also factor in the review and approval process of subdivision planning.

Another series of powers adopted by municipalities are the tools that may be used to stimulate the redevelopment process. Under the once federally sponsored urban renewal program, local governments and jurisdictions, backed by federal funds, could exercise assertive city rebuilding programs.

Today, municipalities continue to become involved with the community redevelopment process, despite the withdrawal of federal funds. The City of Orlando, in particular, has a designated agency, the Orlando Housing Authority, that works with residents, agencies, and even businesses in redeveloping and maintaining communities within city limits. The City also facilitates community

Table 3-21. Proposed Development and Employment Expansions

Map No.	County	Name (DRI No)	Type	Location	Interchange Access	Acres/Square Ft/ Units	Status
Segment 1							
1	Orange	Westwood Center	Commercial/Office	SE Corner of I-4 and SR 528	SR 528	120,000 sq ft	Existing
2	Orange	Orange County Convention Center	Commercial/Public	NE Corner of I-4 and SR 528	SR 528	N/A	Existing
3	Orange	Plaza International	Commercial/Retail/Hotel	E/S I-4, 1 Mile N of SR 528	Sand Lake Rd/SR 528	2,500 rooms/300,000 sq. ft. retail/150,000 sq. ft. office	Existing
4	Orange	Summerfield Suites	Commercial/Hotel	NW corner of International Dr and Austrian Ct	Sand Lake Rd/SR 528	146 rms.	Existing (part of Plaza International)
5	Orange	Mercado North	Commercial/Retail	E/S International Dr, 1/4 Mile S of Sand Lake Rd	Sand Lake Rd/SR 528	110,000 sq. ft.	Existing (part of Plaza International)
6	Orange	Constrazza Hotel	Commercial/Hotel	W/S Universal Blvd, 1/8 mile N of Sand Lake Rd	Sand Lake Rd/SR 528/ Kirkman Rd	200 rms.	Existing
7	Orange	Bayhill Plaza Shopping Center	Commercial/Retail		Sand Lake Rd	N/A	Existing
8	Orange	Galleria Office Shopping Complex	Commercial/Office/Retail		FL Turnpike/Sand Lake Rd	N/A	Proposed
9	Orange	Quality Suites	Commercial/Hotel	W/S Canada Ave. 1/4 Mile N of Sand Lake Rd	Sand Lake Rd/SR 528/ Kirkman Rd	145 rms.	Existing
10	Orange	Sandy Lake Towers	Commercial/Hotel	E/S International Dr, 1/2 Mile N of Sand Lake Rd	Sand Lake Rd/SR 528/ Kirkman Rd	204 rms.	Existing
11	Orange	Millenia (69201)	Commercial/ Office/ Residential MFR	Both sides of I-4, 1 Mile NE of Florida's Turnpike	FL Turnpike/Conroy Rd/ John Young Pkwy	336,000 sq. ft. office/ 1,357 units	Under Construction
Segment 2							
12	Orange	Orange County Corrections Facility	Institutional	SE quadrant of John Young Pkwy and 33rd St	John Young Pkwy	NA	Existing
13	Orange	Lake Holden Industrial Park	Industrial		Orange Blossom Tr	NA	Existing
14	Orange	Orlando Regional Medical Center	Institutional	SW quadrant of Orange Ave and Kaley St	Michigan St/ Kaley St/ Gore St	NA	
15	Orange	Sun Bank Center (68504)	Commercial/ Office		N/A	7 acres/552,000 sq. ft.	Existing
16	Orange	Orange County Courthouse	Institutional/Office		N/A	1,200,000 sq. ft.	Existing
17	Orange	T.D. Waterhouse Centre/Orlando Arena	Recreational/Public Arts/ Hotel		N/A	50 acres/15,000 seats	Existing
18	Orange	Dupont Centre – Barnett Bank Center (68508)	Commercial/Office/Retail		N/A	15 acres	Existing
19	Orange	Olympia Place – One Orlando Center (68813)	Commercial/Office/Hotel		N/A	3 acres/225 rms./ 400,000 sq. ft.	Proposed
20	Orange	Florida National Bank – One Orlando Center (68611)	Commercial/ Office		N/A	7 acres	NA
21	Orange	Gateway Center (68909)	Commercial/ Office		N/A	3 acres/223,000 sq. ft.	Proposed
Segment 3							
22	Orange	Florida Hospital Orlando (69202)	Institutional/Mixed Use	NE quadrant of Orange Ave and Rollins St	Princeton St/Par St	165 acres	Existing
23	Orange	Interstate Industrial Park	Industrial		Lee Rd	NA	NA

3-31

I-4 PDSE Study – Section 2
Final Environmental Impact Statement
August 2002

Table 3-21. Proposed Development and Employment Expansions (Continued)

Map No.	County	Name (DRI No)	Type	Location	Interchange Access	Acres/Square Ft/ Units	Status
Segment 4							
24	Orange	The Summit (68509)	Commercial/Office/Hotel/ Residential/MFR	SW quadrant of I-4 and Maitland Blvd	Maitland Blvd	187 acres/150 rms./ 500,000 sq. ft./150 units	Existing
25	Orange	Lakepointe (68614)	Commercial/Office/ Residential	Both sides of Maitland Blvd, ½ Mile E of I-4	Maitland Blvd	121 acres/200,000 sq. ft. office/150 units	NA
26	Orange	Concourse at Maitland	Commercial/ Office	W/S Keller Rd, ½ Mile S of Maitland Blvd	Maitland Blvd	236,000 sq. ft.	NA
27	Seminole	Lake Lotus Club	Residential/MF	W/S of Wymore Rd, ½ Mile S of SR 436	SR 436/Maitland Blvd	419 units	Existing (144), under construction
28	Seminole	Cheshire Lakeside Towers	Commercial/ Office	SE quadrant of I-4 and Central Pkwy	SR 436	500,000 sq. ft.	Existing
29	Seminole	The Village Shoppes	Commercial/Retail		SR 436	NA	Existing
30	Seminole	Altamonte Mall	Commercial/Retail	NW quadrant of SR 436 and Palm Springs Dr	SR 436	500,000 sq. ft.	Existing/Under Construction
31	Seminole	Springwood Village Shopping Center	Commercial/Retail		SR 434	NA	Existing
32	Seminole	Sanlando Center Office Park (68516)	Commercial/Office		SR 434	17 acres	Existing
33	Seminole	Recoton	Commercial	SW quadrant of Lake Emma Rd and Sand Pond Rd	Lake Mary Blvd	115,000 sq. ft.	Existing
34	Seminole	The Crossings	Residential/SF, MFRO	SE quadrant of Primera Blvd and Greenwood Blvd	Lake Mary Blvd	5,221 Units	Existing (3,650 units), under construction
35	Seminole	Northpoint (68607)	Commercial/office/Hotel/ Retail		Lake Mary Blvd	157 acres	Existing/Under Construction
Segment 5							
36	Seminole	Commerce Park	Commercial/ Office		Lake Mary Blvd	NA	Existing/Under Construction
37	Seminole	Lake Mary Shopping Center (68510)	Commercial/Retail		Lake Mary Blvd	48 acres	Existing
38	Seminole	Corporate Pointe	Commercial	SW quadrant of Lake Mary Blvd and I-4	Lake Mary Blvd	NA	NA
39	Seminole	Primera (68507)	Commercial/Office/Retail/ Hotel	NW quadrant of Rinehart Rd and Lake Mary Blvd	Lake Mary Blvd/Paola Rd (CR 46A)	186 acres/150 rms./ 500,000 sq. ft. office/ 100,000 sq. ft. comm.	Existing
40	Seminole	Heathrow (67405,68804,69009)	Commercial/Retail/Office/ Residential SF, MFRO	SW quadrant of Paola Rd (CR 46A) and I-4	Paola Rd (CR 46A)	500 rms./200,000 sq. ft. office/1,340,000 sq. ft retail/ 4,325 units residence	Existing
41	Seminole	Timacuan (68604)	Commercial/Retail/ Residential SF	E/S Rinehart Rd, ¼ Mile S of Paola Rd	Paola Rd.(CR 46A)	648 acres/185,000 sq. ft. retail/1,087 units residence	Existing/Under construction
42	Seminole	Seminole Towne Center (68913)	Commercial/Retail	SE quadrant of I-4 and SR 46	SR 46/SR 417	218 acres/1,250,000 sq. ft.	Existing
43	Seminole	Interstate Industrial Park	Industrial		SR 46	NA	NA
44	Seminole	Lake Forest (69018)	Commercial/Residential SF	N/S SR 46, ½ Mile west of I-4	SR 46	529 acres/1,016 units	
45	Seminole	Auto Nation	Commercial	SW quadrant of SR 46 and I-4	SR 46	NA	Existing

Table 3-21. Proposed Development and Employment Expansions (Continued)

Map No.	County	Name (DRI No)	Type	Location	Interchange Access	Acres/Square Ft/ Units	Status
Segment 6							
46	Seminole	Sweetgum	Commercial/Mixed use	NW quadrant of SR 46 and I-4	SR 46	85 acres	Proposed
47	Seminole	Port of Sanford	Industrial		SR 46	NA	Existing
48	Volusia	Deltona Plaza Shopping Center	Commercial/Retail		Enterprise Rd/Saxon Blvd	NA	Existing
49	Volusia	West Volusia Hospital	Institutional	NW quadrant of US 17-92 and I-4	Saxon Blvd	NA	Existing, expansion

Source: ECFRPC, Perspective on Regional Growth, 1992-1996

MF = Multi-Family

MFR = Multi-Family Renter

MFRO = Multi-Family Renter and Owner Occupied

N/A = information not available

SF = Single Family

Table 3-22. DRI Summary

Map ID No.	Name of Development/ DRI No.	Location	Jurisdictional Authority	Original Developer	Acres	Approved Dwelling Units	Land Use and Phasing	Interchange Access
Segment 1								
1	Millenia (AKA Schrimsher Southwest)/ 69201	Both sides of I-4 at Americana Blvd and Conroy Rd	City of Orlando/ Orange County	Schrimsher Properties 600 E. Colonial Dr, Suite 100 Orlando, FL 32803	403	1,357	Mixed Use/ Commercial 1992-2000	Florida's Turnpike, Conroy Rd, John Young Pkwy
Segment 2								
2	ORHS (AKA Orlando Regional Healthcare System)/69906	East of CSX rail corridor, west of Orange Ave, north of Kaley St, and south of Gore St	City of Orlando	Orlando Regional Healthcare System 1414 Kuhl Ave Orlando, FL 32806	70	N/A	Hospital/ Office/ Commercial/Hotel 2001-2011	Kaley St, Gore St, SR 408
3	Orlando Downtown/69005	Downtown Orlando	City of Orlando/ Orange County	Orlando Downtown Development Board 100 S. Orange Ave Orlando, FL 32802	1,185	687	Mixed Use/Commercial/ Institutional/Residential 1990-2015	Michigan St, Kaley St, Gore St, SR 408, Anderson St, Robinson St, W. Colonial Dr (SR 50), Ivanhoe Blvd
4	Sun Bank Center/ 68504	Downtown Orlando	City of Orlando/ Orange County	Lincoln Property Co. of Florida, Inc. 702 N. Franklin St Tampa, FL 33602	23	N/A	Mixed Use/ Commercial 1985-1990	Anderson St, Robinson St
5	Orlando Arena/ 68710	East of Parramore Ave, west of I-4, north of Livingston St, and south of Concord St	City of Orlando/ Orange County	Orange County Public Works 400 S. Orange Ave Orlando, FL	50	N/A	15,000 seat arena 1987-1992	Anderson St, Robinson St, SR 408, W. Colonial Dr (SR 50)
6	One Orlando Center (AKA Florida National Bank)/ 68611/68813	East of Orange Ave, west of Magnolia Ave, north of Park Lake St, and south of Marks St	City of Orlando/ Orange County	Olympia & York Southeast Equity Corp. 6301 NW 5 th Wy Ft. Lauderdale, FL	25	60	Office/Commercial/ Residential 1985-1993	Robinson St, W. Colonial Dr (SR 50), Ivanhoe Blvd
7	Gateway Center/ 68909	East of I-4, west of Legion Pl, north of Garland Ave, and south of Ivanhoe Blvd	Orange County	The Prospect Company One Tower Square Hartford, CT 06183	11	N/A	Office/Retail 1989-2001	Robinson St, W. Colonial Dr (SR 50), Ivanhoe Blvd
Segment 3								
8	Florida Hospital Orlando/ 68201/68304	East of I-4, west of Mills Ave, north of Princeton St, and south of Wilkinson St	City of Orlando/ Orange County	Florida Hospital 601 E. Rollins St Orlando, FL 32803	74	150	Hospital/ Office/ Residential/ Mixed Use 1982-2000	Princeton St, Par St
Segment 4								
9	The Summit (AKA Maitland Summit)/ 68509	Maitland Blvd west of I-4	Orange County	Richland Properties of Florida, Inc. 4600 W. Cypress St Tampa, FL 33607	187	1,068	Mixed Use/ Commercial/Residential 1986-2001	Maitland Blvd
10	Lakepointe Eastern Access Road/68901	Site fronts on Lakes Charity and Hope and bisected by Maitland Blvd	City of Maitland/ Orange County	Battaglia Properties Ltd. P.O. Box 398 Winter Garden, FL	8	N/A	Access Road 1989-2003	Maitland Blvd
10	Lakepointe/68614	Site fronts on Lakes Charity and Hope and bisected by Maitland Blvd	Orange County	Battaglia Properties Ltd. P.O. Box 398 Winter Garden, FL	121	90	Office/Commercial/ Residential 1988-2003	Maitland Blvd

Table 3-22. DRI Summary (Continued)

Map ID No.	Name of Development/ DRI No.	Location	Jurisdictional Authority	Original Developer	Acres	Approved Dwelling Units	Land Use and Phasing	Interchange Access
11	Altamonte Springs Downtown/68701	City of Altamonte Springs Central Business District	City of Altamonte Springs/ Seminole County	City of Altamonte Springs Community Redevelopment Agency Altamonte Springs, FL	1,375	1,137	Downtown DRI 1987-2007	SR 436
12	Northpoint/68607	SE quadrant of I-4 and Lake Mary Blvd	City of Lake Mary/ Seminole County	Kana Development, Inc. 3100 Clay Ave, Ste. 275 Orlando, FL 32804	157	N/A	Office/Hotel/Retail 1986-2001	Lake Mary Blvd
13	Lake Mary Shopping Center/68510	SE quadrant of Lake Mary Blvd and Lake Emma Rd	City of Lake Mary/Seminole County	Hardy/Lieb Dev. Corp. 2170 W. SR 434, Suite 200 Longwood, FL 32779	48	N/A	Retail 1985-1998	Lake Mary Blvd
Segment 5								
14	Heathrow/67405	NW quadrant of I-4 and Lake Mary Blvd	Seminole County	Paulucci Enterprises 201 W. First St Sanford, FL 32771	1,495	3,686	Residential 1974-2007	Lake Mary Blvd, Paola Rd (CR 46A)
14	Heathrow International Business Center/68804	NW quadrant of I-4 and Lake Mary Blvd	City of Lake Mary/Seminole County	Paulucci Enterprises 201 W. First St Sanford, FL 32771	547	313	Office/ Residential/ Retail/Hotel 1988-1993	Lake Mary Blvd, Paola Rd (CR 46A)
15	Heathrow Town Center/69009	NW quadrant of I-4 and Paola Rd (CR 46A)	Seminole County	The Hahn Company 4350 LaJolla Village Dr Sanford, FL	100	N/A	Commercial 1990-1999	Paola Rd (CR 46A)
16	Primera/68507	NE quadrant of I-4 and Lake Mary Blvd	City of Lake Mary/Seminole County	Glen H. Martin Financial Security Center 341 N. Maitland Blvd Maitland, FL 32751	186	N/A	Office/Commercial/Hotel 1985-2005	Lake Mary Blvd, Paola Rd (CR 46A)
17	Timacuan/68604	Rinehart Rd	City of Lake Mary/Seminole County	Hubert R. Early 1151 CAN Tower 255 S. Orange Ave Orlando, FL 32801	644	1,097	Residential/Commercial/ Office/Mixed Use 1986-1999	Paola Rd (CR 46A)
18	Seminole Towne Center/68913	SE quadrant of I-4 and SR 46	City of Sanford/ Seminole County	Sanford Interstate Properties Joint Venture One DuPont Centre #1100 390 N. Orange Ave Orlando, FL 32802	218	N/A	Mixed Use/ Hotel/Office 1990-2005	SR 46, SR 417 (under construction)
19	Lake Forest (AKA Kingwood)/ 68602/69018	NW quadrant of I-4 and SR 46	Seminole County	NTS FL Properties 320 W. Sabal Palm Pl Longwood, FL 32779	529	1,016	Mixed Use/Recreational 1986-2001	SR 46
Segment 6								
20	Hidden Harbor Marina/68512	Existing Port of Sanford Basin, west of I-4 on the St. Johns River	Seminole County	William Headley, Jr. Florida Sun Inter., Inc. 2828 Edgewater Dr Orlando, FL 32804	2	0	Recreational 1985-1999	US 17-92

Source: ECFRPC, Development of Regional Impact Project Summaries 1980-2000 (updated 2001).
N/A = Not Applicable

cohesion through its neighborhood support agency, Orlando Neighborhood Services. These agencies help offset the imbalance once created with aggressive city rebuilding programs that had unintentional negative effects on neighborhoods and local communities. The agencies also aid in this process by clearly defining economic or social goals.

The redevelopment program is generally regarded as an avenue to remove barriers to private investment, thus making available changes, development, and improvements at little or no cost to the municipality itself. Several areas along the project corridor have been identified as redevelopment activity sites within each jurisdiction.

Efforts created throughout the project study phase include urban design guidelines. Representatives of local and regional municipalities and development agencies were invited to provide input at a number of "Urban Design Guidelines" meetings held during the PD&E study phase to incorporate the project improvements into the existing and proposed community aesthetics and development goals.

3.1.1.4 Comprehensive Planning

3.1.1.4.1 Regional and Local Jurisdictional Planning

The current adopted comprehensive planning documents of the regional and local government jurisdictions within the Ultimate project study area were reviewed to determine their transportation policies, goals, and objectives. Overall, the regional and local government comprehensive plans were found to be consistent with the project objectives as described in Section 1.1.

In general, each independent comprehensive plan has a common transportation goal to create an efficient multi-modal transportation system that will promote increased public safety and greater economic viability, in coordination with existing and future land use activities. A summary of the relevant transportation-related goals and improvements identified in each of the documents reviewed are discussed briefly below.

I-4 Multi-Modal Master Plan Major Investment Study (September 1995) – The plan for I-4 provides for six general use lanes, two special use lanes, and a LRT system between Celebration and Sanford operating high capacity transit.

FDOT's 2020 Florida Transportation Plan (March 2000) – The plan outlines several major goals to reduce dependency on the single occupant vehicle and to provide accommodation for transit vehicles on state highways, and includes significant improvements to I-4 consistent with the I-4 MMAP adopted by METROPLAN ORLANDO and the Volusia County MPO. The following mission statement was adopted: "The Department will provide a safe, interconnected statewide transportation system for Florida's citizens and visitors that ensures the mobility for people and goods, while enhancing economic prosperity and sustaining the quality of our environment."

METROPLAN ORLANDO 2020 Long Range Transportation Plan Update (adopted December 2000) – Transportation issues for Central Florida, including Osceola, Orange, and Seminole Counties, are addressed by METROPLAN ORLANDO. METROPLAN ORLANDO adopted the following vision statement in the plan to develop "... a regional, integrated, multi-modal transportation system that safely and efficiently moves people and goods to, through and within the urban area and which enables the community to flourish in a global marketplace." The plan outlines several major goals, including a statement that identifies "significant improvements to Interstate 4, which are consistent with the I-4 Master Plan Study recently adopted by the MPO."

Volusia County MPO 2020 Long Range Transportation Plan Refinement (adopted November 2000) – Transportation issues for Volusia County are addressed by the Volusia County MPO. The plan includes the objective to provide a transportation system for safe and efficient movement of freight via the highway, airport, and rail systems and to consider alternative forms of transportation as part of the systematic approach to congestion management. The plan also lists operational and management strategies, such as car-pooling, to increase vehicle occupancy rates.

Orange County, Florida 2000 – 2020 Comprehensive Policy Plan (adopted July 1991; amended through December 2000) – The plan is consistent with the project and states the following: “Orange County shall facilitate the development of a balanced multi-modal transportation system.” The plan also states that a multi-modal approach is necessary to adequately address traffic congestion in the region.

Orange County Comprehensive Plan, International Drive Activity Center Strategic Development Plan (adopted July 1991; amended through October 1994) – The land use plan has a component that calls for an International Drive Activity Center in the area around the southern extension of International Drive (from Westwood Boulevard to SR 536). The plan advocates establishing a variety of transportation systems for this proposed intensely developed area “to ensure efficient movement of people by the creation of a multi-modal transportation system” by providing a roadway network, an effective mass transit system, and a pedestrian circulation network.

North International Drive Urban Design Plan (adopted July 1994) – The plan identifies several streetscape improvements for International Drive between Kirkman Road and Sand Lake Road. The plan also recommends that a transit center be built for the North International Drive district. This center would accommodate the transfer of bus passengers between public transit and other modes of transportation. A parking garage was also featured within the transit center.

City of Orlando, Florida Growth Management Plan (GMP) Policy Document (approved August 1991; amended through October 2001) – The Mass Transit Element of the plan identifies four traffic circulation goals that are consistent with the project. These goals include the following: implement a high capacity multi-modal transportation system that maximizes accessibility to and within downtown to further the land use and commerce objectives of this major metropolitan activity center; use the traffic circulation system in a way that encourages personal mobility and travel choices through enhancement of public transit systems; encourage the inclusion of multi-modal transit and ridesharing facilities in new developments; and roadway improvement projects and ensure accessibility to all transit users.

Winter Park Comprehensive Plan 1990 (adopted August 1991; amended through May 1995) – The plan defines a main goal consistent with the project, stated as follows: “It shall be the goal of the City of Winter Park to ensure the provision of a balanced transportation system to meet the existing and future transportation needs.”

The Town of Eatonville Community Redevelopment Plan (adopted August 1997) – The plan includes goals consistent with the project to provide a safe, convenient, and efficient transportation system to enhance traffic circulation within the Town as well as to and from the surrounding areas.

City of Maitland Comprehensive Development Plan 2001 - 2020 (adopted 1985; amended through April 2002) – The plan identifies several transportation-related objectives. One is to support expanded mass transit service on regional facilities and major collectors as an option for motorists seeking to reduce travel time and costs associated with congestion and as a means to protect neighborhoods from cut-through, non-local traffic. Another is to make efficient use of the existing capacity of the transportation system such as carpooling, Park & Ride, and other capacity-increasing techniques. To protect the quality of neighborhoods, the plan provides for safe and efficient automobile and non-automobile transportation systems for residents and non-residents consistent with the adopted Future Land Use Map.

Vision 2020 Comprehensive Plan Seminole County, Florida (adopted 1991; amended through February 2002) – The plan has a primary traffic circulation goal to develop and maintain an effective, convenient, and economically feasible transportation system that operates safely and efficiently in coordination with existing and future land use activities. Efforts to support this goal should be compatible with the environmental quality, economic viability, and aesthetics of the County. The plan also states that the County shall provide for, based on the needs of the service population, a balanced intermodal transportation system, which may include mass transit.

The City of Altamonte Springs City Plan 2005 (adopted April 1991; amended through 1997) - The plan includes objectives to implement necessary roadway infrastructure to support existing and projected development, and a comprehensive transit strategy to promote mass transit use within the Orlando Metropolitan area. The regional plan policies provide for a safe, convenient, and efficient motorized and non-motorized transportation system, including an emphasis on the use of multi-modal transportation corridors. The plan gives priority to multi-modal facilities in regionally significant roadways between activity centers. The plan also includes carpooling and other capacity-increasing techniques.

The City of Longwood, Florida - 1991 - 1996 Comprehensive Plan (adopted 1991; amended through February 1997) - The plan includes objectives to provide for the efficient circulation of existing and future traffic demands within the City of Longwood. The overall goal of the plan is the development and maintenance of a local traffic circulation system that serves the transportation needs of the City in a safe, efficient, cost-effective and aesthetically pleasing manner. The plan also includes policies to provide a safe, convenient, and efficient multi-modal transportation system to support existing needs and projected growth.

The City of Lake Mary Comprehensive Plan (adopted September 2000) - The plan includes goals to implement a transportation system that provides for a safe, convenient, and efficient transportation network within Lake Mary for motorized vehicles, bicycles, and pedestrian traffic. The plan also encourages the use of alternative modes of transportation in order to reduce the reliance upon the automobile and implements land use policies to provide the protection of existing and future rights-of-way.

The City of Sanford Comprehensive Plan (adopted December 2000) - The plan includes the goal for a safe, convenient, and efficient motorized and non-motorized transportation system, which shall be available for existing and anticipated future users of the system and continue to promote regional transit service. The plan states that, specifically through land use designations, the City will encourage high intensity development in the I-4 corridor in conjunction with a phased increase in transit and ridesharing measures and incorporate into its site plan review process the consideration of Park & Ride lots in the I-4 corridor.

Volusia County Comprehensive Plan (adopted April 1990; amended through April 2000) - The plan includes transportation-related goals that are consistent with the project. These goals include providing a coordinated mass transit system to help meet the County's overall transportation needs at an acceptable level of service. The plan also includes developing programs to ensure that current and future land uses are served by an adequate thoroughfare system and providing a coordinated thoroughfare system to serve current and future population needs.

The City of DeBary, Florida Comprehensive Plan (adopted July 1996; amended through August 2001) -The plan includes the goal to facilitate the development of a cost-effective, coordinated, multi-modal transportation system for the movement of people and goods to benefit the social, economic, and physical development of the City. To meet this goal, the consideration of additional capacity through HOV lanes and/or transit facilities is included. The City will carry out a program of activities to provide for the protection of future rights-of-way for roads and mass transit facilities.

The City of Deltona Comprehensive Plan (adopted November 1999) - The plan includes transportation-related goals that are consistent with the I-4 project. These goals include providing a coordinated mass transit system to help meet the City's overall transportation needs at an acceptable level of service. In addition, the plan states that current and future land use elements are intended to ensure that the surrounding community is adequately served by providing an efficient thoroughfare system, necessary to meet current and future population demands.

The City of Orange City, Florida Comprehensive Plan (adopted January 2002) - The plan includes a major goal to support the intent "to develop, improve and maintain a system of arterial and collector roads and local streets necessary to provide access and efficient traffic service to

community residents and businesses and to help guide future development." The major goal includes "a street network which is safe, convenient, efficient and ensures that current and future land uses are served, shall be available to all residents of Orange City and visitors to Orange City."

3.1.1.5 Coastal Zone Consistency

Under Florida Statute 380, the FDEP is charged with establishing a coastal zone management program in accordance with Title 15, Section 930 of the *Code of Federal Regulations* (CFR). Section 307 of the Coastal Zone Management Act (CZMA) requires all federal agencies to review activities that directly affect the coastal zone in order to develop consistency determinations. These consistency determinations are used to ascertain whether proposed federal activities are consistent, to the maximum extent practicable, with Florida's Coastal Zone Management Program (CZMP), which was approved October 1, 1981.

The Office of Planning and Budget, Office of the Governor, has determined that this project is consistent with the Florida CZMP (as per advance notification response letter dated July 12, 1996). A copy of this letter is included in Appendix C.

3.1.2 Neighborhoods and Community Facilities

The compilation of neighborhood and community facilities involved extensive research. The following list contains resources used to compile the data.

- City of Orlando Neighborhood Services - Neighborhood Directory
- City of Orlando Public Works Geographical Information System (GIS) Mapping Department
- Orange County Community Affairs
- Orange County and Seminole County Neighborhood Directories
- Orange, Seminole, and Volusia County tax maps
- Seminole County Home Owners' Association Directory
- Seminole and Volusia County Property Appraiser's Office GIS Mapping Department
- Central Florida Street Atlas
- Field Reviews
- Community Outreach to various neighborhood and homeowner's association groups

3.1.2.1 Neighborhoods

This section identifies areas of residential land uses and established neighborhoods within the Ultimate project study area. Approximately 225 neighborhoods and subdivisions located within one-half mile of I-4 between SR 528 in Orange County and SR 472 in Volusia County were identified. Table 3-23 lists 88 of these neighborhoods that are potentially affected by this study. The names and approximate boundaries of these neighborhoods are also shown on Figure 3-3. The following is a brief description of the neighborhoods that are anticipated to be directly impacted by the proposed improvements. The site numbers refer to Table 3-23 and Figure 3-3.

3.1.2.1.1 Segment 1

Although two neighborhoods (Sand Lake Village and Cypress Creek) were identified in Table 3-23 as being potentially affected, these neighborhoods will not be directly impacted by the proposed improvements. A description of these neighborhood is included in the *Socioeconomic and Environment Report* (August 2000).

Table 3-23. Affected Neighborhoods

Site No.	Name of Development	Jurisdiction	Boundaries			
			North	South	East	West
Segment 1						
2	Sand Lake Village	Unincorporated Orange County	Paradise Key Boulevard	Big Sand Lake	Turkey Lake Road	Big Sand Lake
5	Cypress Creek	Orlando	Conroy Road	Vineland Road	Vineland Road	Kirkman Road
Segment 2						
8	Woodhaven (split)	Orlando and Unincorporated Orange County	L.B. McLeod Road	40 th Street	John Young Parkway	Bruton/Sedan
10	Isle of Catalina	Orlando	Clear Lake	I-4	Clear Lake/Marathon Avenue	John Young Parkway
12	Lake Shore Landings MHP	Unincorporated Orange County	I-4	Lake Catherine	Rio Grande Avenue	Orange County Jail
13	Rio Grande Park	Orlando	Clear Lake	L.B. McLeod Road	Rio Grande Avenue	Marathon Avenue
16	Angebilt	Unincorporated Orange County	I-4	37th Street	Lee Avenue/29th Street	Rio Grande
19	Holden Heights Neighborhood Watch	Unincorporated Orange County	Michigan Street	Lee Street	Lake Holden	I-4
20	Holden Heights	Orlando and Unincorporated Orange County	Gore Street	I-4	I-4	Clear Lake
21	South Division	Orlando	SR 408	Michigan	CSXT	I-4
22	South Orange	Orlando	SR 408	Michigan	Orange Avenue	CSXT
23	Lake Cherokee/ Lake Lucerne	Orlando	Anderson Street	Gore Street	Summerlin Avenue	Orange Avenue
24	Holden - Parramore	Orlando	Central Boulevard	Gore Street	I-4	Orange Blossom Trail
24A	Griffin Park	Orlando	Carter Street	Gore Street	I-4	I-4/SR 408 ramp
25	Callahan	Orlando	West Amelia Street	Central Blvd	Division Street	Orange Blossom Trail
26	Lake Dot	Orlando	SR 50 (Colonial Drive)	Amelia Street	I-4	Orange Blossom Trail
27	South Eola	Orlando	Robinson Street	SR 408	Summerlin Avenue	Rosalind Avenue
30	College Park	Orlando and Winter Park	Fairbanks Avenue	SR 50 (Colonial Drive)	I-4	Rio Grande Avenue
31	Magnolia Towers	Orlando	Anderson Street	SR 408	Orange Avenue	Edge of Parking Lot
32	Lawsona/Fern Creek	Orlando	Robinson Street	South Street	Bumby Avenue	Brown and Summerlin
197	Lake Sunset	Orlando	SR 408/Church Street	Orange Center Boulevard	Tampa Avenue	John Young Parkway
198	Lorna Doone	Orlando	Garden Road	Orange Center Boulevard	Orange Blossom Trail	SR 408/Tampa Avenue
199	Thornton Park	Orlando	Robinson Street	South Street		Summerlin Avenue
200	Lake Olive Heights	Orlando	South Street	SR 408	Mills Avenue	Summerlin Avenue
201	Lake Davis/Greenwood	Orlando	Anderson Street	Delaney Park Drive	Hampton Avenue	Summerlin Avenue
202	Lake Como	Orlando	Anderson Street	Gore Street	Primrose Avenue	South Hampton Avenue
203	East Central Park	Orlando	Robinson Street	South Street	Crystal Lake Avenue	Bumby Avenue
Segment 3						
33	North Orange	Orlando	Par Street	Ivanhoe (interchange)	CSXT/Lake Estelle	I-4
37	Pine Crest (split)	Unincorporated Orange County	Dartmouth Avenue	Par Avenue	Clay Street	Formosa Avenue
38	Stansbury Estates (split)	Unincorporated Orange County	Cornell/Jewel	Dartmouth	Clay Street	Formosa Avenue
39	Dubsdread	Orlando	Minnesota Avenue	Par Avenue	Formosa Avenue	Edgewater/Little Lake Fairview
40	The Pines (split)	Unincorporated Orange County	Harmon Avenue	Cornell/Jewel	Clay Street	Formosa Avenue
41	Lawndale (split)	Unincorporated Orange County	Minnesota Avenue	Harmon Avenue	Clay Street	Formosa Avenue

Table 3-23. Affected Neighborhoods (Continued)

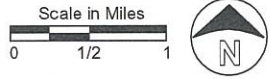
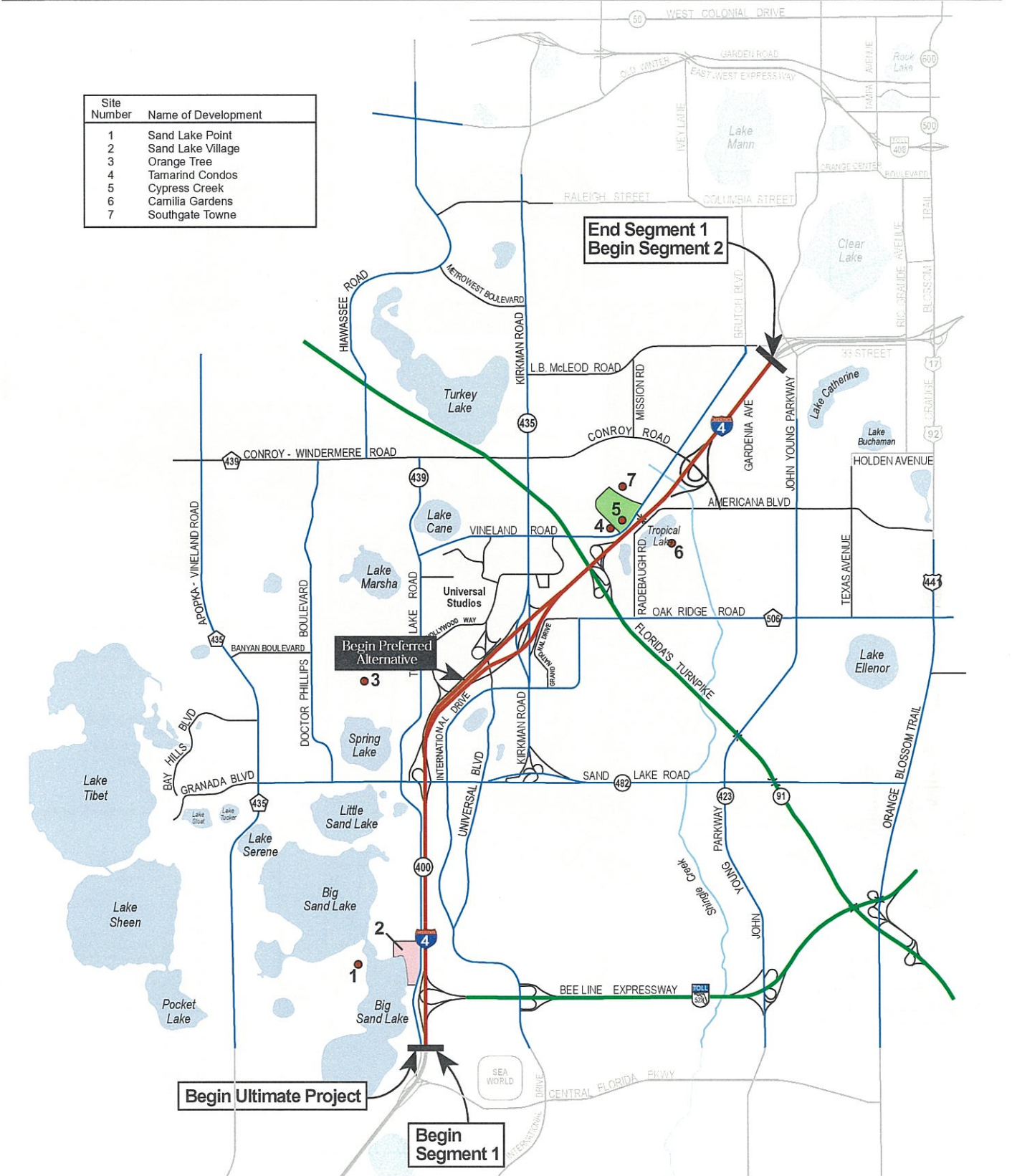
Site No.	Name of Development	Jurisdiction	Boundaries			
			North	South	East	West
43	Olympia Heights (split)	Unincorporated Orange County	Fairbanks Avenue	Minnesota Avenue	Formosa Avenue	Julian Street
44	Dubsdread Heights	Unincorporated Orange County	Fairbanks/Little Lake Fairview	Minnesota Avenue	Julian Street	Greens Avenue
45	Stokes	Unincorporated Orange County	Little Lake Fairview	Minnesota	Greens Avenue	Little Lake Fairview
46	Fairview Heights (split)	Unincorporated Orange County	I-4	Fairbanks/Little Lake Fairview	I-4	Fairbanks/Little Lake Fairview
47	Glenco	Unincorporated Orange County	Euston/Lot-O-Fun Avenue	Roxbury/Fairbanks	Cambridge/Orange Terrace	Wymore Road
50	School Terrace (split)	Unincorporated Orange County	Roxbury Road	I-4	Allen/Cambridge	Granada Drive
52	Justamere Camp	Unincorporated Orange County	Lot-O-Fun Avenue	Lot-O-Fun Avenue	Lake Killarney	Wymore Road
55	Fairbanks Shores	Unincorporated Orange County	Lake Fair	Little Lake Fairview	I-4	Eli Street
Segment 4						
56	Killarney Circle	Unincorporated Orange County	Audrey Avenue	Franklin Avenue	Wymore Road	Lake Killarney
59	Fairshores Place	Unincorporated Orange County	Roxbury	Riddle Road	Edge of 4 parcels	Edge of 4 parcels
60	Killarney Acres	Unincorporated Orange County	Lee Road	Audrey Avenue	Bonnie Brae Street	Wymore Road
60	Lakeside Manor Condos	Unincorporated Orange County	2500 Lee Road	-	-	-
65	Lake Colony Estates	Maitland	Sandspur Road	Lake Jackson	Rollingwood/East Lake Colony	Wymore Road
67	Bel Air Estates	Eatonville	Bel Air Street	Kennedy Boulevard	Gabriel Street	Wymore Road
69	Schoolview	Maitland	Warrens Road	Eaton Street	Gabriel Street	Wymore Road
75	Maitland Club	Maitland	Oranole Road	Lake Love	Southview Road	Wymore Road
76	Destiny Springs Condos	Altamonte Springs	Spring Lake Hills Drive	Orange/Seminole County Line	Lake Destiny Road	Lake Destiny
78	Hidden Estates	Unincorporated Seminole County	Flame Avenue	Oranole Road	Flame Avenue	I-4/Trinity Woods Lane
82	Hidden Ridge Condos	Altamonte Springs	Cordoba Court	Cherokee Court	Hathaway Drive	North Lake Boulevard
83	Altamonte Heights Condos	Altamonte Springs	Cordoba Court	Cherokee Court	Hathaway Drive	North Lake Boulevard
94	North Lake Office Park	Altamonte Springs	SR 436	Flame Avenue	North Lake Boulevard	I-4
94A	Spanish Trace Apartments	Altamonte Springs	Days Inn/SR 436	La Plaza	I-4	Wymore Road
104, 110	Sanlando Springs	Altamonte and Unincorporated Seminole County	Central Parkway	SR 434	CR 427	Markham Woods/Douglas
108	One Douglas Place/Condos	Unincorporated Seminole County	Citrus Street	Central Parkway	I-4	Douglas Avenue
112	Douglas Heights	Altamonte and Unincorporated Seminole County	Pineview Street	Edge of Property	I-4	Douglas Avenue
117	Cambridge Square Condos	Unincorporated Seminole County	SR 434	Barton Street	Raymond Avenue	I-4
123	Springwood Village Condo	Unincorporated Seminole County	Sleepy Hollow Neighborhood	SR 434	Springwood Circle	I-4
124	Sleepy Hollow	Longwood and Unincorporated Seminole County	Wind Mill Way	SR 434	Sleepy Hollow Cove	I-4
126A	Markham Woods HOA	Longwood	Lake Mary Blvd	SR 434	I-4	Little Wekiva River
128	Woodlands	Unincorporated Seminole County	E.E. Williamson Road	Sleepy Hollow	Tollgate Trail	Penelope Drive
130	Des Pinar Acres (split)	Unincorporated Seminole County	E.E. Williamson Road	Des Pinar Water Treatment Plant	Penelope Drive	I-4

3-41

Table 3-23. Affected Neighborhoods (Continued)

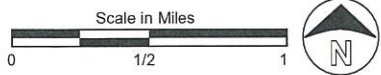
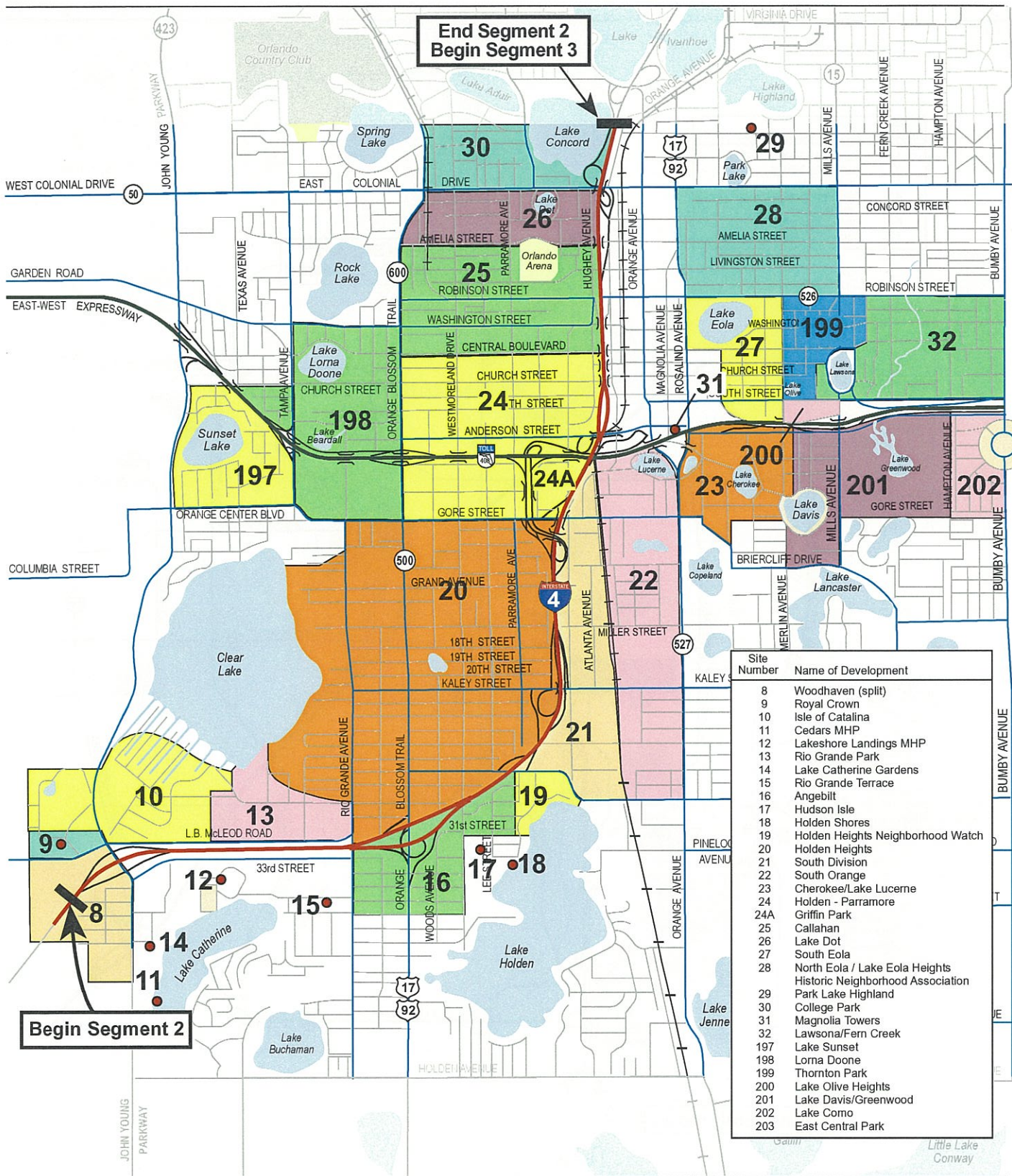
Site Number	Name of Development	Jurisdiction	Boundaries			
			North	South	East	West
132	North Cove	Unincorporated Seminole County	Grace Lake	E.E. Williamson Road	I-4	Grace Lake Circle
133	Markham Meadows	Unincorporated Seminole County	Dixon Road	E.E. Williamson Road	Mandarin Neighborhood	Markham Woods Road
136	North Ridge	Unincorporated Seminole County	Windy Bluff Point	Grace Lake	Myrtle Lake Hills Road	I-4
140	Bolling Farms	Unincorporated Seminole County	Crocus Court	Canal Point Road	Myrtle Lake Hills Road	I-4
141	Mandarin Estates	Unincorporated Seminole County	Long Pond Road	E.E. Williamson Road	I-4	Markham Woods Road
Segment 5						
147	North Point	Lake Mary	Lake Mary Boulevard	Sand Pond Road	Lake Emma Road	I-4
156	Heathrow	Unincorporated Seminole County	Heathrow/Paola Road	Lake Mary Boulevard	I-4	Markham Woods Road
165	Bookertown	Unincorporated Seminole County	Orange Boulevard	Chestnut Street	Dunbar Avenue	Oregon Avenue
Segment 6						
167	Port of Sanford	Unincorporated Seminole County	St. Johns River	Orange Boulevard	I-4/US 17-92	Edge of Property
168	Town of Monroe	Unincorporated Seminole County	Orange Boulevard	School Street	Upsala Road	I-4
169	EA Osteens Subdivision	Unincorporated Seminole County	Section 16 Boundary	St. Johns River	I-4	US 17-92
169	Rolling Green Park	DeBary	Section 16 Boundary	St. Johns River	US 17-92	Railroad Tracks
173	Plantation Estates (split)	DeBary	Highbanks Road	Dirksen Drive	I-4	US 17-92
176	Florida Lake Park Subdivision	Unincorporated Volusia County	Dirksen Drive/DeBary Road	Lake Monroe	Edge of Property	I-4
176	Quarles Subdivision	Unincorporated Volusia County	Edge of Property	Babcock Subdivision	Deltona Boulevard	I-4
176	Babcock Subdivision	Deltona	Deltona Boulevard	DeBary Avenue	Deltona Boulevard	I-4
182	Deltona Lakes	Deltona	Howland Boulevard	Doyle and Enterprise Osteen	SR 415	I-4
185	Summer Haven	DeBary	Snapper Cove Drive	Hufford Drive	I-4	Enterprise Road
186	Orange City Estates (split)	Orange City	Saxon Boulevard	Poinsettia Avenue	Dayton Avenue	Bloxham Avenue
188	Beauty Spot (split)	Deltona	5th Avenue	14th Avenue	Galveston Avenue	Atlantic Avenue
189	Forrest Park Ridge	Orange City/Deltona	Cherry Street	5th Avenue	I-4	Atlantic Avenue
193	Yourlando Farms and Groves	Deltona	Menendez Avenue	Howland Boulevard	I-4	Kentucky Street
194	Country Village MHP	Orange City	Howland Boulevard	Kentucky Avenue	I-4	Kentucky Avenue
196	Yourlando in the Pines	Deltona	Cassadaga Road	Sevilla Avenue	San Jose Avenue	Diaz Street

Site Number	Name of Development
1	Sand Lake Point
2	Sand Lake Village
3	Orange Tree
4	Tamarind Condos
5	Cypress Creek
6	Camilia Gardens
7	Southgate Towne



**Figure 3-3
Neighborhoods**

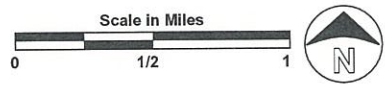
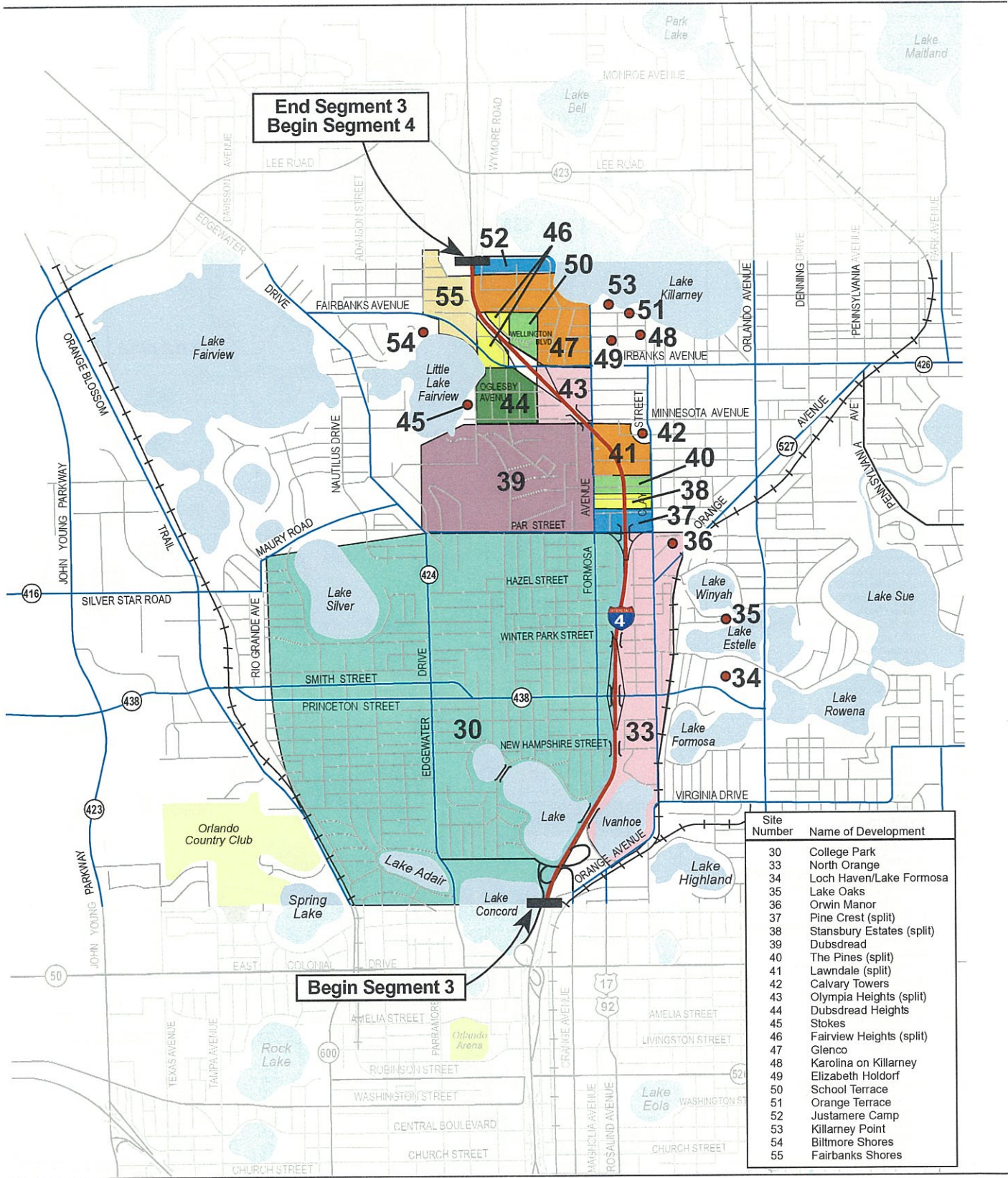
I-4 PD&E Study - Section 2
Segment 1 of 6



**Figure 3-3
Neighborhoods**

I-4 PD&E Study - Section 2
Segment 2 of 6





**Figure 3-3
Neighborhoods**

I-4 PD&E Study - Section 2
Segment 3 of 6

Site Number	Name of Development
56	Killarney Circle
57	Sunshine Gardens
58	Albert Lee Ridge
59	Fairshores Place
60	Killarney Acres/ Lakeshore Manor Condos
61	Shells Terrace
62	Catalina Park
63	Willis R Munger Subdivision
64	Kingswood Manor
65	Lake Colony Estates
66	Lake Lovely Estates
67	Bel Air Estates
68	Magerstadt
69	Schoolview
70	Wind Grove
71	Eaton Manor
72	Addie Johnson
73	Maitland Forest
74	Druid Isle
75	Maitland Club
76	Destiny Springs Condos
77	Glen Arden
78	Hidden Estates/Hidden Ridge
79	The Trails
80	Spring Lake Hills
81	Spring Valley Club
82	Hidden Ridge Condos
83	Altamonte Heights Condos
84	High Ridge
85	Barclay Woods
86	Altamonte Heights
87	Spring Valley Gardens/Spring Valley Estates/Spring Valley Village
88	Prima Vera Cove
89	Spring Valley Farms
90	Oriental Gardens/Spring Garden
91	Aldean Gardens
92	Hathaway Ridge
93	Foss Subdivision of Hudson Park
94	North Lake Island
94A	Spanish Trace Apartments
95	Dol Rey Manor
96	Escondido, Escondido Condo Assoc.
97	West Monte
98	Weathersfield
99	Goldie Manor
100	Iowana Subdivision
101	Altamonte Condos
102	Douglas Point
103	Oakland Village
104, 110	Sanlando Springs
105	Cranes Roost Village
106	Robin Hill
107	Cranes Roost Villas
108	One Douglas Place/Condos
109	Apple Valley
111	Cameron Villas
112	Douglas Heights
113	Victoria Park
114	West Altamonte Heights
115	Douglas North Condos
116	Kensington Park/Kensington Park Condos
117	Cambridge Square Condos
118	Fox Ridge Run
119	Rolling Hills
120	Crown Oak Center Condos/Timberlands
121	Knollwood
122	Meadows West
123	Springwood Village Condo
124	Sleepy Hollow
125	Winsor Manor/Oak Crest
126	The Springs
126A	Markham Woods HOA
127	Springs Landing
128	Woodlands
129	Devonshire
130	Des Pinar Acres (split)
131	IBIS Woods/INNS Woods
132	North Cove
133	Markham Meadows
134	Bay Lagoon
135	Arlington Park
136	North Ridge

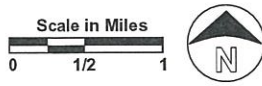
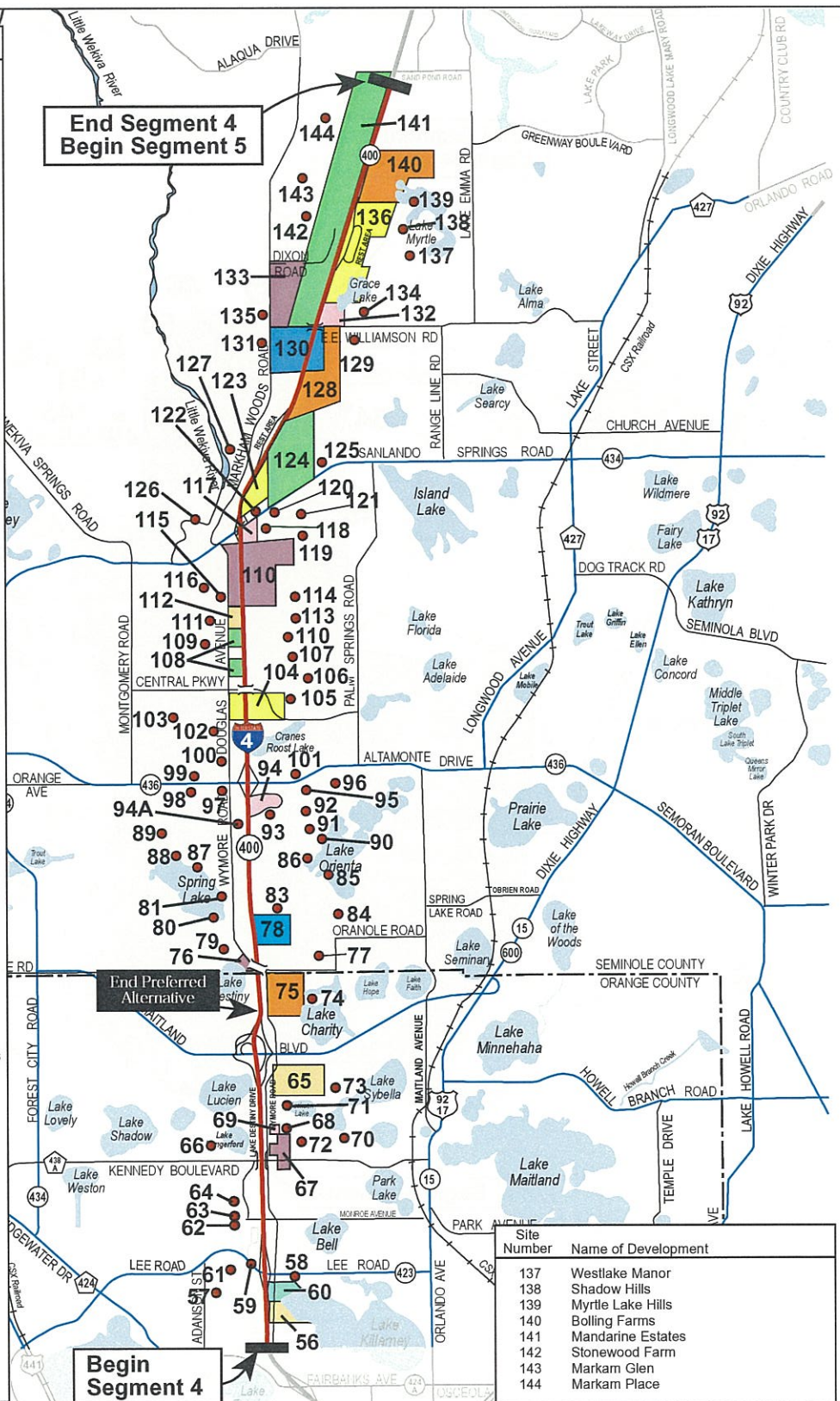
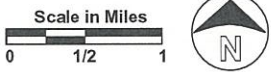
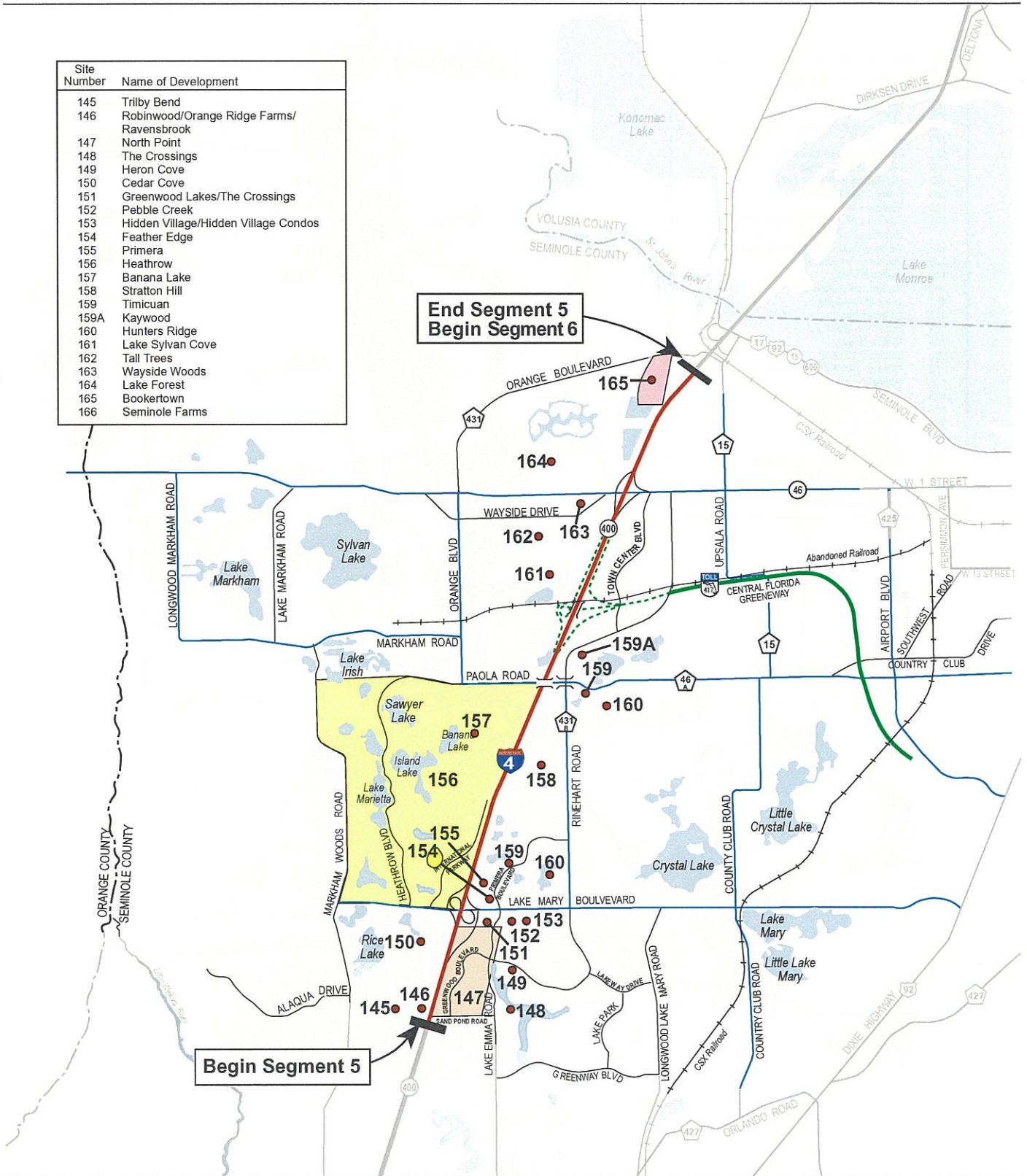


Figure 3-3
Neighborhoods
 I-4 PD&E Study - Section 2
 Segment 4 of 6



Site Number	Name of Development
145	Trilby Bend
146	Robinwood/Orange Ridge Farms/ Ravensbrook
147	North Point
148	The Crossings
149	Heron Cove
150	Cedar Cove
151	Greenwood Lakes/The Crossings
152	Pebble Creek
153	Hidden Village/Hidden Village Condos
154	Feather Edge
155	Primera
156	Heathrow
157	Banana Lake
158	Stratton Hill
159	Timicuan
159A	Kaywood
160	Hunters Ridge
161	Lake Sylvan Cove
162	Tall Trees
163	Wayside Woods
164	Lake Forest
165	Bookertown
166	Seminole Farms



**Figure 3-3
Neighborhoods**

I-4 PD&E Study - Section 2
Segment 5 of 6

Site Number	Name of Development
167	Port of Sanford
168	Town of Monroe
169	EA Osteens Subdivision/Rolling Green Park
170	Volusia Park
171	The Reserve at Debarry
172	Parkview Subdivision
173	Plantation Estates (split)
174	River Oaks Estates
175	Riverwoods
176	Florida Lake Park Subdivision/Quarles Subdivision/Badcock Division
177	Debarry Estates/Merizonith Subdivision
178	Lester Clark Estates
179	Deltona Villas
180	Shady Lake Condos
181	Sunset Gardens
182	Deltona Lakes
183	Swallows East
184	Glen Abbey
185	Summer Haven
186	Orange City Estates (split)
187	Breezewood Park
188	Beauty Spot (split)
189	Forrest Park Ridge
190	Sherwood Oaks
191	Village Park
192	Sunny Hills
193	Yourlando Farms and Groves
194	Country Village MHP
195	Davis Park/Timbercrest
196	Yourlando in the Pines

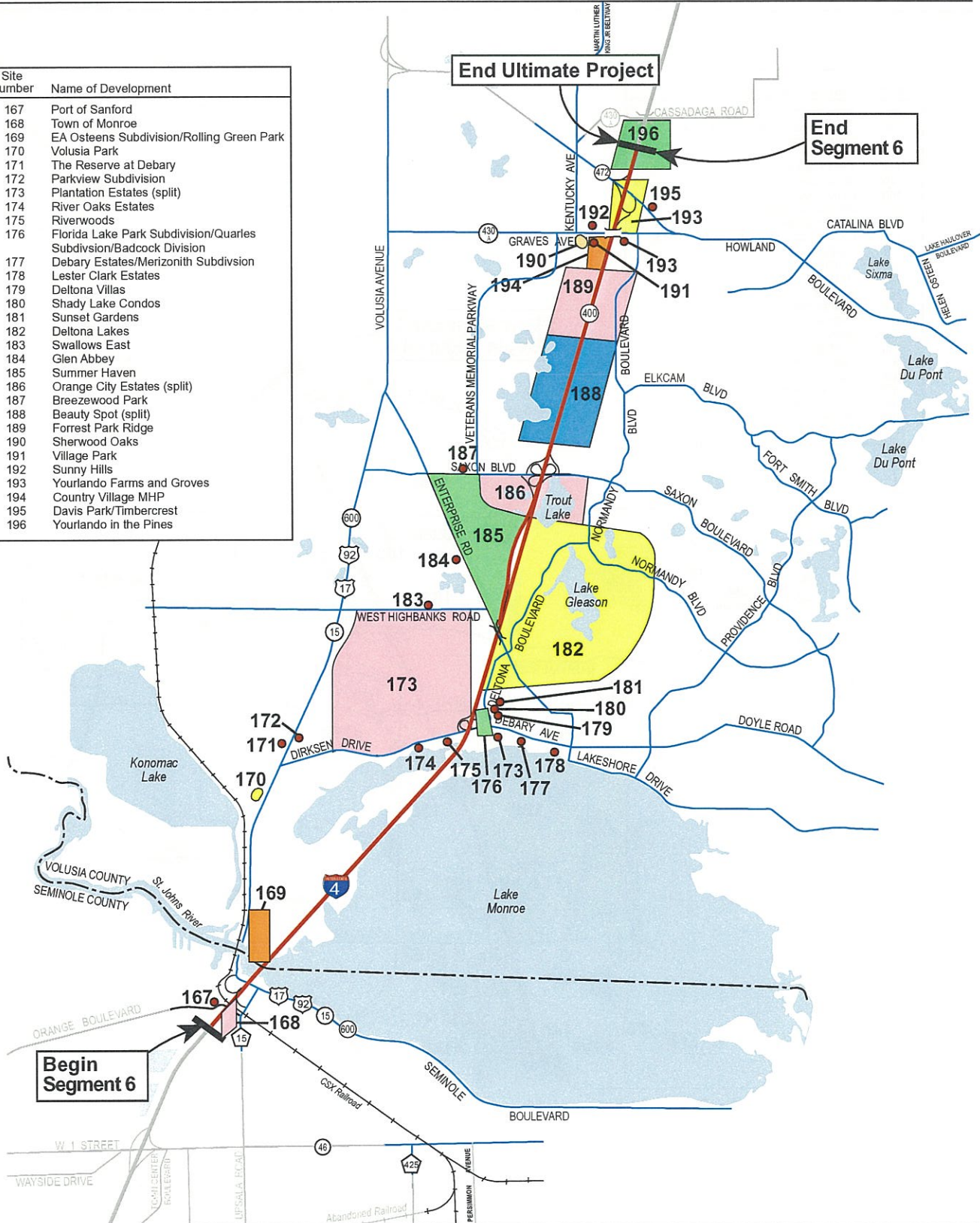


Figure 3-3 Neighborhoods

I-4 PD&E Study - Section 2
Segment 6 of 6



3.1.2.1.2 Segments 2 and 3

Angebilt (Site No. 16) - Angebilt is a designated neighborhood located south of I-4 and east of Rio Grande Avenue. This community includes Pineloch Elementary School, the Living Hope International Ministries, Hare Krishna, and House of Hope. Angebilt, as defined by the Orange County Community Affairs office, was a very large area platted around 1900 and has since been divided numerous times for subdivisions and other land uses. Orange Blossom Trail serves as the main north/south thoroughfare, which divides this neighborhood. No signs in the area designate the neighborhood boundaries and no organized neighborhood association has been established.

Holden Heights Neighborhood Watch (Site No. 19) - This community is a formal association serving the Holden Heights area, which borders Michigan Street on the north and Lake Holden, east of I-4. This neighborhood is composed predominantly of single-family residences. Primary features include Lois' Learning Center and the Veranda Nursing and Rehabilitation Center. This community, as well as Holden Heights, has been targeted as part of Orange County's redevelopment program under the Targeted Community Initiative (TCI) and Restore Orlando.

Holden Heights (Site No. 20) - The Holden Heights neighborhood is located east of I-4 and south of Gore Avenue. This established neighborhood includes both areas of unincorporated Orange County and the City of Orlando. According to the City of Orlando Neighborhood Services, 729 homes are situated within the incorporated boundary of the city. The formal neighborhood association for Holden Heights was founded in 1995. The primary community center of the neighborhood is the Holden Heights Community Center, located on the east side of Rio Grande Avenue adjacent to I-4. Other focal points include the Holden Heights Baptist Church, Lighthouse Church of the Nazarene, Grand Avenue Elementary School, Restore Orlando, and the St. Francis House. Although Holden Heights is predominantly residential, commercial properties are scattered throughout the area. This neighborhood is located within a minority and low-income census tract. This community has been targeted as part of Orange County's redevelopment program under the TCI and Restore Orlando.

South Division (Site No. 21) - South Division is a separately designated area included as part of the general Holden Heights neighborhood. It is located south of SR 408, west of the CSXT railroad tracks, and east of I-4. This area is primarily commercial and industrial.

South Orange (Site No. 22) - This area lies within the jurisdiction of the City of Orlando. This area is bordered by the CSXT railroad tracks on the west and Orange Avenue on the east, Michigan Street on the south, and SR 408 on the north. South Orange includes several commercial and industrial sites, as well as condominiums and historic residences. A portion of Lake Lucerne is included within this neighborhood.

Lake Cherokee/Lake Lucerne (Site No. 23) - This neighborhood is located within a historic district and is NPS certified. The neighborhood is located south of Anderson Street between Orange Avenue and Summerlin Avenue. It consists of predominantly single-family residences. Lake Cherokee and a portion of Lake Lucerne are two of the primary features within this community. Within the historic district, the Peckham-Phillips House is an individually listed building is used as a bed and breakfast hotel. This neighborhood has a cohesive homeowners association.

Holden-Parramore (Site No. 24) - This neighborhood is located north of Gore Street and south of Central Boulevard between Orange Blossom Trail on the west and I-4 on the east. This 50-year old neighborhood was originally divided by the construction of SR 408 and the I-4/SR 408 interchange. Holden-Parramore is a high rental community composed of single-family and multi-family dwelling units. Located within this community are many churches, businesses, and community outreach services. These include the Tuberculosis (T.B.) Shelter managed by the Coalition for the Homeless, Bethel Baptist Church, Miracle Tabernacle Church, the John H. Jackson Community Center, and the Cross Roads Mission. This neighborhood is located within a high minority and low-income census tract.

Griffin Park (Site No. 24A) - Griffin Park is considered part of the Holden-Parramore neighborhood and is listed on the NRHP as the first public housing project in the Orlando area. It is enclosed within the I-4/SR 408 interchange and was previously affected by the original construction of I-4 and SR 408. Griffin Park is governed by the Orlando Housing Authority and includes several multi-family public housing buildings, a small park, and a community center. This neighborhood is located within a high minority and low-income census tract.

Lake Dot (Site No. 26) - This neighborhood is located south of SR 50 and north of Amelia Street, adjacent to the Orlando Centroplex (Orlando Arena and Bob Carr Performing Arts Center). The focal point of this neighborhood is Lake Dot, with single-family homes located along the west side. The local Salvation Army housing, church, day care, and administrative facilities occupy the eastern side of Lake Dot.

College Park (Site No. 30) - The College Park neighborhood encompasses a vast area from SR 50 (Colonial Drive) to Par Avenue with some areas that have a high potential for NRHP listing. The formal neighborhood boundaries are north of SR 50 (Colonial Drive), south of Fairbanks Avenue, east of Orange Blossom Trail (US 441), and west of Orange Avenue. The College Park Neighborhood Association includes smaller residential areas including:

- Pine Crest
- Stansbury Estates
- Dubsdread
- The Pines
- Lawndale
- Olympia Heights
- Dubsdread Heights
- Fairview Heights
- Glenco
- School Terrace
- Fairbanks Shores

Several local schools, churches and parks, including Matthews Park, Killarney Elementary School, the Templo Evangelistico Del Nazareno, and Calvary Assembly of God serve this area.

Lorna Doone (Site No. 198) - This community is located east of the Lake Sunset neighborhood and was previously divided by the construction of SR 408. Its boundaries are Orange Center Boulevard on the south and Garden Road on the north, between Tampa Avenue and Orange Blossom Trail. Lorna Doone has a high minority and low-income population and is a high rental community that consists of single-family and multi-family dwelling units and commercial sites. Jones High School is also located within this community. Its major neighborhood community centers include Lorna Doone Park, Lake Beardall, Tinker Field, and the Citrus Bowl.

Lake Davis/Greenwood (Site No. 201) - This neighborhood is located south of Anderson Street between Summerlin Avenue and Hampton Avenue. Major features within this neighborhood include Lake Davis, Lake Greenwood, and the Greenwood Cemetery. Single-family dwelling units are predominant in this area.

North Orange (Site No. 33) - This area lies east of I-4 and the College Park neighborhood, and west of the CSXT railroad. North Orange does not have a formal neighborhood association, but is included in the aforementioned College Park Homeowners Association. This area consists of residences of single family homes and duplexes. Many businesses are located along Orange Avenue including the Ivanhoe Antique Row District.

3.1.2.1.3 Segments 4 and 5

Bel Air Estates (Site No. 67) - This neighborhood lies within the boundaries of the historic Town of Eatonville. Bel Air Estates is located north of Kennedy Boulevard and east of Wymore Road. Robert Hungerford Preparatory High School (formerly known as Wymore Secondary), Hungerford Elementary School, Life Center Church, and the Denton Johnson Community Center serve as the major focal points within this community. A portion of Eatonville is NRHP listed. The area has a high minority and low-income population.

Spanish Trace Apartments (Site No. 94A) - This apartment complex is a multi-family residential area within Altamonte Springs located south of SR 436 between I-4 and Wymore Road. The Days Inn on the north and La Plaza on the south enclose the apartment complex. The complex is undergoing renovations.

Sanlando Springs (Site No. 104, 110) - This area is a uniquely split community and does not have a formal neighborhood group. A majority of Sanlando Springs is categorized as commercial properties, including restaurants and multi-story office buildings. However, some single-family residences are also included. The area falls under the jurisdiction of the City of Altamonte Springs and unincorporated Seminole County.

Springwood Village Condominiums (Site No. 123) - This neighborhood has a very active homeowners association. This multi-family residential complex located within unincorporated Seminole County is directly adjacent to I-4. Prior construction on I-4 and the recent I-4/SR 434-interchange construction have been a major concern for these residents. The boundaries for this neighborhood are composed of the Sleepy Hollow neighborhood to the north, SR 434 to the south, and I-4 to the west.

Sleepy Hollow (Site No. 124) - This neighborhood is composed of single-family residences and has an active homeowners association. This community is divided by the City of Longwood and unincorporated Seminole County. The boundaries include SR 434 on the south and Sleepy Hollow Cove to the east. A large brick wall acts as the primary divider between the residents and the traffic noise coming from SR 434.

The Woodlands (Site No. 128) - This is primarily a single-family residential neighborhood located in unincorporated Seminole County. The Woodlands is situated east of I-4 just north of the Sleepy Hollow neighborhood. This neighborhood has a formal and organized homeowners association. Woodlands Elementary is located nearby and serves the residents of this community.

Des Pinar Acres (Site No. 130) - This community is a predominantly single-family residential community in unincorporated Seminole County adjacent to I-4. Des Pinar Acres extends north to E.E. Williamson Road. The Des Pinar Water Treatment Plant is located south of this neighborhood.

3.1.2.1.4 Segment 6

Town of Monroe (Site No. 168) - The Town of Monroe neighborhood is located within unincorporated Seminole County. This community lies adjacent to the east side of I-4 near Lake Monroe and the Seminole/Volusia County line. This area is composed of commercial and residential properties. Based on records from the Seminole County Property Appraiser's Office, a formal and organized homeowners' association exists for this community.

Deltona Lakes (Site No. 182) - This neighborhood includes most of the City of Deltona and borders the east of I-4. Howland Boulevard and Enterprise Road serve as the northern and southern boundaries, respectively. This neighborhood includes several residential and commercial areas. This large community features Dupont Lake Park, Vann Park, Discovery Elementary, Deltona Middle School, Sunrise Elementary School, and Deltona Hills Golf and Country Club. Furthermore, many of the city administration buildings are located within the area.

Forrest Park Ridge (Site No. 189) - This community is divided between the City of Orange City and Deltona. This area adjacent to I-4 and north of Beauty Spot is platted but mostly undeveloped.

3.1.2.2 Community Facilities

Community facilities include schools; higher education facilities; day care facilities; churches and cemeteries; social service agencies; medical facilities; community centers; government buildings; and sheriff, police, fire protection, and emergency medical services. Table 3-24 summarizes the number and type of community facilities within at least one-half mile of the interstate.

Table 3-24. Summary of Corridor Community Facilities

Community Facilities	Segments						Total
	1	2	3	4	5	6	
Total Schools K-12	10	32	31	39	6	10	128
Higher Education Centers	3	10	1	8	0	1	23
Child Day Care Centers	0	17	4	2	1	3	27
Adult Day Care Centers	0	1	0	0	0	1	2
Churches	3	67	15	20	1	4	110
Cemeteries/Funeral Homes	1	2	1	2	1	3	10
Social Service Agencies	0	78	14	16	1	1	110
Community Centers	1	9	2	5	0	0	17
Commercial Community Centers	1	4	4	0	0	0	9
Government Facilities	4	61	1	6	3	2	77
Medical Facilities	5	31	7	10	2	3	58
Police/Sheriff Facilities	5	17	0	3	2	1	28
Fire Facilities	1	5	3	3	2	0	14
Evacuation Sites	3	5	2	1	1	10	22
Total	37	339	85	115	20	39	635

There are definite clusters of community facilities along the I-4 corridor. A total of 635 community facilities were identified along the corridor. Segment 1 has relatively few community facilities, totaling six percent of all the corridor community facilities. This is consistent with the low density of residential areas. Segment 2 has several well-established neighborhoods with a high low-income and minority population. Consequently, Segment 2 has the highest concentration of community facilities, a total of 339 facilities, which constitutes approximately 53 percent of all the community facilities identified along the I-4 corridor. Also within Segment 2, the downtown Orlando area, between Anderson Street and Robinson Street, is a focal area for approximately 80 percent of all the government buildings and approximately 60 percent of all the law enforcement offices identified along the corridor. Segment 3 is highly residential and has approximately 14 percent of all the corridor community facilities. Segment 4 is a mix of commercial and residential areas, and exhibits clusters of community facilities (18 percent of all corridor facilities) within the Eatonville area (between Lee Road and Kennedy Boulevard), in Altamonte Springs (along Douglas Avenue) and along E.E. Williamson Road. The remaining nine percent of corridor community facilities are scattered within Segments 4 and 5, which are primarily low-density residential areas.

3.1.2.2.1 Schools

Public and private educational facilities (kindergarten through twelfth grade) were identified and mapped within a two-mile radius of the project study area. The "two-mile limit" was based on Florida law, which specifies that crossing guards must be provided at the request of the public within a two-mile radius of public schools (Chapter 6A-3.001 Student Walking Distances "2 Miles"). A total of 70 public and 58 private educational facilities were identified. Approximately 80 percent of these schools are distributed throughout Segments 2, 3, and 4. These facilities are identified with the corresponding map number by segment on Figure 3-4 and listed in Table 3-25.

A brief description of the schools that are anticipated to be directly impacted by the Ultimate project is presented in the paragraphs that follow.

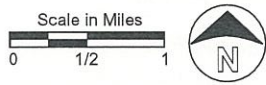
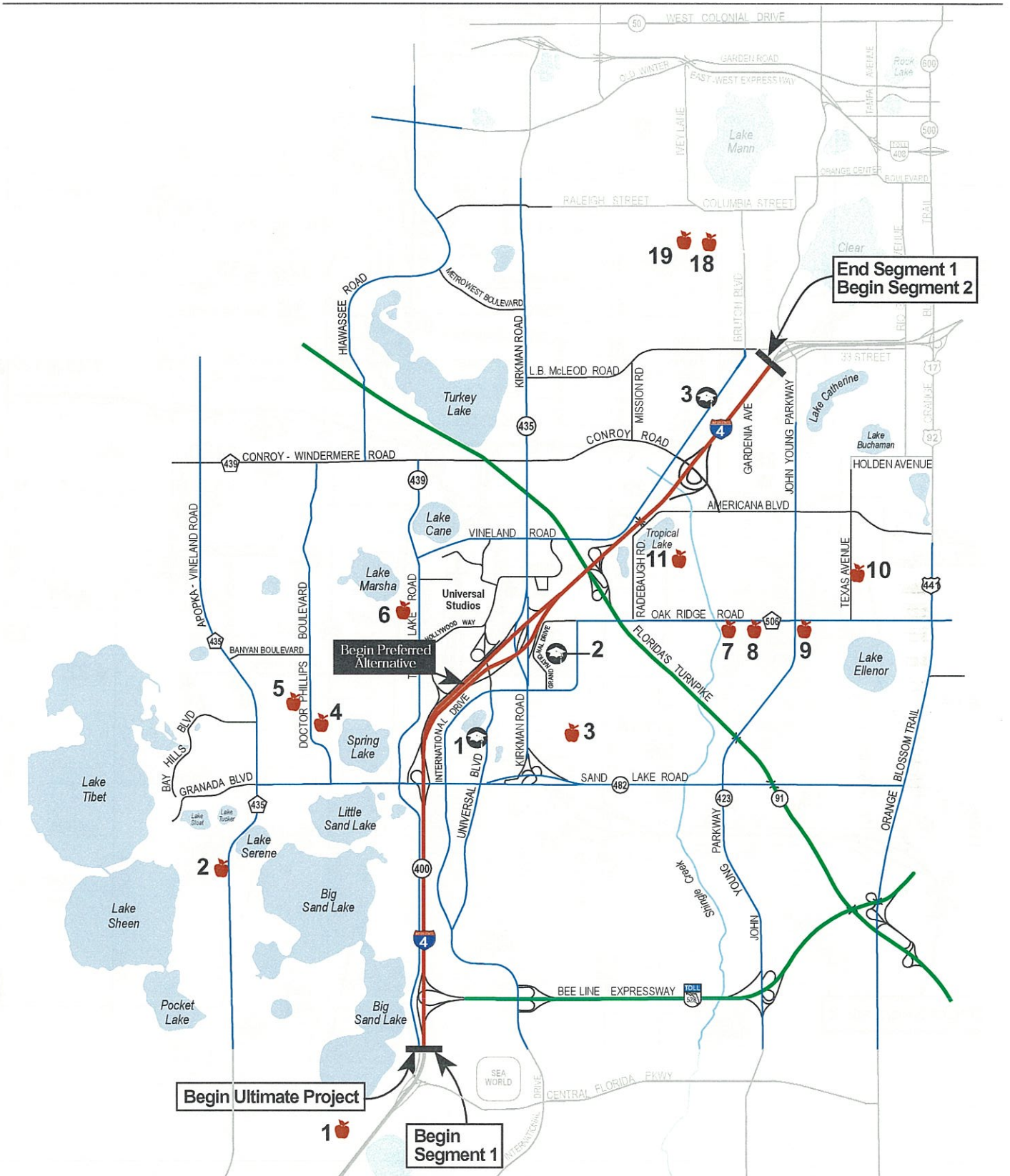
Segments 1, 2, 4, 5, and 6

None of the schools identified in Segments 1, 2, 4, 5, and 6 are anticipated to be directly impacted by the proposed improvements.

Segment 3

One school in Segment 3 has been identified as potentially impacted by the proposed improvements.

Killarney Elementary (Map No. 63) – This is a public school for children of kindergarten age through sixth grade. The school is located near I-4, on Wellington Boulevard in Winter Park. During the school year, Killarney Elementary averages 700 students, 76 staff, and 100 volunteer staff. The





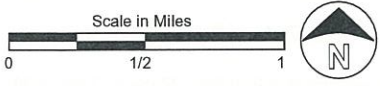
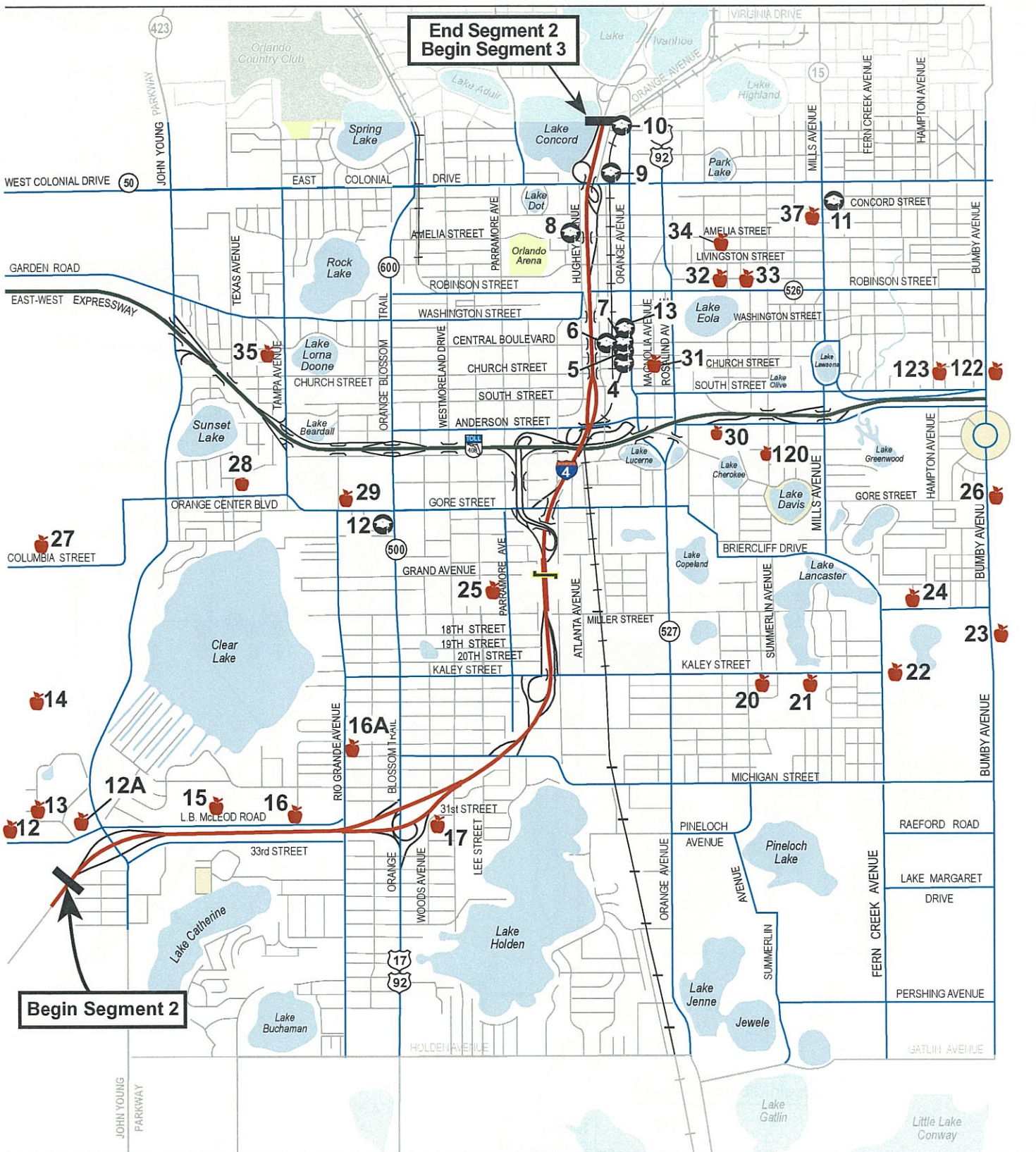
-  School Facility (Refer to Table 3-25)
-  Higher Educational Facilities (Refer to Table 3-26)



Figure 3-4
School and Higher Educational Facilities

I-4 PD&E Study - Section 2
Segment 1 of 6



Pedestrian Crossing

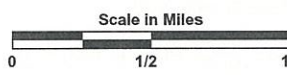
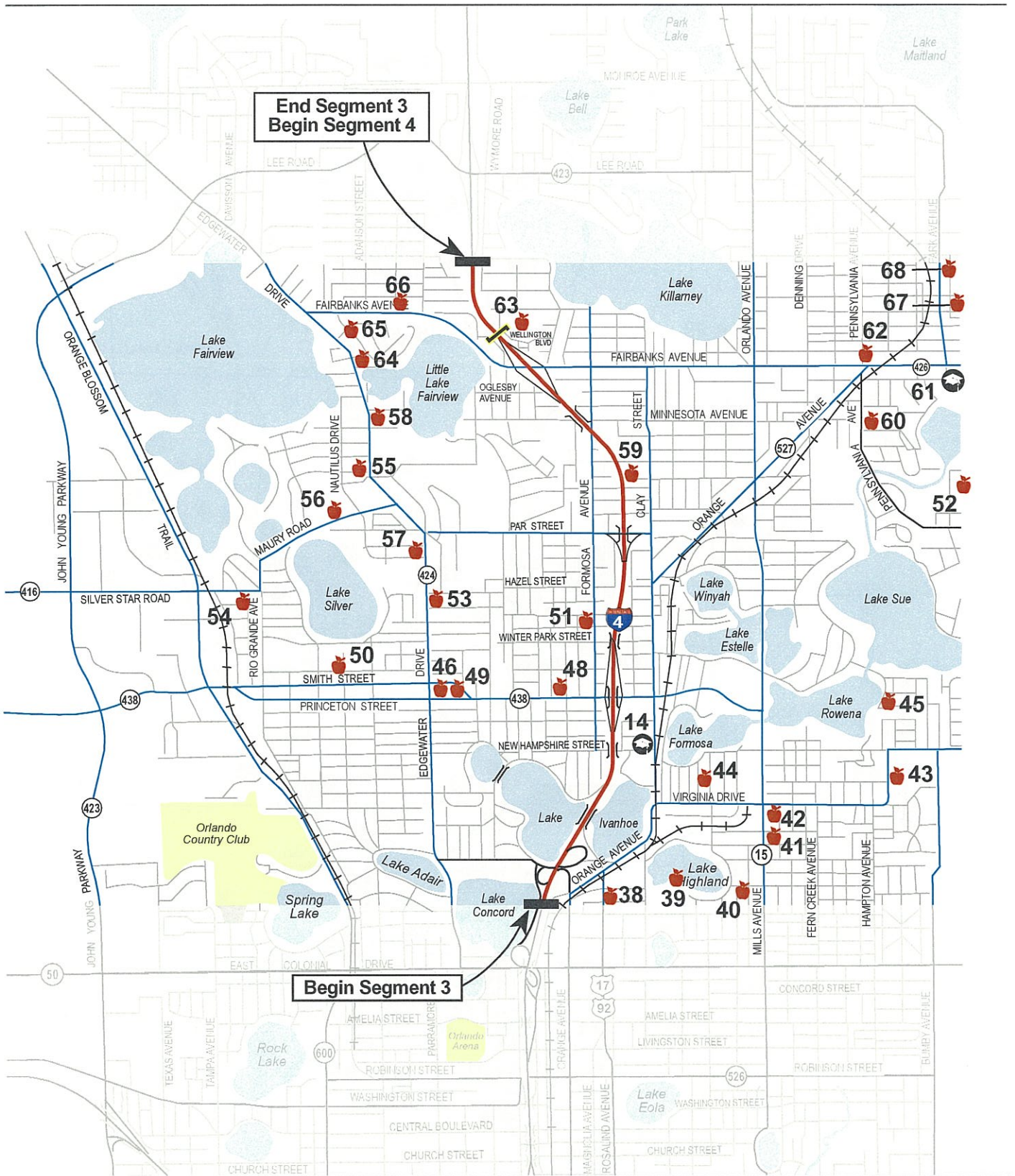
School Facility (Refer to Table 3-25)

Higher Educational Facilities (Refer to Table 3-26)

Figure 3-4
School and Higher Educational Facilities

I-4 PD&E Study - Section 2
Segment 2 of 6

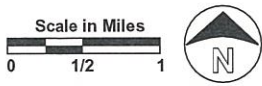
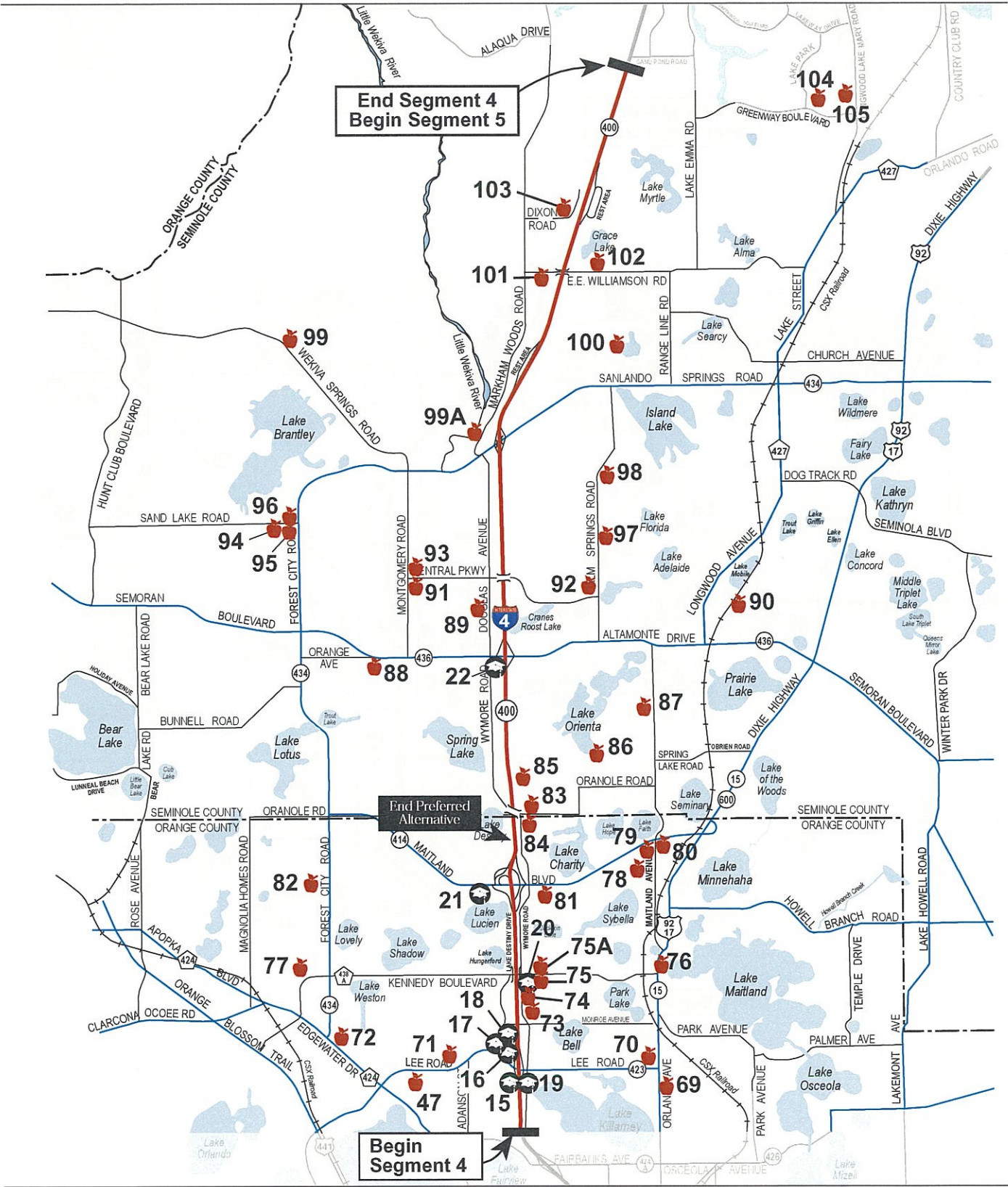




- Pedestrian Crossing
- School Facility (Refer to Table 3-25)
- Higher Educational Facilities (Refer to Table 3-26)

Figure 3-4
School and Higher Educational Facilities







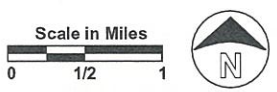
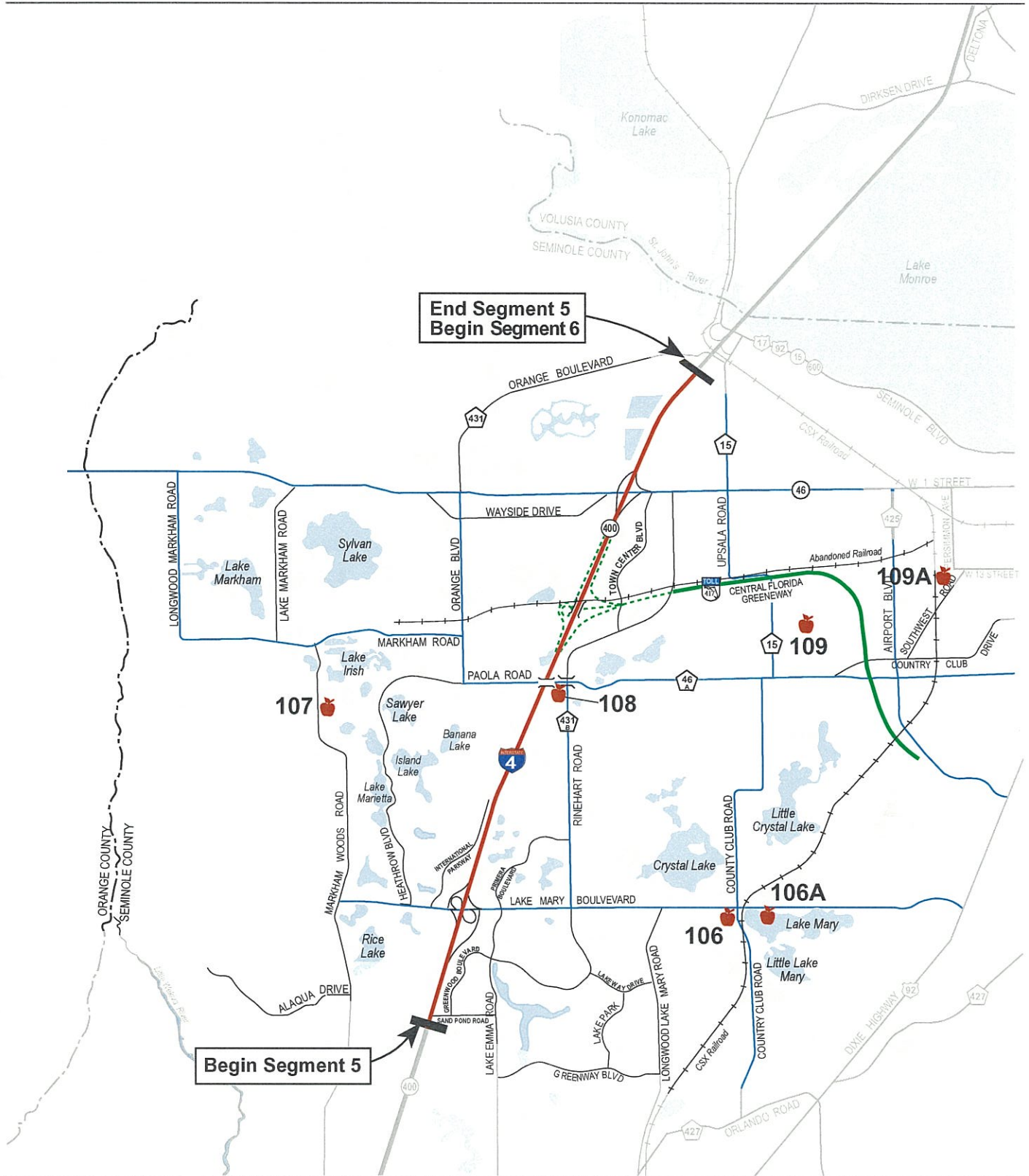
-  School Facility (Refer to Table 3-25)
-  Higher Educational Facilities (Refer to Table 3-26)

Figure 3-4
School and Higher Educational Facilities

I-4 PD&E Study - Section 2
 Segment 4 of 6







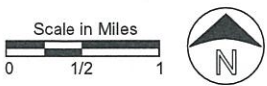
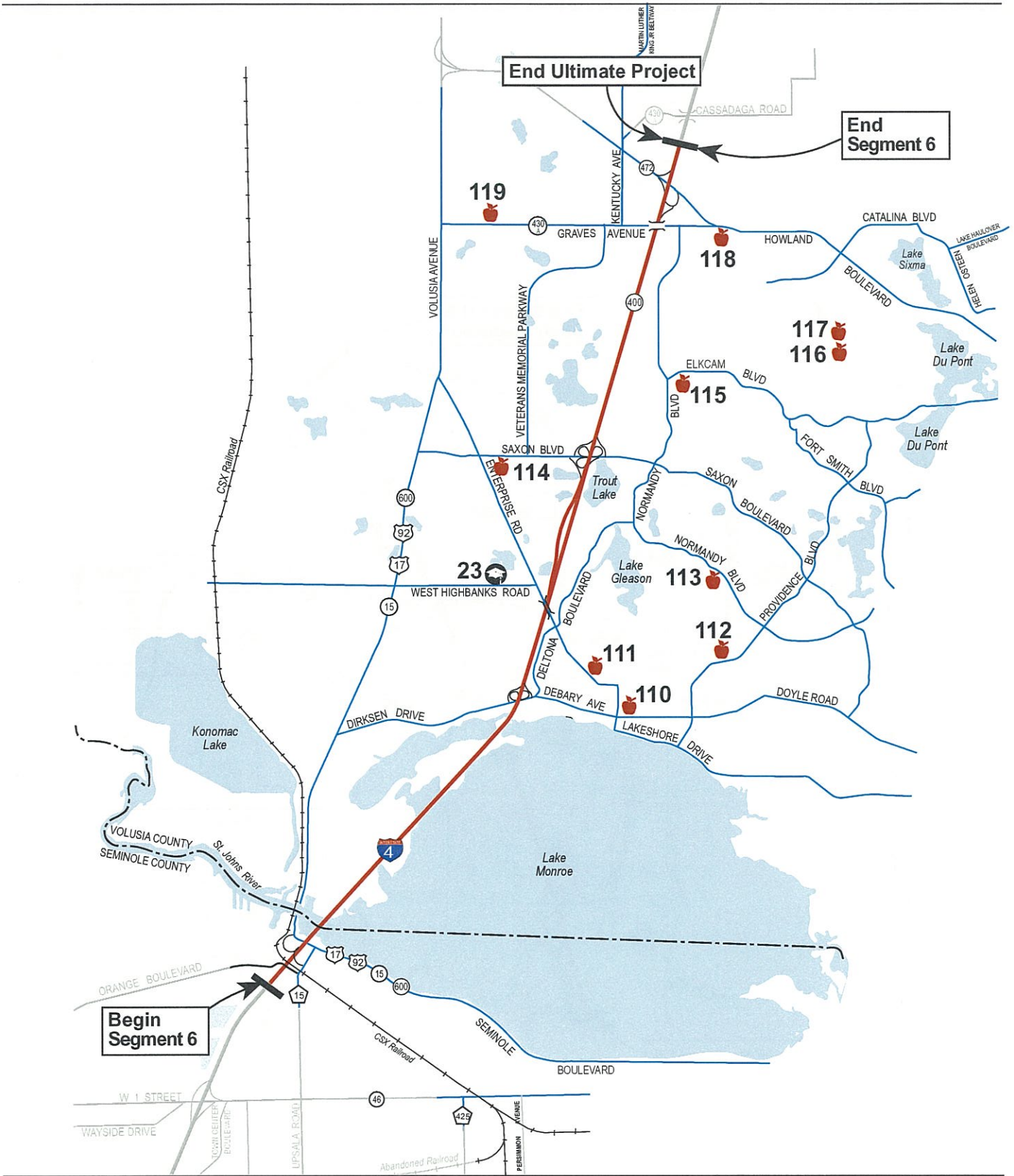
-  School Facility (Refer to Table 3-25)
-  Higher Educational Facilities (Refer to Table 3-26)

Figure 3-4
School and Higher Educational Facilities

I-4 PD&E Study - Section 2
 Segment 5 of 6







-  School Facility (Refer to Table 3-25)
-  Higher Educational Facilities (Refer to Table 3-26)

Figure 3-4
School and Higher Educational Facilities

I-4 PD&E Study - Section 2
 Segment 6 of 6



Table 3-25. Schools

Map No.	Name	Address	Jurisdiction	Public/Private
Segment 1				
1	Montessori World Preschool & Kindergarten	11693 Ruby Lake Road Orlando, FL 32819	Orange County	Private
2	Bay Meadows Elementary	9150 S. Apopka-Vineland Road Orlando, FL 32836	Orange County	Public
3	Tangelo Park Elementary	5115 Anzio Street Orlando, FL 32819	Orange County	Public
4	Dr. Phillips Elementary	6909 Dr. Phillips Boulevard Orlando, FL 32819	Orange County	Public
5	Southwest Middle	6450 Dr. Phillips Boulevard Orlando, FL 32819	Orange County	Public
6	Dr. Phillips High and 9 th Grade Center	6500 Turkey Lake Road Orlando, FL 32819	City of Orlando	Public
7	Sadler Elementary	4000 W. Oak Ridge Road Orlando, FL 32809	Orange County	Public
8	Westridge Middle	3800 W. Oak Ridge Road Orlando, FL 32809	Orange County	Public
9	Mid-Florida Tech	2900 W. Oak Ridge Road Orlando, FL 32809	Orange County	Public
10	Palmetto Elementary	2015 Duskin Avenue Orlando, FL 32839	Orange County	Public
11	Shingle Creek Elementary	5620 Harcourt Avenue Orlando, FL 32839	City of Orlando	Public
12	The First Academy	2667 Bruton Boulevard Orlando, FL 32805	City of Orlando	Private
12A	First Baptist Preschool, Elementary, and High School	3000 S. John Young Parkway Orlando, FL 32805	City of Orlando	Private
13	Richmond Heights Elementary	2500 Bruton Boulevard Orlando, FL 32805	City of Orlando	Public
14	Saint Mark Preparatory School	1960 Bruton Boulevard Orlando, FL 32805	City of Orlando	Private
15	Catalina Elementary	2510 Gulfstream Road Orlando, FL 32805	City of Orlando	Public
16	Memorial Middle	2220 W. 29th Street Orlando, FL 32805	City of Orlando	Public
16A	TLC Christian Academy	1408 W. Michigan Street Orlando, FL 32805	Orange County	Private
17	Pineloch Elementary	3101 Woods Avenue Orlando, FL 32805	Orange County	Public
18	Eccleston Elementary	1500 Aaron Avenue Orlando, FL 32811	City of Orlando	Public
19	Carver Middle	4500 W. Columbia Street Orlando, FL 32811	City of Orlando	Public
20	Blankner Elementary	720 E. Kaley Street Orlando, FL 32806	City of Orlando	Public
Segment 2				
21	William R. Boone High	2000 S. Mills Avenue Orlando, FL 32806	City of Orlando	Public
22	Kaley Elementary	1600 E. Kaley Street Orlando, FL 32806	City of Orlando	Public
23	Montessori Casa Dei Bambini	2500 S. Bumby Avenue Orlando, FL 32806	Orange County	Private
24	A Child's Place Day School	2301 E. Michigan Street Orlando, FL 32806	City of Orlando	Private
25	Grand Avenue Elementary	800 Grand Avenue Orlando, FL 32805	City of Orlando	Public
26	Lake Como Elementary	901 S. Bumby Avenue Orlando, FL 32806	City of Orlando	Public
27	Washington Shores Elementary	944 W. Lake Mann Drive Orlando, FL 32805	City of Orlando	Public
28	Orange Center Elementary	621 Texas Avenue Orlando, FL 32805	City of Orlando	Public
29	Jones High	801 S. Rio Grande Avenue Orlando, FL 32805	City of Orlando	Public
30	Cherokee Exceptional	550 S. Eola Drive Orlando, FL 32801	City of Orlando	Public

Table 3-25. Schools (Continued)

Map No.	Name	Address	Jurisdiction	Public/Private
31	Weekday School and Christ School	106 East Church Street Orlando, FL 32801	City of Orlando	Private
32	St. James Cathedral School	505 E. Ridgewood Street Orlando, FL 32803	City of Orlando	Private
33	Howard Middle School	800 E. Robinson Street Orlando, FL 32803	City of Orlando	Public
34	Trinity Lutheran School	123 E. Livingston Street Orlando, FL 32801	City of Orlando	Private
35	Rock Lake Elementary	408 N. Tampa Avenue Orlando, FL 32805	City of Orlando	Public
37	Hillcrest Elementary	1010 Concord Street Orlando, FL 32803	City of Orlando	Public
121*	Dover Shores Elementary	1200 Gaston Foster Road Orlando, FL	City of Orlando	Public
122	Merriday Montessori School	2600 E Jackson Street Orlando, FL	City of Orlando	Private
123	Quest Kids	2113 E South Street Orlando, FL	City of Orlando	Private
124*	Primary Prep Academy	445 Gaston Foster Road Orlando, FL	City of Orlando	Private
Segment 3				
38	New School of Orlando	130 E. Marks Street Orlando, FL 32803	City of Orlando	Private
39	Lake Highland Preparatory School	901 N. Highland Avenue Orlando, FL 32803	City of Orlando	Private
40	Windows Pre-School	1014 E. Park Lake Street Orlando, FL 32803	City of Orlando	Private
41	Easter Seal Early Intervention Program	1100 Fern Creek Avenue Orlando, FL 32803	City of Orlando	Private
42	Fern Creek Elementary	1121 N. Fern Creek Avenue Orlando, FL 32803	City of Orlando	Public
43	Audubon Park Elementary	1500 Falcon Drive Orlando, FL 32803	City of Orlando	Public
44	Learning Tree	1021 New York Avenue Winter Park, FL 32789	City of Orlando	Private
45	Beeman Park Montessori School	2300 Ridge Avenue Orlando, FL 32803	Orange County	Private
46	College Park United Methodist Child Development	644 W. Princeton Street Orlando, FL 32804	City of Orlando	Private
48	Princeton Elementary	311 W. Princeton Street Orlando, FL 32804	City of Orlando	Public
49	Princeton House	630 W. Princeton Street Orlando, FL 32804	City of Orlando	Private
50	Lake Silver Elementary	2401 N. Rio Grande Avenue Orlando, FL 32804	City of Orlando	Public
51	Orlando Junior Academy	30 E. Evans Street Orlando, FL 32804	City of Orlando	Private
52	Glenridge Middle	801 Glenridge Way Winter Park, FL 32808	City of Winter Park	Public
53	Edgewater High	3100 Edgewater Drive Orlando, FL 32804	City of Orlando	Public
54	Silver Star Center	1600 Silver Star Road Orlando, FL 32804	Orange County	Public
55	Orlando Worship Center Academy	3500 Edgewater Drive Orlando, FL 32804	City of Orlando	Private
56	Lee Middle	1201 Maury Road Orlando, FL 32804	City of Orlando	Public
57	Circle Christian School	3300 Edgewater Drive Orlando, FL 32804	Orange County	Private
58	Morning Star School	954 Leigh Avenue Orlando, FL 32804	Orange County	Private
59	Calvary Assembly School	1199 Clay Street Winter Park, FL 32789	Orange County	Private
60	Winter Park 9 th Grade Center	528 Huntington Avenue Winter Park, FL 32789	City of Winter Park	Public

Table 3-25. Schools (Continued)

Map No.	Name	Address	Jurisdiction	Public/Private
61	Rollins College	1000 Holt Avenue Winter Park, FL 32789-4499	City of Winter Park	Private
62	Winter Park Day Nursery	741 S. Pennsylvania Avenue Winter Park, FL 32789	City of Winter Park	Private
63	Killarney Elementary	2401 Wellington Boulevard Winter Park, FL 32789	Orange County	Public
64	Bishop Moore High School	3901 Edgewater Drive Orlando, FL 32804	Orange County	Private
65	Saint Charles School	4005 Edgewater Drive Orlando, FL 32804	Orange County	Private
66	Tri-L Christian Academy	1039 W. Fairbanks Avenue Orlando, FL 32804	Orange County	Private
67	First Congregational Church Preschool	225 S. Interlachen Avenue Winter Park, FL 32789	City of Winter Park	Private
68	Saint Margaret Mary	142 E. Swoope Winter Park, FL 32789	City of Winter Park	Private
Segment 4				
47	Avalon School	5002 Andrus Avenue Orlando, FL 32804	Orange County	Private
69	Winter Park Tech	901 W. Webster Avenue Winter Park, FL 32789	City of Winter Park	Public
70	Mini Skool	1175 Benjamin Avenue Winter Park, FL 32789	City of Winter Park	Private
71	Congregation of Liberal Judaism Religious School	928 Malone Drive Orlando, FL 32810	Orange County	Private
72	Lake Weston Elementary	5500 Milan Drive Orlando, FL 32810	Orange County	Public
73	Hungerford Elementary	230 College Avenue Eatonville, FL 32751	Town of Eatonville	Public
74	Robert Hungerford Preparatory High School (formerly known as Wymore Secondary)	100 E. Kennedy Boulevard Eatonville, FL 32751	Town of Eatonville	Public
75	New Directions Academy	100 E. Kennedy Boulevard Eatonville, FL 32751	Town of Eatonville	Public
75A	Life Center Elementary	100 E. Kennedy Boulevard Eatonville, FL 32751	Town of Eatonville	Private
76	Park Maitland School	P.O. Box 1095 Maitland, FL 32751	City of Maitland	Private
77	Lockhart Middle	3411 Doctor Love Road Orlando, FL 32810	Orange County	Public
78	Lake Sybella Elementary	600 Sandspur Road Maitland, FL 32751	City of Maitland	Public
79	The Master's Academy	1250 Maitland Avenue Maitland, FL 32751	City of Maitland	Private
80	Hebrew Day School of Central Florida	851 N. Maitland Avenue Maitland, FL 32751	City of Maitland	Private
81	Orangewood Christian Middle School	1300 W. Maitland Boulevard Maitland, FL 32751	City of Maitland	Private
82	Riverside Elementary	3125 Pembroke Avenue Orlando, FL 32810	Orange County	Public
83	King of Kings Lutheran	1101 N. Wymore Road Maitland, FL 32751	City of Maitland	Private
84	Maitland Christian	1185 N. Wymore Road Maitland, FL 32751	Orange County	Private
85	Orangewood Christian Elementary & High	1221 Trinity Woods Lane Maitland, FL 32751	Seminole County	Private
86	Lake Orienta School	612 Newport Avenue Altamonte Springs, FL 32701	City of Altamonte Springs	Public
87	Saint Mary Magdalene	869 Maitland Avenue Altamonte Springs, FL 32701	City of Altamonte Springs	Private
88	Spring Lake Elementary	695 Orange Avenue Altamonte Springs, FL 32714	City of Altamonte Springs	Public
89	Kids United Child Care Center	398 Douglas Avenue Altamonte Springs, FL 32701	City of Altamonte Springs	Private
90	Rosenwald Exceptional Child Center	1096 Merritt Street Altamonte Springs, FL 32701	Seminole County	Public

Table 3-25. Schools (Continued)

Map No.	Name	Address	Jurisdiction	Public/Private
91	Cove Counseling and Educational Center	409 Montgomery, Suite 101 Altamonte Springs, FL 32714	City of Altamonte Springs	Private
92	Altamonte Christian School	601 Palm Springs Drive Altamonte Springs, FL 32701	City of Altamonte Springs	Private
93	Center Academy	470 W. Central Parkway Altamonte Springs, FL 32714	City of Altamonte Springs	Private
94	Teague Middle	1350 McNeil Road Altamonte Springs, FL 32714	City of Altamonte Springs	Public
95	Forest City Elementary	1010 Sand Lake Road Altamonte Springs, FL 32714	City of Altamonte Springs	Public
96	Lake Brantley High	991 Sand Lake Road Altamonte Springs, FL 32714	City of Altamonte Springs	Public
97	Altamonte Elementary	525 Pineview Street Altamonte Springs, FL 32701	Seminole County	Public
98	Saint Marks Kindergarten, Inc.	1021 Palm Springs Road Altamonte Springs, FL 32701	Seminole County	Private
99	Sabal Point Elementary	960 Wekiva Springs Road Longwood, FL 32779	Seminole County	Public
99A	Neighborhood Alliance Preschool	301 Markham Woods Road Longwood, FL 32750	Seminole County	Private
100	Rock Lake Middle	250 Slade Drive Longwood, FL 32750	Seminole County	Public
101	Markham Woods Academy	1681 E.E. Williamson Road Longwood, FL 32779	Seminole County	Private
102	Woodlands Elementary	1420 EE Williamson Road Longwood, FL 32750	Seminole County	Public
103	Wekiva Christian School	1675 Dixon Road Longwood, FL 32779	Seminole County	Private
104	Greenwoods Lakes Middle	601 Lake Park Drive Lake Mary, FL 32746	Seminole County	Public
105	Lake Mary High	655 Longwood/Lake Mary Road Lake Mary, FL 32746	Seminole County	Public
Segment 5				
106	Lake Mary Elementary	132 South Country Club Road Lake Mary, FL 32746	City of Lake Mary	Public
106A	Excel Alternatives - Seminole County	520 W. Lake Mary Blvd, Ste. 301 Lake Mary, FL 32773	Lake Mary	Private
107	Heathrow Elementary	5715 Markham Woods Road Lake Mary, FL 32746	Seminole County	Public
108	St. Peters Preschool	700 Rinehart Road Lake Mary, FL 32746	Seminole County	Private
109	Idyllwilde Elementary	430 Vihlen Road Sanford, FL 32771	Seminole County	Public
109A	Crooms Academy	2200 W. 13th Street Sanford, FL 32771	Sanford	Public
Segment 6				
110	Enterprise Elementary	211 Main Street Enterprise, FL 32725	Volusia County	Public
111	Deltona Middle	250 Enterprise Road Deltona, FL 32725	Volusia County	Public
112	Deltona Christian School	1200 Providence Boulevard Deltona, FL 32725	Volusia County	Private
113	Discovery Elementary	975 Abigail Drive Deltona, FL 32725	Volusia County	Public
114	Kiddie Koledge Learning Center	2700 Enterprise Road Orange City, FL 32763	Volusia County	Private
115	Trinity Christian Academy	875 Elkcam Boulevard Deltona, FL 32725	Volusia County	Private
116	Galaxy Middle	2400 Eustace Avenue Deltona, FL 32725	Volusia County	Public
117	Timbercrest Elementary	2401 Eustace Avenue Deltona, FL 32725	Volusia County	Public
118	Deltona High	100 Wolf Pack Run Deltona, FL 32725	Volusia County	Public
119	Orange City Elementary	555 E. University Avenue Orange City, FL 32763	City of Orange City	Public

* These sites are located within two-miles east of Bumby Avenue and south of SR 408, and are not shown on the figure.

school has a significant minority population of slightly over 30 percent. More than half of the students qualify for free or reduced lunches. Many students are transported by school buses; however, those who reside within a two-mile radius of the school walk or use private transportation. A small percentage of the students (approximately seven percent) use the existing pedestrian overpass over I-4.

3.1.2.2.2 School Transportation

Public school bus routes, field trips, and pedestrian and bicycle activities related to student transportation are discussed in the following section. Since the public school system is under county jurisdiction, the discussions are by county within the Ultimate project study area.

School Bus Routes

Orange County

The portion of I-4 between the John Young Parkway and Par Avenue interchanges receives the vast majority of Orange County school bus use (86 percent). An additional 12 percent occurs in the area of International Drive and the Bee Line Expressway. The remaining usage occurs between the Par Avenue and Lee Road interchanges. The buses generally travel I-4 twice a day. Most school bus crossings occur in Segment 2. However, information generated by the project team indicate that all roadways that cross I-4 in Orange County are used by school buses; crossing of I-4 generally occurs twice a day. The most frequently used crossings include:

- **Segment 1** - Sand Lake Road (interchange)
- **Segment 2** - John Young Parkway, Orange Blossom Trail, Gore Street/SR 408, South Street, Anderson Street, Robinson Street, SR 50 (Colonial Drive) (interchanges); Rio Grande Avenue (underpass)
- **Segment 3** - Lee Road, Princeton Street, and Fairbanks Avenue (interchanges)

Seminole County

The majority of the school/bus routes that use I-4 are in Segments 4 and 5, between the SR 434 and Lake Mary Boulevard interchanges. The buses generally travel I-4 twice a day. Seminole County has school bus compounds located on either side of I-4, which eliminates some crossovers. Review of the bus route sheets indicates that SR 434 (Segment 4) is used the most for crossing I-4. However, all Seminole County roadways that cross I-4 are used by school bus routes. Crossovers most frequently used include:

- **Segment 4** - SR 434 (interchange) and E.E. Williamson Road (crossover)
- **Segment 5** - SR 436 and Lake Mary Boulevard (interchanges)

Volusia County

According to Volusia County school district staff, none of the approximately 256 public school bus routes use I-4 to transport students to or from school. However, all five I-4 roadway crossings in Volusia County (located within Segment 6) are used by school buses to cross I-4. According to district staff, of the seven public schools located within the two mile limit, only students attending Deltona Middle School and Deltona High School are transported across I-4. Students are transported between the hours of 6:00 to 9:00 AM and 1:00 to 5:00 PM. These roadway crossings include:

- **Segment 6** - Dirksen Drive/DeBary Avenue, Saxon Boulevard, SR 472 (interchanges); Enterprise Road, Graves Avenue/Howland Boulevard (crossovers)

Public School Field Trips

Orange County

Orange County conducts approximately 2,000 field trips per year to numerous destinations in the Central Florida area. Information provided by school district staff indicates that approximately 50 percent of these trips use I-4 to travel to popular destinations and attractions in the vicinity of I-4

(Sea World, Disney World, Central Florida Zoo, Green Meadows Farm, Blue Springs, Splendid China, and Medieval Times). In addition, they travel to attractions in Tampa and St. Augustine. Most of these field trips occur in the spring and are conducted between 9:00 AM and 1:00 PM. School district staff also indicated that field trip buses are most likely to use the following I-4 interchanges:

- **Segment 1** - Sand Lake Road
- **Segment 2** - John Young Parkway and SR 408
- **Segment 3** - Princeton Avenue, Par Avenue, and Fairbanks Avenue
- **Segment 4** - Maitland Boulevard

Seminole County

Seminole County conducts approximately 800 field trips per year to popular destinations and attractions in Central Florida and to school sporting events. School district staff provided information indicating that approximately 50 percent of these trips occur during the school day, between 9:00 AM and 3:00 PM. Another 30 percent of the trips occur over the weekends and involve school travel to sporting events. In addition, it was noted that approximately 14 percent of the trips occur after 10:00 PM, usually related to sporting events. School district staff indicated that the following interchanges are the most commonly used.

- **Segment 4** - SR 436 and SR 434
- **Segment 5** - Lake Mary Boulevard

Volusia County

Volusia County conducts approximately 700 field trips a year, averaging approximately 20 per week. The majority of field trips are conducted between the hours of 9:00 AM and 3:00 PM. Approximately half the trips are to popular Central Florida destinations and attractions in the vicinity of the I-4 corridor and located in west Orange County. The following three interchanges are frequently used by school buses.

- **Segment 6** - Dirksen Drive/DeBary Avenue, Saxon Boulevard, and SR 472

Student Pedestrian and Bicycle Activity

All three counties employ staff who function as safety officers for the public school systems. Safety officers coordinate crossing guards, sidewalk issues, school walk routes, and general public school safety issues with the county traffic engineering department and the sheriff's office. Monthly meetings conducted with the county engineering department and the sheriff's office address current issues and construction activities that affect schools.

Orange County

School district staff noted five schools that have students walking or bicycling across I-4. All five schools are located in Segment 2 of the study corridor. These schools and corresponding map numbers are listed below.

- **Catalina Elementary** (Map No. 15) - Students walk or bicycle under I-4 on Rio Grande Avenue.
- **Memorial Middle School** (Map No. 16) - Students walk or bicycle under I-4 on Rio Grande Avenue.
- **Grand Avenue Elementary** (Map No. 25) - Students walk or bicycle across I-4 on Kaley Street or Gore Street.
- **Killarney Elementary** (Map No. 63) - Students are directed by crossing guards to cross under I-4 on Minnesota Avenue and walk north on Formosa Avenue across Fairbanks Avenue to the school. Students also use the pedestrian bridge across I-4 located immediately north of Fairbanks Avenue to access the school and facilities.

- **Hungerford Elementary (Map No. 73)** - Students walk under I-4 on Kennedy Boulevard.

Seminole County

No student pedestrian or bicycle activity is authorized by the school district on roadways crossing I-4 or in the vicinity of I-4. Generally, elementary and middle school students residing west of I-4 who attend Woodlands Elementary (Map No. 102) and Rock Lake Middle Schools (Map No. 100) are within walking and bicycling distance; however, all students are transported across I-4 at E.E. Williamson Road (Segment 4). Seminole County school district staff noted that safe and adequate pedestrian facilities should be installed on the E.E. Williamson Road over I-4.

Volusia County

No student pedestrian or bicycle activity is authorized by the school district on roadways crossing I-4 or in the vicinity of I-4. School district staff did not know of any student walking or bicycling activity to district schools located in the vicinity of the I-4 study area.

3.1.2.2.3 Higher Education Facilities

Higher education facilities (technical schools, vocational facilities, colleges, and universities) were identified within one-half mile of the I-4 corridor. A one-half-mile limit was based on the proximity of the I-4 corridor to these facilities and potential access issues. A total of 23 higher education facilities have been identified by segment in Table 3-26 and presented on Figure 3-4. The majority of these facilities (80 percent) are distributed throughout Segments 2 and 4.

Table 3-26. Higher Education Facilities

Map No.	Name	Address	Jurisdiction	Private/Public
Segment 1				
1	Palm Construction School	7440 Republic Drive	City of Orlando	Private
2	Webster University – South Orlando	7087 Grand National Drive	City of Orlando	Private
3	ARTI Studios	4525 Vineland Road	City of Orlando	Private
Segment 2				
4	International Factoring Institute	255 S. Orange Avenue	City of Orlando	Private
5	Open University	255 S. Orange Avenue	City of Orlando	Private
6	Webster University – Downtown Orlando	32 W. Central Boulevard	City of Orlando	Private
7	UCF Downtown Academic Center	36 W. Pine Street	City of Orlando	Public
8	Orlando Technical Institute	301 W. Amelia Street	City of Orlando	Public
9	Florida Theological Seminary	126 E. Colonial Drive	City of Orlando	Private
10	Central Florida Academy of Travel	845 N. Garland Avenue	City of Orlando	Private
11	ABC Bartending School	653 N. Mills Avenue	City of Orlando	Private
12	Agape Enterprises	750 S. Orange Blossom Trail	City of Orlando	Private
13	Wilmer School of Languages	20 N. Orange Avenue	City of Orlando	Private
Segment 3				
14	C I T E Institute	215 E. New Hampshire Street	City of Orlando	Private
Segment 4				
15	National-Louis University	604 Courtland Street	Orange County	Private
16	Institute of Florida Real Estate Careers Inc.	5311 Diplomat Circle	Orange County	Private
17	Florida Auctioneer Academy	5311 Diplomat Circle	Orange County	Private
18	Orlando College North Campus	5421 Diplomat Circle	Orange County	Private
19	Nova Southeastern University	445 N. Wymore Road	Orange County	Private
20	ACE Wymore	100 E. Kennedy Boulevard	Town of Eatonville	Public
21	ITT Technical Institute	2600 Lake Lucien Drive	City of Maitland	Private
22	Webster University – Orlando	151 Wymore Road	City of Altamonte Springs	Private
Segment 6				
23	Daytona Beach Community College	336 E. High Banks Road	Town of DeBary	Public

Below is a brief description of the higher education facilities that are anticipated to be directly impacted by the proposed improvements.

Segments 1, 2, 3, 5, and 6

None of the higher education facilities located in Segments 1, 2, 3, 5, and 6 are anticipated to be directly impacted by the proposed improvements.

Segment 4

Only one higher education facility within Segment 4 is anticipated to be directly impacted by the proposed improvements.

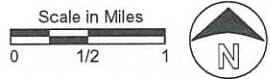
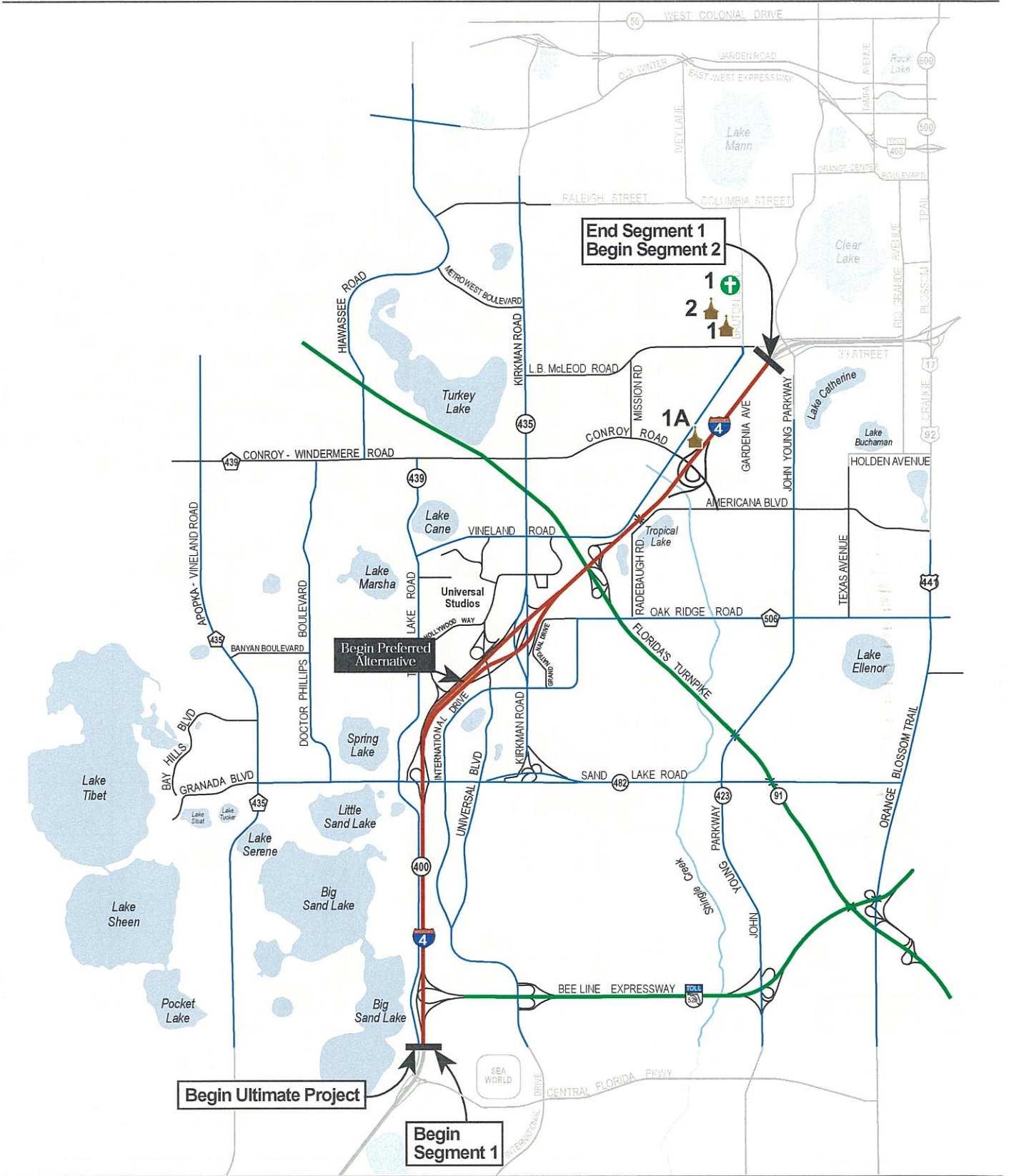
Nova Southeastern University (Map No. 19) - This private institution provides higher education programs. The main campus is located in Fort Lauderdale in South Florida. However, this location serves as one of the college's remote off-campus sites and is located on Wymore Road in Orlando. The Orlando campus has approximately 350 students and is supported by 45 faculty and staff members. The university is privately funded. Class schedules are based on an eight-week term.

3.1.2.2.4 Day Care Facilities

Day care centers were identified within one-half mile of the I-4 corridor. A one-half mile limit was based on the proximity of the I-4 corridor to these facilities and potential access issues. A total of 27 child day care centers and two adult care facilities have been identified by segment in Table 3-27 and are presented on Figure 3-5. Most of these facilities (62 percent) are located in Segment 2. Below is a brief description of the day care facilities that are anticipated to be directly impacted by the proposed improvements.

Table 3-27. Day Care Facilities

Map No.	Name	Location	Jurisdiction	Public/Private Owned
CHILD DAY CARE				
Segment 2				
1	First Baptist Child Enrichment Center	3701 L.B. McLeod Road	Orlando	Private
2	Rosemary's Learning Center	1446 39 th Street	Orlando	Private
3	Hickory Dickory Dots	2601 S. Rio Grande Avenue	Orlando	Private
4	ABC Learning Tree	2778 S. Westmoreland Drive	Orlando	Private
5	Ms. Lemon's Neighborhood	1223 25 th Street	Orlando	Private
6	Lois' Learning Center	718 W. Michigan Street	Orlando	Private
7	Little Red Train Day Care Center	647 W. Indiana Street	Orlando	Private
8	Becky's Preschool	775 W. Gore Street	Orlando	Private
9	Orlando Day Nursery	100 W. Anderson Street	Orlando	Private
10	Wesley Child Development Center	142 E. Jackson Street	Orlando	Private
11	Washington Street Day Care Center	506 W. Washington Street	Orlando	Private
12	United Cerebral Palsy of Central Florida	33 E. Robinson Street	Orlando	Private
13	Trinity Lutheran Child Care	424 Ruth Lane	Orlando	Private
14	Trinity United Methodist Church Day Care	2113 E. South Street	Orlando	Private
15	Salvation Army Day Care Center	416 W. Colonial Drive	Orlando	Private
16	Funshine Pre-School Learning Center	16 S. Dollins Avenue	Orlando	Private
17	Park Lake Presbyterian Church Child Care Center	309 E. Colonial Drive	Orlando	Private
Segment 3				
18	Kid E Place, Inc.	26 W. Steele Street	Orlando	Private
19	Good News Child Care c/o John Knox Presbyterian Church	118 E. Par Street	Orlando	Private
20	Winter Park Church of the Brethren Child Development Center	1721 Harmon Avenue	Winter Park	Private
21	Killarney Baptist Child Care	701 Formosa Avenue	Winter Park	Private
Segment 4				
22	Eatonville Kindergarten & Day Nursery	140 S. West Avenue	Eatonville	Private
23	Kids United	398 Douglas Avenue	Altamonte Springs	Private
Segment 5				
24	La Petite Academy	3850 Lake Emma Road	Lake Mary	Private
Segment 6				
25	La Petite Academy	698 Deltona Boulevard	Deltona	Private
26	First Presbyterian Church Pre-School	267 E. Highbanks Road	DeBary	Private
27	Happy Hands Early Learning Center	2411 E. Graves Avenue	Orange City	Private
ADULT CARE				
Segment 2				
1	Alzheimer Respite Care Program	808 W. Central Boulevard	Orlando	Private
Segment 6				
2	Kreuzer's Adult Day Care	1661 Baltimore Avenue	Deltona	Private

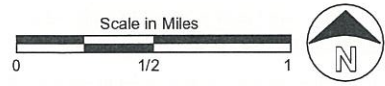
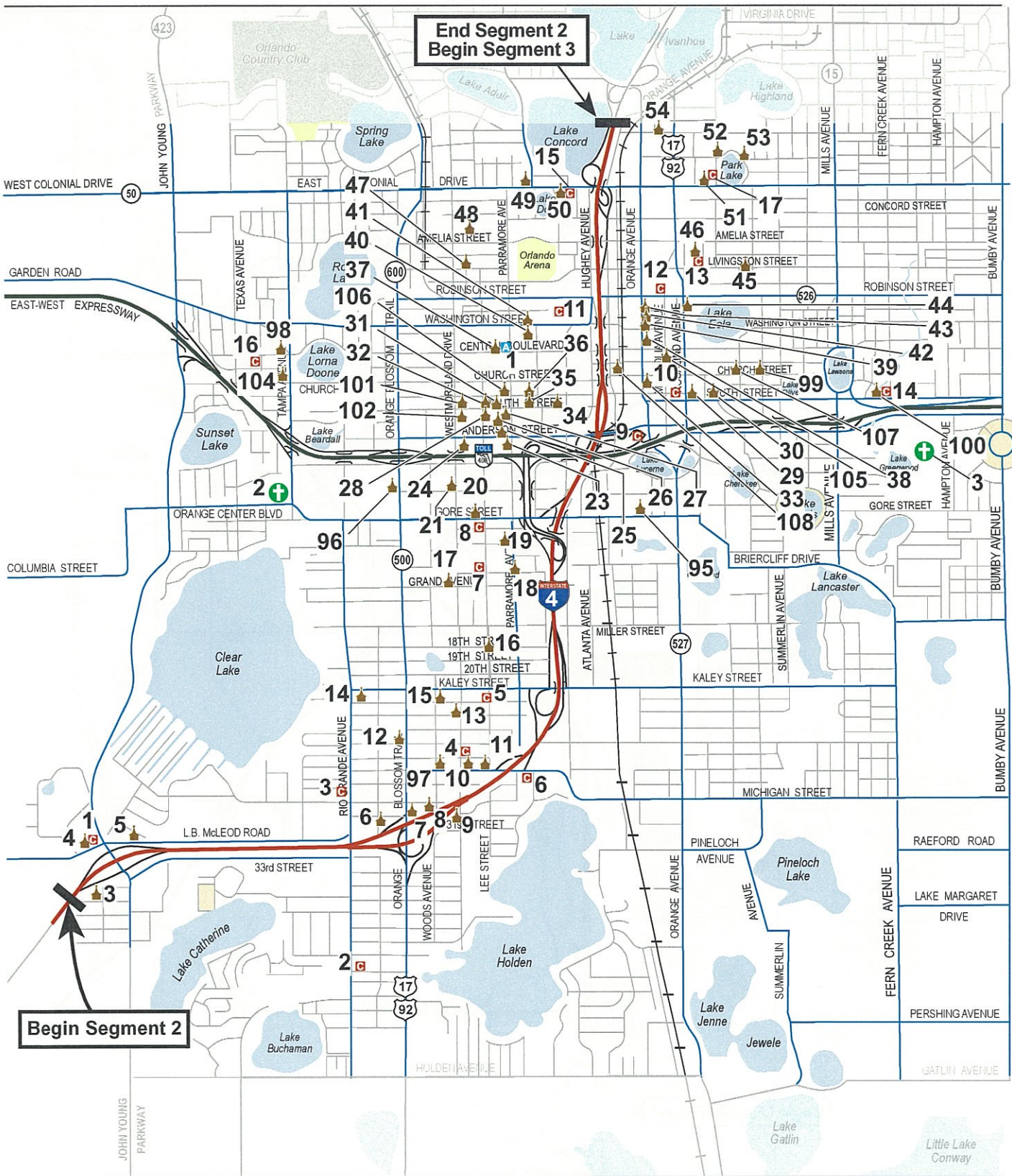


- C Child Day Care Facilities (Refer to Table 3-27)
- A Adult Care Facilities (Refer to Table 3-27)
- Churches/Religious Centers (Refer to Table 3-28)
- + Cemeteries/Funeral Homes (Refer to Table 3-28)

Figure 3-5
Day Care Facilities and Churches/Cemeteries

I-4 PD&E Study - Section 2
 Segment 1 of 6



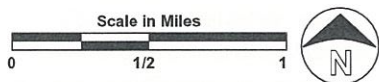
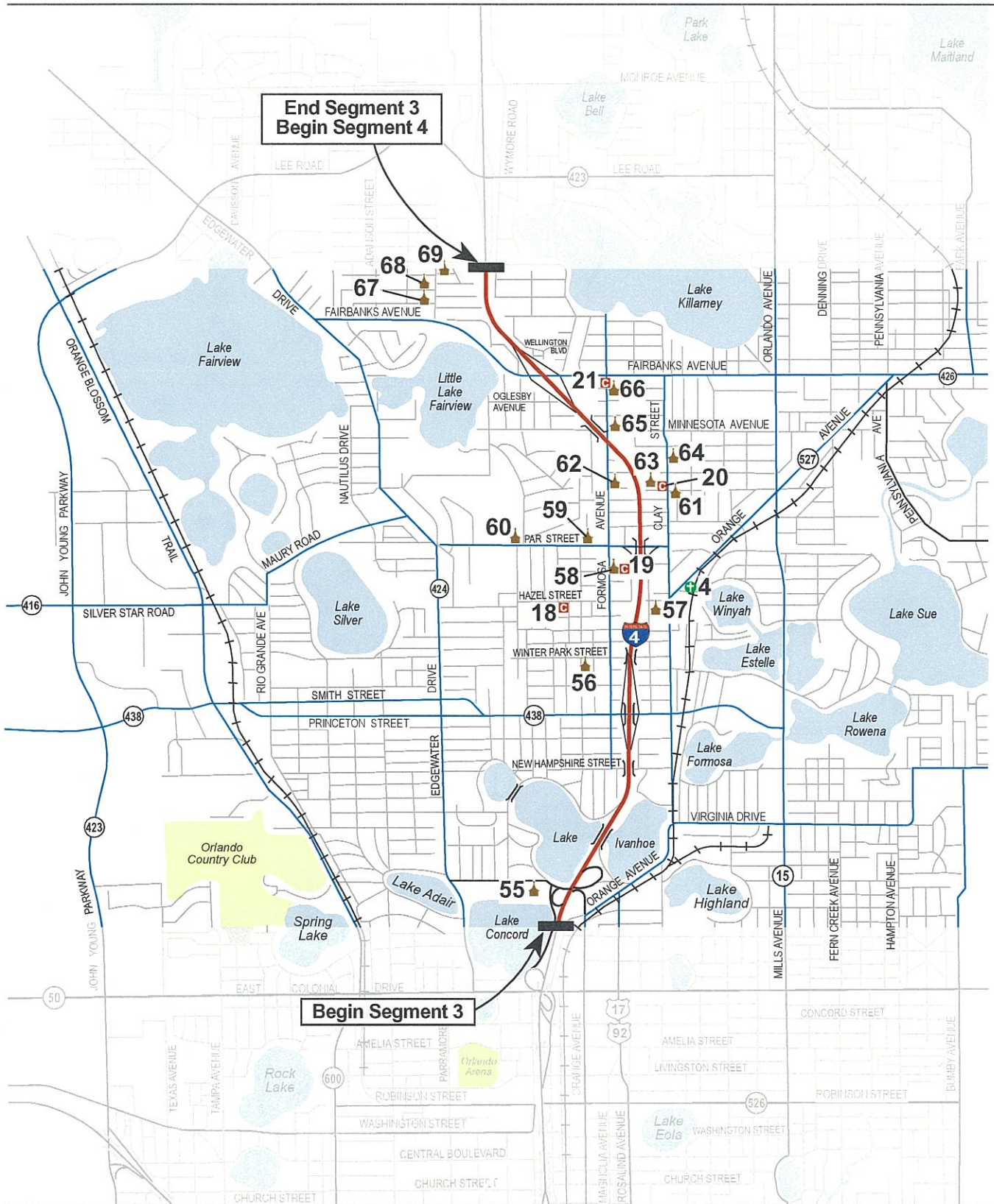


- C Child Day Care Facilities (Refer to Table 3-27)
- A Adult Care Facilities (Refer to Table 3-27)
- Churches/Religious Centers (Refer to Table 3-28)
- + Cemeteries/Funeral Homes (Refer to Table 3-28)

Figure 3-5
Day Care Facilities and Churches/Cemeteries

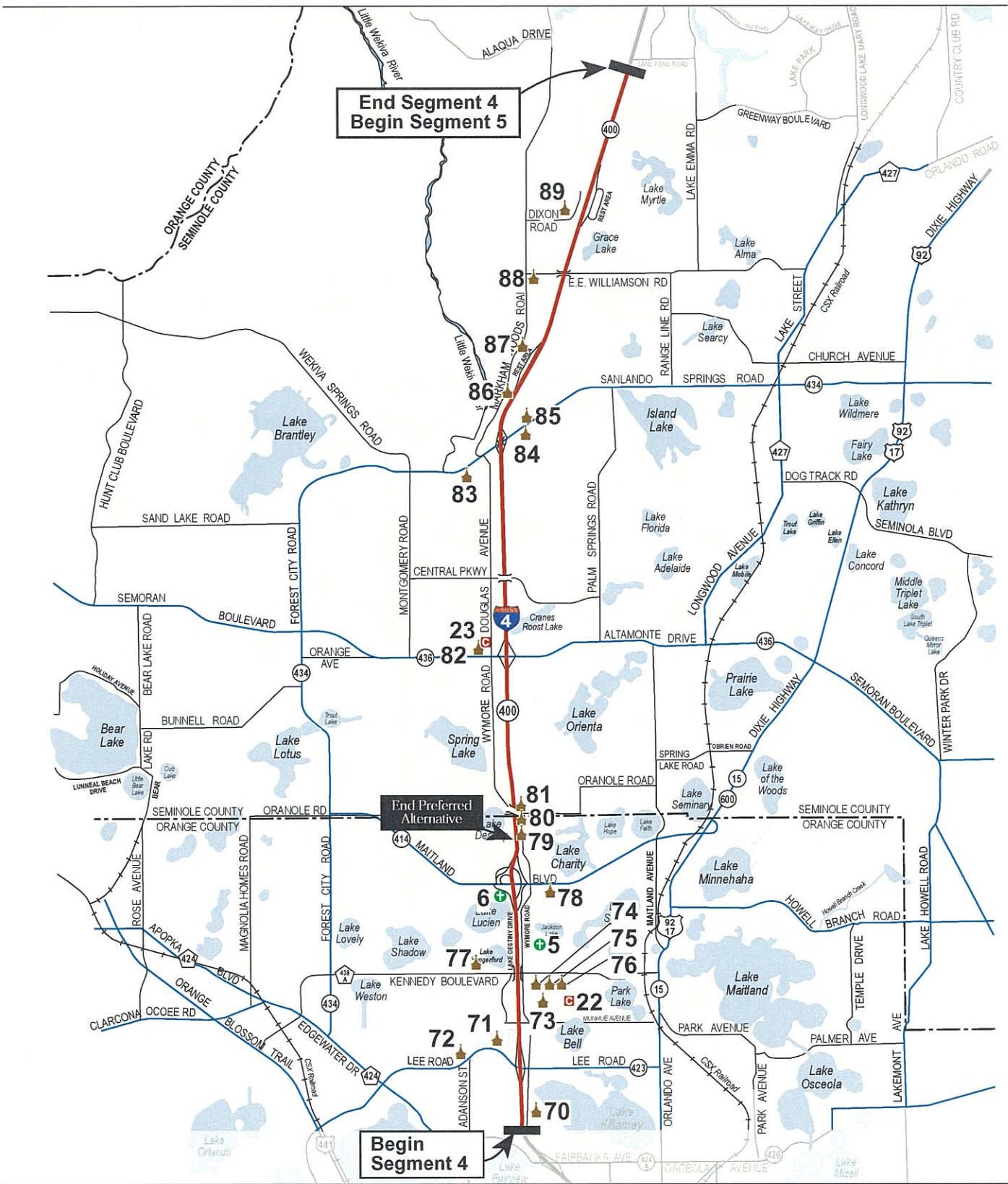
I-4 PD&E Study - Section 2
 Segment 2 of 6





- Child Day Care Facilities (Refer to Table 3-27)
- Adult Care Facilities (Refer to Table 3-27)
- Churches/Religious Centers (Refer to Table 3-28)
- + Cemeteries/Funeral Homes (Refer to Table 3-28)

Figure 3-5
Day Care Facilities and Churches/Cemeteries

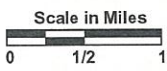
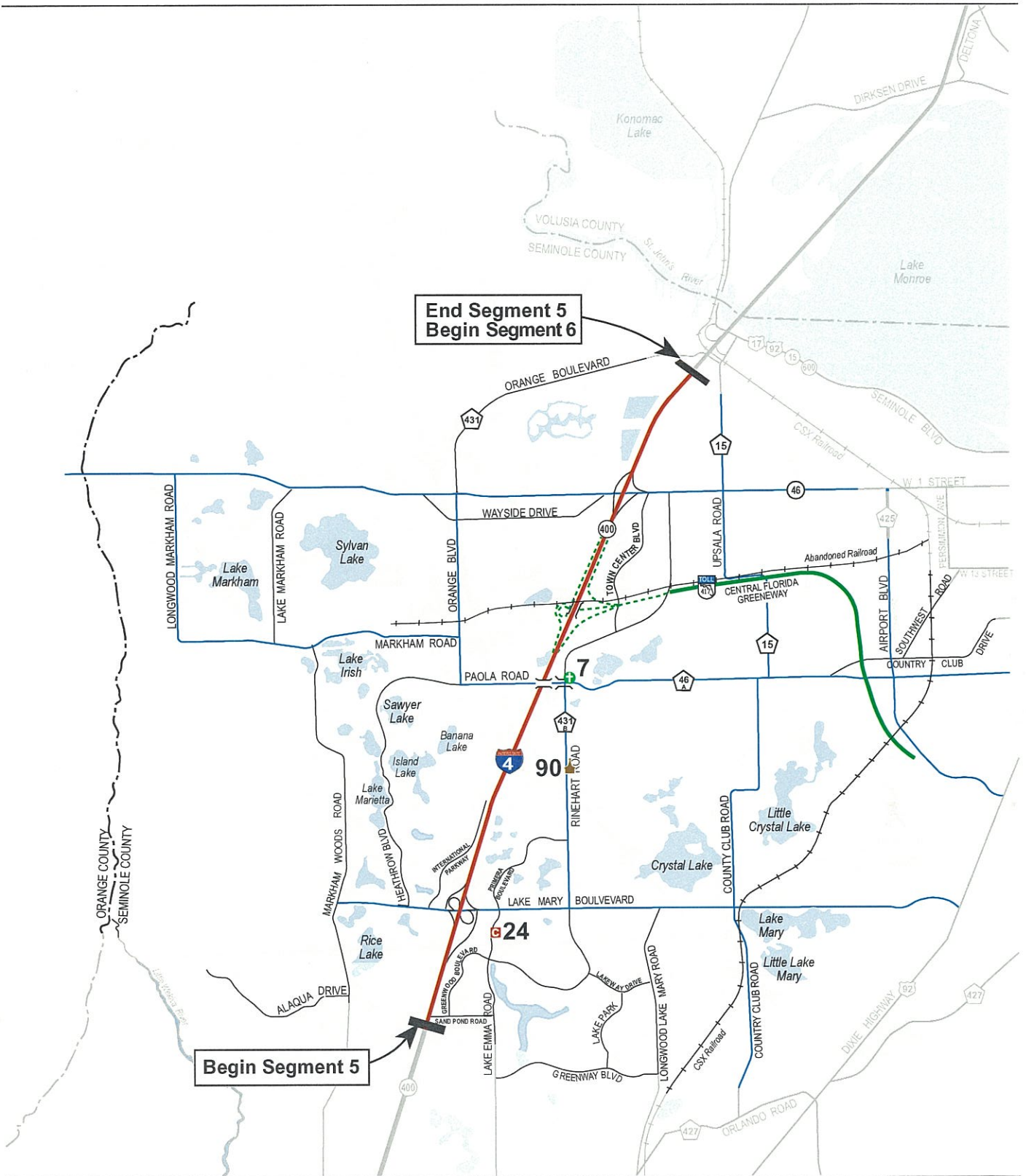


- C Child Day Care Facilities (Refer to Table 3-27)
- A Adult Care Facilities (Refer to Table 3-27)
- Ⓜ Churches/Religious Centers (Refer to Table 3-28)
- + Cemeteries/Funeral Homes (Refer to Table 3-28)

Figure 3-5
Day Care Facilities and Churches/Cemeteries

I-4 PD&E Study - Section 2
 Segment 4 of 6



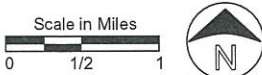
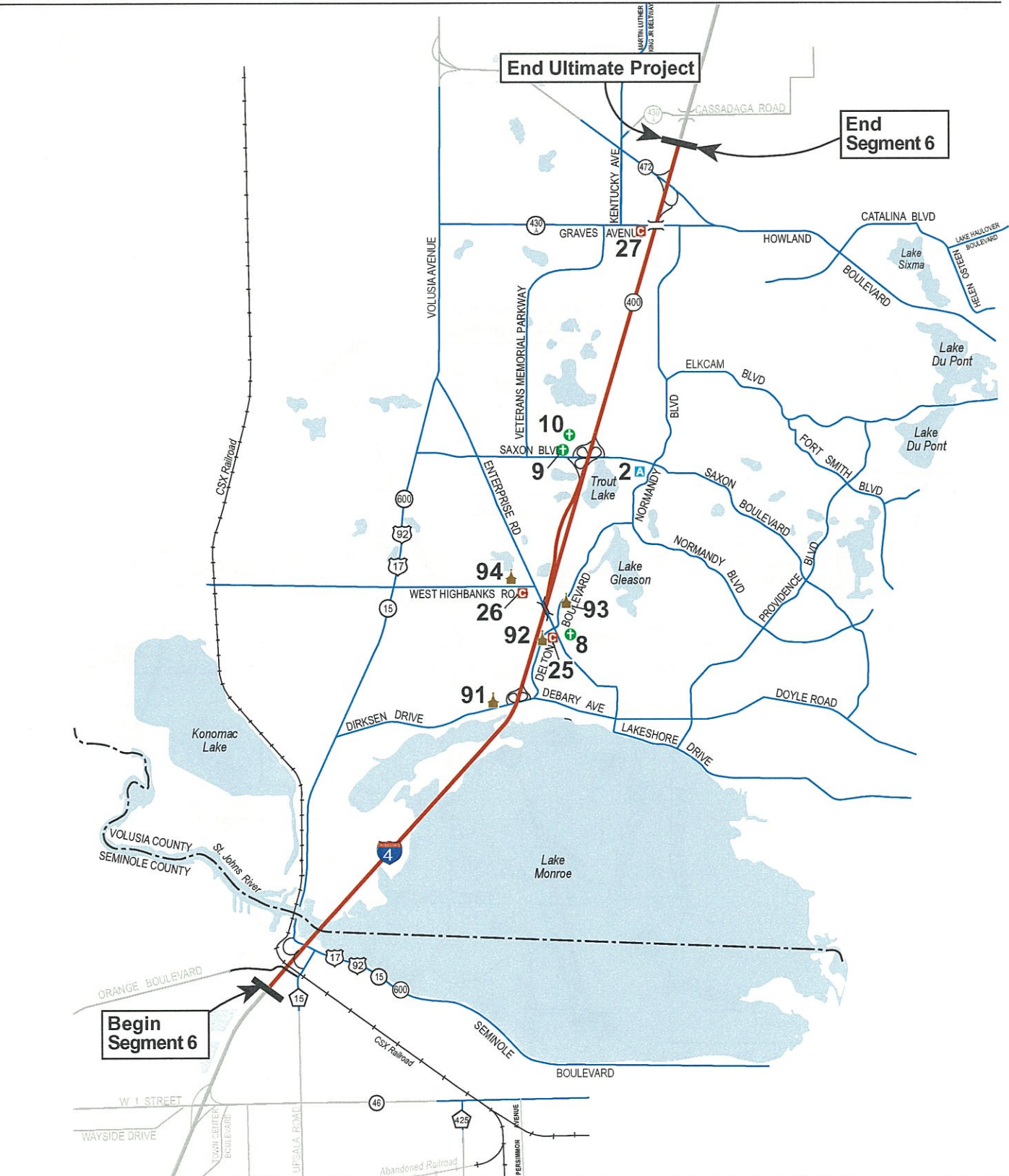


- C Child Day Care Facilities (Refer to Table 3-27)
- A Adult Care Facilities (Refer to Table 3-27)
- Ⓜ Churches/Religious Centers (Refer to Table 3-28)
- + Cemeteries/Funeral Homes (Refer to Table 3-28)

Figure 3-5
Day Care Facilities and Churches/Cemeteries

I-4 PD&E Study - Section 2
 Segment 5 of 6





- Child Day Care Facilities (Refer to Table 3-27)
- Adult Care Facilities (Refer to Table 3-27)
- Churches/Religious Centers (Refer to Table 3-28)
- + Cemeteries/Funeral Homes (Refer to Table 3-28)

Figure 3-5
Day Care Facilities and Churches/Cemeteries

I-4 PD&E Study - Section 2
 Segment 6 of 6



Segments 1, 3, 4, 5 and 6

None of the day care facilities located in Segments 1, 3, 4, 5 and 6 are anticipated to be directly impacted by the project.

Segment 2

Only one facility in Segment 2 is potentially impacted by the proposed improvements.

Orlando Day Nursery (Map No. 9) - This nursery is located on Anderson Street in downtown Orlando. It provides child day care for children between one and five years of age. The facility is open from the hours of 6:30 AM to 6:00 PM, Monday through Friday. It is a non-profit organization operated by United Way, although the building is owned by the Kiwanis Club. Orlando Day Nursery is licensed and serves approximately 131 children, but has an average yearly enrollment of 120 children. No transportation is provided by the facility. The nursery was designed to serve low-income families; therefore, fees are based on a sliding scale. They also accommodate the 4C program. Services provided by this program include a toy library, subsidized child care, assistance in finding quality child care, and assistance obtaining child care education and licensing. Orlando Day Nursery has a total of 18 employees and a few volunteers.

3.1.2.2.5 Churches

Churches, religious centers, cemeteries, and funeral homes were identified within one-half mile of the I-4 corridor. A one half-mile limit was based on the proximity of the I-4 corridor to these facilities and potential access issues. A total of 110 churches and ten cemeteries and funeral homes have been identified by segment in Table 3-28 and presented on Figure 3-5. The majority of these facilities (58 percent) are located within Segment 2.

Table 3-28. Churches, Religious Centers and Cemeteries

Map No.	Name	Location	Jurisdiction
Segment 1			
1A	Zion's Gate Center	4655 Vineland Road	Orlando
1	El Bethel Church of Nazarene	3000 Bruton Boulevard	Orlando
2	Mt. Pleasant Missionary Baptist Church	4077 Prince Hall Boulevard	Orlando
Segment 2			
3	Woodhaven Baptist Church	3035 W. 36 th Street	Orlando
4	First Baptist Church of Orlando	3701 L.B. McLeod Road	Orlando
5	Full Gospel Faith Fellowship Church	3009 Lauressa Lane	Orlando
6	New Hope Church	1410 30 th Street	Orlando
7	Christ For The World	1215 29 th Street	Orlando
8	Holden Heights Baptist Church	1045 W. 29 th Street	Orlando
9	Hare Krishna (Hindu Sanatan Dharma)	1200 32 nd Street	Orlando
10	Korean-American United Methodist Church of Orlando	1224 26 th Street	Orlando
11	Love Gospel Assembly of Central Florida	1025 W. Michigan Street	Orlando
12	True Holiness United Pentecostal Church of Jesus	2471 S. Orange Blossom Trail	Orlando
13	King's Way Baptist Church	1000 22 nd Street	Orlando
14	Victory Praise Center Church of God	1316 22 nd Street	Orlando
15	Restoration Church of the Nazarene	1030 W. Kaley Street	Orlando
16	Jehovah's Witness Kingdom Halls Central Congregation	1701 Lee Avenue	Orlando
17	New St. Mark Free Methodist Church	1001 Grand Avenue	Orlando
18	Lighthouse Church of the Nazarene	601 Columbia Street	Orlando
19	Greater St. Paul Church AME	1040 S. Parramore Avenue	Orlando
20	New Jerusalem House of God	827 Short Avenue	Orlando
21	New Jerusalem Church of God	748 Carter Street	Orlando
23	Bethel Baptist Church	654 W. Anderson Street	Orlando
24	New Zion Progressive Missionary Baptist Church	821 Long Street	Orlando
25	Harvest Baptist Church	514 S. Parramore Avenue	Orlando
26	Jesus Christ House of Prayer	430 S. Parramore Avenue	Orlando
27	New Life Hope in Christ Church	421 S. Parramore Avenue	Orlando
28	Church of Power, Praise and Deliverance	701 W. South Street	Orlando
29	First United Methodist Church	142 E. Jackson Street	Orlando
30	Central Church of the Nazarene	401 E. Jackson Street	Orlando
31	Shiloh Baptist Church	604 W. Jackson Street	Orlando
32	Shabach Deliverance Church	306 S. Parramore Avenue	Orlando

Table 3-28. Churches, Religious Centers and Cemeteries (Continued)

Map No.	Name	Location	Jurisdiction
33	First Presbyterian Church	106 E. Church Street	Orlando
34	St. Paul's Lutheran Church	300 E. Church Street	Orlando
35	Greater Refuge Church of Our Lord Jesus Christ	596 W. Church Street	Orlando
36	Faith Deliverance Temple	625 W. Church Street	Orlando
37	Islamic Center of Downtown Orlando	545 W. Central Boulevard	Orlando
38	Church of St. George	24 N. Rosalind Avenue	Orlando
39	Miracle Tabernacle Church	45 N. Magnolia Avenue	Orlando
40	Orlando Union Rescue Mission	1521 W. Washington Street	Orlando
41	Mt. Zion Missionary Baptist Church	535 W. Washington Street	Orlando
42	Cathedral of St. Luke	130 N. Magnolia Avenue	Orlando
43	St. James Catholic Cathedral	215 N. Orange Avenue	Orlando
44	The Orlando Church	200 E. Robinson Street	Orlando
45	Reformed Presbyterian Church	324 E. Livingston Street	Orlando
46	Trinity Lutheran Church	123 E. Livingston Street	Orlando
47	Tabernacle Missionary Baptist Church	749 W. Federal Street	Orlando
48	Concord Park Methodist	701 W. Concord Street	Orlando
48	Eglise Evangelique Bethesda Inc.	701 W. Concord Street	Orlando
49	Religious Science Church of Orlando	709 Edgewater Drive	Orlando
50	Salvation Army Church	416 W. Colonial Drive	Orlando
51	Park Lake Presbyterian Church	309 E. Colonial Drive	Orlando
52	Orlando Friends Meeting House	316 E. Marks Street	Orlando
53	Orlando Community Church	816 Broadway Avenue	Orlando
54	Central Florida Presbytery	924 N. Magnolia Avenue, #100	Orlando
54	Christian Church Disciples of Christ in Florida	924 N. Magnolia Avenue, #200	Orlando
95	Beth Shalom Memorial Chapel	115 W. Gore Street	Orlando
96	Love of God Church	750 S. Orange Blossom Trail	Orlando
97	Love Gospel Assembly	1025 W. Michigan Street	Orlando
98	St. Johns Baptist Church	2025 W. Central Boulevard	Orlando
99	Primera Iglesia Bautista	525 E. Church Street	Orlando
100	Trinity United Methodist Church and School	2113 E. South Street	Orlando
101	True Gospel Holiness Church	907 W. South Street	Orlando
102	United Deliverance Christ Center	428 Jernigan Avenue	Orlando
104	Bethlehem Baptist Church	2019 W. Church Street	Orlando
105	Downtown Baptist Church of Orlando	120 E. Pine Street	Orlando
106	True Holiness of Worship	220 S. Parramore Avenue	Orlando
107	Central Church of the Nazarene Teen Bldg.	400 E. Church Street	Orlando
108	Christ Episcopal Church	151 W. Church Street	Orlando
Segment 3			
55	Central Christian Church Disciples of Christ	250 SW. Ivanhoe Boulevard	Orlando
56	Emmanuel Episcopal Church	1603 E. Winter Park Street	Orlando
57	Florida Hospital Seventh Day Adventist Church	2800 N. Orange Avenue	Orlando
58	John Knox Presbyterian Church	118 E. Par Street	Orlando
59	Church of Jesus Christ of Latter Day Saints	45 E. Par Street	Orlando
60	Par Street Church of Christ	15 W. Par Street	Orlando
61	Winter Park Church of the Brethren	1721 Harmon Avenue	Winter Park
62	Templo Evangelistico Del Nazereno	1200 Formosa Avenue	Winter Park
63	Calvary Assembly of God	1199 Clay Street	Winter Park
64	Reorganized Church of Jesus Christ of Latter Day Saints	1006 Clay Street	Winter Park
65	Kress Memorial Church of Seventh Day Adventists	746 Formosa Avenue	Winter Park
66	Killarney Baptist Church	701 Formosa Avenue	Winter Park
67	Greater Orlando Free Methodists	4810 Santee Street	Orange County
68	St. Paul's Methodist Church	4711 Adanson Street	Orange County
69	Temple Israel	4917 Ell Street	Orange County
Segment 4			
70	Florida Conference of Seventh Day Adventists	655 N. Wymore Road	Winter Park
71	Congregation of Liberal Judaism – Reform	928 Malone Drive	Orange County
72	Jehovah's Witness Kingdom Halls Adanson Congregation	5114 Adanson Street	Winter Park
73	Open Door Baptist Church	130 N. Calhoun Avenue	Eatonville
74	Life Center Church	63 E. Kennedy Boulevard	Eatonville
75	Eatonville Church of God in Christ	209 E. Kennedy Boulevard	Eatonville
76	Macedonia Missionary Baptist Church of Eatonville	412 E. Kennedy Boulevard	Eatonville
77	Church of Christ at Eatonville	25 Washington Avenue	Eatonville
78	Orangewood Presbyterian Church	1300 W. Maitland Boulevard	Maitland
79	King of Kings Lutheran	1101 N. Wymore Road	Maitland

Table 3-28. Churches, Religious Centers and Cemeteries (Continued)

Map No.	Name	Location	Jurisdiction
80	Grace Brethren Church of Maitland	1185 Wymore Road	Maitland
81	Holy Trinity Greek Orthodox Church	1217 Trinity Woods Lane	Maitland
82	Southeastern Conference of Seventh Day Adventists	180 N. Westmonte Drive	Altamonte Springs
83	St. Stephen Lutheran Church	2140 W. SR 434	Seminole County
84	Sanlando United Methodist Church	1890 W. SR 434	Seminole County
85	Rolling Hills Moravian Church	1525 W. SR 434	Seminole County
86	Neighborhood Alliance Church	301 Markham Woods Road	Seminole County
87	Markham Woods Seventh Day Adventists	505 Markham Woods Road	Seminole County
88	First Church Christ Scientists	975 Markham Woods Road	Seminole County
89	Wekiva Assembly of God	1675 Dixon Road	Seminole County
Segment 5			
90	St. Peter's Episcopal Church	700 Rinehart Road	Lake Mary
Segment 6			
91	Jehovah's Witness Kingdom Hall	202 Dirksen Drive	DeBary
92	Dayspring Church of God	1200 Deltona Boulevard	Deltona
93	Deltona Alliance Church	921 Deltona Boulevard	Deltona
94	First Presbyterian Church of DeBary	267 E. Highbanks Road	DeBary
Cemeteries and Funeral Homes			
Segment 1			
1	Washington Park Cemetery	2600 Bruton	Orlando
Segment 2			
2	Brinson's Funeral Home	726 S Tampa Avenue	Orlando
3	Greenwood Cemetery	Anderson Street, between Bumby and Mills Avenues	Orlando
Segment 3			
4	Garden Chapel Home for Funerals	600 Wilkinson Street	Orlando
Segment 4			
5	Eatonville Cemetery	550 S. Wymore Road	Eatonville
6	Maitland Cemetery	339 Lake Destiny Drive	Maitland
Segment 5			
7	Oaklawn Park Cemetery and Funeral Home	5000 CR 46-A	Sanford
Segment 6			
8	Enterprise Evergreen Cemetery	190 Clark Street	Enterprise
9	Baldauff Funeral Home and Cemetery	1233 Saxon Boulevard	Deltona
10	Deltona Memorial Funeral Home and Cemetery	1295 Saxon Boulevard	Orange City

Below, is a brief description by segment of those facilities that are anticipated to be directly impacted by the proposed improvements.

Segment 1

Zion's Gate Center (Map No. 1A) - This facility is located directly adjacent to the I-4 right-of-way near the newly constructed Conroy Road interchange. Zion's Hope is a non-profit, non-denominational organization supported entirely through private funding. The Zion's Gate Center, located at 4655 Vineland Road in Orlando, is not a church facility and provides no Sunday worship services. The Center primarily serves to display biblical exhibits at no charge to the public. The facility also serves as a Christian conference center, and provides lectures and Bible study classes for seniors and church groups. Approximately 250 people attend the regular Friday evening Bible study class. The Center hosts approximately five conferences each year in the auditorium. Members come to the Center from all over Central Florida for the Bible study classes and from all over Florida to see the exhibits and attend conferences. The center does not provide transportation.

Segment 2

Hare Krishna (Map No. 9) - This facility is located on 32nd Street just south of I-4 and is owned by the Hindu Sanatan Dharma of America. There are two main services on Sundays with attendance of 60 to 70 people. Special programs include World Outreach to teenagers and providing meals to the homeless. This facility is operated by volunteers.

Bethel Baptist Church (Map No. 23) – This church is located on Anderson Street in downtown Orlando within the Holden-Parramore neighborhood, approximately 300 feet north of SR 408 (East/West Expressway). The congregation is composed of approximately 1,000 members with attendance averaging 400 to 500 people. Church members come from all areas within the Central Florida region, but mostly within Orange and Seminole Counties. The church offers its members a bus service; however, most of the members use their own transportation, the public bus system, or walk. The church has limited parking spaces and additional parking is available on the street. The congregation is made up of a minority population with average household incomes. Two full-time employees on staff at the church oversee the various programs provided. These include Boy and Girl Scout programs, a youth group for teens, free meals to the homeless, and monthly distribution of donated clothing items and social activities.

Segment 3

Templo Evangelistico del Nazareno (Map No. 62) This institution, located on Formosa Avenue adjacent to I-4 on the west, primarily serves as a religious center for the Spanish-speaking community. The church district office in Lakeland indicated that this facility was preparing to open a day care program. Several unsuccessful attempts were made in August 1999 to contact this facility directly for further information.

Calvary Assembly of God (Map No. 63) – This facility is located on Clay Street, directly adjacent to I-4, and primarily serves the Winter Park community. Eight pastors serve a congregation of approximately 3,000 people. There are three main buildings and several ancillary structures situated on 34 acres. The main assembly hall is located in a two-story building, which also houses the church administration offices. Aside from the original church structure, the facility also includes an education building, which was originally constructed in 1965. The education building is used primarily for weekend services.

Segment 4

The Florida Conference of Seventh Day Adventists (Map No. 70) This administrative center, located at 655 N. Wymore Road in Winter Park, provides administrative, organizational, and program coordination functions for Seventh Day Adventist churches throughout Florida. This site manages the titles and properties of 140 churches in Florida, including 35 to 40 in Central Florida. This location also serves as a conference headquarters and has approximately 75 employees. The Florida Conference of Seventh Day Adventists is a non-profit organization. Transportation is not provided by the Center.

Neighborhood Alliance Church (Map No. 86) – The church and preschool are situated on Markham Woods Road in the Longwood area. Their outreach community programs include a senior ministry activities program. The total congregation is composed of approximately 250 people. The members come from the surrounding communities of Longwood, Maitland, Apopka, Sanford, and Oviedo. As the congregation continues to grow, the church is considering expanding their facilities to include a new sanctuary, a gymnasium, and some additional parking spaces. The preschool operates three days per week, and employs five certified teachers for an average enrollment of 45 children. The school serves students from two to four years of age. The senior ministries program caters meals to the elderly population about twice per month. The church is privately funded.

Wekiva Assembly of God (Map No. 89) – This facility is situated on Dixon Road just north of E.E. Williamson Road in Longwood. The church serves the surrounding communities of Longwood located within a five-mile radius of the church. The congregation is comprised of approximately 900 members. The facility includes a main building for the church, school, and community activities. There are approximately 350 students enrolled at the school from preschool through eighth grade. The school has a staff of 45 faculty members. After school day care is also provided. Regular church services are held on Tuesdays, Wednesdays, and Sundays. The church plans to expand the facility to include an auditorium and an additional worship center when funding becomes available.

Segments 5 and 6

None of the facilities identified in Segments 5 and 6 are anticipated to be directly impacted by the proposed improvements.

3.1.2.2.6 Social Service Agencies

Social service agencies were identified within one-half mile of the I-4 corridor. A one-half mile limit was based on the proximity of the I-4 corridor to these facilities and potential access issues. A total of 110 social service agencies have been identified by segment in Table 3-29 and presented on Figure 3-6. Approximately 70 percent of the social service agencies identified within the project study area are located within Segment 2. The majority of the agencies are located within the downtown Orlando area and within the neighborhoods of Holden-Parramore and Callahan.

Table 3-29. Social Service Agencies

Map No.	Agency and Address	Jurisdiction	Notes (Public/Private ownership, services)
Segment 2			
1	Inmate Re-Entry Program 3723 Vision Boulevard	Orange	Public service that provides in-jail and transitional community based services to inmates with HIV/AIDS.
2	Orange County Sheriff's Office Victim Advocate Program, 2450 W. 33 rd Street	Orange	Public service that provide immediate assistance for victims of crime and their families.
3	Florida Sentencing Alternatives 3100 S. Rio Grande Avenue	Orange	Private service.
4	Living Hope International Ministry, Inc. 801 29 th Street	Orange	Private service; women's residential shelter (temporary). Cares for abused women, 18 years of age and over.
4	New Beginnings 801 29 th Street	Orange	Private service; women's long-term residential treatment for homeless, drug abuse, 18 years of age and over.
5	House of Hope 1010 W. 30 th Street	Orange	Private service; residential and education services for troubled teens ages 12-18.
7	Pathways Drop-In Center, Inc 1028 W. Michigan Street	Orange	Private service; mental health counseling.
8	Restore Orlando 1030 W. Kaley Street	Orange	Private service for families in the Holden Heights area in need. Homeless food and after school programs.
9	Center for Drug-Free Living 100 W. Columbia Street	Orange	Private service that provides counseling, treatment, and education for persons with substance abuse problems.
10	Alzheimer Resource Center Inc 69 W. Underwood Street	Orange	Private service; counseling for Alzheimer's disease patients family, mostly 50 years of age and over.
11	Center for Drug-Free Living 800 W. Grand Street	Orange	Private service that provides counseling, treatment and education for persons with substance abuse problems.
12	St. Francis House 601 Grand Avenue	Orange	Private service for males infected with HIV/AIDS. Program available by referral only.
13	Paralyzed Veterans of America 83 W. Columbia Street, Room B-106	Orange	Private service; provides assistance to veterans with disabilities and assistance to their families.
14	National Eye Care Project 115 W. Columbia Street	Orange	Private service for the elderly.
15	Central Florida Blood Bank, Inc. 32 W. Gore Street	Orange	Private service to collect and provide blood from and to the general public.
16	Temporary Living Center 632 S. Hughey Avenue	Orange	Private service; residential treatment program for substance abuse problems; male and female, 18 years of age and over.
17	Coalition for the Homeless T.B. Pavilion 325 Carter Street	Orange	Private service that provides shelter for transient and homeless people with tuberculosis.
19	Equal Opportunity/Professional Standards Dept. 455 S. Orange Avenue, Suite 502	Orange	Public service for general public.
19	Consumer Credit Counseling Services 455 S. Orange Avenue, 4 th floor	Orange	Private service for the general public.
20	Parramore Heritage Resource Center 423 W. South Street	Orange	Private service for the general public.
21	Human Relations - City of Orlando 400 S. Orange Avenue	Orlando	Public service for general public.
22	Parent Resource Centers 42 E. Jackson Street	Orange	Private service for the general public.
23	Church Street Counseling Center 106 E. Church Street	Orange	Private service; counseling for the general public.

Table 3-29. Social Service Agencies (Continued)

Map No.	Agency and Address	Jurisdiction	Notes (Public/Private ownership, services)
24	Lakeside Alternatives - Case Management 228 S. Hughey Avenue	Orange	Private service; management services for locations outside I-4 study area.
25	Allen Center Community Center 744 W. Church Street	Orange	Public service; low income clients, elderly.
26	Allen Outreach Development Center 744 W. Church Street	Orange	Private service; medical attention for homeless, low income general public, transient walk-ins, outreach programs to teenagers, student tutoring.
27	Goodwill Industries of Central Florida Self-Sufficiency Job Center 377 W. Church Street	Orange	Private service for the general public.
28	Habitat for Humanity of Greater Orlando, Inc. 808 W. Central Boulevard	Orange	Private service for low-income families.
29	Business Development Dept. 69 E. Pine Street, 1 st floor	Orange	Public service for minority and women owned business.
30	Orange County Library System 101 E. Central Boulevard	Orange	Public service for the general public.
31	Spouse Abuse, Inc. 65 E. Central Boulevard	Orange	Private service for the general public.
32	COFFO Immigration Project 60 N. Court Avenue	Orange	Private service for immigrants seeking visas.
33	Senior Community Service Employment Program 1 N. Orange Avenue	Orange	Private service for the elderly.
34	March of Dimes 135 W. Central Boulevard, Suite 440	Orange	Private service for disabled children and expectant mothers.
35	Service Corps of Retired Executives 80 N. Hughey Street, Room 455	Federal	Public service for general public and elderly.
35	Social Security Administration 80 N. Hughey Avenue	Federal	Public service for general public, elderly, and disabled.
36	Orlando Union Rescue Mission – Men's Lodge 410 W. Central Boulevard	Orange	Private service for low income, transient, homeless males.
37	Boys and Girls Clubs of Central Florida, Inc. 639 W. Central Boulevard	Orange	Private service for children under 18 years with after school programs and day care in year round school.
38	Coalition for the Homeless Pavilion 639 W. Central Boulevard	Orange	Private service that provides shelter and food for transit and homeless people.
39	Christian Service Center for Central Florida 808 W. Central Boulevard	Orange	Private service for homeless and anyone in need.
40	Health Department 832 W. Central Boulevard	Orange	Public service; low income, general public, some transient dependent clients.
41	P.A.C.E. Center for Girls 33 W. Washington Street	Orange	Private service for females 12 to 18 years old.
42	UCF McKnight Center of Excellence 101 N. Parramore Avenue	Florida	Public service for minority students, students in general.
43	Florida Division of Blind Services 400 W. Robinson Street, Suite N-102	Orange	Public service for disabled individuals. Specific programs for blind and deaf individuals.
44	Public Service Commission District I Regional Service Center 400 W. Robinson Street, Suite N-512	Florida	Public service that regulates privately held utility companies in Florida.
44	Child Support Enforcement Program 400 W. Robinson Street, Suite S-509	Florida	Public service for general public.
44	Child Support Enforcement Program 400 W. Robinson Street, Suite S-509	Orange	Public service for general public.
44	Agency for Health Care Administration 400 W. Robinson Street, Suite S-309	Florida	Public service for disabled individuals, elderly, and transient dependent.
44	HRS Administration 400 W. Robinson Street	Florida	Public service for general public.
44	Florida Department of Insurance 400 W. Robinson Street, Suite N-401	Florida	Public service for general public.
44	Project Independence – Department of Labor 400 W. Robinson Street, Suite S-1009	Florida	Public service for general public.
44	Florida Department of Worker's Compensation 400 W. Robinson Street, Suite N-608	Florida	Public service for general public.
45	Consumer Fraud Investigative Unit 250 N. Orange Avenue, Suite 506	Orange	Public service for general public.

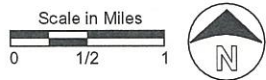
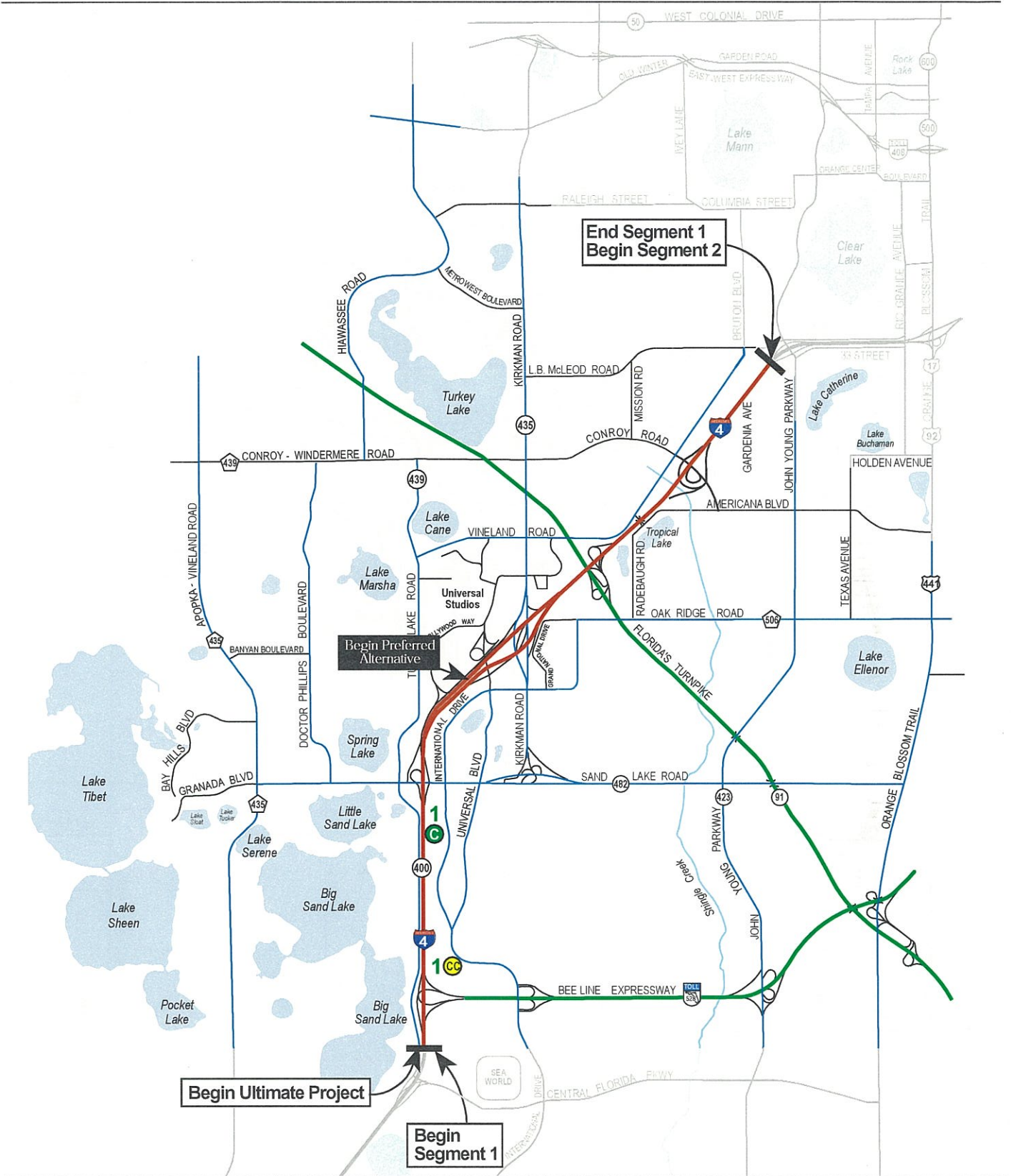
Table 3-29. Social Service Agencies (Continued)

Map No.	Agency and Address	Jurisdiction	Notes (Public/Private ownership, services)
46	United Cerebral Palsy of Central Florida 33 E. Robinson Street, Suite 103	Orange	Private service for cerebral palsy.
47	Legal Aid Society of The Orange Co. Bar Assoc. 100 E. Robinson Street	Orange	Private service; elderly, low income, children, general public.
48	Central Florida Woman's Resource Center 500 W. Livingston Street	Orange	Private service for general public.
49	Cross Roads Mission 400 N. Parramore Avenue	Orange	Private service; transient and homeless, typically for 60 days or more at a time.
50	Additions School Volunteers 455 W. Amelia Street	Orange	Public service for general public. Recruits people to volunteer at public schools. Train at this facility.
51	Center for Drug-Free Living 501 N. Orange Avenue, Suite 300	Orange	Private service that provides counseling, treatment, and education for persons with substance abuse problems.
52	Woman's Residential & Counseling Center 107 E. Hillcrest Street	Orange	Private service; low income women and children, battered women.
53	Lions Sight Center 1 E. Colonial Drive	Orange	Private service; vision aids to indigent and needy people.
53	Caring Hands-Central Florida Respite Care 122 E. Colonial Drive	Orange	Private service; provide temporary care for people that are care-dependent so the guardians can take relief.
53	Community Coordinated Care for Children 4C Head Start – Osceola/Seminole County 122 E. Colonial Drive	Orange	Private service for children.
53	Community Coordinated Care for Children Child Care Resource Development Department 122 E. Colonial Drive	Orange	Private service for general public.
54	Centaur Aids Support Group 741 W. Colonial Drive	Orange	Service individuals with HIV and information for the general public.
55	Response – Sexual Assault Resource Center 719 Irma Avenue	Orange	Public service for general public.
56	Lawyer Referral Service 880 N. Orange Avenue, Suite 100	Orange	Public service for general public.
57	Boys and Girls Clubs of Central Florida, Inc. 801 N. Magnolia Avenue	Orange	Private service; children through the years of high school with after school programs and day care for children in year round school.
58	Assoc. of Birth Defect Children, Inc. 827 Irma Street	Orange	Private service; the general public, primarily parents and young people.
82	Aids Resource Alliance, Inc. 701 E. South Street	Orange	Private service for general public.
83	Al-Anon/Alateen Information Services 314 1/2 S. Bumby Avenue	Orange	Private service for general public.
84	Housing and Community Development Department 525 E. South Street	Orange	Public service for general public.
85	Orlando Housing Authority 300 Reeves Court	Orange	Public service for general public.
86	LYNX Transportation Authority 1200 W. South Street	Orange	Private service for general public.
87	Orange County Medical Clinic 101 S. Westmoreland Avenue	Orange	Private service for general public.
88	Central Florida Mental Health Association 608 Mariposa Street	Orange	Private service for general public.
89	American Red Cross 5 N. Bumby Avenue	Orange	Private service for general public.
90	Junior League of Greater Orlando Walker Hendry House, 125 N. Lucerne Circle	Orlando	Private service for neglected children and families in need.
Segment 3			
59	Adult Literacy League 924 N. Magnolia Avenue, Suite 307	Orange	Private service for general public; teaches people how to read at a functional level.
59	A Center for Christian Counseling 934 N. Magnolia Avenue, Suite 305	Orange	Private services for children and general public.
59	Florida Council of Churches 924 N. Magnolia Avenue, Suite 236	Orange	Private service for general public.
59	Marks Street Senior Recreation Center 99 E. Marks Street, Room 109	Orange Parks & Rec.	Private facility for elderly social and recreational activities.

Table 3-29. Social Service Agencies (Continued)

Map No.	Agency and Address	Jurisdiction	Notes (Public/Private ownership, services)
59	RSVP – Retired & Senior Volunteer Program 99 E. Marks Street, Suite 102	Orange	Private service for the elderly.
60	We Care Crisis Center, Inc. 112 Pasadena Place	Orange	Private service for general public.
61	Children's Home Society of Florida 212 Pasadena Place	Orange	Private service for families and children.
61	American Heart Association 237 E. Marks Street	Orange	Private service for general public.
62	Literacy Coalition, Inc. 934 N. Magnolia Avenue, Suite 104	Orange	Private service for general public.
63	Compassion National Children's Foundation 250 SW Ivanhoe Boulevard, Suite A	Orange	Private service; assistance to families with ill children in the event of insufficient funds.
64	JML Life Center, Inc. 1600 N. Orange Avenue	Orange	Private service; pregnant women and post abortion support groups for women.
65	Center for Independence, Technology & Education, 215 E. New Hampshire Street	Orange	Private service; blind and disabled people and counseling for the general public.
66	Weekends of Greater Orlando, Inc. 626 N. Lake Formosa Drive	Orange	Private service; teens in high school.
67	Trans Life 2501 N. Orange Avenue, Suite 40	Orange	Private service for general public.
Segment 4			
68	Visiting Nurse Association, Inc. 600 Courtland Street, Suite 300	Orange	Private service; handicapped or disabled persons needing care.
69	Community Care for the Elderly/Disabled 600 Courtland Street, Suite 200	Orange	Private service for the elderly and the disabled, transient dependent people.
70	Jewish Family Services of Greater Orlando 112 N. Wymore Road	Orange	Private service; elderly and specific requirements not listed.
70	Life For Kids 315 N. Wymore Road	Orange	Private service; single mothers and new parents.
71	Orange County Health/Community Services Wymore Office 100 E. Kennedy Boulevard	Orange	Public services; low income, transient dependent.
71	B.E.T.A. (Birth, Education, Training, and Acceptance) 100 Kennedy Boulevard	Orange	Private service; pregnant women, new mothers, GED instruction, infant care, child care parents of teen mothers.
72	Better Business Bureau of Central Florida, Inc. 1011 N. Wymore Road, Suite 204	Orange	Private service; service area business and complaints from the general public.
72	Regional Planning Council 1011 Wymore Road, Suite 105	Orange	Public service for general public.
72	Senior Resource Alliance 1011 Wymore Road, Suite 207	Florida	Federal/public services for low income elderly.
73	Hospice of Central Florida 2500 Mainland Center Parkway, Suite 300	Orange	Private service; counseling for terminally ill children and adults.
74	American Diabetes Association 1101 N. Lake Destiny Road	Orange	Private service for general public.
75	Consumer Credit Counseling Services 370 S. North Lake Boulevard, Suite 1020	Seminole	Private service; credit and money management for general public.
76	John Voight Memorial Foundation Inc. 455 Douglas Avenue	Seminole	Private service; children with cancer and leukemia.
77	Seminole Community Mental Health Center 417 Whooping Loop, Suite 1721	Seminole	Private service; elderly, children, general public.
78	Lawyer Referral Service 370 Whooping Loop, Suite 1184	Seminole	Private service for general public.
79	Florida Council on Compulsive Gambling 1180 Spring Centre Boulevard, Suite 390	Orange	Private service for general public.
Segment 5			
80	Seminole County Better Living for Seniors 1097 Sand Pond Road	Seminole	Private service; elderly, transportation dependent.
Segment 6			
81	Private Industry Council of Volusia Westside Career Center at Four Towers 336 E. Highbanks Road	Volusia	Private service for general public.

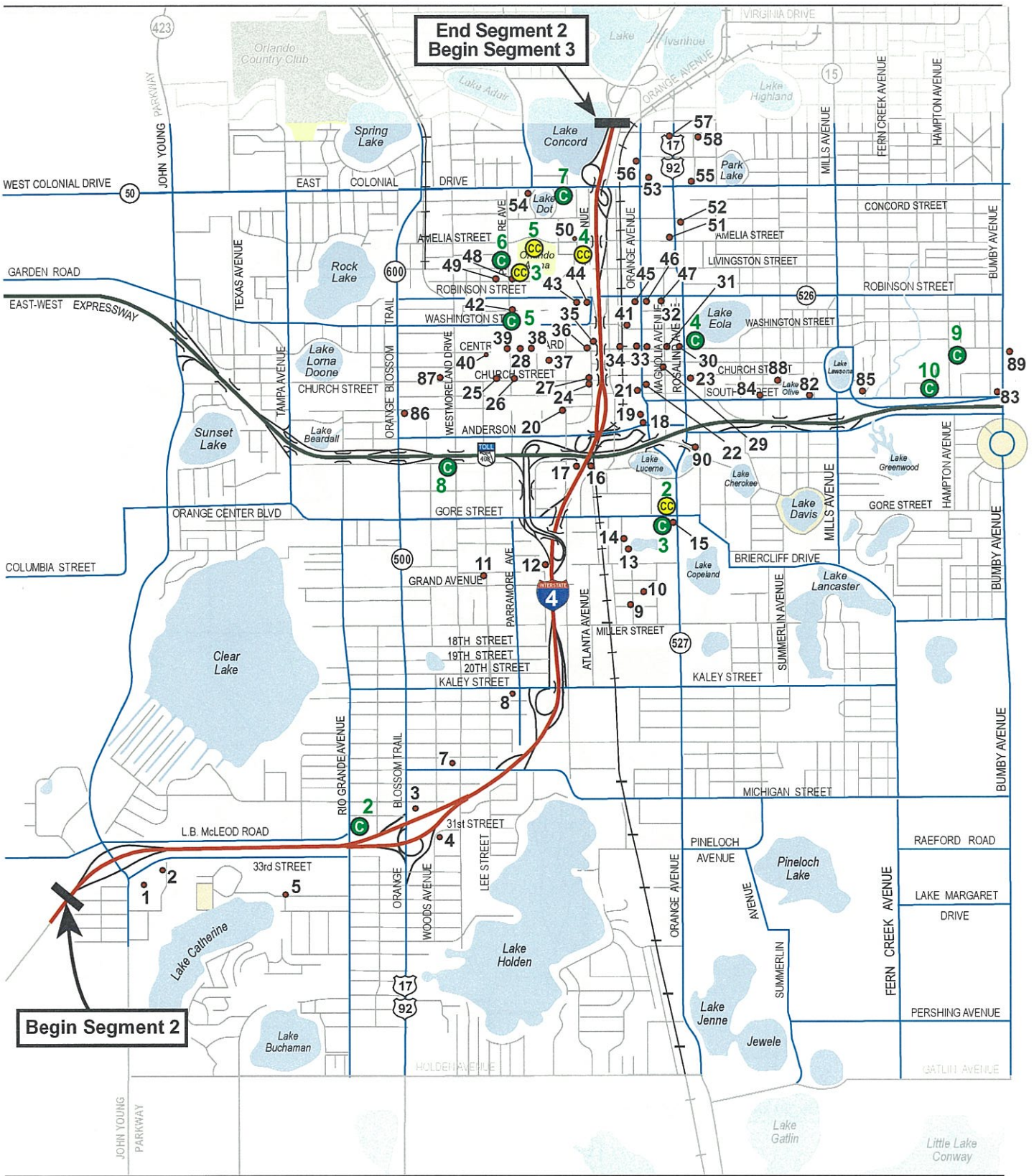
Note: Many of these facilities are located in the same building.



- C Community Centers (Refer to Table 3-30)
- CC Commercial Community Centers (Refer to Table 3-30)



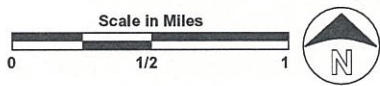
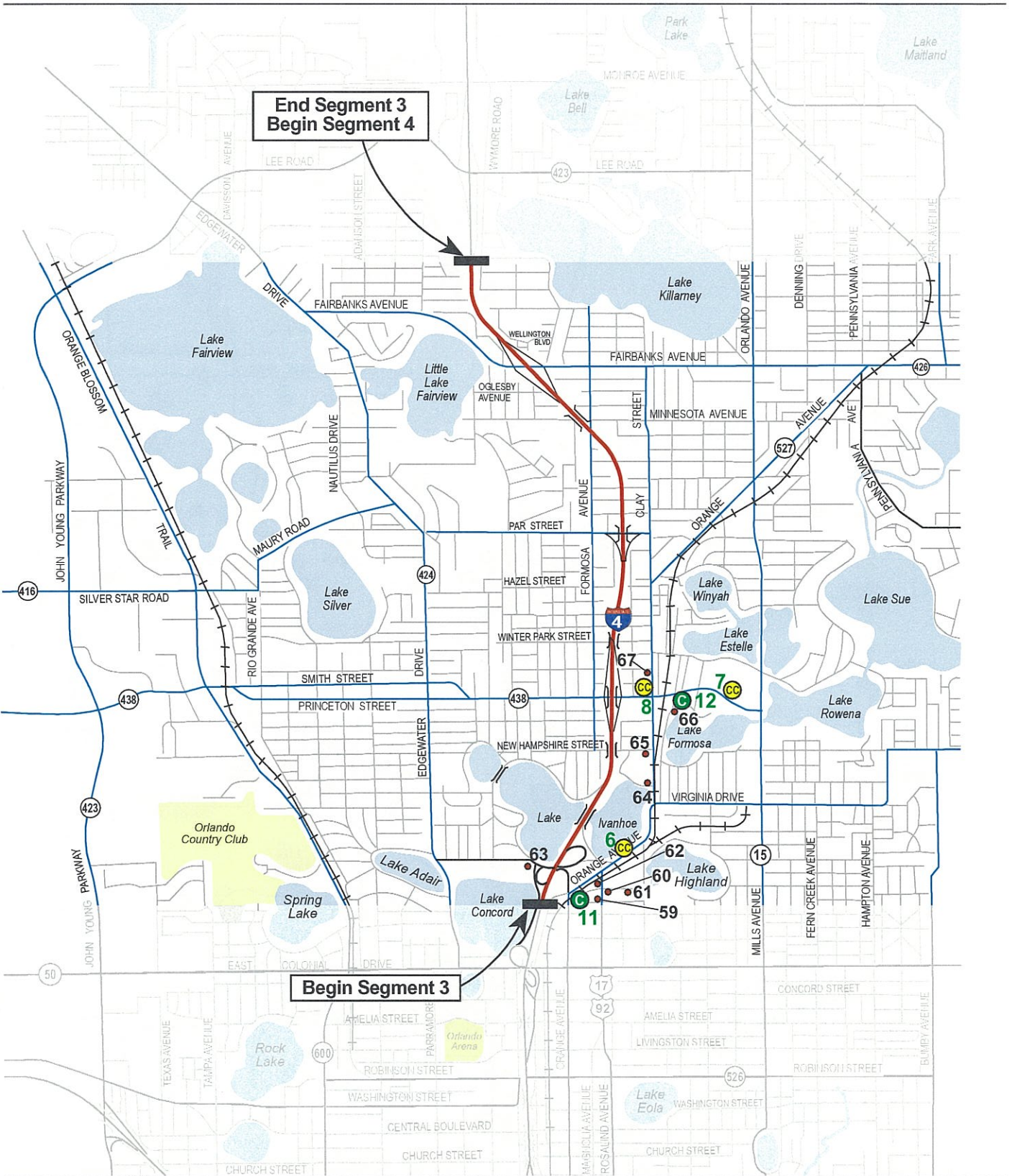
Figure 3-6
Social Service Agencies,
Community Centers and Commercial Community Centers
 I-4 PD&E Study - Section 2
 Segment 1 of 6



- Social Service Agencies (Refer to Table 3-29)
- ⊙ Community Centers (Refer to Table 3-30)
- ⊙ Commercial Community Centers (Refer to Table 3-30)

Figure 3-6
Social Service Agencies,
Community Centers and Commercial Community Centers
I-4 PD&E Study - Section 2
Segment 2 of 6

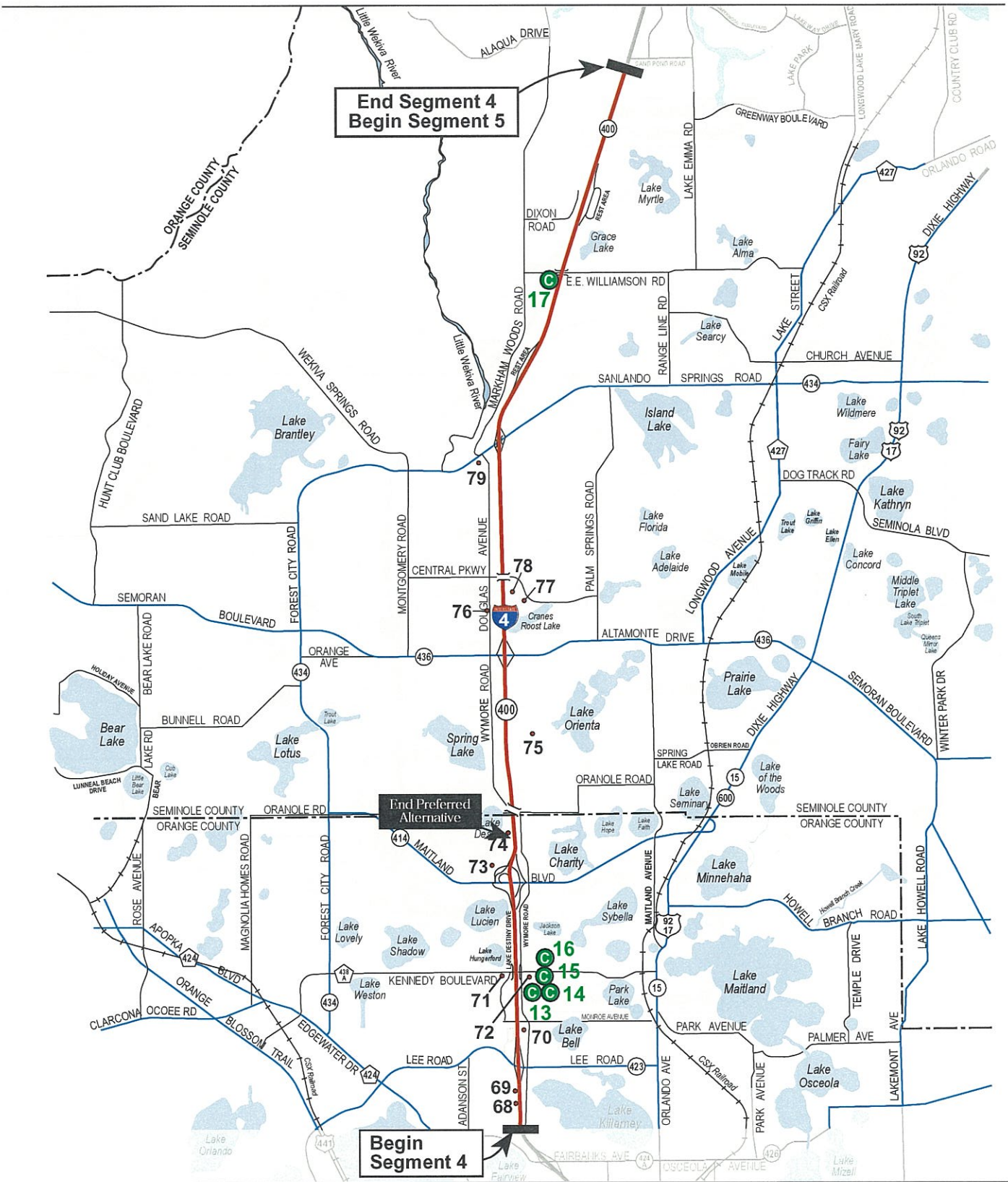




- Social Service Agencies (Refer to Table 3-29)
- Ⓢ Community Centers (Refer to Table 3-30)
- Ⓢ Commercial Community Centers (Refer to Table 3-30)



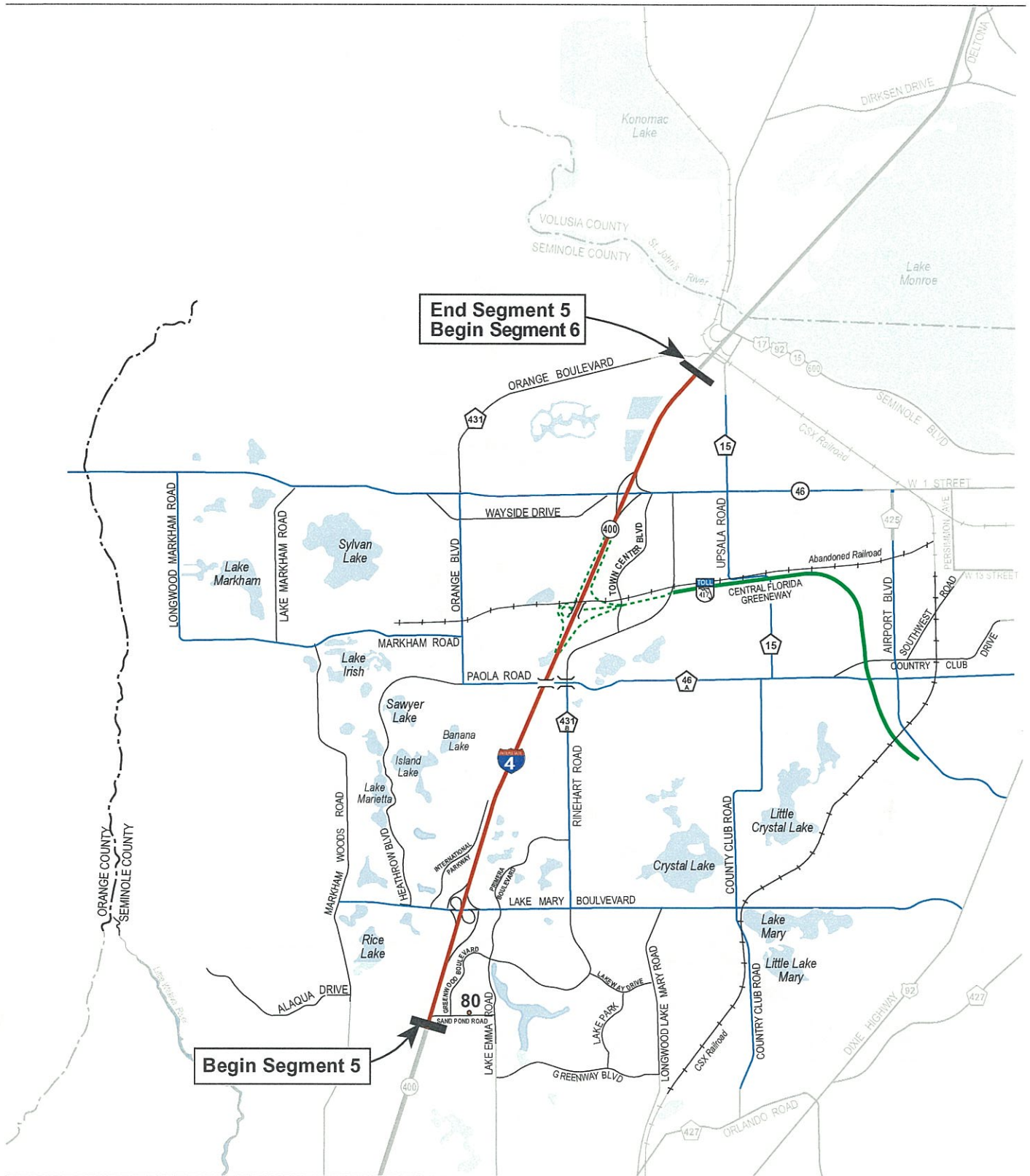
Figure 3-6
Social Service Agencies,
Community Centers and Commercial Community Centers
I-4 PD&E Study - Section 2
Segment 3 of 6



- Social Service Agencies (Refer to Table 3-29)
- Community Centers (Refer to Table 3-30)
- Commercial Community Centers (Refer to Table 3-30)

Figure 3-6
Social Service Agencies,
Community Centers and Commercial Community Centers
I-4 PD&E Study - Section 2
 Segment 4 of 6

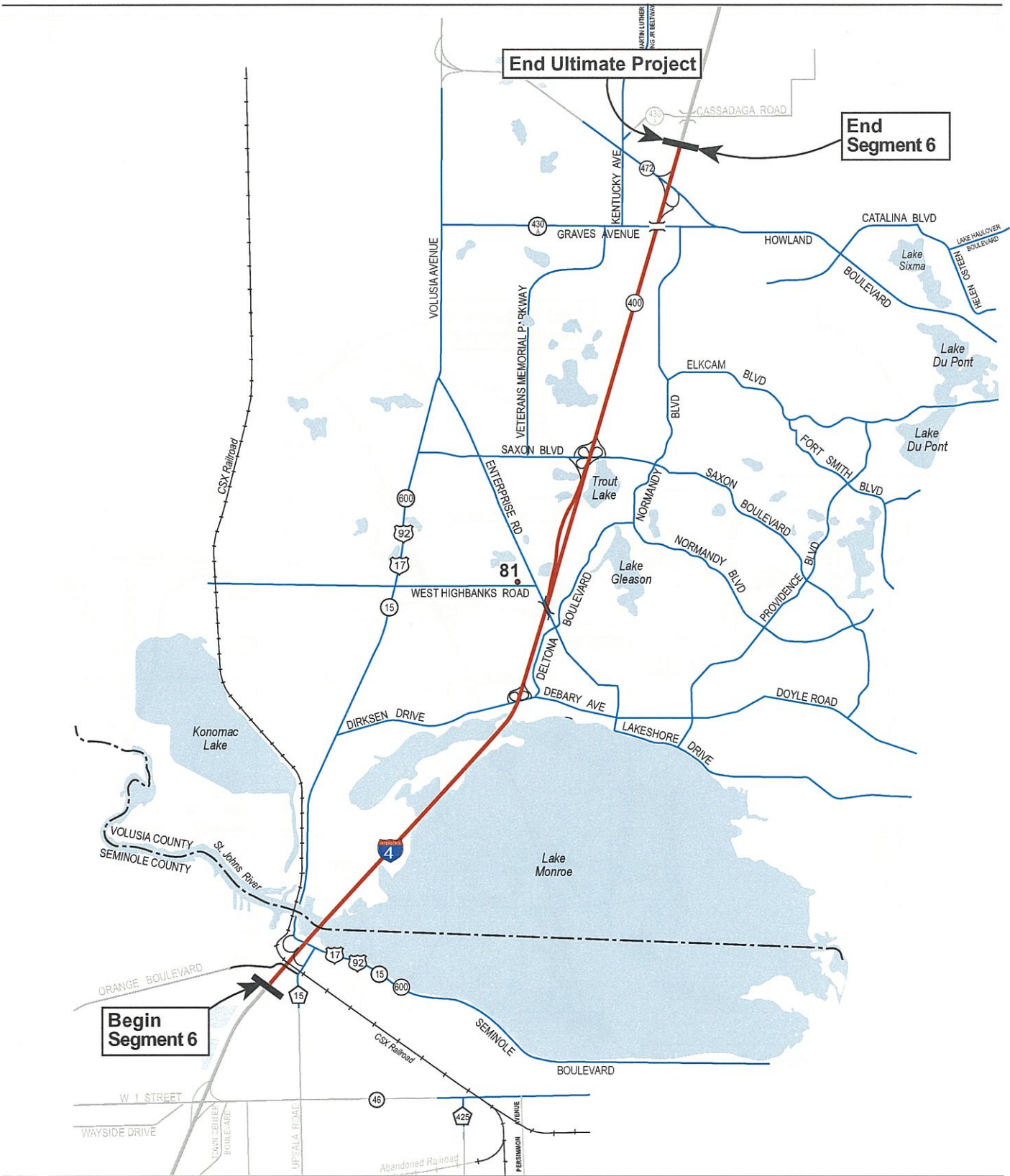




- Social Service Agencies (Refer to Table 3-29)
- Community Centers (Refer to Table 3-30)
- Commercial Community Centers (Refer to Table 3-30)



Figure 3-6
Social Service Agencies,
Community Centers and Commercial Community Centers
 I-4 PD&E Study - Section 2
 Segment 5 of 6



- Social Service Agencies (Refer to Table 3-29)
- Community Centers (Refer to Table 3-30)
- Commercial Community Centers (Refer to Table 3-30)

Figure 3-6
Social Service Agencies,
Community Centers and Commercial Community Centers
I-4 PD&E Study - Section 2
 Segment 6 of 6



Segment 1

No social service agencies were identified within this segment.

Segment 2

House of Hope (Map No. 5) – This Christian residential house is located on 36th Street in Orlando. It provides housing and counseling services for troubled teenage girls and boys within the Osceola, Orange, and Seminole County areas. The facility includes ten buildings, gymnasium, recreation areas, school for students ranging in age 12 through 17, cafeteria, counseling center, and chapel. The facility is privately funded. Parents who enroll their children into the program donate approximately one-third of the funds. Private vehicle is the primary mode of transportation. The facility employs about 25 full-time employees, eight of whom reside on campus.

Coalition for the Homeless T.B. Pavilion (Map No. 17) - This non-profit social service agency operates a Tuberculosis Pavilion on Carter Street near the I-4/SR 408 (East/West Expressway) interchange. The facility, with eight apartments in two buildings, provides housing for tuberculosis patients. The property is leased from the City of Orlando. Due to the contagious nature of the illness, patients are not allowed to take public transportation. This housing facility provides patients with convenient housing within walking distance of the main coalition shelter and health clinic. The shelter receives federal as well as private funding and is the only shelter of its kind in Florida.

Lakeside Alternatives Downtown Plaza (Map No. 24) – This facility, located at 228 S. Hughey Avenue, serves as a mental health clinic providing adult outpatient services for mental health patients in the Orange County area. Lakeside Alternatives is a non-profit organization and receives no government funding, except from patient Medicare and Medicaid payments. This facility has been in service as of 1991 and employees and patients rely heavily on LYNX, I-4 and United (a van service provided through Medicaid) for transportation. Approximately 100 employees operate this facility.

Segments 3, 4, 5 and 6

None of the facilities identified within Segments 3, 4, 5, and 6 are anticipated to be directly impacted by the proposed improvements.

3.1.2.2.7 Community Centers

Community and commercial community centers were identified within one-half mile of the I-4 corridor. A one-half mile limit was based on the proximity of the I-4 corridor to these facilities and potential access issues. A total of 17 community centers and nine commercial community centers have been identified by segment on Figure 3-6 and listed in Table 3-30. Approximately 50 percent of these facilities are located within Segment 2. Below is a brief description of each of the potentially affected community centers.

Segments 1, 3, 4, 5, and 6

None of the facilities within Segments 1, 3, 4, 5, and 6 are anticipated to be directly impacted by the proposed improvements.

Segment 2

Holden Heights Community Center (Map No. 2) – This neighborhood community center is located adjacent to the I-4 right-of-way on L.B. McLeod Road and Rio Grande Avenue. The center is situated within a predominantly low-income and minority neighborhood of Holden Heights. Programs provided include a utility payment assistance program, a seniors club, and a computer program designed for children who live in the Holden Heights community and attend Orange County Schools. Services are provided only to Orange County residents.

The staff consists of social workers, caseworkers, a full-time manager, a receptionist, and volunteers. The center serves as the focal point of the community and is often used as a gathering place for major events and programs. Transportation is not provided by the center; therefore, patrons use the public bus system, drive private vehicles, or walk to the center.

Table 3-30. Community Centers

Map No.	Name	Location	Jurisdiction	Private/ Public
Segment 1				
1	YMCA Aquatic Center	8422 International Drive	Orlando	Private
Segment 2				
2	Holden Heights Community Center	1416 L.B. McLeod Road	Orange County	Private
3	Aquatics Pool	649 W. Livingston Street	Orlando	Public
4	Orlando Public Library	101 E. Central Boulevard	Orlando	Public
5	Callahan Neighborhood Center	101 N. Parramore Avenue	Orlando	Public
6	Beardall Senior Center	800 S. Delaney Street	Orlando	Public
7	Salvation Army	416 W. Colonial Drive	Orlando	Private
8	John H. Jackson Neighborhood Center	1002 W. Carter Street	Orlando	Public
9	Langford Park Neighborhood Center	1808 E. Central Boulevard	Orlando	Public
10	Reeves Terrace Neighborhood Center	100 McJordan Avenue	Orlando	Public
Segment 3				
11	Covenant House	888 N. Orange Avenue	Orlando	Private
12	Loch Haven Community Center	610 N. Lake Formosa Drive	Orlando	Public
Segment 4				
13	Denton Johnson Community Center	400 Ruffie Street	Eatonville	Public
14	Eatonville Municipal Pool	118 S. West Street	Eatonville	Public
15	Wymore Adult Community Center	100 E. Kennedy Boulevard	Eatonville	Public
16	Florida Audubon Society	1101 Audubon Way	Maitland	Private
17	Longwood Aquatic Club	1655 E.E. Williamson Road	Seminole County	Private
Commercial Community Centers				
Segment 1				
1	Orange County Convention Center	9800 International Drive	Orange County	Public
Segment 2				
2	Acting Studio Company	952 Orange Avenue	Orlando	Private
3	Expo Center	500 W. Livingston Street	Orlando	Public
4	Bob Carr Performing Arts Center	401 W. Livingston Street	Orlando	Public
5	TD Waterhouse Centre	600 W. Amelia Street	Orlando	Public
Segment 3				
6	Dr. Phillips Performing Arts Center	1111 N. Orange Avenue	Orlando	Private
6	Orlando Opera	1111 N. Orange Avenue	Orlando	Private
7	Civic Theatre of Central Florida	1001 E. Princeton Street	Orlando	Private
8	Theatre Downtown	2113 N. Orange Avenue	Orlando	Private

Note: Some of these facilities are located in the same building.

Salvation Army Center (Map No. 7) - Located on West Colonial Drive in Orlando, this private community center serves the temporary residents of the Salvation Army homeless shelter. The center receives government subsidies to fund its operations. This community center is intended to serve primarily low-income and homeless persons and families. A total of eight employees and volunteers assist with the daily operations of the center.

3.1.2.2.8 Government Facilities

Government facilities were identified within one-half mile of the I-4 corridor. A one-half mile limit was based on the proximity of the I-4 corridor to these facilities and potential access issues. A total of 77 government facilities have been identified by segment in Table 3-31 and presented on Figure 3-7. Approximately 80 percent of the government facilities identified within the project study area are located in the Orlando CBD (Segment 2). The following paragraphs provide a brief description of each of the potentially affected government facilities.

Segment 1

U.S. Post Office - Sand Lake Branch (Map No. 1) - The federal government facility is located on Turkey Lake Road in south Orlando adjacent to I-4. It serves an average of 900 people daily, who travel from the surrounding areas including Crystal Creek, Windermere, Lake Buena Vista, Kissimmee, Conroy, Kirkman, and International Drive. A parking lot located on the west side of the building provides parking spaces for the 90 employees. A second parking lot located on the east side of the building provides parking for the public.

Segments 2, 3, 4 and 6

None of the government facilities identified in Segments 2, 3, 4, and 6 are anticipated to be directly impacted by the proposed improvements.

Segment 5

U.S. Post Office Mid-Florida Processing Center and Vehicle Maintenance Facility (Map No. 56) –

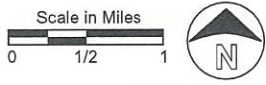
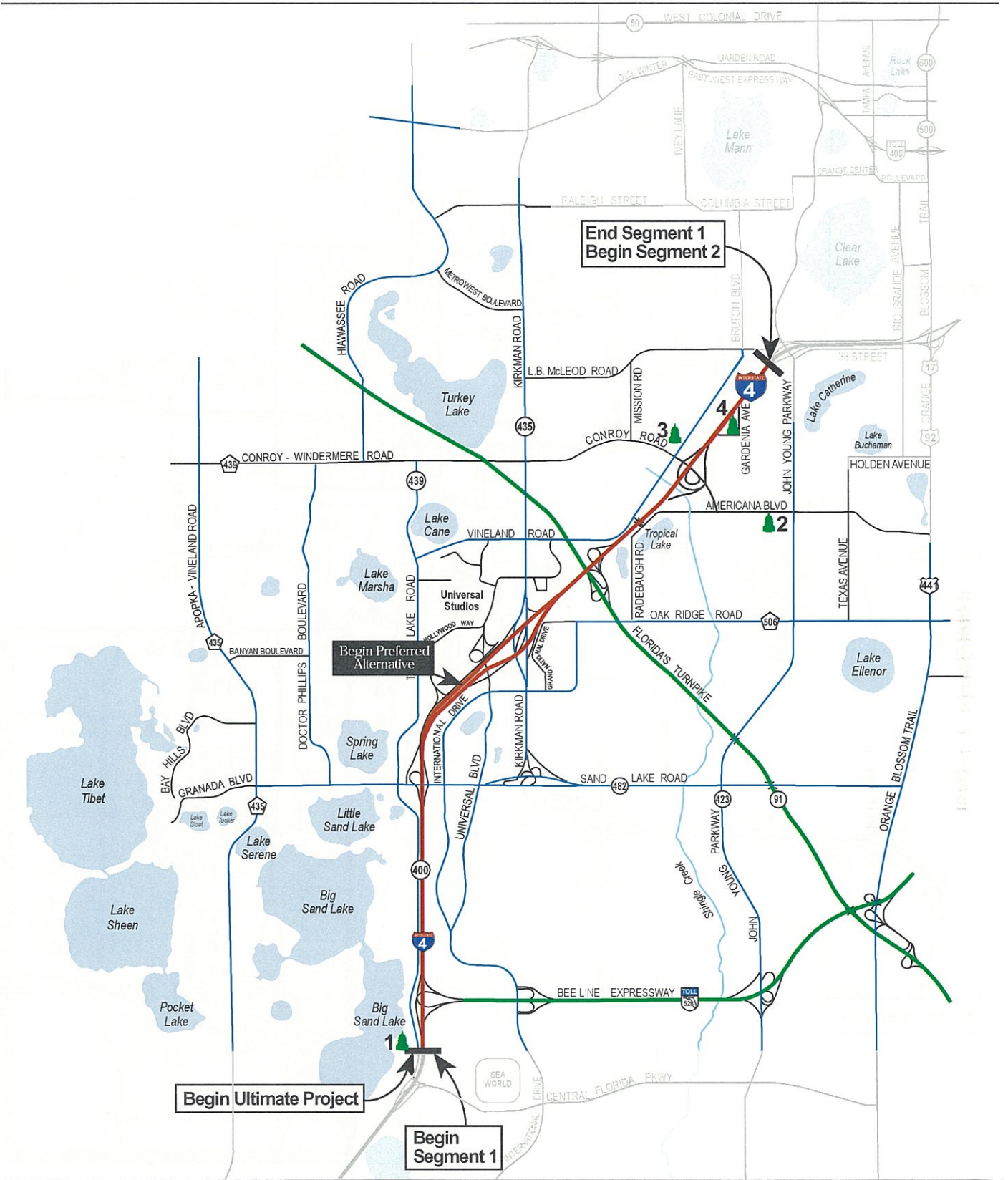
This government facility is located on Rinehart Road in Lake Mary. This division is the main processing center for the U.S. Postal Service in the region. The service area includes Lake Mary and its surrounding areas. However, some mail is processed from other areas such as Deerfield Beach and Cape Canaveral. The site includes two buildings, the main processing building and a vehicle maintenance building, which account for approximately 500,000 total square feet. The facility relies heavily on I-4 as the main access route. About 1,000 employees are divided among three shifts.

Table 3-31. Government Facilities

Map No.	Facility Name	Address	Jurisdiction
Segment 1			
1	U.S. Post Office - Sand Lake Branch	10450 Turkey Lake Road	Federal
2	Animal Services Arthropod Control Spay and Neuter Clinic	2769 Americana Boulevard	Orange
3	Orange County Fleet Management	4400 Vineland Road	Orange
4	Orlando Utilities Commission	3800 Gardenia Avenue	Orlando
Segment 2			
5	Public Works Division	4200 S. John Young Parkway	Orange
6	Orange County Correctional Facility and Sheriff's Office	3278 Vision Boulevard	Orange
7	Keep Orlando Beautiful (Public Works) Streets & Drainage (Public Works)	1010 S. Westmoreland Drive	Orlando
8	Orange County Corrections Work Release Centers	2000 Lucerne Terrace	Orange
9	Elections Supervisor Graphic Reproduction	119 W. Kaley Street	Orange
10	Parks & Recreation	118 W. Kaley Street	Orange
11	Department of Health and Rehabilitative Services	89 W. Copeland Avenue	Florida
12	Medical Examiner	1401 Lucerne Terrace	Orange
13	Facilities Management	1025 W. Grand Avenue	Orlando
14	Fleet Management	1000 W. Gore Street	Orlando
14	Solid Waste Management	1046 W. Gore Street	Orlando
15	Orlando Utilities Commission	500 S. Orange Avenue	Orlando
16	Orlando-Orange County Expressway Authority	525 S. Magnolia Avenue	Florida
17	Orlando City Hall	400 S. Orange Avenue	Orlando
18	Fair Housing and Office of Professional Standards	455 S. Orange Avenue, 5 th floor	Orange
19	Auto Tag Agency Hunting & Fishing Licenses	401 S. Rosalind Avenue	Orange
20	Homestead Exemptions Property Appraiser's Office	200 S. Orange Avenue, 17 th floor	Orange
21	Orange County Utilities	109 E. Church Street (Magnolia Place)	Orange
21	Orange County Administration Center Board of County Commissioners	201 S. Rosalind Avenue	Orange
22	Utilities Customer Accounts Section	14 S. Magnolia Avenue	Orange
23	Business Assistance Team, 7 th floor Community Redevelopment, 9 th floor Downtown Development Board, 9 th floor Downtown Real Estate Resource, 7 th floor	Citrus Bank Building 100 S. Orange Avenue	Orlando
24	Orlando Police Department – Headquarters	100 S. Hughey Avenue	Orlando/Orange
25	Juvenile Assessment Center	823 W. Central Boulevard	Orange
25	Orange County Public Health Unit	832 W. Central Boulevard	Orange
26	Utilities Accounting Division	14 S. Magnolia Avenue	Orange
27	Business Development Department	69 E. Pine Street	Orange
27	Declaration of Domiciles	100 E. Pine Street	Orange
28	Division of Information Technologies	30 S. Magnolia Avenue, 3 rd floor	Orange
29	Public Defender	1 N. Orange Avenue	Orange
29	Department of Justice Pretrial Services Agency Department of the Treasury	Century Plaza 135 W. Central Boulevard	Federal
31	Code Enforcement Bureau Parking System	53 W. Central Boulevard	Orlando

Table 3-31. Government Facilities (Continued)

Map No.	Facility Name	Address	Jurisdiction
31	Department of Legal Affairs Office of Statewide Prosecution	28 W. Central Boulevard	Florida
32	Orange County Clerk of the Courts Circuit Court Judges Marriage Licenses	37 N. Orange Avenue	Orange
33	Orange County Clerk of the Courts Family Mediation Circuit Court Judges	65 E. Central Boulevard	Orange
34	Downtown Library	101 E. Central Boulevard	Orlando
35	Circuit and County Court Judges & Traffic Court	150 N. Orange Avenue	Orange
36	Federal Administrative Offices George C. Young U.S. Courthouse	80 Hughey Avenue	Federal
37	Consumer Fraud Investigations	250 N. Orange Avenue	Orange
38	U.S. Post Office – Downtown Branch	46 E. Robinson Street	Federal
39	U.S. & Foreign Commercial Service	200 E. Robinson Street	Federal
40	Zora Neale Hurston Building State Regional Service Center	400 W. Robinson Street	Florida
41	Orlando Regional Crime Laboratories Department of Law Enforcement	500 E. Robinson Street	Orlando
42	Division of Information Technologies	360 N. Orange Avenue, Suite 200	Orange
43	Declaration of Domiciles Records Management Subdivision Plat Recording Division of Information Technologies	Nations Bank Center 390 N. Orange Avenue	Orange
44	Community and Youth Services Department Director's Office Recreation Bureau Administration Offices	649 W. Livingston Street	Orlando
45	Orange County Courthouse	425 N. Orange Avenue	Orange
46	Orange County Public Schools, LYNX	445 W. Amelia Street	Orange
47	Centroplex Department	600 W. Amelia Street	Orlando
48	Florida League of Cities	135 E. Colonial Drive	Florida
49	Citizen Dispute Settlement Florida Bar Association	880 N. Orange Avenue	Orange
60	U.S. Post Office	440 S. Orange Blossom Trail	Federal
61	Orlando Housing Authority	775 W. Gore Street	Orlando
62	Orange County Administration Building	201 S. Rosalind Avenue	Orange County
63	Tag/Tax Collector's Office	401 S. Rosalind Avenue	Orange County
64	Old Tag Agency	301 S. Rosalind Avenue	Orange County
65	City of Orlando Neighborhood Services	129 E. Gore Street	Orlando
66	Orlando Housing Authority	300 Reeves Court	Orlando
67	Orange County Office of Community Development and Public Housing	525 E. South Street	Orange County
68	Orange County Sheriff's Operations Center	2400 W. 33 rd Street	Orange County
69	Clear Lake Basin Stormwater Treatment Facility		
70	Orlando Nursery/Plants and Parks Bureau	100 Victor Street	Orlando
Segment 3			
50	City of Orlando Chamber of Commerce	75 S. Ivanhoe Boulevard	Orlando
Segment 4			
51	Department of Labor & Employment Security Unemployment Compensation Division	5500 Diplomat Circle	Florida
51	Business And Professional Regulation	5600 Diplomat Circle	Florida
51	Department of Education	5200 Diplomat Circle	Florida
52	Department of Transportation	5151 Adanson Street	Florida
53	Eatonville Town Hall	322 E. Kennedy Boulevard	Eatonville
54	Mental Health Service	434 W. Kennedy Boulevard	Orange
Segment 5			
55	Drug Enforcement Agency	300 International Parkway	Federal
56	U.S. Post Office Mid-Florida Processing Center and Vehicle Maintenance Facility	800 Rinehart Road	Federal
57	U.S. Postal Service - Lake Monroe Branch	755 Monroe Road	Federal
Segment 6			
58	Deltona Municipal Services	800 Deltona Boulevard	Deltona
59	U.S. Post Office - Deltona Branch	944 Deltona Boulevard	Federal

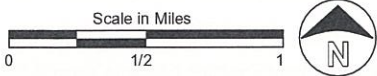
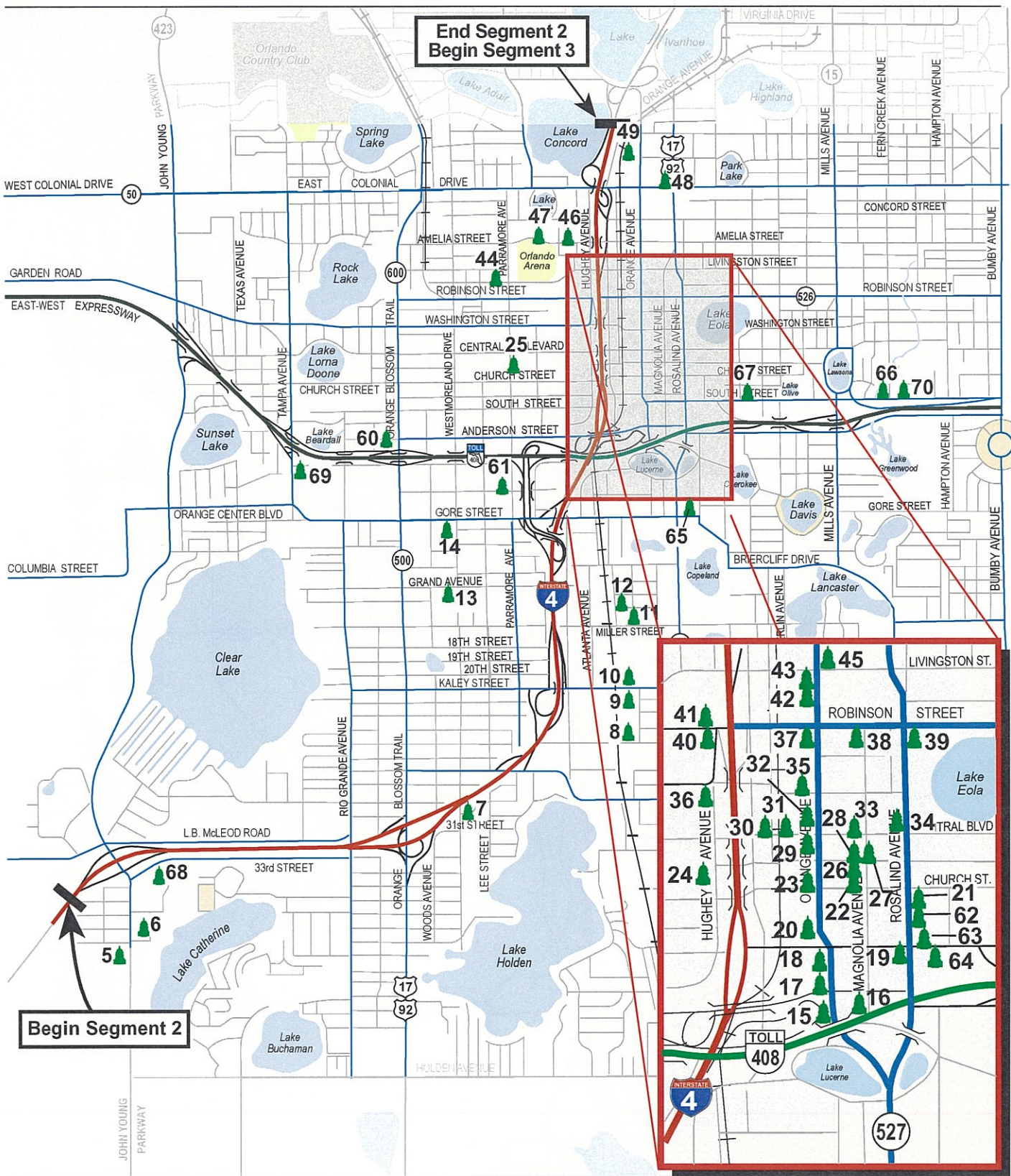


 Government Facilities (Refer to Table 3-31)



Figure 3-7
Government Facilities

I-4 PD&E Study - Section 2
 Segment 1 of 6

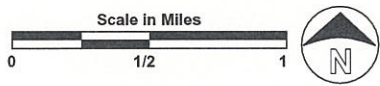


 Government Facilities (Refer to Table 3-31)

Figure 3-7
Government Facilities

I-4 PD&E Study - Section 2
Segment 2 of 6



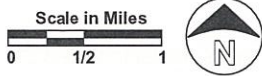
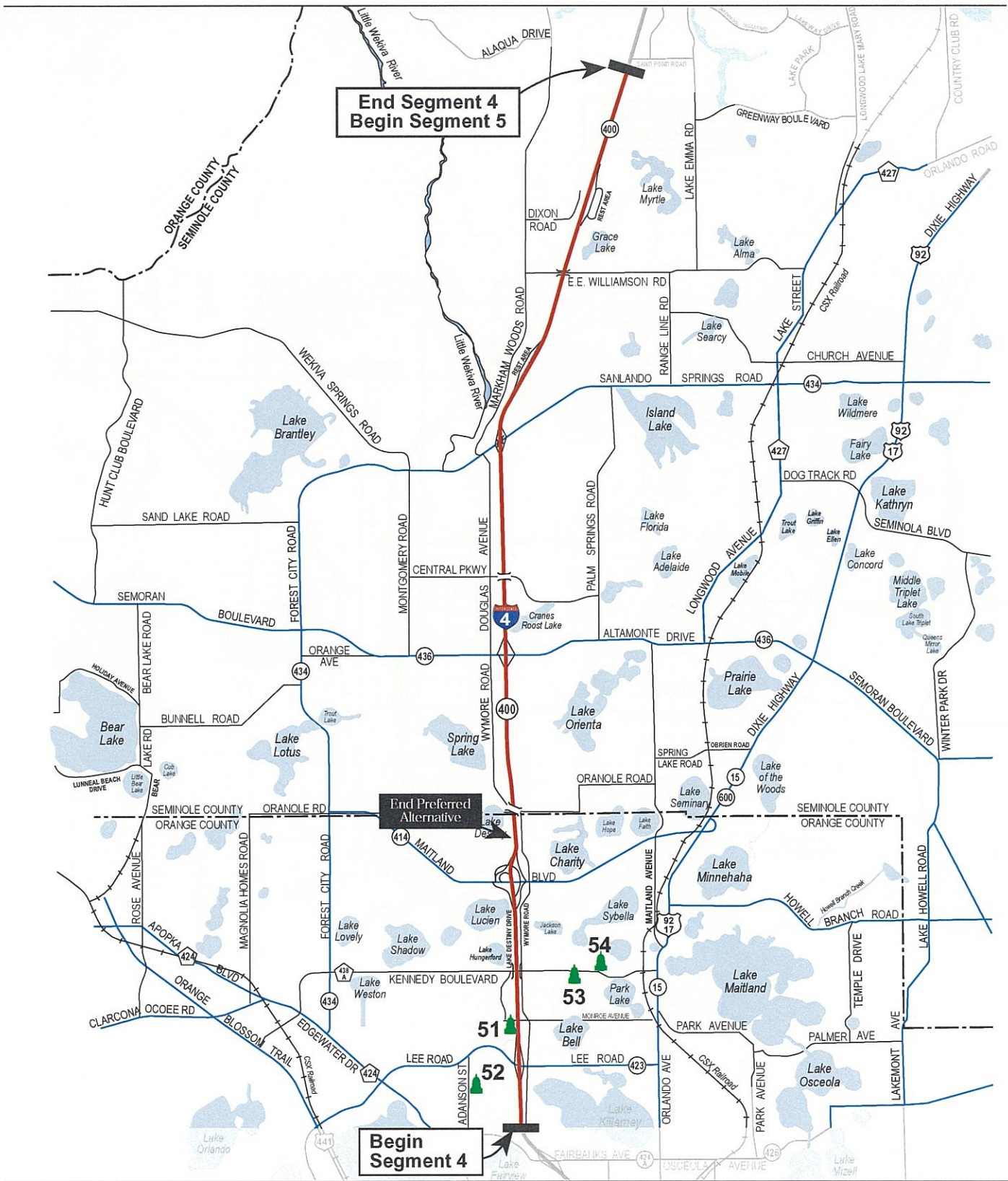


 Government Facilities (Refer to Table 3-31)



Figure 3-7
Government Facilities

I-4 PD&E Study - Section 2
Segment 3 of 6

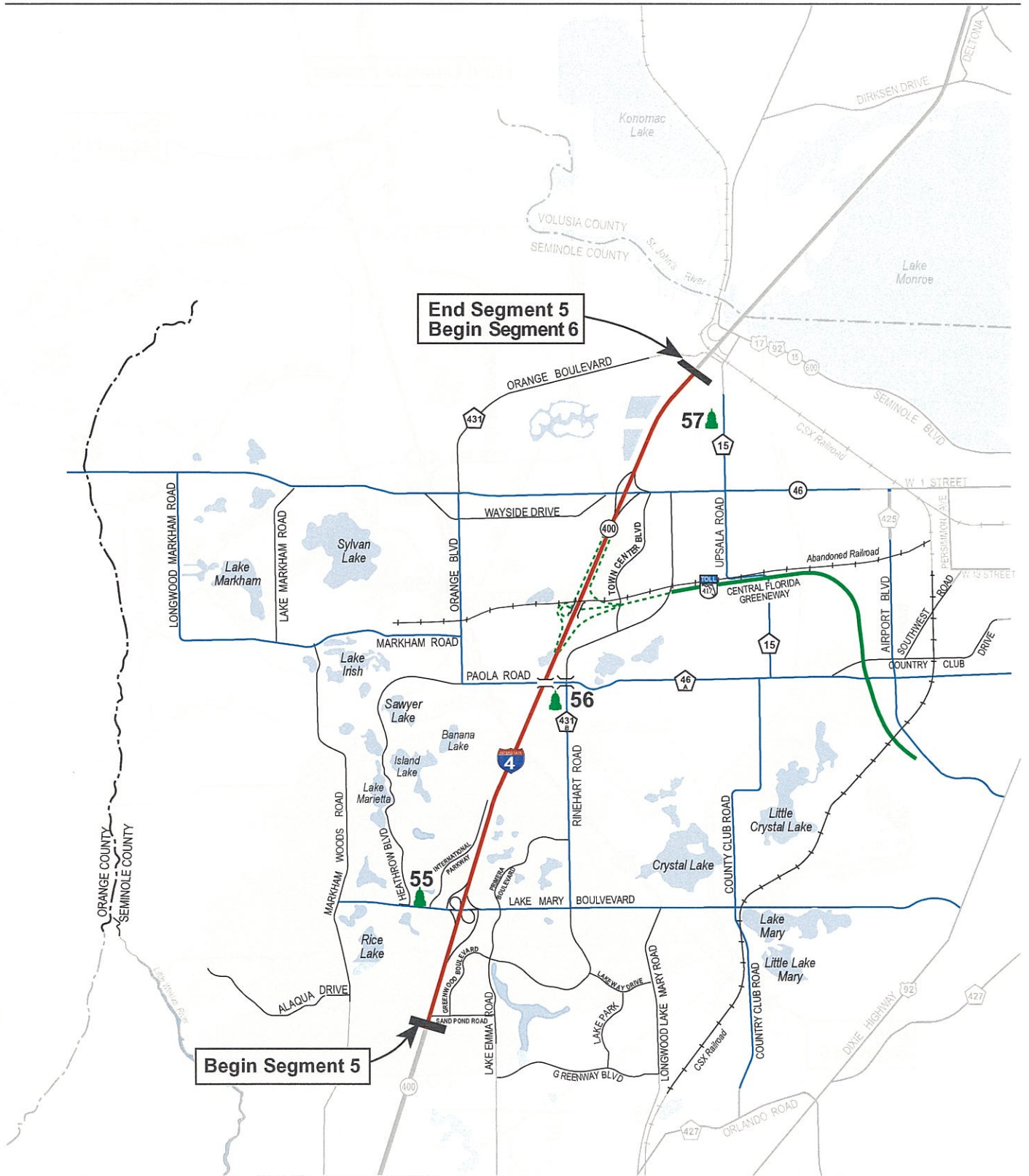


 Government Facilities (Refer to Table 3-31)

Figure 3-7
Government Facilities

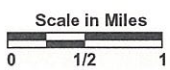
I-4 PD&E Study - Section 2
Segment 4 of 6





End Segment 5
Begin Segment 6

Begin Segment 5

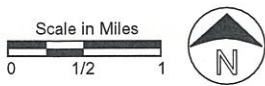
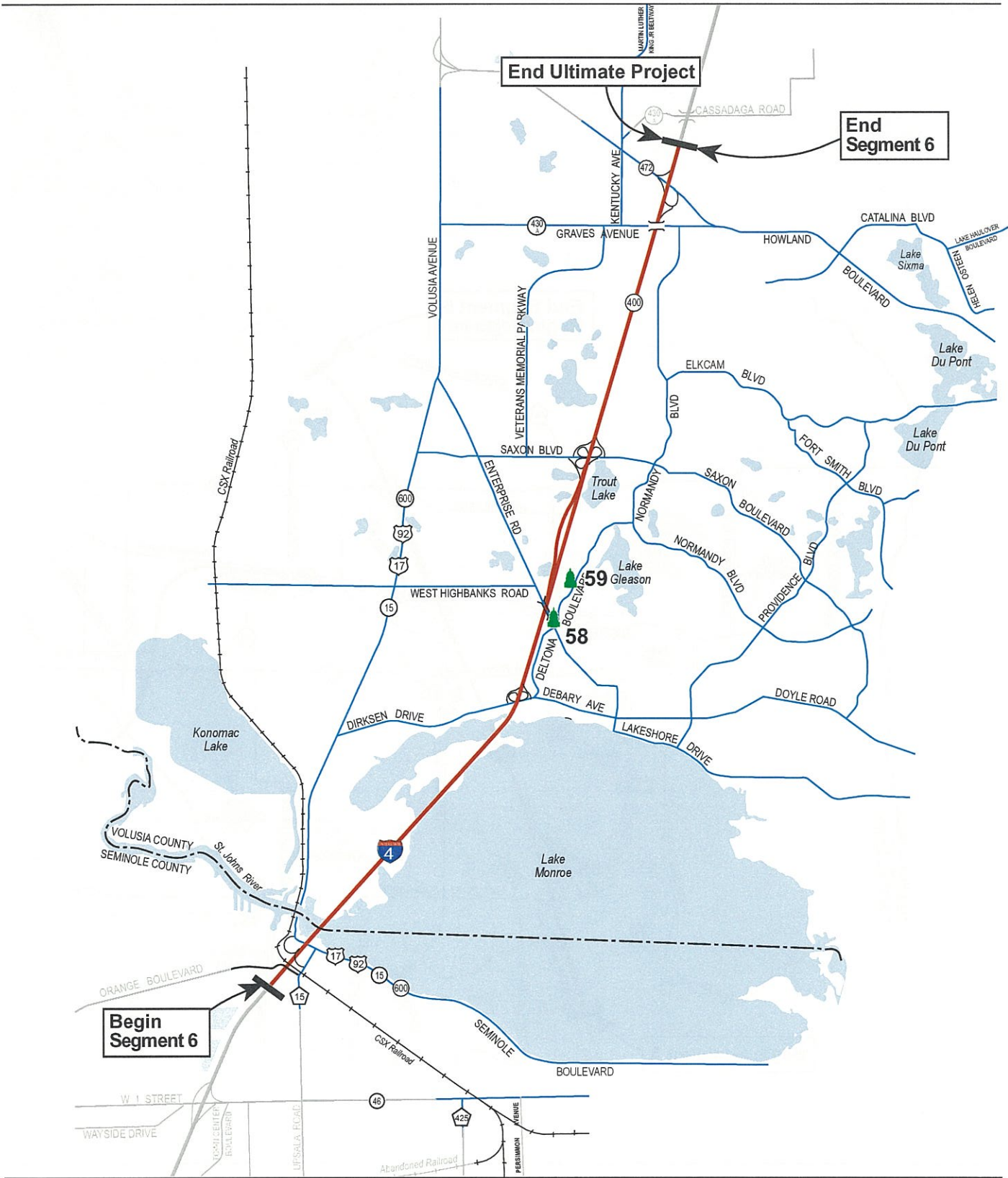


Government Facilities (Refer to Table 3-31)



Figure 3-7
Government Facilities

I-4 PD&E Study - Section 2
Segment 5 of 6




 Government Facilities (Refer to Table 3-31)

Figure 3-7
Government Facilities
 I-4 PD&E Study - Section 2
 Segment 6 of 6



3.1.2.2.9 Medical Facilities

Medical facilities including hospitals, retirement/nursing homes, and hospices were identified within one-half mile of the I-4 corridor. In addition, emergency medical services (EMS) associated with hospitals are provided. A one-half mile limit was based on the proximity of the I-4 corridor to these facilities and potential access issues. A total of 58 medical facilities have been identified by segment in Table 3-32 and presented on Figure 3-8. The majority of the facilities (53 percent) are located within Segment 2.

Table 3-32. Medical Facilities

Map No.	Facility Name	Address	Jurisdiction	Private/ Public
Medical Offices and Hospitals				
Segment 1				
1	Florida Hospital Centra Care	8723 International Drive	Orlando	Private
2	First Aid Medical Center	7411 International Drive	Orlando	Public
3	Sand Lake Hospital	9400 Turkey Lake Road	Orlando	Public
Segment 2				
4	Center for Drug Free Living	1401 W. Michigan Street	Orlando	Private
5	The Veranda Nursing & Rehabilitation Center	830 W. 29th Street	Orlando	Public
6	Orlando Regional Home Health Care	601 W. Michigan Street	Orlando	Public
7	Same Day Surgicenter	88 W. Kaley Street	Orlando	Public
8	Arnold Palmer Hospital for Children and Women	92 W. Miller Street	Orlando	Public
9	Orlando Center for Outpatient Surgery	1405 S. Orange Avenue, Suite #400	Orlando	Public
10	Surgical Licensed Ward	110 Underwood Street	Orlando	Public
11	Center for Drug Free Living	100 W. Columbia Street	Orlando	Private
12	Central Florida Wound Care Center	100 W. Gore Street, Suite #606	Orlando	Public
13	Center for Drug Free Living	712 W. Gore Street	Orlando	Private
14	Orlando Regional Lucerne Hospital	818 S. Main Lane	Orlando	Public
15	Orange County Medical Clinic	101 S. Westmoreland Drive	Orlando	Public
16	Health Care Center for the Homeless, Inc.	11 N. Parramore Avenue	Orlando	Public
17	Center for Drug Free Living	501 N. Orange Avenue, Suite #300	Orlando	Private
18	We Care Crisis Center	112 Pasadena Place	Orlando	Public
28	Tampa Avenue Medical Center	606 Tampa Avenue	Orlando	Private
29	Orlando Regional Medical Center	1414 Kuhl Avenue	Orlando	Public
31	Offices of Mara Tutus, M.D.	810 Lucerne Terrace	Orlando	Private
32	Nemours Children's Clinic	83 W. Columbia Street	Orlando	Private
Segment 3				
19	Orlando Surgery Center	2000 N. Orange Avenue	Orlando	Public
20	Florida Hospital Transitional Care Facilities	2250 Bedford Road	Orlando	Private
21	Florida Hospital – Orlando	601 E. Rollins Street	Orlando	Private
22	Neumann Eye Institute	3000 N. Orange Avenue	Orlando	Public
Segment 4				
23	Florida Hospital Centra Care	2540 Lee Road	Orange County	Private
24	Lakeside Alternatives	434 W. Kennedy Boulevard	Eatonville	Public
Segment 5				
25	Florida Hospital Medical Plaza at Lake Mary	1097 Sand Pond Road	Lake Mary	Private
Segment 6				
26	Deltona Family Medical Walk-In Center	820-a Deltona Boulevard	Deltona	Public
27	Volusia Medical Center	1055 Saxon Boulevard	Orange City	Public
Retirement/Nursing Homes				
Segment 1				
1	RSI Inc.	4201 S. Vineland Road, Suite #1-3	Orlando	Public
Segment 2				
2	Orlando Living Center	2715 Unitah Avenue	Orlando	Public
3	Golden Age Rest Home	817 24 th Street	Orlando	Public
4	Oak Tree Lodge	852 23 rd Street	Orlando	Public
5	Wheeler's Retirement Home	926 18 th Street	Orlando	Public
6	Terra Vista Rehab & Health Center	1730 Lucerne Terrace	Orlando	Public
7	Tara Oaks	710 Delaney Avenue	Orlando	Public
8	Westminster Towers	70 W. Lucerne Circle	Orlando	Public
9	Orlando Lutheran Towers	300 E. Church Street	Orlando	Public
10	Pasadena Lodge Retirement Center	119 Pasadena Place	Orlando	Public

Table 3-32. Medical Facilities (Continued)

Map No.	Facility Name	Address	Jurisdiction	Private/ Public
Segment 3				
11	Share a Home	701 Driver Avenue	Orange County	Public
12	Oakview Retirement Home	647 Harold Avenue	Orange County	Public
Segment 4				
13	Shamrock Retirement Home	909 Fremont Avenue	Orange County	Public
14	Summer Time Retirement Home	909 N. Wymore Road	Orange County	Public
Hospices				
Segment 4				
1	Hospice of Central Florida	2500 Maitland Center Parkway	Maitland	Public
Emergency Medical Service (EMS)				
Segment 1				
1	Sand Lake Hospital	9400 Turkey Lake Road	Orlando	Public
Segment 2				
2	Arnold Palmer Hospital for Children and Women	92 W. Miller Street	Orlando	Public
3	Orlando Regional Medical Center	1414 Kuhl Avenue	Orlando	Public
Segment 3				
4	Florida Hospital – Orlando	601 E. Rollins Street	Orlando	Private
Segment 4				
5	Florida Hospital – Altamonte	601 E. Altamonte Drive	Altamonte Springs	Private
6	Life Lead Atlantic	490 North Street, Suite #108	Longwood	Public
7	South Seminole Hospital	555 W. SR 434	Longwood	Public
Animal Hospitals				
Segment 2				
1	Michigan Street Animal Hospital	1201 W. Michigan Street	Orlando	Public
Segment 4				
2	Cat Hospital of Altamonte Springs	266 E. Altamonte Drive	Altamonte Springs	Public
3	Markham Woods Animal Hospital	1645 E.E. Williamson Road	Seminole County	Public
Segment 5				
4	Lake Emma Animal Hospital	3609 Lake Emma Road	Lake Mary	Public
Segment 6				
5	AA Animal Clinic	2899 Enterprise Road	DeBary	Public

The following paragraphs provide a brief description of each of the potentially affected medical facilities.

Segments 1, 2, 4, 5, and 6

None of the medical facilities located within Segments 1, 2, 4, 5, and 6 are anticipated to be directly impacted by the proposed improvements.

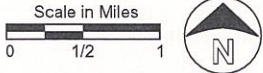
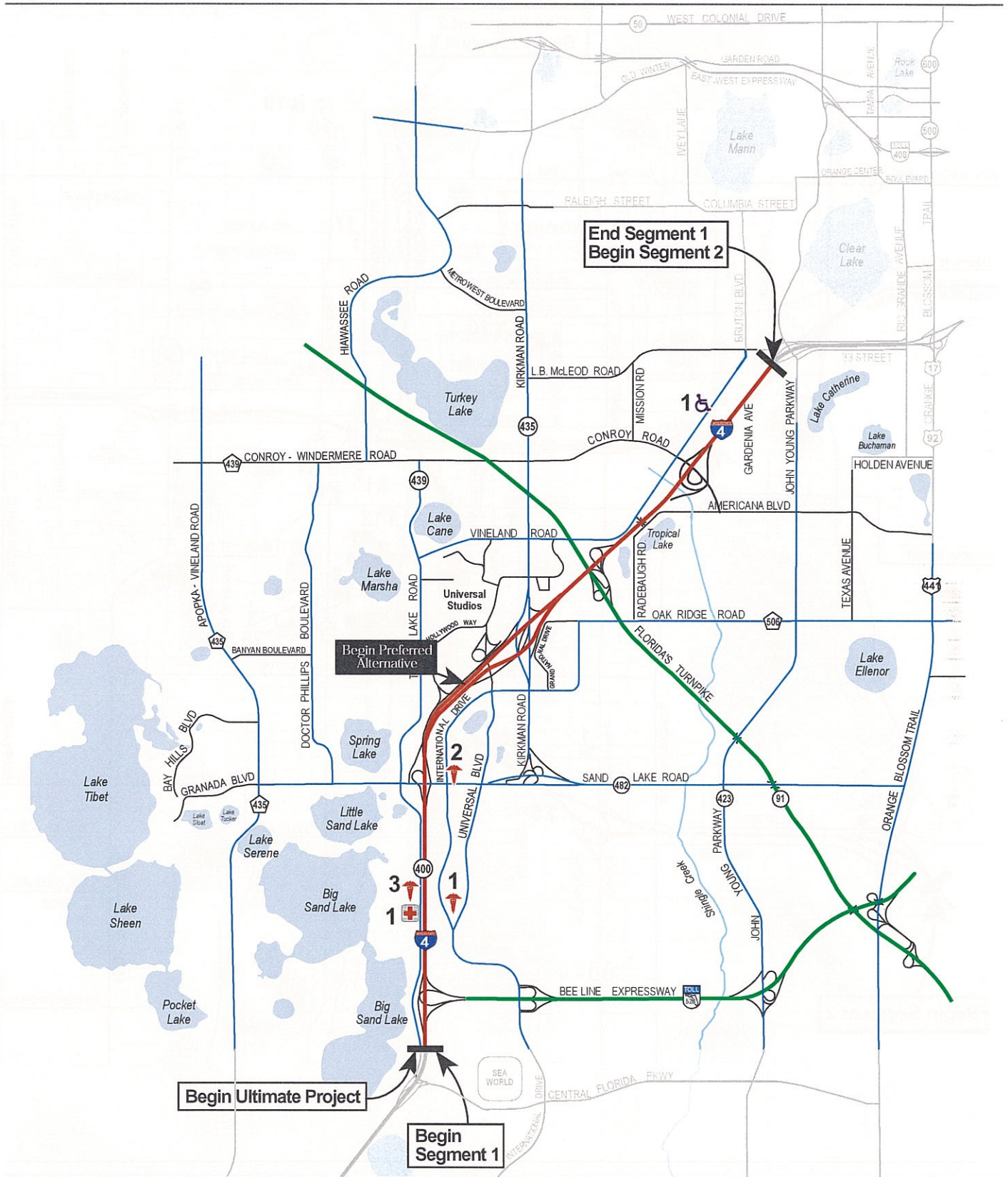
Segment 3

Florida Hospital Orlando (Map No. 21 Medical) – This institution is part of the largest private, not-for-profit hospitals in Central Florida. It is an 840-bed acute-care community hospital serving the Central Florida area. Florida Hospital offers services from obstetrics, pediatrics, emergency services to cancer, cardiology, and diabetes services. Some of the programs and specialties include Ask-a-Nurse, the Walt Disney Memorial Cancer Institute, Rehabilitation Services, Walk-in Care Centers, and many more. On average, about 32,000 inpatients and 53,600 outpatients are treated annually.

3.1.2.2.10 Sheriff, Police, Fire Protection, and EMS

Sheriff, police, fire protection, and related EMS were identified within one-half mile of the I-4 corridor. A one-half mile limit was based on the proximity of the I-4 corridor to these facilities and potential access issues. A total of 42 facilities have been identified by segment in Table 3-33 and presented on Figure 3-9. Approximately 48 percent of these facilities are located within Segment 2.

Emergency medical services are provided at the scene of an emergency by the fire department’s EMS teams in Orange and Seminole Counties. The EMS team at the nearest fire station is the first called to an emergency situation. The hospitals in these counties contract their ambulance services out to private providers, and primarily use emergency medical transport for transporting patients to and from other hospital facilities.



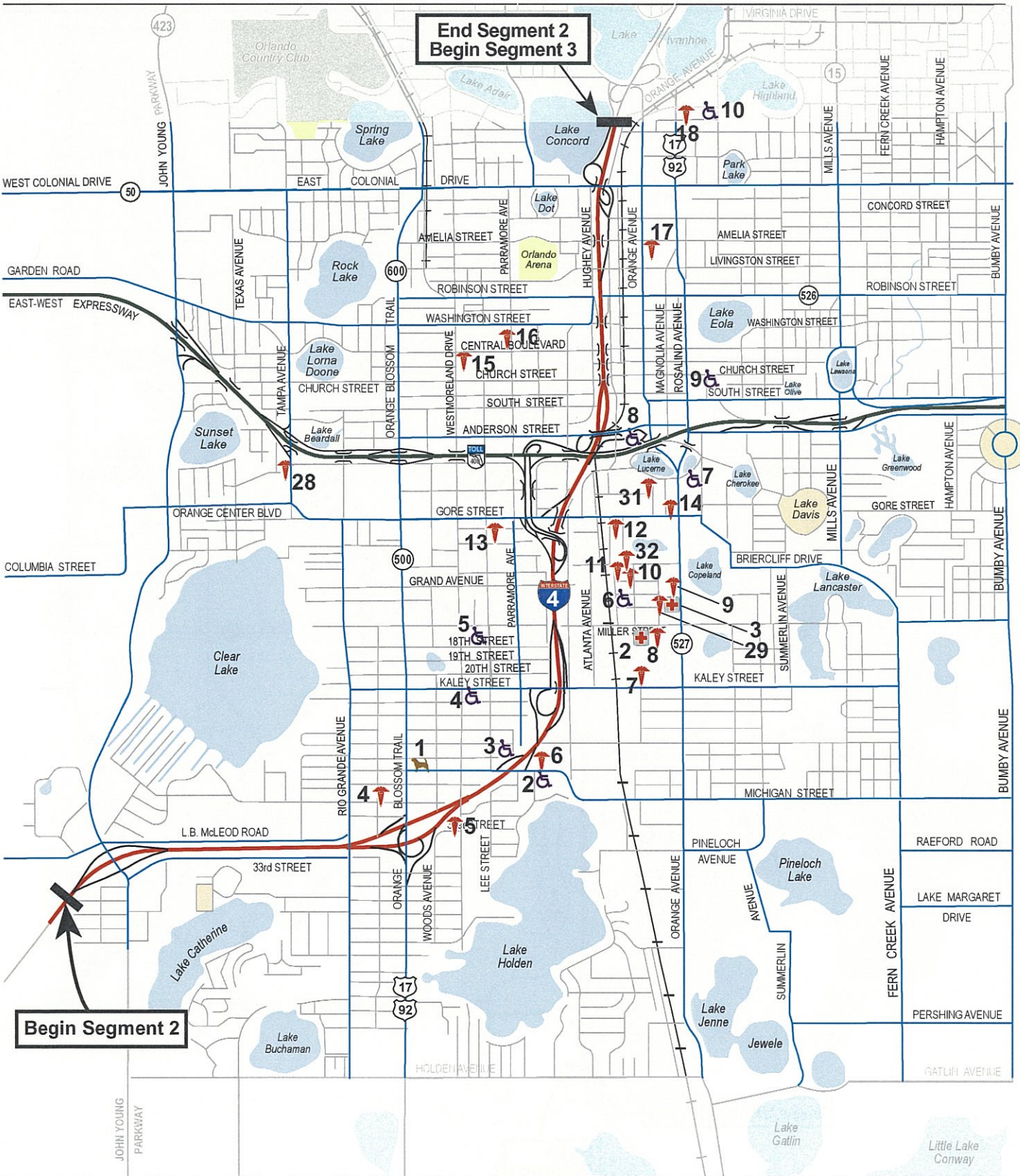
Note: All medical facilities are referenced in Table 3-32.

-  Medical Facilities
-  Animal Hospitals
-  Hospices
-  EMS
-  Retirement/Nursing Homes



**Figure 3-8
Medical Facilities**

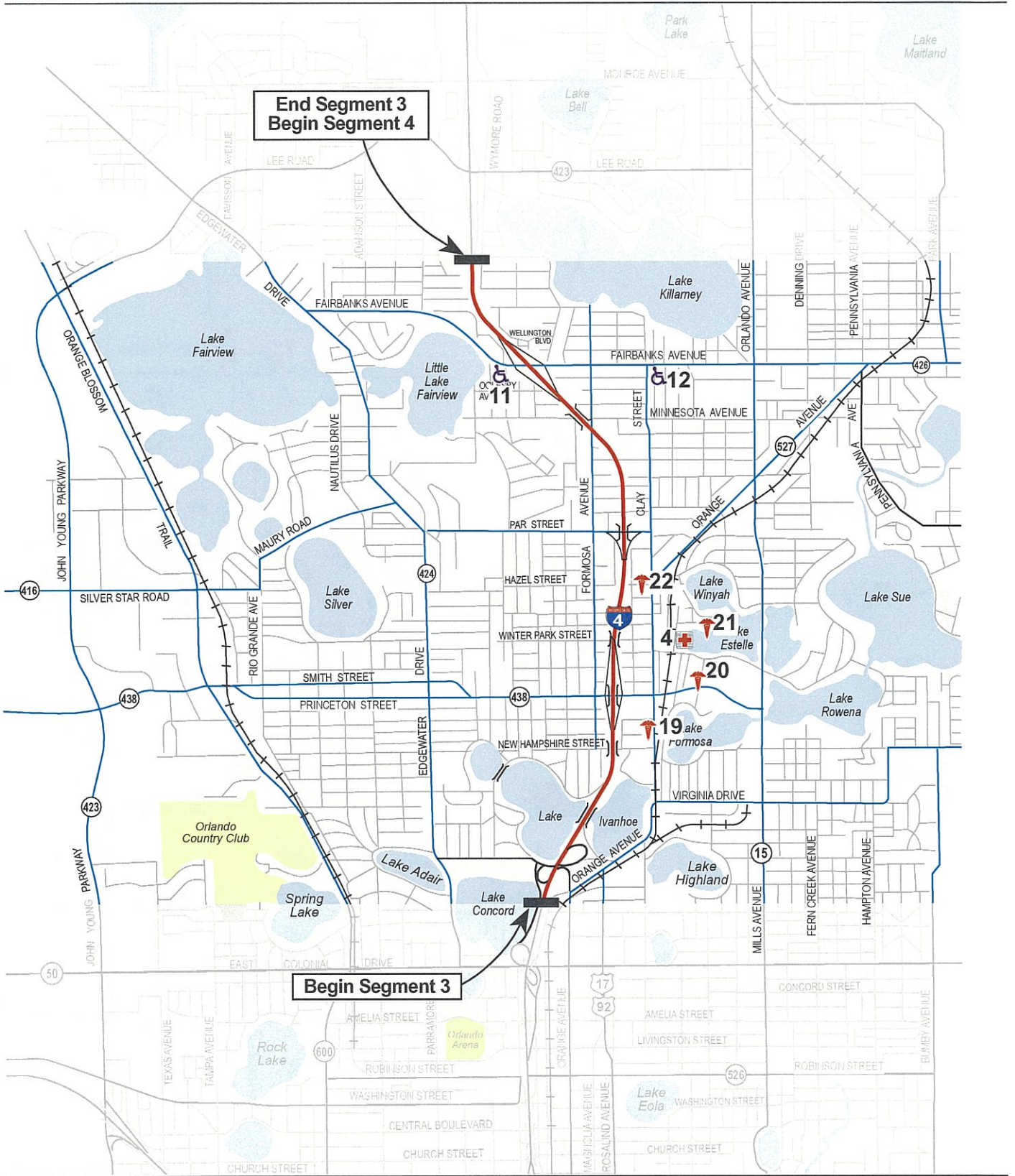
I-4 PD&E Study - Section 2
Segment 1 of 6



**Figure 3-8
Medical Facilities**

I-4 PD&E Study - Section 2
Segment 2 of 6





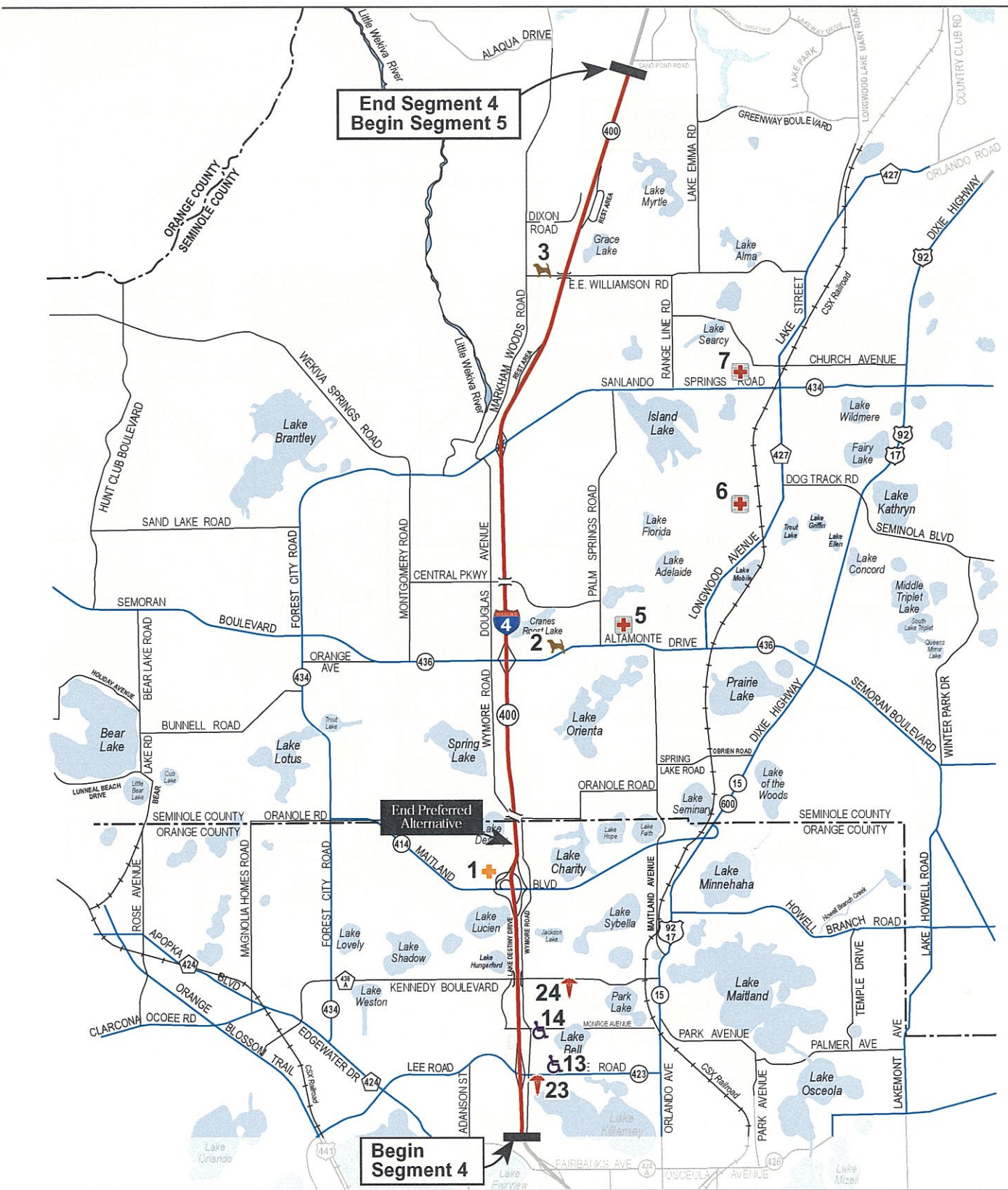
Note: All medical facilities are referenced in Table 3-32.

- Medical Facilities
- Animal Hospitals
- Hospices
- EMS
- Retirement/Nursing Homes



Figure 3-8
Medical Facilities

I-4 PD&E Study - Section 2
Segment 3 of 6



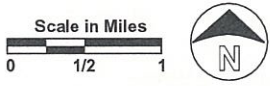
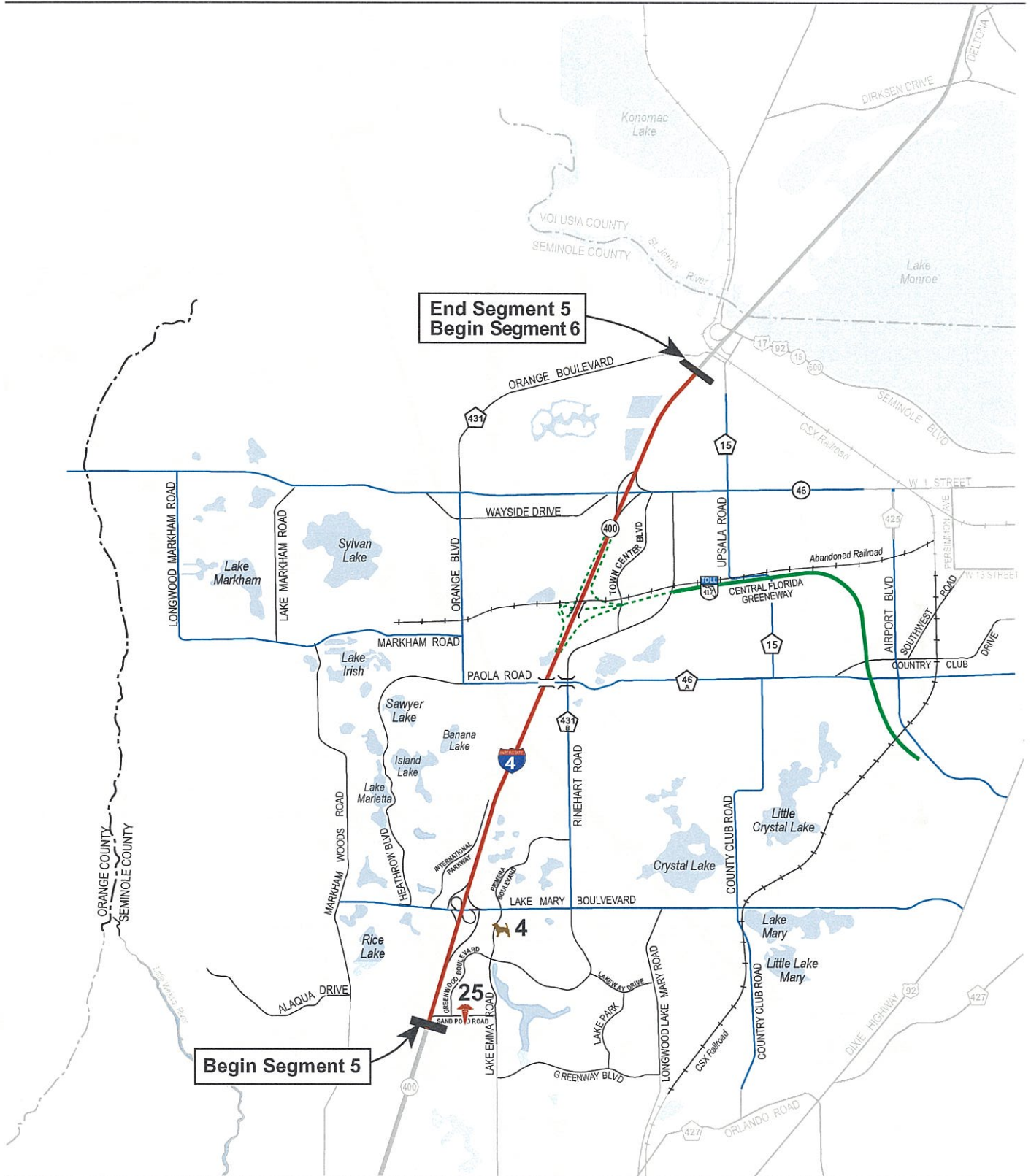
Note: All medical facilities are referenced in Table 3-32.

- Medical Facilities
- Animal Hospitals
- Hospices
- EMS
- Retirement/Nursing Homes

Figure 3-8
Medical Facilities

I-4 PD&E Study - Section 2
Segment 4 of 6





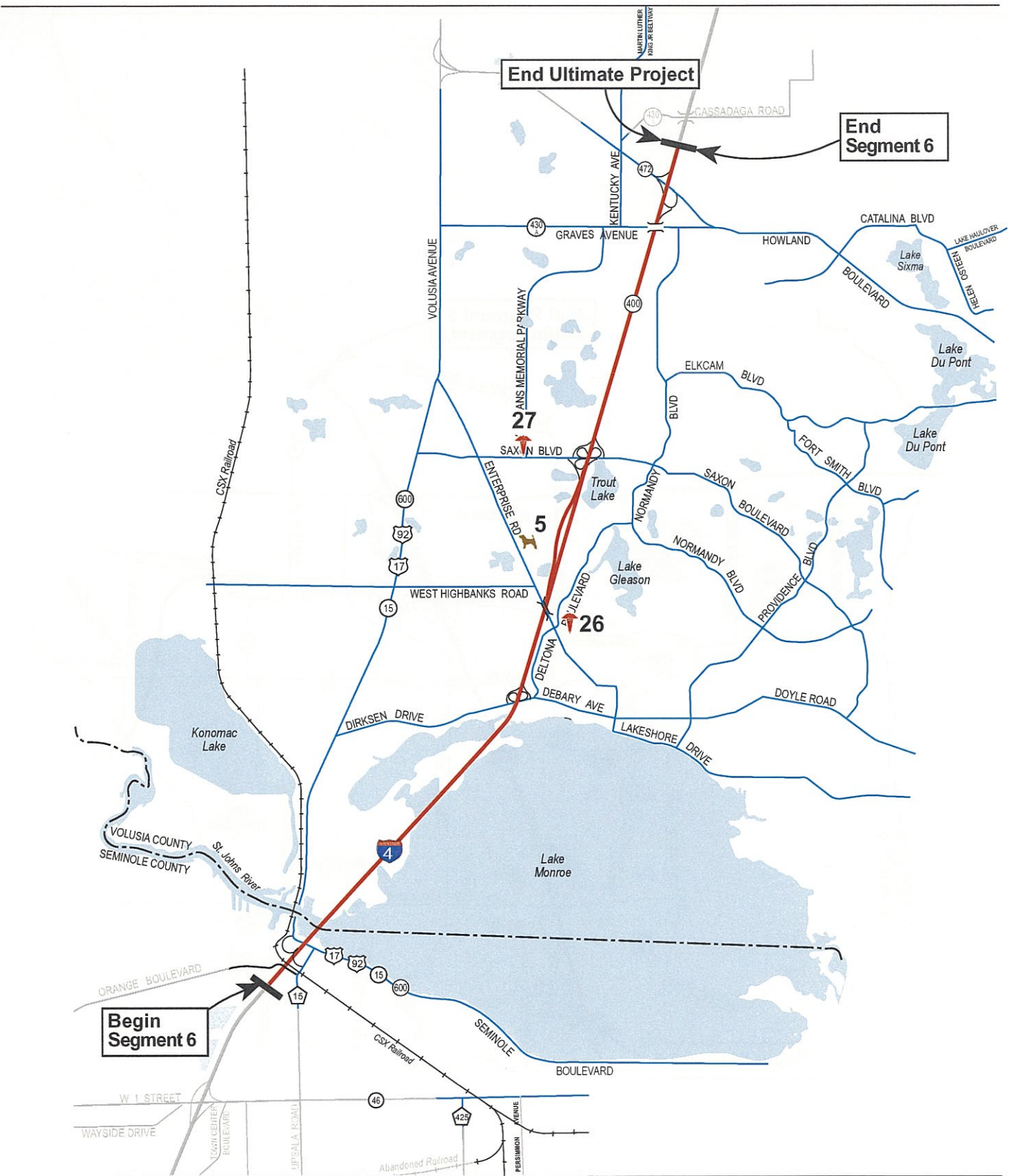
Note: All medical facilities are referenced in Table 3-32.

-  Medical Facilities
-  Animal Hospitals
-  Hospices
-  EMS
-  Retirement/Nursing Homes



**Figure 3-8
Medical Facilities**

I-4 PD&E Study - Section 2
Segment 5 of 6



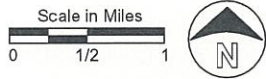
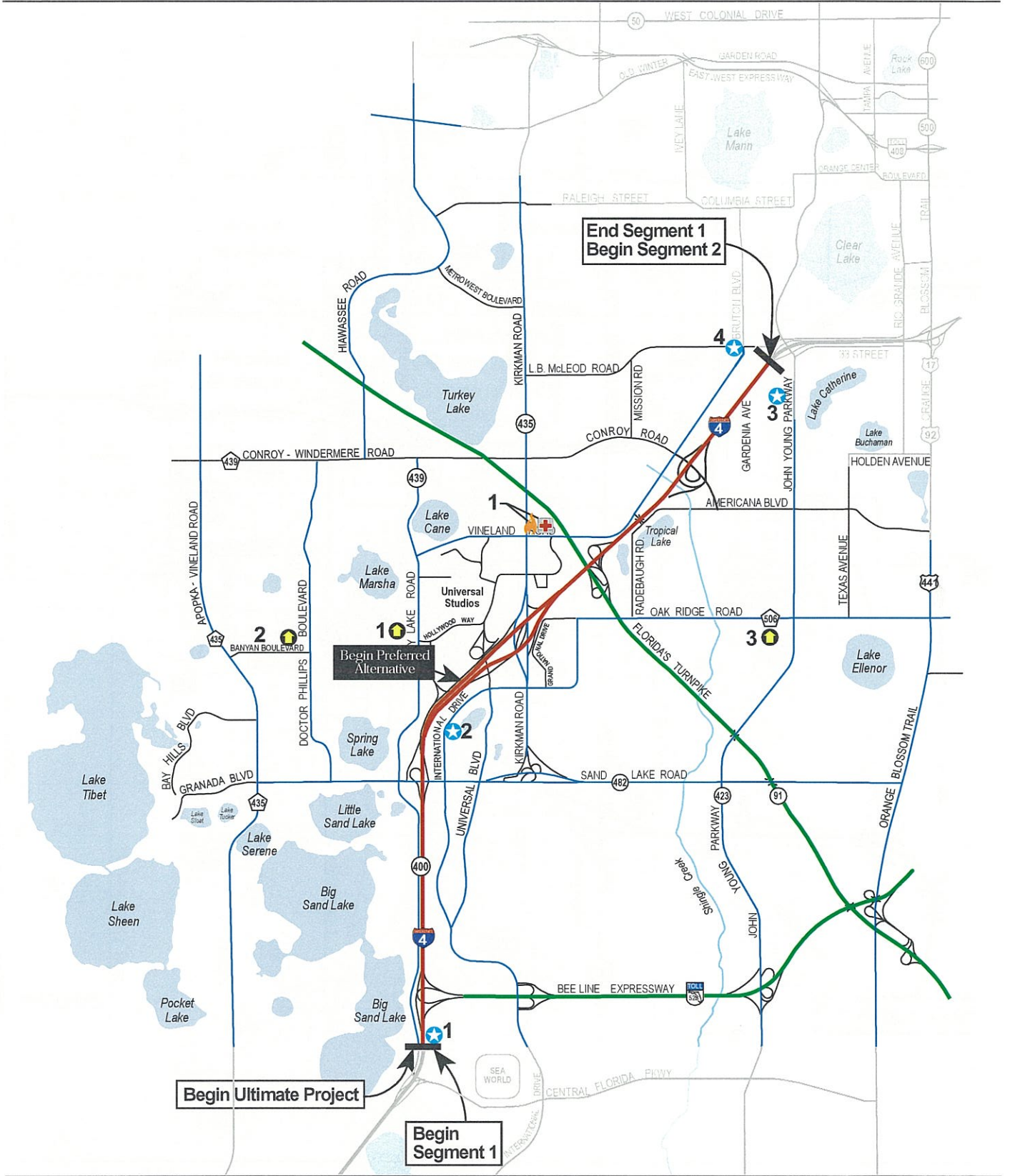
Note: All medical facilities are referenced in Table 3-32.

-  Medical Facilities
-  Animal Hospitals
-  Hospices
-  EMS
-  Retirement/Nursing Homes

Figure 3-8
Medical Facilities

I-4 PD&E Study - Section 2
Segment 6 of 6





Note: All facilities are referenced in Table 3-33 except where noted.

- Police/Sheriff Departments
- EMS
- Fire Station
- Emergency Shelter (Refer to Table 3-34)



Figure 3-9
Police/Fire/EMS/Emergency Shelters

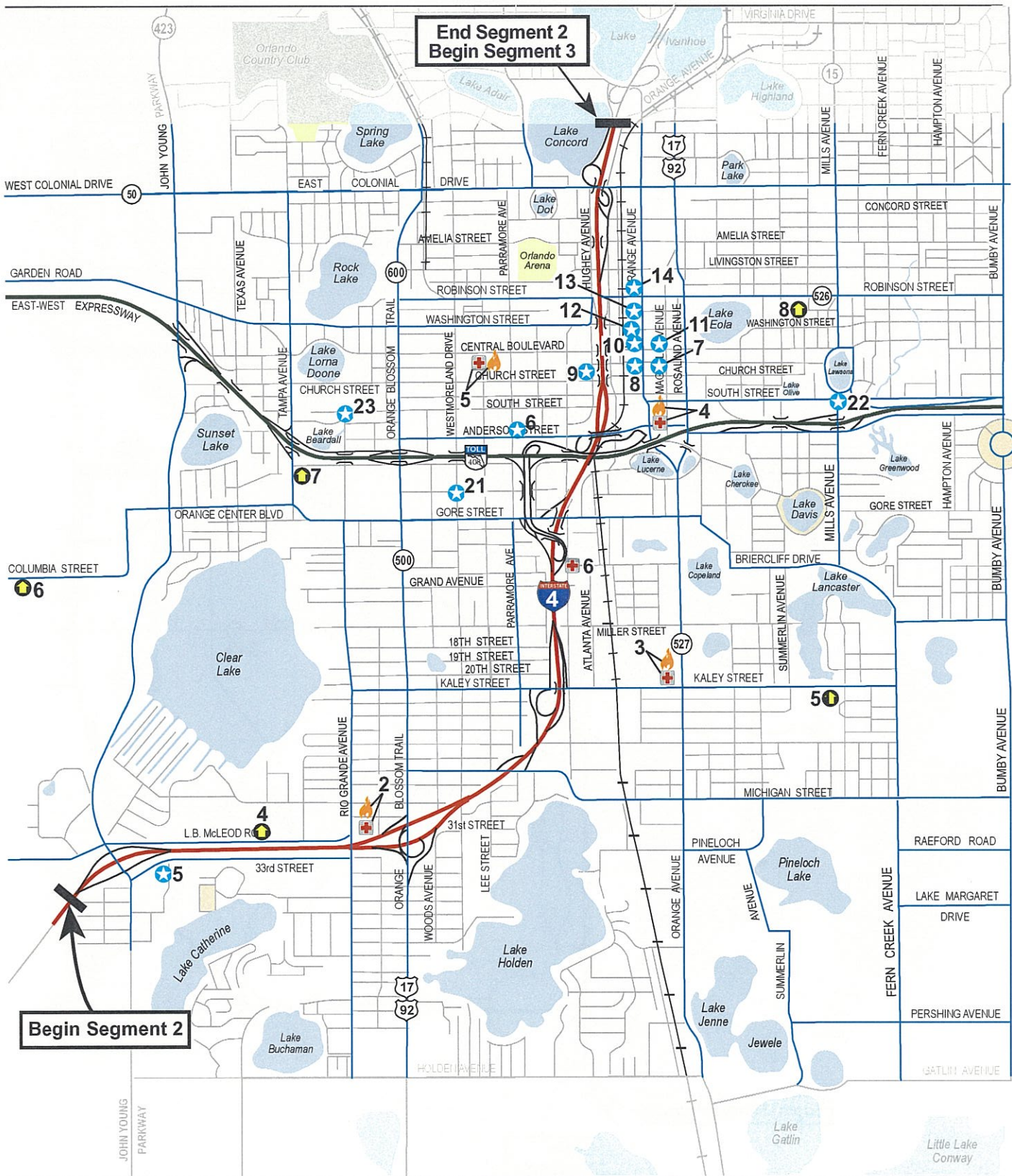


Figure 3-9
Police/Fire/EMS/Emergency Shelters

I-4 PD&E Study - Section 2
Segment 2 of 6





Note: All facilities are referenced in Table 3-33 except where noted.

 Fire Station

 EMS


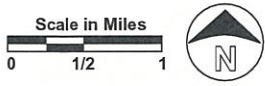
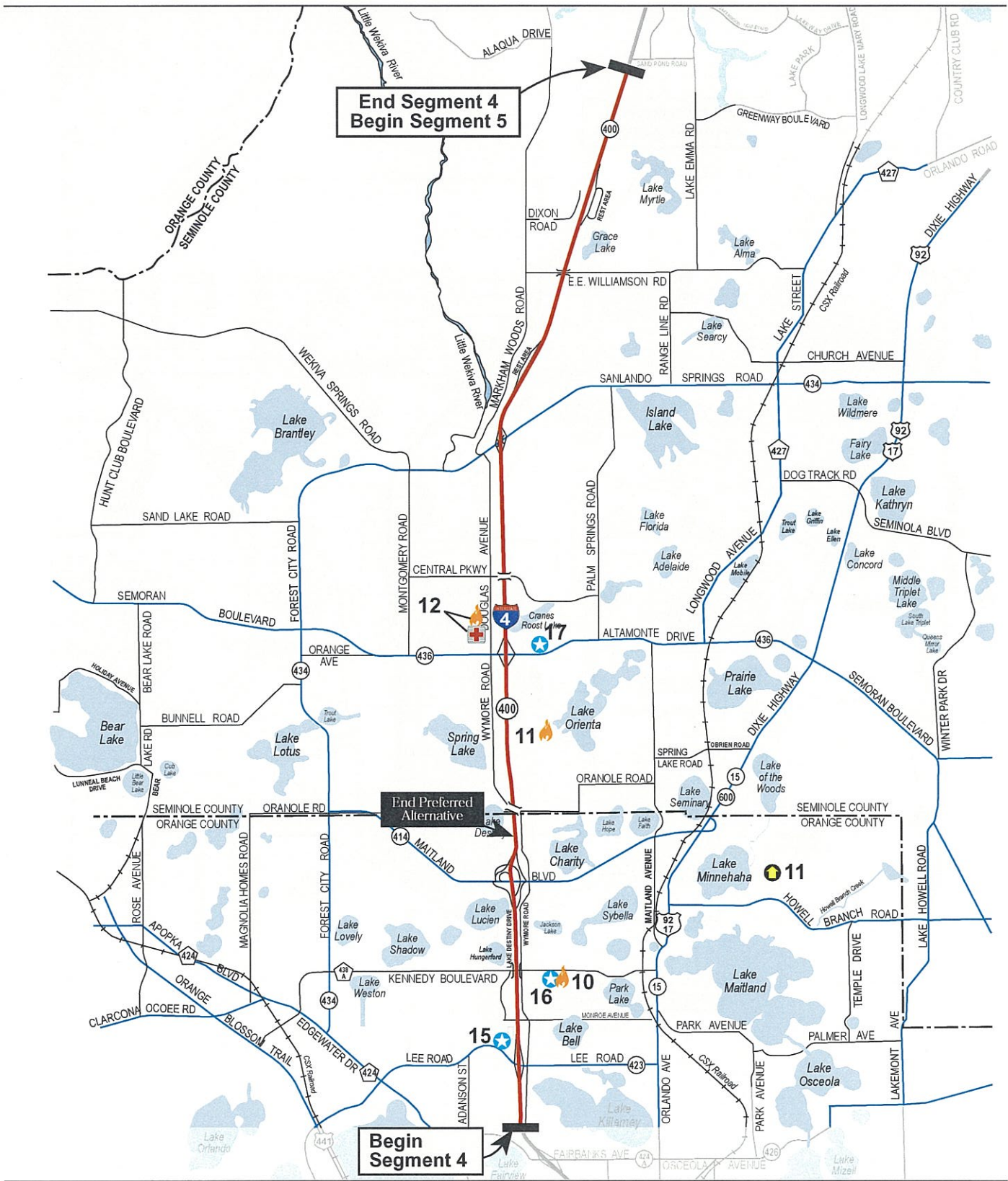
 Emergency Shelter
(Refer to Table 3-34)



Figure 3-9
Police/Fire/EMS/Emergency Shelters

I-4 PD&E Study - Section 2
Segment 3 of 6



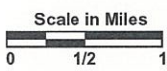
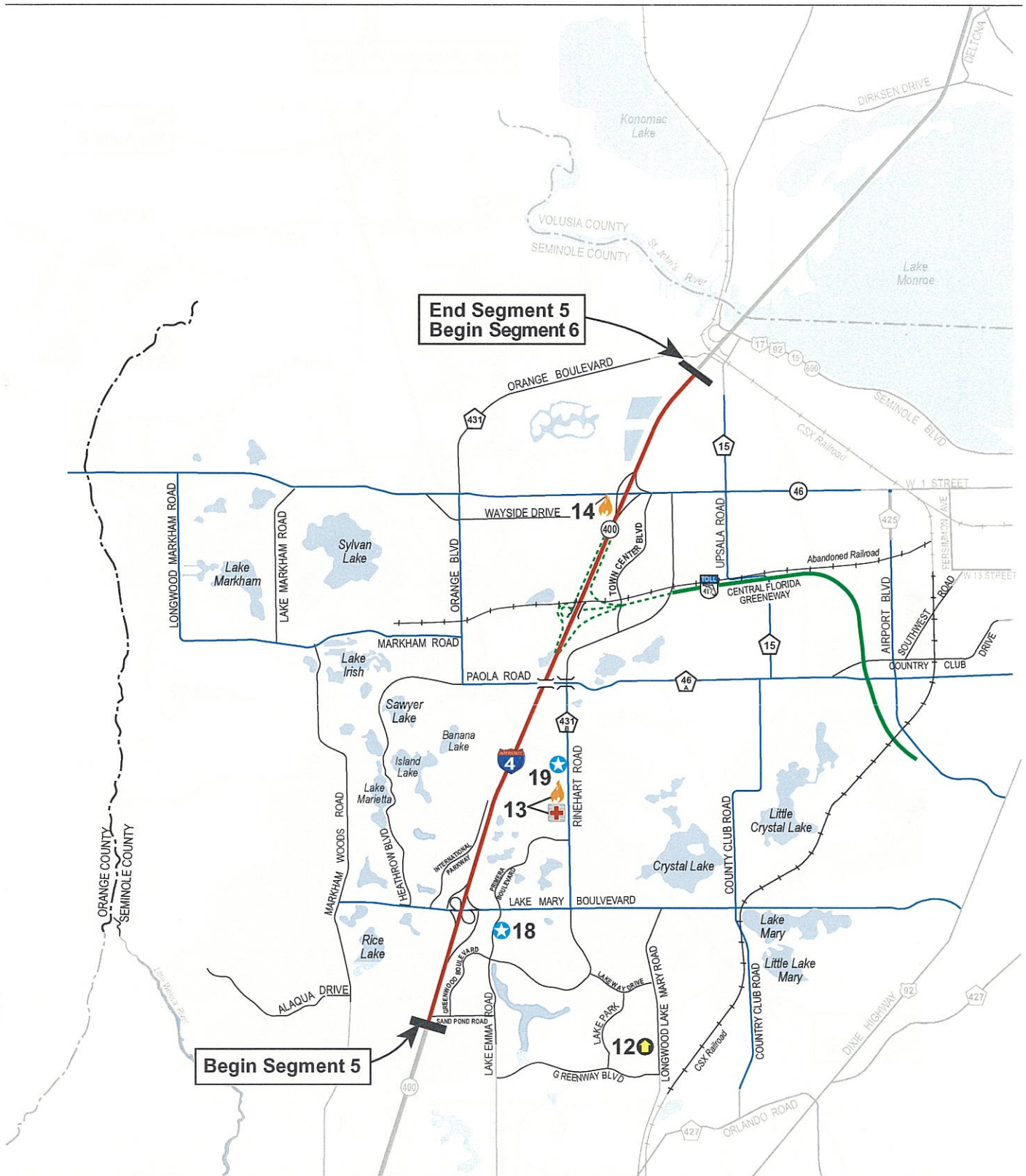
Note: All facilities are referenced in Table 3-33 except where noted.

- Police/Sheriff Departments
- Fire Station
- EMS
- Emergency Shelter (Refer to Table 3-34)

Figure 3-9
Police/Fire/EMS/Emergency Shelters

I-4 PD&E Study - Section 2
 Segment 4 of 6





Note: All facilities are referenced in Table 3-33 except where noted.

Police/Sheriff Departments

EMS

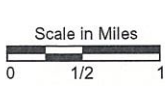
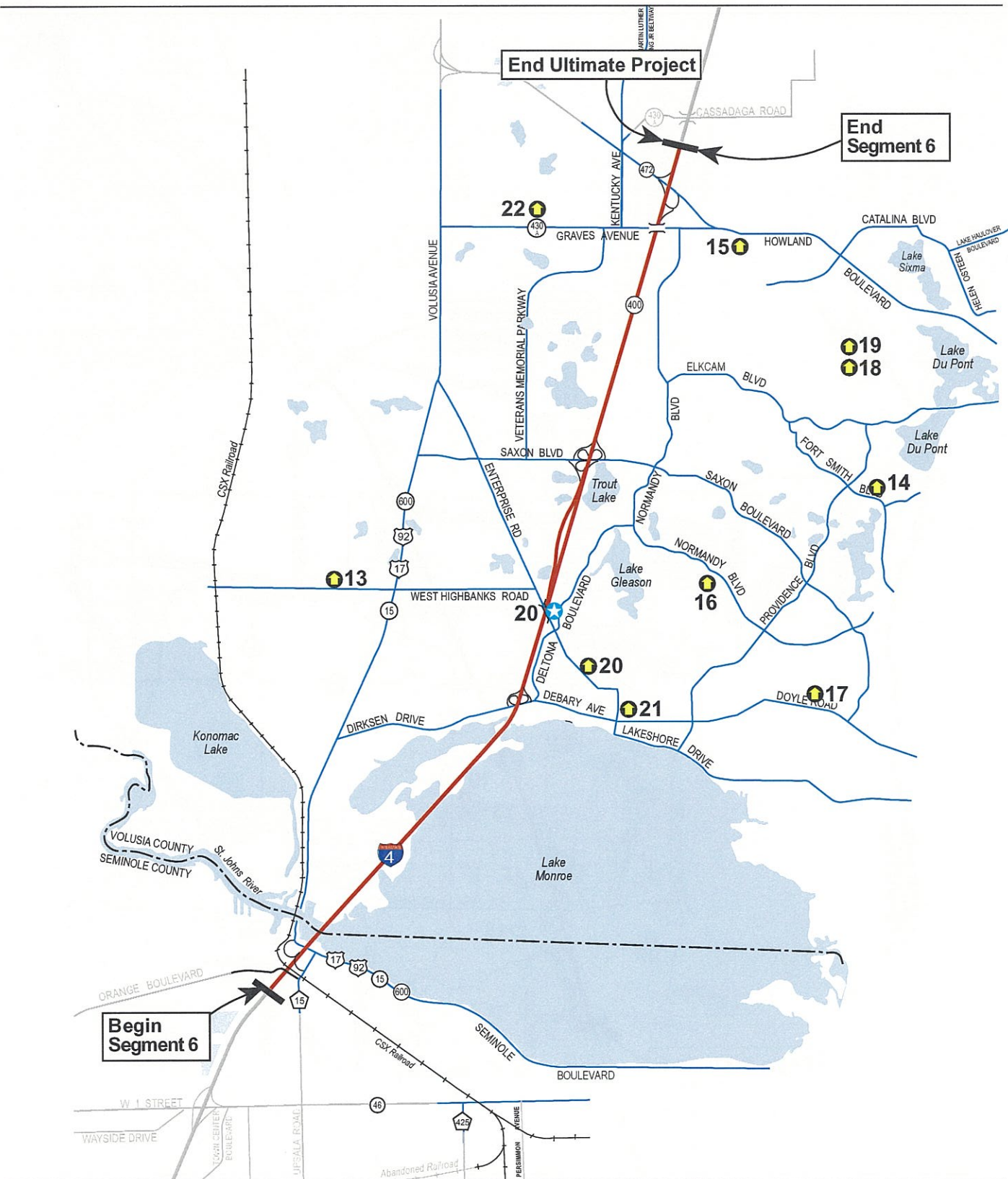
Fire Station

Emergency Shelter (Refer to Table 3-34)



Figure 3-9
Police/Fire/EMS/Emergency Shelters

I-4 PD&E Study - Section 2
Segment 5 of 6



Note: All facilities are referenced in Table 3-33 except where noted.

Police/Sheriff Departments

Emergency Shelter (Refer to Table 3-34)

Figure 3-9
Police/Fire/EMS/Emergency Shelters

I-4 PD&E Study - Section 2
 Segment 6 of 6



Table 3-33. Police, Sheriff, Fire, and EMS

Map No.	Facility Name	Address	Jurisdiction
Police and Sheriff			
Segment 1			
1	Sector 5 – Tourist Oriented Policing	6825 Westwood Boulevard	Orange County Sheriff
2	Sector 5 – Tourist Oriented Policing, Crime Prevention	6544 Carrier Drive	Orange County Sheriff
2	Substation 7 - I-Drive	6544 Carrier Drive	Orlando
3	Evidence	4536 35 th Street	Orange County Sheriff
4	Material Control/Supply	4102 L.B. McLeod Road	Orange County Sheriff
Segment 2			
5	Criminal Investigations, Forensics, Human Resources	2450 33 rd Street	Orange County Sheriff
5	Orange County Sheriff's Operations Center	2400 W. 33 rd Street	Orange County Sheriff
6	Substation 12 – Parramore Heritage-North & South	445 S. Parramore Avenue	Orlando
7	Court Services Division	23 S. Court Avenue	Orange County Sheriff
8	Psychological Services	1 N. Orange Avenue	Orange County Sheriff
8	Court Services Division	1 N. Orange Avenue	Orange County Sheriff
9	Orlando Police Department – Headquarters	100 S. Hughey Avenue	Orlando
10	Court Services Division	425 N. Orange Avenue	Orange County Sheriff
11	Court Services Division	65 E. Central Boulevard	Orange County Sheriff
11	Fiscal Management	205 E. Central Boulevard	Orange County Sheriff
11	Special Operations Division Command Offices	25 E. Central Boulevard	Orange County Sheriff
12	Downtown Bike Office	46 W. Washington Street	Orlando
13	Court Services Division	150 N. Orange Avenue	Orange County Sheriff
14	Court Services Division	250 N. Orange Avenue	Orange County Sheriff
21	Orlando Police Substation	948 W. Conley Street	Orlando
22	Orlando Police Substation	1214 E. South Street	Orlando
23	Orlando Police Substation	Rio Grande Avenue & South Street	Orlando
Segment 4			
15	Sector 1 – Problem Oriented Policing, Diplomat Center	625 Lee Road	Orange County Sheriff
16	Eatonville Police Station	11 Peoples Avenue	Eatonville
17	Burdines Substation	451 East Altamonte Drive	Altamonte Springs
Segment 5			
18	LMPD	3677 Lake Emma Road	Lake Mary
19	District 3 Substation	351 Rinehart Road	Lake Mary
Segment 6			
20	District 4 Substation	840 Deltona Boulevard	Volusia County Sheriff
Fire Departments and Emergency Management Services (EMS)			
Segment 1			
1	OFD Station # 10 & EMS	5655 Vineland Road	Orlando
Segment 2			
2	Holden Heights Station #50 & EMS	1415 29 th Street	Orange County
3	OFD Station #5 & EMS	1818 S. Orange Avenue	Orlando
4	OFD Station #1 & EMS	439 S. Magnolia Avenue	Orlando
5	OFD Station #2 & EMS	700 W. Central Avenue	Orlando
6	Post Station (EMS only)	1107 S. Atlanta Avenue	Rural Metro Ambulance
Segment 3			
7	OFD Station #3 & EMS	2406 Elizabeth Avenue	Orlando
8	Post Station (EMS only)	Corner of I-4 and Fairbanks Avenue	Rural Metro Ambulance
9	Killarney OCFD Station #4 & EMS	4412 Fairview Avenue	Orange County
Segment 4			
10	EFD Station #1	11 Peoples Street	Eatonville
11	ASFD Station #14	600 Hathaway Drive	Altamonte Springs
12	ASFD Station #12 & EMS	325 Douglas Avenue	Altamonte Springs
Segment 5			
13	LMFD Station #37 & EMS	351 Rinehart Road	Lake Mary
14	SCFD Station #34	4905 W. SR 46	Seminole County

In Volusia County, both hospital emergency teams and fire department EMS teams are called to the scene of an emergency to provide medical services. The hospitals in Volusia County also contract ambulance services out to private providers. Because of the number of fire stations throughout the county, the Volusia County fire services EMS teams usually arrive first at the scene of an emergency situation.

Below is a brief discussion of each of the potentially affected facilities.

Segment 1

Sector 5 - Tourist Oriented Policing (Map No. 1 Police) – This facility is operated by the Orange County Sheriff's Department. It is located on Westwood Boulevard near Sea World. The service area extends from the Osceola County line to International Drive and Sand Lake Road. The average response time to emergency calls is about 6.2 minutes. The average number of calls received by this unit for 1997 totaled approximately 35,260. Staff consists of 49 sworn personnel and four civilians. In addition, there are 18 sworn personnel who are contracted through Walt Disney World to provide services for the Walt Disney World properties.

Segments 2, 3, and 6

None of the facilities located in Segments 2, 3, and 6 are anticipated to be directly impacted by the proposed project.

Segment 4

Altamonte Springs Fire Department Station #12 (Map No. 12 Fire) – This fire station is located on Douglas Avenue in Altamonte Springs. There are seven employees that respond to fire rescue calls. The service area extends from I-4 and Lake Mary Boulevard on the north to Maitland Boulevard and I-4 on the south. The approximate response time is about three to four minutes. During 1997, the station responded to 4,048 calls. In addition to providing fire rescue assistance, the station also provides emergency and medical services.

Segment 5

Seminole County Fire Department Station #34 (Map No. 14 Fire) – Station 34 provides emergency fire and rescue service to the unincorporated areas of Seminole County. This station also serves the City of Lake Mary when additional backup is required. Located on West SR 46 near I-4, the station is equipped with three shifts, five employees per shift. The fire and rescue team responds to emergency calls, which has an average response time of about five minutes. The service area boundaries extend to the county line on the west and north sides, north of CR 46A to Upsala Road on the east. This station responded to approximately 759 calls during 1997.

3.1.2.2.11 Emergency Shelters

Major transportation highways within the Central Florida region, including I-4, are used for evacuation purposes especially during emergency situations. According to the Orange County Emergency Management Department, tropical storms and hurricanes are often the primary reason for evacuation. Since Orlando is centrally located within the state, many evacuees who reside in the coastal areas travel inland to seek emergency shelter.

Due to the frequency of hurricane conditions, some of the shelters have been designated by the American Red Cross with a strength level. For example, a category 3 shelter can withstand the winds and other destructive forces of a category 3 storm.

Listed emergency shelters were identified within one-half mile of the I-4 corridor. A one-half mile limit was based on the proximity of the I-4 corridor to these facilities and potential access issues. A total of 22 emergency shelters have been identified by segment in Table 3-34 and presented on Figure 3-9. There are no emergency shelters located along the project corridor that are anticipated to be directly impacted by the proposed improvements.

Table 3-34. Emergency Shelters

Map No.	Facility Name	Address	Jurisdiction
Segment 1			
1	Dr. Phillips High School	6500 Turkey Lake Road	Orlando
2	Southwest Middle School	6450 Dr. Phillips Boulevard	Orange County
3	Westridge Middle School	3800 W. Oak Ridge Road	Orange County
Segment 2			
4	Memorial Middle School	2220 W. 29 th Street	Orlando
5	Boone High School	2000 S. Mills Avenue	Orlando
6	Carver Middle School	4500 W. Columbia Street	Orlando
7	Jones High School	1400 W. Cypress Street	Orlando
8	Howard Middle School	800 E. Robinson Street	Orlando
Segment 3			
9	Edgewater High School	3100 Edgewater Drive	Orlando
10	Lee Middle School	1201 Maury Road	Orlando
Segment 4			
11	Maitland Middle School	1901 Choctaw Trail	Maitland
Segment 5			
12	Lake Mary High School	655 Longwood/Lake Mary Road	Seminole County
Segment 6			
13	DeBary Elementary	88 W. Highbanks Road	DeBary
14	Deltona Lakes Elementary	2022 Adelia Boulevard	Volusia County
15	Deltona High School	100 Wolf Pack Run	Volusia County
16	Discovery Elementary	975 Abigail Drive	Volusia County
17	Forest Lake Elementary	1600 Doyle Road	Volusia County
18	Galaxy Middle School	2400 Eustace Avenue	Volusia County
19	Timbercrest Elementary	2401 Eustace Avenue	Volusia County
20	Deltona Middle School	250 Enterprise Road	Volusia County
21	Enterprise Elementary	211 Main Street	Volusia County
22	Orange City Elementary	555 E. University Avenue	Orange City

3.1.3 Environmental Justice

This environmental justice analysis for the I-4 PD&E Study - Section 2 is prepared in compliance with Executive Order 12898, Environmental Justice, and the U.S. Department of Transportation (DOT) Order on Environmental Justice. Environmental Justice is an integral part of federal agency policy that provides guidelines to review proposed impacts of a project on the surrounding community to determine the extent of the impacts on particular populations. Executive Order (EO) 12898 requires that, "each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, *disproportionately high and adverse human health or environmental effects* of its programs, policies, and activities on *minority populations and low-income populations.*"

This analysis focuses on the populations located within the area potentially affected by the proposed I-4 improvements. In accordance with the DOT Order, the analysis identifies areas of significant minority and low-income populations and investigates the location of significant impacts (as documented in Sections 4.1.2 and 4.1.5 of this report) in relation to these populations.

3.1.3.1 Concentrations of Minority and Other Special Interest Groups

Guidelines to environmental justice issues are addressed in the *Guidance for Federal Agencies on Key Terms in Executive Order 12898*, developed by the Interagency Working Group on Environmental Justice, August 1995. This reference was used to develop the project-specific definitions of terms used in the analysis following the review of demographic data available and the review of the following resources: *CEQ Environmental Justice Guidance Under the National Environmental Policy Act*, 1998; *EPA Guidance for Consideration of Environmental Justice in Clean Air Act 309 Reviews*, July 1995; and *EPA Guidance For Incorporating Environmental Justice Concerns In EPA's NEPA Compliance Analyses*, April 1998.

Table 3-35 and Figure 3-10 presents the areas with concentrations of minorities, poverty level, and elderly populations that exist within the Ultimate project corridor.

Table 3-35. Minority Communities and Populations

1990 Census Tract	Elderly Population (>30%)	Transit Dependent (>10%)	Below Poverty Level (>25%)	Low Income Population (%)*	Minority Population (>50%)	Median Household Income (dollars)	Per Capita Income (dollars)
Minority Populations							
104.00-1	11.5	39.4	49.9	93.5	97.4	6,710	4,683
104.00-2	10.3	18.9	58.1	84.2	99.2	7,797	4,744
105.00-1	12.8	22.1	46.1	81.2	92.7	11,803	6,726
105.00-2	10.0	28.7	49.9	83.5	100	13,341	6,871
106.00-2	2.6	20.5	16.5	49.5	94.0	22,321	9,373
106.00-3	4.4	32.0	56.8	74.7	68.4	10,104	5,473
106.00-4	1.6	14.9	51.1	62.0	73.0	19,107	7,000
106.00-5	11.7	35.4	55.8	89.1	92.0	10,880	4,806
106.00-6	8.8	30.9	60.0	78.6	100	12,969	4,496
106.00-7	12.0	24.6	59.5	81.3	93.0	8,098	4,510
115.00-1	7.1	11.2	33.1	67.7	66.8	18,173	6,989
116.00-3	4.6	5.3	28.8	56.1	85.2	21,000	8,054
116.00-4	15.9	1.2	9.9	38.2	54.7	31,583	13,882
117.02-1	3.9	31.2	42.0	72.6	100	14,735	5,937
117.02-2	14.2	10.6	31.6	68.8	98.8	16,406	7,607
118.00-2	9.2	17.9	49.2	72.7	93.3	11,806	6,089
118.00-3	7.0	4.7	22.6	65.8	84.0	16,786	7,014
145.00-1	4.7	2.6	21.3	60.2	57.2	21,062	11,397
146.03-1	0	0	57.7	100.0	57.7	5,360	3,850
152.01-1	10.4	2.0	28.3	49.3	78.1	23,750	10,553
152.02-1	8.8	7.7	22.6	49.5	53.0	24,430	10,343
154.01-1	3.6	0.0	45.4	84.2	53.3	16,648	6,613
155.02-1	13.7	21.5	32.8	75.6	99.0	14,423	5,050
155.02-2	5.6	8.4	21.5	57.1	91.5	21,477	7,546
170.01-1	4.0	4.5	13.9	38.8	91.3	30,033	9,264
170.01-3	5.5	7.8	19.8	40.7	88.5	30,114	12,939
Poverty Level							
104.00-1	11.5	39.4	49.9	93.5	97.4	6,710	4,683
104.00-2	10.3	18.9	58.1	84.2	99.2	7,797	4,744
105.00-1	12.8	22.1	46.1	81.2	92.7	11,803	6,726
105.00-2	10.0	28.7	49.9	83.5	100	13,341	6,871
106.00-1	23.6	20.6	39.7	88.9	20.2	8,430	7,165
106.00-3	4.4	32.0	56.8	74.7	68.4	10,104	5,473
106.00-4	1.6	14.9	51.1	62.0	73.0	19,107	7,000
106.00-5	11.7	35.4	55.8	89.1	92.0	10,880	4,806
106.00-6	8.8	30.9	60.0	78.6	100	12,969	4,496
106.00-7	12.0	24.6	59.5	81.3	93.0	8,098	4,510
110.00-3	11.7	5.5	29.4	56.5	30.5	19,875	9,612
115.00-1	7.1	11.2	33.1	67.7	66.8	18,173	6,989
115.00-2	7.6	16.8	33.3	66.3	46.5	16,379	6,887
116.00-1	10.9	14.7	26.2	73.5	34.9	15,000	9,016
116.00-2	13.7	5.8	26.6	63.6	27.2	16,250	11,791
116.00-3	4.6	5.3	28.8	56.1	85.2	21,000	8,054
117.02-1	3.9	13.2	42.0	72.6	100	14,735	5,937
117.02-2	14.2	10.6	31.6	68.8	98.8	16,406	7,607
118.00-2	9.2	17.9	49.2	72.7	93.3	11,806	6,089
144.00-3	12.0	6.9	33.0	51.8	31.0	16,833	6,742
154.01-1	3.6	0.0	45.4	84.2	53.3	16,648	6,613
155.02-1	13.7	21.5	32.8	75.6	99.0	14,423	5,050
Elderly Populations							
101.00-3	88.9	0.0	12.1	85.6	2.2	12,292	14,231
103.00-2	35.5	5.0	22.1	72.9	9.1	11,549	17,687
103.00-3	75.0	6.4	15.8	64.1	2.4	15,417	17,860

Table 3-35. Minority Communities and Populations (Continued)

1990 Census Tract	Elderly Population (>30%)	Transit Dependent (>10%)	Below Poverty Level (>25%)	Low Income Population (%)*	Minority Population (>50%)	Median Household Income (dollars)	Per Capita Income (dollars)
159.02-1	56.2	0.0	14.0	62.5	3.6	13,354	22,229
159.02-2	56.2	2.3	7.3	50.6	5.2	24,205	15,067
215.04-4	33.0	0.0	2.9	41.1	7.4	34,393	16,386
908.02-2	90.7	0.0	7.8	45.2	0.6	21,827	17,913
908.02-3	51.7	2.0	11.4	48.5	7.3	19,968	12,518
908.02-6	56.7	0.0	7.7	52.9	3.3	19,237	12,154
910.06-2	40.8	0.0	12.1	48.0	6.1	18,364	14,193
910.06-5	36.6	0.0	14.1	43.8	2.2	23,115	11,633
910.07-5	33.7	0.0	6.8	33.5	4.8	25,040	9,995
Transit Dependency							
102.00-1	17.3	12.3	24.6	58.6	5.7	21,250	12,982
104.00-1	11.5	39.4	49.9	93.5	97.4	6,710	4,683
104.00-2	10.3	18.9	58.1	84.2	99.2	7,797	4,744
105.00-1	12.8	22.1	46.1	81.2	92.7	11,803	6,726
105.00-2	10.0	28.7	49.9	83.5	100	13,341	6,871
106.00-1	23.6	20.6	39.7	88.9	20.2	8,430	7,165
106.00-2	2.6	20.5	16.5	49.5	94.0	22,321	9,373
106.00-3	4.4	32.0	56.8	74.7	68.4	10,104	5,473
106.00-4	1.6	14.9	51.1	62.0	73.0	19,107	7,000
106.00-5	11.7	35.4	55.8	89.1	92.0	10,880	4,806
106.00-6	8.8	30.9	60.0	78.6	100	12,969	4,496
106.00-7	12.0	24.6	59.5	81.3	93.0	8,098	4,510
115.00-1	7.1	11.2	33.1	67.7	66.8	18,173	6,989
115.00-2	7.6	16.8	33.3	66.3	46.5	16,379	6,887
116.00-1	10.9	14.7	26.2	73.5	34.9	15,000	9,016
117.02-1	3.9	13.2	42.0	72.6	100	14,735	5,937
117.02-2	14.2	10.6	31.6	68.8	98.8	16,406	7,607
118.00-2	9.2	17.9	49.2	72.7	93.3	11,806	6,089
155.02-1	13.7	21.5	32.8	75.6	99.0	14,423	5,050

*Low income is defined as 80 percent of the median household income for each respective county. The low income for Orange County was \$24,202, \$28,510 for Seminole County, and \$19,854 for Volusia County.

Source: U.S. Department of Commerce Bureau of the Census, 1990 Census of Population and Housing, Orange, Seminole, Volusia Counties.

High concentrations of minority persons and/or persons with incomes below the poverty level were found in the following regions:

- East of I-4, just north of Sand Lake Road
- West of I-4 near the downtown Orlando area, south of SR 50 (Colonial Drive)
- Both sides of I-4 within the Eatonville area, between Lee Road and Maitland Boulevard

The concentration of elderly persons is primarily located in the following areas:

- East of I-4 near the SR 408 interchange
- East of I-4, north of Par Street
- East of I-4, south of SR 434
- Both sides of I-4, along Normandy Boulevard and south of Graves Avenue

Census tracts with high concentrations of transit-dependent persons are primarily located in the downtown area north of Kaley Street to east SR 50 (Colonial Drive) and in the Eatonville area.

3.1.3.2 Minority/Low-Income Neighborhoods

The minority and low-income census tract data illustrated in Figure 3-10 relates to 13 high minority and/or low-income neighborhoods within the Ultimate project corridor. Minority populations are predominantly African-American. These neighborhoods are shown in Figure 3-11. A brief discussion of each of these neighborhoods is presented in Section 3.1.2 Neighborhoods and Community Facilities. For more detailed discussions on minority and low-income neighborhoods within the study area, refer to the *Socioeconomic and Environment Report* (August 2000).

The following paragraphs discuss the minority population for the neighborhoods that are anticipated to be directly impacted by the proposed improvements.

Segments 1, 3, 5, and 6

None of the minority/low-income neighborhoods located in segments 1, 3, 5, and 6 are anticipated to be directly impacted by the proposed project.

Segment 2

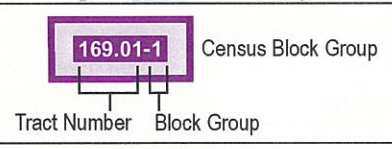
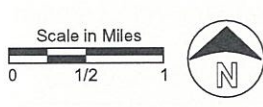
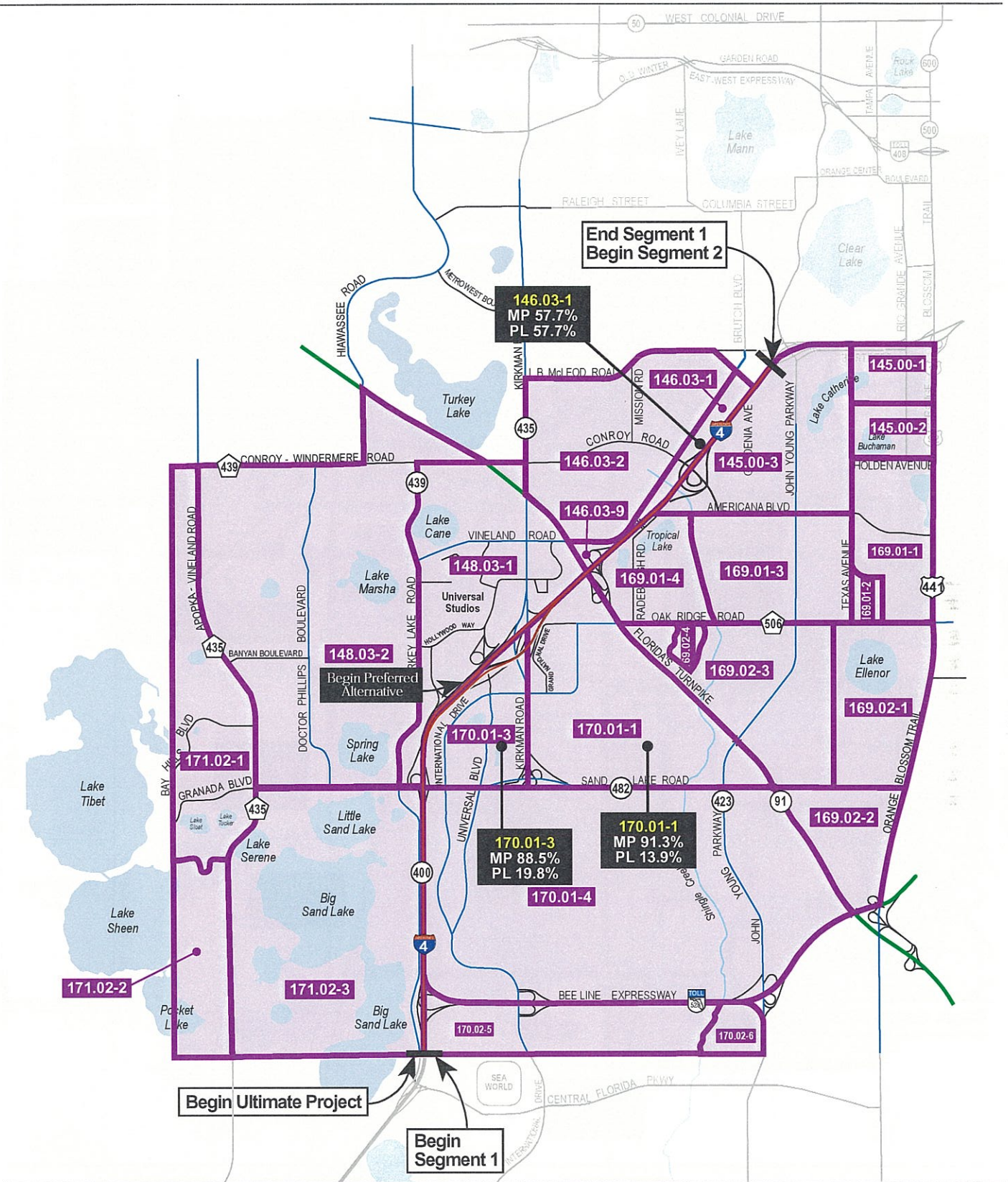
Angebilt (Census Tract-Block Group 144.00-3 and 145.00-1) -The census tract information indicates this area as having a minority population ranging between 30 and 60 percent, with approximately 35 percent of the population living below poverty level.

Holden Heights (Census Tract-Block Group 115.00-1 and 115.00-2, 116.00-1 through 116.00-4) -This neighborhood is located within a minority and low-income census tract. This community has been targeted as part of Orange County's redevelopment program under the TCI and Restore Orlando. Census data indicates that the percentage of minority population ranges between 50 and 70, and for persons living below the poverty level ranges between 25 and 35 percent.

Holden-Parramore (Census Tract-Block Group 104.00-2, 105.00-1 and 105.00-2, 106.00-3 and 106.00-4) - This neighborhood is located within high minority (approximately 93 to 100 percent) and poverty level (50 to 60 percent) census tracts.

Segment 4

Bel Air Estates (Census Tract-Block Group 155.02-1 and 2) -This neighborhood has a high (nearly 100 percent) minority population. Approximately 25 to 30 percent of the population live below poverty level, and nearly 15 percent are transit-dependent.



MP Percent Minority Population
PL Percent Below Poverty Level Population
EP Percent Elderly Population
TP Percent Transit Dependand Population

Figure 3-10
Concentrations of Minorities
and Other Special Groups
 I-4 PD&E Study - Section 2
 Segment 1 of 6



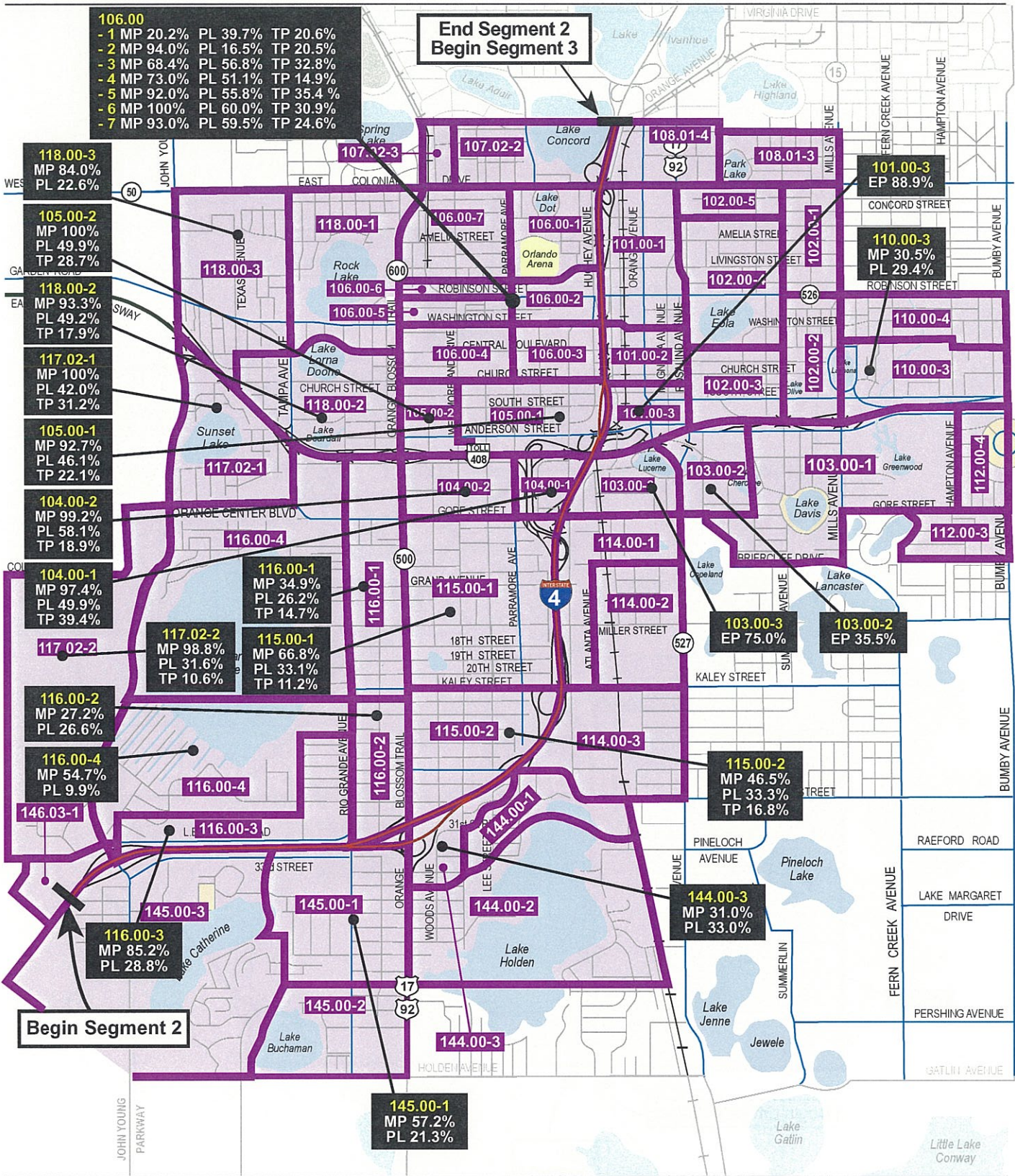
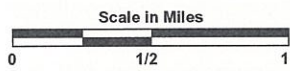
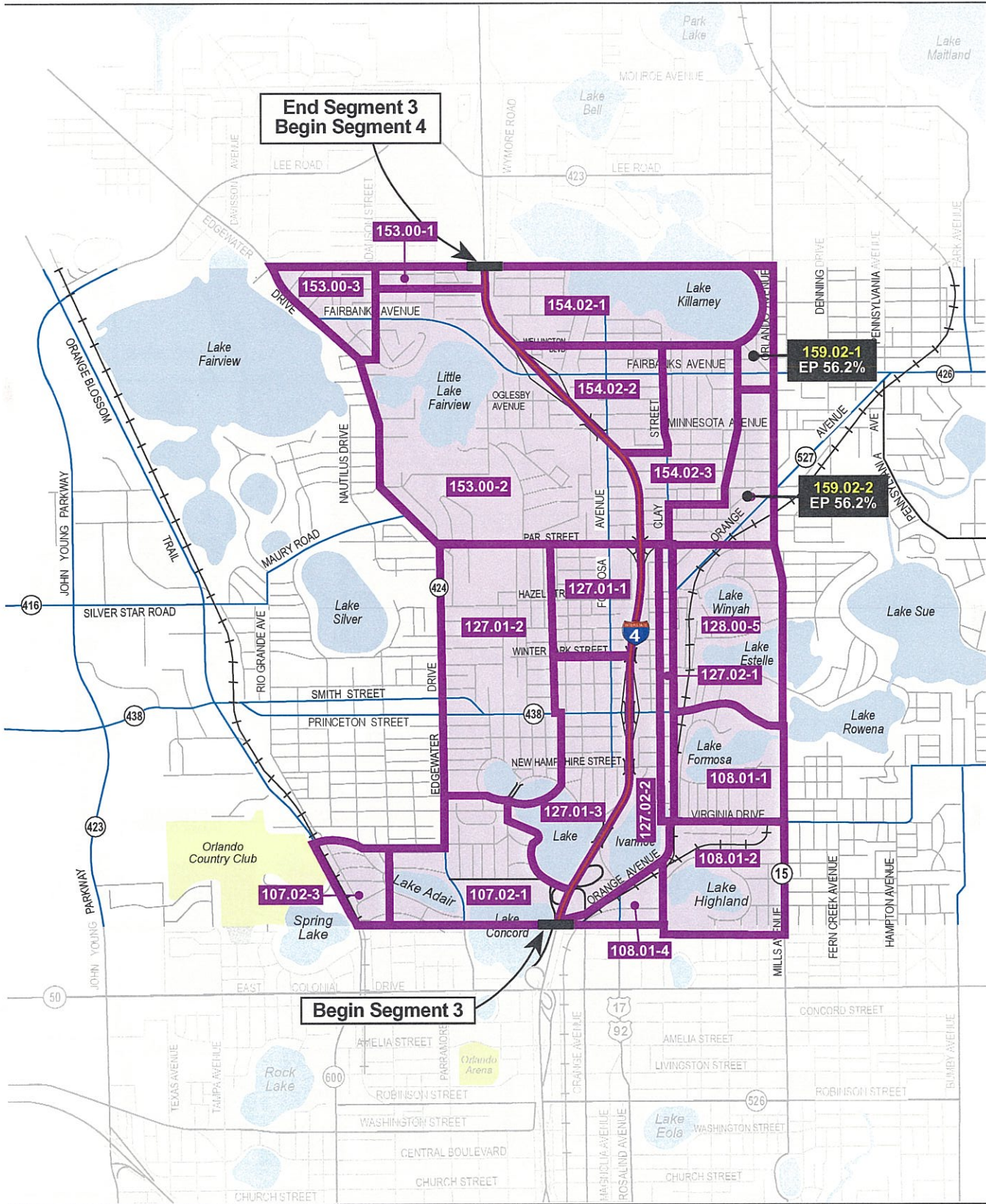


Figure 3-10
Concentrations of Minorities
and Other Special Groups
I-4 PD&E Study - Section 2
Segment 2 of 6





Census Block Group

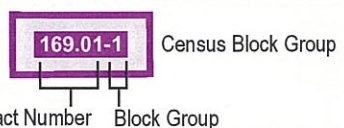
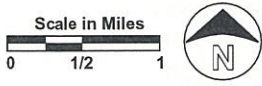
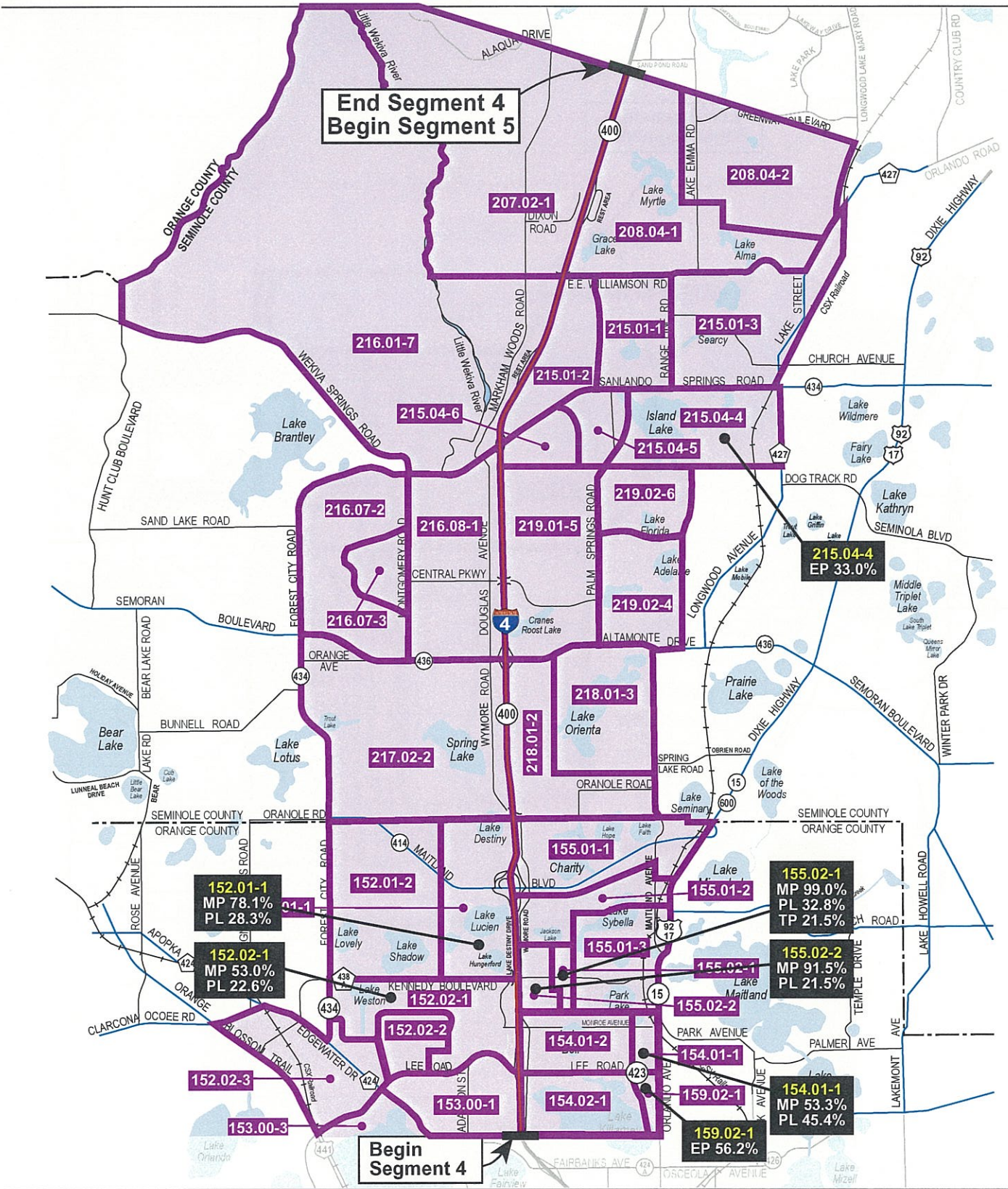
Tract Number Block Group

- MP Percent Minority Population
- PL Percent Below Poverty Level Population
- EP Percent Elderly Population
- TP Percent Transit Dependant Population



Figure 3-10
Concentrations of Minorities and Other Special Groups

I-4 PD&E Study - Section 2
 Segment 3 of 6



MP Percent Minority Population
 PL Percent Below Poverty Level Population
 EP Percent Elderly Population
 TP Percent Transit Dependand Population

Figure 3-10
Concentrations of Minorities
and Other Special Groups
 I-4 PD&E Study - Section 2
 Segment 4 of 6



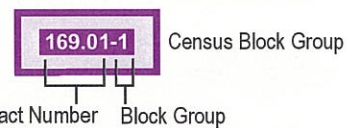
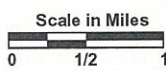
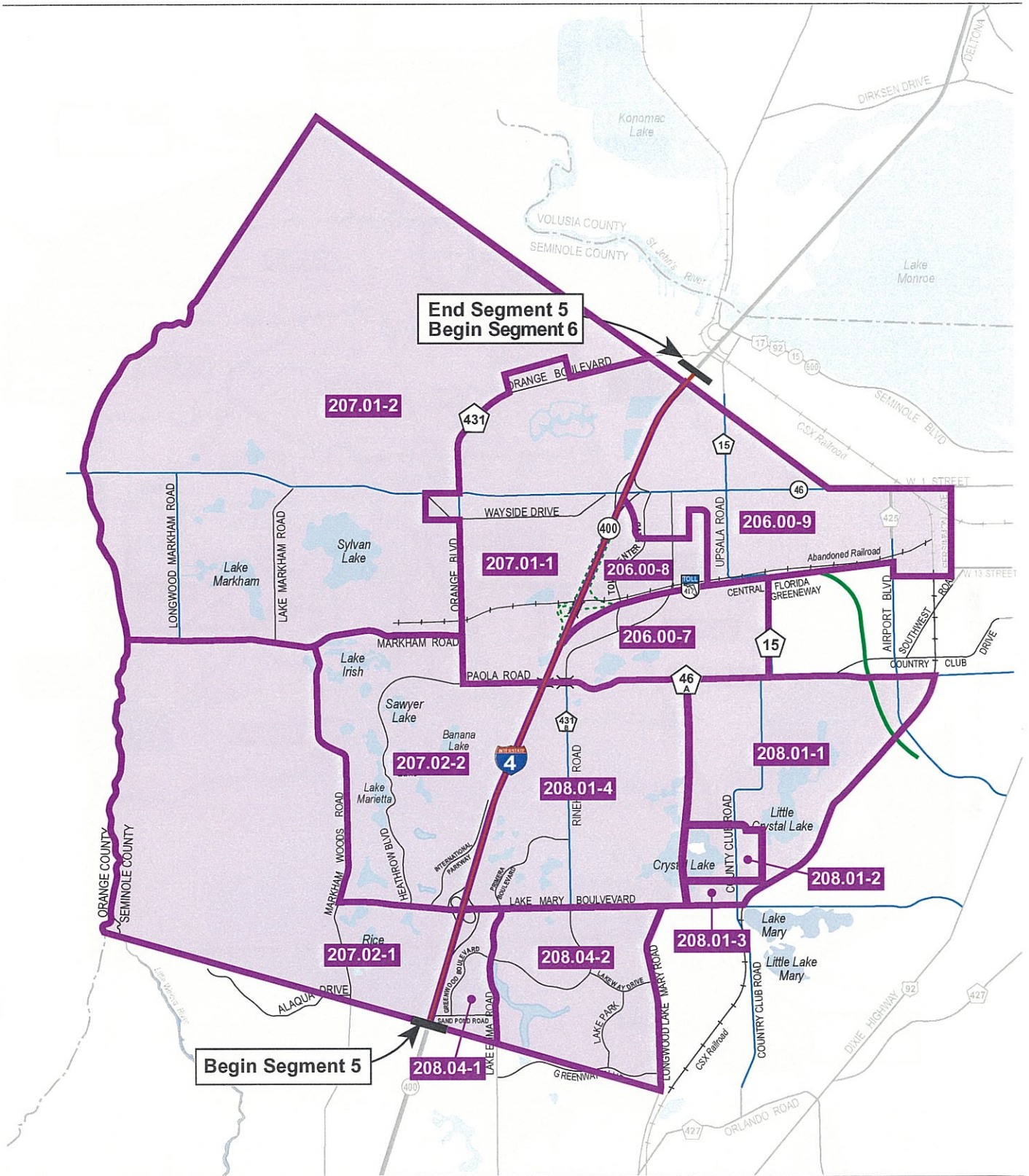


Figure 3-10
Concentrations of Minorities
and Other Special Groups
 I-4 PD&E Study - Section 2
 Segment 5 of 6

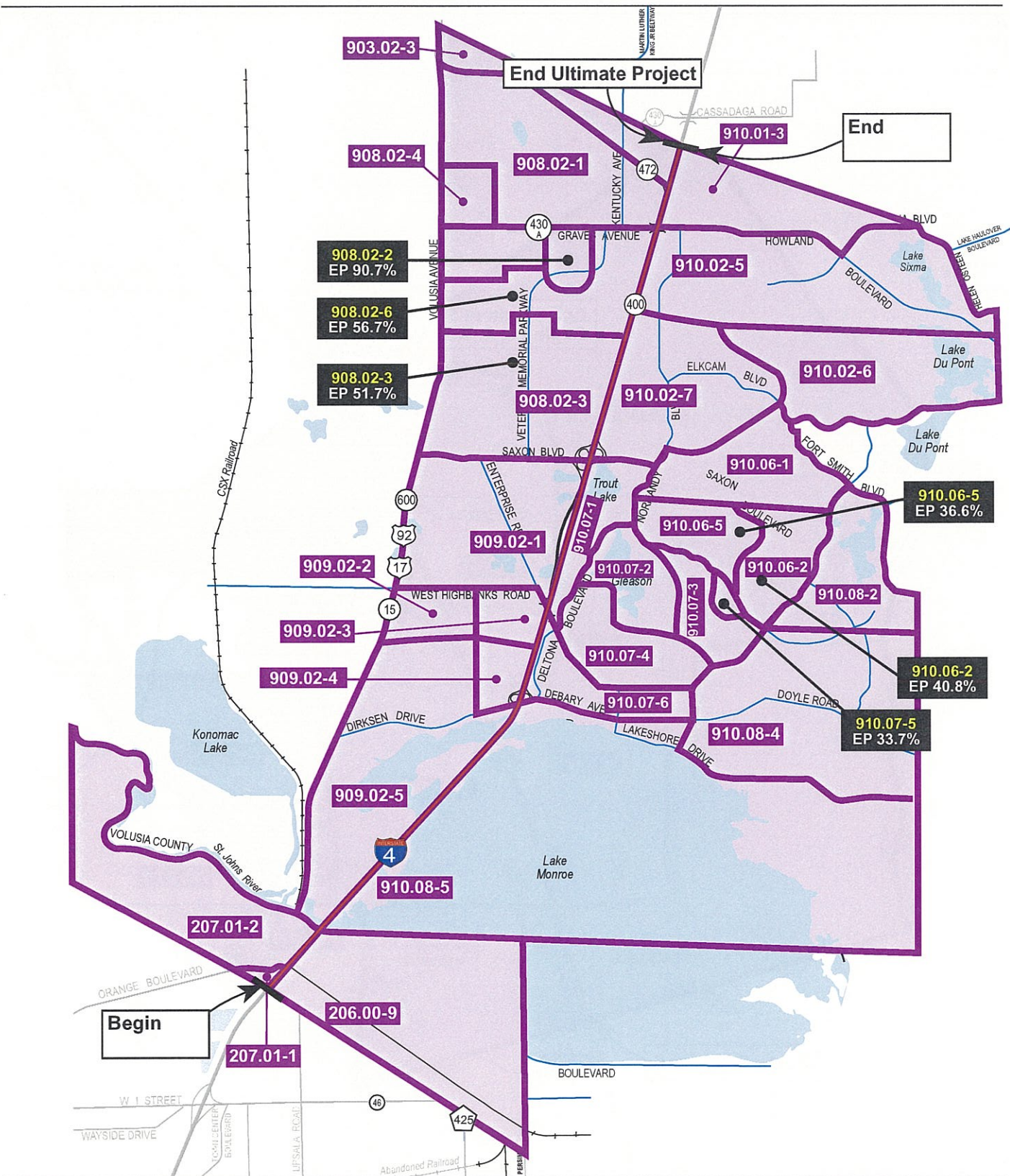


Figure 3-10
Concentrations of Minorities
and Other Special Groups
 I-4 PD&E Study - Section 2
 Segment 6 of 6



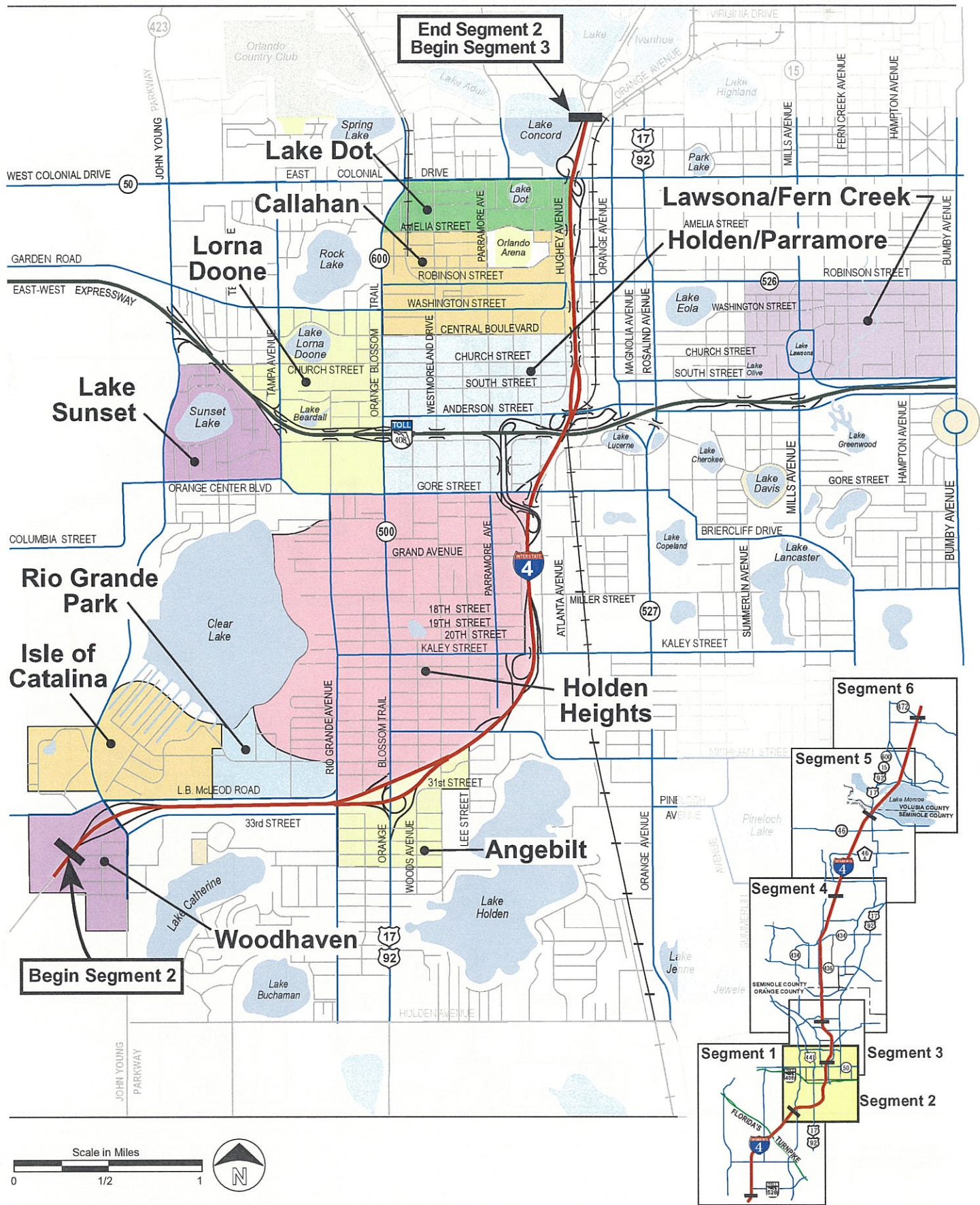


Figure 3-11
Minority and Low-Income Neighborhoods



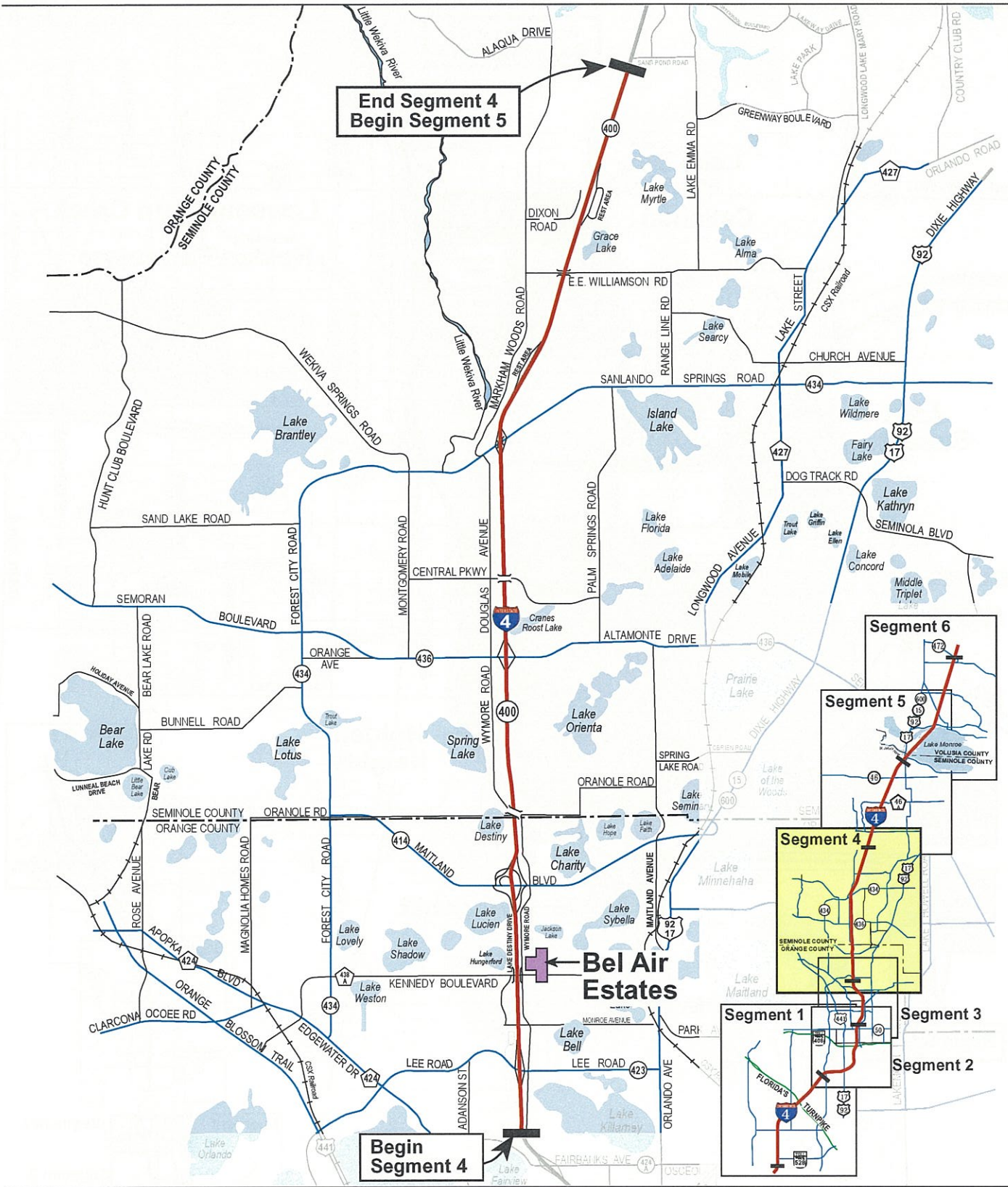


Figure 3-11
Minority and Low-Income Neighborhoods

I-4 PD&E Study - Section 2
 Segment 4 of 6



3.2 Cultural Resources

Section 106 of the National Historic Preservation Act (NHPA) of 1966 (Public Law 89-665, as amended), as implemented by 36 CFR 800 *Protection of Historic Properties*, protects those properties that are listed or determined eligible for inclusion in the NRHP. In addition, Section 4(f) of the Department of Transportation Act of 1966, as amended (49 U.S.C. 303) protects historic and/or cultural resources of national, state, or local significance and other natural public features from conversion to highway use unless there is no prudent or feasible alternative.

A Cultural Resource Assessment and Research Design was prepared in accordance with Section 106, Section 4(f), Chapter 267 of the Florida Historical Resources Act, and Part 2, Chapter 12 (*Archaeological and Historic Resources*) of FDOT's *PD&E Manual* (revised). A reconnaissance survey was conducted for the purpose of providing information to assist in the avoidance of NRHP-listed or potentially eligible properties or National Register Landmark properties. The reconnaissance included all significant historic, architectural, archaeological, and cultural resources within the defined Area of Potential Effects (APE) for the project, as listed in Table 3-36 and shown on Figure 3-12.

Table 3-36. Listed or Potentially Eligible NRHP Sites

Map No.	Site Number and NRHP Eligibility	Name	Location	Jurisdiction
Segment 2				
1	8OR4306– NRHP Listed in 1996	Griffin Park Historic District	Bounded by Avondale, South Division, Carter Street, I-4	Orlando
2	8OR8762 – Determined Ineligible in 2002	Carter Street Historic District	South side of Carter Street and west of Division Avenue	Orlando
3	8OR8699 – Determined Eligible in 1999	Parramore Avenue and Conley Street Historic District	731, 737, 737½AB&C, 741, 742, 744, 746, 748, 801-803, 805-807 S. Parramore Avenue 619-621, 623-625, 624 Conley Street	Orlando
4	8OR1293 – Determined Eligible in 1999	Woodford James Maxey House	638 W. Anderson Street, within Holden-Parramore Historic District	Orlando
5	8OR1947 – Determined Eligible in 1999	Dr. William Monroe Wells House	405 W. South Street, within Holden-Parramore Historic District	Orlando
6	8OR3394 – Determined Eligible in 1999	Masonry Vernacular Building	116 America Street	Orlando
7	8OR3377 – Determined Eligible in 1999	Westminster Retirement	84 West Lucerne Circle	Orlando
8	8OR110– NRHP Listed in 1984	J.J. Bridges House	50 W. Lucerne Circle	Orlando
9	8OR258 – NPS Certified in 1982	Lake Cherokee Historic District	Bounded by Anderson Street	Orlando
10	8OR111 – NRHP Listed in 1979	Peckham-Phillips House	135 N. Lucerne Circle, within Lake Cherokee Historic District	Orlando
11	8OR9088 – Determined Eligible in 1999	Greenwood Cemetery	South of SR 408, east of Hampton Avenue	Orlando
12	8OR8731 – NPS Certified in 1982	Downtown Orlando Historic District	Approx. bounded by Church Street, Magnolia Avenue, Washington Street; extends under and west of I-4 along Church Street	Orlando
13	8OR25 – NRHP Listed in 1976	Old Orlando Railroad Depot	76 W. Church Street, within Orlando Downtown Historic District	Orlando
14	8OR20 – Determined Eligible in 1999	Bumby Hardware Building	102 W. Church Street, within Orlando Downtown Historic District	Orlando
15	8OR183 – Determined Eligible in 1998	Harry P. Leu, Inc.	100 W. Livingston Street	Orlando
16	8OR3447 – Determined Eligible in 1998	Colonial Garage	62-70 W. Colonial Drive	Orlando
17	8OR187 – Determined Eligible in 1998	Judge J.M. Cheney House (Colonial Bank)	105 W. Colonial Drive	Orlando
Segment 3				
18	8OR8483 – Determined Eligible in 1999	College Park Historic District	East and west of I-4 between Colonial Drive and Princeton Street incl. Edgewater Drive, Edgewater Court, Alameda Street, Colonial Drive, Peachtree Road, Ivanhoe Boulevard, Orange Avenue	Orlando
19	8OR8498 – Determined Eligible in 1998	Victorian style residence	2739 Riddle Drive	Orlando
Segment 4				
20	8OR9101 – NRHP Listed in 1998	Eatonville Historic District	Wymore Road, Eaton Street	Eatonville
Segment 6				
21	8VO53 – Determined Eligible in 1999	Lake Monroe Outlet Midden	Within I-4 median to shoreline of Lake Monroe	Volusia County

Previous cultural resource assessment studies (CRAS) have shown that potential visual effects are the most far reaching. Accordingly, the APE for the project was defined as the area within which potential visual effects of the I-4 PD&E Study - Section 2 proposed improvements could be observed. As a result, the APE for historic structures and districts took into consideration the area within which potential visual effects of the improvement could be observed. Initially, this area was based on the existing vertical alignment of I-4. However, as the project progressed, it became apparent that certain alternatives might elevate portions of I-4, and these alternatives required further evaluation.

The preliminary APE was expanded in areas where elevating I-4 was being considered adjacent to significant or potentially significant individual resources and/or districts. In addition, the APE was expanded to include areas around interchanges and potential stormwater management facilities, as necessary.

Potential effects from the project alternatives are described in Section 4.2.1 of this report. A detailed assessment of effects on cultural resources is described in the *Cultural Resource Determination of Effects (CRDE)* developed in December 2000 and revised for the Preferred Alternative in April 2002.

The APE was reviewed by representatives of the State Historic Preservation Office (SHPO), FHWA, and FDOT during a visual reconnaissance of the project area in March 1997. Comments made at that meeting were incorporated into a presentation of the preliminary APE in February 1998. The revised APE was reviewed by SHPO in April 1998.

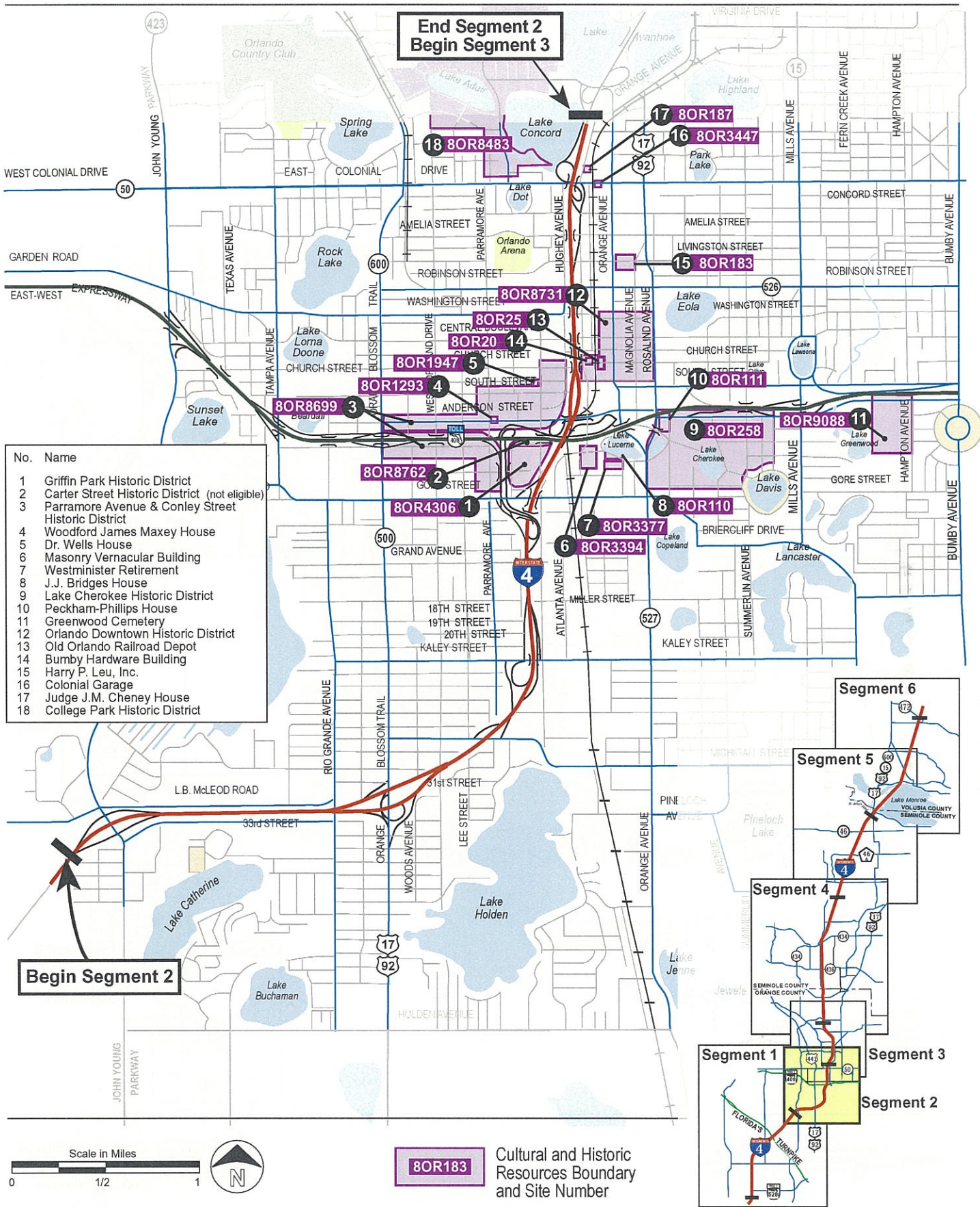
Once the APE was approved, all historic resources within the APE were identified and reviewed with FDOT, FHWA, and SHPO. A *Cultural Resource Assessment Survey (CRAS)* (July 1999) was developed and reviewed by FDOT, FHWA, and SHPO. In addition, a Cultural Resources Committee (CRC) was formed to review potentially adverse effects to cultural and historic/Section 4(f) resources. FDOT, FHWA, and SHPO are members of the CRC. Refer to Section 5.2.2.6 for more information regarding the CRC.

During the public meetings held as part of the public comment period for the DEIS, the College Park Neighborhood Association (CPNA) and area residents raised concerns regarding impacts to historic buildings along Peachtree Road in the vicinity of SR 50 (Colonial Drive) west of I-4, an area that was not included in the APE. In response to a request from the CPNA and the proximity of the proposed improvements to the Peachtree Road residences, the project team including the CRC determined that the APE required expansion so as to include all the properties along SR 50 (Colonial Drive) and Peachtree Road from I-4 to Edgewater Drive. This would incorporate any area where potential effects could occur due to changes to the SR 50 (Colonial Drive) interchange. Refer to the APE plans (February 2002) for an illustration of the APE for the Ultimate project and Preferred Alternative study areas.

In April 2002, an addendum to the 1999 CRAS report was developed and reviewed with SHPO. The *CRAS Addendum* describes the research considerations and methodology and survey results for the historic resources located within the enlarged APE. Nine historic buildings were identified within the enlarged APE. Six of the nine buildings would contribute to the College Park Historic District, and one, the John N. Huttig Estate at 435 Peachtree Road, was listed in the NRHP in January 1993.

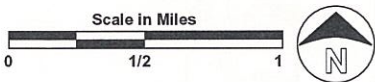
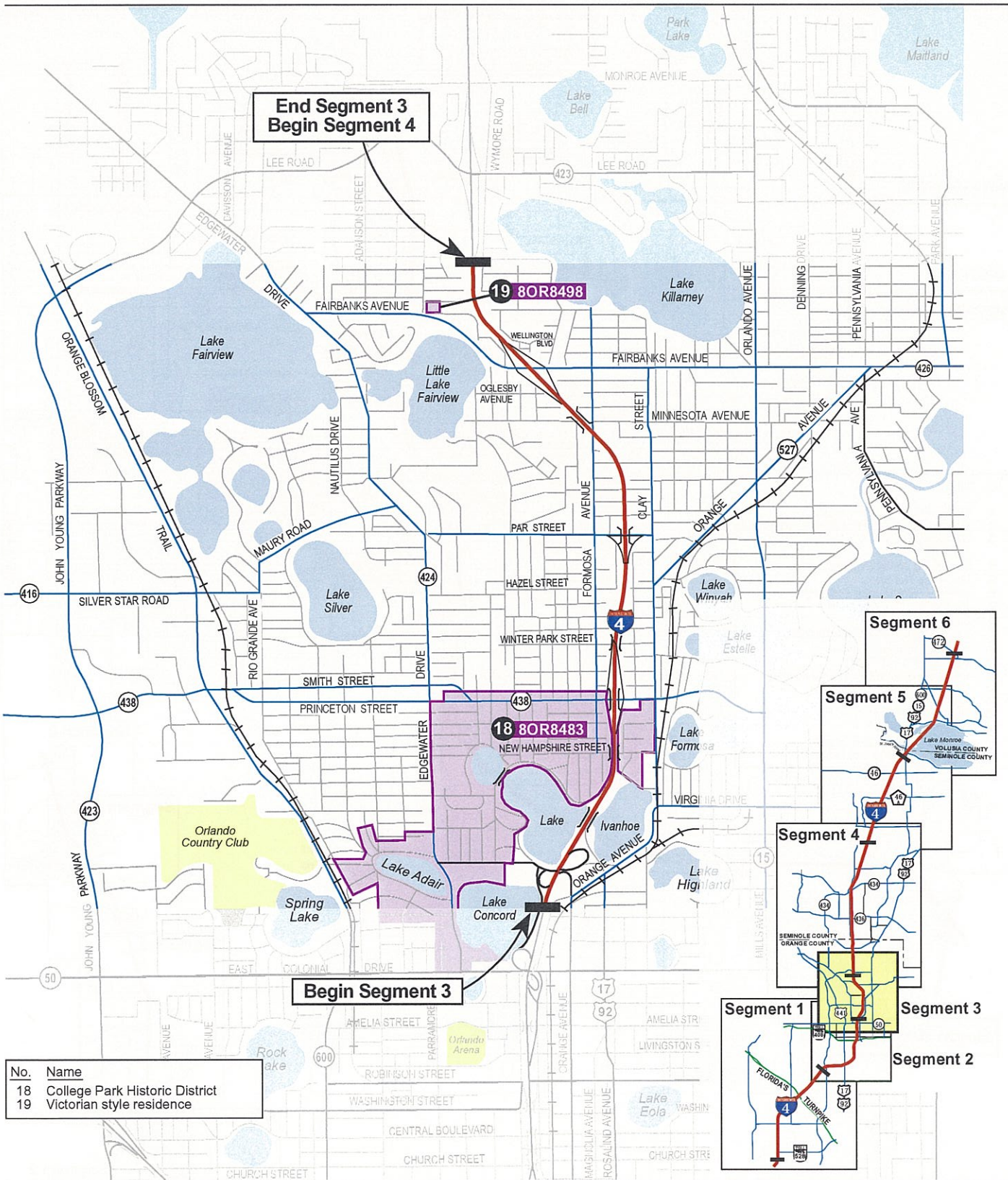
3.2.1 Archaeological Sites

The Florida Site File (FSF) search and literature review identified nine archaeological sites located within or immediately adjacent to the APE. However, only five of these sites [Notorious Site (8SE1130), Oak Lake Site (8SE1131), Grace Lake Site (8SE1132), Leftover Site (8SE1134) within Segment 4, and Lake Monroe Outlet Midden (8VO53) within Segment 6] were located within or immediately adjacent to the APE. Nonetheless, the results of the background research suggest that numerous archaeological and historical sites may be encountered within the project corridor. This is based on a review of the locations of known archaeological and historical sites distributed throughout the general project area, as well as information regarding the early settlement of the region.



**Figure 3-12
Cultural and Historic Resources**

I-4 PD&E Study - Section 2
Segment 2 of 6

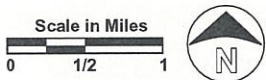
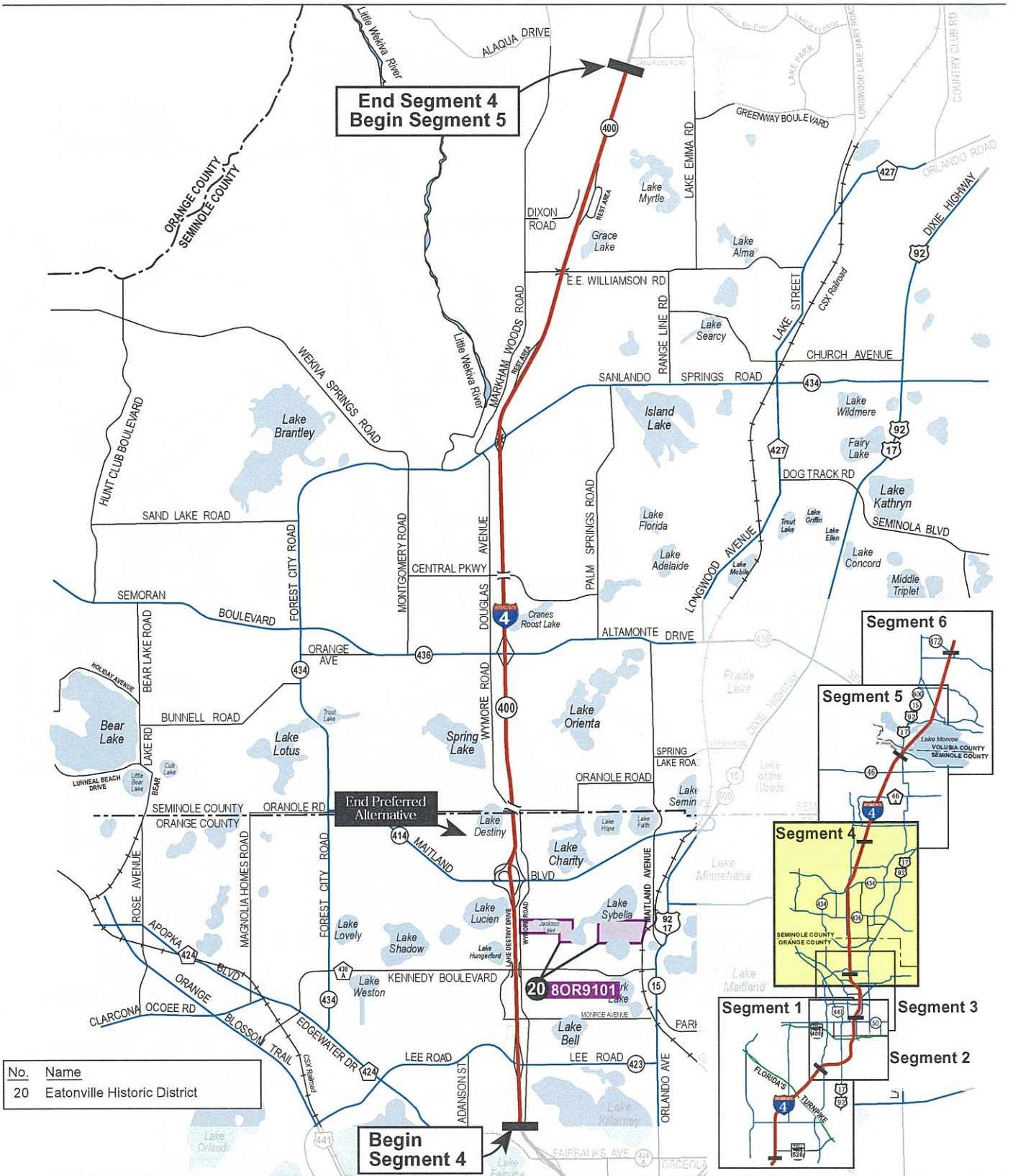


8OR183 Cultural and Historic Resources Boundary and Site Number

Figure 3-12
Cultural and Historic Resources

I-4 PD&E Study - Section 2
 Segment 3 of 6



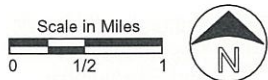
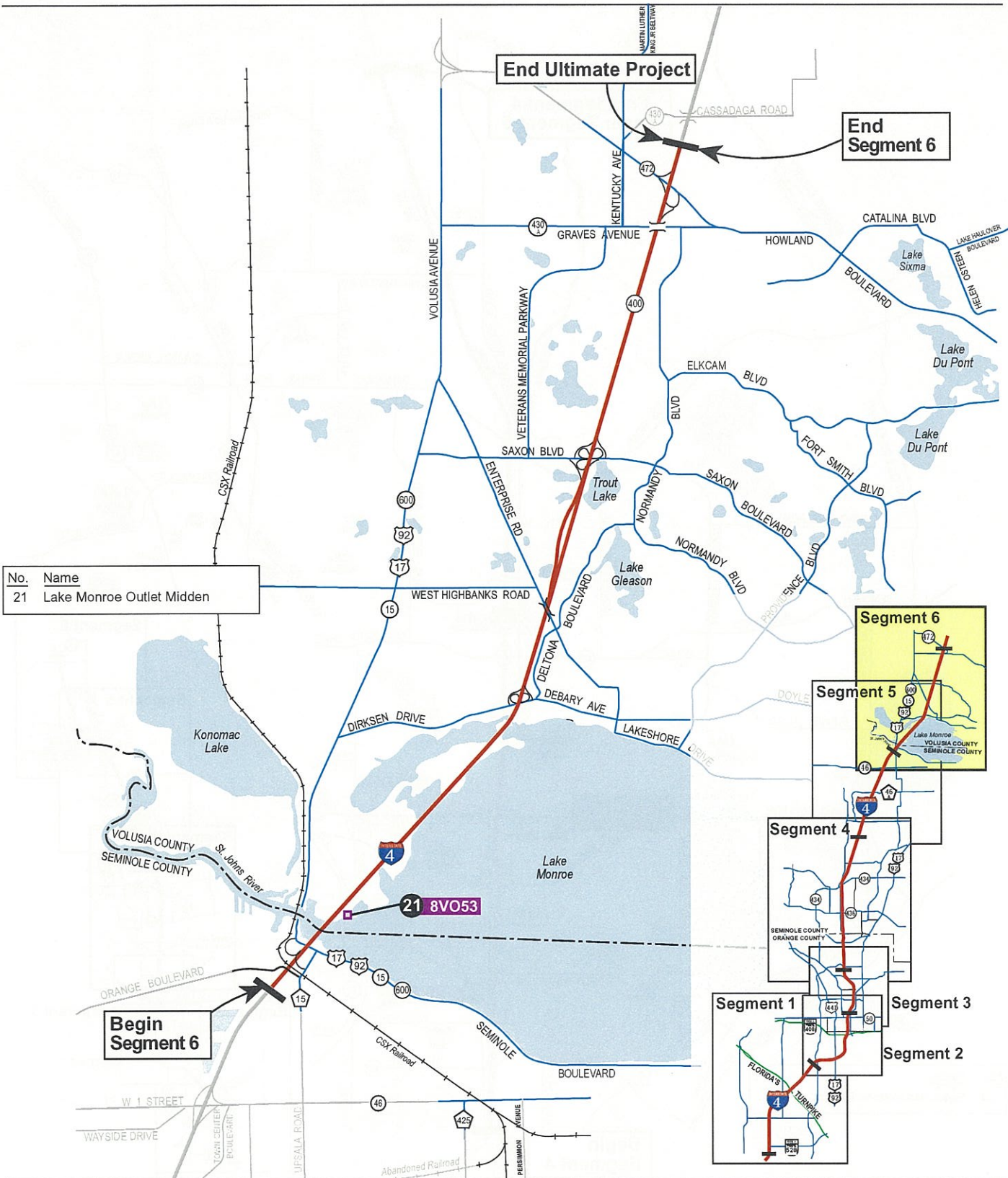


80R183 Cultural and Historic Resources Boundary and Site Number

Figure 3-12
Cultural and Historic Resources

I-4 PD&E Study - Section 2
Segment 4 of 6





8OR183 Cultural and Historic Resources Boundary and Site Number

Figure 3-12
Cultural and Historic Resources

I-4 PD&E Study - Section 2
Segment 6 of 6



Previous cultural resource assessment studies have shown that potential visual effects are project. While it is recognized that certain areas, such as the existing I-4 right-of-way, are somewhat disturbed, numerous areas may still contain important archaeological and historical data that should be investigated.

3.2.1.1 Segments 1, 2, and 3

There are no archaeological sites recorded within these segments.

3.2.1.2 Segments 4 and 5

Four archaeological sites were recorded in Segment 4. Notorious Site (8SE1130), Oak Lake Site (8SE1131), Grace Lake Site (8SE1132), and Leftover Site (8SE1134) were recorded during a 1991 survey of part of I-4 in Seminole County. These sites are best described as sparse lithic and artifact scatters. Due to the limited and mundane nature of the artifacts and lack of features, none of these sites are considered eligible for listing in the NRHP.

There are no archaeological sites recorded within Segment 5.

3.2.1.3 Segment 6

The **Lake Monroe Outlet Midden (8VO53)** (Map No. 21) is a shell midden located in Segment 6. This multi-component site is situated in Volusia County on the north bank of Lake Monroe. Information within the FSF indicates that the site may extend northward from the north shore of Lake Monroe at the I-4 bridge. Based on the available knowledge of this resource, this site may provide information significant to the study of the prehistory of the area. This site was determined eligible for listing on the NRHP in 1999. The location of the Lake Monroe Outlet Midden is shown on Figure 3-12.

3.2.2 Historic Sites

The reconnaissance investigation for historic resources was conducted in 1997 and field verified in 1998. Background research, including the *Cultural Resource Assessment Corridor Analysis* (ACI 1998) and a review of the FSF and the NRHP, indicated that there were more than 400 historic resources located within or immediately adjacent to the APE. As a result of the research and fieldwork, over 900 historic resources were recorded. Twenty of these sites are listed or determined eligible for listing in the NRHP. In addition, most are also designated as local historic landmarks. Two other resources, the Lake Cherokee Historic District and the Orlando Downtown Historic District, are specially certified by NPS and thus are also considered NRHP eligible. Most of the sites are located in Segment 2, where major development occurred early in the history of this region. Table 3-36 lists all the historic sites and districts identified within the project corridor. Figure 3-12 shows the locations of the resources that are listed or determined eligible for listing in the NRHP.

3.2.2.1 Segments 1, 5, and 6

There are no NRHP listed or eligible historic resources located within these segments.

3.2.2.2 Segments 2 and 3

All but one of the listed or eligible historic resources are recorded in Segments 2 and 3. These resources are discussed below.

Holden-Parramore Neighborhood Multiple Property Submission. Located in the western section of Orlando, portions of the Holden-Parramore neighborhood are potential NRHP-eligible as a Multiple Property Submission (MPS). The resources in the Holden-Parramore Neighborhood MPS are considered to be potentially eligible for listing in the NRHP under Criteria A and C in the areas of Community Planning and Development, Ethnic Heritage/Black, and Architecture. The potential MPS is composed of five historic resources that share a common period of development. These resources include two individually eligible buildings (Woodford James Maxey House and the Dr.

Wells House) and three small historic districts (Parramore Avenue and Conley Street Historic District; Griffin Park Historic District; and Carter Street Historic District). The three historic districts represent the Holden-Parramore Neighborhood, a much larger area whose physical cohesiveness has been disrupted over time by the construction of the East/West Expressway and I-4 and non-historic infill construction. As the historic center of Orlando's African-American community, the resources reflect the development and evolution of the community during the first half of the twentieth century. Representative of early-twentieth century Frame and Masonry Vernacular buildings, the resources also maintain architectural significance. The buildings embody distinctive characteristics of their architectural types and periods of construction, while they simultaneously reflect the overall historic character of the Holden-Parramore neighborhood.

The **Griffin Park Historic District (8OR4306)** (Map No. 1), listed in the NRHP in 1996, is potentially eligible for inclusion in the Holden-Parramore Neighborhood MPS. This district is significant under Criteria A and C in the areas of Architecture, Community Planning and Development, Ethnic Heritage, Politics/Government, and Social History. This district is roughly bound by Avondale Avenue, South Division Avenue, Carter Street, and I-4. The Orlando Housing Authority constructed the buildings in the Griffin Park Historic District in 1940 as public housing for the area's poor families. This area exemplifies Post-Depression-era attitudes regarding segregation and low-income housing. Designed by prominent local architects, this district is also architecturally significant as an excellent example of public housing from the 1930s. The complex, named after Uncle Charles Griffin, a former slave who lived in the area, includes 25 Masonry Vernacular apartment buildings and one administration building.

The **Carter Street Historic District (8OR8762)** (Map No. 2), was determined eligible for listing in the NRHP in 1999 under Criteria A and C. Its local importance is in the areas of Community Planning and Development, Ethnic Heritage, and Architecture as it represents a small cluster of intact buildings that remain in the larger Holden-Parramore neighborhood area. Constructed from 1915 to approximately 1927 as low-income housing for the local residents, this proposed district provides an understanding of the African-American community's development during the early twentieth century and chronicles the deterioration of the neighborhood during the last fifty years.

Since 1999, eight contributing buildings in the Carter Street Historic District have been demolished and only five contributing buildings are currently extant. The buildings that are no longer standing include 532, 532 ½, 526, 526 ½, 524, 518-521, 514-516, and 506 Carter Street. These buildings formerly comprised the center of the historic district. Due to the loss of more than half of the contributing resources in this small historic district, the Carter Street Historic District no longer maintains historic integrity. Additionally, because eight buildings have been destroyed, the district can no longer convey its architectural and historical significance. Consequently, this historic district is no longer considered eligible for inclusion in the NRHP. A meeting was held with SHPO on April 23, 2002 to discuss the Carter Street Historic District as no longer being eligible for inclusion in the NRHP. As a result of the meeting, a field review was performed by SHPO in May 2002. Based on the field review, SHPO has concurred that the Carter Street Historic District is not eligible for inclusion in the NRHP.

The **Parramore Avenue and Conley Street Historic District (8OR8699)** (Map No. 3), which was determined eligible for listing in the NRHP in 1999, is potentially eligible for inclusion in the Holden-Parramore Neighborhood MPS. This district is significant under Criteria A and C in the areas of Community Planning and Development, Ethnic Heritage/African-American, and Architecture. The proposed Parramore Avenue and Conley Street Historic District is located primarily along the east and west sides of South Parramore Avenue and to a lesser extent on the south and north sides of Conley Street in the Holden-Parramore neighborhood. This historic district includes 16 Frame Vernacular buildings and remains architecturally important at a local level, as it contributes to the physical fabric of the Holden-Parramore neighborhood and is one of the area's last remaining intact clusters of housing.

In addition, two buildings within the Holden-Parramore neighborhood are considered potentially eligible for inclusion in the MPS. **Woodford James Maxey House (8OR1293)** (Map No. 4) at 638 W.

Anderson Street is a residence that is significant under Criteria A, B, and C in the areas of Community Planning and Development, Ethnic Heritage, and Architecture. Constructed Circa. 1924, this two-story residence exhibits the Frame Vernacular style and the American Four-Square house form. Historically, this building was the residence of Woodford James Maxey, the first African-American letter carrier in Orlando. A prominent African-American citizen within the City of Orlando, Mr. Maxey was instrumental to the growth and development of the Holden-Parramore neighborhood. In September 1987, the Bureau of Historic Preservation determined that this historic resource should be considered for listing in the NRHP. In 1989, the City of Orlando adopted an ordinance designating the house as a historic landmark.

The second building considered potentially eligible for inclusion in the MPS is the **Dr. Wells House (8OR1947)** (Map No. 5). The resource, formerly located at 405 W. South Street, was relocated to a new site in the latter part of 2001. The Wells' built Museum of African-American History moved the house one block further west on W. South Street, just immediately west of the Wells' built Hotel. The house's new address will be 519 W. South Street. At this time, it appears the house remains up on blocks and it has not been placed on a permanent foundation.

The historic resource was determined eligible for NRHP listing in 1999, as part of the Holden-Parramore Neighborhood MPS. The resource is significant under Criteria A, B, and C in the areas of Community Planning and Development, Ethnic Heritage, and Architecture. Constructed circa 1927, this two-story house exhibits the Frame Vernacular style and the American Four-Square house form. Historically, this building was the residence of Dr. William Monroe Wells, an African-American physician and businessman who arrived in Orlando from Fort Gaines, Florida, around 1921. According to several local historians, Dr. Wells was among Orlando's first African-American physicians.

In combination with its important historical associations, the Dr. William Monroe Wells House also maintains architectural significance. The building retains excellent integrity with minimal loss of historic fabric. Additionally, the building contributes to the architectural fabric of the Holden-Parramore Neighborhood as one of the last remaining examples of middle- to upper-income housing in the area. The Dr. Wells House also illustrates the Frame Vernacular architecture of the 1920's land boom era and the stylistic and typological patterns of that time.

116 America Street (8OR3394) (Map No. 6) was determined eligible for listing in the NRHP in 1999 under Criterion C in the area of Architecture. Constructed circa 1924, this building represents the rapid rise in construction that occurred during the Land Boom-era in Orlando and throughout Florida in the early 1920s. This Masonry Vernacular residence with Prairie-style elements embodies the simplicity of design characteristic of the Masonry Vernacular style and the natural textures and horizontal profile inherent in the Prairie style. Today, 116 America Street embodies the former sense of an urban neighborhood, and mirrors the transition from a downtown neighborhood of single-family homes to the mixed-use area of residences and offices.

Westminster Retirement (8OR3377) (Map No. 7) located at 84 West Lucerne was determined eligible for listing in the NRHP in 1999 under Criterion C in the area of Architecture. This Florida Boom Times-era building represents the rapid rise in construction that occurred in Orlando and throughout Florida during the early 1920s. The Masonry Vernacular residence with Mission-style elements embodies the simplicity of design associated with both the Masonry Vernacular and Spanish-influenced Mission styles of architecture popularized during this period. In addition, this building's location, adjacent to downtown Orlando along the banks of Lake Lucerne, places it in one of the City's early twentieth-century residential neighborhoods. 84 West Lucerne Circle is representative of the former residential area and mirrors a neighborhood's transition into a mixed-use area of residences and offices.

The **J.J. Bridges House (8OR110)** (Map No. 8) at 50 West Lucerne Circle is located on the southwest corner of West Lucerne Circle and Kuhl Avenue in Orlando. Listed in the NRHP as an Orlando Historic Landmark in 1984 at 704 Kuhl Avenue, this Colonial Revival style building is significant under Criterion C in the area of Architecture. The Reverend John J. Bridges and his wife, Isobel, retired to Orlando following his career as a clergyman in New York and New Jersey. The Bridges House reflects

the design and ornament of finely crafted New York area residences of the Federal Period that lasted from 1780-1820. This former residence, which now serves as office space, is the earliest purely academic treatment in the Colonial Revival form existent in Orlando.

Lake Cherokee Historic District (8OR258) (Map No. 9) is a well-preserved residential community developed during the late nineteenth and early twentieth centuries. The northern portion of the district, which is located adjacent to SR 408 (East/West Expressway), is included in the APE. Lake Cherokee reflects the historical development of Orlando through the presence of a number of architectural styles including Bungalow, Colonial Revival, Mediterranean Revival, and Frame Vernacular.

The Lake Cherokee Historic District is designated as a local historic district and was certified by the NPS as a special taxing district in 1982. Districts certified by NPS are considered eligible for listing in the NRHP. Significant under Criterion C in the area of Architecture and Landscape Architecture, the district is composed of 146 contributing buildings, two public parks, and two lakes. Forty-four historic buildings inside the district boundaries are located within the APE. Several buildings within the district are locally listed including the Walker-Hendry House (8OR22) at 125 N. Lucerne Circle, which was designated as an Orlando Historic Landmark in 1978 and is located within the APE. Additionally, the Peckham-Phillips House (8OR111) (Map No. 10) at 135 N. Lucerne Circle is located within the APE and was designated as an Orlando Historic Landmark in 1978 and individually listed in the NRHP in 1979.

Greenwood Cemetery (8OR9088) (Map No. 11) is located approximately two miles southeast of downtown Orlando. It is situated immediately south of SR 408 (East/West Expressway), and contains the graves of many of Orlando's pioneers. It was originally named the Orlando City Cemetery. In 1915, Stockholders Robinson and Boone petitioned the city to change the name to the Greenwood Cemetery. With enlargements in 1907, 1927, and 1935, the cemetery now contains approximately 50,000 burials on its 84 acres.

Greenwood Cemetery was determined eligible for listing in the NRHP in 1999 under Criteria A, C, and D in the areas of Community Planning and Development, Landscape Architecture, and Ethnic Heritage. The cemetery is also significant for its contribution to funerary art and landscape architecture. The earliest sections contain marble tablets, obelisks, and pedestals that depict an array of funerary iconography characteristic of the late Victorian era. Individual mausoleums and above ground box tombs are present in the earliest sections of the cemetery. As the first public cemetery of Orlando, the development and design of Greenwood Cemetery evokes evolving attitudes toward death and burial in America throughout the nineteenth and twentieth centuries.

Downtown Orlando Historic District (8OR8731) (Map No. 12) is a distinguishable entity that represents the commercial architecture of Orlando from 1880 to 1930. It was designated as a local historic district and certified by the NPS as a special taxing district in 1982. Only a portion of the Downtown Orlando Historic District, which includes part of Church Street, lies within the Segment 2 APE. Eleven buildings located within the district boundaries are within the APE. The Richardsonian Romanesque style **Old Orlando Railroad Depot (8OR25)** (Map No. 13) at 76 West Church Street is listed as a historic landmark by the City of Orlando and was listed in the NRHP in 1976. In addition, the **Bumby Hardware Building (8OR20)** (Map No. 14) is listed as a local historic landmark and was determined eligible for listing in the NRHP in 1999.

Harry P. Leu, Inc. (8OR183) (Map No.15) is located at 100 West Livingston Street in Orlando. Several buildings are located on the site, including a Masonry Vernacular commercial building, four historic outbuildings, and one nonhistoric ancillary structure. The original wood frame building built around 1905 for the Cain-O'Berry Boiler Company as well as two auxiliary wood frame buildings that date prior to 1925 are also located on the property. In 1998, Harry P. Leu, Inc. was determined eligible for listing in the NRHP. It is eligible under Criterion A in the area of Commerce and Community Planning and Development and Criterion C in the area of Architecture. The site's historical significance is based on its associations with the early twentieth century commercial and community development of Orlando.

The **Colonial Garage (8OR3447)** (Map No. 16) is located at 62-70 West Colonial Drive in Orlando. Known historically as the Colonial Garage and Caldwell Auto Storage, it was constructed around 1926 in the Masonry Vernacular style. As a unique example of a specialized building type, the Colonial Garage was determined eligible for listing in the NRHP in 1998 under Criterion C in the area of Architecture. Likewise, the building is significant under Criterion A in Transportation, Commerce, and Community Planning and Development as a unique example of an automobile-related building type associated with the rise of automobile use.

Judge John M. Cheney House (8OR187) (Map No. 17) is located at 715 North Garland Avenue in Orlando. It was constructed circa 1883 in the Queen Anne-Free Classic style of architecture. Within the past few years, the building was relocated in downtown Orlando between I-4 and the CSXT railroad tracks. In 1998, the Judge John M. Cheney House was determined eligible for listing in the NRHP under Criterion B in the Areas of Law, Industry, and Community Planning and Development, although it has been moved and significantly modified throughout its history. The areas of the site's significance are associated with the life and achievements of Judge John Cheney's endeavors in law and industry. Despite the modifications and a change in location, the Cheney House is in good condition and is one of the few extant buildings that reflect both the origins and high degree of change that has occurred in the community development of Orlando.

The **College Park Historic District (8OR8483)** (Map No. 18) encompasses a large area, the portions within the APE are located west of I-4 along SR 50 (Colonial Drive) and Peachtree Road from I-4 to Edgewater Drive; and east and west of I-4 between Lake Ivanhoe and Princeton Street. The district is located north of downtown Orlando and is divided by I-4. The district consists of two discontinuous elements that represent a cohesive collection of residential properties constructed between 1919 and 1949. The College Park Historic District was determined eligible for listing in the NRHP in 1999 under Criteria A and C in the areas of Community Planning and Development and Architecture. The district, billed as the first suburban neighborhood of Orlando, features a number of modest one-and two-story homes constructed largely between the years of 1921 and 1949. Styles represented include Bungalow, Craftsman, Minimal Traditional, Art Moderne, Tudor Revival, Dutch Colonial Revival, Colonial Revival, Mediterranean Revival, Masonry Vernacular, and Frame Vernacular. Within the district boundaries along SR 50 and Peachtree Road, six of the nine buildings within the expanded APE would contribute to the College Park Historic District, and one, the John N. Huttig Estate at 435 Peachtree Road, was listed in the NRHP in January 1993. Within the district boundaries north of Ivanhoe Boulevard, 110 historic buildings are located within the APE, of which 71 are considered contributing resources. Also located within the district is the home of Walter Washington Rose (8OR8397) at 226 East Vanderbilt Street. A prominent local real estate developer during the 1920s and Florida state senator in the 1930s. Rose was instrumental in establishing many of Orlando's historic neighborhoods, including Lake Lawsona.

2739 Riddle Drive (8OR8498) (Map No. 19) is located on the north side of Riddle Drive between Wymore Road and Fairbanks Avenue. This circa 1883 Folk Victorian style building features physical characteristics identified with the Queen Anne style. Situated on a large residential lot west of I-4, this building continues to be used as a residence in private ownership. Because the owner denied access to the property, only a visual inspection from the right-of-way was possible. 2739 Riddle Drive was determined eligible for listing in the NRHP in 1999 under Criterion C based upon its architecture. It is a fine example of the Folk Victorian style expressed in terms of Queen Anne detailing applied to a folk house form. As a style rarely found in central and south Florida, this building remains a significant architectural resource in Orange County. Few historic buildings from this era remain in the Orlando area with the level of craftsmanship and integrity apparent in this residence.

3.2.2.3 Segment 4

One NRHP listed resource, the Eatonville Historic District, is located in Segment 4.

The **Eatonville Historic District (8OR9101)** (Map No. 20) was listed in the NRHP in February 1998. It is nationally significant both historically and anthropologically under Criterion A in the areas of Ethnic Heritage (African-American), Community Planning and Development, Education, and Literature.

Eatonville is the oldest African-American incorporated municipality in the United States, and as a living repository of Florida's rich African-American traditional culture, Eatonville represents historically significant patterns of cultural activities and events. The Eatonville Historic District is also significant under Criterion B as the hometown and subject of study of Zora Neale Hurston, an internationally acclaimed anthropologist, folklorist, and novelist. The majority of buildings in the district were constructed between 1882 and 1947 in the Frame Vernacular, Masonry Vernacular, and Bungalow styles. The district contains a significant archaeological site, the Hurston family homesite, along with 68 buildings of which 48 are considered contributing to the district. Three of the contributing buildings are located within the APE.

3.2.3 Parks and Recreation

Initially, 98 publicly and privately owned park and recreation facilities were identified within one-half mile of the I-4 corridor. These 98 parks and recreation facilities are listed in Table 3-37 and shown on Figure 3-13.

Table 3-37. Recreation Inventory within One-half Mile of I-4

Map No.	Park Name	Location	Private/ Public	Owner / Jurisdiction
Segment 1				
1	Orange Tree Golf Club	7540 Woodgreen Dr.	Private	Nick Bianco - Manager
2	Cypress Creek Country Club	5353 Vineland Rd.	Private	J.D. Byington III
Segment 2				
3	Boat Tree Boat Ramp	1924 33 rd Street	Private	Boat Tree
4	Clear Lake Park	on South Clear Lake	Public	City of Orlando
5	Catalina Park	Catalina Ln.	Private	Home Owners Association
6	Crescent Park	Rio Grande Ave. and I-4	Public	Orange County
7	Kaley Square	Kaley St. and Maria Ave.	Public	Orange County
8	Grand Avenue Park Playground	Miller St. & Parramore Ave.	Public	City of Orlando
9	Avondale Park	Citrus St.	Public	City of Orlando
10	Carver Park	Gore St.	Public	Orlando Housing Authority
11	Parramore Village Park	Carter St. & Lee St.	Public	City of Orlando
12	Lake Lucerne Park	Lucerne Cir.	Public	City of Orlando
13	Griffin Park	Division St. & SR 408	Public	Orlando Housing Authority
14	Southern Gateway Park	South Rosalind St. & Orange Ave.	Public	City of Orlando
15	Orlando City Hall Urban Park	Anderson St.	Public	City of Orlando
16	Bookhart Park	Between Anderson St. & South St.	Public	City of Orlando
17	Coral Gables Park	South St. & Orange Ave.	Public	City of Orlando
18	Gertrude's Walk	Church St. & Orange Ave.	Public	City of Orlando
19	South Orange Plaza Wall Street Plaza	Orange Ave. & Central Blvd.	Public	City of Orlando
20	Lake Eola Park	Rosalind Ave.	Public	City of Orlando
21	Expo Park	500 W. Livingston St.	Public	City of Orlando
22	T.D. Waterhouse Centre (Orlando Arena)	600 W. Amelia St.	Public	City of Orlando
23	Bob Carr Performing Arts Center	401 W. Livingston St.	Public	City of Orlando
24	Robinson Park	Amelia St.	Public	City of Orlando
25	Downtown Recreation Center	649 W. Livingston St.	Public	City of Orlando
26	Lake Dot Park	Concord St.	Public	City of Orlando
27	Don Dudley Park	Edgewater Dr. & SR 50	Public	City of Orlando
28	Park Lake	East Colonial Dr. & Highland Ave.	Public	City of Orlando
71	Allen Head Start Program	South Lee Ave. & Church St.	Private	Orange County
72	Felton Field	South Lakeland Ave. & Jacobs Place	Public	Orange County
73	Lizzie Rodgers Park	2130 Long St.	Public	City of Orlando
74	Orlando Sports Complex	Gore St. & Rio Grande Ave.	Public	City of Orlando
75	John H. Jackson Community Center	Westmoreland St. & Carter St.	Public	City of Orlando
76	Lake Haven Park / Greenwood Wetland	Anderson St., east of Mills Ave.	Public	City of Orlando
77	Beardall Senior Center	NW Corner of DeLaney Ave. & Gore St.	Public	City of Orlando
78	Al Coith Park	East of DeLaney Ave. & Gore St.	Public	Orange County
79	Mayor Langford Park	1808 East Central Blvd.	Public	City of Orlando
80	Orlando Nursery / Plants & Parks Bureau	Victor Lane	Public	City of Orlando
81	Citrus Bowl / Annex	Church St. & Rio Grande Ave.	Public	City of Orlando
82	Tinker Field	Tampa Ave. & Church St.	Public	City of Orlando
83	McKraken Field	Tampa Ave. & Church St.	Public	City of Orlando
84	Thunder Field	Anderson St. & Rio Grande Ave.	Public	City of Orlando
85	Lorna Doone Park	1519 West Church St.	Public	City of Orlando

Table 3-37. Recreation Inventory within One-half Mile of I-4 (Continued)

Map No.	Park Name	Location	Private/ Public	Owner / Jurisdiction
86	Carter / Carver Park	Conley St. & Westmoreland Ave.	Public	City of Orlando
87	Constitution Green Park	South St. & Summerlin Ave.	Public	Orange County
88	Lake Davis Park	S. Summerlin Ave. & Lake Davis Dr.	Public	City of Orlando
89	Riley Park	Parramore St. & SR 408	Public	City of Orlando
90	George Barker Park	Tampa Ave. & Gore St.	Public	City of Orlando
91	Parramore Community Center	445 S. Parramore St.	Public	City of Orlando
92	Reeves Terrace Recreation Site	Mc Jordan St. & Church St.	Public	City of Orlando
93	Cherokee Park	Cherokee Dr. & Cherokee Circle	Public	City of Orlando
94	Lake Lawsona Park	Brown St. & Central Ave.	Public	City of Orlando
95	Lake Weldon	Weldon St. & East Gore Ave.	Public	City of Orlando
96	Jones Orlando Sport Complex	Jones High School, 1400 W. Cypress St.	Public	City of Orlando
97	Franklin Albert Park	Adjacent/beneath SR 408, at Rosalind St. & Anderson St.	Public	Orlando-Orange County Expressway Authority
Segment 3				
29	Lake Concord	N. of Lake Concord on Lakeview St.	Public	City of Orlando
30	Marks Street Senior Recreational Center	Marks St. & Magnolia Avenue.	Public	Orange County
31	Beth Johnson Park	S. of Lake Ivanhoe St. on Ivanhoe Blvd.	Public	City of Orlando
32	Lake Highland Park	Lake Highland Park	Public	City of Orlando
33	Gaston Edwards Park	Orange Ave. & Virginia Dr.	Public	City of Orlando
34	Lake Ivanhoe Park (and boat ramp)	1723 Bruton Blvd.	Public	City of Orlando
35	Dr. Smith Neighborhood Park	Ivanhoe Plaza	Public	City of Orlando
36	Lake Formosa Park	Lake Formosa Dr.	Public	City of Orlando
37	Princeton Park	Rugby St. & Elizabeth Ave.	Public	City of Orlando
38	Heritage Park	Winyth Dr.	Public	Orange County
39	Lake Estelle	Rollins Ct.	Public	City of Orlando
40	Orlando Loch Haven Park & Neighborhood Center	610 N. Formosa Ave.	Public	City of Orlando
41	Matthews Park	Formosa Ave.	Public	City of Orlando
42	Dubs Dread Golf Course	549 W. Par St.	Public	City of Orlando
43	Orwin Manor Park	Clay St. & Orange Ave.	Public	City of Orlando
Segment 4				
44	Catalina Park	Campusview Dr.	Public	City of Eatonville
45	Bellamy Park	On Lake Jackson	Public	City of Maitland
46	Lake Jackson Park	On Lake Jackson	Public	City of Maitland
47	Lake Destiny Soccer Field	Lake Destiny Dr.	Public	City of Maitland
48	Urban North Park	Hermitage St. & Monticello Dr.	Private	High Ridge Civic Assoc. (HOA)
49	Sunshine Park	Flame Ave.	Public	City of Altamonte Springs
50	Lake Orienta Park	Arvern Ct. on Lake Orienta	Public	City of Altamonte Springs
51	Cranes Roost Lake Park & Boardwalk	On Cranes Roost Lake	Public	City of Altamonte Springs
52	Sanlando Park	Off Douglas Ave. on Highland St.	Public	Seminole County
53	Seminole County Softball Complex	Off Douglas Ave. on Highland St.	Public	Seminole County
54	Rolling Hills Golf Club	1749 Art Hagen Pl.	Private	Tom Story - Manager
55	Sleepy Hollow Park	1 mile north of 434	Private	Sleepy Hollow (HOA)
56	Westbound I-4 Rest Area	I-4, North of 434	Public	F.D.O.T.
57	Woodlands Civic Association Park	Dutchmans Cove	Private	Woodlands Civic Assoc. (HOA)
58	Eastbound I-4 Rest Area	I-4 South of Lake Mary Blvd.	Public	F.D.O.T.
Segment 5				
59	Heathrow Country Club	1200 Bridgewater Dr.	Private	Heathrow Golf Co. Limited
60	Royal Riding Academy	Town Center Blvd.	Private	No longer in existence
Segment 6				
61	Bookertown Park	Richard Allen St.	Public	Seminole County
62	Central Florida Zoological Park	US 17-92	Public	Private / Seminole County
63	Lake Monroe Wayside Park and Boat Ramp	US 17-92	Public	Seminole County
64	Lake Monroe Park	975 US 17-92	Public	Volusia County
65	Glen Abbey Golf Club	US 17-92	Private	Alex McConnell
66	Gemini Springs Park	37 Dirksen Dr.	Public	Volusia County
67	Bill Keller Park	338 ½ Colombia Rd.	Public	Volusia County
68	Lake Gleason Park	1019 East Gaucho Cir.	Public	Volusia County
69	Monastery Golf Club	1717 Monastery Rd.	Private	Mark Stanchina - Manager
70	Orange City Campgrounds	1440 E. Minnesota St.	Private	Bill Clark / Owner
98	PFC Emory L. Bennett Park	W. of I-4, east end of Rhode Island Rd	Public	Volusia County

Note: Shading indicates public parks analyzed under Section 4(f). Bold text indicates potential Section 4(f) resource.

HOA - Home Owners' Association

As a result of preliminary data collection activities, 47 publicly owned parks and recreation facilities identified within one-half mile from I-4 were assessed as a base for the Section 4(f) evaluations. These 47 sites are italicized on Table 3-37. Of the 47 sites, six (shown in bold type on Table 3-37) are considered potential Section 4(f) resources: Lake Lucerne, Beth Johnson Park, Lake Ivanhoe Park, Gaston Edwards Park, Matthews Park, and Cranes Roost Park. A *Section 4(f) Determination of Applicability* (June 1998) was prepared for each of the above mentioned parks and recreational resources. Only one resource, Matthews Park, required a Section 4(f) Evaluation under the U.S. Department of Transportation Act of 1966.

3.2.3.1 Application of Section 4(f)

Section 4(f) of the Department of Transportation Act of 1966 (49 USC 1653, now 49 USC 303) declares it a national policy to make a special effort to preserve the natural beauty of the countryside, including public parks and publicly owned recreation areas, wildlife and waterfowl refuges, and historic sites. According to 23 CFR 771.135(e), which is part of the Department of Transportation's Section 4(f) guidelines, historic sites are those eligible for or listed on the NRHP.

Section 4(f) prohibits FDOT and FHWA from approving projects that require the use of resources protected under Section 4(f) unless two criteria are met: 1) there is no feasible and prudent alternative to such use, and 2) the project includes all possible efforts to minimize harm resulting from such use. Because the proposed project is a transportation project involving federal funds, it is subject to compliance with Section 4(f).

Section 4(f) requirements may not apply to the restoration, rehabilitation, or maintenance of transportation facilities listed in or eligible for the NRHP if such work would not adversely affect the historic qualities of the resource and if SHPO and the Advisory Council concur with the exemption from Section 4(f) requirements [23 CFR 771.135 (f)].

A Section 4(f) use occurs when one of the following conditions is met:

- 1) A protected resource is permanently acquired for a transportation project;
- 2) A temporary use of the protected resource is considered adverse (i.e., preservation of the resource would be impeded); or
- 3) There is constructive use of the protected resource.

For more information regarding Section 4(f) requirements and applications, refer to the *Section 4(f) Evaluation* (August 2002).

3.2.3.2 Section 4(f) Applicability

A review of the affected parks, recreation areas, and historic sites was undertaken. Section 4(f) reviews of these facilities have been performed and discussed further in Section 4.2.3 of this report.

Also, all the historic sites that are on or potentially eligible for listing on the NRHP are by definition Section 4(f) applicable.

3.2.4 Bicycle, Trail, and Greenway Facilities

According to Florida Statute, pedestrians and bicycles are prohibited on limited-access interstate facilities such as I-4 and SR 408. The following is a discussion of bicycle facilities (bikeways, trails, and greenways) within the project study area.

In compliance with Section 109(n) of 23 USC, the proposed project will provide bicyclists a reasonable alternative to the existing facility. Refer to FHWA's Bicycle Policy for further details.

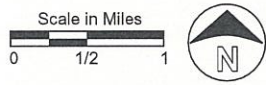
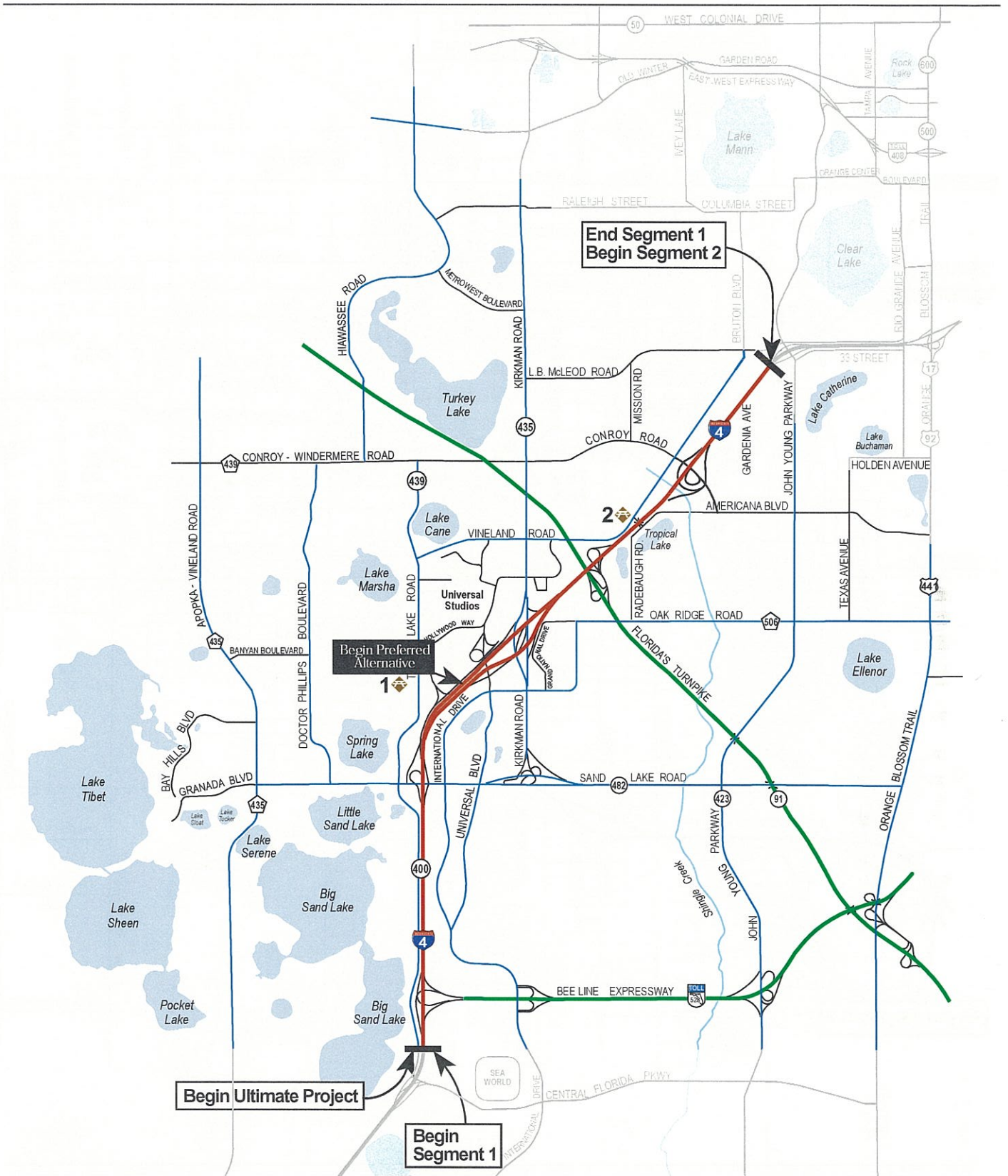


Figure 3-13
Parks and Recreational Facilities



I-4 PD&E Study - Section 2
Segment 1 of 6

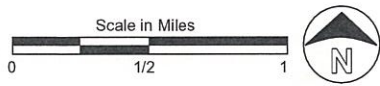
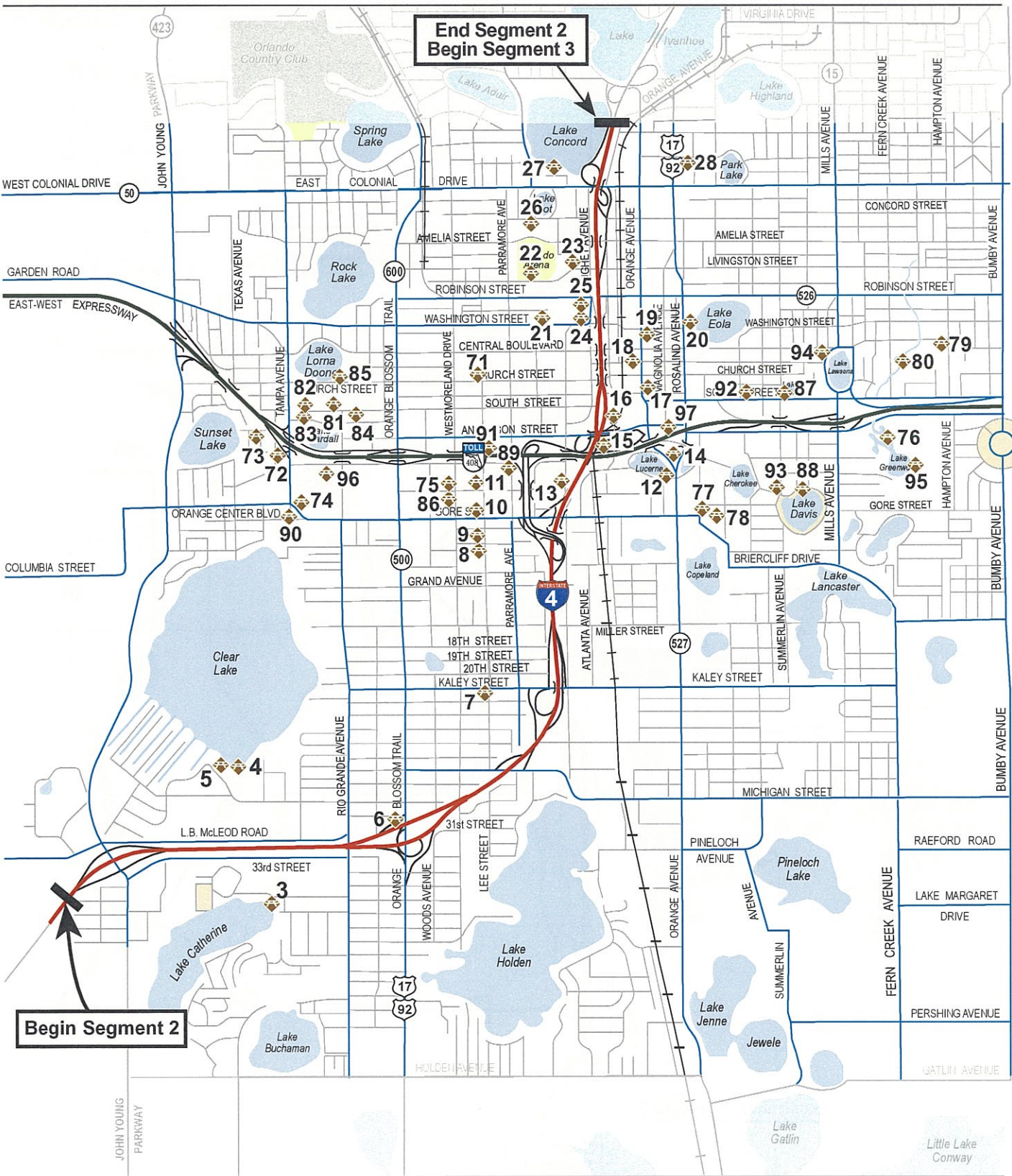


Figure 3-13
Parks and Recreational Facilities

I-4 PD&E Study - Section 2
Segment 2 of 6



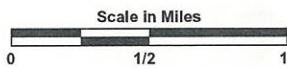
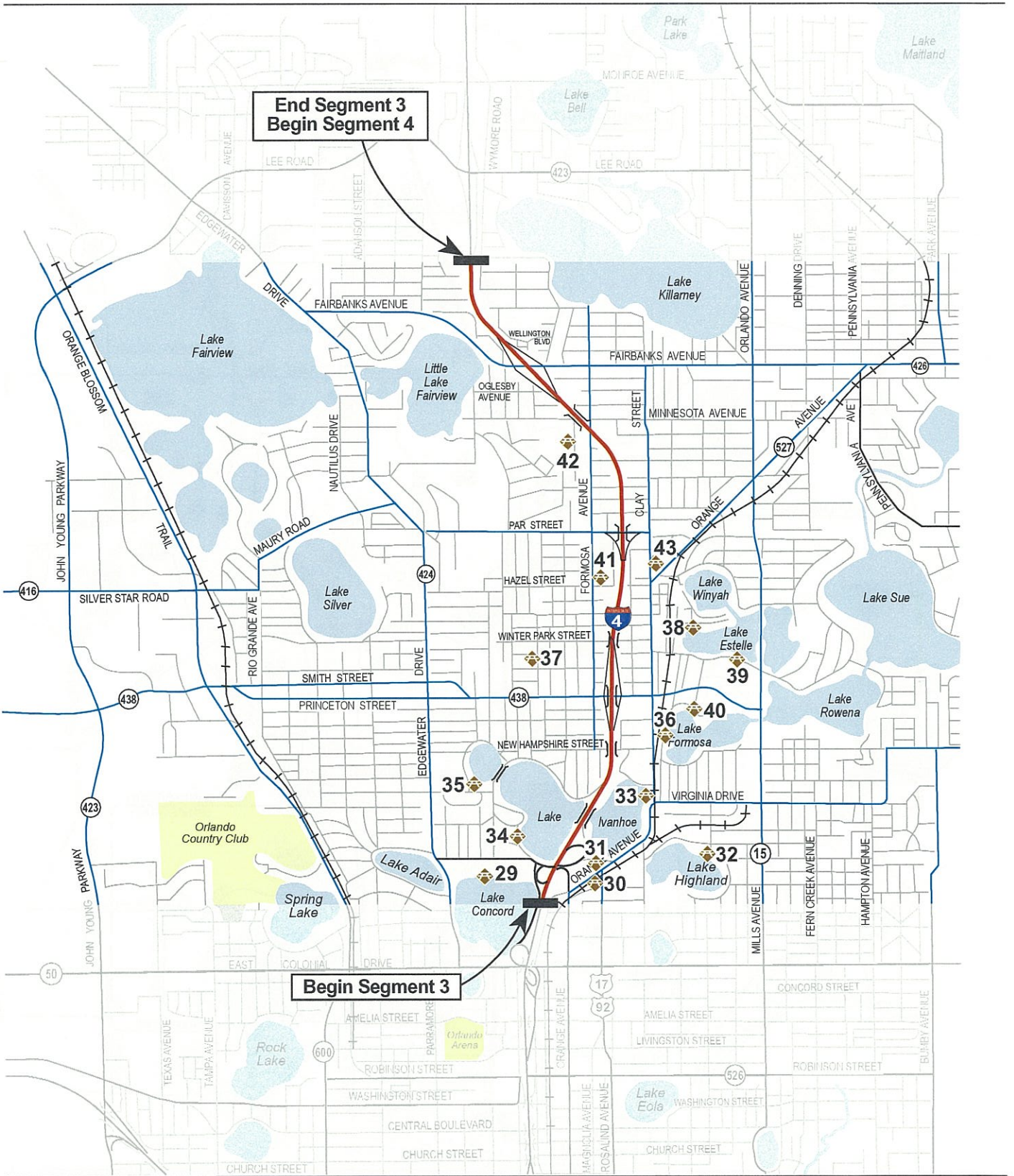


Figure 3-13
Parks and Recreational Facilities

I-4 PD&E Study - Section 2
Segment 3 of 6

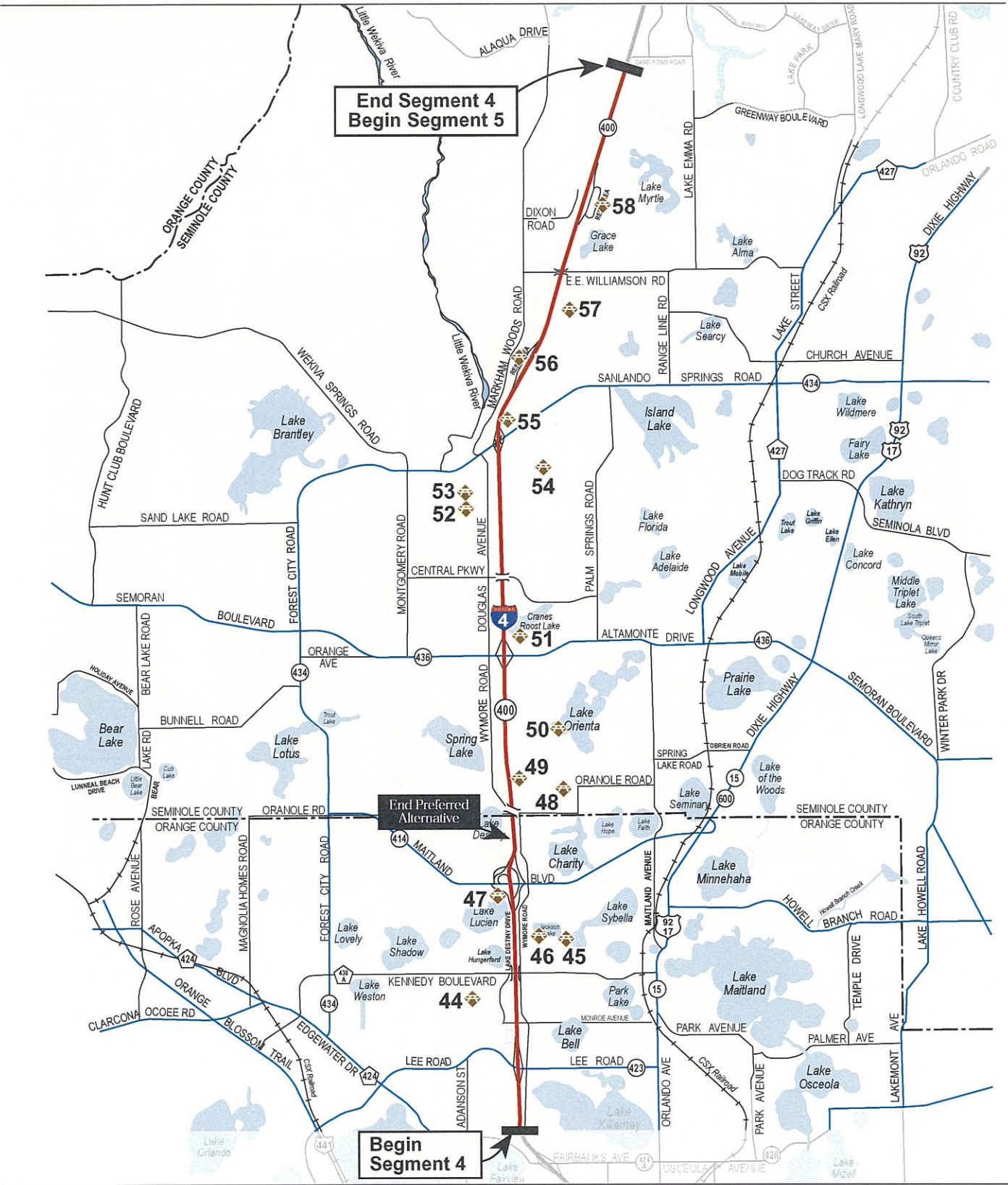


Figure 3-13
Parks and Recreational Facilities

I-4 PD&E Study - Section 2
 Segment 4 of 6



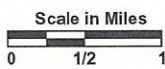
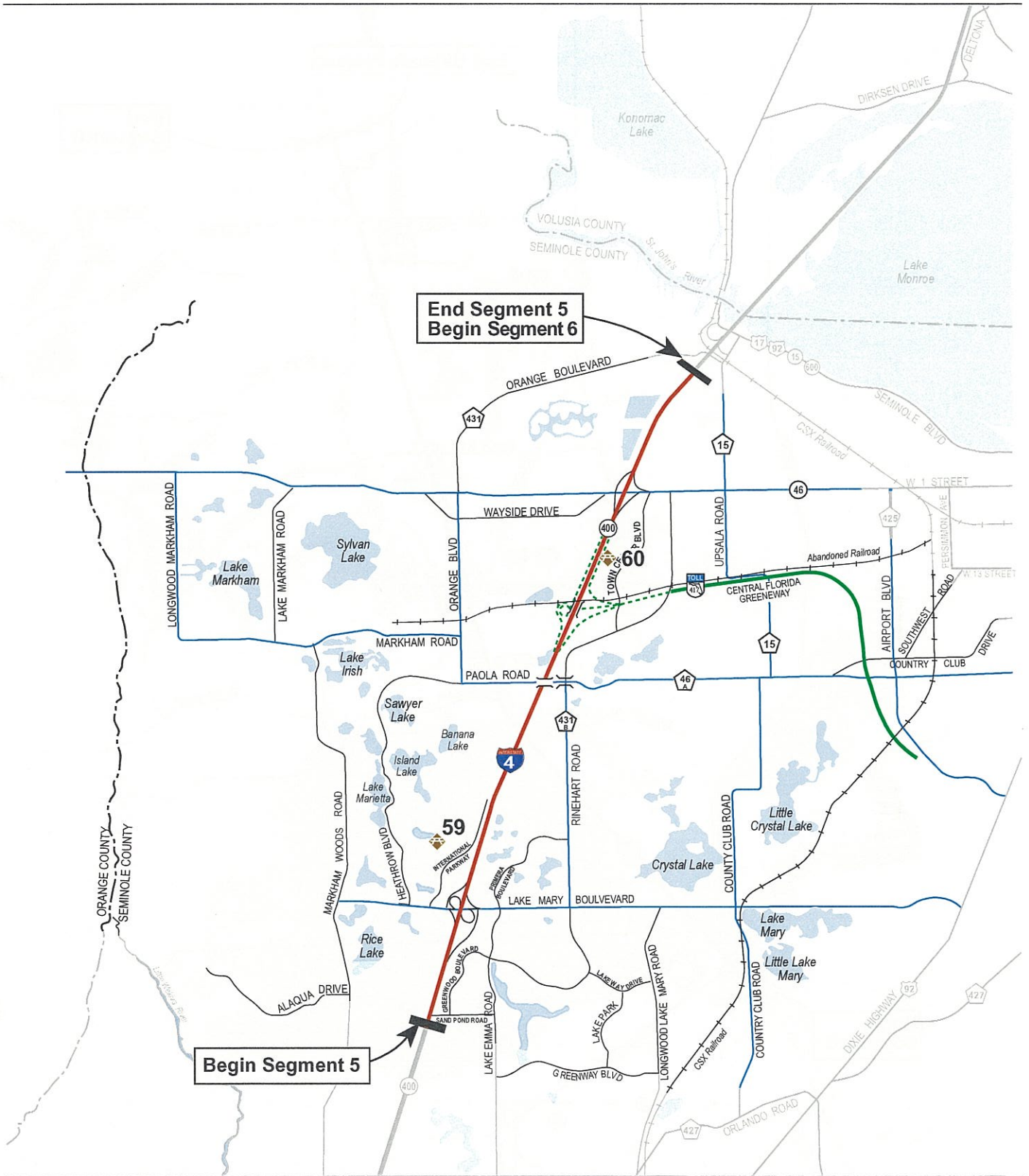


Figure 3-13
Parks and Recreational Facilities

I-4 PD&E Study - Section 2
Segment 5 of 6

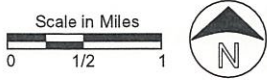
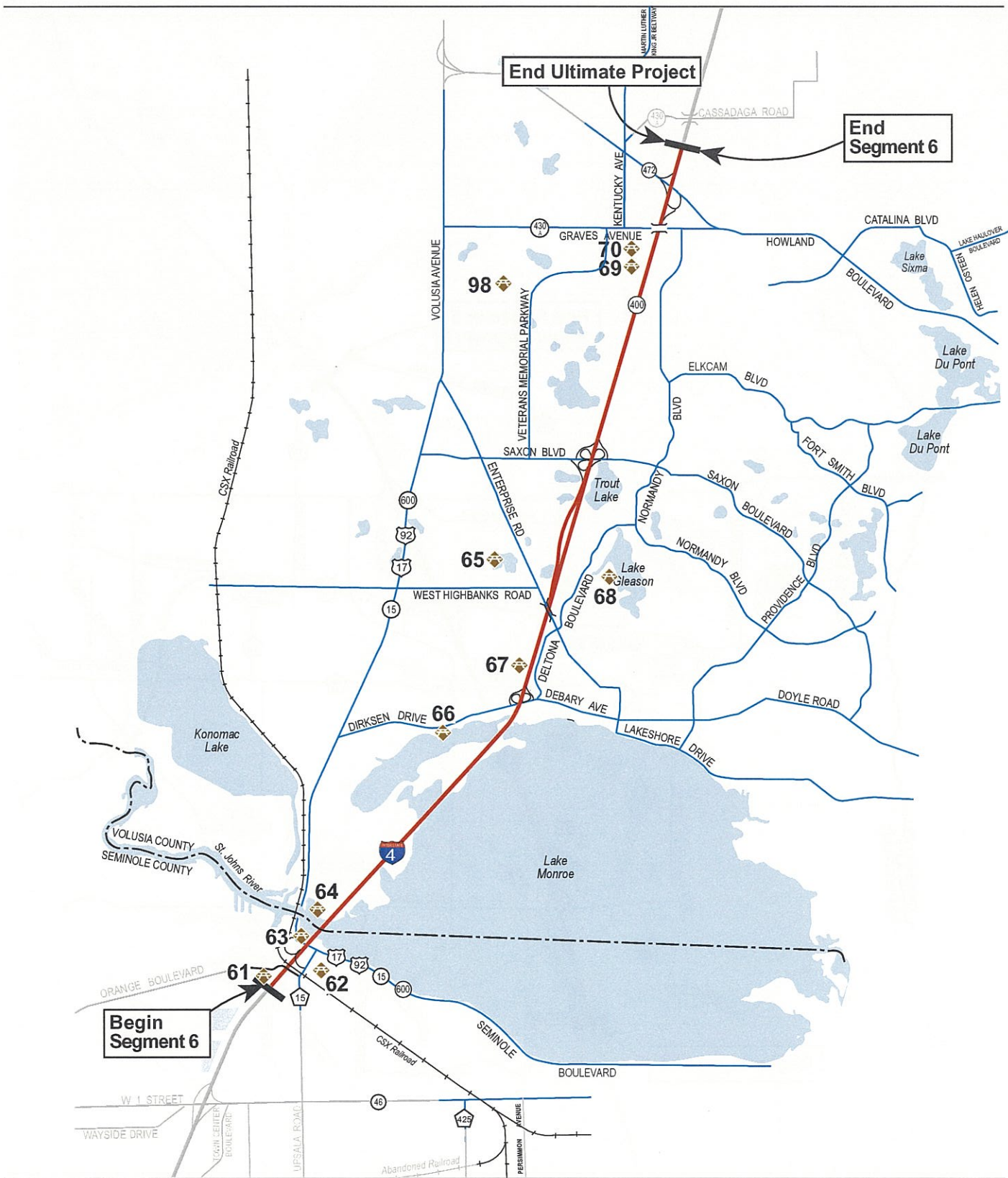


Figure 3-13
Parks and Recreational Facilities

I-4 PD&E Study - Section 2
 Segment 6 of 6



Bikeway, trail, and greenway facilities are located throughout the project study area on crossroads and roadways adjacent to I-4. These facilities are categorized by use. Bikeway facilities include bike lanes, bike routes, and/or paved shoulders. Trail facilities include paved multiple use trails for walking, bicycling, and skating, and unpaved multiple use trails for hiking, horseback riding, and off-road bicycling. Greenway facilities are corridors of protected open space that are managed for conservation and/or recreation. Table 3-38 catalogues 44 existing and proposed facilities that cross I-4 and/or are linked to facilities that cross I-4 within the project study area. These facilities are presented graphically on Figure 3-14.

3.2.5 Pedestrian Facilities

A summary of information for sidewalks crossing I-4 and for sidewalks in areas adjacent to I-4 within the study area is presented in Table 3-39 and Figure 3-15. The majority of the information was obtained from field surveys conducted in December 1996. In addition, the OUATS 2020 Transportation Plan and the Volusia County MPO 2020 Transportation Plan were reviewed for information on existing sidewalks within the vicinity of I-4.

Table 3-38. Bicycle, Trail, and Greenway Facilities

Crossing #	Name	Type Crossing	City	Road Type (Rural or Urban)	Median (yes or no)	No. of Lanes	Shoulder (Paved or Unpaved)	Bicycle Facility ^a	Trail Facility ^b	Greenway Facility ^c	Exist. Sidewalk Facility	Source	Special Requirements/ Notes
Segment 1													
1	Kirkman Rd, SR 435	Overpass	Orlando	Rural	Yes	4	Paved	Proposed Bike Facility			None	OUATS 2020 3/96	OUATS designated as needed bikeway facility (Fig. 20, Tech. Rpt. #5)
2	Tropical Trail	Underpass	Orlando	Urban	No	2	N/A	Proposed Bike lane			Both sides	Orlando Proposed Bikeway Facility Map, 4/94	City of Orlando designated as proposed bike lane. Two 4' bike lanes. Connect Americana Blvd. to Orlando-Vineland Rd.
3	Shingle Creek Greenway	Canal right-of-way	Orlando	N/A	N/A	N/A	N/A		Proposed Primary Trail Network, Off-road/ street facility		N/A	Orlando Proposed Bikeway Facility Map 4/94, Orange County Greenways Trails & Bikeways, 08/96, OUA MPO Bicycle Facilities Planning Map 11/96	City of Orlando designated as off-street dual use facility. Proposed 15' facility. Right-of-way is tight. Orange County designated as Primary Trail Network. OUA MPO designated as unfunded/planned off-road facility.
Segment 2													
4	John Young Parkway, SR 423	Underpass	Orlando	Urban	Yes	4 to 6	N/A	Proposed Bike Facility			Both sides	OUA MPO Bicycle Facilities Planning Map 11/96	OUA MPO designated as funded/planned on-road facility north of I-4.
5, 41	Gore St.	Underpass	Orlando	Urban	Yes	4	N/A	Proposed Bike Lane			Both sides	Orlando Proposed Bikeway Facility Map, 4/94, OUA MPO Bicycle Facilities Planning Map 11/96	City of Orlando designated as proposed bike lane. Two 4' bike lanes to be striped. OUA MPO designated as funded/planned on-road facility.
6	CSXT Railroad at intersection of I-4 and East-West Expressway	Underpass	Orlando	Urban	N/A	N/A	N/A		Proposed Paved Trail		None	Orange County Greenways Trails & Bikeways, 08/96	Orange County designated as paved multiple use trail.

Table 3-38. Bicycle, Trail, and Greenway Facilities (Continued)

Crossing #	Name	Type Crossing	City	Road Type (Rural or Urban)	Median (yes or no)	No. of Lanes	Shoulder (Paved or Unpaved)	Bicycle Facility ^a	Trail Facility ^b	Greenway Facility ^c	Exist. Sidewalk Facility	Source	Special Requirements/ Notes
9	Hughey Ave.	Frontage	Orlando	Urban	No	3	Paved	Existing Bike Facility			Both sides	Orlando Proposed Bikeway Facility Map, 4/94	City of Orlando designated as residential street signage.
10	Washington St.	Underpass	Orlando	Urban	No	4	N/A	Proposed Bike Lane			Both sides	Orlando Proposed Bikeway Facility Map, 4/94, OUA MPO Bicycle Facilities Planning Map 11/96	OUA MPO designated as funded/planned on-road facility. City of Orlando designated as proposed bike lane. Two 4' bike lanes.
11	Livingston St.	Underpass	Orlando	Urban	Yes	4	N/A	Proposed Bike Lane			Both sides	Orlando Proposed Bikeway Facility Map, 4/94, OUA MPO Bicycle Facilities Planning Map 11/96	OUA MPO designated as funded/planned on-road facility. City of Orlando designated as proposed bike lane. Two 4' bike lanes.
12	Amelia St.	Underpass	Orlando	Urban	No	4 to 2	N/A	Proposed Bike Lane			Both sides	Orlando Proposed Bikeway Facility Map, 4/94, OUA MPO Bicycle Facilities Planning Map 11/96	OUA MPO designated as funded/planned on-road facility. City of Orlando designated as proposed bike lane. Two 4' bike lanes.
38	Rio Grande	Underpass/ SR 408	Orlando	Urban	No	4	N/A		Proposed off street/ road facility		Yes	Orlando Proposed Bikeway Facility Map, 4/94, OUA MPO Bicycle Facilities Planning Map 11/96	OUA MPO designated as funded/planned off-road facility. City of Orlando designated as off-street dual use facility.
39	Long St. / Carter St.	Frontage/ SR 408	Orlando	Urban	No	2	N/A	Existing Bike Facility			Yes	Orlando Proposed Bikeway Facility Map, 4/94	City of Orlando designated as residential street signage.

3-147

I-4 PD&E Study - Section 2
Final Environmental Impact Statement
August 2002

Table 3-38. Bicycle, Trail, and Greenway Facilities (Continued)

Crossing #	Name	Type Crossing	City	Road Type (Rural or Urban)	Median (yes or no)	No. of Lanes	Shoulder (Paved or Unpaved)	Bicycle Facility ^a	Trail Facility ^b	Greenway Facility ^c	Exist. Sidewalk Facility	Source	Special Requirements/ Notes
40	Westmoreland Dr.	Underpass/ SR 408	Orlando	Urban	No	4	N/A	Proposed Bike Facility			Yes	Orlando Proposed Bikeway Facility Map, 4/94, OUA MPO Bicycle Facilities Planning Map 11/96	City of Orlando designated as proposed bike lane. OUA MPO designated as funded/planned on-road facility.
42	Rosalind Ave.	Underpass/ SR 408	Orlando	Urban	No	3	N/A	Proposed Bike Facility			Yes	Orlando Proposed Bikeway Facility Map, 4/94, OUA MPO Bicycle Facilities Planning Map 11/96	City of Orlando designated as proposed bike lane. OUA MPO designated as funded/planned on-road facility.
43	Anderson St.	Frontage/ SR 408	Orlando	Urban	No	3	N/A	Proposed Bike Facility			Yes	Orlando Proposed Bikeway Facility Map, 4/94, OUA MPO Bicycle Facilities Planning Map 11/96	City of Orlando designated as proposed bike lane. OUA MPO designated as funded/planned on-road facility.
44	Bumby Ave.	Underpass/ SR 408	Orlando	Urban	Yes	6	N/A	Existing /Proposed Bike Facility			Yes	Orlando Proposed Bikeway Facility Map, 4/94, OUA MPO Bicycle Facilities Planning Map 11/96	City of Orlando designated as residential street signage south of East/West and a proposed bike lane north of East/West. OUA MPO designated as residential street signage south of East/West and a funded/planned on-road facility north of East/West.

Table 3-38. Bicycle, Trail, and Greenway Facilities (Continued)

Crossing #	Name	Type Crossing	City	Road Type (Rural or Urban)	Median (yes or no)	No. of Lanes	Shoulder (Paved or Unpaved)	Bicycle Facility ^a	Trail Facility ^b	Greenway Facility ^c	Exist. Sidewalk Facility	Source	Special Requirements/ Notes
Segment 3													
14	N. Shore Terrace	Frontage	Orlando	Urban	No	2	Paved	Exist. Bike Route			Both sides	Orlando Proposed Bikeway Facility Map, 4/94, OUA MPO Bicycle Facilities Planning Map 11/96, Project Team Field Verification, 12/96	OUA MPO designated as existing residential street signage. City of Orlando designated as existing residential street signage. Field verification identified as signed bike route.
15	New Hampshire St.	Underpass	Orlando	Urban	No	2	N/A	Exist. Bike Route			South side	Orlando Proposed Bikeway Facility Map, 4/94, OUA MPO Bicycle Facilities Planning Map 11/96, Project Team Field Verification, 12/96	OUA MPO designated as existing residential street signage. City of Orlando designated as existing residential street signage. Field verification identified as signed bike route.
16	Princeton Street (SR 438)	Underpass	Orlando	Urban	No-Yes	4 to 6	Paved	Proposed Bikeway Facility			Both sides	OUATS 2020 3/96	Designated as needed bikeway facility (Fig. 20, Tech. Rpt. #5)
17	Winter Park St.	Underpass	Orlando	Urban	No	2	N/A	Exist. Bike Route			South side	Orlando Proposed Bikeway Facility Map, 4/94, OUA MPO Bicycle Facilities Planning Map 11/96, Project Team Field Verification, 12/96	OUA MPO designated as existing residential street signage. City of Orlando designated as existing residential street signage. Field verification identified as signed bike route.
18	Par Ave.	Underpass	Winter Park	Urban	No	3	N/A	Proposed Bike Lane			Both sides	Winter Park Draft Bicycle Circulation Plan, 6/95	Winter Park designated as proposed bike lane.
19	Formosa Ave.	Underpass	Orlando	Urban	No	2	N/A	Proposed Bike Lane			East side	Winter Park Draft Bicycle Circulation Plan 6/95	Winter Park designated as proposed bike lane.

3-149

I-4 PD&E Study - Section 2
Final Environmental Impact Statement
August 2002

Table 3-38. Bicycle, Trail, and Greenway Facilities (Continued)

Crossing #	Name	Type Crossing	City	Road Type (Rural or Urban)	Median (yes or no)	No. of Lanes	Shoulder (Paved or Unpaved)	Bicycle Facility ^a	Trail Facility ^b	Greenway Facility ^c	Exist. Sidewalk Facility	Source	Special Requirements/ Notes
Segment 4													
20	Kennedy Blvd	Underpass	Eatonville	Rural	No	2 to 3	Paved	Proposed Bike Facility			South side	OUATS 2020 3/96, Maitland Alternative Bikeway Study 2/94, OUA MPO Bicycle Facilities Planning Map 11/96	OUATS 2020 designated as needed bikeway facility. Maitland designated as proposed funded blue bike route. OUA MPO designated as funded/planned on-road facility.
21	Lake Destiny Drive	Frontage	Maitland	Mixed	No-Yes	2 to 4	Mixed	Proposed Bike Facility			West side	Maitland Alternative Bikeway Study 2/94, OUA MPO Bicycle Facilities Planning Map 11/96	Maitland designated as proposed blue and green bike route. OUA MPO designated as funded/planned on-road facility.
22	Maitland Blvd. (SR 414)	Overpass	Maitland	Urban	Yes	6	N/A	Exist. Bike Facility			None	OUA MPO Bicycle Facilities Planning Map 11/96	OUA MPO designated as existing on-road facility
23	Wymore Rd	Overpass	Maitland	Urban	No	2	N/A	Proposed Bike Route			None	Maitland Alternative Bikeway Study 2/94, OUA MPO Bicycle Facilities Planning Map 11/96	Maitland designated as proposed green bike route. "Clamp On" Structure by Weslo Corp at this location/or at Maitland Blvd./OUA MPO designated as funded/planned on-road facility
24	Semoran Blvd. (SR 436)	Overpass	Altamonte Spgs.	Urban	Yes	6 to 8	N/A	Proposed Bike Facility			None	OUA MPO Bicycle Facilities Planning Map 11/96	Facility terminates at I-4 on west. OUA MPO designated as funded/planned on-road facility.
25	Central Parkway	Overpass	Altamonte Spgs.	Urban	Yes	4	N/A	Proposed Bike Facility			Both sides	Altamonte Springs Growth Mgmt. Dept.	Altamonte Springs designated as proposed bike facility. Altamonte Springs Bike Plan being developed.

Table 3-38. Bicycle, Trail, and Greenway Facilities (Continued)

Crossing #	Name	Type Crossing	City	Road Type (Rural or Urban)	Median (yes or no)	No. of Lanes	Shoulder (Paved or Unpaved)	Bicycle Facility ^a	Trail Facility ^b	Greenway Facility ^c	Exist. Sidewalk Facility	Source	Special Requirements/ Notes
26	Powerline Easement	Powerline Easement	Seminole Co.	N/A	N/A	N/A	N/A		Proposed Paved Trail		N/A	Seminole Co. Greenways, Trails & Bikeways Plan 07/96	Seminole County designated as paved multiple use trail.
27	E.E. Williamson	Overpass	Seminole Co.	Rural	No	2	Unpaved		Proposed Paved Trail		None	Seminole Co. Greenways, Trails & Bikeways Plan 07/96, EAC Report 9/96	Seminole County designated as paved multiple use trail. Preferred link for FNST to Seminole Wekiva Trail. EAC report designated as proposed crossing for Central Florida Loop.
Segment 5													
28	Paola Rd (CR 46A)	Overpass	Seminole Co.	Rural	No	2	Unpaved		Proposed Paved Trail		None	Seminole Co. Greenways, Trails & Bikeways Plan 07/96, EAC Report 9/96	EAC report designated as proposed crossing for Central Florida Loop.
29	South Paola Rd (CR 46A)	Overpass	Seminole Co.	N/A	N/A	N/A	N/A		Proposed Paved Trail		N/A	Seminole Co. Greenways, Trails & Bikeways Plan 07/96	Seminole County designated as paved multiple use trail. Serves as link for FNST users to Seminole Wekiva Trail.
30	SR 46	Overpass	Seminole Co.	Rural	Yes	4	Paved	Exist. Bike Facility			None	OUA MPO Bicycle Facilities Planning Map 11/96, OUATS 2020 3/96	OUA MPO designated as existing on road facility. OUATS designated as existing bikeway facility.
31	Canal	Easement	Seminole Co.	N/A	N/A	N/A	N/A		Proposed paved trail		N/A	Seminole Co. Greenways, Trails & Bikeways Plan 07/96	Seminole County proposed paved multiple use trail.

3-151

Table 3-38. Bicycle, Trail, and Greenway Facilities (Continued)

I-4 PD&E Study - Section 2
Final Environmental Impact Statement
August 2002

Crossing #	Name	Type Crossing	City	Road Type (Rural or Urban)	Median (yes or no)	No. of Lanes	Shoulder (Paved or Unpaved)	Bicycle Facility ^a	Trail Facility ^b	Greenway Facility ^c	Exist. Sidewalk Facility	Source	Special Requirements/ Notes
Segment 6													
32	Seminole Blvd./US 17-92	Underpass	Seminole Co.	Rural	Yes	4	Paved	Exist. Bike Facility	Proposed Paved Trail	Proposed Seminole County Greenway	None	OUA MPO Bicycle Facilities Planning Map 11/96, Seminole Co. Greenways, Trails & Bikeways Plan 07/96, EAC Report 9/96, City of Sanford Bicycle/ Pedestrian Conceptual Master Plan 5/95	OUA MPO designated as existing on road facility. Seminole County designated as paved multiple use trail and greenway. EAC report listed in 150 Florida Greenways as Seminole County Greenway. City of Sanford designated as Lake Monroe Riverwalk.
33	Dirksen Dr./ DeBary Ave.	Underpass	Volusia Co.	Rural	Yes	4	Paved	Proposed Bike Facility	Proposed South Volusia Trail	Proposed DeBary Greenway	None	Volusia County MPO 2020 Transportation Plan 5/96, EAC Report 9/96	Volusia County designated as proposed bikeway facility. EAC report designated as proposed South Volusia Trail. EAC report listed in 150 Florida Greenways as DeBary Greenway.
34	Enterprise Rd.	Overpass	Volusia Co.	Rural	No	2	Unpaved	Proposed Bike Facility			None	Volusia County MPO 2020 Transportation Plan 5/96	Volusia County designated as proposed bikeway facility.
35	Saxon Blvd.	Overpass	Volusia Co.	Urban	Yes	4 to 6	N/A	Proposed Bike Facility			Both sides	Volusia County MPO 2020 Transportation Plan 5/96	Volusia County designated as proposed bikeway facility.
36	Proposed Rhode Island Rd.	Overpass	Volusia Co.	Urban		2	N/A	Proposed Bike Facility			N/A	Volusia County MPO 2020 Transportation Plan 5/96	Volusia County designated as proposed bikeway facility.
37	SR 472	Overpass	Volusia Co.	Rural	Yes	2	Paved	Proposed Bike Facility			None	Volusia County MPO 2020 Transportation Plan 5/96	Volusia County designated as proposed bikeway facility.

^aBikeway Facility – Includes a bike lane, bike route, or paved shoulder.

^bTrail Facility – Paved trails include multiple use trails for walking, bicycling, and skating. Unpaved trails include multiple trails for hiking, horseback riding, and off-road bicycling.

^cGreenway Facility – Corridors of protected open space that are managed for conservation and/or recreation.

OUATS – Orlando Urban Area Transportation Study

OUA MPO – Orlando Urban Area Metropolitan Planning Organization (METROPLAN ORLANDO)

ROW – Right-of-way

EAC – Environmental Advisory Committee

MPO – Metropolitan Planning Organization

3-152

Table 3-39. Pedestrian/Sidewalk Facilities

Site # (refer to Figure)	Road Name	Road Type (Crossroad or Adjacent)	Federal, State or Local	City	Road Type (Rural or Urban)	Median (yes or no)	No. of Lanes	Shoulder (Paved or Unpaved)	Other Existing Facility	Sidewalk Notes	Potential Affected Sections ^a
Segment 1											
1	Central Florida Parkway	Underpass	Local	Orlando	Urban	No	2	N/A	No	4-ft sidewalk with 4-ft handrail continuous on south side of roadway under I-4.	Crossing potentially affected under I-4.
2	Turkey Lake Road	Adjacent/west side of I-4	State 439	Orlando	Rural	No	2	Unpaved	No	4-ft sidewalk with 4-ft offset in sections on west side of roadway from Central Florida Parkway crossing to north of Sand Lake Rd. Sidewalk continuous on east side of roadway from south to north of Sand Lake Road.	Sidewalk section potentially affected is north of Central Florida Parkway crossing and south of Bee Line Expressway Intersection. Sidewalk section potentially affected is south of Sand Lake Road Intersection.
3	Sand Lake Rd.	Underpass	State 482	Orlando	Mixed	Yes	6 to 8	Mixed	No	4-ft sidewalk with 2-ft offset continuous on south side of roadway under I-4. North side of roadway has sections of sidewalk.	Crossing potentially affected under I-4.
4	Tropical Tr.	Underpass	Local	Orlando	Urban	No	2	N/A	No	4-ft sidewalk continuous under I-4 on both sides of roadway.	Crossing potentially affected under I-4.
Segment 2											
5	L.B. McLeod Rd.	Adjacent/west side of I-4	Local	Orlando	Rural	No	2 to 4	Unpaved	No	4-ft sidewalk with 4-ft offset in sections on north side of roadway from John Young Pkwy. to Rio Grande Avenue.	Sidewalk section potentially affected is in the John Young Pkwy. Interchange area.
6	John Young Parkway	Underpass	State 423	Orlando	Urban	Yes	4 to 6	N/A	6-ft Paved Shoulder s north of I-4	4-ft sidewalk with 4-ft offset continuous on both sides of roadway under I-4.	Crossing potentially affected under I-4.
7	33rd. St.	Adjacent/east side	Local	Orlando	Rural	No	2	Paved	No	4-ft sidewalk with 4-ft offset in sections on both sides of roadway from east of John Young Parkway interchange to Rio Grande Avenue.	Sidewalk section potentially affected is from east of John Young Parkway interchange to Rio Grande Avenue.
8	Rio Grande Ave.	Underpass	Local	Orlando	Rural	No	2	N/A	No	4-ft sidewalk with 4-ft offset continuous on west side of roadway under I-4.	Crossing potentially affected under I-4.
9	Orange Blossom Trail	Underpass	Federal 441	Orlando	Urban	Yes	4	N/A	No	4-ft sidewalk with 4-ft offset continuous on both sides of roadway under I-4. Sidewalk on east side ends approx. 200 ft west of I-4.	
10	Michigan St.	Underpass	Local	Orlando	Urban	No	2	N/A	No	4-ft sidewalk with 4-ft offset continuous on south side of roadway under I-4. Sidewalk in sections on north side of roadway under I-4.	Crossing potentially affected under I-4.

3-153

I-4 PD&E Study - Section 2
Final Environmental Impact Statement
August 2002

Table 3-39. Pedestrian/Sidewalk Facilities (Continued)

Site # (refer to Figure)	Road Name	Road Type (Crossroad or Adjacent)	Federal, State or Local	City	Road Type (Rural or Urban)	Median (yes or no)	No. of Lanes	Shoulder (Paved or Unpaved)	Other Existing Facility	Sidewalk Notes	Potential Affected Sections ^a
11	Kaley St.	Underpass	Local	Orlando	Urban	Yes	2	N/A	No	4-ft sidewalk with 4-ft offsets continuous on both sides under I-4 from Parramore Ave. to Talloaks Ave.	Crossing potentially affected under I-4.
12	Avondale Ave.	Adjacent/west side	Local	Orlando	Urban	No	2	N/A	No	Sidewalk continuous on west side of roadway from Kaley St. to 19th St. Sidewalk on west side of roadway at Grand Ave. connects to pedestrian overpass.	Sidewalk may be affected from Kaley St. to 19th St. Sidewalk may be affected at Grand Ave.
13	Grand Ave.	Adjacent/west side	Local	Orlando	Urban	No	2	N/A	No	Sidewalk continuous on south side of roadway. The sidewalk connects to the Avondale Ave. sidewalk and to pedestrian overpass.	Sidewalk may be affected east and west of Avondale Ave.
14	Pedestrian Overpass	Overpass	N/A	Orlando	N/A	N/A	N/A	N/A	No	10-ft pedestrian walkway over I-4 connects Indiana St. to Grand Ave. Connects to Avondale Ave. and Grand Ave to Grand Ave. Elem. School. Connects to Division St. sidewalks on east side on I-4.	Sidewalks affected may include the pedestrian walkway and sidewalk sections east and west of I-4 that connect to Indiana St. and Grand Ave.
15	Gore St.	Underpass	Local	Orlando	Urban	Yes	4	N/A	No	4-ft sidewalk with 4-ft offset continuous on both sides of roadway under I-4. Sidewalk connects Division Ave. with Parramore Ave.	Crossing potentially affected under I-4.
16	Division Ave.	Adjacent/Crossing	Local	Orlando	Urban	No	3	N/A	No	4-ft sidewalk with 4-ft offset in sections on both sides of roadway from Kaley St. to just north of I-4/SR 408 interchange. Sidewalk provides pedestrian access to Griffin Park.	Sidewalk section potentially affected is from Gore St. to just north of East-West.
17	Callahan Dr.	Adjacent/west side	Local	Orlando	Urban	No	2	N/A	No	Sidewalk continuous on both sides of roadway. Sidewalk connects to Division Ave. and provides access to Griffin Park.	Portion of sidewalk adjacent to I-4 potentially affected.
18	Dunbar Ct.	Adjacent/west side	Local	Orlando	Urban	No	2	N/A	No	4-ft sidewalk continuous on both sides of roadway. Sidewalk connects to Callahan Dr. and provides access to Griffin Park.	
19	Anderson St.	Overpass	Local	Orlando	Urban	No	3	N/A	No	4-ft sidewalk continuous on south side of roadway from Division Ave. to east of Magnolia Ave. North side has sections of 4-ft sidewalks.	

Table 3-39. Pedestrian/Sidewalk Facilities (Continued)

Site # (refer to Figure)	Road Name	Road Type (Crossroad or Adjacent)	Federal, State or Local	City	Road Type (Rural or Urban)	Median (yes or no)	No. of Lanes	Shoulder (Paved or Unpaved)	Other Existing Facility	Sidewalk Notes	Potential Affected Sections ^a
20	South St.	Underpass	Local	Orlando	Urban	No	4	N/A	No	4-ft sidewalk with 7-ft offset continuous on south side of roadway from Division Ave. to east of CSXT Railroad. North side has section of sidewalk missing from Hughey Ave. to Garland Ave.	Crossing potentially affected under I-4.
21	Garland Ave.	Adjacent/east side	Local	Orlando	Urban	No	3	N/A	No	4-ft sidewalk with 4-ft offset in sections on both sides of roadway from East-West Expressway to Orange Avenue.	Sidewalk sections potentially affected include from East-West Expressway to Orange Ave.
22	Church St.	Underpass	Local	Orlando	Urban	No	4	N/A	No	8-ft sidewalk continuous on both sides of roadway from west of Hughey Ave. to east of Garland Ave.	Crossing potentially affected under I-4.
23	Bob Snow Ln.	Underpass	Local	Orlando	Urban	No	2	N/A	No	12-ft sidewalk continuous on both sides of roadway under I-4. Located between Church St. and Central Blvd. at Orlando Municipal Justice Bldg. Sidewalk connects Hughey Ave to Garland Ave.	Crossing potentially affected under I-4.
24	Hughey Ave.	Adjacent/west side	Local	Orlando	Urban	No	3	N/A	No	4-ft sidewalk with 10-ft offset continuous on west side of roadway. 4-ft sidewalk with 4-ft offset in sections on east side from South St. to SR 50.	Sidewalk section potentially affected is from South St. to north of Church St.
25	Central Blvd.	Underpass	Local	Orlando	Urban	No	4	N/A	No	4-ft sidewalk with 4-ft offset continuous on both sides of roadway from west of Hughey Ave. to east of Garland Ave.	Crossing potentially affected under I-4.
26	Washington St.	Underpass	State 526	Orlando	Urban	No	4	N/A	No	6-ft sidewalk with 4-ft offset continuous on both sides of roadway from west of Hughey Ave to east of Garland Ave.	Crossing potentially affected under I-4.
27	Robinson St.	Underpass	State 526	Orlando	Urban	No	4 to 3	N/A	No	4-ft sidewalk with 6-ft offset continuous on south side, 6-ft sidewalk with 6-ft offset on north side, from west of Hughey Ave to east Garland Ave.	Crossing potentially affected under I-4.
28	Livingston St.	Underpass	Local	Orlando	Urban	Yes	4	N/A	No	Sidewalk continuous on both sides of roadway from west of Hughey Ave to east Garland Ave. Sidewalk on south side is 6-ft, north side is 8-ft.	Crossing potentially affected under I-4.

3-155

Table 3-39. Pedestrian/Sidewalk Facilities (Continued)

Site # (refer to Figure)	Road Name	Road Type (Crossroad or Adjacent)	Federal, State or Local	City	Road Type (Rural or Urban)	Median (yes or no)	No. of Lanes	Shoulder (Paved or Unpaved)	Other Existing Facility	Sidewalk Notes	Potential Affected Sections ^a
29	Amelia St.	Underpass	Local	Orlando	Urban	No	4 to 2	N/A	No	12-ft sidewalk with 4-ft barrier wall/4-ft handrail on south side and 4-ft sidewalk with 4-ft barrier on north side, continuous on both sides of roadway from west of Hughey Ave to east Garland Ave.	Crossing potentially affected under I-4.
30	Colonial Dr.	Underpass	State 50	Orlando	Urban	No-Yes	4 to 7	N/A	No	4-ft sidewalk with 6-ft offset continuous on both sides of roadway from west of Hughey Ave to east Garland Ave.	Crossing potentially affected under I-4.
55	Bumby Ave.	Underpass	Local	Orlando	Urban	Yes	6	N/A	Bus Stop	Both sides of street	Crossing potentially affected under I-4.
56	South St.	Adjacent / North Side	State	Orlando	Urban	No	3	N/A	Bus Stops	North side of street.	Only affected if South Street moved north.
57	Mills Ave.	Underpass	Local	Orlando	Urban	Yes	5	N/A	No	Both sides of street	Crossing potentially affected under I-4.
58	Summerlin Ave.	Underpass	Local	Orlando	Urban	No	3	N/A	Bus Stop	Sidewalk widens under SR 408 to about 10 ft. Both sides of street.	Crossing potentially affected under I-4.
59	South St.	Adjacent / North Side	State	Orlando	Urban	No	3	N/A	No	Both sides of the street	Only affected if buildings moved north.
60	Delaney Ave.	Perpendicular /North Side	Local	Orlando	Urban	No	2	N/A	No	Stops at OBT from the East. Runs from Nashville to Rio Grande	Potentially affected if East-West widened significantly
61	Lucerne Cir.	Underpass / Adjacent	Local	Orlando	Urban	No	2	N/A	Around Park	Both sides of street	Impact if bridge demolished
62	Garland Ave./ Sylvia	Underpass	Local	Orlando	Rural	No	2	N/A	No	Both sides of street	Crossing potentially affected under I-4.
63	Garland under Anderson	Underpass	Local	Orlando	Urban	No	2	N/A	No	Both sides of street	Crossing potentially affected with Anderson improvements
64	Division Ave.	Underpass	Local	Orlando	Urban	No	4	N/A	Bus Stop	Both sides of street	Crossing potentially affected under I-4.
65	Carter St.	Adjacent / South Side	Local	Orlando	Urban	No	2	N/A	No	South side of street	Potentially affected if East-West on/off ramps changed significantly
66	Conley St.	Underpass	Local	Orlando	Urban	No	2	N/A	No	Both sides of street	Potentially affected if East-West on/off ramps changed significantly
67	Parramore Ave.	Underpass	Local	Orlando	Urban	No	3	N/A	Benches and Tables	Both sides of street.	Crossing potentially affected under I-4.

Table 3-39. Pedestrian/Sidewalk Facilities (Continued)

Site # (refer to Figure)	Road Name	Road Type (Crossroad or Adjacent)	Federal, State or Local	City	Road Type (Rural or Urban)	Median (yes or no)	No. of Lanes	Shoulder (Paved or Unpaved)	Other Existing Facility	Sidewalk Notes	Potential Affected Sections ^a
68	Long St.	Adjacent / North Side	Local	Orlando	Urban	No	2	N/A	No	North side of street	Potentially affected if East-West widened significantly
69	Westmoreland Ave.	Underpass	Local	Orlando	Urban	No	4	N/A	Bus Stop	Both sides of street	Crossing potentially affected under I-4.
70	Orange Blossom Trail	Underpass	Federal	Orlando	Urban	No	6	N/A	Bus Stop	Both sides of street	Crossing potentially affected under I-4.
71	Rio Grande Ave.	Underpass	Local	Orlando	Urban	No	4	N/A	Bus Stop	Both sides of street	Crossing potentially affected under I-4.
72	Tampa Ave.	Underpass	Local	Orlando	Urban	No	3	N/A	No	Both sides of street	Crossing potentially affected under I-4.
73	Carter St.	Adjacent / South Side	Local	Orlando	Urban	No	2	N/A	No	Runs from Tampa, East to Rio Grande	Potentially affected if East-West widened significantly
74	Carter St.	Adjacent / South Side	Local	Orlando	Rural	No	2	N/A	No	Runs From OBT, West about 300 ft	Potentially affected if East-West widened significantly
75	Carter St.	Adjacent / South Side	Local	Orlando	Urban	No	2	N/A	No	From Easy Ave to Parramore	Potentially affected if East-West widened significantly
76	Anderson St.	Adjacent / South Side	Local	Orlando	Urban	No	2	N/A	No	Runs from Parramore to Division	Potentially affected if East-West widened significantly
77	Anderson St.	Overpass I-4	Local	Orlando	Urban	No	3	N/A	No	South side of street	Potentially affected if East-West widened significantly
78	Magnolia Ave.	Underpass	State	Orlando	Urban	No	2	N/A	Around Park	Around circle, under SR 408	Potential impact with bridge demolition
79	Rosalind Ave.	Underpass	State	Orlando	Urban	No	3	N/A	Around Park	Both sides of street	Potential impact with bridge demolition
80	Lucerne Cir.	Underpass	Local	Orlando	Urban	No	1	N/A	No	Runs under off ramp to Orange Ave.	Potential impact with bridge demolition
81	Anderson St.	Underpass / Adjacent	Local	Orlando	Urban	No	3	N/A	Around Park	South side of street. 12-ft paved shoulder from SR 408 to Summerlin.	Potentially affected if East-West widened significantly
82	Orange Ave.	Underpass	State	Orlando	Urban	No	3	N/A	Bus stops	Both sides of street	Potential impact with bridge demolition
Segment 3											
31	Ivanhoe Blvd.	Underpass	Local	Orlando	Urban	Yes	4 to 5	N/A	No	4-ft sidewalk with 10-ft offset continuous on south side of roadway.	Crossing potentially affected under I-4.
32	Ivanhoe Blvd.	Adjacent/west side. North of Lake Ivanhoe	Local	Orlando	Urban	Yes	2	N/A	Exist. Signed Bike route	Sidewalk continuous on north side of roadway. Sidewalk connects to N. Shore Terrace.	Sidewalk potentially affected is just west of I-4.

3-157

I-4 PD&E Study - Section 2
Final Environmental Impact Statement
August 2002

Table 3-39. Pedestrian/Sidewalk Facilities (Continued)

Site # (refer to Figure)	Road Name	Road Type (Crossroad or Adjacent)	Federal, State or Local	City	Road Type (Rural or Urban)	Median (yes or no)	No. of Lanes	Shoulder (Paved or Unpaved)	Other Existing Facility	Sidewalk Notes	Potential Affected Sections ^a
33	N. Shore Ter.	Adjacent/west side	Local	Orlando	Urban	No	2	N/A	Exist. Signed Bike route	4-ft sidewalk with 4-ft offset continuous on west side of roadway. Sidewalk connects to New Hampshire St.	Sidewalk potentially affected is adjacent to I-4, just north of Ivanhoe Blvd.
34	New Hampshire St.	Underpass	Local	Orlando	Urban	No	2	N/A	Exist. Bike Route	4-ft sidewalk with 4-ft offset continuous on south side of roadway from west of Formosa Ave. to Orange Ave.	Crossing potentially affected under I-4.
35	Cornell Ave.	Adjacent/ east side	Local	Orlando	Urban	No	2	N/A	No	4-ft sidewalk with 4-ft offset sections on both sides of roadway between New Hampshire St. and Yale St.	Sidewalk potentially affected from New Hampshire St. to Yale St. Sections of sidewalks on Vanderbilt St. and Yale St. may also be affected where they connect to Cornell Ave.
36	Princeton St.	Underpass	State 438	Orlando	Urban	No-Yes	4 to 6	N/A	No	4-ft sidewalk with 6-ft offset continuous on both sides of roadway from west of Formosa Ave. to Orange Ave.	Crossing potentially affected under I-4.
37	Winter Park St.	Underpass	Local	Orlando	Urban	No	2	N/A	Exist. Signed Bike Route	4-ft sidewalk with 4-ft offset continuous on south side of roadway from west of Formosa Ave. to Orange Ave.	Crossing potentially affected under I-4.
38	Dade Ave.	Adjacent/east side	Local	Orlando	Urban	No	2	N/A	No	Sidewalk in sections on both sides of roadway from Winter Park St. to Par Ave.	Sidewalk section potentially affected near Hazel St. Proposed MMMP Pond location.
39	Par Ave.	Underpass	Local	Winter Park	Urban	No	3	N/A	No	4-ft sidewalk with 4-ft offset continuous on south side of roadway from west of Formosa Ave. to Clay St. 4-ft sidewalk with 4-ft offset on north side.	Crossing potentially affected under I-4.
40	Formosa Ave.	Underpass	Local	Orlando	Urban	No	2	N/A	Exist. Signed Bike Route from New Hampshire to Par Ave.	4-ft sidewalk with 4-ft offset continuous on both sides of roadway from New Hampshire St. to Par Ave. Sidewalk continuous on east side of roadway from north of Par Ave. to Oglesby Ave.	Crossing potentially affected under I-4.

Table 3-39. Pedestrian/Sidewalk Facilities (Continued)

Site # (refer to Figure)	Road Name	Road Type (Crossroad or Adjacent)	Federal, State or Local	City	Road Type (Rural or Urban)	Median (yes or no)	No. of Lanes	Shoulder (Paved or Unpaved)	Other Existing Facility	Sidewalk Notes	Potential Affected Sections ^a
41	Minnesota Ave.	Underpass	Local	Winter Park	Urban	No	2	N/A	No	4-ft sidewalk with 4-ft offset sections on the north side of the roadway from west of I-4 right-of-way to Formosa Ave. Sidewalk sections on south side from Formosa Ave. to east of Clay St.	Crossing potentially affected under I-4.
42	Fairbanks Ave.	Underpass	State 424A	Winter Park	Urban	Yes	6 to 4	N/A	No	4-ft sidewalk with 6-ft offset and 4-ft barrier walls continuous on both sides of roadway from west of I-4 right-of-way to east of Formosa St.	Crossing potentially affected under I-4.
43	Pedestrian Overpass	Overpass	Local	Winter Park	Urban	N/A	N/A	N/A	No	10-ft pedestrian walkway over I-4 that connects Killarney Elementary School to Wymore Rd.	Sidewalks affected may include the pedestrian walkway and sidewalk sections east and west of I-4 that connect the walkway to Killarney Elementary and Wymore Rd.
44	Wymore Rd.	Underpass / Adjacent	Local	Winter Park	Urban	Yes	4	N/A	No	4-ft sidewalk with 10-ft offset in sections on west side, 4-ft sidewalks with 6-ft offset continuous on east side of roadway from Fairbanks Ave. to Lee Rd.	Crossing potentially affected under I-4.
45	Riddle Dr.	Adjacent/west side	Local	Winter Park	Urban	No	2	N/A	No	Sidewalk continuous on both sides of roadway. Sidewalk connects to Wymore Rd.	Sidewalk section potentially affected is the area that connects to Wymore Rd.
Segment 4											
46	Lee Rd.	Underpass	State 423	Winter Park	Urban	Yes	4 to 7	N/A	No	4-ft sidewalk with 10-ft offset and 4-ft barrier wall continuous on both sides of roadway from west of I-4 right-of-way to east of Wymore Rd.	Crossing potentially affected under I-4.
47	Kennedy Blvd.	Underpass	State 438A	Eatonville	Urban	No	2 to 3	N/A	No	4-ft sidewalk with 4-ft offset continuous on south side of roadway from west of Lake Destiny Dr. to east of Wymore Rd.	Crossing potentially affected under I-4.
48	Central Parkway	Overpass	Local	Altamonte Spgs.	Urban	Yes	4	N/A	No	4-ft sidewalk with 2-ft shoulder continuous on both sides of roadway over I-4. Sidewalk continues west of Douglas Ave. and east of Raymond Ave. 4-ft barrier wall with 6-ft chain link fence on top.	Crossing potentially affected over I-4.

3-159

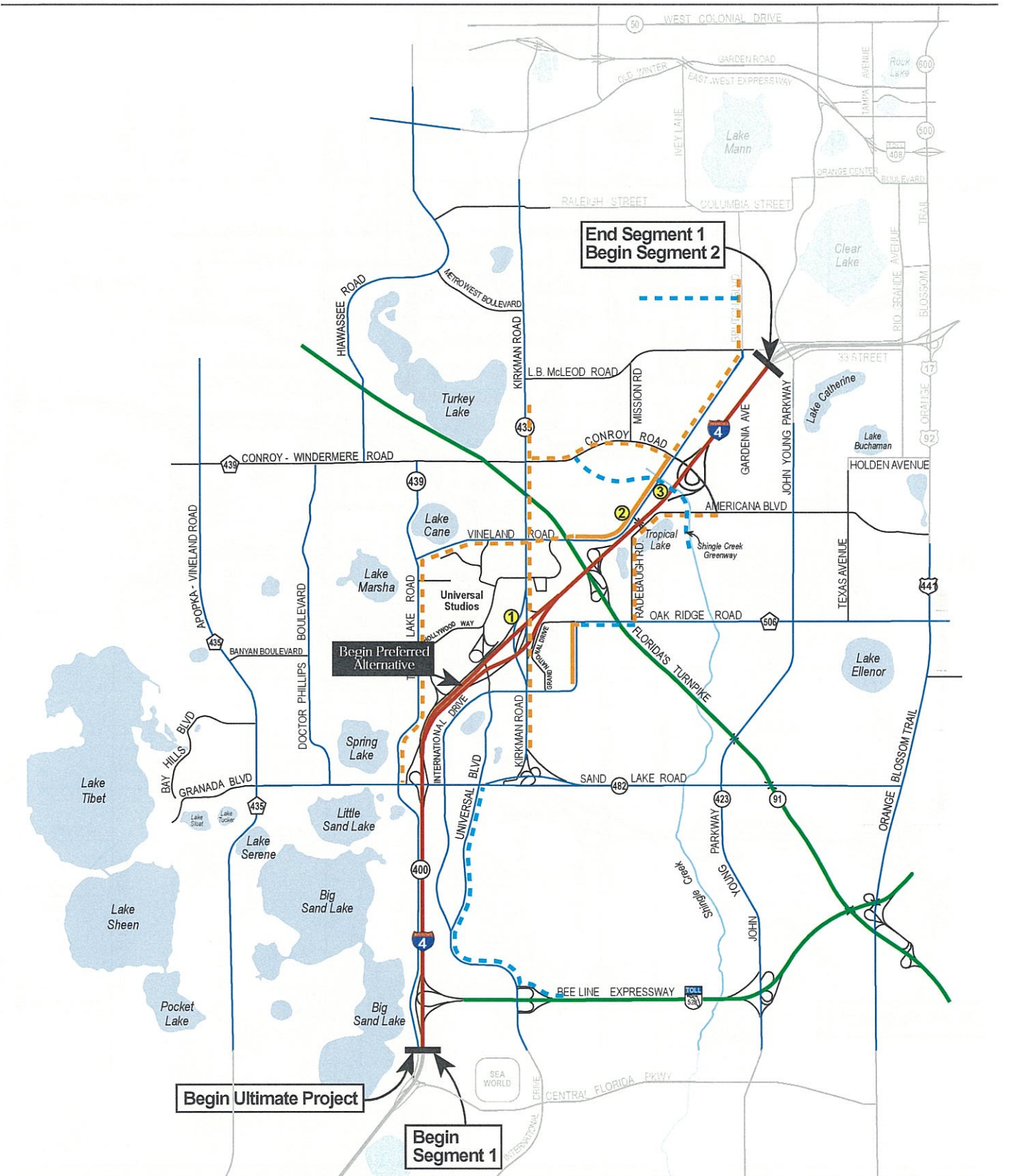
I-4 PD&E Study - Section 2
Final Environmental Impact Statement
August 2002

Table 3-39. Pedestrian/Sidewalk Facilities (Continued)

Site # (refer to Figure)	Road Name	Road Type (Crossroad or Adjacent)	Federal, State or Local	City	Road Type (Rural or Urban)	Median (yes or no)	No. of Lanes	Shoulder (Paved or Unpaved)	Other Existing Facility	Sidewalk Notes	Potential Affected Sections ^a
49	Sanlando Spgs. Rd.	Underpass	State 434	Longwood	Urban	Yes	4 to 6	N/A	No	4-ft sidewalk with 10-ft offset continuous on both sides of roadway over I-4. Sidewalk continues west of Markham Woods Ave. and east of Raymond Ave.	Crossing potentially affected under I-4.
Segment 5											
50	SR 46	Overpass	State 46	Sanford	Rural	Yes	4	Paved	Exist. Bike Route/Paved Shoulder	No sidewalk under I-4. 4-ft sidewalk in sections on north side of roadway east and west of I-4.	Sidewalk section potentially affected on west side of I-4. Proposed interchange location.
51	Oregon St.	Adjacent/west side	Local	Sanford	Rural	Yes	2	Paved	No	4-ft sidewalk with 4-ft offset section at intersection of SR 46 on west side of roadway.	The entire sidewalk section may be affected due to proposed interchange location.
Segment 6											
52	Orange Blvd.	Underpass	State 431	Sanford	Rural	Yes	2	Unpaved	No	No sidewalk under I-4. Sidewalk section on south side of roadway east of I-4 near Upsala Rd.	The sidewalk section may be affected due to proposed new interchange and pond location.
53	Deltona Blvd.	Adjacent/East Side	Local	Deltona	Rural	N/A	3	N/A	No	4-ft sidewalks with 4-ft offset continuous on both sides of the roadway from DeBary Drive to north of Enterprise Rd.	Sidewalk section potentially affected is north of Dirksen Drive/DeBary Avenue interchange.
54	Saxon Blvd.	Overpass	Local	Orange City	Urban	Yes	4 to 6	Paved	Paved Shoulder	4-ft sidewalk continuous on both sides of roadway under I-4.	Crossing potentially affected under I-4.

^aPotentially affected section within proposed I-4 right-of-way from I-4 MMMP, October 1996

Table drafted 2/20/97.



① Bikeway/Trail/Greenway Facilities with Site Number (Refer to Table 3-38)

- Existing Bikeway Facility
- - - Proposed Bikeway Facility
- Existing Multi-Use Trail Facility
- - - Proposed Multi-Use Trail Facility
- Existing Greenway Facility
- - - Proposed Greenway Facility



Figure 3-14
Bikeway/Trail/Greenway Facilities

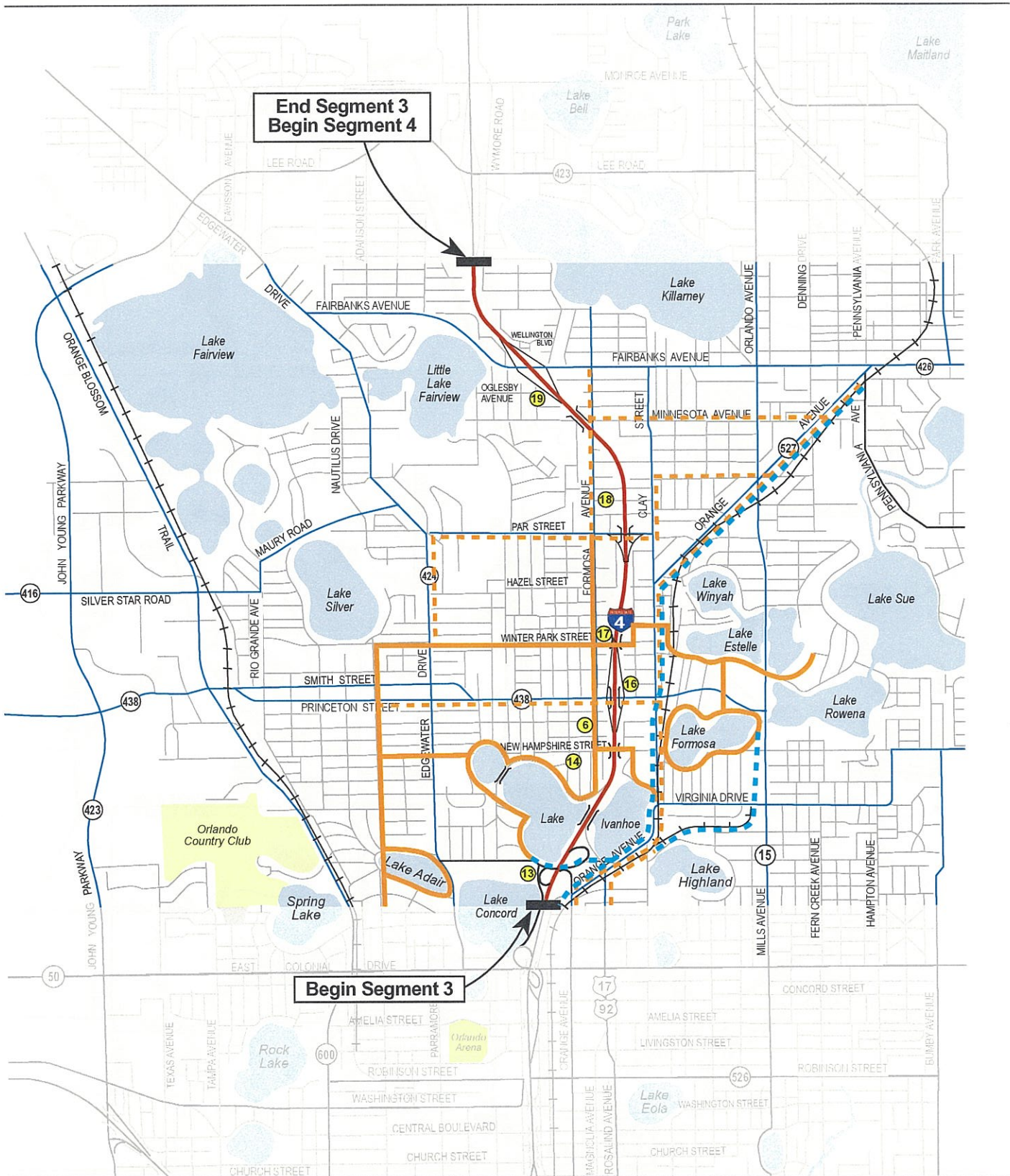
I-4 PD&E Study - Section 2
Segment 1 of 6



Figure 3-14
Bikeway/Trail/Greenway Facilities

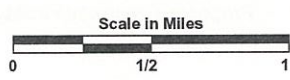
I-4 PD&E Study - Section 2
 Segment 2 of 6





**End Segment 3
Begin Segment 4**

Begin Segment 3



① Bikeway/Trail/
Greenway Facilities
with Site Number
(Refer to Table 3-38)

- Existing Bikeway Facility
- - - Proposed Bikeway Facility
- Existing Multi-Use Trail Facility
- - - Proposed Multi-Use Trail Facility
- Existing Greenway Facility
- - - Proposed Greenway Facility

**Figure 3-14
Bikeway/Trail/Greenway Facilities**



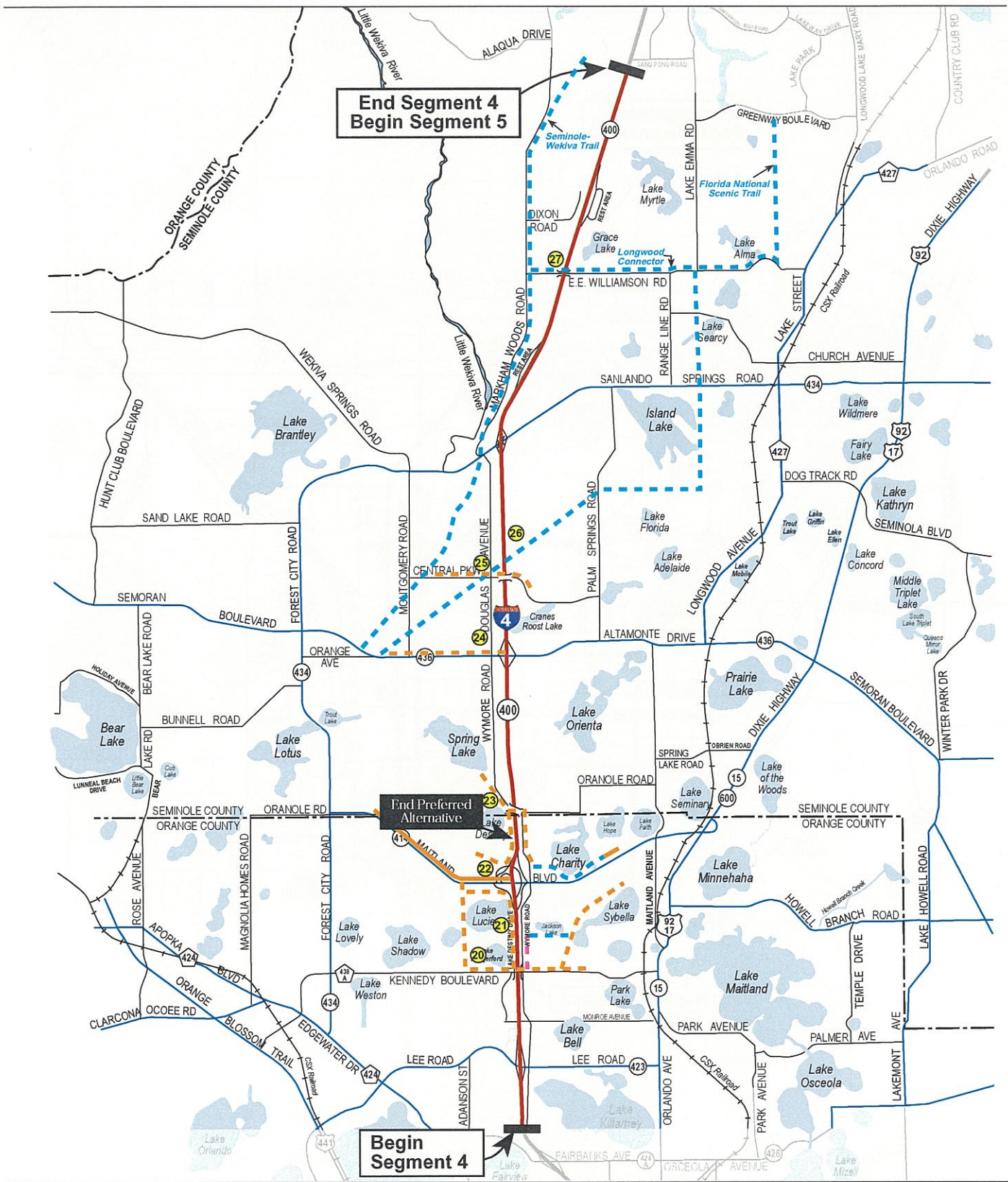
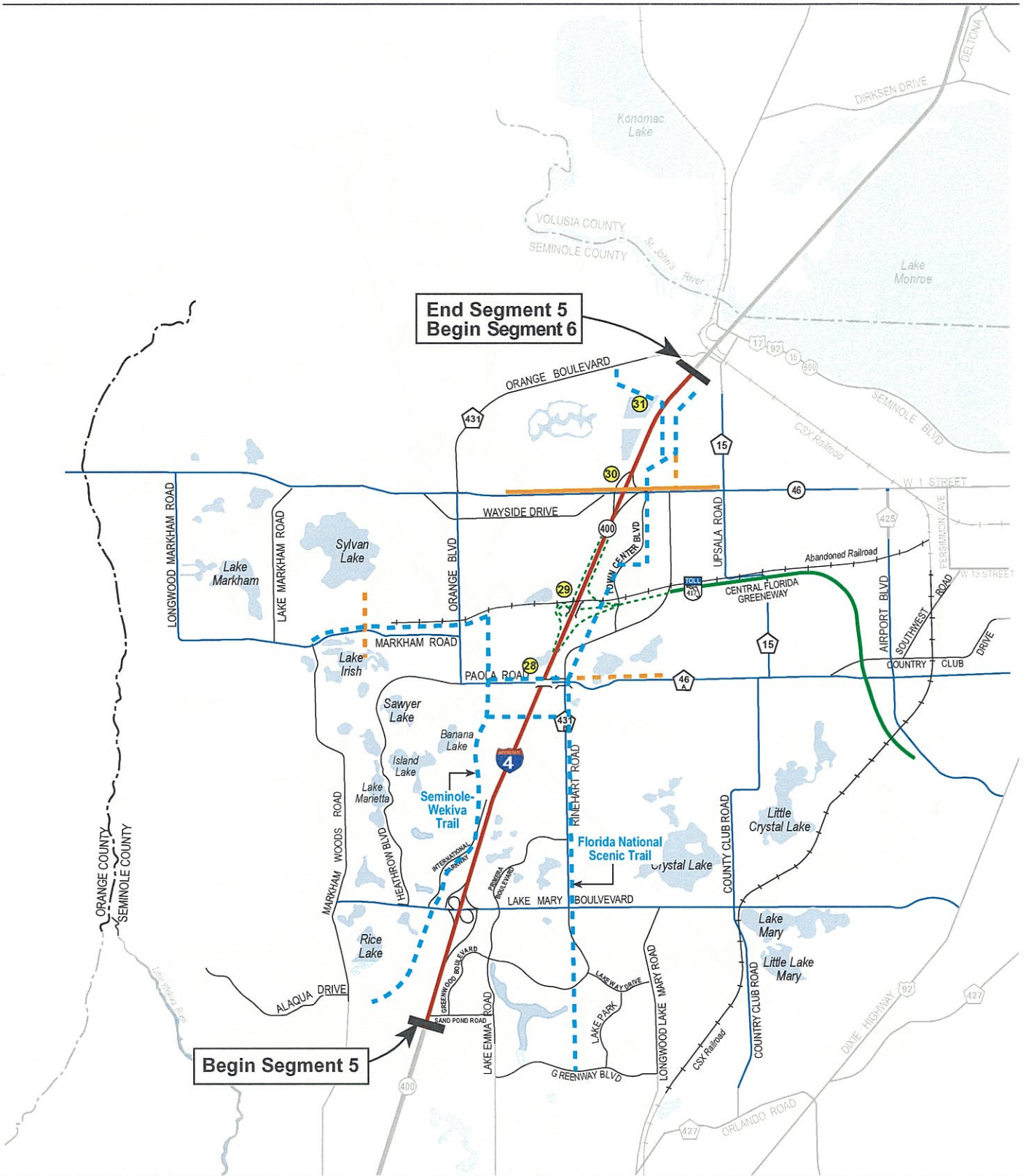


Figure 3-14
Bikeway/Trail/Greenway Facilities

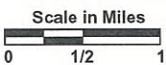
I-4 PD&E Study - Section 2
 Segment 4 of 6





End Segment 5
Begin Segment 6

Begin Segment 5



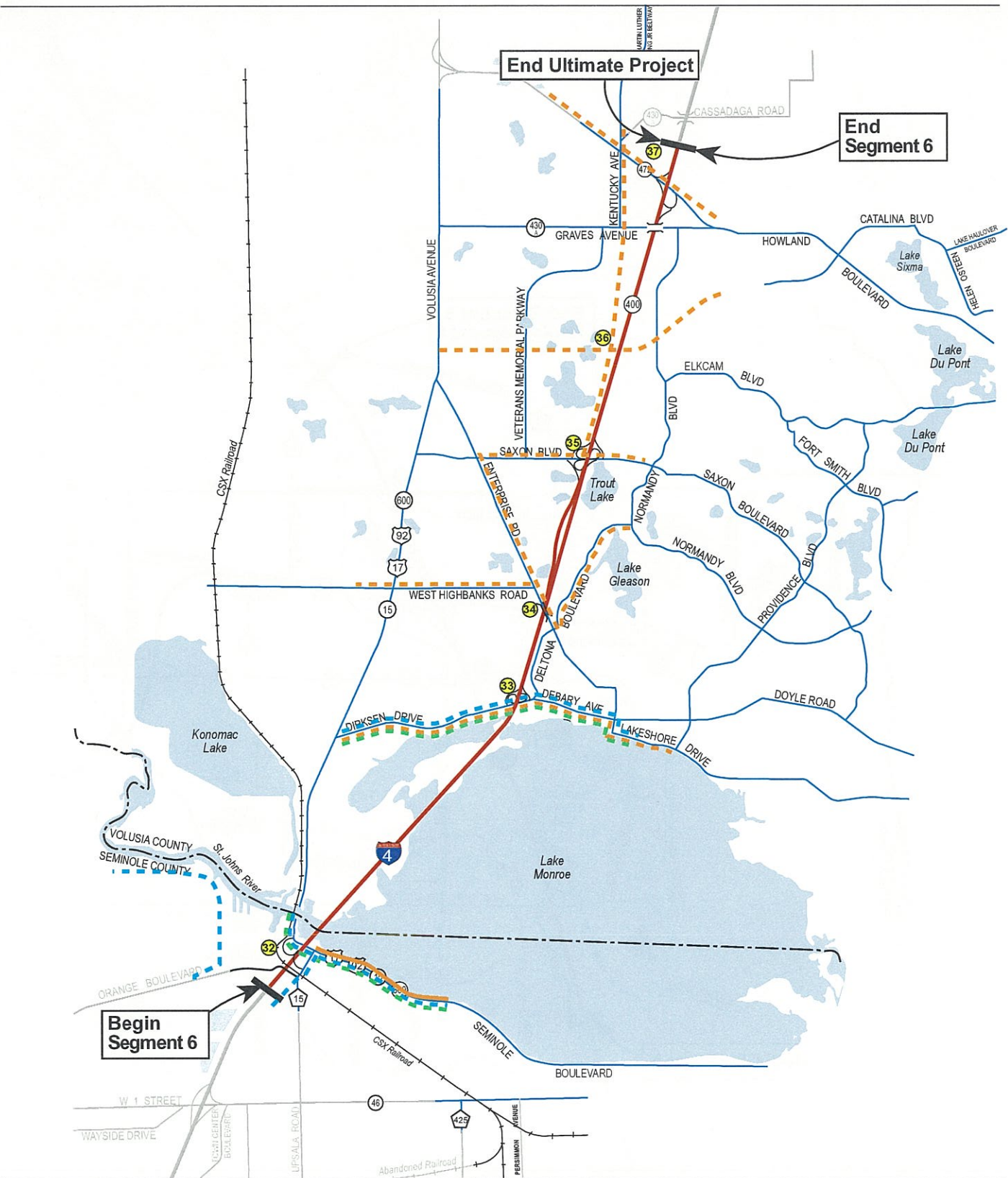
① Bikeway/Trail/Greenway Facilities with Site Number (Refer to Table 3-38)

- Existing Bikeway Facility
- - - Proposed Bikeway Facility
- Existing Multi-Use Trail Facility
- - - Proposed Multi-Use Trail Facility
- Existing Greenway Facility
- - - Proposed Greenway Facility



Figure 3-14
Bikeway/Trail/Greenway Facilities

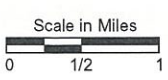
I-4 PD&E Study - Section 2
Segment 5 of 6



Begin Segment 6

End Ultimate Project

End Segment 6



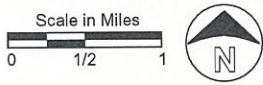
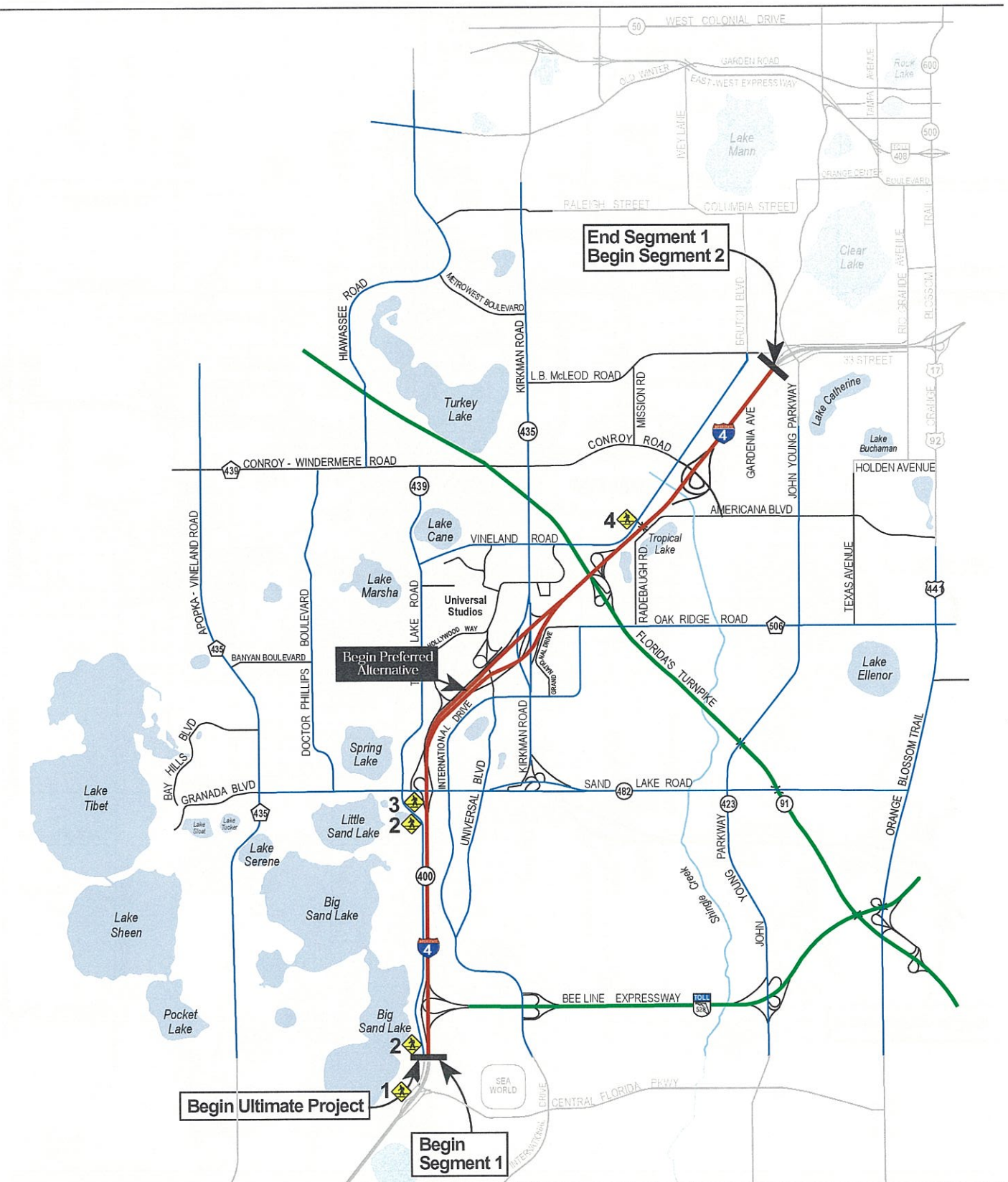
① Bikeway/Trail/Greenway Facilities with Site Number (Refer to Table 3-38)

- Existing Bikeway Facility
- - - Proposed Bikeway Facility
- Existing Multi-Use Trail Facility
- - - Proposed Multi-Use Trail Facility
- Existing Greenway Facility
- - - Proposed Greenway Facility

Figure 3-14
Bikeway/Trail/Greenway Facilities

I-4 PD&E Study - Section 2
Segment 6 of 6

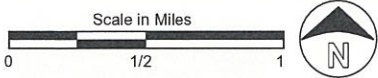
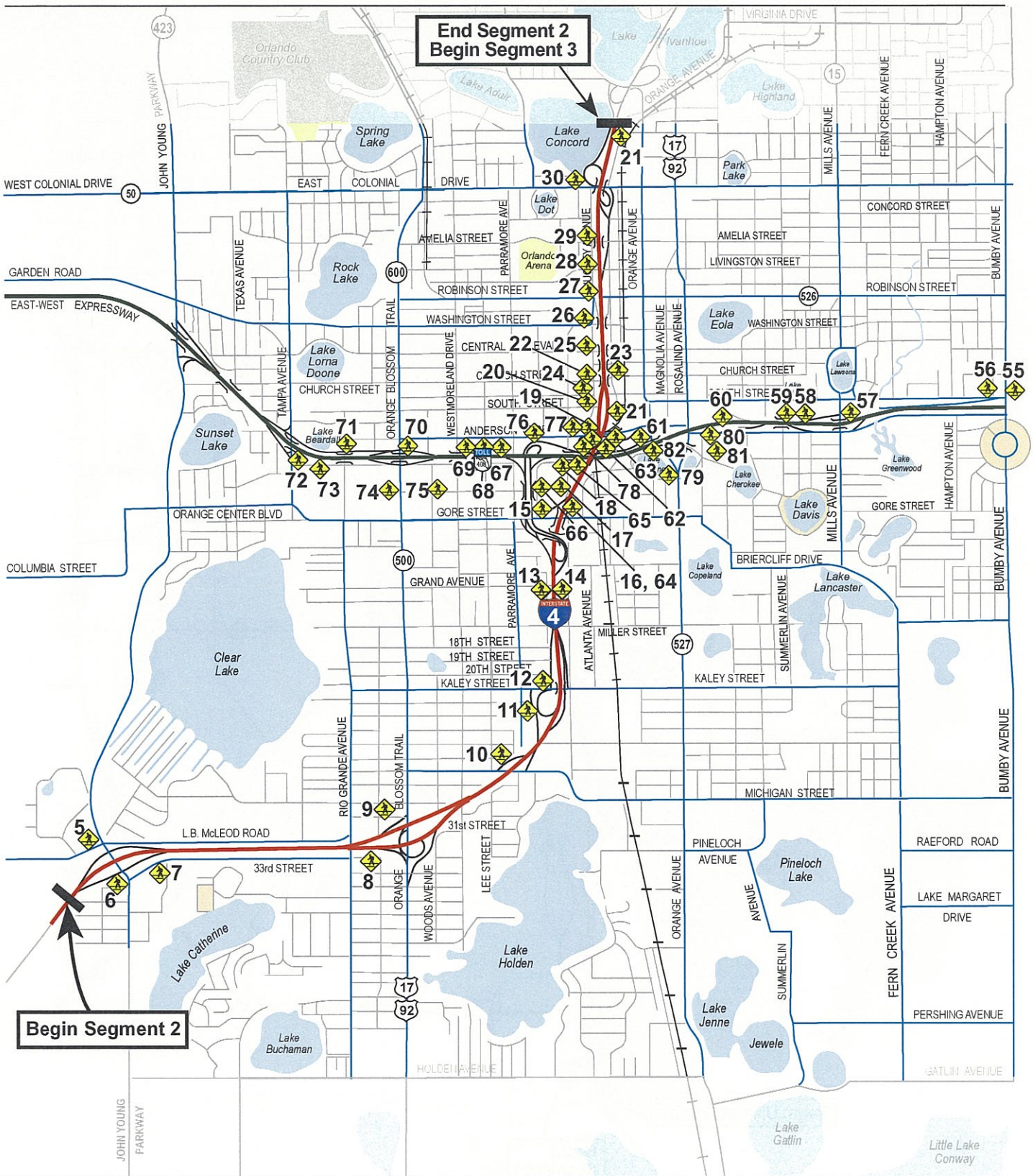




 Pedestrian Facilities with Site Number (Refer to Table 3-39)



Figure 3-15
Pedestrian Facilities
 I-4 PD&E Study - Section 2
 Segment 1 of 6

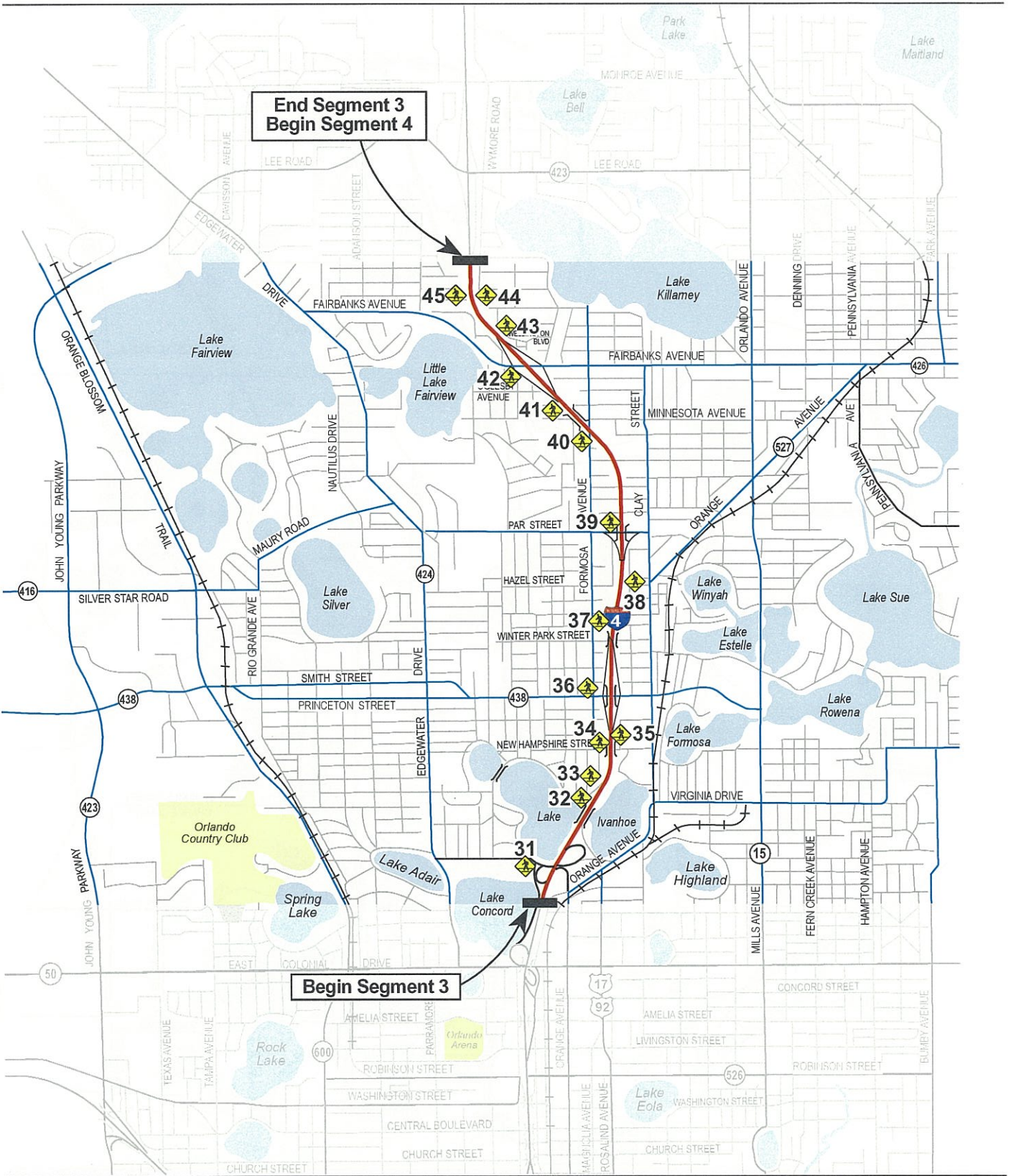


 Pedestrian Facilities with Site Number (Refer to Table 3-39)

Figure 3-15
Pedestrian Facilities

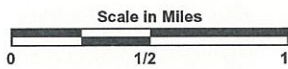
I-4 PD&E Study - Section 2
Segment 2 of 6





**End Segment 3
Begin Segment 4**

Begin Segment 3



Pedestrian Facilities
with Site Number
(Refer to Table 3-39)



**Figure 3-15
Pedestrian Facilities**

*I-4 PD&E Study - Section 2
Segment 3 of 6*

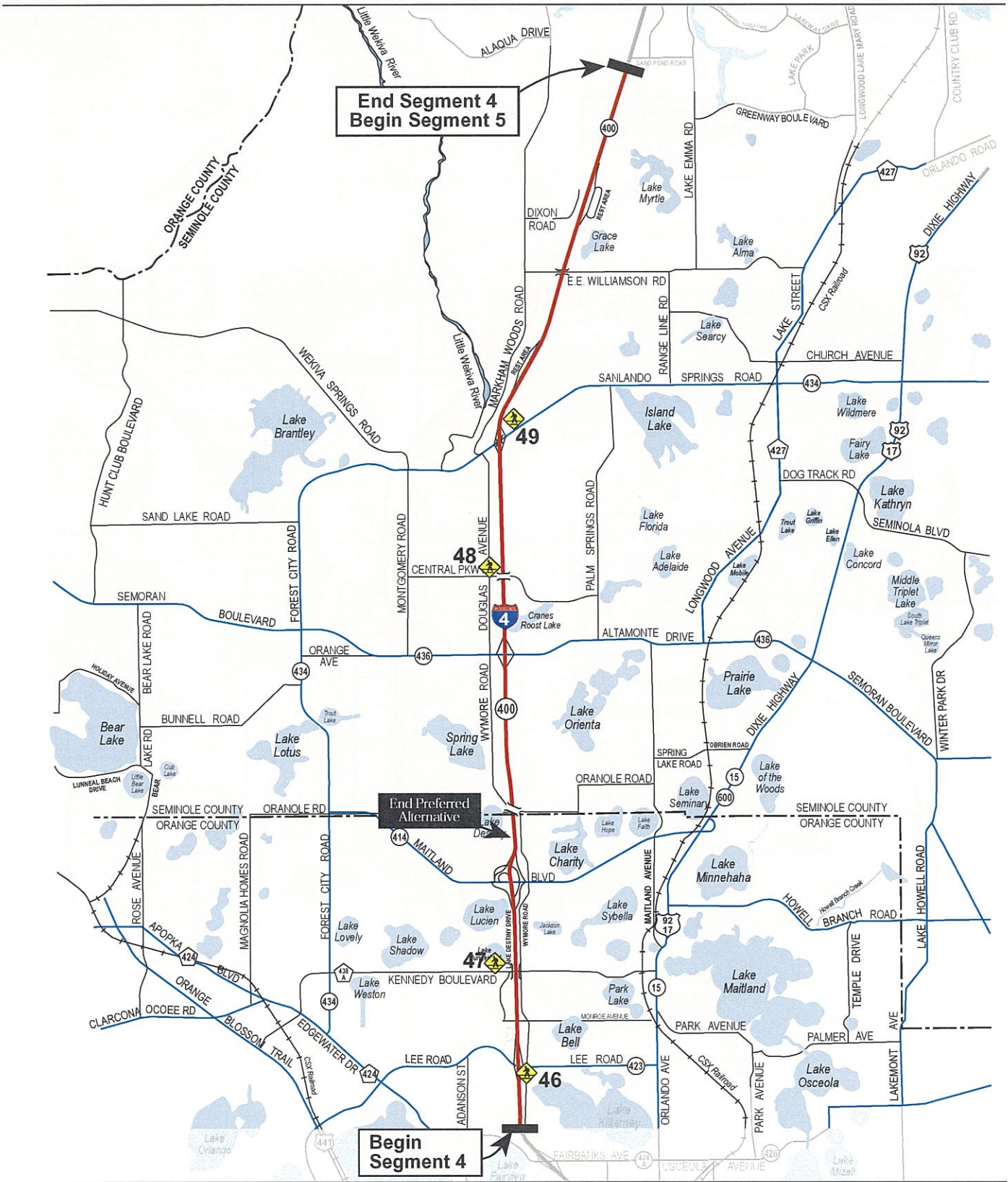
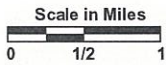
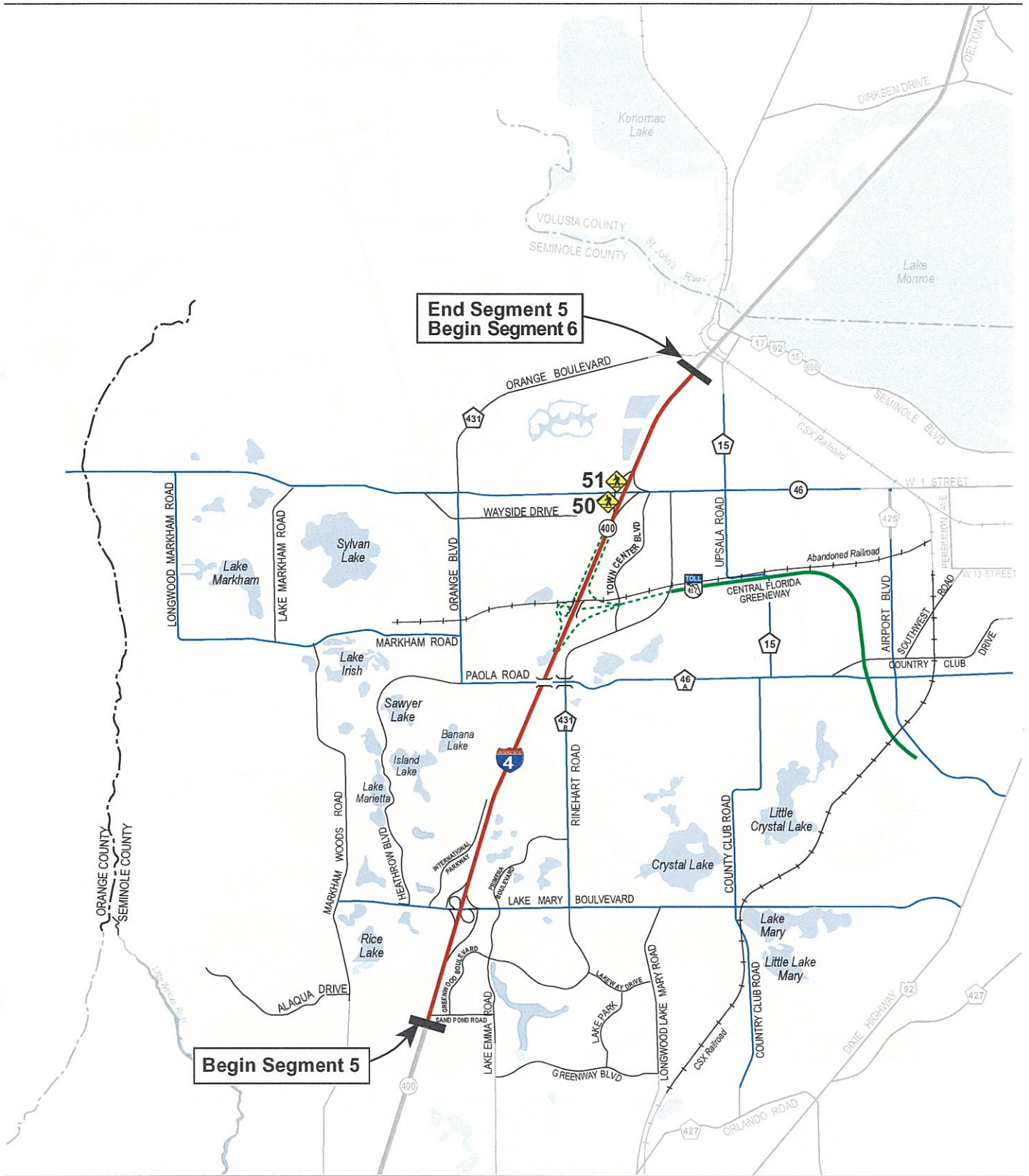


Figure 3-15
Pedestrian Facilities

I-4 PD&E Study - Section 2
Segment 4 of 6

 Pedestrian Facilities
with Site Number
(Refer to Table 3-39)



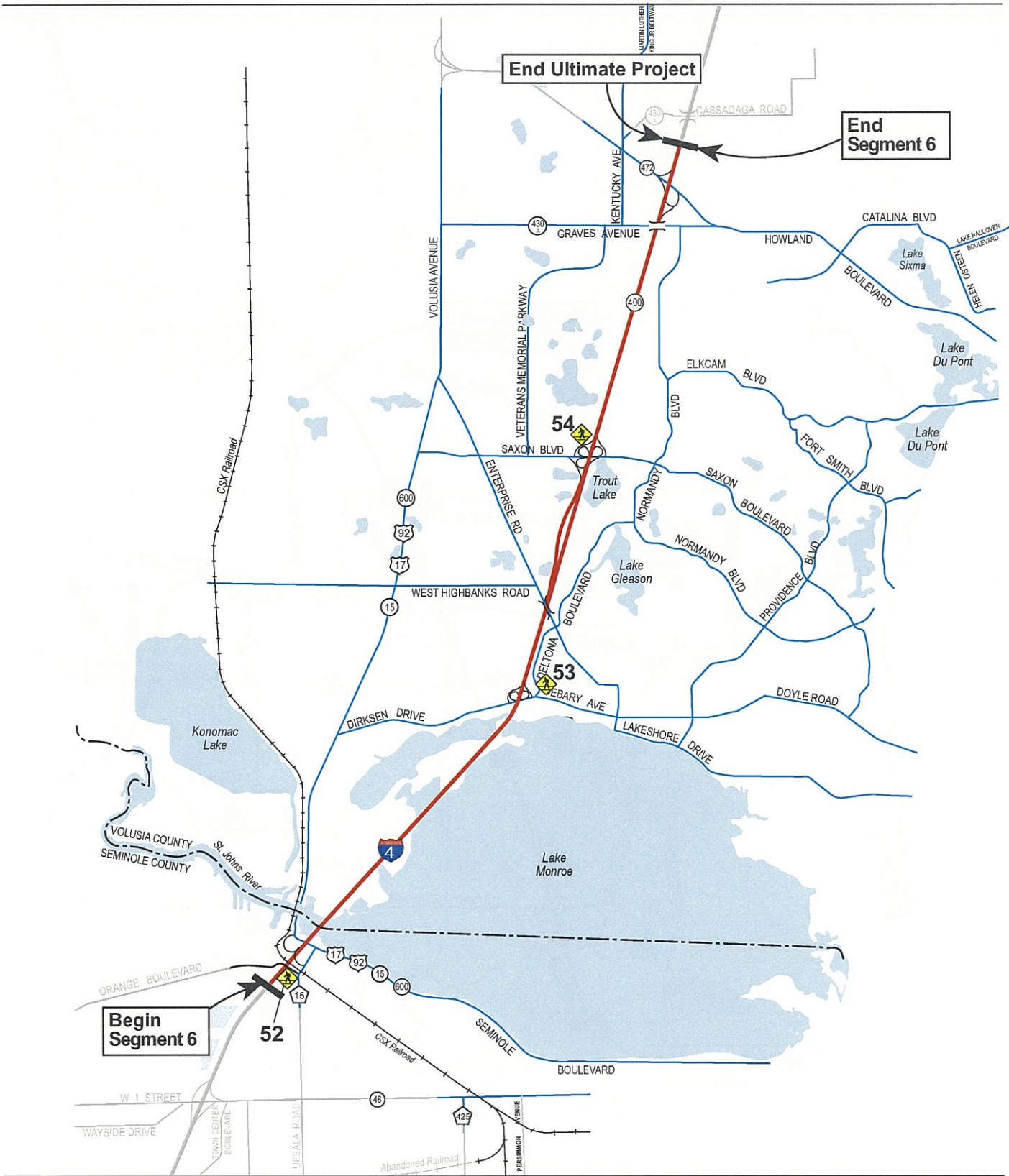


Pedestrian Facilities with Site Number (Refer to Table 3-39)



Figure 3-15
Pedestrian Facilities

I-4 PD&E Study - Section 2
Segment 5 of 6




 Pedestrian Facilities with Site Number (Refer to Table 3-39)

Figure 3-15
Pedestrian Facilities

I-4 PD&E Study - Section 2
Segment 6 of 6



3.3 Natural Resources

3.3.1 Water Resources

Water resources include groundwater, surface water, water quality, Outstanding Florida Waters (OFW), wild and scenic rivers, and aquatic preserves. This section describes the water resources within the Ultimate project corridor that could potentially be affected by the proposed improvements.

3.3.1.1 Groundwater

The Ultimate project study area contains groundwater in both the Surficial and Floridan aquifers. In Orange County, the groundwater is contained within the Floridan aquifer, which consists mainly of the Subsurface and part of the Overlain by confining bed breached by sinkholes (*Water Resources Atlas of Florida*, 1984). In Seminole County, the Ultimate project study area contains groundwater within the Floridan aquifer that consists of both Subsurface and Overlain by confining bed breached by sinkholes. The Ultimate project study area for Volusia County contains groundwater within the Undifferentiated Surficial aquifer and the Floridan aquifer. Groundwater is the subsurface water in the zone of saturation where all the openings of the soil or rock are completely filled with water. Figure 3-16 shows areas of low to high groundwater recharge and discharge.

Surficial Aquifer - The surficial aquifer is composed of unconsolidated sands, clay, hardpan, and shell. Its permeability, thickness, and productivity vary. In most parts of Orange County, the base of the surficial aquifer is approximately 40 feet below the land surface (Anderson and Joyner, 1968). The water table conforms in a general way to the configuration of the land surface, but it is at greater depths under hills and may be at the land surface in low swampy areas. The surface water table is not a stable surface but moves up and down in response to variations in rates of recharge and discharge. It also varies in response to changes in stage of lakes, streams, and canals. Generally, seasonal water table fluctuations range from a few feet in flat areas to 15 feet or more in hilly areas. Changes in water levels in lakes and wetlands are fairly accurate indicators of fluctuations in the water table. (*Water Resources Atlas of Florida*, 1984).

Floridan Aquifer - The Floridan aquifer system is one of the world's most productive aquifers. The approximate thickness of the Floridan aquifer for the Ultimate project study area within Volusia and Seminole Counties is 2,000 to 2,400 feet. The Floridan aquifer within the Orange County study area is approximately 2,400 to 2,800 feet thick (*Water Resources Atlas of Florida*, 1984). The elevation of the top of the Floridan aquifer within the Ultimate project area for all three counties is in the range of 50 to 100 feet below the ground surface.

The Floridan aquifer system in Central Florida is composed of all or parts of the Cedar Key Formation, Oldsmar Formation, Avon Park Formation, Ocala Limestone, and the base of the Hawthorn Group. The confining beds are usually the clay and clayey sand of the Hawthorne Formation of Miocene Age (*Water Resources Atlas of Florida*, 1984).

The confining unit of the Floridan aquifer along the Ultimate project corridor is thin, less than 100 feet thick, breached, or both. There are two isolated locations within the Ultimate project study area (in the southern parts of Seminole and Orange Counties) where the confining unit of the Floridan aquifer is greater than 100 feet thick and not breached (*Ground Water Atlas of the United States*, 1990).

Groundwater Movement and Discharge

In the Ultimate project study area, the potentiometric surface has a large area of high aquifer pressure in the Green Swamp as well as a smaller potentiometric high in Volusia County. Numerous lows, or depressions, in the surface are related to spring discharge, to seepage to the St. Johns River valley or the ocean, and to pumping from wells. Water from the Floridan aquifer may also move upward and discharge along faults and fractures or other geologic structural anomalies in limestone and dolomite formations near the St. Johns River. According to Tibbals (1981), under predevelopment conditions,

about 30 percent of the total discharge from the Floridan aquifer in Central Florida was by upward leakage and about 70 percent was to springs (*Water Resources Atlas of Florida*, 1984).

Groundwater Recharge

In Volusia County, the majority of the Ultimate project study area lies within a very low to moderate recharge zone for the Floridan aquifer, which averages two to ten inches per year. This low to moderate recharge generally occurs where the confining beds are less than 25-feet thick or are breached. In Seminole and Orange Counties, the majority of the Ultimate project study area lies within a high recharge zone for the Floridan aquifer, which is estimated at 10 to 20 inches per year.

Springs

A spring is defined as a source of groundwater discharge that comes from underground flow systems such as the Floridan Aquifer. Springs vary in size from the largest (first magnitude) with a flow in excess of 65 million gallons per day (mgd) to the smallest (eighth magnitude) with a flow of less than 80 gallons per day (gpd) (FDEP, 2002).

There are three natural springs located within close proximity to the I-4 corridor in Seminole County. These springs are Sanlando Springs, Palm Springs, and Starbuck Springs, which are located approximately within one-half mile of I-4 to the west in Segment 4. Refer to Figure 3-16 for an approximate location of these springs.

Both Sanlando Springs and Starbuck Springs are classified as second magnitude springs and Palm Springs is classified as a third magnitude spring.

3.3.1.2 Sole Source Aquifers

There are two locations in the Ultimate project study area that have been designated by the US Environmental Protection Agency (EPA) as "sole source aquifers," under Section 1424(e) of the Safe Drinking Water Act, as amended (EPA, 1990). All of Volusia County is part of the Volusia-Floridan Sole Source Aquifer. Approximately 150 public water systems withdraw drinking water from the aquifer. The southern half of Orange County is located within the Stream Flow and Recharge Source Zone of the Biscayne Sole Source Aquifer. The Biscayne Aquifer is the sole source of drinking water for over 3 million people in southeast Florida. Coordinating with the EPA occurred during the Advanced Notification (AN) process and will continue through the Public Hearing. Correspondence from the EPA is included in Appendix C and response to comments for the AN is included in Appendix G.

3.3.1.3 Surface Water

All the surface waters within the Ultimate project area are classified as Class III water bodies per the State of Florida December 1996 FAC Chapter 62-302.400. A Class III surface water for the State of Florida is designated by the Florida Department of Environmental Protection (FDEP) for the following uses: recreation and propagation and maintenance of a healthy, well-balanced population of fish and wildlife. A water body may be designated as an OFW or an Outstanding National Resource Water in addition to being classified as Class I, Class II, or Class III (refer to Section 3.3.1.4 Outstanding Florida Waters of this report for details).

The surface waters to which the project ultimately discharges are identified by segment on Table 3-40 and shown on Figure 3-17.

3.3.1.4 Water Quality

Groundwater

The natural quality of groundwater in Florida varies widely, depending on location, aquifer, and depth at which the water is obtained. The Ultimate project study area lies within the moderate level of the Floridan aquifer for thickness and, therefore, is between the best quality found in the Sand and Gravel Aquifers (northwestern Florida) and the "boulder zone of Floridan aquifer" (coastal and southeastern Florida), which is equivalent to seawater.

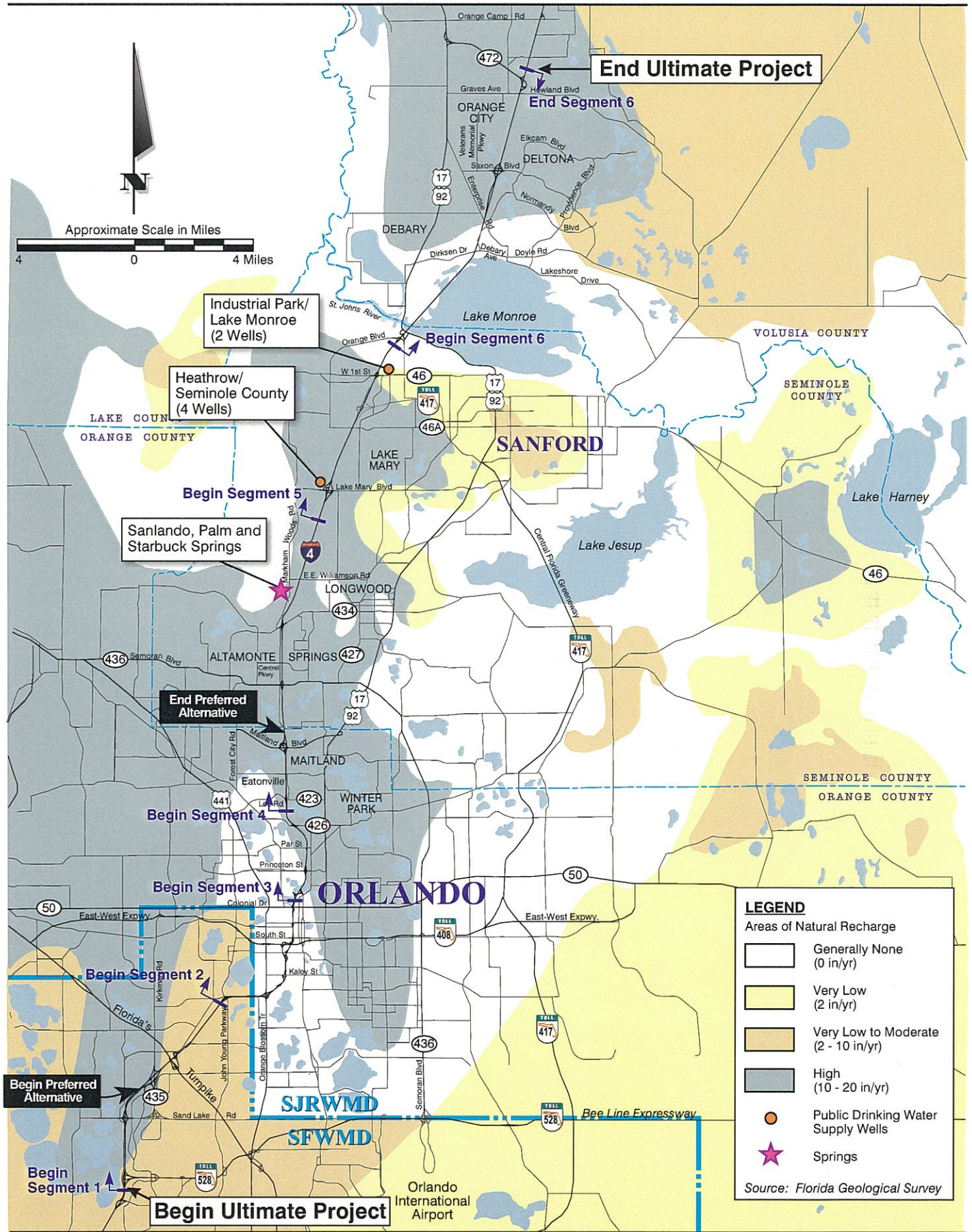
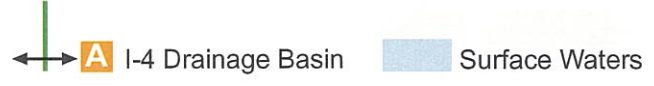
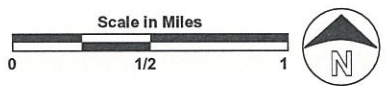
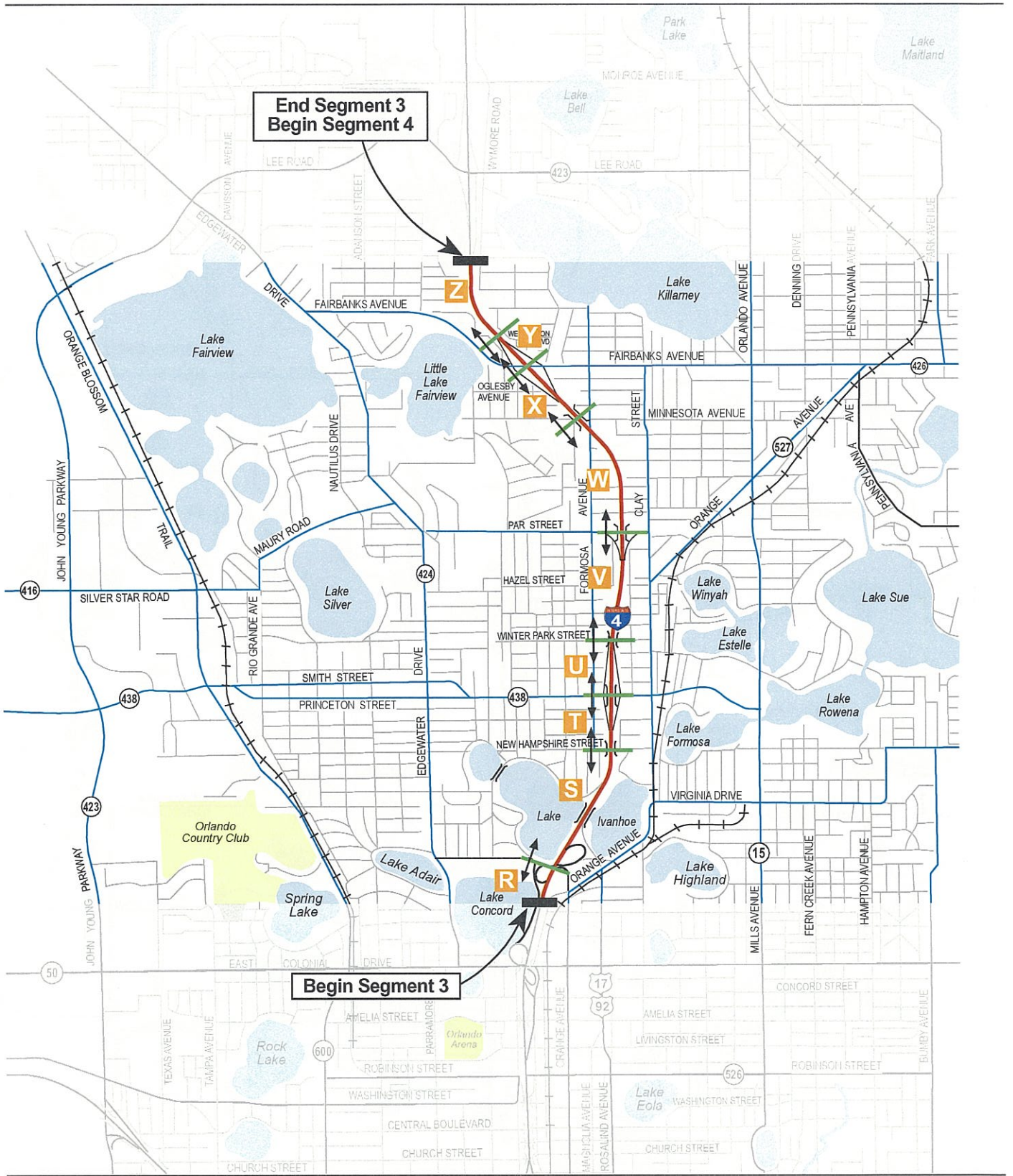


Figure 3-16
Groundwater Recharge/Discharge Characteristics

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**Figure 3-17
Surface Waters**



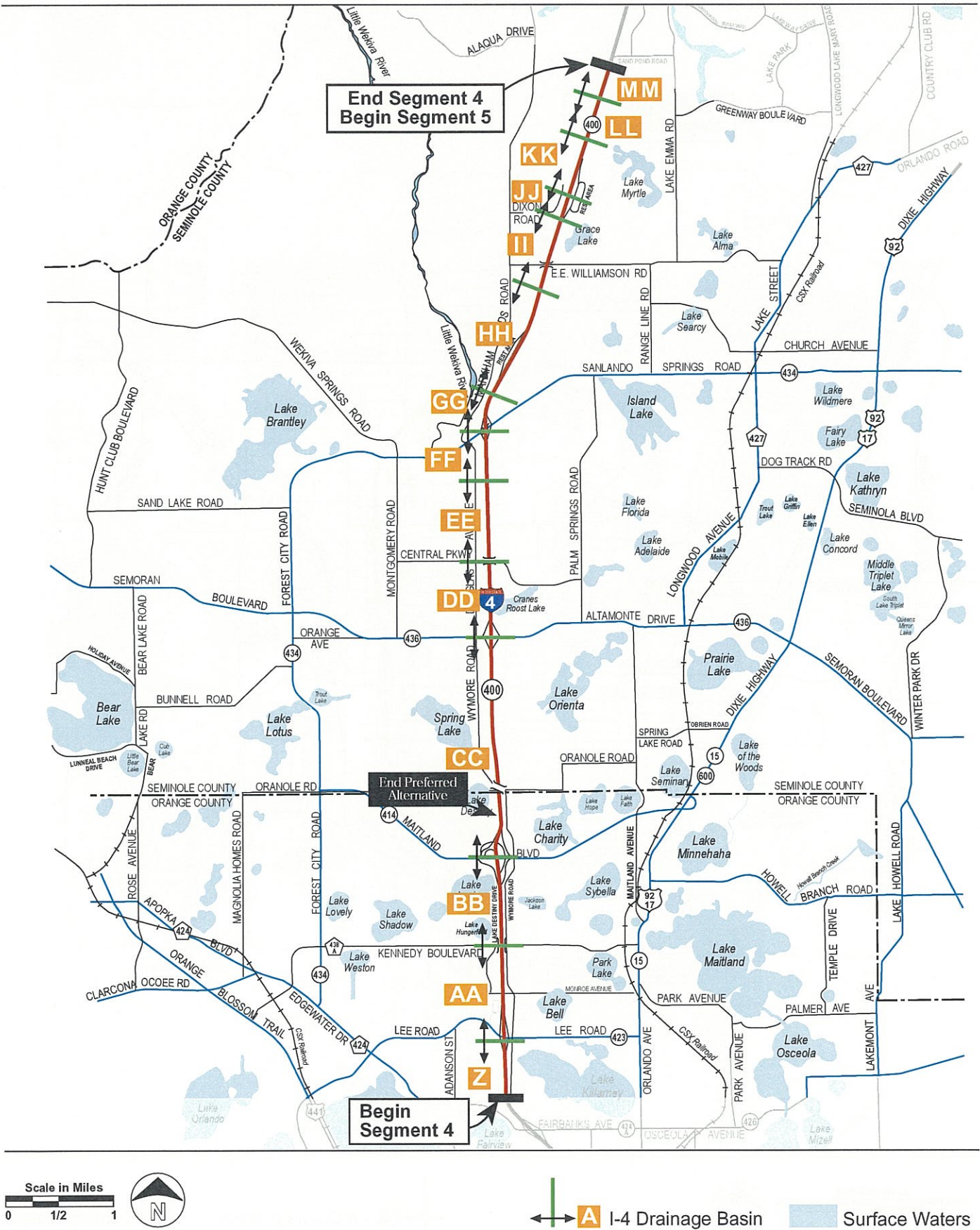


Figure 3-17
Surface Waters

I-4 PD&E Study - Section 2
Segment 4 of 6



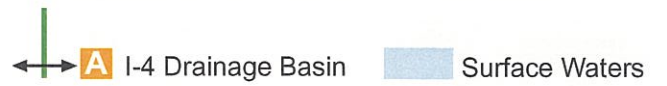
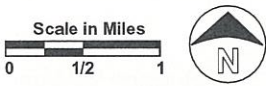
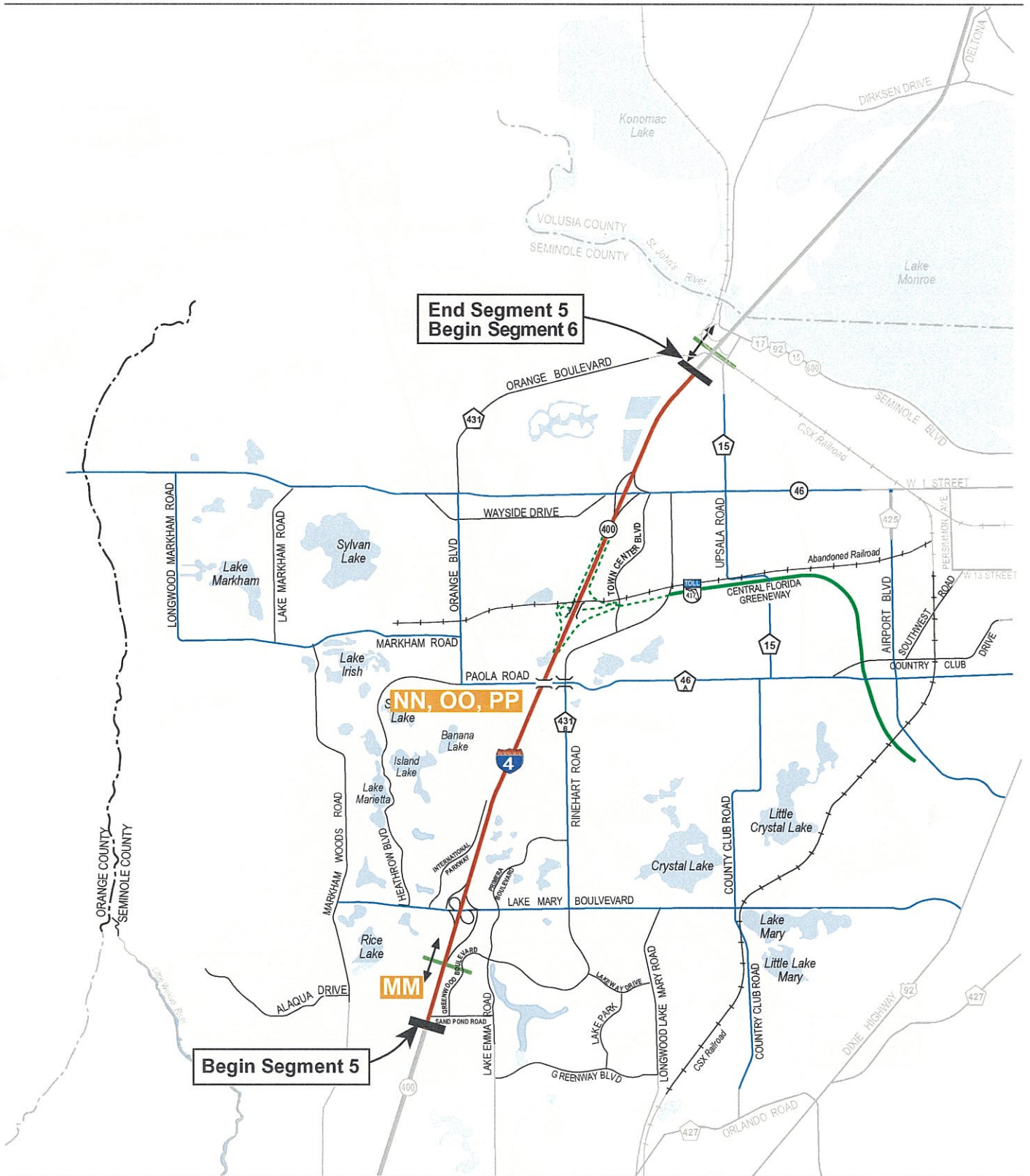
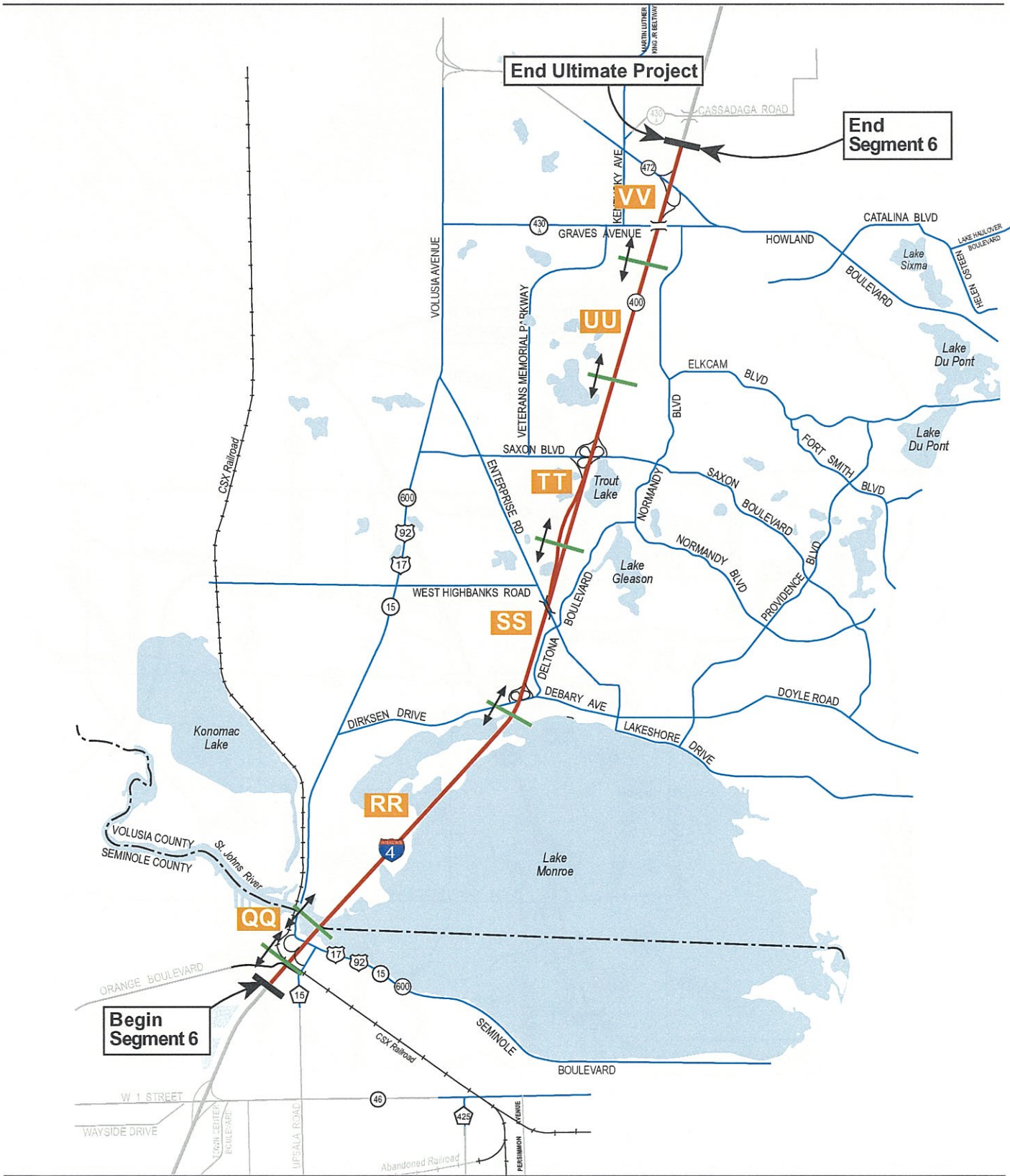


Figure 3-17
Surface Waters

I-4 PD&E Study - Section 2
Segment 5 of 6



A I-4 Drainage Basin

Surface Waters

Figure 3-17
Surface Waters

I-4 PD&E Study - Section 2
Segment 6 of 6



Table 3-40. Summary of Drainage Basins and Ultimate Surface Waters

I-4 Drainage Basin	Drainage Basin	Drainage Basin Surface Water Classification	Discharge to Ultimate Surface Water	Predominant Flow Direction
Segments 1				
A	Big Sand Lake	Class III	Shingle Creek/Kissimmee River	South
A-1	Big Sand Lake	Class III	Shingle Creek/Kissimmee River	South
B	Big Sand Lake	Class III	Shingle Creek/Kissimmee River	South
C	Little Sand Lake	Class III	Shingle Creek/Kissimmee River	South
D	Spring Lake	Class III	Shingle Creek/Kissimmee River	South
E	Shingle Creek	Class III	Kissimmee River	South
F	Shingle Creek	Class III	Kissimmee River	South
G	Shingle Creek	Class III	Kissimmee River	South
H	Shingle Creek	Class III	Kissimmee River	South
I	Shingle Creek	Class III	Kissimmee River	South
J	Shingle Creek	Class III	Kissimmee River	South
Segments 2 and 3				
M	Lake Catherine	Class III	*	
N	Lake Catherine and Lake Holden	Class III	*	
O	Lake Angel	Class III	*	
P	Lake Lucerne	Class III	*	
Pea	Lake Lucerne	Class III	*	
PeB	Lake Greenwood	Class III	*	
Pw	Clear Lake	Class III	Shingle Creek/Kissimmee River	South
Q	Lake Concord	Class III	Lake Jessup/St. Johns River	North
R	Lake Concord	Class III	Lake Jessup/St. Johns River	North
S	Lake Ivanhoe	Class III	Lake Jessup/St. Johns River	North
T	Lake Formosa	Class III	Lake Jessup/St. Johns River	North
U	Lake Formosa	Class III	Lake Jessup/St. Johns River	North
V	Lake Winyah	Class III	Lake Jessup/St. Johns River	North
W	Little Lake Fairview	Class III	Wekiva River/St. Johns River	North
X	Little Lake Fairview	Class III	Wekiva River/St. Johns River	North
Y	Little Lake Fairview	Class III	Wekiva River/St. Johns River	North
Z	Little Lake Fairview	Class III	Wekiva River/St. Johns River	North
Segments 4 and 5				
AA	Lake Bell	Class III	*	
BB	Lake Lucien	Class III	Wekiva River/St. Johns River	North
CC	North Lake	Class III	*	
DD	Cranes Roost/Little Wekiva River	Class III	Wekiva River/St. Johns River	North
EE	Unnamed Water Body	Class III	*	
FF	Unnamed Depression	Class III	*	
GG	Little Wekiva River	Class III	Wekiva River/St. Johns River	North
HH	Little Wekiva River	Class III	Wekiva River/St. Johns River	North
II	Grace Lake	Class III	*	
JJ	Lake Myrtle	Class III	*	
KK	Unnamed Depressional Areas	Class III	*	
LL	Unnamed Depressional Areas	Class III	*	
MM	Unnamed Depressional Areas	Class III	*	
NN	Lake Monroe	Class III	St. Johns River	North
OO	Lake Monroe	Class III	St. Johns River	North
PP	Lake Monroe	Class III	St. Johns River	North
Segments 6				
QQ	St. Johns River	Class III		North
RR	Lake Monroe	Class III	St. Johns River	North
SS	Lake Monroe	Class III	St. Johns River	North
TT	Trout, Goose & Mallard Lakes	Class III	*	
VV	Unnamed Depressional Areas	Class III	*	
VV	Unnamed Depressional Areas	Class III	*	

*No surface water discharge, land-locked basin

Surface Water

All the surface waters within the Ultimate project area are classified as Class III water bodies per the State of Florida December 1996 FAC Chapter 62-302.400 (Refer to Section 3.3.1.3 Surface Water of this report for details). This Class III designation requires adherence to less stringent water quality standards than the Class II designation; however, it requires protection of water quality for public recreation and the propagation and maintenance of fish and wildlife populations.

The Wekiva River has been designated as an OFW by FDEP per FAC Chapter 62-302.700(9)(i)37 (refer to Section 3.3.1.5 Outstanding Florida Waters of this report for details). There are no OFW within the study area, but Basins GG and HH (I-4 from SR 434 north to E.E. Williamson Road) ultimately discharge to the Wekiva River. These basins must adhere to special criteria designated by the St. Johns River Water Management District (SJRWMD) for protection of the Wekiva River set forth in Section 369.301 FAC Conservation Part II: Wekiva River Protection.

The St. Johns River Basin within the SJRWMD boundaries (I-4 from Orange Blossom Trail to SR 472) has experienced water quality problems due to pumping of poor quality water from agricultural areas into canals; runoff from agricultural and cattle grazing lands; and runoff and sewage effluents from Orlando. Dissolved oxygen is sometimes so low that fish kills result. The elevated nitrogen and phosphorus levels in the St. Johns River downstream result in occasional algae blooms and fish kills. (*Water Resources Atlas of Florida*, 1984).

The lakes in the upper Kissimmee River Basin within the South Florida Water Management District (SFWMD) boundaries (I-4 from SR 528 (Bee Line Expressway) to Orange Blossom Trail) are moderately polluted from agricultural and urban runoff, seepage from septic tanks, and in some cases direct discharge of untreated sewage. Water quality is poorest in the vicinity of Orlando and in East Lake Tohopekaliga and improves somewhat as water moves through the system to Lake Kissimmee. (*Water Resources Atlas of Florida*, 1984).

Well Inventory

SFWMD well construction permit records indicate that 58 domestic wells ranging from 2 inches to 6 inches in diameter are located in the approximate vicinity of the study area. SJRWMD well construction permit records indicate that 80 domestic wells ranging from 4 inches to 36 inches in diameter occur in the approximate vicinity of the study area. These water management district well construction permits are tracked and located by Section, Township, and Range, and have been located within approximately one mile of the Ultimate project area. Both water management districts usually only retain records and issue permits for wells of 6 inches in diameter and greater; therefore, there may be shallow wells used for landscape irrigation within the Ultimate project study area.

Public Drinking Water Supply Wells

There are two public drinking water supply wells located within the study area in Seminole County. These wells are designated as Heathrow and I-4 Industrial Area/Lake Monroe. These wells are identified on Figure 3-16.

The Heathrow/Seminole County public drinking water supply consists of three wells located approximately on the west side of I-4 just north of Lake Mary Boulevard. Seminole County constructed this well supply unit in 1984, well after the initial construction of I-4 and is in the process of adopting a well head protection plan that would require a 11,640.5-foot buffer around these drinking water supply wells. The I-4 Industrial Park/Lake Monroe public drinking water supply wells contain two wells located on the east side of I-4 just north of SR 46 and south of the Cracker Barrel Restaurant. This well unit was constructed approximately in late 1970, which occurred after the initial construction of I-4.

Further coordination during design and construction of this project will be necessary between FDOT and Seminole County to ensure that the project will not impact the existing public drinking water supply well system. (Refer to Section 4.3.1 Water Quality of this report for further discussion on impacts).

There are no public drinking water supply wells located within the Ultimate project study area for Orange and Volusia Counties.

3.3.1.5 Outstanding Florida Waters

Section 403.021, Florida Statutes, declares that the public policy of the State of Florida is to conserve the waters of the State to protect, maintain, and improve the quality thereof for public water supplies; for the propagation of wildlife, fish, and other aquatic life; and for domestic, agricultural, industrial, recreational, and other beneficial uses.

OFW are defined as those waters designated by the Environmental Regulation Commission as worthy of special protection because of their natural attributes. Outstanding National Resource Waters are waters designated by the Environmental Regulation Commission that are of such exceptional recreational or ecological significance that water quality should be maintained and protected under all circumstances, other than temporary lowering and the lowering allowed under Section 316 of the Federal Clean Water Act.

Based on a review of the most current FAC Chapter 62-302.700 (December 1996), there are no OFWs located within the Ultimate project study area. The nearest OFW is the Wekiva River, which is approximately 2.75 miles to the north of I-4 along the western boundary of Seminole County within Segment 5. However, a special provision has been established for the protection of the adjoining lands and tributaries to this resource, collectively referred to as the Wekiva River System. Refer to the *Socioeconomic and Environment Report* (August 2000) for a discussion of the provisional protection of the Wekiva River System.

A copy of the correspondence with FDEP, and the US Department of Interior NPS addressing the proximity of special waters within the region of the I-4 corridor is provided in Appendix C.

3.3.1.6 Wild and Scenic Rivers

The Wild and Scenic Rivers Act, 16 USC 1274 et seq., establishes requirements applicable to water resource projects affecting wild, scenic, or recreational rivers within the National Wild and Scenic Rivers system as well as rivers designated on the National Rivers Inventory to be studied for inclusion in the national system.

Under the Act, a federal agency may not assist, through grant, loan, license, or otherwise, the construction of a water resources project that would have a direct and adverse effect on the values for which a river in the National System or study river on the National Rivers Inventory was established, as determined by the Secretary of the Interior for rivers under the jurisdiction of the Department of the Interior and by the Secretary of Agriculture for rivers under the jurisdiction of the Department of Agriculture.

Based on a review of the most current FAC, Chapter 62-302.700 (December 1996), there are no Wild and Scenic Rivers located within the Ultimate project study area. The Wekiva River, which is listed on the NPS Southeastern Rivers Inventory for Wild and Scenic Rivers, is 2.75 miles to the west of I-4 along the western boundary of Seminole County within Segment 5. However, a special provision has been established for the protection of the adjoining lands and tributaries to this resource, collectively referred to as the Wekiva River System. (Refer to Section 3.3.1.5 for information on the protection of the Wekiva River System.)

A copy of the correspondence with FDEP, and US Department of Interior NPS addressing the proximity of special waters with the region of the I-4 corridor is provided in Appendix C.

3.3.1.7 Aquatic Preserves

Aquatic Preserves are the vested interest of the State of Florida, Board of Trustees through the Florida Aquatic Preserve Act of 1975 (Sections 258.35 through 258.46, Florida Statutes). Aquatic

Preserves are submerged lands that are to be preserved in their natural or existing condition based on their aesthetic, biological, and scientific value to the public and future generations.

Based on a review (September 2001) of the most current Florida Statutes, Chapter 258.39 Boundaries of Preserves, the Wekiva River Aquatic Preserve's southeastern boundary terminates at the I-4 right-of-way just north of SR 434 (Sanlando Springs Road) in Segment 4.

Chapter 258.39, Florida Statutes

(30) *"Wekiva River Aquatic Preserve, the boundaries of which are generally: All the state-owned sovereignty lands lying waterward of the ordinary high-water mark of the Wekiva River and the Little Wekiva River and their tributaries lying and being in Lake, Seminole, and Orange counties and more particularly described as follows:"*

(f) *"All the sovereignty submerged lands lying within the following described boundaries: Begin at the intersection of State Road 44 and the westerly ordinary high water line of the St. Johns River, Section 22, Township 17 South, Range 29 East, Lake County: Thence proceed southerly along the westerly ordinary high water line of said river and its tributaries to the intersection of the northerly right-of-way of State Road 400; thence proceed northeasterly along said right-of-way to the easterly ordinary high water line of the St. Johns River; thence proceed northerly along said ordinary high water line of the St. Johns River and its tributaries to its intersection with the easterly ordinary high water line of Lake Beresford; thence proceed northerly along the ordinary high water line of said lake to its intersection with the westerly line of Section 24, Township 17 South, Range 29 East; thence proceed northerly to the southerly right-of-way of West New York Avenue; thence proceed westerly along the southerly right-of-way of said avenue to its intersection with the southerly right-of-way line of State Road 44; thence proceed southwesterly along said right-of-way to the point of beginning."*

Furthermore, based on a review (September 2001) of the most current F.A.C., Chapter 62-302.700, the nearest aquatic preserve in the Ultimate project study area is the special provision that has been established for the protection of the adjoining lands and tributaries to the Wekiva River System; *"Wekiva River Protection Area"* Section 369.303(9) F.A.C. The Wekiva River lies approximately 2.75 miles to the west of I-4 within Segment 5 at Lake Mary Boulevard. As set forth in Section 369.301, F.A.C. *Conservation Part II: Wekiva River Protection*, the Wekiva River System as defined in Section 369.303(10) F.A.C. includes the Wekiva River, the Little Wekiva River, Black Water Creek, Rock Springs Run, and Seminole Creek. The eastern boundary of this Protection Area is defined as **Markham Woods Road**, which comes within 200 feet of the I-4 right-of-way at a point 1,400 feet north of SR 434 (Sanlando Springs Road) within Segment 4.

Regardless that *the westerly ordinary high water line of said river (St. Johns) and its tributaries* do not intersect with the *northerly right-of-way of State Road 400 (I-4)*, as it is written, the F.S. boundary description reaches further east than the description in the F.A.C. Thus, a small portion of an Aquatic Preserve occurs within the project study area just north of SR 434 (Sanlando Springs Road) within Segment 4.

A copy of the correspondence with FDEP, and US Department of Interior NPS addressing the proximity of special waters with the region of the I-4 corridor is provided in Appendix C.

3.3.2 Biotic Communities

In compliance with Presidential Executive Order 11990, and the FHWA Technical Advisory T6640.8A, Title 23, Code of Federal Regulations, Part 777, and Part Two, Chapter 18 of the *FDOT PD&E Manual*, extensive assessments of wetland and natural resources within the Ultimate project corridor have been conducted.

Project ecologists identified and delineated all uplands, wetlands, and surface water features located within the Ultimate project study area during many field reviews conducted from October 1996 through May 1997. The width of the study area was defined as 600 feet beyond each side of the existing right-of-way in order to plan for an ultimate design typical section. At the interchanges proposed for improvements, a similar distance from the existing right-of-way edge was reviewed.

3.3.2.1 Wetlands

Table 3-41 lists all the wetland types delineated within the study corridor for each segment. The approximate wetland locations are shown on Figure 3-18. This breakdown provides an inventory for this study and further studies that may occur during each of the permitting phases for these segments. A summary of the typical dominant floral species, physical attributes, and hydrologic contiguity of a particular wetland type is provided in subsequent text. More detailed wetland information is provided in the *Socioeconomic and Environment Report* (August 2000) and *Wetland Evaluation Report* (May 2000). The relative quality of potential wildlife habitat for each wetland is provided in Table 3-42. A summary of the aerial coverage by major wetland community category is presented in Table 3-43.

Wetlands Identification Methodology

Wetland boundaries were determined using preliminary roadway typical sections and plans, aerial photographs, and field reviews. The boundaries of all wetlands within the right-of-way were photo-interpreted on aerial photographs (1 inch = 200 feet) based on assessments that were conducted in the field.

During the field review, each wetland was visually inspected and a delineation of the wetland boundary was marked on the project aerials. Approximate wetland boundaries were determined using the *US Army Corps of Engineers Wetlands Delineation Manual* (1987) and the State of Florida Unified Method for delineating wetlands. Both methods use a combination of field observations on the presence of wetland vegetation, hydric soils, and hydrology to approximate the jurisdictional wetland boundary. Several sources of information were used to locate and identify the project wetlands. A listing of these sources is provided below.

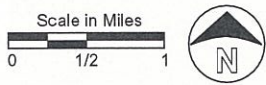
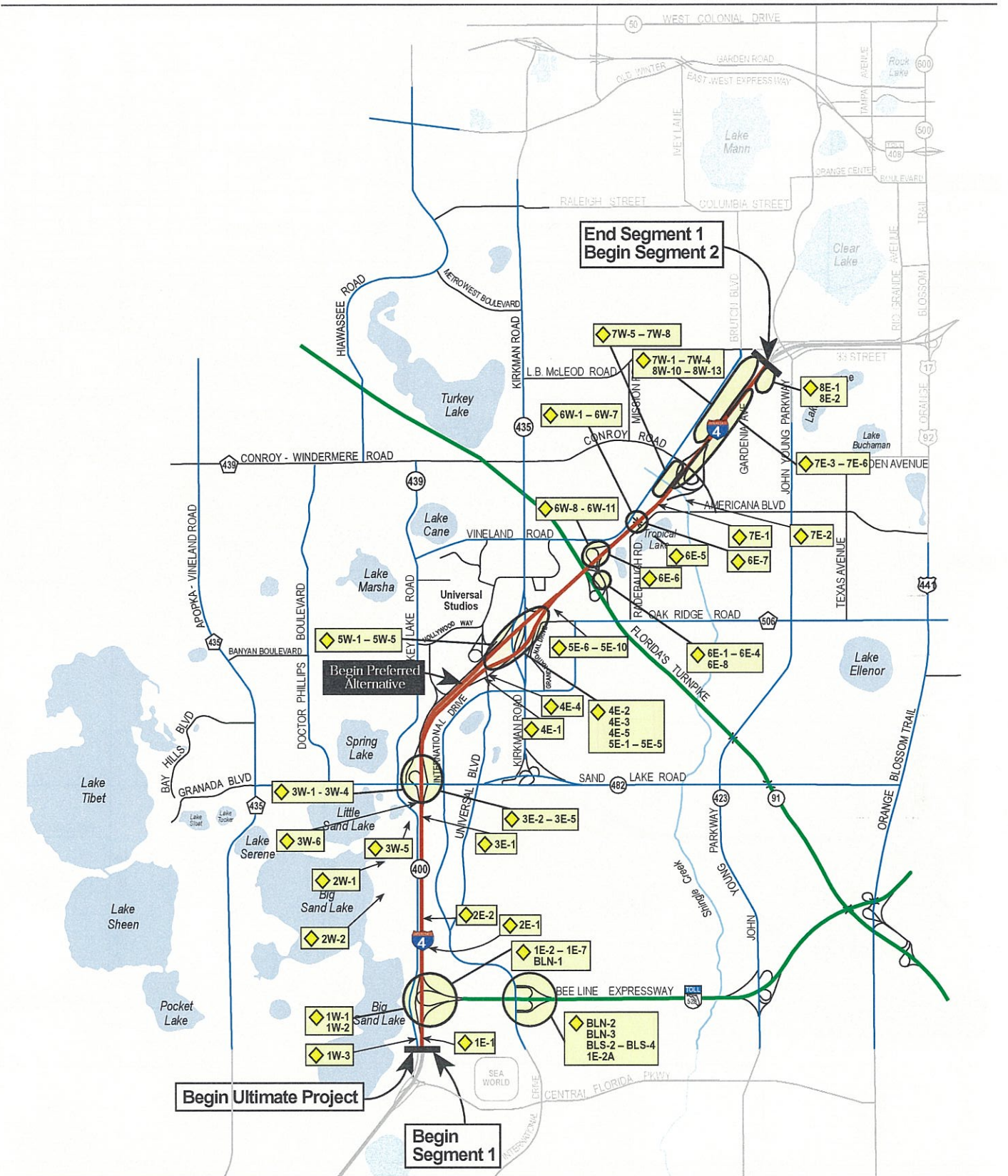
- Project aerials rectified scale (1 inch = 200 feet) (1996)
- Orange County Property Appraiser's aerials (1 inch = 300 feet) (1994)
- Seminole County Property Appraiser's aerials (1 inch = 200 feet) (1995)
- Volusia County Property Appraiser's aerials (1 inch = 200 feet) (1994)
- Multi-modal Master Plan, Tier 3, delineations on aerials (1 inch = 200 feet)
- Natural Resources Conservation Service (NRCS) soil surveys for Orange County (1957 and 1989), Seminole County (1966 and 1990), and Volusia County (1980)
- US Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps (1 inch = 2,000 feet)


Each wetland was classified in accordance with the USFWS *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et. al., 1979) referred to as the National Wetlands Inventory, and in accordance with the *Florida Land Use, Cover and Forms Classification System* (FLUCFCS) developed by the Florida Department of Transportation (FDOT, 1985). In addition to the wetland delineation and classification, other field observations included dominant species, hydrologic information, physical attributes, surrounding land use, observed wildlife species, and the general condition of the wetland. These field data were collected as per the FDOT's *PD&E Manual*, Chapter 18-2 PROCEDURE, for establishing a baseline description of the project wetlands. All the data were recorded on the wetland evaluation data sheets. Wetland areas were then calculated from the photo-interpreted delineations.

Table 3-41. Jurisdictional Wetland Areas by Segment

Seg.	Streams and Waterways			Lakes			Reservoirs		Wetland Hardwood Forests				Wetland Coniferous Forests			Wetland Forested Mixed	Vegetated Non-Forested Wetlands	
	Stormwater Ditch (511)	Canal (512)	Stream (513)	Lakes > 500 ac (521)	Lakes > 10 ac < 100 ac (523)	Lakes < 10 ac (524)	Reservoir > 10 ac < 100 ac (533)	Pond < 10 ac (534)	Lake Swamps (615)	Sloughs (616)	Mixed Hardwood (617)	Scrub/ Shrub (619)	Cypress (621)	Cypress/Pine (624)	Wet Pine Flatwoods (625)	Forested Mixed (630)	Marsh (641 & 644)	Wet Prairie (643)
1	1E-1, 1E-2A, 1E-4A, 1E-6, 1E-7, 1W-1, 1W-2, 2E-2, 3E-1, 3E-2, 3E-3, 3W-3, 3W-4, 4E-1, 4E-4, 4E-5, 5E-5, 5W-1B, 5W-5, 6E-7, 6E-8, 6W-3, 6W-7, 8E-1C, 8W-13	BLS-4, 2W-2B, 7E-2			2W-2A	2W-1A	6E-5D, 8E-1D	1E-5, BLN-1, BLN-2, BLS-2, 5E-7, 5W-1A, 6E-2, 6E-3, 6W-2A, 7W-1, 7W-2, 7W-3, 7W-4, 7W-7, 8E-2, 8W-11, 8W-12				BLN-3, BLS-3, 4E-2, 4E-3, 5E-1, 5E-2B, 5E-3, 5E-4, 6E-6B, 5E-8, 5E-9, 5E-10, 5W-4, 6E-1, 6E-5A, 6E-6, 8W-10C, 8W-10D	2E-1A, 6W-1, 6W-2B, 6W-4, 6W-5, 6W-6, 7E-1A, 7E-3, 7E-5, 7E-6, 7W-5B, 7W-8, 8E-1A		7W-5C	1E-2, 1E-3A, 1E-4B, 3E-4, 3W-6, 5W-2, 6E-4, 6E-5B, 6W-8, 6W-9, 7W-5A, 7W-6, 8W-10A	2E-1B, 2W-1B, 3E-5, 3W-5, 3W-1, 5E-2A, 5W-3, 6E-5E, 6W-10, 6W-11, 7E-1B, 8W-10B	1E-3B, 1W-3, 5E-6A, 6E-5C, 6W-2C, 7E-4, 8E-1B
2	8E-3, 8W-9B, 9E-4, 11AN-1B, 11AS-2	8W-4, 9E-5	11CN-1		11BS-1, 11BS-2, 13E-2, 13W-1A, 13W-2	9E-1, 10W-1, 11BN-1, 11CS-1, 11CS-2		8W-3, 8W-5, 8W-6, 8W-7, 8W-8, 9E-2, 9E-3, 9W-1, 10E-1, 11E-1, 11E-2, 11W-1, 11W-2, 11AN-1, 11AS-1			8W-9A	13W-1B	8W-1, 8W-2, 13E-1					
3					16W-3			15W-1,										
4	16E-1, 17E-2, 17E-3, 17E-4, 17E-5, 17W-3, 18E-3, 18E-4, 18E-5, 18W-4, 18W-6, 18W-8, 19E-2, 20E-2				17W-1A, 18W-7A, 18W-1, 20E-5A, 24E-1B	16W-2, 18E-9, 18W-1, 25E-1B		16W-1, 17W-2, 18E-1, 18E-2, 18E-6, 18E-8, 18W-2, 18W-3, 18W-9, 19E-1, 19E-3, 20E-1, 20E-3, 20E-5B, 20W-1, 20W-2A, 22E-1, 23E-1, 24E-2	22W-1		16W-4	18E-7, 20W-2B, 23E-2, 23E-3	17W-1B		17E-1, 18W-7C	18W-5, 18W-7B, 18W-10, 20E-4, 20W-3, 24E-1A, 25E-1A		
5	26W-2, 27W-1, 30E-4, 30E-5A, 31E-3A, 31E-4, 31E-5, 31E-14, 31W-3, 31W-5, 31W-6, 32E-10	31E-1				29W-1	30W-6, 31W-2	27W-2, 27W-3, 27W-4, 28W-1, 28W-2, 28W-3, 29E-1, 29E-2, 29E-4, 30E-5B, 30E-6, 30E-8, 30W-5, 31E-8, 31E-9, 32W-6B			31W-4B, 32E-2A, 32W-6A	27E-2, 28E-1, 29W-2, 30W-3B, 31E-3B, 31W-1		26W-1	30W-2, 30W-4, 31E-2	26E-1, 27E-1, 27E-3, 29E-3, 30W-3A, 32E-1,	31E-10, 31E-11, 31E-12, 31E-13, 31W-4A	
6	32E-2B, 32E-3, 32E-11, 32W-4C, 36E-5, 36W-2, 36E-3, 36W-3C, 37W-1, 37W-2, 38W-5, 38W-7, 38W-12, 39E-1		33E-1DD3, 5W-1C	33E-1D, 33W-1B	37W-3A, 38E-2D, 38W-4A, 39W-1	38W-6A	35W-1D	36E-1, 36E-4, 36E-6B, 38E-3, 38E-4, 38E-5, 38E-6, 38W-1, 38W-2, 38W-3, 38W-8, 38W-11, 41E-1	32E-6A, 32E-7, 32E-8, 32W-1, 32W-2, 32W-3, 32W-7, 33E-1A, 33W-1A, 34W-1A	36W-3A	32E-4, 32E-5, 32W-5, 33W-2, 35W-1A	32E-6C, 32E-9, 32W-4A, 33E-1B, 33W-3B, 34W-1C, 36E-2B, 36E-6A, 36W-1, 37W-3B, 38E-1, 38E-2B	32W-4B, 33W-3A	40W-1B	36W-4, 36W-5, 38E-2A, 38W-4B, 38W-6B	32E-6B, 33E-1C, 34W-1B, 35W-1B, 36E-2A, 36W-3B, 37W-4, 38E-2C, 38W-9, 38W-10, 39W-2, 40W-1A, 40W-2		

32E-5 All of the wetland area within 600' of ROW will be totally mitigated with the I-4 PD&E Study Six Lining and St. Johns River Bridge project. Therefore are "non-existing" for the Ultimate I-4 project.



 Area of Generalized Wetland Location
 (For Specific Wetland Boundaries Refer to the Wetlands Evaluation Report)


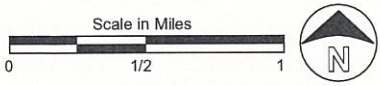
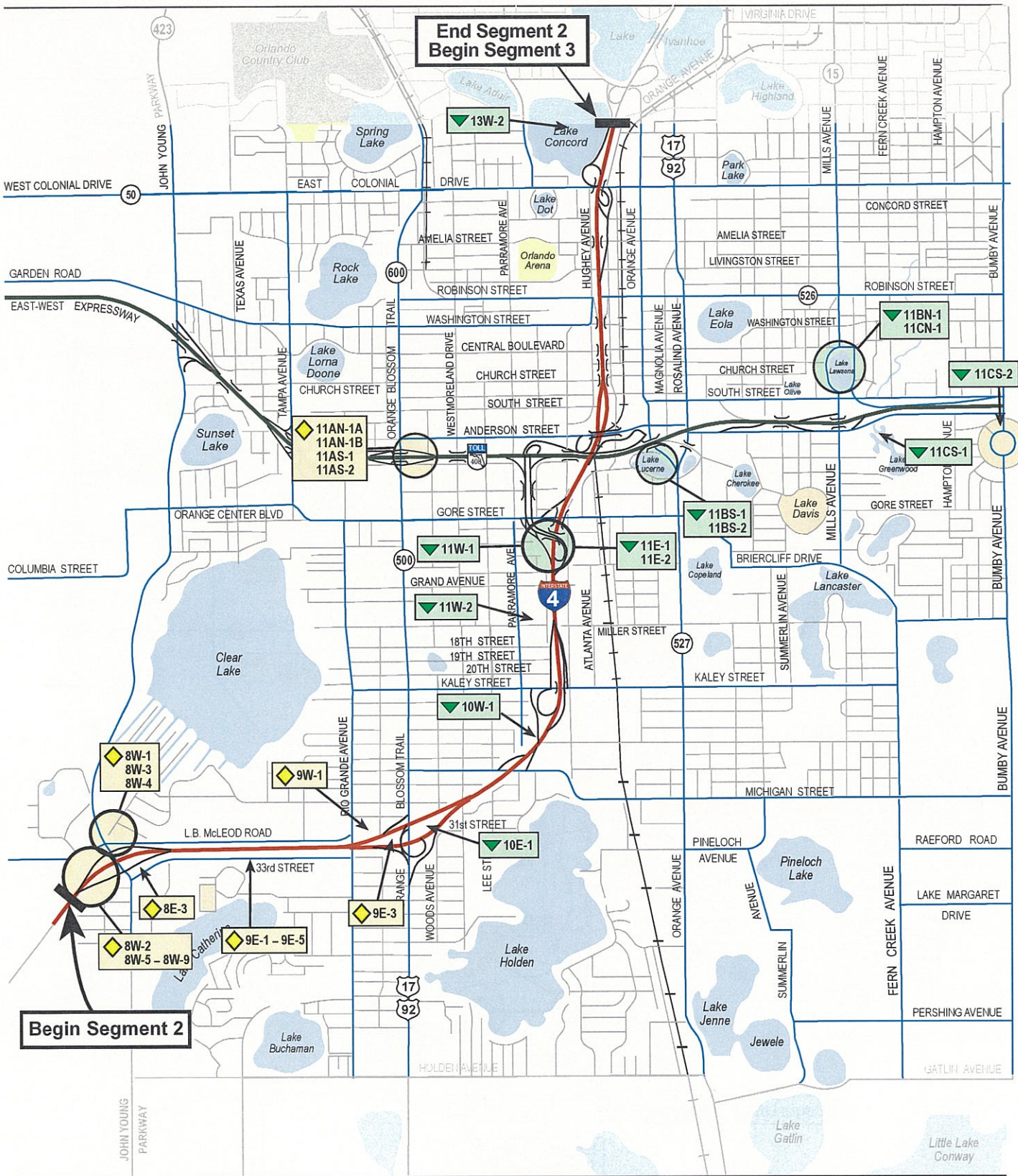

Watershed Basin **Jurisdiction**
 Shingle Creek/ Kissimmee River Basin (SFWMD)



Figure 3-18
Existing Wetlands

I-4 PD&E Study - Section 2
Segment 1 of 6



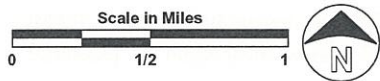
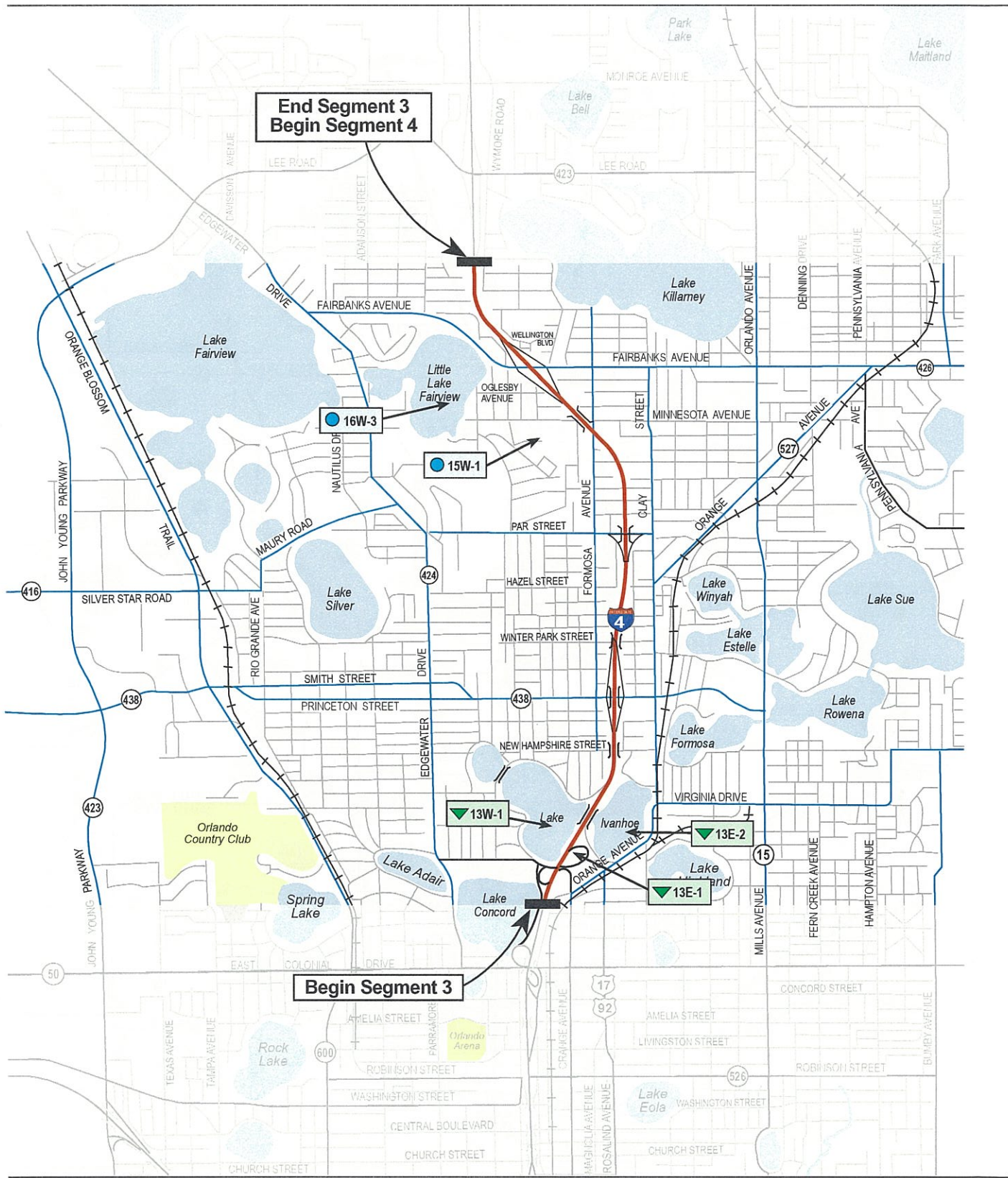
 Area of Generalized Wetland Location
(For Specific Wetland Boundaries Refer to the Wetlands Evaluation Report)

Watershed Basin	Jurisdiction
 Shingle Creek/ Kissimmee River Basin	(SFWMD)
 Lake Jessup Basin	(SJRWMD)

Figure 3-18
Existing Wetlands

I-4 PD&E Study - Section 2
Segment 2 of 6



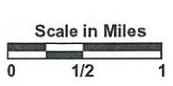
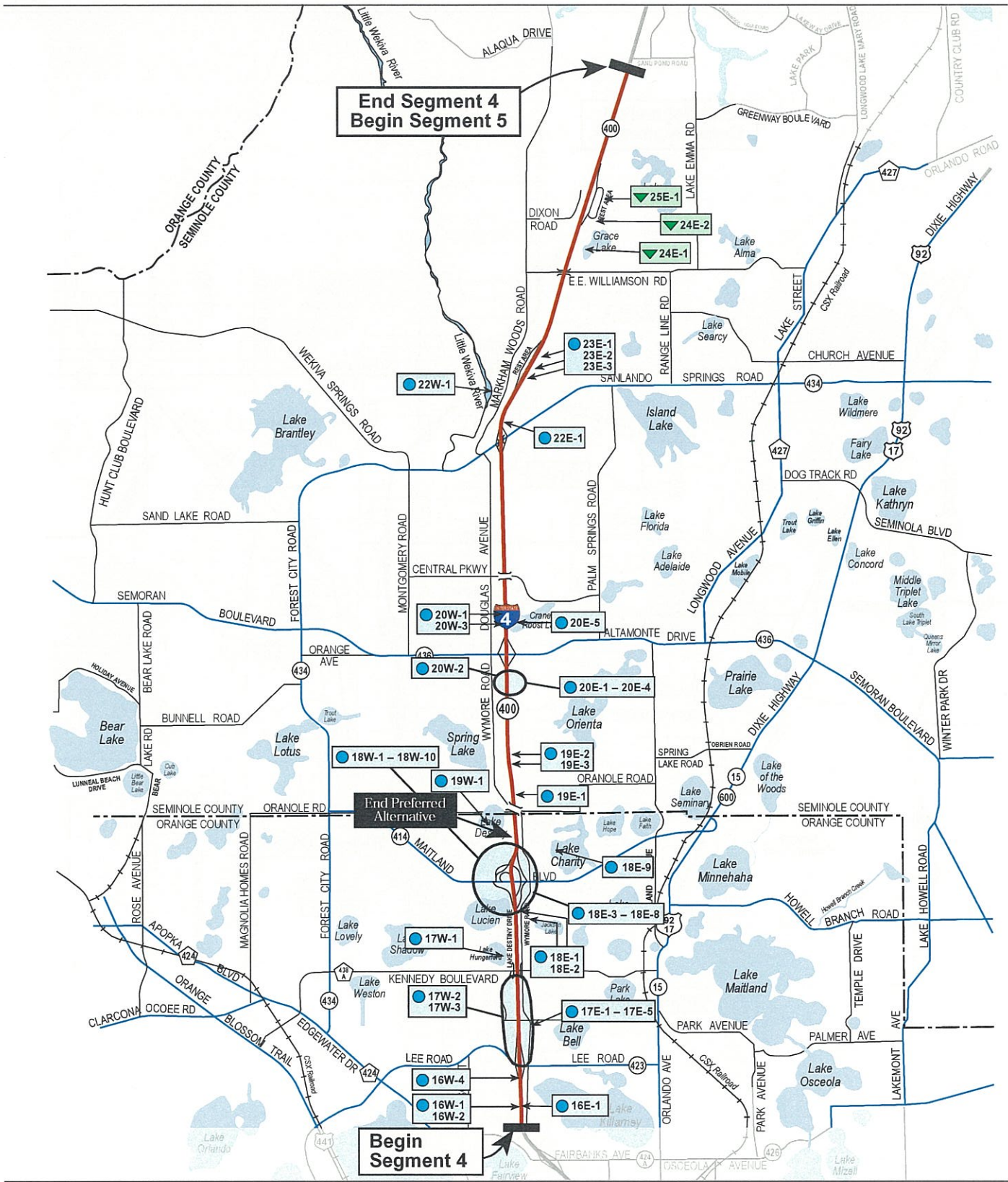


Watershed Basin	Jurisdiction
Lake Jessup Basin	(SJRWMD)
Wekiva River Basin	(SJRWMD)



Figure 3-18
Existing Wetlands

I-4 PD&E Study - Section 2
Segment 3 of 6



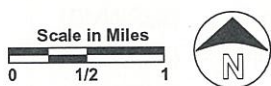
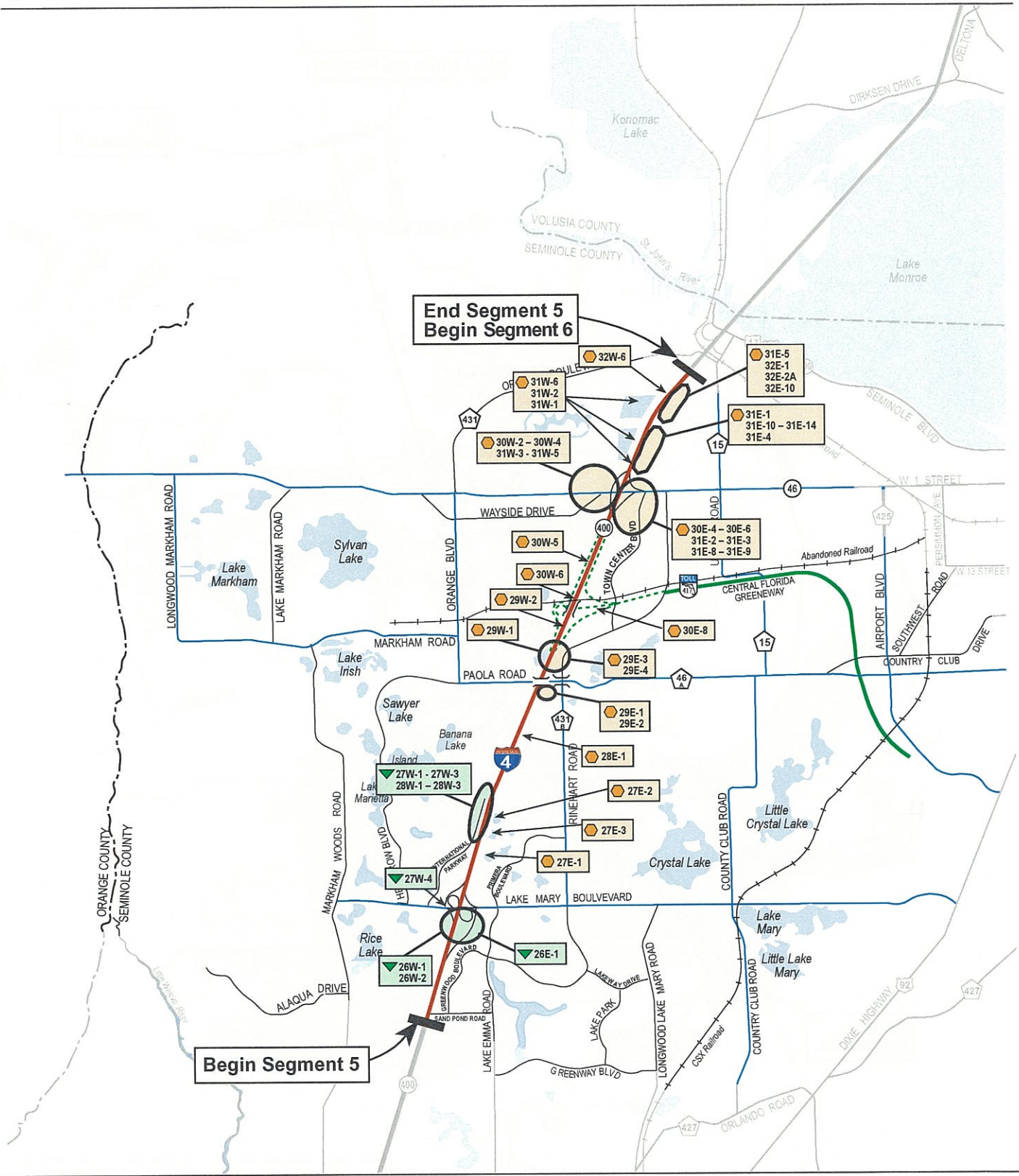
Area of Generalized Wetland Location
 (For Specific Wetland Boundaries Refer to the Wetlands Evaluation Report)

Watershed Basin	Jurisdiction
▲ Lake Jessup Basin	(SJRWMD)
● Wekiva River Basin	(SJRWMD)

Figure 3-18
Existing Wetlands

I-4 PD&E Study - Section 2
 Segment 4 of 6





Area of Generalized Wetland Location
 (For Specific Wetland Boundaries Refer to the Wetlands Evaluation Report)

Watershed Basin	Jurisdiction
Lake Jessup Basin	(SJRWMD)
Lake Monroe Basin	(SJRWMD)



Figure 3-18
Existing Wetlands

I-4 PD&E Study - Section 2
 Segment 5 of 6

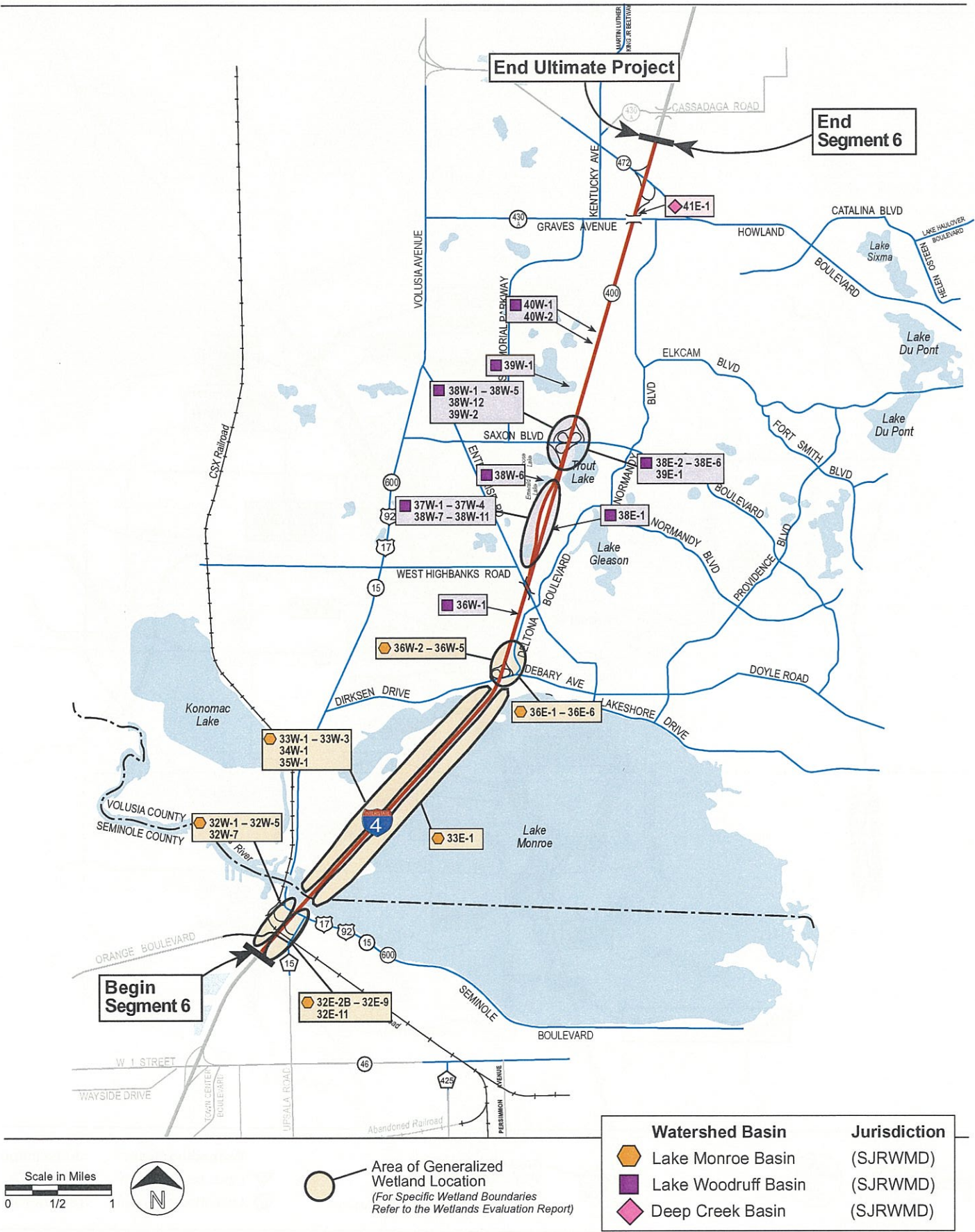


Figure 3-18
Existing Wetlands

I-4 PD&E Study - Section 2
Segment 6 of 6



Table 3-42. Summary of Wetland Classifications within the Ultimate Project Study Area

Wetland Number	Vegetation Structural Diversity		Wetland Type ^a	Wetland Name	Wetland Area	Wildlife Habitat Value ^b	Hydrologic Contiguity ^c	Relationships ^d	Receives Roadway Runoff	Public Use	Integrity ^e
	NWI Classification	FLUCFCS Category			acres						
Segment 1											
1E-1	PEM2Cx	511	ditch		1.75	Poor	1	I, C	✓	--	Man-made
1E-2	PFO7A	630	forested mixed		9.60	Moderate	1	I, U, R		--	Unaltered
1E-2A	PEM2Cx	511	ditch		0.74	Poor	2	I, C, R	✓	--	Man-made
BLN-1	PUBHx	534	pond		1.12	Poor	1	I, C	✓	--	Altered/Man-made
BLN-2	PUBHx	534	pond		2.27	Poor	1	I, C	✓	--	Man-made
BLN-3	PSS6Hx	619	scrub/shrub		0.40	Moderate	1	I	✓	--	Unaltered
BLS-2	PSS3Hx	534	pond		0.96	Poor	1	C		--	Altered/Man-made
BLS-3	PSS6Hx	619	scrub/shrub		0.45	Moderate	1	I	✓	--	Unaltered
BLS-4	PUBHx	512	canal		1.05	Poor	2	I, C, R	✓	--	Man-made
1E-3A	PFO7A	630	forested mixed		0.41	Moderate	1	I, U		--	Man-made
1E-3B	PEM1B	643	wet prairie		0.22	Moderate	1	I, U		--	Man-made
1E-4A	PEM1Bx	511	ditch		0.11	Poor	1	I, U	✓	--	Man-made
1E-4B	PFO7A	630	forested mixed		0.34	Moderate	1	I, U		--	Altered
1E-5	PUBHx	534	pond		0.83	Poor	1	C	✓	--	Man-made
1E-6	PEM2Cx	511	ditch		0.68	Poor	1	I, C	✓	--	Man-made
1E-7	PEM2Cx	511	ditch		0.58	Poor	1	I, C	✓	--	Man-made
1W-1	PEM2Cx	511	ditch		2.54	Poor	1	I	✓	--	Man-made
1W-2	PEM2Cx	511	ditch		0.28	Poor	1	I	✓	--	Man-made
1W-3	PEM1J	643	wet prairie		0.33	Moderate	1	U		--	Unaltered
2E-1A	PFO2F	621	cypress		4.81	Moderate	1	I, C		--	Altered
2E-1B	PEM1C	641	marsh		1.30	Moderate	1	I, C		--	Altered
2E-2	PEM2Cx	511	ditch		1.54	Poor	1	I, C	✓	--	Man-made
2W-1A	L1UBH	524	lake	Big Sand Lake	0.81	High	1	R		--	Altered
2W-1B	PEM1C	641	marsh	Big Sand Lake	1.61	Moderate	1	R		--	Altered
2W-2A	L1UBH	523	lake	Boo Boo's Lake	0.001	High	1	R		Recreational	Altered
2W-2B	PUBHx	512	canal	Boo Boo's Lake	0.09	Moderate	1	R		--	Altered
3E-1	PEM1Jx	511	ditch		0.16	Poor	1	I, C	✓	--	Man-made
3E-2	PEM1Jx	511	ditch		0.53	Poor	1	I, C	✓	--	Man-made
3E-3	PEM1Jx	511	ditch		0.29	Poor	1	I, C	✓	--	Man-made
3E-4	PFO6J	630	forested mixed		0.47	Poor	1	I, C	✓	--	Altered
3E-5	PEM1Jx	641	marsh		0.11	Poor	1	I, C	✓	--	Man-made
3W-1	PEM1Jx	641	marsh		1.09	Poor	1	I, C	✓	--	Man-made

3-195

I-4 PD&E Study - Section 2
Final Environmental Impact Statement
August 2002

Table 3-42. Summary of Wetland Classifications within the Ultimate Project Study Area (Continued)

Wetland Number	Vegetation Structural Diversity		Wetland Type ^a	Wetland Name	Wetland Area	Wildlife Habitat Value ^b	Hydrologic Contiguity ^c	Relationships ^d	Receives Roadway Runoff	Public Use	Integrity ^e
	NWI Classification	FLUCFCS Category			acres						
3W-3	PEM2Jx	511	ditch		0.58	Poor	1	I	✓	--	Man-made
3W-4	PEM2Jx	511	ditch		0.44	Poor	1	I	✓	--	Man-made
3W-5	PEM1Hx	644	marsh		1.73	Moderate	1	R		--	Altered
3W-6	PFO6J	630	forested mixed		0.89	Poor	2	I		--	Altered
4E-1	PEM2Cx	511	ditch		0.18	Poor	1	I, C	✓	--	Man-made
4E-2	PSS6Cx	619	scrub/shrub		0.70	Moderate	1	I	✓	--	Man-made
4E-3	PSS6Cx	619	scrub/shrub		1.00	Poor	1	I	✓	--	Altered
4E-4	PEM2Cx	511	ditch		0.29	Poor	1	I, C	✓	--	Man-made
4E-5	PEM2Cx	511	ditch		1.54	Poor	1	I, C	✓	--	Man-made
5E-1	PSS6Cx	619	scrub/shrub		2.55	Poor	1	I	✓	--	Man-made
5E-2A	PEM1Hx	641	marsh		2.00	Poor	1	I	✓	--	Altered
5E-2B	PSS6Cx	619	scrub/shrub		3.30	Poor	1	I	✓	--	Altered
5E-3	PSS6Cx	619	scrub/shrub		6.20	Moderate	1	I	✓	--	Man-made
5E-4	PSS6Cx	619	scrub/shrub		1.36	Poor	1	I	✓	--	Man-made
5E-5	PSS6Jx	511	ditch		3.95	Poor	2	I, C	✓	--	Man-made
5E-6A	PEM1Cx	643	wet prairie		6.54	Moderate	1	I, C		--	Altered/Man-made
5E-6B	PSS6Cx	619	scrub/shrub		4.71	Moderate	1	I, C		--	Man-made
5E-7	PUBHx	534	pond		0.86	Poor	1	C	✓	--	Man-made
5E-8	PSS6Hx	619	scrub/shrub		0.14	Poor	1	C	✓	--	Man-made
5E-9	PSS6Hx	619	scrub/shrub		0.20	Poor	1	C	✓	--	Man-made
5E-10	PSS6Hx	619	scrub/shrub		0.33	Poor	1	C	✓	--	Man-made
5W-1A	PUBHx	534	pond		1.07	Poor	1	I, C	✓	--	Altered/Man-made
5W-1B	PEM2Jx	511	ditch		1.75	Poor	1	I, C	✓	--	Man-made
5W-2	PFO6Hx	630	forested mixed		2.58	Poor	1	I	✓	--	Altered
5W-3	PEM1E	641	marsh		0.21	Poor	1	I		--	Altered
5W-4	PSS6Cx	619	scrub/shrub		3.53	Poor	1	I	✓	--	Altered
5W-5	PSS1Jx	511	ditch		2.89	Poor	1	I	✓	--	Altered/Man-made
6E-1	PSS3Cx	619	scrub/shrub		1.84	Poor	1	I, C		--	Man-made
6E-2	PEM1Fx	534	pond		1.69	Poor	1	C	✓	--	Man-made
6E-3	PEM1Fx	534	pond		0.58	Poor	1	C	✓	--	Man-made
6E-4	PFO6F	630	forested mixed		3.74	Moderate	1	I		--	Altered
6E-5A	PSS6C	619	scrub/shrub	Tropical Lake	7.60	High	1	I		Recreational	Altered

Table 3-42. Summary of Wetland Classifications within the Ultimate Project Study Area (Continued)

Wetland Number	Vegetation Structural Diversity		Wetland Type ^a	Wetland Name	Wetland Area acres	Wildlife Habitat Value ^b	Hydrologic Contiguity ^c	Relationships ^d	Receives Roadway Runoff	Public Use	Integrity ^e
	NWI Classification	FLUCFCS Category									
6E-5B	PFO6C	630	forested mixed	Tropical Lake	16.88	High	1	I		Recreational	Altered/Man-made
6E-5C	PEM1B	643	wet prairie	Tropical Lake	3.09	High	1	I		Recreational	Man-made
6E-5D	L1UBHx	533	reservoir	Tropical Lake	11.34	High	1	I		Recreational	Man-made
6E-5E	PEM1H	641	marsh	Tropical Lake	1.34	High	1	I		Recreational	Man-made
6E-6	PSS6Cx	619	scrub/shrub		0.32	Poor	1	I	✓	--	Altered
6E-7	PEM1Cx	511	ditch		1.62	Poor	1	I	✓	--	Man-made
6E-8	PEM1Hx	511	ditch		1.95	Poor	2	I	✓	--	Man-made
6W-1	PFO2E	621	cypress		1.40	Moderate	1	I, R		--	Altered
6W-2A	PUBHx	534	pond		0.55	Moderate	1	I, R	✓	--	Altered/Man-made
6W-2B	PFO2F	621	cypress		2.23	Moderate	2	I, R		--	Altered
6W-2C	PEM2E	643	wet prairie		0.49	Moderate	2	I, R		--	Altered
6W-3	PEM1Jx	511	ditch		0.67	Poor	1	I, R	✓	--	Man-made
6W-4	PFO2E	621	cypress		0.71	Poor	1	I, R		--	Altered
6W-5	PFO2E	621	cypress		0.53	Poor	1	I, R		--	Altered
6W-6	PFO2E	621	cypress		0.88	Poor	1	I, R		--	Altered
6W-7	PSS3Jx	511	ditch		1.69	Poor	1	I	✓	--	Man-made
6W-8	PFO6C	630	forested mixed		3.17	Poor	1	I	✓	--	Altered
6W-9	PFO6C	630	forested mixed		11.50	Moderate	1	I		--	Altered
6W-10	PEM1Jx	641	marsh		0.85	Moderate	1	I	✓	--	Altered
6W-11	PEM1Jx	641	marsh		2.57	Moderate	1	I	✓	--	Altered
7E-1A	PFO2C	621	cypress		1.24	High	1	I		--	Man-made
7E-1B	PEM1C	641	marsh		0.25	High	1	I		--	Man-made
7E-2	R2UBHx	512	canal	Shingle Creek	1.78	Poor	4	I	✓	--	Altered
7E-3	PFO2C	621	cypress		23.36	High	4	I		--	Altered
7E-4	PEM1B	643	wet prairie		0.56	Poor	1	I		--	Man-made
7E-5	PFO2C	621	cypress		8.53	High	1	I		--	Altered
7E-6	PFO2B	621	cypress		1.00	Moderate	1	U		--	Altered
7W-1	PUBHx	534	pond		1.04	Poor	1	I, C	✓	--	Man-made
7W-2	PUBHx	534	pond		0.95	Poor	1	I, C	✓	--	Man-made
7W-3	PUBHx	534	pond		0.84	Poor	1	I, C	✓	--	Man-made
7W-4	PUBHx	534	pond		0.27	Poor	1	I, C	✓	--	Man-made
7W-5A	PFO7E	630	forested mixed		17.60	H/M	1	I		--	Altered/Man-made
7W-5B	PFO2E	621	cypress		1.44	Moderate	1	I		--	Altered

3-197

Table 3-42. Summary of Wetland Classifications within the Ultimate Project Study Area (Continued)

Wetland Number	Vegetation Structural Diversity		Wetland Type ^a	Wetland Name	Wetland Area	Wildlife Habitat Value ^b	Hydrologic Contiguity ^c	Relationships ^d	Receives Roadway Runoff	Public Use	Integrity ^e
	NWI Classification	FLUCFCS Category			acres						
7W-5C	PFO4E	625	wet pine flatwoods		4.70	Moderate	1	I, C		--	Man-made
7W-6	PFO6E	630	forested mixed		0.82	Poor	1	I		--	Altered/Man-made
7W-7	PUBHx	534	pond		0.52	Poor	1	I	✓	--	Man-made
7W-8	PFO2F	621	cypress		1.03	Moderate	1	I		--	Altered
8E-1A	PFO2C	621	cypress		7.84	Moderate	2	I		--	Altered
8E-1B	PEM1B	643	wet prairie		2.21	Moderate	2	I		--	Altered
8E-1C	PEM1Jx	511	ditch		1.14	Poor	2	I	✓	--	Man-made
8E-1D	L1UBHx	533	reservoir		6.30	Moderate	4	I	✓	--	Altered/Man-made
8E-2	PUBHx	534	pond		0.23	Poor	1	C	✓	--	Altered/Man-made
8W-10A	PFO6C	630	forested mixed		8.77	Poor	2	I, C		--	Altered
8W-10B	PEM1J	641	marsh		1.59	Poor	2	I, C		--	Altered
8W-10C	PSS6C	619	scrub/shrub		0.99	Poor	2	I, C		--	Altered
8W-10D	PSS6B	619	scrub/shrub		2.74	Poor	2	I, C		--	Altered
8W-11	PUBHx	534	pond		0.80	Poor	1	C	✓	--	Man-made
8W-12	PUBHx	534	pond		0.74	Poor	1	I, C	✓	--	Man-made
8W-13	PEM1Jx	511	ditch		0.14	Poor	2	I, R	✓	--	Man-made
				SEGMENT SUBTOTAL	267.63						
Segments 2 and 3											
8E-3	PEM1Jx	511	ditch		0.30	Poor	1	I	✓	--	Man-made
8W-1	PFO6F	621	cypress		14.42	High	1	I, C, R		--	Altered
8W-2	PFO2F	621	cypress		1.21	High	1	I, C, R		--	Altered
8W-3	PUBHx	534	pond		0.41	Poor	1	C, R	✓	--	Man-made
8W-4	R2UBHx	512	canal		1.84	Poor	3	R	✓	Recreational	Man-made
8W-5	PSS3Hx	534	pond		0.11	Poor	1	I, C	✓	--	Man-made
8W-6	PSS3Hx	534	pond		0.02	Poor	1	I, C	✓	--	Man-made
8W-7	PEM1Hx	534	pond		0.06	Poor	1	I, C	✓	--	Man-made
8W-8	PUBHx	534	pond		0.04	Poor	1	I, C	✓	--	Man-made
8W-9A	PFO1J	617	mixed hardwood		0.18	Poor	1	I		--	Altered
8W-9B	PEM1Jx	511	ditch		0.09	Poor	1	I	✓	--	Man-made
9E-1	PUBHx	524	lake	Lake Catherine	3.63	Poor	3	C		Recreational	Altered

Table 3-42. Summary of Wetland Classifications within the Ultimate Project Study Area (Continued)

Wetland Number	Vegetation Structural Diversity		Wetland Type ^a	Wetland Name	Wetland Area	Wildlife Habitat Value ^b	Hydrologic Contiguity ^c	Relationships ^d	Receives Roadway Runoff	Public Use	Integrity ^e
	NWI Classification	FLUCFCS Category			acres						
9E-2	PUBHx	534	pond		1.99	Poor	1	C	✓	--	Man-made
9E-3	PUBHx	534	pond		1.10	Poor	1	I	✓	--	Man-made
9E-4	PEM1Jx	511	ditch		0.97	Poor	1	I	✓	--	Man-made
9E-5	R2UBHx	512	canal		0.59	Poor	1	R	✓	--	Man-made
9W-1	PUBHx	534	pond		0.49	Poor	1	I, R	✓	--	Man-made
10E-1	PUBHx	534	pond		0.93	Poor	1	I	✓	--	Man-made
10W-1	PUBHx	524	lake	Lake Angel	4.13	Moderate	3	I, R	✓	--	Altered
11AN-1B	PUBHx	511	ditch		0.16	Poor	3	C, R	✓	--	Man-made
11AS-2	PUBHx	511	ditch		0.67	Poor	3	C, R	✓	--	Altered/Man-made
11CN-1	R2UBH	513	creek		0.27	Moderate	2	R	✓	--	Altered/Man-made
11BS-1	L1UBH	523	lake	Lake Lucerne	9.62	High	1	I, R		Recreational	Altered
11BS-2	L1UBH	523	lake	Lake Lucerne	4.60	High/Moderate	1	I, R		Recreational	Altered
11BN-1	L1UBH	524	lake	Lake Olive	0.45	High	1	R		Recreational	Unaltered
11CS-1	PUBHx	524	lake	Greenwood Park	3.74	Moderate	3	R		Recreational	Man-made
11CS-2	PUBH	524	lake	Lake Como	0.34	High	1	R		Recreational	Unaltered
11AN-1A	PUBHx	534	pond	Lake Beardall	3.39	Moderate	2	I, C	✓	--	Altered/Man-made
11AS-1	PUBHx	534	pond		2.59	Moderate	2	I, C	✓	--	Altered/Man-made
11E-1	PEM1Hx	534	pond		0.13	Poor	1	I	✓	--	Man-made
11E-2	PUBHx	534	pond		1.38	Poor	1	I	✓	--	Man-made
11W-1	PUBHx	534	pond		0.73	Poor	1	I	✓	--	Man-made
11W-2	PUBHx	534	pond		0.47	Poor	1	R	✓	--	Man-made
13E-1	PFO2C	621	cypress		0.51	Poor	2	I	✓	--	Altered
13E-2	L1UBH	523	lake	Lake Ivanhoe	34.97	High/Moderate	3	I, C, R		Recreational	Altered
13W-1A	L1UBH	523	lake	Lake Ivanhoe	27.32	High/Moderate	3	I, C, R		Recreational	Altered
13W-1B	PSS6D	619	scrub/shrub	Lake Ivanhoe	0.80	High	3	I, C, R		Recreational	Altered
13W-2	L1UBH	523	lake	Lake Concord	25.42	High	3	I, C, R	✓	Recreational	Altered
15W-1	PUBHx	534	pond		1.65	Moderate	1	R	✓	Recreational	Man-made
16W-3	L1UBH	523	lake	Little Lake Fairview	2.62	High	1	R		Recreational	Altered
				SEGMENT SUBTOTAL	154.33						

Table 3-42. Summary of Wetland Classifications within the Ultimate Project Study Area (Continued)

Wetland Number	Vegetation Structural Diversity		Wetland Type ^a	Wetland Name	Wetland Area acres	Wildlife Habitat Value ^b	Hydrologic Contiguity ^c	Relationships ^d	Receives Roadway Runoff	Public Use	Integrity ^e
	NWI Classification	FLUCFCS Category									
Segments 4 and 5											
16E-1	PEM1Cx	511	ditch		0.61	Poor	2	I, C	✓	--	Man-made
16W-1	PUBHx	534	pond		0.13	Poor	2	C, R	✓	--	Man-made
16W-2	PUBHx	524	lake	Lake Fair	2.35	Moderate	2	C, R		Recreational	Altered
16W-4	PFO6F	617	mixed hardwood		2.93	Poor	1	C		--	Altered
17E-1	PFO6C	630	forested mixed		3.20	Moderate	2	I, C		--	Altered
17E-2	PSS6Jx	511	ditch		1.03	Poor	2	I	✓	--	Man-made
17E-3	PEM1Bx	511	ditch		1.20	Poor	2	I, C	✓	--	Man-made
17E-4	PEM1Bx	511	ditch		0.12	Poor	2	I, C	✓	--	Man-made
17E-5	PEM1Bx	511	ditch		0.55	Poor	2	I, C	✓	--	Man-made
17W-2	PUBHx	534	pond	Lake King	3.03	Moderate	1	C, R	✓	--	Man-made
17W-3	PEM1Cx	511	ditch		1.28	Poor	1	I, C	✓	--	Man-made
17W-1A	L1UBH	523	lake	Hungerford Lake	4.42	Moderate	1	C		--	Altered
17W-1B	PFO2F	621	cypress	Hungerford Lake	0.54	Moderate	2	C		--	Altered
18E-1	PUBHx	534	pond		0.13	Poor	1	I, R	✓	--	Man-made
18E-2	PUBHx	534	pond		0.34	Poor	1	I, R	✓	--	Man-made
18E-3	PEM1Cx	511	ditch		0.35	Poor	1	I	✓	--	Man-made
18E-4	PEM1Cx	511	ditch		0.36	Poor	1	I	✓	--	Man-made
18E-5	PEM1Cx	511	ditch		0.17	Poor	1	I	✓	--	Man-made
18E-6	PUBHx	534	pond		4.16	Poor	1	I	✓	--	Altered
18E-7	PSS6C	619	scrub/shrub		1.41	Poor	1	I	✓	--	Man-made
18E-8	PUBHx	534	pond		0.28	Poor	1	R	✓	--	Man-made
18E-9	L1UBHx	524	lake	Lake Love	0.03	Poor	1	R	✓	--	Altered
18W-1	L1UBHx	524	lake		5.87	High	1	C, R	✓	Recreational	Altered
18W-2	PUBHx	534	pond		0.22	Moderate	2	C	✓	--	Man-made
18W-3	PUBHx	534	pond		0.01	Moderate	2	C	✓	--	Man-made
18W-4	PEM1Fx	511	ditch		0.21	Poor	1	I	✓	--	Man-made
18W-5	PEM1Fx	641	marsh		0.72	Poor	1	I	✓	--	Man-made
18W-6	PEM1Jx	511	ditch		0.51	Poor	1	I, C	✓	--	Man-made
18W-7A	L1UBH	523	lake	Lake Lucien	9.09	Moderate	1	I, C		Recreational	Altered
18W-7B	PEM1F	641	marsh	Lake Lucien	2.29	Moderate	2	I, C		Recreational	Altered

Table 3-42. Summary of Wetland Classifications within the Ultimate Project Study Area (Continued)

Wetland Number	Vegetation Structural Diversity		Wetland Type ^a	Wetland Name	Wetland Area acres	Wildlife Habitat Value ^b	Hydrologic Contiguity ^c	Relationships ^d	Receives Roadway Runoff	Public Use	Integrity ^e
	NWI Classification	FLUCFCS Category									
18W-7C	PFO6F	630	forested mixed	Lake Lucien	1.53	Moderate	2	I, C		Recreational	Altered
18W-8	PEM1Jx	511	ditch		0.46	Poor	1	I, C	✓	--	Man-made
18W-9	PUBHx	534	pond		3.24	Moderate	1	I	✓	--	Man-made
18W-10	PEM1Hx	641	marsh		3.88	Moderate	1	I	✓	--	Man-made
19E-1	PUBHx	534	pond		0.75	Poor	1	I, R	✓	--	Man-made
19E-2	PEM1Cx	511	ditch		0.34	Poor	1	I, R	✓	--	Man-made
19E-3	PUBHx	534	pond		0.24	Poor	1	C	✓	--	Man-made
19W-1	L1UBH	523	lake	Lake Destiny	5.32	High	3	C, R		--	Altered
20E-1	PUBHx	534	pond		3.74	Poor	1	I, C	✓	--	Altered/Man-made
20E-2	PSS6Cx	511	ditch		0.49	Poor	1	I, C	✓	--	Man-made
20E-3	PUBHx	534	pond		2.85	Poor	1	I, C	✓	--	Man-made
20E-4	PEM1Cx	641	marsh		0.83	Poor	1	I, C		--	Man-made
20E-5A	L1UBHx	523	lake	Cranes Roost Lake	11.00	Moderate	1	I, C		Recreational	Altered
20E-5B	PUBHx	534	pond		1.02	Poor	1	I, C	✓	--	Man-made
20W-1	PUBHx	534	pond		2.04	Poor	1	I, C	✓	--	Altered
20W-2A	PUBHx	534	pond		2.43	Moderate	1	I, C	✓	--	Man-made
20W-2B	PSS1Cx	619	scrub/shrub		1.01	Moderate	1	I, C	✓	--	Man-made
20W-3	PEM1Hx	641	marsh		0.21	Poor	1	I, C	✓	--	Man-made
22E-1	PUBHx	534	pond		1.34	Poor	1	I, C, R	✓	--	Man-made
22W-1	PFO1C	615	forested lake swamp	Little Wekiva River	5.28	High	3	R		Recreational	Altered
23E-1	PUBHx	534	pond		0.46	Poor	1	I, R	✓	--	Man-made
23E-2	PSS1F	619	scrub/shrub		0.90	Poor	1	I, R	✓	--	Altered
23E-3	PSS1F	619	scrub/shrub		6.03	Poor	1	R	✓	--	Altered
24E-1A	PEM1A	641	marsh	Grace Lake	9.11	Moderate	2	I, R		--	Altered
24E-1B	L1UBH	523	lake	Grace Lake	1.42	Moderate	1	I, R		Recreational	Altered
24E-2	PUBHx	534	pond		2.90	Poor	1	R	✓	--	Altered
25E-1A	PEM1H	641	marsh	Lake Myrtle	7.24	Poor	2	R		--	Altered
25E-1B	L1AB3H	524	lake	Lake Myrtle	2.32	Poor	2	R		--	Altered
26E-1	PEM1C	641	marsh		9.69	Poor	1	I	✓	--	Man-made
26W-1	PFO4C	625	wet pine flatwoods		4.82	Poor	1	I, A		--	Altered
26W-2	PEM2Jx	511	ditch		0.29	Poor	1	I	✓	--	Man-made

3-201

Table 3-42. Summary of Wetland Classifications within the Ultimate Project Study Area (Continued)

Wetland Number	Vegetation Structural Diversity		Wetland Type ^a	Wetland Name	Wetland Area acres	Wildlife Habitat Value ^b	Hydrologic Contiguity ^c	Relationships ^d	Receives Roadway Runoff	Public Use	Integrity ^e
	NWI Classification	FLUCFCS Category									
27E-1	PEM1C	641	marsh		1.96	Poor	1	U		--	Altered
27E-2	PSS6Hx	619	scrub/shrub		3.39	Moderate	1	U	✓	--	Altered
27E-3	PEM1Cx	641	marsh		0.42	Poor	1	U		--	Altered
27W-1	PSS1Jx	511	ditch		0.12	Poor	1	I	✓	--	Man-made
27W-2	PUBHx	534	pond		1.50	Poor	1	C	✓	--	Man-made
27W-3	PUBHx	534	pond		1.72	Moderate	1	C	✓	--	Altered
27W-4	PUBHx	534	pond		1.77	Poor	1	C	✓	--	Man-made
28E-1	PSS3Jx	619	scrub/shrub		4.81	Poor	1	C	✓	--	Man-made
28W-1	PUBHx	534	pond		2.34	Poor	1	I	✓	--	Man-made
28W-2	PUBHx	534	pond		1.43	Poor	1	I	✓	--	Altered/Man-made
28W-3	PUBHx	534	pond		0.64	Poor	1	C	✓	Cultural	Altered
29E-1	PUBHx	534	pond		0.86	Poor	1	I	✓	--	Man-made
29E-2	PUBHx	534	pond		0.36	Poor	1	U	✓	--	Man-made
29E-3	PEM1H	641	marsh		1.09	Poor	1	I, U		--	Altered
29E-4	PUBHx	534	pond		4.61	Poor	1	I	✓	--	Man-made
29W-1	L1AB3Hx	524	lake		7.81	Moderate	1	I		--	Altered
29W-2	PSS6H	619	scrub/shrub		0.18	Poor	1	A		--	Altered
30E-4	PEM1Jx	511	ditch		0.65	Poor	2	I, C	✓	--	Man-made
30E-5A	PEM1Jx	511	ditch		0.32	Poor	2	I, C	✓	--	Man-made
30E-5B	PEM1Jx	534	pond		3.49	Poor	2	I, C	✓	--	Man-made
30E-6	PUBHx	534	pond		1.53	Poor	1	C	✓	--	Man-made
30E-8	PUBHx	534	pond		0.37	Poor	1	C	✓	--	Man-made
30W-2	PFO6C	630	forested mixed		0.007	Moderate	1	I		--	Altered/Man-made
30W-3A	PEM1H	641	marsh		10.67	Moderate	1	I		--	Altered/Man-made
30W-3B	PSS6C	619	scrub/shrub		9.47	Moderate	2	I		--	Altered/Man-made
30W-4	PFO6C	630	forested mixed		0.76	Moderate	2	I		--	Altered
30W-5	PUBHx	534	pond		4.66	Poor	1	I		--	Man-made
30W-6	L1UBHx	533	reservoir		7.70	Poor	1	I		--	Man-made
31E-1	R2UBHx	512	canal		0.45	Poor	3	C	✓	--	Man-made
31E-2	PFO6C	630	forested mixed		1.41	Poor	1	I		--	Altered/Man-made
31E-3A	PEM1Cx	511	ditch		0.84	Poor	3	I, C	✓	--	Man-made
31E-3B	PSS6J	619	scrub/shrub		0.88	Poor	3	I, C	✓	--	Altered
31E-4	PEM1Cx	511	ditch		0.19	Poor	2	I, C	✓	--	Man-made

Table 3-42. Summary of Wetland Classifications within the Ultimate Project Study Area (Continued)

Wetland Number	Vegetation Structural Diversity		Wetland Type ^a	Wetland Name	Wetland Area acres	Wildlife Habitat Value ^b	Hydrologic Contiguity ^c	Relationships ^d	Receives Roadway Runoff	Public Use	Integrity ^e
	NWI Classification	FLUCFCS Category									
31E-5	PEM1Cx	511	ditch		1.14	Poor	2	I	✓	--	Man-made
31E-8	PEM1Jx	534	pond		0.69	Poor	1	I, C	✓	--	Altered/Man-made
31E-9	PUBHx	534	pond		0.15	Poor	1	C	✓	--	Altered/Man-made
31E-10	PEM1C	643	wet prairie		0.42	Poor	1	C		--	Altered
31E-11	PEM1C	643	wet prairie		0.63	Poor	1	I		--	Altered
31E-12	PEM1C	643	wet prairie		0.32	Poor	1	I		--	Altered
31E-13	PEM1C	643	wet prairie		0.40	Poor	1	I		--	Altered
31E-14	PEM1Jx	511	ditch		0.16	Poor	1	C	✓	--	Altered/Man-made
31W-1	PSS1Fx	619	scrub/shrub		8.60	Poor	1	R		--	Altered/Man-made
31W-2	L1UBHx	533	reservoir		11.11	Moderate	1	R		--	Man-made
31W-3	PSS6Cx	511	ditch		0.82	Poor	1	I	✓	--	Man-made
31W-4A	PEM1C	643	wet prairie		1.74	Poor	1	C, A		--	Altered/Man-made
31W-5	PEM1Jx	511	ditch		0.15	Poor	1	I	✓	--	Man-made
31W-6	PEM1Jx	511	ditch		1.28	Poor	2	I	✓	--	Man-made
32E-1	PEM1J	641	marsh		0.45	Poor	2	I	✓	--	Man-made
32E-2A	PFO1C	617	mixed hardwood		6.53	Moderate	2	I, C		--	Altered
32E-10	PEM1Cx	511	ditch		0.18	Poor	1	U, R, A	✓	--	Man-made
32W-6A	PFO1C	617	mixed hardwood		10.44	Moderate	2	I, C		--	Altered
32W-6B	PUBHx	534	pond		0.41	Moderate	1	I, C		--	Altered/Man-made
				SEGMENT SUBTOTAL	264.68						
Segment 6											
32E-2B	PSS1Jx	511	ditch		0.39	Poor	2	I, C	✓	--	Man-made
32E-3	PSS1Cx	511	ditch		0.20	Poor	1	I	✓	--	Man-made
32E-4	PFO1C	617	mixed hardwood		0.44	Poor	1	I	✓	--	Man-made
32E-5	PFO1C	617	mixed hardwood		1.45	Poor	1	I	✓	--	Altered/Man-made
32E-6A	PFO1C	615	forested lake swamp	Lake Monroe	8.75	Moderate	1	I	✓	--	Altered
32E-6B	PEM1C	641	marsh	Lake Monroe	0.60	Moderate	1	I	✓	--	Altered
32E-6C	PSS6C	619	scrub/shrub	Lake Monroe	2.54	Moderate	1	I	✓	--	Altered
32E-7	PFO1C	615	forested lake swamp	Lake Monroe	28.97	High	2	I	✓	--	Altered

3-203

Table 3-42. Summary of Wetland Classifications within the Ultimate Project Study Area (Continued)

Wetland Number	Vegetation Structural Diversity		Wetland Type ^a	Wetland Name	Wetland Area acres	Wildlife Habitat Value ^b	Hydrologic Contiguity ^c	Relationships ^d	Receives Roadway Runoff	Public Use	Integrity ^e
	NWI Classification	FLUCFCS Category									
32E-8	PFO1C	615	forested lake swamp	Lake Monroe	11.37	High	2	I	√	--	Altered
32E-9	PSS6Cx	619	scrub/shrub		0.55	Poor	1	C	√	--	Altered
32E-11	PEM1Cx	511	ditch		0.13	Poor	1	C	√	--	Man-made
32W-1	PFO1C	615	forested lake swamp	Lake Monroe	8.20	High/Moderate	2	I		--	Altered
32W-2	PFO1F	615	forested lake swamp	Lake Monroe	8.78	High/Moderate	1	I		--	Altered
32W-3	PFO1F	615	forested lake swamp	Lake Monroe	16.49	High/Moderate	2	I		--	Altered
32W-4A	PSS6F	619	scrub/shrub		0.35	High/Moderate	1	I, C	√	--	Altered
32W-4B	PFO2F	621	cypress		1.65	High/Moderate	1	I, C		--	Altered
32W-4C	PEM2Jx	511	ditch		0.76	Poor	1	I, C	√	--	Man-made
32W-5	PFO1C	617	mixed hardwood		1.62	Poor	1	I		--	Man-made
32W-7	PFO1F	615	forested lake swamp	Lake Monroe	13.75	High/Moderate	2	C		--	Altered
33E-1A	PFO1F	615	forested lake swamp	Lake Monroe	55.36	High	2	I		--	Altered
33E-1B	PSS6C	619	scrub/shrub	Lake Monroe	10.35	High	2	I		--	Altered
33E-1C	PEM1F	641	marsh	Lake Monroe	119.97	High	2	I		--	Altered
33E-1D	L1UBH	521	lake	Lake Monroe	50.98	High	4	I		Recreational	Altered
33E-1DD	R2UBH	513	creek	DeBary Creek	0.30	High	4	I		Recreational	Altered
33W-1A	PFO1F	615	forested lake swamp	Lake Monroe	17.68	Moderate	2	I		--	Altered
33W-1B	L1UBH	521	lake	Lake Monroe	13.54	High	4	I		Recreational	Altered
33W-2	PFO6C	617	mixed hardwood	Lake Monroe	2.48	Poor	2	I		--	Altered
33W-3A	PFO2F	621	cypress	Lake Monroe	9.93	Moderate	2	I		--	Altered
33W-3B	PSS1H	619	scrub/shrub	Lake Monroe	1.89	Moderate	2	I		--	Altered
34W-1A	PFO1C	615	forested lake swamp	Lake Monroe	37.90	High	2	I		--	Altered
34W-1B	PEM1F	641	marsh	Lake Monroe	59.91	High	2	I		--	Altered
34W-1C	PSS1H	619	scrub/shrub	Lake Monroe	13.19	Moderate	2	I		--	Altered
35W-1A	PFO6C	617	mixed hardwood	Lake Monroe	5.49	High	2	I		--	Altered
35W-1B	PEM1F	641	marsh	Lake Monroe	25.00	High	2	I		--	Altered

Table 3-42. Summary of Wetland Classifications within the Ultimate Project Study Area (Continued)

Wetland Number	Vegetation Structural Diversity		Wetland Type ^a	Wetland Name	Wetland Area acres	Wildlife Habitat Value ^b	Hydrologic Contiguity ^c	Relationships ^d	Receives Roadway Runoff	Public Use	Integrity ^e
	NWI Classification	FLUCFCS Category									
35W-1C	R2UBH	513	creek	DeBary Creek	4.12	High	4	I		Recreational	Altered
35W-1D	L1UBHx	533	reservoir		7.62	High	1	I		Recreational	Altered/Man-made
36E-1	PEM1Jx	534	pond		0.40	Poor	1	I, R	✓	--	Man-made
36E-2A	PEM1Bx	641	marsh		4.47	Poor	1	I	✓	--	Man-made
36E-2B	PSS6Bx	619	scrub/shrub		3.17	Poor	1	I	✓	--	Man-made
36E-3	PEM1Jx	511	ditch		0.47	Poor	1	I, C	✓	--	Man-made
36E-4	PEM1Hx	534	pond		0.40	Poor	1	I, C	✓	--	Altered/Man-made
36E-5	PEM1Jx	511	ditch		0.42	Poor	1	I, C	✓	--	Man-made
36E-6A	PSS6Cx	619	scrub/shrub		0.24	Poor	1	I, C		--	Man-made
36E-6B	PUBHx	534	pond		3.93	Poor	1	I, C	✓	--	Man-made
36W-1	PSS6C	619	scrub/shrub		3.05	Moderate	2	I		--	Altered
36W-2	PEM1Jx	511	ditch		0.55	Poor	2	I, R	✓	--	Man-made
36W-3A	PFO2D	616	forested slough		5.64	Moderate	4	I, R		--	Altered
36W-3B	PEM1Fx	641	marsh		2.79	Moderate	4	I, R		--	Altered/Man-made
36W-3C	PEM1Jx	511	ditch		0.65	Poor	2	I, R	✓	--	Man-made
36W-4	PFO6Cx	630	forested mixed		6.52	Moderate	1	I		--	Man-made
36W-5	PFO7Cx	630	forested mixed		0.39	Moderate	1	I		--	Man-made
37W-1	PEM1Jx	511	ditch		0.73	Poor	2	I	✓	--	Man-made
37W-2	PEM1Jx	511	ditch		0.30	Poor	2	I	✓	--	Man-made
37W-3A	L1UBH	523	lake	Unnamed	10.79	Moderate	1	I, C, R		--	Altered
37W-3B	PSS6C	619	scrub/shrub		4.00	Moderate	2	I, C, R		--	Altered
37W-4	PEM1Hx	641	marsh		0.43	Poor	1	I	✓	--	Man-made
38E-1	PSS6H	619	scrub/shrub		2.84	Poor	1	I, R		Scientific	Altered
38E-2A	PFO7B	630	forested mixed	Trout Lake	4.16	High	2	I, U		--	Altered
38E-2B	PSS6C	619	scrub/shrub	Trout Lake	6.58	High	2	I, U		--	Altered
38E-2C	PEM1C	641	marsh	Trout Lake	1.82	High	2	I, U		--	Altered
38E-2D	L2UBH	523	lake	Trout Lake	21.56	High	1	I, U		Recreational	Altered
38E-3	PUBHx	534	pond		0.48	Poor	1	I, C	✓	--	Man-made
38E-4	PUBHx	534	pond		1.29	Poor	1	I, C	✓	--	Man-made
38E-5	PUBHx	534	pond		1.09	Poor	1	I, C	✓	--	Man-made
38E-6	PUBHx	534	pond		4.68	Poor	1	I	✓	--	Man-made
38W-1	PEM1Hx	534	pond		2.91	Poor	1	I	✓	--	Man-made
38W-2	PEM1Hx	534	pond		3.75	Poor	1	I	✓	--	Man-made
38W-3	PEM1Hx	534	pond		1.03	Poor	1	I	✓	--	Man-made

3-205

I-4 PD&E Study - Section 2
Final Environmental Impact Statement
August 2002

Table 3-42. Summary of Wetland Classifications within the Ultimate Project Study Area (Continued)

Wetland Number	Vegetation Structural Diversity		Wetland Type ^a	Wetland Name	Wetland Area acres	Wildlife Habitat Value ^b	Hydrologic Contiguity ^c	Relationships ^d	Receives Roadway Runoff	Public Use	Integrity ^e
	NWI Classification	FLUCFCS Category									
38W-4A	L2AB3H	523	lake	Goose Lake	12.33	High	1	I, R, C		--	Altered
38W-4B	PFO6C	630	forested mixed	Goose Lake	1.86	High	2	I, R, C		--	Altered
38W-5	PEM1Jx	511	ditch		0.21	Poor	1	I	✓	--	Man-made
38W-6A	L1UBH	524	lake	Lake Emerald	3.45	High	1	R		Recreational	Altered
38W-6B	PFO6C	630	forested mixed	Lake Emerald	0.36	Moderate	2	R		--	Altered
38W-7	PEM1Jx	511	ditch		0.65	Poor	1	I	✓	--	Man-made
38W-8	PUBHx	534	pond		0.60	Moderate	1	I, R	✓	--	Man-made
38W-9	PEM1Hx	641	marsh		6.00	Moderate	1	I, R	✓	--	Altered
38W-10	PEM1Hx	641	marsh		0.58	Moderate	1	I, R	✓	--	Altered
38W-11	PUBHx	534	pond		0.24	Moderate	1	I, R	✓	--	Man-made
38W-12	PEM1Jx	511	ditch		0.45	Poor	1	I	✓	--	Man-made
39E-1	PEM1Jx	511	ditch		0.24	Poor	1	I	✓	--	Man-made
39W-1	L1UBH	523	lake		2.57	High	1	U		--	Altered
39W-2	PEM1F	641	marsh		2.25	High	1	U		--	Altered
40W-1A	PEM1F	641	marsh		3.07	Moderate	1	I, U		--	Altered
40W-1B	PFO2/4F	624	cypress/pine		2.17	Moderate	1	I, U		--	Altered
40W-2	PEM1H	641	marsh		3.55	High	1	I, U		--	Altered
41E-1	PUBHx	534	pond		1.08	Moderate	1	I, U		--	Man-made
				SEGMENT SUBTOTAL	685.94						
				PROJECT TOTAL	1372.59						

Notes:

- a - (ditch) = roadside ditch, excavated; (pond) = retention pond, excavated in upland soils; (canal) = man-made or excavated natural watercourse.
- b - Wildlife habitat value as estimated during field observations
- c - (1) Perched or isolated from the regional drainage system
(2) Joined to a local creek or lake system by an indistinct natural connection or a small or partly obscured ditch
(3) Joined to regional drainage systems by distinct natural connections or well-defined ditch or canal
(4) Contiguous to or within established drainage ways
- d - (I) Interstate/Roadway, (R) Residential, (C) Commercial, (A) Agricultural, (U) Undeveloped
- e - "Altered" by man from its natural condition; "Unaltered"= Undisturbed; "Man-made"= excavated in upland soils; "Altered/Man-made" = a natural wetland that has been excavated and altered completely (different habitat), e.g., former marsh - now a lake.
Wetland area within 600 feet of existing right-of-way

Table 3-43. Wetland Community Classification and Percent Cover of Total Wetland Area within the Ultimate Project Study Corridor

National Wetland Inventory Classification	NWI Code	Total Wetland Area (acres within 600 ft of right-of-way)	Percent of Total Wetland Area
Palustrine Forested	PFO	441.66	32%
Open Water	LUBH, RUBH, PUBH	430.15	31%
Palustrine Emergent	PEM	363.48	27%
Palustrine Scrub-Shrub	PSS	137.29	10%
TOTAL		1,372.59	100%

Wetland Descriptions

Most of the wetlands within the Ultimate project study corridor have been previously disturbed. The degree of disturbance generally correlates with the surrounding land use type along that particular portion of the corridor, whether it is highly urbanized or rural/agriculture. Types of disturbances observed include fragmentation by development and/or roadway construction, ditching to drain or diverting surface water from wetlands, and livestock grazing.

The 1996-1997 field reviews and mapping of wetlands resulted in the identification of 290 individual wetland sites (ditches and retention ponds included) within the I-4 study corridor. These wetlands are grouped into four dominant types: forested, open water, emergent marshes, and scrub-shrub. The classifications of all wetlands presented in the study area are listed in Table 3-42.

The NWI classification assigned to a wetland indicates its existing condition, regardless of its historic condition, i.e., former wetland or upland. The historical condition is indicated in the Integrity column of Table 3-42, where "Man-made" indicates that historically the wetland was non-existent and was excavated in upland soils; and "Altered" indicates a historically existing wetland that has been directly modified by human activity. Additionally, the lower case "x" in the NWI classification indicates if the wetland has been excavated since the initial construction of I-4. The excavated modifier can apply to either man-made or natural wetlands. A summary of the relative percent areal coverage for the four major wetland types found in each roadway segment of the Ultimate project study area is presented in the following sections.

As shown in Table 3-43, three of the four major community types that comprise the total coverage of wetlands along the I-4 study area are nearly equally dominant: Palustrine forested (32 percent), Open water (31 percent), and Palustrine emergent (27 percent). Approximately 50 percent of the Palustrine forested community acreage within the right-of-way is the forested lake swamp communities associated with Lake Monroe (Segment 6). Also, over half of the emergent (marsh) wetlands are found in Segment 6. The dominance of the open water is due to naturally occurring lakes found in all segments. Scrub-shrub wetlands (10 percent) consist of natural shrubby wetlands within the study area but are also represented by littoral zones associated with stormwater retention ponds and ditches. The major vegetated wetlands and open water types are described below.

Forested Wetlands (32 percent of total project wetlands)

On an areal basis, forested systems comprise the most prevalent (32 percent) community type occurring within the Ultimate project study area. Forested wetlands are characterized by woody vegetation greater than 20 feet tall. The forested systems were divided by dominant species into three categories: Hardwoods, Coniferous, and Mixed; and subcategories: Lake Swamp, Slough, Mixed Hardwoods, Cypress, Cypress/Pine, Wet Pine Flatwoods, and Forested Mixed. Many of these systems are remnant wetlands severed from contiguous wetland systems by the initial construction of I-4. They are characterized by a relatively open interior, while the outer edge contains dense stands of opportunistic species, including elderberry (*Sambucus canadensis*), primrose willow (*Ludwigia peruviana*), and a variety of vines including pepper vine (*Ampelopsis arborea*), climbing hempweed

(*Mikania scandens*), and grape vine (*Vitis muscadine*). These systems experience seasonal flooding; however, their historical hydrologic regimes have been altered by adjacent development.

Hardwoods can include varying compositions of hardwood species such as red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), black gum (*Nyssa sylvatica*), red bay (*Persea borbonia*), sweetbay (*Magnolia virginiana*), sugarberry (*Celtis laevis*), water oak (*Quercus nigra*), and American elm (*Ulmus americanus*). Mixed hardwood/conifer systems include hardwood species in combination with conifer species such as cypress and/or slash pine (*Pinus elliottii*).

Needle-leaved deciduous trees, specifically bald cypress and pond cypress, dominate Cypress wetlands. Common associates of these systems include red maple, sweet bay, dahoon holly (*Ilex cassine*), and water oak. The shrub layer is typically dominated by buttonbush (*Cephalanthus occidentalis*), wax myrtle (*Myrica cerifera*), and elderberry. The herbaceous layer commonly includes redroot (*Lachnanthes caroliniana*), primrose willow, cinnamon fern (*Osmunda cinnamomea*), swamp fern (*Blechnum serrulatum*), and lizard's tail (*Saururus cernuus*).

Open Water (31 percent of total project wetlands)

On an areal basis, open water systems comprise the second most prevalent (31 percent) community type occurring within the Ultimate project study area. This category is composed mainly of lakes with some retention ponds, reservoirs, canals, and streams. Lake systems are deepwater habitats that are depressional and often have wetland vegetation within the littoral zone perimeter. Most of the lakes have historically been modified along the shoreline by residential and commercial development, roadway construction or other human activities. Canal and riverine systems are those wetlands contained within a channel. The channel can be natural or artificially created and contains periodic or continuous moving water between two water bodies.

Stormwater Ditches, Retention Ponds, Reservoirs, and Canals

The ditches within the Ultimate project study area range from deep, dredged ditches that contain water most of the year to shallow, grassed swales with interspersed wetland vegetation that only flow in response to rainfall. The dominant vegetation within these ditches consists of cattails (*Typha latifolia*), primrose willow, smartweed (*Polygonum hydropiperoides*), torpedo grass (*Panicum repens*), and several sedges (*Fimbristylis* sp.) such as (*Cyperus* sp.) and (*Rhynchospora* sp.). The habitat quality is typically low, which is the result of periodic mowing, dredging, or herbicidal control to maintain the conveyance characteristics of these ditches.

The main distinguishing characteristic of a retention pond (or reservoir) is the open water component. The difference between ponds and reservoirs is the surface area, ponds being less than 10 acres and reservoirs being greater than 10 acres. All are man-made systems. Most of the man-made ponds have narrow littoral edges and control structures that drain the system during high flood events.

In the urbanized areas within downtown Orlando and other municipal or residential areas, the upland edges of stormwater retention areas are stabilized with maintained grasses and an occasional planted tree. All the ponds receive stormwater runoff and sometimes debris from commercial and/or residential development. These areas usually support cattail, Carolina willow (*Salix caroliniana*), button bush, and primrose willow. Planted cypress trees and cabbage are occasionally present near the shoreline of these systems. The majority of these landscaped areas provide low quality wildlife habitat due to their isolated, man-made nature. Periodic maintenance activities to control vegetation stands within these areas have resulted in minimal habitat for wildlife. The deeper and larger retention areas do offer refuge for small fish and provide more suitable habitat for wildlife.

Retention areas present in the highway median are usually shallow and are dependent on rainfall and road runoff as their main source of water. These are typically densely vegetated with forested and shrub species including red maple, American elm, wax myrtle, salt bush (*Baccharis halimifolia*), blackberry (*Rubus* sp.), elderberry, and Carolina willow. Deeper pools in these areas typically support species such as cattail, torpedo grass, hydrilla (*Hydrilla verticillata*), water hyacinth

(*Eichhornia crassipes*), pennywort (*Hydrocotyle umbellata*), pickerelweed (*Pontederia cordata*), smartweed, primrose willow, and spatterdock (*Nuphar luteum*), a floating aquatic species.

Reservoirs along the Ultimate project study area are essentially large ponds deep enough to hold water year-round and have varying widths of littoral zones. These areas are the result of excavating fill material for previous roadway or other construction purposes. These typically have an edge growth of shrub and emergent species such as wax myrtle, salt bush, Carolina willow, blackberry, buttonbush, elderberry, cattail, primrose willow, water pennywort (*Hydrocotyle bonariensis*), soft rush (*Juncus effusus*), and smartweed, depending on the time since excavation and edge contours.

Canals along the Ultimate project study area are of poor wetland quality and are man-made (excavated from upland or urban soil types). Many are similar to Wetland 8W-4 (Segment 2), which is a concrete-lined canal that serves mainly as stormwater retention/conveyance within a residential area. Canals often support floating aquatic plants such as water hyacinth and white water lily (*Nymphaea odorata*).

Emergent Marshes (27 percent of total project wetlands)

Marsh (emergent) wetland systems in the Ultimate project area cover 27 percent of the total wetland area along the Ultimate project study area. These wetlands occur as isolated or contiguous depressional systems that are dominated by emergent vegetation. The marsh wetlands are divided into two types of systems: marsh and wet prairie. Marsh systems tend to have longer hydrologic regimes and typically contain standing water for the majority of the year. Wet prairies have much shorter hydrologic regimes and support a different assemblage of vegetative species adapted to such conditions.

A typical deep marsh system within the Ultimate project study area is dominated by pickerelweed, redroot, pennywort, coinwort (*Centella asiatica*), soft rush, smartweed, and arrowhead (*Sagittaria* sp.). Cattail, primrose willow, wild taro (*Colocasia esculentum*), and occasional Carolina willow are common invasive species that were observed in varying quantities along the edge of these marshes. The majority of these marshes are contiguous with other wetland systems such as cypress, mixed forested, or lakes, and form a mosaic of wetland habitat.

Wet prairies are typically shallow marshes with a short hydroperiod and are commonly found interspersed within pine flatwoods, areas with a high water table. The majority of wet prairies are found within Segments 1 and 5. Sedge, beakrush (*Rhynchospora* sp.), rush, fleabane (*Pluchea rosea*), foxtail (*Setaria* sp.), redroot, yellow-eyed grass (*Xyris* sp.), and blue maidencane (*Amphicarpum muhlenbergianum*) dominate these wet prairies. Occasional shrubs, such as wax myrtle, saltbush, and scattered slash pine, are common associates within these systems. Wet prairies are a fire dependent community and suppression of natural fires may contribute to the conversion of these systems to shrub dominated communities.

Scrub-Shrub (10 percent of total project wetlands)

Shrub wetlands in total comprise the least areal coverage (10 percent) of total wetlands within the Ultimate project study area. Shrub wetland communities typically contain woody vegetation less than 20 feet tall. They commonly occur within highway interchange infields but are also found along roadside ditch systems or as pioneer shrub zones adjacent to impacted forested systems.

Elderberry, wax myrtle, and saltbush dominate the typical shrub wetland. Common associates include Carolina willow, red maple saplings, primrose willow, dog fennel (*Eupatorium capillifolium*), maidencane, cattail, and a dense vine cover of grapevine and climbing hempweed.

3.3.2.1.1 Segment 1

The predominant wetland category in Segment 1 is Forested (51 percent). Forested Mixed and Cypress are the main wetland community types making up the majority coverage in this category. Table 3-44 summarizes the percent cover of wetlands in this segment. See Table 3-42 for a detailed list of each wetland in the Ultimate project study corridor.

Table 3-44. Wetland Community Classification and Percent Cover of Total Wetland Area within Segment 1

National Wetland Inventory Classification	NWI Code	Types of Wetland Systems	Total Wetland Area (acres within 600 feet of right-of-way)	Percent of Segment's Total Wetland Area
Palustrine Forested	PFO	Forested Mixed, Wet Pine Flatwoods, and Cypress	136.48	51%
Open Water	LUBH, RUBH, PUBH	Lakes, Reservoirs, Retention Ponds, Canals, Ditches	33.45	12%
Palustrine Emergent	PEM	Marsh, Wet Prairie, Ditches, Ponds	49.85	19%
Palustrine Scrub-Shrub	PSS	Shrub Wetlands, Ditches, Ponds	47.85	18%
TOTAL			267.63	100%

Two lakes and two reservoirs occur within Segment 1 (refer to Table 3-45). All these wetlands have less than ten acres of open water area within the Ultimate project study corridor.

Table 3-45. Lakes along the Study Corridor within Segment 1

Lake	Wetland Number (open water portion)
Segment 1	
Big Sand Lake	2W-1A
Boo Boo's Lake	2W-2A
Tropical Lake (reservoir)	6E-5D
Unnamed reservoir	8E-1D

Notes: All these lakes have less than 10 acres of open water area within 600 feet of existing right-of-way

3.3.2.1.2 Segments 2 and 3

Open Water is the predominant wetland category (88 percent) in Segments 2 and 3. Lakes make up the bulk of the open water area in this segment. Table 3-46 summarizes the percent cover of wetlands in this segment. See Table 3-42 for a detailed list of each wetland in the Ultimate project study corridor.

Table 3-46. Wetland Community Classification and Percent Cover of Total Wetland Area within Segments 2 and 3

National Wetland Inventory Classification	NWI Code	Types of Wetland Systems	Total Wetland Area (acres within 600 ft of right-of-way)	Percent of Segment's Total Wetland Area
Palustrine Forested	PFO	Forested Mixed, Mixed Hardwoods, Cypress	16.31	10.5%
Open Water	LUBH, RUBH, PUBH	Lakes, Reservoirs, Retention Ponds, Canals, Ditches	135.53	88%
Palustrine Emergent	PEM	Marsh, Wet Prairie, Ditches, Ponds	1.55	1%
Palustrine Scrub-Shrub	PSS	Shrub Wetlands, Ditches, Ponds	0.94	0.6%
TOTAL			154.33	100%

As listed in Table 3-47, nine lakes occur within Segments 2 and 3. Three of these lakes (Lucerne, Concord, and Ivanhoe) have more than 10 acres of open water area within the Ultimate project study corridor.

Table 3-47. Named Lakes along the Study Corridor within Segments 2 and 3

Named Lake	Wetland Number (open water portion)
Segment 2	
Lake Catherine	9E-1
Lake Angel	10W-1
Lake Lucerne*	11BS-1, 11BS-2
Lake Olive	11BN-1
Greenwood Park	11CS-1
Lake Como	11CS-2
Lake Concord*	13W-2
Lake Ivanhoe*	13E-2, 13W-1A
Segment 3	
Little Lake Fairview	16W-3

Notes: * Lakes with 10 acres or more of open water area within 600 feet of existing right-of-way.

3.3.2.1.3 Segments 4 and 5

The predominant wetland type in Segments 4 and 5 is Open Water (45.5 percent). Lakes and ponds are the main wetland communities that make up the bulk of this wetland category in this segment. Table 3-48 summarizes the percent cover of wetlands in this segment. See Table 3-42 for a detailed list of each wetland in the Ultimate project study corridor.

Table 3-48. Wetland Community Classification and Percent Cover of Total Wetland Area within Segments 4 and 5

National Wetland Inventory Classification	NWI Code	Types of Wetland Systems	Total Wetland Area (acres within 600 ft of right-of-way)	Percent of Segment's Total Wetland Area
Palustrine Forested	PFO	Forested Mixed, Forested Lake Swamp, Cypress, Mixed Hardwoods, Wet Pine Flatwoods	37.44	14%
Open Water	LUBH, RUBH, PUBH	Lakes, Reservoirs, Retention Ponds, Canals	120.52	45.5%
Palustrine Emergent	PEM	Marsh, Wet Prairie, Ditches, Ponds	67.58	25.5%
Palustrine Scrub-Shrub	PSS	Shrub Wetlands, Ditches, Ponds	38.14	15%
TOTAL			263.68	100%

Ten lakes and two reservoirs occur within Segments 4 and 5, as listed in Table 3-49. Two of these wetlands have more than ten acres of open water area within the study corridor.

Table 3-49. Lakes along the Study Corridor within Segments 4 and 5

Lake	Wetland Number (open water portion)
Segment 4	
Lake Fair	16W-2
Hungerford Lake	17W-1A
Lake Love	18E-9
Unnamed lake	18W-1
Lake Lucien	18W-7A
Lake Destiny	19W-1
Cranes Roost Lake*	20E-5A
Grace Lake	24E-1B
Lake Myrtle	25E-1B
Segment 5	
Unnamed lake	29W-1
Unnamed reservoir	30W-6
Unnamed reservoir*	31W-2

Notes: * Lakes with 10 acres or more of open water area within 600 feet of existing right-of-way.

3.3.2.1.4 Segment 6

The two predominant wetland categories in Segment 6 are Forested and Emergent (37 percent and 36 percent, respectively). The area covered by these categories is mainly due to forested lake swamp and marsh associated with the Lake Monroe floodplain. Table 3-50 summarizes the percent cover of wetlands in this segment. See Table 3-42 for a detailed list of each wetland in the Ultimate project study corridor.

Table 3-50. Wetland Community Classification and Percent Cover of Total Wetland Area within Segment 6

National Wetland Inventory Classification	NWI Code	Types of Wetland Systems	Total Wetland Area (acres within 600 ft of right-of-way)	Percent of Segment's Total Wetland Area
Palustrine Forested	PFO	Forested Mixed, Forested Lake Swamp, Cypress, Mixed Hardwoods, Wet Pine Flatwoods, Forested Slough, Cypress/Pine	251.43	37%
Open Water	LUBH, RUBH, PUBH	Lakes, Reservoirs, Retention Ponds, Canals, Streams	140.65	20%
Palustrine Emergent	PEM	Marsh, Wet Prairie, Ditches, Ponds	244.50	36%
Palustrine Scrub-Shrub	PSS	Shrub Wetlands, Ditches, Ponds	49.36	7%
TOTAL			685.94	100%

As listed in Table 3-51, six lakes and one reservoir occur within Segment 6. Four of these (Lake Monroe, Trout Lake, Goose Lake, and an unnamed lake) have more than ten acres of open water area within the Ultimate project study corridor.

Table 3-51. Lakes along the Study Corridor within Segment 6

Lake	Wetland Number (open water portion)
Segment 6	
Lake Monroe*	33E-1D, 33W-1B
Unnamed reservoir	35W-1D
Unnamed lake*	37W-3A
Trout Lake*	38E-2D
Goose Lake*	38W-4A
Lake Emerald	38W-6A
Unnamed lake	39W-1

Notes: * Lakes with 10 acres or more of open water area within 600 feet of existing right-of-way.

Lake Monroe/St. Johns River

The largest lake and river (over 4,940 acres) within the Ultimate project study area is the Lake Monroe/St. Johns River system, located within Segment 6. This large lake/river complex, is relatively undisturbed; the floodplain area is an intricate mosaic of forested, shrub, and marsh wetland systems that provide good habitat for regional wildlife populations.

This wetland, a large, open water lake with a major river flowing through it, has an expansive, vegetated floodplain composed of diverse wetland habitat types (forested, emergent, scrub/shrub). It is used for commerce and recreation, and with its vegetated floodplain and deep channel, has potential to provide water treatment functions. All these features make this wetland unique relative to other wetlands in the region. Although extensive areas of excellent habitat remain within the Lake Monroe/St. Johns River system, many areas along the north, south, and east shorelines have been affected by residential development. In addition, areas along the west and south shores have been affected by the construction of US 17-92 and I-4.

The historical floodplain area along the western shoreline has been severely fragmented by past road construction activities and has essentially been severed from the river and Lake Monroe by the presence of US 17-92. Although culverts and other structures maintain some degree of hydrologic connection between the floodplain wetlands, the river, and the lake, diminished hydrologic interaction has reduced the depth, duration, and frequency of flooding for the floodplain wetlands. Typical vegetative species that are found along these lake/river systems include bald cypress, pond cypress, red maple, sweet bay, loblolly bay, live oak, and laurel oak. Occasional stands of Chinese tallow were observed along the shoreline, which serve as an indication of historical disturbance to the native plant community.

3.3.2.2 Uplands

Land use within the Ultimate project study corridor is characterized by commercial and residential development and fragmented natural communities. These remnant natural communities along the corridor are described in this section. A list of the types of natural communities along the Ultimate project study corridor, and their distribution by roadway segment, is presented in Table 3-52.

Table 3-52. Existing Undeveloped Uplands within the Ultimate Project Study Corridor by Segment

FLUCFCS Designation		Segment			
		1	2 and 3	4 and 5	6
191	Undeveloped land within urban areas		✓	✓	
194	Other open land		✓	✓	✓
211	Improved pastures	✓		✓	✓
221	Citrus groves			✓	
241	Tree nurseries			✓	
260	Other open lands <rural>			✓	
261	Fallow crop land			✓	
310	Herbaceous	✓		✓	✓
321	Palmetto prairies	✓			
329	Other shrubs and brush	✓	✓	✓	✓
329/740	Other shrubs and brush/disturbed lands	✓			
411	Pine flatwoods	✓		✓	✓
412	Longleaf pines	✓		✓	✓
412/413	Longleaf pine-xeric oaks/sand pine	✓			✓
413/421	Sand pine/Xeric oak	✓			✓
413	Sand pine	✓			✓
414	Pine – Mesic Oak	✓			
415	Slash pine and mesic shrub	✓			✓
419	Other pines	✓	✓		✓
421	Xeric oak	✓		✓	✓
423	Oak – pine – hickory				✓
425	Temperate hardwoods			✓	✓
427	Live oak	✓		✓	✓
428	Cabbage palm				✓
434	Hardwood-conifer mixed	✓	✓	✓	✓
438	Mixed hardwoods			✓	✓
439	Other hardwoods			✓	
441	Coniferous plantations			✓	
740	Disturbed lands		✓	✓	
832	Electric power transmission lines	✓		✓	✓

FLUCFCS = Florida Land Use, Cover and Forms Classification System, FDOT, July 1985.
Designations given by Environmental Management & Design, Inc. 1997.

3.3.2.2.1 Segment 1

The southern portion of the Ultimate project study corridor consists primarily of fragmented sand pine (*Pinus clausa*), pine flatwoods, and longleaf pine-xeric oak communities. Shrub species that are typical of sand pine communities include myrtle oak or scrub oak (*Quercus myrtifolia*, *Q. inopina*), saw palmetto, and rusty lyonia (*Lyonia ferruginea*), with a sparse groundcover of gopher apple (*Licania michauxii*), beak rush (*Rhynchospora megalocarpa*), and various lichens. Pine flatwoods are typically vegetated by a canopy of slash pine or longleaf pine (*Pinus palustris*) with some loblolly pine. Shrub and groundcover vegetation varies depending on the soils and site-specific hydrology. The understory of the pine is dominated by saw palmetto, gallberry (*Ilex glabra*), dogwood (*Cornus foemina*), and water oak.

Longleaf pine-xeric oak communities are dominated by longleaf pine with blue-jack oak (*Quercus incana*), turkey oak (*Q. laevis*), and sand post oak (*Q. margaretta*) with a sparse undergrowth of grasses, saw palmettos, and other low shrubs.

3.3.2.2.2 Segments 2 and 3

Most of the upland areas located along Segments 2 and 3 have been developed into commercial or residential property, and few natural upland communities remain. Small areas of shrub and brush, pines, and hardwood-conifer mixed forests occur in this area. Hardwood-conifer mixed community is characterized as a dry transitional community between other communities. This is a hardwood community in which neither the oaks nor pines are significantly dominant, but occur in a nearly equal mix. Composition is sometimes a mix of turkey oak, post oak (*Quercus stellata*), and laurel oak, with associated pines. Understory species can include dogwood, bracken fern (*Pteridium aquilinum*), broomsedge, catbrier (*Smilax* sp.), gallberry, ball moss, and ground lichens.

3.3.2.2.3 Segments 4 and 5

Several upland forest communities occur along Segments 4 and 5, including longleaf pine, mixed hardwoods, and pine flatwoods. Many other upland areas along this portion of the Ultimate project study corridor are in agricultural use, such as citrus groves, tree nurseries, and pasture.

Historically in Florida, pine flatwoods are a naturally occurring, fire-maintained community characterized by a dominance of widely-spaced slash or longleaf pine (or both) with an understory of saw palmetto, gallberry, and wax myrtle. The understory vegetation varies, depending on hydrology, and is dominated by saw palmetto, gallberry, dogwood. The pine flatwoods community in this segment is typical of fire-suppressed flatwoods within developed areas that, over time, succeed into pine-oak mixed communities.

A longleaf pine/xeric oak community consists of an open canopy of longleaf pine and turkey oak on well-drained soils. The groundcover stratum contains a variety of herbs and low woody species including wiregrass (*Aristida stricta*), bracken fern, and saw palmetto.

3.3.2.2.4 Segment 6

Dense sand pine communities are predominant along much of Segment 6. Pine flatwoods, shrubs and brush, mixed hardwoods, temperate hardwoods, and live oak communities occur along other portions of this segment. Oaks and hardwoods predominate in these areas, the mixture of which depends on the soil conditions and moisture regime that various species can tolerate. These areas lack sufficient indicators to meet the definition of jurisdictional wetlands. Included in the mixture of temperate hardwoods and mixed hardwoods are water oak, laurel oak, sweetgum, wax myrtle, and gallberry. Detailed descriptions of the "sand pine" and the "longleaf pine-xeric oaks/sand pine" communities are provided in the *Endangered Species Biological Assessment* (ESBA) (May 2000).

3.3.3 Threatened and Endangered Species

Land use within the Ultimate project study corridor is characterized by commercial and residential development and fragmented natural communities. A high degree of disturbance typically limits specie diversity and reduces the potential for threatened and endangered species to occur within

these areas. However, remnant natural communities along the corridor may provide suitable habitat for some protected vegetative and wildlife species. Figure 3-19 depicts the general locations of protected species observed during the study and/or reported by an agency to occur within or near the Ultimate project corridor.

3.3.3.1 T&E Flora and Significant Habitat

Sixty-four federally and state listed threatened and endangered plant species were identified as potentially occurring within the vicinity of the Ultimate project study corridor. These species, their state and federal status, and their potential for occurrence are listed in the *Endangered Species Biological Assessment Report* (May 2000). Seven of these potential species were observed within or near the project corridor. These species are listed in Table 3-53. None of the other 57 species, with potential for occurrence as indicated in the report, were found.

Table 3-53. Observed Listed Vegetative Species within, or adjacent to, the Ultimate Project Study Area

Scientific Name	Common Name	Status ¹		Habitat Preference; Location Observed
		USFWS ²	FDA ³	
<i>Clitoria fragrans</i>	Pigeon-wing (sandhill) butterfly-pea	T	E	Sandhills, scrub, scrubby flatwoods and roadsides (observed by project consultants 1997); northern Segment 6
<i>Garberia heterophylla</i>	Garberia		T	Sand pine and oak scrub
<i>Lechea cernua</i>	Nodding (drooping; scrub) pinweed		T	Scrub communities; observed by project consultants 1997 in Segment 1 west of Turkey Lake Rd. (unable to confirm)
<i>Lupinus aridorum</i>	McFarlin's (scrub) lupine	E	E	Sand pine scrub; observed by project consultants 1997 in Segment 1 west of Turkey Lake Rd. (unable to confirm)
<i>Osmunda cinnamomea</i>	Cinnamon fern		C	Wet woods & swamps throughout corridor
<i>Osmunda regalis</i>	Royal fern		C	Wet woods & swamps throughout corridor
<i>Tillandsia fasciculata</i>	Common (stiff-leaved) wild pine		E	Cypress swamps and hammocks throughout corridor

¹ Status as of December 31, 1998

E = Endangered; T = Threatened; C = Commercially Exploited

² USFWS = US Fish and Wildlife Service

³ FDA = Florida Department of Agriculture and Consumer Services

3.3.3.1.1 Segment 1

The southern portion of the corridor consists of fragmented upland communities, including sand pine, pine flatwoods, and longleaf pine-xeric oak communities. Two protected species, McFarlin's lupine and nodding pinweed, were identified within this vicinity. The scrub lupine was found by project biologists, outside the Ultimate project area, west of Turkey Lake Road at SR 528 (between I-4 Stations 735+00 and 760+00). Its presence within the Ultimate project area will need to be confirmed at the time of permitting.

No other areas of natural uplands significant to federally listed threatened and endangered plants or animals exist along this segment. Fragmented areas of sand pine and longleaf pine-xeric oak communities primarily occur within the median and at the Sand Lake Road interchange.

3.3.3.1.2 Segments 2 and 3

The high degree of residential and commercial development along Segments 2 and 3 limits the potential for occurrence of protected plants. No areas of natural uplands significant to federally listed threatened and endangered plants exist along these segments. No listed vegetative species were observed in this area during project biologist field surveys conducted in 1996.

3.3.3.1.3 Segments 4 and 5

Several forested communities occur along Segments 4 and 5, including longleaf pine and turkey oak, mixed hardwoods, and pine flatwoods. These fragmented natural communities may provide limited habitat for listed plant species. None were observed during project field surveys.

3.3.3.1.4 Segment 6

The northern section of the study corridor consists predominantly of sand pine communities, which typically support a variety of endemic floral species. Protected floral species that may be found in sand pine communities include Ashe's savory (*Calamintha ashei*), Garberia, and Florida beargrass (*Nolina atopocarpa*). During a project field investigation in 1997, the sandhill butterfly pea (*Clitoria fragrans*) was found at the edge of an overgrown scrub community located on the northwest corner of the Saxon Boulevard interchange.

3.3.3.2 Threatened or Endangered (T&E) Fauna and Significant Habitat

General wildlife species observed by project biologist in 1997 are listed in the report. Those species listed as Threatened or Endangered (state and federal status) and their potential for occurrence as determined by project biologists, are described in the *Endangered Species Biological Assessment* (May 2000). Many of the protected wildlife species are wetland-dependent species. In general, a wetland's ability to support a great on-site diversity and/or abundance of fish or invertebrates is due to the vegetation community being structurally diverse. A wetland's ability to support wetland-dependent birds during the breeding season, migration, or winter, depends on the amount of foraging potential and littoral zone productivity for fish and invertebrate reproduction. Site disturbance and developed shorelines adversely affect these factors and result in a lack of suitable breeding/foraging habitat along shorelines. Wetlands are discussed further in Section 3.3.2 and in the *Wetland Evaluation Report* (May 2000).

Table 3-54 lists the protected wildlife species, which have either been observed or have been determined to have a high potential for occurrence within the Ultimate project corridor.

Table 3-54. Observed or High Potential Listed Wildlife Species within, or adjacent to, the Ultimate Project Study Area

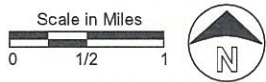
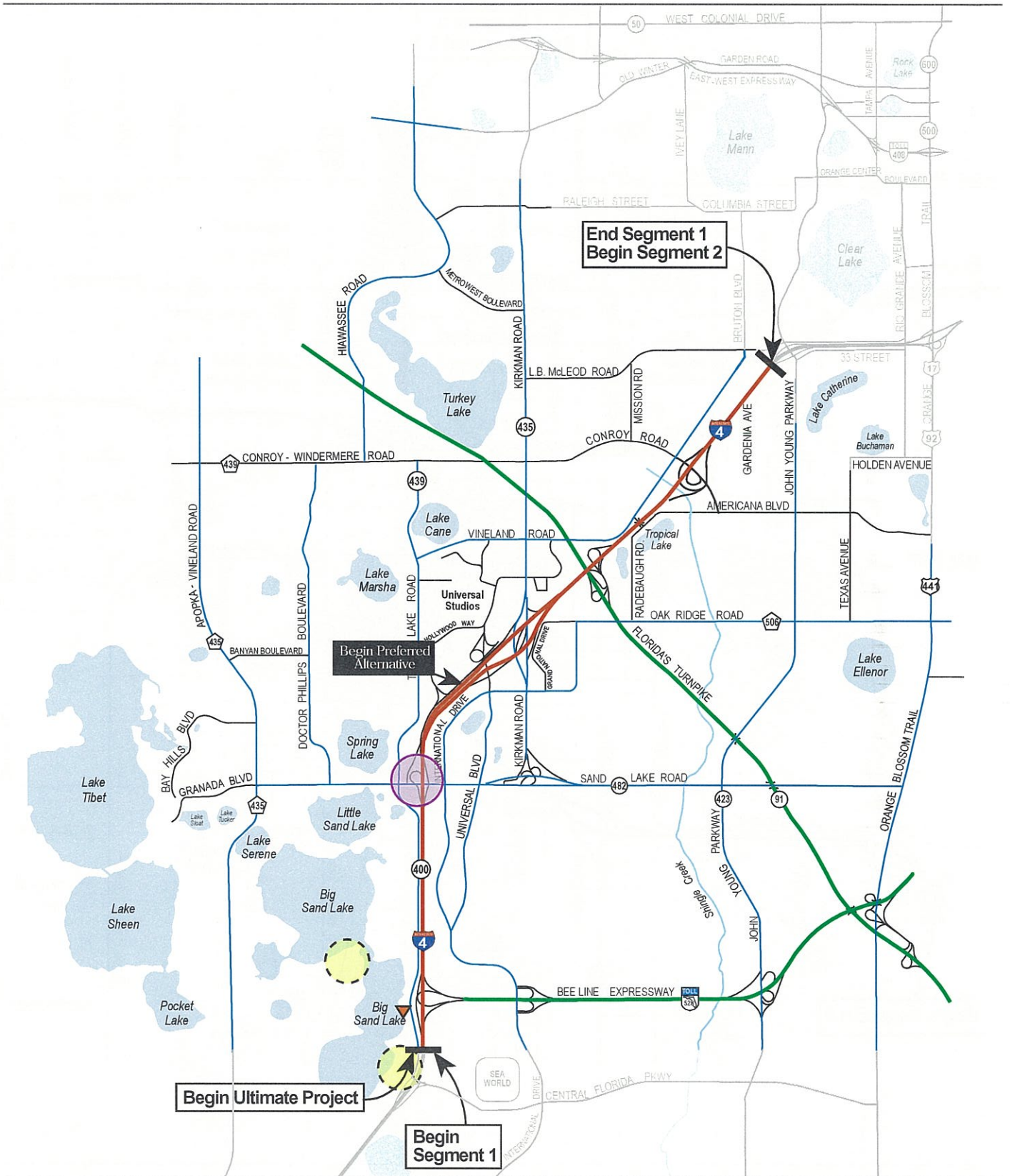
Scientific Name	Common Name	Status ¹		Habitat Preference; Location Observed
		USFWS ²	FWC ³	
Reptiles				
<i>Alligator mississippiensis</i>	American alligator		SSC	Rivers, wetlands and open water bodies; wetland 33E-1
<i>Drymarchon corais couperi</i>	Eastern indigo snake	T	T	Wide range of habitat types, from upland sandhill to swamp edges; northern Segment 6 near SR 472
<i>Gopherus polyphemus</i>	Gopher tortoise		SSC	Longleaf pine-xeric oak, sand pine scrub, hammocks, dry prairie, pine flatwoods and disturbed habitats, southern Segment 1, northern Segment 6
Birds				
<i>Aphelocoma coerulescens</i>	Florida Scrub Jay	T	T	Oak scrub; low growing oaks with patches of bare sand; northern Segment 6
<i>Aramus guarana</i>	Limpkin		SSC	Slow moving freshwater river and stream systems; wetlands 16W-1,2 and 11AN-1A
<i>Egretta caerulea</i>	Little Blue Heron		SSC	Freshwater, brackish & saltwater wetlands; 10E-1, 11E-2, 11W-1, 20E-5, 28W-1,2,3, 29E-4, 38W-8, and 40W-1
<i>Egretta thula</i>	Snowy Egret		SSC	Freshwater and coastal wetlands; 5E-5, 5W-1, 20W-2, 28W-1,2,3, 36W-1, 38W-2,3, and 38W-9,10
<i>Egretta tricolor</i>	Tricolored Heron (Louisiana)		SSC	Typically found in freshwater & estuarine wetland; 9E-3, 13W-1, and 11AS-1
<i>Eudocimus albus</i>	White Ibis		SSC	Typically found in marshy sloughs, mud flats, lagoons and forested wetland; 5W-1, 10W-1, and 18W-2,3
<i>Haliaeetus leucocephalus</i>	Bald Eagle	T	T	Large open water, mature pine; flyover at wetland 36W-1
<i>Mycteria americana</i>	Wood Stork	E	E	Freshwater and brackish wetlands; near Lake Monroe
Mammals				
<i>Trichechus manatus</i>	West Indian (Florida) manatee	E	E	Gulf coast, Atlantic coast, St. Johns River and various other waterways; southern Segment 6
<i>Ursus americanus floridanus</i>	Florida black bear		T	Forested communities: forested wetlands, pine flatwoods, sand pine scrub and mixed hardwood hammocks; Segments 2 and 5

Status as of December 31, 1998

E = Endangered; T = Threatened; SSC = Species of Special Concern

² USFWS = US Fish and Wildlife Service

³ FWC = Florida Fish and Wildlife Conservation Commission



- Scrub Jay (FWC Oct. 1996)
- Gopher Tortoise (FWC Oct. 1996)
- Scrub Lupine



Figure 3-19
Threatened and Endangered Wildlife Species

I-4 PD&E Study - Section 2
 Segment 1 of 6

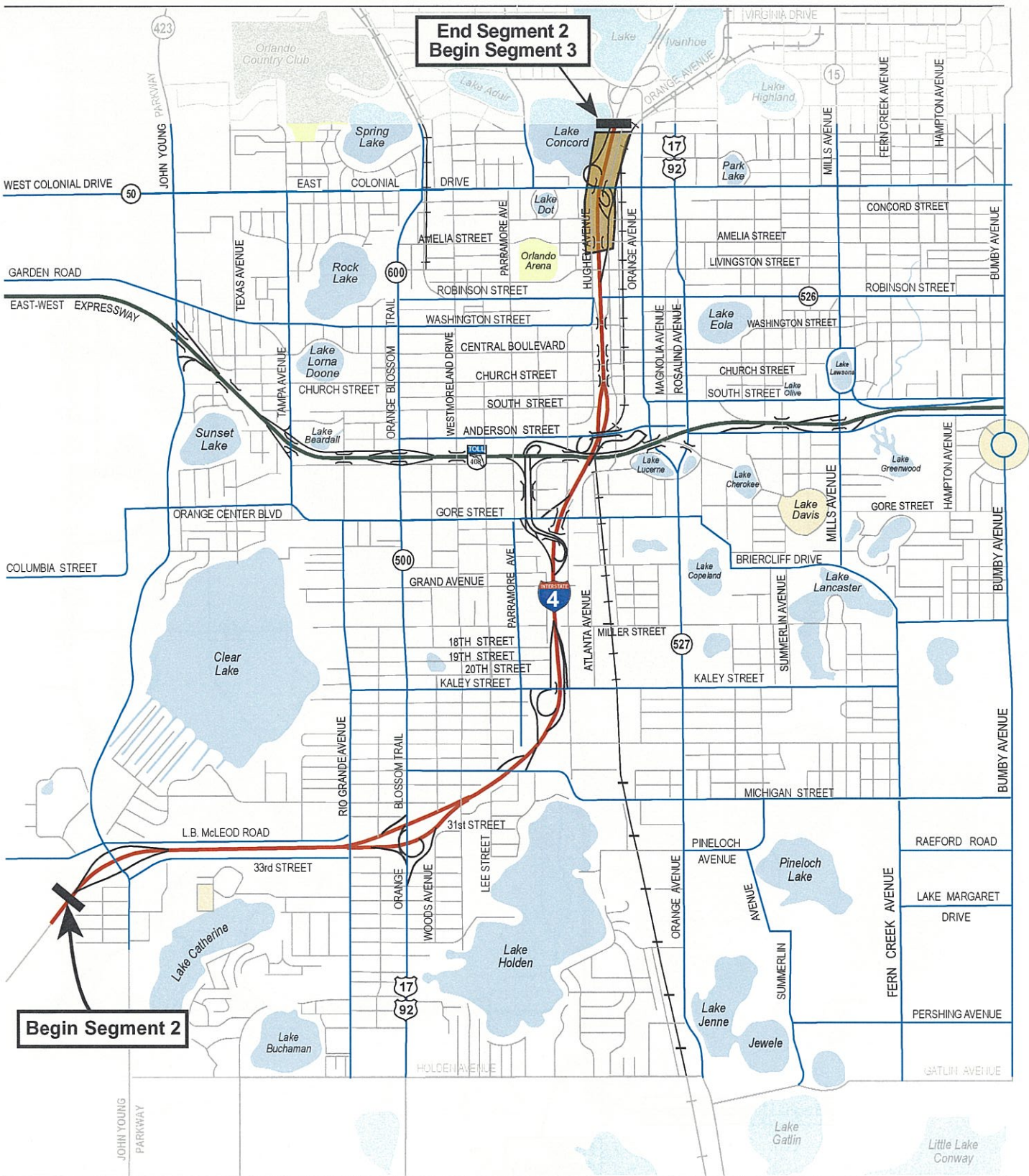
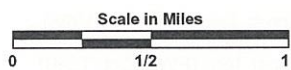
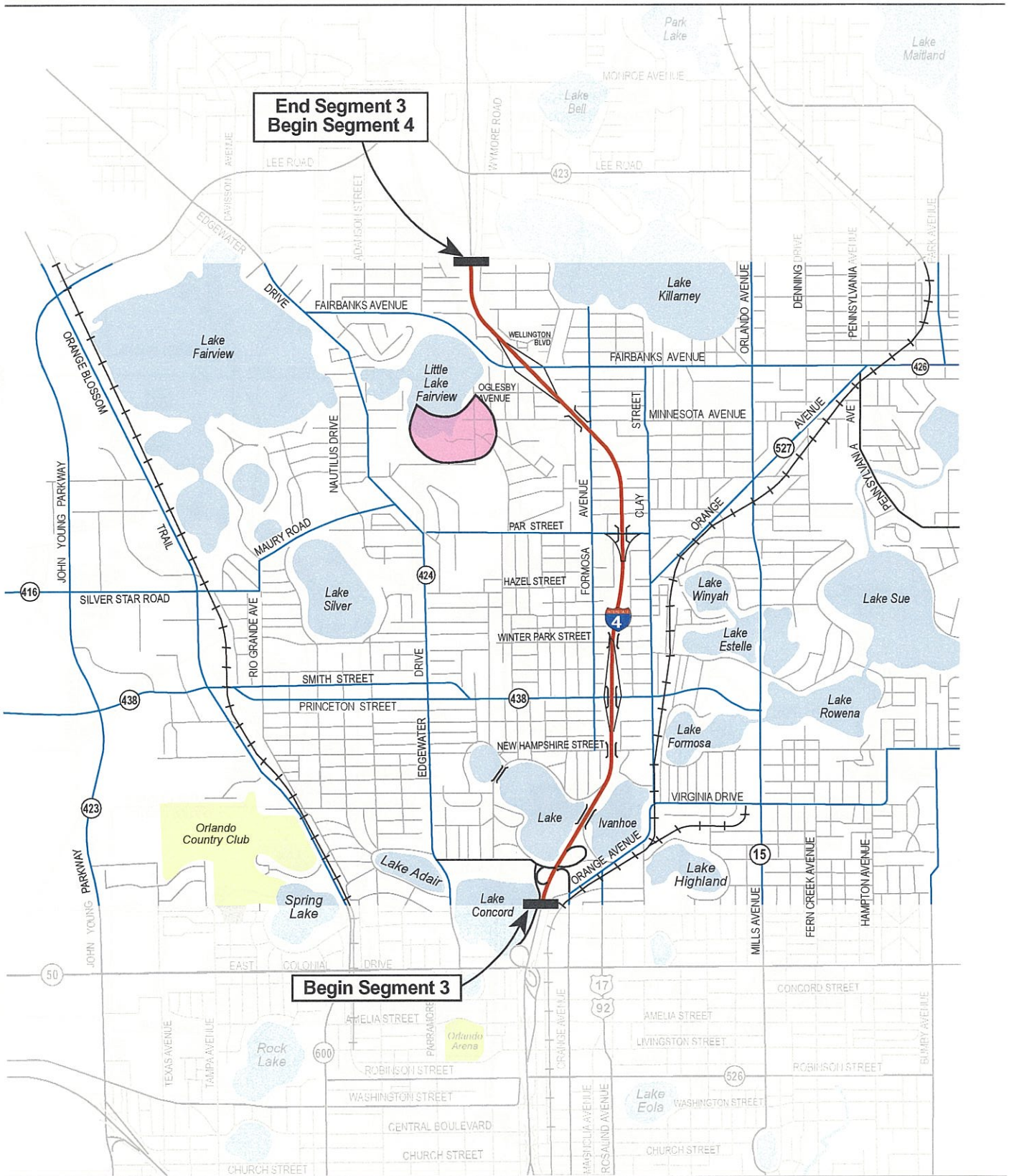


Figure 3-19
Threatened and Endangered Wildlife Species

I-4 PD&E Study - Section 2
 Segment 2 of 6





 Eagle (FNAI Nov. 1996)



Figure 3-19
Threatened and Endangered Wildlife Species

I-4 PD&E Study - Section 2
Segment 3 of 6

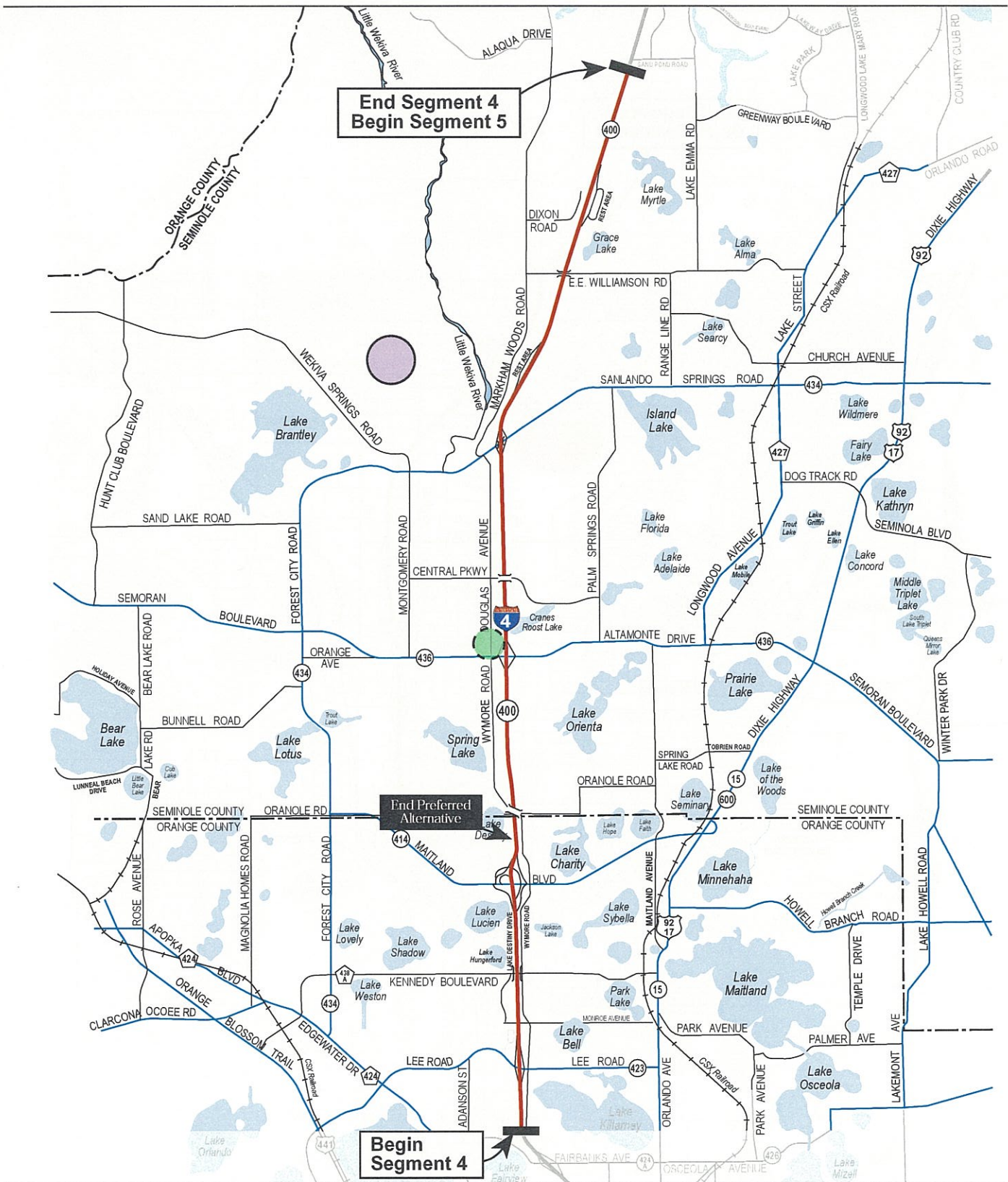
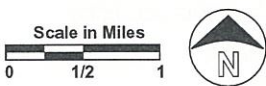
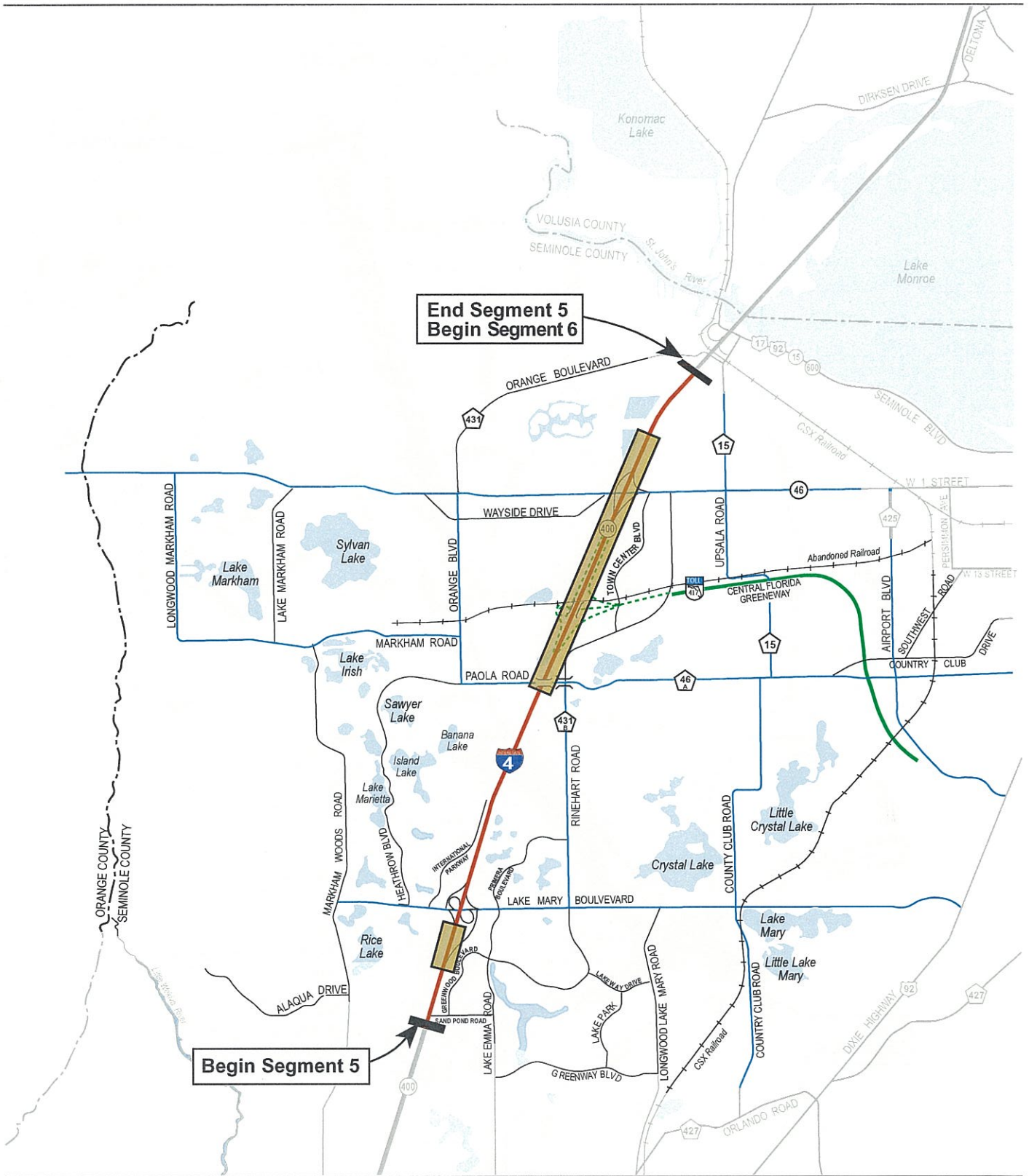


Figure 3-19
Threatened and Endangered Wildlife Species

I-4 PD&E Study - Section 2
Segment 4 of 6



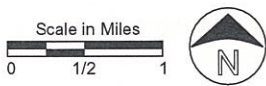
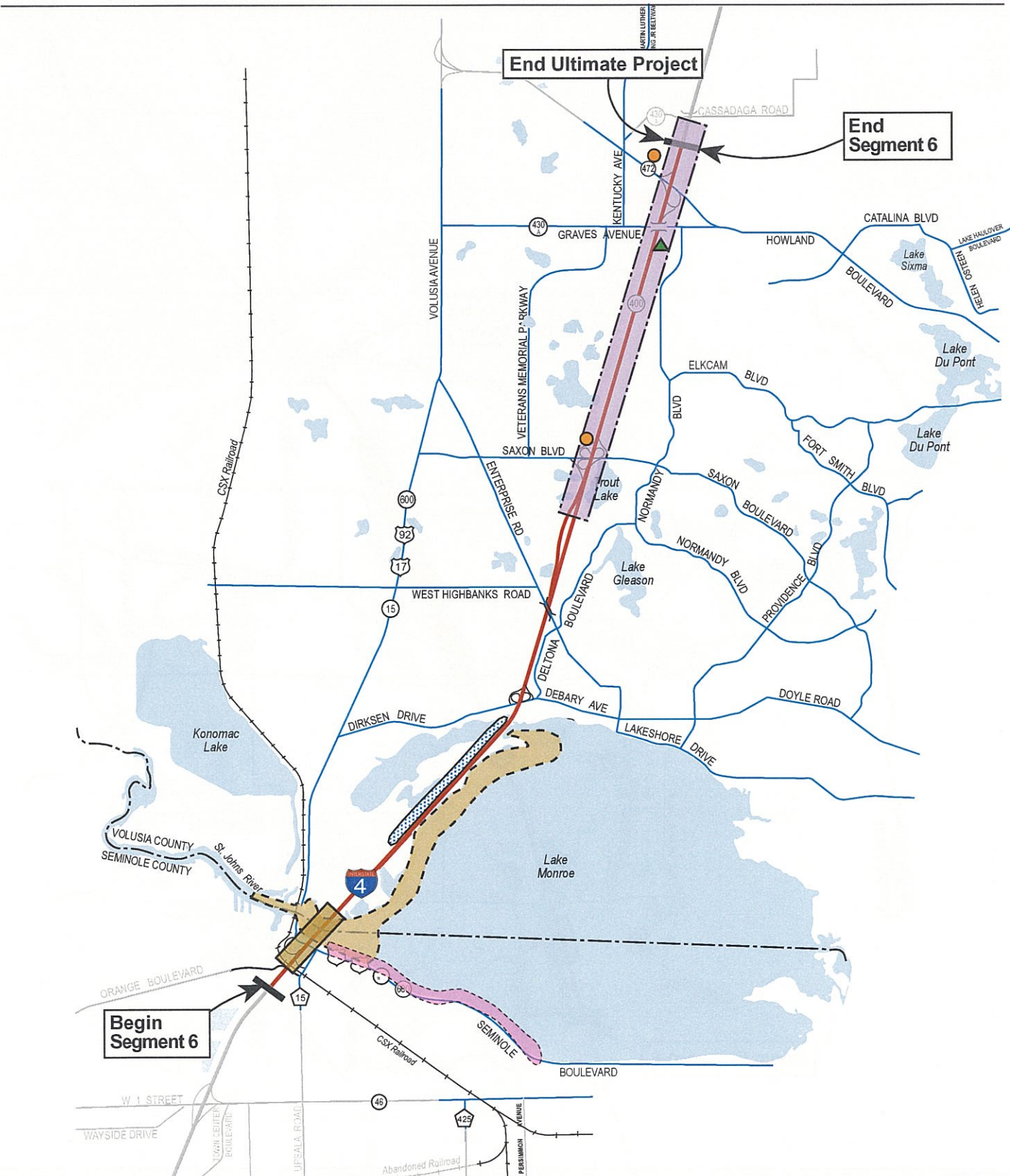


Black Bear (FWC Dec. 1996)



Figure 3-19
Threatened and Endangered Wildlife Species

I-4 PD&E Study - Section 2
 Segment 5 of 6



- Black Bear (FWC Dec. 1996)
- Eagle (FNAI Nov. 1996)
- Manatee (FNAI and Environmental Management of Volusia County Nov. 1996)
- Scrub Jay (FWC Oct. 1996)
- Wood Stork
- Indigo Snake
- Pigeon Wings

Figure 3-19
Threatened and Endangered Wildlife Species

I-4 PD&E Study - Section 2
 Segment 6 of 6



3.3.3.2.1 Segment 1

Low structural and vegetative diversity serve to limit wildlife variety in the southern portion of the study corridor. Small, isolated natural areas are likely to accommodate only a few individuals with small home range requirements. Scrub Jays in the area of Sand Lake Road were reported by FWC in 1996; however, project biologists detected none in this area (FWC 1996). Gopher tortoises were reported to be outside the project area in 1987 near Sand Lake Road (FNAI 1996).

3.3.3.2.2 Segments 2 and 3

Lake Concord and Lake Ivanhoe in Segment 2 may provide foraging habitat for a variety of avian species, including the protected Snowy Egret, Little Blue Heron, and Limpkin. No listed wildlife was observed during this study in these segments. Past agency records show reports of a black bear killed in 1982 while attempting to cross SR 50 (Colonial Drive) (FWC 1996). An eagle nest near Little Lake Fairview (outside the Ultimate project area) was last active in 1995 (FNAI 1996).

3.3.3.2.3 Segments 4 and 5

Longleaf pine and turkey oak communities in Segments 4 and 5 may provide suitable habitat for gopher tortoises, although dense canopy cover in areas dominated by live oak may reduce habitat suitability. Gopher tortoises were documented in the vegetative communities immediately adjacent to the eastern rest area along I-4, and along the I-4 right-of-way north to the St. Johns River. Past agency reports include the least tern at SR 436, Scrub Jay two to three miles west of the Ultimate project corridor, and black bear road kill near Lake Mary Boulevard in 1987, and between CR 46A and SR 46 (FWC 1996).

3.3.3.2.4 Segment 6

Sand pine communities, which are prevalent in Segment 6, often support protected wildlife species such as gopher tortoise and commensal species such as the Florida mouse. However, the dense canopy cover found may reduce the suitability of this habitat for these species.

In the Ultimate project study area, the St. Johns River is federally designated as an area of Critical Habitat for the West Indian manatee. Manatees are reported to seasonally frequent the St. Johns River channel and the northwest shore of Lake Monroe (FNAI 1996 and Volusia County 1996).

Although the Florida black bear was not observed by project biologists, black bear road kills have been reported near the I-4/St. Johns River Bridge in 1994 (FWC 1996). A wood stork was observed foraging in a roadside marsh.

Eagles have been sighted along the southern shore of Lake Monroe as well as an active nest in 1995 (FNAI 1996).

The Florida Scrub Jay was identified at the SR 472 interchange. Two families were observed by a project biologist in the dense scrub oak habitat on the northeast and southeast sides of the interchange. Mapping performed in support of Volusia County's proposed southern extension of SR 472 has characterized the habitat as predominantly Type II and III habitats, using state criteria. Jay occurrence at this location has been independently confirmed by project biologists in surveys conducted in 1997 and 1998. In addition, a single Florida Scrub Jay was observed using a relict scrub-oak habitat remnant at the northeast side of the Saxon Boulevard interchange on two occasions in 1997 and 1998.

An indigo snake was sighted in the modified scrub-oak/sand pine habitat outside but immediately adjacent to the right-of-way in the northern portion of Segment 6.

3.3.3.3 Ecological Relationships

Only two regionally significant areas of natural uplands (and wetlands) exist along the Ultimate project study corridor. These are the Wekiva River/Little Wekiva River conservation lands and the Lake Monroe/St. Johns River corridor. These linear natural features are regionally important wildlife movement corridors.

Most of the land along the I-4 study corridor has been developed into commercial or residential property, and few natural upland communities remain. A list of the types of natural communities along the Ultimate project study corridor, and their distribution by roadway segment, is presented in Table 3-52 of Section 3.3.2. Undeveloped lands remaining along the I-4 corridor consist mainly of fragmented pine and oak communities.

Scattered stands of longleaf pine-xeric oak/sand pine communities remain along the segment east of Lake Monroe in Volusia County (Segment 6). Two clans of Florida Scrub Jays use a small area of the oak/pine community, adjacent to I-4 at the SR 472 intersection. No impact to this habitat will occur under this project. Mitigation for potential impact to this habitat was addressed in Volusia County's plan to extend SR 472 and in the I-4 Six Laning and St. Johns River Bridge project. Details on the Scrub Jays that inhabit this area are presented in Sections 3.3.3.2 and 4.3.3.2 of this report and in the *Endangered Species Biological Assessment* (May 2000). The linear natural features of regional significance are discussed in this section.

3.3.3.3.1 Wekiva River/Little Wekiva River

The Little Wekiva River floodplain within Segment 4 is located to the west of I-4 in Seminole County. Adjoining this river floodplain is the Wekiva River and Rock Springs Run State Preserve located three miles west of the Little Wekiva River. The land between the rivers is known as the Wekiva River Buffer Conservation Area. These conservation lands are part of a corridor to the Ocala National Forest for Florida wildlife, including the black bear. This regional corridor area encompasses uplands and expansive wetlands that include riverine swamp systems with dense forested floodplains in relatively undisturbed and good ecological condition. This area provides excellent forest habitat for wildlife species.

In addition to these conservation lands, the State has designated a buffer area called the Wekiva River System Protection Area. Section 369.303(9) FAC provides for a protection area to buffer the Wekiva River System, as defined in Section 369.303(10) FAC, which consists of the Wekiva River, the Little Wekiva River, Black Water Creek, Rock Springs Run, and Seminole Creek. Although the Wekiva River is 2.75 miles to the west of the I-4 corridor, the eastern boundary of this Protection Area is designated as Markham Woods Road just north of SR 434 (Segments 4 and 5).

I-4 does not bisect this wildlife corridor. No construction will occur west of the protection boundary at Markham Woods Road.

3.3.3.3.2 Lake Monroe/St. Johns River Corridor

The St. Johns River is a regionally significant north-south wildlife corridor in eastern Florida. Large tracts of adjoining lands along most of the river receive some form of protection from development. In the vicinity of the Ultimate project study corridor, conservation lands include the Lake Jessup Conservation Area, the Lake Monroe Conservation Area, the Lake Norris Conservation Area, and the Little-Big Econ State Forest. Like the Wekiva corridor, these lands include uplands and wetlands that are important to many species of Florida wildlife. The Ultimate project corridor crosses this natural land corridor at the west (downstream) end of Lake Monroe where the St. Johns River leaves the lake. Culverts and other structures provide some degree of hydrologic connection between the floodplain wetlands, the river, and the lake; and provide for underpasses that are used by wildlife.

Lake Monroe/St. Johns River is the largest lake and river (over 4,940 acres) within the I-4 study area. It is used for commerce and recreation. The floodplain area is an intricate mosaic of forested, shrub, and marsh wetland systems that include lake swamp, mixed hardwoods, and pine/oak associations. These habitats are in relatively good ecological condition despite the numerous roadways intersecting with these forested systems, human disturbances and residential development encroachments. With its vegetated floodplain and deep channel, it has the potential to provide water treatment functions. All these features combine to make this wetland unique relative to other wetlands in the Ultimate project study area.

3.3.3.3 Shingle Creek Corridor

Shingle Creek is mentioned here not because it is a unique wetland, but because it is connected to other larger wetlands and has the potential to serve as a wildlife movement corridor under the I-4 roadway. It provides a link from Turkey Lake (west of I-4) to the Reedy Creek Swamp system and Lake Tohopekaliga (east of I-4) in Osceola County. At the project site, the creek is a channeled, open water canal with high steep-sided embankments. Most of this creek has been significantly altered as a result of development activities within the study area in the last few decades and provides poor wildlife habitat. Shingle Creek maintains this channeled character for at least a mile beyond the Ultimate project study corridor.

It will provide limited functions as a regional wildlife corridor, because although it is connected to larger undeveloped areas, it has long stretches through urban areas. It may be used by general wildlife that are acclimated to, or adapt readily to, populated areas, such as raccoon, opossum, armadillo, squirrel, etc. It may also serve as a flyway for bats and birds. However, larger, and more selective animals (i.e., bobcat, skunk, bear, and otter) are less likely to use the Shingle Creek canal in the project area as a regular movement corridor.

3.4 Physical Environment

3.4.1 Visual Quality and Aesthetic Character

The existing visual quality of the Ultimate project study area is characteristic of rapidly expanding urban environments in which individual communities evolve into a metropolitan region over time through continued development. The Ultimate project study area includes open lands and recent residential and commercial growth surrounding older, more established urban neighborhoods. Generally, the density of development diminishes with distance from the Orlando CBD. However, commercial activity centers have developed along I-4, including the IDRA and the cities of Maitland, Altamonte Springs, and Lake Mary.

The topography of the region is characteristically flat. This increases visibility to and from elevated portions of the interstate system. Views of the interstate extend for great distances in some areas, which accentuates the visual impact of raised and vertical physical elements in the landscape.

3.4.1.1 Existing Visual Characteristic and Quality

As described in Section 3.1.1.3.1 Existing Land Use, development patterns within the greater Orlando area encompass a variety of land use patterns with a broad and diverse range of visual resources.

Man-made elements, which include office towers, commercial parks, shopping centers, businesses, industrial facilities, residential areas, parks, tourist accommodations, and tourist destinations, dominate the view shed within the City of Orlando. However, the City of Orlando, as well as the metropolitan area, is situated in a region with significant natural resources including an abundance of lakes and extensive tree cover. In addition, many areas along the existing interstate are enhanced by extensive landscape plantings, minimizing impacts to adjacent neighborhoods and contributing to the visual experience for motorists.

More mixed land use patterns characterize the transitional, or suburban, areas such as the cities of Maitland, Altamonte Springs, and Lake Mary. These cities, located between more densely developed urban areas and areas more rural in character, provide a visual transition between urban and rural environments.

Existing natural and modified naturalistic landscapes interspersed with recent residential and commercial development dominate the visual landscape farther out from the city center. Open lands include pasture, cultivated fields, fallow lands, forested lands, lakes, and wetlands.

3.4.1.2 Visually Sensitive Resources

Visually sensitive resources were identified throughout the Ultimate project study area. The criteria used to define these resources were derived from a variety of sources. Federal guidelines require assessment of impacts including those to unique or culturally significant neighborhoods, historic properties and districts, archaeological sites, and recreational areas. Applicable federal guidelines are outlined in Section 4.4.1.2. In addition, research into local jurisdictions' comprehensive plans identified locally designated gateways.

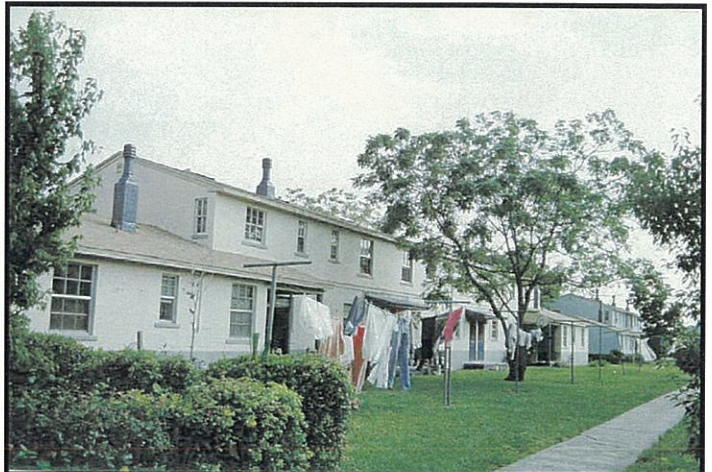
Resources that are visually sensitive are listed in Table 3-55. These resources include unique or culturally significant neighborhoods, historic and archaeological sites, recreational areas (i.e., parks and lakes), designated gateways, and views from the interstate. Representations of these sensitive resources are shown in Figure 3-20.

3.4.2 Air Quality

The purpose of this section is to introduce federal and state air quality standards and discuss the existing air quality conditions of the Orlando area. Section 4.4.2 describes the methodology employed to predict future air quality conditions in the Ultimate project area and the results of the analysis.



**North Holden - Parramore Historic District
Shotgun House on Hicker Avenue**



**Griffin Park Historic District
Callahan Drive and Avondale Avenue**



**Downtown Historic District
Church Street Station (east side of I-4)**



**Lake Cherokee Historic District
Norment-Perry House**



**South College Park Historic District
Yale Street**

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Table 3-55. Visually Sensitive Resources

Segment	Land Use	Natural Landscape Features	Urban Landscape Features	Unique/Cultural or Other Features	Features Blocking View of I-4 Right-of-way	Visually Sensitive Resource?
1	Primarily tourist with some light commercial and residential development	Tourist corridor – landscaped medians, palm trees and heavy vegetative cover between buildings	Traffic signals, utility poles and billboards, overpass and interchanges	N/A	Trees, vegetation	No
2 & 3	Extensive commercial and residential development, including the Orlando Central Business District	I-4 corridor – grassy median and shoulders Downtown – grass cover, street trees and shrubbery	Railroad tracks and crossings, utility poles, traffic signals, parking lots, street lights, billboards	Historic District – Holden Heights/Parramore, Griffin Park, Church Street Station Neighborhoods – Lake Cherokee, College Park Recreational Parks – Beth Johnson, Matthews Gateways – Orange Blossom Tr. and Par St overpass View of Orlando Skyline - Princeton St overpass, SR 408/Summerlin Ave.	Trees, vegetation and some fences around neighborhoods	Yes
4 & 5	Suburban commercial and residential development	Residential areas – street trees, ground covers, lakes, and parks	Traffic signals, utility poles, street lights, billboards	Historic District – Eatonville	Trees, vegetation and some fences around neighborhoods	No
6	Extensive open lands and recent residential development	Open lands – forested lands, lakes and wetlands Residential areas – street trees, grass, ponds	Railroad tracks and crossings, utility poles, traffic signals, street lights, billboards	N/A	Trees, vegetation and some fences around neighborhoods	No

3.4.2.1 Air Quality Standards and Pollutants

The EPA has established National Ambient Air Quality Standards (NAAQS) to protect public health, the environment, and the quality of life from the detrimental effects of ambient (i.e., outdoor) air pollution. FDEP has adopted the same NAAQS (with one exception), which are summarized in Table 3-56. These standards have been set for the following *criteria* pollutants: carbon monoxide, lead, oxides of nitrogen, ozone, particulate matter, and sulfur dioxide, which are briefly described below.

Table 3-56. National and State Ambient Air Quality Standards

Pollutant	Averaging Time	Standard		Type of Standard ^a
		ppm	µg/m ³	
Carbon monoxide (CO)	1 hour	35	40,000	Primary
	8 hours	9	10,000	Primary
Lead (Pb)	1 quarter	-	1.5	Primary & Secondary
Oxides of Nitrogen (NO _x)	1 year	0.053	100	Primary & Secondary
Ozone (O ₃)	1 hour	0.12	235	Primary & Secondary
	8 hours	0.08	157	Primary & Secondary
Particulate Matter with a diameter ≤ 10 µm (PM-10)	24 hours	-	150	Primary & Secondary
	1 year	-	50	Primary & Secondary
Particulate Matter with a diameter ≤ 2.5 µm (PM-2.5)	24 hours	-	65	Primary & Secondary
	1 year	-	15	Primary & Secondary
Sulfur Dioxide (SO ₂)	3 hours	0.50	1300	Secondary
	24 hours	0.14 ^b	365	Primary
	1 year	0.03	80	Primary

^a Primary standards are set to protect public health with an adequate margin of safety. Secondary standards are designed to protect public welfare.

^b Florida Ambient Air Quality Standards are different from the NAAQS on this item only. The Florida standard for the 24-hour concentration of SO₂ is 0.1 ppm (260 µg/m³).

3.4.2.2 Existing Air Quality Conditions

Ambient air monitors allow environmental agencies to determine compliance with the NAAQS and to evaluate the effectiveness of pollution control measures. Each of the three counties in the Ultimate project study area (Orange, Seminole, and Volusia) has ambient air monitors operated by both FDEP and county environmental agencies. The annual data from the 1998 monitoring programs for each county are summarized in Table 3-57.

Based on air monitoring data obtained from the monitoring stations, ozone (O₃) is the criteria pollutant of concern in the I-4 study area. As stated previously, O₃ is formed in a photochemical reaction of volatile organic compounds (VOC) and NO_x. These precursor pollutants are often emitted in the urban center of a metropolitan area and then transported to areas surrounding the urban center, creating an area-wide phenomenon. Thus, elevated levels of O₃ are often considered regional in nature and not restricted to the I-4 study area. Notably, there have been no violations of the NAAQS for O₃ in the Orlando area for several years prior to 1999.

According to the Clean Air Act Amendments of 1990 (CAAA), all areas within states are designated with respect to the NAAQS as either attainment, non-attainment, or unclassifiable. As of 1999, Orange, Seminole, and Volusia Counties have been designated as attainment areas for all criteria pollutants.

Table 3-57. 1998 Air Monitoring Data

County	Monitoring Station Location	Pollutants Monitored	Highest Recorded Level	NAAQS	Averaging Time	Violation of NAAQS
Orange	1 Orange Avenue, Orlando	CO	3.9 ppm ^a	35 ppm	1 hour	No
			2.5 ppm	9 ppm	8 hours	No
	7055 Winegard Road, Orlando	O ₃	0.133 ppm	0.12 ppm	1 hour	No ^b
	E. Washington Street, Orlando/ Zellwood	PM-10	68 µg/m ³	150 µg/m ³	24 hours	No
	2401 W. 33 rd Street, Orlando (Sheriff's Office)	PM-10	62 µg/m ³	150 µg/m ³	24 hours	No
	W. Central & Parramore, Orlando	PM-10	37 µg/m ³	150 µg/m ³	24 hours	No
	595 N. Primrose Avenue, Orlando	PM-10	68 µg/m ³	150 µg/m ³	24 hours	No
	Morris Blvd, Winter Park	CO	2.9 ppm	35 ppm	1 hour	No
			1.7 ppm	9 ppm	8 hours	No
		SO ₂	0.002 ppm	0.03 ppm	1 year	No
			0.008 ppm	0.1 ppm ^c	24 hours	No
			0.029 ppm	0.5 ppm	3 hours	No
	NO ₂	0.062 ppm	0.011 ppm	1 year	No	
O ₃	0.130 ppm	0.12 ppm	1 hour	No ^d		
PM-10	68 µg/m ³	150 µg/m ³	24 hours	No		
Seminole	County Homes Road, on US 17-92	O ₃	0.110 ppm	0.12 ppm	1 hour	No
	300 N. Park Avenue, Sanford	PM-10	105 µg/m ³	150 µg/m ³	24 hours	No
Volusia	5200 Spruce Creek Road, Port Orange	O ₃	0.085 ppm	0.12 ppm	1 hour	No
	1185-A Dunn Avenue, Daytona Beach	O ₃	0.097 ppm	0.12 ppm	1 hour	No
		PM-10	314 µg/m ³	150 µg/m ³	24 hours	No ^d
	Williamson Blvd & US 92, Daytona Beach	PM-10	315 µg/m ³	150 µg/m ³	24 hours	No ^d

^a Note that the average CO concentration for this location in 1998 was 0.75 ppm.

^b The concentration should not be at or above the standard on more than three days over three years. This exceedance must be viewed with other maxima to be evaluated as a violation of the NAAQS.

^c This is the Florida standard, which is stricter than the NAAQS of 0.14 ppm.

^d The 24-hour average concentration is not to be exceeded more than once per year. The NAAQS was exceeded only once.

ppm = parts per million

µg/m³ = micrograms per cubic meter

3.4.3 Noise Study

Noise levels are measured in units called decibels (dB). Since the human ear does not respond equally to all frequencies, measured sound levels are adjusted or weighted to correspond to the frequency response of human hearing and the human perception of loudness. The weighted sound level is expressed in single number units called A-weighted decibels (dBA) and is measured with a calibrated noise meter.

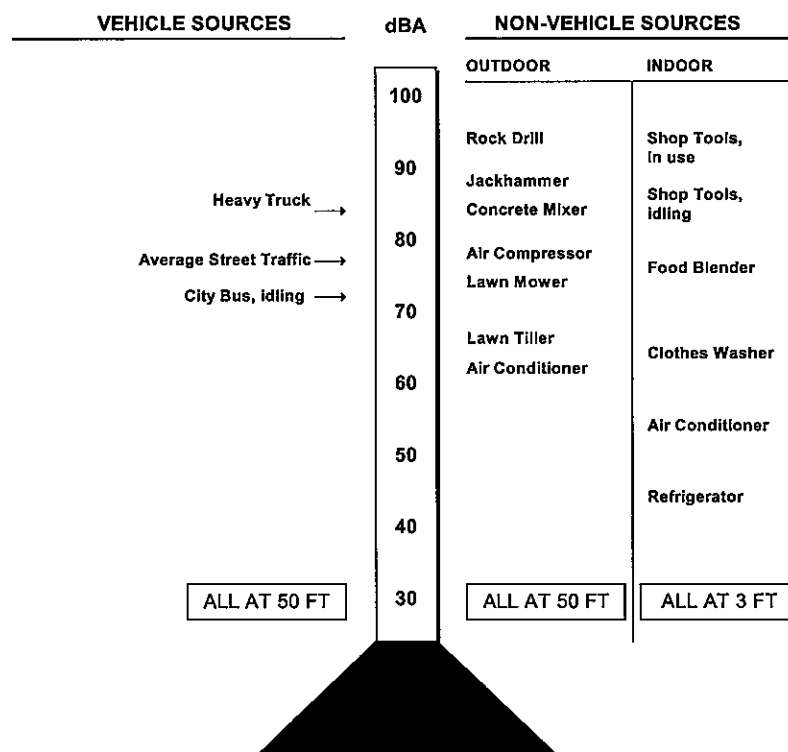
Traffic and other noises found in communities tend to fluctuate from moment to moment, depending on whether a noisy truck passes by, an airplane flies over, a horn blows, or children scream as they play in a nearby schoolyard. In order to measure this noise accurately, it is common practice to average noise produced by different activities over a period of time in order to obtain a single number. This single number is called the equivalent continuous noise level, or L_{eq} .

Human Perception of Noise

The average individual's ability to perceive changes in noise levels is well documented. In general, changes in noise levels less than 3 dBA will be barely perceived by most listeners, whereas a 10-dBA change normally is perceived as a doubling (or halving) of noise levels.

Most noise acceptability criteria are based on the general principle that a change in noise level is likely to cause annoyance whenever it intrudes upon the existing ambient noise. That is, annoyance depends upon the noise that exists before the start of a new noise-generating project or expansion of an existing project. Community noise levels in urban areas usually range between 45 dBA, the daytime level in a typical quiet living room, and 85 dBA, the approximate noise level near a sidewalk adjacent to heavy traffic. For reference and orientation to the decibel scale, representative environmental noises and their respective dBA levels are shown in Figure 3-21.

Figure 3-21. Common Indoor and Outdoor Noise Levels



3.4.3.1 Noise Criteria

The basic goals of noise criteria for highway projects are to minimize the adverse noise impacts on the community and to provide feasible and reasonable noise control (abatement) where necessary and appropriate.

FHWA Noise Abatement Criteria, summarized in Table 3-58, establish guidelines for evaluating traffic noise impacts with respect to various land uses and activity categories. When traffic noise associated with a roadway project is predicted to approach or exceed these criteria, noise abatement must be considered.

Table 3-58. FHWA Noise Abatement Criteria

Activity Category	Hourly A-Weighted Sound Level (dBA)		Description of Activity Category
	Leq (h)	L10 (h)	
A	57 (Exterior)	60 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (Exterior)	70 (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (Exterior)	75 (Exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	--	--	Undeveloped lands.
E	52 (Interior)	55 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Source: Title 23 of the Code of Federal Regulations (CFR) Part 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise, Federal Highway Administration, Washington, D.C.

FDOT considers a traffic noise impact to occur when predicted project-related noise levels approach the FHWA abatement criteria, or substantially exceed existing levels. FDOT defines “approach” as 2 dBA. For example, while the FHWA criteria for Activity Category B (residential, churches, parks, etc.) is 67 dBA, a site predicted to experience a noise level of 65 dBA would be considered impacted.

Noise impacts are also considered to occur when noise levels are predicted to increase substantially, yet not approach or exceed the FHWA criteria. Substantial increases primarily occur when (1) proposed roadway improvements are planned in the vicinity of noise sensitive areas where existing noise levels are relatively low, or (2) the proposed improvements change the noise propagation environment. FDOT considers a 15-dBA increase to be substantial.

3.4.3.2 Modeling and Measurement Methodology

A review of the project corridor identified 51 noise sensitive areas (a total of 10,732 residential sites) that would be potentially impacted by the proposed project. Each of these areas is described below in Table 3-59 and shown in Figure 3-22. More detailed information can be found in the *Noise Study Report* (April 2001).

Ambient noise levels were monitored at a total of 30 locations within the study limits in accordance with procedures described in the FHWA report, *Measurement of Highway-Related Noise*. Of those 30 locations, 19 locations were used for noise model validation. Monitoring locations included residential, commercial, and other land use types representative of typical conditions within the Ultimate project corridor. The locations for noise monitoring were selected after an extensive on-site review of the corridor. The criteria for monitoring selection included land use, existing ambient noise, number of sensitive receivers in the area, and the site’s potential sensitivity to changes in noise. The noise monitoring sites are shown on Figure 3-22 and described in Table 3-60.

Traffic related noise levels were monitored at each site for three 10-minute periods using Metrosonics db-3100 sound level meters. The meters were placed on a tripod at a height of five feet. The position of the meter was dictated by the limited-access right-of-way line, location of the frontage road, and location of the noise sensitive site. Calibration checks were performed on the sound level meters before and after the sampling event using a Metrosonics CL-304 calibrator. Both the meter and calibrator meet or exceed American National Standards Institute (ANSI) specifications.

Concurrent with noise measurements, traffic conditions including traffic volume, vehicle mix, and travel speeds were recorded during the monitoring period. These data and other roadway/receiver site condition factors were used as input to validate the version of the *STAMINA 2.1* noise prediction computer model approved for use in Florida.

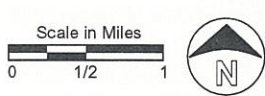
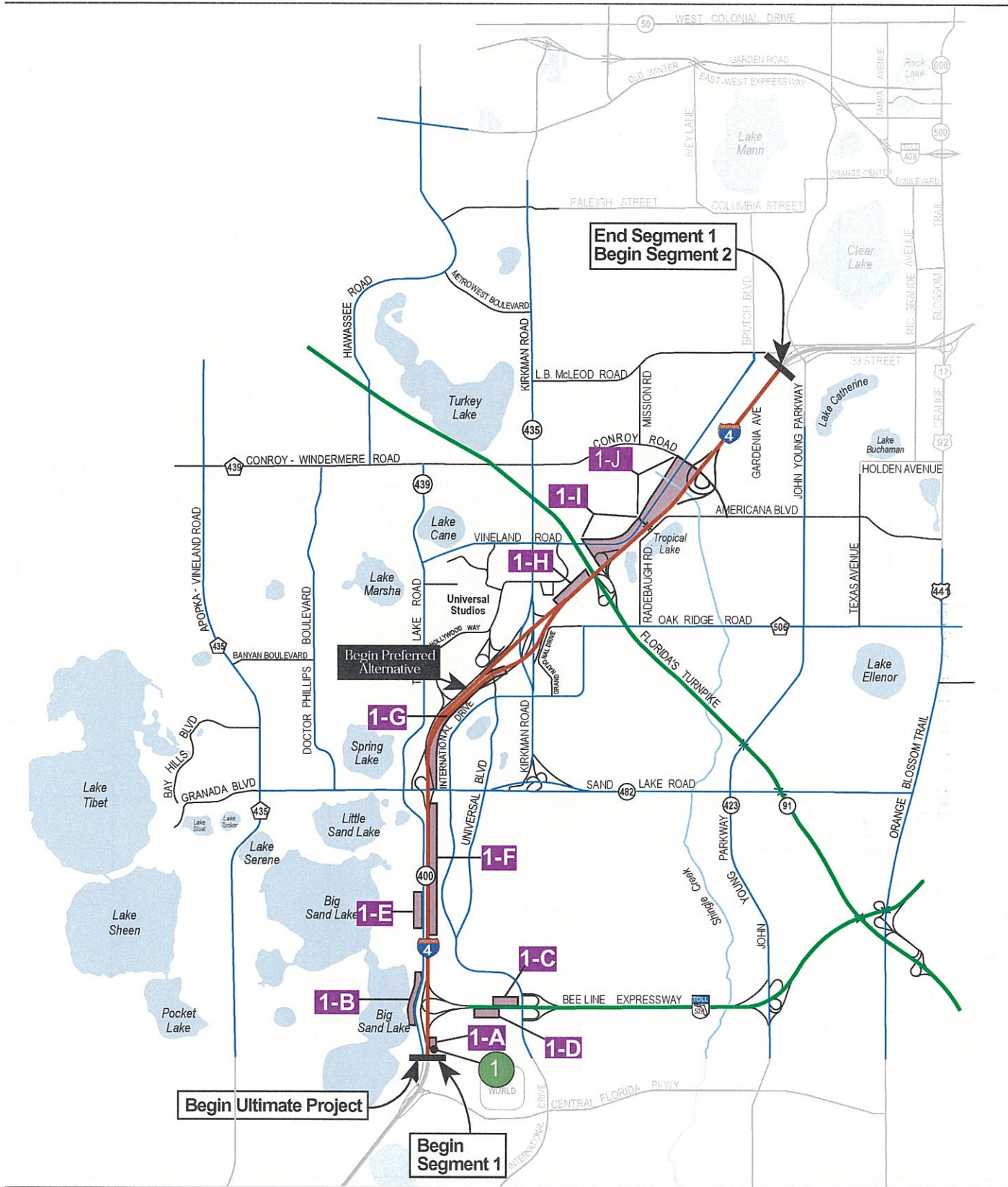
The computer model’s ability to accurately predict noise levels was confirmed. As shown in Table 3-60, the predicted noise levels were within FDOT’s tolerance (3 dBA) of the measured noise levels. Materials developed in support of the validation procedure are contained in the *Noise Study Report* (April 2001) and the project files.

Table 3-59. Noise Sensitive Areas

Noise Sensitive Area (NSA)	Land Use	Description	No. of Residences per NSA
Segment 1			
1-A	Residential	McKinley Lake Apartments - east of I-4 and south of the Bee Line Expressway	102
1-B	Residential	West Gate Lakes Resort - west of the I-4 and Bee Line Expressway Interchange	371
1-C	Commercial	West of International Drive and north of the Bee Line Expressway	0
1-D	Commercial	West of International Drive and south of the Bee Line Expressway	0
1-E	Commercial/ Residential	Between the Comfort Suites Hotel and the Vinings at Sand Lake - west of I-4 and Turkey Lake Road	134
1-F	Commercial Hotels	East of I-4 and west of International Drive	1285
1-G	Commercial Hotels	East of I-4, northwest of International Drive, and north of Sand Lake Road (SR 482)	1702
1-H	Commercial/ Residential	Days Inn and the Delta Orlando Resort – northwest of I-4 and east of Kirkman Road (SR 435)	552
1-I	Residential	Between Tamarind Condominiums and the Villas of Cypress Creek – northwest of I-4, west of Orlando-Vineland Road, and east of the Florida's Turnpike (SR 91)	140
1-J	Residential	Between Cypress Creek Apartments, Park Street Apartments, and Oakwood Apartments - northwest of I-4, west of Orlando-Vineland Road, and west of Conroy Road	286
Total Segment 1:			4572
Segment 2			
2-A	Residential	South of I-4 and west of Orange Blossom Trail (US 441)	127
2-B	Residential	Rio Grande Apartments - north of I-4 and west of Orange Blossom Trail (US 441)	97
2-C	Residential	Single family homes and Holden Heights Baptist Church - west of I-4 between Orange Blossom Trail (US 441) and Kaley Street	91
2-D	Residential / Institutional	Single family homes, Pineloch Elementary School, House of Hope Church, Living Hope International Ministries, and part of the Veranda Nursing - east of I-4 between Orange Blossom Trail (US 441) and Michigan Street	66
2-E	Residential	Griffin Park and Shady Lyn Apartments in the center of the East/West Expressway/I-4 Interchange	173
2-F	Residential	Single family homes - west of I-4, south of the East/West Expressway, and north of Kaley Street	122
2-G	Residential/ Institutional	Single family homes and apartments, South Holden Parramore Neighborhood including part of the Sun Charm Court Retirement Living, Rio Grande High School, and the Vacation Lodge Hotel - west of I-4 and south of the East/West Expressway	289
2-H	Residential / Institutional	Single family homes, Harvest Baptist Church, Bethel Missionary Baptist Church, and the Maxey House - west of I-4 and north of the East/West Expressway	157
2-I	Residential	Single family homes south of the East/West Expressway	181
2-J	Residential	Single and multi-family homes - north of the East/West Expressway	234
2-K	Residential / Hotels	North Holden Parramore neighborhood, public buildings, and hotels - west of I-4, north of the East/West Expressway, and south of Livingston Street	89
Total Segment 2:			1626
Segment 3			
3-A	Residential / Hotels / Institutional	Single family homes, Holiday Inn, Central Christ Church, Concord Lake Apartments, Hampshire Apartments, Fountain Tree Apartments, Don Dudley Park, and Lake Ivanhoe Park – west of I-4, across Lake Concord from Colonial Drive (SR 50) to Lake Ivanhoe	319
3-B	Residential	Single family homes – west of I-4 from Lake Ivanhoe North to Princeton Street (SR 438)	122
3-C	Residential / Institutional	Single family homes, Matthew Park, Orlando Junior Academy, and John Knox Presbyterian Church – west of I-4 from Princeton Street to Par Street	156
3-D	Residential / Institutional / Commercial	Single family homes, Lake Ivanhoe Shores Apartments, Colonial Apartments, Seventh Day Adventist Church, and medical and business offices – east of I-4 and east of Orange Avenue (SR 527) between Lake Ivanhoe south and Groveland Street	225
3-E	Residential / Institutional	Single family homes, the Church of Jesus Christ of Latter Day Saints, Templo Evangelistico Del Nazareno Church - west of I-4 between Par Street and Fairbanks Avenue	149
3-F	Residential / Institutional / Commercial	Single family homes, The Oaks Apartments, medical offices, Calvary Assembly of God Church, Reorganized Church of Jesus Christ of Latter Day Saints, The Seventh Day Adventist Church, Killarney Baptist Church, and commercial and business offices – east of I-4 between Groveland Street and Fairbanks Avenue	138

Table 3-59. Noise Sensitive Areas (Continued)

Noise Sensitive Area (NSA)	Land Use	Description	No. of Residences per NSA
3-G	Residential / Institutional / Hotels / Commercial	Single family homes, Knights Inn, Holiday Inn, Temple Israel, and commercial and business office buildings – west of I-4 between Fairbanks Avenue and Lee Road (SR 423)	277
3-H	Residential / Institutional / Commercial	Single family homes, Killarney Elementary School, Florida Conference of Seventh Day Adventist Church, and business offices east of I-4 between Fairbanks Avenue and Lee Road (SR 423)	132
Total Segment 3:			1518
Segment 4			
4-A	Residential / Institutional / Commercial	Single family homes, Florida Catholic Church, Orlando College North Campus, and commercial buildings – west of I-4 and north of Lee Road (SR 423)	19
4-B	Residential / Institutional / Commercial	Single family homes, Hungerford Elementary School, Life Center Church, and business offices – east of I-4 and north of Wymore Road	68
4-C	Residential / Hotels / Commercial	Single family homes, Destiny Springs Condos, Altamonte Manor Apartments, Spring Lake Hills Apartments, The Ashfords Apartments, La Plaza Apartments, Spanish Trace Apartments, Days Inn, Holiday Inn, Spring Colony Apartments, Wymore Grove Apartments, and commercial buildings – west of I-4, north of Lake Destiny, and south of SR 436	907
4-D	Residential / Institutional / Commercial / Hotels	Single family homes, King of Kings Lutheran Church and School, Maitland Christian School, Grace Brethren Church of Mailland, Holy Trinity Greek Orthodox Church, Orangewood Christian High School, Orangewood Christian Elementary School, business and commercial offices, Hidden Ridge Condominiums, Newbury Place Apartments, Hilton Hotel, and The Courts at Lakeside – east of I-4, north of Maitland Boulevard, and south of Cranes Roost Lake	165
4-E	Hotels	Hampton Inn and Best Western - west of I-4 between SR 436 and Central Parkway	140
4-F	Residential / Commercial	Single family homes, medical facilities, business and commercial offices, Kingston Village Apartments, and Cameron Village - west of I-4 between Central Parkway and SR 434	134
4-G	Residential	Single family homes - East of I-4 between Central Parkway and SR 434	97
4-H	Residential / Institutional / Hotels	Single family homes, Ramada Inn, Neighborhood Alliance Church, and Markham Woods Seventh Day Adventist Church - west of I-4 between SR 434 and E.E. Williamson Road	121
4-I	Residential	Single family homes and Springwood Village Condominiums - east of I-4 and north of SR 434	274
4-J	Residential	Single family homes - east of I-4 and south of E.E. Williamson Road	49
4-K	Residential / Institutional	Single family homes, and Wekiva Assembly of God Church - west of I-4 and north of E.E. Williamson Road	50
4-L	Residential	Single family homes - east of I-4, north of E.E. Williamson Road, and surrounds Grace Lake	66
4-M	Residential	Single family homes – west of I-4 and south of Long Pond Road	86
Total Segment 4:			2176
Segment 5			
5-A	Hotels	Courtyard by Marriott - west of I-4, north of Lake Mary Boulevard, and east of International Parkway	25
5-B	Residential	Single family homes - west of I-4, south of Orange Boulevard, and southwest of Lake Monroe	39
5-C	Residential	Single family homes - west of I-4, south of Orange Boulevard, and southwest of Lake Monroe	13
Total Segment 5:			77
Segment 6			
6-A	Residential / Institutional	Single family homes, River Oaks Estates, and Bill Keller Park - west of I-4, and north from Lake Monroe to Enterprise Road	67
6-B	Residential / Hotels / Commercial	Single family homes, Best Western, business and commercial offices, Deltona Villas, and Shady Lake Condominiums - east of I-4 and south of Enterprise Road	107
6-C	Residential	Single family homes - east of I-4 between Enterprise Road and Saxon Boulevard	183
6-D	Residential	Single family homes - west of I-4 between Enterprise Road and Saxon Boulevard	84
6-E	Residential	Single family homes - east of I-4 between Saxon Boulevard and Rhode Island Road	131
6-F	Residential	Single family homes and Village Park Mobile Home Park - west of I-4 and south of Graves Avenue	191
Total Segment 6:			763

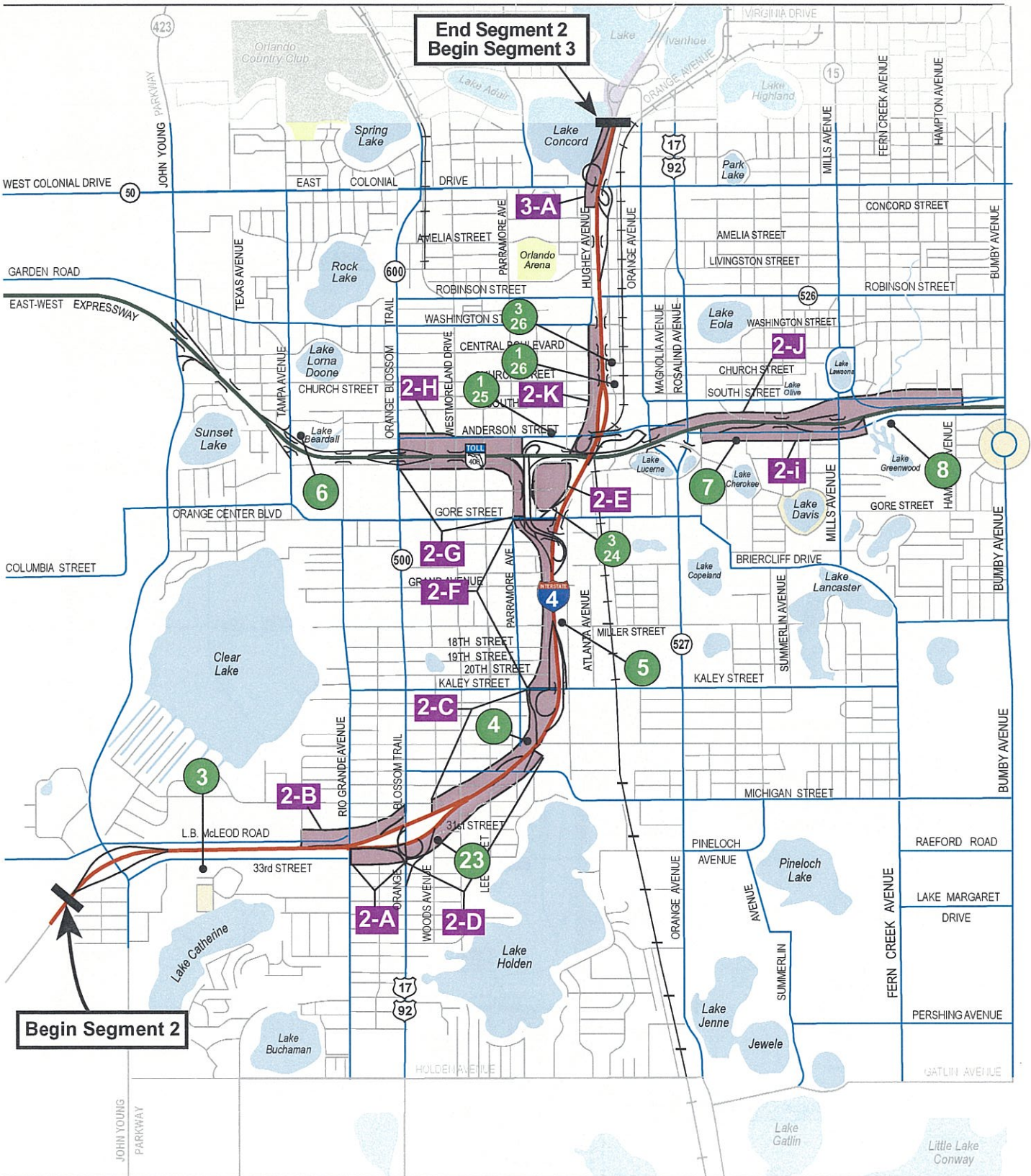


- 1 Noise Monitoring Site
- Noise Sensitive Area



Figure 3-22
Noise Monitoring Locations

I-4 PD&E Study - Section 2
Segment 1 of 6

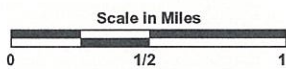
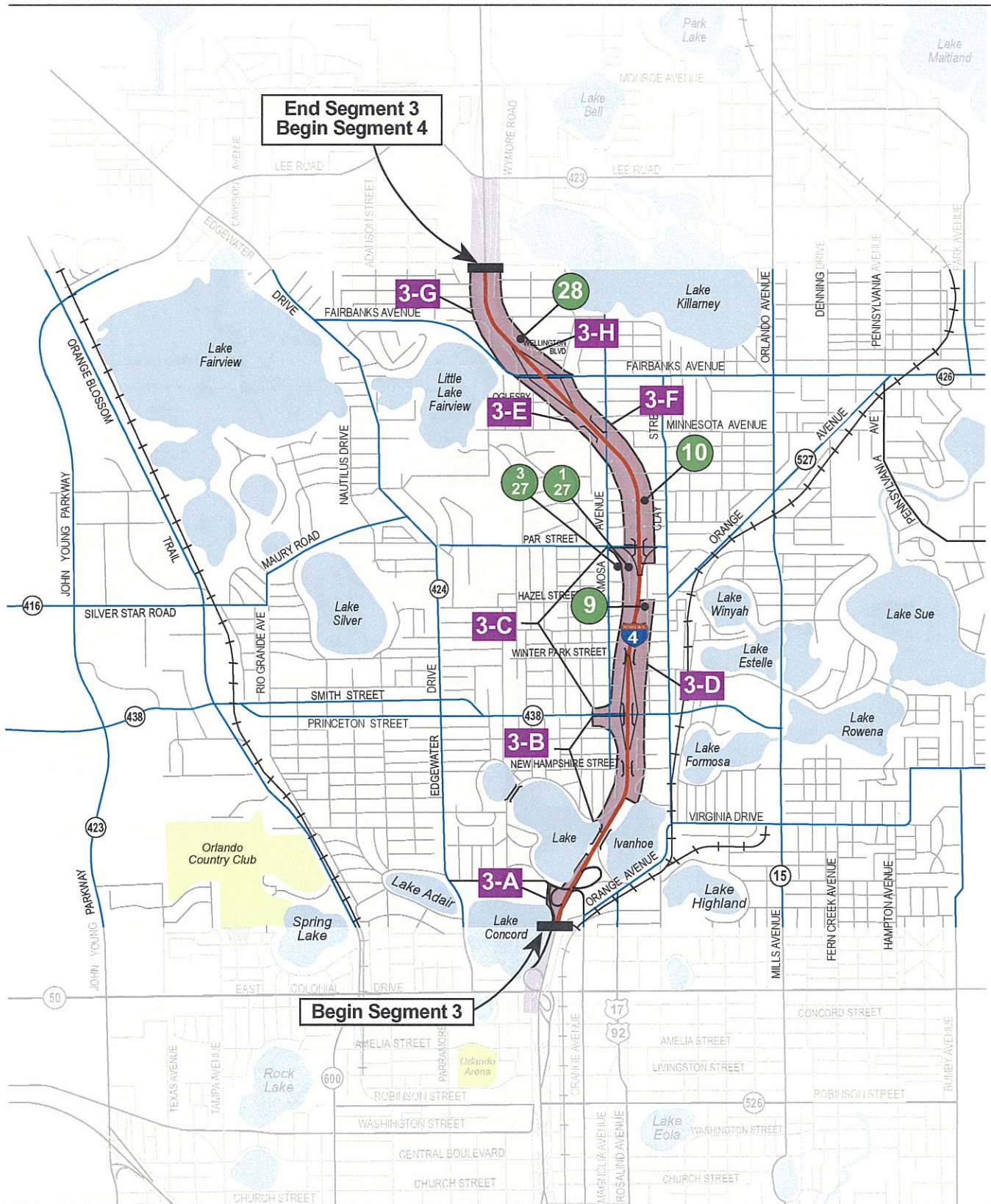


- 1 Noise Monitoring Site
- Noise Sensitive Area

Figure 3-22
Noise Monitoring Locations

I-4 PD&E Study - Section 2
 Segment 2 of 6



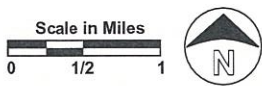
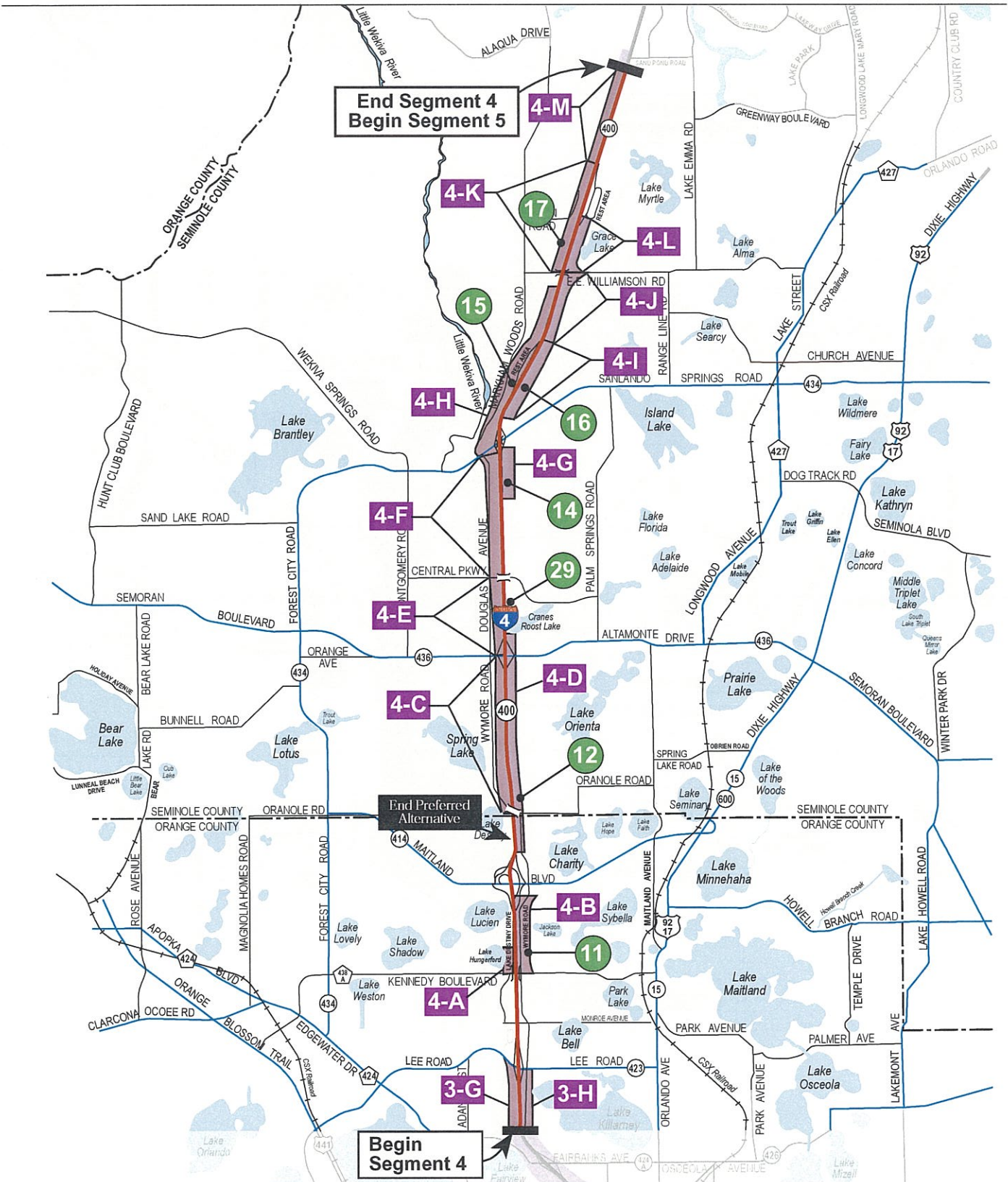


- 1 Noise Monitoring Site
- Noise Sensitive Area



Figure 3-22
Noise Monitoring Locations

I-4 PD&E Study - Section 2
Segment 3 of 6

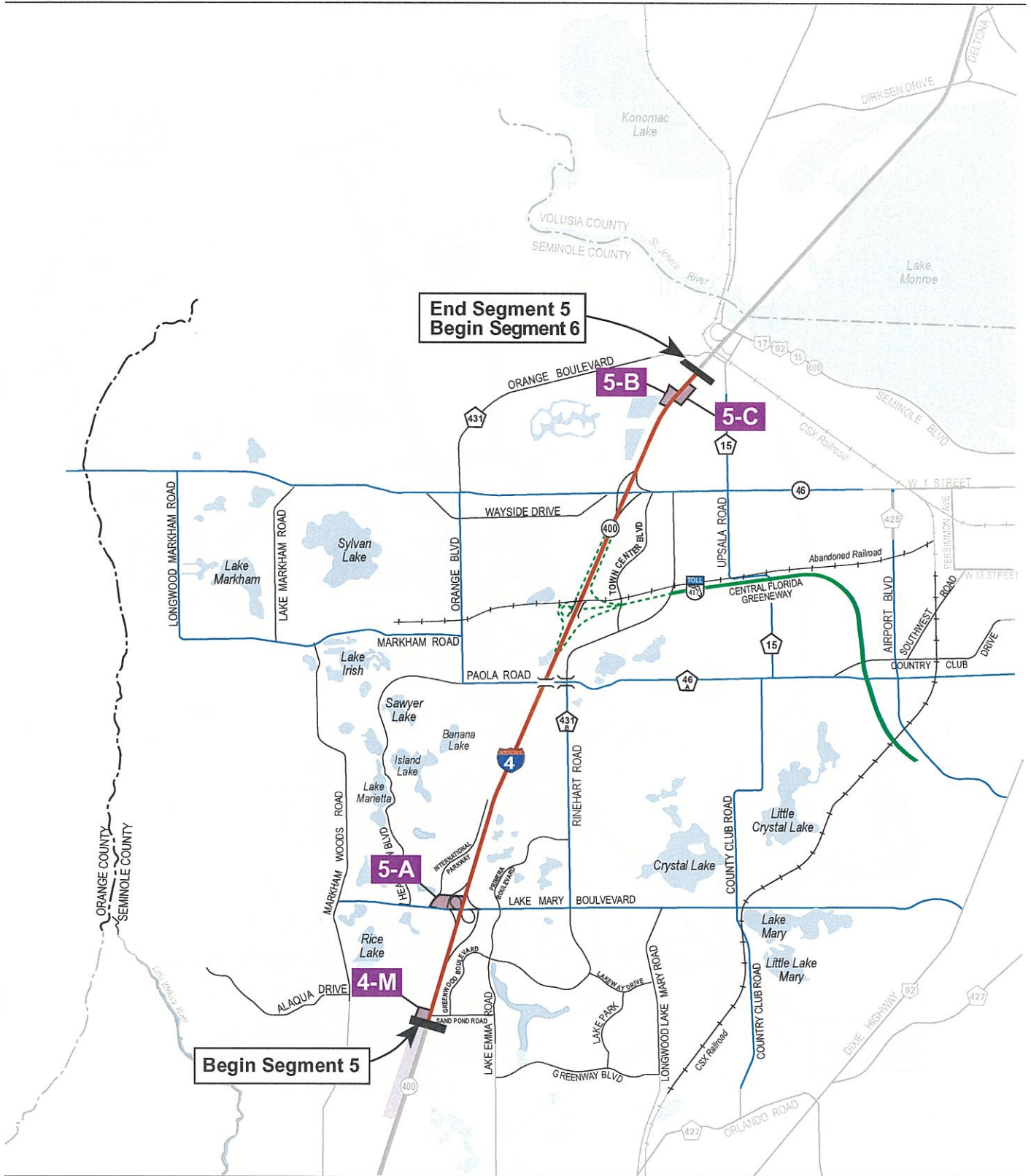


- 1 Noise Monitoring Site
- Noise Sensitive Area

Figure 3-22
Noise Monitoring Locations

I-4 PD&E Study - Section 2
 Segment 4 of 6





- 1 Noise Monitoring Site
- Noise Sensitive Area



Figure 3-22
Noise Monitoring Locations

I-4 PD&E Study - Section 2
Segment 5 of 6

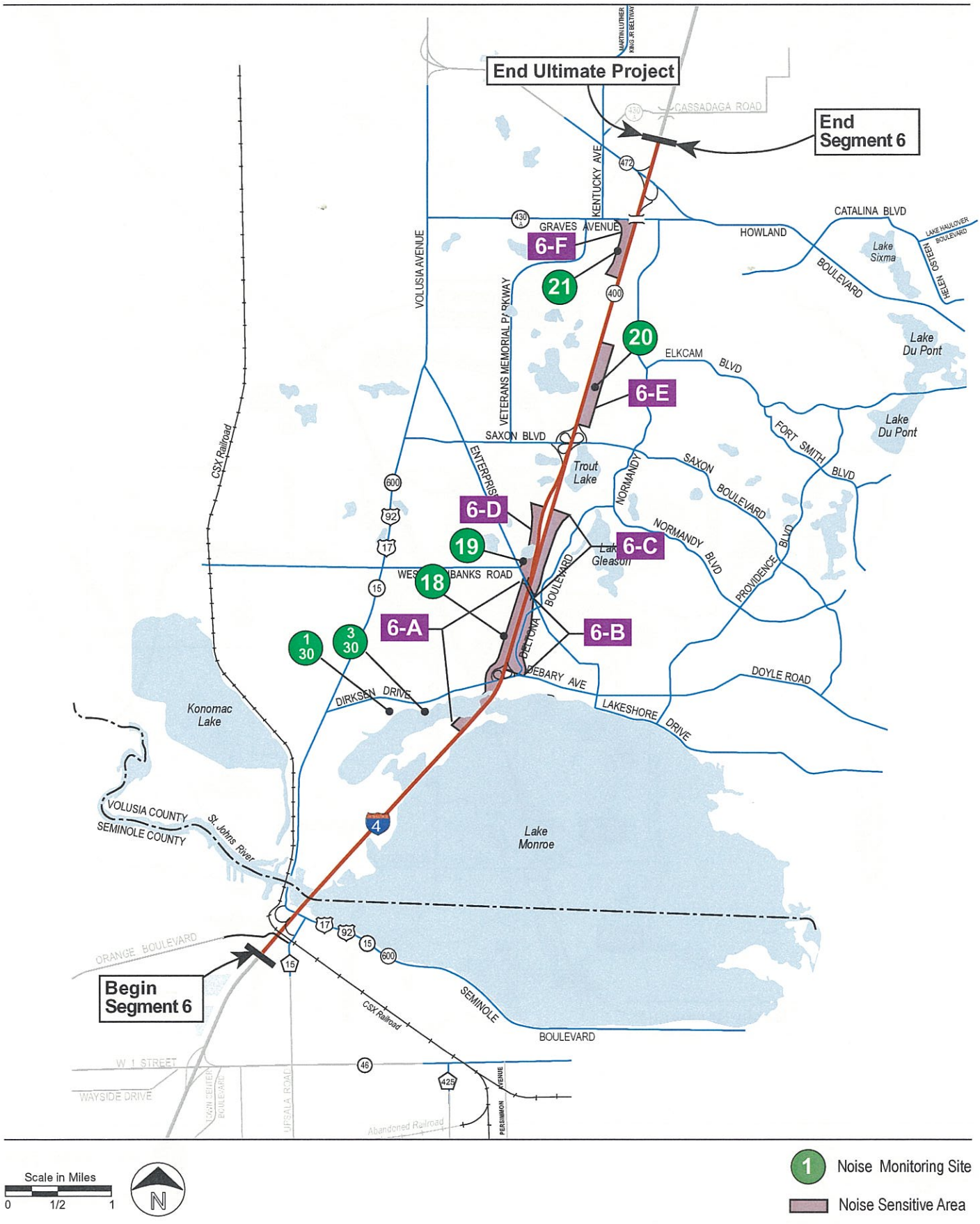


Figure 3-22
Noise Monitoring Locations

I-4 PD&E Study - Section 2
 Segment 6 of 6



Table 3-60. Summary of Existing Noise Monitoring

Site No.	NSA Site located in/near	Description	Land Use	Noise Levels (dBA)			Ground Surface Type
				Monitored	Predicted	Difference	
1	1-A	East of I-4 at the end of Weiser Street. (monitor 100 ft from center line of nearest travel lane at McKinley Apts.)	Residential	71.2	73.1	1.9	Soft
				70.9	73.2	2.3	
				70.0	72.9	2.9	
3	2-A 2-B	South of I-4 along 33rd St.; adjacent to Lakeshore Landings (monitor 110 ft from center line of nearest travel lane adjacent to Lakeshore Landings)	Residential	74.7	75.2	0.5	Soft
				74.5	74.4	-0.1	
				75.6	75.1	-0.5	
4	2-C	West of I-4 along South Parramore Avenue (monitor 500 ft from center line of nearest travel lane in a residential neighborhood at the edge of Lake Angel)	Residential	71.4	65.2	-6.2	Over water
				68.5	65.7	-2.8	
				68.7	66.2	-2.5	
5	2-F	East of I-4 at the end of Miller Street (monitor 75 ft from center line of the nearest travel lane across from residential neighborhood)	Residential	73.5	75.3	1.8	Hard
				73.6	75.4	1.8	
				73.5	75.8	2.3	
6	2-G 2-H	North of the East/West Expressway at the UCF baseball field (monitor 175 ft from center line of nearest travel lane adjacent to the UCF recreational / athletic area)	Institutional / Park	61.9	64.8	2.9	Soft
7	2-I	South of the East/West Expressway at Anderson and Lake (monitor 200 feet from center line of the nearest travel lane in residential neighborhood)	Residential	70.5	69.2	-1.3	Hard
				70.6	69.5	-1.1	
				70.4	69.5	-0.9	
8	2-I 2-J	South of the East/West Expressway at a cemetery (monitor 100 ft from center line of nearest travel lane near a cemetery across from residential area)	Park (Cemetery)	71.0	72.8	1.8	Soft
				70.4	72.3	1.9	
				70.1	72.3	2.2	
9	3-D	East of I-4 at the end of Evans Street (monitor 125 ft from center line of nearest travel lane in residential neighborhood near College Park area)	Residential	76.0	76.9	0.9	Hard
				76.1	77.1	1.0	
				76.7	77.6	0.9	
10	3-F	East of I-4 at the Calvary Assembly of God Church (monitor 225 feet from center line of nearest travel lane surrounded by residential areas)	Institutional	71.2	73.2	2.0	Hard
				70.8	73.2	2.4	
				70.8	73.0	2.2	
11	4-B	East of I-4 along Wymore Road. (monitor 120 ft from center line of nearest travel lane near cemetery adjacent to residential areas in Eatonville area)	Residential	69.9	70.8	1.9	Hard
				69.8	70.5	0.7	
				70.0	70.9	0.9	
12	4-D (near 4-C)	East of I-4 at the Holy Trinity Greek Orthodox Church (monitor 175 ft from center line of nearest travel lane near churches, schools, residences)	Institutional /Residential	68.6	70.1	1.5	Soft
				67.7	69.5	1.8	
				68.9	70.2	1.3	
14	4-G (near 4-F)	East of I-4 at the end of Hobson Street (monitor 160 ft from center line of nearest travel lane adjacent to residential area)	Residential	67.2	69.5	2.3	Combination of hard and soft
				67.2	69.5	2.3	
				67.6	69.8	2.2	
15	4-I (near 4-H)	West of I-4 at the Neighborhood Alliance Church (monitor 115 ft from center line of nearest travel lane across from Springwood Village Condos)	Institutional/ Residential	69.7	71.1	1.4	Soft
				69.8	71.0	1.2	
				69.9	71.0	1.1	
16	4-I (near 4-H)	East of I-4 at the end of Colonial Lane (monitor 250 ft from center line of nearest travel lane, across from Sleepy Hollow community)	Residential	66.9	67.9	1.0	Soft
				67.9	68.7	0.8	
				66.8	68.2	1.4	

3-241

Table 3-60. Summary of Existing Noise Monitoring (Continued)

Site No.	NSA Site located in/near	Description	Land Use	Noise Levels (dBA)			Ground Surface Type
				Monitored	Predicted	Difference	
17	4-K (near 4-L)	West of I-4 at the Wekiva Assembly of God (monitor 60 feet from center line of nearest travel lane across from residential area)	Institutional/ Residential	76.0	74.8	-1.2	Soft
				75.6	74.4	-1.2	
				75.3	74.6	-0.7	
18	6-A (near 6-B)	West of I-4 at a vacant lot adjacent to Cardinal Drive (monitor 70 ft from center line of nearest travel lane, across from residential area)	Residential	70.4	72.1	1.7	Soft
				68.7	70.6	1.9	
				68.2	69.9	1.7	
19	6-D	West of I-4 and N of Uncle Bob's Self Storage on Enterprise Road 8/5/98 10:44 – 11:14 a.m. (monitor 120 ft from center line of nearest travel lane across from residential areas)	Commercial/ Residential	67.9	n/a	n/a	Hard
20	6-E	East of I-4 at the end of Sullivan Street (monitor 110 ft from center line of nearest travel lane adjacent to residential neighborhood)	Residential	70.0	71.5	1.5	Soft
				71.2	72.3	1.1	
21	6-F	West of I-4 at a vacant lot adjacent to Countryside Drive (monitor 110 ft from center line of nearest travel lane in mobile home park)	Residential	71.4	71.8	0.4	Soft
				71.7	71.7	0.0	
				71.3	71.9	0.6	
23	2-D (near 2-C)	Pineloch Elementary School 8/6/98 8:48 – 9:18 a.m. (monitor 280 ft from center line of nearest travel lane across from residential areas)	Institutional/ Residential	68.7	n/a	n/a	Hard
24	2-E	Griffin Park residential area 8/5/98 2:05 – 2:35 p.m. (monitor 150 ft from center line of nearest travel lane in a residential neighborhood)	Residential	64.7	n/a	n/a	Soft
25	2-K	Parramore Neighborhood 8/6/98 9:35 – 10:05 a.m. (monitor 100 feet from center line of the East/West Expressway/SR 408 ramp)	Residential	66.1	n/a	n/a	Hard
26	near 2-K	Church St. Station Downtown Historic District 8/6/98 1:15 – 1:45 p.m. (Monitor #1 at corner of Garland and Pine, 140 ft from center line of nearest travel lane. Monitor #3 at corner of Garland and South, 220 ft from center line of nearest travel lane)	Commercial/ Historic	68.4 73.5	n/a	n/a	Hard
27	3-C	Matthews Park 8/6/98 10:20 – 10:50 a.m. (Monitor #1 was placed in the baseball field 200 feet from the center line of the nearest travel lane. Monitor #3 was placed in the center of the park, 350 feet from the center line of the nearest travel lane)	Park	71.6	n/a	n/a	Soft
				67.2			
28	3-H (near 3-G)	Killarney Elementary School (monitor 110 feet from center line of nearest travel lane across from Killarney Elementary School)	Institutional	72.5	71.0	-1.5	Soft
				67.1	68.1	1.0	
				66.9	68.2	1.3	
29	near 4-D	Cranes Roost 8/5/98 12:04 – 12:34 p.m. (monitor 1750 ft from center line of nearest travel lane)	Commercial/ Park	55.6	n/a	n/a	Over water
30	near 6-A	River Oaks Estates 8/5/98 9:35 – 10:05 a.m. (monitor #1 1250 ft from center line of nearest travel lane. Monitor #3 725 ft from center line of nearest travel lane, at far end of boat dock)	Residential	55.8	n/a	n/a	Over water
				57.0			

Note: Italicized text indicates public involvement noise monitoring sites (8 total). These sites were not used for model validation.

In addition to the model validation sites, the public involvement process has identified eight additional sites where noise issues are particularly sensitive. These sites were not used for model validation. These sites are presented in Table 3-60 (in italics) with the results of the monitoring events.

3.4.3.3 Existing Ambient Noise Levels

Existing ambient traffic noise levels monitored along the Ultimate project study corridor are discussed in Section 3.4.3.2 and presented in Table 3-60. Predicted existing and future-year noise levels for the previously identified noise sensitive areas were evaluated using the FDOT approved computer version of the *STAMINA 2.1* noise prediction model. A total of 10,732 sites were represented in the modeling effort. Section 4.4.3.3 presents predicted noise levels for each of the noise sensitive areas within the project limits. The *STAMINA 2.1* output files provided in the project files further document the predicted noise levels.

3.4.4 Contamination

A contamination screening evaluation study was completed in August 1998 and amended in May 1999. The results of the study are summarized in this section and documented in detail in the *Contamination Screening Evaluation Report* (August 1998) and in the I-4 PD&E Study SR 408 (East/West Expressway) *Contamination Screening Evaluation Report* (May 1999). The study was conducted in accordance with the methodology prescribed in Chapter 22 of the FDOT *PD&E Manual*.

3.4.4.1 Methodology

The presence of soil and/or groundwater contamination or hazardous substances within existing or proposed right-of-way can have a significant adverse impact on the cost and schedule to complete a transportation improvement project. Contaminated groundwater drawn into the dewatering system during construction could require special treatment and permitting prior to disposal. Contaminated soil unearthed during construction may require treatment and disposal and would not be useable to backfill excavations. Therefore, the early identification of potential contamination sites that could adversely impact the proposed project provides valuable information for the alternatives evaluation, design, right-of-way acquisition, and construction phases.

The contamination screening evaluation identified any known and potential hazardous material and petroleum contamination sites along the corridor, evaluated their potential to impact the proposed project, and provided recommendations for additional investigations where required. For the purpose of the contamination screening evaluation, the limits of the investigation were defined as approximately 300 feet on each side of the proposed Ultimate project corridor.

The information compiled from the screening evaluation was assessed according to risk evaluation guidelines developed by FDOT and described in the PD&E Guidelines. Using the FDOT risk rating system, each identified site was assigned a rating of "No," "Low," "Medium," or "High" based upon the information collected during the screening process. The risk rating assigned to a site indicates the potential for petroleum contamination or hazardous material involvement, which could adversely impact the proposed project.

As a result of the data collection efforts and field reconnaissance conducted as part of the screening process, a total of 255 sites were identified within the Ultimate project study area, of which 123 were rated "Low" or were far enough from the alignment to be of no concern to the project. Twenty-nine sites were given a risk rating of "Medium" and 103 have been assigned a rating of "High" for having potential petroleum or hazardous material contamination. Table 3-61 presents a breakdown of these 132 sites and the type of potential contamination involvement.

Table 3-61. Potential Contamination Sites by Risk Rating and Type

Site Rating	Contamination Type			Total
	Petroleum	Hazardous Material	Both	
Medium	19	2	8	29
High	57	4	42	103
Total	76	6	50	132

Table 3-62 lists the 132 potential sites from south to north using the site numbers given in the *Contamination Screening Evaluation Report* (August 1998) and the facility name, and they are shown on Figure 3-23. Sites located along SR 408 (East/West Expressway) have the designation "EW" following their number to facilitate identification. Also listed in the table are the kinds of contamination that may be present at each site.

Table 3-62. List of Potential Contamination Sites

Facility Name	Address	Site Rating	Hazardous (H) or Petroleum (P)	Nature of Potential Contamination
Segment 1				
16	Shell Station	6942 Sand Lake Road	High	H/P LUST
18	Chevron #42157	6908 Sand Lake Road	Medium	H/P LUST
19	7-Eleven Food Store #2968	7329 Sand Lake Road	High	P LUST
23	Texaco #025-0073	6941 Sand Lake Road	High	H/P LUST
27	7-Eleven Food Store #2131	7957 Turkey Creek Road	High	P LUST
38	Orlando MGPC, Inc.	5901 American Way	High	P LUST
40	Exxon #40262	6855 Grand National Drive	High	H/P LUST
Segment 2				
2EW	City of Orlando Lift Station	E. South Street	High	H/P UST
4EW	Former Gas Station	1204 South Street	High	H/P UST
8EW	Former Gas Station	702 S. Parramore Street	High	P LUST
10EW	Citgo	520 S. Orange Blossom Trail	High	H/P UST
11EW	Union 76-Persad	707 S. Orange Blossom Trail	High	P LUST, UST
12EW	Comfort Inn Downtown	720 S. Orange Blossom Trail	High	P LUST, UST
16EW	Former City Engineering Yard	1300 South Street	High	H/P UST
17EW	Former Residence	NW corner Lucerne Circle/Rosalind Avenue	High	H/P UST
18EW	Former Residence	NW corner Lucerne Circle/South Orange Avenue	High	H/P UST
19EW	Former Residence	NW corner Lucerne Circle/South Orange Avenue	High	H/P UST
20EW	Former Foam Rubber Warehouse	SW corner Anderson Street/Garland Avenue	High	H/P UST
21EW	Former Cleaners	NW corner Grace Road/CSX	High	H/P UST
22EW	Former Texas Oil Co.	NW corner Grace Road/CSX	High	H/P UST
23EW	Former City Pipe Yard	Across from CSX/Carter Street	High	H/P UST
24EW	Former Cleaner	NW corner America Street/S. Hughey Intersection	High	H/P UST
25EW	Former Brake Shoe Bonding Plant	North of Atlanta Avenue/America Street	High	H/P UST
26EW	Former Cleaners	North of Carter Street/west of Hughey Avenue	High	H/P UST
27EW	Former Gas Station	Under SR 408, east of Orange Blossom Trail	High	H/P UST
28EW	Former Gas Station	Under SR 408, west of Orange Blossom Trail	High	H/P UST
118	3400 Superplex	3400 S. Orange Blossom Trail	High	P LUST
143	Glassman	2930 S. Orange Blossom Trail	High	P LUST
146	Explosive Sounds Inc.	1234 W. 29 th Street	High	P LUST
171	Federal Express Corp – MCO	635 W. Michigan Street	Medium	H/P LUST
194	Merita Bakeries Depot – ORL	2200 S. Division Avenue	High	P LUST
200	Mobil #02-CP7	1901 Tallokas Avenue	Medium	H/P LUST
201	Conrad Yelvington Distrib.	410 W. Kaley Avenue	Medium	P LUST
204	Texaco #025-283	515 W. Kaley Avenue	High	H/P LUST
215	Commercial Iron & Metal Co. Inc.	317 and 415 W. Kaley Avenue	Medium	H/P LUST

Table 3-62. List of Potential Contamination Sites (Continued)

	Facility Name	Address	Site Rating	Hazardous (H) or Petroleum (P)	Nature of Potential Contamination
220	Sunshine Biscuits, Inc.	1825 S. Division Avenue	High	P	UST
221	Florida Steel Corporation	1818 Atlanta Avenue	High	P	UST
236	Florida Carbonic	510 18 th Street	High	P	UST
237	Curtin Property	512 18 th Street	High	P	LUST
240	A-1 Block Corp.	1617 S. Division Avenue	Medium	P	LUST
242	Springlock Scaffolding	1600 S. Division Avenue	High	P	UST
245	Architectural Sheet Metal	519 Conroy Street	High	P	LUST
246	Autowerks Haus Inc.	527 Conroy Street	High	H/P	LUST
249	Rinker Materials Corp. – K	1406 Atlanta Avenue	High	P	LUST
253	Schroeder Services	520 Indiana Street	High	P	UST
254	Salano, Daniel	521 Indiana Street	High	P	LUST
276	National Linen Service	1213 S. Division Street	High	H/P	LUST
279	Mid State Plumbing Inc.	1125 Atlanta Avenue	High	P	LUST
281	Hancock Sod	1034 S. Parramore Avenue	High	P	UST
284	Airport Limousine Service	400 W. Piedmont Street	High	H/P	LUST
300	Center for Drug Free Living	712 W. Gore Street	High	P	LUST
301	On Mark Mini Mart	626 W. Gore Street	High	P	UST
304	Mears Transportation Group	324 W. Gore Street	High	H/P	LUST
317	Mishalanie/Phil	718 S. Hughey Avenue	High	P	UST
320	Mid Florida Pools & Repairs Co.	714 Franklin Lane	Medium	P	UST
329	Florida Terrazzo Inc.	440 S. Hughey Avenue	High	P	UST
333	Orlando Refinishers	300 W. South Street	High	P	LUST
337	Lindberg Heat Treating Company	316 S. Hughey Street	High	H/P	UST
356	OPH Cleaners, Inc.	383 W. Church Street	High	H	UST
384	Century Plaza	135 W. Central Boulevard	High	P	UST
394	Trailways Bus System – OLD	30 N. Hughey Avenue	High	P	LUST
403	Federal Building – US Court	80 N. Hughey Avenue	Medium	P	UST
409	Chicone Properties	101 N. Garland Avenue	High	P	LUST
455	Greyhound Bus Lines	300 W. Amelia Street	Medium	P	LUST
461	MEK Motors	501 N. Garland Avenue	Medium	P	LUST
462	Consolidated Electric Sup	523 N. Garland Avenue	Medium	P	LUST
469	Reed Motors Inc.	601 N. Garland Avenue	High	H/P	LUST
475	Sentinel Communications Co.	633 N. Orange Avenue	Medium	H	---
479	Acme Glass	100 W. Colonial Drive	High	P	LUST
487	Uptown Orlando	700 N. Orange Avenue	High	P	LUST
487A	Northern Orlando Downtown Site	N.E. Quadrant of Orange Ave. and SR 50	High	H/P	----
488	Walkup Exterminating Inc.	770 N. Orange Avenue	High	P	LUST
492	Andersen, Garcia B. Trust	806 N. Orange Avenue	High	P	LUST
498	Braun AMC, Jeep, Renault, Inc.	911 N. Orange Avenue	Medium	P	LUST
Segment 3					
499	Dance Jeep Eagle Inc.	1000 N. Orange Avenue	Medium	H	LUST
500	Former Braun Cadillac	1000 N. Orange Avenue	Medium	P	LUST
502	Orlando City Lift Station	1000 N. Garland Avenue	Medium	P	UST
528	Spur #2261 Princeton	300 E. Princeton Street	High	P	UST
529/ 530	Exxon #5417	206 E. Princeton Street	High	H/P	LUST
533	James Service Center Inc. Shell Station	235 E. Princeton Street	Medium	H/P	LUST
544	Lil Champ Food Store #99	123 King Street	High	P	UST
550	Massey Services Inc.	3210 Clay Street	Medium	P	UST
552	Texaco Food Mart #103-08	325 E. Par Street	Medium	P	LUST
553	Links Automotive	130 E. Par Street & I-4	High	P	LUST
556	Calvary Assembly of God	1099 Clay Street/1199 Clay Street	Medium	P	UST
565	Sunway Market	822 Formosa Avenue	High	P	LUST

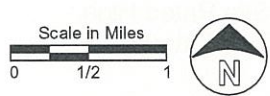
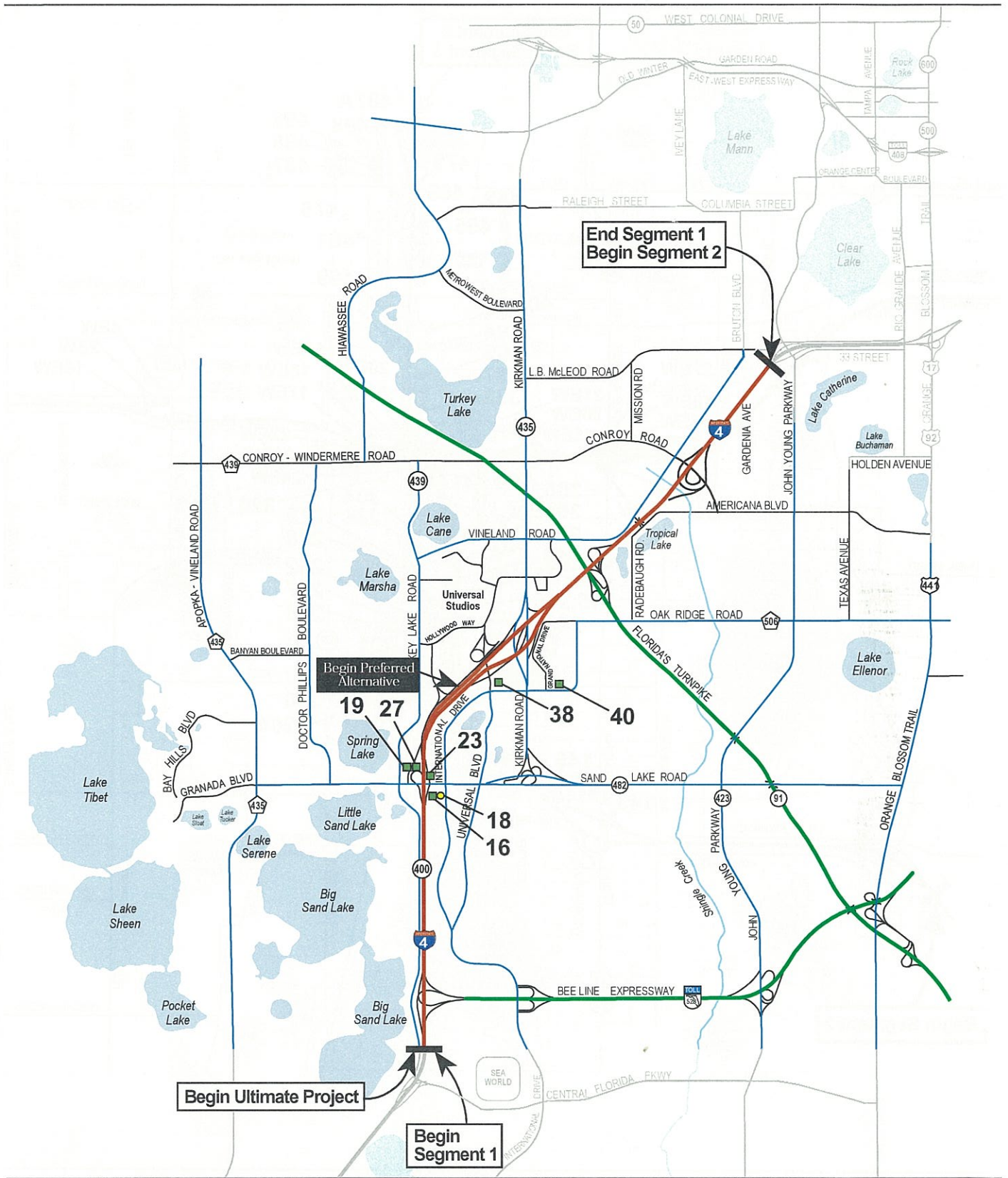
Table 3-62. List of Potential Contamination Sites (Continued)

	Facility Name	Address	Site Rating	Hazardous (H) or Petroleum (P)	Nature of Potential Contamination
566	Cumberland Farms #0926	800 Formosa Avenue	High	P	UST
592	Sunoco	2324 Fairbanks Avenue	High	H/P	LUST
593	Mobil #03A62	2324 W. Fairbanks Avenue	High	H/P	LUST
599	Nort Northam Collection	2650 W. Fairbanks Avenue & I-4	High	P	LUST
604	Amoco #429	2325 W. Fairbanks Avenue	High	H/P	LUST
606	Giles Property	2617 W. Fairbanks Avenue	High	P	LUST
Segment 4					
612	Mobil #02-JJG	2701 Lee Road & I-4	High	H/P	LUST
614	Chevron #42155	2626 Lee Road	High	H/P	LUST
617	AAMCO Transmission	600 Lee Road	Medium	P	UST
620	Texaco #025-004	610 Lee Road	High	H/P	LUST
624	Mobil #02-CQQ	630 Lee Road & I-4	High	H/P	LUST
646	Applied Electronic Technology	257 Lake Destiny Drive	High	H	---
647	7-Eleven Food Store #2560	351 N. Lake Destiny Drive	High	P	LUST
657	Brumlik Property	300 S. Wymore Road	High	P	LUST
670	Shell Station	SR 436 & I-4	High	H/P	UST
675	Chevron # 47972	I-4 & Highway 436	High	P	LUST
683	Amoco #461-Altamonte Food	109 E. Altamonte Drive	High	H/P	LUST
691	Mobil #02-H3B	201 W. Highway 436	High	H/P	LUST
713	Tri-State Motor Transit C	510 Douglas Avenue	High	P	LUST
714	FL Convoy, Inc.	510 Douglas Avenue	High	P	LUST
715	US Pool Construction Use	540 Douglas Avenue	High	P	UST
723	Altamonte Springs Op Ctr	607 N. Douglas Avenue	High	H	---
724	Florida Power Corp - Altamonte	607 Douglas Avenue	High	P	UST
739	Mobil #02-DMG	2040 W. SR 434	Medium	H/P	LUST
741	Exxon #5252	2010 SR 434	High	H/P	LUST
741A	Siemens/City of Lake Mary Site	400 Rinehart Road	High	H/P	---
743	Chevron #47974	I-4 & SR 434	High	H/P	LUST
745	Mobil #02-H5R	1999 W. SR 434	High	H/P	LUST
746	Shell Station	1998 SR 434 & I-4	High	P	UST
Segment 5					
787	Mobil #02-DHW	125 S. Oregon Avenue	Medium	P	LUST
789	Mobil #02-D68	101 Oregon Avenue	High	P	UST
790	Amoco#60331 - ACA#089	4800 SR 46 West	High	P	LUST
791	Northgate West/Seminole	SR 46 & Oregon Avenue	High	P	LUST
793	Chevron #47968-Hall's	SR 46 & I-4	Medium	P	LUST
794	Cathys Fruit Stand	I-4 & SR 46	High	P	LUST
795	Speedway #9859	4730 Highway 46	High	P	LUST
Segment 6					
796B	Fred's Tire	Upsala Road and Orange Blvd.	Medium	unknown	---
848	Deltona Best Western Motel	481 Deltona Boulevard	Medium	P	UST
856	Cumberland Farms #0988	785 Deltona Boulevard	Medium	P	UST
857	Deltona BP#24521	790 Deltona Boulevard	High	H/P	LUST
861	Amoco - Deltona	801 Deltona Boulevard	High	H/P	LUST
863	Circle K #4385	819 Deltona Boulevard	Medium	H/P	UST
866	Lil Champ Food Store #121	880 Deltona Boulevard	High	H/P	LUST
867	Deltona Blvd Chevron	900 Deltona Boulevard	Medium	H/P	LUST
873	Browning's Convenience Store	2123 Saxon Boulevard	High	P	UST
879	Alternations Unlimited & C	2411 E. Graves Avenue	High	H	UST

Refer to the Contamination Screening Evaluation Report (Geotechnical and Environmental Consultants, Inc., August 1998, amended May 1999) for additional site data, descriptions, addresses, and photographs.

UST - underground storage tank

LUST - leaking underground storage tank



Note: Site numbers were taken from the I-4 PD&E Study - Section 2 Contamination Screening Evaluation Report (August 1998)

■ Site Rated High
● Site Rated Medium



Figure 3-23
Potential Contamination Sites

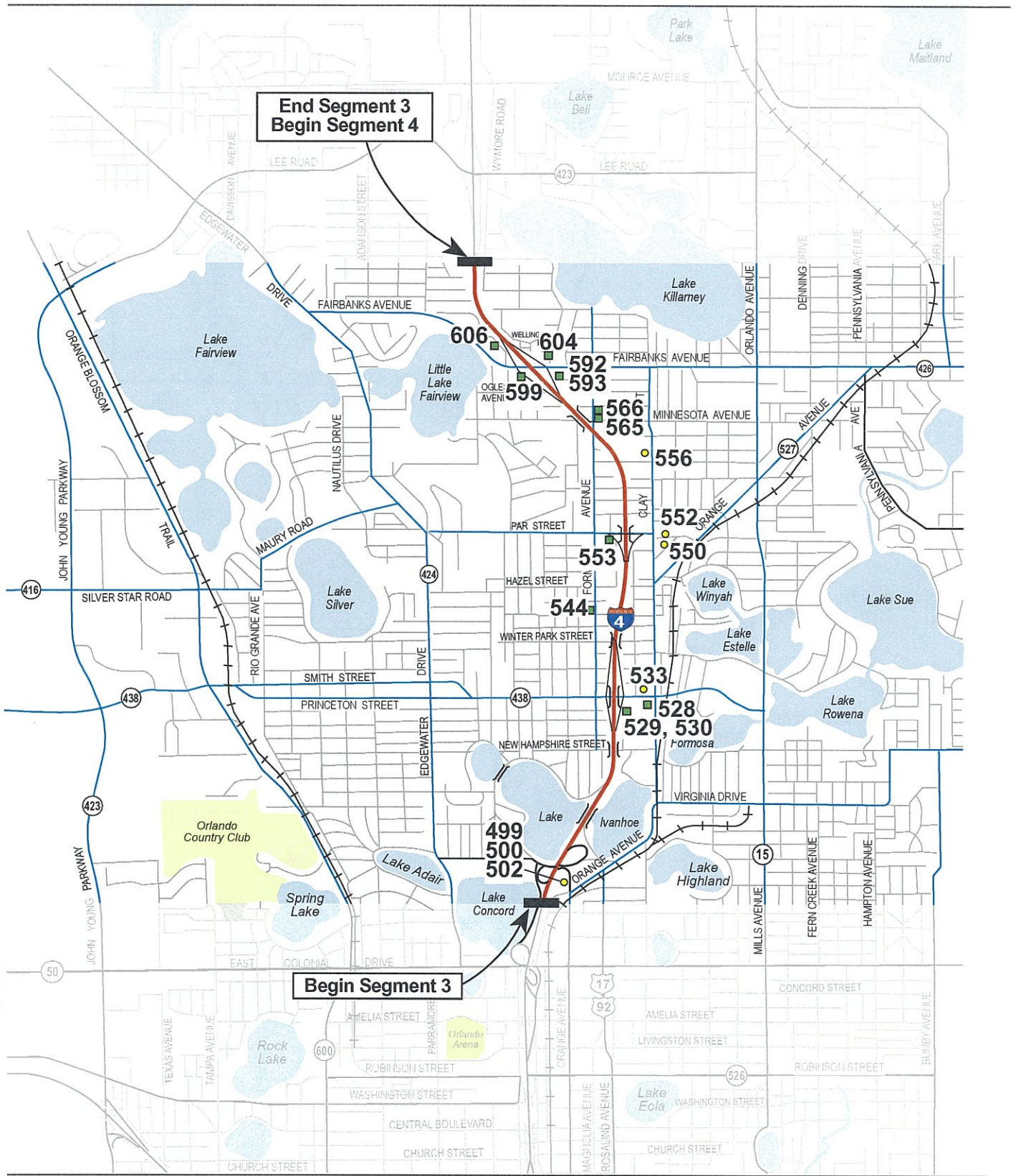
I-4 PD&E Study - Section 2
Segment 1 of 6



**Figure 3-23
Potential Contamination Sites**

I-4 PD&E Study - Section 2
Segment 2 of 6

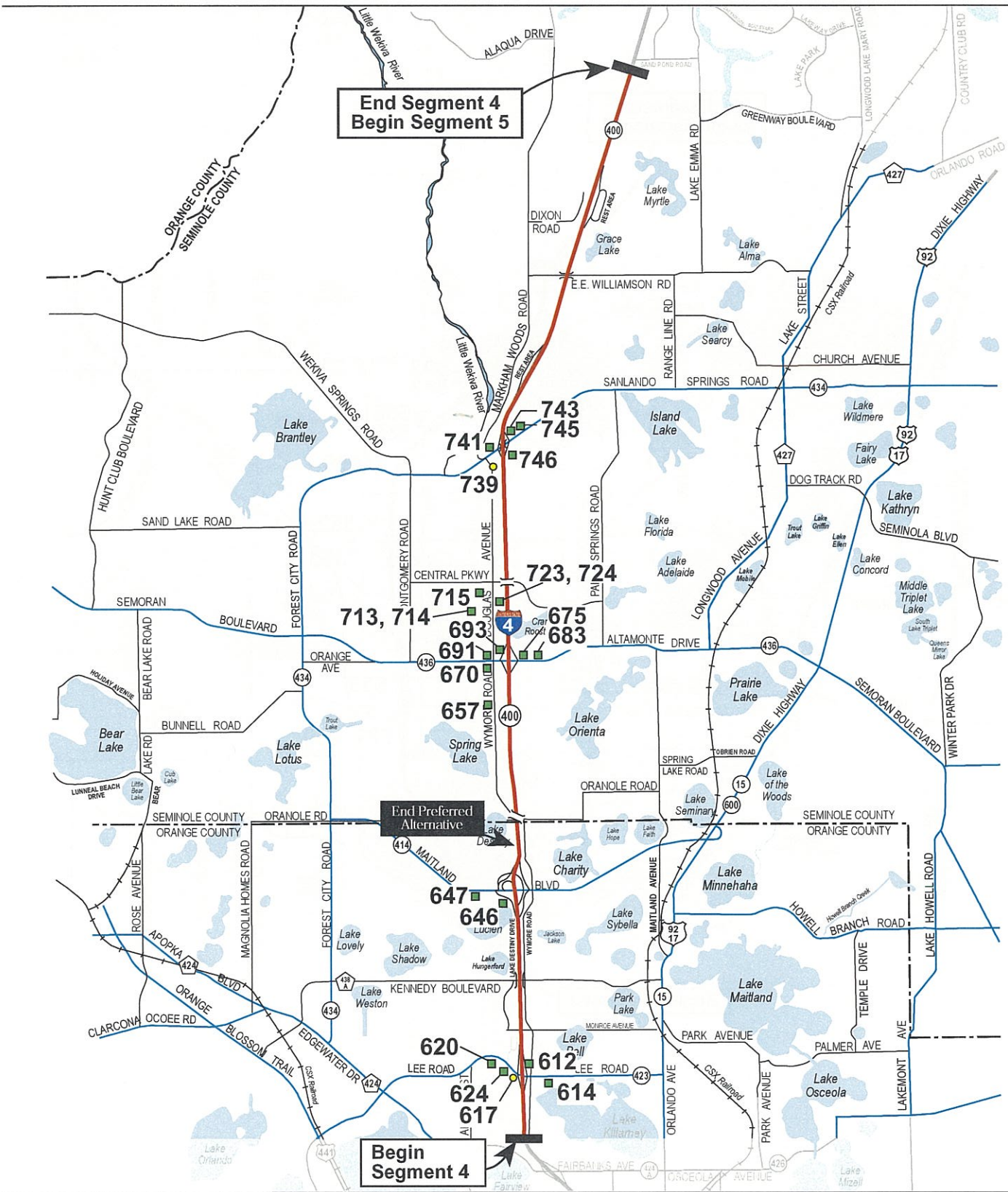




**Figure 3-23
Potential Contamination Sites**

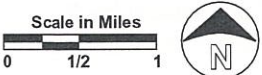
I-4 PD&E Study - Section 2
Segment 3 of 6





End Segment 4
Begin Segment 5

Begin
Segment 4



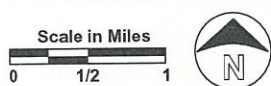
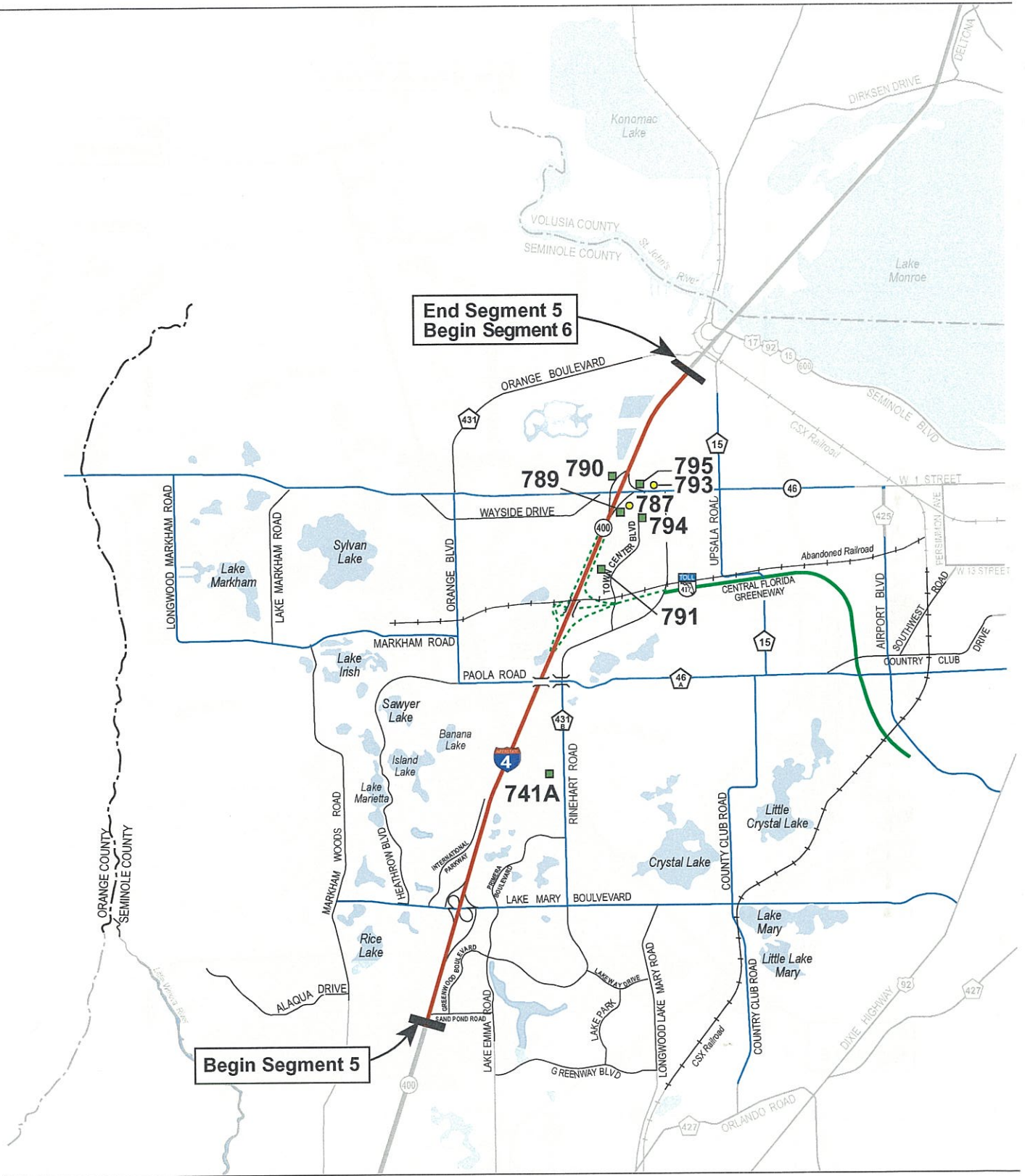
Note: Site numbers were taken from the I-4 PD&E Study - Section 2 Contamination Screening Evaluation Report (August 1998)

- Site Rated High
- Site Rated Medium

Figure 3-23
Potential Contamination Sites

I-4 PD&E Study - Section 2
Segment 4 of 6





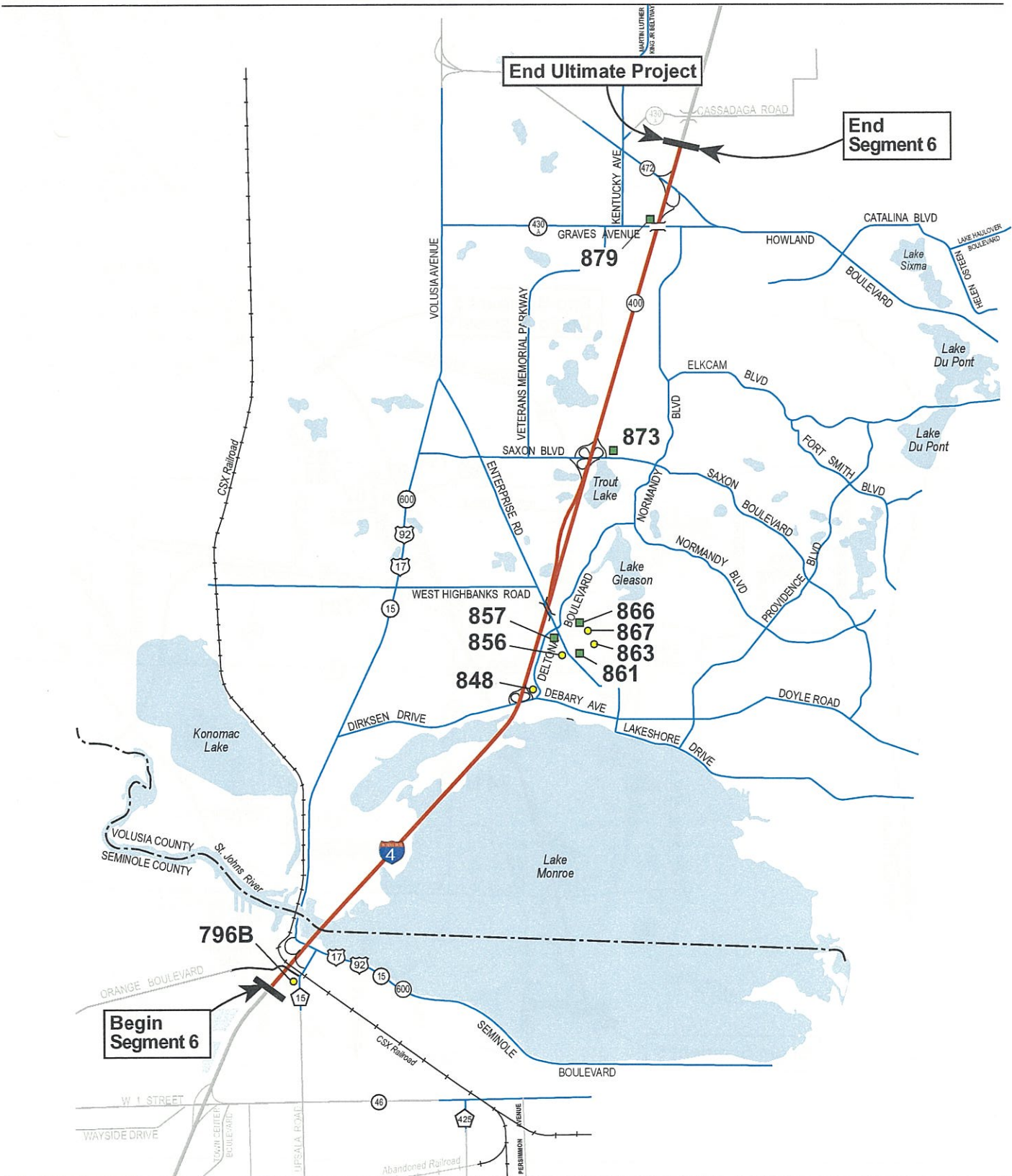
Note: Site numbers were taken from the I-4 PD&E Study - Section 2 Contamination Screening Evaluation Report (August 1998)

- Site Rated High
- Site Rated Medium



Figure 3-23
Potential Contamination Sites

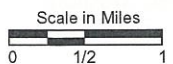
I-4 PD&E Study - Section 2
Segment 5 of 6



End Ultimate Project

End Segment 6

Begin Segment 6



Note: Site numbers were taken from the I-4 PD&E Study - Section 2 Contamination Screening Evaluation Report (August 1998)

- Site Rated High
- Site Rated Medium

Figure 3-23
Potential Contamination Sites

I-4 PD&E Study - Section 2
Segment 6 of 6



The Sanborn File Map reviews revealed a total of 13 former gas stations, dry cleaners, and other commercial sites, including a City Engineering Yard at 1300 South Street, which were demolished to construct SR 408 (East/West Expressway). There were no tank closure requirements at the time demolitions (late 1960s to 1970) and, therefore, a potential exists that petroleum or hazardous material contamination may exist beneath SR 408. Based on the location (beneath the embankment fill or bridges used to construct SR 408), these former facilities have been assigned a contamination risk potential of High. These facilities are designated as 2EW through 28EW.

Applying the risk rating categories in the evaluation process, these sites were determined to have some potential for hazardous material or petroleum contamination impacts to the proposed project. Businesses that maintain underground storage tanks (UST) for petroleum products or sites that previously contained USTs constitute the vast majority of these sites. The majority of these sites are listed as leaking underground storage tanks (LUSTs). Regulatory agency records are sometimes limited in information; therefore, a LUST designation does not confirm the absence or presence of an underground storage tank. If regulatory agency files identify that contaminated soil and/or groundwater or hazardous materials exist on a site, this information is included in the table. Where this information is not included, it can be assumed that the existence or extent of contamination is not known.

Regulatory databases have been reviewed for any change in regulatory status of previously documented sites and to identify any new potential contamination sites that may affect the project. No substantial changes or new sites were identified.

A complete list of the sites as well as detailed information about each is contained in the *Contamination Screening Evaluation Report* (August 1998) and the *I-4 PD&E East/West Expressway Contamination Screening Evaluation Report* (May 1999), previously referenced. A discussion of the potential contamination site impacts is provided in Chapter 4, Section 4.4.4.

3.4.5 Floodplains and Regulatory Floodways

Protection, analysis, mitigation, and documentation of floodplains and floodways has been provided in accordance with the requirements set forth in Executive Order 11988, *Floodplain Management*, US DOT Order 5650.2, *Floodplain Management and Protection*, FHPM 6-7-3-2 and 23CFR650A. The intent of these regulations is to avoid or minimize encroachments within the 100-year (base) floodplain, where practicable, and to avoid supporting land use development that is incompatible with floodplain values.

The Ultimate project corridor contains two distinct varieties of base floodplain involvement: 100-year floodplain associated with lake basins, and cross culverts. Information on the floodplains associated with lake basins was determined using Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) for Orange, Seminole, and Volusia Counties; the Orange County Lake Index; as well as available basin and watershed studies. The base flood for cross culverts was determined by utilizing FDOT construction plans, available basin and watershed studies, and an analysis of each culvert in its existing condition. The analysis of each of these existing floodplain types can be found in the *Location Hydraulics Report* (August 2000).

Floodplains are sparsely present along the majority of the I-4 corridor and heavily present near the St. Johns River and Lake Monroe. There are two regulated floodways along the Ultimate project study corridor: Shingle Creek and the St. Johns River. The floodplain involvement for this study is presented below by segment; floodplains that are impacted with the proposed improvements are identified with an "Area" designation. Each discussion will identify floodplain and floodway areas near the I-4 corridor as well as any historical flooding issues.

3.4.5.1 Segment 1

The majority of Segment 1 is situated above the 100-year base floodplain; however, there are two floodplains and one floodway adjacent to the Ultimate project corridor in this Segment. Figure 3-24 depicts the 100-year floodplain areas, which have been defined by using the City of Orlando FEMA FIRM, Community Panel Number 120186 0020D; and for Orange County, 120179 0375C. The following is a discussion regarding each of these floodplain/floodway areas:

- Area A - This Zone "A" floodplain is located at the I-4/Kirkman Road interchange and is an isolated floodplain area not associated with any water body. There are two existing cross culverts, 6 and 7, north of the interchange, which have exhibited minor flooding (see Section 3.4.7 Drainage and Hydrology, Figure 3-25 (map A), for the culvert locations).
- Area B - This Zone "A" floodplain is located north of the I-4/Kirkman Road interchange and is associated with culvert 7 described above.
- Area C - This Zone "A2" floodplain is located at Shingle Creek, which is a FEMA regulated floodway.

3.4.5.2 Segments 2 and 3

Segments 2 and 3 are located above the 100-year base floodplain except for the floodplains designated as D and E in Figure 3-24. These floodplains were delineated using the City of Orlando FEMA FIRM, Community Panel Number 120186 0015D; and for Orange County, 120179 0200B. No history of flooding is recorded for these floodplains. The following is discussion regarding each of these floodplain areas:

- The Clear Lake and Lake Catherine floodplains are located at the I-4/John Young Parkway interchange near the I-4 corridor and will not be impacted in the proposed condition.
- Area D - This Zone "A3" floodplain is associated with Lake Concord.
- Area E - This Zone "A3" floodplain is associated with Lake Ivanhoe.
- The Lake Fairview floodplain is located at the I-4/Fairbanks Avenue interchange and will not be impacted in the future condition.

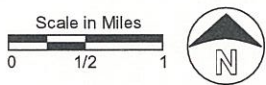
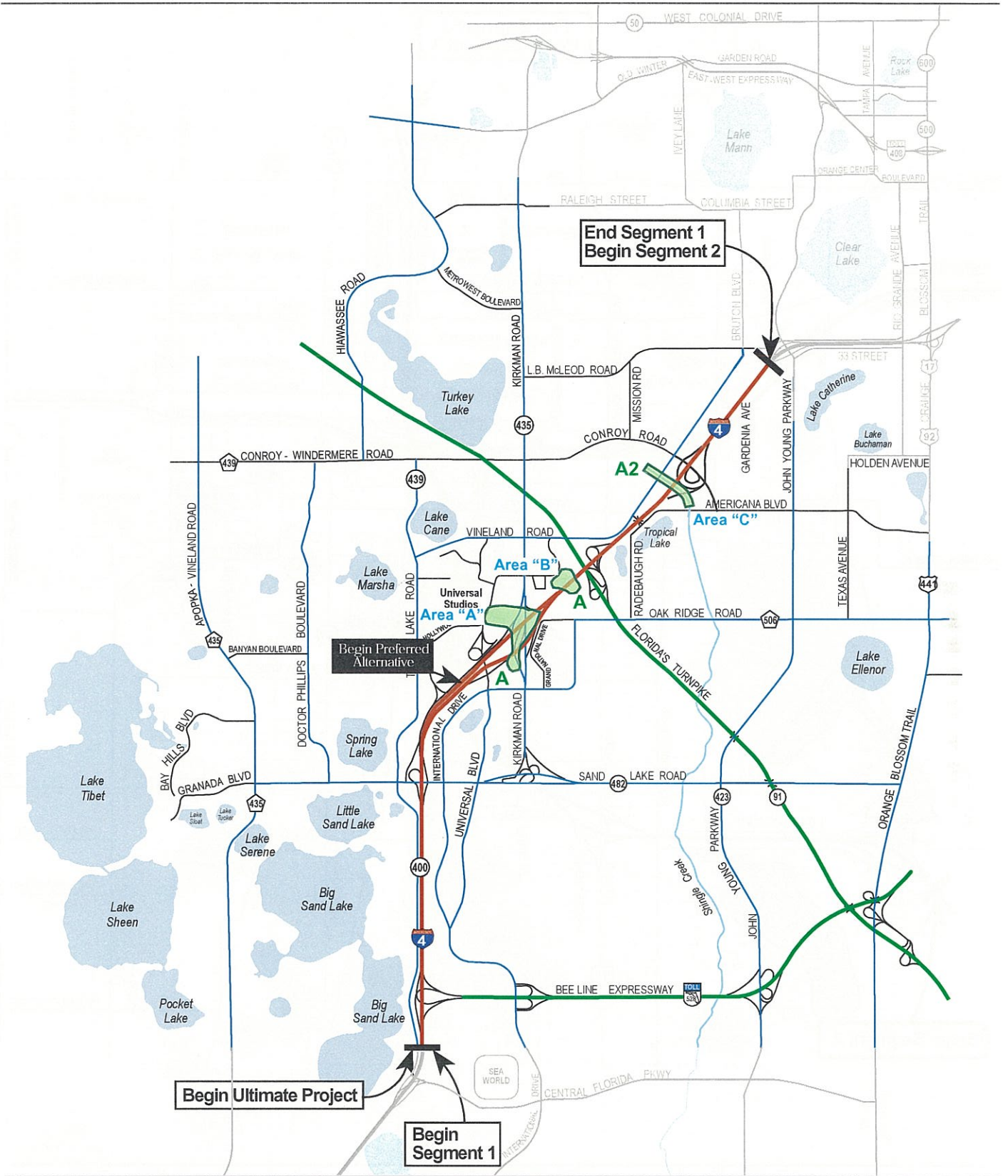
3.4.5.3 Segments 4 and 5

The majority of Segments 4 and 5 is located above the 100-year base floodplain except for the areas delineated on Figure 3-24. The floodplains were determined using the following FEMA FIRM Community Panels:

- City of Maitland - 120184 0005B
- City of Altamonte Springs - 120290 0010B
- Seminole County - 120289 0030B, -0040C, -0110B, -0120B and -0130B

There have been historical cyclic flooding problems associated with Cranes Roost and Grace Lake, which will be discussed in the following treatment on the floodplain areas:

- The Lake Killarney, Lake Bell, and the unnamed depressional area floodplains located at the I-4/Lee Road interchange will not be impacted in the future condition.
- The Hungerford Lake, Lake Lucien, and Lake Destiny floodplains located south of the I-4/Maitland Boulevard interchange will not be impacted by the proposed improvements.
- The Lake Destiny floodplain located north of the I-4/Maitland Boulevard interchange will not be impacted in the future condition.

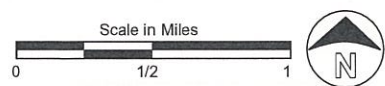
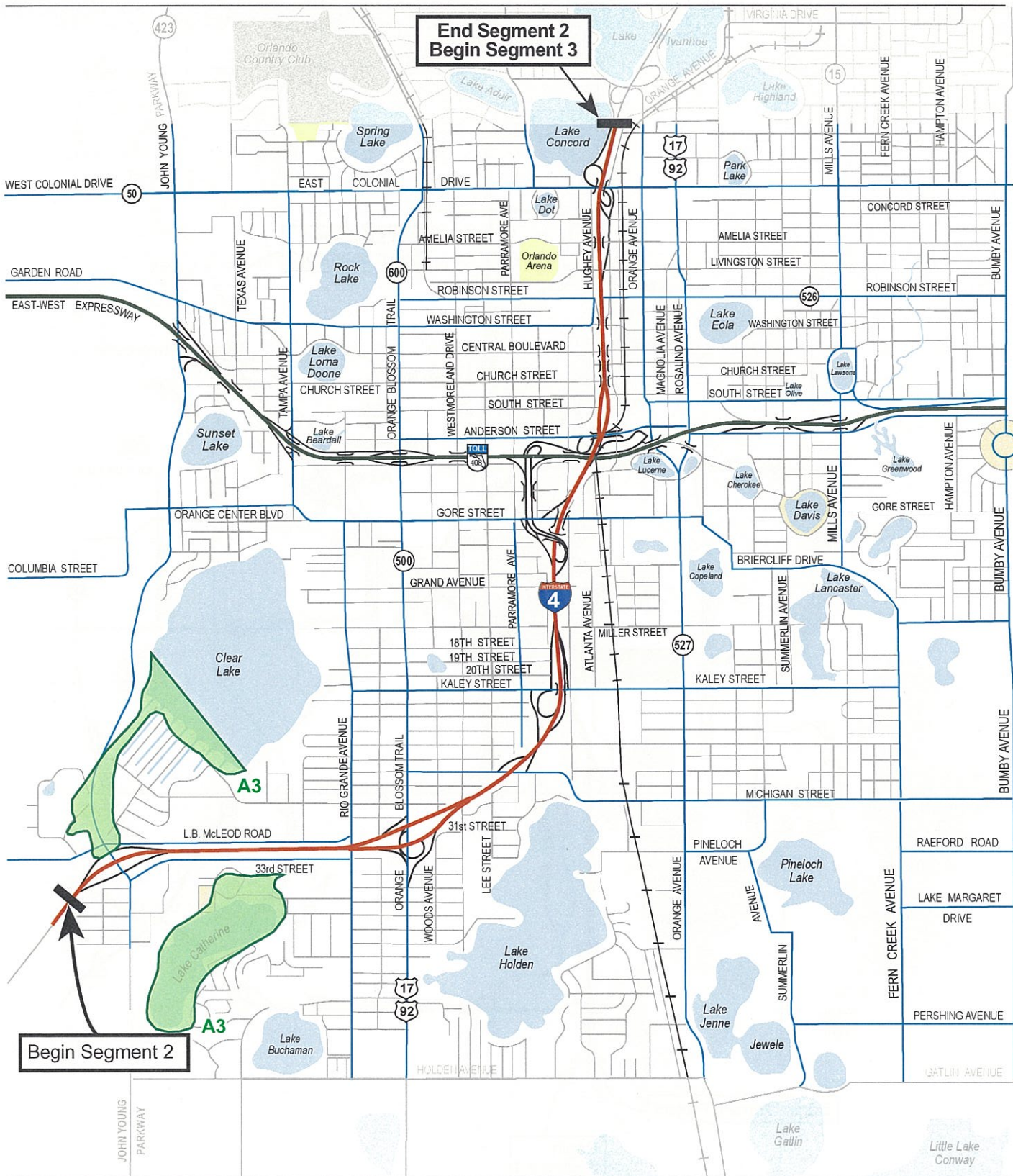


- A Floodplain and Zone Designation
- X Area "X" Designation for floodplains proposed to be impacted by future improvements



Figure 3-24
Floodplains and Floodways

I-4 PD&E Study - Section 2
Segment 1 of 6

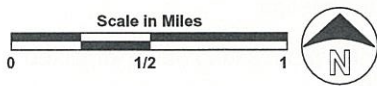
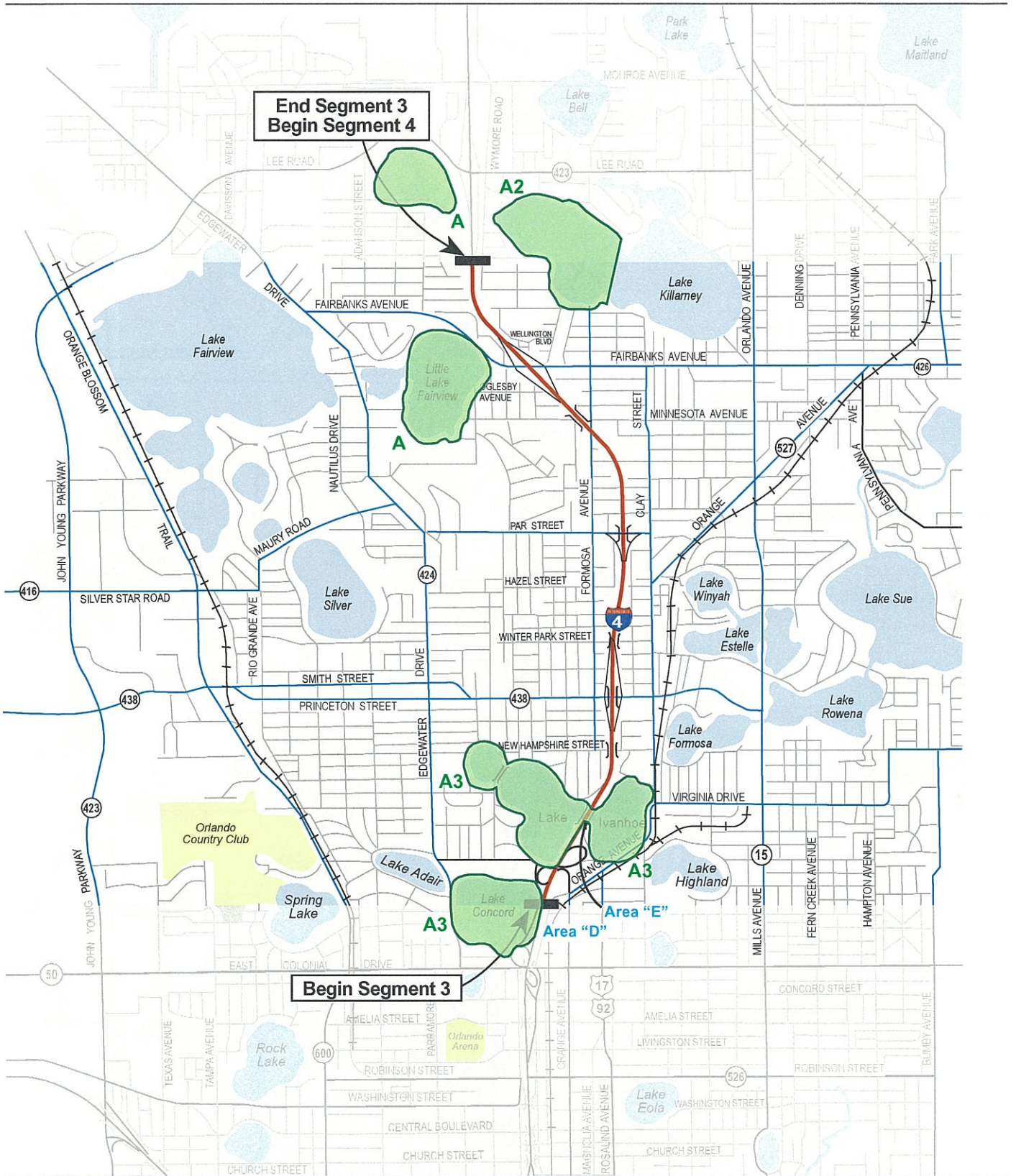


- Floodplain and Zone Designation
- Designation for floodplains proposed to be impacted by future improvements

Figure 3-24
Floodplains and Floodways

I-4 PD&E Study - Section 2
 Segment 2 of 6

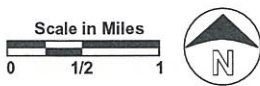
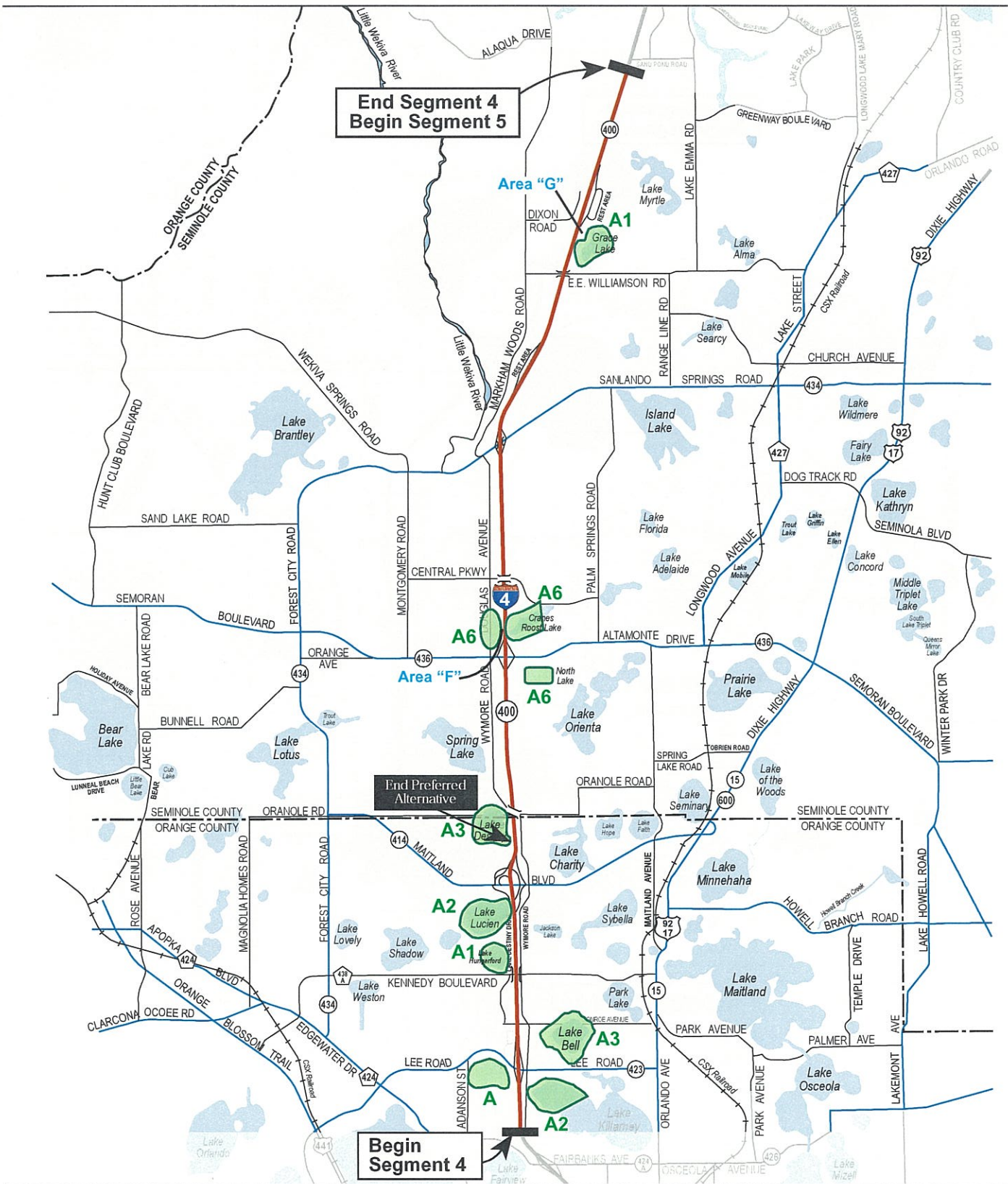




- A Floodplain and Zone Designation
- Area "X" Designation for floodplains proposed to be impacted by future improvements



Figure 3-24
Floodplains and Floodways

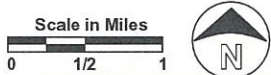
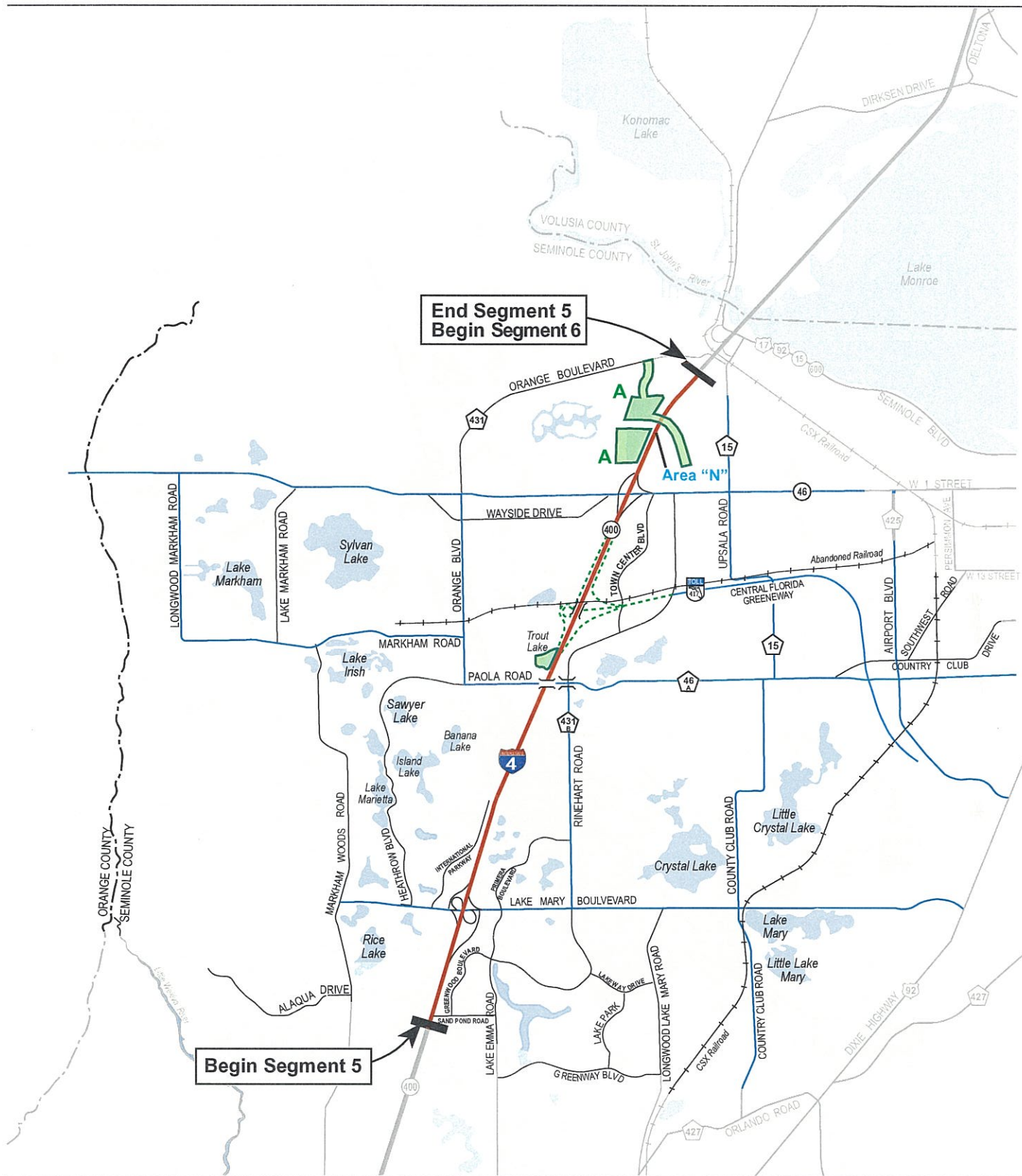


- A Floodplain and Zone Designation
- Area "X" Designation for floodplains proposed to be impacted by future improvements

Figure 3-24
Floodplains and Floodways

I-4 PD&E Study - Section 2
Segment 4 of 6



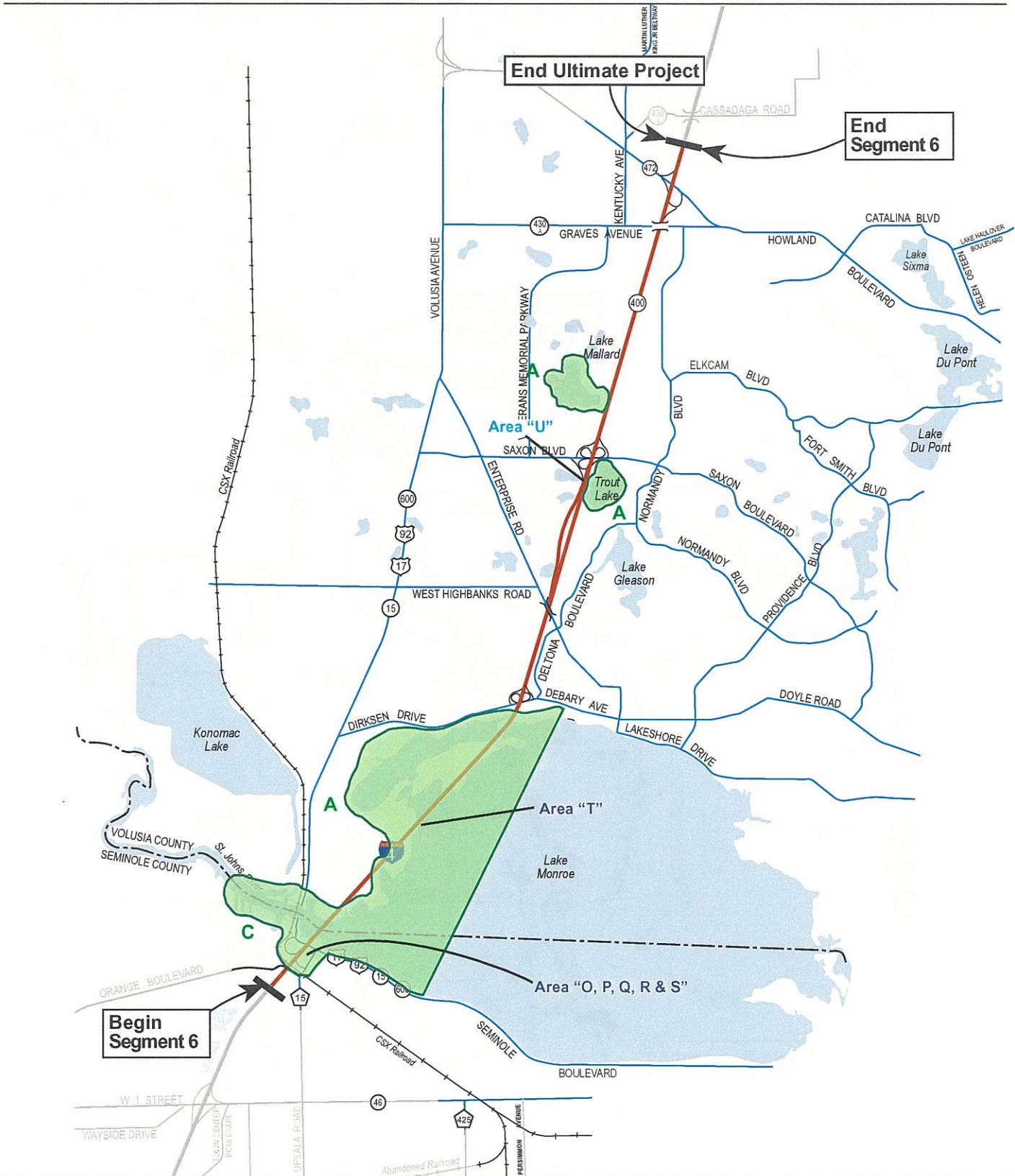


-  **A** Floodplain and Zone Designation
-  **Area "N"** Designation for floodplains proposed to be impacted by future improvements



**Figure 3-24
Floodplains and Floodways**

*I-4 PD&E Study - Section 2
Segment 5 of 6*

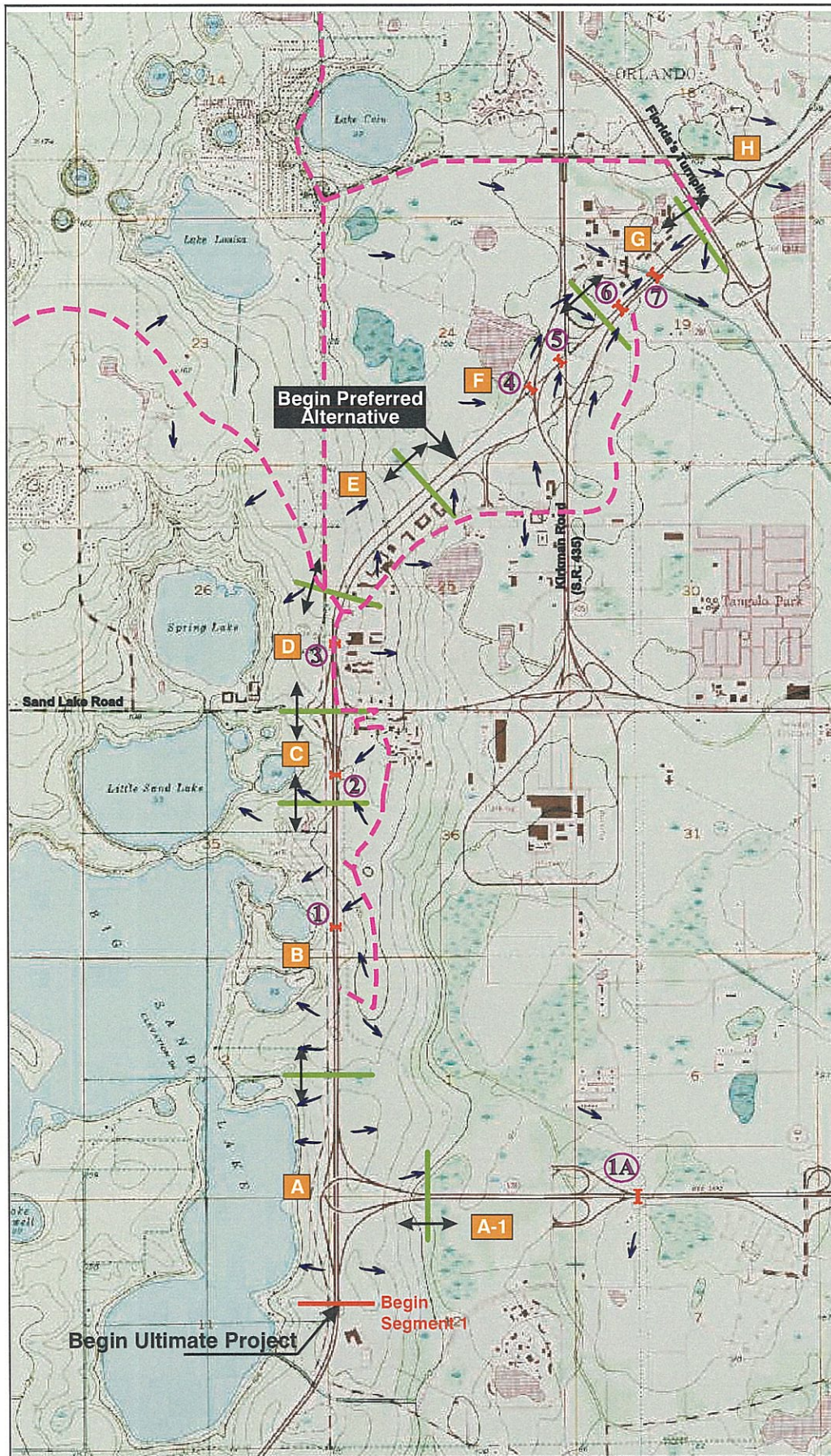


- **A** Floodplain and Zone Designation
- **Area "X"** Designation for floodplains proposed to be impacted by future improvements

Figure 3-24
Floodplains and Floodways

I-4 PD&E Study - Section 2
 Segment 6 of 6

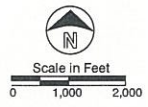




LEGEND

- Interstate Highways
- Federal Highways
- State Roads
- County Roads
- Railroads
- County Line
- Existing Culvert
- Drainage Boundary
- Flow Direction
- Culvert Designation
- Drainage Basin

INDEX

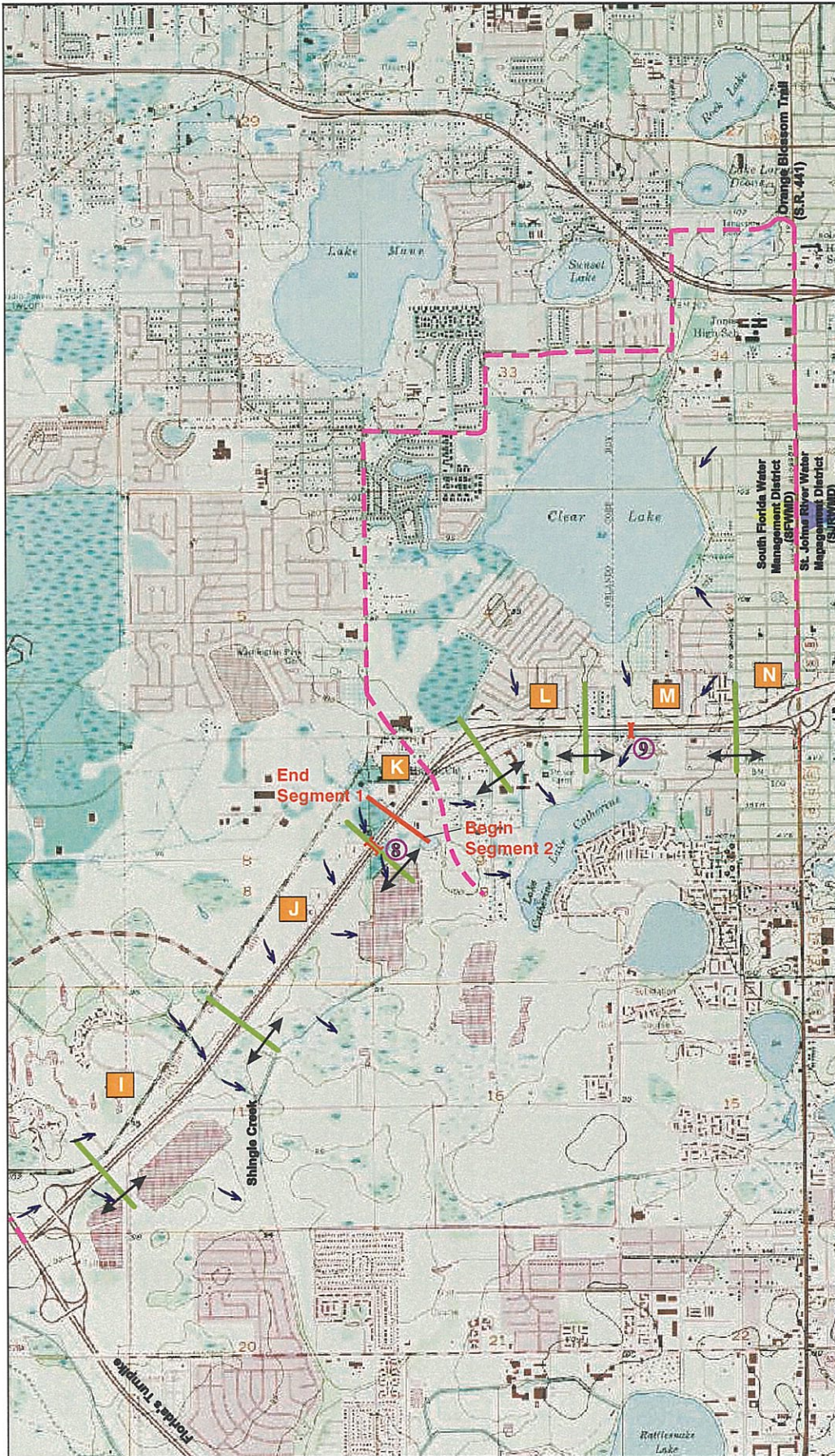


Prepared from USGS Quadrangle Maps:
 Windermere Forest City Orange City
 Lake Jessamine Casselberry Lake Helen
 Orlando West Sanford SW
 Orlando East Sanford



Figure 3-25
Existing Drainage Characteristics

I-4 PD&E Study - Section 2
 Map A (Southern Portion of Segment 1)



LEGEND

- Interstate Highways
- Federal Highways
- State Roads
- County Roads
- Railroads
- County Line
- Existing Culvert
- Drainage Boundary
- Flow Direction
- Culvert Designation
- Drainage Basin

INDEX

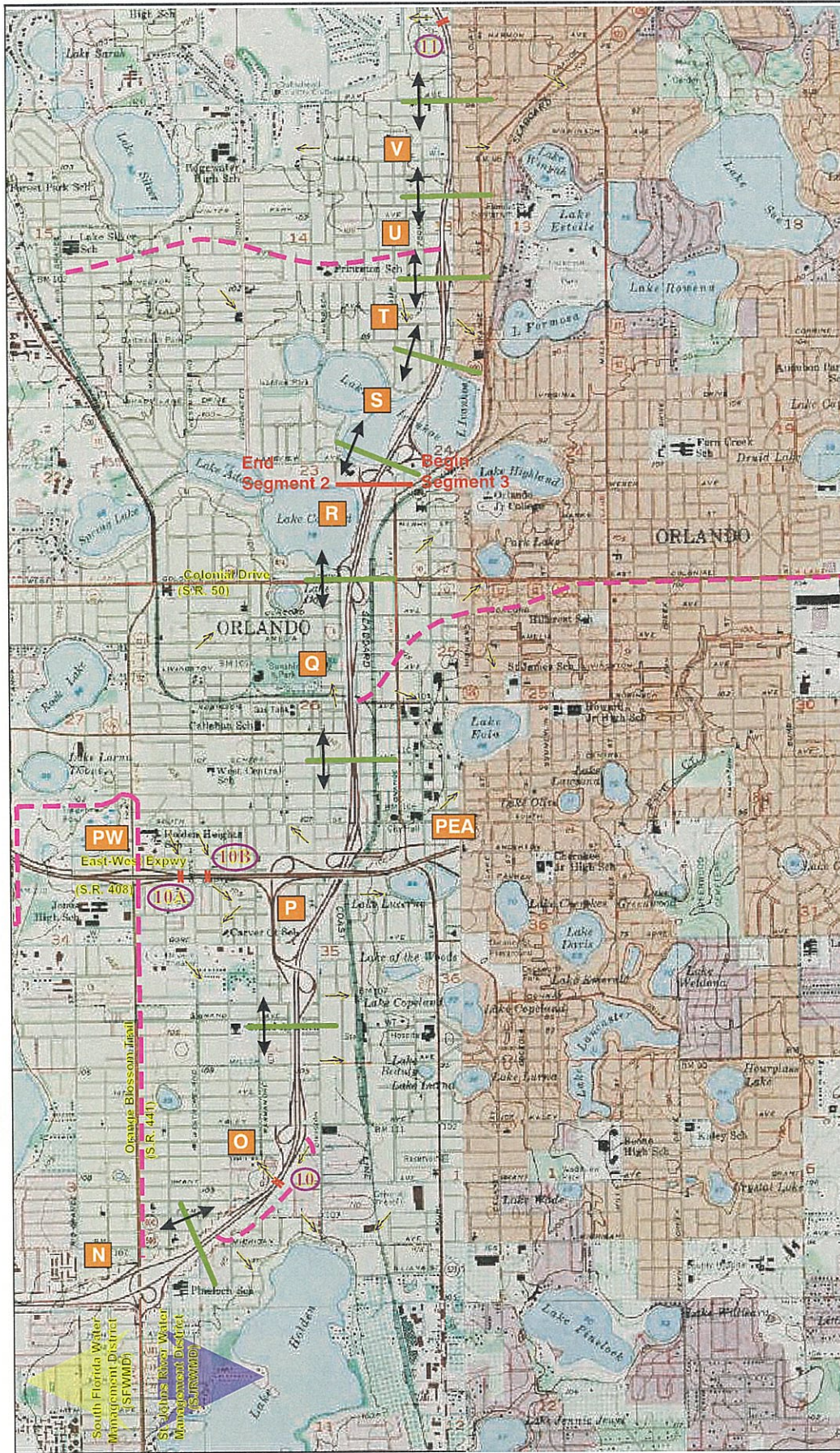
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Prepared from USGS Quadrangle Maps:
 Windermere Forest City Orange City
 Lake Jessamine Casselberry Lake Helen
 Orlando West Sanford SW
 Orlando East Sanford

Figure 3-25
Existing Drainage Characteristics

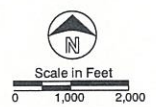
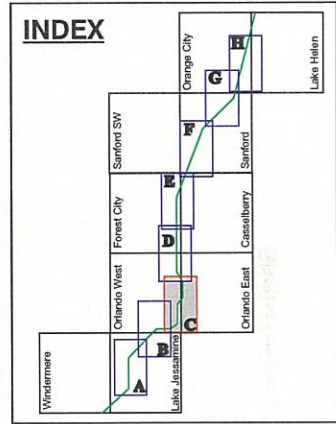
I-4 PD&E Study - Section 2
 Map B (Northern Portion of Segment 1 and Southern Portion of Segment 2)





LEGEND

- Interstate Highways
- Federal Highways
- State Roads
- County Roads
- Railroads
- County Line
- Existing Culvert
- Drainage Boundary
- Flow Direction
- Culvert Designation
- Drainage Basin



Prepared from USGS Quadrangle Maps:
 Windermere Forest City Orange City
 Lake Jessamine Casselberry Lake Helen
 Orlando West Sanford SW
 Orlando East Sanford



Figure 3-25
Existing Drainage Characteristics

I-4 PD&E Study - Section 2
 Map C (Northern Portion of Segment 2 and Southern Portion of Segment 3)

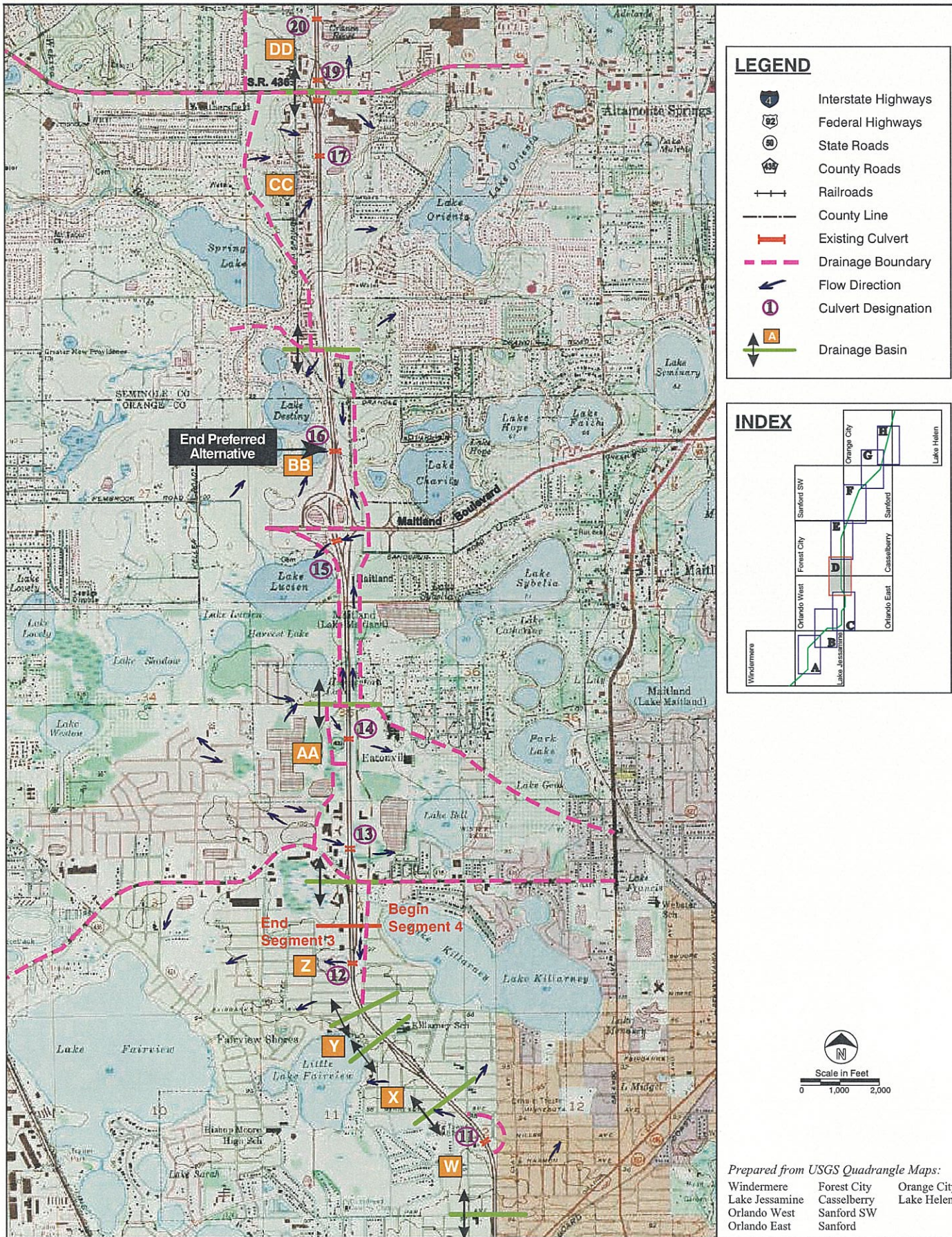
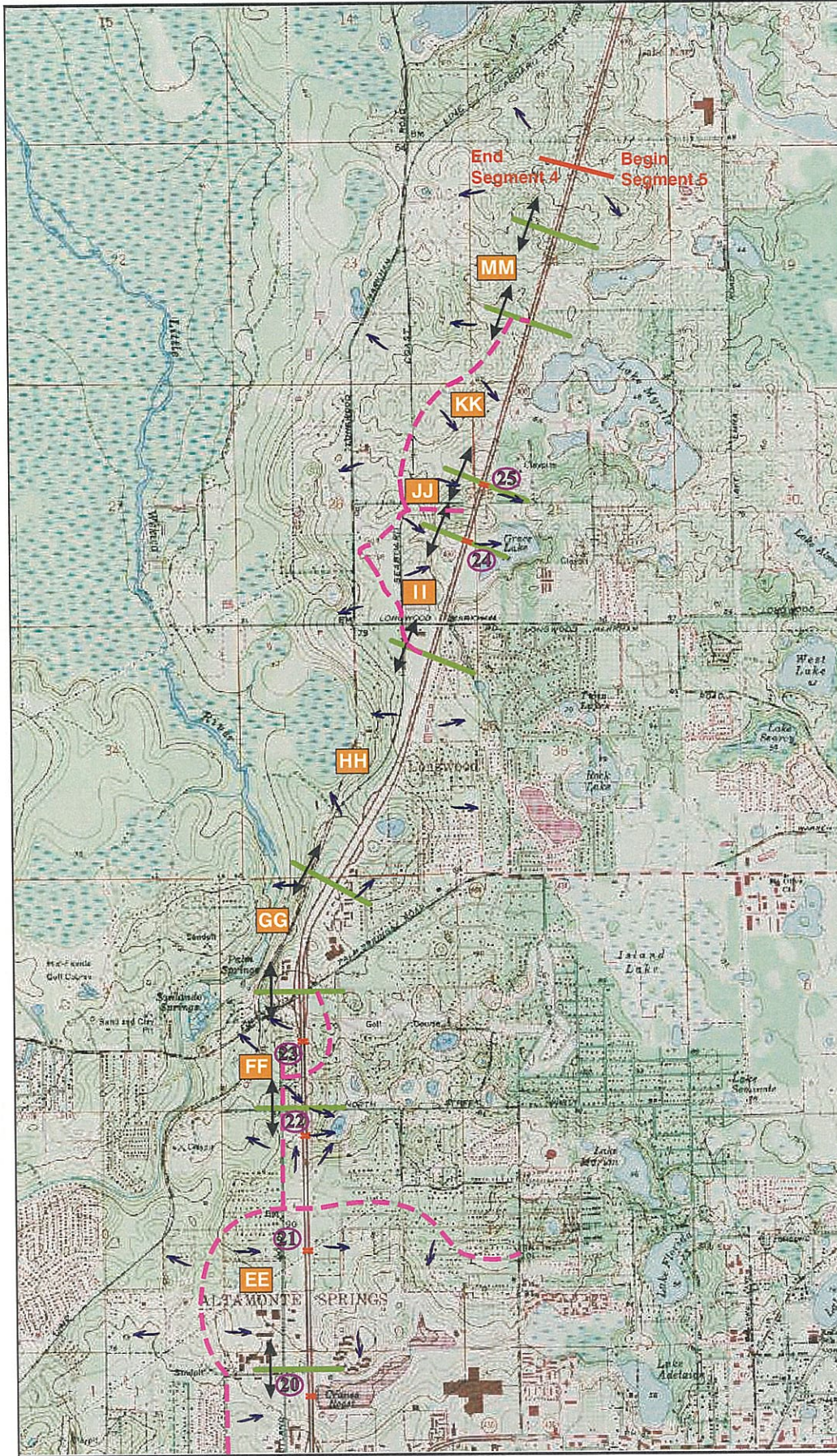


Figure 3-25
Existing Drainage Characteristics

I-4 PD&E Study - Section 2
 Map D (Northern Portion of Segment 3 and Southern Portion of Segment 4)

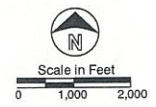




LEGEND

- Interstate Highways
- Federal Highways
- State Roads
- County Roads
- Railroads
- County Line
- Existing Culvert
- Drainage Boundary
- Flow Direction
- Culvert Designation
- Drainage Basin

INDEX



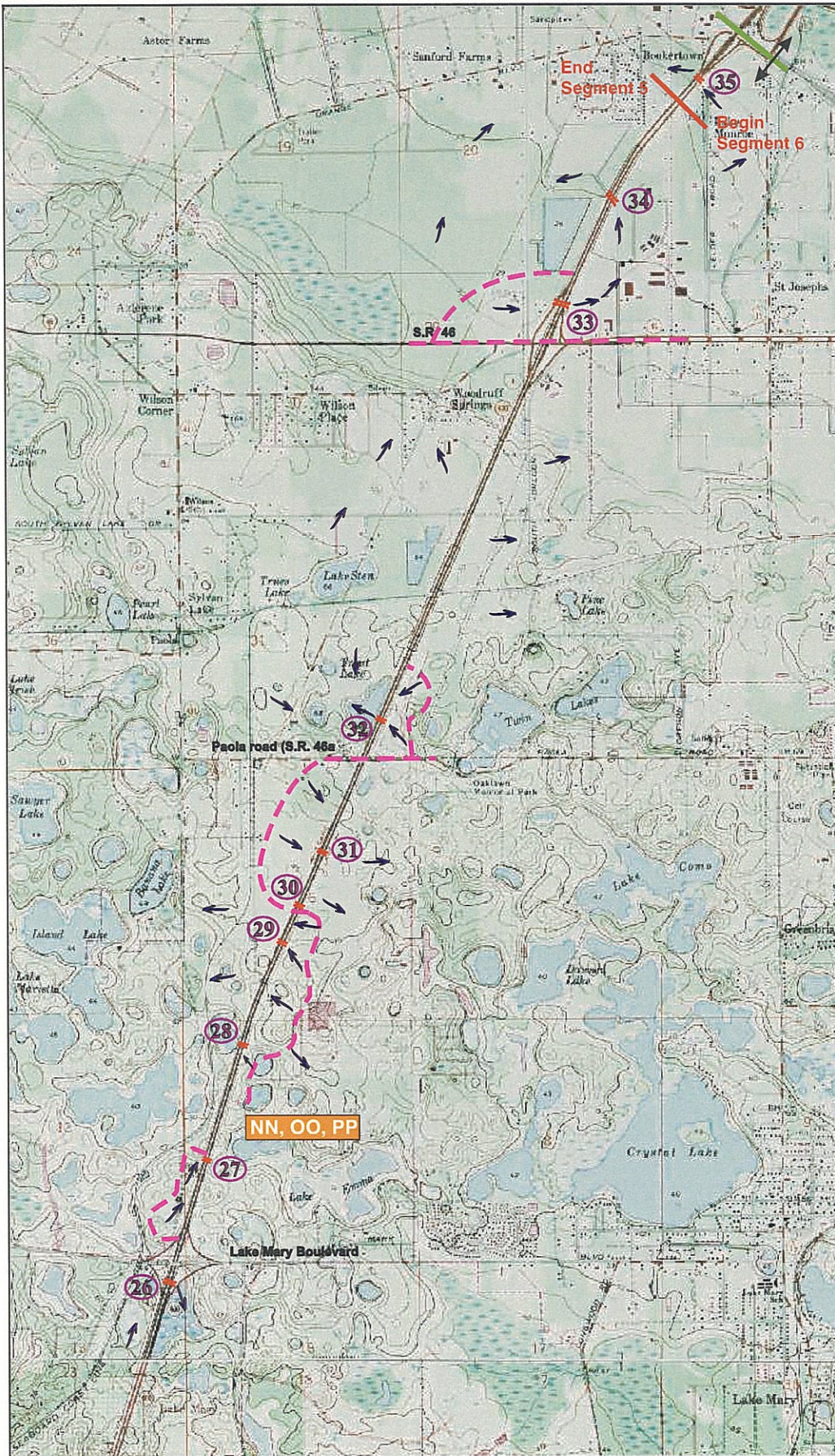
Prepared from USGS Quadrangle Maps:
 Windermere Forest City Orange City
 Lake Jessamine Casselberry Lake Helen
 Orlando West Sanford SW
 Orlando East Sanford



Figure 3-25
Existing Drainage Characteristics

I-4 PD&E Study - Section 2

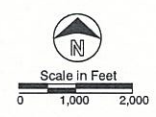
Map E (Northern Portion of Segment 4 and Southern Portion of Segment 5)



LEGEND

- Interstate Highways
- Federal Highways
- State Roads
- County Roads
- Railroads
- County Line
- Existing Culvert
- Drainage Boundary
- Flow Direction
- Culvert Designation
- Drainage Basin

INDEX

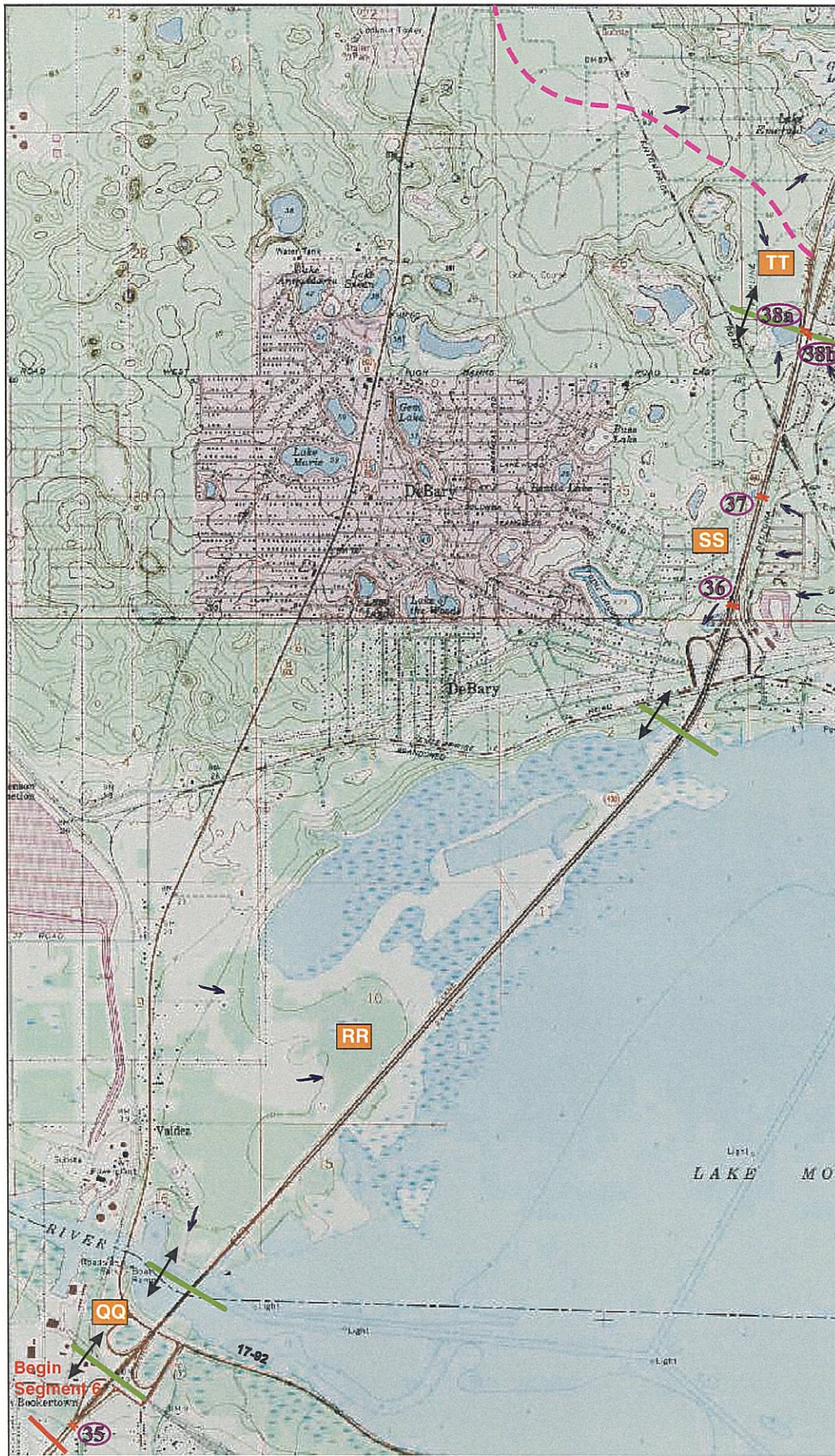


Prepared from USGS Quadrangle Maps:
 Windermere Forest City Orange City
 Lake Jessamine Casselberry Lake Helen
 Orlando West Sanford SW
 Orlando East Sanford

Figure 3-25
Existing Drainage Characteristics

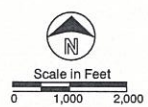
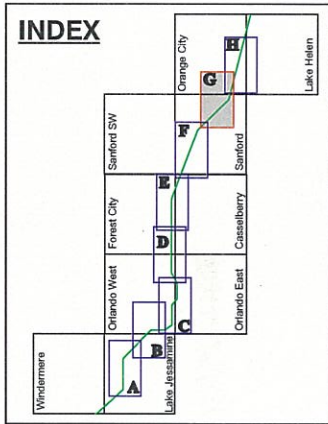
I-4 PD&E Study - Section 2
 Map F (Northern Portion of Segment 5 and Southern Portion of Segment 6)





LEGEND

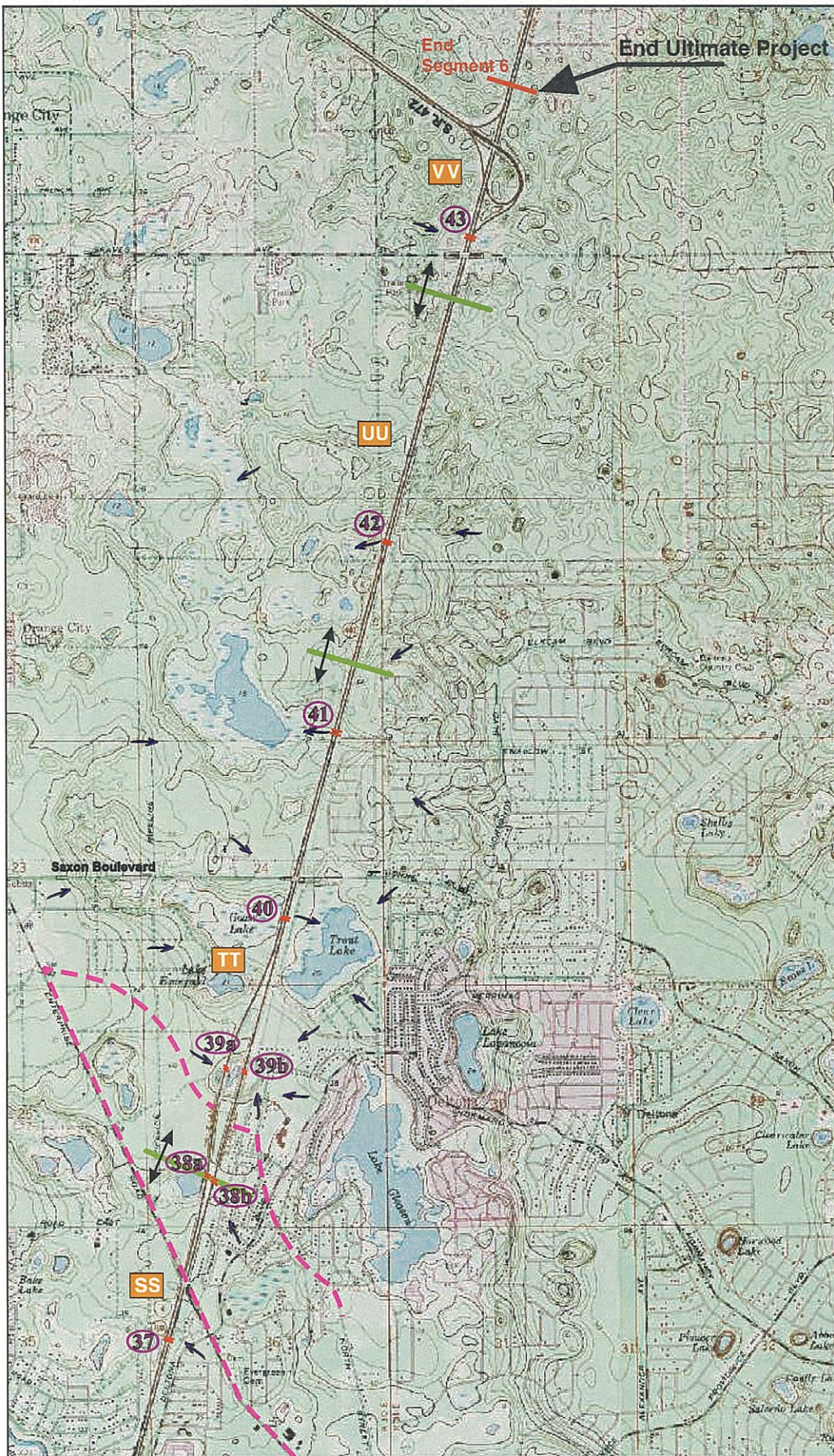
- Interstate Highways
- Federal Highways
- State Roads
- County Roads
- Railroads
- County Line
- Existing Culvert
- Drainage Boundary
- Flow Direction
- Culvert Designation
- Drainage Basin



Prepared from USGS Quadrangle Maps:
 Windermere Forest City Orange City
 Lake Jessamine Casselberry Lake Helen
 Orlando West Sanford SW
 Orlando East Sanford



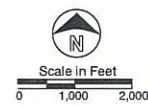
Figure 3-25
Existing Drainage Characteristics
I-4 PD&E Study - Section 2
 Map G (Southern Portion of Segment 6)



LEGEND

- Interstate Highways
- Federal Highways
- State Roads
- County Roads
- Railroads
- County Line
- Existing Culvert
- Drainage Boundary
- Flow Direction
- Culvert Designation
- Drainage Basin

INDEX



Prepared from USGS Quadrangle Maps:
 Windermere Forest City Orange City
 Lake Jessamine Casselberry Lake Helen
 Orlando West Sanford SW
 Orlando East Sanford

Figure 3-25
Existing Drainage Characteristics
 I-4 PD&E Study - Section 2
 Map H (Northern Portion of Segment 6)



- Area F - This Zone "A6" floodplain is associated with Cranes Roost. There is a history of flooding problems associated with Cranes Roost, which are directly related to the fact that the flood stages are controlled via a pumping station. The water from the pumping station discharges to the Little Wekiva River and is subject to stringent pumping constraints to maintain a minimum pollution loading at its outfall. Therefore, when any permitted pumping, stage, or turbidity threshold is met, the pumping operation must cease, which increases the surface elevation in Cranes Roost and causes the flooding problems.
- Area G - This Zone "A3" floodplain is associated with Grace Lake. During the original construction of I-4, Grace Lake was bisected by the interstate and hydraulically connected by a cross culvert, identified as structure 24 on Figure 3-25 (map E) in Section 3.4.7. During higher stages, the lake fills to its original bank line by backing into structure 24 and flooding the lake remnant west of I-4. This flooding was part of the I-4 original design and does not affect the interstate during these high stage events. The Trout Lake floodplain north of the I-4/Paola Road interchange will not be impacted in the proposed condition.
- Area N - This Zone "A" floodplain is located north of the I-4/SR 46 interchange and is associated with the Lockhart-Smith Canal.

3.4.5.4 Segment 6

The majority of Segment 6 is located above the 100-year base floodplain except for the areas delineated on Figure 3-24. The floodplains were determined using the following FEMA FIRM Community Panels:

- Seminole County - 120184 0030B
- Volusia County - 125155 0475C and 125155 0600C

There have been historical cyclic flooding problems at Saxon Boulevard, which will be discussed in the following treatment on the floodplain areas:

- Area O - This Zone "C" floodplain is located at the I-4/US 17-92 interchange and is associated with the Lake Monroe floodplain.
- Areas P, Q, R, and S - These Zone "A" floodplains are located at the I-4/US 17-92 interchange and are associated with the Lake Monroe floodplain.
- The St. Johns River is considered a FEMA regulated floodway.
- Area T - This Zone "A" floodplain is located through the Lake Monroe "flats" between US 17-92 and Dirksen Drive/DeBary Avenue. The original construction of I-4 bisected this existing floodplain. No flooding of I-4 has been recorded through this area; however, areas along the Lake Monroe perimeter have experienced higher flood stages due to increased development within the historical 100-year floodplain.
- Area U - This Zone "A" floodplain is located at the I-4/Saxon Boulevard interchange and is associated with Trout Lake. There is a history of flooding problems at this interchange that are not directly related to the floodplain or the existing cross culvert, which hydraulically connects Goose and Trout Lakes. The recorded flooding took place during 1994-1995 in which a combination of events occurred that affected the interchange and the surrounding areas. During that time, above average rainfall and an increase in the potentiometric surface elevation of the Floridan aquifer reduced the recharge rate to the aquifer from Goose and Trout Lakes. As a result, the static water surface elevation in both of these lakes increased with each rainfall event and portions of the interchange ramps were encroached; the I-4 mainline remained flood free. This is a cyclic event and during normal conditions, recharge to the aquifer provides adequate recovery for these lakes.

- The Mallard Lake floodplain located north of the I-4/Saxon Boulevard interchange will not be impacted in the proposed condition.

3.4.6 Soils

A preliminary geotechnical investigation was performed to conceptually evaluate roadway, stormwater management, and structure improvement constraints. Specifically, the purpose of this preliminary geotechnical investigation was to review readily available published information regarding anticipated geotechnical conditions within the Ultimate project study area as well as to evaluate groundwater conditions at potential pond locations. The information reviewed for this study included the US Department of Agriculture (USDA) SCS Soil Survey for Orange, Seminole and Volusia Counties, Florida; the U.S. Geological Survey (USGS) quadrangle maps for this area; and available topographic maps from Orange County, Seminole County, SJRWMD, and SFWMD. For more information and SCS Soil Survey Maps of the study corridor, refer to the *Soils Investigation Report* (November 1998), which includes results of field tests performed in conjunction with this project. Information on regional geology and hydrology in Orange, Seminole, and Volusia Counties is summarized in the *Socioeconomic and Environment Report* (May 2000).

3.4.6.1 Orange County, Florida

The ground surface ranges from approximate elevations of +115 to +140 feet National Geodetic Vertical Datum (NGVD) at the beginning of the project (near SR 528). The topography in this area slopes to the west due to the influence of Big Sand Lake. From this point, the project alignment gradually levels out to an elevation of approximately +100 feet NGVD. This elevation is relatively constant throughout downtown Orlando and continues to the end of the Orange/Seminole County border.

Description of Subsurface Conditions

Soil strata were separated into groups by materials with different usage (i.e., AASHTO classification, and FDOT Index 505 usage (January 1998)) and any materials that may require special consideration (e.g., soils that may be difficult to excavate, deleterious organic soils). Table 3-63 presents a description of the soil types generally found in Orange County.

Table 3-63. Description of Soil Types in Orange County

Strata No.	Description	Classification	
		AASHTO	Index 505
1	Light gray to grayish brown fine sand	A-3	S
2	Reddish-brown, dark brown to dark grayish-brown fine sand	A-3	S
3	Brown to grayish-brown silty fine sand	A-2-4	S
4	Dark brown silty fine sand with trace organics	A-2-4	S
5	Dark brown fine sand with clay, silty clayey fine sand to clayey fine sand	A-2-6, A-2-7	P
6	Grayish-brown to greenish-gray sandy clay to clay	A-6, A-7-6	H
7	Dark brown organic silty fine sand to organic silty clay	A-8	M

According to FDOT Standard Index 505, Strata 1 through 4 are classified as S (Select) and are suitable material for construction of the roadway improvements. However, due to the percent fines, Strata 3 and 4 material may retain excess moisture and be difficult to dry and compact.

Stratum 5 is plastic material and should be removed from beneath permanent structures in accordance with Index 500. This material may be placed above the existing water level at the time of construction to within 4 feet of the proposed base. It should be placed uniformly in the lower portion of the embankment for some distance along the project rather than full depth for shorter distances.

All of Stratum 6 shall be treated as high plastic material and should be removed in accordance with Index 500. This material may be used within the project limits as indicated in Index 505 only when

excavated from within the project limits and is not to be used when obtained from outside the project limits.

Stratum 7 is highly organic soil and shall be removed in accordance with Index 500. Results of organic content tests conducted on retrieved samples from the organic stratum (Stratum 7) indicated organic contents ranging from five to 46 percent.

The removal of muck, if encountered, as well as any other soils deemed unacceptable (i.e., plastic or high plastic), should be accomplished in accordance with FDOT Standard Index 500 unless otherwise indicated on the plans. The material may then be used as indicated in FDOT Standard Index 505.

Measured Groundwater Levels

The measured groundwater levels were encountered at depths ranging from +0.1 foot above ground surface to 17 feet below existing ground. However, groundwater was not encountered in many of the boreholes.

The absence of groundwater data at these borings indicates that groundwater was not encountered within the vertical reaches of these borings on the dates drilled. This does not necessarily mean that groundwater would not be encountered at these locations or within the vertical reaches of these boreholes at some other time. Fluctuations in groundwater levels should be anticipated throughout the year primarily due to seasonal variations in rainfall and other factors that may vary from the time the borings were conducted.

3.4.6.2 Seminole County, Florida

The ground surface elevation along the Ultimate project corridor ranges from approximately elevation +100 to +115 feet NGVD from the Orange/Seminole County border to the southern limits of Altamonte Springs. The ground surface elevation dips to approximately +75 feet NGVD through Altamonte Springs and Longwood. Near Lake Mary Boulevard, the ground surface ranges between +50 to +60 feet NGVD. From Lake Mary Boulevard to Paola Road, the ground surface ranges from +65 to +80 feet NGVD. From Paola Road, the ground surface elevation dips down to approximately elevation +5 feet NGVD at Lake Monroe.

Description of Subsurface Conditions

Table 3-64 presents a description of the soil types generally found in Seminole County.

Results of organic content tests conducted on retrieved samples from the organic stratum (Stratum 7) indicated organic contents ranging from nine to 30 percent.

Table 3-64. Description of Soil Types in Seminole County

Strata No.	Description	Classification	
		AASHTO	Index 505
1	Light brown to grayish brown fine sand	A-3	S
2	Reddish-brown, dark brown to dark grayish-brown fine sand	A-3	S
3	Brown to grayish-brown silty fine sand	A-2-4	S
4	Dark brown silty fine sand with trace organics	A-2-4	S
5	Dark brown fine sand with clay, silty clayey to clayey fine sand	A-2-6	P
6	Grayish-brown to greenish-gray sandy clay to clay	A-6, A-7-5, A-7-6	P, H
7	Dark brown organic silty fine sand to organic silty clay	A-8	M

Measured Groundwater Levels

The measured groundwater levels were encountered at depths ranging from one to 15.5 feet below existing ground. However, groundwater was not encountered in many of the boreholes.

3.4.6.3 Volusia County, Florida

The ground surface elevation along the Ultimate project corridor ranges from approximately elevation +5 to +10 feet NGVD from the Seminole/Volusia County border to the north edge of Lake Monroe. The ground surface ranges from elevation +25 to +50 feet NGVD from north of Lake Monroe to approximately one mile south of SR 472. From this point, the ground surface elevation increases to elevation +60 to +75 feet NGVD to the intersection with SR 472.

Description of Subsurface Conditions

Table 3-65 presents a description of soil types generally found in Volusia County.

Table 3-65. Description of Soil Types in Volusia County

Strata No.	Description	Classification	
		AASHTO	Index 505
1	Light gray to grayish brown fine sand	A-3	S
2	Reddish-brown, dark brown to dark grayish-brown fine sand	A-3	S
3	Brown to grayish-brown silty fine sand	A-2-4	S
4	Dark brown silty fine sand with trace organics	A-2-4	S
5	Dark brown fine sand with clay, silty clayey to clayey fine sand	A-2-6	P
6	Grayish-brown to greenish-gray sandy clay to clay	A-6, A-7-5, A-7-6	P, H
7	Dark brown organic silty fine sand to organic silty clay	A-8	M

Results of organic content tests conducted on retrieved samples from the organic stratum (Stratum 7) indicated organic contents ranging from five to 15 percent.

Measured Groundwater Levels

The groundwater level was measured in the boreholes on the day drilled following stabilization of the downhole water level. The measured groundwater levels were encountered at depths ranging from 0.3 to 15.7 feet below existing ground. However, groundwater was not encountered in many of the boreholes.

3.4.7 Drainage and Hydrology

This Ultimate project study area lies within two water management districts and three counties. The limits of the SFWMD extend from SR 528 (Bee Line Expressway) to approximately US 441. The SJRWMD has jurisdiction over the project from US 441 to SR 472. The existing drainage conditions and drainage basins for the Ultimate project study area are discussed below per segment. As presented previously, Figure 3-25 identifies the existing drainage characteristics associated with this project.

3.4.7.1 Segment 1

Existing drainage characteristics associated with this segment include both median and roadside ditches to convey runoff (both onsite and offsite) to ditch bottom inlets or end treatments. Both the onsite and offside flow is routed under the interstate via cross culverts. These culverts discharge offsite. The following statements define the general flow of runoff from and through existing I-4 right-of-way.

- Between SR 528 and just north of Sand Lake Road (Basins A through D), the runoff from the I-4 right-of-way discharges into Big Sand Lake, Little Sand Lake, and Spring Lake.
- Between just north of Sand Lake Road and Florida's Turnpike (Basins E through G), the runoff from the I-4 right-of-way discharges into Shingle Creek via a series of canals.
- From Florida's Turnpike to John Young Parkway (Basins H through K), the runoff from I-4 right-of-way discharges into the Shingle Creek System.
- From John Young Parkway to the end of Segment 1 (Basin L), the runoff from I-4 right-of-way discharges into Lake Catherine, which is a land-locked system.

3.4.7.2 Segments 2 and 3

The existing drainage characteristics associated with these segments include the conveyance of runoff via roadside ditches and storm sewer into nearby lakes. The following statements identify the general flow of runoff from and through existing I-4 right-of-way.

- Between John Young Parkway and US 441 (Basins M through N), the runoff from the right-of-way discharges into Lake Catherine, which is a land-locked system.
- From US 441 to just south of SR 408 (Basins N through O), runoff from the right-of-way discharges into Lake Holden, which is a land-locked system.
- At SR 408, runoff from the right-of-way discharges into Clear Lake (Basins P and Pw).
- Between SR 408 and Robinson Street, the runoff from the right-of-way discharges into the Lake Lucerne system (Basin P), Lake Cherokee (Basin PeA), and Lake Greenwood (Basin PeB).
- From just north of SR 408 through College Park to Par Street (Basins Q through V), runoff discharges into the Lake Concord, Lake Ivanhoe, and Lake Formosa systems, which comprise part of the Howell Branch Basin.
- Between Par Street and Lee Road (Basins W through Z), runoff discharges into Little Lake Fairview and the Lake Fairview system, which ultimately discharges into the Little Wekiva River.

3.4.7.3 Segments 4 and 5

Existing drainage characteristics associated with these segments include both median and roadside ditches to convey runoff (both onsite and offsite) to ditch bottom inlets or end treatments. Both the onsite and offsite flow is routed under the interstate via cross culverts. These culverts discharge offsite. The following statements define the general pattern of runoff flow from and through the existing I-4 right-of-way.

- Between Lee Road and Kennedy Boulevard (Basin AA), the runoff from the I-4 right-of-way discharges via a borrow pit into Lake Bell, and ultimately into Lake Killarney.
- From Kennedy Boulevard to just north of Maitland Avenue (Basin BB), the runoff from the I-4 right-of-way discharges into Lake Lucien.
- Between Maitland Avenue and SR 436 (Basin CC), the runoff from the I-4 right-of-way discharges into North Lake (water body south of the Interstate Mall), a land-locked basin.
- Between SR 436 and south of Central Parkway (the Basin DD), the runoff from the I-4 right-of-way discharges into Cranes Roost. Cranes Roost is treated as a land-locked basin since it discharges into the Little Wekiva River via hydraulic pumping only during high water levels.
- Between south of Central Parkway and SR 434 (Basins EE and FF), the runoff from the I-4 right-of-way discharges into an unnamed lake east of I-4, which is a land-locked basin.
- Between SR 434 and Longwood-Markham Woods Road (Basins GG and HH), the runoff from the I-4 right-of-way flows overland into the Little Wekiva River, which is a FDEP designated OFW.
- Between Longwood-Markham Woods Road and Dixon Road (Basins II and JJ), the runoff from the I-4 right-of-way discharges into Grace Lake, which is a land-locked basin.
- Between Dixon Road and 7,000 feet north of Longwood-Markham Woods Road (Basin KK), the runoff from the I-4 right-of-way discharges into Lake Myrtle, which is a land-locked basin.
- Between 7,000 feet north of Longwood-Markham Woods Road and Lake Mary Boulevard (Basins LL and MM), the runoff from the I-4 right-of-way discharges into a series of unnamed land-locked depressions.

- Between Lake Mary Boulevard and Orange Boulevard (Basins NN, OO, and PP), the runoff from the I-4 right-of-way discharges into Lake Monroe via the Lockhart – Smith Canal or the Elder Ditch system, which ultimately drains into the St. Johns River.
- Between Orange Boulevard and the high point of the bridge over the St. Johns River (Basin QQ), the runoff from the I-4 right-of-way discharges into Lake Monroe and the St. Johns River.

3.4.7.4 Segment 6

Existing drainage characteristics associated with this segment include both median and roadside ditches conveying onsite and offsite runoff. The following statements define general patterns of runoff flow from and through the existing I-4 right-of-way.

- Between US 17-92 and 3,500 feet north of Enterprise Road (Basins RR through SS), the runoff from the I-4 right-of-way discharges into Lake Monroe.
- From 3,500 feet north of Enterprise Road to Saxon Boulevard (Basin TT), the runoff from the I-4 right-of-way discharges into either Goose Lake or Trout Lake, both of which are land-locked lakes.
- Between Saxon Boulevard and 4,700 feet south of SR 472 (Basin UU), the runoff from the I-4 right-of-way discharges into Lake Mallard and a series of depressional areas, all of which are land-locked.
- Between 4,700 feet south of SR 472 and the end of the project (Basin VV), runoff from the I-4 right-of-way discharges into unnamed depressional areas adjacent to the interstate and are considered land-locked.

The Ultimate project study area within the SFWMD jurisdiction discharges into Big Sand Lake Basin and Shingle Creek Basin. The study area within the SJRWMD ultimately discharges into the St. Johns River or land-locked basins. There are no tidally influenced areas within this study.

General existing drainage patterns, basin divides, and cross culvert locations are illustrated on Figure 3-25. Various drainage studies have been used in developing and identifying the drainage patterns and basins (please refer to Figure 3-25 Existing Drainage Characteristics). The following reports were available and reviewed for this study: *Clear Lake Basin Study*, *Little Lake Fairview Basin Study*, *City of Orlando Drainage Well Study*, and the *Little Wekiva River Study*. These reports document existing drainage problems, structures, and outfalls, and recommend proposed improvements. The existing drainage basin conditions are discussed in more detail in the *Pond Siting Report* (August 2000), which is published separately.

There are 43 major cross drains providing conveyance for I-4 within the Ultimate project study area. A summary of all the existing structures is provided in Table 3-66. Figure 3-25 (maps A through H) illustrates the location of existing cross culverts and general topography within and adjacent to the study corridor. Details pertaining to the impact on these cross culverts in the proposed (extended) condition have been addressed in the *Location Hydraulics Report* (August 2000).

Table 3-66. Summary of Existing Drainage Structures

Structure Number	Description	Elevations ft NGVD	Drainage Basin
Segment 1			
1	42" RCP	111.38 111.01	Big Sand Lake
2	36" RCP	118.37 117.84	Little Sand Lake
3	24" RCP	131.72 131.10	Spring Lake
4	24" RCP	95.10 94.98	Shingle Creek
5	24" RCP	96.50 96.37	Shingle Creek

Table 3-66. Summary of Existing Drainage Structures (Continued)

Structure Number	Description	Elevations ft NGVD	Drainage Basin
6	48" RCP	92.09 91.94	Shingle Creek
7	6' x 5' RCBC	91.69 91.26	Shingle Creek
8	30" RCP	94.07 93.67	Shingle Creek
Segment 2			
9	9' X 5' RCBC	89.67 89.57	Lake Catherine
10	24" RCP	109.10 109.00	Lake Holden
10A	24" RCP	101.3 L 101.0 R	
10B	6' x 3' RCBC	93.05 L 93.00 R	
Segment 3			
11	24" RCP	94.00 93.10	Little Lake Fairview
12	36" RCP	93.00 92.30	Little Lake Fairview
Segment 4			
13	10' x 3' RCBC	91.50 90.90	Lake Bell
14	24" RCP	94.00 93.40	Lake Bell
15	7' x 12' RCBC	87.40 87.30	Lake Lucien
16	42" RCP	92.20 91.00	Lake Lucien
17	3' x 3' RCBC	50.50 50.40	North Lake
18	OMITTED	OMITTED	OMITTED
19	18" RCP	64.60 64.30	Cranes Roost/Little Wekiva River
20	4' x 4' RCP	48.00 44.50	Cranes Roost/Little Wekiva River
21	24" RCP	85.80 85.40	Cranes Roost/Little Wekiva River
22	30" RCP	63.00 57.50	Unnamed Depression
23	24" RCP	60.30 48.50	Unnamed Depression
24	54" RCP	54.00 53.00	Grace Lake
25	36" RCP	52.30 51.00	Lake Myrtle
Segment 5			
26	48" RCP	46.50 42.60	Lake Monroe/St. Johns River
27	24" RCP	52.10 48.50	Lake Monroe/St. Johns River
28	30" RCP	53.30 49.40	Lake Monroe/St. Johns River
29	24" RCP	76.60 76.20	Lake Monroe/St. Johns River
30	30" RCP	77.80 77.40	Lake Monroe/St. Johns River
31	24" RCP	77.60 77.20	Lake Monroe/St. Johns River
32	30" RCP	57.10 57.00	Lake Monroe/St. Johns River

Table 3-66. Summary of Existing Drainage Structures (Continued)

Structure Number	Description	Elevations ft NGVD	Drainage Basin
33	18" RCP	28.00 27.90	Lake Monroe/St. Johns River
34	10' x 8' RCP	17.20 17.10	Lake Monroe/St. Johns River
Segment 6			
35	18" RCP	12.00 11.90	Lake Monroe/St. Johns River
36	24" RCP	20.40 20.13	Lake Monroe/St. Johns River
37	30" RCP	35.20 33.60	Lake Monroe/St. Johns River
38	36" RCP	36.00 27.60 42.98 36.12	Lake Monroe/St. Johns River
39A	24" RCP	50.00 49.80	Goose and Trout Lakes
39B	24" RCP	49.70 49.60	Goose and Trout Lakes
40	36" RCP	19.85 19.27	Goose and Trout Lakes
41	24" RCP	30.43 28.72	Lake Mallard
42	30" RCP	35.00 20.20	Lake Mallard
43	24" RCP	59.43 58.30	Unnamed Depression

3.5 Utilities and Railroads

3.5.1 Utilities

Existing utilities within the Ultimate project area include electrical transmission lines, gas lines, water mains, sanitary sewer pipes, cable television lines, telecommunication lines, railroads, high-speed rail, and FDOT Surveillance and Motorists Information Systems (SMIS) structures. Of the 46 utility companies contacted for this study (refer to Table 3-67), 37 have existing utilities located within the Ultimate project study area. Major utilities were assessed as part of this report. Minor utilities, such as water and electrical lines serving individual buildings, have been excluded from this analysis. Table 3-68 summarizes the major utilities potentially impacted by this project. For more information regarding existing utilities and location plan sheets, refer to the draft *Utility Impact Report* (September 1998) prepared for this study.

3.5.2 Railroads

Existing railroads have also been evaluated along with the utilities located within the Ultimate project area. Table 3-68 summarizes the major utilities located within the Ultimate project study area, which include railroad lines and are identified in Figure 1-24.

3.6 Navigation

I-4 crosses the St. Johns River/Lake Monroe at the Seminole/Volusia County line, located just north of the I-4/US 17-92 interchange. The St. Johns River is considered to be a navigable waterway. There are several public and private facilities located downstream within one-half mile of the crossing. These facilities include Wayside Park and Dock, Port of Sanford, Hidden Harbor Marina, and Lake Monroe Park.

In addition, major cargo is transported on the river through this area. Types of cargo include fertilizer, oil and gasoline, phosphate rock, cement, motor vehicles, paper, and fruit. The majority of the marine traffic consists of sailboats, cabin cruisers, pontoon boats, and small outboard motorboats.

The proposed project will not block access of any vessel presently using local service facilities during construction. In addition, the proposed bridge will provide the minimum clearances mandated by the USCG in order to provide safe, efficient passage of the largest of these vessels. It should be noted that the St. Johns River Bridge substructure and the superstructure for the general use lanes and the substructure for the HOV lanes are being advanced as part of the I-4 Six Laning and St. Johns River Bridge project. Therefore, the minimum horizontal and vertical clearances for the bridge superstructure for the HOV lanes will most likely be established as part of the St. Johns River Bridge project.

Table 3-67. Utility Contacts with Utilities Present

Utility Name	Contact	Telephone Number
Water		
Orlando Utilities Commission	Mr. J. Ed Upchurch	407/ 424-9100 ext. 4515
Southern State Utilities	Mr. Fernando Platin	407/880-0058
City of Maitland	Mr. Fabian Hurtado	407/549-6200
City of Sanford	Mr. Paul R. Moore	407/440-5640
City of Lake Mary	Mr. C.W. Temby	407/424-4000
Water and Sewer		
Orange County Public Utilities	Mr. S.T. Beasley	407/846-7211
City of Longwood	Mr. J.M. Salsano	407/788-4600
Sanlando Utilities Corporation	Mr. J.M. Salsano	407/788-4600
Seminole County Public Utilities	Mr. Roger Smith	407/424-9615
City of Winter Park	Mr. Craig Campbell	407/624-4455
City of Altamonte Springs	Mr. Glenn Forest	407/840-4857
Volusia County Public Works	Mr. Larry Hayduk	904/944-7027
Town of Eatonville	Mr. Korvin Hunter	407/624-1160
Sewer		
Orlando Bureau of Wastewater	Mr. Alan Oyler	407/246-2214
Electric		
Orlando Utilities Commission	Mr. Bob Oshiem	407/484-4029
Florida Power Corporation – Apopka	Mr. Fred Shipman	407/886-7442
Florida Power Corporation – St. Petersburg	Mr. Ronald Worley	814/866-4996
Florida Power Corporation – DeLand	Mr. L.T. Robertson	904/744-4770
Florida Power Corporation – Jamestown	Mr. Ron Ray	407/459-4492
Florida Power and Light Corporation	Mr. Bruce Stephenson	904/422-4070
Telephone		
American Telephone & Telegraph	Mr. Harry Van Loon	407/294-4070
BellSouth Telephone – Orlando	Mr. Lamar Davis	407/245-4066
BellSouth Telephone – Daytona Beach	Mr. Victor Wapler	904/788-1707
MCI Telephone	Ms. Donna Pruett	972/498-6042
Time Warner Communications	Mr. Kim Fosky	407/667-6858
Cable Television		
Cablevision Industries – Orlando	Mr. T.S. Hudson	407/277-5814
Cablevision Industries	Mr. John Wolski	407/656-4427
Time Warner Communications	Mr. Marvin Usry	407/295-9119 ext. 1646
TCl of Central Florida – Altamonte Springs	Mr. Jerry Molina	407/869-6600
TCl of Central Florida – Port Orange	Mr. Tom Ham	814/746-1446
Natural Gas		
Florida Gas Transmission	Mr. Steve Keith	407/875-5800
Florida Public Utilities Company	Mr. D.P. Scribbs	407/422-5744
Peoples Gas, Inc.	Mr. Joe Sanchez	407/425-4661
SMIS		
FDOT SMIS	Mr. John Cheney	904/944-5410
Railroad		
CSX Transportation, Inc.	Mr. Jon Wollenzien	940/459-1205
Florida Central Railroad	Mr. Ben Biscan	407/880-8500
Telecommunications		
World Communication	Mr. Avarvid Crane	561/665-8877

Table 3-68. Major Utilities

Type of Utility	Owner	Location
Segment 1		
Electric	FPC	Aerial, runs west along back parking lot of Convention Center, then north along I-4 right-of-way to Mile Post 72.7, then crosses over I-4 right-of-way at Mile Post 72.4.
Telephone	BellSouth	Buried, runs north along International Dr from Westwood Blvd to Hawaiian Ct.
Cable TV	CVI	Aerial, runs north along Turkey Lake Rd right-of-way from Central Florida Parkway to Wallace Rd with buried segments near State Rd 528, Mile Post 72.5 and Mile Post 73.2.
Electric	FPC	Buried, runs north along the east I-4 right-of-way from Mile Post 72.7 to 100' south of Sand Lake Rd west, then crosses under I-4 right-of-way- to Turkey Lake Rd
Electric	FPC	Aerial, runs west from International Dr over I-4 right-of-way, then north to Turkey Lake Rd
Cable TV	Time Warner Communications	Aerial, runs from International Dr toward I-4, then runs south along Access Rd east of Ramp and then east.
Cable TV	Time Warner Communications	Aerial, crosses over Kirkman Rd at Mile Post 75.3, then north along Grand National Dr west, then crosses over I-4 right-of-way at Mile Post 76 and along I-4 right-of-way to Kirkman Rd and north.
Electric	OUC	Buried, runs west along Oak Ridge Rd., then north under I-4 right-of-way at Mile Post 75.9.
Electric	OUC	Buried, runs under Kirkman Rd to feed median, then crosses under the northbound I-4 on-ramp, then crosses under I-4 right-of-way at Mile Post 75.8.
Electric	FPC	Aerial, runs north - east along I-4 right-of-way then over I-4 right-of-way to run north - west along west Turnpike right-of-way.
Electric	FPC	Aerial, runs north - west along west Turnpike right-of-way over I-4 right-of-way.
Cable TV	Time Warner Communications	Buried, runs north along Vineland Rd under I-4 right-of-way to Americana Blvd. Aerial, runs east from American Blvd.
Cable TV	Time Warner Communications	Buried, runs north under Vineland Rd from the Florida Turnpike to Mile Post 76.7. Aerial from Mile Post 76.7 to L.B. McLeod Rd.
Segments 2 and 3		
Electric	OUC	Aerial, runs south - east at Mile Post 78.3 from Vineland Rd over I-4 right-of-way and connects to power line along I-4 right-of-way.
Cable TV	Time Warner Communications	Buried, runs east along L.B. McLeod Rd Aerial at Surfside Rd and continues east.
Cable TV	Time Warner Communications	Aerial, runs south along Clear Way, then east along Surfside Rd to L.B. McLeod Rd, then to Rio Grande Rd, then north.
Cable TV	Time Warner Communications	Buried, runs south under I-4 right-of-way from L.B. McLeod Rd to 33rd St west. Splits and runs west 4000' along 33rd St and east to Rio Grande Rd west. Aerial at Rio Grande west.
Electric	OUC	Aerial, runs south along Nashville Rd over I-4 right-of-way and continues south.
Electric	OUC	Aerial, runs south along Nashville Rd over I-4 right-of-way and then both 300' east and 300' west along 33rd St.
Cable TV	Time Warner Communications	Buried, runs east along L.B. McLeod Rd from Station 1150 to Rio Grande Ave, then north along Rio Grande Ave
Cable TV	Time Warner Communications	Buried, runs east along Michigan St under I-4 right-of-way and continues east.
Cable TV	Time Warner Communications	Buried, runs north-south along Westmoreland Dr from I-4 right-of-way, north of I-4
Cable TV	Time Warner Communications	Aerial, runs south along Westmoreland Dr to I-4 right-of-way, south of I-4.
Telephone	BellSouth	Aerial, runs east along 29th St to I-4 right-of-way.
Cable TV	Time Warner Communications	Aerial, runs east along 19th St to west I-4 right-of-way.
Cable TV	Time Warner Communications	Aerial, runs east along 18th St to I-4 right-of-way.
Electric	OUC	Aerial, runs east along 18 th St from Parramore Ave to within 100' of I-4 right-of-way east from I-4 right-of-way along 18 th St to Division Ave
Electric	OUC	Aerial, runs east along Miller St over I-4 right-of-way and continues east.
Electric	OUC	Substation east of I-4.
Railroad	CSX	Runs north - south under SR 408 right-of-way, 100' from I-4 right-of-way.
Cable TV	Time Warner Communications	Aerial, runs east along 20 th St to I-4 right-of-way.
Telecommunications	LDDS	Buried, runs east - west along SR 408 south right-of-way
Telephone	AT&T	Buried, runs east - west along SR 408 north right-of-way.
Telephone	World Communication	Buried, runs east - west along SR 408 north right-of-way.
Telephone	World Communication	Buried, runs east - west along SR 408 south right-of-way
Cable TV	Time Warner Communications	Aerial, runs east along Miller St to I-4 right-of-way.
Cable TV	Time Warner Communications	Aerial, runs east along Conroy St from Parramore St to Avondale Ave
Cable TV	Time Warner Communications	Buried, runs east along Indiana St from Parramore St to Avondale Ave
Telecommunications	LDDS	Buried, runs along south side of SR 408 from Sunset Dr to Parramore Ave

Table 3-68. Major Utilities (Continued)

Type of Utility	Owner	Location
Telephone	AT&T	Buried, runs along north side of SR 408 from Church St to McFall Ave
Telephone	World Communication	Buried, runs along north side of SR 408 from Church St to McFall Ave and crosses SR 408 at Tampa Ave toll plaza.
Telephone	World Communication	Buried, runs along south side of SR 408 from Sunset Dr to Parramore Ave
Telephone, BellSouth	BellSouth	Buried, runs north along Tampa Ave from Carter St to West South St.
Telephone, AT&T	AT&T	Buried, runs east along nourished SR 408 right-of-way from Garland Ave to Liberty Ave,
Telecommunications	LDOS	Buried, runs east along south side SR 408 from Garland Ave to Rosalind Ave
Telephone	World Communication	Buried, runs east along nourished SR 408 right-of-way from Garland Ave to Mills Ave
Telephone	World Communication	Buried, runs east along south side SR 408 right-of-way from Garland Ave to Mills Ave
Telephone	BellSouth	Buried, runs southeast from the south end of Garland Ave, under SR 408 right-of-way to Lucien Cir.
Telephone	BellSouth	Buried, runs south along CSX RR from Pine St to Anderson St.
Telephone	BellSouth	Aerial, runs north along Rosalind Ave from South St to Pine St.
Telephone	BellSouth	Buried, runs east along South St from Rosalind Ave to 150 ft east of Delaney Ave
Telephone	AT&T	Buried, runs east and follows SR 408 ramp to Delaney Ave
Telephone	World Communication	Buried, runs east along nourished SR 408 right-of-way from Mills Ave to Primrose Dr.
Telephone	World Communication	Buried, runs east along south side SR 408 right-of-way from Mills Ave to Primrose Dr.
Telephone	MCI	Buried, runs north along CSX Railroad right-of-way to Concord St then east.
Electric	OUC	Substation east of I-4.
Railroad	Florida Central	Runs west 200" south and parallel to Pitman Rd from CSXT Railroad under I-4 right-of-way and continues west.
Telephone	BellSouth	Buried, runs north along Garland Ave from the SR 408 right-of-way to South St.
Telephone	World Communication	Buried, runs east - west along the EAST SR 408 right-of-way.
Telephone	MCI	Buried, runs north under SR 408 right-of-way, along CSXT Railroad to Concord St.
Cable TV	Time Warner Communications	Buried, runs west along Amelia St from CSXT Railroad to Garland, then north on Garland Ave to Concord St.
Cable TV	Time Warner Communications	Buried, runs east - west along Concord St under I-4 right-of-way and continues east and west.
Cable TV	Time Warner Communications	Buried, runs along Concord St under I-4 right-of-way and continues east and west.
Cable TV	Time Warner Communications	Buried, runs west along Ivanhoe Blvd under I-4 right-of-way from Orange Ave and continues east and west.
Cable TV	Time Warner Communications	Buried, runs along Ivanhoe Blvd between Chamber of Commerce and Gateway Center.
Railroad	CSXT	Runs north - south along Gertrude Ave parallel to EAST I-4 right-of-way from SR 408 right-of-way to Orange Ave
Telephone	BellSouth	Buried, runs east along Concord St from CSXT Railroad.
Telephone	BellSouth	Buried, runs east along Concord St from CSXT Railroad
Cable TV	Time Warner Communications	Aerial, runs south along north Shore Ter from New Hampshire St to Ivanhoe Blvd.
Electric	OUC	Aerial, runs east - west along Ivanhoe Blvd over I-4 right-of-way to north Shore Lane.
Cable TV	Time Warner Communications	Buried, runs east - west along New Hampshire St under I-4 right-of-way and continues east and west.
Telephone	BellSouth	Buried, runs east - west along New Hampshire St under I-4 right-of-way and continues east and west.
Cable TV	Time Warner Communications	Aerial, runs east - west along Vanderbilt St to I-4 right-of-way and continues.
Cable TV	Time Warner Communications	Buried, runs east along Smith St from Formosa Ave to west I-4 right-of-way
Telephone	BellSouth	Aerial, runs west along Rollins St from Formosa Ave to west I-4 right-of-way then east from east I-4 right-of-way to Dade Ave
Cable TV	Time Warner Communications	Aerial, runs east along Winter Park St from Formosa Ave to WEST I-4 right-of-way.
Telephone	AT&T	Buried, runs east - west along Winter Park St under I-4 right-of-way and continues east and west.
Telephone	AT&T	Buried, runs from the east along Ivanhoe Blvd to EAST I-4 right-of-way, then north along I-4 right-of-way to New Hampshire St.
Cable TV	Time Warner Communications	Buried, runs north along Cornell Ave from New Hampshire St to Princeton St.

Table 3-68. Major Utilities (Continued)

Type of Utility	Owner	Location
Cable TV	Time Warner Communications	Aerial, runs east - west along Yale St to east I-4 right-of-way then from west I-4 right-of-way and continues.
Cable TV	Time Warner Communications	Buried, runs east along Orlando St from Formosa Ave to west I-4 right-of-way.
Telephone	AT&T	Buried, runs north-south along Dade Ave from Evans St to the Oaks Apartments, then east to Orange Ave
Electric	OUC	Aerial, runs east - west along Hazel St over I-4 right-of-way and continues east; then north and south along west I-4 right-of-way and north and south along Dade Ave
Cable TV	Time Warner Communications	Aerial, runs east - west along Hazel St to West I-4 right-of-way; then north along I-4 right-of-way to Massey Pelham Rd
Cable TV	Time Warner Communications	Aerial, runs east along King St to West I-4 right-of-way.
Cable TV	Time Warner Communications	Aerial, runs east along Evans St to East I-4 right-of-way; continues to Dade St.
Cable TV	Time Warner Communications	Buried, runs east from Formosa St to West I-4 right-of-way then west along Massey Pelham Place Rd
Cable TV	Time Warner Communications	Buried, runs east from Formosa Ave to WEST I-4 right-of-way along Orlando St.
Telephone	AT&T	Aerial, runs east - west along Dartmouth Rd over I-4 right-of-way and continues.
Cable TV	Time Warner Communications	Buried, runs east along Harmon Rd from Formosa Ave to I-4 right-of-way.
Cable TV	Time Warner Communications	Aerial, runs east - west along Minnesota Ave from West I-4 right-of-way to the west.
Cable TV	Time Warner Communications	Aerial, runs east - west along Crander Ave from West I-4 right-of-way to the west.
Cable TV	Time Warner Communications	Buried, runs west along Fairbanks Ave from Formosa Ave, under I-4, and continues west.
Cable TV	Time Warner Communications	Aerial, runs north along Formosa Ave from Par Ave to Michigan Ave
Cable TV	Time Warner Communications	Aerial, runs east - west along Oglesby Ave from West I-4 right-of-way to the west.
Segments 4 and 5		
Cable TV	Time Warner Communications	Aerial, runs east - west along Fairbanks Ave over I-4 right-of-way and continues.
Cable TV	Time Warner Communications	Buried, runs north along Allen Ave from east I-4 right-of-way to Wellington Blvd.
Electric	FPC	Aerial, runs east - west along Franklin Rd over I-4 right-of-way and continues west.
Data	Time Warner Communication	Aerial, runs east - west at Station 409 under I-4 right-of-way and continues.
Electric	FPC	Aerial Runs from Lake Killarney over I-4 right-of-way to Courtyard St.
Electric	FPC	Aerial, runs east - west along Lee Rd over I-4 right-of-way and continues to Wymore Rd west, then north to Kennedy Blvd.
Electric	FPC	Aerial, runs east - west along Fairbanks Ave over I-4 right-of-way and continues to Wymore, then buried, runs north along Wymore Rd from Fairbanks to Lee Rd
Cable TV	Time Warner Communications	Buried, runs east - west along Kennedy Blvd under I-4 right-of-way and south along Wymore Rd
Electric	FPC	Aerial, runs east - west along Kennedy Blvd over I-4 right-of-way and continues.
Data	Time Warner Communication	Buried, runs east - west along Kennedy Blvd from Gabriel Ave to east I-4 right-of-way, then north along Wymore Rd
Electric	FPC	Aerial, runs east from Lucien Way over I-4 right-of-way and continues east to substation at Mile Post 89.1 (3-phase)
Electric	FPC	Aerial, runs east from Lucien Way over I-4 right-of-way to substation at Mile Post 89.1. (2-phase)
Substation	FPC	Power substation east of I-4.
Cable TV	Time Warner Communications	Buried, runs from west I-4 right-of-way to east I-4 right-of-way at Station 2177.
Data	Time Warner Communication	Buried, runs north-south along Maitland Blvd under I-4 right-of-way, 1100 south of Maitland Blvd, and continues north and south along Wymore Rd
Cable TV	Time Warner Communications	Buried, runs north along Wymore Rd from Station 2160 to Sandspur Rd, then east along Sandspur Rd
Electric	FPC	Aerial, runs north along Wymore Rd from Station 2160 to Substation, and continues north along Wymore Rd under Maitland Blvd to Station 2215
Electric	FPC	Aerial, runs east - west along Sate Rd 436, over I-4 right-of-way, and continues (south side)
Electric	FPC	Aerial, runs east - west along Sate Rd 436, over I-4 right-of-way, and continues (north side)
Cable TV	Time Warner Communications	Aerial, runs east - west along Altamonte Commerce Blvd, then crosses over I-4 right-of-way to Raymond Ave, runs north along Douglas Ave to State Rd 434.

Table 3-68. Major Utilities (Continued)

Type of Utility	Owner	Location
Electric	FPC	Aerial, runs east - west along Altamonte Commerce Blvd then crosses over I-4 right-of-way to Raymond Ave, branches off south to Camera # 43.
Electric	FPC	Aerial, runs north - east from Central Parkway over I-4 right-of-way, and continues north - east.
Electric	FPC	Aerial, runs west, 500' south of State Rd 434, from Raymond St over I-4 right-of-way and continues southwest to Douglas Ave
Water Plant	Sanlando Utilities	Water Treatment Plant east of I-4.
Electric	FPC	Aerial, runs east - west along EE Williamson Rd over I-4 right-of-way and continues.
Electric	FPC	Aerial, runs north 2200 feet along east I-4 right-of-way from EE Williamson Rd, then crosses west over I-4 right-of-way.
Electric	FPC	Aerial, runs east - west at Mile Post 96.4, crosses over I-4 right-of-way and continues.
Cable TV	TCI	Buried, runs east - west along Sandpond Rd under I-4 right-of-way, and continues.
Electric	FPC	Buried, runs east - west along Lake Mary Blvd under I-4 right-of-way and continues.
Electric	FPC	Buried, runs east at Mile Post 98.6 under I-4 right-of-way from International Parkway to east side of I-4 right-of-way. Aerial, runs north along poles for 3500'.
Water Plant	Seminole County	Water Treatment Plant west of I-4.
Wastewater Plant	Seminole County	Wastewater Treatment Plant west of I-4.
Electric	FPC	Aerial, runs north - east along back parking lot of Seminole Towne Center under I-4 right-of-way at Mile Post 102.2 and continues north to Oregon Ave
Cable TV	Time Warner Communications	Aerial, runs north - east along Wayside Dr to Oregon Ave for 200 feet, then crosses under I-4 right-of-way to State Rd 46 and continues east.
Segment 6		
Electric	FPC	Aerial, runs north along easement and crosses over I-4 right-of-way at Mile Post 103.5 and continues north.
Electric	FPC	Aerial, runs north along easement and crosses over I-4 right-of-way at Mile Post 103.5 and continues north.
Telephone	BellSouth	Buried, runs east along Orange Blvd and crosses under I-4 right-of-way and continues to Upsala Rd
Telephone	BellSouth	Buried, runs east along Orange Blvd and crosses under I-4 right-of-way and continues to Upsala Rd
Railroad	CSX Transportation	Parallel to Orange Blvd. and crosses I-4 and continues northwest and east.
Electric	FPL	Aerial, runs north along Upsala Rd then crosses under I-4 right-of-way at Station 2970, continues north under US 17-92 right-of-way and St. Johns River.
Telephone	AT&T	Buried, runs north along Upsala Rd, then crosses under I-4 right-of-way at Station 2970 and continues north under US 17-92 right-of-way and St. Johns River.
Electric	FPC	Aerial, runs east - west 300' north of and parallel to Dirksen Drive/DeBary Ave right-of-way over I-4 right-of-way and continues.
Electric	FPC	Aerial, runs east - west 350' north of and parallel to Dirksen Drive/DeBary Ave right-of-way over I-4 right-of-way and continues.
Electric	FPC	Aerial, runs east - west 400' north of and parallel to Dirksen Drive/DeBary Ave right-of-way over I-4 right-of-way and continues.
Electric	FPC	Aerial, runs east - west along Saxon Blvd over I-4 right-of-way and continues.
Electric	FPL	Aerial, runs east - west parallel and 300' north of Saxon Blvd right-of-way over I-4 right-of-way and continues.
Electric	FPL	Aerial, runs east - west parallel and 300' north of Saxon Blvd right-of-way over I-4 right-of-way and continues.
Electric	FPC	Aerial, runs east at Mile Post 110.1 over I-4 right-of-way, then north along I-4 right-of-way to Saxon Blvd and continues east.
Electric	FPL	Aerial, runs east - west in easement at Mile Post 111.9 over I-4 right-of-way and continues.
Electric	FPC	Aerial, runs east in easement at Mile Post 111.9 over I-4 right-of-way and continues north to Graves Ave

BL indicates the Station corresponds to stationing associated with SR 528 mainline.
 E/W indicates the Station corresponds to stationing associated with SR 408 mainline.

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Chapter 4

Environmental Consequences



4. Environmental Consequences

This chapter of the report summarizes the potential effects on the social, cultural, and natural environment that would result from the construction of the I-4 improvement project in comparison to the No Action Alternative. Potential impacts were analyzed for both the Ultimate project and the *Preferred Alternative*. Impacts associated with the Ultimate project represent the ultimate I-4 improvements for the entire 43-mile corridor and include those impacts associated with the *Preferred Alternative*. The potential impacts are based on planning efforts to date and use current available information. Potential mitigation measures for the anticipated impacts associated with the Ultimate project and the *Preferred Alternative* are also discussed in this chapter. In order to emphasize the impacts and mitigation measures associated with the *Preferred Alternative*, these discussions are presented in *bold italicized text*.

The specific issues analyzed in Chapter 4 include those related to the following:

- Socioeconomic Conditions (Section 4.1)
- Cultural Resources (Section 4.2)
- Natural Resources (Section 4.3)
- Physical Environment (Section 4.4)
- Utilities and Railroads (Section 4.5)
- Navigation (Section 4.6)
- Required Permits (Section 4.7)
- Construction Impacts (Section 4.8)
- Indirect and Cumulative Impacts (Section 4.9)
- Relationships between Local Short-Term Uses of Man's Environment and the Maintenance and Enhancement of Long-Term Productivity (Section 4.10)
- Irreversible and Irretrievable Commitments (Section 4.11)

The impacts for the Ultimate project and *Preferred Alternative* are discussed by project segment. As indicated in Section 2.6, the Ultimate project includes combinations of alternatives for Segments 1, 4, 5, and 6. Since there are a number of alternatives associated with the Ultimate project, a range of impacts is discussed herein. The Ultimate project alternatives carried forward as part of the FEIS are as follows:

- Segment 1 - Ultimate/Existing Bee Line Interchange
- *Segment 2 - Kaley-Michigan Exfiltration Alternative*
- *Segment 2 - SR 408 Alternative 2B1*
- *Segment 2 - SR 50 Alternative 2*
- *Segment 3 - Typical Section C with Exfiltration*
- Segment 4 - SR 434 Alternative 1/Alternative 2
- Segment 5 - Typical Section C with Ponds
- Segment 6 - Ultimate/Existing SR 472 Interchange

The Preferred Alternative includes the following alternatives:

- *Segment 1 (Kirkman Road to John Young Parkway) - Typical Section C with Ponds*
- *Segment 2 - Kaley-Michigan Exfiltration Alternative*

- *Segment 2 – SR 408 Alternative 2B1*
- *Segment 2 – SR 50 Alternative 2*
- *Segment 3 – Typical Section C with Exfiltration*
- *Segment 4 (Lee Road to Maitland Boulevard) – Typical Section C with Ponds*

As part of the EIS process, direct, indirect, and cumulative effects were evaluated for the Ultimate project and the *Preferred Alternative*. The definitions of direct, indirect, and cumulative effects are as follows:

Direct effects are caused by the action and occur at the same time and place.

Indirect effects are caused by the action but occur later in time or are further removed in distance, but must be reasonably foreseeable.

Cumulative effects result from the incremental impacts of the action when added to past, present, and reasonable foreseeable future actions.

These effects were evaluated in conjunction with the comments received during the public and agency coordination process in order to minimize impacts. Sections 4.1 through 4.8 discuss direct effects and Section 4.9 discusses indirect and cumulative effects.

Existing and future conditions in the Ultimate project and *Preferred Alternative* corridors were discussed under corresponding headings in Chapter 3, Affected Environment.

4.1 Socioeconomic Conditions

4.1.1 Population and Community Growth Characteristics

Substantial local and regional project impacts will result from the construction of the I-4 improvements relative to the No Action Alternative. The intent of this section is to discuss the likely overall Ultimate project and *Preferred Alternative* impacts that will be attributed to the I-4 improvements and their effects on the population, employment and regional growth, land use, and development activity.

4.1.1.1 Population and Community Growth Characteristics

This section provides a summary of potential impacts to population, employment, and regional growth.

4.1.1.1.1 Population Impacts

In general, the tri-county area population is growing rapidly and has a diverse ethnicity and age constituency. The region's growth is anticipated to be greater than any other area in Florida through 2020. Impacts to the local and regional population due to the Ultimate project and *Preferred Alternative* include direct use impacts related to physical and environmental impacts, and indirect and cumulative impacts that may occur as a consequence of the proposed improvements.

A high number of residential and business property impacts and relocations are expected due to the expansion. The Ultimate project and *Preferred Alternative* impact populations from various neighborhoods located adjacent to the I-4 corridor. The neighborhoods with direct use impacts include the following in Orange County:

- Angebilt
- Holden Heights
- Holden-Parramore
- College Park
- North Orange

In Seminole County, the neighborhoods with direct use impacts include the following:

- Spanish Trace Apartments
- Palm Springs
- Sanlando Springs
- Town of Monroe

The neighborhoods impacted by the Preferred Alternative include:

- *Angebilt*
- *Holden Heights*
- *Holden-Parramore*
- *College Park*
- *North Orange*

Impacts to these neighborhoods and its communities are discussed further in this section.

Indirect and cumulative impacts include land use changes that may result from the acquisition of properties within these neighborhoods and communities adjacent to I-4. The Ultimate project and *Preferred Alternative* will require the acquisition of properties for roadway improvements and stormwater retention ponds. These acquisitions may result in a change in land use for the properties located adjacent to the proposed I-4 right-of-way. This change in land use may include the transition from owner-occupied homes to rental properties. The pattern of rental properties located adjacent to I-4 is evident along the Ultimate project and *Preferred Alternative* corridors, especially in the Holden-Parramore area. Section 4.9 discusses specific areas along the Ultimate project and *Preferred Alternative* corridors that may experience a shift in land uses as a result of the proposed improvements.

Other indirect and cumulative impacts may be due to the enhanced access and mobility attributed to the project. Existing access will be modified at several interchanges along the Ultimate project and *Preferred Alternative* corridors, most significantly the SR 408 (East/West Expressway) and Kaley-Michigan interchanges. Alternate routes, where feasible, will be provided to compensate for the changes in access. Where access is eliminated, changes in traffic patterns will result.

4.1.1.1.2 Regional Growth Impacts

The I-4 improvements will address the Interstate Highway Policy's goals and objectives as outlined in Chapter 1. I-4 carries by far the greatest number of people and vehicles of any transportation facility in the region. I-4 connects with SR 528 (Bee Line Expressway) and Florida's Turnpike within the Ultimate project study area. SR 528 (Bee Line Expressway) is a regional roadway that connects Central Florida to the Atlantic Seaboard on the east coast of Florida. It serves motorists traveling to many popular destinations, such as Cocoa Beach, Cape Canaveral, and the Kennedy Space Center, as well as travelers to and from OIA. Florida's Turnpike extends from the I-75 junction north of Leesburg to Miami. Travelers on I-4 may access I-75 through Florida's Turnpike and travel north toward Ocala, Gainesville, and the State of Georgia or south to West Palm Beach, Fort Lauderdale, and Miami.

Future growth in the region will be focused on the Ultimate project corridor's six activity centers in the developed business districts of International Drive, Orlando, Winter Park, Maitland, Altamonte Springs, and Lake Mary (refer to Figure 1-15). I-4 serves all of these activity centers and is directly related to the economic development of these areas. The Ultimate project and *Preferred Alternative* are expected to encourage and support growth within the activity centers and help to discourage urban sprawl. This is especially true for Orange County, which is expected to have the largest growth in population and employment in Central Florida. These effects on the regional population and labor force are considered positive and are consistent with regional growth management plans.

Without improvement in levels of service, the No Action Alternative would be less supportive of growth at the regional activity centers. The region's gross economy could, in time, gradually slow its

projected growth in employment if activities such as tourism are not supported by transportation improvements to effectively transport residents, tourists, and employees to and from entertainment venues, the Orlando CBD, and other areas of activity.

4.1.1.2 Economic Conditions

Tourism is the leading industry in the tri-county area, evidenced by the fact that services and retail trade account for over half of the employment in the region. In 1990, the services and retail trade sectors accounted for 61 percent of all employment for Orange County. In Seminole and Volusia Counties, these sectors accounted for 59 percent of the employment. Manufacturing, the third largest employment sector, accounted for ten percent of the employment for Orange County, 12 percent for Seminole County, and 11 percent for Volusia County.

The Ultimate project and *Preferred Alternative* will provide the opportunity for tourist and commuter vehicles with two or more passengers to use HOV lanes, increasing mobility within the study area. The HOV lanes will provide increased mobility for motorists to get to SR 528 (Bee Line Expressway) and SR 408 (East/West Expressway). Motorists using SR 528 (Bee Line Expressway) can access Florida's Turnpike, OIA, SR 417, Cape Canaveral, and I-95 (Atlantic Seaboard). With increased mobility on I-4, OIA may experience an increase in travelers. Increased mobility brings additional economic development to the region as people and businesses decide to move to the region. If no improvements are made to the interstate, a loss in mobility for the area's residents, visitors, and employees can be expected, resulting in a severe threat to the continued viability of the economy and the quality of life.

4.1.1.2.1 Employment Opportunity Impacts

The specific purpose of the Ultimate project and *Preferred Alternative* is to improve mobility on the interstate in the primary commuter shed of the Orlando metropolitan area. The Ultimate project improvements will serve the developed business districts of Orlando, Maitland, Altamonte Springs, and Lake Mary.

The Preferred Alternative improvements will serve the developed business districts of Orlando, Maitland, and Altamonte Springs.

The proposed Ultimate project and *Preferred Alternative* improvements will affect employment opportunities by enhancing access and mobility.

The proposed Ultimate project improvements will afford the opportunity for residents of Seminole and Volusia Counties to commute to the activity centers along I-4 for enhanced career opportunities.

Adverse economical effects to existing businesses may result from the construction phase of the proposed project. For further discussion on construction related impacts, refer to Section 4.8.2 of this document.

4.1.1.2.2 Income Impacts

An increase in mobility because of the improvements will provide residents with wider, more diverse, and higher paying employment opportunities. In addition, more income would be generated by construction of the Ultimate project and the *Preferred Alternative*, such as construction related employment. Construction expenditures would occur over a number of years, directly creating new demand for construction materials and jobs. These direct impacts will then lead to indirect or secondary impacts, as the production of output by firms in other industries increases to supply the demand for inputs to the construction industry. Both the direct and indirect impacts of construction expenditures cause firms in all industries to employ more workers to meet increases in demand; this leads to induced impacts as the additional wages and salaries paid to workers create higher consumer spending.

Right-of-way purchases for the proposed improvements would reduce the property tax base of Orange, Seminole, and Volusia Counties and local jurisdictions along the Ultimate project and

Preferred Alternative alignments. The estimated value of the ad valorem tax revenue loss by alternative is shown in Table 4-1 for the Ultimate project and the *Preferred Alternative*. When the property tax revenue loss is divided among the various jurisdictions, the impact on any one jurisdiction is relatively small. It is anticipated that the loss in ad valorem tax revenues would be offset by the increases in property values for the land adjacent to the I-4 interchanges.

As shown in Table 4-1, the greatest property tax loss for the Ultimate project would occur due to the SR 434 interchange improvements.

The greatest property tax loss for the Preferred Alternative would occur due to the SR 408 (East/West Expressway) interchange improvements (refer to Table 4-1).

Table 4-1. Property Tax Revenue Loss Due to Acquisitions

	FULL			PARTIAL			TOTAL	
	Taxable Value	Tax Revenue Loss	Loss as Percent of County Tax Revenue	Affected Taxable Value	Tax Revenue Loss	Loss as Percent of County Tax Revenue	Total Tax Revenue Loss	Loss as Percent of County Tax Revenue
Segment 1								
Ultimate	\$548,430	\$11,268	0.00%	\$5,261,826	\$111,626	0.04%	\$122,894	0.05%
Existing	\$548,430	\$17,483	0.01%	\$6,183	\$216	0.00%	\$17,699	0.01%
<i>Preferred (from Kirkman Rd to John Young Pkwy)</i>	<i>\$0</i>	<i>\$0</i>	<i>0.00%</i>	<i>\$6,566,992</i>	<i>\$139,056</i>	<i>0.05%</i>	<i>\$139,056</i>	<i>0.05%</i>
Segment 2								
<i>Preferred Kaley-Michigan-Exfiltration</i>	<i>\$1,103,322</i>	<i>\$22,406</i>	<i>0.01%</i>	<i>\$627,956</i>	<i>\$12,821</i>	<i>0.00%</i>	<i>\$35,227</i>	<i>0.01%</i>
<i>Preferred SR 408 Alt 2B1</i>	<i>\$4,184,044</i>	<i>\$93,169</i>	<i>0.04%</i>	<i>\$9,356,096</i>	<i>\$206,827</i>	<i>0.08%</i>	<i>\$299,996</i>	<i>0.11%</i>
<i>Preferred SR 50 Alt 2</i>	<i>\$2,372,101</i>	<i>\$51,779</i>	<i>0.02%</i>	<i>\$551,560</i>	<i>\$15,024</i>	<i>0.01%</i>	<i>\$66,803</i>	<i>0.03%</i>
Segment 3								
<i>Preferred Segment 3 - C-xfiltration</i>	<i>\$678,598</i>	<i>\$14,163</i>	<i>0.01%</i>	<i>\$727,615</i>	<i>\$15,525</i>	<i>0.01%</i>	<i>\$29,688</i>	<i>0.01%</i>
Segment 4								
<i>Preferred Segment 4 - C (from Lee Rd to Maitland Blvd)</i>	<i>\$1,296,919</i>	<i>\$25,930</i>	<i>0.02%</i>	<i>\$9,490,745</i>	<i>\$106,709</i>	<i>0.08%</i>	<i>\$132,639</i>	<i>0.10%</i>
Preferred Orange County Total:	\$9,634,984	\$207,447	0.08%	\$27,320,965	\$495,961	0.19%	\$703,408	0.27%
Ultimate Low Orange County Total:	\$10,183,414	\$224,930	0.08%	\$27,327,147	\$496,178	0.19%	\$721,107	0.27%
Ultimate High Orange County Total:	\$10,183,414	\$218,715	0.08%	\$32,582,790	\$607,587	0.23%	\$826,302	0.31%
SR 434 Alt 1	\$519,130	\$9,982	0.01%	\$5,361,692	\$101,325	0.08%	\$111,307	0.09%
SR 434 Alt 2	\$1,091,312	\$20,531	0.02%	\$9,090,421	\$170,073	0.13%	\$190,605	0.15%
Segment 5								
Ultimate	\$0	\$0	0.00%	\$1,714,405	\$32,478	0.03%	\$32,478	0.03%
Ultimate Low Seminole County Total:	\$519,130	\$9,982	0.01%	\$7,076,097	\$133,803	0.11%	\$143,785	0.11%
Ultimate High Seminole County Total:	\$1,091,312	\$20,531	0.02%	\$10,804,825	\$202,552	0.16%	\$223,083	0.18%
Segment 6								
Ultimate & Existing	\$29,620	\$683	0.00%	\$2,397,226	\$51,551	0.06%	\$52,234	0.06%
Ultimate Volusia County Total:	\$29,620	\$683	0.00%	\$2,397,226	\$51,551	0.06%	\$52,234	0.06%

All impacts associated with the Preferred Alternative are shown in **bold italics**.

4.1.1.2.3 Regional Economic Impacts

A Cost Effective Analysis (CEA), or determination of benefit to cost ratios, was performed for this study and is documented in the I-4 SAMR (April 2000). The primary purpose of the CEA for this project is to define in economic terms the net benefits that can be expected to result if the proposed I-4 improvement program is undertaken. Basically, the analysis compares the cost of implementing the improvement against the road user benefits that can be expected to accrue from having the improvements in place. The benefits are then compared to the cost of the project. Costs as defined in this application are engineering, right-of-way, construction, maintenance, and rehabilitation. Benefits are defined as the realized user benefits and salvage value costs. It is important to note that the project will incur a regional benefit realized by the overall transportation system. These benefits were calculated based on overall system improvements (reduction in overall vehicle miles traveled

and travel times) calculated from a comparison of the regional model output with and without the improvements.

The primary output indicators for the analysis are:

- Netted Benefit/Cost Ratio = User Benefits + Salvage Value - Increased Maintenance and Rehabilitation Costs/Construction Costs
- Internal Rate of Return (IRR) - a measure of the profitability of the project, IRR is equal to the discount rate where the net present value equals zero and the benefit/cost ration equals 1.0.

Bearing in mind the magnitude of the Ultimate project and the realized benefit, justification for the Ultimate project is realized at a discount rate of seven percent, considering that the return on investment is \$1.56 for every \$1.00 committed to the project, for an average return of 156 percent for the period of 2016 to 2040.

Bearing in mind the magnitude of the Preferred Alternative and the realized benefit, justification for the Preferred Alternative is realized at a discount rate of seven percent, considering that the return on investment is \$1.16 for every \$1.00 committed to the project, for an average return of 116 percent for the period of 2016 to 2040.

Therefore, participation in the funding of the proposed I-4 Ultimate project and *Preferred Alternative* improvements is an economically sound investment of public dollars.

The results of the CEA clearly indicate that the economic benefits derived from traveling on the improved interstate system will more than offset the costs of construction and maintaining the facility. It is demonstrated that the I-4 Ultimate project and the *Preferred Alternative* will benefit the overall region through travel and result in timesaving costs through improved travel conditions throughout the regional system.

4.1.1.3 Land Use and Development Activity

This section provides a summary of potential impacts to land use, activity centers, developments of regional impact, land use planning, and joint land use development.

4.1.1.3.1 Land Use Impacts

The Ultimate project and *Preferred Alternative* are not expected to significantly alter future land use designation as established in the regional and local government comprehensive plans. Only a minimal amount of vacant land exists along the Ultimate project corridor, primarily in Segments 5 and 6. Consequently, most of the land use patterns have already been established. The generalized future land use maps were previously shown on Figure 3-2.

The Ultimate project improvements will require approximately 210 to 241 acres of right-of-way for public transportation use. Approximately 109 to 122 acres are required for roadway and approximately 102 to 119 acres are required for stormwater ponds.

The Preferred Alternative will require approximately 97 acres of right-of-way for public transportation use. Approximately 57 acres are required for roadway and approximately 40 acres are required for stormwater ponds.

Additional impacts to future land use may occur due to access changes resulting from the addition and removal of ramps along the interstate.

Indirect land use impacts may occur due to residents moving away from their homes as the interstate and stormwater ponds encroach on the neighborhoods. These indirect impacts are discussed in Section 4.9 of this chapter.

The following paragraphs summarize the potential land use impacts by project segments for the Ultimate project and the *Preferred Alternative*. Section 4.1.4 describes specific impacts related to neighborhood and community cohesion, including access changes and land impacts.

Segment 1 (SR 528 to Kirkman Road)

The proposed future land use activities within Segment 1 from SR 528 (Bee Line Expressway) to Kirkman Road indicate an increase in commercial, office, and industrial use development along the I-4 corridor.

Land use impacts within this portion of Segment 1 are expected to be minimal. There may be some localized land use changes because of additional right-of-way needed for roadway and ponds. However, the impacts will not significantly affect the future land use plans for this area.

Interchange modifications are not expected to impact the land use within the surrounding areas.

Segment 1 (Kirkman Road to John Young Parkway)

The proposed future land use activities within Segment 1 from Kirkman Road to John Young Parkway are similar to the portion of Segment 1 from SR 528 (Bee Line Expressway) to Kirkman Road. The future land use indicates an increase in commercial, office, and industrial use development along this portion of the project corridor.

Land use impacts are expected to be minimal. There may be some localized land use changes as a result of additional right-of-way needed for roadway and ponds. However, the impacts will not significantly affect the future land use plans for this area.

Interchange modifications are not expected to impact the land use within the surrounding areas.

Segment 2

The proposed future land use plans along the project corridor in Segment 2 include large tracts of land reserved for residential, industrial, commercial/office, and public facilities.

Segment 2 may experience the largest land use impacts of all the segments along the project corridor. This is primarily due to the reconstruction of the I-4/SR 408 (East/West Expressway) interchange. Modifications to the Kaley-Michigan interchange and SR 50 (Colonial Drive) interchange are also expected to incur land use changes.

The modifications to the Kaley-Michigan interchanges provide increased access to the interstate, which may provide for commercial land use transitions adjacent to the neighborhoods. In addition, the right-of-way required for the roadway and ponds extend into the neighborhoods, providing potential opportunities for land use transitions. However, these changes in land uses will be localized and are not expected to change the type of land use patterns significantly.

The I-4/SR 408 (East/West Expressway) interchange modifications alter downtown Orlando access and require a number of residential and business relocations. As indicated in Chapter 2, the I-4/SR 408 (East/West Expressway) interchange will alter access to downtown Orlando. Businesses located adjacent to existing interchanges may experience land use impacts due to the proposed improvements. These impacts will be significant due to the number of relocations, change in access, and Section 106 impacts as a result of the proposed improvements. Through these impacts, pressure for land use transitions may occur.

The proposed SR 50 (Colonial Drive) interchange improvements will potentially impact several businesses and community facilities. Localized land use impacts in the vicinity of these relocations may occur. However, these localized land use impacts are not expected to be significant.

Segment 3

The land use within Segment 3 is primarily designated as residential, with some office and commercial sites located within the large residential sections and three conservation sites.

The proposed improvements will require additional right-of-way for roadway and ponds. This additional right-of-way will impact several residences, commercial buildings, and community services located along the Preferred Alternative corridor. Localized land use impacts surrounding these relocations may occur.

Community access in Segment 3 will essentially stay the same. Modifications to the Ivanhoe Boulevard interchange may cause localized land use impacts due to the change in access at this interchange. However, these localized land use impacts are not expected to be significant.

Segment 4 (Lee Road to Maitland Boulevard)

Land use in the portion of Segment 4 from Lee Road to Maitland Boulevard is a mix of residential, commercial/office, public facility, and agricultural designations. The primary designations directly adjacent to the corridor in this portion of Segment 4 are residential and commercial/office.

Land use impacts are expected to be minimal. There may be some localized land use changes as a result of additional right-of-way acquisition for roadway and ponds. However, the impacts will not significantly affect the future land use plans for this area.

Interchange modifications are not expected to impact the land use within the surrounding areas.

Segment 4 (Maitland Boulevard to West of Lake Mary Boulevard)

Land use in these segments is a mix of residential, commercial/office, and industrial designations. The primary designations directly adjacent to the corridor in this portion of Segment 4 are residential and commercial/office.

Land use impacts are expected to be minimal. There may be some localized land use changes as a result of additional right-of-way acquisition for roadway and ponds. However, the impacts will not significantly affect the future land use plans for this area.

Interchange modifications are not expected to impact the land use within the surrounding areas.

Segment 5

Land use in Segment 5 is a mix of residential, commercial/office, and industrial designations. The primary designations directly adjacent to the corridor in this segment are industrial and commercial/office.

Land use impacts within these segments are expected to be minimal. There may be some localized land use changes as a result of additional right-of-way acquisition for roadway and ponds. However, the impacts will not significantly affect the future land use plans for this area.

The primary interchange improvement in Segment 5 will be at the SR 46 interchange. A loop ramp will be provided in the northwest quadrant.

Segment 6

This segment is primarily designated for conservation and residential land use plans, with a few areas of office, commercial, and industrial use.

Land use impacts within this segment are expected to be minimal. There may be some localized land use changes as a result of additional right-of-way acquisition for roadway and ponds. However, the impacts will not significantly affect the future land use plans for this area.

The primary interchange improvement proposed in this segment will be at US 17-92. The existing ramps at Orange Boulevard will be removed and replaced by reconstructed ramps to US 17-92, providing access to and from I-4 in all directions. The modified interchange at US 17-92 may facilitate development in the area.

Mitigation

Mitigation measures for the land use impacts at the I-4/SR 408 (East/West Expressway) interchange will include several techniques. As indicated, the land use impacts at the I-4/SR 408 (East/West Expressway) interchange will be significant due to the number of relocations, change in access, and Section 106 impacts. The relocations will be mitigated through the FDOT relocation program. A description of the relocation program is presented in Section 4.1.2.3.

To limit the impacts associated with change in access at the I-4/SR 408 (East/West Expressway), Alternative 2B1 was chosen as the Preferred Alternative. This alternative maintains a westbound on-ramp at Gore Street and provides an eastbound off-ramp and a westbound on-ramp at Amelia Street.

A Memorandum of Agreement (MOA) has been developed among SHPO, FHWA, and FDOT regarding adverse effects to cultural resources and suitable mitigation measures for the Preferred Alternative. Mitigation measures for historical resource impacts have been coordinated according to the Section 106 process and the agreed upon commitments with SHPO and appropriate consulting parties as documented in the MOA. A copy of the MOA is included in Appendix L.

4.1.1.3.2 Activity Centers Impacts

As indicated in Section 3.1.1.3.3, there are six major activity centers along the Ultimate project corridor. The proposed improvements may have some beneficial and adverse impacts to the activity centers along the Ultimate project and *Preferred Alternative* corridors. In general, the improvements should increase the movement of goods and people to the activity centers, thus providing beneficial impacts to businesses within these areas. However, access to some of the activity centers will change with the improvements. These access changes may affect the movement of motorists to businesses located within the activity centers. In addition, during construction all of the activity centers may experience short-term adverse impacts.

The following is a summary of the potential impacts to the activity centers:

The International Drive Resort Area activity center includes the area surrounding International Drive on both sides from SR 528 (Bee Line Expressway) to the Florida's Turnpike. Portions of this activity center are located in the Preferred Alternative. Since this area is primarily a commercial and tourist oriented area, the proposed HOV lanes and interchange modifications may facilitate increased access to the activity center.

The CBD activity center includes the downtown Orlando area, primarily around the I-4/SR 408 (East/West Expressway) interchange. Access to and from the interstate in this area is proposed to change substantially, and will affect existing traffic movements. However, improvements to the I-4/SR 408 (East/West Expressway) interchange should improve traffic flow throughout this area.

The Winter Park activity center generally includes the area along the project corridor between Princeton Street to just north of Lee Road. The proposed improvements should benefit the activity center by increasing the mobility of motorists in this area.

The Altamonte Springs/Maitland activity center is focused primarily around the commercial and office facilities surrounding the SR 436 and Maitland Boulevard interchanges. Only the portion of the activity center surrounding the Maitland Boulevard interchange will be impacted by the Preferred Alternative. The improvements should improve the traffic flow within the area providing increased mobility for motorists in this area.

The Lake Mary/Sanford/Northwest Seminole activity center is a large area along the project corridor stretching from just south of Lake Mary Boulevard up to the St. Johns River/Lake Monroe area. This activity center is primarily focused around industrial, commercial, and office facilities. The proposed improvements will increase the mobility of motorists in the activity center and will revise access to the Port of Sanford area.

The SR 472/Howland Boulevard activity center includes primarily the area to the northwest of the interchange. This is an area designated for mixed use of commercial, office, and residential sites. The proposed improvements will increase the mobility of motorists in the activity center.

4.1.1.3.3 Developments of Regional Impact

It is anticipated that the DRIs located adjacent to the Ultimate project and *Preferred Alternative* corridors will experience short-term adverse impacts during construction. However, long-term adverse impacts are not expected to occur. In fact, beneficial long-term impacts may occur to the DRIs located adjacent to the Ultimate project and *Preferred Alternative* corridors due to the

increased mobility of motorists gaining access to the DRIs. The following paragraphs describe potential impacts to the DRIs. The locations of the DRIs are presented on Figure 1-17 and are summarized in Table 3-22.

Segment 1 (SR 528 to Kirkman Road)

None of the DRIs located within this portion of Segment 1 will be directly impacted by the proposed improvements.

Segment 1 (Kirkman Road to John Young Parkway)

There is one DRI located within this portion of Segment 1 that may experience direct impacts as a result of the Preferred Alternative. Additional right-of-way will be required for roadway improvements and pond sites in the vicinity of the Millenia site, which is located adjacent to the project corridor at the Conroy Road interchange. However, this direct use impact will not adversely impact the DRI.

Segment 2

This segment contains several DRIs located in close proximity to the Preferred Alternative corridor. All of the DRIs located in Segment 2 will be impacted due to the changes in access to downtown Orlando. The DRIs located within Segment 2 will also experience visual impacts due to the introduction of a four-level interchange proposed by the I-4/SR 408 (East/West Expressway) flyover interchange alternative (Alternative 2B1).

Two of the DRIs located in Segment 2 will also be impacted by additional right-of-way acquisition for roadway and pond improvements. The downtown Orlando DRI will experience the most relocations from roadway and pond requirements. This high number of relocations is primarily due to the reconstruction of the I-4/SR 408 (East/West Expressway) interchange. There will also be some relocations within the T.D. Waterhouse Centre (formerly known as the Orlando Arena) DRI as a result of the proposed shift in the alignment of Hughey Avenue. Refer to Section 4.1.2 for information on displacement and relocations. Section 4.1.2.3 provides information on the relocation program to mitigate impacts due to relocations and displacements.

Segment 3

The Florida Hospital DRI, which encompasses land and several buildings along the project corridor just north of downtown Orlando, will be directly impacted by the proposed improvements. The Florida Hospital Center for Psychiatry on Dade Avenue is proposed for relocation due to right-of-way acquisition for roadway improvements. Refer to Section 4.1.2 for information on displacement and relocations. Section 4.1.2.3 provides information on the relocation program to mitigate impacts due to relocations and displacements.

Segment 4 (Lee Road to Maitland Boulevard)

The Lakepointe-Maitland Substantial Deviation DRI, which is located off Lake Hope and Lake Charity, may be impacted by the reconstruction of the Maitland Boulevard interchange. Impacts to this DRI will not be significant.

Segment 4 (Maitland Boulevard to West of Lake Mary Boulevard)

None of the DRIs located within this portion of Segment 4 will be directly impacted by the proposed improvements.

Segment 5

None of the DRIs located within Segment 5 will be directly impacted by the proposed improvements.

Segment 6

The Hidden Harbour Marina, located within the Port of Sanford, may be impacted by access changes at the proposed US 17-92 interchange. Impacts to this DRI are not expected to be significant.

4.1.1.3.4 Project Consistency with Land Use Planning

As indicated in Sections 1.3.3 and 1.3.4, regional and local government planning documents were reviewed for consistency with the Ultimate project and *Preferred Alternative*.

Overall, the regional and local government comprehensive plans were found to be consistent with the Ultimate project and *Preferred Alternative* goals and objectives. Each independent comprehensive plan has a common transportation goal to create an efficient multi-modal transportation system that will promote increased public safety and greater economic viability, in coordination with existing and future land use activities. A summary of the relevant transportation-related goals and improvements identified in each of the documents reviewed is presented in Section 3.1.1.4.1.

4.1.1.3.5 Joint Land Use Development

Joint land uses currently exist along the *Preferred Alternative* corridor under I-4 at Church Street and under SR 408 (East/West Expressway) near Rosalind Avenue.

A public parking lot exists under I-4 near Church Street. It is anticipated that the parking lot will remain a joint use development after the construction of the Preferred Alternative. In addition, the parking lot may be expanded since the interstate will be widened. It is also anticipated that the parking lot will be impacted in the short-term during construction.

The other existing joint use developments within the Preferred Alternative corridor are Franklin Albert Park, OOCEA office, and other commercial structures located partially under SR 408 (East/West Expressway) in the vicinity of Rosalind Avenue. It is anticipated that the OOCEA offices may be relocated due to the widening of SR 408. Other joint use developments in the area will remain following construction of the proposed I-4/SR 408 (East/West Expressway) interchange modifications. Short-term impacts may occur at these locations during construction.

Throughout the project development process, coordination with the local jurisdictions has occurred concerning the treatment of stormwater. Some local jurisdictions have expressed an interest in developing joint use stormwater ponds along the corridor. Coordination with the local jurisdictions will continue throughout the design phase of the project to identify locations for joint use stormwater ponds.

4.1.2 Displacements and Relocations

Displacement results from right-of-way acquisition, and requires permanent removal or relocation of existing land uses. Right-of-way acquisition for the Ultimate project and *Preferred Alternative* would involve some partial or complete purchase of parcels of land with resulting displacement of residential and non-residential land uses. FDOT would acquire all rights-of-way needed for the proposed Ultimate project and *Preferred Alternative*.

Under the requirements of federal law and state statute, property owners would be paid fair market value for their property, and provided assistance in finding replacement business sites and dwellings. See Section 4.1.2.3 for a more detailed discussion of the relocation program.

It should be noted that FDOT has proceeded with advanced right-of-way acquisition for a number of the parcels affected by the Ultimate project and *Preferred Alternative*. However, this advanced right-of-way acquisition has not affected the selection of the *Preferred Alternative*.

4.1.2.1 Displacements

Acquisitions and displacements were calculated based on engineering drawings prepared February 25, 2002. In addition, field reviews were performed in January 1999 and April 2002. Generally, if the percentage of the impacted property was less than 100 percent of the entire property, it was considered a partial acquisition even if the impact involved a building located on the property.

Orange County, Seminole County, and Volusia County Property Appraiser information and field reviews were used to characterize parcel use. Employment estimates were calculated based on

employee per-square-foot assumptions for each type of land use. A parcel breakdown of this information can be found in the project files. Table 4-2 provides a summary of residential and non-residential relocations broken down by segment and by roadway and stormwater pond impacts. This information, right-of-way impacts, and parcel impacts are also presented in Table 2-10 for the *Preferred Alternative* and Table 2-11 for the Ultimate project.

Table 4-2. Summary of Parcel Relocations

	ROAD				POND				TOTAL				
	Residential			No. of Non-Residential Units	Residential			No. of Non-Residential Units	Residential			No. of Non-Residential Units	No. of Non-Residential Impacted Parking Spaces
	MF		SF		MF		SF		MF		SF		
	DU	Buildings		DU	Buildings	DU		Buildings					
Segment 1													
Ultimate	0	0	0	1	1	0	0	0	1	0	0	1	134
Existing	0	0	0	0	1	0	0	0	1	0	0	0	0
<i>Preferred (from Kirkman Rd to John Young Pkwy)</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>129</i>
Segment 2													
<i>Preferred Kaley-Michigan-Exfiltration</i>	<i>6</i>	<i>0</i>	<i>0</i>	<i>2</i>	<i>13</i>	<i>2</i>	<i>1</i>	<i>7</i>	<i>19</i>	<i>2</i>	<i>1</i>	<i>9</i>	<i>7</i>
<i>Preferred SR 408 Alt 2B1</i>	<i>10</i>	<i>101</i>	<i>20</i>	<i>29</i>	<i>1</i>	<i>2</i>	<i>1</i>	<i>1</i>	<i>11</i>	<i>103</i>	<i>21</i>	<i>30</i>	<i>407</i>
<i>Preferred SR 50 Alt 2</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>9</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>4</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>13</i>	<i>42</i>
Segment 3													
<i>Preferred C-Exfiltration</i>	<i>52</i>	<i>8</i>	<i>1</i>	<i>8</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>52</i>	<i>8</i>	<i>1</i>	<i>8</i>	<i>44</i>
Segment 4													
<i>Preferred C (from Lee Rd to Maitland Blvd)</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>2</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>2</i>	<i>253</i>
<i>Preferred Orange County Total:</i>	<i>68</i>	<i>109</i>	<i>21</i>	<i>51</i>	<i>14</i>	<i>4</i>	<i>2</i>	<i>12</i>	<i>82</i>	<i>113</i>	<i>23</i>	<i>63</i>	<i>882</i>
Ultimate Low Orange County Total:	68	109	21	51	15	4	2	12	83	113	23	63	882
Ultimate High Orange County Total:	68	109	21	52	15	4	2	12	83	113	23	64	1016
SR 434 Alt 1	1	0	0	2	4	188	17	0	5	188	17	2	366
SR 434 Alt 2	1	0	0	6	4	188	17	0	5	188	17	6	321
Segment 5													
Ultimate	3	0	0	1	0	0	0	0	3	0	0	1	103
Ultimate Low Seminole County Total:	4	0	0	3	4	188	17	0	8	188	17	3	469
Ultimate High Seminole County Total:	4	0	0	7	4	188	17	0	8	188	17	7	424
Segment 6													
Ultimate & Existing	0	0	0	10	0	0	0	0	0	0	0	10	0
Totals													
<i>Preferred Alternative Total</i>	<i>68</i>	<i>109</i>	<i>21</i>	<i>51</i>	<i>14</i>	<i>4</i>	<i>2</i>	<i>12</i>	<i>82</i>	<i>113</i>	<i>23</i>	<i>63</i>	<i>882</i>
Ultimate Low Project Total	72	109	21	64	19	192	19	12	91	301	40	76	1351
Ultimate High Project Total	72	109	21	69	19	192	19	12	91	301	40	81	1440

All impacts associated with the Preferred Alternative are shown in *Bold Italics*.

SF single family dwelling unit
 DU dwelling unit
 MF multi-family

As shown in Table 2-11, the Ultimate project will result in the right-of-way impact of 519 to 536 parcels (approximately 210 to 241 acres). Most of these parcel impacts are related to roadway improvements, which impact 428 to 443 parcels (approximately 109 to 122 acres); whereas, stormwater pond improvements impact 91 to 93 parcels (approximately 102 to 119 acres). The Ultimate project will result in 144 to 146 full acquisitions and 375 to 390 partial acquisitions. Most of the impacted parcels are non-residential (382 to 399 parcels, mostly commercial businesses).

As shown in Table 2-10, the Preferred Alternative will result in the right-of-way impact of 362 parcels (approximately 97 acres). Most of these parcel impacts are related to roadway

improvements, which impact 309 parcels (approximately 57 acres); whereas, stormwater pond improvements impact 53 parcels (approximately 40 acres). The Preferred Alternative will result in 111 full acquisitions and 251 partial acquisitions. Most of the impacted parcels are non-residential (244 parcels, mostly commercial businesses).

Segment 1: Ultimate/Existing Bee Line Interchange Alternatives

The Ultimate Bee Line Interchange Alternative impacts an additional 11 parcels (24.2 acres) and involves one more non-residential relocation than the Existing Bee Line Interchange Alternative.

Ultimate Bee Line Interchange Alternative

The Ultimate Bee Line Alternative will result in 32 partial acquisitions and six full acquisitions, a total impact of 38 parcels. Ten of the parcels are impacted due to stormwater ponds (29.3 acres) and 28 are impacted due to roadway improvements (11.4 acres), for a total impact of 40.7 acres. Most of the impacts (37 parcels) involve non-residential land uses including commercial land uses and vacant parcels at the interchanges of SR 528 (Bee Line Expressway), Sand Lake Road, Kirkman Road, and Conroy Road.

One of the impacted parcels is residential involving one relocation due to proposed stormwater Pond B-2. The Ultimate Bee Line Alternative is estimated to relocate three residents from one single-family home and 172 employees from two non-residential properties.

The proposed roadway improvements for the Ultimate Bee Line Alternative will involve the direct use, partial impact of the Places of Learning currently operated by the Orange County Sheriff's office. Further discussions on impacts to community facilities are presented in Section 4.1.3.

Existing Bee Line Interchange Alternative

The Existing Alternative will result in 22 partial acquisitions and six full acquisitions, for a total impact of 28 parcels. Eight of the impacted parcels are due to stormwater ponds (12.8 acres) and 20 are impacted due to roadway improvements (3.7 acres), for a total impact of 16.5 acres. Most of the impacts (27 parcels) involve non-residential land uses including commercial land uses and vacant parcels at the interchanges of Sand Lake Road, Kirkman Road, and Conroy Road.

One of the impacted parcels is residential involving one relocation due to proposed stormwater Pond B-2. The Existing Alternative is estimated to relocate three residents from one single-family home and 28 employees from one non-residential property.

Segment 1: Preferred Alternative –Typical Section C with Ponds

As indicated previously, the Preferred Alternative within Segment 1 extends from Kirkman Road to John Young Parkway. The Preferred Alternative within this portion of Segment 1 will result in 21 partial acquisitions. Twenty of the parcels are impacted due to stormwater ponds (4.5 acres) and one is impacted due to roadway improvements (3.7 acres), for a total impact of 8.2 acres. All of the impacts (21 parcels) involve non-residential land uses including commercial land uses and vacant parcels at the interchanges of Kirkman Road and Conroy Road.

Segment 2: Kaley-Michigan Exfiltration Alternative

Two neighborhoods within this area are significantly impacted: Angebilt and Holden Heights.

The Kaley-Michigan Exfiltration Alternative will result in 16 partial acquisitions and 28 full acquisitions, for a total impact of 44 parcels. Twenty-nine of the parcels are impacted due to stormwater ponds (13.8 acres) and 15 are impacted due to roadway improvements (7.5 acres), for a total impact of 21.3 acres. Approximately half of the impacts (22 parcels) involve non-residential land uses including commercial and industrial land uses from the interchange of the Orange Blossom Trail and just north of Kaley Street.

Twenty-two of the impacted parcels are residential involving 21 relocations due to roadway impacts and proposed stormwater Ponds O-4, N-4, and N-5. This alternative is estimated to relocate 65 residents from 21 homes and 105 employees from 9 non-residential properties.

A few special facilities are impacted by the Kaley-Michigan Exfiltration Alternative. These facilities include the Holden Heights Community Center, the House of Hope, and the Hare Krishna House. Further discussions on impacts to community facilities are presented in Section 4.1.3.

Segment 2: SR 408 (East/West Expressway) Alternative 2B1

There are two neighborhoods within this area that are significantly impacted: Holden-Parramore (including Griffin Park Historic District) and downtown Orlando.

Alternative 2B1 will result in 86 partial acquisitions and 55 full acquisitions, for a total impact of 141 parcels. Eleven of the parcels are affected due to stormwater ponds (3.6 acres) and 130 are affected due to roadway improvements (27.7 acres), for a total impact of 31.3 acres. Twenty-eight of the impacted parcels are residential involving 114 relocations (351 residents) due to SR 408 interchange improvements and proposed stormwater Pond P-6.

SR 408 Alternative 2B1 is estimated to relocate 113 residents of which 40 residents are from 16 units in two buildings within Griffin Park, one single-family home (three residents) on Carter Street, and one single-family home (three residents) in Holden Heights. SR 408 Alternative 2B1 will also have a direct use impact to the Griffin Park community center and recreational area.

Alternative 2B1 is expected to relocate 458 employees from 30 non-residential properties.

A few special facilities are impacted by Alternative 2B1. These facilities include the Coalition for the Homeless T.B Shelter, the Orlando Day Nursery, and the Lakeside Alternatives. Further discussions of impacts to the community facilities are presented in Section 4.1.3.

Segment 2: Colonial Drive (SR 50) Alternative 2

The impacted areas around the SR 50 interchange include portions of Lake Dot, College Park, and Garland Avenue. This area is primarily commercial and has no impacts to residential land uses. The SR 50 Alternative 2 was developed specifically to avoid historic resources located on the south and north sides of SR 50. Alternative 2 was developed to avoid impacts to the Colonial Garage but has direct use impacts to the Judge Cheney property. Both the Judge Cheney House and the Colonial Garage are historic resources and impacts to these facilities involve Section 106 and Section 4(f) issues, which are discussed later in this section.

SR 50 Alternative 2 will result in 15 partial acquisitions due to roadway impacts and six full acquisitions due to stormwater Pond R-2 impacts, for a total impact of 21 parcels (3.6 acres). Impacts involve non-residential, mostly commercial land uses. This alternative is estimated to relocate 188 employees from 13 non-residential properties.

Segment 3: Typical Section C with Exfiltration

Most of this area is within the neighborhood of College Park.

This alternative will result in 79 partial acquisitions and 20 full acquisitions, for a total impact of 99 parcels. None of the parcels are impacted due to stormwater ponds and 99 are impacted due to roadway improvements, for a total impact of 10.4 acres. The non-residential land uses (33 parcels) are mostly commercial land uses. Most of the impacts (66 parcels) involve residential land uses involving 60 relocations due to roadway impacts. This alternative is estimated to relocate 127 residents from 60 homes and 30 employees from 8 non-residential properties.

A few community facilities are impacted by the C-Exfiltration alternative. These facilities include Templo Evangelistico Del Nazareno Church and Killarney Elementary School. Further discussions of impacts to community facilities are presented in Section 4.1.3.

Segment 4: Preferred Alternative – Typical Section C with Ponds

As indicated previously, the Preferred Alternative within Segment 4 extends from Lee Road to Maitland Boulevard. The Preferred Alternative within this portion of Segment 4 will result in 34 partial acquisitions and 2 full acquisitions, for a total impact of 36 parcels. Six of the parcels are impacted due to stormwater ponds (15.7 acres) and 30 are impacted due to roadway improvements (6.5 acres), for a total impact of 20.2 acres. Most of the impacts (34 parcels) involve non-residential land uses including commercial land uses. Two of the impacted parcels are residential involving no relocations due to roadway impacts. The Preferred Alternative is estimated to relocate 128 employees from two non-residential properties.

Segment 4: SR 434 Alternatives

There are several neighborhoods within this area that are impacted: the Spanish Trace Apartments, Palm Springs, and Sanlando Springs. The land use adjacent to the I-4 corridor is primarily commercial within Segment 4. The most of SR 434 Alternative 2 impacts are associated with the proposed loop ramp in the northwest quadrant of the I-4/SR 434 interchange.

SR 434 Alternative 1

This alternative will result in 81 partial acquisitions and 14 full acquisitions, for a total impact of 95 parcels. Twenty-one of the parcels are impacted due to stormwater ponds (37.1 acres) and 74 are impacted due to roadway improvements (13 acres), for a total impact of 50.1 acres. Most of the impacts (80 parcels) involve non-residential land uses including commercial land uses. Fifteen of the impacted parcels are residential involving 193 relocations due to roadway impacts and proposed stormwater Ponds CC-2, and FF-3 (Spanish Trace Apartments). This alternative is estimated to relocate 523 residents from 193 homes (including 188 multi-family dwelling units (MF DUs) in the Spanish Trace Apartments) and 192 employees from 4 non-residential properties.

SR 434 Alternative 2

This alternative will result in 86 partial acquisitions and 16 full acquisitions, for a total impact of 102 parcels. Twenty-one of the impacted parcels are impacted due to stormwater ponds (37.4 acres) and 81 are impacted due to roadway improvements (18.8 acres), for a total impact of 56.2 acres. Most of the impacts (87 parcels) involve non-residential land uses including commercial land uses. Fifteen of the impacted parcels are residential involving 193 relocations due to roadway impacts and proposed stormwater Ponds CC-2 and FF-3. This alternative is estimated to relocate 523 residents from 193 homes (including 188 MF DUs of the Spanish Trace Apartments) and 594 employees from 8 non-residential properties.

A few community facilities are impacted by these alternatives. Further discussions on impacts to community facilities are presented in Section 4.1.3.

Segment 5: Typical Section C with Ponds

This alternative will result in 37 partial acquisitions and one full acquisition, for a total impact of 38 parcels. None of the parcels are impacted due to stormwater ponds and 38 are impacted due to roadway improvements for a total impact of 16.6 acres. Most of the impacts (33 parcels) involve non-residential land uses including commercial land uses and vacant parcels. Five of the impacted parcels are residential involving three relocations due to roadway impacts. This alternative is estimated to relocate seven residents from three homes and six employees from one non-residential property.

Segment 6: Ultimate and Existing SR 472 Interchange Alternatives

This alternative will result in 39 partial acquisitions and 14 full acquisitions, for a total impact of 53 parcels. Sixteen of the parcels are impacted due to stormwater ponds (32.0 acres) and 37 are impacted due to roadway improvements (28.6 acres), for a total impact of 60.7 acres. Most of the impacts

Table 4-3. Non-Residential Impacts Due To Acquisitions

	COMMERCIAL & INDUSTRIAL ¹			HOTEL/MOTEL & RESTAURANT ²			OTHER ³			VACANT	TOTAL		
	No. of Impacted Parcels	No. of Relocations	No. of Displaced Employees ⁵	No. of Impacted Parcels	No. of Relocations	No. of Displaced Employees ⁵	No. of Impacted Parcels	No. of Relocations	No. of Displaced Employees ⁵	No. of Impacted Parcels ⁴	No. of Impacted Parcels	No. of Relocations	No. of Displaced Employees
Segment 1													
Ultimate	4	1	144	2	0	0	1	0	0	9	16	1	144
Existing	0	0	0	0	0	0	0	0	0	6	6	0	0
<i>Preferred (from Kirkman Rd to John Young Pkwy)</i>	<i>6</i>	<i>1</i>	<i>28</i>	<i>6</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>0</i>	<i>0</i>	<i>8</i>	<i>21</i>	<i>1</i>	<i>28</i>
Segment 2													
<i>Preferred Kaley-Michigan-Exfiltration</i>	<i>7</i>	<i>5</i>	<i>18</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>4</i>	<i>4</i>	<i>87</i>	<i>11</i>	<i>22</i>	<i>9</i>	<i>105</i>
<i>Preferred SR 408 Alt 2B1</i>	<i>58</i>	<i>28</i>	<i>287</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>3</i>	<i>2</i>	<i>171</i>	<i>52</i>	<i>113</i>	<i>30</i>	<i>458</i>
<i>Preferred SR 50 Alt 2</i>	<i>16</i>	<i>13</i>	<i>188</i>	<i>1</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>4</i>	<i>21</i>	<i>13</i>	<i>188</i>
Segment 3													
<i>Preferred C-Exfiltration</i>	<i>12</i>	<i>8</i>	<i>30</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>3</i>	<i>0</i>	<i>0</i>	<i>18</i>	<i>33</i>	<i>8</i>	<i>30</i>
Segment 4													
<i>Preferred C (from Lee Rd to Maitland Blvd)</i>	<i>24</i>	<i>2</i>	<i>128</i>	<i>4</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>0</i>	<i>0</i>	<i>5</i>	<i>34</i>	<i>2</i>	<i>128</i>
<i>Preferred Orange County Total:</i>	<i>123</i>	<i>57</i>	<i>679</i>	<i>11</i>	<i>0</i>	<i>0</i>	<i>12</i>	<i>6</i>	<i>258</i>	<i>98</i>	<i>244</i>	<i>63</i>	<i>937</i>
Low Orange County Total:	123	57	679	11	0	0	12	6	258	104	250	63	937
High Orange County Total:	127	58	823	13	0	0	13	6	258	107	260	64	1081
Typical Section C & SR 434 Alt 1	16	2	64	5	0	0	3	0	0	22	46	2	64
Typical Section C & SR 434 Alt 2	16	3	68	9	3	398	3	0	0	25	53	6	466
Segment 5													
Typical Section C	7	1	6	2	0	0	2	0	0	22	33	1	6
Ultimate Low Seminole County Total:	23	3	70	7	0	0	5	0	0	44	79	3	70
Ultimate High Seminole County Total:	23	4	74	11	3	398	5	0	0	47	86	7	472
Segment 6													
Ultimate & Existing	5	10	191	0	0	0	0	0	0	48	53	10	191
Ultimate Volusia County Total:	5	10	191	0	0	0	0	0	0	48	53	10	191
Low Project Total	151	70	940	18	0	0	17	6	258	196	382	76	1198
High Project Total	155	72	1088	24	3	398	18	6	258	202	399	81	1744

All impacts associated with the Preferred Alternative are shown in ***Bold Italics***.

¹ Industrial comprise 2-4 Impacted Parcels, 0-2 Relocations and 0-51 Displaced Employees. Commercial comprise 157-173 Impacted Parcels, 71-80 Relocations and 1016-1142 Displaced Employees

² Hotel/Motel comprise 13-14 Impacted Parcels, 0-1 Relocations and 0-354 Displaced Employees. Restaurants comprise 8-11 Impacted Parcels, 0-2 Relocations and 0-44 Displaced Employees

³ "Other" includes community facilities, refer to Section 4.1.3.2 for further discussion.

⁴ "Vacant" category includes vacant nonresidential and residential zoned land.

⁵ Employee factors: commercial: 1 employee/500 sq.ft.; industrial: 1 employee/300 sq.ft.; hotel/motel: 1 employee/250 sq.ft.; restaurant: 1 employee/250 sq.ft.; other: 1 employee/250 sq.ft.

(53 parcels) involve non-residential land uses including commercial land uses and vacant parcels. These alternatives are estimated to relocate 191 employees from ten non-residential properties. No residential relocations are proposed

4.1.2.1.1 Impacts to Businesses

The impacts to businesses are summarized in Table 4-3. The largest impact to businesses occurs due to acquisition of property needed for roadway improvements associated with Segments 2 and 4. The Ultimate project improvements are expected to impact 382 to 399 business properties (excluding 196 to 202 vacant commercial properties). This impact involves the relocation of 76 to 81 businesses (this includes community facilities discussed later in this section). Business relocations consist of approximately 89 to 92 percent of commercial facilities.

The Preferred Alternative is expected to impact 244 business properties (excluding 98 vacant commercial properties). This impact involves the relocation of 63 businesses (this includes community facilities discussed later in this section). Business relocations consist of approximately 90 percent of commercial facilities. The businesses can be classified as follows:

- *Industrial/light manufacturing*
- *Small retail convenience/gas*
- *Small service related*
- *Healthcare*
- *Community organizations*
- *Auto/equipment retail*
- *Professional office*

Modifications to the SR 408 interchange account for approximately 37 to 40 percent of the total Ultimate project relocations.

Modifications to the SR 408 interchange account for approximately 48 percent of the total Preferred Alternative relocations.

Furthermore, approximately 26 to 38 percent of the total Ultimate project employees displaced are due to the SR 408 Alternative 2B1 in Segment 2, and 16 to 34 percent of the total employees displaced are associated with the SR 434 interchange in Segment 4.

Approximately 49 percent of the total Preferred Alternative employees displaced are due to the SR 408 Alternative 2B1 and approximately 20 percent are associated with the SR 50 Alternative 2 in Segment 2.

The impacts to businesses are not expected to affect the economy in the community. According to the *Conceptual Stage Relocation Plan* (April 2001), there are an adequate number of sites available along the Ultimate project and *Preferred Alternative* corridor where the effected businesses may relocate. Plausible business relocation sites are included as part of the *Conceptual Stage Relocation Plan* (April 2001).

A check of the multiple listings for the immediate area reveals that there are six properties leasing space, one entire business for sale, and five vacant sites. It is not anticipated that all of the impacted businesses will be relocating at one time. It appears that the market will be able to absorb all the displaced businesses as they enter the real estate market.

Vehicle and pedestrian access impacts will occur to businesses along the I-4 corridor. Another important issue related to non-residential property impacts is acquisitions that involve existing parking spaces. The impacts to parking are included in the *Conceptual Stage Relocation Plan* (April 2001) and shown in Table 4-2. The Ultimate project is expected to impact approximately 1,351 to 1,440 non-residential parking spaces.

The Preferred Alternative is expected to impact approximately 882 non-residential parking spaces. Impacts to parking spaces may result in a loss of business and non-residential properties. Mitigation for the impacted non-residential parking spaces will be through financial compensation.

4.1.2.1.2 Impacts to Housing Supply and Employment

The range of impacts of the Ultimate project to housing supply and employment in the tri-county and Ultimate project study area are listed on Table 4-4. In terms of housing supply, the Ultimate project will have a minimal impact from a countywide perspective, amounting to totals ranging between 0.4 percent and 0.7 percent.

In addition, the Preferred Alternative will have a minimal impact on housing supply from a countywide perspective, amounting to totals of 0.06 percent in 1996 and 0.04 percent in 2020.

According to the *Conceptual Stage Relocation Plan* (April 2001), there is an abundance of replacement dwellings for residents displaced from single-family units to relocate. In addition, there are enough vacancies in apartment complexes located within the Ultimate project and *Preferred Alternative* study areas for residents displaced from multi-family units. Plausible residential and apartment relocation sites are included as part of the *Conceptual Stage Relocation Plan* (April 2001).

Table 4-4. Summary of Housing Supply and Employment Impact (as a percentage of totals)

Area	Housing		Employees	
	1996	2020	1996	2020
Tri-County Area				
Orange County	0.06%	0.04%	0.16%–0.18%	0.09%–0.11%
Seminole County	0.13%	0.08%	0.04%–0.30%	0.02%–0.17%
Volusia County	0%	0.04%	0.11%	0.07%
Tri-County Total:	0.06%	0.04%	0.13%–0.19%	0.08%–0.11%
<i>Preferred Alternative:</i>	<i>0.06%</i>	<i>0.04%</i>	<i>0.16%</i>	<i>0.09%</i>
Project Study Area				
Orange County	0.43%	0.31%	0.49%–0.57%	0.33%–0.38%
Seminole County	0.59%	0.34%	0.13%–0.85%	0.06%–0.40%
Volusia County	0%	0%	1.89%	1.01%
Ultimate Project Study Area Total:	0.42%	0.28%	0.47%–0.68%	0.28%–0.41%
<i>Preferred Alternative:</i>	<i>0.42%</i>	<i>0.31%</i>	<i>0.49%</i>	<i>0.33%</i>

All impacts associated with the Preferred Alternative are shown in ***Bold Italics***.

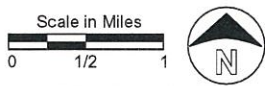
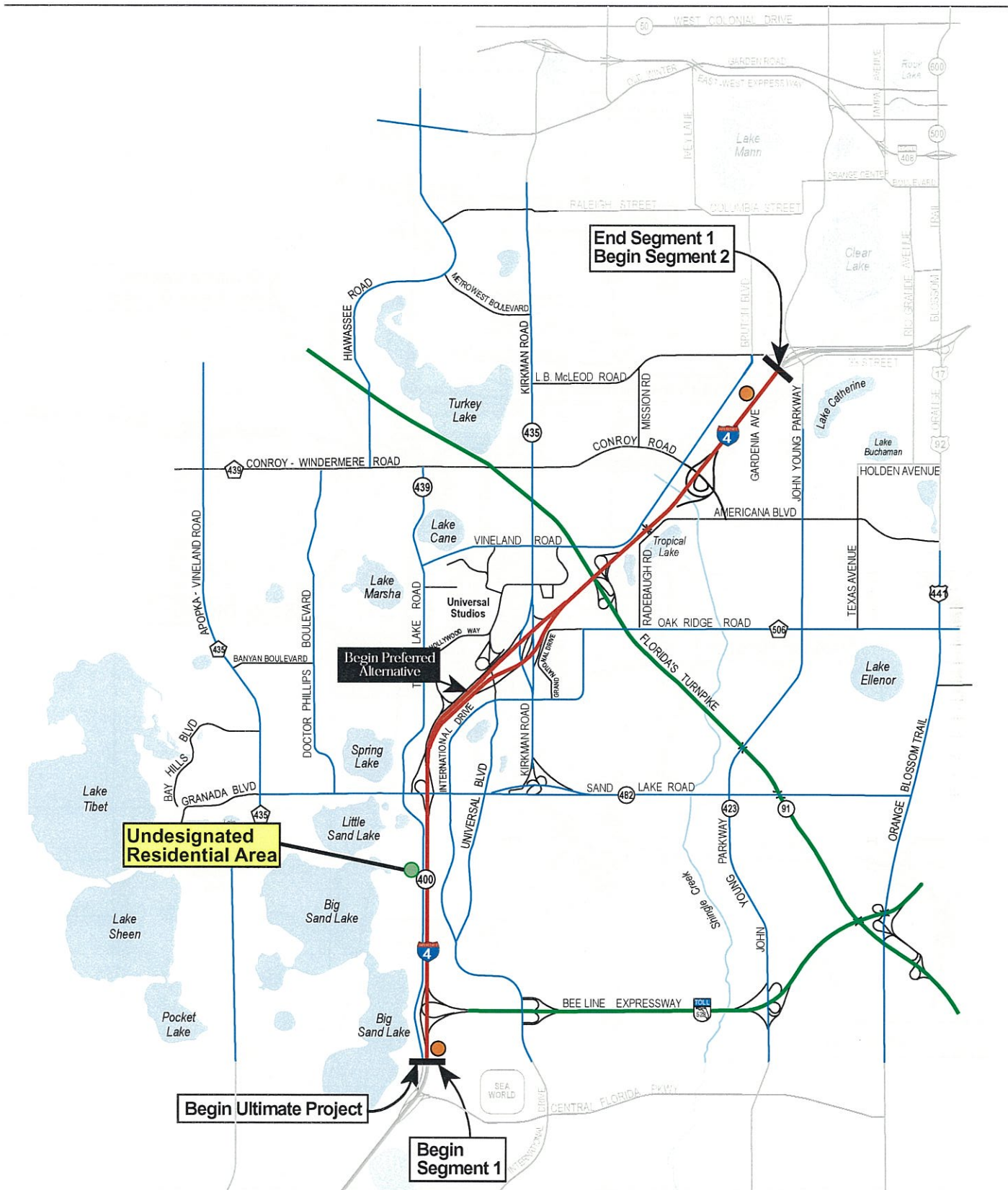
Source: East Central Florida Regional Planning Council, City of Orlando Planning Department, 1988.

In terms of employment, a comparison to the 1996 base indicates that the Ultimate project would impact approximately 0.13 percent to 0.19 percent of the tri-county area total and approximately 0.47 percent to 0.68 percent of the Ultimate project study area total. For a 2020 base comparison, the Ultimate project would impact approximately 0.08 percent to 0.11 percent of the tri-county area total and approximately 0.28 percent to 0.41 percent of the Ultimate project study area total.

The employment impacts are not considered significant for the Ultimate project given the relative ratio of impact and the fact that many of the impacted businesses will likely relocate within the tri-county area.

For 1996, The Preferred Alternative impacts approximately 0.16 percent of the tri-county area total and approximately 0.49 percent of the Preferred Alternative study area total. For 2020, the Preferred Alternative impacts approximately 0.09 percent of the tri-county area total and approximately 0.33 percent of the Preferred Alternative study area total.

The employment impacts are not considered significant for the Preferred Alternative given the relative ratio of impact and the fact that many of the impacted businesses will likely relocate within Orange County and Seminole County.

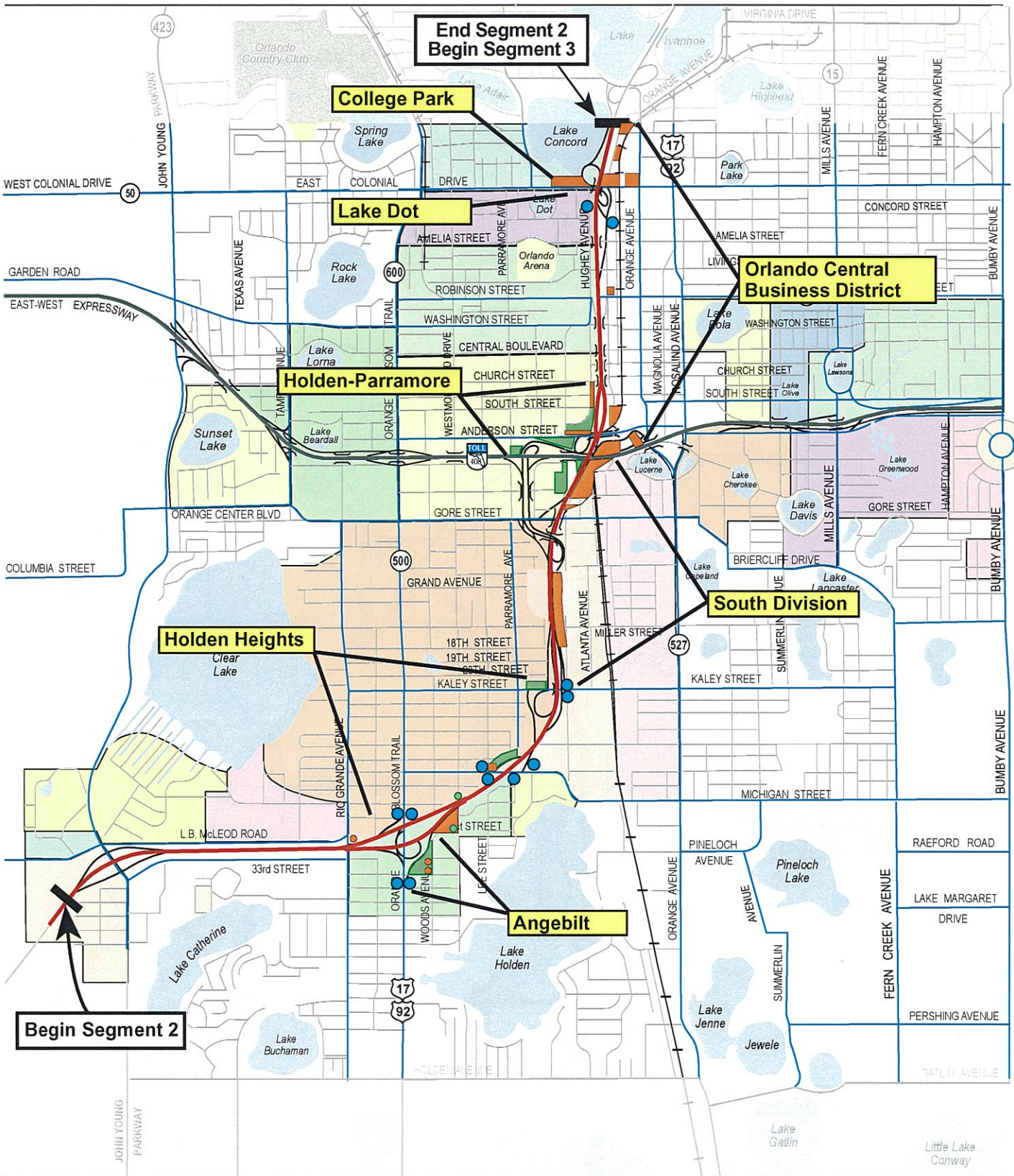


Approximate Area of Business Relocations
 Approximate Area of Residential Relocations

Note: Refer to Section 4.1.2 for impacts by alternative.



Figure 4-1
Neighborhood Impacts
I-4 PD&E Study - Section 2
Segment 1 of 6

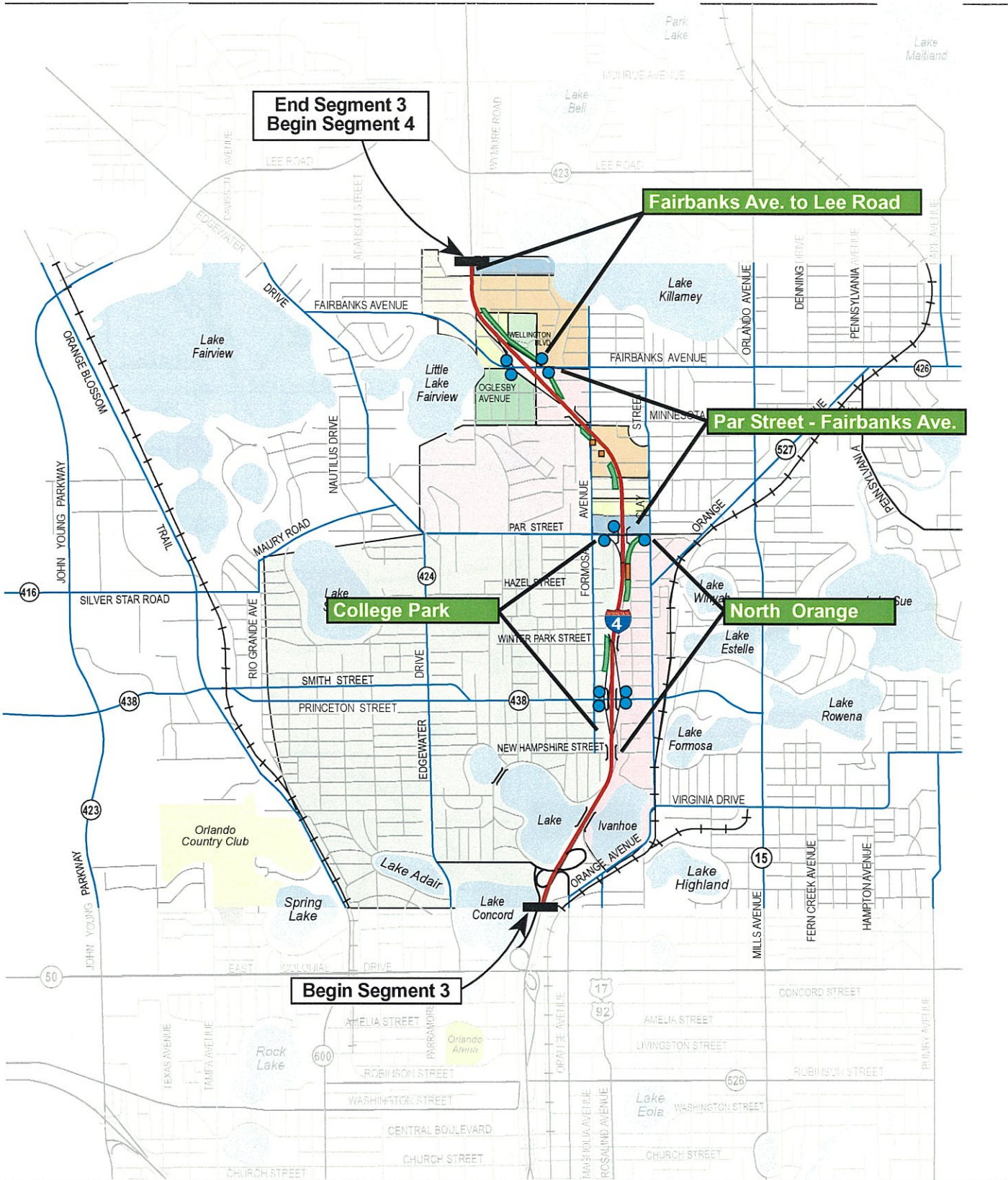


- Approximate Area of Business / Non-Residential Relocations
 - Approximate Area of Residential Relocations
 - Approximate Area of Limited Access
- Note: Refer to Section 4.1.2 for impacts by alternative.*

**Figure 4-1
Neighborhood Impacts**

I-4 PD&E Study - Section 2
Segment 2 of 6





- Approximate Area of Business Relocations
- Approximate Area of Residential Relocations
- Approximate Area of Limited Access Severance Damages (Business & Residential)

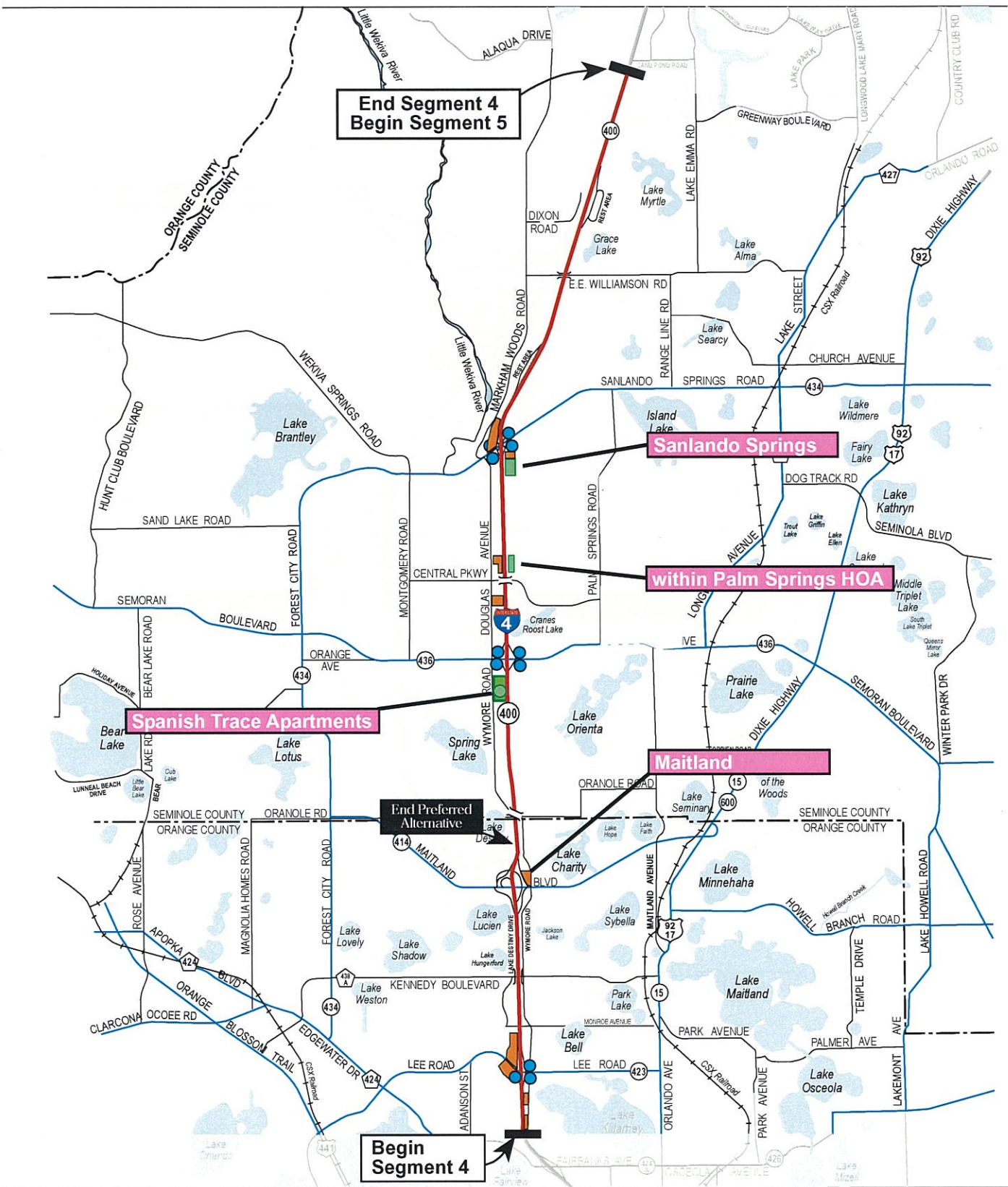


Note: Refer to Section 4.1.2 for impacts by alternative.

Figure 4-1
Neighborhood Impacts



I-4 PD&E Study - Section 2
Segment 3 of 6



**End Segment 4
Begin Segment 5**

Sanlando Springs

within Palm Springs HOA

Spanish Trace Apartments

Maitland

End Preferred Alternative

Begin Segment 4

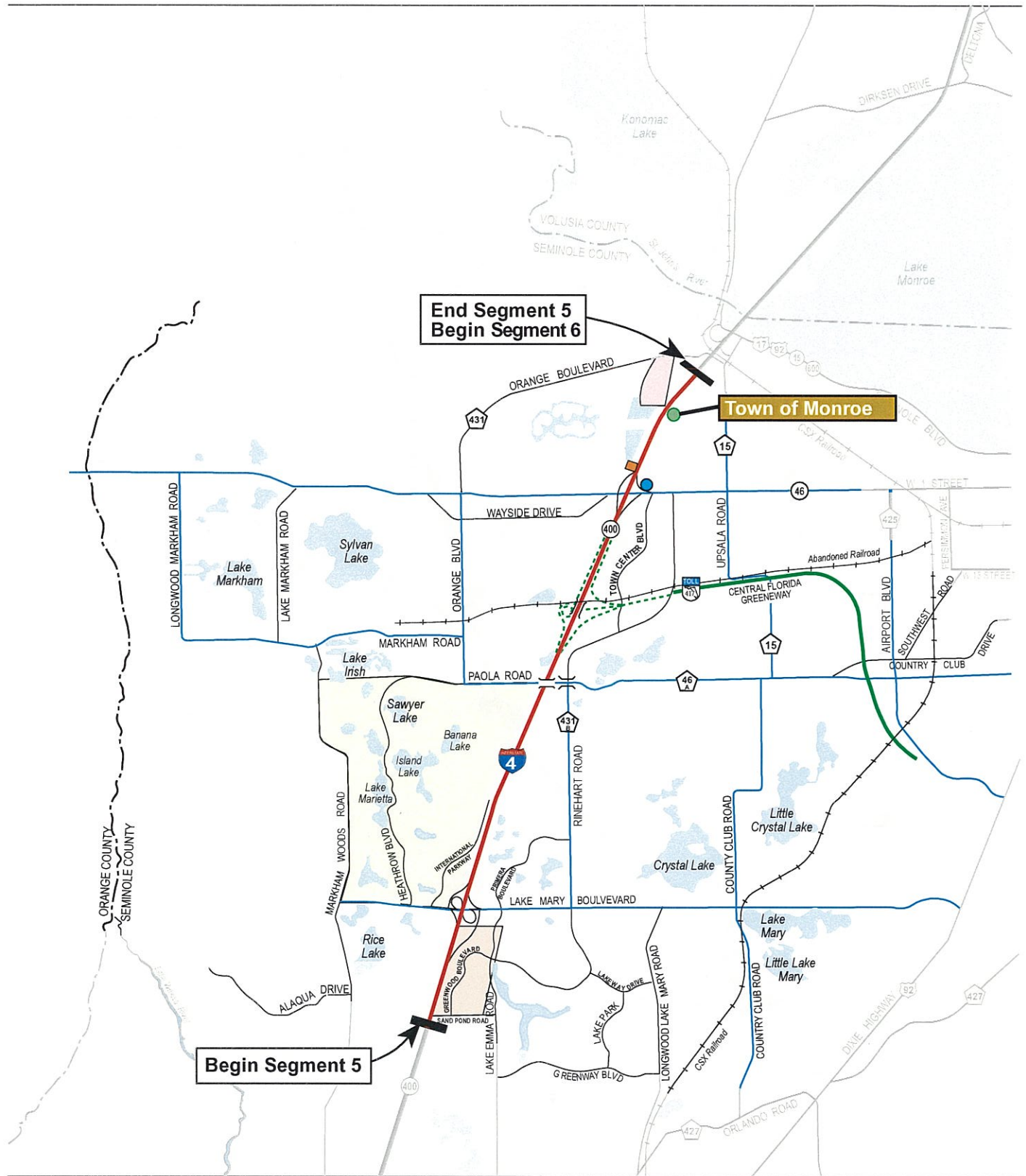


Note: Refer to Section 4.1.2 for impacts by alternative.

- Approximate Area of Business Relocations
- Approximate Area of Residential Relocations
- Approximate Area of Limited Access Severance Damages (Business)

**Figure 4-1
Neighborhood Impacts**
I-4 PD&E Study - Section 2
Segment 4 of 6



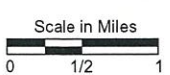
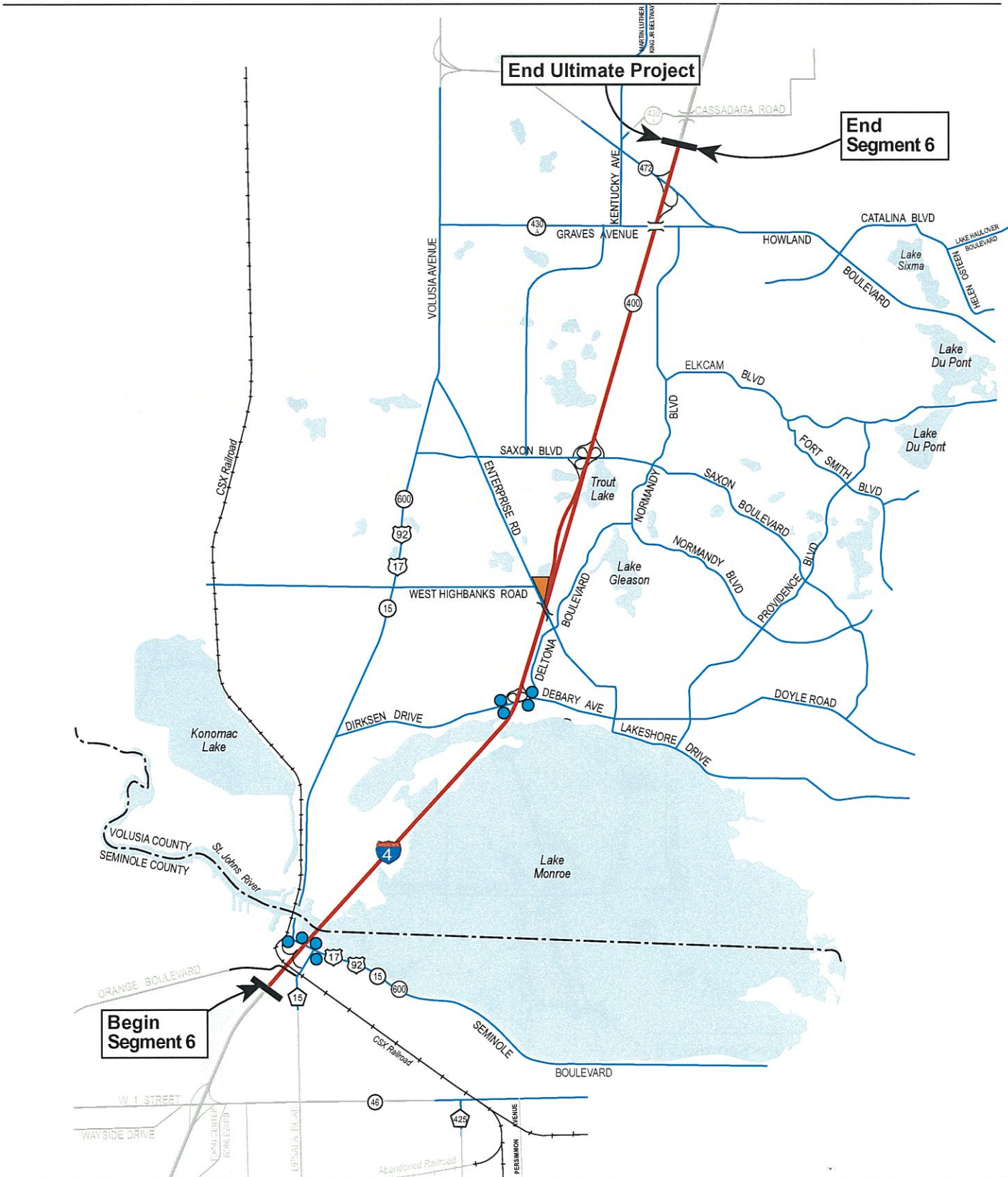


- Approximate Area of Business Relocations
- Approximate Area of Residential Relocations
- Approximate Area of Limited Access Severance Damages



Figure 4-1
Neighborhood Impacts

I-4 PD&E Study - Section 2
Segment 5 of 6



- Approximate Area of Business Relocations
- Approximate Area of Residential Relocations
- Approximate Area of Limited Access Severance Damages

Figure 4-1
Neighborhood Impacts
 I-4 PD&E Study - Section 2
 Segment 6 of 6



4.1.2.2 Limited Access Impacts

The ramp terminal modifications for the Ultimate project and *Preferred Alternative* include both reconstruction along the cross streets and tying to existing conditions along the cross street. If right-of-way acquisition is required along a cross street, the limited-access right-of-way line is extended to meet criteria. If no right-of-way acquisition or construction is proposed along a cross street, the existing limited-access right-of-way limits are reviewed to determine compliance with FDOT criteria. When FDOT criteria are not met, an evaluation is prepared to determine the impacts associated with meeting the limited-access criteria. In general, most ramp terminal locations were modified to meet limited-access criteria. However, since design for the I-4 corridor will occur over many years, the limited-access requirements must be reevaluated during design to ensure that changes in operations, safety, and land use are considered. In order to meet criteria, the existing access to many properties would be potentially impacted. Property owners would receive severance damages for the loss of existing access. However, if the property becomes landlocked due to the changes in limited-access, relocation may be required.

The approximate location of limited-access impacts is shown on Figure 4-1. Refer to the *Preliminary Concept Plans* for detailed limited-access limits. Following the review process for meeting criteria, the proposed limited-access impacts are discussed below by segment and are summarized in Table 2-10 for the *Preferred Alternative* and Table 2-11 for the Ultimate project. Limited-access impacts are in addition to the proposed impacts due to roadway and stormwater ponds discussed earlier in this chapter.

Segment 1 (SR 528 to Kirkman Road)

No limited-access impacts are proposed along this portion of Segment 1.

Segment 1 (Kirkman Road to John Young Parkway)

No limited-access impacts are proposed along this portion of Segment 1.

Segment 2

John Young Parkway to SR 408: As shown on Figure 4-1, most of the limited-access impacts occur at the interchanges of Orange Blossom Trail, Michigan Street, Kaley Street, and SR 408. A total of 21 parcels will receive limited-access severance damages for the Kaley-Michigan Exfiltration Alternative. Twelve of the parcels are commercial land uses, four are vacant properties, and one is a child day care (Lois' Learning Center). Lois' Learning Center is the only facility in this area to be relocated due to the proposed limited-access. Further discussions of impacts to Lois' Learning Center are presented in Section 4.1.3 of this report.

SR 408 to Ivanhoe Boulevard: As shown on Figure 4-1, most of the limited-access impacts occur at the interchange of SR 50 (Colonial Drive). A total of five parcels will receive limited-access severance damages. One of the parcels is commercial land use and four are vacant properties; no relocations are required.

Segment 3

As shown on Figure 4-1, most of the limited-access impacts occur at the interchanges of Princeton Street and Fairbanks Avenue. A total of 19 parcels will receive limited-access severance damages. Ten of the parcels are commercial land uses, three are residential, three are medical offices, and three are vacant properties. Four relocations are required of two commercial businesses, one single-family residence, and one medical office.

Segment 4 (Lee Road to Maitland Boulevard)

No limited-access impacts are proposed along this portion of Segment 4.

Segment 4 (Maitland Boulevard to West of Lake Mary Boulevard)

Most of the limited-access impacts occur at the interchanges of SR 436 and SR 434. A total of 11 parcels will receive limited-access severance damages for SR 434 Alternative 1. Ten of the parcels

are commercial land uses and one is multi-family residential. Three additional commercial parcels are impacted by SR 434 Alternative 2. Alternative 1 requires the relocation of four businesses and Alternative 2 requires the relocation of five businesses.

Segment 5

The limited-access impacts for Segment 5 occur at the SR 46 interchange. A total of one commercial parcel will receive limited-access severance damages. No relocations are required.

Segment 6

As shown on Figure 4-1, most of the limited-access impacts occur at the interchanges of US 17-92 and Dirksen Drive/DeBarry Avenue. A total of 19 parcels will receive limited-access severance damages. Two of the parcels are commercial land uses and 17 are vacant properties. No relocations are required.

4.1.2.3 Relocation Program

The proposed Ultimate project improvements require the relocation of approximately 392 single-family and multi-family units and 76 to 81 businesses.

The proposed Preferred Alternative improvements require the relocation of approximately 195 single-family and multi-family units and 63 businesses.

For further discussion of relocation impacts, refer to the *Conceptual Stage Relocation Plan* (April 2001) developed for the Ultimate project.

In order to minimize the unavoidable effects of right-of-way acquisition and displacement of people, FDOT will carry out a right-of-way and relocation program in accordance with Florida Statute 339.09 and the Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970 (Public Law 91-646 as amended by Public Law 100-17).

FDOT provides advance notification of impending right-of-way acquisition. Before acquiring right-of-way, all properties are appraised on the basis of comparable sales and land use values in the area. Owners of property to be acquired will be offered and paid fair market value for their property rights.

No person lawfully occupying real property will be required to move without at least 90 days written notice of the intended date to vacate and no occupant of a residential property will be required to move until decent, safe, and sanitary replacement housing is made available. "Made available" means that the affected person has either by himself obtained and has the right of possession of replacement housing, or that FDOT has offered the relocatee decent, safe, and sanitary housing that is within his financial means and available for immediate occupancy.

At least one relocation specialist is assigned to each highway project to carry out the relocation assistance and payments program. A relocation specialist will contact each person to be relocated to determine individual needs and desires, and to provide information, answer questions, and give help in finding replacement property. Relocation services and payments are provided without regard to race, color, religion, sex, or national origin.

All tenants and owner-occupant displacees will receive an explanation regarding all options available to them, such as (1) varying methods of claiming reimbursement for moving expenses; (2) rental of replacement housing, either private or publicly subsidized; (3) purchase of replacement housing; and (4) moving owner-occupied housing to another location.

Financial assistance is available to the eligible relocatee to:

- Reimburse the relocatee for the actual reasonable costs of moving from homes, businesses, and farm operations acquired for a highway project;
- Make up the difference, if any, between the amount paid for the acquired dwelling and the cost of a comparable decent, safe, and sanitary dwelling available on the private market;

- Provide reimbursement of expenses incidental to the purchase of a replacement dwelling; and
- Make payment for eligible increased interest cost resulting from having to get another mortgage at a higher interest rate. Replacement housing payments, increased interest payments, and closing costs are limited to \$22,500 combined total.

A displaced tenant may be eligible to receive a payment, not to exceed \$5,250, to rent a replacement dwelling or room, or to use as down payment, including closing costs, on the purchase of a replacement dwelling.

The brochures that describe in detail the FDOT relocation assistance program and right-of-way acquisition program are "Your Relocation: Residential", "Your Relocation: Businesses, Farms and Nonprofit Organizations", "Your Relocation: Signs", and "The Real Estate Acquisition Process." All of these brochures are distributed at all public hearings and made available upon request to any interested persons.

It should be noted that FDOT has proceeded with advanced right-of-way acquisition for a number of the parcels affected by the Ultimate project and *Preferred Alternative*. However, this advanced right-of-way acquisition has not affected the selection of the *Preferred Alternative*.

4.1.3 Community Effects

4.1.3.1 Neighborhoods

An assessment was performed to identify impacts to the neighborhoods in the Ultimate project and *Preferred Alternative* study areas. Specific information on relocations and displacements was previously provided in Section 4.1.2.1 Displacements. Table 4-5 summarizes the neighborhood impacts for the Ultimate project and the *Preferred Alternative*.

Figure 4-1 provides the general location of each impacted neighborhood. A brief description of each of the impacted neighborhoods is presented below. For further discussion on neighborhood and community cohesion effects, refer to Section 4.1.4.

Segment 1 (SR 528 to Kirkman Road)

None of the neighborhoods identified within this portion of Segment 1 are impacted. Visual and noise impacts to this area were assessed and are reviewed later in this section.

Segment 1 (Kirkman Road to John Young Parkway)

None of the neighborhoods identified along this portion of Segment 1 are impacted. Visual and noise impacts to this area were assessed and are reviewed later in this section.

Segment 2

The neighborhoods that have significant direct use impact are as follows: Angebilt, Holden Heights, and Holden-Parramore including the Griffin Park Historic District. The following neighborhoods also have direct use impacts: South Division, the Orlando CBD, and Lake Dot. However, impacts to these neighborhoods are not significant since the majority of impacts are to non-residential structures.

Angebilt

Angebilt, as originally developed, was a very large area platted around the turn of the 20th Century and has since been divided numerous times for subdivisions and other land use projects. The area has a primarily minority population, and is designated as a low-income neighborhood. The impacts to this neighborhood include the relocation of seven single-family dwelling units, two multi-family dwelling units, and seven non-residential relocations. The proposed locations for stormwater retention ponds N-4 and N-5 are the primary reason for these relocations.

South Division

South Division is a separately designated area included as part of the general Holden Heights neighborhood. It is located south of SR 408, west of the CSXT railroad tracks, and east of I-4. This area is primarily commercial and industrial.

The direct use impacts within South Division are associated with the proposed SR 408 alternative ramps and Pond P-4. The direct use impacts include the relocation of 18 commercial/industrial properties.

Table 4-5. Neighborhood Impacts

Neighborhood	Total No. of Relocations (DU)	Displaced Population	Alternatives with Direct Use Impacts	Full/ Partial	Road/ Pond	Relocation	Other Project Effects
Segment 1							
Unincorporated Orange County	1	3	Ultimate	F	P	Yes	
Segment 2: Kaley-Michigan Exfiltration							
Angebilt	9	31	K-M-Exfil	F	P	Yes	Environmental Justice, Protection of Children, Redevelopment Programs
Holden Heights	13	37	K-M-Exfil	F&P	R&P	Yes	Environmental Justice, Protection of Children, Redevelopment Programs, Noise
Segment 2: SR 408 Alternative 2B1							
Holden-Parramore	113	348	2B1	F&P	R&P	Yes	Environmental Justice, Protection of Children, Section 106, Section 4(f), Redevelopment Programs, Noise, Visual
Griffin Park	16	40	2B1	P	R	Yes	Environmental Justice, Protection of Children, Section 106, Section 4(f), Redevelopment Programs, Noise, Visual
Carter Street	1	3	2B1	P	R	Yes	Environmental Justice, Protection of Children, Redevelopment Programs, Noise, Visual
Segment 3: Typical Section C with Exfiltration							
College Park & North Orange	18	38	Typical Section C-Exfiltration	F&P	R&P	Yes	Section 106, Section 4 (f), Noise, Visual
Par Street-Lee Road	42	89	Typical Section C-Exfiltration	F&P	R&P	Yes	Noise, Visual
Segment 4: Alternatives							
Spanish Trace Apartments	188	510	SR 434 Alt 1 & 2	F	P	Yes	
Within Palm Springs HOA	1	2	SR 434 Alt 1 & 2	P	R	Yes	
Sanlando Springs	4	11	SR 434 Alt 1 & 2	F	P	Yes	
Segment 5							
Town of Monroe	3	7	Typical Section C	P	R	Yes	
Preferred Alternative Total:	195	543					
Ultimate Project Total:	392	1076					

All impacts associated with the Preferred Alternative are shown in **Bold Italics**

Holden Heights

The Holden Heights neighborhood was originally split by the construction of I-4 in the early 1960s. Portions of the neighborhood to the southeast of I-4 have been subjected to encroachment of non-residential land uses due to the fragmentation. This neighborhood is located within a minority and low-income census tract. The community of Holden Heights has been targeted as part of Orange County's redevelopment program under the TCI and Restore Orlando programs.

The majority of the property impacts and relocations associated with the Kaley-Michigan Exfiltration Alternative are due to proposed stormwater Pond O-4. Impacts due to stormwater ponds include the relocation of 13 single-family dwelling units and two multi-family dwelling units. Six single-family homes will be directly impacted by roadway improvements for the Kaley-Michigan Exfiltration Alternative.

One additional single-family home will be relocated by the SR 408 2B1 Alternative. This relocation is associated with the westbound I-4 Gore Street on-ramp.

Holden-Parramore

The Holden-Parramore neighborhood is located adjacent to the I-4/SR 408 interchange. Due to its close proximity to the interchange, impacts are unavoidable. This 50-year old neighborhood was originally divided by the construction of the highways and the I-4/SR 408 interchange. This neighborhood is located within a high minority and low-income census tract. A total of nine single-family dwelling units and 101 multi-family dwelling units will be relocated due to roadway improvements. One single-family and two multi-family dwelling units are impacted by stormwater

retention facilities. Additionally, 29 non-residential units will require relocations due to the roadway impacts and one non-residential unit will require relocation due to stormwater retention facilities.

Griffin Park is considered part of the Holden-Parramore neighborhood and is listed on the NRHP as the first public housing project in the Orlando area. The Griffin Park Historic District is enclosed within the I-4/SR 408 (East/West Expressway) interchange and was previously affected by the original construction of I-4 and SR 408 (East/West Expressway). Griffin Park is governed by the Orlando Housing Authority and includes several multi-family public housing buildings, a small park, and a community center. This neighborhood is located within a high minority and low-income census tract.

SR 408 Alternative 2B1 impacts a total of 16 multi-family dwelling units in two buildings in Griffin Park, the Griffin Park Community Center and recreational area, and one single-family home on Carter Street.

This neighborhood is located within a high minority (predominantly African-American) and low-income census tract. Impacts related to the Griffin Park Historic District involve Section 106, Section 4(f), and environmental justice issues, which are discussed further in this section.

Orlando CBD

Magnolia Towers is a multi-story retirement facility adjacent to SR 408 on the corner of Magnolia Avenue and Anderson Street. The proposed improvements have direct use impacts to the facility parking area.

Lake Dot

The impacted areas around the SR 50 (Colonial Drive) interchange include portions of Lake Dot. This area is primarily commercial and has no impacts to residential land uses. The direct use impacts vary along SR 50 (Colonial Drive).

Segment 3

The College Park neighborhood encompasses a vast area from SR 50 (Colonial Drive) to Fairbanks Avenue with certain areas having a high potential for NRHP listing. Impacts to historic districts are discussed later in this section.

Alternative C with Exfiltration will relocate 52 single-family dwelling units, 8 multi-family dwelling units, and eight non-residential facilities.

The community of North Orange would also be impacted. This area lies east of I-4 and the College Park neighborhood, and west of the CSXT railroad. North Orange does not have a formal neighborhood association, but is included in the College Park Neighborhood Association. This area consists of residences of single-family homes and duplexes. Many businesses are located along Orange Avenue, which includes the Ivanhoe Antique Row District. All impacts associated with this community have been included with the impacts to College Park.

Segment 4 (Lee Road to Maitland Boulevard)

None of the neighborhoods identified along this portion of Segment 4 are impacted. Visual and noise impacts to this area were assessed and are reviewed later in this section.

Segment 4 (Maitland Boulevard to West of Lake Mary)

There are several neighborhoods within this portion of Segment 4 area that are impacted: the Spanish Trace Apartments, Palm Springs, and Sanlando Springs. These neighborhoods are not located within high minority or poverty level census tracts. The majority of the residential impacts are due to proposed stormwater ponds CC-2, FF-3, and FF-4.

Impacts to the neighborhoods in this area are common to both SR 434 alternatives. Impacts to commercial buildings, including hotels, restaurants, and gas stations, vary by alternative and are discussed in Section 4.1.2.1.1.

Spanish Trace Apartments

Spanish Trace Apartments is a multi-family residential apartment complex located in Altamonte Springs. Currently, the complex is undergoing renovations. Improvements to the interstate would require a stormwater management facility; thus resulting in relocating 188 multi-family dwelling units.

Palm Springs

The Palm Springs Homeowners Association does not encompass a formal neighborhood boundary; however, membership is open to residents in the area along I-4 near Central Parkway north to Palm Springs Road. One single-family dwelling unit is proposed for relocation due to the roadway improvements.

Sanlando Springs

Sanlando Springs is a uniquely split community and does not have a formal neighborhood association. A majority of Sanlando Springs is categorized as commercial properties, including restaurants and multi-story office buildings. However, some single-family residences are also included. Improvements for the proposed alignment would require the relocation of four single-family dwelling units.

Segment 5

The Town of Monroe neighborhood is located within unincorporated Seminole County. This community lies adjacent to the east side of I-4 near Lake Monroe and the Seminole/Volusia County line. Three single-family dwelling units are proposed for relocation due to the roadway improvements.

Segment 6

There are no residential impacts involving relocations within a designated neighborhood in Segment 6.

4.1.3.2 Community Facilities

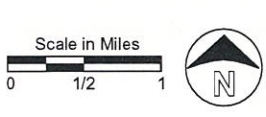
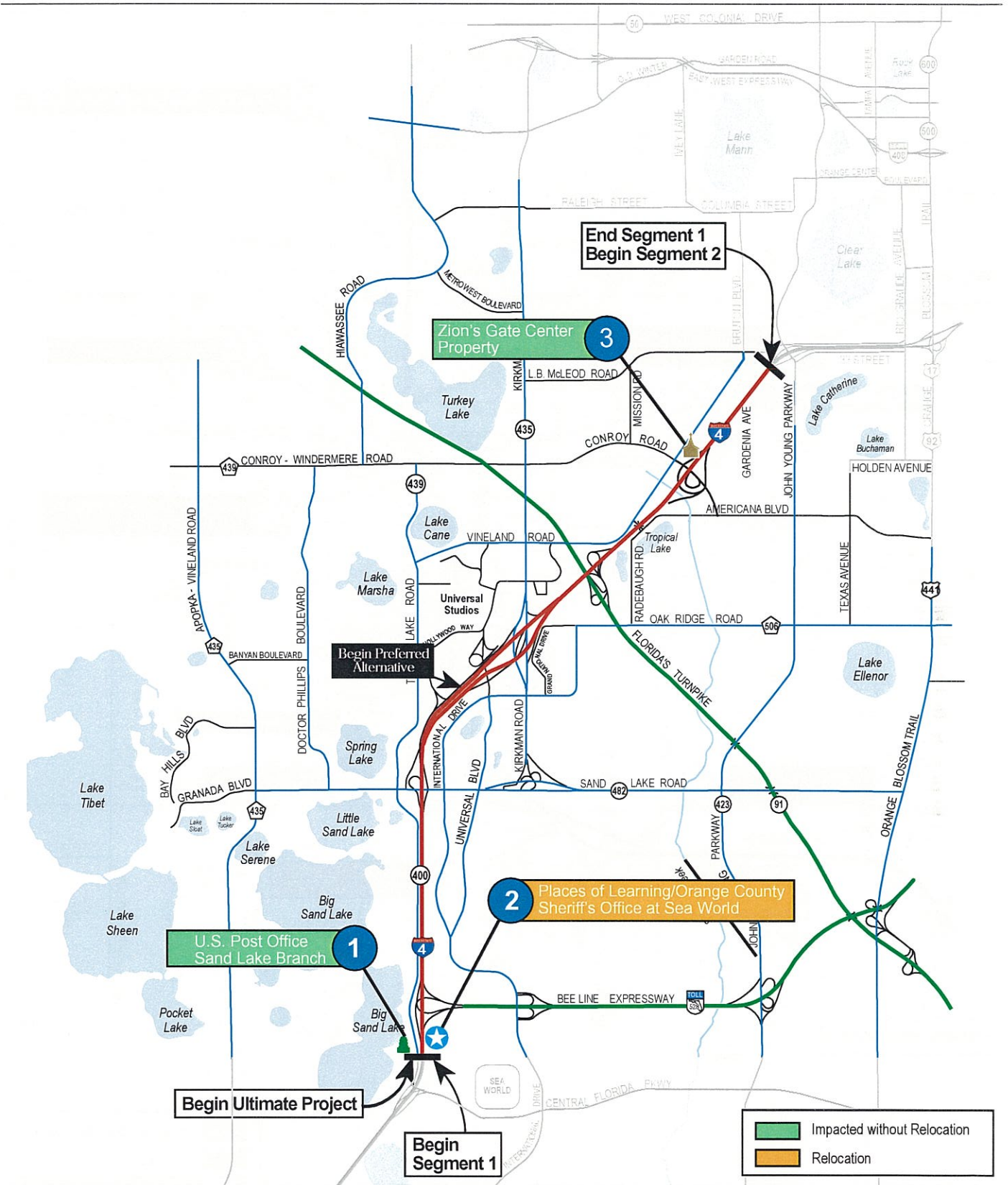
Community facilities include schools; day care; places of worship; residential shelters and crisis centers; social service agencies; cultural centers; hospitals; senior citizen centers; public services; and fire, evacuation, and police stations. Such facilities are generally important in shaping a neighborhood's identity and sense of togetherness. Table 4-6 summarizes the number of impacted community facilities for the Ultimate project and the *Preferred Alternative*. The Ultimate project will impact a total of 23 to 25 community facilities.

Table 4-6. Summary of Community Facilities

Type	Ultimate Alternatives		Preferred Alternative	
	No. of Impacted Facilities	No. of Relocations	No. of Impacted Facilities	No. of Relocations
Schools	2	0	2	0
Day Care	2	2	2	2
Churches	9	2	6	1
Cemeteries	0	0	0	0
Social Services	3	3	3	3
Community Centers	1	1	1	1
Government	1-2	0	0	0
Medical	3	2	3	2
Police and Fire	2-3	0-1	0	0
Total	23-25	10-11	17	9

The Preferred Alternative will impact a total of 17 community facilities.

Figure 4-2 provides the general location of the community facilities impacted. Table 4-7 lists the impacted facilities and summarizes Ultimate project and *Preferred Alternative*-related impacts by segment alternatives. The following paragraphs provide a description of the impacts to each community facility.

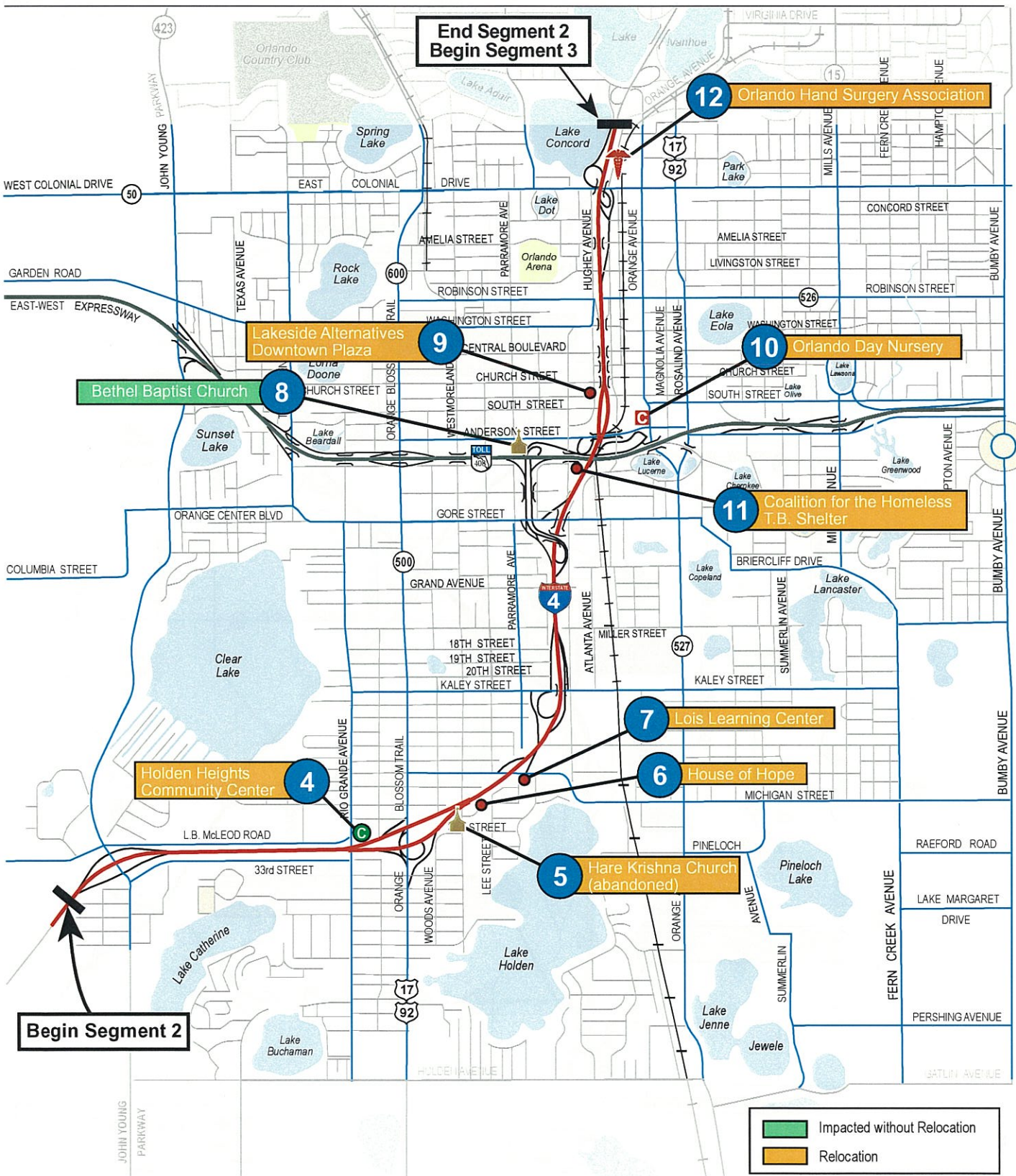


-  Churches/Religious Centers
-  Medical Facilities
-  Police/Sheriff Departments
-  Government Facility
-  Cemeteries/Funeral Homes
-  Day Care Facilities
-  Fire Station
-  Social Service Agency
-  School Facility
-  Community Centers



Figure 4-2
Impacted Community Facilities

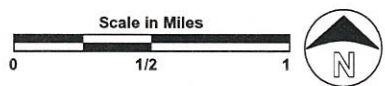
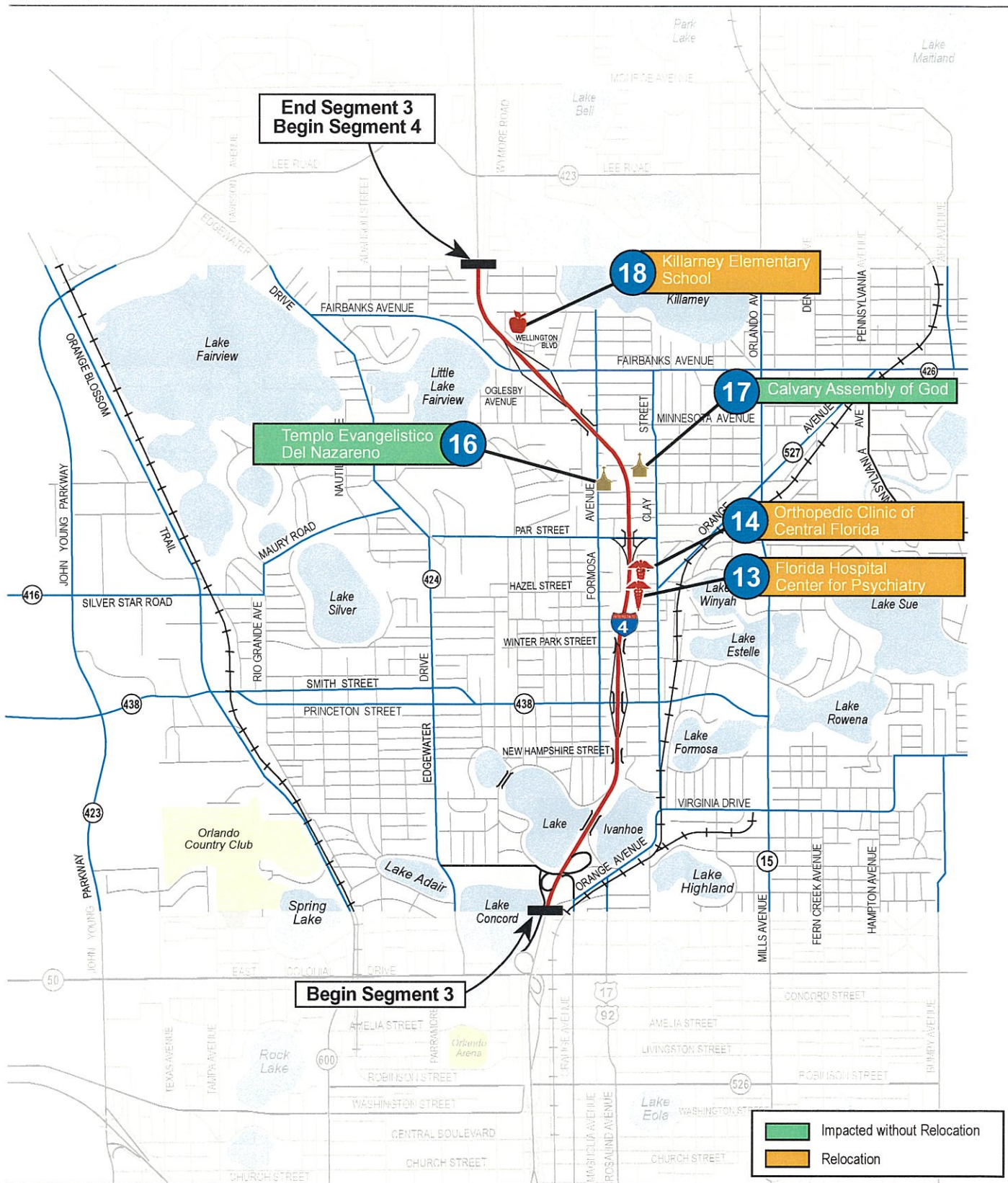
I-4 PD&E Study - Section 2
Segment 1 of 6



**Figure 4-2
Impacted Community Facilities**

I-4 PD&E Study - Section 2
Segment 2 of 6














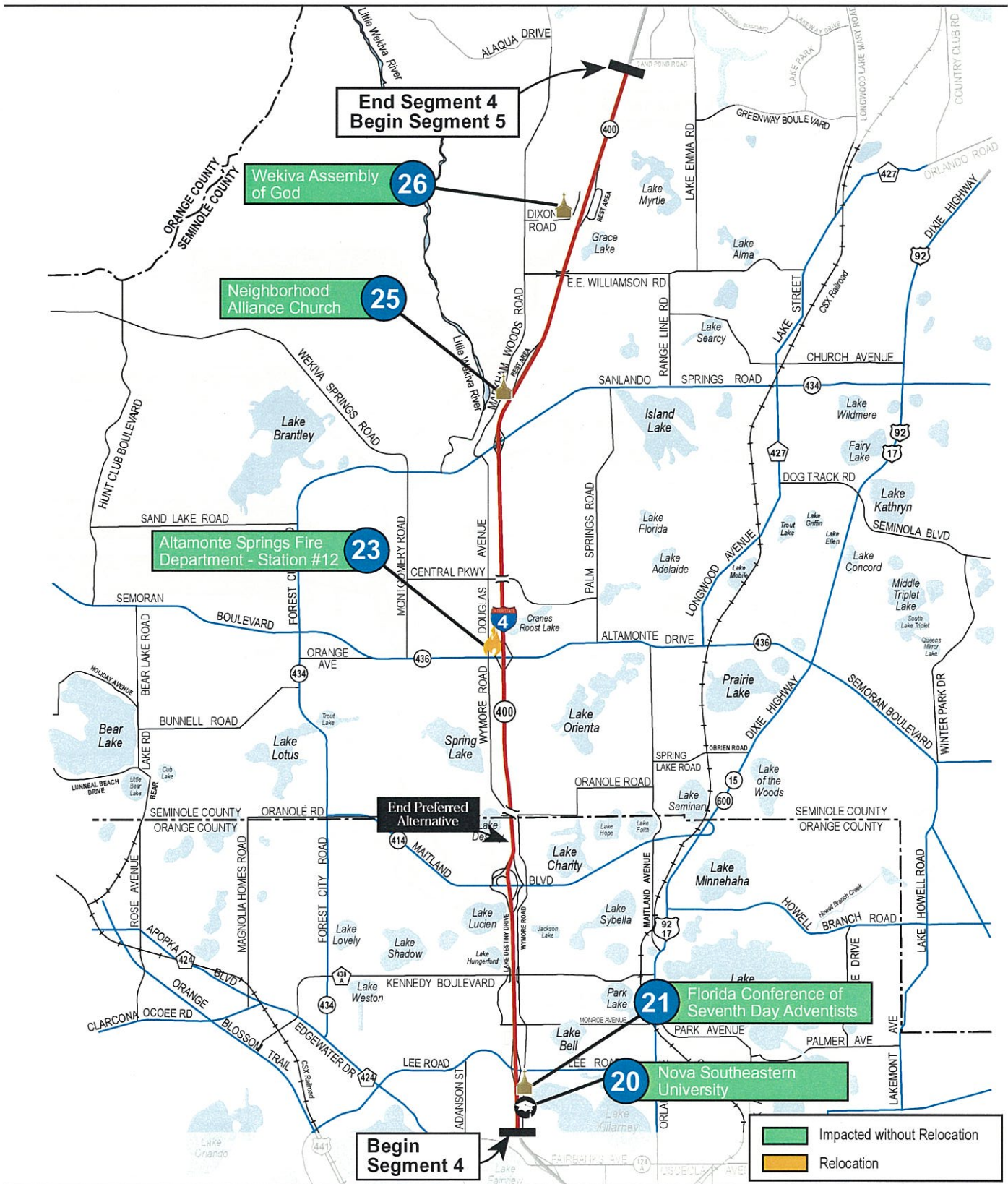
-  Churches/Religious Centers
-  Medical Facilities
-  Police/Sheriff Departments
-  Cemeteries/Funeral Homes
-  Day Care Facilities
-  Fire Station
-  School Facility
-  Community Centers
-  Social Service Agency



Figure 4-2
Impacted Community Facilities

I-4 PD&E Study - Section 2
 Segment 3 of 6

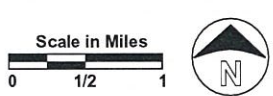
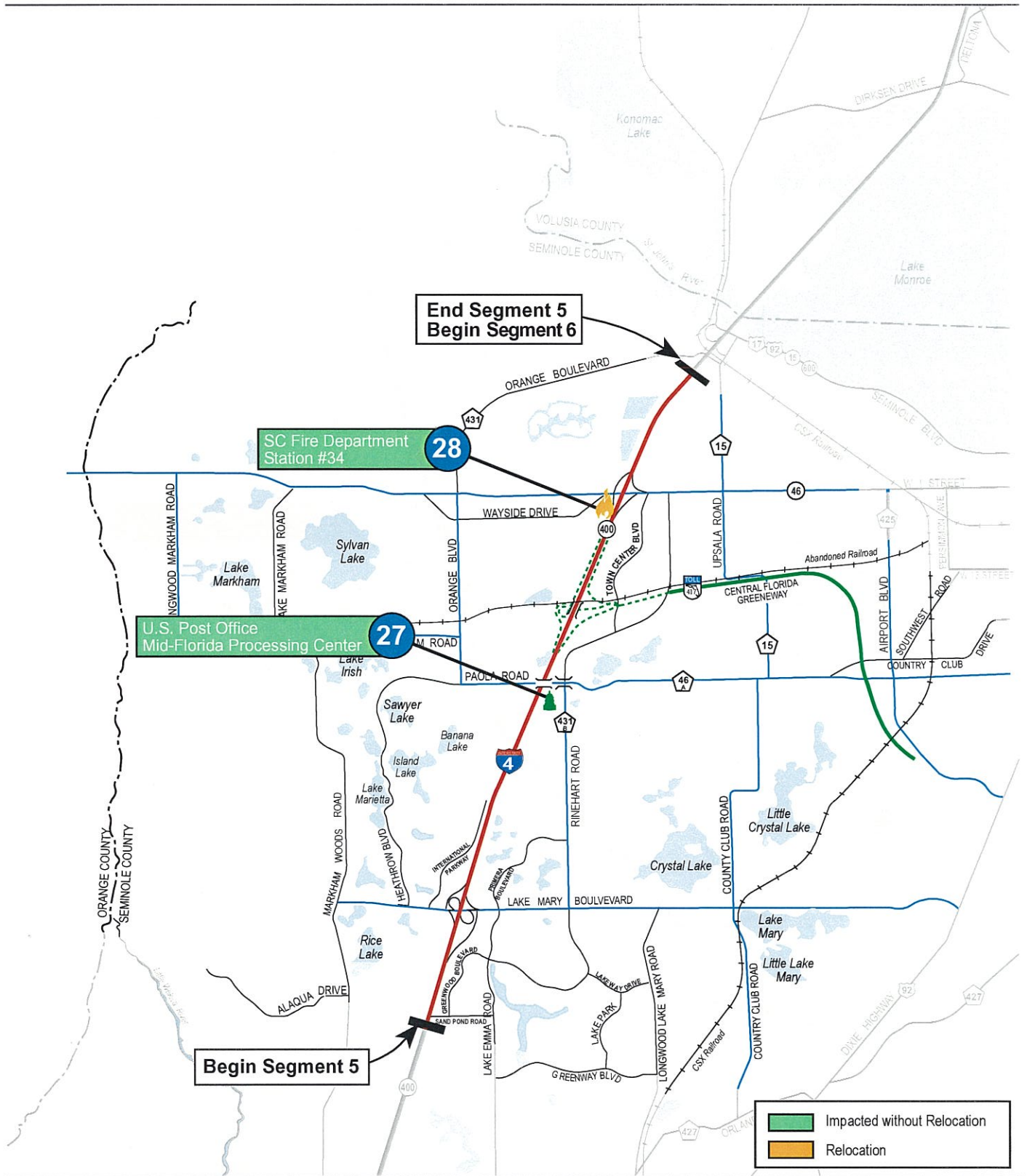


- Churches/Religious Centers
- Cemeteries/Funeral Homes
- Higher Education Facility
- Medical Facilities
- Day Care Facilities
- Community Centers
- Police/Sheriff Departments
- Fire Station
- Social Service Agency

**Figure 4-2
Impacted Community Facilities**

I-4 PD&E Study - Section 2
Segment 4 of 6





-  Churches/Religious Centers
-  Medical Facilities
-  Police/Sheriff Departments
-  Government Facility
-  Cemeteries/Funeral Homes
-  Day Care Facilities
-  Fire Station
-  Social Service Agency
-  Higher Education Facility
-  Community Centers



Figure 4-2
Impacted Community Facilities

I-4 PD&E Study - Section 2
Segment 5 of 6

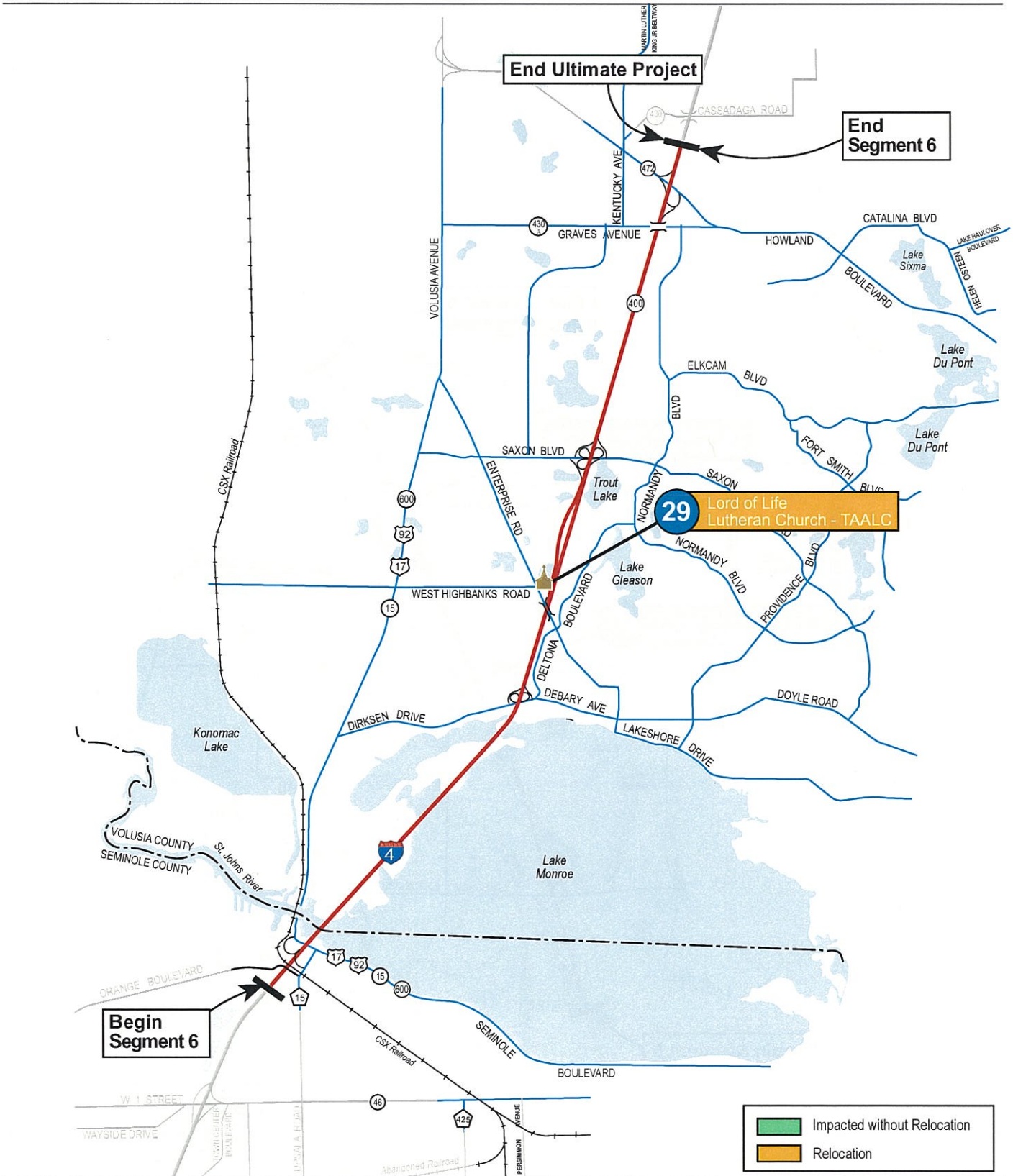


Figure 4-2
Impacted Community Facilities

I-4 PD&E Study - Section 2
 Segment 6 of 6

- | | | |
|----------------------------|---------------------|----------------------------|
| Churches/Religious Centers | Medical Facilities | Police/Sheriff Departments |
| Cemeteries/Funeral Homes | Day Care Facilities | Fire Station |
| Higher Education Facility | Community Centers | Social Service Agency |



Table 4-7. Community Facilities Impacted

Map No.	Name	Address	Segment	Sheet No.	Parcel No.	Alternative	Impacted by Preferred Alternative	Full/ Partial	Road/ Pond/ Limited Access	Relocation	MP/ PL	Children
Schools and Higher Education Facilities												
18	Killarney Elementary School	2401 Wellington Boulevard	3	20	4030	<i>C-EXFIL</i>	Yes	P	R	No	No	Yes
20	Nova Southeastern University	445 N. Wymore Road	4	20	4285A	<i>C</i>	Yes	P	R	No	No	No
Day Care Facilities												
7	Lois' Learning Center	718 W. Michigan Street	2	13		<i>K-M-EXFIL</i>	Yes	F	LA	Yes	Yes	Yes
10	Orlando Day Nursery	100 W. Anderson Street	2	13	2483	<i>2B1</i>	Yes	F	R	Yes	Yes	Yes
Churches and Cemeteries												
3	Zion's Gate Center	P.O. Box 690909	1	8	1255	<i>Ultimate, Existing</i>	Yes	P	R	No	No	No
5	Hare Krishna	120 32nd Street	2	11	1631	<i>K-M-EXFIL</i>	Yes	F	P	Yes	No	No
8	Bethel Baptist Church	654 W. Anderson Street	2	13	2517	<i>2B1</i>	Yes	P	R	No	Yes	Yes
17	Calvary Assembly of God	1199 Clay Street	3	19	3523	<i>C-EXFIL</i>	Yes	P	R	No	No	Yes
16	Templo Evangelistico Del Nazareno	1220 Formosa Avenue	3	19	3670	<i>C-EXFIL</i>	Yes	P	R	No	No	No
21	Florida Conference of Seventh Day Adventists	655 N. Wymore Road	4	20	4286	<i>C</i>	Yes	P	R	No	No	No
25	Neighborhood Alliance Church	301 Markham Woods Road	4	26, 26A	6368	SR 434 ALT 1 & 2		P	R	No	No	No
26	Wekiva Assembly of God	1675 Dixon Road	4	28	6618	SR 434 ALT 1 & 2		P	R	No	No	No
29	Lord of Life Lutheran Church - TAALC	Enterprise Industrial Park, 3063 Enterprise Road	6	41	8491	Ultimate, Existing		P	R	Yes	No Info	No
Social Service Agencies												
6	House of Hope	1010 W. 30th Street	2	11	1632, 1641	<i>K-M-EXFIL</i>	Yes	F	P	Yes	Yes	Yes
11	Coalition for the Homeless T.B. Shelter	325 Carter Street	2	13	2366	<i>2B1</i>	Yes	F	R	Yes	Yes	No
9	Lakeside Alternatives Downtown Plaza	228 S. Hughey Avenue	2	13	2603	<i>2B1</i>	Yes	P	R	Yes	Yes	No
Community Centers												
4	Holden Heights Community Center	1416 L.B McLeod Road	2	10	1520	<i>K-M-EXFIL</i>	Yes	P	R	Yes	Yes	Yes
Government Facilities												
1	U.S. Post Office – Sand Lake Branch	10450 Turkey Lake Road	1	1	1010	Ultimate		P	R	No	No	No
27	U.S. Post Office Mid-Florida Processing Center	800 Rinehart Road	5	32	6874	<i>C</i>		P	R	No	No	No
Medical Facilities												
12	Orlando Hand Surgery Association	825 N. Garland Avenue	2	17	2795	<i>SR 50 ALT 2</i>	Yes	F	P	Yes	No	No
13	Florida Hospital – Center for Psychiatry	3000 Dade Avenue	3	18	3484	<i>C-EXFIL</i>	Yes	P	R	Yes	No	No
14	Orthopedic Clinic of Central Florida	154 Spring Chase Circle	3	19	3490	<i>C-EXFIL</i>	Yes	F	R	Yes	No	No
Sheriff, Police, Fire Protection, and EMS												
2	Places of Learning/Orange County Sheriff's Office	6817 Westwood Boulevard	1	1	1001	Ultimate		P	R	Yes	No	No
23	Altamonte Springs Fire Department Station #12	325 Douglas Avenue	5	35	6928	<i>C</i>		P	R	No	No	No
28	Seminole County Fire Department Station #34	4905 W. SR 46	4	24	6069	SR 434 ALT 1 & 2		P	R	No	No	No

All impacts associated with the Preferred Alternative are shown in *Bold Italics*.

MP minority population

PL population living below poverty level

4-37

I-4 PD&E Study – Section 2
Final Environmental Impact Statement
August 2002

4.1.3.2.1 Schools and Higher Education Facilities

The impacts to these community facilities will not affect the services provided to the surrounding neighborhoods.

Killarney Elementary

This public elementary school is located near I-4, on Wellington Boulevard in Winter Park. The school has a minority population of just over 30 percent. Many students are transported by school buses; however, those who reside within a two-mile radius of the school walk or use private transportation. A small percentage of the students utilize the existing pedestrian crosswalk over I-4.

The impact requires the partial acquisition of the corner of the property due to the realignment of Granada Drive used frequently for school transportation. This impact will not affect the function of the services provided at the school and will not impact existing structures.

Nova Southeastern University

This private not-for-profit university is dedicated to providing high quality educational programs. This remote off-campus site is located on Wymore Road in Orlando. The Orlando campus has approximately 350 students and is supported by 45 faculty and staff members. This university is privately funded.

The Nova facility has a covered west entrance to the main building facing I-4. This covered entrance is impacted by roadway improvements; however, the primary building is not impacted.

4.1.3.2.2 Day Care Facilities

Lois' Learning Center

This child day care facility is located on Michigan Street in Orlando and is the only 24-hour child day care provider in the area. It serves children from infancy up to 12 years of age. This facility provides transportation in the form of van service that transports the children to the facility from neighboring elementary schools. Lois' Learning Center receives government funding and serves primarily low-income, minority families. The center has three buildings on site. Due to proposed limited-access, this area will lose existing access to Michigan Street and become landlocked. Therefore, the facility is proposed for relocation and severance damages.

Orlando Day Nursery

This nursery is located on Anderson Street in downtown Orlando. It provides child day care for children between one and five years of age. It is a non-profit organization operated by United Way. The nursery is designed to serve low-income families; therefore, fees are based on a sliding scale. This service is unique to the downtown Orlando area and important to the surrounding communities. A full acquisition is necessary for stormwater retention facilities. This facility will be relocated.

4.1.3.2.3 Churches and Cemeteries

Zion's Gate Center

This private church is located off Vineland Road in southwest Orange County. The church owns a tract of vacant land adjacent to I-4, which will be impacted by the Preferred Alternative. The vacant parcel will be acquired for right-of-way usage for the I-4 improvements. A partial acquisition would be required for roadway improvements. No relocation will be involved.

Hare Krishna House

Proposed Pond N-5 will have direct use to the entire property of this facility. Owned by the Hindu Sanatan Dharma of America, this facility is located on 32nd Street just south of I-4 and has a congregation of 60 to 70 people. Special programs include World Outreach to teenagers and providing meals to the homeless. A relocation will be required.

Bethel Baptist Church

This church is located on Anderson Street in downtown Orlando. A majority of the congregation comes from the Holden-Parramore neighborhood. The congregation is made up of a minority population with average household incomes.

The proposed improvement will have a direct use partial impact to the property. The proposed roadway improvements will impact the parking area. Access to Long Street in this area will be limited. The proposed improvement will not adversely affect the services and function of this facility.

Calvary Assembly of God

This church is located on Clay Street, east of I-4, in Winter Park. Eight pastors serve a congregation of approximately 3,000 people. There are a total of three primary buildings and several small structures on approximately 34 acres of property. A partial acquisition would be required for roadway improvements. The Preferred Alternative does not have a direct use impact to this facility. The impacts to this facility will not affect the services provided to the community and do not impact the primary church building.

Templo Evangelistico Del Nazareno

This institution, located on Formosa Avenue adjacent to I-4 on the west, primarily serves as a religious center for the Spanish-speaking community. The Preferred Alternative involves partial impacts to the church property but does not impact the main church building. The services provided by this facility will not be affected by the proposed improvements.

Florida Conference of Seventh Day Adventists

This religious institution currently owns some property, west of I-4, off North Wymore Road. A partial acquisition will be required for roadway improvements. However, the impacts to this facility do not involve relocations or impacts to existing structures.

Neighborhood Alliance Church

This church is located off Markham Woods Road in Longwood. A partial acquisition will be required for roadway improvements. However, the impacts to this facility do not involve relocations or impacts to existing structures.

Wekiva Assembly of God

This private church is located on Dixon Road in Longwood adjacent to I-4. It serves the surrounding communities within about a five-mile radius from the church. The church plans to expand the facility to include an auditorium and additional worship center. A partial acquisition will be required for roadway improvements. However, the impacts to this facility do not involve relocations or impacts to existing structures.

Lord of Life Lutheran Church

This facility is located within the Enterprise Industrial Park in the northwest quadrant of Enterprise Road and I-4. Several attempts to contact this organization were initiated. No information is available on the services provided at this facility. The Enterprise Industrial Park will involve a full acquisition due to the proposed Park & Ride lot.

4.1.3.2.4 Social Service Agencies

House of Hope

This Christian residential house is located on West 30th Street in Orlando. It provides housing and counseling services for troubled teenage girls within the Osceola, Orange, and Seminole County areas. Proposed Pond N-5 will have a direct use impact to the entire property of the House of Hope, resulting in a relocation. The House of Hope has relocated this facility and its services. FDOT has acquired this property.

Coalition for the Homeless T.B. Pavilion

This non-profit social service agency operates a Tuberculosis Pavilion on Carter Street near the I-4/SR 408 (East/West Expressway) interchange. The Preferred Alternative will have a direct use impact to the entire property due to roadway impacts resulting in a relocation. The services provided require a location that is isolated from residential and high traffic areas but that remains accessible to the Coalition for the Homeless facility also located within the Holden-Parramore neighborhood.

Lakeside Alternatives Downtown Plaza

This facility, located at 228 South Hughey Avenue, serves as a mental health clinic providing adult outpatient services for mental health patients in the Orange County area. The Preferred Alternative will have a direct use partial impact to the entire property due to the realignment of Hughey Avenue, resulting in a relocation.

4.1.3.2.5 Medical Facilities

The medical facilities impacted by the Ultimate project and *Preferred Alternative* are primarily private institutions; the relocation of these facilities would be classified as commercial relocations.

Orlando Hand Surgery Association

This institution is located in the Orlando CBD off North Garland Avenue. A partial acquisition of this property will be necessary for roadway improvements. No relocation will be involved.

Florida Hospital – Center for Psychiatry

This institution is part of the largest private, not-for-profit hospital in Florida. The center is currently operated by the Seventh Day Adventists. It is located on Dade Avenue in Orlando. The Preferred Alternative requires a partial acquisition and a relocation.

Orthopedic Clinic of Central Florida

This institution is located on Spring Chase Circle in Orlando. The Preferred Alternative requires a full acquisition and a relocation.

4.1.3.2.6 Community Centers

Holden Heights Community Center

This neighborhood community center is located adjacent to the I-4 right-of-way on L.B. McLeod Road and Rio Grande Avenue. The center is situated within the predominantly low-income and minority neighborhood of Holden Heights. Programs provided include a utility payment assistance program, a seniors club, and a computer program designed for children who live in the Holden Heights community and attend Orange County Schools. The center serves as the focal point of the community and is often used as a gathering place for major events and programs.

The Preferred Alternative will involve the direct use partial impact of the Holden Heights Community Center property, resulting in a relocation.

4.1.3.2.7 Government Facilities

U.S. Post Office – Sand Lake Branch

The federal government facility is located on Turkey Lake Road in south Orlando adjacent to I-4. It serves an average of 900 people daily, who travel from the surrounding areas including Crystal Creek, Windermere, Lake Buena Vista, Kissimmee, Conroy, Kirkman, and International Drive. A parking lot located on the west side of the building provides parking spaces for the 90 employees. A second parking lot located on the east side of the building provides parking for the public. The proposed improvements associated with the Ultimate and Existing Bee Line Alternatives will involve the direct use partial impact of the public parking area due to roadway impacts. No relocation of this facility is required.

U.S. Post Office Mid-Florida Processing Center

This government facility is located on Rinehart Road in Lake Mary. This division is the main processing center for the U.S. Postal Service in the region. The service area includes Lake Mary and its surrounding areas. The site includes two buildings, the main processing building and a vehicle maintenance building, which account for approximately 500,000 total square feet. A partial acquisition of this property will be necessary for roadway improvements. No relocation will be involved.

4.1.3.2.8 Sheriff, Police, Fire Protection, and Emergency Medical Services

Places of Learning/Orange County Sheriff's Office

This community facility is currently operated by the Orange County Sheriff's Department. It is located on Westwood Boulevard near Sea World. The service area extends from International Drive and Sand Lake Road to the Osceola County line.

The proposed improvements associated with the Ultimate Bee Line interchange will involve the direct use impact of the Places of Learning. A partial acquisition will be required.

Altamonte Springs Fire Department Station #12

This fire station is located on Douglas Avenue in Altamonte Springs. The service area extends from I-4 and Lake Mary Boulevard on the north to Maitland Boulevard and I-4 on the south. In addition to providing fire rescue assistance, the station also provides emergency and medical services. A partial acquisition of this property will be necessary for roadway improvements. No relocation will be involved.

Seminole County Fire Department Station #34

Station 34 provides emergency fire and rescue service to the unincorporated areas of Seminole County. This station also serves Lake Mary when additional backup is required. The station is located on west SR 46 near I-4. A partial acquisition of this property will be necessary for roadway improvements. No relocation will be involved.

4.1.3.3 Mitigation

The neighborhood impacts of the I-4 PD&E Study -Section 2 will be evaluated on a case-by-case basis. There are several mitigation measures being proposed for the impacted neighborhoods and community facilities.

The community facilities impacted by the I-4 improvements provide important local and/or regional community services. Although the impacts to these facilities are not considered a significant regional impact to community services, loss of these facilities would reduce important neighborhood and regional services. Through the assessment efforts of these impacts, coordination has been undertaken with each facility.

As indicated in Section 4.1.2.3, displacements and relocations as a result of the Ultimate project and *Preferred Alternative* will be mitigated through FDOT's relocation program. Before acquiring right-of-way, all properties are appraised on the basis of comparable sales and land use values in the area. Owners of property to be acquired will be offered and paid fair market value for their property rights.

To soften significant visual impacts associated with the Ultimate project and the *Preferred Alternative*, urban design amenities will be implemented along the I-4 corridor. A description of proposed urban design amenities is provided in Section 4.4.1.2 of the FEIS. Detailed information of the urban design amenities proposed for the Ultimate project and *Preferred Alternative* is provided in the *Urban Design Guidelines* (February 2000).

Noise walls are considered reasonable and feasible in several of the neighborhoods with significant impacts. These include Holden Heights, Holden Parramore, and College Park. The noise walls will

mitigate noise impacts associated with the *Preferred Alternative*. The locations of the noise walls considered reasonable and feasible are provided on Figure 4-16.

4.1.4 Neighborhood and Community Cohesion

An assessment was performed to identify impacts to neighborhoods and communities in the Ultimate project and *Preferred Alternative* study areas. Specific information on relocations and displacements was previously provided in Section 4.1.2 of this report. In terms of specific impacts related to neighborhood and community cohesion, the following issues were examined:

Physical Barriers – Does the proposed action create a physical barrier that separates or splits integral community facilities?

Access Changes – Does the proposed action decrease neighborhood or community access?

Land Impacts – Does the project create large pieces of vacant lands within the community that are out of context to the neighborhood function?

Community Services – Does the project directly or indirectly impact community facilities that are important to the functionality and operation of the community?

4.1.4.1 Segment 1

Ultimate and Existing Bee Line Interchange Alternatives

Segment 1 is a predominantly commercial area that was established following the construction of I-4. The seven I-4 interchanges within Segment 1 allow for access to the surrounding areas and have led to the development of the IDRA and other activity and employment centers. Most of the roadway improvements are within FDOT existing right-of-way, with the exception of the interchange areas of SR 528 (Bee Line Expressway), Kirkman Road, and Conroy Road. The proposed ponds in Segment 1, Ponds A-1 and A-7 (near the Bee Line Expressway on Turkey Lake Road), Pond B-2 (on Turkey Lake Road), and Pond C-2 (near Sand Lake Road) are proposed in both options that tie to the Ultimate and Existing Bee Line interchange.

Physical Barriers – The proposed roadway improvements will not create additional physical barriers within Segment 1. The proposed ponds are not located within any designated neighborhood. Therefore, physical barrier impacts to the neighborhood due to the I-4 improvements will be minimal.

Access Changes – There are no adverse effects to traffic circulation in Segment 1 due to changes in limited-access.

Land Impacts – Land for the proposed ponds and roadway improvements will be acquired, resulting in the removal of existing buildings and landscaping, which, in turn, will expose a limited portion of the surrounding areas to increased views of I-4. The acquisitions will involve one residential and several commercial land uses. Only one single-family home is impacted due to proposed stormwater pond, Pond B-2. This residence is not within a defined neighborhood and is currently landlocked between Turkey Lake Road, Boo Boo's Lake, and condominiums. None of the other neighborhoods identified along the I-4 corridor in Segment 1 are impacted. The proposed ponds will be fenced and become limited-access areas.

Community Facilities – The proposed improvements associated with the Ultimate Bee Line interchange will involve the direct use impact of the Places of Learning currently operated by the Orange County Sheriff's office. A partial acquisition will be required.

Overall, the neighborhood and community cohesion impacts for the Ultimate project are not expected to be significant within Segment 1.

Preferred Alternative – Typical Section C with Ponds

As indicated previously, this portion of Segment 1 is a predominantly commercial area that was established following the construction of I-4. Most of the roadway improvements are within FDOT existing right-of-way, with the exception of the interchange areas of Kirkman Road and Conroy Road.

Physical Barriers – The proposed roadway improvements will not create additional physical barriers within this portion of Segment 1. The proposed ponds are not located within any designated neighborhood. Therefore, physical barrier impacts to the neighborhood due to the I-4 improvements will be minimal.

Access Changes – There are no adverse effects to traffic circulation in this portion of Segment 1 due to changes in limited-access.

Land Impacts – Land for the proposed ponds and roadway improvements will be acquired, resulting in the removal of existing buildings and landscaping, which, in turn, will expose a limited portion of the surrounding areas to increased views of I-4. The acquisitions will involve no residential and several commercial land uses. The proposed ponds will be fenced and become limited-access areas.

Community Facilities – There are no adverse effects to community facilities within this portion of Segment 1.

Overall, the neighborhood and community cohesion impacts for the Preferred Alternative are not expected to be significant within this portion of Segment 1.

4.1.4.2 Segment 2

Kaley-Michigan Exfiltration Alternative

As indicated in Section 4.1.3.1, there are two neighborhoods between John Young Parkway and just south of SR 408 (East/West Expressway) that are significantly impacted: Angebilt and Holden Heights.

Angebilt

Specific impacts to the neighborhood and the community within Angebilt are described in the following paragraphs.

Physical Barriers – Ponds N-4 and N-5 are proposed in the Kaley-Michigan Exfiltration Alternative. However, the proposed improvements do not create additional physical barriers through this neighborhood. Within Angebilt, the proposed roadway improvements are within existing FDOT right-of-way and the proposed ponds are located immediately adjacent to the existing right-of-way, bordering the Pineloch Elementary School and the Veranda Nursing Home. Therefore, physical barrier impacts to the neighborhood due to the I-4 improvements will be minimal.

Access Changes – Access changes within the Angebilt neighborhood include the closures of 34th Street on both sides of Orange Blossom Trail and Unitah Avenue at Michigan Street. The closures of 34th Street and Unitah Avenue may result in the change of land uses for the parcels located along the roadway. These land use changes could include the migration of commercial parcels located near to Orange Blossom Trail and Michigan Street to residential land uses. Vehicles accessing parcels along the roadways may increase traffic circulation through the neighborhood.

Land Impacts – Land for the proposed Ponds N-4 and N-5 will be acquired, resulting in the existing buildings and some of the landscaping being removed, which, in turn, will expose a limited portion of the neighborhood to increased visual and noise sources. The proposed ponds will be fenced and become limited-access areas.

Community Services – The acquisitions will involve residential and commercial land uses including the House of Hope, a social service operation, and the Hare Krishna House.

Holden Heights

Specific impacts to community cohesion within Holden Heights are discussed in the following paragraphs.

Physical Barriers – *The proposed roadway improvements will not create additional physical barriers. The proposed roadway and pond improvements are located immediately adjacent to the existing right-of-way. Therefore, physical barrier impacts to the neighborhood due to the I-4 improvements will be minimal.*

Access Changes – *Access changes in this area are described as follows:*

30th Street – *Access to Orange Blossom Trail will be denied. The closure of 30th Street may change land uses for the parcels located along the roadway. In addition, vehicles gaining access to the parcels located along the roadway will circulate traffic through the neighborhood.*

Avondale Avenue – *Access to Kaley Street from Avondale Avenue will be blocked. Access along Avondale Avenue north of Kaley Street will be restricted and will result in a change in traffic circulation patterns. As this area is primarily residential, the access changes will not require changes to the existing land uses and may reduce cut-through traffic.*

Tallockas Avenue – *Access to Kaley Street will be denied on both sides of the roadway. The closure of Tallockas Avenue may result in the shift of land use from commercial to residential, and traffic circulation to the neighborhood may change.*

Kaley-Michigan Interchange – *The improvement in access due the proposed interchange configuration at Kaley Street and Michigan Street increases accessibility to Michigan Street, therefore decreasing the cut-through traffic along Kaley Street, a primarily residential area. This improved access may enhance the economic development and quality of life in the Holden Heights area and, in turn, increase property values over time.*

Land Impacts – *The proposed improvements will involve the direct use impact of several residences, one commercial building, and one community service facility. Land for the proposed roadway and ponds will be acquired, resulting in the existing buildings and some of the landscaping being removed, which, in turn, will expose a limited portion of the neighborhood to increased views of I-4. The proposed ponds will be fenced and become limited-access areas.*

The proposed impacts include areas considered as urban blight adjacent to the I-4 corridor and should not impact current renewal efforts by the community.

Community Services – *The proposed improvements will involve the direct use impact of the Holden Heights Community Center and the limited-access relocation of Lois' Learning Center.*

SR 408 (East/West Expressway) Alternatives

The Holden-Parramore (including Griffin Park Historic District and Carter Street) neighborhood portion of Segment 2 is significantly impacted. In addition, the Orlando CBD, which is a large commercial district, is also significantly impacted by the Preferred Alternative.

Holden-Parramore

The Holden-Parramore/Griffin Park community has been targeted as part of the City of Orlando and Orlando Housing Authority's redevelopment program under the Federal Hope VI Application in coordination with the Parramore Heritage Development Corporation (PHDC), Community Redevelopment Agency (CRA), and the Downtown Development Board (DDB). The objective of the redevelopment proposed by Orlando is to reunite the Holden-Parramore, Griffin Park, and Carter Street neighborhoods, thereby improving the opportunities for social interaction, economic development, and quality of life for its residents. (Refer to Figure 4-8 in Section 4.4.1 for before and after renderings of the existing I-4/SR 408 interchange with the revitalization plan for the Griffin Park and Holden-Parramore neighborhoods.

Physical Barriers – *The existing I-4/SR 408 interchange ramp structure presents a physical barrier within the Holden-Parramore neighborhood, resulting in the isolation of Griffin Park Historic District and the Carter Street neighborhood. The Preferred Alternative proposes to reconfigure the interchange to eliminate this physical barrier between the neighborhoods and open the area to redevelopment as proposed by the City of Orlando.*

The Preferred Alternative has visual effects to the adjacent neighborhood due to the proposed flyover bridge structure.

Access Changes – *As presented in Section 2.9, Figures 2-33 through 2-44 illustrate the existing and proposed access for three areas within the limits of the SR 408 (East/West Expressway) interchange. The improvement in traffic operation of the proposed I-4/SR 408 interchange may decrease cut-through traffic to the adjacent neighborhoods. The following are access changes for the Preferred Alternative.*

Griffin Park – *Access to Griffin Park is fairly restricted to Callahan Drive/Conley Street via Parramore Avenue. Access via Avondale Avenue is blocked. Only partial access exists at the Division Avenue and Callahan Drive intersection due to the existing bridge pier locations. With the proposed improvements, Callahan Drive will become a cul-de-sac and access to Division Avenue will not be maintained at Callahan Drive. In addition, Avondale Avenue access to Gore Street will be reopened. All other existing access to Griffin Park will remain.*

Gore Street Ramp Elimination – *The I-4 westbound exit-ramp to Gore Street will be eliminated, decreasing the cut-through traffic to adjacent neighborhoods.*

However, an I-4 westbound on-ramp will be provided. The Gore Street ramp will result in the closure of Avondale Avenue from Columbia Street to Miller Street. Properties along Conroy Street, Indiana Street, and Grand Avenue will be accessed through Parramore Avenue.

Long Street Limited Access – *Access along Long Street will be blocked east of Parramore Avenue and restricted between Orange Blossom Trail and Westmoreland Drive. Easy Avenue, Grove Avenue, and Woods Avenue will become cul-de-sacs and will not have direct access to Long Street. The acquisition of landlocked parcels will result in the separation of homes, which will affect the overall identity of this portion of the neighborhood.*

Lake Cherokee – *The elimination of the Gore Street off-ramp and Orange Avenue ramps (i.e., direct access from I-4) will result in a changes to traffic circulation through the neighborhood. Residents will be required to travel to either Anderson Street (eastbound only) or Hughey Avenue (westbound only). The SR 408 Mills Avenue ramps will be maintained for access to I-4.*

Land Impacts – *Land for the proposed roadway improvements and ponds will be acquired, resulting in the existing buildings and some of the landscaping being removed, which, in turn, will expose a limited portion of the neighborhood to increased views of I-4. The proposed ponds will be fenced and become limited-access areas. The proposed improvements will involve the direct use impact of several single-family and multi-family residences and commercial buildings within Holden-Parramore due to roadway and pond impacts.*

The Preferred Alternative proposes Ramp D as a flyover ramp. Although the Preferred Alternative has direct use impacts to the Griffin Park Historic District, the opportunities for redevelopment present a positive offsetting to the property impacts.

Community Services – *The Preferred Alternative involves the direct use impact to the Tuberculosis (T.B.) Shelter managed by the Coalition for the Homeless, the Lakeside Alternatives, and the Bethel Baptist Church. In addition, the Preferred Alternative involves the direct use of the community and recreational area of Griffin Park.*

Orlando Central Business District

The types of land uses that have developed in the immediate area of the Preferred Alternative adjacent to I-4 consist of primarily commercial and industrial sites. The impacts are associated with the proposed SR 408 ramps, the realignment of Hughey Avenue and Garland Avenue, and Pond P-8. This is not a primarily residential area; therefore, community cohesion issues are minimal in this area.

Physical Barriers - The widening of I-4 presents a wider barrier between the west and east sides of I-4. Efforts to redevelop the west side of I-4 along Church Street have had limited success, partially due to the separation caused by the I-4 structure through downtown, which is perceived to discourage pedestrians from accessing those businesses.

Access Changes - The changes in access through the downtown area will not greatly affect the existing and future land uses. However, businesses located adjacent to existing interchanges may experience less exposure to I-4 traffic. For detailed information on the access changes through downtown Orlando, refer to Section 2.9.

Land Impacts - There are no land impacts.

Community Services - The proposed improvements will result in the direct use impact of the Orlando Day Nursery. In addition, Magnolia Towers, a multi-story retirement facility adjacent to SR 408, will also be impacted by the improvements, which will directly affect the facility parking area.

SR 50 (Colonial Drive) Alternative

The impacted areas around the SR 50 (Colonial Drive) interchange include portions of Lake Dot, College Park, and Garland Avenue. This area is primarily commercial and has no impacts to residential land uses. Therefore, community cohesion issues are minimal in this area.

The following paragraphs discuss the interchange area collectively.

Physical Barriers - The proposed roadway improvements will not create additional physical barriers. Therefore, physical barrier impacts to these neighborhoods due to the Preferred Alternative will be minimal.

Access Changes - The following describe access changes for the Preferred Alternative.

Garland Avenue Limited Access - Access along Garland Avenue will be restricted between SR 50 (Colonial Drive) and Marks Street. Those properties without any other access may receive severance damages for loss of existing access and may require relocation. The landlocked parcels will result in the separation of commercial land uses, which will affect the overall identity of this portion of the neighborhood.

Concord Street - The proposed improvements will result in the closure of Concord Street at Garland Avenue. The change in access may result in a change in land use for parcels located along the roadway. In addition, vehicles accessing parcels along the roadway will be recirculated through other local streets.

Land Impacts - The direct use impacts vary along SR 50 (Colonial Drive). The Preferred Alternative impacts the north side of SR 50 (Colonial Drive), impacting the Judge Cheney House property (Colonial Bank) and several businesses.

Land for the proposed roadway improvements will be acquired, resulting in existing buildings and landscaping being removed, which, in turn, will expose a limited portion of the surrounding areas to increased views of I-4.

Community Facilities - The Preferred Alternative will not impact any community facilities within this portion of Segment 2.

The neighborhood and community cohesion impacts are expected to be significant within Segment 2, especially in the vicinity of the I-4/SR 408 (East/West Expressway) interchange. Measures to minimize neighborhood and community cohesion impacts are discussed in Section 4.1.4.7.

4.1.4.3 Segment 3

Community cohesion impacts to the College Park neighborhood are described in the following paragraphs.

Physical Barrier - The College Park neighborhood was originally split by the construction of I-4 in the early 1960s. Within the Preferred Alternative corridor, the right-of-way is the narrowest through this neighborhood. The proposed roadway improvements will not create additional physical barriers. Therefore, physical barrier impacts to these neighborhoods due to the I-4 improvements will be minimal.

Access Changes - The following describe access changes for the Preferred Alternative.

Cornell Avenue - Improvements to the Princeton Street interchange will acquire right-of-way on Cornell Avenue south of Princeton Street. In addition, Cornell Avenue will be closed at Par Street. The closing of Cornell Avenue may alter the land use of parcels located near Par Street. In addition, traffic circulation patterns through the neighborhood may be altered.

Land Impacts - The Preferred Alternative will involve the direct use impact of residences, commercial buildings, and several community services. Land for the proposed roadway and ponds will be acquired, resulting in the existing buildings and some of the landscaping being removed, which, in turn, will expose a limited portion of the neighborhood to increased views of I-4. The proposed ponds will be fenced and become limited-access areas.

Community Services - The acquisitions will involve residential and commercial land uses including several community services. The impacts to these community facilities vary by alternatives and include Matthews Park, Templo Evangelistico Del Nazareno Church, Calvary Assembly of God, and Killarney Elementary School. A detailed discussion on these facilities is included in Section 4.1.3.

The neighborhood and community cohesion impacts are not significant for the Preferred Alternative in Segment 3.

4.1.4.4 Segment 4

Preferred Alternative - Typical Section C with Ponds

As indicated previously, this portion of Segment 4 is predominantly a mix of residential, commercial/office, and industrial designations. Most of the roadway improvements are within FDOT existing right-of-way, with the exception of the interchange areas of Lee Road and Maitland Boulevard. Neighborhoods located within this portion of the Ultimate Project will not be impacted adversely.

Physical Barriers - The proposed roadway improvements will not create additional physical barriers within this portion of Segment 4. The proposed ponds are not located within any designated neighborhood. Therefore, physical barrier impacts to the neighborhood due to the I-4 improvements will be minimal.

Access Changes - There are no adverse effects to traffic circulation in this portion of Segment 4 due to changes in limited-access.

Land Impacts - Land for the proposed ponds and roadway improvements will be acquired, resulting in the removal of existing buildings and landscaping, which, in turn, will expose a limited portion of the surrounding areas to increased views of I-4. The acquisitions will involve no residential and several commercial land uses. The proposed ponds will be fenced and become limited-access areas.

Community Facilities - The impacts to the community services in this portion of Segment 4 involve impacts to the existing structure at the Nova Southeastern University. The Nova facility has a

covered west entrance to the main building facing I-4. This covered entrance is impacted; however, the primary building is not impacted by the proposed roadway improvements. The impacts to this community facility will not affect the services provided to the surrounding neighborhoods.

Overall, the neighborhood and community cohesion impacts for the Preferred Alternative are not expected to be significant within this portion of Segment 4.

Ultimate SR 434 Alternatives

There are several neighborhoods within this area that are impacted: the Spanish Trace Apartments, Palm Springs, and Sanlando Springs. These neighborhoods are not located within high minority or poverty level census tracts. The land use adjacent to the I-4 corridor is primarily commercial within Segment 4. Therefore, community cohesion issues are minimal in this area.

Physical Barriers – The proposed improvement does not create an additional physical barrier through the area. Therefore, physical barrier impacts to the adjacent neighborhoods due to the I-4 improvements will be minimal.

Access Changes – There are no adverse effects to traffic circulation due to changes in limited-access. The realignment of Howard Avenue due to Pond FF-3 is common to all alternatives.

Land Impacts – Land will be acquired, resulting in the existing buildings and some of the landscaping being removed, which, in turn, will expose a limited portion of the neighborhood to increased visual and noise sources. The proposed ponds will be fenced and become limited-access areas. The majority of the residential impacts are due to proposed stormwater ponds CC-2, FF-3, and FF-4. The proposed Pond CC-2 has a direct use impact to the Spanish Trace Apartments on Wymore Road. Impacts to the neighborhoods in this area are common to all proposed alternatives. Impacts to commercial buildings, including hotels, restaurants, and gas stations, vary by alternative and are discussed in Section 4.1.2.

In addition, right-of-way will also be required for a proposed Park & Ride lot at Central Parkway. Land use surrounding the Park & Ride lot may change to accommodate motorists traveling to the Park & Ride lot. Changes in land use may include convenience stores and gas stations.

Community Services – The acquisitions will involve residential and commercial land uses including several community services. However, the impacts to the community services in this area do not involve relocations or impacts to existing structures.

The neighborhood and community cohesion impacts are not expected to be significant within this portion of Segment 4.

4.1.4.5 Segment 5

As indicated previously, Segment 5 is predominantly a mix of residential, commercial/office, and industrial designations. Most of the roadway improvements are within FDOT existing right-of-way, with the exception of the interchange areas of CR 46A and SR 46. Neighborhoods located within this portion of the Ultimate project will not be adversely impacted.

Physical Barriers – The proposed improvement does not create an additional physical barrier through the area. Therefore, physical barrier impacts to the adjacent neighborhoods due to the I-4 improvements will be minimal.

Access Changes – There are no adverse effects to traffic circulation due to changes in limited-access. The proposed improvements realign Oregon Street and allow for access to SR 46.

Land Impacts – Land will be acquired, resulting in the existing buildings and some of the landscaping being removed, which, in turn, will expose a limited portion of the neighborhood to increased views of I-4. The proposed ponds will be fenced and become limited-access areas. Impacts to commercial buildings, including hotels, restaurants, and gas stations, are discussed in Section 4.1.2.

Community Services – The acquisitions will involve residential and commercial land uses including several community services. However, the impacts to the community services in this area do not involve relocations or impacts to existing structures.

The neighborhood and community cohesion impacts are not expected to be significant within Segment 5.

4.1.4.6 Segment 6

Segment 6 is a predominantly rural with pockets of residential and commercial land uses. Most of the roadway improvements are within FDOT existing right-of-way, with the exception of the interchange areas of US 17-92, Dirksen Drive/DeBary Avenue, the proposed Park & Ride at Enterprise Road, Saxon Boulevard, and SR 472. The proposed ponds in Segment 6, Ponds TT-8, UU-2, VV-2, and VV-3, are designated for vacant areas. Impacts are common to both alternatives. As there are no impacts within a designated neighborhood, community cohesion issues are minimal.

Physical Barriers – The proposed roadway improvements will not create additional physical barriers within Segment 6. Therefore, physical barrier impacts to the neighborhood due to the I-4 improvements will be minimal.

Access Changes – There are no adverse effects to traffic circulation in Segment 6 north of Orange Boulevard due to changes in limited-access.

Orange Boulevard Ramp Relocation – The I-4 westbound entrance ramp and I-4 eastbound exit ramp to Orange Boulevard will be relocated to US 17-92. No direct access to Orange Boulevard will be provided. Access will be provided with the proposed US 17-92 interchange modifications. The relocation of the Orange Boulevard access will not affect adjacent neighborhoods significantly, but may require the rerouting of truck routes used by the commercial industry in the area.

Land Impacts – Land for the proposed ponds and roadway improvements will be acquired, resulting in landscaping being removed, which, in turn, will expose a limited portion of the surrounding areas to increased views of I-4. The acquisitions will involve several commercial businesses due to the proposed Park & Ride lot location on Enterprise Road. Land use surrounding the Park & Ride lot may change to accommodate motorists traveling to the Park & Ride lot. Changes in land use may include convenience stores and gas stations. The proposed ponds will be fenced and become limited-access areas.

Community Facilities – Within the Enterprise Industrial Park is the Lord of Life Lutheran Church. Several attempts to contact this organization were initiated. No information is available on the services provided at this facility.

The neighborhood and community cohesion impacts are not expected to be significant within Segment 6.

4.1.4.7 Mitigation

Adverse effects on neighborhood and community cohesion have been a principal concern since the study began in 1996. FDOT and FHWA coordinated a public outreach effort to gain a clear understanding of potential mitigation options desired by the affected residents, businesses, and organizations in order to help strengthen the community. Extensive public involvement and creative community suggestions regarding design and mitigation measures have led to the protection of, and in many instances the enhancement of, community cohesion. FDOT has conducted over 400 meetings with jurisdictions, neighborhoods, agencies, and special interest groups during the PD&E phase in order to gather public input. As a result, proposed mitigation measures including noise walls, urban design guidelines, pedestrian enhancements, and relocation efforts will help minimize the impacts to residential and non-residential properties, and improve the quality of life in each affected neighborhood.

It is anticipated that the interstate improvements, combined with the proposed mitigation plans and design amenities, will help stimulate the urban renewal process in some depressed areas along the I-4 corridor, facilitating new development. The anticipated new development will be fueled, in part, by better neighborhood and community access, improved safety and mobility, provision for maintaining public services, and enhancements to visual and audible environments. The proposed improvements, in combination with the urban design amenities, are intended to increase property values and improve the quality of life for area residents.

The alternatives that comprise the Preferred Alternative were selected to minimize impacts to neighborhood and community cohesion. In Segment 2, the Kaley-Michigan Exfiltration Alternative was chosen because it had the least number of impacts to residents and businesses.

The SR 408 Interchange Alternative 2B1 was chosen because it provided access to downtown Orlando with the Amelia Street ramps. In addition, the alternative reconfigures the interchange to eliminate the physical barrier between the Griffin Park and Holden-Parramore neighborhoods and open the area to redevelopment. Alternative 2B1 also provides for a westbound Gore Street on-ramp for better access to I-4 from the neighborhoods.

The SR 50 Alternative 2 minimizes impacts to community facilities such as the Salvation Army Community Center and historic resources such as Colonial Garage.

In Segment 3, the Preferred Alternative results in a limited number of neighborhood and community cohesion impacts. The Typical C Alternative with Exfiltration minimizes impacts to residents and businesses. In addition, the Preferred Alternative maintains access to Pinehurst Avenue. As a result, access to the Calvary Assembly of God is maintained.

However, as indicated above, the neighborhood and community cohesion impacts are expected to be significant within Segment 2, especially in the vicinity of the I-4/SR 408 (East/West Expressway) interchange. To minimize neighborhood and community cohesion impacts and improve the quality of life adjacent to the interstate, urban design treatments, noise barrier walls, enhanced pedestrian access, and relocation efforts in the vicinity of the I-4/SR 408 (East/West Expressway) Interchange are being proposed as part of the Preferred Alternative. These urban design treatments may include:

- Ensuring that bridge structures are architecturally compatible with the design and with all other design elements;*
- Reducing visual effect of retaining walls and noise walls using landscaping, texture, color, or lighting;*
- Providing landscaping where possible;*
- Including aquatic plantings and fountains for stormwater treatment ponds;*
- Painting the right-of-way fence to blend into the surrounding context;*
- Incorporating public art into appropriate areas;*
- Placing utilities underground, where feasible; and*
- Ensuring that color and finish of sign columns compliment surrounding vertical structure elements.*

Refer to the Urban Design Guidelines (February 2000) for a complete description of possible urban design amenities.

Noise walls are considered reasonable and feasible in portions of Segments 1, 2, 3, 4 and 6 to mitigate noise impacts and soften visual impacts. The locations of the noise walls considered to be reasonable and feasible are shown on Figure 4-16.

As indicated in Sections 4.2.4.7 and 4.2.5.1, the Preferred Alternative includes provision for future development of bikeway, trail, greenway, and pedestrian facilities on cross streets. Future road widening projects within the state have been recommended to include roadway facilities to accommodate bicycle and pedestrian traffic. All interstate overpasses proposed for reconstruction

as part of this project have been designed to ensure that all cross streets will have sufficient room to incorporate proposed bikeway, trail, greenway, and pedestrian facilities during future cross street improvement projects. In addition, cross street overpasses proposed for reconstruction will be designed to accommodate proposed bikeway, trail, greenway, and pedestrian facilities.

The pedestrian overpass located just north of the I-4/Kaley Street interchange will not be rebuilt to accommodate the wider interstate facility. However, FDOT has committed to provide funding for sidewalk and pedestrian facilities that allow for pedestrian access from the current overpass location to Gore Street underpass. FDOT will coordinate with the City of Orlando during the design phase to determine the locations of the sidewalk and pedestrian facilities.

As indicated in Section 4.1.2.3, displacements and relocations as a result of the Preferred Alternative will be mitigated through FDOT's relocation program. Before acquiring right-of-way, all properties are appraised on the basis of comparable sales and land use values in the area. Owners of property to be acquired will be offered and paid fair market value for their property rights.

4.1.5 Environmental Justice

4.1.5.1 Requirements of Executive Order

Executive Order 12898 requires that each federal agency achieve the environmental justice part of its mission by identifying and addressing disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations (i.e., target populations). The federal guidance for evaluating environmental justice issues is found in *Guidance for Federal Agencies on Key Terms in Executive Order 12898*, which was developed by the Interagency Working Group on Environmental Justice, August 1995.

Supplementing this guidance is the *EPA Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analysis* (April 1998).

4.1.5.2 Criteria

The following definitions are relevant to the environmental justice discussion.

Target population: populations targeted for evaluation under the environmental justice executive order. Target populations are composed of minority and low-income populations. The census block groups and neighborhoods containing the target populations were identified in Section 3.1.3.

Minority: minority is defined as ethnically and racially nonwhite. Census data identify White, Black or African American, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and Other as races. Hispanics may fall into any of the above races; however, persons of Hispanic origin, regardless of races, are considered minority in this evaluation.

Low-income: persons below the poverty level, as defined by the Census Bureau, are considered low-income.

An environmental justice impact would occur if a target population were disproportionately and adversely affected by a human health impact or risk (bodily impairment, illness, or death) or by an environmental impact (ecological, cultural, economic, or social) caused by the project. Specifically, an environmental justice impact would occur if the following two conditions were met:

1. The percentage of the target population in the affected area (i.e., the project corridor) is meaningfully greater than the percentage of the target population in the general population or other appropriate comparison area. Environmental Justice guidelines recognize that determining "meaningfully greater" is a subjective process. In this analysis, if the percentage of the minority and low-income population is at least 50 percent and 25 percent, respectively, then the target population is meaningfully greater. Refer to Section 3.1.3 for the methodology used to determine these thresholds.

2. Human health or environmental impacts disproportionately and adversely affect this target population. Disproportionately high and adverse effect on minority and low-income populations means an adverse effect that: (1) is predominately borne by a minority population and/or a low-income population, or (2) will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population. When determining whether impacts are disproportionately high and adverse, agencies are to consider (a) whether there exists a potential for disproportionate impact, (b) whether affected communities have been sufficiently involved in the decision-making process, and (c) whether communities currently or historically have suffered from cumulative or multiple adverse exposures to environmental and health risks or hazards.

4.1.5.3 Potential for Disproportionate Impacts

4.1.5.3.1 Target Population

Thirty-two of the 140 census tract block groups along the Ultimate project corridor have disproportionately large minority or low-income populations, and are listed in Section 3.1.3 and in Table 3-35.

All of the 32 census block groups are within the Preferred Alternative corridor.

Nineteen of these census block groups, within ten neighborhoods, have direct use impacts. Six of these census blocks in the neighborhoods of Angebilt (BG 144.00-3), Holden Heights (BG 115.00-1, BG 115.00-2), and Holden-Parramore (BG 104.00-1, BG 105.00-1, and BG 105.00-2) are identified as targeted population. These six census block groups are all located within Segment 2 and are shown on Figure 4-3.

It is inappropriate and potentially misleading to attempt to determine disproportionality without combining alternatives and options, which may yield a different conclusion than would be drawn when focusing on a single segment, jurisdiction, or neighborhood. A preliminary disproportionality analysis was conducted for the Ultimate Build Alternatives and the *Preferred Alternative*, based on the locations of potentially significant impacts reported in other sections of this EIS.

Given the large number of impacted households along the Ultimate project and *Preferred Alternative* corridors, coupled with respect for the privacy of individuals living there, made it impractical to determine the actual race and income of impacted residents. In order to determine if residential impacts fall disproportionately on minority or low-income populations, a probabilistic model was used. For example, if an impacted residential unit is located in a census block that is 22 percent low-income, there is a 22 percent probability that the unit is occupied by low-income residents; or, for every 100 units impacted, it is probable that 22 of them are occupied by low-income residents.

4.1.5.3.2 Disproportionate Impacts

Human Health

The Ultimate project and *Preferred Alternative* involve improvements to an existing highway facility. It is not anticipated to create any potential human health impacts. The alignment will follow the existing I-4 and SR 408 alignment. Significant new safety problems that could increase the risk of death or injury to humans would not be created by the Ultimate project and *Preferred Alternative*. Furthermore, none of the proposed improvements would create or exacerbate illness in humans. Thus, disproportionate human health effects are not likely to result from the Ultimate project and *Preferred Alternative*.

Environmental

Environmental impacts include air quality, noise, visual, neighborhood impacts, disruption of community cohesion, and acquisitions. The appropriate sections in this document were reviewed to discern any disproportionate and adverse impacts in these categories in the environmental justice target population.

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Air Quality

The air quality impact analysis presented in Section 4.4.2 found that (1) carbon monoxide standards would not be exceeded at any of the interchanges that are expected to experience increased traffic volumes as a result of the Ultimate project and *Preferred Alternative*; and (2) no carbon monoxide violations would occur in the Ultimate project and *Preferred Alternative* study areas. Therefore, no disproportionate air quality impacts are expected and no mitigation measures are warranted.

Noise

The noise impact analysis presented in Section 4.4.3 found a potential for a noise impact under conditions of the Ultimate project and *Preferred Alternative*. Of the 10,732 noise sensitive sites identified within the Ultimate Build Alternatives study limits, 3,356 of the sites are impacted.

Of the 4,209 noise sensitive sites identified within the Preferred Alternative study limits, 1,506 of the sites are impacted. Within the targeted population areas, there are 987 noise sensitive sites of which 537 are impacted.

Mitigation (i.e., noise abatement such as noise walls) would reduce the number of impacted sites along the Ultimate project and *Preferred Alternative* corridors. Noise walls have been determined reasonable and feasible for most of the neighborhoods exhibiting noise impacts, including the neighborhoods with targeted populations. With noise abatement as described in Section 4.4.3.4, 1,916 of the sites are impacted within the Ultimate Build Alternative study limits.

Within the Preferred Alternative study limits, 1,329 noise sensitive sites are impacted.

Section 4.8.6 discusses specific abatement measures that could be implemented to limit construction noise impacts.

The analyses indicated that the impacted minority and low-income population is less than 50 percent of the total impacted population along the Ultimate project corridor. The Ultimate project corridor has 39 percent for minority population and 27 percent for low-income populations.

The analyses also indicated that the impacted minority and low-income population is less than 25 percent of the total impacted population along the Preferred Alternative project corridor. The Preferred Alternative has 21 percent for minority population and 16 percent for low-income populations.

Therefore, disproportionate noise impacts are not expected with or without noise abatement for the Ultimate project and the *Preferred Alternative*.

Construction noise and vibration would not disproportionately affect these target populations as construction impacts will be experienced throughout the Ultimate project and *Preferred Alternative* corridors. Construction impacts would be temporary. Section 4.8.6 discusses specific abatement measures that could be implemented to limit construction noise impacts.

Visual

Section 4.4.1 of this report evaluates the visual and aesthetic characteristics of the Ultimate project and *Preferred Alternative*, and identifies potential project-related impacts on the visual environment. The environmental justice analysis examines those impacts that remain potentially significant even after suggested mitigation is applied.

From Orange Blossom Trail to Lee Road, the changes in the vertical profile of I-4 would require the construction of retaining walls that would introduce a new visual element defining the edge of the adjacent neighborhoods. The Preferred Alternative also introduces new visual elements related to the Kirkman Road interchange, the I-4/SR 408 interchange alternative, and the Maitland Boulevard interchange.

In addition, the Ultimate project introduces new visual elements related to the Ultimate Bee Line interchange.

In the areas along the Ultimate project and *Preferred Alternative* corridors that meet requirements for noise abatement, noise walls would be constructed onto the proposed retaining walls, adding to the visual element, thereby increasing its scale and massing in relationship to the surrounding structures.

In addition, Figure 4-9 presents a visual perspective of the existing I-4 mainline and the proposed I-4 mainline with and without noise walls within Griffin Park. Section 4.4.1 discusses specific mitigation for treatment of these proposed visual elements.

For this analysis, the impacted population was set at those individuals residing in and adjacent to the zone of significant impact. This was considered appropriate, as it was concluded that these individuals would experience the visual impact more frequently and for a longer duration than other individuals travelling through (e.g., driving through) the significant impact zone.

The targeted populations identified within the neighborhoods of Angebilt, Holden Heights, Griffin Park, and Holden-Parramore are significantly impacted by visual effects of the proposed improvements. Other neighborhoods and areas impacted by visual effects along the corridor include South Division, the Orlando CBD, Lake Cherokee/Lucerne, Lake Davis/Greenwood, Lake Dot, and College Park. As the neighborhoods and areas located outside the targeted population areas have relatively low numbers of minority and low-income residents, the changes in visual effects do not result in a disproportionate distribution of impacts. Refer to Section 4.1.5.4 for Mitigation, Enhancements, and Offsetting Benefits.

Neighborhoods and Community Cohesion

Section 4.1.4 discusses impacts to neighborhoods and community cohesion. Approximately one-half of the community services relocated by the proposed improvements are located in Segment 2 within the neighborhoods with target populations. Identifying mitigation for these impacts involves active efforts by the relocation team to identify replacement sites for these community services. However, if acceptable sites are not available, or if available sites have adverse consequences (e.g., access issues), to the service patrons, then an environmental justice impact may result.

Section 4.1.4 describes no significant barrier to social interaction with the exception of the SR 408 alternatives in Segment 2.

The Preferred Alternative proposes to reconfigure the interchange to eliminate this physical barrier between the neighborhoods and open the area to redevelopment, as proposed by the city of Orlando.

Residential Displacements and Acquisitions

Section 4.1.2 describes in detail the property displacements and encroachments that would be necessary under the Ultimate project and *Preferred Alternative*, and the proposed mitigation for these impacts. Although residential displacements would be mitigated by fair compensation and relocation assistance in accordance with Section 339.09 of the Florida Statutes and the Uniform Relocation Assistance and Real Property Acquisition Act of 1970, they are nevertheless treated here as high and adverse impacts because of their potentially high number.

The Ultimate project would potentially result in the displacement of 392 residential units.

The Preferred Alternative would result in the displacement of 244 residential units.

Table 4-8 lists the ten neighborhoods with direct use impacts and the estimated displaced population for the Ultimate project and *Preferred Alternative* corridors and the target populations. The majority of the targeted populations are located in the vicinity of the I-4/SR 408 interchange in Segment 2.

Table 4-8. Environmental Justice Displaced Population

Affected Neighborhood	Displaced Population	Displaced Poverty Level Population	Percent of Displaced Poverty Level Population	Displaced Minority Population	Percent of Displaced Minority Population	Target Population Area? (Yes/No)
Segment 1						
Unincorporated Orange County	3	0	0%	0	0%	No
Segment 2						
<i>Angebilt</i>	<i>31</i>	<i>10</i>	<i>32%</i>	<i>31</i>	<i>100%</i>	<i>Yes</i>
<i>Holden Heights</i>	<i>37</i>	<i>13</i>	<i>35%</i>	<i>37</i>	<i>100%</i>	<i>Yes</i>
<i>Holden- Parramore¹</i>	<i>348</i>	<i>164</i>	<i>47%</i>	<i>348</i>	<i>100%</i>	<i>Yes</i>
Segment 3						
<i>College Park</i>	<i>38</i>	<i>3</i>	<i>8%</i>	<i>2</i>	<i>5%</i>	<i>No</i>
<i>Par Street-Lee Road</i>	<i>89</i>	<i>12</i>	<i>13%</i>	<i>7</i>	<i>8%</i>	<i>No</i>
Segments 4 and 5						
<i>Eatonville</i>	<i>0</i>	<i>0</i>	<i>0%</i>	<i>0</i>	<i>0%</i>	<i>Yes</i>
Spanish Trace Apartments	510	47	9%	78	15%	No
Within Palm Springs HOA	2	0	0%	0	0%	No
Sanlando Springs	11	0	0%	0	0%	No
Town of Monroe	7	1	14%	1	14%	No
Total						Disproportionate Impact? (Yes/No)
<i>Preferred Alternative Total:</i>	<i>543</i>	<i>202</i>	<i>37%</i>	<i>425</i>	<i>78%</i>	<i>Yes</i>
Ultimate Project Total:	1076	250	23%	504	47%	No
Target Population Threshold ²		25%		50%		
Project Corridor Total Population		11.1%		20.4%		
- Orange County		15.1%		31.5%		
- Seminole County		5.2%		7.9%		
- Volusia County		9.4%		5.5%		

All impacts associated with the Preferred Alternative are shown in ***Bold Italics***.

¹Impacted population in Holden-Parramore includes Hotel Carlton (38 DU) and T.B. Pavilion (8 DU).

²The threshold is determined in Section 3.1.3.

Source: US Census Bureau, 1990.

The analyses of the Ultimate project and *Preferred Alternative* are shown in Table 4-8. Values in this table indicate that the Ultimate project would not result in disproportionate impacts. The displaced minority and low-income population is less than 50 percent and 25 percent, respectively, for the Ultimate project corridor, and 47 percent for minority population and 23 percent for low-income populations. This situation comes about primarily due to the large number of displacements that would occur in Segments 2 and 3. Segment 2 has relatively high numbers of minority and low-income residents, whereas Segment 3 has a relatively low minority and/or low-income residents.

Values in Table 4-8 indicate that the Preferred Alternative would result in disproportionate impacts primarily due to the large numbers of individuals impacted in Segment 2, a segment with relatively high numbers of minority and low-income residents. This preliminary determination of disproportionate impacts does not take into account any offsetting benefits. Refer to Section 4.1.5.4 for Mitigation, Enhancements, and Offsetting Benefits.

For those residents identified as low-income or identified as "Last Resort" as described in the FDOT *Right-of-Way Manual*, Section 9.6, purchase additive payments will be made available so that housing will be affordable. According to the 2000 Census Report, within the central Orlando area, there are 391 single-family rental units unoccupied. For the displacees identified as "Last Resort," rental assistance payments in the form of super supplements will be made available so those rentals are affordable to them. Relocations are random along the proposed new right-of-way for this

portion of the study area. Acquisitions do not cut off any of the existing communities and there will be enough housing remaining in the neighborhoods to absorb the residents displaced by the Ultimate project and *Preferred Alternative*.

4.1.5.3.3 Non-Residential Displacements

The FEIS identifies the number of displaced businesses and other buildings along the segment alternatives in Section 4.1.2. Since the spatial distribution of non-residential land uses mirrored that of residential displacements, they were not analyzed separately for disproportionality.

According to Section 4.1.2.1.1, there are approximately 63 businesses located within the central Orlando area that are impacted by the Preferred Alternative. The businesses can be classified as follows:

- *Industrial/light manufacturing*
- *Small retail convenience/gas*
- *Small service related*
- *Healthcare*
- *Community organizations*
- *Auto/equipment retail*
- *Professional office*

A check of the multiple listings for the immediate area reveals that there are six properties leasing space, one entire business for sale, and five vacant sites. It is not anticipated that all 63 businesses will be relocating at one time. It appears that the market will be able to absorb all the displaced businesses as they enter the real estate market. It is also estimated that 15 percent to 20 percent of the downtown businesses are minority-owned.

Contamination

Section 4.4.4 lists sites with medium or high levels of contamination along the proposed alignment. None of the listed sites appear to be within any of the neighborhoods that have been identified as containing target populations. Remediation for hazardous materials will be done in accordance with federal and state statutory requirements to protect human health.

4.1.5.3.4 Public Outreach

This section examines whether affected communities have been sufficiently involved in the decision-making process. Chapter 5 summarizes the public involvement program conducted during the DEIS and FEIS stages of the project. Following the public hearing and selection of the *Preferred Alternative*, additional outreach was performed in target population communities. Specifically, individual meetings were held with neighborhood groups to identify concerns and plans of these groups and to inform them of the Ultimate project and *Preferred Alternative*. The information gleaned from these meetings feeds into the evaluation of environmental justice impacts and development of appropriate mitigation measures. As is evident in Chapter 5, extensive public outreach was performed during DEIS and FEIS stages of project development. A series of stakeholder meetings, public workshops and hearings, and open houses was held; telephone and fax hotlines were established to receive comments; and technical advisory and citizens advisory committees were created to work with the project team during preliminary engineering. As recommended in the Environmental Justice guidelines, the EIS scoping process included the following elements:

- Identification of target population neighborhoods
- Solicitation of key concerns from neighborhood residents, leaders, and community service providers through both public and one-on-one meetings

4.1.5.3.5 Cumulative and Multiple Adverse Impacts

This section addresses whether target populations suffer from cumulative or multiple adverse impacts. The East Central Florida Regional Planning Council (ECFRPC) maintains a database of proposed projects that could have regional impact. This information was reviewed and it was found that none of the proposed developments would be located in proximity to the target populations and that none would create cumulative impacts or contribute to multiple adverse impacts on any of the target populations.

In addition, there are several related studies along the Ultimate project and *Preferred Alternative* corridors. These related studies are described in some detail in Section 1.4. There is a potential for cumulative impacts due to construction of both the PD&E Study – Section 2 and the related studies. Refer to Section 4.9.2 for information on cumulative impacts.

4.1.5.3.6 Indirect Impacts

This section addresses whether the target populations will suffer indirect impacts as part of the proposed improvements. A detailed discussion of indirect impacts as a result of the proposed improvements is provided in Section 4.9.1. As indicated in Section 4.9.1, the areas in which the target populations are located will not suffer from disproportionate indirect impacts.

4.1.5.4 Mitigation, Enhancements, and Offsetting Benefits

Table 4-9 summarizes the Environmental Justice impacts. As shown in Table 4-9, the Preferred Alternative would result in disproportionate impacts primarily due to the large numbers of individuals impacted in Segment 2, a segment with relatively high numbers of minority and low-income residents.

The project impacts that could become an Environmental Justice concern are the neighborhood impacts in Angebilt (BG 144.00-3), Holden Heights (BG 115.00-1, BG 115.00-2), and Holden-Parramore (BG 104.00-1, BG 105.00-1, and BG 105.00-2). The removal of community services in these neighborhoods would likely alter the existing character of the neighborhood. Measures will be undertaken to relocate noted community services within the general neighborhood area.

Those impacts that can and will be mitigated sufficiently would not translate into adverse and disproportionate Environmental Justice impacts. Applicable mitigation is discussed above in Section 4.1.4.7.

Table 4-9. Environmental Justice Severe and Disproportionate Impacts for Preferred Alternative

Target Neighborhoods	Human Health	Air Quality	Noise	Visual	Neighborhoods & Community Services	Acquisitions	Contamination	Public Outreach
<i>Angebilt</i>	<i>no</i>	<i>no</i>	<i>no¹</i>	<i>yes¹</i>	<i>yes²</i>	<i>yes²</i>	<i>no</i>	<i>no</i>
<i>Holden Heights</i>	<i>no</i>	<i>no</i>	<i>no¹</i>	<i>yes¹</i>	<i>yes²</i>	<i>yes²</i>	<i>no</i>	<i>no</i>
<i>Holden-Parramore</i>	<i>no</i>	<i>no</i>	<i>no¹</i>	<i>yes¹</i>	<i>yes²</i>	<i>yes²</i>	<i>no</i>	<i>no</i>
<i>Griffin Park</i>	<i>no</i>	<i>no</i>	<i>no¹</i>	<i>yes¹</i>	<i>yes²</i>	<i>yes²</i>	<i>no</i>	<i>no</i>
<i>Eatonville</i>	<i>no</i>	<i>no</i>	<i>no¹</i>	<i>yes¹</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>no</i>

All impacts associated with the Preferred Alternative are shown in *Bold Italics*.

¹Impact may be severe and disproportionate before mitigation; however, after the application of mitigation as described in the relevant section of this document, no severe or disproportionate impact would occur.

²Mitigation is proposed, yet successful relocation is contingent on available sites in the area.

In addition to the mitigation measures discussed in Section 4.1.4.7, FDOT will continue the community outreach during project design and construction to ensure community concerns are addressed. Specifically, the following measures are recommended, particularly in the Environmental Justice target populations.

- *Continue to provide a telephone hotline to receive and respond to neighborhood concerns. In particular, this service should be available during active construction periods so that*

residents have an opportunity to express concerns over any acute problems that may arise in their neighborhoods. At best, this hotline should be available 24 hours per day if construction is planned for evening and early morning hours. If project personnel are not available 24 hours per day, an answering service should be provided to ensure that residents' comments can be received.

- *Set up an information booth in the construction vicinity to provide a communication line between construction management and residents. This booth could disseminate information regarding specific construction activities as well as provide residents with the opportunity to express their concerns about construction activity.*
- *Provide for direct mailings or community postings of any construction activity that is anticipated to be a particular nuisance (e.g., to inform residents of the period of pile driving in their neighborhood).*

The I-4 Project Team has made every effort to identify and address impacts to target populations. The project is expected to have an overall positive and beneficial effect on local and regional transportation needs of target populations by improving access to transportation.

4.1.6 Protection of Children

4.1.6.1 Requirements of Executive Order

Executive Order 13045, signed by former President Clinton on April 21, 1997, seeks to reduce environmental health and safety risks to children. This executive order requires federal agencies, as part of their programs and policies, to address these risks and ensure federal standards take into account special risks to children.

Executive Order 13045 states that a growing body of scientific knowledge demonstrates that children may suffer disproportionately from environmental health and safety risks. These risks arise because children's neurological, immunological, digestive, and other bodily functions are still developing; children eat more food, drink more fluids, and breathe more air relative to their body weight than adults. Children's size and weight may diminish their protection from standard safety features and children's behavior patterns may make them more susceptible to accidents because they are less able to protect themselves.

4.1.6.2 Criteria

Federal guidelines for addressing protection of children have not yet been published. In this study, the following criteria are used. For purposes of evaluating impacts to children, persons under the age of sixteen were considered children due to the fact that at a minimum until this age, they are still developing and growing. An impact under this Executive Order would occur if the following two conditions are met: (1) there is a disproportionate representation of children in a given census block group and (2) the census block group is expected to suffer disproportionate environmental impacts. Refer to Section 4.1.5 Environmental Justice, for definitions regarding disproportionate populations and impacts. The same definitions apply here as well.

4.1.6.3 Potential for Disproportionate Impacts

For specific assumptions and details on analyses, refer to similar discussions in Section 4.1.5.3.

4.1.6.3.1 Target Population

Twenty-two of the 140 census tract block groups along the Ultimate project corridor have disproportionately large children populations. Nineteen of these census block groups, within 10 neighborhoods, have direct use impacts to residential areas.

Five of these census blocks within the neighborhoods of Angebilt (BG 144.00-3), Holden Heights (BG 115.00-1, BG 115.00-2), Holden-Parramore (BG 105.00-1), and Griffin Park (BG 104.00-1) are identified as targeted populations. These five census block groups are all located within Segment 2 and are shown on Figure 4-4.

4.1.6.3.2 Disproportionate Impacts

Environmental impacts include air quality, noise, visual, neighborhood impacts and community cohesion, and acquisitions. The appropriate sections in this document were reviewed to discern any disproportionate and adverse impacts in these categories.

Based on discussions in Section 4.1.5.3.2, disproportionate health effects and effects from air quality impacts and contamination impacts are not likely to result from the Ultimate project and the *Preferred Alternative* on the population of children. No mitigation resources are warranted.

The air quality impact analysis presented in Section 4.4.2 found that (1) carbon monoxide standards would not be exceeded at any of the interchanges that are expected to experience increased traffic volumes as a result of the Ultimate project and *Preferred Alternative*; and (2) no carbon monoxide violations would occur in the Ultimate project and *Preferred Alternative* study areas.

Application of the noise mitigation presented in Section 4.4.3 would be necessary to eliminate the potential for disproportionate impacts affecting children resulting from noise.

For discussion on changes in visual effects, refer to Section 4.1.5.3.2.

Neighborhoods and Community Cohesion

Despite application of the mitigation measures described in Section 4.1.3, the target neighborhoods in Segment 2, including Holden Heights, Holden-Parramore, and Griffin Park, would continue to suffer a substantial and disproportionate loss of community services including services that benefit children. The Holden Heights Community Center, House of Hope, Lois' Learning Center, Orlando Day Nursery, and the Griffin Park Community Center and recreational area (direct use impact by SR 408 Preferred Alternative 2B1) would be relocated.

The identified mitigation for these facilities involves active efforts by the relocation team to identify replacement sites within the same general area. However, if acceptable sites are not available, or if acceptable sites have adverse consequences (e.g., access issues) to the facility patrons, then a Protection of Children impact may result.

Residential Displacements and Acquisitions

Section 4.1.2 describes in detail the property displacements and encroachments that would be necessary under the Ultimate project and *Preferred Alternative*, and the proposed mitigation for these impacts. Although residential displacements would be mitigated by fair compensation and relocation assistance in accordance with Section 339.09 of the Florida Statutes and the Uniform Relocation Assistance and Real Property Acquisition Act of 1970, they are nevertheless treated here as high and adverse impacts because of their potentially high number.

Using the same probability analysis defined in Section 4.1.5, the displaced children population is presented in Table 4-10, listing 11 neighborhoods with direct use impacts and identifies those with target populations (Eatonville and Mandarin Estates were identified as target areas but do not have direct use impacts to residences). The analyses of the Ultimate project and *Preferred Alternative* are shown in Table 4-10.

Table 4-10. Protection of Children

Affected Neighborhood	Percent Children Population of Total Population	Total Displaced Population	Children Population Displaced	Percent of Children Population Displaced	Target Population Area? (Yes/No)
Segment 1					
Unincorporated Orange County	22%	3	1	33%	No
Segment 2					
<i>Angebilt</i>	<i>32%</i>	<i>31</i>	<i>10</i>	<i>32%</i>	<i>Yes</i>
<i>Holden Heights</i>	<i>33%</i>	<i>37</i>	<i>12</i>	<i>32%</i>	<i>Yes</i>
<i>Holden Parramore</i>	<i>44%</i>	<i>348</i>	<i>104</i>	<i>32%</i>	<i>Yes</i>
Segment 3					
<i>College Park</i>	<i>23%</i>	<i>38</i>	<i>7</i>	<i>18%</i>	<i>No</i>
<i>Par Street-Lee Road</i>	<i>17%</i>	<i>89</i>	<i>15</i>	<i>17%</i>	<i>No</i>
Segments 4 and 5					
Eatonville	42%	0	0	0%	Yes
Spanish Trace Apartments	25%	510	127	25%	No
Within Palm Springs HOA	18%	2	0	0%	No
Sanlando Springs	14%	11	2	18%	No
Mandarine Estates	30%	0	0	0%	Yes
Town of Monroe	18%	7	1	14%	No
Segment 6					
None in Segment 6					
Total					Disproportionate Impact? (Yes/No)
<i>Preferred Alternative Total:</i>	<i>23%</i>	<i>543</i>	<i>148</i>	<i>27%</i>	<i>No</i>
Ultimate Project Total:	22%	1076	279	26%	No
Target Population Threshold*				30%	
Project Corridor Total Population				20%	
- Orange County				21%	
- Seminole County				23%	
- Volusia County				19%	

All impacts associated with the Preferred Alternative are shown in *Bold Italics*.

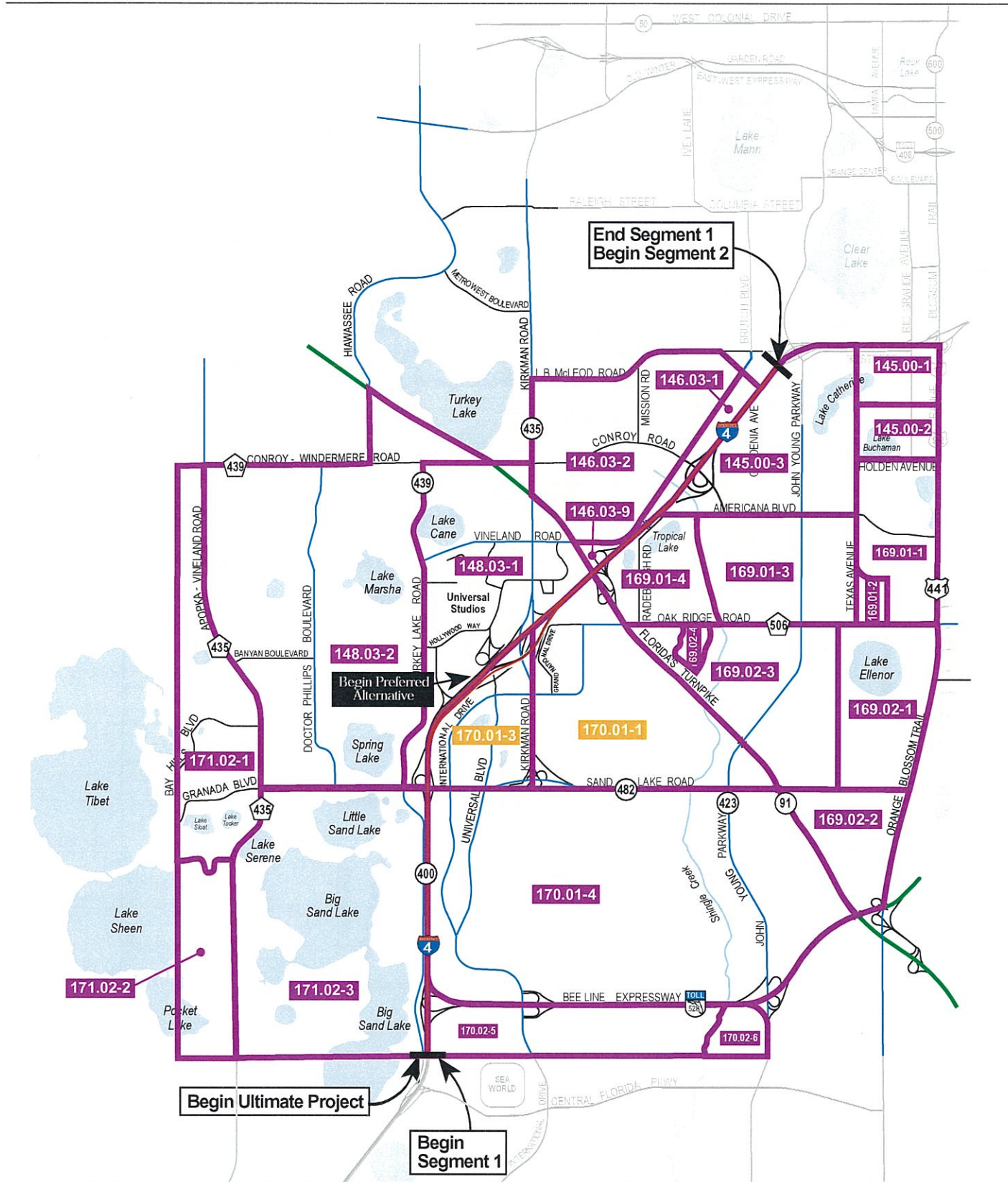
*The threshold is determined using methodology in Section 3.1.3.

Source: US Census Bureau, 1990

The majority of the targeted populations are located in the vicinity of the I-4/SR 408 interchange in Segment 2. The displaced children population within the target population is approximately 27 percent of the Preferred Alternative project corridor population.

The displaced children population within the target population is approximately 26 percent of the Ultimate project corridor population.

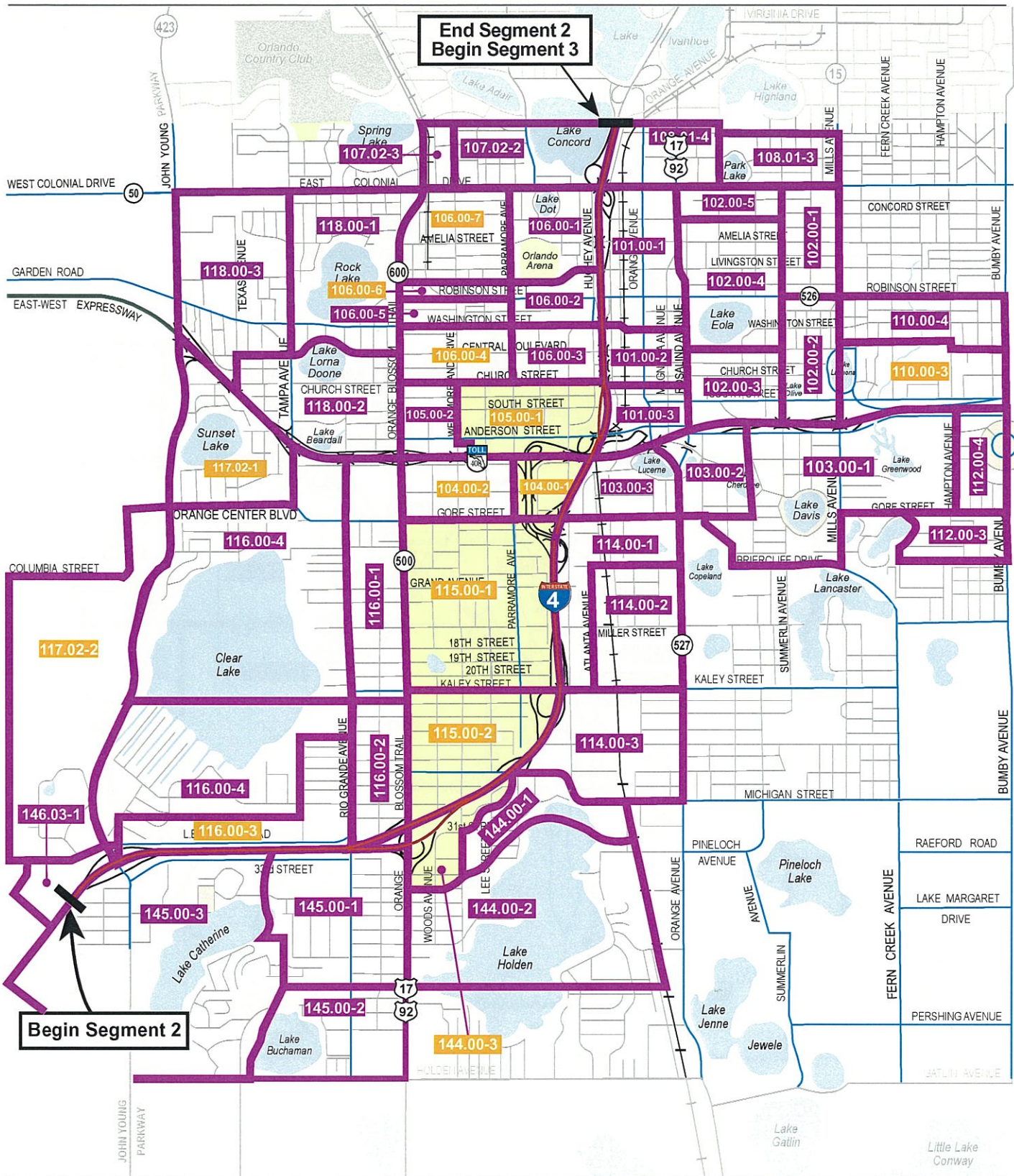
Values in Table 4-10 indicate that the Ultimate project and *Preferred Alternative* would not result in disproportionate impacts. This situation comes about primarily due to the large number of displacements that would occur in Segment 2 and 3.



- Protection of Children Block Groups $\geq 30\%$ of Population is 16 years of age or under
 - Impacted Census Block Groups
 - Census Block Group
- Tract Number
 Block Group

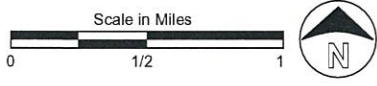


Figure 4-4
Protection of Children
Census Block Groups
 I-4 PD&E Study - Section 2
 Segment 1 of 6



**End Segment 2
Begin Segment 3**

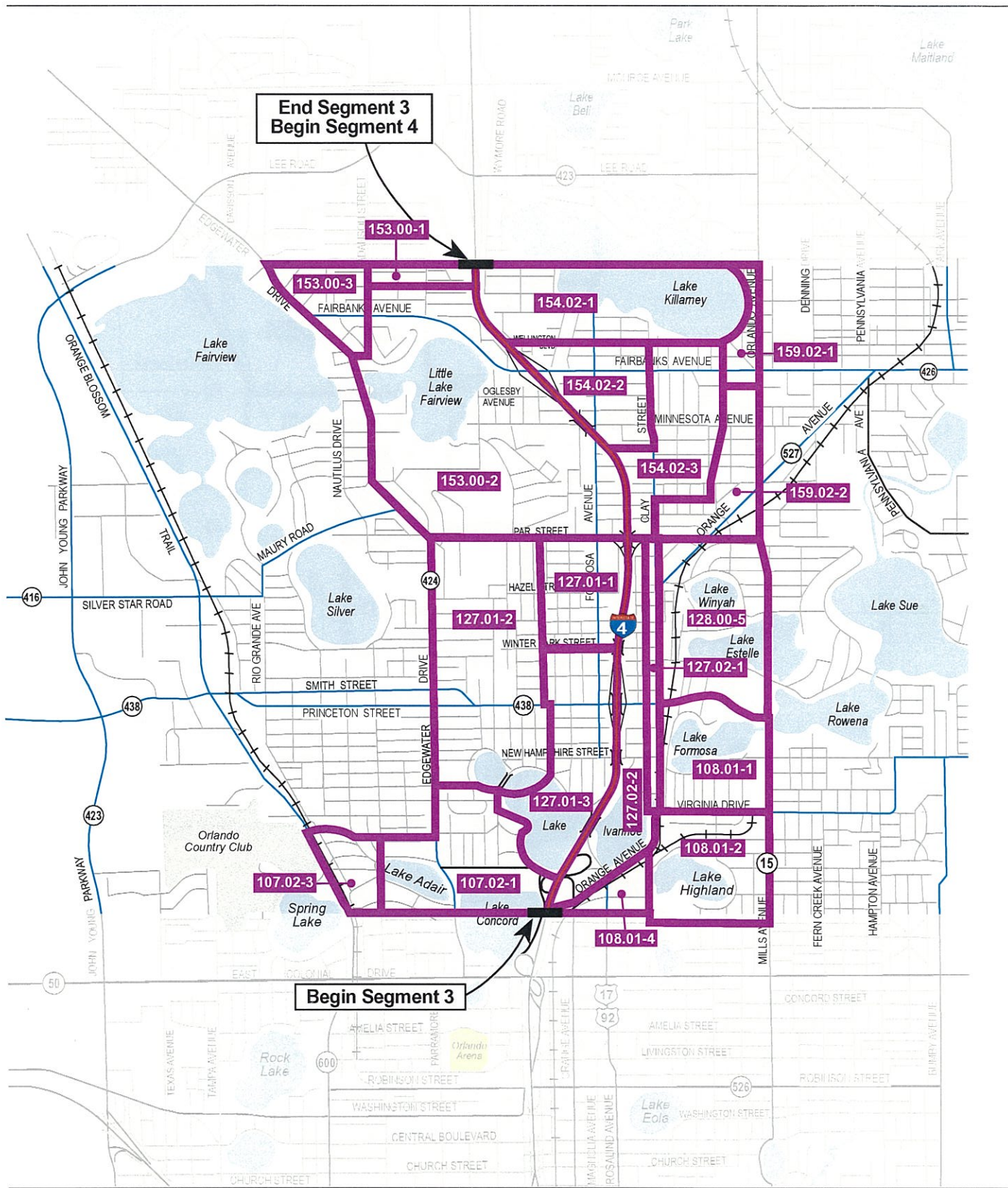
Begin Segment 2



- Protection of Children Block Groups
≥ 30% of Population is 16 years of age or under
 - Impacted Census Block Groups
 - Census Block Group
- Tract Number Block Group

Figure 4-4
Protection of Children
Census Block Groups
I-4 PD&E Study - Section 2
Segment 2 of 6





**End Segment 3
Begin Segment 4**

Begin Segment 3



- Protection of Children Block Groups $\geq 30\%$ of Population is 16 years of age or under
- Impacted Census Block Groups

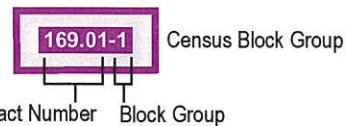
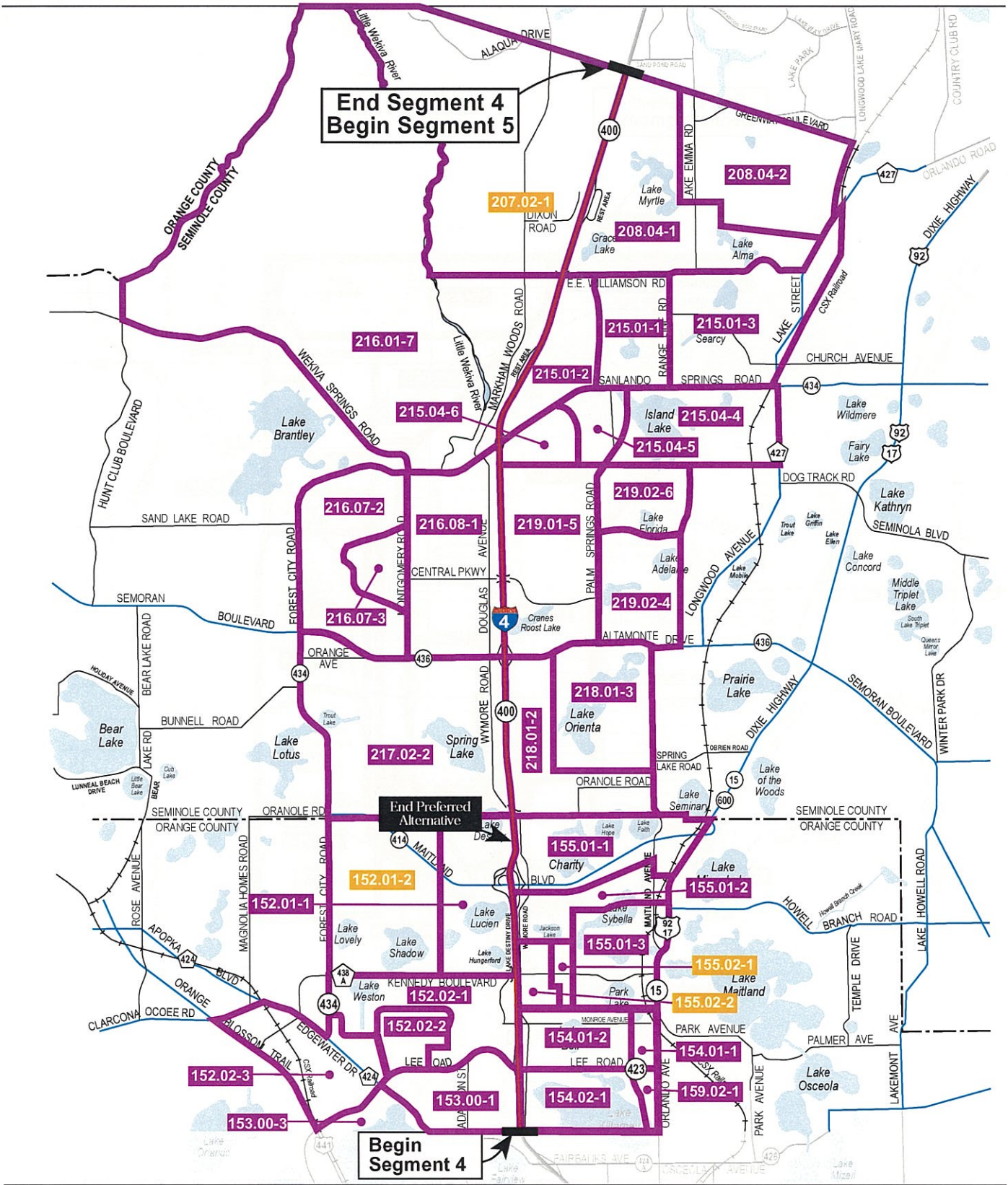


Figure 4-4
Protection of Children
Census Block Groups
I-4 PD&E Study - Section 2
Segment 3 of 6



- Protection of Children Block Groups \geq 30% of Population is 16 years of age or under
- Impacted Census Block Groups

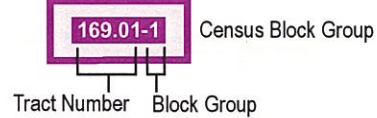


Figure 4-4
Protection of Children
Census Block Groups
I-4 PD&E Study - Section 2
Segment 4 of 6



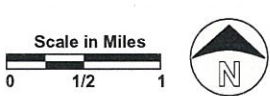
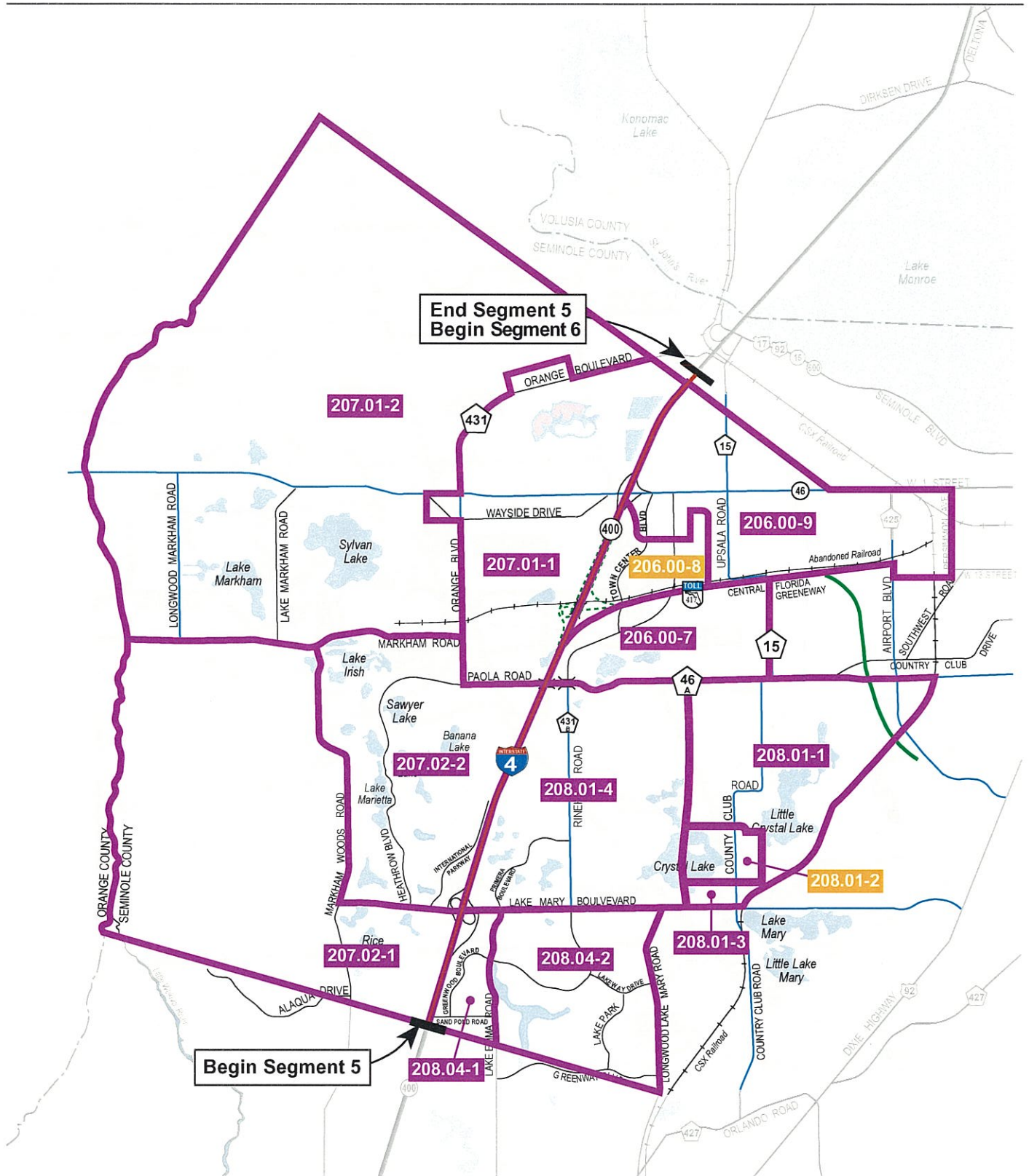


Figure 4-4
Protection of Children
Census Block Groups
 I-4 PD&E Study - Section 2
 Segment 5 of 6

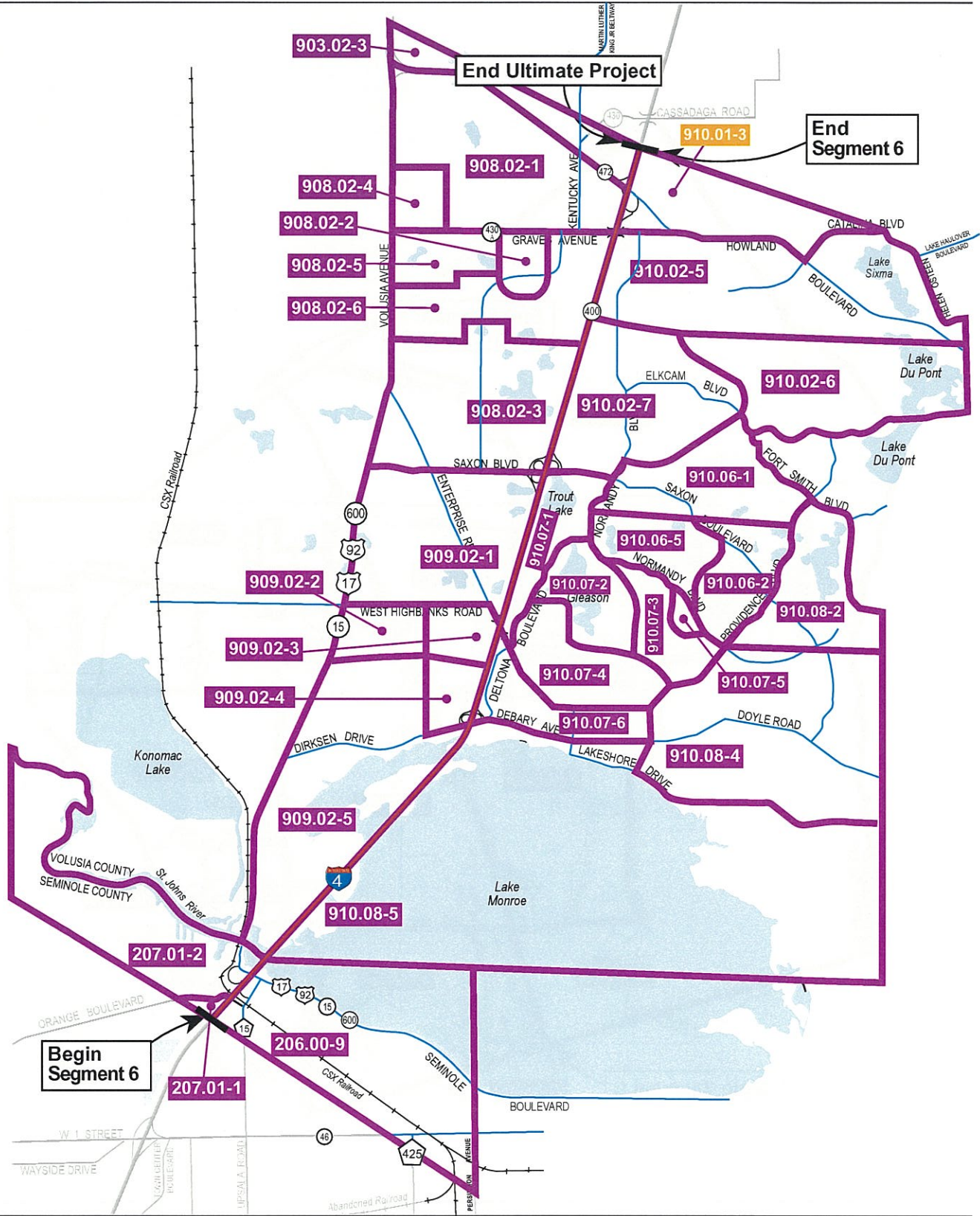


Figure 4-4
Protection of Children
Census Block Groups
 I-4 PD&E Study - Section 2
 Segment 6 of 6



Contamination

Section 4.4.4 lists sites with medium or high levels of contamination along the proposed alignment. None of the listed sites appear to be within any of the neighborhoods that have been identified as containing target populations. Remediation for hazardous materials will be done in accordance with federal and state statutory requirements to protect human health.

4.1.6.3.3 Public Outreach

Section 4.1.5 examines whether affected communities have been sufficiently involved in the decision-making process. Chapter 5 summarizes the public involvement program conducted during the DEIS and FEIS stage of the project for environmental justice, which also included the communities with affected protection of children issues.

4.1.6.4 Mitigation

Table 4-11 summarizes the protection of children from adverse impacts. Those impacts that can and will be mitigated sufficiently would not translate into adverse and disproportionate impacts. Applicable mitigation is discussed briefly above in Section 4.1.5.4 and in greater detail in the relevant sections of this document.

Table 4-11. Protection of Children Severe and Disproportionate Impacts

Target Neighborhoods	Human Health	Air Quality	Noise	Visual	Neighborhoods & Community Services	Acquisitions	Contamination	Public Outreach
<i>Angebilt</i>	no	no	no ¹	yes ¹	yes ²	no	no	no
<i>Holden Heights</i>	no	no	no ¹	yes ¹	yes ²	no	no	no
<i>Holden-Parramore</i>	no	no	no ¹	yes ¹	yes ²	no	no	no
<i>Griffin Park</i>	no	no	no ¹	yes ¹	yes ²	no	no	no
<i>Eatonville</i>	no	no	no ¹	yes ¹	no	no	no	no
Mandarine Estates	no	no	no ¹	no	no	no	no	no

All Impacts associated with the Preferred Alternative are shown in *Bold Italics*.

¹ Impact may be severe and disproportionate before mitigation; however, after the application of mitigation as described in the relevant section of this document, no severe or disproportionate impact would occur.

² Mitigation is proposed, yet successful relocation is contingent on available sites in the area.

The Preferred Alternative impacts that could become a protection of children concern are the neighborhood impacts in Angebilt (BG 144.00-3), Holden Heights (BG 115.00-1 and BG 115.00-2), Griffin Park (BG 104.00-1), and Holden-Parramore (BG 105.00-1). The removal of community services in these neighborhoods would likely alter the existing character of the neighborhood. Measures will be undertaken to relocate noted community services within the general neighborhood area.

The I-4 Project Team has made every effort to identify and address impacts to target populations. The project is expected to have an overall positive and beneficial effect on local and regional transportation needs of target populations by improving mobility within the region and thus providing broader employment and educational opportunities.

Although the SR 408 Preferred Alternative incurs protection of children issues, and consequently Section 106 and Section 4(f) issues, this alternative is supported by the City of Orlando and other local agencies and promotes the redevelopment and reconnection of the Holden-Parramore, Griffin Park, and Carter Street neighborhoods. For further information regarding the revitalization of Holden-Parramore, refer to Section 4.1.4.

4.1.7 Title VI and VIII

Title VI of the Civil Rights Act of 1964, provides that no person shall on the grounds of race, color, age, religion, sex, national origin, marital status, handicap, or family composition be excluded from participation in, or be denied the benefits of, or be otherwise subject to discrimination under any program of the Federal, State, or local government. Title VIII of the Civil Rights Act of 1968 guarantees each person equal opportunity in housing.

The I-4 PD&E Study - Section 2 project has been developed in accordance with the Civil Rights Act of 1964, as amended by the Civil Rights Act of 1968.

4.2 Cultural Resources

Historic resources with the greatest potential to be impacted or adversely affected by the I-4 Ultimate Project and *Preferred Alternative* include 19 National Register of Historic Places (NRHP)-listed, NRHP-eligible, or NRHP-contributing cultural resources—six historic districts and 13 individual properties. Effects to historic districts or individual resources within the Ultimate project and *Preferred Alternative* corridor would be primarily visual and associated with the introduction of new ramps, noise walls, and in some areas elevated general use lanes and HOV lanes. However, the possibility exists for direct use impacts to several cultural resources.

Final determinations of mitigation measures for the protection of historic resources have occurred as part of the FEIS phase of the project. As part of the FEIS phase of project development, all the requirements mandated by Section 106 and Section 4(f) have been completed.

4.2.1 Archaeological and Historic Resources

4.2.1.1 Area of Potential Effect

When evaluating historic structures, districts, and archaeological sites, the area of potential effect (APE) was determined by the type of improvement under consideration and the possible effects these improvements could have on significant resources. This determination also considered the changing character of the project area and the large number of historic resources that can be found in this region. Potential effects to these resources include physical impacts as well as visual, noise, and access. Previous cultural resource assessment studies have shown that potential visual effects can be, among the effects previously mentioned, the most far-reaching. As a result, the APE took into consideration the area within which potential visual effects for the improvements could be observed. Initially, this area was based on the existing elevation of I-4. However, as the project progressed, certain alternatives and/or options considered raised the existing profile of the roadway. Following consultation with SHPO representatives, it was determined that the preliminary APE would be expanded in areas where changes in elevation were being considered adjacent to significant or potentially significant individual resources and/or districts.

In addition, the APE was expanded to include areas around interchanges and potential stormwater pond sites located immediately adjacent to the corridor. For archaeological surveying and testing, a linear APE was defined as an area inclusive of medians and extending approximately 330 feet outward from the edge of each side of the existing roadway and was expanded appropriately around existing and proposed interchanges. Representatives of SHPO first reviewed the APE during a visual reconnaissance of the project area in 1997. Comments made during this review were incorporated into a presentation of the preliminary APE during a meeting with SHPO, FHWA, and FDOT in February 1998. The preliminary APE, which was informally noted and accepted by the attendees, was included in a document detailing the proposed methodology for the cultural resource assessment of I-4 PD&E Study - Section 2. SHPO's review of the document concluded that the methodology would sufficiently address the historic preservation concerns of the agency.

During the public meetings held as part of the public comment period for the DEIS, the College Park Neighborhood Association and area residents raised concerns regarding impacts to historic buildings along Peachtree Road in the vicinity of State Road 50 (West Colonial Drive) west of I-4, an area which was not included in the APE. In response to a request from the College Park Neighborhood Association and the proximity of the proposed improvements to the Peachtree Road residences, the project team and the Cultural Resources Committee (CRC) formed during the project study determined that the APE required expansion to include all the properties along SR 50 (Colonial Drive) and Peachtree Road from I-4 to Edgewater Drive. This would incorporate any area where potential

effects could occur due to changes to the SR 50 (Colonial Drive) interchange. Refer to the APE plans (February 2002) for an illustration of the APE for the Ultimate project and *Preferred Alternative*.

4.2.1.2 Potential Impacts to Historic Resources

Impacts to historic properties and districts listed on or eligible for listing on the NRHP were evaluated. Potential proximity impacts were identified as well as the direct use of resources. Proximity impacts include those that can be quantified (such as noise, water runoff, etc.) and those that lend themselves to qualitative analysis (such as visual intrusion, access, etc.). The impacts to historic resources in each segment are described in this section and are summarized in Table 4-12. Figure 4-5 shows the locations of the historic resources that will be impacted relative to the alternative alignments.

In addition, potential effects to historic resources listed on or eligible for listing on the NRHP were evaluated based on criteria developed by the Advisory Council on Historic Preservation (ACHP) as defined in 36 CFR Part 800.5. Determinations of no adverse effect and adverse effect were made for each historic resource listed on or eligible for listing on the NRHP within the APE. The results of the determinations are summarized in Table 4-12.

FDOT is committed to provide a higher level of urban design treatment for publicly sensitive historic resources that have potential impacts due to the proposed improvements and a determination of no adverse effect. These publicly sensitive historic resources include Lake Cherokee Historic District, Peckham-Phillips House, Downtown Orlando Historic District, Woodford James Maxey House, Parramore Avenue and Conley Street Historic District, and Eatonville Historic District. Higher levels of urban design treatments may include:

- Ensuring that bridge structures are architecturally compatible with the design and with all other design elements;
- Reducing visual effect of retaining walls and noise walls using landscaping, texture, color, or lighting;
- Providing landscaping where possible;
- Including aquatic plantings and fountains for stormwater treatment ponds;
- Painting the right-of-way fence to blend into the surrounding context;
- Incorporating public art into appropriate areas;
- Placing utilities underground, where feasible; and
- Ensuring that color and finish of sign columns compliment surrounding vertical structure elements.

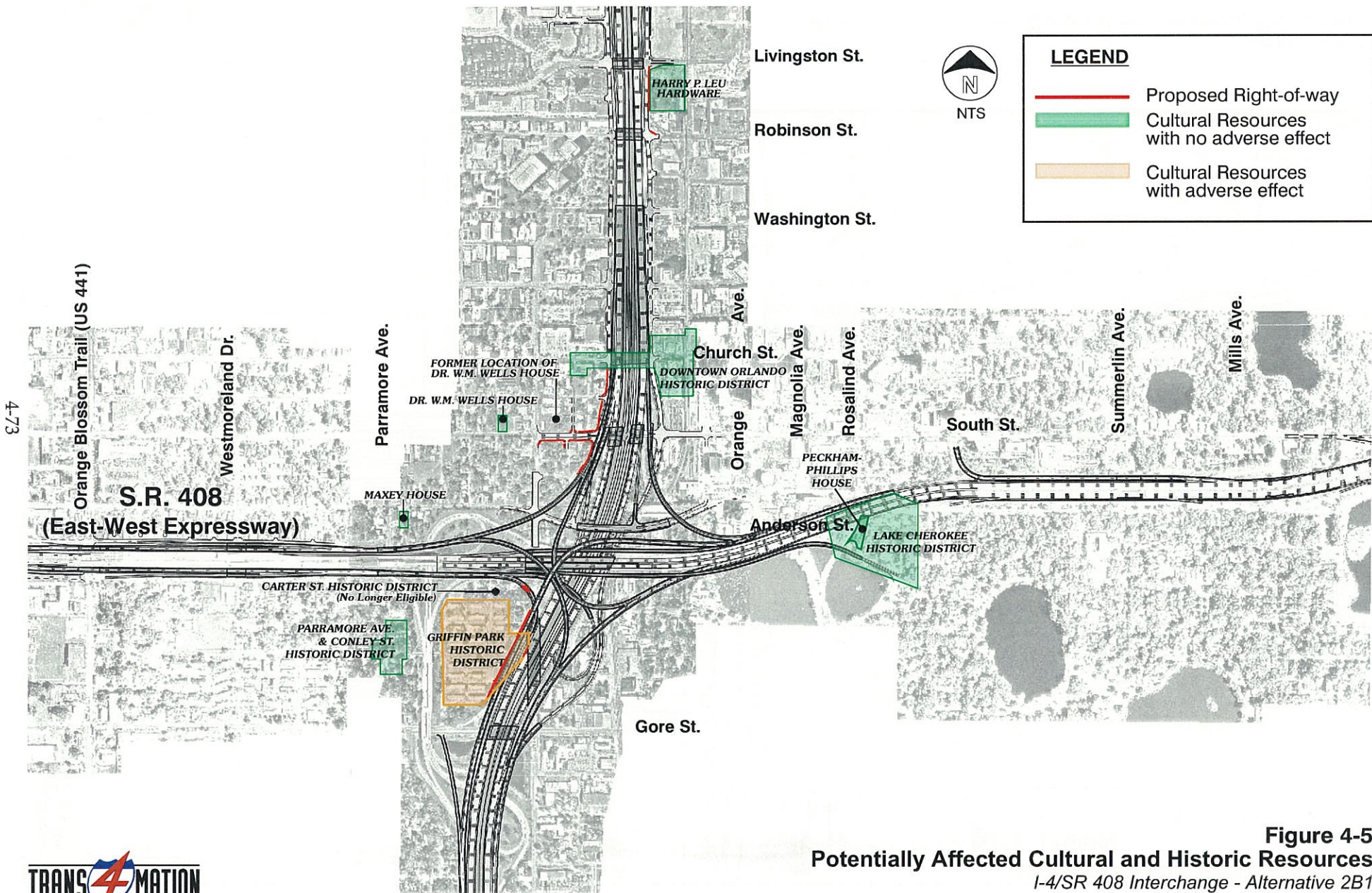
During the design phase, FDOT will coordinate with the Urban Design Committee. The Urban Design Committee consists of representatives from each of the jurisdictions potentially impacted by the proposed improvements.

Potential impacts to historic resources were reviewed with SHPO on January 30, 2001 and April 23, 2002. Comments made by SHPO during these meetings have been incorporated into this document. A copy of the meeting minutes are provided in Appendix C. Three determinations of effect were identified at the January 30, 2001 meeting. This was reduced to two determinations of effect at the April 23, 2002 meeting. The reduction was due to the elimination of the Carter Street Historic District from inclusion in the NRHP. Subsequent to the April 23, 2002 meeting, SHPO performed a field review of historic resources within the Preferred Alternative in May 2002. As a result of the field review, SHPO signed a concurrence letter indicating that the Preferred Alternative will have an adverse effect on two historic resources. A copy of the letter is provided in Appendix C. As indicated in Section 3.2, the Carter Street Historic District is no longer eligible for inclusion in the NRHP.

Table 4-12. Potential Effects to Historic Resources

FSF No.	Historic Resource	NRHP Status	Summary Description of Impacts	Determination of Effect
Segment 1				
No historic resources identified in this segment.				
Segment 2				
I-4/SR 408 INTERCHANGE ALTERNATIVE 2B1 FLYOVER WITH AMELIA ST RAMPS				
<i>8OR4306</i>	<i>Griffin Park Historic District</i>	<i>NRHP Listed in 1996</i>	<i>Visual/Noise/Direct Use</i>	<i>Adverse Effect</i>
<i>8OR258</i>	<i>Lake Cherokee Historic District</i>	<i>NPS Certified in 1982</i>	<i>Visual/Noise/Direct Use</i>	<i>No Adverse Effect</i>
<i>8OR111</i>	<i>Peckham-Phillips House/135 N. Lucerne Circle</i>	<i>NRHP Listed in 1979</i>	<i>Visual</i>	<i>No Adverse Effect</i>
<i>8OR8731</i>	<i>Downtown Orlando Historic District</i>	<i>NPS Certified in 1982</i>	<i>Visual/Direct Use</i>	<i>No Adverse Effect</i>
<i>8OR25</i>	<i>Old Orlando Railroad Depot</i>	<i>NRHP Listed in 1976</i>	<i>No Impacts</i>	
<i>8OR20</i>	<i>Bumby Hardware</i>	<i>Determined Eligible in 1999</i>	<i>No Impacts</i>	
<i>8OR183</i>	<i>Harry P. Leu, Inc./100 W. Livingston Street</i>	<i>Determined Eligible in 1999</i>	<i>Direct Use</i>	<i>No Adverse Effect</i>
<i>8OR1293</i>	<i>Woodford James Maxey House</i>	<i>Determined Eligible in 1999</i>	<i>Visual/Noise</i>	<i>No Adverse Effect</i>
<i>8OR1947</i>	<i>Dr. W.M. Wells House</i>	<i>Determined Eligible in 1999</i>	<i>No Impacts</i>	
<i>8OR8699</i>	<i>Parramore Avenue and Conley Street Historic District</i>	<i>Determined Eligible in 1999</i>	<i>Visual/Noise</i>	<i>No Adverse Effect</i>
<i>8OR110</i>	<i>J.J. Bridges House</i>	<i>NRHP Listed in 1984</i>	<i>No Impacts</i>	
<i>8OR3394</i>	<i>Masonry Vernacular Building, 116 America Street</i>	<i>Determine Eligible in 1999</i>	<i>No Impacts</i>	
<i>8OR3377</i>	<i>Westminster Retirement</i>	<i>Determine Eligible in 1999</i>	<i>No Impacts</i>	
<i>8OR9088</i>	<i>Greenwood Cemetery</i>	<i>Determined Eligible in 1999</i>	<i>No Impacts</i>	
Alternative SR 50-2 Northern Alignment				
<i>8OR3447</i>	<i>Colonial Garage/62-70 W. Colonial Drive</i>	<i>Determined Eligible in 1998</i>	<i>No Impacts</i>	
<i>8OR177</i>	<i>Judge Cheney House/715 N. Garland Avenue</i>	<i>Determined Eligible in 1998</i>	<i>Access</i>	<i>No Adverse Effect</i>
Segment 3				
Alternative C – Exfiltration				
<i>8OR8483</i>	<i>College Park Historic District</i>	<i>Determined Eligible in 1999</i>	<i>Visual/Noise/Direct Use</i>	<i>Adverse Effect</i>
<i>8OR8498</i>	<i>Folk Victorian Style Residence, 2739 Riddle Drive</i>	<i>Determined Eligible in 1998</i>	<i>No Impacts</i>	
Segment 4				
Alternative C				
<i>8OR9101</i>	<i>Eatonville Historic District</i>	<i>NRHP Listed in 1998</i>	<i>Visual</i>	<i>No Adverse Effect</i>
Segment 5				
No historic resources identified in this segment.				
Segment 6				
No historic resources identified in this segment.				

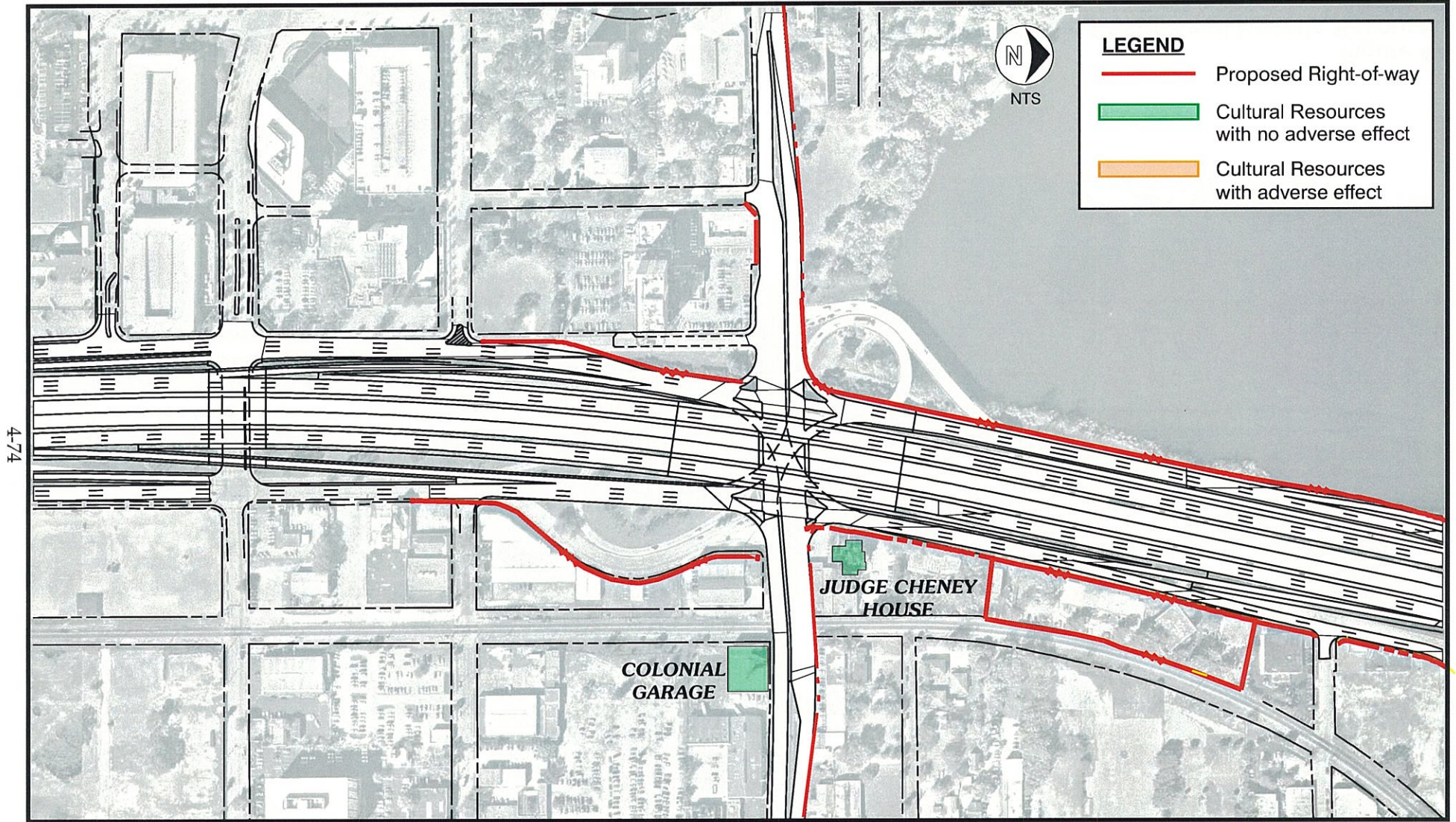
All impacts associated with the Preferred Alternative are shown in *Bold Italics*.

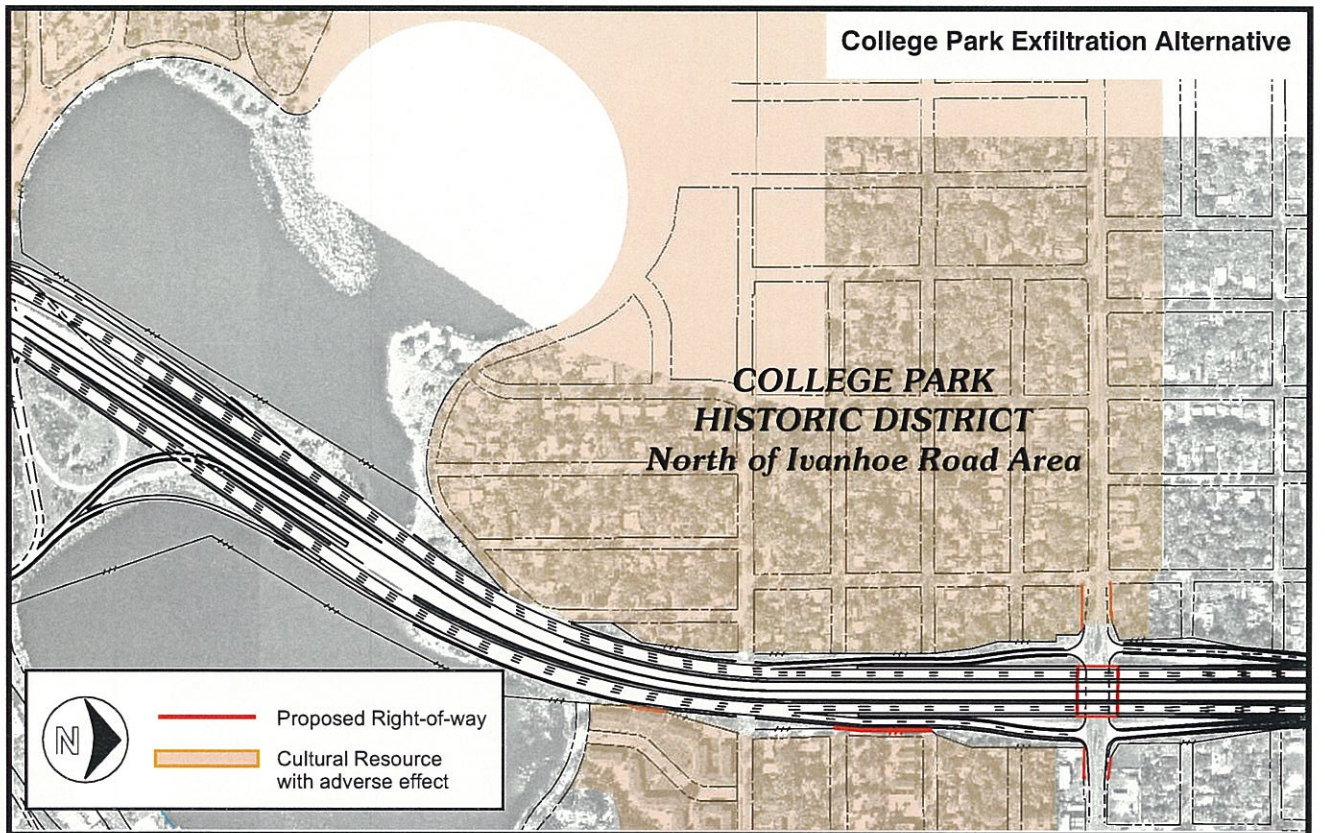
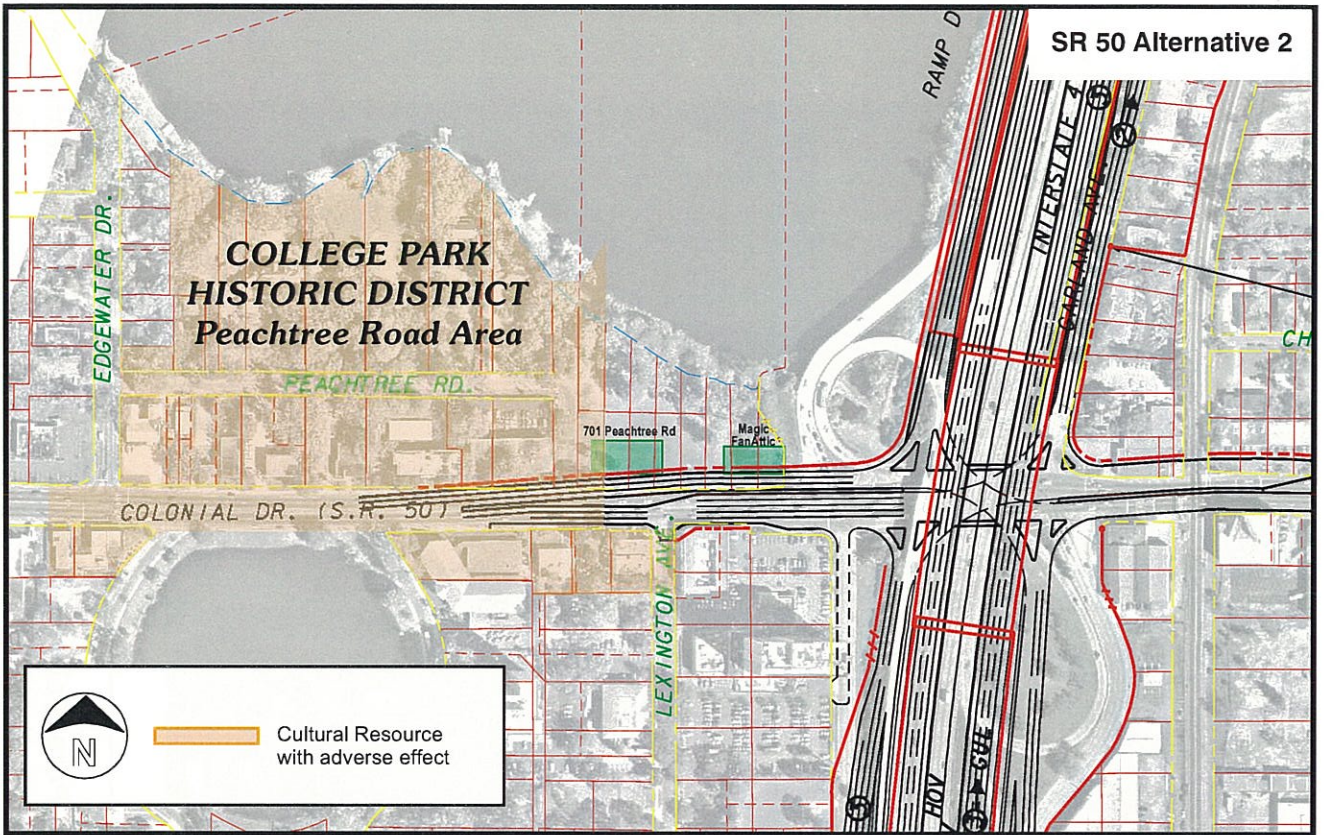


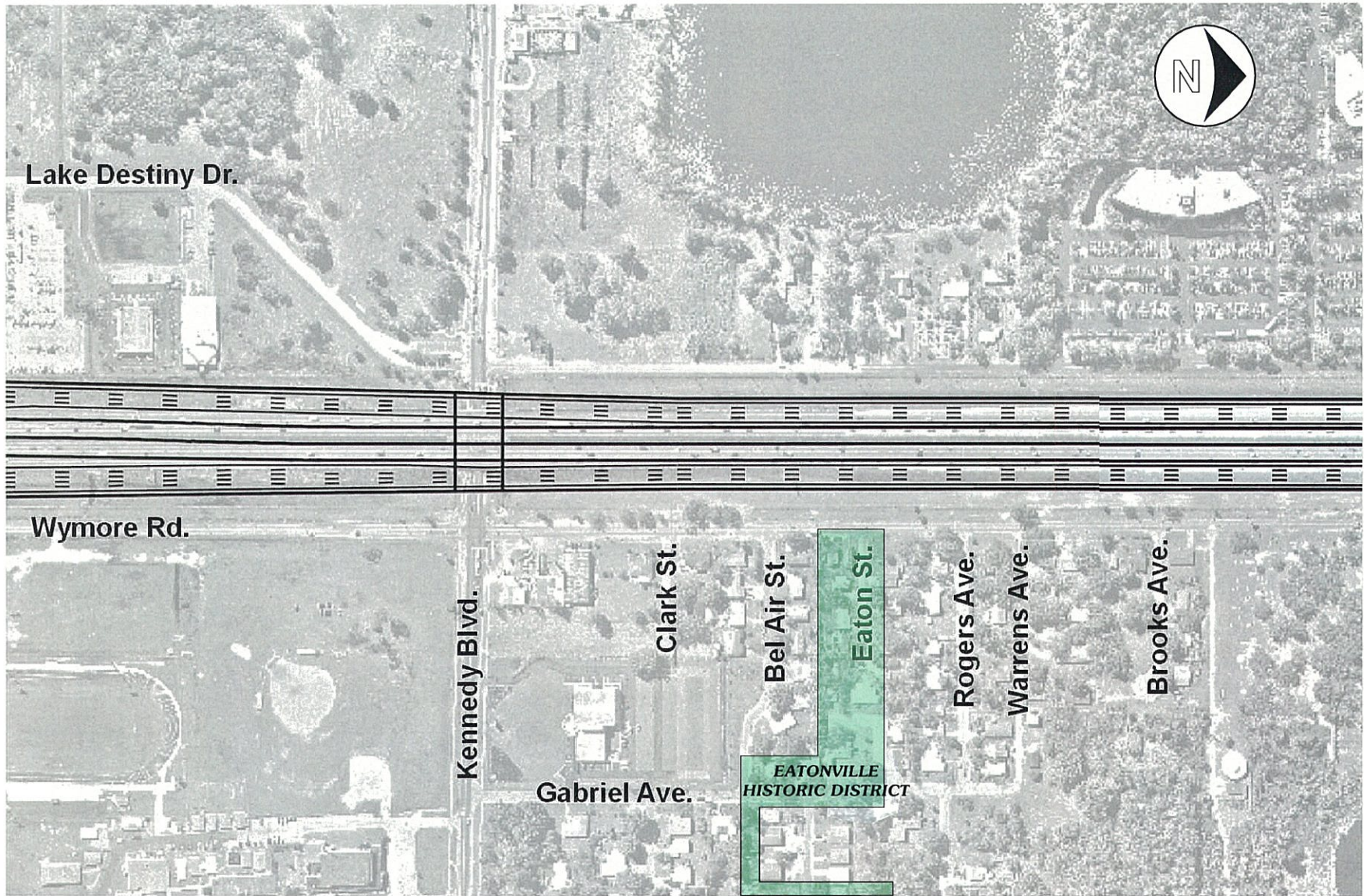
LEGEND

- Proposed Right-of-way
- Cultural Resources with no adverse effect
- Cultural Resources with adverse effect

Figure 4-5
Potentially Affected Cultural and Historic Resources
 I-4/SR 408 Interchange - Alternative 2B1
 I-4 PD&E Study - Section 2
 Sheet 1 of 4







A determination of no effect was made if the proposed improvements would have no impact on the identified resource either by direct use or constructive use. A determination of no adverse effect was made if there were some direct or constructive use but it would not impact the integrity of the historic resource. A determination of adverse effect was made for those resources that would be impacted by the proposed improvements.

Segment 1 (SR 528 to Kirkman Road)

No NRHP-listed or NRHP-eligible historic resources were identified in this portion of Segment 1.

Segment 1 (Kirkman Road to John Young Parkway)

No NRHP-listed or NRHP-eligible historic resources were identified in this portion of Segment 1.

Segments 2 and 3

These segments include downtown Orlando and immediately surrounding areas and encompass 25 historic resources. The following resources in Segments 2 and 3 are impacted by the Preferred Alternative:

- *Griffin Park Historic District*
- *Lake Cherokee Historic District*
- *Peckham-Phillips House*
- *Downtown Orlando Historic District*
- *Parramore Avenue and Conley Street Historic District*
- *Harry P. Leu, Inc.*
- *Woodford James Maxey House*
- *Judge Cheney House*
- *College Park Historic District*

Impacts to these properties are described in the paragraphs that follow. Historic resources that will not be impacted by the Preferred Alternative include:

- *Old Orlando Railroad Depot*
- *Bumby Hardware*
- *Dr. W.M. Wells House*
- *J.J. Bridges House*
- *Colonial Garage*
- *Masonry Vernacular Building/116 America Street*
- *Westminster Retirement*
- *Greenwood Cemetery*
- *Folk Victorian Style Residence/2739 Riddle Drive*

Griffin Park Historic District

The Preferred Alternative will visually impact the historic district and require the direct use of contributing historic resources. The Preferred Alternative reconstructs the I-4/SR 408 (East/West Expressway) interchange and proposes additional ramps and flyovers that increase the elevation of the interchange. Elevation increases may be up to 70 feet in some locations of the Preferred Alternative. In addition, the Preferred Alternative will require the direct use of three contributing resources: two residential buildings composed of 16 units and the Griffin Park community center. The area of land required for the Preferred Alternative is approximately 52,797 square feet (1.21 acres). The direct use of contributing resources will adversely affect the character and integrity of the historic district. Figure 4-5, sheet 1, presents a plan view illustration of the direct use impacts to the Griffin Park Historic District for the Preferred Alternative. In addition, Figure 4-8 presents a visual perspective before and after the proposed improvements.

The Preferred Alternative is eligible for the construction of noise walls. The average existing/No-Build noise level within the historic district is 69.7 dBA. The average Build noise level without noise wall abatement is 68.8 dBA, which is lower than the existing average noise level. The average Build noise level with noise wall abatement is 59.8 dBA. Thus, noise levels for the Preferred Alternative with noise walls will be under the FDOT Noise Abatement Criteria level of 65.0 dBA. Based on the minimal noise impact associated with the project and given the fact that noise abatement in the form of noise walls in this area is considered reasonable and feasible, the historic district will not be adversely affected by noise. Figure 4-16 presents the locations of the noise walls

determined to be reasonable and feasible for the Preferred Alternative. In addition, a visual perspective of the improvements with noise walls is provided on Figure 4-9.

Applying the criteria set forth as part of 36 CFR Part 800.5, it has been determined that the direct use impact of the contributing structures as a result of the Preferred Alternative will compromise the character of the Griffin Park Historic District. In addition, the integrity of the historic resource will be affected with this loss of contributing resources. An adverse effect determination has been made for the Griffin Park Historic District.

Lake Cherokee Historic District

The Preferred Alternative will visually impact the historic district and will require widening to the inside within the median of the existing SR 408 (East/West Expressway). The Lake Cherokee Historic District crosses underneath SR 408 (East/West Expressway). The widening will involve a direct use impact of the Orlando-Orange County Expressway Authority Office Building (Expressway Authority). However, the Expressway Authority building is a non-contributing resource of the Lake Cherokee Historic District. The additional aerial area required for the Preferred Alternative is approximately 4,225 square feet (0.1 acre). There will be no direct use of any contributing historic resources. The elevation of SR 408 (East/West Expressway) will not increase with the proposed improvements. Figure 4-5, sheet 1, presents the location of the Lake Cherokee Historic District in relation to the Preferred Alternative.

The Preferred Alternative is eligible for the construction of noise walls adjacent to SR 408 (East/West Expressway) from just east of the Anderson Street/SR 408 (East/West Expressway) on-ramp to east of Mills Avenue. The average noise levels for the benefited receivers within the historic district in the existing and No Build scenarios is 66.9 dBA. The average noise level in the Build scenario without noise abatement is 64.5 dBA. With the construction of noise barrier walls, the average noise level drops to 58.1 dBA, a reduction of 6.4 dBA, which is under the FDOT noise abatement criteria of 65.0 dBA. Based on the minimal noise impact associated with the project and given the fact that noise walls in this area are considered reasonable and feasible, the historic district will not be adversely affected by noise. Figure 4-16 presents the locations of the reasonable and feasible noise walls for the Preferred Alternative.

As stated earlier, FDOT is committed to provide a higher level of urban design treatment within the Lake Cherokee Historic District to mitigate visual impacts. Examples of these higher-level design treatments are provided above. FDOT will coordinate with the Urban Design Committee to determine which treatments would best benefit the district.

A finding of no adverse effect has been determined for the Preferred Alternative. The Lake Cherokee Historic District will be visually impacted due to the addition of noise walls in portions of the district (refer to Figure 4-16). Although the noise walls will diminish the integrity of a portion of the district's setting, this portion of the district has already been impacted by the construction of SR 408 (East/West Expressway). Furthermore, the integrity of location, design, materials, workmanship, feeling, and association within the district remain intact.

Peckham-Phillips House

The Preferred Alternative will not require a direct use of the historic resource. However, the Preferred Alternative will visually impact this historic resource. As part of the proposed improvements, the existing eastbound SR 408 (East/West Expressway) off-ramp to Orange Avenue will be reconstructed. This off-ramp passes in front of the Peckham-Phillips House. However, there will be no increase in the elevation of the off-ramp in the vicinity of the Peckham-Phillips House. Figure 4-5, sheet 1, presents the location of the Peckham-Phillips House in relation to the Preferred Alternative.

The Peckham-Phillips house is located in a commercial district adjacent to Rosalind Avenue south of SR 408 (East/West Expressway) and does not lie in a noise sensitive area. The structure has been converted into a bed and breakfast hotel and no substantial outdoor activity takes place on the property. Therefore, there are no noise impacts to the Peckham-Phillips House.

As stated earlier, FDOT is committed to provide a higher level of urban design treatment to mitigate visual impacts. Examples of these higher-level design treatments are provided above. The FDOT will coordinate with the Urban Design Committee to determine which treatments would best benefit the resource.

A finding of no adverse effect has been determined for the Preferred Alternative. The Peckham-Phillips House will be visually impacted by the Preferred Alternative due to the addition of noise walls adjacent to SR 408 (East/West Expressway). Although the construction of noise walls will diminish the setting of the Peckham-Phillips House, this building has already been impacted by the construction of SR 408 (East/West Expressway). Furthermore, the integrity of location, design, materials, workmanship, feeling, and association will remain intact.

Downtown Orlando Historic District

The Preferred Alternative will visually impact this historic district. Additional ramps and flyovers have the potential to compromise the viewshed of downtown Orlando from the interstate. The westbound elevation of I-4 will increase approximately 5 to 8 feet and the eastbound elevation of I-4 will decrease up to approximately 8 feet within the vicinity of the Downtown Orlando Historic District. Figure 4-10 presents a visual perspective for the Preferred Alternative before and after the proposed improvements.

The proposed improvements will require the reconstruction and widening of the bridges in the Hughey Avenue/Church Street area and modification of the existing bridge pier locations. The reconstruction and widening of the bridges will require additional air rights and direct use for piers and abutments within the district. However, such direct use does not impact any of the contributing resources that comprise the district. The additional aerial area required for the Preferred Alternative is approximately 20,100 square feet (0.46 acre). The additional right-of-way required for the Preferred Alternative is approximately 257 square feet. Figure 4-5, sheet 1, presents a plan view illustration of the location of the Downtown Orlando Historic District in relation to the Preferred Alternative.

No noise walls are being proposed, since the Downtown Orlando Historic District is not located in a noise sensitive area.

As stated earlier, FDOT is committed to provide a higher level of urban design treatment within the Orlando Downtown Historic District to mitigate visual impacts. Examples of these higher-level design treatments are provided above. FDOT will coordinate with the Urban Design Committee to determine which treatments would best benefit the district.

A finding of no adverse effect has been determined for the Preferred Alternative. The Orlando Downtown Historic District will be visually impacted due the additional spanning of the district as a result of widening the bridges. However, the additional spanning does not introduce new visual elements and will not diminish the integrity of the resource's significant historic features. In addition, the additional spanning will not change the character of the Orlando Downtown Historic District.

Old Orlando Railroad Depot

The Preferred Alternative proposes improvements to I-4 within the vicinity of Old Orlando Railroad Depot. However, the alternative will not impact the Old Orlando Railroad Depot. No right-of-way will be required from the Old Orlando Railroad Depot. In addition, the viewshed to and from the historic resource will remain unchanged with the proposed improvements. Refer to Figure 3-12 for the location of the Old Orlando Railroad Depot in relation to the Downtown Orlando Historic District.

Since there will be no impacts to the resource, a finding of no effect has been assigned to the Old Orlando Railroad Depot.

Bumby Hardware

The Preferred Alternative proposes improvements to I-4 within the vicinity of Bumby Hardware. However, the alternatives will not impact the historic resource. No right-of-way will be required from Bumby Hardware. In addition, the viewshed to and from the historic resources will remain unchanged

with the proposed improvements. Refer to Figure 3-12, sheet 1, for the location of the Bumby Hardware in relation to the Preferred Alternative and the Downtown Orlando Historic District.

Since there will be no impacts to the resource, a finding of no effect has been assigned to Bumby Hardware.

Harry P. Leu, Inc.

The Preferred Alternative will require the direct use of a sliver of property on the western edge of the Harry P. Leu, Inc. site that falls within the historic property boundaries. The area of land required for the Preferred Alternative is approximately 3,477 square feet (0.08 acre). Figure 4-5, sheet 1, presents the impacts to Harry P. Leu, Inc. as a result of the Preferred Alternative.

The Preferred Alternative will not diminish the views to or from the historic resource, since the Harry P. Leu, Inc. building faces Livingston Street and not I-4. In addition, noise walls are not proposed within the vicinity of Harry P. Leu, Inc.

A no adverse effect determination has been made for Harry P. Leu, Inc. Applying the criteria set forth as part of 36 CFR Part 800.5, it has been determined that the direct use impact to the property as a result of the Preferred Alternative will not compromise the character of Harry P. Leu, Inc.

Woodford James Maxey House

There will be no direct use impacts to the Woodford James Maxey House from the Preferred Alternative. The proposed widening will not require any right-of-way acquisition from the Woodford James Maxey House property. However, the additional ramps and flyovers for the I-4/SR 408 (East/West Expressway) interchange have the potential to impact the existing viewshed of the historic resource. Elevation increases may be up to 70 feet in some locations of the proposed the I-4/SR 408 (East/West Expressway) interchange alternative. Figure 4-5, sheet 1, presents the location of the Woodford James Maxey House in relation to the Preferred Alternative.

In addition, the Preferred Alternative is eligible for the construction of noise walls adjacent to SR 408 (East/West Expressway) in the vicinity of the Woodford James Maxey House. The average existing/No-Build noise level within the noise sensitive area is 70.1 dBA. The average Build noise level without noise abatement 70.3 dBA, a difference of less than 3 dBA. The average Build noise level with noise walls is 65.6 dBA. Based on the minimal noise impact associated with the project and given the fact that this area is eligible for noise abatement, the historic district will not be adversely affected by noise. Refer to Figure 4-16 for the locations of the noise walls.

A finding of no adverse effect has been determined for the Preferred Alternative. The Woodford James Maxey House will be visually impacted by the Preferred Alternative due to the addition of noise walls adjacent to SR 408 (East/West Expressway). However, the introduction of the new visual elements will not diminish the integrity of the resource's significant historic features. In addition, the introduction of the noise walls will not change the character of the property's use or setting that contribute to its historic significance.

Dr. W.M. Wells House

The Dr. W.M. Wells House, formerly located at 405 W. South Street, was relocated to a new site in the latter part of 2001. The Wells' built Museum of African-American History moved the house one block further west on W. South Street, just immediately west of the Wells' built Hotel. The house's new address will be 519 W. South Street. As of May 2002, it appears the house is up on blocks and it has not been placed on a permanent foundation. Refer to Figure 4-5, sheet 1, for the former and new location of the Dr. W.M. Wells House.

There will be no impacts to the Dr. W.M. Wells House from the Preferred Alternative. The proposed widening will not require any right-of-way acquisition from the Dr. W.M. Wells House property. All widening and right-of-way acquisition will be from the south side of South Street. The widening of South Street will not introduce new visual elements to the historic resource. In addition, noise walls are not reasonable and feasible in the vicinity of the Dr. W.M. Wells House.

Since there will be little or no impacts to the site, a finding of no effect has been assigned to the Dr. W.M. Wells House.

Parramore Avenue and Conley Street Historic District

There will be no direct use impacts to the Parramore Avenue and Conley Street Historic District from the Preferred Alternative. The proposed widening will not require any right-of-way acquisition from district property. However, the additional ramps and flyovers for the I-4/SR 408 (East/West Expressway) interchange have the potential to impact the existing viewshed of historic resource. Elevation increases may be up to 70 feet in some locations of the proposed the I-4/SR 408 (East/West Expressway) interchange alternatives. Figure 4-5, sheet 1, presents a plan view illustration of the potential impacts to the historic district.

The Preferred Alternative is eligible for the construction of noise walls adjacent to the I-4/SR 408 (East/West Expressway) ramps within the vicinity of the Parramore Avenue and Conley Street Historic District. Because the traffic movements along the ramp highway that exists along the south border of the district have been eliminated, build noise levels are less than existing noise levels. These traffic movements have been relocated to new ramps along the existing I-4 corridor. The average existing/No-Build noise level within the district is 65.6 dBA. The average Build noise level without noise wall abatement 62.0 dBA. The average Build noise level with noise walls is 60.2 dBA. Thus, noise levels with noise walls will be under the FDOT Noise Abatement Criteria level of 65.0 dBA. Based on the minimal noise impact associated with the project and given the fact that noise walls are reasonable and feasible in this area, the historic district will not be adversely affected by noise. Refer to Figure 4-16 for the locations of the noise walls.

As stated earlier, FDOT is committed to provide a higher level of urban design treatment within the Parramore Avenue and Conley Street Historic District to mitigate visual impacts. Examples of these higher level design treatments are provided above. The FDOT will coordinate with the Urban Design Committee to determine which treatments would best benefit the district.

A finding of no adverse effect has been determined for the Preferred Alternative. The Parramore Avenue and Conley Street Historic District will be visually impacted due to the addition of noise walls adjacent to SR 408 (East/West Expressway). However, the introduction of the new visual elements will not diminish the integrity of the resource's significant historic features. In addition, the potential for walls will not change the character of the property's use or setting that contribute to its historic significance.

J.J. Bridges House

It was determined that there will be no impacts to the historic resource as a result of the proposed improvements. The J.J. Bridges House is located too far away from SR 408 (East/West Expressway) and I-4 to be impacted visually or by increases in noise. Figure 3-12 presents the location of the J.J. Bridges House.

Since there will be no impacts to the site, a finding of no effect has been assigned to the J.J. Bridges House.

Masonry Vernacular Building/116 America Street

Due to the distance away from I-4 and SR 408 (East/West Expressway), it was determined that there will be no impacts to the historic resource as a result of the proposed improvements. Figure 3-12 presents the location of the historic resource.

Since there will be no impacts to the site, a finding of no effect has been assigned to the Masonry Vernacular Building located at 116 America Street.

Westminster Retirement

It was determined that there will be no impacts to the historic resource as a result of the proposed improvements. Westminster Retirement is located too far away from SR 408 (East/West Expressway)

and I-4 to be impacted visually or by increases in noise. Figure 3-12 presents the location of the historic resource.

Since there will be no impacts to the site, a finding of no effect has been assigned to Westminster Retirement.

Greenwood Cemetery

There will be no impacts to the Greenwood Cemetery from the Preferred Alternative. The proposed widening will not require any right-of-way acquisition from the historic resource property. The proposed improvements will not introduce new visual elements to the Greenwood Cemetery. In addition, noise walls are not reasonable and feasible within the vicinity of the Greenwood Cemetery. Figure 3-12 presents the location of the Greenwood Cemetery.

Since there will be no impacts to the site, a finding of no effect has been assigned to the Greenwood Cemetery.

Colonial Garage

As presented in Figure 4-5, sheet 2, the Preferred Alternative will not directly impact the Colonial Garage. The widening of SR 50 (Colonial Drive) will occur on the north side of the roadway.

The proposed improvements will not visually impact the historic resource. The proposed improvements will result in increases in the elevation of I-4 of approximately 5 feet. There are no new visual elements being proposed as part of the improvements. In addition, Colonial Garage is not located in a noise sensitive area.

A finding of no adverse effect has been determined for the Preferred Alternative. This alternative will not require any additional right-of-way and will not introduce any new visual elements to the historic resource.

Judge Cheney House

The Preferred Alternative will require additional right-of-way from a portion of the parking lot on the west side of the Colonial Bank site in front of the Judge Cheney House in order to expand Garland Avenue. In addition, the proposed improvements impact the parking lot on the south side due to the realignment of SR 50 to the north. However, no direct use impacts are proposed within the limits of the historic resource. The Judge Cheney House has been incorporated into the Colonial Bank building, and only the original foundation of the building represents the limits of the eligible historic resource. Although the proposed improvements will require additional right-of-way from part of the parking lot located in front of the Judge Cheney House, they will not notably impact the character of the historic resource. The building's integrity of location, setting, and feeling has already been compromised because this building has been substantially modified and moved from its original location. The resource's significance is based predominantly on its historical associations with a prominent Orlando citizen, Judge John M. Cheney. The Preferred Alternative will alter access to the historic resource, as two-way Garland Avenue will become a one-way thoroughfare. Figure 4-5, sheet 2, presents the location of the Judge Cheney House in relation to the Preferred Alternative.

The Preferred Alternative will not visually impact the Judge Cheney House. The elevation of I-4 will increase approximately 5 feet as a result of the proposed improvements. The alternative will not introduce any new visual elements to the historic resource. In addition, the Judge Cheney House is not located in a noise sensitive area.

A no adverse effect determination has been assigned to the Judge Cheney House. As indicated, the Preferred Alternative will not notably impact the character or integrity of the historic resource and will not involve direct use impacts to the historic resource. The building's integrity of location, setting, and feeling has already been compromised because this building has been substantially modified and moved from its original location.

College Park Historic District

Since the College Park Historic District encompasses a large area, impacts to the district will be discussed for the area of the district located west of I-4 along SR 50 (Colonial Drive) and Peachtree Road from I-4 to Edgewater Drive (Peachtree Road Area); and for the area of the district located east and west of I-4 between Lake Ivanhoe and Princeton Street (North of Ivanhoe Boulevard Area).

Peachtree Road Area

There are approximately seven historic properties listed on, eligible for listing on, or contributing to the NRHP identified in the portion of the College Park Historic District located west of I-4 along SR 50 (Colonial Drive) and Peachtree Road from I-4 to Edgewater Drive. Refer to the CRAS Addendum (April 2002) for a description of these historic resources.

The Preferred Alternative will not require the direct use of any historic resources located in this portion of the College Park Historic District. Refer to Figure 4-5, sheet 3, for the locations of the proposed improvements in relation to the College Park Historic District.

Noise walls are not reasonable and feasible in this portion of I-4. The average existing/No-Build noise level ranges from 60.5 dBA to 62.3 dBA. The average Build noise level without noise walls ranges from 59.8 dBA to 62.4 dBA. The existing/No-Build and Build noise levels do not meet FHWA criteria for noise abatement. Refer to Figure 4-16 for the locations of the noise walls.

Two historic resources, the McEwan House (8OR2154) and the Gibson-Slemons House (8OR2155), will be visually impacted by the Preferred Alternative due to the removal of FanAttic and 701 Peachtree buildings, which currently block the view of the interstate and SR 50 (Colonial Drive). Refer to Figure 4-5, sheet 3, for an illustration of the impacts to the buildings. It should be noted, however, that the two buildings to be removed were constructed in 1996/1997. Previously, this land was vacant. The distance from the historic resources to SR 50 (Colonial Drive) and I-4 will remain unchanged. The elevation of I-4 will increase approximately five feet.

FDOT is committed to provide a higher level of urban design treatment within the College Park Historic District to mitigate visual impacts. FDOT will coordinate with Urban Design Committee to determine which treatments would best benefit the district.

Members of the College Park Neighborhood Association (CPNA) are concerned that the removal of the two buildings on SR 50 (Colonial Drive) and the potential use of the remaining property. The CPNA has concerns that the Peachtree Road area would become less desirable, and more susceptible to demolition in favor of the construction of condominiums.

The Preferred Alternative does not require the acquisition of the complete properties occupied by the FanAttic and 701 Peachtree buildings. The future use of the property will be determined by the property owners based on the parcels remaining after the right-of-way acquisition process is complete. In addition, the large office building at 719 Peachtree Road and its associated parking lot will remain in place (USDOT, FHWA, FDOT 2001). Therefore, cumulative effects are minimal based on the proposed improvements.

Applying the criteria set forth as part of 36 CFR Part 800.5, a finding of no adverse effect has been determined for this portion of the College Park Historic District. Although the removal of the two buildings will diminish the integrity of the easternmost portion of the district's setting within the expanded APE, the integrity of this portion of the district was already compromised by the construction of I-4 during the 1960s. Furthermore, the integrity of location, design, materials, workmanship, feeling, and association within the district remain intact.

North of Ivanhoe Boulevard Area

There are approximately 110 historic properties listed on, eligible for listing on, or contributing to the NRHP identified in the portion of the College Park Historic District located east and west of I-4 between Lake Ivanhoe and Princeton Street. Refer to the Cultural Resource Assessment Survey (CRAS) (July 1999) for a description of these historic resources.

The Preferred Alternative will visually impact this portion of the historic district and will require the acquisition and direct use of a small portion of land (approximately 600 square feet) at the Lake Ivanhoe Shores Apartment Complex that is included within the district's boundaries. However, no contributing buildings within the Lake Ivanhoe Shores Apartment Complex will be affected by the right-of-way acquisition. The Preferred Alternative will also require additional air rights, which will not require the direct use of any contributing buildings. The additional aerial area required for the Preferred Alternative is approximately 1,615 square feet (0.04 acre). Figure 4-5, sheet 3, presents a plan view illustration of the direct use impacts to the College Park Historic District located north of Ivanhoe Boulevard. In addition, Figure 4-12 presents a visual perspective before and after the proposed improvements.

Noise walls are reasonable and feasible in this portion of the College Park Historic District. The average existing/No-Build noise level is 68.1 dBA to the west of I-4 and 66.0 dBA to the east of I-4. The average Build noise level without noise walls is 70.2 dBA to the west of I-4 and 68.0 dBA to the east of I-4, an increase of less than 3 dBA. The average Build noise level with noise walls is 63.5 dBA to the west of I-4 and 60.7 dBA to the east of I-4. Both levels are below the FDOT Noise Abatement Criteria level of 65.0 dBA. Based on the minimal noise impact associated with the project and given the fact that noise walls are reasonable and feasible in this portion of the historic district will not be adversely affected by noise. Figure 4-16 presents the locations of the noise walls. In addition, a visual perspective of the improvements with noise walls is provided on Figure 4-13.

In addition, the proposed improvements will increase the elevation of the roadway by approximately 5 to 15 feet within this portion of the College Park Historic District. This increase in elevation will change the viewshed of the historic resource.

A finding of adverse effect has been determined for the Preferred Alternative. The proposed improvements will require approximately 600 square feet (0.01 acre) of additional land within the district and approximately 1,615 square feet (0.04 acre) of additional aerial area. In addition, the elevation of I-4 will increase 5 to 15 feet between Lake Ivanhoe Boulevard and Princeton Street. The acquisition of right-of-way within the district and the substantial increases in the elevation of the roadway will directly impact the character of the historic district and affect its integrity.

Folk Victorian Style Residence/2739 Riddle Drive

It was determined that there will be no impacts to the historic resource as a result of the proposed improvements. The Folk Victorian Style Residence/2739 Riddle Drive is located too far away from I-4 to be impacted visually or by increases in noise. Figure 3-12 presents the location of the Folk Victorian Style Residence.

Since there will be no impacts to the site, a finding of no effect has been assigned to Folk Victorian Style Residence/2739 Riddle Drive.

Segment 4 (Lee Road to Maitland Boulevard)

Eatonville Historic District

The Preferred Alternative will not require the direct use of resources within the Eatonville Historic District. Figure 4-5, sheet 4, presents a plan view illustration of the location of the Eatonville Historic District in relation to the Preferred Alternative. Figure 4-15 presents a visual perspective before and after the proposed improvements.

Noise walls are not being proposed within this portion of I-4. The average existing/No-Build noise level is 68.7 dBA. The average Build noise level without noise walls for the Preferred Alternative is 70.1 dBA, an increase of less than 3 dBA. Although it appears that the district will be impacted by noise levels as this exceeds the FDOT Noise Abatement Criteria level of 65.0 dBA, Wymore Road, which lies between I-4 and the district, contributes to the existing and build noise levels. Noise abatement for I-4 in this area did not substantially reduce build noise levels.

As stated earlier, FDOT is committed to provide a higher level of urban design treatment within the Eatonville Historic District to mitigate any potential visual impacts. Examples of these higher level design treatments are provided above. FDOT will coordinate with the Eaton Historic District to determine which treatments would best benefit the district.

A finding of no adverse effect has been determined for the Preferred Alternative. The Eatonville Historic District will not be significantly impacted by increases in profile. Increases in the elevation of the roadway are expected to be 0 to 5 feet. The proposed improvements will not introduce new visual elements that will diminish the integrity of the resource's significant historic features.

Segment 4 (Maitland Boulevard to West of Lake Mary Boulevard)

No NRHP-listed or NRHP-eligible historic resources were identified within this portion of Segment 4.

Segment 5

No NRHP-listed or NRHP-eligible historic resources were identified in this segment.

Segment 6

No NRHP-listed or NRHP-eligible historic resources were identified in this segment.

4.2.1.3 Potential Impacts to Archaeological Resources

Segments 1, 2, 3, 4 and 5

No NRHP-listed or NRHP-eligible archaeological resources were identified in these segments.

Segment 6

Lake Monroe Outlet Midden

There will be no impacts to the Lake Monroe Outlet Midden as a result of the proposed improvements for the I-4 PD&E Study – Section 2. The construction of the I-4 Six Laning and St. Johns River Bridge project is occurring within the boundaries of the NRHP eligible Lake Monroe Outlet Midden, 8VO53. FHWA, FDOT, and the Florida SHPO executed an MOA in August and September of 1999 that outlines conditions to mitigate adverse effects potentially caused by the project. Figure 3-12 presents the location of the Lake Monroe Outlet Midden.

4.2.1.4 Mitigation Measures

An MOA has been developed among SHPO, FHWA, and FDOT regarding adverse effects to cultural resources and suitable mitigation measures for the Preferred Alternative as part of the FEIS phase of the project. Mitigation measures for historical resource impacts have been coordinated according to the Section 106 process and the agreed upon commitments with SHPO and appropriate consulting parties as documented in the MOA.

A copy of the MOA is included in Appendix L.

In addition, as stated previously, FDOT is committed to provide a higher level of urban design treatment for publicly sensitive historic resources that have potential impacts due to the proposed improvements and a determination of no adverse effect. During the design phases, FDOT will coordinate with the Urban Design Committee. In addition, upon selection of the final alternative, mitigation measures to minimize impacts to the historic resources will be coordinated with appropriate local jurisdictions and neighborhoods.

4.2.1.5 Public Outreach

Historic resources within the APE were identified early in the project planning process. These resources and potential effects were presented at numerous public involvement meetings throughout the project development process. These public involvement meetings, which presented potential impacts to historic resources, are discussed in Sections 5.2.2.6 and 5.2.3.7 of this document.

4.2.2 Parks and Recreational Facilities

A proximity effects analysis was conducted for the 98 publicly and privately owned parks and recreational facilities identified within one-half mile of the project corridor. Potential direct and indirect effects associated with the proposed interstate improvements, including right-of-way acquisition and access, were evaluated at each site based on field observations and analysis of the preliminary concept plans. The evaluation results are documented in the project files.

No publicly or privately owned parks and recreational facilities will be directly impacted by the Ultimate project or the *Preferred Alternative*. Short-term construction impacts are anticipated to occur at parks and recreational areas located adjacent to the I-4 corridor. The construction impacts are described in detail in Section 4.8.

4.2.3 Section 4(f) Impacts

A Section 4(f) evaluation was conducted as part of the I-4 PD&E Study – Section 2. The results of the Section 4(f) evaluation are presented in the *Section 4(f) Evaluation* (August 2002).

One park and 19 historic resources were evaluated as part of the Section 4(f) analyses. Four of the historic resources are directly impacted by the Preferred Alternative. A brief description of the four historic resources and associated impacts are described in the following sections. In addition, the Preferred Alternative has a direct impact on the Carter Street Historic District. However, as indicated in Section 4.2.1.2, due to the loss of more than half of the contributing resources in the district, the Carter Street Historic District is no longer considered eligible for inclusion in the NRHP.

Proposed mitigation measures for the impacted facilities are discussed.

4.2.3.1 Historic Resources

As indicated, 19 historic resources were analyzed for Section 4(f) impacts. Nine of the 19 were found to have no impacts resulting from the proposed I-4 improvements and are listed below:

- *Bumby Hardware*
- *84 West Lucerne Circle*
- *Greenwood Cemetery*
- *Dr. William Monroe Wells House*
- *Old Orlando Railroad Depot*
- *Colonial Garage*
- *116 America Street*
- *J. J. Bridges House*
- *2739 Riddle Drive*

Eight of the 19 historic resources were found to have no adverse effect resulting from the proposed I-4 improvements and are listed below:

- *Parramore Avenue and Conley Street Historic District*
- *Woodrow James Maxey House*
- *Harry P. Leu, Inc.*
- *Downtown Orlando Historic District*
- *Lake Cherokee Historic District*
- *Peckham-Phillips House*
- *Judge Cheney House*
- *Eatonville Historic District*

The remaining two historic resources are discussed in the following sections and listed below:

- *Griffin Park Historic District*
- *College Park Historic District*

Harry P. Leu, Inc. and the Downtown Orlando Historic District are also discussed in the following sections as the Preferred Alternative has a direct use impact on these Section 4(f) resources.

4.2.3.1.1 Griffin Park Historic District

The Griffin Park Historic District was listed in the NRHP in 1996. This district is roughly bound by Avondale Avenue, South Division Avenue, Carter Street, and I-4. The Orlando Housing Authority constructed the Griffin Park Historic District in 1940 as public housing for the area's poor families. This historic resource is associated with the overall planning and development of the surrounding neighborhood, particularly in the late-1930s and early-1940s.

The Preferred Alternative is expected to directly impact the Griffin Park Historic District. Table 4-13 summarizes the impacts to the historic district. Also included in Table 4-13 is the avoidance alternative.

Griffin Park may also experience visual impacts as a result of the Preferred Alternative. Information on visual impacts is provided in Section 4.2.1.2 of this document.

The Preferred Alternative for the I-4/SR 408 area meets many of the objectives outlined by the stakeholders.

Table 4-13. Griffin Park Impacts

	Alternatives	
	Preferred	Avoidance
Structures Affected	3¹	0
Relocations	16 units	0
Land Area Required (ft ²)	52,797	0
Avg. Existing Noise Level (dBA)	69.7	67.0
Avg. Build Noise Level (dBA)	68.8²	67.8²
Avg. Build Noise Level w/Walls (dBA)	59.8	62.4
Operational Effectiveness	Medium	Medium⁴
Consistent with Redevelopment Plans?	Yes	No
Comments	Direct Use of contributing structures	

All impacts associated with the Preferred Alternative are shown in **bold italics**.

¹Includes community center

²Noise increase not perceptible (< 3dBA)

³Includes traffic operations and access through downtown Orlando (I-4, Hughey Avenue, Garland Avenue, Amelia Street)

⁴Does not provide full access at US 441

Avoidance Alternatives

The Avoidance Alternative will not require any direct use impacts of any buildings or property in Griffin Park. Westbound SR 408 to westbound I-4 traffic and eastbound SR 408 to westbound I-4 will use a ramp connector that will be constructed in the same location as the existing ramp. The construction of the new ramp connector will maintain the isolation of Griffin Park from the Parramore Avenue and Conley Street Historic District, which does not meet the conditions of the area's stakeholders. Also, direct toll-free access from US 441 (Orange Blossom Trail) to I-4 (another stakeholder condition) cannot be provided with the Avoidance Alternative due to ramp spacing requirements; however, direct access will be provided from I-4 to US 441 (Orange Blossom Trail).

The No Build Alternative was also considered as an Avoidance Alternative since it would result in no impacts to Griffin Park or any other Section 4(f) properties. However, this alternative would also result in no capacity, design, or safety improvements to I-4, thereby not fulfilling the purpose and need of the project. Therefore, the No Build Alternative was not determined to be a prudent and feasible Avoidance Alternative.

There are unique problems or unusual factors involved in the use of alternatives that avoid the Griffin Park Historic District that the cost, social, economic, and environmental impacts or community disruption resulting from such alternatives reach extraordinary magnitudes.

Measures to Minimize Harm

Measures will be developed to minimize adverse effects to significant cultural resources. Refer to Section 4.2.1.4 for a description of potential mitigation measures.

Based on the above considerations, there is no feasible and prudent alternative to the use of land from Griffin Park. The proposed action includes all possible planning to minimize harm to Griffin Park resulting from such use. Refer to the Section 4(f) Evaluation (August 2002) for detailed information on avoidance alternatives and measures to minimize harm.

4.2.3.1.2 Downtown Orlando Historic District

The Downtown Orlando Historic District is designated as a local historic district and was certified by NPS as a special taxing district in 1982. Districts certified by NPS are considered eligible for listing in the NRHP. Only the portion of the Downtown Orlando Historic District that includes part of Church Street falls within the I-4 APE. The Downtown Orlando Historic District is a distinguishable entity that represents the architecture of Orlando from 1880 to 1930.

The Downtown Orlando Historic District crosses underneath the existing roadway. Reconstruction of the interstate will require additional spanning of the District and will require 257 square feet of right-of-way. However, the Preferred Alternative will not require the direct use of any buildings within the District. Reconstruction of I-4 will require the modification of the existing embankment and pier locations within the segment of the District between Garland Avenue and Hughey Avenue and requires the reconstruction of Hughey Avenue. The Preferred Alternative includes maintaining Church Street as a one-way local collector road, sidewalks, and parking. Minor improvements to Garland Avenue include widening outside the limits of the District. Hughey Avenue improvements include resurfacing and striping. Impacts to the Downtown Orlando Historic District as a result of the Preferred Alternative are summarized in Table 4-14.

Table 4-14. Downtown Orlando Historic District Impacts

	Alternatives	
	Preferred	Avoidance
Structures Affected	0	0
Relocations	0	0
Land Area Required (ft ²)	257	0
Existing Aerial Area (ft ²)	20,800	20,800
Additional Aerial Area Required (ft ²)	20,100	19,025
Total Aerial Area (ft ²)	40,900	39,825
Operational Effectiveness ¹	Medium	Medium

All impacts associated with the Preferred Alternative are shown in ***Bold Italics***.

¹Includes traffic operations and access through downtown Orlando (I-4, Hughey Avenue, Garland Avenue, Amelia Street)

The additional spanning and direct use for pier and abutments and Hughey Avenue widening do not introduce new visual elements and will not diminish the integrity of the resource's significant historical features or change the character of the Orlando Downtown Historic District. Therefore, a finding of no adverse effect has been determined for the Preferred Alternative. However, since direct use of property from the historic district will be required, it is included in this Section 4(f) Evaluation.

The Preferred Alternative for the I-4/SR 408 area meets many of the objectives outlined by the stakeholders.

Avoidance Alternative

The No Build Alternative was considered as an Avoidance Alternative since it would result in no impacts to the Downtown Orlando Historic District or any other Section 4(f) properties. However, this alternative would also result in no capacity, design, or safety improvements to I-4, thereby not fulfilling the purpose and need of the project.

There are unique problems or unusual factors involved in the use of alternatives that avoid the Downtown Orlando Historic District that the cost, social, economic, and environmental impacts or community disruption resulting from such alternatives reach extraordinary magnitudes.

Measures to Minimize Harm

Measures will be developed to minimize adverse effects to significant cultural resources. Refer to Section 4.2.1.4 for a description of potential mitigation measures.

Based on the above considerations, there is no feasible and prudent alternative to the use of land from the Downtown Orlando Historic District. The proposed action includes all possible planning to minimize harm to the Downtown Orlando Historic District resulting from such use. Refer to the Section 4(f) Evaluation (August 2002) for detailed information on avoidance alternatives and measures to minimize harm.

4.2.3.1.3 Harry P. Leu, Inc.

In 1998, Harry P. Leu, Inc. was determined eligible for listing in the NRHP. There are several buildings located on the Harry P. Leu, Inc. site including a Masonry Vernacular commercial building and four historic outbuildings. The site's historical significance is based on its associations with the early 20th Century commercial and community development of Orlando. Having provided over 90 years of service throughout the state, Harry P. Leu, Inc. was an important establishment in Orlando and other areas of Florida. Its historical significance is also based on the property's association with Harry P. Leu, a notable local businessman, civic leader, and philanthropist.

The Preferred Alternative requires a direct use of a sliver of property (3,477 square feet) along the western edge of the Harry P. Leu, Inc. property. Impacts to Harry P. Leu, Inc. from the Preferred Alternative are quantified in Table 4-15.

The sliver of additional right-of-way and direct use of property from the Harry P. Leu, Inc. property does not introduce new visual elements and will not diminish the integrity of the resource's historical features. Therefore, a finding of no adverse effect has been determined for the Preferred Alternative. However, since direct use of property from the historic resource will be required, it is included in this Section 4(f) Evaluation.

Table 4-15. Harry P. Leu, Inc. Impacts

	Alternatives	
	Alternative	Avoidance
Structures Affected	<i>0</i>	<i>0</i>
Relocations	<i>0</i>	<i>0</i>
Land Area Required (ft ²)	<i>3,477</i>	<i>3,960</i>
Operational Effectiveness	<i>Medium</i>	<i>Medium*</i>

All impacts associated with the Preferred Alternative are shown in *Bold Italics*.

* Does not provide full access at US 441

The Preferred Alternative for the I-4/SR 408 area meets many of the objectives outlined by the stakeholders.

Avoidance Alternatives

An Avoidance Alternative was developed for the Section 4(f) resources in the area of the SR 408 interchange. Since Griffin Park and the Carter Street Historic District are located on the west side of I-4 and the Harry P. Leu, Inc. property is located on the east side of I-4, improvements to I-4 cannot be accomplished without impacts to either property.

Narrowing Garland Avenue to two lanes between Robinson Street and Livingston Street adjacent to the Harry P. Leu, Inc. property avoids impacts to the property for the Preferred Alternative. However, this would impact traffic circulation in the downtown Orlando area, which, in addition to being an unacceptable scenario to several area stakeholders, would not fulfill the purpose and need of the project.

The No Build Alternative was also considered as an Avoidance Alternative since it would result in no impacts to the Harry P. Leu, Inc. property or any other Section 4(f) properties. However, this alternative would also result in no capacity, design, or safety improvements to I-4, thereby not fulfilling the purpose and need of the project. Therefore, the No Build Alternative was not determined to be a prudent and feasible Avoidance Alternative.

There are unique problems or unusual factors involved in the use of alternatives that avoid Harry P. Leu, Inc. that the cost, social, economic, and environmental impacts or community disruption resulting from such alternatives reach extraordinary magnitudes.

Measures to Minimize Harm

Measures will be developed to minimize adverse effects to significant cultural resources. Refer to Section 4.2.1.4 for a description of potential mitigation measures.

Based on the above considerations, there is no feasible and prudent alternative to the use of land from Harry P. Leu, Inc. The proposed action includes all possible planning to minimize harm to Harry P. Leu, Inc. resulting from such use. Refer to the Section 4(f) Evaluation (August 2002) for detailed information on avoidance alternatives and measures to minimize harm.

4.2.3.1.4 Summary of Impacts for Downtown Alternatives

Table 4-16 summarizes the potential impacts to the Section 4(f) resources near the I-4/SR 408 Interchange and Downtown Access Alternatives.

Table 4-16. Summary of Impacts I-4/SR 408 Interchange Preferred Alternative

	Alternatives	
	Preferred	Avoidance
Structures Affected	5	0
Relocations	18	0
Land Area Required (ft ²)	64,105	3,960
Existing Aerial Area (ft ²)	20,800	20,800
Additional Aerial Area Required (ft ²)	20,100	19,025
Total Aerial Area (ft ²)	40,900	39,825
Operational Effectiveness	Medium	Medium¹
Consistent with Redevelopment Plans?	Yes	No

All impacts associated with the Preferred Alternative are shown in ***Bold Italics***.
¹Does not provide access at US 441

4.2.3.1.5 College Park Historic District

The College Park Historic District appears potentially eligible for listing in the NRHP. The district, billed as the first suburban neighborhood of Orlando, features a number of modest one-story and two-story homes constructed largely between the years of 1921 and 1949. Styles represented include Bungalow, Craftsman, Minimal Traditional, Art Moderne, Tudor Revival, Dutch Colonial Revival, Colonial Revival, Mediterranean Revival, Masonry Vernacular, and Frame Vernacular. Divided by I-4, the district boundaries would roughly extend to Edgewater Drive and Edgewater Court on the west; Alameda Street, SR 50 (Colonial Drive), and Peachtree Road on the south; and Ivanhoe Boulevard and North Orange Avenue on the east, creating a district that is irregular in shape.

The Preferred Alternative will require direct use of a small piece of property (600 square feet) within the historic district at the Lake Ivanhoe Shores Apartment Complex. No contributing buildings will be affected and the property taken will not compromise the integrity of the College Park Historic District. Table 4-17 summarizes the impacts to the College Park Historic District.

Table 4-17. College Park Historic District Impacts

	<i>Preferred Alternative</i>
Structures Affected	0
Land Area Required (ft ²)	600
Existing Aerial Area (ft ²)	0
Additional Aerial Area (ft ²)	1,615
Total Aerial Area (ft ²)	1,615
Avg. Existing Noise Level (dBA)	68.1 (west of I-4) 66.0 (east of I-4)
Avg. Build Noise Level (dBA)	70.2 (west of I-4)* 68.0 (east of I-4)*
Avg. Build Noise Level w/Walls (dBA)	63.5 (west of I-4) 60.7 (east of I-4)
Comments	<i>Direct Use of property within the district. Will not affect any contributing buildings within the district and the property acquired does not compromise the integrity of the district.</i>

All impacts associated with the Preferred Alternative are shown in ***Bold Italics***.

* Noise increase not perceptible (< 3dBA)

Avoidance Alternatives

The Preferred Alternative does not require any direct use of structures within the College Park Historic District. The proposed elevation of the original concept was reduced but still must be raised up to 15 additional feet to increase the safety and capacity of the Interstate.

The No Build Alternative was also considered as an Avoidance Alternative since it would result in no impacts to the College Park Historic District or any other Section 4(f) properties. However, this alternative would also result in no capacity, design, or safety improvements to I-4, thereby not fulfilling the purpose and need of the project. Therefore, the No Build Alternative was not determined to be a prudent and feasible Avoidance Alternative.

There are unique problems or unusual factors involved in the use of alternatives that avoid the College Park Historic District that the cost, social, economic, and environmental impacts or community disruption resulting from such alternatives reach extraordinary magnitudes.

Measures to Minimize Harm

Measures will be developed to minimize adverse effects to significant cultural resources. Refer to Section 4.2.1.4 for a description of potential mitigation measures.

Based on the above considerations, there is no feasible and prudent alternative to the use of land from the College Park Historic District. The proposed action includes all possible planning to minimize harm to the College Park Historic District resulting from such use. Refer to the Section 4(f) Evaluation (August 2002) for detailed information on avoidance alternatives and measures to minimize harm.

4.2.4 Bicycle, Greenway, and Trail Facilities

The Section 4(f) Applicability definition concerning bikeways states that "if the bikeway is primarily for transportation and is an integral part of the local transportation system, the requirements of Section 4(f) would not apply." All of the existing and proposed bikeways were eliminated from Section 4(f) consideration since all consist of either paved shoulders, lane striping, or street signage and will, therefore, be "integral" to the roadway.

There are no existing officially designated trails or greenways within the Ultimate project or *Preferred Alternative*. However, there are several proposed, off-road, parallel, and crossing facilities within the Ultimate project and *Preferred Alternative*. FHWA guidance on Section 4(f) applicability states that if a recreational trail or bikeway is "... simply described as occupying the highway right-of-way and is not limited to any specific location within that right-of-way ..." then Section 4(f) would not apply to that facility.

The existing and proposed bicycle, greenway, and trail facilities identified in Section 3.2.4 were assessed to determine which facilities might be impacted due to the Ultimate project and *Preferred Alternative*. Table 4-18 identifies the existing and proposed bicycle, greenway, and trail facilities that may be impacted by the Ultimate project and *Preferred Alternative*. The locations of the impacted facilities are presented on Figure 3-14. The following paragraphs discuss the impacted bicycle, greenway, and trail facilities by segment. It should be noted that Segments 2 and 3 have been assessed together since these segments have similar land use features.

In compliance with Section 109(n) of 23 USC, the proposed project will provide bicyclists and pedestrians a reasonable alternative to the existing facilities, which will meet the design standards of the current FDOT *Bicycle Facilities Planning and Design Handbook* (February 1998). The maintenance of bicycle traffic during construction is addressed in Section 4.8 Construction Impacts.

Table 4-18. Impacted Bicycle, Greenway, and Trail Facilities

Crossing Number	Name	Type Crossing	No. of Lanes	Bikeway Facility ^a	Trail Facility ^b	Special Requirements/Notes
Segment 1						
1	Kirkman Road (SR 435)	Overpass	4	Proposed Bike Facility		OUATS designated as needed bikeway facility (Figure 20, Technical Report#5)
2	Tropical Trail	Underpass	2	Proposed Bike lane		City of Orlando designated as proposed bike lane. Two 4-foot bike lanes. Connect Americana Boulevard to Orlando-Vineland Road
3	Shingle Creek Greenway	Canal ROW	NIA		Proposed Primary Trail Network, off-road/street facility	City of Orlando designated as off-street dual use facility. Proposed 15-foot facility. ROW is tight. Orange County designated as Primary Trail Network. OUA MPO designated as unfunded/planned off-road facility.
Segment 2						
4	John Young Parkway, SR 423	Underpass	4 to 6	Proposed Bike Facility		OUA MPO designated as Funded/Planned On-road facility north of I-4.
5, 41	Gore Street	Underpass	4	Proposed Bike Lane		City of Orlando designated as proposed bike lane. Two 4-foot bike lanes to be striped. OUA MPO designated as funded/planned on-road facility.
6	CSXT Railroad at intersection of I-4 and East/West Expressway	Underpass	NIA		Proposed Paved Trail	Orange County designated as paved multiple use trail.
7	Anderson Street	Overpass	3	Proposed Bike Lane		OUA MPO designated as funded/planned on-road facility. City of Orlando designated as proposed bike lane. One way 4-foot bike lane
8	South Street	Underpass	4	Proposed Bike Lane		OUA MPO designated as funded/planned on-road facility. City of Orlando designated as proposed bike lane. One way 4-foot bike lane
9	Hughey Avenue	Frontage	3	Existing Bike Facility		City of Orlando designated as residential street signage.
10	Washington Street	Underpass	4	Proposed Bike Lane		OUA MPO designated as funded/planned on-road facility. City of Orlando designated as proposed bike lane. Two 4-foot bike lanes.
11	Livingston Street	Underpass	4	Proposed Bike Lane		OUA MPO designated as funded/planned on-road facility. City of Orlando designated as proposed bike lane. Two 4-foot bike lanes.
12	Amelia Street	Underpass	2 to 4	Proposed Bike Lane		OUA MPO designated as funded/planned on-road facility. City of Orlando designated as proposed bike lane. Two 4-foot bike lanes.
38	Rio Grande Avenue	Underpass/ SR 408	4		Proposed off street/ road facility	OUA MPO designated as funded/planned off-road facility. City of Orlando designated as off-street dual use facility.
39	Long Street /Carter Street	Frontage/ SR 408	2	Existing Bike Facility		City of Orlando designated as residential street signage.

Table 4-18. Impacted Bicycle, Greenway, and Trail Facilities (Continued)

Crossing Number	Name	Type Crossing	No. of Lanes	Bikeway Facility ^a	Trail Facility ^b	Special Requirements/Notes
40	Westmoreland Drive	Underpass/ SR 408	4	Proposed Bike Facility		City of Orlando designated as proposed bike lane. OUA MPO designated as funded/planned on-road facility.
42	Rosalind Avenue	Underpass/ SR 408	3	Proposed Bike Facility		City of Orlando designated as proposed bike lane. OUA MPO designated as funded/planned on-road facility.
43	Anderson Street	Frontage/ SR 408	3	Proposed Bike Facility		City of Orlando designated as proposed bike lane. OUA MPO designated as funded/planned on-road facility.
13	Ivanhoe Boulevard	Underpass	4 to 5		Proposed off street/ road facility	OUA MPO designated as unfunded/planned off road facility. City of Orlando designated as off street dual use facility. Minimum 10 feet needed. ROW is tight. Potential connection to Dinky Line Trail. EAC designated as potential crossing for Central Florida Loop.
14	N. Shore Terrace	Frontage	2	Existing Bike Route		OUA MPO designated as existing residential street signage. City of Orlando designated as existing residential street signage. Field verification identified as signed bike route.
15	New Hampshire Street	Underpass	2	Existing Bike Route		OUA MPO designated as existing residential street signage. City of Orlando designated as existing residential street signage. Field verification identified as signed bike route.
16	Princeton Street (SR 438)	Underpass	4 to 6	Proposed Bikeway Facility		Designated as needed bikeway facility (Figure 20, Technical Report #5)
17	Winter Park Street	Underpass	2	Existing Bike Route		OUA MPO designated as existing residential street signage. City of Orlando designated as existing residential street signage. Field verification identified as signed bike route.
18	Par Street	Underpass	3	Proposed Bike Lane		Winter Park designated as proposed bike lane.
19	Formosa Avenue	Underpass	2	Proposed Bike Lane		Winter Park designated as proposed bike lane.
Segment 3						
None in Segment 3.						
Segment 4						
20	Kennedy Boulevard	Underpass	2 to 3	Proposed Bike Facility		OUATS 2020 designated as needed bikeway facility. Maitland designated as proposed funded blue bike route. OUA MPO designated as funded/planned on road facility.
21	Lake Destiny Drive	Frontage	2 to 4	Proposed Bike Facility		Maitland designated as proposed blue and green bike route. OUA MPO designated as funded/planned on road facility.
22	Maitland Boulevard (SR 414)	Overpass	6	Existing Bike Facility		OUA MPO designated as existing on road facility.
23	Wymore Road	Overpass	2	Proposed Bike Route		Maitland designated as proposed green bike route. "Clamp On" Structure by Weslo Corp at this location/or at Maitland Boulevard/OUA MPO designated as funded/planned on road facility.
24	Semorán Boulevard (SR 436)	Overpass	6 to 8	Proposed Bike Facility		Facility terminates at I-4 on west. OUA MPO designated as funded/planned on road facility.
25	Central Parkway	Overpass	4	Proposed Bike Facility		Altamonte Springs designated as proposed bike facility. Altamonte Springs Bike Plan currently being developed.
26	Powerline Easement	Powerline Easement	N/A		Proposed Paved Trail	Seminole County designated as paved multiple use trail.
27	E.E. Williamson Road	Overpass	2		Proposed Paved Trail	Seminole County designated as paved multiple use trail. Preferred link for FNST to Seminole Wekiva Trail. EAC report designated as proposed crossing for Central Florida Loop.

Table 4-18. Impacted Bicycle, Greenway, and Trail Facilities (Continued)

Crossing Number	Name	Type Crossing	No. of Lanes	Bikeway Facility ^a	Trail Facility ^b	Special Requirements/Notes
Segment 5						
28	South Paola Road (CR 46A)	Overpass	2		Proposed Paved Trail	EAC report designated as proposed crossing for Central Florida Loop.
29	South Paola Road (CR 46A)	Overpass	N/A		Proposed Paved Trail	Seminole County designated as paved multiple use trail. Current link for FNST users to Seminole Wekiva Trail.
30	SR 46	Overpass	4	Existing Bike Facility		OUA MPO designated as existing on road facility. OUATS designated as existing bikeway facility.
31	Canal	Easement	N/A		Proposed Paved Trail	Seminole County proposed paved multiple use trail.
Segment 6						
32	Seminole Boulevard/ US 17-92	Underpass	4	Existing Bike Facility	Proposed Paved Trail	OUA MPO designated as existing on road facility. Seminole County designated as paved multiple use trail and greenway. EAC report listed in 150 Florida Greenways as Seminole County Greenway. City of Sanford designated as Lake Monroe Riverwalk.
33	Dirksen Drive/DeBary Avenue	Underpass	4	Proposed Bike Facility	Proposed South Volusia Trail	Volusia County designated as proposed bikeway facility. EAC report designated as proposed South Volusia Trail. EAC report listed in 150 Florida Greenways as DeBary Greenway.
34	Enterprise Road	Overpass	2	Proposed Bike Facility		Volusia County designated as proposed bikeway facility.
35	Saxon Boulevard	Overpass	4 to 6	Proposed Bike Facility		Volusia County designated as proposed bikeway facility.
36	Proposed Rhode Island Road	Overpass	2	Proposed Bike Facility		Volusia County designated as proposed bikeway facility.
37	SR 472	Overpass	2	Proposed Bike Facility		Volusia County designated as proposed bikeway facility.

All impacts associated with the Preferred Alternative are shown in ***Bold Italics***.

^a Bikeway Facility – Includes a bike lane, bike route, or paved shoulder.

^b Trail Facility – Paved trails include multiple use trails for walking, bicycling and skating. Unpaved trails include multiple trails for hiking, horseback riding and off-road bicycling.

^c Greenway Facility – Corridors of protected open space that are managed for conservation and/or recreation (located in Segment 6 only).

OUATS = Orlando Urban Area Transportation Study

OUA MPO = Orlando Urban Area Metropolitan Planning Organization (METROPLAN Orlando)

ROW = Right-of-way

EAC = Environmental Advisory Committee

MPO = Metropolitan Planning Organization

FNST = Florida National Scenic Trail

4.2.4.1 Segment 1

4.2.4.1.1 SR 528 to Kirkman Road

No existing or proposed bikeway, trail, and greenway facilities are located within this portion of Segment 1.

4.2.4.1.2 Kirkman Road to John Young Parkway

No existing bikeway, trail, and greenway facilities are located within this portion of Segment 1.

However, there are three proposed facilities located within the segment that may be impacted.

These potentially impacted facilities include:

- *Kirkman Road*
- *Tropical Trail from Americana Boulevard to Orlando-Vineland Road*
- *Shingle Creek canal*

4.2.4.2 Segments 2 and 3

There are 22 existing and proposed bikeways and trails located within Segments 2 and 3 of the Preferred Alternative study area. The majority of the facilities located within these segments are concentrated within the downtown Orlando area. There are five existing bikeway facilities and 13 proposed bikeway facilities that may be impacted by the proposed improvements. The impacted existing bikeway facilities that cross or are adjacent to I-4 and SR 408 include:

- *Hughey Avenue*
- *Long Street/Carter Street (along SR 408)*
- *North Shore Terrace*
- *New Hampshire Street*
- *Winter Park Street*

The impacted proposed bikeway facilities that cross or are adjacent to I-4 and SR 408 include:

- *John Young Parkway*
- *Gore Street*
- *Anderson Street*
- *South Street*
- *Washington Street*
- *Livingston Street*
- *Amelia Street*
- *Westmoreland Drive (crosses under SR 408)*
- *Rosalind Avenue (crosses under SR 408)*
- *Anderson Street (along SR 408)*
- *Princeton Street*
- *Par Street*
- *Formosa Avenue*

In addition, there are three proposed trail facilities that may be impacted by the Preferred Alternative. The first is a proposed paved, multi-use trail facility planned along the CSXT railroad that will cross under I-4 at the I-4/SR 408 interchange. The second trail facility is proposed to travel under SR 408 and run along Rio Grande Avenue, between Orange Center Boulevard and Church Street. The third paved trail facility is proposed to run under I-4, along Ivanhoe Boulevard.

4.2.4.3 Segment 4 (Lee Road to Maitland Boulevard)

There is one existing and two proposed facilities located within this portion of Segment 4 that may be impacted by the Preferred Alternative.

There is one existing impacted bikeway facility that crosses over I-4 at Maitland Boulevard.

Two bikeway facilities are proposed to cross I-4 at various locations and may be impacted. A bikeway is proposed to travel under I-4 at Kennedy Boulevard. In addition, a planned bikeway along Lake Destiny is proposed to connect with the existing bikeway facility on Maitland Boulevard.

There are no impacted paved trail facilities within this portion of Segment 4.

4.2.4.4 Segment 4 (Maitland Boulevard to West of Lake Mary Boulevard)

There are five proposed facilities located within this portion of Segment 4 that may be impacted by the proposed improvements.

Three bikeway facilities are proposed to cross I-4 at various locations and may be impacted. Three planned bikeways are proposed to travel over I-4 on Wymore Road, SR 436, and Central Parkway.

The impacted paved trail facilities within this portion of Segment 4 include:

- *A power line easement that crosses I-4 just north of Central Parkway*
- *E.E. Williamson Road over I-4*

4.2.4.5 Segment 5

There is one existing and three proposed facilities located within Segment 5 of the Ultimate study area that may be impacted by the proposed improvements.

There is one existing impacted bikeway facility that crosses over I-4 at SR 46.

The impacted paved trail facilities within Segment 5 include:

- The Seminole Wekiva Trail passing over I-4 south of Paola Road is under construction as of May 2002
- Proposed FNST along Paola Road
- Along a canal northeast of I-4/SR 46

4.2.4.6 Segment 6

Potentially impacted bikeway facilities within Segment 6 include one existing bikeway, which passes under I-4 at US 17-92, and five proposed facilities. The potentially impacted proposed bikeway facilities include:

- Dirksen Drive/DeBary Avenue
- Enterprise Road
- Saxon Boulevard
- Proposed Rhode Island
- SR 472

In addition, there are two proposed trail facilities and two proposed greenway facilities located in Segment 6 that may be impacted by the proposed project. These include:

- Lake Monroe River Walk at US 17-92
- Seminole County Greenway at US 17-92
- South Volusia Trail at Dirksen Drive/DeBary Avenue
- DeBary Greenway at Dirksen Drive/DeBary Avenue

4.2.4.7 Mitigation Measures

As indicated in Section 1.3.6, the proposed improvements include provision for future development of bikeway, trail, and greenway facilities on cross streets. Future road widening projects within the state have been recommended to include roadway facilities to accommodate bicycle and pedestrian traffic.

All interstate overpasses proposed for reconstruction as part of this project have been designed to ensure that all cross streets will have sufficient room to incorporate proposed bikeway, trail, and greenway facilities during future cross street improvement projects. In addition, cross street overpasses proposed for reconstruction will be designed to accommodate proposed bikeway, trail, and greenway facilities.

Construction of the proposed improvements is not expected to have significant long-term impacts to any of the bikeway and trail facilities existing or proposed along the Preferred Alternative. FDOT has committed to installing a fence around the limited access right-of-way and stormwater ponds adjacent to the I-4 corridor for the protection of trail users. Any additional fencing requested will be coordinated with the local jurisdictions and FDOT during the design phase of the project. All negative impacts to any of these facilities will only be temporary during construction of the proposed improvements. Temporary re-routings may be required due to construction activities.

A public involvement program will be implemented and maintained during the construction phase to ensure information regarding construction issues reaches the public and to accommodate questions or concerns during construction.

4.2.5 Pedestrian Facilities

Table 3-39 presents the sidewalk facilities that cross or are adjacent to Ultimate project and *Preferred Alternative* corridor. All the facilities listed in Table 3-39 may be impacted by the proposed improvements.

In addition, there is a pedestrian overpass, located in Segment 2, which crosses I-4 and will be impacted by the Preferred Alternative. This overpass is located approximately 2,150 feet north of the I-4/Kaley Street interchange. This pedestrian crosswalk connects Indiana Street and Grand Avenue, which leads to the Grand Avenue Elementary School. The pedestrian bridge crossing is a 10-foot wide concrete structure.

4.2.5.1 Mitigation Measures

The proposed improvements include provision for future development of pedestrian facilities on cross streets. Future road widening projects within the state have been recommended to include roadway facilities to accommodate pedestrian traffic. All interstate overpasses proposed for reconstruction as part of this project have been designed to ensure that all cross streets will have sufficient room to incorporate pedestrian facilities during future cross street improvement projects. In addition, cross street overpasses proposed for reconstruction will be designed to accommodate pedestrian facilities.

The pedestrian overpass located just north of the I-4/Kaley Street interchange will not be rebuilt to accommodate the wider interstate facility. However, FDOT has committed to provide funding for sidewalk and pedestrian facilities that allow for pedestrian access from the current overpass location to Gore Street underpass. FDOT will coordinate with the City of Orlando during the design phase to determine the location of the sidewalk and pedestrian facilities.

Construction of the proposed improvements is not expected to have significant long-term impacts to any pedestrian facilities. FDOT has committed to installing a fence around the limited access right-of-way and stormwater ponds adjacent to the I-4 corridor for the protection of pedestrian users. Any additional fencing requested will be coordinated with the local jurisdictions and the FDOT during the design phase of the project. All negative impacts to any of the pedestrian facilities will only be temporary impacts during construction of the proposed improvements. Temporary re-routings may be required due to construction activities.

Public input for the mitigation of pedestrian facilities will continue through the design phase of the project. A public involvement program will be implemented and maintained during the construction phase to ensure information regarding construction issues reaches the public to accommodate questions or concerns during construction.

4.3 Natural Resources

4.3.1 Water Resources

4.3.1.1 Groundwater

The effect of the project on area groundwater resources will be minimal. The proposed I-4 widening project should not affect groundwater recharge rates within the Ultimate project or *Preferred Alternative*, since the additional impervious area that will be constructed is adjacent to the existing roadway. The Ultimate project and *Preferred Alternative* will adhere to all state requirements for providing stormwater treatment and attenuation per Section 40C-4.302 F.A.C., or local agency regulations if more stringent. The proposed stormwater management systems will be maintained to remain in compliance with state and local agency permitting requirements.

Groundwater resources in the Ultimate project and *Preferred Alternative* will be protected according to the requirements of EPA and the local and state agencies having jurisdiction. Surface runoff discharges to groundwater will be avoided, since stormwater management systems will be constructed to provide the required stormwater treatment and attenuation. Prior to design and construction activities, further coordination with FDEP will be initiated to develop action plans with respect to existing interceptor wells, bridge pilings, borings, stormwater ponds, and other related construction activities. FDOT is also committed to repairing and/or replacing any interceptor wells damaged and/or disturbed due to construction activities.

Management practices that describe spill response procedures and methods to minimize the potential for impacts due to spills will be developed during design and further finalized in construction in accordance with requirements and regulations of EPA and the local and state agencies having jurisdiction. The EPA requires a National Pollutant Discharge Elimination System (NPDES) General Permit for construction activities that require more than five acres of land disturbance. The Ultimate project and *Preferred Alternative* will adhere to these permit requirements by establishing best management practices (BMPs) and implementing a stormwater management plan.

4.3.1.2 Surface Water

The Ultimate project and *Preferred Alternative* will include the construction of stormwater management systems that will provide water quality treatment and attenuation for the additional and existing impervious areas within the Ultimate project and *Preferred Alternative* study areas per local and state agency regulations. The water quality impacts in relation to surface waters will be temporary and associated with construction. The proposed improvements will not have any significant long-term effect on the quality of surface waters within the Ultimate project and *Preferred Alternative*. BMPs will be maintained in accordance with Section 40C-4.301, 4.302, FAC, and will be used to minimize water quality impacts during construction and achieve a no-net effect on water quality in the system.

Avoidance, minimization, and compensation measures will be conducted during the design phase of the project to avoid surface and groundwater quality impacts. A stormwater management plan will be established and implemented during construction in accordance with the EPA NPDES General Permit for construction projects with greater than five acres of land disturbance. As required by local and state agencies, stormwater management systems, such as stormwater ponds, are required to be constructed initially, and may serve as sedimentation basins during construction if necessary.

4.3.1.3 Water Quality

The Ultimate project and *Preferred Alternative* will not have any significant long-term effect on the quality of surface waters and groundwater (please refer to Section 4.3.1.1 Groundwater and Section 4.3.1.2 Surface Water). Short-term, construction-related impacts will be minimized to the maximum extent possible through the use of BMPs, control of surface water runoff, and strict adherence to FDOT's *Standard Specifications for Road and Bridge Construction*.

It is not anticipated that the Ultimate project and *Preferred Alternative* will have any drinking water quality impacts. As referenced in Section 3.3.1 Water Resources, there are two public drinking water supply wells in close proximity of the I-4 corridor in Seminole County. These two water supply wells are shown on Figure 3-16. Seminole County constructed both public supply wells following the initial construction of I-4.

Seminole County is currently in the process of adopting a well head protection plan, which would require a 1,640-foot buffer around the drinking water supply wells. Neither of the wells meet the required 1,640-foot buffer, but should be grandfathered by the County once the plan has been adopted. Coordination will be required during design and construction between FDOT, the FDOT Roadway Construction Contractor, and Seminole County to ensure that the Ultimate project will not impact the existing drinking water supply wells. It is recommended that the wells be identified on the construction plans and specification documents to ensure that the contractor is aware of the situation.

There are no drinking water supply wells located within the Preferred Alternative.

4.3.1.4 Outstanding Florida Waters (OFW)

No impacts are anticipated to the OFWs located near the I-4 corridor. No OFWs occur within the Ultimate project and *Preferred Alternative*. The nearest OFW is the Wekiva River, which is 2.75 miles to the west of I-4 within Segment 5 at Lake Mary Boulevard.

No impacts are anticipated to the Wekiva River System, as defined in Section 369.303(10) F.A.C. The Wekiva River System consists of the Wekiva River, the Little Wekiva River, Black Water Creek, Rock Springs Run, and Seminole Creek.

The eastern boundary of the Wekiva River Protection Area (as defined in Section 369.303(9) F.A.C.) is Markham Woods Road just north of SR 434 within Segment 4. No construction activity will occur west of this boundary in the protection area.

The Preferred Alternative will not impact any OFWs.

4.3.1.5 Wild and Scenic Rivers

No impacts are anticipated to any Wild and Scenic Rivers located near the I-4 corridor. No Wild and Scenic Rivers occur within the Ultimate project and *Preferred Alternative*. The Wekiva River is not designated as a Wild and Scenic River; however, it is listed on the Southeastern Rivers Inventory. The Wekiva River is 2.75 miles to the west of I-4 within Segment 5 at Lake Mary Boulevard.

No impacts are anticipated to the Wekiva River System, as defined in Section 369.303(10) F.A.C. The Wekiva River System consists of the Wekiva River, the Little Wekiva River, Black Water Creek, Rock Springs Run, and Seminole Creek.

The eastern boundary of the Wekiva River Protection Area (as defined in Section 369.303(9) FAC) is Markham Woods Road north of SR 434 within Segment 4. No construction activity will occur west of this boundary in this protection area.

The Preferred Alternative will not impact any Wild and Scenic Rivers.

4.3.1.6 Aquatic Preserves

No impacts are anticipated to the Aquatic Preserves located adjacent to the I-4 corridor just north of SR 434 within Segment 4.

No impacts are anticipated to the Wekiva River System, as defined in Section 369.303(10) F.A.C., and consisting of the Wekiva River, the Little Wekiva River, Black Water Creek, Rock Springs Run, and Seminole Creek.

The eastern boundary of the Wekiva River Protection Area, as defined in Section 369.303(9) F.A.C., is Markham Woods Road north of SR 434 within Segment 4. No construction activity will occur west of this boundary in this protection area.

There are no aquatic preserves located in the vicinity of I-4 within the limits of the Preferred Alternative.

4.3.1.7 Coastal Zone Consistency

Under Florida Statute 380, FDEP is charged with establishing a Coastal Zone Management Program (CZMP) in accordance with Title 15, CFR 930. Section 307 of the Coastal Zone Management Act (CZMA) requires all federal agencies to review activities that directly affect the coastal zone in order to develop consistency determinations. These consistency determinations will be used to determine if proposed federal activities are consistent, to the maximum extent practicable, with Florida's CZMP, which was approved on October 1, 1981.

The Office of Planning and Budget, Office of the Governor has determined that the Ultimate project and *Preferred Alternative* is consistent with the Florida CZMP (as per advance notification response letter dated July 12, 1996). A copy of this letter is included in Appendix C.

4.3.2 Biotic Communities

Land use within the I-4 PD&E Study - Section 2 corridor is characterized by commercial and residential development and fragmented natural (wetland and upland) communities. Proposed impacts to these remnant natural communities, both wetlands and uplands, are described in this section.

Based on the proposed roadway improvement design plans, approximately 132 acres, or ten percent, of existing wetlands in the Ultimate project would be impacted by the proposed improvements.

Approximately 82 acres, or 19 percent, of existing wetlands in the Preferred Alternative would be impacted by the proposed improvements.

These impacts are based on the extent of wetlands approximated during field reviews conducted from October 1996 through May 1997. Impacts were calculated in most places to the proposed right-of-way line. Thus, this estimate of total impact to wetlands should represent a worst-case scenario.

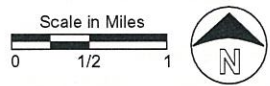
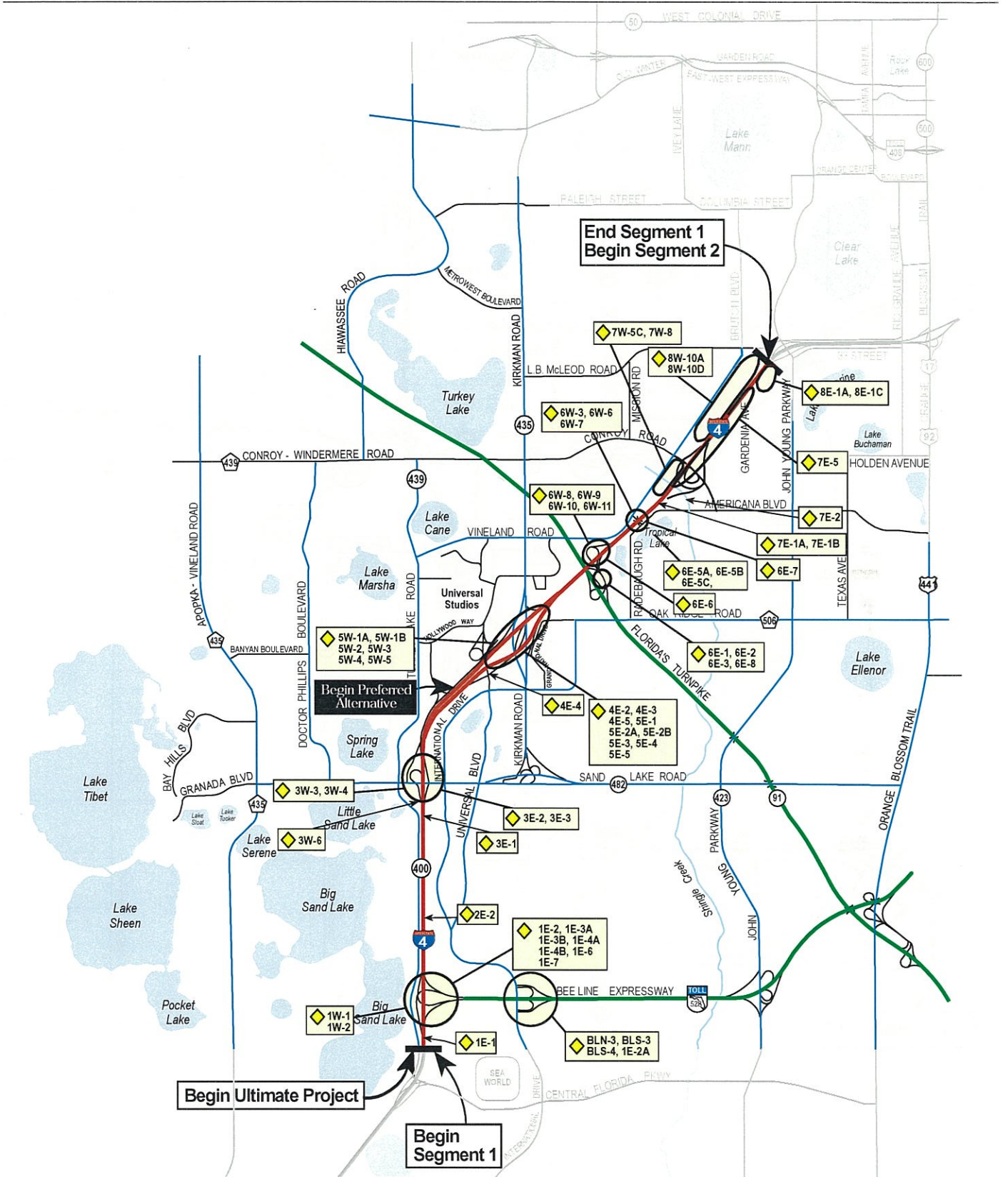
Impacts to wetlands and critical uplands will be minimized and avoided where possible, based on safe and sound engineering and construction constraints.

4.3.2.1 Wetlands

The approximate wetland impact locations are shown in Figure 4-6. A complete list of wetlands and the proposed impact area, whether due to roadway or pond construction, is provided in the *Wetland Evaluation Report* (May 2000). A general description of the typical dominant floral species, physical attributes, and hydrologic contiguity of a particular wetland type is provided in Section 3.3.2. More detailed wetland information, which includes the WET 2 analysis and results, is provided in the *Wetland Evaluation Report* (May 2000).

The WET 2 analysis indicates that the Lake Monroe/St. Johns River wetland complex has the highest potential to be a regionally, socially significant wetland in most categories. However, most of the model wetlands ranked high for groundwater recharge, flood flow alteration, sediment/toxicant retention, and nutrient removal/transformation. However, these wetlands are not unique systems, but are retention areas or lakes. All of the segments contain these types of wetlands. Post-construction improvements to the project corridor will result in the same, or more, of these retention area wetlands in each segment. Ponds, ditches, and lakes will continue to be an integral feature of the landscape along the roadway corridor. Thus, groundwater recharge, flood flow alteration, sediment/toxicant retention, and nutrient removal/transformation will not be adversely affected.

A summary of the wetland types to be impacted is provided in this section. Excluded from the wetland impact totals are wetlands that are previously accounted for in other projects, such as the Conroy Road and John Young Parkway interchange projects in Segment 1, the I-4 Six Laning and St. Johns River Bridge project in Segment 6, and previously permitted stormwater ponds.



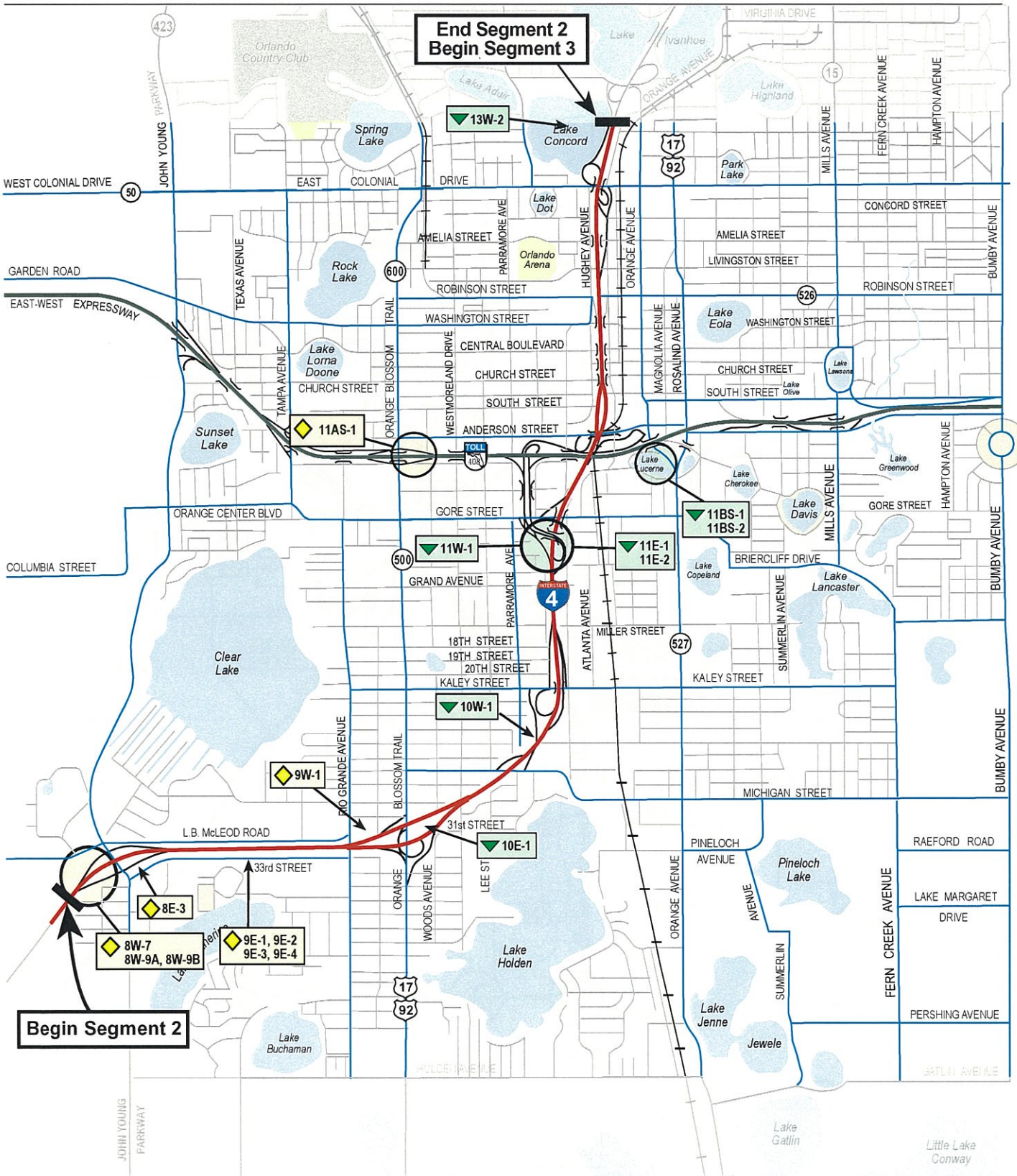
 Area of Generalized Wetland Location
 (For Specific Wetland Boundaries Refer to the Wetlands Evaluation Report)

Watershed Basin **Jurisdiction**
 Shingle Creek/ Kissimmee River Basin (SFWMD)



Figure 4-6
Impacted Wetlands

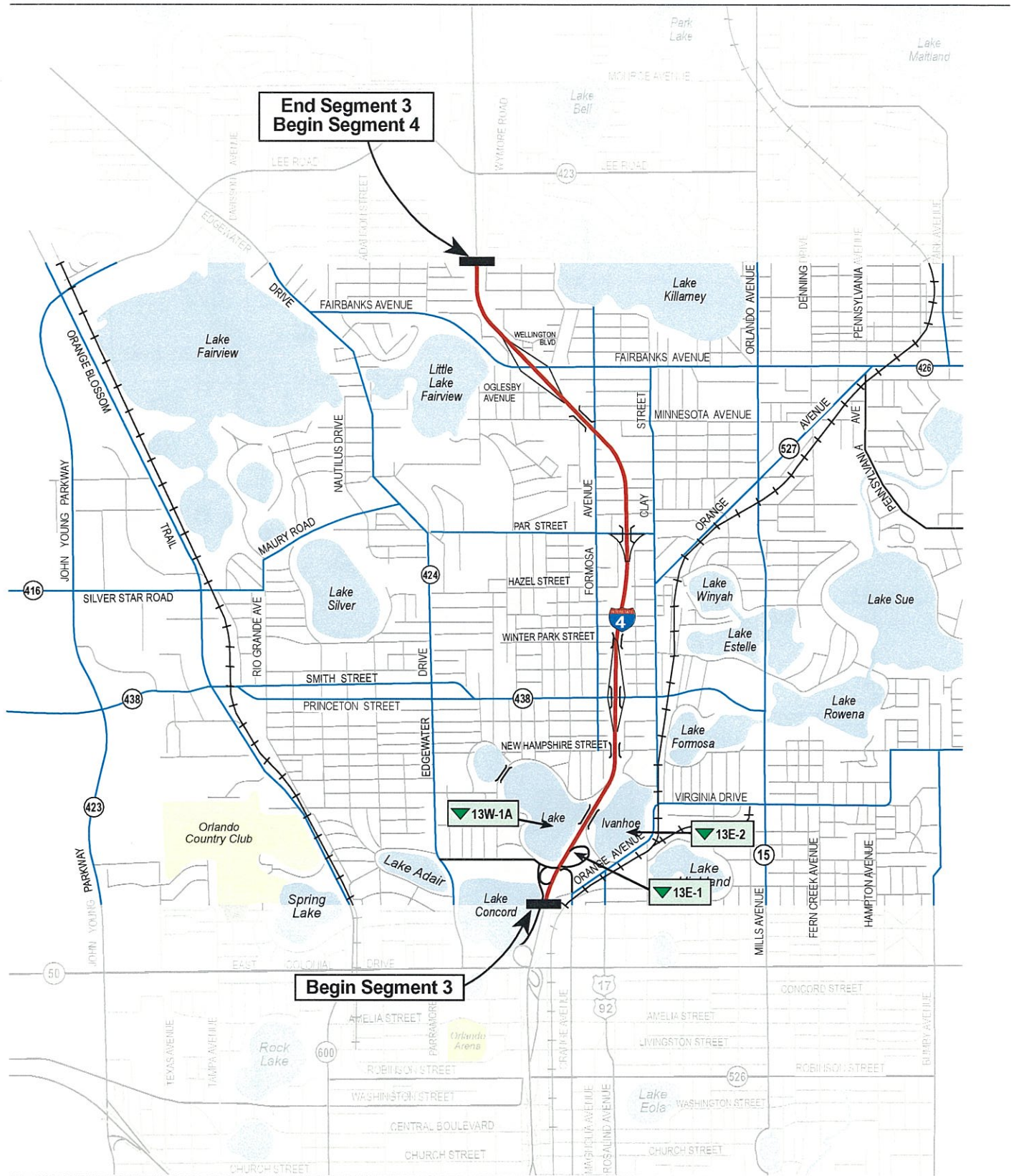
I-4 PD&E Study - Section 2
Segment 1 of 6



**Figure 4-6
Impacted Wetlands**

I-4 PD&E Study - Section 2
Segment 2 of 6





Watershed Basin Jurisdiction
 ▼ Lake Jessup Basin (SJRWMD)

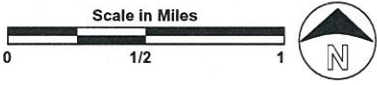
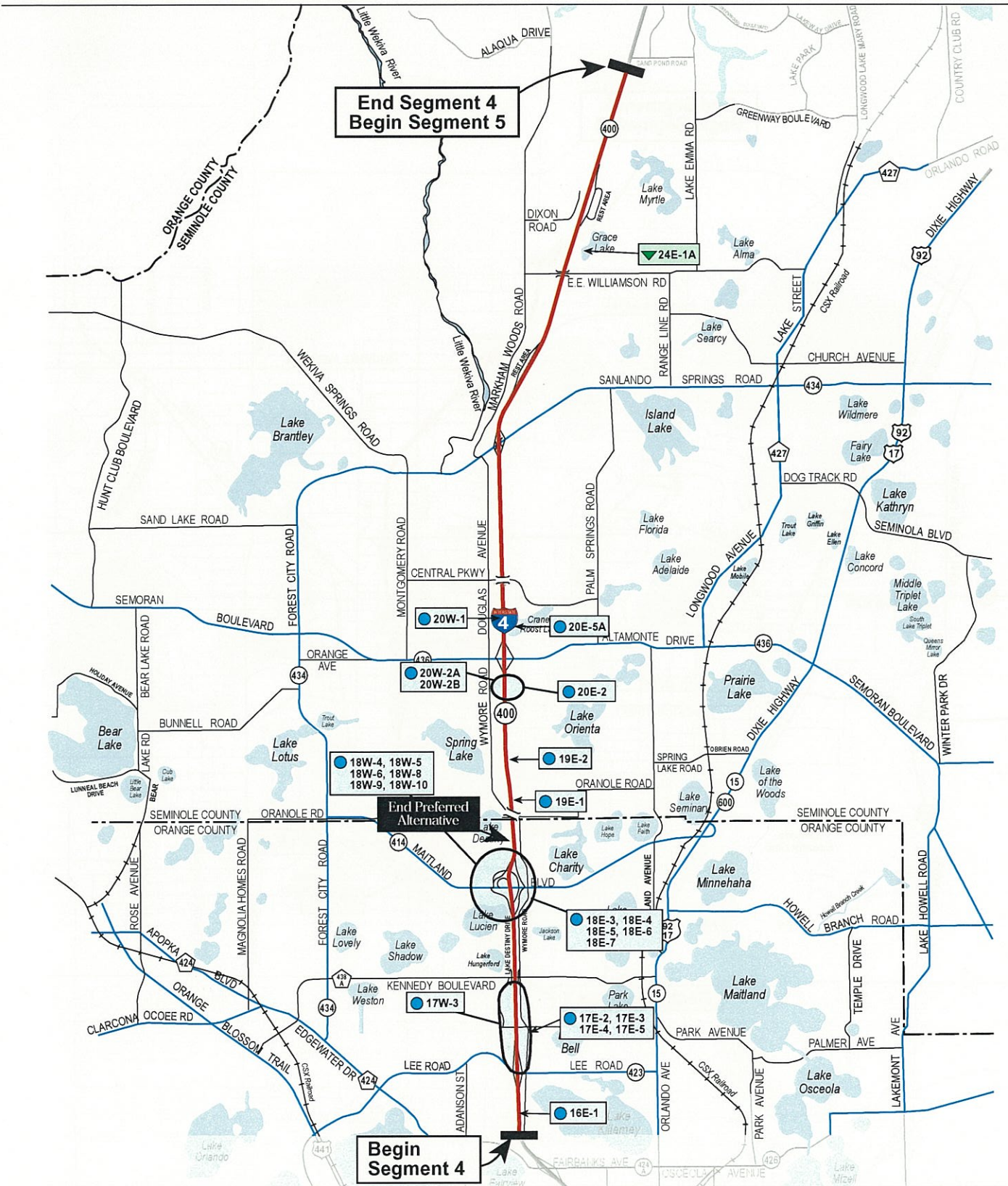



Figure 4-6
Impacted Wetlands

I-4 PD&E Study - Section 2
 Segment 3 of 6






Area of Generalized Wetland Location
 (For Specific Wetland Boundaries Refer to the Wetlands Evaluation Report)



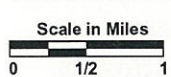
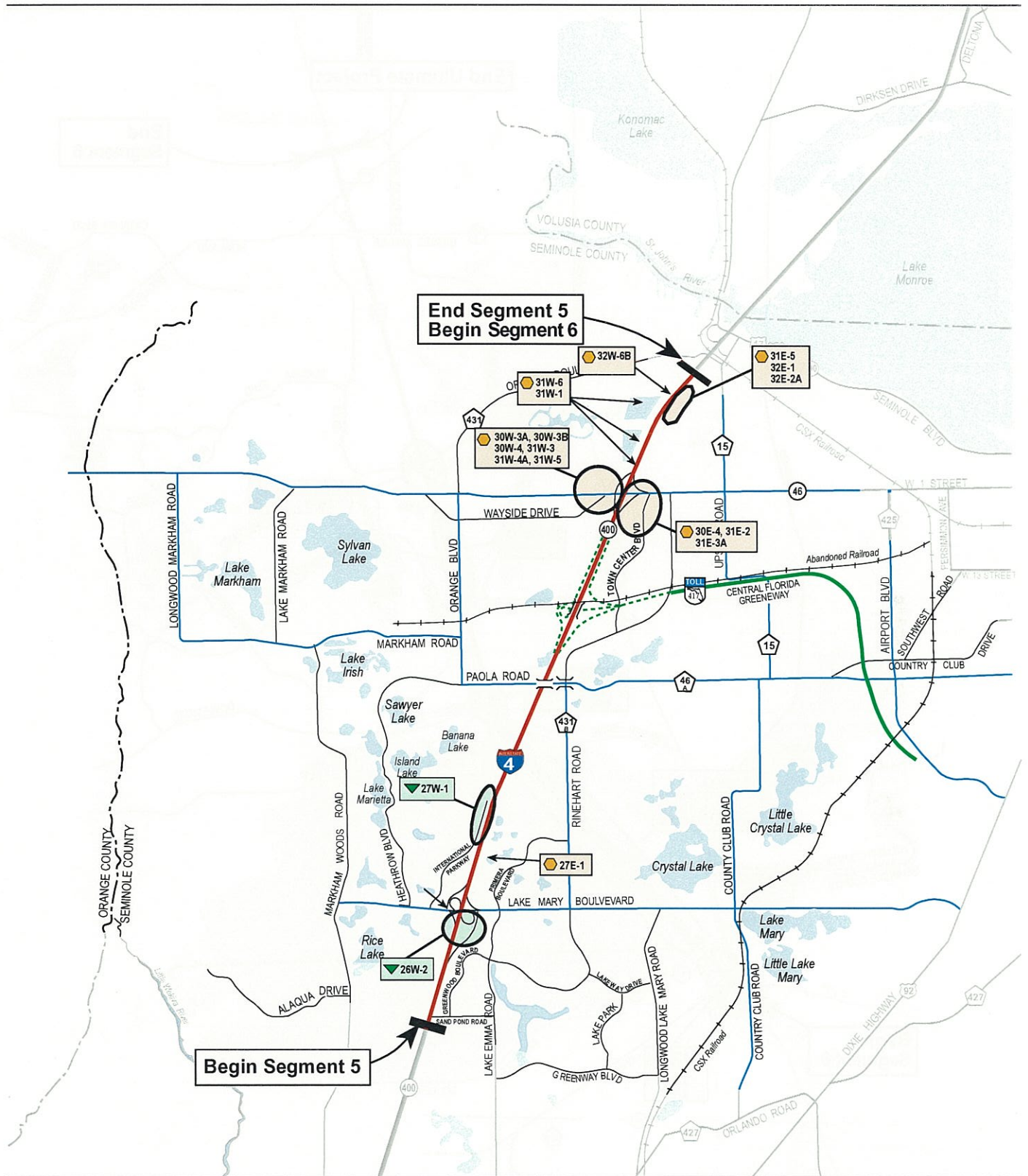

Watershed Basin	Jurisdiction
 Lake Jessup Basin	(SJRWMD)
 Wekiva River Basin	(SJRWMD)

Figure 4-6
Impacted Wetlands

I-4 PD&E Study - Section 2
Segment 4 of 6





 Area of Generalized Wetland Location
 (For Specific Wetland Boundaries Refer to the Wetlands Evaluation Report)



Watershed Basin	Jurisdiction
 Lake Jessup Basin	(SJRWMD)
 Lake Monroe Basin	(SJRWMD)



Figure 4-6
Impacted Wetlands

I-4 PD&E Study - Section 2
Segment 5 of 6

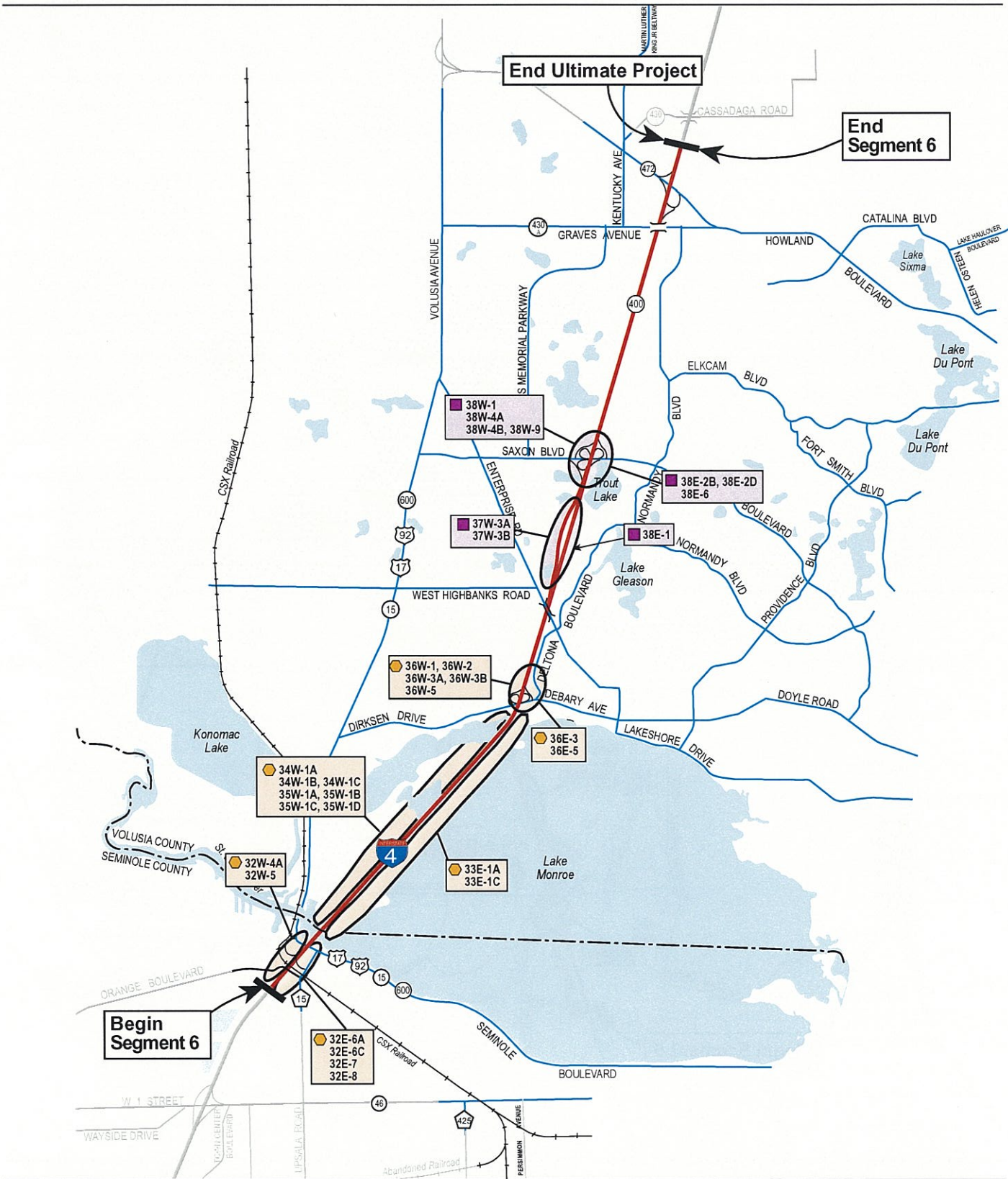


Figure 4-6
Impacted Wetlands

I-4 PD&E Study - Section 2
 Segment 6 of 6



Wetland impacts are grouped into four dominant types: Forested, Open Water, Emergent Marshes, and Scrub-Shrub. A summary of the total impact area by major wetland community type is presented in Table 4-19.

Table 4-19. Total Wetland Impact Area and Percent Cover by Community Classification

National Wetland Inventory Classification	NWI Code	Total Project Wetland Area*	Percent of Total Project Wetland Area	Total Wetland Impact Area	Percent Impact to Community Type	Percent of Project Total Impacts
Ultimate Project						
Palustrine Forested	PFO	442 ac	32%	18 ac	4%	14%
Open Water	LUBH, RUBH, PUBH	430 ac	31%	30 ac	7%	22%
Palustrine Emergent	PEM	364 ac	27%	49 ac	13%	37%
Palustrine Scrub-Shrub	PSS	137 ac	10%	35 ac	26%	27%
TOTAL		1373 ac	100%	132 ac	10%	100%
Preferred Alternative						
<i>Palustrine Forested</i>	<i>PFO</i>	<i>144 ac</i>	<i>33%</i>	<i>6 ac</i>	<i>8%</i>	<i>7%</i>
<i>Open Water</i>	<i>LUBH, RUBH, PUBH</i>	<i>196 ac</i>	<i>45%</i>	<i>26 ac</i>	<i>32%</i>	<i>32%</i>
<i>Palustrine Emergent</i>	<i>PEM</i>	<i>47 ac</i>	<i>11%</i>	<i>22 ac</i>	<i>26%</i>	<i>27%</i>
<i>Palustrine Scrub-Shrub</i>	<i>PSS</i>	<i>49 ac</i>	<i>11%</i>	<i>28 ac</i>	<i>34%</i>	<i>34%</i>
TOTAL		437 ac	100%	82 ac	19%	100%

All impacts associated with the Preferred Alternative are shown in *bold italics*.

*Total Wetland Area is within 600 feet of pavement or to right-of-way line, whichever is greater.

Ultimate Project

Ten percent of the wetland area (132 out of 1,373 acres) within the Ultimate project limits will be impacted. These impacts will be due to roadway construction or pond construction.

In terms of surface area, emergent marsh (PEM) will be impacted to the largest extent, totaling approximately 49 acres. This area constitutes approximately 13 percent of the total marsh coverage and accounts for 37 percent of all wetland impact within the Ultimate project limits. Approximately 29 acres of PEM impact has been previously accounted (and mitigated) for with the I-4 Six Laning and St. Johns River Bridge improvement project.

Impacts to scrub-shrub (PSS) wetlands will total approximately 35 acres, which is only 27 percent of all impacts, but is the largest relative percentage (26 percent) within each of the four community types. Approximately eight acres of PSS impact has been previously accounted (and mitigated) for with the I-4 Six Laning and St. Johns River Bridge improvement project.

Less than ten percent each of the project's forested wetland (PFO) and open water will be impacted. Forested wetlands account for 14 percent, and open water for 22 percent, of the total Ultimate project impacts. Approximately 42 acres of PFO impact and 16 acres of open water impact have been previously accounted (and mitigated) for with the I-4 Six Laning and St. Johns River Bridge improvement project.

Preferred Alternative

Approximately 19 percent of the total wetland area (82 out of 437 acres) within the Preferred Alternative will be impacted. These impacts will be due to roadway construction or pond construction.

In terms of surface area, scrub-shrub (PSS) will be impacted to the largest extent, totaling approximately 28 acres. This area constitutes approximately 34 percent of the total shrub coverage and accounts for 34 percent of all wetland impacts within the Preferred Alternative. Approximately 32 percent of open water will be impacted. Twenty-six acres or 32 percent of the total wetland impacts will be impacted.

Impacts to emergent marsh (PEM) wetlands will total approximately 22 acres, which accounts for 27 percent of all impacts within each of the four community types.

Less than ten percent of forested wetlands (PFO) within the Preferred Alternative will be impacted. Forested wetlands account for seven percent or approximately 6 acres of the total wetland impacts.

4.3.2.1.1 Temporary Impacts

Approximately 23 percent of the total Ultimate project wetland impacts (132 acres) will be for construction of ponds (total 31 acres).

Approximately 36 percent of the total Preferred Alternative wetland impacts (82 acres) will be for construction of ponds (total 29 acres).

In many instances, the wetland being impacted is an existing pond, whether open water or vegetated; thus, the impact is temporary. In some places, the existing ditches will be incorporated into a pond. An example of this occurs at the Maitland Boulevard Interchange, where wetlands 18E-4, 7 and 18W-4, 5, 9, and 10 are man-made wetlands that will be converted entirely or in part to a new pond. Wetland 18E-6 was a pond historically (prior to 1950), was altered with the initial construction of I-4, and will again be altered (in part) for a new pond.

Man-made Wetlands

Approximately 45 percent (59 acres) of the total Ultimate project wetland impacts (132 acres) will be to man-made wetlands.

Approximately 51 percent (42 acres) of the total Preferred Alternative wetland impacts (82 acres) will be to man-made wetlands.

Man-made wetlands are wet areas that were constructed in an upland area. Historically, the wetland was non-existent at the time of the initial I-4 construction (prior to 1950). In most cases, the upland soils were excavated to form a retention pond, which has since re-vegetated with wetland plants. Most have been in existence for over 40 years and have lost the typical "bermed-pond" characteristics. The current vegetative character of these areas (forested, shrubby, or emergent) is indicated by the FLUCFCS code and/or NWI classification in Table 4-19. Many of these areas function as stormwater runoff conveyance/retention areas, and will be reconstructed, relocated, and/or re-contoured as part of the roadway improvements. More recently, relative to the initiation of wetland resources regulation, permitted stormwater ponds are excluded from the Ultimate project and *Preferred Alternative* wetland impact totals. Another seven acres of the total Ultimate project impacts will occur in wetlands that are combination of man-made and previously altered natural wetlands.

Another two acres of the total Preferred Alternative impacts will occur in wetlands that are combination of man-made and previously altered natural wetlands.

Altered Natural Wetlands

Sixty-six acres (50 percent) of the Ultimate project natural wetlands within the I-4 corridor have been previously disturbed by the surrounding land use, being highly urbanized or rural/agriculture.

Thirty-eight acres (47 percent) of the Preferred Alternative natural wetlands have been previously disturbed.

Several wetlands have been fragmented by development and/or roadway construction. Most have been altered by changes to surface water drainage, diversion, or impoundment. These are indicated as such in the Integrity column of Table 3-42, as "Altered." Seven acres (five percent) of the Ultimate project to be impacted were existing prior to the initial construction of I-4, and were completely modified (re-contoured, changed habitat) when the interstate was constructed. These are indicated as such as "Altered/man-made" in the table.

Two acres (two percent) of the Preferred Alternative wetlands impacted were existing prior to the construction of I-4.

Summary of Ultimate Project Total Wetland Impacts

- Based on the proposed roadway improvement design plans, approximately 132 acres, or ten percent, of the existing total wetlands in the Ultimate project area would be directly impacted by the proposed improvements.
- 23 percent of the total proposed wetland impacts will be due to construction of stormwater ponds. Thus, the impact to these wetland acres would not be a permanent loss of wetland acres (as in filling a wetland), rather it would be a change in habitat type or a temporary impact during construction. For example, when a forested wetland is changed to a pond, that would be a permanent change in habitat type, and would be a loss of wetland habitat; however, the recontouring of an existing pond would be a temporary impact during construction.
- 45 percent of the total Ultimate project wetland impacts will be to man-made wetlands (wetlands that were not in existence prior to the initial construction of I-4).
- Secondary or cumulative impacts to wetlands are not anticipated to any significant extent, because this project consists of widening an existing interstate system with no new interchange construction being proposed, and is not a new roadway being constructed through wetlands.
- Forested wetland impacts account for 14 percent of the total Ultimate project wetland impacts.
- Open-water impacts account for 22 percent of the total Ultimate project wetland impacts.
- Emergent marsh impacts account for 37 percent of the total Ultimate project wetland impacts.
- Scrub-shrub wetland impacts account for 27 percent of the total Ultimate project wetland impacts.
- 96 percent of the forested wetlands will not be impacted.
- 93 percent of the open-water communities will not be impacted.
- 87 percent of the marsh communities will not be impacted.
- 74 percent of the scrub-shrub wetlands will not be impacted.
- Over half of the total open-water community impacts will occur in lakes and ponds in Segment 2.
- Although 50 percent (658 acres) of the project's total wetland area occurs within Segment 6, only 19 percent (25 acres) of the total impact acreage is accounted for in this segment. This is because over 90 acres of impact in this segment have been previously accounted for (and mitigated) with the I-4 Six Laning and St. Johns River Bridge improvement project.

Summary of Preferred Alternative Total Wetland Impacts

- *Based on the proposed roadway improvement design plans, approximately 82 acres, or 19 percent, of the total existing wetlands for the Preferred Alternative would be directly impacted by the proposed improvements.*
- *36 percent of the total proposed wetland impacts will be due to construction of stormwater ponds. Thus, the impact to these wetland acres would not be a permanent loss of wetland acres (as in filling a wetland), rather it would be a change in habitat type or a temporary impact during construction.*
- *51 percent of the total wetlands impact will be to man-made wetlands (wetlands that were not in existence prior to the initial construction of I-4).*
- *Secondary or cumulative impacts to wetlands are not anticipated to any significant extent, because this project consists of widening an existing interstate system with no new interchange construction being proposed, and is not a new roadway being constructed through wetlands.*
- *Forested wetland impacts account for seven percent of the total Preferred Alternative wetland impacts.*

- *Open-water impacts account for 32 percent of the total Preferred Alternative wetland impacts.*
- *Emergent marsh impacts account for 27 percent of the total Preferred Alternative wetland impacts.*
- *Scrub-shrub wetland impacts account for 34 percent of the total Preferred Alternative wetland impacts.*
- *92 percent of the forested wetlands will not be impacted.*
- *68 percent of the open-water communities will not be impacted.*
- *74 percent of the marsh communities will not be impacted.*
- *66 percent of the scrub-shrub wetlands will not be impacted.*

4.3.2.1.2 Segment 1

The total wetland impacts for Segment 1 have been broken out to evaluate the Ultimate project and the *Preferred Alternative* separately. Table 4-20 summarizes the percent impact to the four wetland community types in this segment.

Bee Line Expressway to Kirkman Road

Total impact area in this portion of Segment 1 will be 13 acres. Two of the 13 acres impacted will be converted to ponds.

In terms of wetland surface area within this portion, PEM will be impacted to the largest extent, totaling approximately nine acres. This area constitutes approximately 53 percent of this portion of total PEM coverage and accounts for 71 percent of all wetland impact, which is the largest relative percentage of the four community types.

Impacts to PFO wetlands will total three acres, or 17 percent of the total PEM coverage and 22 percent of total impacts in this segment.

Less than ten percent of each of the open water and PSS total wetlands will be impacted. Open water and scrub-shrub account for less than one acre of total wetland impacts within this portion of Segment 1.

Kirkman Road to John Young Parkway

Total impact area in this portion of Segment 1 will be 45 acres. Seventeen of the 45 acres impacted will be converted to ponds.

In terms of wetland surface area within this portion, PSS will be impacted to the largest extent, totaling approximately 27 acres. This area constitutes approximately 58 percent of this portion of total PEM coverage and accounts for 59 percent of all wetland impact, which is the largest relative percentage of the four community types.

Impacts to PEM wetlands will total 12 acres, or 36 percent of the total PEM coverage and 27 percent of total impacts in this segment.

Less than ten percent of each of the PFO and open water will be impacted. PFO and open water account for six acres and less than one acre of total wetland impacts within this portion of Segment 1, respectively.

4.3.2.1.3 Segments 2 and 3

Table 4-20 summarizes the percent cover of wetlands in these segments.

Total impact area in Segments 2 and 3 will be 19 acres, or 12 percent of the segment's total wetland area. Two acres of wetland impact will be converted to pond.

Table 4-20. Wetland Community Impact Area and Percent Cover of Total Wetland Area

National Wetland Inventory Classification	NWI Code	Types of Wetland Systems	Total Area of Wetland in Segment*	Percent of Segment's Total Wetland Area	Total Wetland Area Impacted by Ponds	Total Wetland Area Impacted by Roadway	Segment's Total Wetland Impact Area	Percent Impact to Community Type	Percent of Segment Total Impacts
Segment 1									
<i>SR 528 (Bee Line Expwy) to Kirkman Rd</i>									
Palustrine Forested	PFO	Forested mixed, Wet pine flatwoods, and Cypress	16.52 ac	40%	0.06 ac	2.72 ac	2.78 ac	17%	22%
Open Water	LUBH, RUBH, PUBH	Lakes, Reservoirs, Retention ponds, Canals, Ditches	6.17 ac	15%	0.00 ac	0.03 ac	0.03 ac	0%	0%
Palustrine Emergent	PEM	Marsh, Wet prairie, Ditches, Ponds	16.79 ac	41%	1.80 ac	7.14 ac	8.94 ac	53%	71%
Palustrine Scrub-Shrub	PSS	Shrub wetlands, Ditches, Ponds	1.81 ac	4%	0.00 ac	0.85 ac	0.85 ac	47%	7%
Subtotal 1			41.29 ac	100%	1.86 ac	10.74 ac	12.60 ac	31 %	100%
<i>Kirkman Rd to John Young Pkwy</i>									
Palustrine Forested	PFO	Forested mixed, Wet pine flatwoods, and Cypress	119.95 ac	53%	2.73 ac	3.07 ac	5.80 ac	5%	13%
Open Water	LUBH, RUBH, PUBH	Lakes, Reservoirs, Retention ponds, Canals, Ditches	27.29 ac	12%	0.00 ac	0.63 ac	0.63 ac	2%	1%
Palustrine Emergent	PEM	Marsh, Wet prairie, Ditches, Ponds	33.07 ac	15%	4.54 ac	7.45 ac	11.99 ac	36%	27%
Palustrine Scrub-Shrub	PSS	Shrub wetlands, Ditches, Ponds	46.04 ac	20%	10.18 ac	16.35 ac	26.53 ac	58%	59%
Subtotal 2			226.35 ac	100%	17.45 ac	27.50 ac	44.95 ac	20 %	100%
Segment 1 TOTAL			267.64 ac	100%	19.31ac	38.24 ac	57.55 ac	21 %	100%
Segments 2 and 3									
Palustrine Forested	PFO	Forested mixed, Mixed hardwoods, Cypress	16.31 ac	11%	0.51 ac	0 ac	0.51 ac	3%	3%
Open Water	LUBH, RUBH, PUBH	Lakes, Reservoirs, Retention ponds, Canals, Ditches	135.53 ac	88%	1.92 ac	16.42 ac	18.34 ac	14%	97%

4-111

I-4 PD&E Study - Section 2
Final Environmental Impact Statement
August 2002

Table 4-20. Wetland Community Impact Area and Percent Cover of Total Wetland Area (Continued)

National Wetland Inventory Classification	NWI Code	Types of Wetland Systems	Total Area of Wetland in Segment*	Percent of Segment's Total Wetland Area	Total Wetland Area Impacted by Ponds	Total Wetland Area Impacted by Roadway	Segment's Total Wetland Impact Area	Percent Impact to Community Type	Percent of Segment Total Impacts
<i>Palustrine Emergent</i>	<i>PEM</i>	<i>Marsh, Wet prairie, Ditches, Ponds</i>	<i>1.55 ac</i>	<i>1%</i>	<i>0.13 ac</i>	<i>0.00 ac</i>	<i>0.13 ac</i>	<i>8%</i>	<i><1%</i>
<i>Palustrine Scrub-Shrub</i>	<i>PSS</i>	<i>Shrub wetlands, Ditches, Ponds</i>	<i>0.94 ac</i>	<i><1%</i>	<i>0.00 ac</i>	<i>0.00 ac</i>	<i>0.00 ac</i>	<i>0%</i>	<i>0%</i>
Segments 2 & 3 TOTAL			154.33 ac	100%	2.56 ac	16.42 ac	18.98 ac	12%	100%
Segment 4									
Lee Rd to Maitland Blvd									
<i>Palustrine Forested</i>	<i>PFO</i>	<i>Forested mixed, forested lake swamp, cypress, mixed hardwoods, wet pine flatwoods</i>	<i>8.20 ac</i>	<i>15%</i>	<i>0.00 ac</i>	<i>0.00 ac</i>	<i>0.00 ac</i>	<i>0%</i>	<i>0%</i>
<i>Open Water</i>	<i>LUBH, RUBH, PUBH</i>	<i>Lakes, reservoirs, retention ponds, canals</i>	<i>33.30 ac</i>	<i>59%</i>	<i>3.82 ac</i>	<i>3.58 ac</i>	<i>7.40 ac</i>	<i>22%</i>	<i>40%</i>
<i>Palustrine Emergent</i>	<i>PEM</i>	<i>Marsh, wet prairie, ditches, ponds</i>	<i>12.71 ac</i>	<i>22%</i>	<i>3.91 ac</i>	<i>5.55 ac</i>	<i>9.46 ac</i>	<i>74%</i>	<i>52%</i>
<i>Palustrine Scrub-Shrub</i>	<i>PSS</i>	<i>Shrub wetlands, ditches, ponds</i>	<i>2.44 ac</i>	<i>4%</i>	<i>1.43 ac</i>	<i>0.00 ac</i>	<i>1.43 ac</i>	<i>59%</i>	<i>8%</i>
Subtotal 1			56.65 ac	100%	9.16 ac	9.13 ac	18.29 ac	32%	100%
Maitland Blvd to West of Lake Mary Blvd									
<i>Palustrine Forested</i>	<i>PFO</i>	<i>Forested mixed, forested lake swamp, cypress, mixed hardwoods, wet pine flatwoods</i>	<i>10.10 ac</i>	<i>12%</i>	<i>0.00 ac</i>	<i>0.00 ac</i>	<i>0.00 ac</i>	<i>0%</i>	<i>0%</i>
<i>Open Water</i>	<i>LUBH, RUBH, PUBH</i>	<i>Lakes, reservoirs, retention ponds, canals</i>	<i>37.83 ac</i>	<i>45%</i>	<i>0.04 ac</i>	<i>1.72 ac</i>	<i>1.76 ac</i>	<i>5%</i>	<i>55%</i>
<i>Palustrine Emergent</i>	<i>PEM</i>	<i>Marsh, wet prairie, ditches, ponds</i>	<i>27.42 ac</i>	<i>33%</i>	<i>0.00 ac</i>	<i>0.56 ac</i>	<i>0.56 ac</i>	<i>2%</i>	<i>18%</i>
<i>Palustrine Scrub-Shrub</i>	<i>PSS</i>	<i>Shrub wetlands, ditches, ponds</i>	<i>8.43 ac</i>	<i>10%</i>	<i>0.00 ac</i>	<i>0.87 ac</i>	<i>0.87 ac</i>	<i>10%</i>	<i>27%</i>

Table 4-20. Wetland Community Impact Area and Percent Cover of Total Wetland Area (Continued)

National Wetland Inventory Classification	NWI Code	Types of Wetland Systems	Total Area of Wetland in Segment*	Percent of Segment's Total Wetland Area	Total Wetland Area Impacted by Ponds	Total Wetland Area Impacted by Roadway	Segment's Total Wetland Impact Area	Percent Impact to Community Type	Percent of Segment Total Impacts
Subtotal 2			83.78 ac	100%	0.04 ac	3.15 ac	3.19 ac	4%	100%
Segment 4 TOTAL			140.43 ac	100%	9.20 ac	12.28 ac	21.48 ac	15%	100%
Segment 5									
Palustrine Forested	PFO	Forested mixed, forested lake swamp, cypress, mixed hardwoods, wet pine flatwoods	19.15 ac	15%	0.00 ac	1.88 ac	1.88 ac	10%	23%
Open Water	LUBH, RUBH, PUBH	Lakes, reservoirs, retention ponds, canals	49.42 ac	40%	0.00 ac	0.001 ac	0.001 ac	0%	0%
Palustrine Emergent	PEM	Marsh, wet prairie, ditches, ponds	27.48 ac	22%	0.00 ac	4.23 ac	4.23 ac	15%	51%
Palustrine Scrub-Shrub	PSS	Shrub wetlands, ditches, ponds	28.27 ac	23%	0.00 ac	2.23 ac	2.23 ac	8%	26%
Segment 5 TOTAL			124.32 ac	100%	0.00 ac	8.34 ac	8.34 ac	7%	100%
Segment 6									
Palustrine Forested	PFO	Forested mixed, forested lake swamp, cypress, mixed hardwoods, wet pine flatwoods, forested slough, cypress/pine	251.43 ac	37%	0.23 ac	7.25 ac	7.48 ac	3%	29%
Open Water	LUBH, RUBH, PUBH	Lakes, reservoirs, retention ponds, canals, streams	140.65 ac	20%	0.00 ac	1.53 ac	1.53 ac	1%	6%
Palustrine Emergent	PEM	Marsh, wet prairie, ditches, ponds	244.50 ac	36%	0.00 ac	13.35 ac	13.35 ac	6%	52%
Palustrine Scrub-Shrub	PSS	Shrub wetlands, ditches, ponds	49.36 ac	7%	0.00 ac	3.16 ac	3.16 ac	6%	12%
Segment 6 TOTAL			685.95 ac	100%	0.23 ac	25.29ac	25.52 ac	4%	100%

All impacts associated with the Preferred Alternative are shown in ***Bold Italics***.
 *Total Wetland Area is within 600 feet of pavement or to right-of-way line, whichever is greater.

4-113

I-4 PD&E Study - Section 2
 Final Environmental Impact Statement
 August 2002

Open water (mainly lakes) will be impacted to the largest extent, totaling approximately 18 acres. This area constitutes approximately 14 percent of the total open water coverage and accounts for 97 percent of all wetland impact in the segments.

Less than one acre each of the PEM and PFO wetlands will be impacted in Segments 2 and 3. These impacts account for less than ten percent of their respective community types within the segments.

No PSS will be impacted in Segments 2 and 3.

4.3.2.1.4 Segment 4

Lee Road to Maitland Boulevard

Total impact area in this portion of Segment 4 will be 18 acres. Nine of the 18 acres impacted will be converted to ponds.

In terms of wetland surface area within this portion, PEM will be impacted to the largest extent, totaling approximately nine acres. This area constitutes approximately 74 percent of this portion of total PEM coverage and accounts for 52 percent of all wetland impact, which is the largest relative percentage of the four community types.

Impacts to open water will total seven acres, or 22 percent of the total open water coverage and 40 percent of total impacts in this portion of Segment 4.

Impacts to PSS will total approximately one acre, or 59 percent of the total PSS coverage and eight percent of total wetland impacts in this portion of Segment 4.

No PFO will be impacted in this portion of Segment 4.

Maitland Boulevard to West of Lake Mary Boulevard

Total impact area in this portion of Segment 4 will be three acres. Less than one (0.04) acre of the three acres impacted will be converted to ponds.

In terms of wetland surface area within this portion of Segment 4, open water will be impacted to the largest extent, totaling approximately two acres. This area constitutes approximately five percent of this portion of total open water coverage and accounts for 55 percent of all wetland impact, which is the largest relative percentage of the four community types.

Less than one acre of each of the PEM and PSS wetlands will be impacted in this segment. These impacts account for ten and two percent of their respective community types within this portion of Segment 4.

No PFO will be impacted in this portion of Segment 4.

4.3.2.1.5 Segment 5

Table 4-20 summarizes the percent cover of wetlands in this segment.

Total wetland area in Segment 5 will be approximately eight acres, or seven percent of the segment's total wetland area. All eight acres will be used for roadway construction and none will be converted to pond.

In terms of wetland surface area within this segment, PEM wetlands will be impacted to the largest extent, totaling approximately four acres, or 15 percent of the PEM in Segment 5. This area constitutes approximately 51 percent of the total wetland impact in this segment. Impacts to the PSS will be two acres, or eight percent of the segment's scrub-shrub wetlands. These wetland impacts account for 26 percent of the segment's total impact.

Impacts to PFO will total less than two acres, or ten percent of the total PFO coverage, and 23 percent of all impacts in this segment.

Open water (LUBH, RUBH, and PUBH) impacts will be minimal with less than one acre or 0.001 acres total.

4.3.2.1.6 Segment 6

Table 4-20 summarizes the percent cover of wetlands in this segment.

Total wetland area in Segment 6 will be approximately 26 acres, or four percent of the segment's total wetland area. Less than one acre will be converted to pond.

In terms of wetland surface area within this segment, PEM wetlands will be impacted to the largest extent, totaling approximately 13 acres, or 6 percent of the PEM in Segment 1. This area constitutes approximately 52 percent of the total wetland impact in this segment.

Impacts to the PFO will be seven acres, or three percent of the segment's forested wetlands. Forested wetland impacts account for 29 percent of the segment's total impact.

Impacts to PSS will total approximately three acres, or three percent of the total PSS coverage, and 12 percent of all impacts in this segment.

Open water (LUBH, RUBH, and PUBH) impacts will total less than two acres. This area constitutes approximately one percent of the open water community type in this segment, and six percent of all impacts in the segment.

4.3.2.1.7 Wetland Mitigation Measures

Wetland impacts will be mitigated pursuant to Section 373.4137 F.S. to satisfy all mitigation requirements of Part VI, Chapter 373, F.S. and 33 U.S.C. Section 1344. The use of the Section 373.4137 F.S. for mitigation of wetland impacts has been coordinated with USACE, SJRWMD, and SFWMD. Coordination efforts have included sit-down meetings and field reviews with these agencies. At the meetings, potential impacts, minimization techniques, and mitigation measures were discussed. Refer to Section 5.3 for additional information on agency coordination.

Application for the permits will occur during the design phase of the project. Design will occur after the completion of the PD&E Study. Impacts to wetlands will be minimized and avoided where possible based on safe and sound engineering and construction constraints.

Coordination with the regulatory agencies will continue during the permitting phases of the project. Wetland mitigation concepts will be determined through pre-application meetings with USACE and the water management districts. Typically, mitigation requirements are based on a compilation of wetland parameters including quality, type, function, and size. All of the Ultimate project and Preferred Alternative wetlands have been previously impacted by development. Some of the wetlands are man-made. Based on preliminary design, it is determined that there are no practicable alternatives to the proposed construction in these wetland areas, and that avoidance of wetlands has been maximized to the extent possible at this time. Further impact minimization efforts will include detailed design considerations such as steep-ended side slopes or the use of retaining walls to reduce/prevent wetland encroachment. The use of silt screens, hay bales, and other discharge prevention measures during construction will minimize impacts to wetlands within the vicinity of the Ultimate project and Preferred Alternative. In addition, during final design, minor alignment shifts will be examined to minimize impacts to wetlands.

4.3.2.2 Uplands

Land use within the I-4 Ultimate project and *Preferred Alternative* is characterized by commercial and residential development and fragmented natural communities. Proposed impacts to these remnant natural communities are described in this section. A list of the types of natural communities along the Ultimate project and *Preferred Alternative* study areas, and their distribution by roadway segment, is presented in Section 3.3.2 Uplands, Table 3-52. Impacts to natural uplands that are considered to be potentially significant to threatened and endangered species (plants or animals) are discussed below.

Significant natural uplands that occur along the Ultimate project corridor include:

- Wekiva River System Protection Area, west of I-4 in Segments 4 and 5
- Wildlife movement corridor, adjacent to the Lake Monroe wetland communities in Segment 6
- Scrub Jay (*Aphelocoma coerulescens*) habitat at the SR 472 interchange in Segment 6

There are no significant natural uplands that occur within the limits of the Preferred Alternative.

4.3.2.2.1 Segment 1

No significant areas of natural upland communities exist along the Ultimate project and *Preferred Alternative* within Segment 1.

Fragmented areas of sand pine and longleaf pine-xeric oak communities primarily occur within the median. Several of these areas will be removed for construction of ponds.

4.3.2.2.2 Segments 2 and 3

Most of the upland areas located along Segments 2 and 3 have been developed into commercial or residential property, and few natural upland communities remain. No significant areas of natural upland communities exist along the limits of the Preferred Alternative. Pond construction will mainly occur in urbanized areas or in previously impacted shrubby and wooded areas.

4.3.2.2.3 Segments 4 and 5

No significant areas of natural upland communities exist along the limits of the Preferred Alternative within Segment 4.

No impacts are anticipated to the Wekiva River System Protection Area, which is located within the limits of the Ultimate project corridor. Section 369.303(9) F.A.C. provides for a protection area to buffer the Wekiva River System, as defined in Section 369.303(10) F.A.C., which consists of the Wekiva River, the Little Wekiva River, Black Water Creek, Rock Springs Run, and Seminole Creek. Although the Wekiva River is 2.75 miles to the west of the I-4 corridor, the eastern boundary of this Protection Area is Markham Woods Road just north of SR 434. No construction will occur west of this boundary.

Several upland forest communities occur along Segments 4 and 5, including longleaf pine, mixed hardwoods, xeric oaks, and pine flatwoods. Several retention ponds will be constructed adjacent to the roadway within these segments. Pond construction will occur in urban areas as well as in some of these upland communities. Most of the ponds will be located in fallow croplands, others in the natural forested uplands, which have been fragmented by development to various extents. A few larger ponds proposed to be constructed in the shrub and brush uplands of these segments are being accounted for by other projects.

4.3.2.2.4 Segment 6

The black bear is a threatened species in Florida. Their presence, as evidenced by an occasional road kill, is also important to the local residents. Uplands and wetlands associated with the Lake Monroe/St. Johns River are presumed to be used by black bears as movement corridors. This project will not displace large undeveloped areas, thus areas potentially utilized by black bears for movement corridors will not be impacted.

The upland habitat immediately adjacent to the right-of-way at the SR 472 interchange, and near the Saxon Boulevard interchange, is known to be utilized by Scrub Jays, the Eastern indigo snake, and a plant [the pigeon wings (*Clitoria fragrans*)]. None of the habitat where the snake or the pigeon wings were found will be impacted. None of the Scrub Jay habitat will be impacted by the proposed improvements. It is anticipated that the I-4 Six Laning and St. Johns River Bridge project will mitigate 0.14 acres of Scrub Jay habitat. Roadway and pond construction will impact some of the sand pine and longleaf pine communities along Segment 6. No roadway or pond construction will

occur in the longleaf pine-xeric oak/sand pine community identified to be utilized by Scrub Jays. The extent and significance of this habitat modification is described in the *Endangered Species Biological Assessment Report* (May 2000).

Ponds will also be located in improved pastures. A potential indirect impact to the Sandhill Crane (not observed, but potentially occurring) would be the displacement of pasture (used for foraging) for a pond (RR-3), located on the west side of I-4 adjacent to the Lake Monroe floodplain. This loss of foraging area is not considered to be significant to regional populations of Sandhill Crane.

4.3.2.2.5 Upland Mitigation Measures

To enhance the potential for successful black bear crossings, although the Ultimate project will not directly impact bear habitat, consideration has been given in the preliminary design of the roadway and bridge to allow for wildlife movement under the I-4 roadway. The HOV lane bridge over the St. Johns River and the GUL/HOV bridge over Padgett Creek in Volusia County will be lengthened an additional 20 feet to accommodate wildlife crossings. This design consideration will continue to be addressed as roadway designs are finalized. Discussions and coordination meetings have taken place with agencies and special interest groups including Orange County, Seminole County, Volusia County, FDOT, Blue Springs State Park, Friends of the Wekiva River, Habitat for Bears Campaign, FDEP, FWC, Florida Natural Areas Inventory (FNAI), and USFWS.

The Ultimate project has no direct impact to Scrub Jay habitat and should have no significant adverse effect on regional or local populations of Scrub Jays. Other road improvement projects in the area (extension of SR 472) may improve the habitat value for the Jays, by providing more open areas, which Jays require for acorn caching.

The St. Johns River is federally designated as an area of critical habitat for the West Indian manatee. Manatees are known to be present within the Ultimate project area in the St. Johns River and Lake Monroe areas. Construction and maintenance activities associated with the project may disturb manatees that may be present in the area; however, these impacts are expected to be temporary and minor. As part of the I-4 Six Laning and St. Johns River Bridge project, the substructure and superstructure for the general use lanes will be constructed. In addition, the foundation for the HOV lanes will be constructed thereby limiting construction in the river to one time. Therefore, construction within the St. Johns River is not expected to occur as part of the Ultimate I-4 PD&E Study - Section 2 improvements with the exception of barges and the construction of the bridged loop ramp at the US 17-92 interchange. No direct impacts to manatees are anticipated to occur from the project.

4.3.3 Threatened and Endangered Species

The natural communities along the I-4 PD&E Study Section 2 Ultimate project and *Preferred Alternative* study areas are fragmented by commercial and residential development. This typically limits species diversity and reduces the potential for threatened and endangered species (plants and animals) to occur within these areas. However, a few remnant natural communities along the limits of the Ultimate project *and Preferred Alternative* do provide suitable habitat for some protected vegetative and wildlife species. Potential impacts to these areas, and to specific species when possible, are described below.

4.3.3.1 T&E Flora and Significant Habitat

Table 4-21 presents the names of seven listed plant species that were identified within the Ultimate project study area by project biologists and that may be impacted by the roadway improvements. These species are among the 64 federal and state listed threatened and endangered plant species that were identified as potentially occurring within the vicinity of the I-4 Ultimate project study area. None of the other 57 species were found.

No impacts to flora species are anticipated to occur within the limits of the Preferred Alternative.

Table 4-21. Listed Plant Species Potentially Impacted by the I-4 PD&E Study – Section 2 Project

Common Name	Scientific Name	Federal Listing (USFWS)	State Listing (FDA)	Found near Segment No.
Wetland Plants				
Cinnamon fern	<i>Osmunda cinnamomea</i>		C	All
Common wild pine	<i>Tillandsia fasciculata</i>		E	All
Royal fern	<i>Osmunda regalis</i>		C	All
Upland or Scrub Plants				
Garberia	<i>Garberia heterophylla</i>		T	6
McFarlin's lupine	<i>Lupinus aridorum</i>	E	E	1
Nodding pinweed	<i>Lechea cernua</i>		T	1
Pigeon-wing (sandhill butterfly-pea)	<i>Clitoria fragrans</i>	T	E	6

All impacts associated with the Preferred Alternative are shown in ***Bold Italics***.
 FDA = Florida Department of Agriculture and Consumer Services
 USFWS = United States Fish and Wildlife Service

E= Endangered
 T= Threatened
 C= Commercially Exploited

4.3.3.1.1 Segment 1

Two protected species, McFarlin's lupine (*Lupinus aridorum*) (Endangered/Federal) and nodding pinweed (*Lechea cernua*) (Threatened/State), were identified within the Ultimate project study area and in the vicinity of the southern portion of Segment 1. Project biologists identified their occurrence to be in the uplands west of I-4 and adjacent to Turkey Lake Road. Impact to these plants is likely, due to roadway improvements and pond construction in that area.

Those State listed vegetative species that are found in wetland communities [cinnamon fern (*Osmunda cinnamomea*), royal fern (*Osmunda regalis*), and common wild pine (*Tillandsia fasciculata*)] were observed by project biologists in this segment. It is anticipated that these species will be impacted by the I-4 Ultimate improvements. Impacts to these plants will be addressed in the wetland permitting process.

The Preferred Alternative will not impact the McFarlin's lupine, nodding pinweed, cinnamon fern, royal fern, and common wild pine within the portion of Segment 1 from Kirkman Road to John Young Parkway.

4.3.3.1.2 Segments 2 and 3

The only listed (State) vegetative species that were observed by project biologists in these segments are those found in wetland communities: cinnamon fern, royal fern, and common wild pine. It is anticipated that there will be no impacts to these species, due to the high degree of residential and commercial development along Segments 2 and 3. Impacts to these plants will be addressed in the wetland permitting process.

4.3.3.1.3 Segments 4 and 5

The only listed (State) vegetative species that were observed by project biologists in these segments are those found in wetland communities: cinnamon fern, royal fern, and common wild pine. It is anticipated there will be impacts to these species as a result of the I-4 Ultimate improvements. Impacts to these plants will be addressed in the wetland permitting process.

The Preferred Alternative will not impact the cinnamon fern, royal fern, and common wild pine within the portion of Segment 4 from Lee Road to Maitland Boulevard.

4.3.3.1.4 Segment 6

Two of the five specimens of the pigeon wings or sandhill butterfly pea (*Clitoria fragrans*) (Threatened/Federal and Endangered/State) were identified by the project team along Segment 6 in 1997, at the edge of an overgrown scrub community on the northwest corner of the Saxon Boulevard interchange. It is anticipated that the Ultimate project will impact this community. Suitable habitat will continue to exist along this segment; thus, this species will not be significantly impacted. Another protected floral species, garberia (*Garberia heterophylla*) (Threatened/State),

which is found in sand pine communities such as those in the northern section of the Ultimate project corridor, was observed. Numerous individuals were found in scattered locals throughout the sand pine and scrub communities. Although this species was encountered in the study area, garberia will not be significantly impacted by the proposed roadway improvements.

Those State listed vegetative species that are found in wetland communities (cinnamon fern, royal fern, and common wild pine) were observed by project biologists in this segment. It is anticipated that these species will be impacted by the Ultimate project improvements. Impacts to these plants will be addressed in the wetland permitting process.

4.3.3.1.5 T&E Flora Mitigation Measures

No significant impacts to regional populations of protected plant species are anticipated at this time as a result of the proposed Ultimate project and Preferred Alternative roadway improvements.

Coordination with federal, state, and local agencies and mitigation planning will continue during the permitting phases of the project. FDOT will, prior to construction activities, have a qualified biologist survey all the undeveloped lands within the Ultimate project and Preferred Alternative footprint, with a focus on appropriate habitat, to determine the presence or absence of the flora species. If new or existing occupied plants are found, the locations of the individual plants will be marked in the field. FDOT will contact USFWS within three days to consult on the potential removal and relocation of the plants to a suitable habitat.

For the Preferred Alternative, survey and assessment efforts will be conducted on all undeveloped lands, with a focus on those habitats of high potential, such as:

- *Two large parcels of vacant land located along Segment 1 north of Kirkman Road that contain a diverse assemblage of upland and wetland ecosystems*

For the Ultimate project, survey and assessment efforts will be conducted on all undeveloped lands, with a focus on those habitats of high potential, such as:

- Sand pine/scrub uplands in the southern portion of Segment 1
- Sand pine/scrub uplands throughout Segment 6

If protected species are identified, permits will be obtained, if needed. Prior to construction, the locations of the individual plants will be marked in the field so they can be protected until removed and relocated to a suitable habitat.

4.3.3.2 T&E Fauna and Significant Habitat

Several of the protected wildlife species that may be found within the Ultimate project and Preferred Alternative study corridors are associated with wetland habitat.

Table 4-22 provides a list of the protected wildlife species that have been observed within the Ultimate project and Preferred Alternative, based on historic agency records and 1996 field observations. Figure 4-7 shows areas of potential impact to threatened and endangered wildlife.

Table 4-22. Listed Animal Species Potentially Impacted by the I-4 PD&E Study – Section 2 Project

Common Name	Scientific Name	Federal Listing (USFWS)	State Listing (FWC)	Found near Segment No.
Bald Eagle	<i>Haliaeetus leucocephalus</i>	T	T	2 - 5
Eastern indigo snake	<i>Drymarchon corai couperi</i>	T	T	6
Florida Scrub Jay	<i>Aphelocoma coerulescens</i>	T	T	4, 5, 6
Gopher tortoise	<i>Gopherus polyphemus</i>		SSC	1, 4, 5
West Indian manatee	<i>Trichechus manatus</i>	E	E	6
Wood Stork	<i>Mycteria americana</i>	E	E	6

All impacts associated with the Preferred Alternative are shown in ***Bold Italics***.
 E = Endangered
 FWC (formerly FGFWFC) = Florida Fish and Wildlife Conservation Commission

SSC = Species of Special Concern
 T = Threatened
 USFWS = United States Fish and Wildlife Service

No impacts to fauna species are anticipated to occur within the limits of the Preferred Alternative.

4.3.3.2.1 Segment 1

Florida Scrub Jays were not found along Segment 1, although they were previously reported (by FWC) to be in the area. Gopher tortoises have been documented in the vicinity (one-half mile to the west) of Segment 1, and wildlife species commensal with gopher tortoise also may occur in this area. These species are typically impacted by roadway improvement projects through a reduction of suitable habitat. It is not anticipated that gopher tortoises will be impacted by the proposed Ultimate project or the *Preferred Alternative*. However, if impacts occur, mitigation to species will be conducted in accordance with agency recommendations established during the permitting phases.

The American alligator and wading birds such as Wood Storks (Mycteria americana), Snowy Egrets (Egretta thula), Little Blue Herons (Egretta caerulea), White Ibis (Eudocimus albus), and Tricolored Herons (Egretta tricolor) may occur in the emergent wetland systems and along Shingle Creek. The Preferred Alternative is not expected to significantly impact these species, except for temporary disruption of foraging habitat during construction.

4.3.3.2.2 Segments 2 and 3

No impacts to Bald Eagles are expected as a result of proposed improvements. There are no known active nests in the construction area and mitigation measures will be implemented during construction to minimize disturbance to any eagles that may be in the vicinity.

Lake Concord in Segment 2 and Lake Ivanhoe in Segment 3 provide foraging habitat for a variety of avian species, including the protected Snowy Egret, Little Blue Heron, and Limpkin (Aramus guarauna). No rookeries were identified in the project area. No impacts to these protected species are expected as a result of the Preferred Alternative roadway improvements. Secondary and cumulative impacts to bear habitat connectivity as a result of other related transportation projects (refer to Section 1.4) are expected to be minimal.

4.3.3.2.3 Segments 4 and 5

The Ultimate project is not expected to impact Bald Eagles within Segments 4 and 5. There are no known active nests in the impact area, and mitigation measures will be implemented during construction to minimize disturbance to any eagles that may be in the vicinity.

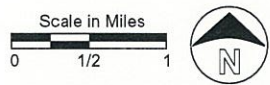
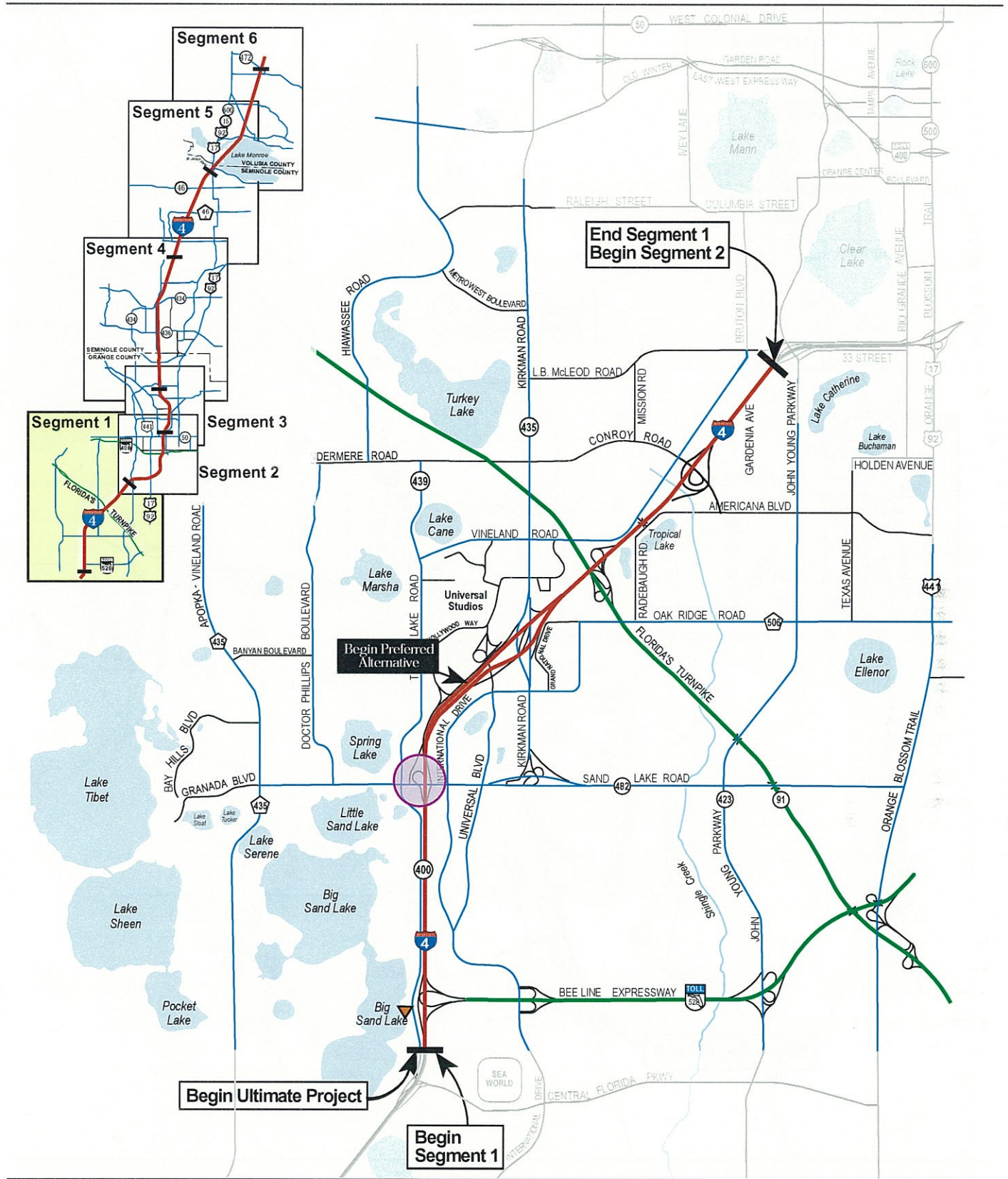
The Preferred Alternative is not expected to impact Bald Eagles within the portion of Segment 4 from Lee Road to Maitland Boulevard.

Florida black bear mortality has been previously reported by FWC along the northern end of Segment 5; however, the mortality rate is not expected to increase significantly as a result of the roadway improvements. *Secondary and cumulative impacts to bear habitat connectivity as a result of other related transportation projects (refer to Section 1.4) are expected to be minimal.*

Agency reports indicate that Scrub Jays may occur in the vicinity of Segments 4 and 5. It is not anticipated that the Ultimate project will impact Scrub Jays. However, if impacts occur, mitigation will be conducted in accordance with agency recommendations established during the permitting phases.

The Preferred Alternative is not expected to impact Scrub Jays within the portion of Segment 4 from Lee Road to Maitland Boulevard.

Gopher tortoises were documented in the vegetative communities immediately adjacent to the eastern rest area along I-4, north of SR 434. The Ultimate project is not likely to impact these tortoises or their habitat as no construction is planned to occur east of the rest area. Mitigation for these potential impacts will be conducted in accordance with agency recommendations established during the permitting phases.

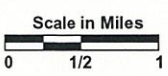
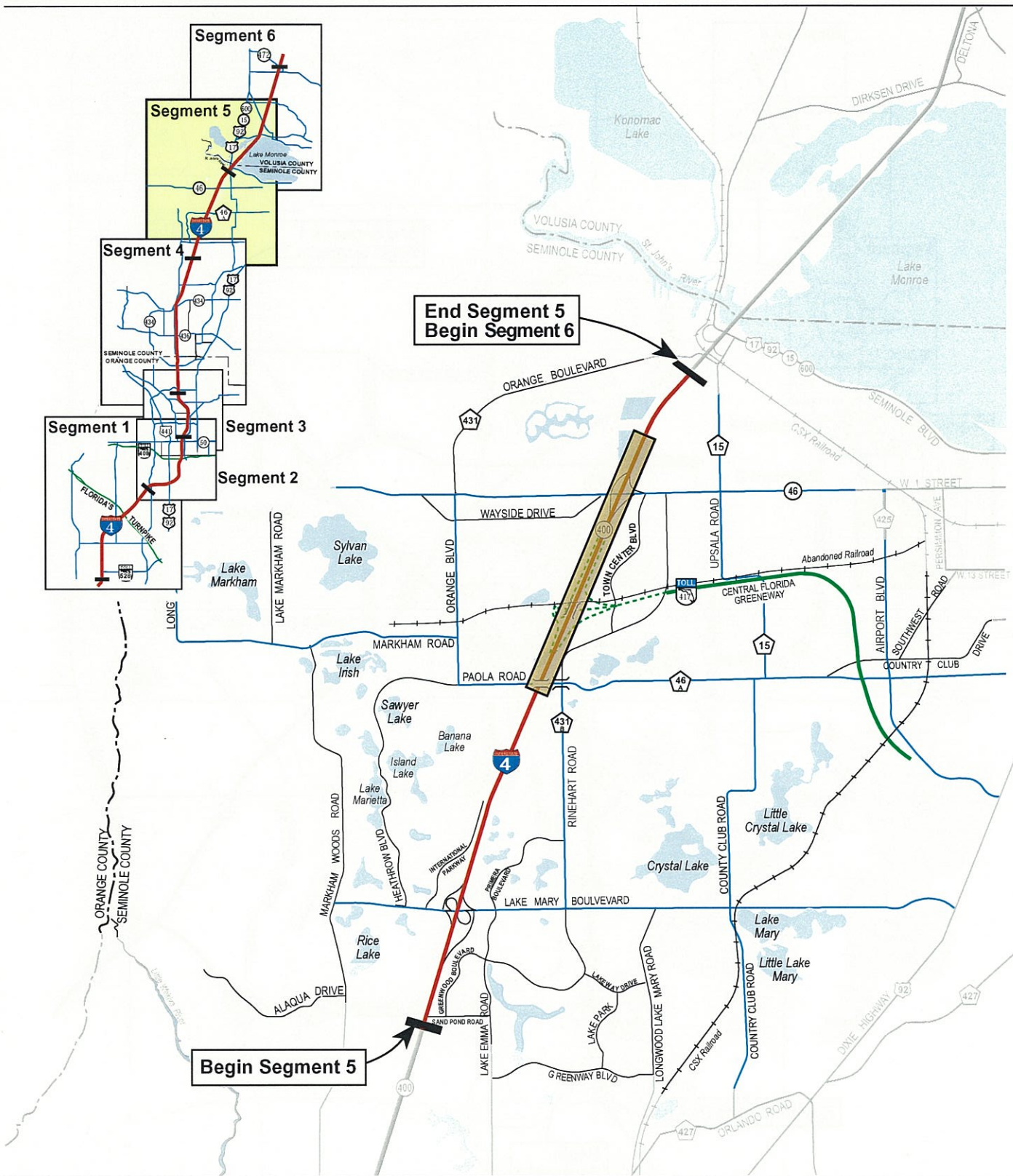


Note: Both species were sited prior to 1996.

- Potential Impact Scrub Jay (FWC Oct. 1996)
- Potential Impact Scrub Lupine



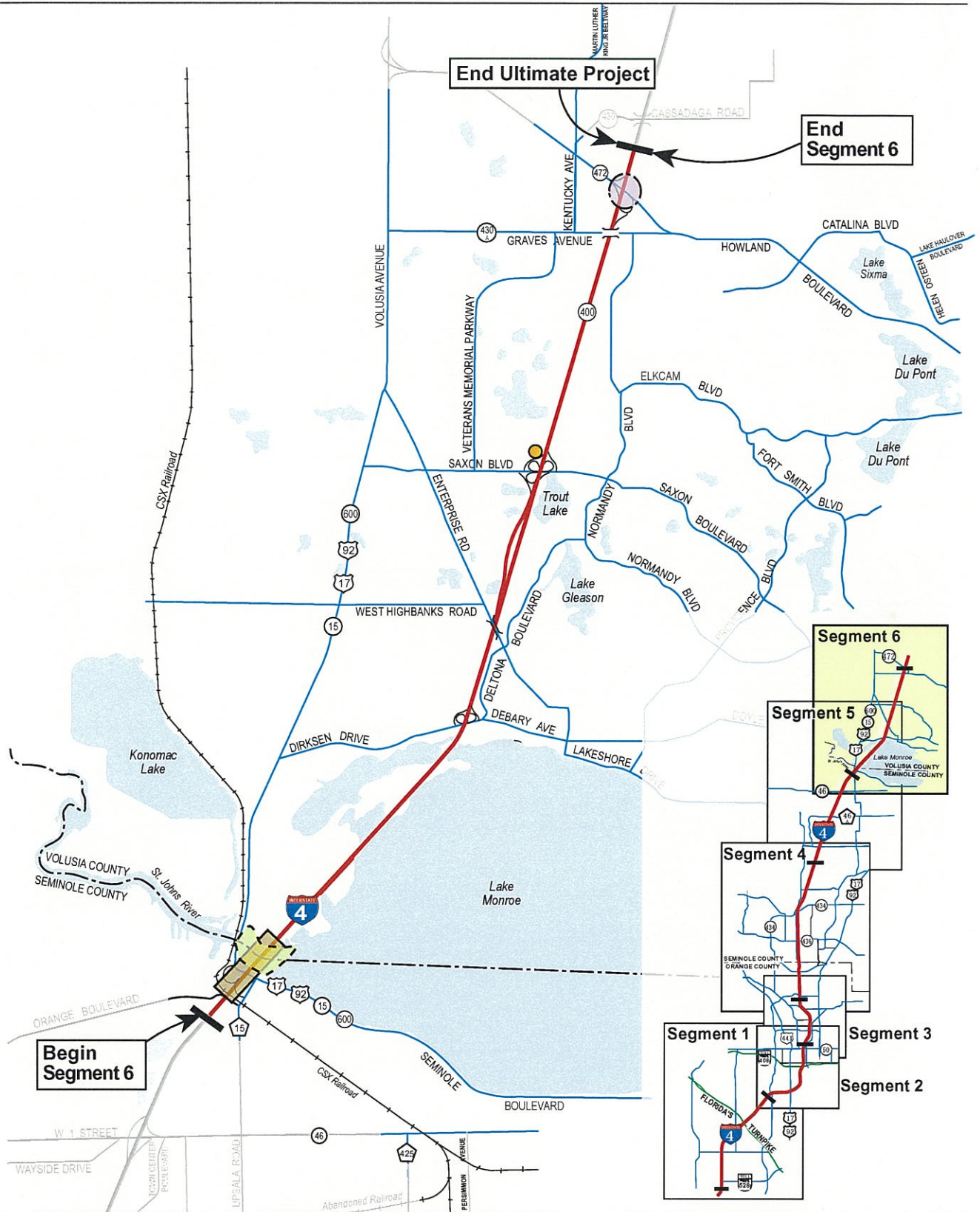
Figure 4-7
Potential Impacts to
Threatened and Endangered Wildlife Species
I-4 PD&E Study - Section 2
 Segment 1 of 6



Potential Impact
Black Bear (FWC Dec. 1996)

Figure 4-7
Potential Impacts to
Threatened and Endangered Wildlife Species
 I-4 PD&E Study - Section 2
 Segment 5 of 6





- Potential Impact Black Bear (FWC Dec. 1996)
- Potential Impact Manatee (FNAI and Environmental Management of Volusia County Nov. 1996)
- Potential Impact Scrub Jay (FWC Oct. 1996)
- Potential Impact Pigeon Wings



Figure 4-7
Potential Impacts to Threatened and Endangered Wildlife Species
 I-4 PD&E Study - Section 2
 Segment 6 of 6

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A Least Tern was reported near Segment 4 in 1996. Nesting habitat for the tern (beaches) does not occur in the Ultimate project or *Preferred Alternative* study areas, and therefore the roadway improvements are not likely to affect this species.

4.3.3.2.4 Segment 6

No impacts to Bald Eagles are expected to occur as a result of the Ultimate project. There are no known active nests in the construction area, and mitigation measures will be implemented during construction to minimize disturbance to any eagles that may be in the vicinity.

The Ultimate project improvements will have no direct impact to Scrub Jay habitat and should have no significant adverse effect on regional or local populations of Scrub Jays in Segment 6. The USFWS provided a letter of "No Significant Impact" to the Volusia County SR 472 extension project; which will displace over five acres (DRMP 1997). Similarly, USFWS provided a letter of "No Significant Impact" to the I-4 Six Laning and St. Johns River Bridge project, which would displace only a fraction of the amount (0.14 acres) of Jay habitat as the SR 472 extension's project. Refer to the I-4 Six Laning and St. Johns River Bridge project *EA/FONSI* (May 2000) for further information.

The St. Johns River is federally designated as an area of critical habitat for the West Indian manatee. Manatees are known to be present within the project area in the St. Johns River and Lake Monroe areas. Construction and maintenance activities associated with the project may disturb manatees that may be present in the area; however, these impacts are expected to be temporary and minor. As part of the I-4 Six Laning and St. Johns River Bridge project, the substructure and superstructure for the general use lanes will be constructed. In addition, the foundation for the HOV lanes will be constructed thereby limiting construction in the river to one time. Therefore, construction within the St. Johns River is not expected to occur as part of the I-4 PD&E Study - Section 2 with the exception of barges within the river. No direct impacts to manatees are anticipated to occur from the Ultimate project. To protect and minimize the potential impacts of bridge demolition and construction on manatees, the Manatee Watch Program (MWP) Guidelines (consisting of 19 special provisions for the protection of manatees) are included in Appendix J. These guidelines will be adhered to in accordance with the Federal Endangered Species Act of 1973, the Florida Manatee Act, and the Federal Marine Mammal Protection Act of 1972, as amended. In addition to the measures described in Appendix J, FDOT will develop and implement a special Manatee Survey/Watch Plan in accordance with FDEP's *Endangered Species Watch Program for Blasting Activities*. The USFWS shall assist FDOT in plan development. The plan shall be in place not later than three months prior to the first detonation event.

No significant impact to habitat used by the indigo snake is anticipated with this project. No impacts to Wood Storks are anticipated as a result of the roadway improvements. Individuals using the Ultimate project area as foraging habitat, are expected to utilize similar habitat areas nearby.

The Florida black bear is a threatened species and a species of regional concern. Bear mortality has been reported along this section of I-4; however, the mortality rate is not expected to increase significantly as a result of the Ultimate project roadway improvements. Secondary and cumulative impacts to bear habitat connectivity as a result of other related transportation projects (refer to Section 1.4) are expected to be minimal.

4.3.3.2.5 T&E Fauna Mitigation Measures

No significant impacts to regional populations of protected species are anticipated as a result of the Ultimate project and *Preferred Alternative*. Coordination with local agencies will continue and specific mitigation measures will be developed during the permitting phases of the project.

Discussions and coordination meetings have taken place with agencies and special interest groups including Orange County, Seminole County, Volusia County, FDOT, Blue Springs State Park, Friends of the Wekiva River, Habitat for Bears Campaign, FDEP, FWC, FNAI, and USFWS. Where federally protected species are determined to be present, the timing and location of construction

activities will be in accordance with accepted regulatory guidelines where applicable, and as established with agencies during the permitting process.

No direct impacts are anticipated to the protected species potentially occurring near the Ultimate project and *Preferred Alternative*, including the Bald Eagle, Florida Scrub Jay, West Indian manatee, Florida black bear, Eastern indigo snake, Wood Stork, and gopher tortoise.

The bridge over Padgett Creek in Volusia County will be widened an additional 20 feet for wildlife crossings.

4.3.3.3 Ecological Relationships

No significant impacts to the two regional natural areas of upland/wetlands that exist along the Ultimate project and *Preferred Alternative* corridors are anticipated as a result of the proposed roadway improvements.

I-4 does not bisect the Wekiva River/Little Wekiva River conservation lands in Seminole County or its protection boundary at Markham Woods Road. The wetland functions and wildlife movement corridors currently being provided by the Lake Monroe/St. Johns River/and floodplain are expected to continue because the proposed improvements will be along the existing roadway.

4.3.3.3.1 Shingle Creek Corridor

The proposed roadway improvements to I-4 will not significantly impact Shingle Creek within the I-4 study area. Because most of this creek within the Preferred Alternative study area has been significantly altered as a result of development activities in the last few decades, it provides poor wildlife habitat; however, the potential for the creek to serve as a wildlife movement corridor under the I-4 roadway will continue.

It is anticipated that the creek will continue to provide limited functions as a regional wildlife corridor through long urban stretches, because it is connected to larger undeveloped areas. It may be used by general wildlife that are acclimated to, or adapt readily to, populated areas, such as raccoons, opossums, armadillos, and squirrels.

4.3.3.3.2 Wekiva River/Little Wekiva River

I-4 does not bisect the Little Wekiva River floodplain, and no construction will occur within the Aquatic Preserve or its protection boundary. BMPs will be implemented during construction activities to protect the water quality of this resource. No impact is anticipated to occur within the Wekiva River System Protection Area, which includes the Wekiva River, the Little Wekiva River, Black Water Creek, Seminole Creek, and Rock Springs Run State Preserve and the Wekiva River Buffer Conservation Area. As part of the conservation lands of the Ocala National Forest, the area will continue to serve as a wildlife corridor with forest habitat in good ecological condition.

4.3.3.3.3 Lake Monroe/St. Johns River Corridor

The proposed roadway improvements to I-4 will not significantly impact the Lake Monroe/St. Johns River within the Ultimate project study area. Because of the large size of the lake and river (over 4,940 acres), and because the proposed improvements will be along the existing roadway (no new impact areas), the wetland functions currently being provided by the river/lake/floodplain are expected to continue. The river/lake will still be used for commerce and recreation; the floodplain will continue as an intricate mosaic of forested, shrub, and marsh wetland systems that include lake swamp, mixed hardwoods, and pine/oak associations. Culverts and other structures will continue to provide some hydrologic connection between the floodplain wetlands, the river, and the lake; and will provide underpasses that are used by wildlife.

In addition, the HOV lane bridge over the St. Johns River and the GUL/HOV bridge over Padgett Creek will be extended to provide wildlife crossings.

4.4 Physical Environment

4.4.1 Visual Quality and Aesthetic Quality

FDOT recognizes the importance of addressing aesthetic design issues as an integral component of multi-modal transportation projects. These issues are addressed from two vantage points: the motorists traveling the facility and those land uses or "neighbors" looking to the roadway from outside the system. The existing highway currently impacts the visual quality of the many land uses and neighborhoods that are situated within view of I-4. Interstate reconstruction will invariably result in additional visual impacts to properties within the study area.

4.4.1.1 Impacts to Visually Sensitive Resources

The following discussion describes the potential visual impacts to areas located along the Ultimate project and *Preferred Alternative* corridor. These visual impacts are also summarized in Table 4-23, which presents the existing natural landscape feature, the existing urban landscape feature, the potential visual impact, and indicates the magnitude of the potential impacts to these areas/resources. Impacts are rated as "Low," "Moderate," or "High." Low indicates that the visual change will be minor. Moderate is used when the project will result in noticeable changes to the visual landscape. High indicates there will be major changes in the existing visual character or view shed.

Table 4-23. Summary of Impacts to Visually Sensitive Resources

Resource/ Area	Natural Landscape Feature	Urban Landscape Feature	Summary of Visual Impact	Level of Impact
Segment 1				
SR 528 (Bee Line Expressway)	Tourist Corridor - landscaped medians, palm trees, and vegetative cover between buildings.	Traffic signals, utility poles, and billboards, I-4	Introduction of a higher fully directional three-level interchange, replacement of vegetated sloped embankments with retaining walls, and location of roadway closer to right-of-way fence.	High - in direct vicinity of the I-4/SR 528 interchange. Low - in other areas of Segment 1
Kirkman Road	<i>Tourist Corridor - landscaped medians, palm trees, and vegetative cover between buildings.</i>	<i>Traffic signals, utility poles, and billboards, I-4</i>	<i>Introduction of a higher partial access four-level interchange, replacement of vegetated sloped embankments with retaining walls, and location of roadway will be closer to right-of-way fence.</i>	<i>High - in direct vicinity of the I-4/Kirkman Road interchange. Low - in other areas of Segment 1</i>
Segments 2 and 3				
Orange Blossom Trail to Lee Road	<i>Extensive commercial and residential development, including Orlando CBD. I-4 corridor - grassy median and shoulders. Downtown - grass cover, street trees, and shrubbery.</i>	<i>Railroad tracks and crossings, utility poles, traffic signals, parking lots, and street lights.</i>	<i>Roadway at a higher elevation than existing, sloped embankments replaced with retaining walls, roadway will be closer to right-of-way fence, and introduction of a higher interchange at SR 408. (Specific impacts to the SR 408 area are provided below.)</i>	<i>High - in area adjacent to roadway elevation increase. Otherwise moderate impacts.</i>
SR 408 (East/West Expressway)	<i>Extensive commercial and residential development, including downtown Orlando. Historic districts and resources. I-4 and SR 408 corridor - grassy shoulders. Downtown - grass cover, street trees and shrubbery.</i>	<i>Railroad tracks and crossings, utility poles, traffic signals, parking lots, and street lights.</i>	<i>Introduction of a four-level interchange, sloped embankments replaced with retaining walls, and location of roadway closer to right-of-way fence.</i>	<i>High - in vicinity of I-4/SR 408 interchange.</i>
Lake Ivanhoe/Concord	<i>Extensive commercial and residential development, including downtown Orlando. College Park Historic District. I-4 corridor - grassy shoulders. Downtown - grass cover, street trees and shrubbery.</i>	<i>Traffic signals, parking lots, and street lights.</i>	<i>Additional bridges over Lake Ivanhoe and Lake Concord, interstate profile is higher, roadway closer to right-of-way, and sloped embankments replaced with retaining walls.</i>	<i>Moderate</i>

Table 4-23. Summary of Impacts to Visually Sensitive Resources (Continued)

Resource/ Area	Natural Landscape Feature	Urban Landscape Feature	Summary of Visual Impact	Level of Impact
Segment 4				
<i>Eatonville</i>	<i>Suburban commercial and residential development. Residential areas – street trees, ground covers, and lakes. Eatonville Historic District.</i>	<i>Traffic signals, parking lots, and street lights.</i>	<i>No median in roadway, roadway closer to right-of-way, and sloped embankments replaced with retaining walls.</i>	<i>Low</i>
<i>Maitland Boulevard</i>	<i>Suburban commercial and residential development. Residential areas - street trees, ground covers, and lakes.</i>	<i>Traffic signals, parking lots, and street lights.</i>	<i>Higher interchange elevation, no median in roadway, roadway closer to right-of-way, and sloped embankments replaced with retaining walls.</i>	<i>Moderate</i>
SR 436	Suburban commercial and some residential development. I-4 corridor - grassy median and shoulders. Cranes Roost Lake.	Traffic signals, parking lots, and street lights.	Introduction of a bridge over Cranes Roost Lake, no median in roadway, roadway closer to right-of-way, and sloped embankments replaced with retaining walls.	Low
SR 434	Suburban commercial and residential development. Residential areas - street trees, ground covers, and lakes.	Traffic signals, parking lots, and street lights.	Alternative 2 introduces loop ramp in northwest quadrant of roadway, roadway closer to right-of-way, and sloped embankments replaced with retaining walls.	Low
Segment 5				
West of Lake Mary Boulevard to US 17-92	Open land and residential developments. Open lands - forested lands, lakes, and wetlands. Residential areas - street trees, grass, and ponds.	Railroad tracks and crossings, utility poles, traffic signals, parking lots, and street lights.	Slightly higher roadway profiles, roadway closer to right-of-way and sloped embankments replaced with retaining walls. Introduction of a loop ramp in northwest quadrant of SR 46 interchange.	Low
Segment 6				
St. Johns River Bridge	Open land. Open lands – forested lands, lakes, and wetlands.	Railroad tracks and crossings, utility poles, traffic signals, parking lots, and street lights.	Introduction of loop ramp in northeast quadrant of US 17-92 interchange, roadway closer to right-of-way, and sloped embankments replaced with retaining walls.	Low
Dirksen Drive/DeBary Avenue to SR 472	Open land and residential developments. Open lands - forested lands, lakes, and wetlands. Residential areas - street trees, grass, and ponds.	Railroad tracks and crossings, utility poles, traffic signals, parking lots, and street lights.	Slightly higher roadway profiles, roadway closer to right-of-way, and sloped embankments replaced with retaining walls.	Low

All impacts associated with the Preferred Alternative are shown in ***Bold Italics***.

The visual impacts were assessed assuming no noise barrier walls are constructed. As indicated in Section 4.4.3.4, noise walls are being proposed at several locations along the project corridor. The addition of noise walls will increase the visual impact component along the project corridor. The proposed height of the noise walls will range from 12 to 24 feet depending on the location. The *Noise Study Report* (April 2001) shows the locations and proposed heights of the noise walls.

Segment 1 (SR 528 to Kirkman Road)

Visual impacts to neighborhoods and commercial centers within this portion of Segment 1 will primarily occur at the I-4/SR 528 (Bee Line Expressway) interchange. At this location, the interchange will be at a higher elevation than the existing interchange.

In addition, the vegetated sloped embankments will be replaced with retaining walls, and the roadway will be closer to the right-of-way throughout this portion Segment 1.

Segment 1 (Kirkman Road to John Young Parkway)

Visual impacts to neighborhoods and commercial centers within this portion of Segment 1 will primarily occur at the I-4/Kirkman Road interchange. At this location, the interchange will be at a higher elevation than the existing interchange.

In addition, the vegetated sloped embankments will be replaced with retaining walls, and the roadway will be closer to the right-of-way throughout this portion of Segment 1.

Segments 2 and 3

Segments 2 and 3 will experience the greatest visual impacts of all the segments along the Ultimate and Project Alternative corridor. Neighborhoods, historic resources, and commercial centers located adjacent to the I-4 corridor can expect an increase in the elevation of I-4 from Orange Blossom Trail to Lee Road, the replacement of vegetated sloped embankments with retaining walls, and the roadway closer to the right-of-way. It should be noted that Segments 2 and 3, specifically through College Park, have the narrowest right-of-way of the entire 43-mile project corridor. Figures 4-8 through 4-14 present a before and after perspective of I-4 from different view points in Segments 2 and 3. In addition, Figures 4-9, 4-13, and 4-14 present a visual perspective of the proposed I-4 mainline with noise walls.

The proposed improvements will introduce a new four-level interchange. This interchange will have a visual impact on the historic resources in the area located within the vicinity of the I-4/SR 408 (East/West Expressway) interchange and along the SR 408 (East/West Expressway) mainline. Refer to Section 4.2.1.2 for information on the historic resources located within these areas of the Preferred Alternative corridor. In addition, the interchange will have an impact on the neighborhoods located adjacent to the I-4 and SR 408 (East/West Expressway) mainline. The neighborhoods that may be affected include Holden Heights, South Division, Griffin Park, Holden-Parramore, Cherokee/Lake Lucerne, Lake Dot, and Lake Davis/Greenwood.

The introduction of this interchange at SR 408 (East/West Expressway) will have an impact on the City of Orlando's gateways located at Orange Blossom Trail (US 441) and Par Street. In addition, the proposed interchange will impact the view of the Orlando skyline from the Princeton Street overpass and along SR 408 (East/West Expressway) at Summerlin Avenue.

Additional visual impacts in the Lake Ivanhoe/Lake Concord area are new bridges over the lakes. These bridges may impact the view from the College Park Historic District, Gaston Foster Park, and Beth Johnson Park.

Segment 4 (Lee Road to Maitland Boulevard)

Potential visual impacts in the portion of Segment 4 from Lee Road to Maitland Boulevard are expected to be low to moderate. As shown in Table 4-23, the areas adjacent to I-4 can expect to see the existing sloped embankments replaced with retaining walls, and a roadway closer to the right-of-way fence. Figure 4-15 is a visual representation of the existing and proposed I-4 mainline from the perspective of someone looking at the roadway from within the Eatonville Historic District (Eaton Street).

The other notable visual impact along this portion of Segment 4 includes a higher elevation interchange at Maitland Boulevard.

Segment 4 (Maitland Boulevard to West of Lake Mary Boulevard)

Potential visual impacts in the portion of Segment 4 from Maitland Boulevard to west of Lake Mary Boulevard are expected to be low. There will be a new bridge over Cranes Roost Lake and the SR 434 - Alternative 2 introduces a new loop ramp in the northwest quadrant of the interchange. In addition, the areas adjacent to I-4 can expect to see the existing sloped embankments replaced with retaining walls, and a roadway closer to the right-of-way fence.

Segment 5

Potential visual impacts in Segment 5 are expected to be low. Throughout the segment, the existing sloped embankments will be replaced with retaining walls, the elevation of the roadway will be slightly higher than existing, and the roadway will be closer to the right-of-way fence. In addition, a loop ramp will be introduced in the northwest quadrant of the SR 46 interchange.

Segment 6

Potential visual impacts in Segment 6 are expected to be low. Throughout the segment, the existing sloped embankments will be replaced with retaining walls, the elevation of the roadway will be slightly higher than existing, and the roadway will be closer to the right-of-way fence. In addition, a loop ramp will be introduced in the northeast quadrant of the US 17-92 interchange.

4.4.1.2 Mitigation Options

Options to mitigate the visual impacts of the Preferred Alternative are assessed in the Urban Design Guidelines (February 2000) developed for the Ultimate project. The following is a list of mitigation options that may be used to reduce the visual impacts:

- *Ensuring that bridge structures are architecturally compatible with the design and with all other design elements*
- *Reducing perceived height of retaining walls using terracing, landscaping, texture, color, or lighting*
- *Softening impact of noise barriers by providing landscaping where possible*
- *Providing landscaping where possible*
- *Including aquatic plantings and fountains for stormwater treatment ponds*
- *Ensuring that placement of lighting reflects a relationship with other structural elements*
- *Painting the right-of-way fence dark green or black to blend into the surrounding communities*
- *Incorporating public art into appropriate areas*
- *Placing utilities underground, where feasible*
- *Ensuring that color and finish of sign columns compliment surrounding vertical structure elements*
- *Ensuring close coordination with the public for input*

4.4.2 Air Quality

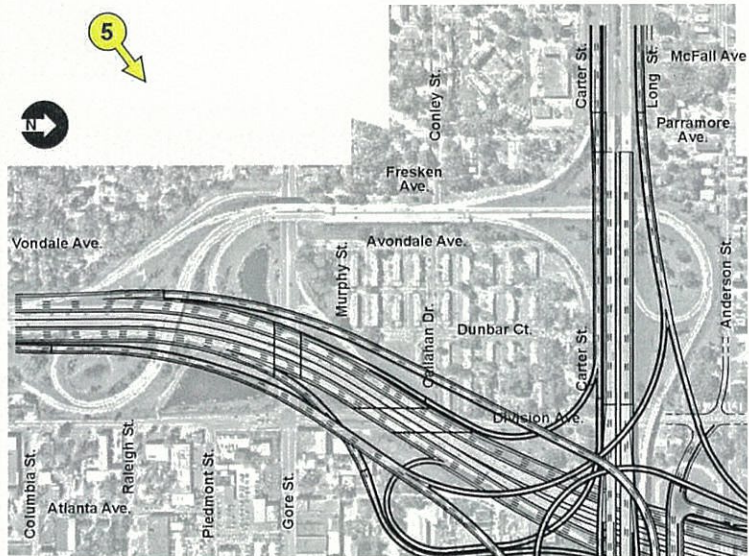
Section 3.4.2 described existing air quality conditions in the Ultimate and *Preferred Alternative* study areas. This section gives details about the air quality analysis methodology and results.

4.4.2.1 Pollutants for Analysis

The purpose of the air quality analysis is to discern the impact of the proposed improvements on future air quality conditions in the vicinity of the Ultimate project and *Preferred Alternative*. Specifically, the analysis investigates the generation and dispersion of CO, the primary pollutant emitted from motor vehicles. The results of the analysis are used to indicate whether motor vehicle emissions associated with the proposed improvements would contribute to violations of the NAAQS for CO. FDOT has issued guidelines for determining which of the criteria air pollutants need to be analyzed to evaluate the air quality impact of a roadway improvement project. According to FDOT *PD&E Manual*, CO levels must be considered for every project. Conversely, modeling of hydrocarbon (i.e., VOC) emissions was not warranted for the project because of the attainment status of the Ultimate project and *Preferred Alternative* study areas.

4.4.2.2 Carbon Monoxide Analysis Screening

In accordance with FDOT guidelines, the planned I-4 improvements were subjected to a graphical screening test that makes several conservative worst-case assumptions about the meteorology, traffic, and site conditions. The screening test uses these assumptions in the MOBILE Series Model and CALINE3 models to produce a series of curves that can be used to determine critical distance for receptors. The critical distance is the closest a receptor can be to a given intersection or link



4-131

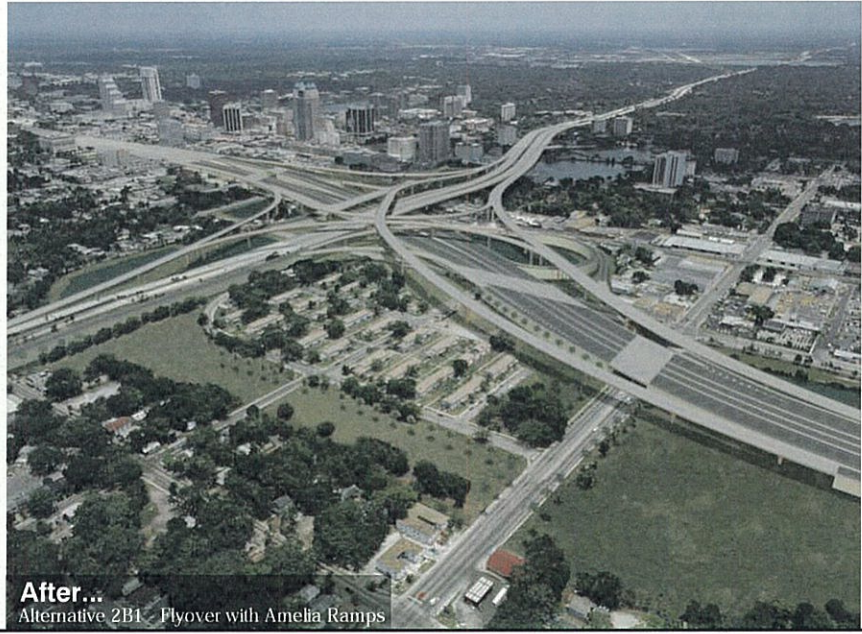
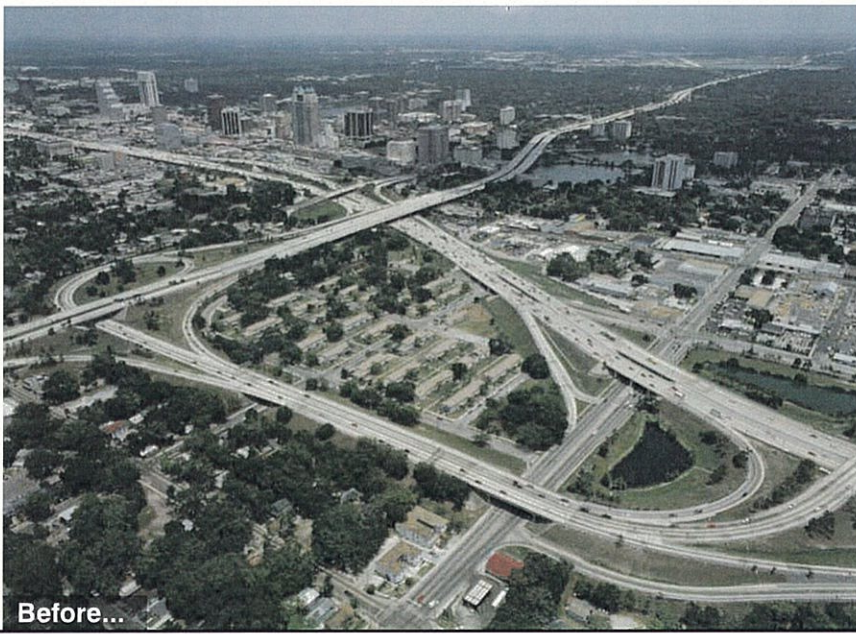
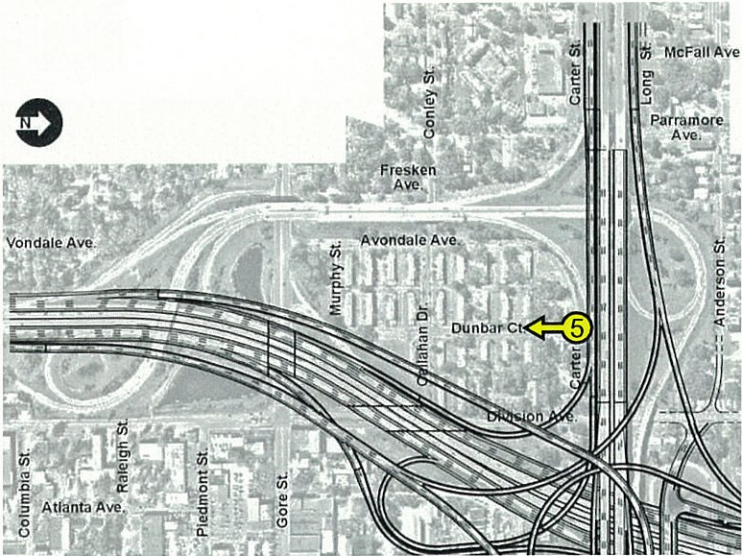


Figure 4-8
I-4/SR 408 (East/West Expressway) Interchange
Preferred Alternative
I-4 PD&E Study - Section 2



Before...

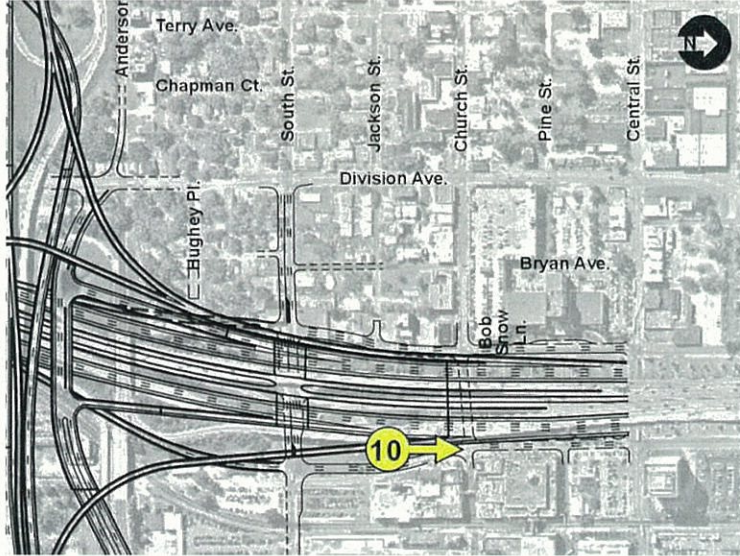


After...
Without Noise Wall



After...
With Noise Wall

4-132

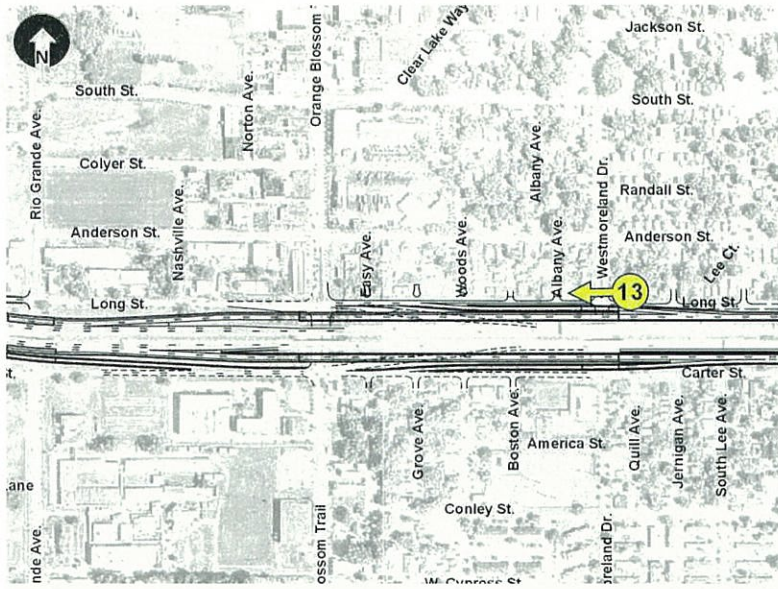


4-133



Before...

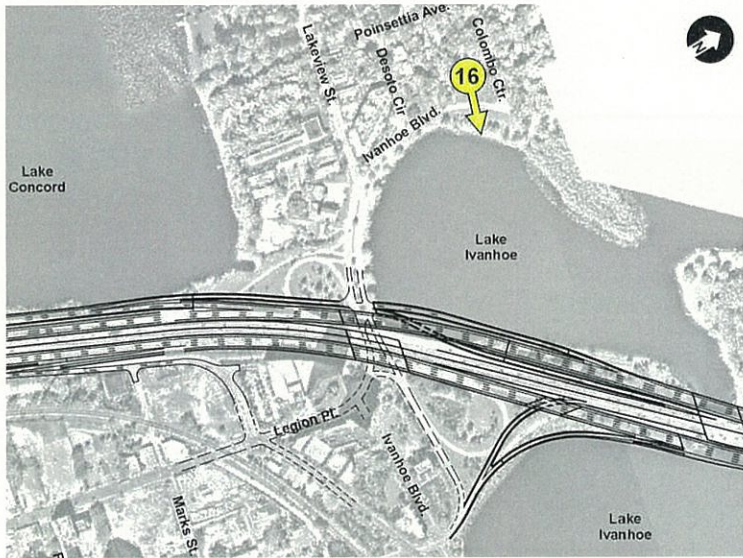
After...



4-134



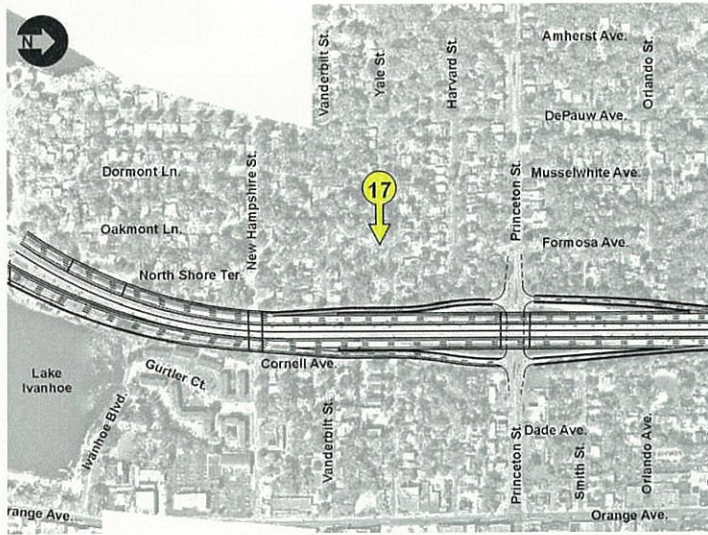
Figure 4-11
Long Street
 Preferred Alternative
 I-4 PD&E Study - Section 2



4-135



Figure 4-12
Lake Ivanhoe
Preferred Alternative
I-4 PD&E Study - Section 2



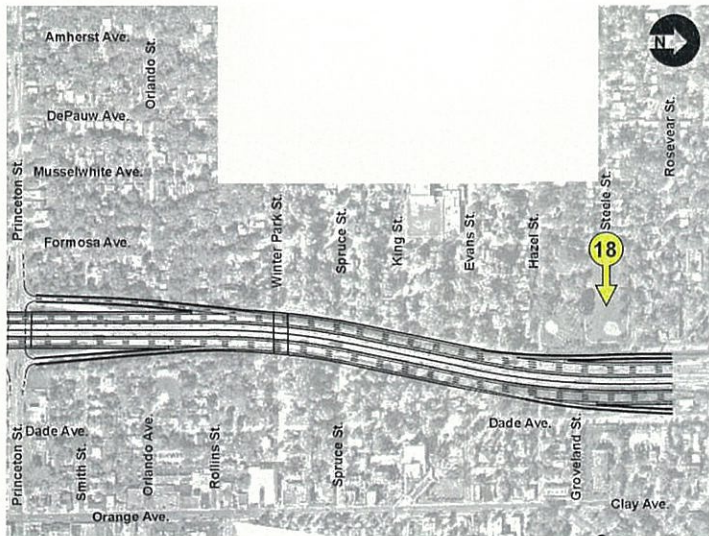
Before...



After...
Without Noise Wall



After...
With Noise Wall



4-137



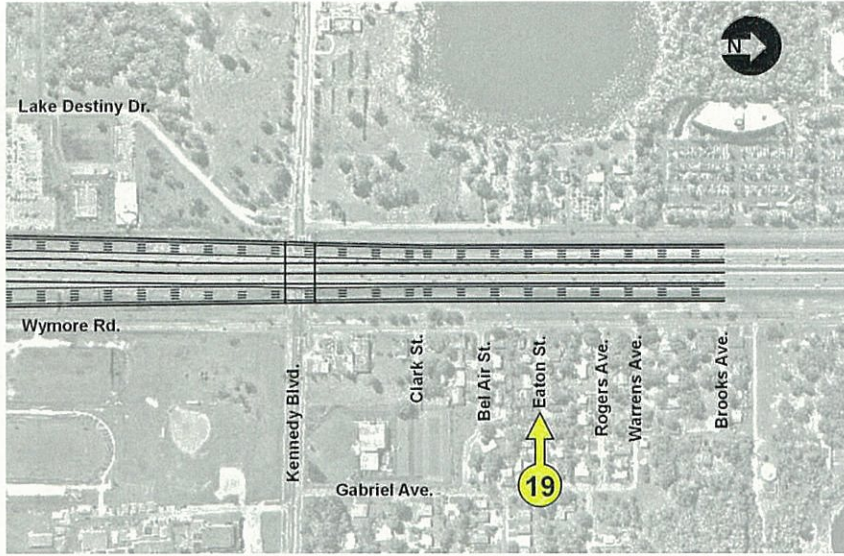


Figure 4-15
Eaton Street
Preferred Alternative
I-4 PD&E Study - Section 2

without a significant air quality impact. The premise of this approach is that CO concentrations elsewhere along the project corridor will be lower than these worst-case screening locations. Traffic data and aerial photography showing the concept design were reviewed to identify areas having a combination of heavy traffic volumes, low vehicular speeds, and neighboring reasonable receptor sites. Receptor sites are areas where the public has routine access and may spend one to several hours. The links along I-4 that were selected for analysis—College Park, John Young Parkway, and SR 408 (East/West Expressway)—have traffic volumes greater than 10,000 vehicles per hour (vph) and thereby automatically fail the screening test.

As stated in the *PD&E Manual*, the computer models used in the microscale analysis were the latest FHWA-approved MOBILE Series Model and CAL3QHC CO dispersion model. Traffic input parameters, provided by Orange County, included peak hour volumes, vehicular speeds, and vehicle. Meteorological inputs included wind speed, wind direction, and atmospheric stability. Orange County has two CO monitors, and the average background concentration of CO obtained from the local air quality authority is 0.75 parts per million (ppm). The locations of the monitors in the counties encompassing the study are described in Table 3-57 (Section 3.4.2 Air Quality). Additional details of model inputs can be found in Table 4-24.

Table 4-24. Summary of Microscale Analysis Modeling Parameters

Model	Parameter	Value
MOBILE5.0 ^a	Region	Low altitude
	Operating Mode	20.6% cold / 27.3% hot
	Ambient Temperature	49 °F
	Vehicle Mix	Default
	Analysis Years	2000 and 2020 ^a
	Inspection / Maintenance	No
	Anti-tampering Program	No
	Reformulated Gas	No
	Vehicle Types	All except LDGT
	CAL3QHC	Stability class
Wind speed		1 meter/second
Wind Direction – Coarse		0o - 350o at 10o intervals
Wind Direction – Refined		20o angle around max receptor and coarse wind angle at 1o intervals
Mixing Height		1,000 meters
Traffic Persistence Factor		0.75
Meteorological Persistence Factor		0.6
Surface Roughness		175 cm
Settling Velocity		0.0
Deposition Velocity		0.0

All impacts associated with the Preferred Alternative are shown in ***Bold Italics***.

^a 2000 emission factors were used for 2010. This is a conservative measure, for emission factors will be lower in 2010 than in 2000.

The modeling was concentrated at the sections of the Ultimate project with the greatest projected air pollution (i.e., College Park, John Young Parkway, and SR 408). It should be noted that the sections selected for modeling are located within the *Preferred Alternative*. The receptors selected for each of these sections are detailed in Table 4-25. The computer modeling of worst-case traffic and meteorological data were conducted for the peak one-hour period. To account for the long-term variation in traffic and meteorological data over time, persistence factors were used to convert the one-hour modeled conditions to comparable worst-case, eight-hour conditions. In this way, results can be compared to the NAAQS, which are based on one-hour and eight-hour averaging times for CO. For this analysis, traffic and meteorological persistence factors of 0.75 and 0.60, respectively, were used. The eight-hour concentrations were derived from the one-hour values with the following equation:

$$[\text{CO}]_{8\text{hr}} = \{([\text{CO}]_{1\text{hr}} - [\text{CO}]_{\text{background}}) \times \text{MPF} \times \text{TPF}\} + [\text{CO}]_{\text{background}}$$

$[\text{CO}]_{8\text{hr}}$ is the average concentration of CO over an eight-hour period.

$[\text{CO}]_{1\text{hr}}$ is the average concentration of CO over a one-hour period, using the calculated worst-case conditions.

$[\text{CO}]_{\text{background}}$ is the ambient concentration of CO in the study area, obtained from the Orange County Environmental Protection Department (0.75 ppm)

MPF is the meteorological persistence factor (0.6)

TPF is the traffic persistence factor (0.75)

Table 4-25. Sensitive Receptor Descriptions

Interchange	Receptor ^{a, b}	Description	
John Young Parkway	R1	Business	
	R2	Business	
	R4	Business	
	R5	Business	
	R7	Residential	
	R8	Residential	
	R9	Business	
	R11	Business	
	R12	Business	
	SR 408 (East/West Expressway)	R1	Residential
		R3	Residential
		R2	Residential
R4		Residential (Playground)	
R5		Residential	
R6		Residential	
R7		Residential	
R10		Business	
College Park	R11	Business	
	R1 - R 12	Residential	

All impacts associated with the Preferred Alternative are shown in *Bold Italics*.

^a Any receptor that is not listed was selected for general coverage and for its proximity to the I-4 study area.

^b All receptors are located within the Preferred Alternative corridor.

The results are shown in the Table 4-26. For brevity, only the receptor with the highest concentration of CO is included. The worst case is shown for both the Build and No Action conditions for each roadway section. It should be noted that Table 4-26 predicts worst-case carbon monoxide levels for the I-4 segments near College Park, John Young Parkway, and SR 408 (East/West Expressway) for 2010 and 2020. For the full output of the modeling, please see the *Air Quality Report* (April 2000). The data are compared to the NAAQS for CO.

As shown in Table 4-26, CO concentrations will be within standards for both the Build and No Action conditions in 2010 and 2020. Therefore, the Ultimate project and *Preferred Alternative* will not have a significant impact on air quality.

Construction activities will cause minor short-term air quality impacts in the form of dust from earthwork and unpaved roads and smoke from open burning. These impacts will be minimized by adherence to all State and local regulations and to the FDOT Standard Specifications for Road and Bridge Construction.

The Ultimate project and *Preferred Alternative* are in an area where the State Implementation Plan does not contain any transportation control measures. Therefore, the conformity procedures of 23 CFR 770 do not apply to the Ultimate project and *Preferred Alternative*.

All state and local agencies were provided with an opportunity to comment on this project. There were no adverse comments regarding air quality.

The Ultimate project and *Preferred Alternative* are in an area that has been designated as attainment for the ozone standards under the criteria provided in the CAAA. The Ultimate project and *Preferred Alternative* are in conformance with the State Implementation Plan because they will not cause violations of the NAAQS.

Table 4-26. Predicted Worst-Case Carbon Monoxide Levels for the I-4 Segments near College Park, John Young Parkway, and SR 408 for 2010 and 2020

I-4 Section	Year	Alternative	Receptor ^a	Total Impact ^b (CO Concentration in ppm)		NAAQS Violation ^c
				1-hour	8-hour	
College Park	2010	<i>Build</i>	8	12.9	6.2	No
		No Action	8	11.6	5.6	No
	2020	<i>Build</i>	8	9.9	4.8	No
		No Action	8	9.4	4.6	No
SR 408 (East/West Expressway)	2010	<i>Build</i>	4	7.7	3.9	No
		No Action	9	6.7	3.4	No
	2020	<i>Build</i>	4	7.0	3.5	No
		No Action	4	5.0	2.6	No
John Young Parkway	2010	<i>Build</i>	8	7.6	3.8	No
		No Action	13	8.0	4.0	No
	2020	<i>Build</i>	13	6.3	3.2	No
		No Action	13	5.2	2.7	No

All impacts associated with the Preferred Alternative are shown in *Bold Italics*.

^a College Park was modeled with 12 receptors, E/W with 13, and John Young with 12. Receptor 8 at College Park is different from Receptor 8 at John Young Parkway.

^b Includes background concentration of 0.75 parts per million (ppm) provided from local data in the EPA AIRS database.

^c The NAAQS for CO are as follows: 35 ppm for 1 hour and 9 ppm for 8 hours.

4.4.2.3 Mitigation

Based on the microscale dispersion analysis, the Ultimate project and *Preferred Alternative* will not cause CO concentrations above the one- and eight-hour NAAQS for CO. In comparison with the No Action condition, the results show that CO concentrations with the proposed improvements may increase slightly where new interchanges are proposed. Because the total impact of the Ultimate project and *Preferred Alternative* is small and will not cause violations of the NAAQS, no mitigation measures are warranted.

4.4.3 Noise

4.4.3.1 Characteristics of Highway Noise

The traffic noise level at a site depends on both site geometry and traffic characteristics (volume, vehicle type, and speed) of roadways near the site. For a straight, at-grade roadway with a steady stream of vehicles, the average noise level (L_{eq}) would decrease when the distance from the roadway to the receptor location increases. The rate at which the noise level drops off with distance can vary with the hardness or softness of the surface between the roadway and the receptor site. Where the area between the roadway and the receptor site is primarily grass or other sound absorptive material, the noise level will normally drop off at a rate of 4.5 dBA per doubling of the distance. This becomes more complicated, however, where the roadway is curved, the terrain is uneven, or if there are nearby structures that act as sound barriers or reflectors.

A doubling in traffic volume over a given period of time produces a doubling in the sound energy. A doubling in sound energy corresponds to a 3 dBA increase in noise level, a barely perceptible change. At locations where traffic volumes and noise levels are already high, a large change in traffic volume would be required to cause a perceptible change in the noise level.

Noise emission levels from trucks are greater than those from automobiles, approximately two times (12 dBA) greater for medium trucks and approximately 4 times (18 dBA) greater for heavy trucks. Consequently, at a given traffic speed, noise levels are more sensitive to changes in truck volumes than they are to changes in overall traffic flow. When the traffic volumes are high, a doubling of heavy truck volumes would result in an increase in noise level equivalent to an increase in overall traffic volume by a factor of 1.6 to 1.7, which is equivalent to an increase of approximately 2 dBA. If the traffic volumes are high and truck percentages are also high, a doubling of the truck volumes would result in a less than 3 dBA increase in the noise level.

On a roadway carrying a given volume of automobile traffic, the noise level will increase by approximately 5 to 6 dBA as the speed increases from 30 to 45 mph. Traffic noise levels will increase by another 3 dBA as the speed increases to 55 mph.

4.4.3.2 Noise Assessment Methodology

The basic goals of noise criteria for highway projects are to minimize the adverse noise impacts on the community and to provide feasible and reasonable noise control where necessary and appropriate.

FHWA Highway Traffic Noise Abatement Criteria

The traffic noise abatement criteria, against which the project traffic noise levels are evaluated, are extracted from 23 CFR 772, *Procedures for Abatement of Highway Traffic Noise and Construction Noise*, FHWA, Washington D.C. The criterion applicable for residences, churches, schools, recreational uses, and similar areas (refer to Table 4-27) is an exterior hourly equivalent sound level (L_{eq}) from the project that approaches or exceeds 67 dBA. The criterion applicable for other developed lands, such as commercial and industrial uses, is an exterior L_{eq} that approaches or exceeds 72 dBA. No criterion exists for underdeveloped lands or construction noise.

Table 4-27. FHWA Highway Noise Abatement Criteria

Activity Category	Hourly A-Weighted Sound Level (dBA) L_{eq} (h)	Description of Activity Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (Exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	---	Undeveloped lands.
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

All impacts associated with the Preferred Alternative are shown in ***Bold Italics***.

FDOT considers the *approach criteria* to mean noise levels within 2 dBA of the appropriate FHWA Criteria. For this analysis, locations predicted to experience a noise level of 65 dBA were considered to be impacted.

Existing and future-year noise levels were predicted for the noise sensitive areas using the FDOT-approved PC version of the STAMINA 2.1 noise prediction model.

Note that a substantial noise increase occurs when the existing noise level is predicted to be exceeded by 15 dBA or more as a result of the transportation improvement project. When this occurs, the requirement for abatement consideration will be followed.

Hourly traffic volumes and truck factors were based on the traffic analysis performed for this project. To simulate worst-case conditions, LOS C conditions or demand traffic volumes, whichever is less, are usually modeled. The traffic analysis indicated that the majority of the modeled roadways would function at LOS D or worse for the existing, no-build, and build conditions. Traffic volume assignments are provided in the *I-4 PD&E Study – Section 2 Noise Study Report* (April 2001). A ten percent truck factor was used for the I-4 mainline and ramps west of John Young Parkway and east

of US 17-92. A five percent truck factor was used for the I-4 mainline and ramps from east of John Young Parkway to US 17-92, and a five percent truck factor was also applied to all arterial roads. Trucks volumes were evenly split between medium and heavy trucks for all roadway segments.

Speeds simulated in the model were based on existing speed limits. A speed of 55 mph was assigned to I-4 and the interchange on-ramps. Off-ramps were assigned a speed of 35 mph, and arterial roads were assigned a speed of 40 mph.

Aerial photography base maps showing the Ultimate project and *Preferred Alternative* were used to establish horizontal coordinates of the roadways and receptors. The vertical alignment was also simulated for existing and build conditions.

4.4.3.3 Noise Impact Assessment

A noise study was conducted in accordance with the *PD&E Manual*, Part 2, Chapter 17 to assess the potential noise impacts associated with the project alternatives. A total of 10,732 sites were modeled as part of the noise study. Table 4-28 presents the predicted noise levels at each of the noise sensitive areas (NSA) with the project limits. The *Noise Study Report* (April 2001) presents the predicted noise levels and impacts at each modeled receptor location.

Table 4-28. Noise Sensitive Areas

Noise Sensitive Area	Location	Activity Category	Approximate No. Sites		No-Build/ Existing L_{eq}		Build L_{eq}	
			Total	Impacted	min	max	min	max
Segment 1								
1-A	East of I-4 and south of the Bee Line Expressway	B	102	57	58.8	70.3	60.9	73.4
1-B	West of the I-4 and Bee Line Expressway interchange	B	371	130	58.4	67.9	59.9	69.6
1-C	West of International Drive and north of the Bee Line Expressway	C	--	--	62.2	66.8	61.8	66.7
1-D	West of International Drive and south of the Bee Line Expressway	C	--	--	63.2	69.0	65.2	71.8
1-E	West of I-4 and Turkey Lake Road	B	134	34	60.2	68.4	63.5	70.1
1-F	East of I-4 and west of International Drive	E	1,285	3	61.8	71.7	64.7	73.2
1-G	East of I-4, northwest of International Drive and north of Sand Lake Road (SR 482)	E	1,702	3	64.3	72.8	66.8	74.3
1-H	Northwest of I-4 and east of Kirkman Road (SR 435)	E	552	--	60.4	70.1	63.1	73.7
1-I	Northwest of I-4, west of Orlando Vineland Road and east of Florida's Turnpike (SR 91)	B	140	64	63.3	71.5	61.8	71.6
1-J	Northwest of I-4, west of Orlando Vineland Road and west of Conroy Road	B	286	118	60.3	70.0	60.8	70.2
Segment 2								
2-A	South of I-4 and west of Orange Blossom Trail (US 441)	B	127	114	59.1	70.6	58.6	71.6
2-B	North of I-4 and west of Orange Blossom Trail (US 441).	B	97	49	58.1	72.3	57.8	72.6
2-C	West of I-4 between Orange Blossom Trail (US 441) and Kaley Street.	B	91	45	57.7	74.0	58.6	71.9
2-D	East of I-4 between Orange Blossom Trail (US 441) and Michigan Street	B	66	33	60.5	72.0	59.9	70.3
2-E	In the center of I-4/SR 408 interchange	B	173	137	63.9	76.6	64.5	75.3
2-F	West of I-4, south of SR 408, and north of Kaley Street	B	122	56	61.4	75.7	58.9	76.9
2-G	West of I-4 and south of SR 408	B	289	148	61.1	72.9	61.1	75.5
2-H	West of I-4 and north of SR 408	B	157	82	58.8	73.9	59.8	75.4
2-I	South of SR 408	B	181	60	58.0	72.9	57.0	75.5
2-J	North of SR 408	B	234	69	58.6	71.2	56.8	72.2
2-K	West of I-4, north of SR 408, and south of Livingston Street	B	89	61	62.1	77.7	59.2	74.6

Table 4-28. Noise Sensitive Areas (Continued)

Noise Sensitive Area	Location	Activity Category	Approximate No. Sites		No-Build/ Existing L_{eq}		Build L_{eq}	
			Total	Impacted	min	max	min	max
Segment 3								
3-A	<i>West of I-4, across Lake Concord from SR 50 (Colonial Drive) to Lake Ivanhoe</i>	<i>B</i>	<i>319</i>	<i>2</i>	<i>55.8</i>	<i>72.5</i>	<i>53.2</i>	<i>71.1</i>
3-B	<i>West of I-4 from Lake Ivanhoe north to Princeton Street (SR 438)</i>	<i>B</i>	<i>122</i>	<i>59</i>	<i>56.9</i>	<i>75.0</i>	<i>58.8</i>	<i>79.9</i>
3-C	<i>West of I-4 from Princeton Street to Par Street</i>	<i>B</i>	<i>156</i>	<i>80</i>	<i>57.3</i>	<i>73.7</i>	<i>58.7</i>	<i>75.5</i>
3-D	<i>East of I-4 and east of Orange Avenue (SR 527) between Lake Ivanhoe south and Groveland Street</i>	<i>B</i>	<i>225</i>	<i>101</i>	<i>59.5</i>	<i>73.5</i>	<i>61.5</i>	<i>76.3</i>
3-E	<i>West of I-4 between Par Street and Fairbanks Avenue</i>	<i>B</i>	<i>149</i>	<i>65</i>	<i>55.5</i>	<i>70.9</i>	<i>57.8</i>	<i>76.7</i>
3-F	<i>East of I-4 between Groveland Street and Fairbanks Avenue</i>	<i>B</i>	<i>138</i>	<i>64</i>	<i>57.0</i>	<i>73.7</i>	<i>58.5</i>	<i>72.1</i>
3-G	<i>West of I-4 between Fairbanks Avenue and Lee Road (SR 423)</i>	<i>B</i>	<i>277</i>	<i>31</i>	<i>57.8</i>	<i>74.1</i>	<i>59.0</i>	<i>73.4</i>
3-H	<i>East of I-4 between Fairbanks Avenue and Lee Road (SR 423)</i>	<i>B</i>	<i>132</i>	<i>27</i>	<i>56.7</i>	<i>71.7</i>	<i>58.2</i>	<i>71.3</i>
Segment 4								
4-A	<i>West of I-4 and north of Lee Road (SR 423) single-family home</i>	<i>B</i>	<i>19</i>	<i>5</i>	<i>58.3</i>	<i>70.2</i>	<i>59.5</i>	<i>71.1</i>
4-B	<i>East of I-4 and north of Wymore Road</i>	<i>B</i>	<i>68</i>	<i>24</i>	<i>58.5</i>	<i>73.6</i>	<i>59.1</i>	<i>74.8</i>
4-C	West of I-4, north of Lake Destiny and south of SR 436	B	907	706	62.2	72.0	62.1	75.8
4-D	East of I-4, north of Maitland Boulevard, and south of Crane's Roost Lake	B	165	85	57.1	71.7	58.4	73.4
4-E	West of I-4 between SR 436 and Central Parkway	B	140	--	65.9	71.3	63.6	74.2
4-F	West of I-4 between Central Parkway and SR 434	B	134	41	60.3	73.9	61.9	72.4
4-G	East of I-4 between Central Parkway and SR 434	B	97	48	59.3	72.4	60.4	77.3
4-H	West of I-4 between SR 434 and E.E. Williamson Road	B	121	90	57.7	72.9	59.4	73.1
4-I	East of I-4 and north of SR 434	B	274	207	61.0	74.7	61.8	75.7
4-J	East of I-4 and south of E.E. Williamson Road	B	49	30	58.6	73.9	58.9	74.8
4-K	West of I-4 and north of E.E. Williamson Road	B	50	16	58.4	72.6	58.8	73.8
4-L	East of I-4, north of E.E. Williamson Road, and surrounds Grace Lake	B	66	13	58.8	73.1	58.2	74.5
4-M	West of I-4 and south of Long Pond Road	B	86	40	57.9	70.4	58.0	70.3
Segment 5								
5-A	West of I-4, north of Lake Mary Boulevard, and east of International Parkway	B	25	1	64.5	68.0	66.0	69.2
5-B	West of I-4, south of Orange Boulevard, and southwest of Lake Monroe	B	39	8	54.0	67.7	54.4	69.6
5-C	West of I-4, south of Orange Boulevard, and southwest of Lake Monroe	B	13	9	60.5	73.1	62.6	71.7
Segment 6								
6-A	West of I-4, and north from Lake Monroe to Enterprise Road	B	67	31	57.7	70.8	57.8	74.3
6-B	East of I-4 and south of Enterprise Road	B	107	24	57.9	72.6	60.0	76.9
6-C	East of I-4 between Enterprise Road and Saxon Boulevard	B	183	113	57.0	71.8	59.7	77.6
6-D	West of I-4 between Enterprise Road and Saxon Boulevard	B	84	23	55.5	70.4	58.1	74.9
6-E	East of I-4 between Saxon Boulevard and Rhode Island Road	B	131	46	55.9	72.8	58.5	76.9
6-F	West of I-4 and south of Graves Avenue	B	191	92	58.7	72.7	58.9	74.7

All impacts associated with the Preferred Alternative are shown in *Bold Italics*.

Note: Land Use Categories

B - residential, recreational, churches, schools (exterior)

C - commercial (exterior)

E - hotels/motels (interior)

The predicted noise level at each noise sensitive site was compared to the impact criteria. A total of 3,344 noise sensitive sites are predicted to experience traffic noise impacts for the Ultimate project.

A total of 1,494 noise sensitive sites are predicted to experience traffic noise impacts for the Preferred Alternative.

Refer to Table 4-28 for the number of impacted sites within the NSA for the Ultimate project and the *Preferred Alternative*. Figure 3-22 presents the locations of the NSA for each of the project segments. All of the NSA have impacted sites within their boundaries with the exception of 1-C, 1-D, and 1-H.

The number of impacted sites within each NSA are shown in Table 4-28.

Noise impacts are also considered to occur when noise levels are predicted to increase substantially, yet not approach or exceed the FHWA criteria. Substantial increases primarily occur when (1) proposed roadway improvements are planned in the vicinity of noise sensitive areas where existing noise levels are relatively low, or (2) the proposed improvements change the noise propagation environment.

A comparison between predicted existing and proposed alternative noise levels indicate that the Ultimate project and *Preferred Alternative* may cause an increase of approximately 6 dBA or less. Approximately 3 dBA is considered the smallest difference that can be perceived by the average person; therefore, the Ultimate project and *Preferred Alternative* will not cause impacts due to substantial increases in noise levels.

4.4.3.4 Noise Abatement Measures

In accordance with 23 CFR, Part 772, noise abatement measures were evaluated for the noise sensitive sites predicted to approach or exceed FHWA criteria. Abatement measures considered include traffic management, modifications to roadway alignment, land use controls, and construction of permanent noise barriers within the limited access right-of-way along I-4.

Feasibility and reasonableness are considered when evaluating abatement measures. The feasibility of providing noise abatement primarily addresses engineering considerations (physical constraints, drainage and accessibility considerations, safety and maintenance requirements, and utility impacts). Reasonableness addresses the use of common sense and good judgement when considering noise abatement. Factors such as noise abatement benefits, ability to provide a substantial noise reduction, cost of abatement, aesthetic considerations, community desires, establishment of local controls to limit incompatible land uses, absolute noise levels, predicted change in noise levels, adjacent development, and environmental impacts of construction are all considered.

4.4.3.4.1 Mitigation Options

Traffic management measures that limit motor vehicle type, travel speeds, traffic volumes, and/or time of operation are sometimes used as noise abatement measures. A reduction in speed would reduce the interstate's capacity to accommodate anticipated traffic volumes. Therefore, speed reduction is not considered a feasible or reasonable abatement measure. I-4 is a major route by which goods are transported. Limiting truck volumes or their time of operation would be restrictive to the movement of materials and goods over a very large area of Florida. Therefore, traffic restrictions are not considered a reasonable noise abatement measure for this project.

Alignment modifications generally involve orienting and/or siting the roadway at sufficient distances from noise sensitive sites to minimize noise impacts. The proposed alignment primarily follows the existing alignment, making full use of the existing right-of-way. Shifting the alignment would reduce noise impacts on one side of the facility; however, this would result in increased environmental impacts, a greater number of relocations, and increased construction and right-of-way costs. Alignment modification is therefore not considered a feasible or reasonable noise abatement measure.

Proper land use controls can effectively minimize future noise impacts. To guide in the development of unimproved tracts or any redevelopment of property local governmental and planning agencies with land use controls can use the 65 dBA contour shown in the *Noise Study Report* (April 2001) as a guide to minimize the development of noise sensitive land uses in proximity to the roadway.

4.4.3.4.2 Summary of Noise Abatement Measures

Noise barriers reduce noise levels by blocking the sound path between a roadway and an NSA. To be effective, noise barriers must be long, continuous, and sufficiently high. When noise barriers are evaluated to abate (reduce) noise levels, feasibility and reasonableness are considered. The feasibility of providing noise abatement primarily addresses engineering considerations (physical constraints, drainage and accessibility considerations, safety and maintenance requirements, and utility impacts). Reasonableness addresses the use of common sense and good judgement when considering noise abatement.

FDOT has established 21 reasonableness and feasibility factors that must be evaluated relative to each abatement measure. Each of these factors is weighed before reasonableness and feasibility are determined for any individual barrier location. A brief explanation of each factor to be considered in determining the reasonableness and feasibility of traffic noise abatement at any given location and how they relate to the overall Ultimate project and *Preferred Alternative* is provided below. Any special case items that are not common to the overall Ultimate project and *Preferred Alternative* will be handled on an individual basis in the barrier descriptions that follow this listing.

1. Relationship of future levels to the abatement criterion: If the future levels are only expected to approach or just barely exceed (up to 3 dBA) the criterion, abatement may not be as desirable as it would be if the impact were to be greater. Most NSAs along the Ultimate project and *Preferred Alternative* limits average increases of 3 dBA to 5 dBA over the abatement criterion.

The categories on Table 4-29 were determined as follows:

- Within (< 65 dBA)
- Approach (65-66.9 dBA)
- Barely Exceed (67-69.9 dBA)
- Exceed (70-71.9 dBA)
- Far Surpass (≥ 72 dBA)

2. Insertion Loss: This is the lowering of the noise level as a result of some type of abatement effort. A normal design goal is 10 dBA or more. However, the minimum insertion loss on an impacted receiver should be at least 5 dBA. The majority of the barriers evaluated achieve a minimum insertion loss of 5 dBA, with the majority of the impacted receptors receiving a 7 dBA to 10 dBA insertion loss.

The categories on Table 4-29 were determined as follows:

- High (≥ 10 dBA)
- Medium (5-9.9 dBA)
- Low (<5 dBA)

3. Safety: A very critical factor in determining whether a particular abatement scheme is viable is the impact it may have on safety. Maintaining a clear recovery zone is very important, as is sight distance. The typical section of the proposed roadway includes concrete barrier walls adjacent to the outside shoulders. Noise barriers in the same location will not compromise safety. Further investigation into the safety of the proposed barriers will be performed during the design phase of this project.

Table 4-29. Criteria Matrix

Reasonableness and Feasibility Factors		Segments 1 & 2 — Noise Sensitive Areas									
		1-A	2-B	2-C	2-D	2-E	2-F	2-G	2-H	2-I	2-J
1.	Relationship of Future Levels to the Abatement Criterion	Far Surpass	<i>Barely Exceed</i>	<i>Exceed</i>	<i>Barely Exceed</i>	<i>Barely Exceed</i>	<i>Far Surpass</i>	<i>Exceed</i>	<i>Far Surpass</i>	<i>Barely Exceed</i>	<i>Barely Exceed</i>
2.	Insertion Loss	High	<i>Low</i>	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>	<i>Low</i>	<i>Medium</i>
3.	Safety	High	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>	<i>High</i>	<i>Medium</i>	<i>Medium</i>	<i>High</i>	<i>High</i>	<i>High</i>
4.	Community Desires	High	<i>High</i>	<i>High</i>	<i>High</i>	<i>High</i>	<i>High</i>	<i>High</i>	<i>High</i>	<i>Medium</i>	<i>High</i>
5.	Accessibility	High	<i>High</i>	<i>High</i>	<i>High</i>	<i>High</i>	<i>High</i>	<i>High</i>	<i>High</i>	<i>High</i>	<i>High</i>
6.	Land Use Stability	High	<i>Medium</i>	<i>High</i>	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>Medium</i>	<i>High</i>	<i>Medium</i>
7.	Local Controls	Yes	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
8.	Views of Officials with Jurisdiction in the Area	High	<i>High</i>	<i>High</i>	<i>High</i>	<i>High</i>	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>	<i>High</i>	<i>High</i>
9.	Noise Level Increase from Existing to Future Build Conditions	Medium	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Medium</i>	<i>Low</i>	<i>Low</i>
10.	Noise Level Changes from Future Build and No-Build Conditions	Medium	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Medium</i>	<i>Low</i>	<i>Low</i>
11.	Antiquity	After	<i>Before</i>	<i>Before</i>	<i>Before</i>	<i>Before</i>	<i>Before</i>	<i>Before</i>	<i>Before</i>	<i>Before</i>	<i>Before</i>
12.	Constructability	Medium	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>	<i>High</i>	<i>Medium</i>	<i>High</i>	<i>High</i>	<i>Medium</i>	<i>Medium</i>
13.	Maintainability	Medium	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>	<i>High</i>	<i>Medium</i>	<i>High</i>	<i>High</i>	<i>Medium</i>	<i>Medium</i>
14.	Aesthetics	Low	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>
15.	Right-of-Way Needs	Low	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>
16.	Total Cost/ Cost Per Benefited Receiver	\$304,000/ \$10,857	<i>\$1,146,660/ \$163,809</i>	<i>\$1,685,600/ \$67,424</i>	<i>\$1,306,240/ \$38,646</i>	<i>\$826,000/ \$5,434</i>	<i>\$1,104,460/ \$23,499</i>	<i>\$1,272,800/ \$31,820</i>	<i>\$896,400/ \$23,589</i>	<i>\$1,068,898/ 28,889</i>	<i>\$1,508,000/ \$12,361</i>
17.	Utilities	Low	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>
18.	Drainage	Low	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>
19.	Special Land Use Considerations	Low	<i>Low</i>	<i>Low</i>	<i>High</i>	<i>High</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>High</i>	<i>Low</i>
20.	Other Environmental Impacts	Low	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>
21.	Additional Considerations										

4-147

Table 4-29. Criteria Matrix (Continued)

Reasonableness and Feasibility Factors		Segment 3 — Noise Sensitive Areas						
		3-B	3-C	3-D	3-E	3-F	3-G	3-H
1.	Relationship of Future Levels to the Abatement Criterion	<i>Far Surpass</i>	<i>Far Surpass</i>	<i>Far Surpass</i>	<i>Far Surpass</i>	<i>Exceed</i>	<i>Barely Exceed</i>	<i>Exceed</i>
2.	Insertion Loss	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>
3.	Safety	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>	<i>High</i>	<i>Medium</i>	<i>Medium</i>
4.	Community Desires	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>	<i>Low</i>	<i>High</i>	<i>High</i>
5.	Accessibility	<i>High</i>	<i>High</i>	<i>High</i>	<i>High</i>	<i>High</i>	<i>High</i>	<i>High</i>
6.	Land Use Stability	<i>High</i>	<i>High</i>	<i>Medium</i>	<i>High</i>	<i>High</i>	<i>High</i>	<i>High</i>
7.	Local Controls	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
8.	Views of Officials with Jurisdiction in the Area	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>	<i>High</i>	<i>High</i>	<i>High</i>	<i>High</i>
9.	Noise Level Increase from Existing to Future Build Conditions	<i>Medium</i>	<i>Low</i>	<i>Low</i>	<i>Medium</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>
10.	Noise Level Changes from Future Build and No-Build Conditions	<i>Medium</i>	<i>Low</i>	<i>Low</i>	<i>Medium</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>
11.	Antiquity	<i>Before</i>	<i>Before</i>	<i>Before</i>	<i>Before</i>	<i>Before</i>	<i>Before</i>	<i>Before</i>
12.	Constructability	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>
13.	Maintainability	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>
14.	Aesthetics	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>	<i>Low</i>	<i>Low</i>
15.	Right-of-Way Needs	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>
16.	Total Cost/ Cost Per Benefited Receiver	<i>\$1,201,320/ \$23,102</i>	<i>\$1,477,440/ \$16,982</i>	<i>\$2,143,440/ \$15,996</i>	<i>\$1,732,500/ \$25,109</i>	<i>\$1,936,000/ \$22,776</i>	<i>\$1,328,800/ \$44,293</i>	<i>\$1,154,340/ \$46,174</i>
17.	Utilities	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>
18.	Drainage	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>
19.	Special Land Use Considerations	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>Low</i>
20.	Other Environmental Impacts	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>
21.	Additional Considerations							

Table 4-29. Criteria Matrix (Continued)

Reasonableness and Feasibility Factors		Segment 4 — Noise Sensitive Areas									
		4-A	4-C	4-D	4-G	4-H	4-I	4-J	4-K	4-L	4-M
1.	Relationship of Future Levels to the Abatement Criterion	Exceed	Exceed	Exceed	Far Surpass	Approach	Far Surpass	Far Surpass	Exceed	Far Surpass	Barely Exceed
2.	Insertion Loss	Medium	Medium	Medium	High	Low	Medium	Medium	Medium	High	Medium
3.	Safety	High	Medium	Medium	High	High	Medium	High	High	High	High
4.	Community Desires	High	Medium	High	High	High	High	High	High	High	High
5.	Accessibility	High	High	High	High	High	High	High	High	High	High
6.	Land Use Stability	High	High	High	High	High	High	High	High	High	High
7.	Local Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8.	Views of Officials with Jurisdiction in the Area	High	High	High	High	High	High	High	High	High	High
9.	Noise Level Increase from Existing to Future Build Conditions	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
10.	Noise Level Changes from Future Build and No-Build Conditions	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
11.	Antiquity	Before	Before	Before	Before	After	After	After	After	After	After
12.	Constructability	High	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium
13.	Maintainability	High	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium
14.	Aesthetics	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
15.	Right-of-Way Needs	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
16.	Total Cost/ Cost Per Benefited Receiver	\$441,170/ \$88,234	\$1,940,200/ \$10,053	\$1,060,200/ \$66,263	\$2,456,800/ \$33,655	\$960,000/ \$160,000	\$2,178,720/ \$8,253	\$831,600/ \$23,100	\$2,452,800/ \$129,095	\$1,920,600/ \$73,869	\$2,498,400/ \$40,957
17.	Utilities	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
18.	Drainage	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
19.	Special Land Use Considerations	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
20.	Other Environmental Impacts	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
21.	Additional Considerations										

4-149

Table 4-29. Criteria Matrix (Continued)

Reasonableness and Feasibility Factors		Segments 5 & 6 — Noise Sensitive Areas							
		5-B	5-C	6-A	6-B	6-C	6-D	6-E	6-F
1.	Relationship of Future Levels to the Abatement Criterion	Barely Exceed	Barely Exceed	Barely Exceed	Far Surpass	Far Surpass	Exceed	Far Surpass	Exceed
2.	Insertion Loss	Medium	Medium	Medium	Medium	High	Medium	High	Medium
3.	Safety	High	High	High	Medium	High	High	Medium	High
4.	Community Desires	High	High	High	High	High	High	High	High
5.	Accessibility	High	High	High	High	High	High	High	High
6.	Land Use Stability	Medium	Medium	Medium	High	High	High	High	High
7.	Local Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8.	Views of Officials with Jurisdiction in the Area	High	High	High	High	High	High	High	High
9.	Noise Level Increase from Existing to Future Build Conditions	Low	Low	Low	Medium	Medium	Medium	Medium	Low
10.	Noise Level Changes from Future Build and No-Build Conditions	Low	Low	Low	Medium	Medium	Medium	Medium	Low
11.	Antiquity	Before	Before	After	After	After	After	After	After
12.	Constructability	Medium	Medium	Medium	Medium	Medium	Medium	High	High
13.	Maintainability	Medium	Medium	Medium	Medium	Medium	Medium	High	High
14.	Aesthetics	Low	Low	Low	Low	Low	Low	Low	Low
15.	Right-of-Way Needs	Low	Low	Low	Low	Low	Low	Low	Low
16.	Total Cost/ Cost Per Benefited Receiver	\$985,660/ \$82,138	\$1,197,800/ \$99,817	\$2,950,200/ \$95,168	\$1,170,400/ \$90,031	\$2,340,480/ \$15,398	\$1,810,560/ \$51,730	\$4,047,000/ \$42,600	\$1,804,000/ \$15,419
17.	Utilities	Low	Low	Low	Low	Low	Low	Low	Low
18.	Drainage	Low	Low	Low	Low	Low	Low	Low	Low
19.	Special Land Use Considerations	Low	Low	Low	Low	Low	Low	Low	Low
20.	Other Environmental Impacts	Low	Low	Low	Low	Low	Low	Low	Low
21.	Additional Considerations								

All impacts associated with the Preferred Alternative are shown in *Bold Italics*.

The categories on Table 4-29 were determined as follows:

- High - Little effect on sight distance
- Medium - Some effect on sight distance
- Low - Significant effect on sight distance

4. Community Desires: Extremely important in determining whether a noise barrier should be built at any location is whether the affected community really wants to have a barrier. Preliminary public workshops held during the DEIS phase of the project indicated that noise barriers would be acceptable in most proposed locations. A survey of residential properties affected by the proposed noise barriers will be undertaken during the design phase of the project.

The categories on Table 4-29 were determined as follows:

- High - No opposition
- Medium - Some opposition
- Low - General opposition

5. Accessibility: This refers to the ingress and egress to properties that would be affected by the noise abatement measure. Since the Ultimate project and *Preferred Alternative* involves a limited-access facility, the placement of noise barriers will not affect the ingress or egress of adjacent properties.

6. Land Use Stability: This refers to whether or not an area's land use designation is stable and if noise sensitive land uses are likely to remain for an indefinite period of time. The areas adjacent to each noise sensitive area are established communities. It is unlikely that land use in these areas will change in the near future.

The categories on Table 4-29 were determined as follows:

- High - Developed property with little or no redevelopment potential
- Medium - Developed property with high redevelopment potential
- Low - Undeveloped property

7. Local Controls: Local zoning and planning unit actions to control noise sensitive land uses from building adjacent to the project corridor should be examined. This implies that if no controls are used, noise abatement is not a very high priority in the community. The Ultimate project area ranges from rural/suburban to urban in nature.

The Preferred Alternative is primarily urban in nature.

Most of the urban areas are built out and new development is being subjected to noise criteria in these areas. The more suburban/rural areas are not developing adjacent to the existing facility without some abatement technique.

The categories on Table 4-29 were determined as follows:

- Yes - Controls used
- No - Controls not used

8. Views of officials with jurisdiction in the area: This implies that consideration should be given to the views of the local politicians who may be asked to represent the views of concerned citizens within the Ultimate project and *Preferred Alternative* area. Their views will be obtained during the survey of affected residences in the design phase of the project.

The categories on Table 4-29 were determined as follows:

- High – No opposition
- Medium – Some opposition
- Low – General opposition

9. Noise level increase from existing to future build conditions: The magnitude of the noise level increase should be examined. A 15 dBA increase to 64 dBA is far more noticeable than a 3 dBA increase to 67 dBA, even though 64 dBA is below the abatement criterion. The increase over existing noise levels varies throughout the Ultimate project and *Preferred Alternative* corridors. Because this is an existing facility, noise levels currently approach or exceed the noise abatement criterion. In general, most areas will experience an increase of less than 4 dBA. In some cases where retaining walls are being proposed to minimize right-of-way impacts, the future year noise levels are less than existing noise levels. In some cases, the existing noise levels will be reduced by as much as 8 dBA.

The categories on Table 4-29 were determined as follows:

- High (≥ 5 dBA)
- Medium (3-4.9 dBA)
- Low (< 3 dBA)

10. Noise level changes from future Build and No Build conditions: If the difference between the future No Build and the future Build is 3 dBA or less, most people would not notice the change. If the change is greater than 3 dBA, abatement consideration should be given more weight. The existing and No Build noise levels are the same for this evaluation because they both use level of service C conditions for the existing roadway geometry. Therefore, the change between the future Build and No Build conditions is the same as described in Factor 9 above.

The categories on Table 4-29 were determined as follows:

- High (≥ 5 dBA)
- Medium (3-4.9 dBA)
- Low (< 3 dBA)

11. Antiquity: This implies that someone who builds or buys a noise sensitive site along an existing highway (or within a corridor where a road is planned for construction) probably does not consider noise a significant factor in location. Many of the areas adjacent to I-4 existed prior to the original construction of the roadway. However, these areas have been subject to steadily increasing traffic and noise levels over the past ten to 15 years.

12. Constructability: Factors affecting constructability include terrain, utilities, safety (e.g., lane closures), bridges, overpasses, and similar difficulties. All proposed noise barriers should be able to be constructed using routine construction methods and techniques. Wall heights on bridges have been limited. Constructability will be further investigated during the design phase of this project.

The categories on Table 4-29 were determined as follows:

- High – Some difficulty expected during construction
- Medium – Some difficulty possible during construction
- Low – Little or no difficulty expected during construction

13. Maintainability: Proposed barrier location and material should not be an impedance to maintenance.

The categories on Table 4-29 were determined as follows:

- High – Some difficulty expected during maintenance
- Medium – Some difficulty possible during maintenance
- Low – Little or no difficulty expected during maintenance

14. Aesthetics: This refers to the physical appearance of the wall from both the highway side and the affected property side. It also incorporates the landscaping concept, the view of the property owners, and the local requirements relative to color, height, style, and materials. This will be addressed on a case-by-case basis during the survey of community desires, to take place during the design phase of the project.

The categories on Table 4-29 were determined as follows:

- High – Significant effect on view to and from roadway
- Medium – Some effect on view to and from roadway
- Low – Little effect on view to and from roadway

15. Right-of-way needs including access rights (air, view, ingress/egress), construction and/or maintenance easements and additional land: Right-of-way impacts include the cost to obtain access rights, easements, and land. It also includes the consideration of donation or purchase. Normally, right-of-way needs and costs will be determined early in the process. If access rights and easements are required, these will normally be by donation. This is in consideration of the construction of the wall for the benefit of the property owners. All proposed barriers can be constructed within the proposed right-of-way.

The categories on Table 4-29 were determined as follows:

- High – Significant requirements
- Medium – Some requirements
- Low – Little or no requirements

16. Cost: Cost factors will include the cost of construction (material and labor), the cost of the right-of-way (including easements) and any other associated costs less the cost of designing the wall. It will be assumed that a cost per benefited receiver will be calculated. The lower the cost, the higher the benefit to the impacted area. For this evaluation, cost was established at \$20 per square foot of barrier. A cost of \$30,000 per benefited receiver is looked upon as an upper limit although a higher level of expenditure can be used if justified by other circumstances. A benefited receiver is defined as a noise sensitive receiver that will obtain a minimum of 5 dBA of noise reduction as a result of the use of a specific noise abatement activity such as the construction of a noise barrier wall. Only benefited receivers will be included in calculations needed to determine if a particular noise abatement plan has a reasonable cost.

17. Utilities: The impact of noise barriers on utilities and the reverse must be assessed early in the process. Large overhead power lines and underground pipes and conduits can have a significant impact on cost and design options. It appears that the proposed barriers can be constructed with minimal impacts to utilities.

The categories on Table 4-29 were determined as follows:

- High – Significant effect on utilities
- Medium – Some effect on utilities
- Low – Little or no effect on utilities

18. Drainage: One of the most important elements in the location and design of a noise barrier is drainage. Directing water along, under or away from a noise barrier can be expensive and cause construction and maintenance problems. It is not anticipated that the proposed noise barriers will impede drainage. Final roadway alignment, barrier locations, and drainage design will be evaluated during the design phase.

The categories on Table 4-29 were determined as follows:

- High – Significant effect on drainage
- Medium – Some effect on sight drainage
- Low – Little or no effect on sight drainage

19. Special land use considerations: If a noise impact is identified at a special land use such as a school, church, or park, the process outlined in the research report “Method to Determine Reasonableness and Feasibility of Noise Abatement at Special Use Locations” may be followed. However, most special use areas within the Ultimate project and *Preferred Alternative* corridors are located within residential areas and were considered as part of those areas.

The categories on Table 4-29 were determined as follows:

- High – Significant special land use within the area
- Medium – Some special land use within the area
- Low – Little or no special land use within the area

20. Other environmental impacts: This refers to impacts of noise barrier installation that should be considered on a site-by-site basis. The installation of noise barriers should not increase the impacts to other environmental considerations.

21. Additional considerations: This refers to the unanticipated contingencies that can seriously impact whether a noise barrier is reasonable or feasible as conceived at a given location. An example would be the impact of a wall on a nearby hospital heli-pad for emergency medical transport.

Each NSA within the Ultimate project and *Preferred Alternative* limits has been evaluated using the 21 reasonableness and feasibility factors. The results are presented in Table 4-29. A noise barrier analyses for each NSA follows the table.

Noise Sensitive Area 1-A

A noise barrier 800 feet long, with an average height of 19 feet, will provide a minimum 5 dBA insertion loss to 28 residences. The total cost and cost-per-residence benefited is \$304,000 and \$10,857, respectively. This barrier is considered to be reasonable and feasible.

Noise Sensitive Area 1-B

A noise barrier is not considered to be reasonable and feasible due to the proximity of Turkey Lake Road, which does not allow a barrier to meet the minimum insertion loss requirements.

Noise Sensitive Area 1-C

A noise barrier is not considered to be reasonable and feasible because NSA 1-C is designated as a commercial area and, therefore, is not impacted.

Noise Sensitive Area 1-D

A noise barrier is not considered to be reasonable and feasible because NSA 1-D is designated as a commercial area and, therefore, is not impacted.

Noise Sensitive Area 1-E

A noise barrier is not considered to be reasonable and feasible due to the proximity of Turkey Lake Road, which does not allow a barrier to meet the minimum insertion loss requirements.

Noise Sensitive Area 1-F

A noise barrier is not considered to be reasonable and feasible due to the proximity of International Drive, which does not allow a barrier to meet the minimum insertion loss requirements.

Noise Sensitive Area 1-G

A noise barrier is not considered to be reasonable and feasible due to the proximity of International Drive, which does not allow a barrier to meet the minimum insertion loss requirements.

Noise Sensitive Area 1-H

A noise barrier is not considered to be reasonable and feasible due to the proximity of Major Boulevard and several access roads, which do not allow a barrier to meet the minimum insertion loss requirements.

Noise Sensitive Area 1-I

A noise barrier is not considered to be reasonable and feasible due to the proximity of Orlando-Vineland Road, which does not allow a barrier to meet the minimum insertion loss requirements.

Noise Sensitive Area 1-J

A noise barrier is not considered to be reasonable and feasible due to the proximity of Orlando-Vineland Road, which does not allow a barrier to meet the minimum insertion loss requirements.

Noise Sensitive Area 2-A

A noise barrier is not considered to be reasonable and feasible due to the proximity of 33rd Street, which does not allow a barrier to meet the minimum insertion loss requirements.

Noise Sensitive Area 2-B

A noise barrier 3,295 feet long, with an average height of 17.4 feet, will provide a minimum 5 dBA insertion loss to seven residences. The total cost and cost-per-residence benefited is \$1,146,660 and \$163,809, respectively. This barrier is not considered to be reasonable and feasible.

Noise Sensitive Area 2-C

A noise barrier 4,900 feet long, with an average height of 17.2 feet, will provide a minimum 5 dBA insertion loss to 25 residences. The total cost and cost-per-residence benefited is \$1,685,600 and \$67,424, respectively. This barrier is not considered to be reasonable and feasible.

Noise Sensitive Area 2-D

A noise barrier 1,600 feet long, with an average height of 15.7 feet, will provide a minimum 5 dBA insertion loss to 13 residences. The total cost and cost-per-residence benefited is \$502,400 and \$38,646, respectively. This barrier is not considered to be reasonable and feasible.

Noise Sensitive Area 2-E

A noise barrier 2,950 feet long, with an average height of 14.0 feet, will provide a minimum 5 dBA insertion loss to 152 residences. The total cost and cost-per-residence benefited is \$826,000 and \$5,434, respectively. This barrier is considered to be reasonable and feasible for this alternative.

Noise Sensitive Area 2-F

A noise barrier 3,430 feet long, with an average height of 16.1 feet, will provide a minimum 5 dBA insertion loss to 47 residences. The total cost and cost-per-residence benefited is \$1,104,460 and \$23,499, respectively. This barrier is considered to be reasonable and feasible for this alternative.

Noise Sensitive Area 2-G

A noise barrier 4,300 feet long, with an average height of 14.8 feet, will provide a minimum 5 dBA insertion loss to 40 residences. The total cost and cost-per-residence benefited is \$1,272,800 and \$31,820, respectively. This barrier is not considered to be reasonable and feasible for this alternative.

Noise Sensitive Area 2-H

A noise barrier 3,320 feet long, with an average height of 13.5 feet, will provide a minimum 5 dBA insertion loss to 38 residences. The total cost and cost-per-residence benefited is \$896,400 and \$23,589, respectively. This barrier is considered to be reasonable and feasible for this alternative.

Noise Sensitive Area 2-I

A noise barrier 3,295 feet long, with an average height of 16.2 feet, will provide a minimum 5 dBA insertion loss to 37 residences. The total cost and cost-per-residence benefited is \$1,068,898 and \$28,889, respectively. This barrier is considered to be reasonable and feasible.

Noise Sensitive Area 2-J

A noise barrier 5,200 feet long, with an average height of 14.5 feet, will provide a minimum 5 dBA insertion loss to 122 residences. The total cost and cost-per-residence benefited is \$1,508,000 and \$12,361, respectively. This barrier is considered to be reasonable and feasible.

Noise Sensitive Area 2-K

A noise barrier is not considered to be reasonable and feasible due to the proximity of Hughey Avenue and Anderson Street, which does not allow a barrier to meet the minimum insertion loss requirements.

Noise Sensitive Area 3-A

A noise barrier is not considered to be reasonable and feasible due to the proximity of Ivanhoe Boulevard, which does not allow a barrier to meet the minimum insertion loss requirements.

Noise Sensitive Area 3-B

A noise barrier 4,230 feet long, with an average height of 14.2 feet, will provide a minimum 5 dBA insertion loss to 52 residences. The total cost and cost-per-residence benefited is \$1,201,320 and \$23,102, respectively. This barrier is considered to be reasonable and feasible for this alternative.

Noise Sensitive Area 3-C

A noise barrier 4,560 feet long, with an average height of 16.2 feet, will provide a minimum 5 dBA insertion loss to 93 residences. The total cost and cost-per-residence benefited is \$1,477,440 and \$15,886, respectively. This barrier is considered to be reasonable and feasible for this alternative.

Noise Sensitive Area 3-D

A noise barrier 6,870 feet long, with an average height of 15.6 feet, will provide a minimum 5 dBA insertion loss to 149 residences. The total cost and cost-per-residence benefited is \$2,143,440 and \$14,386, respectively. This barrier is considered to be reasonable and feasible for this alternative.

Noise Sensitive Area 3-E

A noise barrier 5,250 feet long, with an average height of 16.5 feet, will provide a minimum 5 dBA insertion loss to 77 residences. The total cost and cost-per-residence benefited is \$1,732,500 and \$22,500, respectively. This barrier is considered to be reasonable and feasible for this alternative.

Noise Sensitive Area 3-F

A noise barrier 6,050 feet long, with an average height of 16 feet, will provide a minimum 5 dBA insertion loss to 85 residences. The total cost and cost-per-residence benefited is \$1,936,000 and \$22,776, respectively. This barrier is considered to be reasonable and feasible.

Noise Sensitive Area 3-G

A noise barrier 3,020 feet long, with an average height of 22 feet, will provide a minimum 5 dBA insertion loss to 30 residences. The total cost and cost-per-residence benefited is \$1,328,800 and \$44,293, respectively. This barrier is not considered to be reasonable and feasible.

Noise Sensitive Area 3-H

A noise barrier 3,630 feet long, with an average height of 15.9 feet, will provide a minimum 5 dBA insertion loss to 25 residences. The total cost and cost-per-residence benefited is \$1,154,340 and \$46,174, respectively. This barrier is not considered to be reasonable and feasible.

Noise Sensitive Area 4-A

A noise barrier 1,405 feet long, with an average height of 15.7 feet, will provide a minimum 5 dBA insertion loss to five residences. The total cost and cost-per-residence benefited is \$441,170 and \$88,234, respectively. This barrier is not considered to be reasonable and feasible.

Noise Sensitive Area 4-B

A noise barrier is not considered to be reasonable and feasible due to the proximity of Wymore Road, which does not allow a barrier to meet the minimum insertion loss requirements.

Noise Sensitive Area 4-C

A noise barrier 5,450 feet long, with an average height of 17.8 feet, will provide a minimum 5 dBA insertion loss to 193 residences. The total cost and cost-per-residence benefited is \$1,940,200 and \$10,053, respectively. This barrier is considered to be reasonable and feasible.

Noise Sensitive Area 4-D

A noise barrier 2,850 feet long, with an average height of 18.6 feet, will provide a minimum 5 dBA insertion loss to 16 residences. The total cost and cost-per-residence benefited is \$1,060,200 and \$66,263, respectively. This barrier is not considered to be reasonable and feasible.

Noise Sensitive Area 4-E

A noise barrier is not considered to be reasonable and reasonable and feasible because no noise sensitive sites will be impacted.

Noise Sensitive Area 4-F

A noise barrier is not considered to be reasonable and feasible due to the proximity of Douglas Avenue, which does not allow a barrier to meet the minimum insertion loss requirements.

Noise Sensitive Area 4-G

A noise barrier 7,400 feet long, with an average height of 16.6 feet, will provide a minimum 5 dBA insertion loss to 73 residences. The total cost and cost-per-residence benefited is \$2,456,800 and \$33,655, respectively. This barrier is not considered to be reasonable and feasible.

Noise Sensitive Area 4-H

A noise barrier 2,400 feet long, with an average height of 20.0 feet, will provide a minimum 5 dBA insertion loss to six residences. The total cost and cost-per-residence benefited is \$960,000 and \$160,000, respectively. This barrier is not considered to be reasonable and feasible.

Noise Sensitive Area 4-I

A noise barrier 6,120 feet long, with an average height of 17.8 feet, will provide a minimum 5 dBA insertion loss to 264 residences. The total cost and cost-per-residence benefited is \$2,178,720 and \$8,253, respectively. This barrier is considered to be reasonable and feasible.

Noise Sensitive Area 4-J

A noise barrier 2,200 feet long, with an average height of 18.9 feet, will provide a minimum 5 dBA insertion loss to 36 residences. The total cost and cost-per-residence benefited is \$831,600 and \$23,100, respectively. This barrier is considered to be reasonable and feasible.

Noise Sensitive Area 4-K

A noise barrier 5,600 feet long, with an average height of 21.9 feet, will provide a minimum 5 dBA insertion loss to 19 residences. The total cost and cost-per-residence benefited is \$2,452,800 and \$129,095, respectively. This barrier is not considered to be reasonable and feasible.

Noise Sensitive Area 4-L

A noise barrier 4,850 feet long, with an average height of 19.8 feet, will provide a minimum 5 dBA insertion loss to 26 residences. The total cost and cost-per-residence benefited is \$1,920,600 and \$73,869, respectively. This barrier is not considered to be reasonable and feasible.

Noise Sensitive Area 4-M

A noise barrier 6,940 feet long, with an average height of 18 feet, will provide a minimum 5 dBA insertion loss to 61 residences. The total cost and cost-per-residence benefited is \$2,498,400 and \$40,957, respectively. This barrier is not considered to be reasonable and feasible.

Noise Sensitive Area 5-A

A noise barrier is not considered to be reasonable and feasible due to the proximity of International

Boulevard, which does not allow a barrier to meet the minimum insertion loss requirements.

Noise Sensitive Area 5-B

A noise barrier 2,210 feet long, with an average height of 22.3 feet, will provide a minimum 5 dBA insertion loss to 12 residences. The total cost and cost-per-residence benefited is \$985,660 and \$82,138, respectively. This barrier is not considered to be reasonable and feasible.

Noise Sensitive Area 5-C

A noise barrier 2,650 feet long, with an average height of 22.6 feet, will provide a minimum 5 dBA insertion loss to 12 residences. The total cost and cost-per-residence benefited is \$1,197,800 and \$99,817, respectively. This barrier is not considered to be reasonable and feasible.

Noise Sensitive Area 6-A

A noise barrier 7,450 feet long, with an average height of 19.8 feet, will provide a minimum 5 dBA insertion loss to 31 residences. The total cost and cost-per-residence benefited is \$2,950,200 and \$95,168, respectively. This barrier is not considered to be reasonable and feasible.

Noise Sensitive Area 6-B

A noise barrier 3,080 feet long, with an average height of 19 feet, will provide a minimum 5 dBA insertion loss to 13 residences. The total cost and cost-per-residence benefited is \$1,170,400 and \$90,031, respectively. This barrier is not considered to be reasonable and feasible.

Noise Sensitive Area 6-C

A noise barrier 6,360 feet long, with an average height of 18.4 feet, will provide a minimum 5 dBA insertion loss to 152 residences. The total cost and cost-per-residence benefited is \$2,340,480 and \$15,398, respectively. This barrier is considered to be reasonable and feasible.

Noise Sensitive Area 6-D

A noise barrier 4,920 feet long, with an average height of 18.4 feet, will provide a minimum 5 dBA insertion loss to 35 residences. The total cost and cost-per-residence benefited is \$1,810,560 and \$51,730, respectively. This barrier is not considered to be reasonable and feasible.

Noise Sensitive Area 6-E

A noise barrier 9,500 feet long, with an average height of 21.3 feet, will provide a minimum 5 dBA insertion loss to 95 residences. The total cost and cost-per-residence benefited is \$4,047,000 and \$42,600, respectively. This barrier is not considered to be reasonable and feasible.

Noise Sensitive Area 6-F

A noise barrier 4,400 feet long, with an average height of 20.5 feet, will provide a minimum 5 dBA insertion loss to 117 residences. The total cost and cost-per-residence benefited is \$1,804,000 and \$15,419, respectively. This barrier is considered to be reasonable and feasible.

Locations where noise barriers were found to be reasonable and feasible are shown in Figure 4-16 for the Ultimate project and the *Preferred Alternative*. Although noise barriers are anticipated to be reasonable and feasible at these locations, other important factors such as community desires, adjacent land uses, safety, and constructability play important roles and require further consideration in determining the reasonableness and feasibility of the barriers.

FDOT is committed to the implementation of reasonable and feasible noise abatement in the noise sensitive areas identified in Section 3.4.3, contingent upon the project meeting the following conditions during the final design phase of the project:

- *Detailed noise analyses during the final design process support the need for abatement.*
- *Reasonable cost analyses indicate that the economic cost of the barriers will not exceed the guidelines.*
- *Community input regarding desires, types, heights, and locations of barriers has been solicited by FDOT.*

- Preferences regarding compatibility with adjacent land uses, particularly as addressed by officials having jurisdiction over such land uses, has been noted.
- Safety and engineering aspects as related to the roadway user and the adjacent property owner have been reviewed.
- Any mitigating circumstances found in Part 2, Chapter 17-4.6.1 of the PD&E Manual have been analyzed.

4.4.4 Contamination

4.4.4.1 Contamination Impact Sites

Data pertaining to potential sources of contamination identified in the *Contamination Screening Evaluation Report* (May 1999) were reviewed for the I-4 PD&E Study - Section 2 study area. A total of 255 sites were identified within the Ultimate project study area, of which 123 were rated "Low" or were located far enough from the alignment to be of no concern. Twenty-nine sites were given a risk rating of "Medium" and 103 have been assigned a rating of "High" for having potential petroleum or hazardous material contamination.

Based on the proposed alignment at this phase of the Ultimate project, the proposed improvements could require partial or total right-of-way acquisition of 25 Medium or High rated sites. Table 4-30 presents a breakdown of these 25 impacted sites and the type of potential contamination involvement.

The Preferred Alternative could require partial or total right-of-way acquisition of 21 of the 25 Medium or High rated sites. Table 4-30 presents a breakdown of these 21 impacted sites and the type of potential contamination involvement.

Table 4-30. Potential Impacted Contamination Sites by Risk Rating and Type

Site Rating	Contamination Type			Total
	Petroleum	Hazardous Material	Both	
Ultimate Project				
Medium	1	0	0	1
High	8	1	15	24
Total	9	1	15	25
Preferred Alternative				
Medium	1	0	0	1
High	6	0	13	19
Total	7	0	13	21

All impacts associated with the Preferred Alternative are shown in ***Bold Italics***.

The potentially impacted sites are listed below in Table 4-31 and discussed in the paragraphs that follow. Figure 4-17 shows the locations of all impacted sites rated Medium and High relative to the Ultimate Project and *Preferred Alternative*.

Additional information on the potentially impacted sites is contained in the *Contamination Screening Evaluation Report* (May 1999). This report contains maps of all the sites and distance to the Ultimate project corridor. Changes in the alignment made during the design phase of the project may affect the number of property acquisitions.

The findings of the contamination screening and evaluation are based on preliminary information only and are not intended to replace more detailed studies such as individual site assessments and subsurface soil and groundwater investigations. Potential contamination sites may extend beyond those identified in this report because of limited historical and regulatory information, illegal dumping practices, and a lack of compliance with storage tank registration and hazardous waste generator programs. Finally, the identification of a site in this report does not indicate necessarily that the site contains contamination, but only that there is the potential for contamination to occur.

A Sanborn File Map review revealed a total of 12 former gas stations, cleaners and other commercial sites including a City Engineering Yard at 1300 South Street that were demolished to construct SR 408 (East/West Expressway). There were no tank closure requirements at the time of the demolitions (late 1960s to 1970) and, therefore, a potential exists that petroleum or hazardous material contamination may exist beneath SR 408. Based on the location (beneath the embankment fill or bridges used to construct SR 408), these former facilities have been assigned a Contamination Risk Potential of High. These facilities are designated as 17EW through 28EW.

Schroeder Services (Site No. 253) - The available information for this facility indicated that a 550 gallon UST was filled with cement sludge during 1990. No other information is available for this facility. Therefore, this facility has been designated a contamination risk potential rating of High.

Salano, Daniel (Site No. 254) - The file for this facility, dated February 1991, indicated that a 2,000-gallon steel gasoline UST had been removed during February 1991 and excessively contaminated soils were not found; however, petroleum contaminated groundwater was detected at that time. The report indicates that the tank excavation was backfilled with original soils and additional fill material. The only other available information was an Orange County Environmental Protection Department (OCEPD) March 1993 letter to Wiseco, which indicated that further assessment and clean-up would be required at the site. No additional information was available. Therefore, this facility has been assigned a contamination risk potential rating of High.

Mishalanie/Phil (Site No. 317) - The only information within this file was a pollutant storage tank inspection form dated March 1991. This form indicated that there were two 10,000-gallon USTs on this property. The form noted that there was no evidence of tanks on this property.

The report also indicated that no fill or vent pipes were observed. Based upon a lack of a Tank Closure Report or another environmental assessment, this facility has been assigned a contamination risk potential rating of High.

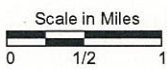
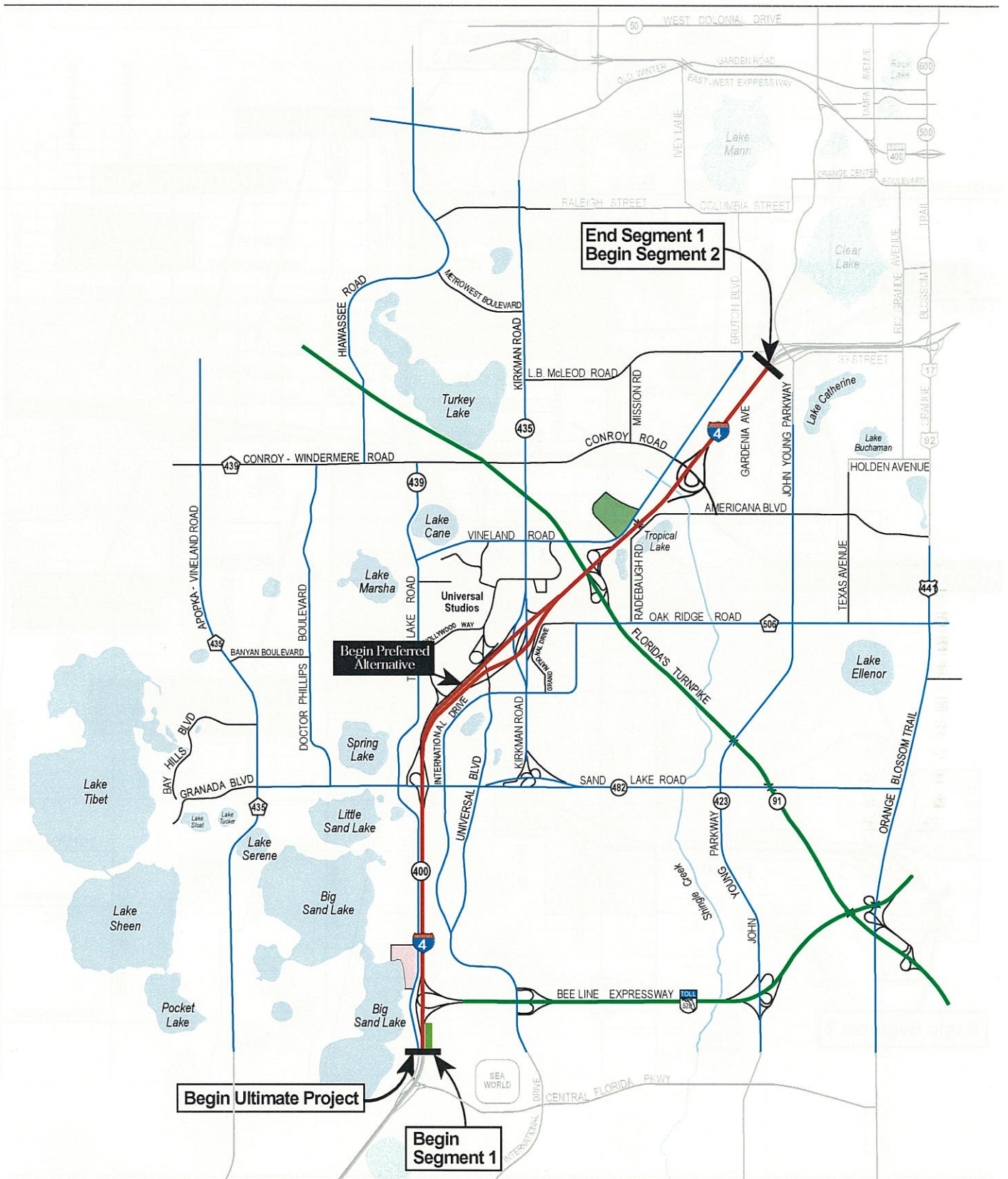
Mid-Florida Pools & Repairs Co. (Site No. 320) - Mid-Florida Pools is reported on the Storage Tank Inventory (STI) list as having three USTs in service (gasoline and diesel) and having closed an additional gasoline UST in place. All four USTs were reportedly installed during 1980 and the closed gasoline tank was reportedly closed during 1984. All four USTs are reported to be steel construction. No environmental report or other information was available within the file at the time of the file review. Therefore, since storage tanks are steel and were installed during 1980, (exceeding the 15-year average lifetime for a steel UST), and since no environmental testing was performed when the gasoline UST was closed in place, this facility has been assigned a contamination risk potential rating of Medium.

Florida Terrazzo Inc. (Site No. 329) - The file contained a Tank Closure Report dated June 1989. This report indicated that four soil samples were taken from around a 3,000-gallon UST to screen the soil with an organic vapor analyzer (OVA). The soils reportedly had no detection limits. There was no information within the file that indicated that a groundwater sample had been taken. Therefore, this facility has been assigned a contamination risk potential rating of High.

Orlando Refinishers (Site No. 333) - The file indicated that petroleum contaminated groundwater was discovered during a September 1994 UST removal. No further information was available. Therefore, this facility has been assigned a contamination risk potential rating of High.

Lindbergh Heat Treating Co. (Site No. 337) - The only information available regarding this facility is a November 1992 Pollutant Storage Tank Inspection form. This form indicated there had been three USTs at this facility that were removed prior to 1988. There was no indication regarding the environmental status of this site within this file. Therefore, this site has been assigned a contamination risk potential rating of High.

Uptown Orlando (Site No. 487) - The Walkup Exterminating and Anderson properties (Contamination Site No. 492, refer to Figure 3-23) contain a groundwater contamination plume of



— Noise Walls



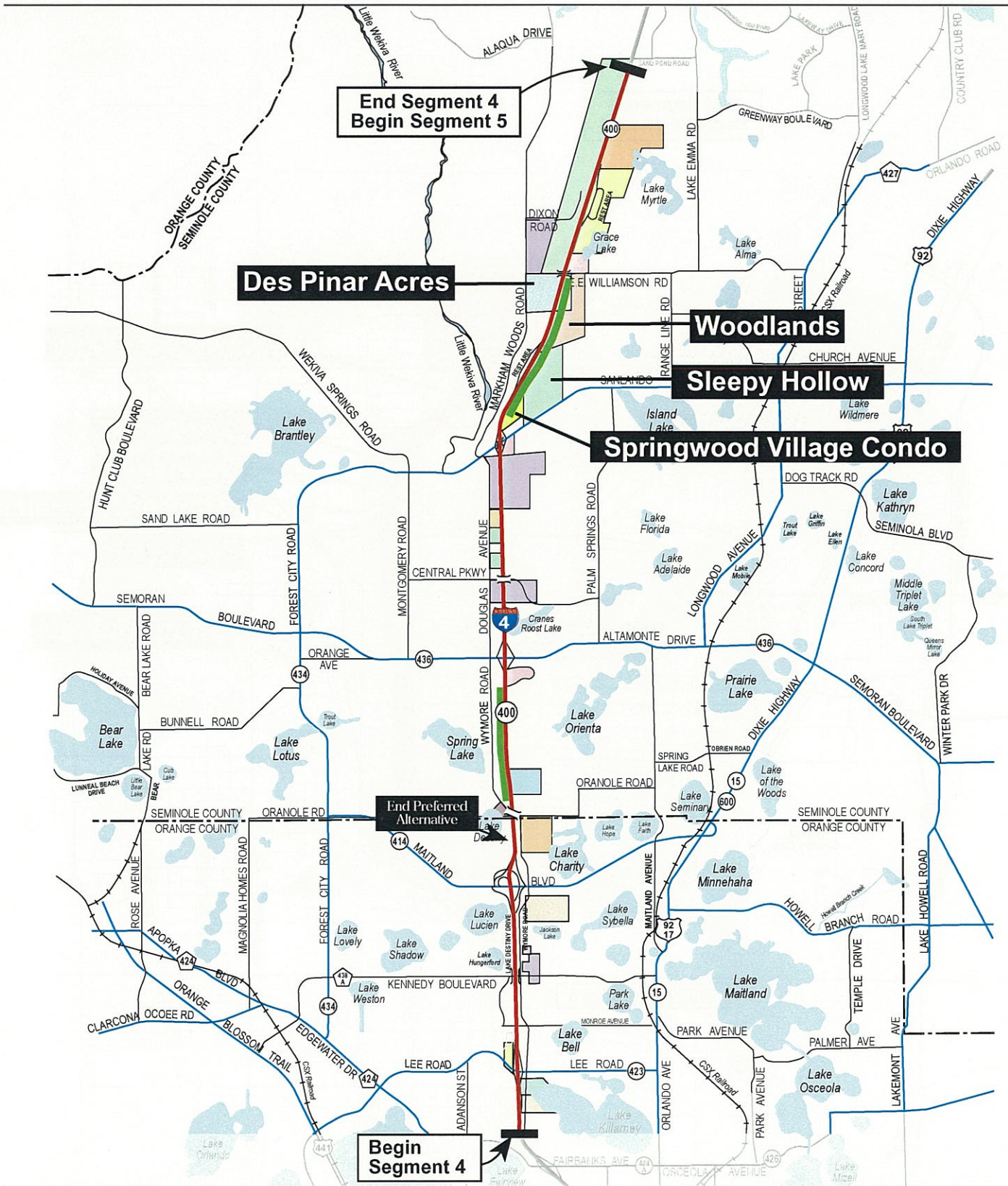
Figure 4-16
Noise Walls

I-4 PD&E Study - Section 2
Segment 1 of 6



Figure 4-16
Noise Walls
SR 408 Alternative 2B1
 I-4 PD&E Study - Section 2
 Segment 2 of 6



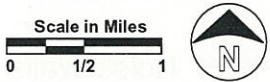
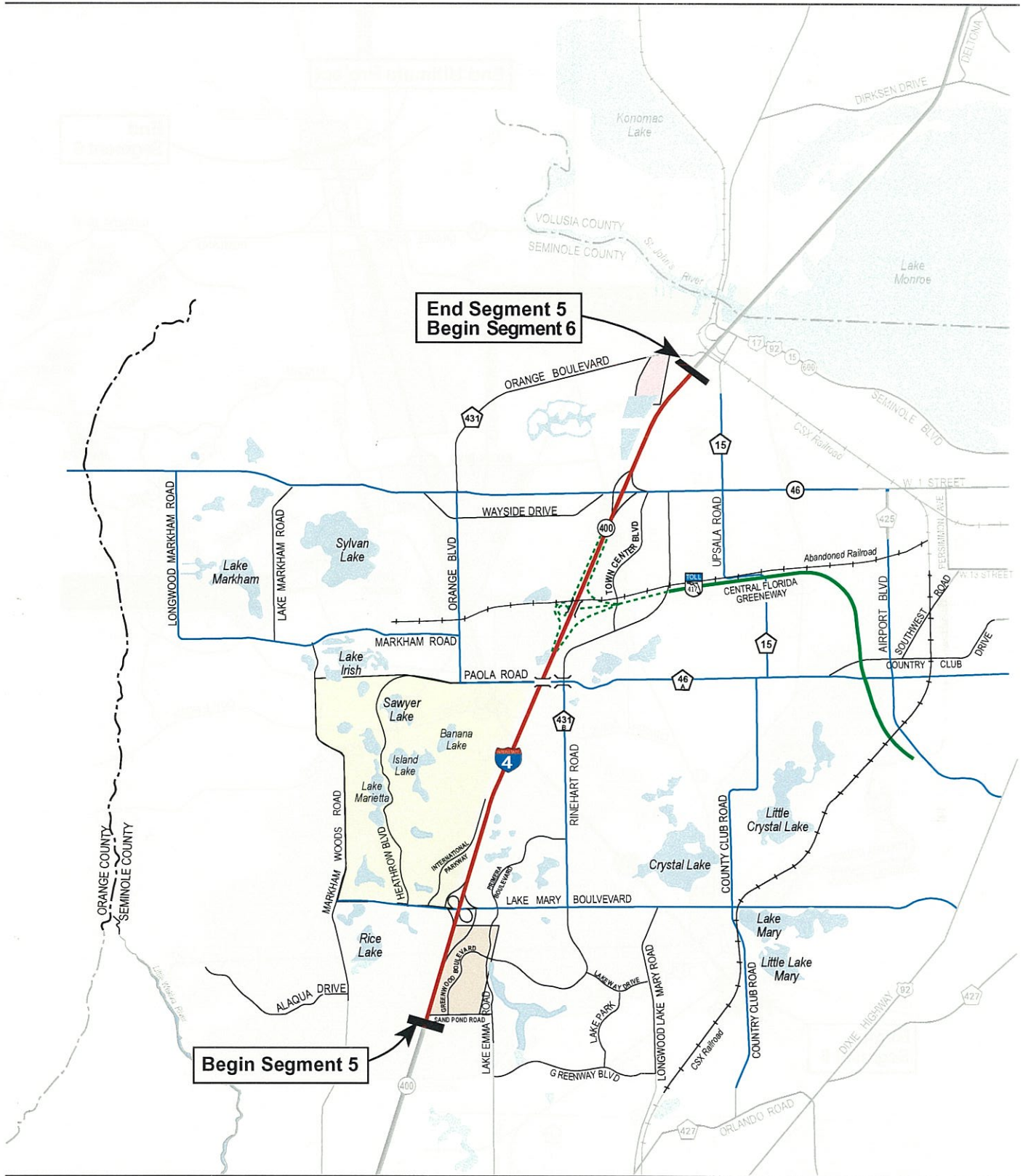


— Noise Walls

Figure 4-16
Noise Walls

I-4 PD&E Study - Section 2
Segment 4 of 6





— Noise Walls



**Figure 4-16
Noise Walls**

*I-4 PD&E Study - Section 2
Segment 5 of 6*

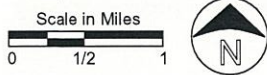
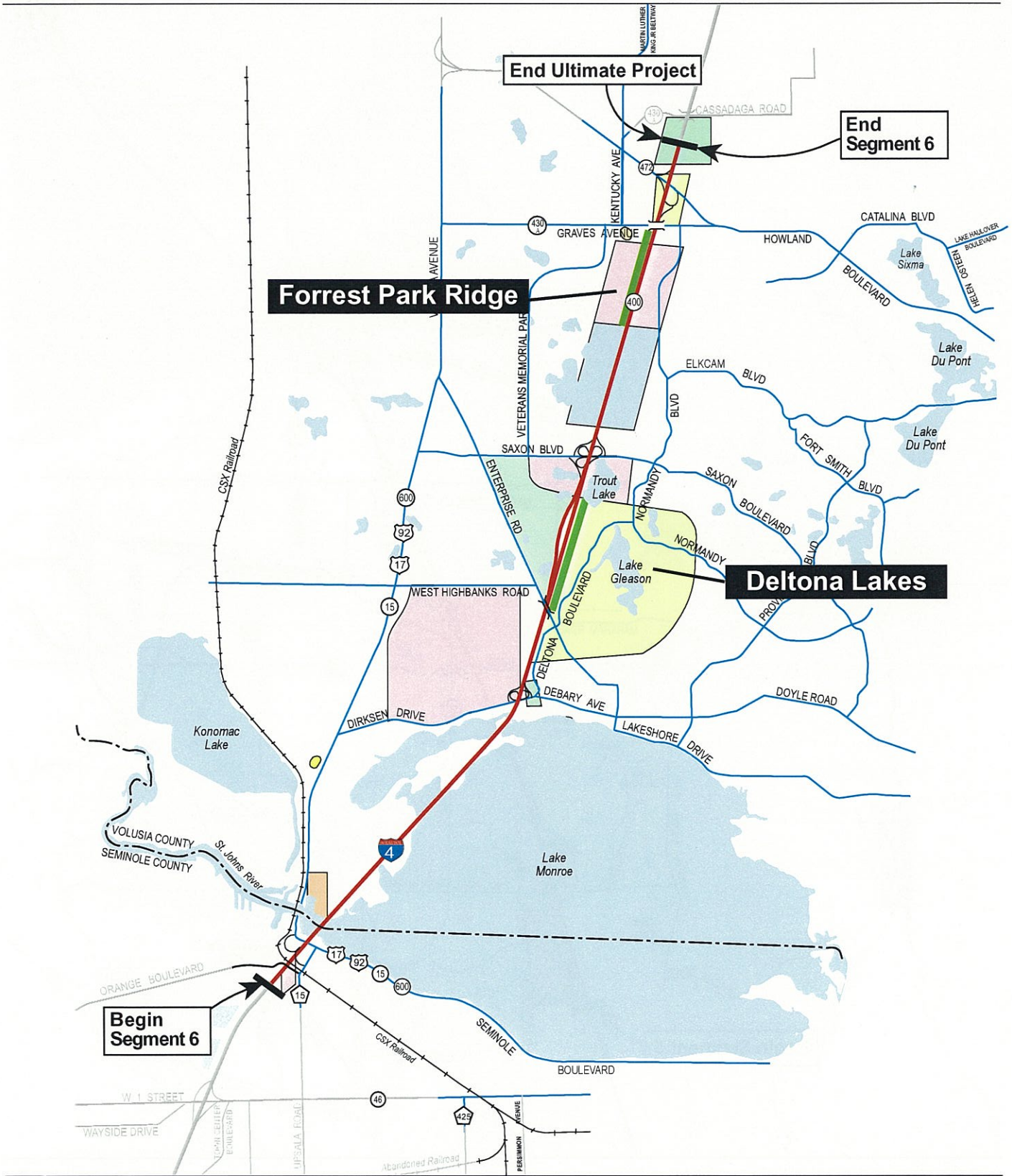
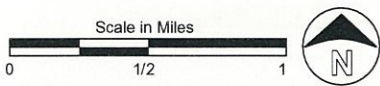


Figure 4-16
Noise Walls

I-4 PD&E Study - Section 2
Segment 6 of 6



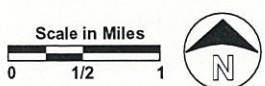
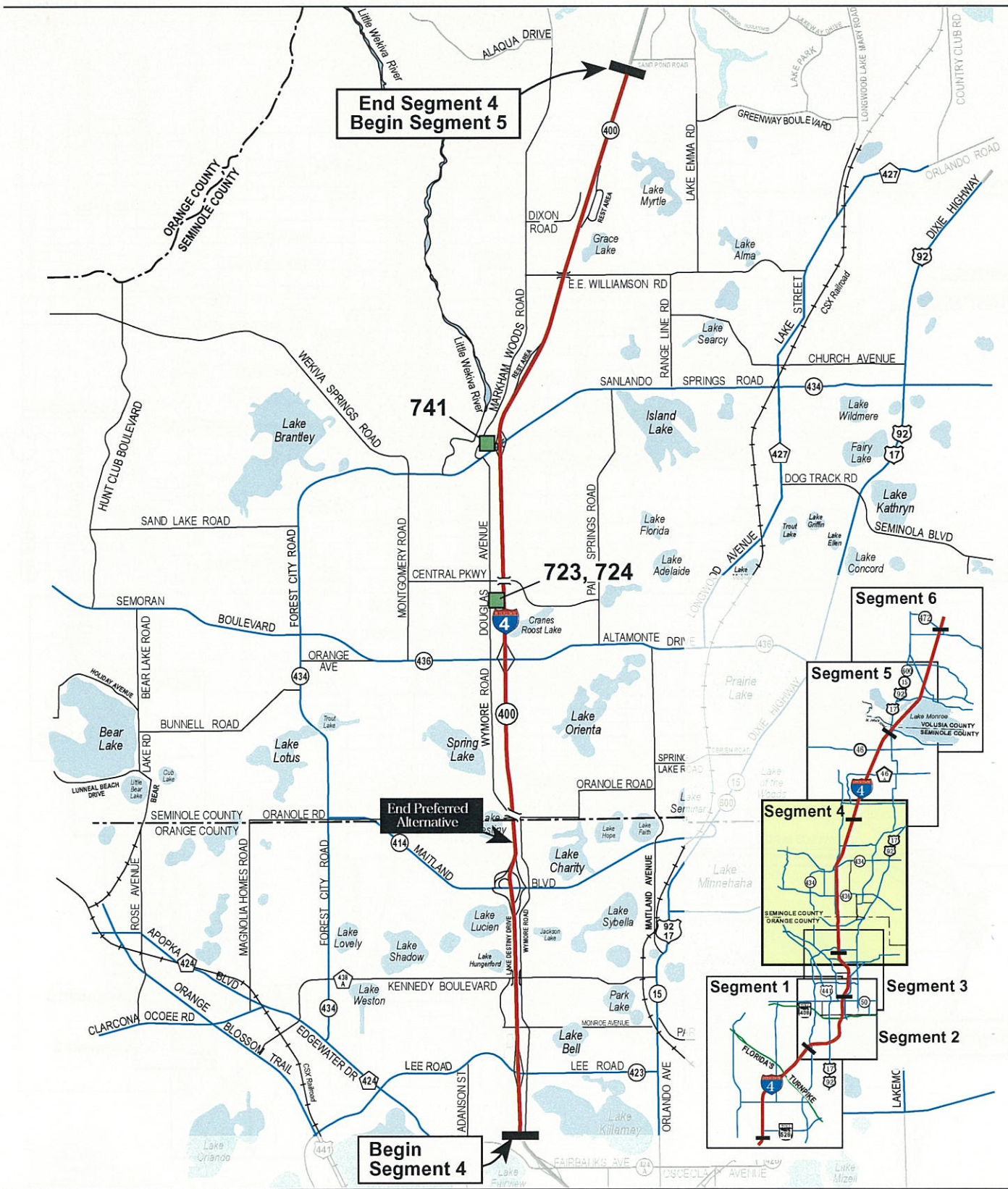


- Site Rated High
- Site Rated Medium



Figure 4-17
Impacted Contamination Sites

I-4 PD&E Study - Section 2
Segment 2 of 6

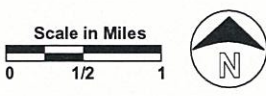
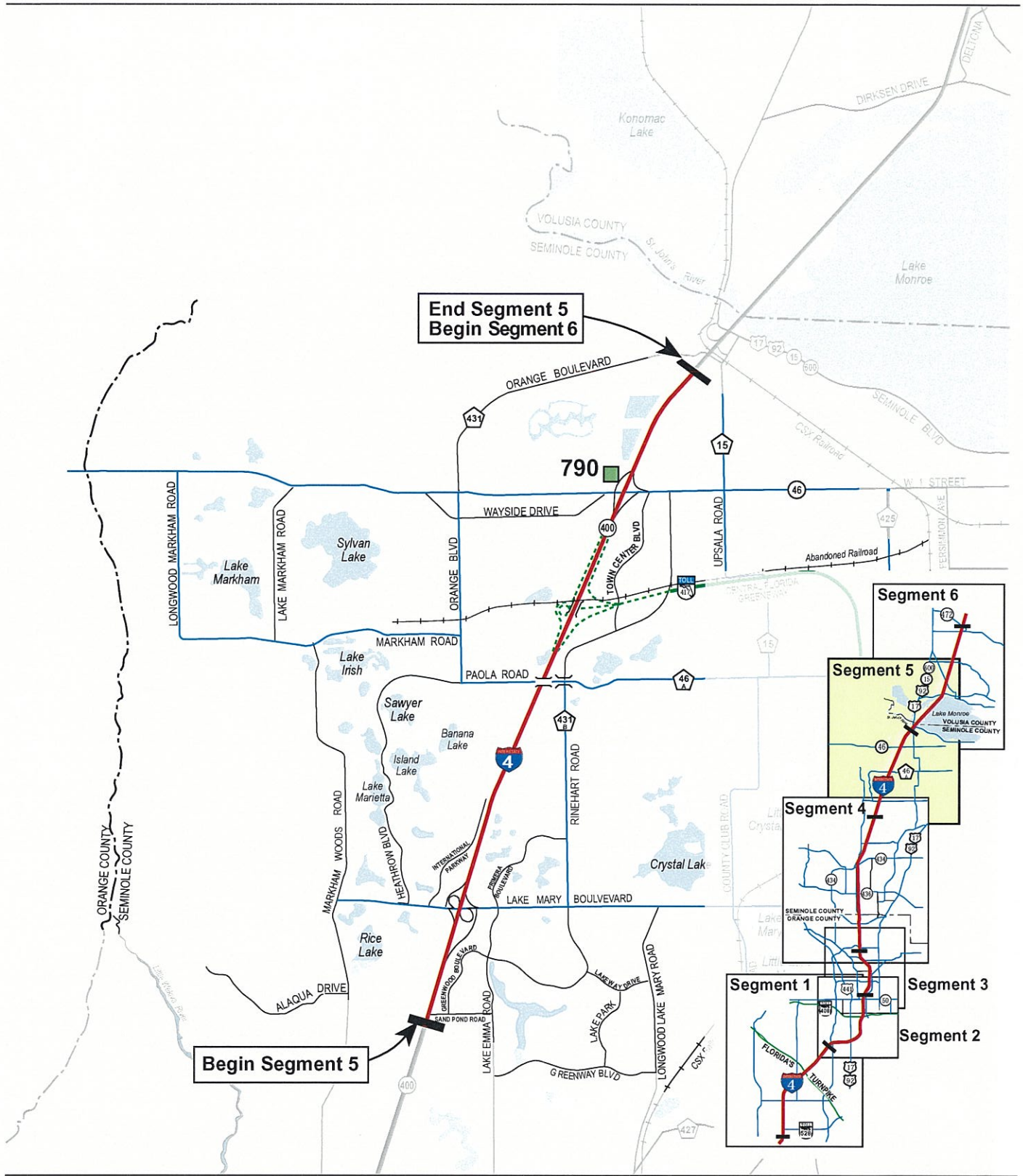


■ Site Rated High

Figure 4-17
Impacted Contamination Sites

I-4 PD&E Study - Section 2
 Segment 4 of 6





■ Site Rated High



Figure 4-17
Impacted Contamination Sites

I-4 PD&E Study - Section 2
Segment 5 of 6

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Table 4-31. Summary of Potential Contamination Site Impacts

Contamination Site No.	Name	Address	Alternative	Site Rating	Hazardous (H) or Petroleum (P)	Nature of Potential Contamination	Type of Impact Full (F) or Partial (P)	Nature of Impact Roadway (R) or Pond (P)
17EW	Former Residence	NW quadrant of Lucerne Cir/ Rosalind Ave	2B1	High	HIP	UST	P	R
18EW	Former Residence	NW quadrant of Lucerne Cir/ Orange Ave	2B1	High	HIP	UST	F	R
19EW	Former Residence	NW quadrant of Lucerne Cir/ Orange Ave	2B1	High	HIP	UST	F	R
20EW	Former Foam Rubber Warehouse	SW quadrant of Anderson St/ Garland Ave	2B1	High	HIP	UST	F	R
21EW	Former Cleaners	NW quadrant Grace Rd/ CSX	2B1	High	HIP	UST	F	Beneath Existing I-4
22EW	Former Texas Oil Co.	NW quadrant Grace Rd/ CSX	2B1	High	HIP	UST	P	R
23EW	Former City Pipe Yard	Across from CSX/ Carter St	2B1	High	HIP	UST	F	R
24EW	Former Cleaners	NW quadrant of America St/ S Hughey Ave	2B1	High	HIP	UST	F	R
25EW	Former Brake Shoe Bonding Plant	North of Atlanta Ave/ America St	2B1	High	HIP	UST	F	Beneath Existing I-4
26EW	Former Cleaners	North of Carter St/ west of Hughey Ave	2B1	High	HIP	UST	F	Beneath Existing I-4
27EW	Former Gas Station	Under SR 408, east of Orange Blossom Tr	2B1	High	HIP	UST	F	Beneath Existing SR 408
28EW	Former Gas Station	Under SR 408, west of Orange Blossom Tr	2B1	High	HIP	UST	F	Beneath Existing SR 408
253	Schroeder Services	520 Indiana St	2B1	High	P	UST	P	R
254	Salano, Daniel	521 Indiana St	2B1	High	P	LUST	P	R
317	Mishalaniel/Phil	718 S Hughey Ave	2B1	High	P	UST	F	R
320	Mid Florida Pools & Repairs	714 Franklin Ln	2B1	Medium	P	UST	P	R
329	Florida Terrazzo Inc.	440 S Hughey Ave	2B1	High	P	UST	F	P
333	Orlando Refinishers	300 W South St	2B1	High	P	LUST	P	R
337	Lindberg Heat Treating Co.	316 S Hughey St	2B1	High	HIP	UST	P	R
487	Uptown Orlando	700 N Orange Ave	SR 50 Alt 2	High	P	LUST	P	R
487A	Northern Orlando Downtown Site	NE quadrant of Orange Ave & Colonial Dr (SR 50)	SR 50 Alt 2	High	HIP	--		
723	Altamonte Springs Operations Center	607 Douglas Ave	C	High	H	--	P	R, Park & Ride Lot
724	Florida Power Corp.	607 Douglas Ave	C	High	P	UST	P	R, Park & Ride Lot
741	Exxon #5252	2010 SR 434	SR 434 Alt 2	High	H/P	LUST	F	R
790	Amoco#60331 - ACA#089	4800 SR 46 West	C	High	P	LUST	F	R

All impacts associated with the Preferred Alternative are shown in **Bold Italics**.

There are no potential contamination site impacts within Segments 1 and 6.

UST = Underground storage tank

LUST = Leaking underground storage tank

4-171

petroleum products and a plume of Trichloroethene (TCE). The petroleum plume appears to originate at Walkup Exterminating property and flow northwest, extending onto and through the Uptown Orlando property. The petroleum plume appears to stop inside the Anderson property limits while the TCE plume appears to continue on. No Remedial Action Plan (RAP) or monitoring reports were available at the time of records review. The contamination risk potential rating for these sites is High.

Northern Orlando Downtown Site (NODS, Site No. 487A) - According to FDEP, a plume of TCE/Perchloroethene (PCE) has contaminated groundwater that is moving toward Lake Concord and is located in the Surficial Aquifer. An 8-foot to 20-foot clay lens separates the contaminated surficial groundwater aquifer from the Floridan Aquifer, which is the drinking water source for the City of Orlando, Orange County, and surrounding areas. The contamination is estimated to have occurred at Orange Avenue and Colonial Drive (SR 50). A joint cleanup effort between FDEP, the City of Orlando, and the Orlando Sentinel Newspaper has cost approximately \$2.5 million to date. This cleanup site has been referenced in previous correspondence with FDOT as either the Orlando North Area of Contamination or the Northern Orlando Downtown Site (NODS). Seven interceptor wells, located along Garland Avenue, pump groundwater to a treatment facility to prevent contamination of Lake Concord. The wells are below grade, in the roadway, and contained in vaults. If affected by construction, the vaults must be extended to allow sampling and maintenance to continue. Water removed from these wells is currently piped to a special wastewater treatment plant for treatment. This site has been assigned a contamination risk potential rating of High.

Altamonte Springs Operation Center (Site No. 723) - No file was available for this facility. Therefore, this site has been assigned a contamination risk potential rating of High.

Florida Power Corp. (Site No. 724) - According to FDEP, a contamination assessment has been conducted and an Interim Remedial Action of Injection of a bioaugmentation compound (Cogen 5) to enhance biodegradation, is being performed. The chemical of concern is Tetrachloroethene, which was detected in one of the groundwater monitoring wells. The contaminated area is approximately 200 feet west of I-4 and Douglas Avenue. The FDEP STI list indicates that seven USTs and one aboveground storage tanks (AST) were removed during November 1989. There is no discharge information listed on the STI list. Therefore, this facility has been assigned a contamination risk potential rating of High.

Exxon #5252 (Site No. 741) - This file contained information indicating that petroleum contaminated groundwater existed on the site during 1995 and that this site was under a Monitor Only Plan. A September 1995 correspondence to FDEP requested a site rehabilitation acknowledgment. There was also a correspondence from FDEP to the owners of Speedway dated October 1995, which indicated that funding is available for remedial work for this facility. No more recent information was available. However, one of the wells onsite had an increase of contaminants detected from a February 1995 monitoring event to a May 1995 monitoring event. This same well had a greatly reduced detection during August 1995. This letter indicated that the groundwater flow direction at the site is toward the northeast. Based on this information and its close proximity to I-4, this facility has been assigned a contamination risk potential rating of High.

Amoco #60331 - ACA #089 (Site No. 790) - The file for this facility included information indicating that a remedial system had been in operation onsite. A soil vapor extraction unit had been installed and a pump-and-treat unit had been installed. The remedial system was deactivated on July 3, 1996, due to a lack of funding from the State of Florida's reimbursement program. The latest information within the file was a FDEP correspondence dated August 15, 1996, which indicated that a work order had been generated in order to have this remedial system continue operation at this site. No further information was available within the files. Therefore, this facility has been assigned a contamination risk potential rating of High.

4.4.4.2 Hazardous Materials/Petroleum Transport

The State of Florida has no designated routes for hazardous materials transport; however, interstate travel is considered to be the safest. Improvements to the interstate will improve safety on the freeway and help to reduce the possibility of accidents and hazardous material spills. A Health and Safety Plan and a Hazardous Materials Management Plan, which describe the spill response procedures and minimize the potential for impacts due to spills, will be developed during the design phase of the project in accordance with the requirements and regulations of EPA and the local and state agencies having jurisdiction. In addition, FDOT is committed to obtaining the necessary permits for storage of hazardous wastes associated with the construction of the proposed project.

4.4.4.3 Mitigation

It is recommended that the data accumulated in the project files for all sites within the 600-foot corridor rated No or Low for potential contamination be revisited during final design prior to project right-of-way acquisition and construction. This examination should include an updated review of agency files and the public record to determine if any significant change in status has occurred since the report was prepared.

In addition, a Phase II site assessment will be conducted during the design phase of the project for those sites identified as having a potential to affect the project. Select sampling of the soil and groundwater will be conducted at those sites to help determine the absence or presence of contamination. At a minimum, soil and groundwater investigations will be conducted at those sites affected by project right-of-way acquisition to determine if additional, more in-depth testing is required to identify the actual extent of contamination. A preferred method of testing will be determined on a site-by-site basis during final design.

Resolution of problems associated with contamination will be coordinated with the appropriate regulatory agencies and, prior to right-of-way acquisition, appropriate action will be taken, where applicable.

4.4.5 Floodplains and Regulatory Floodways

The proposed improvements to I-4 will minimally impact several floodplains and floodways along the corridor. All impacts can be generally described as follows:

- The impact of the proposed improvements is minimal and will be mitigated as appropriate. The likelihood of flood risk is minimized due to the stringent culvert hydraulic analysis and proposed floodplain impact mitigation proposed.
- No adverse impacts on natural and beneficial floodplain values are anticipated since the majority of improvements are confined within the existing roadway corridor. Additionally, mitigation is proposed where necessary.
- The improvements to the interstate will not encourage developments within the base floodplain since they occur within a limited access facility that provides controlled entrance and exit points.
- There are no records of traffic interruption due to flooding on the existing mainline and the facility will continue to provide flood free access; therefore, the floodplain impacts associated with the improvements will not adversely affect the operation of emergency services.
- Floodplain impacts have been minimized and avoided where practical by using shoulder gutters, closed drainage systems, retaining walls, and bridges.

A *Location Hydraulics Report* (August 2000) that provides an in-depth study of the floodplain and floodway impacts has been prepared for this study. The subsequent segment discussions provide a general description of those floodplain and floodway impacts as well as restoration and/or mitigation measures for each impact area. Table 4-32 summarizes these impacts.

Table 4-32. Impacts to Floodplains

Impact Areas	Volume (acre feet)	Comments
Segment 1		
A	29.33	Compensation will be provided in proposed stormwater management ponds
B	1.98	Compensation will be provided in proposed stormwater management ponds
C	8.70	Compensation will be provided in proposed stormwater management ponds
Segments 2 and 3		
D	Minimal	Impacts will be equal to volume of bridge piers
E	Minimal	Impacts will be equal to volume of bridge piers
Segment 4		
F	Minimal	Impacts will be equal to volume of bridge piers
G	6.03	Compensation will be provided in Pond CP-1
Segment 5		
N	0.26	Displaced volume is insignificant; no separate compensation is proposed
Segment 6		
O, P, Q, R, S, and T	289.17	Retaining walls, bridges, enclosed storm sewer systems, and cross culverts will be proposed through the FEMA permitting process
U	2.85	Shoulder gutter, closed storm sewer system, and retention pond are proposed to minimize impacts
Total	338.32	

All impacts associated with the Preferred Alternative are shown in ***Bold Italics***.

Replacement drainage structures for the Ultimate project and ***Preferred Alternative*** are limited to hydraulically equivalent structures. The limitations to the hydraulic equivalency being proposed are basically due to restrictions imposed by the geometrics of design, existing development, cost feasibility, or practicability. An alternative encroachment location is not considered in this category since it defeats the project purpose or is economically unfeasible. Since flooding conditions in the project area are inherent in the topography or are a result of other outside contributing sources, and there is no practical alternative to totally eradicate flood impacts or even reduce them in any significant amount, existing flooding will continue, but not be increased. The proposed structures will be hydraulically equivalent to or greater than the existing structures, and backwater surface elevations are not expected to increase. As a result, the Ultimate project and ***Preferred Alternative*** will not affect existing flood heights or floodplain limits. The Ultimate project and ***Preferred Alternative*** will not result in any new or increased adverse environmental impacts. There will be no significant change in the potential for interruption or termination of emergency service or emergency evacuation routes. Therefore, it has been determined that this encroachment is not significant.

4.4.5.1 Segment 1

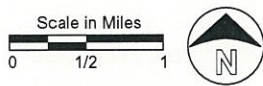
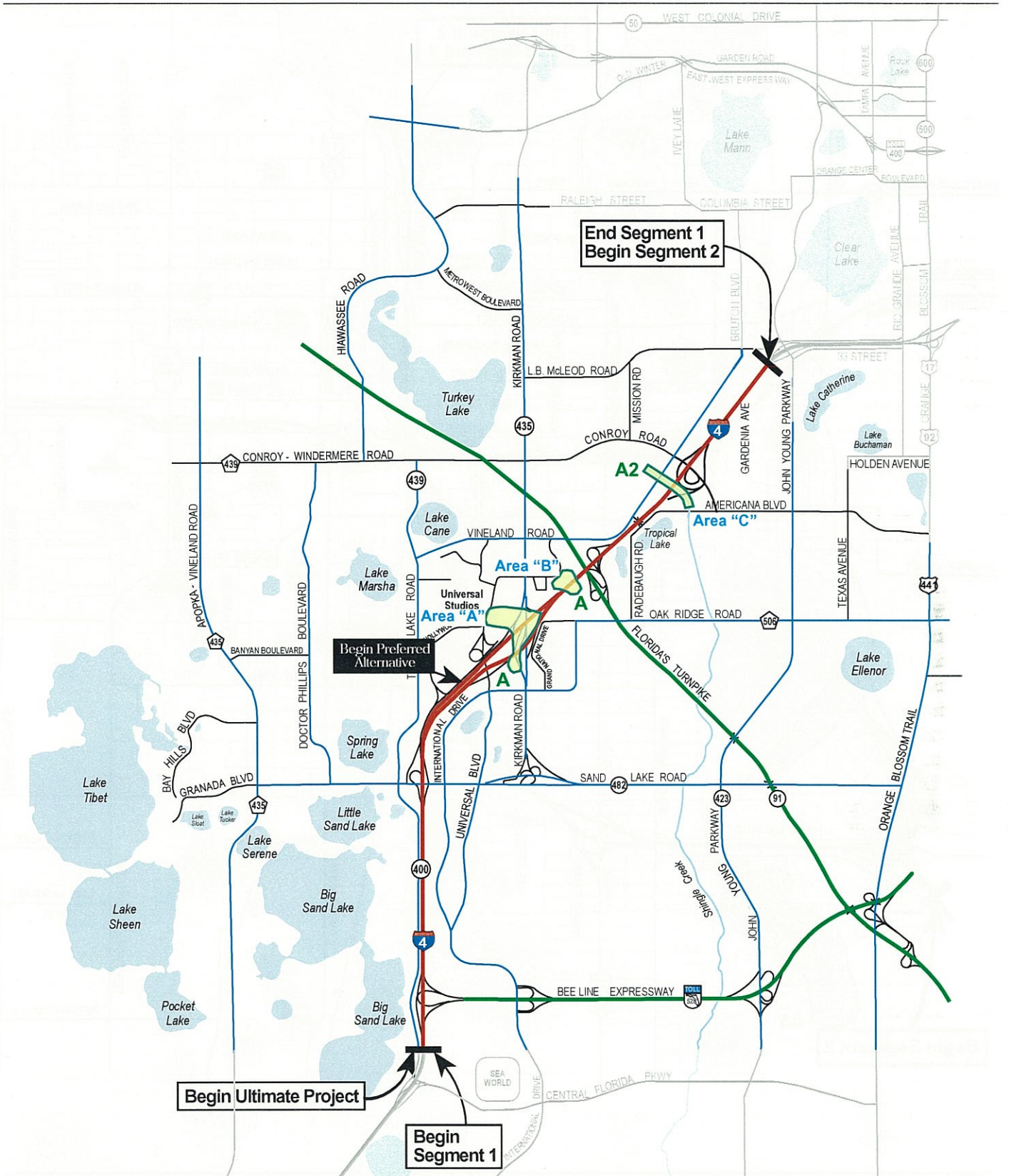
SR 528 to Kirkman Road

There are no floodplain impacts or floodway impacts in this portion of Segment 1.

Kirkman Road to John Young Parkway

There are two floodplain impacts and one floodway impact within this portion of Segment 1. Figure 4-18 identifies the location of each impact area and corresponds to the impact area designation provided in Section 3.4.5.

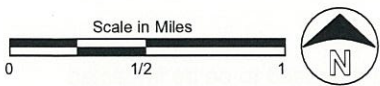
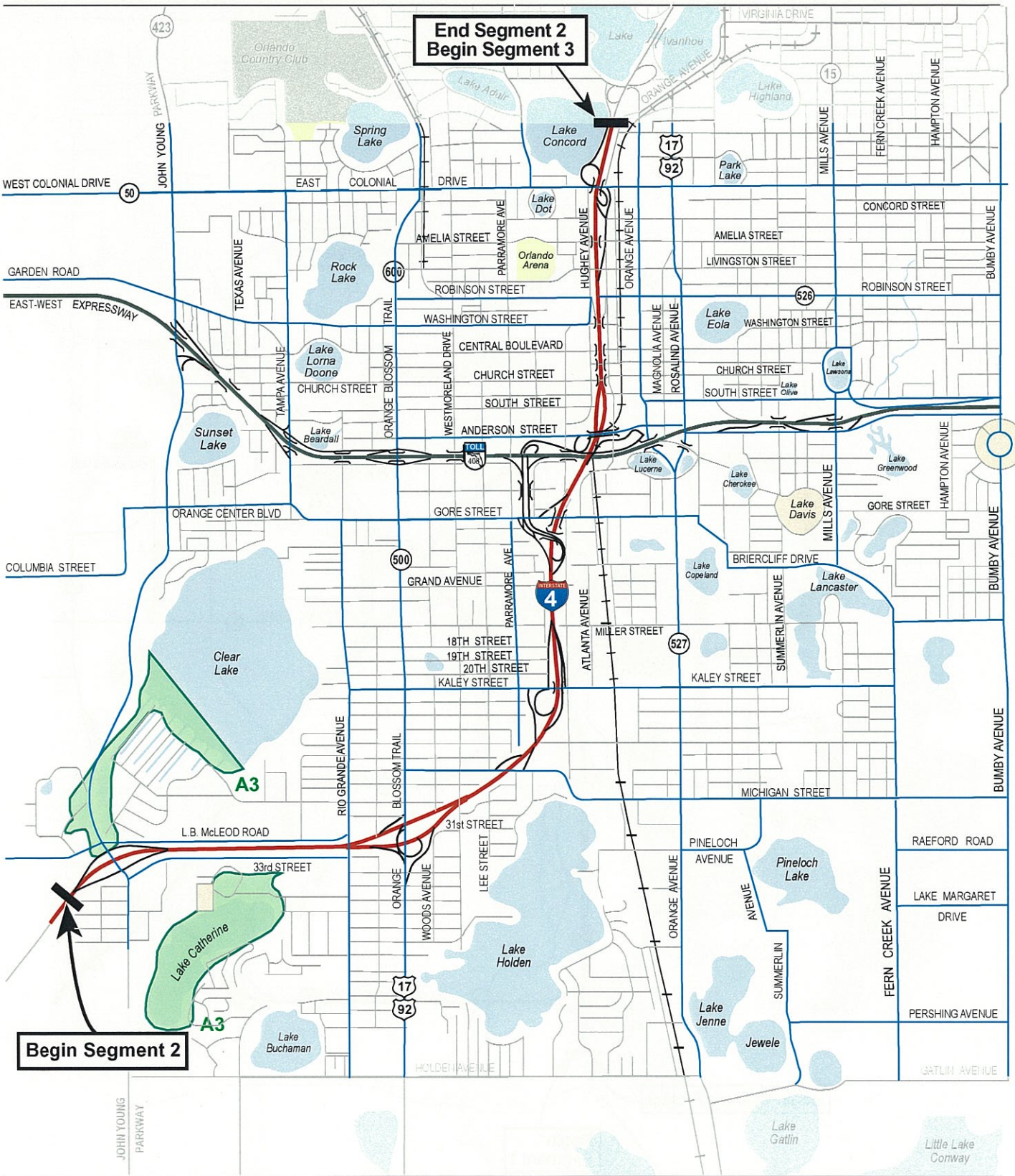
- ***Impact Areas A and B – The impact to these floodplains is approximately 29.33 acre-feet for Area A and 1.98 acre-feet for Area B. This constitutes a minimal impact when compared to the overall floodplain with which these areas are associated. Compensation for this displaced volume will be provided in the proposed stormwater management ponds. As stated in Section 3.4.5, these floodplains are associated with existing structures,***



- A Potential Floodplain Impact
- Area "X" Designation for floodplains proposed to be impacted by future improvements



Figure 4-18
Potentially Affected Base Floodplains and Floodways
 I-4 PD&E Study - Section 2
 Segment 1 of 6

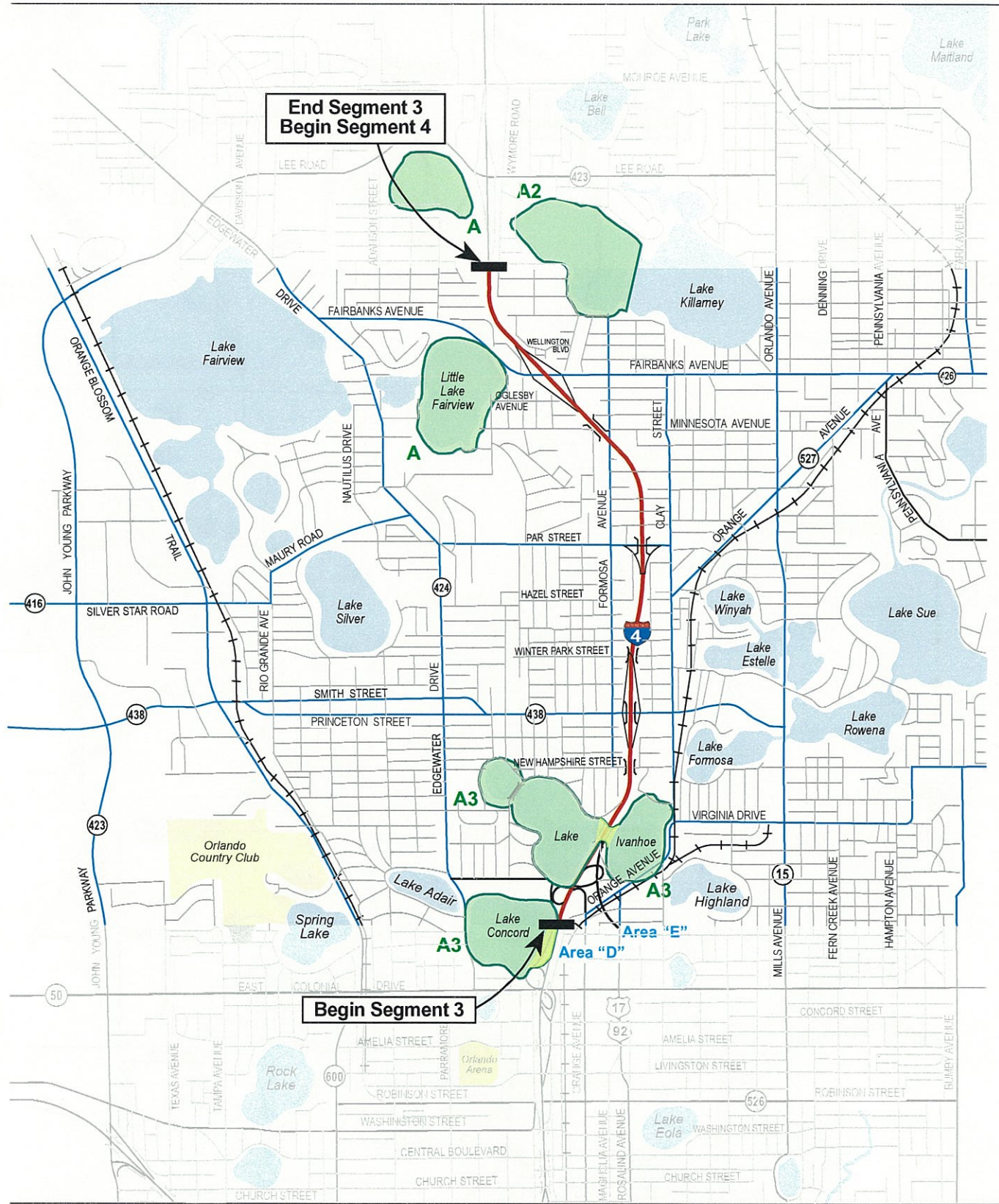


- A Floodplain and Zone Designation
- X Designation for floodplains proposed to be impacted by future improvements

Figure 4-18
Potentially Affected Base
Floodplains and Floodways




I-4 PD&E Study - Section 2
 Segment 2 of 6





**End Segment 3
Begin Segment 4**

Begin Segment 3

-  A Floodplain and Zone Designation
-  A Potential Floodplain Impact
-  Area "X" Designation for floodplains proposed to be impacted by future improvements

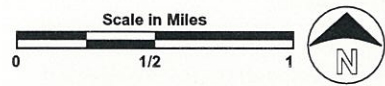
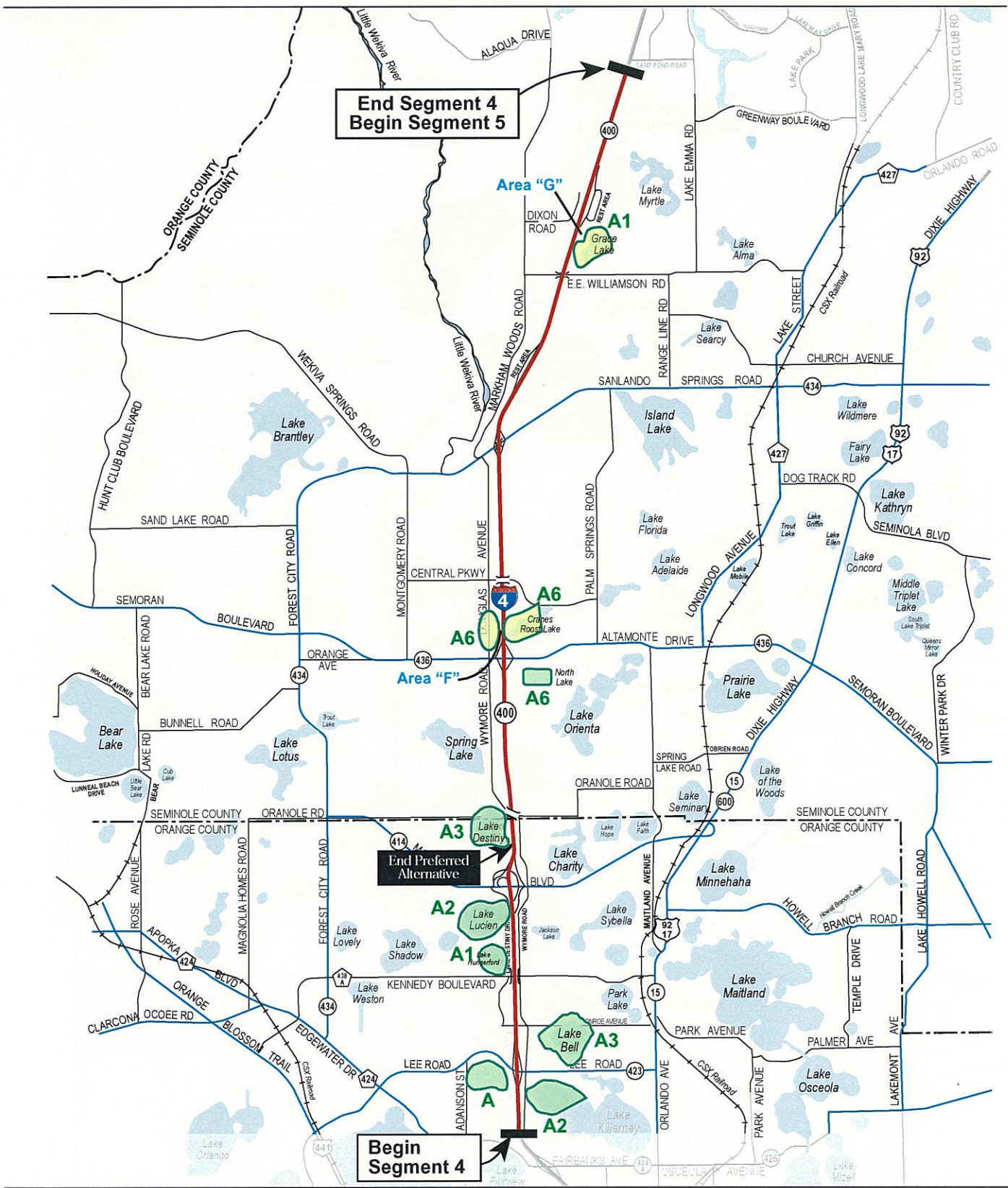
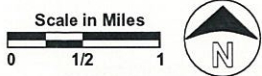


Figure 4-18
Potentially Affected Base
Floodplains and Floodways
I-4 PD&E Study - Section 2
Segment 3 of 6



**End Segment 4
Begin Segment 5**

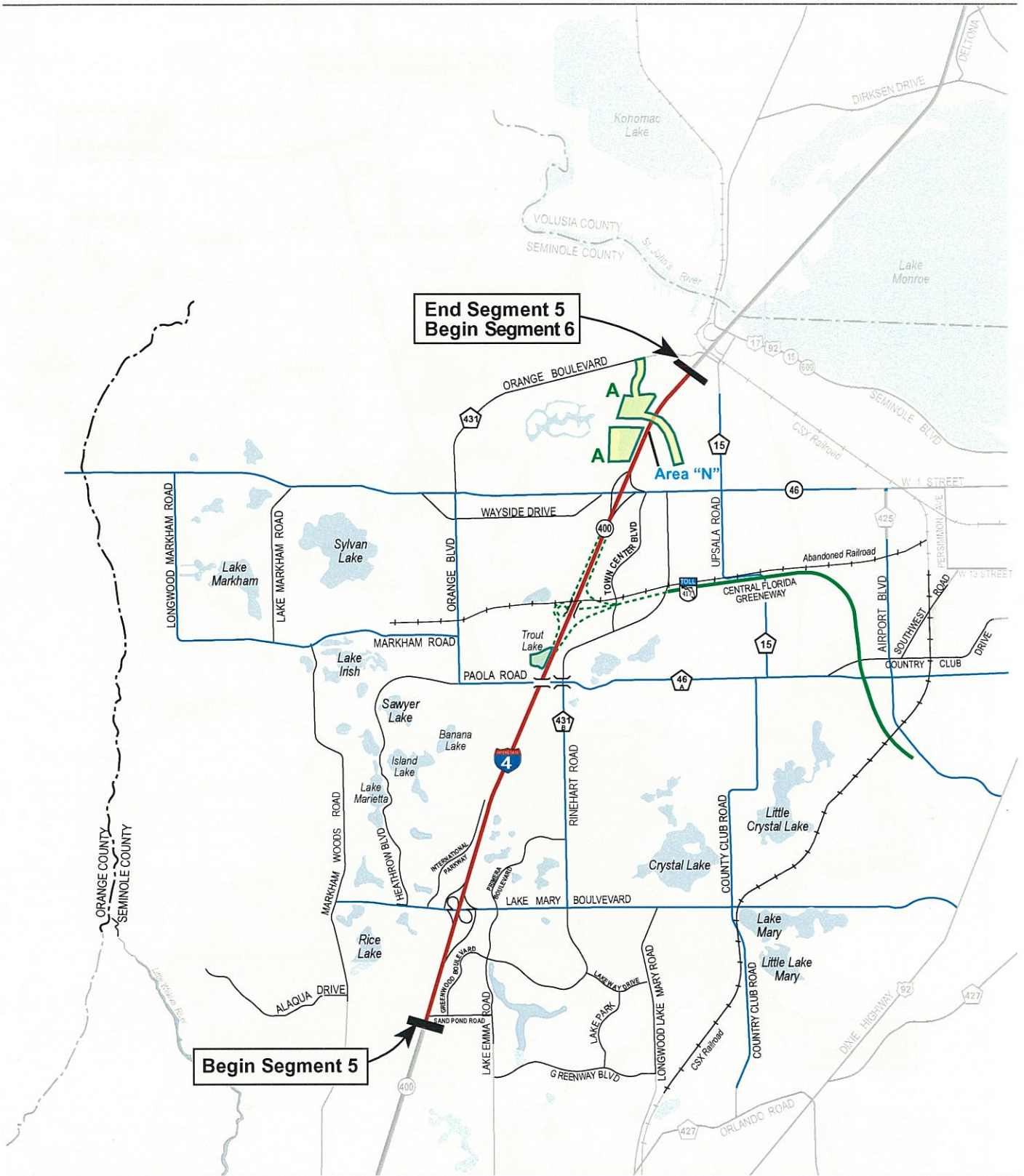
**Begin
Segment 4**



- A Floodplain and Zone Designation
- A Potential Floodplain Impact
- Area "X" Designation for floodplains proposed to be impacted by future improvements

Figure 4-18
Potentially Affected Base
Floodplains and Floodways
I-4 PD&E Study - Section 2
Segment 4 of 6

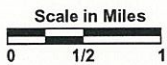




End Segment 5
Begin Segment 6

Begin Segment 5

Area "N"



- A Floodplain and Zone Designation
- A Potential Floodplain Impact
- Area "X" Designation for floodplains proposed to be impacted by future improvements



Figure 4-18
Potentially Affected Base
Floodplains and Floodways
I-4 PD&E Study - Section 2
Segment 5 of 6

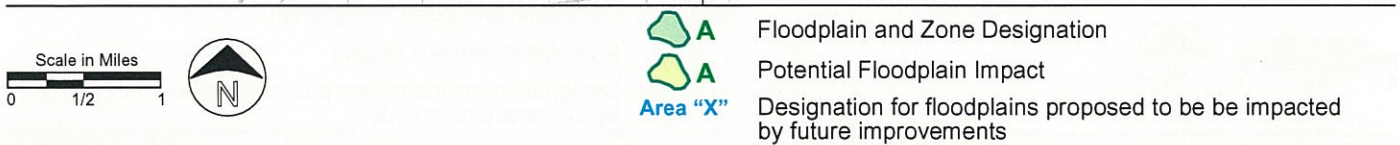
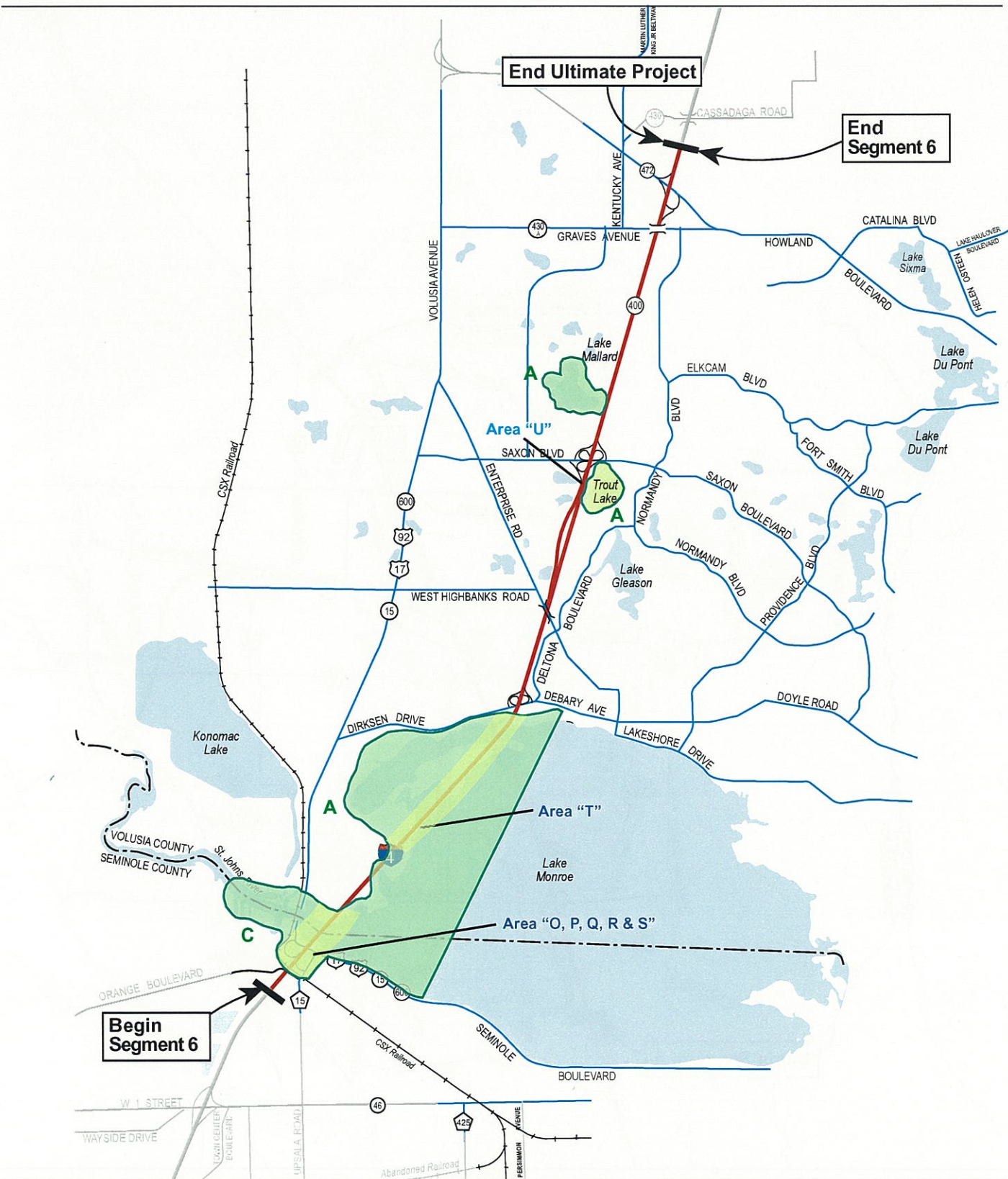


Figure 4-18
Potentially Affected Base
Floodplains and Floodways
I-4 PD&E Study - Section 2
 Segment 6 of 6



identified as Structures 6 and 7 in Figure 4-18. The property upstream of these culverts has experienced minor flooding in the existing condition. With the implementation of the improvements to I-4, the headwater elevation increases 0.04 foot with the extension of the culverts. This is a minimal increase. As stated in the Location Hydraulics Report (August 2000), this upstream flooding problem will require a more in-depth analysis during final design to determine an appropriate solution to reduce upstream impacts and ensure that downstream impacts are not increased.

- **Impact Area C** - Approximately 8.70 acre-feet of displaced floodplain volume is anticipated at this site. Additionally, this impact area is associated with Shingle Creek, which is identified as a FEMA regulated floodway. The crossing of Shingle Creek will include the placement of bridge piles within the floodway to accommodate the roadway widening. The piles will be placed and oriented so that no impact to this floodway will occur. In addition, the extension of the existing box culvert to accommodate the proposed improvements will require permitting and coordination with Orange County and FEMA. This hydraulic analysis, coordination, and permitting will take place during final design; however, initial analysis of this box culvert extension indicates that the headwater increases 0.08 foot, which will not adversely impact the upstream environment. Compensation for the displaced volume at this site will be provided in proposed stormwater management ponds. Coordination with Orange County and FEMA first occurred during the scoping process and has continued throughout the PD&E process. Refer to Chapter 5 of this report for information on coordination efforts with agencies and government officials. In addition, copies of correspondence is included in Appendix C.

4.4.5.2 Segments 2 and 3

There are two floodplain impacts in these segments. Their impacts and proposed mitigation are described below; Figure 4-18 identifies the location of each impact area and corresponds to the impact area designation provided in Section 3.4.5.

Impact Areas D and E - The estimated impacts to these floodplains associated with Lake Concord and Lake Ivanhoe, respectively, are minimal. To minimize impacts to these recreational lakes, the proposed mainline improvements and additional ramps will be bridged instead of built on fill; therefore, the impacts within the floodplains will be equal to the volume of the bridge piers. Excavating existing fill adjacent to the interstate will compensate for this minimal fill volume.

4.4.5.3 Segment 4

Lee Road to Maitland Boulevard

There are no floodplain or floodway impacts in this portion of Segment 4.

Maitland Boulevard to West of Lake Mary Boulevard

There are two floodplain impacts anticipated within this portion of Segment 4. Their impacts and proposed mitigation are described below. Figure 4-18 identifies the location of each impact area and corresponds to the impact area designation provided in Section 3.4.5.

- **Impact Area F** - The approximate impacts to this floodplain associated with Cranes Roost are minimal. In an effort to minimize impacts, the proposed improvements will be bridged; therefore, the impacts to this floodplain are equal to the volume of the bridge piers. By excavating existing fill adjacent to I-4, the displaced volume can be compensated, and additional available floodplain can potentially be added. This may reduce the severity of the existing flooding at this site.
- **Impact Area G** - Approximately 6.03 acre-feet of displaced volume is anticipated at this floodplain associated with Grace Lake, as a result of the proposed improvements. Compensation is to be provided in Pond CP-1. This compensation is not designed to improve the historic flooding on the west side of I-4, but will maintain the current high water elevation for a 100-year storm event.

4.4.5.4 Segment 5

There is one floodplain impact anticipated within Segment 5. The impacts and proposed mitigation are described below. Figure 4-18 identifies the location of the impact area and corresponds to the impact area designation provided in Section 3.4.5.

- **Impact Area N** - The amount of displaced 100-year volume at this site is approximately 0.26 acre-feet and is insignificant. No separate floodplain compensation/mitigation is proposed.

4.4.5.5 Segment 6

There are seven impact areas anticipated within this segment. Their impacts and proposed mitigation are described below. Figure 4-18 identifies the location of each impact area and corresponds to the impact area designation provided in Section 3.4.5.

- **Impact Areas O, P, Q, R, S, and T** - These six impact areas are located at the I-4/US 17-92 interchange and adjacent to I-4 through the Lake Monroe floodplain and total approximately 289.17 acre-feet in impact volume. This displaced volume increases the static Lake Monroe floodplain elevation by 0.018 feet over the total floodplain area and is considered insignificant. Several techniques are proposed to further minimize the impacts of this project: retaining walls, bridges, and enclosed stormsewer systems. Additionally, cross culverts will be installed, by jack and bore, through the Lake Monroe causeway to restore the hydroperiod of the wetlands and floodplain on the west side of I-4. These culverts will be placed such that a free flow flushing may occur. Coordination with all regulatory agencies has been ongoing and should continue concerning the location, size, and most effective inverts for the installation of these cross culverts.

The St. Johns River is considered a regulated floodway. However, no impacts to the floodway are anticipated as part of the I-4 PD&E Study - Section 2. As part of the I-4 Six Laning and St. Johns River Bridge project, the substructure and superstructure for the general use lanes will be constructed. In addition, the foundation for the HOV lanes will be constructed, thereby limiting construction within the floodway to one time.

- **Impact Area U** - The approximate impact to this floodplain associated with Trout Lake is 2.85 acre-feet. In an effort to minimize these impacts, it is proposed to provide shoulder gutter and a closed storm sewer system. Compensation for this minimal impact is to be provided in the proposed retention ponds within the I-4/Saxon Boulevard interchange since there is excess volume available in these ponds according to the preliminary design. The implementation of this scheme is not proposed to eliminate the cyclic flooding problem as discussed in Section 3.4.5.

4.4.5.6 Mitigation

As indicated in the previous sections, impacts to floodplains may be mitigated using the following measures:

- *Stormwater management ponds*
- *Excavating existing fill adjacent to the interstate*

Potential impacts to the regulated floodway will be mitigated during the design phase of the project. As indicated, Shingle Creek is a regulated floodway. As part of the proposed improvements, a bridge will be constructed over Shingle Creek. The construction of the bridge will include the placement of bridge piles within the floodway to accommodate the roadway widening. The piles will be placed and oriented so that no impact to this floodway will occur. A hydraulic analysis will be conducted during final design to determine if there will be any encroachment into the floodway due to the bridge piers. Any impacts to the floodway will be permitted through Orange County and FEMA. A discussion of the permits required is included in Section 4.7.

4.4.6 Drainage and Hydrology

Stormwater management systems will be provided for each basin to provide the adequate stormwater treatment and attenuation required by Orange County, SFWMD, SJRWMD, and FDOT (refer to the *Pond Siting Report* (August 2000) for design criteria). It will be the responsibility of FDOT to maintain the proposed stormwater management facilities unless other jurisdictional arrangements are made.

The stormwater management approach for the Ultimate project was initially a traditional one with stormwater ponds consisting of either wet detention ponds or dry retention ponds depending on the existing ground elevation. When sufficient right-of-way was not available within the basin required for a traditional or regional pond approach, minor adjustments to the standard design criteria for ponds were investigated in accordance with local and state agencies and FDOT standards (refer to *Pond Siting Report* (August 2000)). When these minor design adjustments did not provide an acceptable alternative, two options were considered:

- An exfiltration system design instead of traditional stormwater ponds.
- An exfiltration system design in combination with traditional stormwater ponds.

A combination stormwater alternative consisting of traditional ponds and exfiltration system was used in cases where right-of-way was available within existing or proposed I-4 for a traditional stormwater pond, but not sufficient to meet the entire basin requirements. This alternative is being recommended in some basins in lieu of total exfiltration due to the high maintenance requirements for these types of systems (refer to the *Pond Siting Report* (August 2000)).

Four alternatives have been identified for the locations of the proposed exfiltration systems for I-4 (Options A, B, C, and D). Options C and D were evaluated further and cost estimates were prepared for placement of exfiltration systems within the Ultimate project area per the April 22, 1998, FDOT I-4 PD&E Study Drainage Concept Meeting (refer to the *Pond Siting Report* (August 2000)). The Option C exfiltration system is located within the I-4 corridor between the outside general use lane shoulder and the typical section wall. The Option D exfiltration system is located within the I-4 corridor between the typical section wall and the proposed right-of-way line. Option D is the recommended alternative for I-4 exfiltration systems that have been identified in the *Pond Siting Report* (August 2000).

An underdrain system has been included as part of the exfiltration system for planning purposes due to high water table elevations for Option D, and parts of Option C. In Option C, an underdrain system was not included in the exfiltration systems that are being proposed in downtown Orlando where I-4 has elevated typical sections (refer to the *Pond Siting Report* (August 2000)).

The proposed drainage scheme will incorporate the use of shoulder gutter and storm sewer to convey runoff to the water management facilities to reduce the impacts to right-of-way, wetlands, and floodplains. If conveyance ditches can be employed without excess impacts, they will be used where appropriate. The recommended stormwater management systems for this project consist of stormwater ponds and exfiltration systems (refer to Chapter 4 of the *Pond Siting Report* (August 2000) for further details on each basin per segment). Listed below are the recommended alternatives for each basin per segment.

Table 4-33 summarizes the recommended stormwater management systems for the Ultimate project and the *Preferred Alternative*. For the locations of the stormwater ponds, refer to the Preliminary Concept Plans (February 2002).

Stormwater management for basins NN, OO, and PP is being provided under the FDOT I-4 Six-Laning Project from Lake Mary Boulevard to US 17-92 (FDOT WPI No. 5148847 & SPN 77160-1404). A separate PD&E Study and EA has been completed for this referenced I-4 six-laning project prior to design.

Table 4-33. Recommended Stormwater Management Systems

Basin	Recommended Stormwater Management
Segment 1	
A	Ponds A-1, A-2, A-3, A-5, A-7 & A-9
A-1	Ponds A-1-1 & A-1-2
B	Pond B-2
C	Pond C-2
D	Ponds D-2 & D-3
E, F 3/C, 3/F'	F-32, F-33, F-34 & F-35
G, H/C	Ponds H-3, H-4, H-5 & H-6
I	Pond I-1
J	I-4/Conroy Road Interchange Ponds
Segments 2 and 3	
M	Pond M-1
N	Ponds N-4 and N-5
O	Ponds O-4 and 36-inch Exfiltration
P	P-1, P-2, P-4, P-6, P-8, P-10, P-12 and 36-inch Exfiltration
Q	36-inch Exfiltration
R	Ponds R-2 and R-4 and 30-inch Exfiltration
S	Pond S-1 and 30-inch Exfiltration
T	36-inch Exfiltration
U	36-inch Exfiltration
V	36-inch Exfiltration
W/C	36-inch Exfiltration
W/F'	36-inch Exfiltration
X/C&F'	36-inch Exfiltration
Y/C	36-inch Exfiltration
Y/F'	36-inch Exfiltration
Z/C&F'	42-inch Exfiltration
Segment 4	
AA	Ponds AA-5 & AA-1
BB	Ponds BB-1, BB-3, BB-4, BB-5, BB-6, BB-7, BB-8, BB-9 & BB-10
CC	Pond CC-22
DD	Pond DD-1
EE	Pond EE-2
FF	Ponds FF-3 & FF-4
GG	Pond GG-1
HH	Ponds HH-2 & HH-3
II	Pond II-1A
JJ	Pond JJ-1
KK	Pond KK-2
LL	Ponds LL-1 & LL-2
Segment 5	
MM	Pond MM-2
Segment 6	
QQ	Ponds QQ-3 & QQ-5
RR	Ponds RR-2 & RR-3
SS	Ponds SS-2 & SS-3
TT	Ponds TT-3, 4, 5 & 8
UU	Pond UU-2
VV	Pond VV-2 & VV-3

All impacts associated with the Preferred Alternative are shown in *Bold Italics*.

4.4.7 Farmlands

The Ultimate project and *Preferred Alternative* improvements will have no impact on farmlands. Through coordination with NRCS, it has been determined that no farmlands as defined in 7 CFR 658 are located in the vicinity of the Ultimate project and *Preferred Alternative*. Therefore, the provisions of the Farmland Protection Policy Act of 1984 do not apply to the Ultimate project and *Preferred Alternative*.

4.5 Utilities Impacts

Existing utilities within the Ultimate project and *Preferred Alternative* include electrical transmission lines, gas lines, water mains, sanitary sewer pipes, cable television lines, telecommunication lines, railroads, and FDOT SMIS structures. Thirty-seven utility companies have existing utilities located within the Ultimate study area and are discussed in Section 3.5 of this report.

Table 4-34 summarizes the major utilities potentially impacted by the Ultimate project and the *Preferred Alternative*.

As indicated in the *Utility Impact Report* (September 1998) and Section 3.5, forty-six utility companies were contacted to determine the presence of existing and proposed utilities within the Ultimate project corridor. The utility companies provided the project team with plans of existing and proposed utilities. The locations of the utilities are provided on the location plan sheets as part of the *Utility Impact Report* (September 1998). Further coordination with the utility companies will occur during the design phase of the project.

4.5.1 Cost

The utility companies identified in Table 4-34 were contacted for a determination of cost of relocation. However, the utility companies declined to give this information. The cost of the relocation of the impacted utilities will be determined during design.

4.5.2 Mitigation

Most utility companies have technologies to alter facilities without inconveniences to the customers. However, to the extent feasible, mitigation measures for utility disruptions will include:

- *Maintaining utility connections in temporary locations*
- *Minimizing the time without service*
- *Installing alternative service before disconnecting the existing service*
- *Allowing service disruption only during periods of non-usage or minimum usage*

4.6 Navigation

Construction activities for the proposed I-4/St. Johns River Bridge replacement would have air, noise, water quality, vehicular and marine traffic flow, and visual impacts for those residents, travelers, and recreational users within the immediate vicinity of the Ultimate project.

The air quality impact would be temporary and primarily in the form of emissions from diesel powered construction equipment and dust from embankment and haul road areas. Air pollution associated with the creation of airborne particles would be effectively controlled through the use of watering or the application of calcium chloride in accordance with FDOT's *Standard Specifications for Road and Bridge Construction*, as directed by the FDOT project manager.

Noise and vibration impacts would be from the heavy equipment movement and construction activities such as pile driving and vibratory compaction of embankments. Noise control measures would include those contained in FDOT's *Standard Specifications for Road and Bridge Construction*.

Water quality impacts resulting from erosion and sedimentation would be controlled in accordance with FDOT's *Standard Specifications for Road and Bridge Construction* and through the use of best management practices (BMPs). During filling, dredging, and piling installation, turbidity and erosion would be controlled by silt screens, haybales, or other appropriate techniques.

Table 4-34. Major I-4 Utilities

Utility Type, Owner	Sheet	Location	Size (units vary)	Material	Impact	Approximate Station
Segment 1						
Electric, FPC	1	Aerial, runs west along back parking lot of Convention Center, then north along I-4 right-of-way to Mile Post 72.7, then crosses over I-4 right-of-way at Mile Post 72.4.	795 ft	AL	Possible	775
Telephone, BellSouth	1A	Buried, runs north along International Drive from Westwood Boulevard to Hawaiian Court.	N/A	FOC	Possible	BL 234
Cable TV, CVI	1, 2	Aerial, runs north along Turkey Lake Road right-of-way from Central Florida Parkway to Wallace Road with buried segments near SR 528, Mile Post 72.5 and Mile Post 73.2.	40 inch	FOC	Possible	715-770
Electric, FPC	2	Buried, runs north along the east I-4 right-of-way from Mile Post 72.7 to 100 feet south of Sand Lake Road west, then crosses under I-4 right-of-way to Turkey Lake Road.	1000 ft	KCM	Possible	770-825
Electric, FPC	3	Aerial, runs west from International Drive over I-4 right-of-way then north to Turkey Lake Road.	795 ft	AL	Possible	863
Cable TV, Time Warner Communications	3	Aerial, runs from International Drive toward I-4, then runs south along access road east of ramp and then east.	N/A	FOC		
Cable TV, Time Warner Communications	5	Aerial, crosses over Kirkman Road at Mile Post 75.3, then north along Grand National Drive west, then crosses over I-4 right-of-way at Mile Post 76 and along I-4 right-of-way to Kirkman Road and north.	N/A	FOC	Possible	965
Electric, OUC	5	Buried, runs west along Oak Ridge Road then north under I-4 right-of-way at Mile Post 75.9.	115 KV	N/A	Possible	969
Electric, OUC	5	Buried, runs under Kirkman Road to feed median, then crosses under the northbound I-4 on-ramp, then crosses under I-4 right-of-way at Mile Post 75.8.	115 KV	N/A	Possible	936-965
Electric, OUC	5	Buried, runs under Kirkman Road to feed median, then crosses under the northbound I-4 on-ramp, then crosses under I-4 right-of-way at Mile Post 75.8.	115 KV	N/A	Possible	936-965
Electric, FPC	6	Aerial, runs northeast along I-4 right-of-way then over I-4 right-of-way, to run northwest along west Turnpike right-of-way.	230 KV	WXd	Possible	990
Electric, FPC	6	Aerial, runs northwest along west Turnpike right-of-way over I-4 right-of-way.	69 KV	WR	Possible	990
Cable TV, Time Warner Communications	6	Buried, runs north along Vineland Road under I-4 right-of-way to American Boulevard; Aerial, runs east from American Boulevard.	N/A	FOC	Possible	1028
Cable TV, Time Warner Communications	6	Buried, runs north under Vineland Road from the Florida Turnpike to Mile Post 76.7. Aerial from Mile Post 76.7 to L.B. McLeod Road.	N/A	FOC		
Electric, OUC	8	Aerial, runs southeast at Mile Post 78.3 from Vineland Road over I-4 right-of-way and connects to power line along I-4 right-of-way.	N/A	N/A	Possible	1108
Cable TV, Time Warner Communications	8	Buried, runs east along L.B. McLeod Road Aerial at Surfside Road and continues east.	N/A	FOC	Possible	1139
Cable TV, Time Warner Communications	8	Aerial, runs south along Clear Way, then east along Surfside Road to L.B. McLeod Road, then to Rio Grande Road, then north.	N/A	FOC		
Segments 2 and 3						
Cable TV, Time Warner Communications	9	Buried, runs south under I-4 right-of-way from L.B. McLeod Road to 33rd Street west. Splits and runs west 4000 feet along 33rd Street and east to Rio Grande Road west. Aerial at Rio Grande west.	N/A	FOC	Possible	15

Table 4-34. Major I-4 Utilities (Continued)

Utility Type, Owner	Sheet	Location	Size	Material	Impact	Approximate Station
Electric, OUC	9	Aerial, runs south along Nashville Road over I-4 right-of-way and continues south.	NIA	NIA	Possible	24
Electric, OUC	9	Aerial, runs south along Nashville Road over I-4 right-of-way and then both 300 feet east and 300 feet west along 33rd Street.	NIA	NIA	Possible	24
Cable TV, Time Warner Communications	9	Buried, runs east along L.B. McLeod Road from station 1150 to Rio Grande Avenue, then north along Rio Grande Avenue.	NIA	FOC	Possible	1150-16
Cable TV, Time Warner Communications	10	Buried, runs east along Michigan Street under I-4 right-of-way and continues east.	NIA	FOC	Possible	59
Cable TV, Time Warner Communications	10	Buried, runs north-south along Westmoreland Drive from I-4 right-of-way, north of I-4.	NIA	FOC		
Cable TV, Time Warner Communications	10	Aerial, runs south along Westmoreland Drive to I-4 right-of-way, south of I-4.	NIA	FOC		
Telephone, BellSouth	10	Aerial, runs east along 29th Street to I-4 right-of-way.	NIA	FOC		
Cable TV, Time Warner Communications	11	Aerial, runs east along 19th Street to west I-4 right-of-way.	NIA	FOC	Possible	89
Cable TV, Time Warner Communications	11	Aerial, runs east along 18th Street to I-4 right-of-way.	NIA	FOC	Possible	93
Electric, OUC	11	Aerial, runs east along 18th Street from Parramore Avenue to within 100 feet of I-4 right-of-way. East from I-4 right-of-way along 18th Street to Division Avenue.	NIA	NIA	Possible	93
Electric, OUC	11	Aerial, runs east along Miller Street over I-4 right-of-way and continues east.	NIA	NIA	Possible	96
Electric, OUC	11	Substation east of I-4.	NIA	NIA	Possible	138
Railroad, CSXT	11	Runs north - south under SR 408 right-of-way, 100 feet from I-4 right-of-way.	NIA	NIA	Possible	650
Cable TV, Time Warner Communications	11	Aerial, runs east along 20th Street to I-4 right-of-way.	NIA	FOC	Possible	89+50
Telecommunications, LDDS	11	Buried, runs east-west along SR 408 south right-of-way.	NIA	FOC	Possible	EIW 625-648
Telephone, AT&T	11	Buried, runs east-west along SR 408 north right-of-way.	NIA	FOC	Possible	EIW 625-648
Telephone, World Communication	11	Buried, runs east-west along SR 408 north right-of-way.	NIA	FOC	Possible	EIW 625-648
Telephone, World Communication	11	Buried, runs east-west along SR 408 south right-of-way.	NIA	FOC	Possible	EIW 625-648
Cable TV, Time Warner Communications	11	Aerial, runs east along Miller Street to I-4 right-of-way.	NIA	FOC		
Cable TV, Time Warner Communications	11	Aerial, runs east along Conroy Street from Parramore Street to Avondale Avenue.	NIA	FOC		
Cable TV, Time Warner Communications	11	Buried, runs east along Indiana Street from Parramore Street to Avondale Avenue.	NIA	FOC		
Telecommunications, LDDS	11	Buried, runs along south side of SR 408 from Sunset Drive to Parramore Avenue.	NIA	FOC	Possible	EIW 560-623+70
Telephone, AT&T	11	Buried, runs along north side of SR 408 from Church Street to McFall Avenue.	NIA	FOC	Possible	EIW 560-623+70

Table 4-34. Major I-4 Utilities (Continued)

Utility Type, Owner	Sheet	Location	Size	Material	Impact	Approximate Station
Telephone, World Communication	11	Buried, runs along north side of SR 408 from Church Street to McFall Avenue and crosses SR 408 at Tampa Avenue toll plaza.	NIA	FOC	Possible	EIW 560-623+70
Telephone, World Communication	11	Buried, runs along south side of SR 408 from Sunset Drive to Parramore Avenue.	NIA	FOC	Possible	EIW 560-623+70
Telephone, BellSouth	11	Buried, runs north along Tampa Avenue from Carter Street to west South Street.	NIA	FOC	Possible	EIW 576
Telephone, AT&T	11	Buried, runs east along north side SR 408 right-of-way from Garland Avenue to Liberty Avenue.	NIA	FOC	Possible	EIW 659-676
Telecommunications, LDDS	11	Buried, runs east along south side SR 408 from Garland Avenue to Rosalind Avenue.	NIA	FOC	Possible	EIW 659-715
Telephone, World Communication	11	Buried, runs east along north side SR 408 right-of-way from Garland Avenue to Mills Avenue.	NIA	FOC	Possible	EIW 659-715
Telephone, World Communication	11	Buried, runs east along south side SR 408 right-of-way from Garland Avenue to Mills Avenue.	NIA	FOC	Possible	EIW 659-715
Telephone, BellSouth	11	Buried, runs southeast from the south end of Garland Avenue, under SR 408 right-of-way to Lucien Circle.	NIA	FOC	Possible	EIW 675
Telephone, BellSouth	11	Buried, runs south along CSXT Railroad from Pine Street to Anderson Street.	NIA	FOC		
Telephone, BellSouth	11	Aerial, runs north along Rosalind Avenue from South Street to Pine Street.	NIA	FOC		
Telephone, BellSouth	11	Buried, runs east along South Street from Rosalind Avenue to 150 ft east of Delaney Avenue.	NIA	FOC		
Telephone, AT&T	11	Buried, runs east and follows SR 408 ramp to Delaney Avenue.	NIA	FOC	Possible	EIW 645-671
Telephone, World Communication	11	Buried, runs east along north side SR 408 right-of-way from Mills Avenue to Primrose Drive.	NIA	FOC	Possible	EIW 715-750
Telephone, World Communication	11	Buried, runs east along south side SR 408 right-of-way from Mills Avenue to Primrose Drive.	NIA	FOC	Possible	EIW 715-750
Telephone, MCI	11, 12	Buried, runs north along CSXT Railroad right-of-way to Concord Street then east.	NIA	FOC	Possible	EIW 650
Electric, OUC	12	Substation east of I-4.	NIA	NIA	Possible	180
Railroad, Florida Central	12	Runs west 200 ft south and parallel to Pitman Road from CSXT Railroad under I-4 right-of-way and continues west.	NIA	NIA	Possible	180
Telephone, BellSouth	12	Buried, runs north along Garland Avenue from the SR 408 right-of-way to South Street.	NIA	FOC	Possible	142-152
Telephone, World Communication	12	Buried, runs east-west along the east SR 408 right-of-way.	NIA	FOC	Possible	EIW 645-670
Telephone, MCI	12	Buried, runs north under SR 408 right-of-way, along CSXT Railroad to Concord Street.	NIA	FOC	Possible	EIW 651
Cable TV, Time Warner Communications	12, 13	Buried, runs west along Amelia Street from CSXT Railroad to Garland Avenue, then north on Garland Avenue to Concord Street.	NIA	FOC	Possible	192-198
Cable TV, Time Warner Communications	13	Buried, runs east - west along Concord Street under I-4 right-of-way and continues east and west.	NIA	FOC	Possible	198

Table 4-34. Major I-4 Utilities (Continued)

Utility Type, Owner	Sheet	Location	Size	Material	Impact	Approximate Station
Cable TV, Time Warner Communications	13	Buried, runs along Concord Street under I-4 right-of-way and continues east and west.	NIA	FOC	Possible	198
Cable TV, Time Warner Communications	13	Buried runs west along Ivanhoe Boulevard under I-4 right-of-way from Orange Avenue and continues east and west.	NIA	FOC	Possible	231
Cable TV, Time Warner Communications	13	Buried, runs along Ivanhoe Boulevard between Chamber of Commerce and Gateway Center.	NIA	FOC		
Railroad, CSXT	13	Runs north - south along Gertrude Avenue parallel to east I-4 right-of-way from SR 408 right-of-way to Orange Avenue.	NIA	NIA		
Telephone, BellSouth	13	Buried, runs east along Concord Street from CSXT Railroad.	NIA	FOC		
Telephone, BellSouth	13	Buried, runs east along Concord Street from CSXT Railroad.	NIA	FOC		
Cable TV, Time Warner Communications	14	Aerial, runs south along north Shore Terrace from New Hampshire Street to Ivanhoe Boulevard.	NIA	FOC	Possible	255
Electric, OUC	14	Aerial, runs east-west along Ivanhoe Boulevard over I-4 right-of-way to north Shore Lane.	NIA	NIA	Possible	257
Cable TV, Time Warner Communications	14	Buried, runs east - west along New Hampshire Street under I-4 right-of-way and continues east and west.	NIA	FOC	Possible	264
Telephone, BellSouth	14	Buried, runs east - west along New Hampshire Street under I-4 right-of-way and continues east and west.	NIA	FOC	Possible	264
Cable TV, Time Warner Communications	14	Aerial, runs east - west along Vanderbilt Street to I-4 right-of-way and continues.	NIA	FOC	Possible	267
Cable TV, Time Warner Communications	14	Buried, runs east along Smith Street from Formosa Avenue to west I-4 right-of-way.	NIA	FOC	Possible	280
Telephone, BellSouth	14	Aerial, runs west along Rollins Street from Formosa Avenue to west I-4 right-of-way then east from east I-4 right-of-way to Dade Avenue.	NIA	FOC	Possible	287
Cable TV, Time Warner Communications	14	Aerial, runs east along Winter Park Street from Formosa Avenue to west I-4 right-of-way.	NIA	FOC	Possible	290
Telephone, AT&T	14	Buried, runs east - west along Winter Park Street under I-4 right-of-way and continues east and west.	NIA	FOC	Possible	290
Telephone, AT&T	14	Buried, runs from the east along Ivanhoe Boulevard to east I-4 right-of-way, then north along I-4 right-of-way to New Hampshire Street.	NIA	FOC	Possible	250-264
Cable TV, Time Warner Communications	14	Buried, runs north along Cornell Avenue from New Hampshire Street to Princeton Street.	NIA	FOC	Possible	264-276
Cable TV, Time Warner Communications	14	Aerial, runs east - west along Yale Street to east I-4 right-of-way, then from west I-4 right-of-way and continues.	NIA	FOC	Possible	270+50
Cable TV, Time Warner Communications	14	Buried, runs east along Orlando Street from Formosa Avenue to west I-4 right-of-way.	NIA	FOC	Possible	283+50
Telephone, AT&T	14	Buried, runs north-south along Dade Avenue from Evans Street to the Oaks Apartments, then east to Orange Avenue.	NIA	FOC	Possible	300-315

Table 4-34. Major I-4 Utilities (Continued)

Utility Type, Owner	Sheet	Location	Size	Material	Impact	Approximate Station
Electric, OUC	14	Aerial, runs east - west along Hazel Street over I-4 right-of-way and continues east. Then north and south along west I-4 right-of-way and north & south along Dade Avenue.	NIA	NIA	Possible	303, 300-315
Cable TV, Time Warner Communications	14	Aerial, runs east - west along Hazel Street to west I-4 right-of-way then north along I-4 right-of-way to Massey Pelham Road.	NIA	FOC	Possible	303-313
Cable TV, Time Warner Communications	14	Aerial, runs east along King Street to west I-4 right-of-way.	NIA	FOC		
Cable TV, Time Warner Communications	14	Aerial, runs east along Evans Street to east I-4 right-of-way, continues to Dade Avenue	NIA	FOC		
Cable TV, Time Warner Communications	14	Buried, runs east from Formosa Street to west I-4 right-of-way then west along Massey Pelham Place Road.	NIA	FOC		
Cable TV, Time Warner Communications	14	Buried, runs east from Formosa Avenue to west I-4 right-of-way along Orlando Street.	NIA	FOC		
Telephone, AT&T	15	Aerial, runs east - west along Dartmouth Road over I-4 right-of-way and continues.	NIA	FOC	Possible	321
Cable TV, Time Warner Communications	15	Buried, runs east along Harmon Road from Formosa Avenue to I-4 right-of-way.	NIA	FOC	Possible	330
Cable TV, Time Warner Communications	15	Aerial, runs east-west along Minnesota Avenue from west I-4 right-of-way to the west.	NIA	FOC	Possible	346
Cable TV, Time Warner Communications	15	Aerial, runs east-west along Crander Avenue from west I-4 right-of-way to the west.	NIA	FOC	Possible	351
Cable TV, Time Warner Communications	15	Buried, runs west along Fairbanks Avenue from Formosa Ave, under I-4 and continues west.	NIA	FOC	Possible	365
Cable TV, Time Warner Communications	15	Aerial, runs north along Formosa Avenue from Par Avenue to Michigan Avenue.	NIA	FOC	Possible	316-341
Cable TV, Time Warner Communications	15	Aerial, runs east-west along Oglesby Avenue from west I-4 right-of-way to the west.	NIA	FOC	Possible	356+50
Segments 4 and 5						
Cable TV, Time Warner Communications	16	Aerial, runs east - west along Fairbanks Avenue over I-4 right-of-way and continues.	NIA	FOC	Possible	365
Cable TV, Time Warner Communications	16	Buried, runs north along Allen Avenue from east I-4 right-of-way to Wellington Boulevard.	NIA	FOC	Possible	367
Electric, FPC	16	Aerial, runs east - west along Franklin Road over I-4 right-of-way and continues west.	NIA	NIA	Possible	397
Data, Time Warner Communications	16	Aerial, runs east - west at Station 409 under I-4 right-of-way and continues.	NIA	FOC	Possible	409
Electric, FPC	16	Aerial Runs from Lake Killarney over I-4 right-of-way to Courtyard Street.	12KV	NIA	Possible	409
Electric, FPC	16	Aerial, runs east - west along Lee Road over I-4 right-of-way and continues to Wymore Road west then north to Kennedy Boulevard.	NIA	NIA	Possible	416

Table 4-34. Major I-4 Utilities (Continued)

Utility Type, Owner	Sheet	Location	Size	Material	Impact	Approximate Station
Electric, FPC	16	Aerial, runs east – west along Fairbanks Avenue over I-4 right-of-way and continues to Wymore; then buried, runs north along Wymore Road from Fairbanks to Lee Road.	69KV	NIA	Possible	365, 382
Cable TV, Time Warner Communications	17	Buried, runs east – west along Kennedy Boulevard under I-4 right-of-way and south along Wymore Road.	NIA	FOC	Possible	2143
Electric, FPC	17	Aerial, runs east - west along Kennedy Boulevard over I-4 right-of-way and continues.	69KV	NIA	Possible	2143
Data, Time Warner Communications	17	Buried, runs east - west along Kennedy Boulevard from Gabriel Avenue to east I-4 right-of-way, then north along Wymore Road.	NIA	FOC	Possible	2143-2160
Electric, FPC	18	Aerial, runs east from Lucien Way over I-4 right-of-way and continues east to substation at Mile Post 89.1 (3-phase).	69KV	NIA	Possible	2169
Electric, FPC	18	Aerial, runs east from Lucien Way over I-4 right-of-way to substation at Mile Post 89.1. (2-phase).	12KV	NIA	Possible	2169
Substation, FPC	18	Power substation east of I-4.	NIA	NIA	Possible	2169
Cable TV, Time Warner Communications	18	Buried, runs from west I-4 right-of-way to east I-4 right-of-way at Station 2177.	NIA	FOC	Possible	2177
Data, Time Warner Communications	18	Buried, runs north-south along Maitland Boulevard under I-4 right-of-way , 1100 feet south of Maitland Boulevard and continues north and south along Wymore Road.	NIA	FOC	Possible	2190
Cable TV, Time Warner Communications	18	Buried, runs north along Wymore Road from Station 2160 to Sandspur Road, then east along Sandspur Road.	NIA	FOC	Possible	2160-2183
Electric, FPC	18	Aerial, runs north along Wymore Road from Station 2160 to Substation, and continues north along Wymore Road under Maitland Boulevard to Station 2215.	69KV	NIA	Possible	2160-2215
Electric, FPC	20	Aerial, runs east - west along SR 436 over I-4 right-of-way and continues. (south side)	12KV	NIA	Possible	2301
Electric, FPC	20	Aerial, runs east - west along SR 436 over I-4 right-of-way and continues. (north side)	12KV	NIA	Possible	2303
Cable TV, Time Warner Communications	21	Aerial, runs east - west along Altamonte Commerce Boulevard then crosses over I-4 right-of-way to Raymond Avenue runs north along Douglas Avenue to SR 434.	NIA	FOC	Possible	2345
Electric, FPC	21	Aerial, runs east - west along Altamonte Commerce Boulevard then crosses over I-4 right-of-way to Raymond Avenue Branches off south to Camera #43.	12KV	NIA	Possible	2345
Electric, FPC	21	Aerial, runs northeast from Central Parkway over I-4 right-of-way and continues northeast.	230KV	NIA	Possible	2349
Electric, FPC	22	Aerial, runs west 500 feet south of SR 434, from Raymond Street over I-4 right-of-way and continues southwest to Douglas Avenue.	12KV	NIA	Possible	2401

4-191

Table 4-34. Major I-4 Utilities (Continued)

<i>Utility Type, Owner</i>	<i>Sheet</i>	<i>Location</i>	<i>Size</i>	<i>Material</i>	<i>Impact</i>	<i>Approximate Station</i>
Water Plant, Sanlando Utilities	24	Water Treatment Plant east of I-4.	N/A	N/A	Possible	2470
Electric, FPC	24	Aerial, runs east - west along EE Williamson Road over I-4 right-of-way and continues.	12KV	N/A	Possible	2495
Electric, FPC	24	Aerial, runs north 2200 feet along east I-4 right-of-way from EE Williamson Road, then crosses west over I-4 right-of-way.	12KV	N/A	Possible	2496-2518
Electric, FPC	25	Aerial, runs east - west at Mile Post 96.4, crosses over I-4 right-of-way and continues.	230KV	N/A	Possible	2566
Cable TV, TCI	26	Buried, runs east - west along Sandpond Road under I-4 right-of-way and continues.	N/A	FOC	Possible	2605
Electric, FPC	27	Buried, runs east - west along Lake Mary Boulevard under I-4 right-of-way and continues.	1000	KCM	Possible	2661
Electric, FPC	27	Buried, runs east at Mile Post 98.6 under I-4 right-of-way from International Parkway to east side of I-4 right-of-way. Aerial, runs north along poles for 3500 feet.	1000	KCM	Possible	2678
Water Plant, Seminole County	27	Water Treatment Plant west of I-4.	N/A	N/A	Possible	2688
Wastewater Plant, Seminole County	27	Wastewater Treatment Plant west of I-4.	N/A	N/A	Possible	2689
Electric, FPC	30	Aerial, runs northeast along back parking lot of Seminole Towne Center under I-4 right-of-way at Mile Post 102.2 and continues north to Oregon Avenue.	115KV	N/A	Possible	2867
Cable TV, Time Warner Communications	31	Aerial, runs north - east along Wayside Drive to Oregon Avenue for 200 feet, then crosses under I-4 right-of-way to SR 46 and continues east.	N/A	FOC	Possible	2880
Segment 6						
Electric, FPC	32	Aerial, runs north along easement and crosses over I-4 right-of-way at Mile Post 103.5 and continues north.	230KV	N/A	Possible	2934
Electric, FPC	32	Aerial, runs north along easement and crosses over I-4 right-of-way at Mile Post 103.5 and continues north.	115KV	N/A	Possible	2934
Telephone, BellSouth	32	Buried, runs east along Orange Boulevard and crosses under I-4 right-of-way and continues to Upsala Road.	N/A	FOC	Possible	2955
Telephone, BellSouth	32	Buried, runs east along Orange Boulevard and crosses under I-4 right-of-way and continues to Upsala Road.	N/A	FOC	Possible	2955
Railroad, CSXT	32	Parallel to Orange Boulevard and crosses I-4 and continues northwest and east.	N/A	N/A	Possible	2957
Electric, FPL	32	Aerial, runs north along Upsala Road then crosses under I-4 right-of-way at Station 2970, continues north under US 17-92 right-of-way and St. Johns River.	115KV	N/A	Possible	2970
Telephone, AT&T	32	Buried, runs north along Upsala Road, then crosses under I-4 right-of-way at Station 2970 and continues north under US 17-92 right-of-way and St. Johns River.	2 inch Duct	FOC/ STL	Possible	2970
Electric, FPC	36	Aerial, runs east - west 300 feet north of and parallel to Dirksen-DeBary Road right-of-way over I-4 right-of-way and continues.	12KV	N/A	Possible	3161

Table 4-34. Major I-4 Utilities (Continued)

<i>Utility Type, Owner</i>	<i>Sheet</i>	<i>Location</i>	<i>Size</i>	<i>Material</i>	<i>Impact</i>	<i>Approximate Station</i>
Electric, FPC	36	Aerial, runs east - west 350 feet north of and parallel to Dirksen-DeBary Road right-of-way over I-4 right-of-way and continues.	115KV	N/A	Possible	3162
Electric, FPC	36	Aerial, runs east - west 400 feet north of and parallel to Dirksen-DeBary Road right-of-way over I-4 right-of-way and continues.	230KV	N/A	Possible	3163
Electric, FPC	38	Aerial, runs east - west along Saxon Boulevard over I-4 right-of-way and continues.	69KV	N/A	Possible	3306
Electric, FPL	38	Aerial, runs east - west parallel to and 300 feet north of Saxon Boulevard right-of-way over I-4 right-of-way and continues.	115KV	N/A	Possible	3310
Electric, FPL	38	Aerial, runs east - west parallel to and 300 feet north of Saxon Boulevard right-of-way over I-4 right-of-way and continues.	115KV	N/A	Possible	3310
Electric, FPC	38	Aerial, runs east at Mile Post 110.1 over I-4 right-of-way, then north along I-4 right-of-way to Saxon Boulevard and continues east.	12KV	N/A	Possible	3283-3305
Electric, FPL	40	Aerial, runs east - west in easement at Mile Post 111.9 over I-4 right-of-way and continues.	115KV	N/A	Possible	3378-3420
Electric, FPC	40	Aerial, runs east in easement at Mile Post 111.9 over I-4 right-of-way and continues north to Graves Avenue.	115KV	N/A	Possible	3378-3420

All impacts associated with the Preferred Alternative are shown in ***Bold Italics***.
 BL indicates the station corresponds to stationing associated with SR 528 mainline.
 E/W indicates the station corresponds to stationing associated with SR 408 mainline.

Maintenance of traffic and sequence of construction would be planned and scheduled to minimize traffic delays throughout the project. Maintenance of marine vessel traffic would be coordinated with the USCG. Signs would be used as appropriate to provide notice of road closures and other pertinent information for the travelling public. Floating devices would similarly be used for the marine vessel traffic. The local news media would be notified in advance of road closures and other construction related activities that could cause excessive inconvenience.

For the residents and recreational users living in and/or using the area, some materials that would be stored for the project may be visually displeasing; however, this would be a temporary condition and should pose no substantial problem in the long term.

Construction of the roadway and bridge may require excavation of unsuitable material (muck), placement of embankments, and use of materials such as limerock, asphaltic concrete, and portland cement concrete. Disposal would be in appropriate, off-site areas. The removal of structures would be in accordance with local and state regulation agencies permitting this operation. The contractor would be responsible for the methods of controlling pollution on haul roads, in borrow pits, and in areas used for disposal of waste materials from the project. Temporary erosion control features as specified in the FDOT Standard Specifications, Section 104, would consist of temporary grassing, sodding, mulching, sandbagging, slope drains, sediment basins, sediment checks, artificial coverings, and berms.

A discussion of the St. Johns River is contained in Section 1.3.8 of this report. Impacts related to the St. Johns River Bridge are a part of the I-4 Six Laning and St. Johns River Bridge PD&E Study. For more information, refer to the *I-4 Six Laning & St. Johns River Bridge EA/FONSI* (May 2000).

There are no navigation impacts associated with the Preferred Alternative.

4.7 Required Permits

The construction and operation of the proposed improvements to I-4 will require permits from federal and state regulatory agencies prior to the construction of the Ultimate project and the *Preferred Alternative*. Permits will be required for wetland impacts, stormwater discharge, treatment and attenuation, and submerged sovereign state lands. A bridge permit will not be required for Ultimate project and the *Preferred Alternative*. All bridge construction for the ultimate modification of the I-4 bridge structures across Lake Monroe/St. Johns River will be completed under the I-4 Six Laning and St. Johns River Bridge project.

In addition, it is anticipated that a Sovereign Submerged Lands Public Easement will not be required for the construction of the Preferred Alternative. The Preferred Alternative does not cross any sovereign submerged state lands.

FDOT District 5 has sovereign immunity from local permits within its jurisdiction and, therefore, the I-4 PD&E Study - Section 2 project will not require permits from Orange, Seminole, or Volusia Counties. Complying with all federal and state regulations concerning impacts to wetlands and water resources will satisfy county ordinances pertaining to such impacts.

A list of the potential permits required prior to commencement of the I-4 PD&E Study - Section 2 construction activities and the respective issuing agency are presented in Table 4-35.

4.7.1 Federal Dredge and Fill Permit

All wetlands in the United States are federally protected under Executive Orders 11990 (Protection of Wetlands) and 11988 (Floodplain Management), the Clean Water Act (CWA), and Rivers and Harbors Act. Section 404 of the CWA requires that a permit be obtained from USACE before discharge of dredged or fill material in wetlands within federal jurisdiction. Section 10 of the Rivers and Harbors Act (33 USC Section 403) requires a permit for structures or work in or affecting navigable waters of the United States. Jurisdiction under this statute is broadly defined by Congress

and by USACE in 33 CFR Part 323 to include all waters of the United States whose alteration could affect interstate or foreign commerce.

Table 4-35. Potentially Required Permits for the Ultimate Project and the Preferred Alternative

Potentially Required Permits	Issuing Agency	Review and Commenting Agencies	Jurisdiction
Federal Dredge and Fill Permit, filed jointly with Environmental Resource Permit (ERP)	US Army Corps of Engineers (USACE)	US Fish and Wildlife Service (USFWS), U.S. Environmental Protection Agency (EPA)	Federal
National Pollution Discharge Prevention and Elimination System (NPDES) Permit	EPA	none	Federal
No-Rise Certification, or a Conditional Letter of Map Revision (CLOMR)	Federal Emergency Management Agency (FEMA), (and Orange County)	none	Federal
Protected Wildlife Take Permit (not anticipated to be needed)	USFWS	none	Federal
Protected Wildlife Take Permit (not anticipated to be needed)	Florida Fish and Wildlife Conservation Commission (FWC—formerly FGFWFC)	none	State
ERP	St. Johns River Water Management District (SJRWMD), South Florida Water Management District (SFWMD)	Florida Department of State Division of Historic Resources (FDHR), Florida Department of Environmental Protection (FDEP)	State
Water Use Permit (dewatering)	SJRWMD, SFWMD	none	State
Sovereign Submerged Lands Public Easement ¹	FDEP, Florida Division of State Lands (DSL)	Attached to the ERP, which is issued by SFWMD	State

All impacts associated with the Preferred Alternative are shown in *bold italics*.

¹Not Required for Preferred Alternative.

4.7.1.1 Agency Jurisdiction

The USACE is responsible for reviewing and processing the ERP application, which is forwarded by the respective water management district (WMD) to evaluate impacts to wetlands. The USACE Merritt Island Regulatory Office has jurisdiction over Volusia, Seminole, and Orange Counties and will be responsible for issuance of a Section 404 dredge and fill permit under the CWA.

Section 404(c) of the CWA allows EPA to restrict the use of a site if the disposal of dredged or fill material will have an unacceptable adverse effect on municipal water supplies, shellfish beds, fishery areas, wildlife, or recreational areas. This is commonly referred to as EPA veto and has rarely been used in the history of the Section 404 program.

4.7.1.2 Permit Types and Criteria

The USACE issues different types of permits under the CWA, depending upon the nature of the activity and the specific adoptions for a particular proposed activity. Individual or standard permits are processed through a public interest review procedure, including public notice and receipt of comments from various federal agencies and the general public. The important commenting agencies in this process are the EPA, USFWS, and the National Marine Fisheries Service (NMFS). The I-4 PD&E Study – Section 2 project will require an individual permit from USACE.

In addition to the individual permits, the Secretary of the Army has the authority to issue general permits on the state, regional, or nationwide basis for any category of activities involving discharges of dredged or fill material are similar in nature; and that will cause only minimal adverse environmental effects when performed separately, and will have only minimal cumulative adverse impact on the environment. The general permits pursuant to the CWA take the following forms: nationwide permits, general regional permits, and programmatic permits (33 USC §325.5).

Under Section 307 of the CWA, an activity (filling of wetlands) cannot violate the applicable State water quality standards or effluent standards. The operating agreement under Florida Environmental Reorganization Act of 1993 provides that issuance of an ERP constitutes state water quality certification as required by section 401 of the CWA, 33 USC 1341, unless the permit states

otherwise. In addition, an activity cannot jeopardize the existence of federally listed endangered or threatened species or their habitat.

4.7.2 National Pollution Discharge Prevention and Elimination System Permit

An NPDES permit is required for this project because the impervious surface threshold of five acres during construction will be exceeded. A Stormwater Pollution Prevention Plan (SPPP) is also required to be part of the engineering plans for this project and is certified by the contractor during construction.

4.7.2.1 Agency Jurisdiction

On November 16, 1990, EPA published regulations under the NPDES program that defined the term "stormwater discharge associated with industrial activity" to include stormwater discharges from construction activities (including clearing, grading, and excavation activities) that result in the disturbance of five or more acres of total land area (40 CFR 122.26(b)(14)(x)). The EPA District IV office in Atlanta, Georgia, maintains responsibility for promulgation of this NPDES regulatory program.

4.7.2.2 Permits and Criteria

Section 402(p) of the CWA states that stormwater discharges associated with industrial activity to waters of the United States must be authorized by an NPDES permit.

NPDES general permits for stormwater discharges associated with industrial activity require that FDOT submit a Notice of Intent (NOI) prior to discharging under this permit (40 CFR 122.28(b)(2)).

SPPPs would include a site description; a description of controls that would be used at the site (e.g., erosion and sediment controls, stormwater management measures); a description of maintenance and inspection procedures; and a description of pollution prevention measures for any non-stormwater discharges that would exist.

FDOT would submit a Notice of Termination (NOT) to EPA after the construction of I-4 has undergone final stabilization and the facility no longer discharges stormwater from the highway construction area.

4.7.3 Bridge Permit

The I-4 PD&E Study - Section 2 project will not require a bridge permit from USCG for construction within navigable waters.

4.7.4 No-Rise Certification (FEMA)

The National Flood Insurance Program (NFIP) was created when the US Congress passed the National Flood Insurance Act in 1968. The NFIP was designed to reduce future flood losses through local floodplain management and to provide protection for property owners against potential losses through flood insurance. Provisional to making this insurance available in a community, the NFIP requires floodplain management ordinances to contain certain minimum requirements intended to reduce future flood losses. The community is also responsible for submitting updated information to FEMA for the revision of NFIP maps, premium rates, and management requirements.

4.7.4.1 Agency Jurisdiction

Shingle Creek and the St. Johns River are FEMA regulated floodways. The FEMA office in Atlanta is the permitting agency in most cases. FEMA has delegated authority over the "no-rise" approval to Orange County (Shingle Creek). However, FEMA authority over the Conditional Letter of Map Revision (CLOMR) in Orange County.

4.7.4.2 Permit and Criteria

The bridge designer must demonstrate “no-rise” in floodwater levels at the bridge structure. If a rise is anticipated at the structure, the designer must apply for a CLOMR. Applications to FEMA for map revisions will require professional certification of current condition data, computations, and methodologies (based on 44 CFR Chapter I, Parts 60, 65, and 72). In addition, all individuals and organizations impacted by the proposed changes need to be made aware of the changes and have an opportunity to comment.

4.7.5 Wildlife Take Permit(s)

Based on the biological assessment conducted on the Ultimate project and *Preferred Alternative*, no wildlife take permits are anticipated to be required, as no habitat is currently occupied by a listed species. A take permit is a general term used to indicate approval by the regulatory agencies to displace or destroy habitat being used by a protected wildlife species. The permit is for a specified number of individuals in a specific location. Mitigation is always required. Take permit criteria are specific to the listed species, because each species has distinct habitat requirements.

Certain species are currently listed with the Federal (USFWS) and State (FWC) wildlife agencies as declining in population and thus in need of protection. Several classification levels indicate the species “rareness” and the level of protection given through the Federal Endangered Species Act of 1973 (16 USC 1531) and the State of Florida Endangered Species Act of 1977 (Section 372.072, FS). The state and federal lists are not necessarily the same because of differences in the rate of local population decline and the amount of suitable habitat. For example, the red-cockaded woodpecker is listed as “Endangered” in the US (Federal list) and “Threatened” in Florida (State list).

The federal classification levels of protection are:

- Endangered (E)
- Threatened (T)
- Threatened due to similarity of appearance (TSA)
- Candidate for listing still under review (C2)

The State of Florida list species as:

- Endangered (E)
- Threatened (T)
- Species of special concern (SSC)

4.7.6 Environmental Resource Permit

The Florida Environmental Reorganization Act of 1993 consolidated wetland resource and surface water management permits into a single regulatory approval referred to as an environmental resource permit (ERP). Under an operating agreement, FDEP and WMDs have divided permitting, compliance, and enforcement programs for regulated activities that affect wetlands and other surface waters within the state of Florida. The agreement also addresses determinations of concurrence with the state’s federally approved coastal zone management program, procedures for coordinating review of applications and enforcement activities, and joint review of mitigation bank permits. Finally, the agreement provides for interagency permitting meetings to be held by each party on a rotating basis and establishes a process for terminating the agreement with or without cause.

4.7.6.1 Agency Jurisdiction

Under this operating agreement, the WMDs assumed permitting responsibilities for all highway projects within the State. The first eight miles of the Ultimate project, extending from SR 528 (Bee Line Expressway) to Orange Blossom Trail within Orange County, fall within the SFWMD Orlando Office jurisdiction. The remaining portion of the Ultimate project, extending eastward from Orange Blossom Trail to SR 472 within Orange and Seminole Counties, and portions of Volusia County are under the jurisdiction of the SJRWMD Orlando Office.

The Preferred Alternative also falls within boundaries of both SFWMD and SJRWMD. From Kirkman Road to Orange Blossom Trail, the Preferred Alternative is within SFWMD jurisdiction. From Orange Blossom Trail to Maitland Boulevard, the Preferred Alternative is within SJRWMD jurisdiction.

Each respective WMD will have the responsibility for issuing ERP permits for those segments of I-4 that fall within their jurisdiction. Road segments that have overlapping WMD jurisdiction will be reviewed by the WMD that receives the majority of the drainage within their respective drainage basin.

4.7.6.2 Permits and Criteria

There are several types of permits issued as ERPs. The type of permit that is required for a project depends on the type and size of the project and the total area of wetlands that is proposed to be impacted. For the SFWMD, Chapter 40E-4.041, Florida Administrative Codes (FAC) lists the types of ERPs that can be issued. All permits issued by the SFWMD must comply with the specific conditions outlined in 40E-4.301 and 40E-4.302, FAC. The types of ERP permits issued by the SJRWMD are listed in Chapter 40C-4 and 40C-42, FAC. In addition, Chapter 40C-41, FAC lists specific basin criteria, including the Wekiva River basin. A portion of I-4, Section 2 lies within the Wekiva River basin and will be subject to these specific basin criteria.

The WMDs will, at minimum, send copies of the ERP application to USACE, FDEP, and FWC. The USACE will forward the application to EPA, USFWS, and Florida Division of Human Resources (FDHR) within three business days after receipt of the application for their review and comments.

4.7.6.3 ERP Application/Permit Timeline

The WMD has 30 days to request additional information from FDOT to process the ERP application. FDOT has up to 60 days to supply the requested additional information. FDOT may request in writing an additional 90-day waiver to submit the requested information. After receipt of the ERP application, the WMD has 90 days to either issue the permit, issue a notice of intent to grant the permit, or deny the permit.

FDOT must submit a completed Construction Commencement Notice Form No. 40-1.901(19) to the WMD within 48 hours prior to conducting any activity authorized by the ERP. If construction exceeds one year, FDOT must submit a completed Annual Status Report Form(s) No. 40-1.901(20) to the WMD.

4.7.7 Water Use Permit

A Water Use Permit (WUP) will be required for withdrawals (dewatering) of ground or surface water to facilitate construction of the proposed improvements of I-4. Dewatering activities would be necessary in areas where a high water table would interfere with the construction of the interstate and ancillary facilities. Any dewatering activities associated with the proposed I-4 improvements would be controlled in accordance with FDEP through the use of BMPs. Special provisions in relation to aquatic preserves would be adhered to through the use of straw bale or filter barriers, silt fences, and other appropriate techniques suitable for the use of sedimentation and erosion control. The purpose of the water use regulatory program is to ensure that those water uses permitted by the WMDs are reasonably beneficial, will not interfere with any presently legal uses of water, and are consistent with the public interest pursuant to Section 373.223, F.S.

4.7.7.1 Agency Jurisdiction

Chapter 373, Florida Statutes enables SJRWMD and SFWMD to regulate the use of water within their respective jurisdictional boundaries. The WMDs have adopted rules for consumptive water use such as dewatering during construction and these are set forth in Chapters 40C-2 and 40C-22 for the SJRWMD and Chapters 40E-2 and 40E-20 for SFWMD.

4.7.7.2 Permits and Criteria

Two types of water use permits are available to FDOT for the construction of I-4. These include a short-term general dewatering permit (general WUP) pursuant to Chapters 40E-20.042, FAC and 40C-22.030, FAC or an individual WUP pursuant to Chapter 40E-2 and Chapter 40C-2, FAC. Based on the typical requirements for construction, a general dewatering permit would need to be obtained by the contractors prior to starting construction. This permit is subject to the limiting conditions stated in Chapter 40E-20.302 and Chapter 40 C-22.030 that set certain thresholds on the water withdrawal quantities.

In accordance with FDEP, BMPs such as erosion and sediment control measures would be implemented to prevent violations of water quality standards as specified in Chapter 62-302, FAC. Based on the rule, no direct discharges into OFW Class I or Class II water bodies are allowed. A direct discharge means a discharge that enters an OFW Class I or Class II water body without an adequate opportunity for prior mixing and dilution to prevent significant degradation.

Within the Wekiva River Hydrologic Basin, specific standards and criteria are established according to the conditions for issuance of dewatering permits under Chapter 40C-41.063, FAC. A water quality protection zone for erosion and sediment control and water quality must extend one half mile from the Wekiva River and Little Wekiva River north of SR 436, and must also extend one quarter mile from any wetland abutting an OFW.

Specific turbidity control measures necessary to retain sediment onsite and prevent turbid discharge will be selected, implemented, and operated as necessary to prevent violations of water quality standards as specified in Chapter 62-302, FAC.

4.7.8 Sovereign Submerged State Lands

In accordance with the ERP process, the Ultimate project must also obtain a public land easement from the Division of State Lands, FDEP, for traversing sovereign submerged state lands. A public land easement is anticipated to be required for the construction activities over Padgett Creek. A public land easement is not anticipated to be required for the construction activities over the Lake Monroe/St. Johns River, as all construction activities will be completed under the I-4 Six Laning and St. Johns River Bridge project.

In addition, a public land easement is not anticipated to be required for the construction of the Preferred Alternative. The Preferred Alternative does not cross any sovereign submerged state lands.

Sovereignty lands include all lands beneath navigable waters, extending to the mean high water line or ordinary high water mark that have not been validly transferred to the State. These lands became vested in the Sovereign State of Florida upon its admission to the Union on March 3, 1845. Under the provisions of Florida Statutes, title to all submerged lands not previously conveyed by deed or statute is vested in the Board of Trustees of the Internal Improvement Trust Fund (FS §253.12(a)).

4.7.8.1 Agency Jurisdiction

Most of the provisions of Chapter 253 are administered by FDEP, Division of State Lands, which serves as staff to the Trustees. The Division is responsible for evaluating and processing all forms of requests for use of state owned lands. The agency provisions for managing activities on sovereignty submerged lands are found in Chapter 18-21, FAC.

Although FDEP will evaluate and process the request for use of submerged sovereign lands, the WMDs have assumed responsibility for processing the ERP application to determine whether it is complete.

4.7.8.2 Permit and Criteria

The SJRWMD and SFWMD will handle the ERP permit application review according to their respective jurisdictions. The WMD forwards the complete application to FDEP, which further processes the application and administers the required easement(s) as approved by the Board of Trustees.

The proposed roadway and bridge construction crossing state-owned lands is subject to Chapter 18-21.009, FAC, *Application for Public Easements*.

4.8 Construction Impacts

The construction activities for the Ultimate project and *Preferred Alternative* will result in temporary air, noise, water quality, traffic flow, and visual impacts for those residents, businesses, and travelers within the vicinity of the construction areas of the proposed improvements. In addition, consideration of construction staging needs, disposal of materials, and required borrow material are important.

The level, type, and degree of construction impacts will vary as a function of several key characteristics including:

- The type of construction: demolition, excavation, fill, bridge structures, utilities, pavement.
- The proximity of sensitive land uses to construction: residential, commercial, hospitals, schools, churches.
- The traffic volumes in and around the construction site: traffic control complexities, safety, project phasing.
- The locations of haul routes: borrow sites, fabrication yards, asphalt plants, disposal areas.

Given the factors involved with construction impacts, it is not possible to provide specific detail of the exact location, level, and extent of impacts. Clearly, with proposed improvements as large as the Ultimate project and *Preferred Alternative*, it is expected that construction impacts will be extensive and spread through the entire project areas.

Several areas along the Ultimate project will be especially impacted by the construction of the I-4 project. Approximately 225 neighborhoods and subdivisions exist within one-half mile of I-4 from SR 528 (Bee Line Expressway) to SR 472. Eighty-eight of these neighborhoods will be potentially affected by the Ultimate and are listed in Table 3-23 in Section 3.1.2. Special care will be provided to avoid unreasonable impact to these neighborhoods.

In general, the most complex construction with the greatest extent of sensitive adjacent land uses is located within the Preferred Alternative (Segments 2 and 3) incorporating downtown Orlando and the numerous neighborhoods in the area.

The following discussion provides a description of the anticipated construction effects.

4.8.1 At-Grade and Bridge Construction Impacts

4.8.1.1 Probable Effects

Construction of the proposed improvements will temporarily impact traffic movements, on-street parking, and access to adjacent properties. The extent of construction phase impacts will vary on a segment-by-segment basis depending upon whether the construction is at-grade or on bridge structure.

The traffic control approach for the proposed improvements will call for maintaining three lanes of traffic in each direction on I-4 during construction. Temporary lane closures will be required and such activities will be scheduled during off-peak and low traffic times. A similar approach will be used on all major crossroads or interchanges.

It is anticipated that 12-foot travel lanes will be maintained during construction. However, lane widths during construction will be determined during the design phase of the project.

4.8.1.2 Potential Mitigation Measures

Measures to mitigate transportation and circulation impacts during construction will consist of several components. A Traffic Control Plan (TCP) will be developed and implemented in consultation with the local jurisdictions and FDOT. Measures to be considered for implementation in the TCP will include, but not be limited to:

- Advance public notification to motorists of the nature, extent, and duration of any street closing and possible detour routes, if needed.
- Detour signing placed in advance at strategic locations to notify motorists of alternative routing.
- Use of warning signs and marking.
- Construction during off-peak times, whenever feasible, to minimize disruption to access driveways and business entrances.
- Maintenance of at least one entrance at all times where there are multiple entrances to a property.
- Coordination of construction activities with other proposed roadway improvements in the area.
- Concurrent utility relocations whenever possible to minimize disruptions.
- Inclusion of measures within the construction contract specifications and plans to encourage contractors to use responsible construction practices to avoid or minimize impacts.

It should also be noted that school and transit bus routing modifications might be necessary during construction. Public announcements will be made well in advance of the re-routings to minimize any inconveniences.

A community relations/construction mitigation program may be developed and implemented in order to provide general construction scheduling information, coordination of construction work with adjacent business activities, and assistance with the resolution of problems that adjacent land uses may have with the construction work.

Public notification techniques used during construction will include, but not be limited to, articles in local newspapers, segments on television stations, and message boards. In addition, construction offices will be set up and a mitigation coordinator will be located in the construction offices to provide information to the concerned public on the progress of construction and mitigation measures being enacted.

4.8.2 Disruption to Existing Businesses

4.8.2.1 Probable Effects

Adverse economic effects to existing businesses associated with the construction phase of the Ultimate project and *Preferred Alternative* will be primarily related to the disruption of commercial activity due to impeded access and the diversion of traffic. During construction of any of the alternatives, the construction zone may extend into the existing local roadways and lanes may be

restriped, rerouted, or closed. The lane closures and other traffic disturbances would disrupt access to businesses fronting the alignment route. Although the traffic impacts would be temporary, the temporary disturbances to business access could produce economic losses and interfere with daily operations of individual businesses. Businesses that are to be partially acquired are more likely to suffer from access disturbance because they would be immediately adjacent to the alignment. Many will lose parking and vehicle access as a result of the partial acquisitions.

However, businesses that are outside the construction zone and are not candidates for acquisition could also be affected due to local street lane closures and traffic detours. Construction disturbances are also likely to have a greater effect on businesses that rely on truck deliveries and shipments, timely deliveries of goods, and a constant movement of trucks into and out of their premises (e.g., industrial properties, including manufacturers and distributors) than businesses that rely on foot traffic. However, the loss of any direct access (including on-site and off-site parking and inconveniences to pedestrian and vehicle circulation to the site) could result in a temporary loss of business patronage during the construction activity.

4.8.2.2 Potential Mitigation Measures

Impacts from construction activities should be temporary and not substantial since the construction will be phased and restricted to the designated segment locations. Deliveries of construction materials will be controlled to minimize disruptions to surrounding areas. Various other measures that could further minimize the possibility of short-term impacts associated with these activities include:

- Restricting construction activities in certain sensitive areas to off-peak hours
- Confining heavy construction vehicle operations to the location of the alignment itself to minimize noise or other intrusions on adjacent streets
- Maintaining at least one entrance into businesses at all times where there are multiple entrances
- Controlling demolition activities and disposal haul routes

Mitigation for adverse impacts during construction will also include planning with business owners and managers to provide increased signage where appropriate, and coordination and timing of temporary closures, when necessary. A public information and notification program will advise area residents of traffic detours. Temporary paths to facilitate pedestrian movements to and through the area, and channelization, detour/guide signs, and temporary traffic signals are among the tools available to help maintain travel patterns. In addition, construction offices will be set up and a mitigation coordinator will be located in the construction offices to provide information to business owners and the concerned public on the progress of construction and mitigation measures being enacted.

4.8.3 Neighborhoods and Community Cohesion

4.8.3.1 Probable Effects

Any major construction project, public or private, will inconvenience or disturb the residents, businesses, and business customers adjacent to that construction project. Particular temporary effects include:

- Traffic congestion and detours
- Interrupted access to residences and businesses
- Loss of roadside parking
- Disruption of utility services
- Presence of construction workers and materials

- Noise and vibrations from construction equipment and vehicles
- Airborne dust
- Removal of or damage to vegetation (e.g., trees, shrubs, grass)

Without proper planning and implementation of controls, these construction-related effects could adversely affect the comfort and daily life of residents and inconvenience or disrupt the flow of customers, employees, and materials/supplies to and from businesses. For residents living along the alignment, some materials stored for the project may be visually displeasing. This is a temporary condition and should pose no substantial problem in the long term.

4.8.3.2 Potential Mitigation Measures

Construction impact controls will be integrated into the project's contract specifications, which will contain construction phasing and TCPs. Types of mitigation are discussed in the following sections.

4.8.4 Visual and Aesthetic Quality

4.8.4.1 Probable Effects

Visual effects of interstate reconstruction, as seen from adjacent and nearby properties, may include the presence and movement of heavy machinery, extensive deposition of fill material, dust from embankment and haul road areas, maintenance of traffic lanes adjacent to or nearer to the right-of-way line than existing lanes, lights associated with night time operations, temporary traffic signs, use of silt control devices, and excavation of future ponds.

Adequate lighting of the work area at night is important for both quality and safety. However, temporary lighting and flashing safety lights associated with nighttime roadway construction can be a nuisance. Properly illuminating the work area can create excessive glare, which can be hazardous for motorists and annoying to nearby residents.

The primary requirement for highway construction lighting is to facilitate the performance of construction related tasks in the work zone. Correct lighting should enable a work crew to observe and effectively control various equipment and processes. Unfortunately, excessive contrast and or brightness within the immediate surroundings can be glaring, uncomfortable, and hazardous to motorists. High brightness, such as from head-on views of lamps, can be simply annoying or temporarily "blinding."

4.8.4.2 Potential Mitigation Measures

The visual effects during construction will be temporary. In an effort to minimize the visual impacts, several approaches may be considered:

- Limit truck routings in visually sensitive areas.
- Keep construction equipment clean.
- Screen visually distracting construction areas.
- Limit heights and extent of piled construction materials.
- Limit construction worker access to adjacent properties.

A construction lighting plan should be prepared that will address achievement of necessary illumination and nuisance control. The plan should focus on the following issues:

- Lights should be properly mounted on construction equipment to allow for aiming and positioning.
- Light towers should be easy to move to keep pace with operations.
- The lighting illumination should be free from glare.

Simply ensuring that field personnel have an awareness of the subject can eliminate many visual and lighting problems. Construction staff must pay close attention to the location of the lights and the direction of the aim. In open areas, luminaries should be positioned at the highest possible locations to minimize glare. Fixtures should be aimed down, where possible. Good awareness training of the contractor's workforce and inspectors is vital to minimize impacts.

4.8.5 Air Quality

4.8.5.1 Probable Effects

Construction activities will cause short-term air quality impacts in the form of fugitive dust from earthwork and unpaved roads, and vehicle exhaust from construction equipment. These impacts will be minimized by adherence to all state and local regulations and to FDOT's *Standard Specifications for Road and Bridge Construction*.

Construction activities for the proposed improvements will create air quality impacts for residents, businesses, and travelers within the immediate vicinity of the project. Air quality impacts will be temporary and primarily in the form of exhaust emissions from trucks and construction equipment as well as fugitive dust from construction sites. Almost all the trucks and other equipment involved in construction activities will be diesel-powered. Overall, construction vehicle emissions will not be significant as compared with the emissions from automobile traffic in the area. Detours and other delays in traffic during construction typically result in local increases in vehicle emissions.

4.8.5.2 Potential Mitigation Measures

Fugitive dust is potentially a more serious impact, and construction operations for the proposed improvements will be a significant local source of additional particulate matter. Measures to mitigate fugitive dust impacts include:

- Spraying exposed areas with water or other dust suppressants
- Covering trucks carrying dusty materials to and from the site
- Washing construction vehicles, particularly their wheels and underbodies, before they leave construction sites
- Limiting vehicle speeds on unpaved surfaces to 15 mph
- Minimizing the use of vehicles in unpaved or uncovered areas
- Regularly cleaning adjacent paved areas to remove dust before it can be resuspended into the air

The generation of particulate matter as fugitive dust can be effectively controlled through the use of watering or the application of calcium chloride (dust suppressant) in accordance with FDOT's *Standard Specifications for Road and Bridge Construction*.

4.8.6 Noise and Vibration

Project construction activities would have short-term noise and vibration effects on receptors in the immediate vicinity of the construction site. Effects on community noise and vibration levels during construction include noise and vibration from construction equipment and noise from construction vehicles and delivery vehicles traveling to and from the site. The following sections introduce construction noise levels, an analysis of potential construction noise and vibration impacts, and a list of mitigation measures.

4.8.6.1 Introduction to Construction Noise and Vibration

The range of construction noise and vibration levels depends on the noise characteristics of the equipment and activities involved (e.g., pile driving), the construction schedule (time of day and duration of activity), and the distance from sensitive receptors. Expected phases of construction include land clearing and excavation, demolition, utility relocation, roadway and drainage construction, the laying of foundations and placement of concrete, construction of bridge structures, and construction of park and ride lots and other facilities.

Construction activities will occur throughout the project area in close proximity to existing structures. At a typical receptor, the noise and vibration levels would be highest during the early phases of construction when excavation and heavy daily levels of truck traffic would occur. The early phase of construction would be relatively short (three to six months). Noise and vibration levels would decrease as construction operations moved farther away.

Typical Construction Noise Levels

Average noise levels for typical construction equipment, measured at 50 feet from the construction site, range from 76 dBA for pumps to 89 dBA for pavers and scrapers to 101 dBA for impact pile drivers. The total hourly energy average dBA noise level, L_{eq} (1 hour), at a distance of 50 feet from the construction site boundary, usually is on the order of 85 to 90 dBA. Noise levels at known distances from the construction site boundary can be estimated by assuming a 6 dBA drop-off for every doubling of distance from the site boundary as seen in Table 4-36, which illustrates construction equipment noise emission levels at 50 and 100 feet.

Table 4-36. Construction Equipment Noise Levels

Equipment	Typical Noise Level (dBA) 50 feet from Source	Typical Noise Level (dBA) 100 feet from Source
Air Compressor	81	75
Backhoe	80	74
Compactor	82	76
Concrete Mixer	85	79
Concrete Pump	82	76
Concrete Vibrator	76	70
Crane, Derrick	88	82
Crane, Mobile	83	77
Dozer	85	79
Generator	81	75
Grader	85	79
Impact Wrench	85	79
Jack Hammer	88	82
Loader	85	79
Paver	89	83
Pile Driver (Impact)	101	95
Sonic	96	90
Pneumatic Tool	85	79
Pump	76	70
Rock Drill	98	92
Roller	74	68
Saw	76	70
Scarifier	83	77
Scraper	89	83
Shovel	82	76
Spike Driver	77	71
Truck	88	82

All impacts associated with the Preferred Alternative are shown in *bold italics*.
Source: Transit Noise and Vibration Impact Assessment, FTA April 1995.

Increases in noise levels due to operation of delivery trucks and other construction vehicles would not be significant. Small increases in noise levels are expected near a few defined truck routes and in the immediate vicinity of the project site.

Typical Construction Vibration Levels

Common vibration producing equipment used during demolition and construction activities includes pile drivers, jackhammers, bulldozers, and backhoes. The principal concern of this analysis is identifying any vibration sensitive receptors in the immediate project area. Structures located on weak soils, having historic value, or containing vibration sensitive equipment are among those likely to be sensitive to vibration impacts.

Demolition activities would generate vibration at nearby receivers. Construction equipment used during demolition includes bulldozers, backhoes, jackhammers, loaders, and haul trucks. There are no existing vibration measurements of the types of activities expected during the demolition activities. USDOT states that vibration levels above 0.15 in/sec are sometimes perceptible to people, and the level at which vibration becomes annoying to people is 0.64 in/sec. Demolition activities are not expected to produce vibration levels higher than 0.64 in/sec. After the demolition activities are complete and normal construction is underway, levels should drop below 0.64 in/sec.

Pile driving activities will be employed during construction of bridge structures required at proposed grade separations. At this stage of the project, however, it is not yet known whether pile driving will be performed near any vibration sensitive land uses. At any specific location, perceptible construction vibration should only occur intermittently and should never be sufficient to cause even minor cosmetic damage. Should construction cause intrusive vibration, the contractor would be required to modify construction equipment or procedures to eliminate the intrusion.

Typical vibration levels from construction equipment are given in Table 4-37.

Table 4-37. Vibration Source Levels for Construction

Equipment	PPV ¹ at 25 ft (in/sec)	Approximate L _v at 25 ft ² (VdB re 10 ⁻⁵ in/sec)
Pile Driver (impact, upper range)	1.518	112
Pile Driver (impact, typical)	0.644	104
Pile Driver (sonic, upper range)	0.734	105
Pile Driver (sonic, typical)	0.170	93
Clam shovel drop (slurry wall)	0.202	94
Large bulldozer	0.089	87
Caisson drilling	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58

All impacts associated with the Preferred Alternative are shown in ***Bold Italics***.

Source: *Guidance Manual for Transit Noise and Vibration Impact Assessment*, FTA April 1995.

Notes: ¹ Peak particle velocity

² RMS velocity in decibels (VdB) are 1 micro inch per second

4.8.6.2 Potential Mitigation Measures

All construction work will follow noise provisions contained with FDOT's *Standard Specifications for Road and Bridge Construction*. In addition, a construction noise and vibration abatement plan may be developed during the design stages of project segments that are located near noise sensitive areas. This plan would be included in the contract specifications and implemented before construction began. The plan may include specific noise and vibration level restrictions and limitations on time for construction activities. Refer to Section 4.4.3.3 for a description of the noise sensitive areas along the Ultimate project and Preferred Alternative corridors.

4.8.6.2.1 Noise Impacts

Several construction noise abatement methods can be implemented to limit the impacts. Source controls, which limit noise emissions, are the most effective method for minimizing excessive noise. Wherever possible, noise control should occur at the source.

Noise levels related to pile driving are expected to result in the most substantial increases in noise levels along the corridor. Pile driving will be limited to daytime hours, Monday through Saturday. No other mitigation of noise related to pile driving should be necessary.

The following noise control strategies may be used to limit excessive noise during the I-4 construction:

- Develop a construction noise and abatement plan for construction projects in sensitive areas.
- Require construction operations planning that restricts movement of equipment into and through the construction area. Provisions may address limiting truck routing near residential areas, minimizing backing movements to reduce soundings of backup alarms, and limiting operations by time of day and/or season.
- Require modern equipment, which will generally have better engine insulation and mufflers.
- Ensure maintenance on equipment, most notably adequate lubrication and non-leaking mufflers.
- Develop equipment restrictions requiring modifications for noise reductions and restricting the use of certain equipment by location and time of day.
- Operate equipment at minimum power.
- Control non-construction traffic by limiting heavy truck movements on residential streets.
- Encourage the use of quieter equipment.
- Maximize the distance between equipment and receptors.
- Enclose or screen noisy activities or stationary equipment.

4.8.6.2.2 Vibration Impacts

To control ground vibration levels, the construction contract specifications may limit the use of types of equipment permitted and the allowable levels of vibration. Noise and vibration control measures will include those contained in FDOT *Standard Specifications for Road and Bridge Construction*.

There are no vibration specific regulations that are applicable to this project. Therefore, it is recommended that the contract specifications contain a section specific to vibration, and include, at a minimum, vibration monitoring of all activities that may produce vibration levels near USDOT maximum recommended vibration level whenever there are structures located near the construction activity. This would include pile driving, vibratory sheet installation, soil compacting, and other construction activities that have the potential to cause high levels of vibration. Other mitigation measures may include:

- Erecting temporary noise barriers.
- Limiting the hours of activities.
- Using pre-bored piles.
- Providing specific truck routes to each construction site to avoid or minimize the use of residential streets.
- Providing a careful maintenance and lubrication program for heavy equipment.

4.8.7 Ecosystems

4.8.7.1 Probable Effects

Construction impacts to the natural ecosystem along the Ultimate project *and Preferred Alternative* corridor are anticipated to mainly consist of the displacement of wetlands (direct impact). No other threatened and endangered wildlife species will be directly affected. No impacts are anticipated to any regionally significant populations of protected plants. The direct impacts to, and mitigation of, wetlands, significant uplands, and threatened and endangered wildlife habitat are discussed in Sections 4.3.2 and 4.3.3 of this document. Other secondary construction impacts to natural systems include:

- Noise and visual disturbances from construction activity during breeding and nesting season can have an adverse effect on sensitive fauna in the immediate area. Most of the land uses along the Ultimate project and *Preferred Alternative* corridor are characterized by commercial and residential development with interspersed fragmented natural communities. Most of the fauna found in these remnant natural areas are already acclimated to urban noises.
- Dust from construction activity can settle on leaves (until the next heavy rainfall), temporarily blocking sunlight needed for photosynthesis.
- Sedimentation in wetlands from erosion runoff can adversely affect these sensitive habitats in the immediate area.

No significant areas of natural upland communities exist along the Preferred Alternative. Most of the upland areas located along these segments have been developed into commercial or residential property, and few natural upland communities remain primarily within the median. Noise, dust, and construction activities may temporarily affect some species of wildlife. It is expected that these will leave the area during times of disturbance and then return.

Along Segments 4 and 5 of the Ultimate project, several upland forest communities and croplands, fragmented by development, remain. Adjacent to Segment 4 is the Wekiva River System Protection Area. However, I-4 does not bisect this wildlife corridor. No construction will occur west of the protection boundary at Markham Woods Road. No impacts are anticipated to the Wekiva River System Protection Area. Noise, dust, and construction activities may temporarily affect some species of wildlife. It is expected that these will leave the area during times of disturbance and then return.

Along Segment 6, there are several areas of longleaf pine-xeric oak / sand pine community. A small portion of this habitat type is used by scrub jays. Noise and construction activities nearby may temporarily affect these sensitive birds. It is expected that they will leave the area during times of disturbance and then return. The Florida black bear is a threatened species in Florida and its presence (as evidenced by an occasional road kill) is a concern to the local residents. Noise and construction activities may temporarily deter bears from coming near the portion of I-4 under construction. It is expected that bears and other sensitive wildlife species will leave the area during times of disturbance and then return.

4.8.7.2 Potential Mitigation Measures

Coordination with the regulatory agencies regarding wetland and upland habitat mitigation will continue during the permitting phases of the project. All of the wetlands and natural uplands along the Ultimate project and *Preferred Alternative* have been previously impacted by development. Some of the wetlands are man-made.

4.8.7.2.1 Wetland Habitats

Silt fences, turbidity screens, and other forms of appropriate erosion control will be used, as required by the regulatory agencies and according to specifications defined by the FDOT *Standard Specifications for Road and Bridge Construction* and FDEP *Florida Development Manual*. These erosion control devices will be used during all construction activities in uplands and wetlands to reduce the temporary effects of dust and prevent sedimentation in wetlands and on plant life.

The St. Johns River is federally designated as an area of Critical Habitat for the West Indian manatee. Manatees are known to occur within the project area in the St. Johns River and Lake Monroe. It is anticipated that construction and maintenance activities associated with the project may disturb any manatee that may be present in the area; however, these impacts are expected to be temporary and minor. All direct wetland impacts will be mitigated according to the rules and regulations applicable at that time for which a particular roadway segment permit application is submitted. Currently, wetland impacts that will result from the construction of this project will be mitigated pursuant to Section 373.4137 FS to satisfy all mitigation requirements of Part VI, Chapter 373, FS and 33 USC Section 1344. The use of the Section 373.4137 FS for mitigation of wetland impacts associated with the project has been coordinated with USACE and the WMDs (SJRWMD and SFWMD). In addition, if required, further coordination and review with the permit agencies will occur during the final EIS process. Application for the permits will occur during the design phase of the project. Design will occur after the completion of the PD&E Study. Impacts to wetlands will be minimized and avoided where possible based on safe and sound engineering and construction constraints.

4.8.7.2.2 Upland Habitats

No significant impacts to regional populations of protected plant species are anticipated at this time as a result of the proposed roadway improvements. Coordination with federal, state, and local agencies and mitigation planning will continue during the permitting phases of the project. Silt fences and other forms of appropriate erosion control will be used to offset the temporary effects of potential dust settling and sedimentation on plant life.

No direct impacts will occur with this project to the scrub habitat that is used by scrub jays near SR 472 interchange. Coordination with USFWS and FWC has begun and will continue when the roadway project is in the permitting phase.

4.8.7.2.3 Wildlife Corridors

Noise and construction activities will temporarily deter wildlife from using the I-4 right-of-way (during construction) as a movement corridor, which includes attempted crossings. It is expected that bears and other sensitive wildlife species will leave the area during times of disturbance and then return. Therefore, more permanent offset measures are being considered in terms of improving wildlife crossing provisions.

4.8.8 Water Resources

4.8.8.1 Probable Effects

Water quality impacts during construction will range from moderate to none depending on what time of year the project is under construction. Qualitative short-term construction impacts to water quality by the proposed improvements are anticipated and listed below. None of the impacts listed will be permanent and all will be kept to a minimum using BMPs in accordance with local, state, and federal standards.

- Turbidity - Minor to Moderate
- Sedimentation - Minor
- Chemical Pollutants - Minor
- Biota - Minor

Direct effects on water quality during construction may include pollution from existing contaminated facilities and spills or discharges. Avoidance and minimization of these contaminated sites was performed during the PD&E process. In areas where avoidance is not feasible, the site will be evaluated and remediated in design, if necessary, prior to roadway construction in accordance with local, state, and federal standards. Proper BMPs and proper planning will be implemented to help prevent such occurrences.

Water quality degradation as a result of stormwater runoff is not anticipated. Implementation of the proposed stormwater management systems within the project area will provide an improvement to the water quality of the surrounding surface water bodies. This is because the majority of the project currently does not receive any stormwater treatment, and the interstate was constructed before any state or local regulatory requirements were established for stormwater treatment.

4.8.8.2 Potential Mitigation Measures

Establishing and implementing good construction and stormwater management practices can successfully mitigate adverse impacts on water quality during construction. These practices include the control of sediment transfer and erosion, minimizing water velocity through contouring and diversion, use of plant cover via sod or seed and mulching, and channeling of stormwater runoff into sedimentation basins. Stormwater management plans and sedimentation and erosion control plans will be developed during design and included in the contract specifications package for construction letting. Improved erosion control practices would be incorporated into the sedimentation and erosion control plan submitted during permitting for the I-4/St. Johns River area. Approval of these plans by SJRWMD, SFWMD, and FDEP will be obtained during the environmental permitting process in design. These stormwater management and sedimentation and erosion control plans will further be finalized prior to starting and during construction by the contractor in accordance with the EPA NPDES General Permit for construction projects greater than five acres of land disturbance.

BMPs will be implemented to satisfy environmental permit requirements and to minimize secondary effects of turbidity, greases, and oils. Mitigation measures to be implemented to reduce the effects on water quality resulting from sedimentation are proposed for the construction areas to:

- Limit the amount of exposed soil area and the length of time exposed in accordance with *FDOT Standard Specifications for Road and Bridge Construction*.
- Retain and protect existing vegetation within the project area as much as possible.
- Cover disturbed soils with mulch or vegetation as soon as possible in accordance with *FDOT Standard Specifications for Road and Bridge Construction*.
- Mechanically retard runoff erosion and sediment in runoff water by use of silt screens, hay bails, and floating turbidity barriers (where warranted).
- Provide effective accommodations for increased runoff caused by changed soil and surface conditions during construction.

The removal of existing structures and debris will be done in accordance with appropriate regulatory agencies permitting requirements. Precautions will be taken during construction to pile material on existing fill or affected areas to avoid impacting additional wetlands that are not part of the approved ERP for the Ultimate project and *Preferred Alternative*. Spoil will be stored in an approved upland area in accordance with permit requirements to provide protection against allowing erosion or sediment-laden runoff into wetlands. Stockpiling within the project area would be temporary and should pose no substantial long-term adverse effects.

Water quality impacts resulting from erosion and sedimentation will be controlled in accordance with *FDOT's Standard Specifications for Road and Bridge Construction* and through the use of BMPs.

Management practices that identify spill response procedures and minimize the potential for impacts to water quality due to spills will be developed during the design phase in accordance with the requirements and regulations of EPA and the local and state agencies having jurisdiction.

4.8.9 Infrastructure

4.8.9.1 Probable Effects

Short-term utility service disruptions due to construction activities can affect adjacent community areas. Disruptions will occur where utility relocations are necessary. However, any disruptions identified in advance will be of short duration. The local community will be properly notified prior to any service disruptions.

4.8.9.2 Potential Mitigation Measures

Most utility companies have technologies to alter facilities without inconveniences to the customers. However, to the extent feasible, mitigation measures for utility disruptions will include:

- Maintaining utility connections in temporary locations
- Minimizing the time without service
- Installing alternative service before disconnecting the existing service
- Allowing service disruption only during periods of non-usage or minimum usage

4.8.10 Contamination

4.8.10.1 Probable Effects

For the Ultimate project and *Preferred Alternative*, construction impacts related to hazardous materials may result from activities occurring in proximity to generators of those materials, removal or excavation around USTs, and activities occurring in proximity to spill sites. The risk of adverse impacts resulting from these sources is low, provided that safe work practices are followed.

Construction activities will require subsurface excavation in many locations along the proposed right-of-way. Although all efforts will be made to identify contamination sites prior to construction, undiscovered contaminated soils and/or groundwater still may be encountered during construction within both existing and proposed right-of-way.

Additionally, construction activities can involve the use of hazardous materials. If these materials were handled, used, stored improperly, or accidentally spilled, they could result in adverse impacts to both human health and the environment.

4.8.10.2 Potential Mitigation Measures

A Health and Safety Plan will be developed by a qualified health and safety specialist (Certified Industrial Hygienist) to guide construction activities. The plan will be prepared based on the proposed construction activities and potential hazards that have been identified.

A Certified Hazardous Materials Specialist will prepare a Hazardous Materials Management Plan for construction activities. This plan will address the proper storage, handling, and use of hazardous materials required during construction, as well as emergency response procedures for any hazardous material spills.

4.8.11 Construction Material Transport, Storage, and Disposal

4.8.11.1 Probable Effects

The construction of the Ultimate project and *Preferred Alternative* will involve the transport of large amount of material into and out of the construction area. The three primary activities that will have some construction effects are transport, storage, and disposal.

The transport of construction materials may have several effects to the environment. Noise associated with additional truck traffic may impact noise sensitive areas. Additional truck traffic on local roads may create a need for more frequent road maintenance. Dust or debris from trucks may escape from loads and impact properties along haul routes. The storage of construction materials may also create visual or dust impacts to adjacent residents and businesses. The disposal of demolished or non-useable materials may involve impacts at the locations of disposal such as visual effects.

4.8.11.2 Potential Mitigation Measures

All construction activities will follow FDOT *Standard Specifications for Road and Bridge Construction*, which specifically addresses required measures for the transport, storage, and disposal of construction materials.

4.9 Indirect and Cumulative Effects

The previous discussions in Chapter 4 have focused on the direct effects associated with the Ultimate project and *Preferred Alternative*. Analyses of indirect and cumulative effects for the Ultimate project and *Preferred Alternative* have been performed and are described herein.

4.9.1 Indirect Effects

The proposed improvements described within this document will generate several effects and impacts that are directly attributable to the Ultimate project and *Preferred Alternative*. In addition, the Ultimate project and *Preferred Alternative* may produce effects that, in turn, cause a reaction that has additional consequences to the human environment. The general areas where such indirect issues may occur include:

- **Air Quality:** Emissions associated with project-related traffic may cause regional air quality impacts and contribute to exceedance of the NAAQS.
- **Land Use:** Land use changes may occur due to the degradation of the community fabric adjacent to the project, or due to the enhanced access and mobility attributed to the project.

The impacts associated with air quality effects are discussed in Section 4.8.5. The Ultimate project and *Preferred Alternative* study areas are currently classified as attainment areas. In addition, comparative travel characteristics projected for 2020, which assess the Build Alternatives versus the No Action Alternative, indicate that the Build Alternative will result in lower vehicle miles traveled (VMT), less vehicle hours of travel (VHT), and less fuel consumption. Consequently, based on these statistics, it is not anticipated that the Build Alternatives will contribute to regional air quality impacts as compared to the No Action Alternative.

The issues of indirect land use effects represent a common concern related to highway improvements. In regard to the Ultimate project and *Preferred Alternative*, two general indirect land use effects are expected.

The first indirect effect associated with land use involves an inducement of land use outside the central cities due to the increased capacity and mobility that will be provided by the Build Alternatives. This effect is not anticipated to result in major changes of land use given the extensive growth management planning that is required for all local governments. Specifically, the local government comprehensive plans set the future land uses within the region. These land uses represent

a fairly significant commitment on how and what development will occur in the corridor. The comprehensive plans also include and recognize the LRTP improvements as a part of the land use efforts.

Consequently, it is not anticipated that the Ultimate project and *Preferred Alternative* will induce measurable new or different land uses beyond those represented in the local government comprehensive plan. However, it is reasonable to expect that development may occur at a faster pace with the enhanced mobility of the proposed improvements versus the No Action Alternative.

The second indirect land use effect with the Build Alternatives is based on the fact that the proposed roadway improvements will be closer to the existing right-of-way limits on I-4 in some areas, and in other areas the roadway will actually directly use new right-of-way on existing residential and commercial properties. Also, in a few isolated areas, the I-4 Build Alternatives will impact access to existing properties, requiring more circuitous routing to and from these properties.

These issues, teamed with the associated noise and/or visual effects of the Build Alternatives, will result in some "out migration" from owner-occupied existing residential units located directly adjacent to the proposed right-of-way limits. Furthermore, it will be reasonably expected that with such a shift, there will be transition to rental residential properties, or land use changes in these areas.

In summary, the extent of these types of land use impacts will be fairly isolated. One location where special attention is warranted is the Holden-Parramore neighborhood. The specific locations where the Build Alternatives may cause a shift in land use include the following:

Segment 2

Between Orange Blossom Trail (US 441) and SR 408: Within the Holden Heights neighborhood, impacts from the Build Alternatives will extend further into the neighborhood, most notably along Kaley Street. However, much of this area has previously transitioned to rental properties and the extent of the indirect effects with the proposed project is expected to be minimal.

In the vicinity of the I-4/SR 408 interchange: To the west of I-4 is the Holden-Parramore neighborhood. This area experienced fairly dramatic changes with the introduction of I-4 in the early 1960s and the subsequent development of SR 408 in the 1970s. Consequently, much of the land use adjacent to I-4 and SR 408 has transitioned in past years. The proposed improvement alternatives for the I-4/SR 408 interchange will vary in the manner in which they affect the redevelopment efforts of the City of Orlando and the Orlando Housing Authority in the area. Issues related to the redevelopment were previously presented in Section 4.1. Given the redevelopment program and past land use issues in this neighborhood, the indirect effects of the proposed improvements will merit ongoing coordination with the City of Orlando and residents.

East of I-4 is the Lake Cherokee neighborhood and the Lake Lawsona neighborhood. Given the limited direct effects in this area, it is anticipated that land use changes or edge impacts will be minor.

North of Colonial Drive, east of Garland Avenue: The proposed project will adjust Garland Avenue north of Colonial Drive to a one-way facility. This will create potential for some minor land use changes in this immediate area due to the access changes.

Segment 3

Between Lake Ivanhoe and Lee Road: This area incorporates the College Park neighborhood and adjacent residential development. The existing properties adjacent to I-4 have not generally been reconditioned, expanded, or upgraded as compared to properties located back from the existing I-4 right-of-way. Direct impacts associated with the Build Alternatives will be primarily in the areas for ponds and near the Fairbanks Avenue curves. In these locations, houses that are currently on the second or third row from I-4 will be adjacent to the right-of-way. Therefore, some indirect land use effects are expected. These impacts will be fairly isolated and characterized as minor.

Segment 4

South of SR 434: The Build Alternatives will have some direct impacts to the Sanlando Springs neighborhood area. The direct impacts will result in some properties that are currently set back from I-4 being directly adjacent to the right-of-way. Some minor land use edge effect is expected in this vicinity.

4.9.2 Cumulative Effects

In reviewing the characteristics of the Ultimate project and *Preferred Alternative*, and based on an assessment of other foreseeable actions in the region, several actions are anticipated that fall into the defined categories of cumulative effects.

Chapter 1 of the FEIS presents a description of improvements within the vicinity of the Ultimate project and *Preferred Alternative*. The following provides a list of these independent projects/studies that are or will be a cumulative effect to the proposed I-4 improvements.

- I-4 PD&E Study - Section 1
- I-4 Six Laning and St. Johns River Bridge
- *Central Florida Light Rail Transit System Study*
- I-4 Auxiliary Lanes - SR 535 to SR 528
- I-4 Auxiliary Lanes - SR 528 to SR 482 (Sand Lake Road)
- *I-4 Auxiliary Lanes - Kirkman Road to west of Florida's Turnpike*
- *I-4 Auxiliary Lanes - US 441 (Orange Blossom Trail) to Maitland Boulevard*
- *I-4/John Young Parkway Interchange*
- I-4 Six Laning from CR 532 to US 192
- I-4 Six Laning from Lake Mary Boulevard to US 17-92
- Rest Area Improvements
- I-4/SR 417 (Central Florida GreeneWay) Interchange
- I-4/SR 472 Interchange
- Seminole Wekiva Trail Overpass
- *Florida's Turnpike from Kissimmee/St. Cloud to SR 50*
- SR 528 (Bee Line Expressway) from I-4 to McCoy Road
- *SR 408 (East/West Expressway) from Kirkman Road to Tampa Avenue*
- *SR 408 (East/West Expressway) from Tampa Avenue to I-4*
- *SR 408 (East/West Expressway) from Rosalind Avenue to SR 436*
- Westwood Connector
- *Lake Destiny Drive/Kennedy Boulevard*
- Markham Woods Road/Douglas Avenue Realignment
- Rhode Island Extension

Table 4-38 summarizes the environmental impacts of the I-4 PD&E Study - Section 2 and related studies listed above and described in Section 1.4. It should be noted that the SR 417 (Central Florida GreeneWay) and the SR 472 interchange projects are not included in Table 4-38. These projects are currently under construction and are considered an existing condition.

In addition, environmental impacts associated with the four separate I-4 Auxiliary Lane projects have already been included as part of the I-4 PD&E Study - Section 2. As a result, these projects are not shown in Table 4-38. The Rest Area Improvements, I-4 Pedestrian Bridge Overpass, Lake Destiny Drive/Kennedy Boulevard, and Markham Woods Road/Douglas Avenue Realignment projects have not been included in Table 4-38. Since these projects either have no impacts or do not require an environmental action, there are no associated environmental impacts to consider. Finally, the Florida's Turnpike and SR 528 (Bee Line Expressway) projects have also been omitted from the table. These projects are currently in the PD&E phase of project development; therefore, environmental impacts have not been assessed.

Table 4-38. Summary of Cumulative Impacts

Evaluation Criteria	I-4 PD&E Study - Section 2 Ultimate Project	I-4 PD&E Study - Section 2 Preferred Alternative	I-4 PD&E Study - Section 1	I-4 Six Laning and St. Johns River Bridge	Central Florida Light Rail Transit System Study	I-4/John Young Parkway Interchange	I-4 Six Laning from CR 532 to US 192	I-4 Six Lanning from Lake Mary Blvd to US 17-92	SR 408 (East/West Expressway) from Kirkman Rd to Tampa Ave	SR 408 (East/West Expressway) from Tampa Ave to I-4	SR 408 (East/West Expressway) from Rosalind Ave to SR 436	Westwood Connector	Rhode Island Extension
Business and Residential Impacts													
• Number of Business Relocations	76-81	63	0	1	55	0	0	0	0	0	2	0	0
• Number of Residential Relocations	392	195	0	8	3	0	0	0	0	0	4	0	0
Cultural & Historic Structures													
• Number of Historic Structures/Properties	10	10	0	0	8	0	0	0	0	0	0	0	0
• Number of Archaeological Sites	0	0	4	1	0	0	0	0	0	0	0	0	0
• Number of Parks/Recreational Facilities	0	0	0	0	2	0	0	0	0	0	0	0	0
Natural Environment & Physical Impacts													
• Wetlands (acres)	132	82	71.7	200.08	8.41	6.96	6.35	8.94	0	0	0.80	0.30	N/A
• T&E (low, med, high)	Low-Med	Low	Low	Med	Low	Low	Low	Low	Low	Low	Low	Low	Low
• Floodplains (acre-feet)	338	40	38.90	283.45	0	4.18	0	0	0	0	Min	0	0
• Number of Contamination Sites	24-25	21	1	1	11	2	0	0	0	0	N/A	0	0
Noise Impacts													
• Number of Noise Sensitive Sites	3,356	1,506	6	36	38	64	0	0	0	0	363	0	N/A

All impacts associated with the Preferred Alternative are shown in **Bold Italics**.

N/A = Not available.

All impacts presented above are approximate estimates only.

An examination of total effects associated with each of the projects listed, along with the proposed I-4 improvements, indicates that the cumulative effects will not have major local, regional, or national impact to the human environment.

4.10 Relationship Between Local Short-Term Uses of Man's Environment and the Maintenance and Enhancement of Long-Term Productivity

The Ultimate project and *Preferred Alternative* improvements to I-4 will clearly involve impacts to the human environment within the greater Orlando metropolitan area. Previous discussions have provided much detail on the socioeconomic, cultural, natural, and physical impacts that are attributed to the I-4 improvement alternatives. The level of impact for each build alternative varies to a moderate degree; however, the types and general extent of the build alternative impacts are similar.

The primary impacts to the human environment include existing land use such as residential, commercial, and natural systems. These impacts will be mitigated through appropriate actions defined through commitments included this environmental action.

The impacts caused by Ultimate project and *Preferred Alternative*, along with the associated actions to minimize or mitigate these impacts, are balanced with the benefits derived through enhancement of long-term productivity associated with improving I-4, likely the most critical transportation link in Central Florida, with commensurate improvement in travel time and travel efficiency.

METROPLAN ORLANDO and the Volusia County MPOs 2020 LRTPs identify improvements to I-4 as a top priority for the region to enhance connectivity and mobility. Furthermore, each of the study area local government Comprehensive Plans clearly identify improvements to I-4 as an important priority to serve sustained positive economic conditions for the region.

Enhancement of the efficiency and safety of I-4 through focusing on the movement of people and goods within the corridor has required careful consideration of the type of improvement, the operation of the facility, and the design criteria applied to the build alternatives. Through that effort, it is concluded that the local short-term impacts and the use of resources associated with implementation of the build alternatives is consistent with the maintenance and enhancement of long-term productivity within the region that will be realized with the proposed improvements.

4.11 Irreversible and Irrecoverable Commitments

Implementation of the Ultimate project and *Preferred Alternative* will involve the commitment of a range of natural, physical, human, and fiscal resources. Land used in the construction of the Ultimate project and *Preferred Alternative* is considered an irreversible commitment during the time period that the land is used for a highway facility. However, if a greater need arises for use of the land or if the highway facility is no longer needed, the land can be converted to another use. At present, there is no reason to believe such a conversion will ever be necessary or desirable.

Considerable amounts of fossil fuels, labor, and highway construction materials such as cement, aggregate, and bituminous materials will be expended. Additionally, large amounts of labor and natural resources will be used in the fabrication and preparation of construction materials for the Ultimate project and *Preferred Alternative*. These materials will generally not be retrievable. However, they are not in short supply and their use will not have an adverse effect upon continued availability of these resources. Any construction will also require a substantial one-time expenditure of both state and federal funds, which are not retrievable.

The commitment of these resources is based on the concept that residents in the immediate area, state, and region will benefit by the improved quality of the transportation system. These benefits will consist of improved accessibility and safety, savings in time, and greater availability of quality services, which are anticipated to outweigh the commitment of these resources.

Chapter 5

Comments and
Coordination



5. Comments and Coordination

Proactive community involvement is an integral part of any successful community project. The Public Involvement Program (PIP) process is developed to ensure that important community concerns and technical issues are identified early in the project. The purpose of this program is to establish and maintain communication with the public at-large and individuals and agencies concerned with the project and its potential impacts. To ensure open communication and agency and public input, FDOT has provided an advance notification package to state and federal agencies and other interested parties defining the project and describing anticipated issues and impacts.

FDOT has carried out the scoping process as required by the Council of Environmental Quality Guidelines in order to:

- Expedite the project development processes
- Eliminate unnecessary work
- Provide a substantial issue identification/problem solving effort

Finally, in an effort to resolve all issues identified, FDOT has conducted an extensive interagency coordination and consultation effort, and public participation process. This chapter details FDOT's program to fully identify, address, and resolve all project-related issues identified through the PIP process.

5.1 Scoping Process

Scoping is a process designed to encourage the active participation of agencies, jurisdictions, and the public early in the decision-making process. Scoping is intended to provide the opportunity to identify issues and concerns, define the alternatives to be examined in the study, and identify the impacts to be considered. The objectives of the scoping process include the following:

- Ensure the participation of affected federal, state, and local agencies, and other interested persons
- Determine scope, significance of issues, and the degree of analysis required
- Identify and eliminate issues determined to be insignificant
- Allocate assignments among agencies
- Identify related environmental documents being prepared
- Identify other environmental review and consultation requirements
- Identify permits, licenses, and entitlements necessary
- Indicate the relationship between the timing of the preparation of environmental analyses and the agency's planning and decision-making schedule

Scoping for the project began in May 1996 with the issuance of the Advance Notification (AN) for the project. Scoping continued throughout the project with a Class of Action Determination, Notice of Intent (NOI), Scoping Meeting, and various other meetings with agencies and local jurisdictions affected by the project. A summary of tasks performed as part of the scoping process is discussed in the following sections. Meetings with agencies and local jurisdictions are discussed in Section 5.2.

5.1.1 Advance Notification

AN is the means through which federal, state, and local agencies are informed of proposed actions by FDOT. It also gives notice of FDOT's intent to apply for federal aid on a project. The AN process

provides for early involvement of federal, state, and local agencies in the project development phase and allows them to share information and/or concerns for a proposed action. This process is required by the President's Executive Order 12372 and the Governor's Executive Order 93-194.

On May 10, 1996, an advance notification package was sent, in accordance with FHWA requirements, to initiate coordination with government agencies and the general public and to advise that an environmental document would be prepared for proposed I-4 highway improvements through Orange, Seminole, and Volusia Counties.

The AN was distributed to federal and state agencies and included a description of the project, explanation of the need for the project, potential alternatives, and potential effects of the project. A mailing list was included of the agencies to which the notification package was sent, including federal, state, and local agencies with a stake or interest in the project. A copy of the advance notification, including a list of agencies that received the AN package, is included in Appendix F.

Responses to comments received from agencies were prepared and are also included in Appendix G. The responses address various issues regarding the project and potential impacts.

5.1.2 Class of Action Determination

In January 1997, FDOT, in consultation with FHWA, prepared a Class of Action Determination to prepare an EIS for improvements to I-4 from SR 528 (Bee Line Expressway) in Orange County to SR 472 in Volusia County. The Class of Action Determination was prepared in accordance with FDOT's *PD&E Manual, Part 1, Chapter 3*. A copy of the signed Class of Action Determination is included in the *Scoping Summary Report* (September 1997) and in Appendix H.

5.1.3 Notice of Intent

The NOI to prepare an EIS was forwarded to FHWA by FDOT in February 1997. The NOI was executed by FHWA and appeared in the *Federal Register*/Vol. 62, No. 44, on Thursday, March 6, 1997. A copy of the NOI is included in the *Scoping Summary Report* (September 1997) and in Appendix H.

5.1.4 Scoping Meeting

A public scoping meeting for the project was held for members of federal, state, and local agencies, local jurisdictions, and other interested parties. The meeting was held on April 15 and 16, 1997, from 8:00 AM to 4:00 PM at the Eastmonte Park Recreation & Civic Center, 830 Magnolia Drive, Altamonte Springs, Florida.

Public notice for the scoping meeting was first announced in the *Federal Register* on March 6, 1997, in the NOI. An invitational letter for the scoping meeting was sent to over 300 federal, state, and local agencies, local jurisdictions, and interested parties. The invitational letter included a description of the project, need, alternatives, and probable effects. Also included within the letter was a map of the project area and an agenda. The scoping meeting was also advertised in the legal section of the following study area newspapers on the noted dates:

- *The Orlando Sentinel* - April 10, 1997
- *The Central Florida Advocate* - April 11, 1997
- *La Prensa* - April 10, 1997

Approximately 50 individuals attended on April 15, 1997, and 20 individuals attended on April 16, 1997. The following is a description of the topics discussed during each day of the scoping meeting.

Day 1 - April 15, 1997

An open house was conducted from 8:00 AM to 9:00 AM. During this time, project information was on display for viewing. In addition, the project team was available to answer any questions. During the morning session, the presentation included the following topics:

- Project Overview
- Overview of NEPA
- Project Development Process
 - FDOT Project Development Process
 - Project Development Process
- Scoping and Public Involvement
- Alternatives
- Engineering Analysis
- Environmental Analysis
- Impacts
- Permits

The afternoon session consisted of a question and answer period and a discussion of issues of concern for the attendees. The attendees were encouraged to forward any additional issues of concern to the project team.

Day 2 - April 16, 1997

The second day of the scoping meeting consisted of an open house format from 8:00 AM to 9:00 AM. During this time, project information was on display for viewing. In addition, the project team was available to respond to questions.

At 9:00 AM, the attendees and the project team boarded a LYNX bus for a field review of the 43-mile study area. During the field review, the project team discussed areas of potential impact including neighborhoods, historical areas, parks and recreation areas, wetlands, and wildlife areas. The project team answered questions from the attendees regarding the potential impacts and environmental concerns that could result from this project.

Information summarizing the scoping meeting, including public notices, mailing lists, advertisements, sign-in sheets, handouts, newsletters, meeting agendas, presentation material, comments, and responses, is provided in the *Scoping Summary Report* (September 1997).

Responses to comments received from federal, state, local agencies and jurisdictions, and interested parties during the scoping meeting, and a comment period after the scoping meeting are provided in the *Scoping Summary Report* (September 1997) and in Appendix H.

5.2 Public Involvement Program

The PIP was developed in March 1997, at the beginning of the PD&E study process. The plan identifies the objectives, strategies, and various plan elements of the PIP developed for the project. The program is in compliance with FDOT's *PD&E Manual* and incorporates all requirements of the Federal Aid Policy Guide and Florida Statute 339.155. The purpose of the program is to help ensure that the appropriate input from all concerned citizens, agencies, private groups, and governmental entities is obtained and incorporated into the project development process. This proactive public involvement program focuses on achieving public awareness and community interaction throughout the entire project development process. A major goal of the program is to promote understanding and support for the project and the study process.

FDOT established a single, coordinated PIP for the three highway PD&E studies and the LRT study. The Public Involvement Action Plan for all four of the projects consisted of the elements outlined below.

- Enter into dialogue with residents of the Orlando metropolitan area and surrounding communities to build consensus for the need to improve and expand I-4, providing a solid transportation base.
- Educate potential users of I-4 about the benefits of HOV lanes.
- Demonstrate to the community that HOV lanes will ensure the continued economic viability of Central Florida.
- Demonstrate how HOV lanes will enhance mobility by reducing congestion and sustaining Central Florida's quality of life.
- Identify concerned public.
- Provide an outlet that maintains easy access and opportunity for the public to become involved and interact with technical consultants and FDOT representatives, generating consensus building for the proposed improvements to I-4.

Public participation for the I-4 PD&E Study – Section 2 was accomplished through the use of the following techniques:

- Public Information Office
- Study Sponsors and Advisory Groups
- Community Participation
- Information Elements

Descriptions of the four information techniques are summarized in the following sections. A master list of the meetings held as part of the project is included in Appendix I. A summary of the issues discussed at the meetings is presented in the following sections and contained in the project files.

5.2.1 Public Information Office

Throughout the PD&E study process, FDOT's intent is to provide a coordinated PIP that delivers consistent information to the public regarding the three PD&E studies along 73 miles of the I-4 corridor.

One of the first tasks of the PIP was to create an identity by developing a project logo/theme. The logo/theme selected, *Trans4mation - The Evolution of Transportation in Central Florida*, embraces the vision of this project to focus on improvements to the I-4 corridor including the mass transit options of HOV lanes, express bus service, and preservation of a light rail transit envelope. These proposed improvements will provide flexibility, allowing Central Florida to meet the ever-changing transportation needs. The logo was further developed as the project icon and is utilized in all presentations, letterhead, and displays.

In November 1996, the I-4 Public Involvement Office was established at 370 Whooping Loop, Suite 1154, Altamonte Springs, Florida. The office, centrally located along the I-4 corridor, provides the latest project information to visitors as well as a fully trained staff to help answer specific questions. Informational displays, presentational boards, project design plans, technical reports, and handouts are available for review at the office Monday through Friday from 8:00 AM to 5:00 PM. The 24-hour toll free number (888-797-1616) provides easy access to project information for all interested parties.

Project team members created the Trans4mation Station in April 1997. The Trans4mation Station, a mobile information office designed to take the message to the public, is a modified 34-foot recreational vehicle with a customized exterior emblazoned with the project logo and toll-free phone number. The vehicle is equipped with a mobile office, project video, interchangeable displays, handouts, design plans, and other project information. The Trans4mation Station has made appearances throughout the entire project corridor to neighborhood and homeowner associations, special interest groups, shopping centers, festivals, and other locations along the I-4 corridor. Through March 2002, the Trans4mation Station has made over 400 appearances with over 21,000

visitors. This outreach is especially noteworthy, given that each visitor is provided an opportunity to speak one-on-one with a Public Involvement Specialist regarding their own interests and concerns, learning first hand about the proposed improvements. Refer to Appendix I for a listing of the mobile office appearances.

5.2.2 Study Sponsors and Advisory Groups

As part of the PIP for the I-4 corridor, the Project Advisory Group (PAG) and the Environmental Advisory Committee (EAC) were revived from the I-4 MMMP efforts and expanded to provide technical input to the project teams. In addition, the College Park Neighborhood Association I-4 Technical Committee, the I-4/SR 408 Interchange Technical Committee, the Urban Design Guidelines Committee, and the Cultural Resources Committee (CRC) were formed for the project to address neighborhood, community, aesthetic, and historic resource concerns. The study sponsors and advisory groups met on several occasions throughout the project development process.

5.2.2.1 Project Advisory Group (PAG)

A PAG generally consisting of technical representatives of local governments, METROPLAN ORLANDO, Volusia County MPO, transit providers, state agencies, and special interest groups met frequently during the I-4 PD&E Studies. The focus of this group was to provide input, review study results, and to aid in the formulation of study recommendations from a regional perspective. Additionally, meetings were held with the individual agencies and municipalities to discuss in detail the proposed impacts within their jurisdictions and to receive input.

The following agencies/organizations were invited to join the PAG:

1000 Friends of Florida	Efficient Transportation for the Community
AAA - Florida, Louisiana, Mississippi	FDOT- District 5
BRW, Inc.	FDOT- Turnpike District
Busch Properties of Florida	Federal Highway Administration
CH2M HILL	Florida Audubon Society
City of Altamonte Springs	Florida Highway Patrol
City of Bell Isle	Florida Overland eXpress
City of Casselberry	Glatting Jackson
City of Daytona Beach	Greater Orlando Aviation Authority
City of DeLand	HNTB
City of Edgewood	I-Drive Master Transit & Improvement Dist.
City of Lake Helen	ITE
City of Lake Mary	Keith and Schnars, P.A.
City of Longwood	Kittelson and Associates
City of Maitland	LYNX/CFRTA
City of Orange City	METROPLAN ORLANDO
City of Orlando	OOCEA
City of Port Orange	Orange County
City of Sanford	Orange County Convention Center
City of Winter Park	Orange County Planning Dept.
CSX Transportation	Orange County Traffic Engineering
Darden Restaurants	Orlando Central Park
DBIA Planning & Development	Orlando Downtown Development Board
East Central Florida RPC	Orlando/Orange County Convention & Visitor Bureau Board
Osceola County	The Walt Disney Company
PBQ&D	Town of Eatonville
PBS&J	URS Corporation

Reedy Creek Improvement District
 Seminole County
 Seminole County Expressway Authority
 The Assn. to Preserve Eatonville
 Community, Inc.
 The Sierra Club of Central Florida

U.S. Army Corps of Engineers - Regulatory
 Universal Studios Florida
 Volusia County Public Works Dept.
 Volusia County MPO
 VoTran

The PAG has met throughout the study process at key milestones and before workshops. The PAG meeting schedule is provided below. Each meeting was held at PBS&J, 1560 Orange Avenue, Basement Level Conference Room, Winter Park.

PAG Meeting Date	Itinerary
December 4, 1996	Review I-4 MMMP/LRT
March 5, 1997	General overview of project and PD&E process
April 30, 1997	Section 2 Scoping Meeting results
September 3, 1997	Discuss impacts of LRT/I-4
January 13, 1998	Review I-4 improvements, I-4/SR 408 interchange, downtown access, HOV only access
February 11, 1998	Review I-4 improvements, noise study, urban design guidelines
July 28, 1998	Review project information prior to Workshop
January 20, 1999	Project Status Update
April 6, 1999	Project Status Update
January 20, 2000	Project Status Update/Review I-4 Six Laning information prior to public hearing
June 6, 2001	Review project information prior to public hearing

5.2.2.2 Environmental Advisory Committee (EAC)

The EAC performed a similar role to the PAG with regard to providing input, review, and guidance during the PD&E study process, but with focus on the environmental aspects of the study. The EAC consisted of representatives from local, state, and federal permitting agencies as well as environmental interest groups.

The following agencies/organizations were invited to join the EAC:

- | | |
|---|--|
| 1000 Friends of Florida | Glattig Jackson |
| CH2M HILL | HNTB |
| City of Altamonte Springs | Kissimmee Valley Audubon Society |
| City of Maitland | Kittelson and Associates |
| City of Orlando | League of Environmental Organizations |
| Cross-Seminole Trails Alliance | League of Women Voters for Volusia County |
| East Central Florida RPC | LYNX/CFRTA |
| FDA, Division of Forestry | METROPLAN ORLANDO |
| FDOT- District 5 | Orange Audubon Society |
| Florida Audubon Society | Orange County Environmental Protection Dept. |
| Florida Dept. of Environmental Protection | Orange County Parks Department |
| Florida Fish and Wildlife Conservation Commission | Osceola County |
| Florida Trails Association | PBQ&D |
| Four Corners Coalition | PBS&J |
| Friends of the Wekiva, Inc. | Reynolds, Smith and Hills |
| Seminole County Planning Dept. | Save the St. Johns, Inc. |
| Sierra Club - Volusia/Flagler Water Management District | U.S. Army Corps of Engineers |
| | U.S. Coast Guard |
| | U.S. EPA, Region IV |

Sierra Club of Central Florida
 South Florida Water Management District
 Southwest Florida Water Management District
 St. Johns River Water Management District
 State of Florida Division of Historical Resources
 Stewards of the St. Johns
 The Nature Conservancy
 Town of Eatonville

University of Florida
 URS Corporation
 USFWS-DOI
 Volusia County Environmental Mgmt. Dept.
 Volusia County Growth Management
 Volusia County MPO
 Walt Disney Imagineering
 West Volusia Audubon Society

Near the conclusion of the I-4 MMMP project, the EAC issued a report entitled *Community and Environmental Planning Report Interstate 4 - Road Expansion Project* (July 1996). This report summarizes specific community and environmental planning issues identified by the committee during its review of the I-4 MMMP. It also develops general recommendations to resolve these issues.

Realizing the tremendous contribution of the EAC to the success of the I-4 MMMP, FDOT continued the participation of the committee through the PD&E process. An initial meeting was held with the participants of the EAC to review the PD&E Study sections and address initial environmental concerns of the committee. As a result of this meeting, FDOT committed to reviewing the *Community & Environmental Planning Report* (July 1996) and to provide responses to the environmental planning issues and recommendations set forth in that document. These responses were documented in the *Response to Comments Environmental Advisory Committee Community & Environmental Planning Report* (May 1997).

Numerous meetings have been conducted with the EAC throughout the I-4 studies to discuss impacts and determine environmental concerns of the committee. A summary of the issues discussed at the meetings is presented in the project files. Meetings with the EAC held to discuss issues within the project study limits included:

EAC Meeting Date	Itinerary
November 7, 1996	Reviewed I-4 MMMP and introduced PD&E Study project team
January 17, 1997	Met with South Florida Water Management District to discuss potential concerns
January 22, 1997	Met with U.S. Army Corps of Engineers to discuss potential concerns
January 24, 1997	Met with St. Johns River Water Management District and FDEP to discuss potential concerns
July 28, 1997	Reviewed Environmental Report prepared by EAC
December 12, 1997	Discussed potential Little Wekiva/Cranes Roost Park impacts
December 16, 1997	Discussed potential impacts to Orlando Historic Resources
January 9, 1998	Discussed potential Orlando Area Impacts
January 16, 1998	Discussed potential impacts to Lake Monroe
January 23, 1998	Discussed potential impacts to Shingle Creek
September 29, 1999	Provided a project status update

The EAC is concerned with a number of environmental issues along the project corridor including:

- The protection of neighborhoods along the project corridor.
- The incorporation of landscape enhancements to improve aesthetics along the I-4 corridor.
- Provisions for bicycle, trail, and recreational greenway facilities.
- Protection of water quality including surface water and groundwater.
- Preservation of archaeological and historical resources.
- Incorporation of wildlife crossings.
- Minimization of wetland and wildlife impacts.

5.2.2.3 College Park Neighborhood Association (CPNA) I-4 Technical Committee

During the PD&E Study, information regarding the proposed improvements has been distributed through the PIP to the neighborhoods and residents living along the I-4 corridor. Interest has been generated by the information provided, and many neighborhoods have requested additional presentations to keep residents informed.

The College Park Neighborhood Association (CPNA) is a very active and involved group of voluntary residents. Many of the College Park residents live directly adjacent to or within close proximity to the I-4 corridor. The College Park community is unique in terms of its history and the cohesiveness of its residents. A few members of CPNA volunteered their time to form the CPNA Interstate 4 Technical Committee. This Committee met numerous times in addition to the regular association meetings to research and discuss I-4 and the proposed improvements.

The CPNA Interstate 4 Technical Committee consists of 14 members from the College Park neighborhood. In addition to the I-4 presentations at CPNA meetings, the Committee met separately with project team members to discuss the project.

The CPNA and its Interstate 4 Technical Committee have communicated their position on the project via letters and e-mail to Mark Callahan at CH2M HILL, Mike Snyder at FDOT, Orange County Chairman Richard Crotty, and City of Orlando Mayor Glenda Hood. Correspondence with the CPNA Interstate 4 Technical Committee is included in the project files.

A list of meetings held with College Park residents is provided below:

College Park Meeting Date	Itinerary
July 7, 1997	CPNA – Review concepts and discuss potential impacts
January 5, 1998	CPNA – Review concepts and discuss potential impacts
March 2, 1998	CPNA – Review concepts and discuss potential impacts
July 1, 1998	CPNA I-4 Technical Committee – Review neighborhood issues
August 10, 1998	CPNA I-4 Technical Committee – Review neighborhood issues
September 4, 1998	Bill Jennings of the CPNA I-4 Technical Committee – Review potential impacts
September 14, 1998	CPNA – Review concepts and discuss potential impacts
October 5, 1998	CPNA – Review concepts and discuss potential impacts
January 23, 1999	CPNA Historic Assessment Meeting – Review potential impacts to historic resources
February 2, 1999	CPNA Resident – Review potential impacts
February 9, 1999	CPNA Resident – Review potential impacts
February 9, 1999	CPNA Resident – Review potential impacts
March 13, 1999	CPNA Resident – Review potential impacts
May 18, 1999	CPNA – Review concepts and discuss potential impacts
January 10, 2000	CPNA – Provide update on the Interim Reversible HOV lane.
October 16, 2000	CPNA – Provide overview of Section 106 and the Historic Preservation Policy.

The CPNA I-4 Technical Committee is concerned with a number of issues related to the proposed improvements including the following items:

- Visual impacts due to raising the profile of I-4
- Additional right-of-way needed for the proposed improvements
- Number of businesses and residents impacted
- Increased noise impacts
- Impacts to historic resources
- Access impacts

- Water quality impacts

Table 5-1 presents additional information on the topics and issues discussed with CPNA.

5.2.2.4 I-4/SR 408 Interchange Technical Committee

The I-4/SR 408 Interchange Technical Committee was formed to assist the project team in the development of alternatives at the I-4/SR 408 interchange. As stated in Section 2.4.3.2 of this document, the goal of this committee was to develop alternatives that would accomplish the following objectives:

- Provide system-to-system access between I-4 and SR 408 (East/West Expressway).
- Provide an interchange system that is affordable.
- Provide an interchange concept that allows for a phased improvement.
- Provide acceptable access to downtown Orlando.
- Provide acceptable local access to surrounding neighborhoods.
- Minimize impacts to surrounding neighborhoods.
- Complement redevelopment of the Parramore Neighborhood.
- Preserve/enhance livability in the area of the interchange.
- Provide a sustainable neighborhood in terms of urban design considerations.
- Provide urban design enhancements to contribute to improved aesthetics.
- Improve pedestrian connections.
- Preserve/enhance pedestrian/bicycle access across I-4 and SR 408 (East/West Expressway).
- Promote positive use of public owned land.
- Achieve consensus among the stakeholders within the interchange area of influence.

This committee included representatives from the following local agencies:

- City of Orlando
- FDOT
- OOCEA
- Orange County
- Orlando Downtown Development Board
- Orlando Housing Authority
- Project Consultants
- Parramore-Heritage Development Board

The I-4/SR 408 Interchange Technical Committee met on several occasions to review and discuss the alternatives developed by the project team. The following is a list of meetings held with the I-4/SR 408 Interchange Technical Committee:

I-4/SR 408 Meeting Date	Itinerary
March 12, 1999	Reviewed potential impacts and Hope VI revitalization program.
April 2, 1999	Reviewed proposed alternative concepts 1A and 2A.
April 30, 1999	Reviewed proposed alternative and discussed potential impacts.
May 13, 1999	Reviewed two alternatives for the interchange and discussed impacts.
August 9, 1999	Reviewed revised alternatives and discussed impacts.
September 1, 1999	Reviewed revised alternatives and discussed Preferred Alternative.
September 10, 1999	Reviewed refined alternatives and potential impacts.
October 13, 1999	Reviewed refined alternatives and potential impacts.
November 15, 1999	Reviewed refined alternatives and potential impacts.
December 10, 1999	Reviewed refined alternatives with OOCEA.

I-4/SR 408 Meeting Date	Itinerary
December 13, 1999	Reviewed refined alternatives with City of Orlando staff.
June 6, 2000	Reviewed refined alternatives to determine support for design concept.

5.2.2.5 Urban Design Committee

An Urban Design Committee was formed early in the project development process to discuss potential aesthetic enhancements to the I-4 corridor. The Urban Design Committee developed possible locations of gateways to communities, and techniques to soften structures along the corridor and enhance the aesthetics of stormwater retention ponds. Representatives of the following agencies were involved in the Urban Design Committee:

CH2M HILL	Orange Blossom Trail Development Board
City of Altamonte Springs	Orange County
City of DeBary	Orange County Environmental Protection
City of DeLand	Orange County Parks & Recreation Dept.
City of Deltona	Orange County Planning Dept.
City of Lake Helen	Orlando Downtown Development Board
City of Lake Mary	Osceola County Planning Department
City of Maitland	METROPLAN ORLANDO
City of Orange City	PBQ&D
City of Orlando, Growth Mgmt. & Historic	PBS&J
City of Orlando, Planning and Development	Reedy Creek Improvement District
City of Orlando, Trans. Planning Bureau	Seminole County Services Building
City of Sanford	Seminole County Softball Complex
City of Winter Park	Town of Eatonville
East Central Florida RPC	URS Corporation
FDOT - District 5	Volusia County Administration
Glatting Jackson	Volusia County Fair Association
Greater Orlando Area Services	Volusia County MPO
Kittelson & Associates	

The Urban Design Committee met on several occasions to develop Urban Design Guidelines for the project. The following is a list of meetings for the Urban Design Committee:

Urban Design Meeting Date	Itinerary
April 22, 1997	Informed members of the scope and purpose of Urban Design Guidelines
February 10, 1998	Update on I-4 improvements and Section 106 in City of Orlando
April 23, 1998	Status of PD&E Study and discussion of candidate levels of treatment
September 2, 1998	Meeting to discuss gateways in Seminole County
October 12, 1999	Review of Draft Urban Design Guidelines

Once the Urban Design Guidelines were developed for the project, a number of workshops were held with the community to present the proposed aesthetic enhancements along the I-4 corridor. The workshops are discussed in Section 5.2.3.6.

5.2.2.6 Cultural Resources Committee

A CRC was formed to review potentially adverse effects to cultural and historic/Section 4(f) resources within the project study area. The focus of the CRC is to provide input on the various I-4 alternatives relative to cultural resources. Input from the CRC aided in selecting the Preferred Alternative for the I-4 project. The identification of a Preferred Alternative is required to make the

final selection of alternatives to implement this project. Representatives of the following agencies were involved in forming the CRC:

Archaeological Consultants, Inc.	Keith & Schnars, P.A.
Carter Street Neighborhood Association	Lake Cherokee Neighborhood Association
CH2M HILL	Orange County Historical Museum
City of Orlando Neighborhood Services	Orlando Downtown Development Board
College Park Neighborhood Association	Orlando Historic Preservation Office
Commissioner - District 6	Orlando Housing Authority
Commissioner Elect - District 6	Parramore Heritage Development Board
FDOT - District 5	State Historic Preservation Office/Div. of
Federal Highway Administration	Historic Resources
Griffin Park Neighborhood Association	URS Corporation
Janus Research	Wilson, Leavitt & Small, PA

The CRC met on numerous occasions to review potential impacts to historically significant sites associated with the project. The following is a list of meetings for the CRC:

CRC Meeting Date	Itinerary
March 28, 2000	Discussed primary goals for Section 106 and 4(f) issues
May 2, 2000	Discussed NEPA process and Draft EIS, interchange alternatives and reviewed potential impacts to historically significant sites
June 21, 2000	Focused on range and types of potential effects to historic properties
March 8, 2001	Discussed determination of effect for historic properties
June 21, 2001	Discussed determination of effect for historic properties
September 13, 2001	Discussed adverse effects, mitigation measures, and Section 4(f) issues
December 3, 2001	Discussed the elements and stipulations of the Memorandum of Agreement (MOA)
January 23, 2002	Discussed historic resources, mitigation options, and the elements and stipulations of the MOA
March 12, 2002	Discussed historic resources in Holden-Parramore neighborhood, mitigation options in the Griffin Park Historic District and the draft MOA.
April 30, 2002	Discussed results of Historic Resources Survey, CPNA Transportation Committee meeting with City of Orlando, City of Orlando's Griffin Park Hope VI Plans; and SHPO meeting.
July 9, 2002	Discussed the revised MOA, NRHP nomination for the College Park area, and NRHP nomination for the Holden-Parramore area.

The CRC will continue to meet through the FEIS phase of project development.

5.2.3 Community Participation

The success of the I-4 PD&E Study PIP hinged on the continual exchange of information between the project team and the public. The public is composed of several groups including citizens who live and work along the corridor, civic groups, neighborhood and homeowner associations, environmental groups, business interests, government agencies, and elected/appointed officials. Efforts have included a series of public information workshops, focus group meetings with local interests, and local government briefings. Additionally, hundreds of meetings with property owners, homeowners groups, special interest groups and businesses along the corridor have been conducted. A brief summary of these meetings is provided in the following section. A complete listing of the project meetings is provided in Appendix I.

5.2.3.1 Project Alternatives Public Workshop

The Project Alternatives Public Workshops were held on August 18, 19, and 20, 1998. In order to provide easy access to meeting locations along the 43-mile project corridor, a series of three consecutive meetings were held, one in each county.

- Expo Center in Orange County
- Lake Mary Elementary School in Seminole County
- Enterprise Elementary School in Volusia County

In preparation for these workshops, a notification mailing was sent to 5,981 property owners and approximately 2,000 other interested parties, as well as *FourCast* (Issue 5), the project's quarterly newsletter. Notices were placed in the following six regional news publications: *Orlando Sentinel*, *Orlando Times*, *Orlando Business Journal*, *La Prensa*, *Central Florida Advocate*, and *Seminole Herald*. Flyers were distributed to local libraries, community centers, and governmental buildings.

Approximately 800 people attended the three-day event with approximately 170 written comment forms received. Responses to the comments were prepared and mailed to each inquiry. Copies of these comment forms and responses are provided in the project file. The comments generally addressed the following areas of concern (some comments addressed more than one concern):

Area of Concern	Number of Comments
Total written comment forms received	170
Add to mailing list only	9
Request Trans4mation Station appearance	18
Request plan sheets	46
Comments regarding Retention Ponds	
- Relocate the pond somewhere else (Orange County)	17
(Seminole County)	6
(Volusia County)	2
- Provide increased aesthetics around ponds (Orange County)	3
(Seminole County)	2
Provide Noise Barriers along Corridor	
(Orange County)	9
(Seminole County)	12
(Volusia County)	29
(No Address Provided)	1
Comments regarding High Occupancy Vehicle Lanes (HOV)	
- Against Installation (Orange County)	7
(Seminole County)	4
- Support Installation (Seminole County)	2
- Modify HOV proposal (Seminole County)	3
(Volusia County)	1
(No Address Provided)	1
Comments regarding the Typical Sections	
Alternative C	N/A
Alternative F' support (Orange County)	1
Request for Additional Information on Right-of-Way Acquisition (Orange County)	4
Request for additional informational about impacts to their residential parcel	7

The items listed below provide a brief summation of other comments, questions, and statements received during the workshops:

Design Plan Comment Summary

- Support Kaley Street and Miller Street modifications
- Maintain Kaley Street exit ramps in current configuration (two comments)
- Support Michigan Street and Kaley Street interchange modifications
- Provide northbound exit to Orange Blossom Trail (US 441)

- Provide westbound cloverleaf at SR 434
- Concern about direct impacts to traffic flow around Killarney Elementary School
- Provide protective measures against cut-through traffic from Fairbanks Avenue, down Cambridge Boulevard to Wymore Road by providing cul-de-sacs
- Improve bridge/access (three comments)
- Provide access at Mills Avenue
- Amelia Street is not a good alternative to Robinson Street, since it is not a through street
- Provide loop interchange at CR 46A
- Provide full interchange at Par Street (25,000 attend Calvary Assembly of God)
- How much is Hughey Avenue impacted
- How is access provided to and from HOV lanes in urban and rural areas
- Change Republic Boulevard to Universal Boulevard on Sheet 5, 5A
- Change Touch One Street to Touchstone Street on Sheets 6, 6A, 6B, 6C
- Conduct Value Engineering on the Typical Section - too expensive
- For better maintenance of traffic, close one side and work 24 hours (like the Europeans)
- Keep trucks in right lane to reduce hazard
- How will homeowners' existing water well be protected during demolition of neighbor's well and septic
- Provide permanent reversible HOV lanes
- Avoid urban sprawl - provide light rail
- Stage construction so I-4 and US 17-92 in Volusia County are not under construction at the same time
- Provide HOT not HOV lanes
- Provide half interchange (to the south) at Lake Emma Road
- Provide plantings along I-4 at Laurel Oaks/Springwood Village in Longwood
- Do not move the Anderson Street ramp on SR 408 (East/West Expressway)
- If the Mills Avenue ramp is being replaced, provide alternative entrance ramp for the US 17-92 traffic
- Do not remove the Robinson Street exit and replace it with Amelia Street
- Do not block Easy Street to install retention pond along the SR 408 (East/West Expressway). A lot of traffic uses Easy Street to avoid Orange Blossom Trail (US 441)
- Increase exit ramp width to two lanes (location not identified)
- Do not take corner cuts from property adjacent to Jefferson Street and Garland Avenue in Orlando. The property is a "development piece."
- Provide bridge over the railroad tracks at the US 17-92 interchange
- Do not widen I-4, provide alternative routes
- Provide safety walls to keep trucks from running off the road into the rear of our houses. (Volusia County - six comments)
- Provide U-turns on the interstate

Commercial/Environmental Justice Properties and Historic Districts Summary

- Star Properties (Pond Q1 at Garland Avenue)
- Salvation Army (400 W. Colonial Drive)
- Dobson's Wood and Water, Inc. (806 S. Hughey Avenue)

- Long Farms North, Inc./ The Oaks Apartments (just east of the Par Street ramp)
- Living Hope International Ministries, Inc. (801 29th Street, Orlando)
- Lake Cherokee Historic District resident against Lake Avenue entrance to SR 408
- The retention pond north of the St. Johns River Bridge is located on the top of a significant pre-historic Indian Mound. The I-4 bridge over Dirksen Drive/DeBary Avenue does not appear to be wide enough to accommodate the proposed bicycle trail. Please provide the results of the noise study, upon completion (Tom Scofield, Volusia Co. August 20, 1998, Public Workshop Transcript, page 23).

The format for each workshop was an informal, open house format to encourage the exchange of information between the public and the project team. The same information was presented at each location.

A detailed summary of the alternatives workshop is presented in the *Project Alternatives Workshop, Volumes I and II* (August 1998).

5.2.3.2 Neighborhood Meetings

Extensive outreach has been conducted to meet with the existing neighborhoods along the project corridor. Through February 2002, over 95 meetings have been held with the citizens along the I-4 corridor. These meetings provide an overview of the project process and status, while focusing on the potential project impacts adjacent to their neighborhood. Table 5-1 provides information on the meetings with the neighborhoods including the number of attendees, and topics and issues discussed at the meetings.

5.2.3.3 Local Government/Elected Officials Briefings

Through February 2002, members of the project team attended over 200 meetings with the local MPOs, local and elected officials, appointed boards, and the staff of the city and county governments. These meetings were conducted in addition to the PAG meetings. These meetings allowed for a focused discussion of issues and concerns related to the specific jurisdictions. In each case, a presentation of the current project status and issues was given, followed by a question and answer period. Table 5-2 provides information on the local government/elected officials meetings including the number of attendees, and topics and issues discussed at the meetings.

5.2.3.4 Environmental Justice

As directed by Executive Order 12898 (Environmental Justice), extensive outreach has been conducted to identify and meet with low-income and minority neighborhoods and social service agencies/groups that provide services to low-income and minority persons. At the meetings, the project team reviewed project information and potential impacts, and received input. Through February 2002, over 25 small group meetings have been conducted along the I-4 corridor. Table 5-3 provides information on the Environmental Justice meetings including the number of attendees, and topics and issues discussed at the meetings. The meetings conducted with Environmental Justice neighborhoods are included in Table 5-1.

5.2.3.5 Special Interest Groups

A number of meetings have been conducted with special interest groups that may be impacted by the proposed improvements. These special interest groups include social services agencies/groups, schools, hospitals, and churches. Meetings were held to review project information and potential impacts, and to receive input. Through February 2002, over 55 small group meetings have been conducted along the I-4 corridor. Table 5-4 provides information on special interest group meetings including the number of attendees, and topics and issues discussed at the meetings.

5.2.3.6 Speakers Bureau

Throughout the PD&E process, key staff members have been available to interested community and civic groups for presentations about the study process, transportation needs, and the proposed improvements. Through February 2002, over 20 presentations have been conducted to date with groups such as the East Orlando Kiwanis Club, American Business Women Association, DeLand Rotary Club, Sierra Club, Florida Bar Association, and the Maitland Men's Club. Information on meetings held with civic groups including the number of attendees, and topics and issues discussed at the meetings is provided in Table 5-5.

Extensive outreach has been focused on providing information to the residents, property owners, and other interested parties regarding potential noise impacts, historic properties, and urban design criteria. Over 810 people attended a series of six workshops held during January and February 1999. The meetings were held at the following locations:

Meeting Date	Itinerary
January 12, 1999	Country Village Mobile Home Park, 2252 Hollowridge Dr, Orange City, Volusia County
January 13, 1999	Beardall Senior Center, Lake Cherokee, 800 S. Delaney Ave, Orlando, Orange County
January 20, 1999	Rock Lake Middle School, North Ridge HOA, et. al., 250 Slade Dr, Longwood, Seminole County
February 1, 1999	First Baptist Church, College Park, 1914 Edgewater Dr, College Park, Orange County
February 8, 1999	Neighborhood Alliance Church, Markham Woods HOA, 301 Markham Woods Rd, Longwood, Seminole County
February 16, 1999	Eatonville City Hall, 307 Kennedy Blvd, Eatonville, Orange County

The workshops consisted of an informal open house with displays of the study criteria and results, as well as a formal presentation of the information. A review of the methodology and results of the noise study was provided including noise abatement criteria and potential noise wall locations along the project corridor. The proposed criteria for the aesthetic elements along the corridor as defined in the Urban Design Guidelines for the project were also reviewed.

A review of the location of historic districts and properties identified adjacent or near to the project boundaries were reviewed and discussed with interested parties.

In addition to the notices sent out to the interested parties and the article in *FourCast* announcing the meetings, this series of workshops generated eight television news interviews with over 32 airings of the broadcasts.

5.2.3.7 Section 106

Throughout the project development process, the project team has informed the public on the potential impacts to historic and archaeological properties. Project team historians and archaeologists were on-hand to answer questions at the project scoping meeting, College Park Workshop, Project Alternatives Public Workshop, Urban Design Workshops, and the Public Hearing. In addition, the project team historians and archaeologists met several times with local, state, and federal agencies to discuss potential impacts to historic and archaeological properties. The project team also briefed neighborhoods of potential impacts to historic resources. Meetings involving historic resources have been included within the meetings as described in Sections 5.2.2, 5.2.3, and 5.3.

Table 5-1. Neighborhoods

Date	Organization	No. Attendees	Topics	Issues
March 20, 1997	Sleepy Hollow HOA	38	Discuss I-4 PD&E Study process. Discuss concerns and issues.	Concerned with impacts on noise, landscaping, park, and ROW.
April 28, 1997	Griffin Park NA	21	Provide overview of I-4 PD&E Study and discuss possible impacts to the area with residents.	Interchange does not meet current FDOT design standards. Association feels road elevation would create "eyesore" for residents along corridor. ROW is critical issue. Not much land left to take. Residents are used to noise, not a bother to them. Safety concerns.
May 6, 1997	Orlando Neighborhood Services	5	Coordinate activities regarding neighborhood association meetings and public involvement for the proposed I-4 improvements.	Areas of concern: College Park, GP, Holden-Parramore, and Holden Heights. As with past projects, homeowners want to be involved with the outcome of improvements.
June 9, 1997	Orlando Neighborhood Services	12	Review updates of I-4 PD&E Study. Key issues are potential impacts and key neighborhood concerns.	Met with neighborhood representatives to give overview of project.
June 23, 1997	Orlando Neighborhood Services	5	Provide update on I-4 improvements and the potential effects to the neighborhoods along the corridor within the Orlando city limits.	Continues coordination with neighborhood representatives to identify neighborhood issues and contacts.
July 7, 1997	College Park NA	55	Overview of study process. Discuss potential impacts to area.	Provided overview of project. Concerned about impacts to their neighborhood, access issues, and retention ponds.
August 1, 1997	Orlando Neighborhood Services	10	Provide update on I-4 improvements and the potential effects to the neighborhoods along the corridor within the Orlando city limits.	Established contact with neighborhood ambassadors.
September 5, 1997	Orlando Neighborhood Services	4	Provide update on I-4 improvements and the potential effects to the neighborhoods along the corridor within the Orlando city limits.	Lake Cherokee and Lake Davis. Concerns with visual impacts involving ramp changes for E/W Expressway.
September 8, 1997	Orlando Neighborhood Services Ambassador	5	Provide update on I-4 improvements and the potential effects to the neighborhoods along the corridor within the Orlando city limits.	Holden Heights, Holden-Parramore, Griffin Park, Parramore, and Callahan/Lake Dot. Issues include ROW, retention ponds, and impacts to historic Griffin Park. Need to minimize impacts in arena area.
September 10, 1997	Orlando Neighborhood Services Ambassador	5	Provide update on I-4 improvements and the potential effects to the neighborhoods along the corridor within the Orlando city limits.	Isle of Catalina and Rio Grande Avenue. Issues with cut-through traffic in neighborhoods. Residents along Surfside may see increase in traffic with the realignment of John Young Pkwy and LB McLeod. Noise abatement and landscaping issues.
September 16, 1997	Orlando Neighborhood Services Ambassador	5	Provide update on I-4 improvements and the potential effects to the neighborhoods along the corridor within the Orlando city limits.	College Park & Westside of Lake Ivanhoe. Issues include access, flooding, water quality/level, and shoreline erosion of three lakes. The removal of the loop at Lake Concord will affect the access to Ivanhoe and the flow of traffic.
September 17, 1997	Orlando Neighborhood Services Ambassador	5	Provide update on I-4 improvements and the potential effects to the neighborhoods along the corridor within the Orlando city limits.	East of Lake Ivanhoe, Orwin Manor, Thornton Park, Lawsona/Ferncreek, Colonial Town South, and Lake Eola Heights. No concerns or impacts.
November 5, 1997	Isle of Catalina HOA	14	Introduce I-4 PD&E Study.	Residents prefer that ramps/roads do not affect existing wetland area west of I-4. Residents want trees to remain. They want to maintain easy access to I-4. Changes reflect an increase in traffic volume and the intrusion to the neighborhood. High volume of cut-through traffic.

Table 5-1. Neighborhoods (Continued)

Date	Organization	No. Attendees	Topics	Issues
November 12, 1997	Lake Cherokee NA	37	Overview of I-4 PD&E Study. Request input from the communities regarding potential issues to the area.	Provided overview of project. Concerned about noise, visual impacts, preservation of historic areas, cut-through traffic, and impacts to quality of life.
January 5, 1998	College Park NA	53	Review I-4 project and the effects to the College Park area.	Issues include ROW and the removal of housing along corridor, the difference between a buffer and a barrier and the enforcement process, the handling of Lake Ivanhoe, and retention pond locations. There is an overall objection to the I-4 expansion.
February 2, 1998	College Park NA	7	Discuss status of I-4 PD&E Study.	Residents requested copy of I-4 PD&E Study plan concepts, profiles, and typical section. Reviewed concepts, explained profile/design speed issues. Residents are concerned with noise, visuals, height of road, historic homes, property values, and impacts of drainage ponds.
February 3, 1998	College Park NA w/1 resident & CH2M HILL	3	Discuss construction impacts to the community, including noise, pollution, traffic safety, and historic properties.	Concerned with construction staging, maintaining the flow of traffic, and the ugly visual impact created by the elevation of I-4.
February 3, 1998	Parramore/Heritage Neighborhoods	10	Provide update of the I-4 PD&E Study. Focus on impacts and I-4/SR 408 interchange.	Discussed access, noise, visual, and historic issues. Board wants more specific visuals to understand impacts, benefits, and construction schedules.
February 11, 1998	Orwin Manor Executive Board	13	Discuss I-4 improvements and obtain input from residents about potential impacts/concerns to the area.	Noise impacts. Road elevation sends noise above trees and across neighborhoods. Requested the use of a retention pond as a recreation facility (Matthews Park), with access from the north. Use ponds as amenities, not fenced-off eyesores.
March 2, 1998	College Park Open House/Baptist Church	120	Review I-4 PD&E Study. Discuss issues, including noise, construction, historic properties, aesthetics, and impacts to homes and businesses.	Provided overview of project. Concerned about impacts to neighborhood, noise, and aesthetics.
March 13, 1998	College Park Residents	3	Reviewed project improvements.	Impacts to Ivanhoe Boulevard interchange.
March 19, 1998	Lake Eola Heights HOA	83	Introduce I-4 PD&E Study to homeowners.	Provided overview of project. Concerned about modification to access in downtown area, especially Robinson Street and Amelia Street. Do not want cut-through traffic.
March 29, 1998	College Park NA	--	Review I-4 PD&E Study. Discuss issues, including noise, construction, historic properties, aesthetics, and impacts to homes and businesses.	Profile changes and access impacts.
March 30, 1998	Griffin Park NA	13	Inform the residents about the redeveloped plans for I-4 improvements. Obtain input from residents regarding potential impacts to area.	Major issue is the safety of children. High traffic including tourists. Residents want improved signage on/near I-4 to decrease cut-through traffic. Possible visual, noise, and air quality impacts. Residents interested in aesthetic buffer, such as trees.
April 8, 1998	Lake Cherokee NA	45	I-4 PD&E Study overview and discussion of noise, traffic, and historic property impacts.	Provided overview of project to residents. Concerned about noise, impacts to historic, and cut-through traffic.
April 16, 1998	Restore Orlando	5	Discuss proposed I-4 improvements and potential impacts.	Changes to Michigan Street interchange will force traffic to take Kaley Street. Do not make Kaley Street a four-lane commercial street that will make it difficult to revitalize area. New Covenant Baptist Church will continue to grow and traffic on

Table 5-1. Neighborhoods (Continued)

Date	Organization	No. Attendees	Topics	Issues
April 27, 1998	Griffin Park NA	6	Provide an update on the proposed I-4 improvements.	Kaley Street will increase. Inquired about sidewalk cuts and the possibility of putting them in on Gore Street and South Street residents would like basketball court. How does this fit in with I-4? Is a street becoming a dead-end area used as a court? Residents want Lynx bus stop in neighborhood.
April 27, 1998	Callahan NA	13	Overview of I-4 PD&E Study.	Discussed changes in access, noise, and aesthetic impacts. Discussed how I-4 and LRT will work together.
May 5, 1998	Summer Haven HOA	12	Review the I-4 PD&E Study. Discuss issues including access, HOV lanes and aesthetics.	HOA concerned about the increase in noise levels and traffic safety.
May 6, 1998	Isle Of Catalina NA	42	Review I-4 improvements including John Young Parkway interchange, HOV lanes, and access points.	Overview of project, including John Young Parkway interchange. Discussed slip ramps, barriers, HOV lanes, general use lanes, and auxiliary lanes. Issues include access, safety, traffic volume, and speed. Improving access to/from John Young Parkway and ramps.
May 13, 1998	Tamarind Village	12	Provide overview of I-4 PD&E Study process and proposed improvements.	Discussed HOV lanes, access points, and impacts to the community, including noise and aesthetics.
May 18, 1998	Markham Woods HOA	34	Review proposed improvements along the I-4 corridor and potential impacts in the Markham Woods area.	Provided overview of project to homeowners. Concerned about FDOT 6 + 4 policy, HOV will not be used, barrier separated is too expensive, want more GUL, want noise wall, want partial interchange at E. E. Williamson.
May 20, 1998	Orange Tree HOA	20	Review the I-4 PD&E Study and project improvements.	Discussed HOV lanes, access points, noise, aesthetics, and stormwater issues.
May 27, 1998	North Holden Heights Redevelopment Committee	11	Review proposed I-4 improvements and potential impacts to the area.	Provided overview of project. Committee wants NB access at OBT. They want to redevelop area. Could 29th St. be developed as access? Supported Alt. C and Texas U-turn concept. Want to maintain Gore Street access and close Michigan/Kaley Street.
May 27, 1998	Cypress Creek HOA	13	Introduce the proposed I-4 improvements.	Provided open house format review of proposed project improvements.
July 1, 1998	Summer Time Retirement Home	3	Discuss PD&E Study, proposed improvements to I-4, possible impacts to the facility, concerns of the staff, and services provided to the community.	No direct impacts to building or property.
July 21, 1998	Magnolia Towers	20	Introduce the I-4 PD&E Study and improvements.	Located east of I-4, north of SR 408. Interchange improvements will relocate SR 408 closer to building. Ramp crosses over parking area, but most likely won't take any parking. Noise issue.
August 4, 1998	Holden Heights NA @ Restore Orlando	3	Review proposed I-4 improvements, HOV lanes and access points, downtown interchanges and impacts to neighborhoods.	Holden Heights NA did not show up for meeting.
August 10, 1998	College Park NA I-4 Technical Committee	6	Review PD&E Study and I-4 improvements. Obtain input from group regarding impacts to neighborhoods and community. Properties lost to ponds is major issue for homeowners.	Improve SR 50 and I-4 Interchange to relieve congestion. Protect water quality and level of Lakes Ivanhoe and Concord. Stop the noise from crossing the lakes. Potential traffic diversion to Princeton due to Ivanhoe access change. Park areas around Lake Ivanhoe and Lake Concord.

Table 5-1. Neighborhoods (Continued)

Date	Organization	No. Attendees	Topics	Issues
August 13, 1998	Kingswood Manor HOA	21	Review PD&E Study and the I-4 improvements. Obtain input from the residents about potential impacts to the area and concerns of the community.	No direct effects on facility. No noise impact, location is too far from I-4. Can HOV lanes be reversible to support and improve AM/PM commuter traffic? For safety reasons, create semi-truck traffic lanes on I-4. 12 ft. shoulders on each side of HOV lanes.
August 27, 1998	Orlando District 6 Neighborhood Meeting	128	Review I-4 improvements and PD&E Study process. Obtain input from neighborhood representatives.	Provided overview of project to representatives from 12 neighborhoods.
September 14, 1998	College Park NA/College Park Baptist	225	Review I-4 improvements. Discuss potential impacts and issues to neighborhoods and the community.	Provided overview to 225 residents. Concerned about modifications to Ivanhoe Blvd. interchange; design speed impacts; retention pond impacts; aesthetics and maintenance; construction noise at night, noise impacts, and noise walls; project timeframe; impacts to historic resources.
September 28, 1998	Holden Heights Neighborhood Watch	30	Overview of project. Discuss issues and potential changes to access, especially in the downtown area.	Provided overview to 30 residents. Noted redevelopment of Kaley Street and Michigan Street still provides access to this area. Concerned about potential pollution from I-4 to Lake Holden. Advised that water quality and quantity issues will be addressed.
October 1, 1998	Targeted Community Initiative	40	Review project improvements. Discuss issues and potential impacts to neighborhoods.	Targeted community initiative. Provided overview of I-4 project and PD&E process to 40 people. Expressed concerns that new configuration of Kaley Street and Michigan Street will cause backup of traffic at Michigan Street. Concerned that interchange will encourage commercial and development.
October 12, 1998	Spring Valley Farms HOA	31	Review PD&E Study and the I-4 improvements. Obtain input from the residents about potential impacts to the area and concerns of the community.	Concerned that HOV lanes are a waste. Make two more general use lanes. Requested the statistics on HOV usage. Make lanes reversible. Barriers required for enforcement. Enforcement necessary to make HOV lanes effective.
October 27, 1998	Country Village Mobile Home Park	49	Review PD&E Study and the I-4 improvements. Obtain input from the residents about potential impacts to the area and concerns of the community.	Residents in favor of a sound and safety barrier. Why not use mass transit. Add lanes for trucks only. Requested information on HOV lane use in other cities. Does it work?
October 29, 1998	Lake Cherokee HOA	10	Provide details and explanation of improvement options proposed for this area. Meeting is follow-up to Fall 1997 meeting with HOA.	Protect the historic areas from impacts. Ramp at Osceola Ave. has the potential to increase cut-through traffic. Proposed bridge over Lake Lucerne will be a negative visual impact. Concerned with modifications to I-4 and SR 408 interchange.
November 19, 1998	Carter Street NA	30	Review PD&E Study and the I-4 improvements. Obtain input from the residents about potential impacts to the area and concerns of the community.	Provided overview of I-4 project and PD&E process to those in attendance. Very concerned downtown changes will not provide for traffic to Citrus Bowl. Concerned about the placement of retention ponds. Exfiltration system may eliminate ponds.
January 12, 1999	Combination Noise/Urban Meeting – Country Village/Volusia Co.	128	Provide information on potential impacts to local communities and neighborhoods. Discuss proposed mitigation activities regarding historic properties, parks, and noise abatement issues. Seek input from the public.	Provided project and PD&E process overview and the noise study abatement recommendation. The area west of I-4 from Howland Blvd. to Abbott Woods Lane, including Country Village, qualifies for noise barriers.

Table 5-1. Neighborhoods (Continued)

Date	Organization	No. Attendees	Topics	Issues
January 13, 1999	Combination Noise/Urban Meeting/Section 106 Lake Cherokee	95	Provide information on potential impacts to local communities and neighborhoods. Discuss proposed mitigation activities regarding historic properties, parks, and noise abatement issues. Seek input from the public.	Gave overview of the historic area. Identified properties with significant resources. Discussed the noise study and the basic requirements to qualify for abatement barriers.
January 20, 1999	Combination Noise/Urban Meeting Northridge HOA/Rock Lake Middle School	126	Provide information on potential impacts to local communities and neighborhoods. Discuss proposed mitigation activities regarding historic properties, parks, and noise abatement issues. Seek input from the public.	Provided project and PD&E overview, the Urban Design guidelines and noise study recommendation for the area. Areas east of I-4 from Central Parkway to Lake Mary Blvd. qualify for noise barriers. Some neighborhoods exceed the Benefited Residence Cost.
January 25, 1999	Combination Noise/Urban Meeting/Section 106 Callahan NA	123	Provide information on potential impacts to local communities and neighborhoods. Discuss proposed mitigation activities regarding historic properties, parks, and noise abatement issues. Seek input from the public.	Overview of the historic potential effects. Significant historic resources will be avoided. Reviewed the noise study. There are noise sensitive areas along I-4 located from Orange Blossom Trail to Washington Street.
February 1, 1999	Combination Noise/Urban Meeting/Section 106 College Park	284	Provide information on potential impacts to local communities and neighborhoods. Discuss proposed mitigation activities regarding historic properties, parks, and noise abatement issues. Seek input from the public.	Overview of the historic area of potential effect with 71 buildings identified as contributing to the historic district. Negative impacts to these resources will be avoided. Overview of the noise study, including the basic requirements to qualify for noise barriers.
February 8, 1999	Combination Noise/Urban/Section 106 – Markham Woods	93	Provide information on potential impacts to local communities and neighborhoods. Discuss proposed mitigation activities regarding historic properties, parks, and noise abatement issues. Seek input from the public.	Overview of noise study. Residential areas west of I-4 from SR 434 to Lake Mary Blvd. do not qualify for noise barriers now. Some neighborhoods exceed the Benefited Residence Cost. They will be re-evaluated during the final design. Criteria could change.
February 16, 1999	Combination Noise/Urban/Section 106 – Eatonville	84	Provide information on potential impacts to local communities and neighborhoods. Discuss proposed mitigation activities regarding historic properties, parks, and noise abatement issues. Seek input from the public.	Provided project and PD&E process overview. Discussed noise study and findings, recommendations, and information on potential impacts from I-4 on the historical district. Wymore Road area qualifies for noise barrier. Interested in Urban Design for barriers.
March 25, 1999	Griffin Park NA	25	Planning meeting for the revitalization of the Griffin Park and Carver Court public housing developments with the opportunity for citizen input for preparation of a Hope VI application.	Outlined the current plans for the Hope VI application. Residents had no concerns about the I-4 PD&E Study.
April 10, 1999	Parramore Redevelopment	--	Provide information on potential impacts to local communities and neighborhoods. Discuss proposed mitigation activities regarding historic properties, parks, and noise abatement issues. Seek input from the public.	Outlined the current plans for the Hope VI application. Concerned access changes will impact redevelopment plans.
April 14, 1999	Orwin Manor HOA	--	Provide information on potential impacts to local communities and neighborhoods. Discuss proposed mitigation activities regarding historic properties, parks, and noise abatement issues. Seek input from the public.	Concerned that access changes will impact neighborhood. Neighborhood does not want Pinehurst Avenue closed.

Table 5-1. Neighborhoods (Continued)

Date	Organization	No. Attendees	Topics	Issues
April 14, 1999	Lake Cherokee NA	16	Present overview of I-4 improvements, flexible use of HOV lanes as "HOT" or truck lane in addition to changing technologies as "Smart Car" lane. Review Urban Design treatments. Discuss I-4/SR 408 interchange impacts, including ramp crossings over lakes.	Concerned that noise walls will be ugly. Walls need Urban Design treatment and landscaping, including Anderson Street. Cut-through traffic is bad now, it will only get worse with I-4 improvements. Can ramps at Lucerne be moved?
May 13, 1999	Rio Grande HOA	10	Provide overview of I-4 improvements and PD&E Study. Discuss impacts to the area, the tentative schedule for implementation and issues/concerns of residents.	Overview of I-4 project and improvements. JYP and I-4 interchange taken out of PD&E Study. Will be done separately to accelerate construction. Direct exit to JYP will eliminate the need for traffic to stop at signal at JYP.
May 22, 1999	Neighborhood Horizons - College Park	100	Overview of project improvements. Provide attendees the opportunity to view "before" and "after" photos containing ramps and noise walls with aesthetic treatment. Discuss the need to raise I-4 profile in this area in addition to design criteria.	Concerned about visual impacts and aesthetic treatment. Changes to the Ivanhoe interchange will reduce access to I-4. Keep the design of I-4 the same, including curves and dips. Use the funds to fix other roads. Use exfiltration system and not ponds.
June 8, 1999	Lake Davis/ Greenwood NA	26	Discuss Alternate Plans 1A and 2A both featuring changes to connecting ramps on I-4 and surrounding areas. Seek public involvement.	Neighborhood Association concerned with increase in noise and traffic on Anderson Street. Change in access will impede the flow of traffic downtown. Residents want landscaping replaced along SR 408 after modifications are complete. Improve the signage for interchanges.
June 9, 1999	Lake Cherokee NA	33	Discuss Alternate Plans 1A and 2A both featuring changes to connecting ramps on I-4 and surrounding areas. Seek public involvement.	Residents do not want bridge over Lake Lucerne; eliminate Orange Avenue exit instead. Access changes to exits on I-4/SR 408 will impede traffic to E. Orlando in both south and west directions. Concerned that cut-through traffic will increase.
June 21, 1999	Holden Heights NA and Targeted Community Initiative	21	Discuss Alternate Plans 1A and 2A both featuring changes to connecting ramps on I-4 and surrounding areas. Seek public involvement.	Alternative 1A is not acceptable and not compatible with proposed plans for this area. Ramps isolate the Parramore Avenue and Griffin Park areas. With Alternative 1A there are no apparent new impacts to area, maintains access to downtown Orlando, reduces impacts.
June 22, 1999	Lake Como NA	28	Discuss Alternate Plans 1A and 2A both featuring changes to connecting ramps on I-4 and surrounding areas. Seek public involvement.	Eliminating two exit ramps from SR 408 will reduce the access to neighborhoods between I-4 and Bumby Avenue. Will increase traffic within the Lake Como area. Will clog Bumby Avenue to local residents. Need to improve flow of existing traffic to Bumby Avenue.
June 23, 1999	Lawsona/ Ferncreek HOA	18	Discuss Alternate Plans 1A and 2A both featuring changes to connecting ramps on I-4 and surrounding areas. Seek public involvement.	Residents concerned about exits and entrances along SR 408 and ramp eliminations and modifications. What impacts will the noise walls have? What input will residents have in final decision on noise walls? Discussed HOV, night construction, flow of traffic.
June 24, 1999	Carter Street NA	19	Discuss Alternate Plans 1A and 2A both featuring changes to connecting ramps on I-4 and surrounding areas. Seek public involvement.	Residents would like two-way traffic on Carter or Long Streets. Concerned with the elimination of Gore Street, access changes to neighborhoods, retention ponds, and land/property acquisition. Problems already exist in Citrus Bowl area.

Table 5-1. Neighborhoods (Continued)

Date	Organization	No. Attendees	Topics	Issues
June 28, 1999	Griffin Park NA	32	Present proposed concepts for the improvements to I-4/SR 408.	Brief overview of project study. Discussed alternative concepts for the interchange improvements. Consensus of NA was the fourth level fly over. The concept would better facilitate the redevelopment of the Griffin Park area and Carter Street.
July 20, 1999	Carter and Long Street Open House	24	Present two additional alternative interchange concepts developed for consideration for the I-4/SR 408 interchange. Discuss potential impacts to the neighborhoods and properties along Carter and Long Streets. Seeking public input.	Provided brief overview of PD&E Study, physical impacts to the environment, and social impacts to the community. Alternative 1A is a tunnel design. No new impacts to the community, maintains access to downtown Orlando, reduces impacts to Griffin Park and Carter Street.
July 22, 1999	Belmont/Hanging Moss HOA	30	Present two additional alternative interchange concepts developed for consideration for the I-4/SR 408 interchange. Discuss potential impacts to the neighborhoods and properties along Carter and Long Streets. Seeking public input.	Provided brief overview of PD&E Study, physical impacts to the environment, and social impacts to the community. Alternative 1A is a tunnel design. No new impacts to the community, maintains access to downtown Orlando, reduces impacts to Griffin Park and Carter Street.
August 10, 1999	Magnolia Towers	16	Present two additional alternative interchange concepts developed for consideration for the I-4/SR 408 interchange. Discuss potential impacts to the neighboring communities. Seeking public input.	Provided brief overview of PD&E Study, physical impacts to the environment, and social impacts to the community. Alternative 1A is a tunnel design. No new impacts to the community, maintains access to downtown Orlando, reduces impacts to Griffin Park and Carter Street.
August 17, 1999	Parramore/Heritage Development Corporation	8	Present two additional alternative interchange concepts developed for consideration for the I-4/SR 408 interchange. Discuss potential impacts to the neighborhoods and facility. Seeking public input.	Provided brief overview of the PD&E Study, physical impacts to the environment, and social impacts to the community. Alternative 1A is a tunnel design. No new impacts to the community. Maintains access to downtown Orlando, reduces impacts to Griffin Park and re-connects it with surrounding communities. Alternative 2A is a flyover design with basically the same advantages. The tunnel design is more expensive. The public needs to decide which alternative benefits the community. In areas with impacts, additional enhancement activities will be done as a form of mitigation. Concerned about keeping and maintaining sidewalks in the downtown Orlando area. Community needs to get involved in the Urban Design process.
August 30, 1999	Arlington Heights NA (Lake Dot)	13	Provide status of I-4 improvements, including alternatives for the development of interchanges and potential impact to the neighboring communities.	Brief overview of I-4 PD&E Study. I-4/SR 408 interchange will be modified to provide more direct access in all directions. Construction is slated for 2007. Discussed HOV lanes and the benefits to implementing in the improvements to I-4.
September 27, 1999	Callahan NA	12	Present alternative concepts considered for the I-4/SR 408 interchange. Discuss potential impacts to emergency services.	Brief overview of project improvements. City of Orlando, Housing Authority and Community Redevelopment has concerns with safety, access, noise, and aesthetics. As a result, FDOT reassessed the basic plan for the I-4/SR 408 interchange. Re-develop Holden/Parramore.
September 28, 1999	East Central Park NA	16	Provide an overview of the I-4 PD&E Study. Discuss alternatives developed for interchanges and potential impacts to the neighboring communities.	Brief overview of project and improvements. Explained the concept behind HOV, GUL, and auxiliary lanes. Project plan allows FDOT to maximize the use of existing ROW and minimize the impacts to adjacent communities. Funding accelerated for the SJR bridge.

Table 5-1. Neighborhoods (Continued)

Date	Organization	No. Attendees	Topics	Issues
October 4, 1999	Orlando Central Towers RA/Seniors	64	Provide an overview of the I-4 PD&E Study. Discuss alternatives developed for interchanges and potential impacts to the neighboring communities.	Brief overview of project and improvements. Explained the concept behind HOV, GUL, and auxiliary lanes. Project plan allows FDOT to maximize the use of existing ROW and minimize the impacts to adjacent communities. Discussed alternatives for the I-4/SR 408 interchange.
October 20, 1999	Orlando Cloisters/Seniors	63	Provide an overview of the I-4 PD&E Study. Discuss alternatives developed for interchanges and potential impacts to the neighboring communities.	Brief overview of project and improvements. Explained the concept behind HOV, GUL, and auxiliary lanes. Project plan allows FDOT to maximize the use of existing ROW and minimize the impacts to adjacent communities. Discussed alternatives for the I-4/SR 408 interchange.
October 21, 1999	Booth Towers/Seniors	13	Provide an overview of the I-4 PD&E Study process and improvements. Discuss potential impacts to the community.	Brief overview of project and improvements. Explained the concept behind HOV, GUL, and auxiliary lanes. Project plan allows FDOT to maximize the use of existing ROW and minimize the impacts to adjacent communities. Discussed alternatives for the I-4/SR 408 interchange.
January 10, 2000	College Park NA	27	Review I-4 project improvements. Provide update on the Interim Reversible HOV lane.	Overview on the status of both the ultimate PD&E Study and Interim Reversible HOV lane. Addressed County Chairman's proposed 10-laning. Concepts formulated under the I-4 PD&E Study could allow 10 lanes in the same envelope.
March 21, 2000	Northridge HOA	23	Provide update of the I-4 PD&E Study. Discuss the SJR bridge, six-laning, interim reversible HOV lane, impacts to neighborhoods, interchange, and safety improvements.	Brief overview of I-4 project and related topics. HOA disappointed that this area does not qualify for noise wall due to the cost factor. Other areas along the corridor with same noise levels are slated for noise walls.
March 30, 2000	Lake Destiny Springs HOA	11	Provide update on the I-4 PD&E Study, SJR bridge, six-laning, safety improvements, and potential impacts to the community.	No direct impacts to the community. Group requested project update.
April 18, 2000	Orwin Manor HOA	44	Provide update on the I-4 PD&E. Discuss the Interim Reversible HOV lane and impacts to neighborhoods. Seeking public involvement.	Provided project update. Discussed landscaping buffers for eastside of I-4. FDOT will replace existing landscape with same type and number of plants. Area qualifies for noise abatement. Discussed the Interim Reversible HOV lane, construction schedule.
May 1, 2000	Apple Valley HOA	21	Provide update on the I-4 PD&E Study, SJR bridge replacement, six-laning, Interim HOV, interchange improvements, safety, and potential impacts to neighboring communities.	Provided brief history of project to date. Members concerned most with Interim HOV project and the traffic on Douglas Ave. No changes planned for Douglas Ave.
June 7, 2000	Carter Street and Lake Cherokee HOA	19	Provide update on the I-4 PD&E. Review I-4/SR 408 interchange alternatives, including benefits and potential impacts to neighboring communities. Seeking public involvement.	Discussed the APE for Historical Properties and/or Districts and the possibility of extending the boundaries of the APE. The redesign reduced many of the impacts to the Lake Cherokee area. Reviewed the original concept of the I-4/SR 408 interchange including potential impacts to the east and west of I-4. Discussed the proposed alternatives. Residents have concerns about noise, downtown access, ROW, ponds, general access to the area, and traffic impacts to the south end of town and the west side of

Table 5-1. Neighborhoods (Continued)

Date	Organization	No. Attendees	Topics	Issues
August 8, 2000	Magnolia Towers	40	Provide an update regarding the I-4 PD&E Study focusing on access to downtown Orlando and alternative improvements under study for the I-4/SR 408 interchange.	I-4. Provided brief history of project to date. Concentrated on the I-4/SR 408 interchange. Outlined options being considered to improve the interchange (i.e., tunnel or flyover option). Residents concerned that building will be taken.
September 11, 2000	Holden Heights Targeted Community Commission	34	Provide an update on the I-4 PD&E Study focusing on access issues and potential impacts to the community.	Overview of the I-4 project. Group advised that the projected date for the Section 2 public hearing is February 2001. The community is concerned about the closing of exit at Gore Street. The Carter Street NA and Lake Cherokee NA want the exit ramp to remain.
October 10, 2000	Lake Como NA	17	Provide a discussion on the proposed improvements to I-4 and the I-4/SR 408 interchange and the potential impacts to local neighborhoods.	Brief overview of the I-4 project and the PD&E Study. Stated that current plans for Section 2 of the project still provide for a 44 ft. median for future mass transit options given the fact that FDOT remains positive to the issue.
October 16, 2000	College Park NA, Historic and I-4 Technical Committees	16	Address issues conveyed in correspondence sent by the College Park NA.	Provide overview of Section 106 and the Historic Preservation policy as it applies to I-4. Discussed the APE boundaries and the potential impacts to historic resources. All items within the APE are eligible for the same consideration if it is a historic resource.
November 9, 2000	Lake Eola Heights Historic NA	49	Provide a discussion on the proposed improvements to I-4 and the I-4/SR 408 interchange and the potential impacts to local neighborhoods.	Overview of the I-4 project discussing the process and the proposed improvements along the corridor. Focused on proposed changes to the I-4/SR 408 interchange and the related access modification to downtown.
January 8, 2001	Holden Heights NA	38	Provide update on the I-4 PD&E Study, Michigan/Kaley Street Interchange, access issues, potential impacts, and issues related to alternatives. Discuss the status of the DEIS. Seek public input from community.	Overview of I-4 project identifying the boundaries of the three sections. Advised group that public review of DEIS is scheduled for the spring of 2001 and the approval of the FHWA could occur by the end of the year.
January 9, 2001	Summer Haven NA	42	Provide update on the I-4 PD&E Study, access issues, potential noise impacts, and abatement alternatives. Discuss the status of the DEIS.	Overview of I-4 project identifying the boundaries of the three sections. Advised group that public review of DEIS is scheduled for the summer 2001 and the approval of the FHWA could occur by the end of the year. Discussed preliminary plans for the St. Johns River Bridge.
March 26, 2001	Lake Dot/Arlington NA	6	Overview of the I-4 project, alternatives, and interim improvements to SR 408 and the I-4 interchange. Provide update on the St. Johns River Bridge and access issues to downtown Orlando.	Brief overview of I-4 project, identifying the boundaries of all three sections. Discussed alternatives for the I-4/SR 408 interchange, access management, impacts to neighboring communities, the St. Johns River Bridge, HOV, and auxiliary lanes.

Table 5-1. Neighborhoods (Continued)

Date	Organization	No. Attendees	Topics	Issues
May 17, 2001	Riverside Condominium Association	30	Discuss progress of I-4 PD&E Study and potential impacts to neighboring communities.	Overview of the I-4 project. Discussion included mention of improvements to Section 2 of the project, HOV, GUL, and a 44' envelope for a future rail system. Meeting included information on the interim improvements consisting of the auxiliary lanes to ease congestion along the corridor. Discussed the replacement of the 40-year old St. Johns River Bridge, improvements to the US 17/92 interchange, and the widening of several land bridges. Condo Association not eligible for a noise wall. Owners have concerns with long-term safety issues and during the construction phase. Group advised that appropriate parties will monitor situation to ensure owners safety. Discussed construction time frame, retention ponds, and no right-of-way acquisition required from the Association.
May 23, 2001	Hidden Estates NA	35	Provide status of the I-4 PD&E Study and the DEIS. Discuss access issues and possible impacts that include noise and abatement issues.	Provided overview of I-4 PD&E Study. Advised group of Public Hearing for Section 2 (scheduled for 6/01). Discussed ROW, St. Johns River Bridge, aesthetics, noise, and urban design guidelines. Discussion also included information on the interim auxiliary lane project for I-4.
May 29, 2001	East Central Park NA	10	Provide over of the I-4 PD&E Study. Discuss proposed ultimate improvements, interim auxiliary lanes, the proposed alternatives for the I-4/SR 408 Interchange, access changes to the Downtown Orlando area, potential impacts, and the upcoming Public Hearing.	Overview of I-4 PD&E Study and process, impacts to neighboring communities, projected time frame of 10-15 years, HOT or Smart Lanes. Discussed the enforcement of carpool lanes and breakdown bays. Other topics covered included safety, the I-4/SR 408 Interchange alternatives, interim auxiliary lane projects, St. Johns River Bridge and noise abatement.
June 4, 2001	Spring Valley Farms NA	37	Provide an update of the I-4 PD&E Study, St. Johns River Bridge and six-laning, HOV, interchange, and safety improvements and potential impacts to neighboring communities.	Discussed I-4 project, including impacts to wetlands, noise levels, existing neighborhoods, parks cultural/historic resources, archeological sites, air/water quality, including stormwater management. Group also received information regarding the design criteria for the alternative plans proposed for the I-4/SR 408 interchange. Individuals have concerns with the curves at Fairbanks Ave. Pleased to hear that ITS studies are underway for all of I-4.
June 14, 2001	Rio Grande Park NA	22	Provide overview of I-4 project. Discuss proposed ultimate I-4 improvements; I-4/SR 408 Interchange alternatives; changes to downtown access; potential impacts to communities; interim I-4 auxiliary lanes and I-4 PD&E Public Hearing schedule.	Brief project overview. Height of I-4/SR 408 Interchange w/tunnel alternative is 65-70 ft. Height for flyover alternative is 80-90 ft. Downtown I-4 access points are proposed at SR 50, South St., Anderson St. and Amelia St., At most, three buildings will be impacted by these different alternatives. The Community Center would be relocated to another site. Ultimate improvements to I-4 along the 43 miles will cost an estimated \$2.1 billion. This area does not qualify for noise walls. Community suggested signs along I-4 directing drivers to use SR 417 as a bypass route.

Table 5-2. Government Officials

Date	Organization	No. Attendees	Topics	Issues
October 23, 1996	METROPLAN ORLANDO - CAC	39	Provide overview of PD&E Study.	No issues discussed.
October 25, 1996	METROPLAN ORLANDO - TTC	45	Discuss I-4 study process.	No issues discussed.
November 13, 1996	METROPLAN ORLANDO - CAC	47	Present I-4 PD&E Study process.	Overall study limits, consultant, class of action and time frames. Study is in the initial stage of data gathering, additional presentations made throughout study.
November 19, 1996	Volusia Co. MPO - TTC	29	Overview of PD&E Study process and project improvements.	Explained differences between EA & EIS. End product different by the magnitude or depth of study process itself. Crossover of bridge is significant.
November 19, 1996	Volusia Co. MPO - CAC	29	Discuss project study process.	Concerned about the funding of the project. Will there be an increase in taxes?
November 26, 1996	Volusia Co. MPO	37	Present I-4 PD&E Study.	No issues discussed.
December 12, 1996	City of Altamonte Springs	9	Study overview and discuss city items of concerns including utilities, construction controls, Central Pkwy bridge, Wymore Road stormwater basin, Cranes Roost, Park & Ride.	City's concern, including relocation/impacts to existing and proposed utilities including water tower and pump station; sensitive Cranes Roost stormwater and floodplain system; impacts to business development; pond locations; location of Park & Ride; pedestrian activity; and maintenance of traffic.
January 7, 1997	City of DeBary	6	Introduce the I-4 PD&E Study. Discuss access issues/interchange concepts, local improvements, drainage pond locations and water issues, pending development areas, major utility concerns, and visual/aesthetic issues.	City wants SW area of Lake Monroe as a preserve in partnership with City, WMD & FDOT. Only one pond wanted near Dirksen Dr. and Enterprise Rd. Existing drainage problems. City does not want additional drainage basin flow restrictions. Impacts to neighborhood.
January 8, 1997	City of Orange City	9	Introduce the I-4 PD&E Study. Discuss access issues/interchange concepts, local improvements, drainage pond locations and water issues, pending development areas, major utility concerns, and visual/aesthetic issues.	City concerned with proposed diamond-shaped interchange at SR 472, accuracy of demographic study and traffic report. City would like changes ASAP. Impacts to Country Village. Traffic impact for proposed medical center. Summer Haven may require buffer.
January 8, 1997	City of Deltona	6	Introduce the I-4 PD&E Study. Discuss access issues/interchange concepts, local improvements, drainage pond locations and water issues, pending development areas, major utility concerns, and visual/aesthetic issues.	Improvements to SR 472 interchange is critical issue. Requested Park & Ride at Howland Rd. and that the entrance to city be located at Saxon Blvd. with fountain at SW corner of interchange.
January 15, 1997	City of Sanford	12	Introduce the I-4 PD&E Study. Discuss access issues/interchange concepts, local improvements, drainage pond locations and water issues, pending development areas, major utility concerns, and visual/aesthetic issues.	Concerned about traffic studies, and the number and location of proposed HOV interchanges. Current study necessary due to amount of growth in recent years. Existing bridge is restrictive. City wants larger bridge. Existing problems will only get worse.
January 16, 1997	City of Longwood	5	Introduce the I-4 PD&E Study. Discuss access issues/interchange concepts, local improvements, drainage pond locations and water issues, pending development areas, major utility concerns, and visual/aesthetic issues.	Concerns with traffic congestion at SR 434 interchange. City supports new interchange at Emma Oaks Trail to relieve congestion at Rangeline Rd. Feels there is a need to re-investigate this possibility. City concerned with visual and aesthetic impacts at SR 434.

Table 5-2. Government Officials (Continued)

Date	Organization	No. Attendees	Topics	Issues
January 23, 1997	Seminole Co.	10	Introduce the I-4 PD&E Study. Discuss access issues/interchange concepts, local improvements, drainage pond locations and water issues, pending development areas, major utility concerns, and visual/aesthetic issues.	County has concerns with SR 434 Interchange. Requesting loops. Bridge structure should accommodate six lanes for future improvements. Concerned with ramp alignment at Lake Mary Blvd. (eastbound Lake Mary Blvd. to westbound I-4 HOV access movement). Safety concerns.
March 6, 1997	City of Orlando	10	Introduce the I-4 PD&E Study. Discuss access issues/interchange concepts, local improvements, drainage pond locations and water issues, pending development areas, major utility concerns, and visual/aesthetic issues.	City concerned with impacts to neighborhoods, access to downtown, historic resources, and locations of stormwater ponds.
March 11, 1997	OOCEA	8	Introduce the I-4 PD&E Study. Discuss access issues/interchange concepts, local improvements, drainage pond locations and water issues, pending development areas, major utility concerns, and visual/aesthetic issues.	Concerned with access to downtown and SR 408 interchange.
March 21, 1997	Orange Co. Transportation Planning	23	Present overview of project study.	Provided overview of project. Concerned about John Young Parkway.
March 24, 1997	Orange Co. Planning Department	4	Present I-4 PD&E Study process.	Provided overview of project, anticipated improvements and study schedule.
April 23, 1997	OOCEA	6	Coordination of SR 408 interchange.	Concerned with downtown access.
June 11, 1997	METROPLAN ORLANDO	38	Review status of I-4 PD&E Study process.	Conducting development & evaluation refinement to MMMP. Looking at ways to modify typical section to provide safety & capacity improvements and minimize impacts to neighborhoods. Historical/Archaeological sites and Urban Design Team identified.
June 12, 1997	City of Maitland DRC Meeting	15	Review I-4 improvements and process.	Concerned about Maitland Blvd. Interchange configuration. A lot of development planned in area on currently vacant property.
June 26, 1997	City of Maitland	--	Review I-4 improvements and process.	Concerned about Maitland Blvd. Interchange configuration. A lot of development planned in area on currently vacant property.
July 7, 1997	Town of Eatonville	6	Discuss project improvements. Obtain input regarding potential issues and concerns.	Provided review of project with staff. Concerned about LRT impacts.
July 9, 1997	OOCEA	--	Coordination of improvements and review of alternatives.	Concerned with downtown access.
July 23, 1997	METROPLAN ORLANDO – CAC	46	Discuss I-4 project improvements.	Conducting development & evaluation refinement to MMMP. Looking at ways to modify typical section to provide safety & capacity improvements and minimize impacts to neighborhoods. Historical archaeological sites and Urban Design Team identified.
July 23, 1997	Volusia Co.	10	Coordination of improvements and review of alternatives.	Concerned with SJR bridge, LRT, and SR 472 interchange.
July 24, 1997	City of Altamonte Springs	5	Present overview of project study.	Provided overview of project with staff members concerned about SR 436 interchange and impacts to Cranes Roost Lake
July 24, 1997	City of Longwood	2	Overview of I-4 PD&E Study process.	Provided overview of project. Minimal impacts to their city.
July 25, 1997	METROPLAN ORLANDO – TTC	43	Discuss potential issues and concerns regarding I-4 project improvements.	No issues discussed.

Table 5-2. Government Officials (Continued)

Date	Organization	No. Attendees	Topics	Issues
July 29, 1997	City of Orlando	8	Discuss status of I-4 project and impacts to neighborhoods.	Provided overview of project. Concerned about access to downtown, changes to SR 408, ROW impacts, and existing neighborhoods.
July 31, 1997	Orange Co.	7	Review study process. Address concerns of neighborhoods.	Provided overview of project. Concerned about John Young Parkway and impacts to existing neighborhoods.
August 6, 1997	Orange/Seminole Utility Coordination Group	23	Review project improvements.	Provided overview of project with representatives of utilities, requested info on location of existing utilities.
August 14, 1997	City of Orlando – TTC	--	Review project improvements.	No issues discussed.
August 19, 1997	Orange Co. Planning (Wymore/Kennedy)	5	Overview of project improvements and interchange improvements.	Concerned about impacts to Wymore Rd./Kennedy Blvd. From I-4 and LRT improvements.
August 26, 1997	Town of Eatonville	18	Provide overview of I-4 Master Plan and PD&E Study.	Town is small with limited land available for development. Members expressed the importance of prudent planning to ensure the best use of the limited resource regarding I-4 improvements and LRT.
August 28, 1997	OOCEA	--	Review study process. Discuss interchange improvements to I-4/SR 408.	Comments on SR 408 alternatives. Concerned with access downtown.
October 22, 1997	OOCEA	33	Review study process. Discuss interchange improvements to I-4/SR 408.	Provided review of I-4/SR 408-interchange design. Concerned about financing. Suggested early coordination with adjacent neighborhoods.
September 23, 1997	Orlando Housing Authority	--	Review study process. Discuss interchange improvements to I-4/SR 408.	Concerned with impacts to neighborhoods adjacent to corridor including Griffin Park, and changes in access.
November 6, 1997	Community Traffic Safety Team – Seminole Co.	13	Introduce and review I-4 project with law enforcement, emergency response, and traffic/safety engineers.	Provided overview of project. They were concerned about school bus crossing and emergency access to HOV lanes.
November 11, 1997	Community Traffic Safety Team – W. Volusia Co.	18	Introduce and review I-4 project with law enforcement, emergency response, and traffic/safety engineers.	Provided overview of project. Concerned about access to barrier separated HOV.
November 12, 1997	METROPLAN ORLANDO	40	Provided overview of project and potential impacts.	No issues discussed.
November 18, 1997	Community Traffic Safety Team – Orange Co.	23	Introduce and review I-4 project with law enforcement, emergency response, and traffic/safety engineers.	Provided overview of project. Concerned about access to HOV lanes and funding for enforcement.
November 19, 1997	OOCEA	42	Review I-4 PD&E Study process.	Provided overview of project process, potential changes along SR 408 and project schedule.
November 19, 1997	City of Orlando	12	Reviewed project alternatives and potential impacts.	Concerned with downtown access and impacts to neighborhoods.
November 20, 1997	Community Traffic Safety Team – E. Volusia Co.	26	Introduce and review I-4 project with law enforcement, emergency response, and traffic/safety engineers.	Provided overview of project.
December 3, 1997	Tri-County Freeway Incident Management Team	31	Discuss project study and potential issues.	Provided an overview of I-4 improvements. Concerned about emergency response to HOV lanes. Want sliding gates for access.
December 9, 1997	Orlando/OOCEA/408 Workshop	21	Review alternative interchange configurations developed for the SR 408.	Reviewed layout at SR 408 and modifications to downtown access.
December 16, 1997	Orlando Municipal Planning Board	22	Review status of I-4 project improvements.	Provided overview of proposed improvements to I-4. Concerned with downtown access changes.
January 7, 1998	DeBary City Council	42	Review I-4 project, interchange improvements, and the SJR	Provided overview of the proposed improvements to City Council. No comments

Table 5-2. Government Officials (Continued)

Date	Organization	No. Attendees	Topics	Issues
			bridge.	discussed.
February 3, 1998	Orlando Housing Authority/ Parramore Heritage	10	Provide update of the I-4 PD&E Study. Focus on impacts and I-4/SR 408 interchange.	Discussed access, noise, visual, and historic issues. Board wants more specific visuals to understand impacts, benefits, and construction schedules.
February 16, 1998	DeLand City Commission	35	Review current project status and future considerations regarding proposed I-4 improvements.	Brief overview of section limits, proposed improvements and PD&E process. Focused on north portion of Section 2, including bridge, interchanges, and ROW needs. Discussed pond locations, design impacts to the environment surrounding community.
February 24, 1998	City of Orlando Affordable Housing Advisory Committee	11	Provide a briefing on the proposed I-4/SR 408 interchange improvements.	Explained the PD&E process, including: DEIS, FEIS Publication, Public Hearings. FHWA approval required prior to next design phase with Record of Decision tentatively set for 5/99. Tentative schedule for Public Hearing is 2/99. Air Quality analysis will be conducted.
March 12, 1998	MPO Alliance	18	Discuss the design, construction, funding, and estimated time frame of the new SJR bridge.	Bridge is included in on-going PD&E process. Current plan for bridge is for two separate structures to be built on the outside of the existing bridge, which will be used to maintain traffic during the improvement process.
March 20, 1998	Leadership Seminole Presentation	54	Discuss the I-4 PD&E Study process and issues.	Provided general overview of project. Concerned about how HOV will work and coordinated with LRT.
March 23, 1998	Orlando City Commission with Mobile Office	35	Review current project status and future considerations regarding proposed I-4 improvements.	Neighborhood meetings held. College Park, Holden Heights, and Parramore impacted the most. Impacts include ROW, HOV, visual, ponds, access, landscaping, and air quality. College Park residents concerned with lowering design speed to minimize impacts.
March 24, 1998	Deltona City Staff	2	Discuss the I-4 PD&E Study process and issues.	Provided overview of project. Concerned about access, bridge, and noise impacts.
March 25, 1998	OOCEA	14	Discuss I-4/SR 408 Interchange and ramp, the location of the Anderson Street ramp, and impacts to the City and Orlando Utilities Commission.	Presented I-4/SR 408 interchange improvements. Comments from Lake Cherokee residents resulted in the movement of the Anderson Street ramp west to reduce cut-through traffic. FDOT working with OOCEA regarding SR 408 ramp.
March 26, 1998	Maitland DRC	12	Review I-4 improvements and proposed modifications to Maitland Blvd.	Provided overview of project. Concerned about configuration of Maitland Blvd. Interchange, additional ROW needs, and retention pond locations.
April 2, 1998	Community Traffic Safety Team – Seminole Co.	23	Review any changes on I-4 improvements. Discuss barrier HOV verses buffer and how traffic and emergency response will be maintained and enforced.	FHP favors barrier use alternative for easier enforcement and reduced fatalities. Concerns and issues include access for EMS/Law Enforcement through barrier walls with "cattlegates" at mile intervals. Emergency service call boxes need to be included along GUL and HOV lanes. EMS/Law Enforcement can use slip ramp for access.
April 6, 1998	Deltona City Commission	45	Review the proposed improvements along I-4 with emphasis in the Deltona area.	Gave brief overview of improvements and extensive public involvement. Highlighted specific improvements proposed along I-4 in Deltona area. Reviewed proposed changes to SJR bridge. Construction of bridge scheduled for 2006-2010.
April 9, 1998	Maitland Transportation TTC	11	Discuss HOV lanes and update of project.	Continued discussion about Maitland Blvd. Interchange alternatives.

Table 5-2. Government Officials (Continued)

Date	Organization	No. Attendees	Topics	Issues
April 14, 1998	Community Traffic Safety Team – W. Volusia Co.	23	Review any changes on I-4 improvements. Discuss barrier HOV verses buffer and how traffic and emergency response will be maintained and enforced.	FHP favors barrier use alternative for easier enforcement and reduced fatalities. Concerns and issues include access for EMS/Law Enforcement through barrier walls with "cattlegates" at mile intervals. Emergency service call boxes need to be included along GUL and HOV lanes. EMS/Law Enforcement can use slip ramp for access.
April 15, 1998	ECFRPC	22	Discuss proposed I-4 improvements and study process.	Provided an overview to the project. Concerned about ROW acquisition, profile through College Park, very expensive for little increase in capacity.
April 16, 1998	City of Altamonte Springs Staff	8	Discuss proposed improvements and potential impacts.	Provided a review of the project. Concerned about impacts to Cranes Roost, improvements to SR 436 interchange, and retention pond locations.
April 22, 1998	Community Traffic Safety Team – Orange Co.	11	Review any changes on I-4 improvements. Discuss barrier HOV versus buffer and how traffic and emergency response will be maintained and enforced.	Provided a technical overview of the project. Concerned about enforcement areas and emergency access to barrier separated HOV lanes.
April 23, 1998	City of Sanford Staff	25	Discuss noise abatement, aesthetics, the development of the Urban Design guidelines, and interchange modifications including signage.	City concerned with noise abatement measures, graffiti on retaining walls, the flow of traffic at Lake Mary Blvd. Interchange, the appearance of the CR 46A interchange, lighting and landscaping. Biggest concern is ample signage at the CR 46A ramp.
April 27, 1998	Maitland City Commission	28	Discuss proposed I-4 improvements within the city limits and the PD&E Study process.	Provided an overview of the project. Commission concerned about configuration of Maitland Blvd. Interchange. Requested further review with staff. Also concerned that there is no proposed access point for HOV from Maitland to Downtown.
April 28, 1998	(City of) Orange City Commission	60	Review current project status and future considerations regarding proposed I-4 improvements.	Brief overview of project, highlighting the extensive public involvement program. Discussed pond locations, design impacts to environmental and surrounding communities. Public Hearing tentatively scheduled for 3/99.
May 7, 1998	City of DeBary Staff	6	Review current project status and potential impacts in DeBary.	Provided overview of project. Staff revealed proposed private development plan for golf course and marina north of SJR bridge. City would like government to purchase flats area for preservation.
May 11, 1998	City of Sanford Commission	37	Review current project status and future considerations regarding proposed I-4 improvements.	Reviewed changes to US 17-92 interchange. Modification to interchange eliminates direct access to Orange Ave. Public Hearing of DEIS is scheduled for 3/99. Discussed pond locations, design impacts to environment and surrounding community.
May 18, 1998	Seminole Transportation Summit	--	Review current project status and future considerations regarding proposed I-4 improvements.	Concerned with SR 434 interchange design, HOV access, LRT, and drainage improvements.
May 19, 1998	City of Altamonte Springs Commission	40	Review current project status and future considerations regarding proposed I-4 improvements.	Overview of project, barrier separated typical section and Altamonte Springs location of proposed HOV access lanes via slip ramps and direct access interchanges. On-going study of impacts to the environment, surrounding communities and ponds.
May 27, 1998	DeBary Economic Development Board	15	Review current project status and future considerations regarding proposed I-4 improvements.	Brief overview of project. Focused on DeBary and Orange City, including SJR bridge, local interchanges and ROW needs. Discussed timelines for existing funding and local dedicated funding alternatives, in addition to pond locations.

Table 5-2. Government Officials (Continued)

Date	Organization	No. Attendees	Topics	Issues
May 28, 1998	Maitland TTC Committee	11	Review current status of I-4 project and review Maitland Blvd. Interchange concepts.	Provided technical overview of project. Reviewed 8 alternative concepts for Maitland Blvd. Interchange. They wanted operational analysis for Alts. 2B, 7, and cloverleaf. Concerned about HOV access locations not providing access from Maitland to downtown.
June 3, 1998	DeBary City Commission	40	Review I-4 PD&E Study updates.	Discussion focused on improvements to DeBary and Orange City. Issues included SJR bridge, interchanges, ROW needs, pond locations, design impacts to the environment surrounding communities, and Park & Ride lots.
June 10, 1998	Orange Co. Public Works	21	Review I-4 PD&E process and project improvements.	County is widening John Young Parkway to I-4. There needs to be a left turn signal for streets crossing JYP.
June 10, 1998	Orange Co. Sheriff's Department	3	Introduce I-4 improvements and PD&E Study.	Discussed access for EMS vehicles and a barrier separated HOV system. Prefer barrier method over buffer. Suggested the use of a spring-like barrier (similar to SR 408) and the use of accident/enforcement bays along shoulders. Safety and access issues.
July 1, 1998	Tri-County Freeway Incident Management Team	15	Review changes and updates regarding I-4 improvements and PD&E Study. Discuss HOV lanes.	Provided overview of project. Concerned about emergency access to HOV lanes, enforcement of HOV, access to downtown areas.
July 2, 1998	Seminole Co.	9	Reviewed I-4 alternatives and potential impacts.	Concerned with SR 434 interchange, HOV access, and drainage.
July 7, 1998	OCEA	--	Coordination of SR 408 interchange.	Access issues.
July 17, 1998	Orange Co. Transportation Planning Group	26	Update on I-4 PD&E Study.	Discussed impacts from retention ponds, noise, traffic control, safety, and the need for manpower enforcement.
July 22, 1998	Orange Co. Community Affairs	8	Discuss potential impacts to the Holden Heights Community Center as a result of the proposed improvements to I-4.	There are potential impacts to Holden Heights Community Center. The Center is open for discussing the acquisition of current site with FDOT. This may provide opportunity to build a new center at a larger site. The center may fall under 4(f).
July 22, 1998	METROPLAN ORLANDO -- CAC	35	Discuss changes to downtown Orlando traffic patterns and access points, including the issue of safety due to the closure of a few access areas.	Made presentation of the concept of six through lanes/HOV lanes. DEIS being prepared and should be circulated to CAC members. Will Kaley Street be the only remaining exit? Will Michigan Street be closed?
July 22, 1998	METROPLAN ORLANDO -- Bike/Ped Committee	33	Review project improvements. Discuss the construction and maintenance of bike/ped crossways over I-4.	Expressed the importance of urban design. Make Michigan Street and Kaley Street one interchange, connected by frontage roads adjacent to I-4. How much funding will be required for special aesthetic treatment?
July 24, 1998	METROPLAN ORLANDO -- TTC	40	Review status of project. Discuss impacts to neighborhoods, including historic and archaeological sites. Select Urban Design Team to develop guidelines to address aesthetic concerns.	Conducting development & evaluation refinement to MMMP. Looking at ways to modify typical section to provide safety & capacity improvements and minimize impacts to neighborhoods. Historical archaeological sites and Urban Design Team identified.
July 28, 1998	City of Winter Park Staff	9	Review current status of I-4 PD&E Study and proposed improvements.	Met with staff, law enforcement, and fire rescue. Concerned about emergency access for Section F, noise impacts, LRT alignment, Lee Road interchange configuration, and HOV access. Provided overview of Section 2 plans prior to workshop to PAG members.
July 30, 1998	Volusia Co. Staff	8	Review current proposed improvements along I-4 in Volusia County.	Provided review of the project. Staff had concerns regarding ridership in HOV lanes and barrier separation. Discussion about Park & Ride lot at Enterprise Rd. Interested in potential joint use of retention ponds and

Table 5-2. Government Officials (Continued)

Date	Organization	No. Attendees	Topics	Issues
				proposed developments in the area.
August 6, 1998	Volusia Co. Commission	31	Review current status of proposed plans and study process.	Provided overview of project to Commission.
August 6, 1998	DeLand City Staff	3	Review current status of proposed plans and study process.	Provided overview of project. No comments.
August 6, 1998	City of Lake Mary Commission	28	Review current status of proposed plans and study process.	Provided overview of the project. A commissioner was concerned that the HOV concept will not work. Wants increased number of general use lanes.
August 10, 1998	Winter Park City Commission	34	Review current status of proposed improvements and schedule of study process.	Provided overview of project. Concerned about access to HOV lanes and cost of improvements.
August 11, 1998	Orange Co. Commission	7	Provided a review of proposed improvements along I-4.	Provided overview of I-4 project. Wanted status of funding for SJR bridge.
August 12, 1998	METROPLAN ORLANDO – Board Meeting	39	Provided status of I-4 improvements.	Provided update on I-4 improvements. Concerned about funding for SJR bridge improvements.
August 13, 1998	City of Maitland – TTC	--	Provided status of I-4 improvements.	Maitland Boulevard interchange and LRT issues.
August 18, 1998	Volusia Co. MPO – TTC	28	Review PD&E Study and I-4 improvements for Volusia County.	Provided overview of project. SJR bridge is a major concern. Concerned about the funding for the bridge.
August 18, 1998	Volusia Co. MPO – CAC	28	Review PD&E Study and I-4 improvements for Volusia County.	Provided overview of project. SJR bridge is a major concern. Concerned about the funding for the bridge.
August 25, 1998	Volusia Co. MPO – Board Meeting	36	Review of the proposed improvements along I-4.	Provided update of I-4 improvements. Do not like barrier separated HOV. Concerned about bridge construction, Park & Ride at Enterprise Road and noise impacts. Will have further discussion on FDOT 6 + 4 policy.
August 26, 1998	Maitland TTC	17	Review PD&E Study and I-4 improvements, including update on Maitland Blvd. Interchange.	Provided continued coordination to review details of Maitland Blvd. Interchange.
September 1, 1998	City of Orlando Staff	--	Coordination of SR 408 interchange alternatives	Commented on alternatives. Concerned with downtown access and impacts to neighborhoods.
September 9, 1998	Town of Eatonville Staff	7	Review I-4 project status. Discuss request for Kennedy Blvd. Interchange and potential impacts to community.	Provided overview of project. Very concerned about ROW needed for retention ponds and proposed improvements. Wanted an interchange at Kennedy Blvd. And better emergency access.
September 9, 1998	Town of Eatonville Commission	22	Review I-4 improvements. Discuss issues relating to the area.	Provided overview of project. Commission very concerned about ROW impacts from slip ramps and retention ponds and impact to historic area.
September 10, 1998	MPO – Alliance	17	Provide status of project improvements.	Provided update of FDOT efforts to accelerate construction of SJR bridge.
November 23, 1998	Orange Co. Sheriff's Department Sector 5	3	Review PD&E Study and the I-4 improvements. Obtain input about I-4 expansion.	Dept. needs information regarding changes regarding access to downtown area. John Young Parkway and I-4 interchange will be modified. Rapid growth on Conway and Windermere. Need an I-4 exit at this area. Roads will remain open during construction.
November 30, 1998	City of Orlando Commissioner D. Lynum	2	Provide status of project improvements.	Concerned with access and neighborhood impacts.
December 10, 1998	City of Orlando Transportation Department	28	Discuss proposed project improvements with consultants hired by the City of Orlando to renovate the Parramore area.	Discussed proposed renovation plans being considered for the Parramore area. A portion of the funding for the renovation of this area is dependent upon the extent of I-4 impacts in the area including direct physical and noise impacts.
December 10, 1998	Orlando Housing Authority	10	Provide status of project improvements.	Concerned with impacts to neighborhoods and redevelopment of Griffin Park.

Table 5-2. Government Officials (Continued)

Date	Organization	No. Attendees	Topics	Issues
December 15, 1998	Sanford Transportation and Economic Development Committee	15	Review I-4 improvements. Discuss the acceleration and funding for the replacement of the Bridge. Review interchange improvements for SR 46, CR 46A, and US 17-92. Discuss the maintenance of bike/ped access for River Walk.	Explained design build of SJR bridge. They are extremely interested in rapid replacement of it. The bridge impacts Sanford's business growth potential. Explained reconfiguration of interchange in Sanford area, improving safety and accessibility.
December 23, 1998	Orlando Housing Authority	8	Review of PD&E Study in regards to the Griffin Park area and the potential for this area to be relocated under a redevelopment project currently under study by Orlando Housing Authority.	Concerned about changes to I-4 and SR 408, especially increases in elevation, having a negative impact on Griffin Park (GP). Strong concerns about noise levels in GP and that negative impacts reducing GP potential for HUD grants and funding.
January 5, 1999	Volusia Co. MPO	--	Provided project status update.	No issues discussed.
January 8, 1999	OOCEA	38	Review I-4/SR 408 interchange improvements. Discuss the need for access to west Orlando and OBT.	I-4/SR 408 Interchange isolates Griffin Park from the rest of Orlando. No access to OBT from I-4, or to the Citrus Bowl. Community will suffer from traffic congestion.
January 14, 1999	Orlando Housing Authority	12	Provide a review of I-4 and interchange improvements, schedule, funding, noise, aesthetics, and historic sites. Discuss impacts to Griffin Park and west Orlando area.	OHA applying for a HOPE VI grant. The isolation of Griffin Park is unacceptable. Requesting access to the Citrus Bowl and OBT for economic growth. Asked for the redesign of the I-4/SR 408 Interchange.
January 19, 1999	Volusia Co. MPO - TCC	28	Provide a review of I-4 and interchange improvements, schedule, funding, SJR bridge, noise, aesthetics, and historic sites.	Concerned about environmental impacts to the SJR bridge as a result of construction. Issues with the operation of I-4 during work hours. Interested in the location of noise walls.
January 19, 1999	Volusia Co. MPO - CAC	28	Provide a review of I-4 and interchange improvements, schedule, funding, SJR bridge, noise, aesthetics, and historic sites.	Concerned about environmental impacts to the SJR bridge as a result of construction. Issues with the operation of I-4 during work hours. Interested in the location of noise walls.
January 26, 1999	Volusia Co. MPO	29	Review PD&E Study process and improvements to Interchanges SR 46, CR 46A, and US 17-92. Discuss time and funding schedules, St. Johns River Bridge, noise and aesthetic abatement, and the protection of historical sites.	Concerned about environmental impacts to the SJR bridge as a result of construction. Issues with the operation of I-4 during work hours. Interested in the location of noise walls.
January 29, 1999	Orlando Housing Authority	17	Discuss project study and improvements to I-4 and interchanges, especially I-4/SR 408. Discuss time frame and funding, noise, aesthetics, Griffin Park, and access issues.	OHA voiced a negative response to proposed plans for I-4/SR 408 interchange. This isolates Griffin Park and there is no access to west Orlando or the Citrus Bowl. Community impacted from all impacts with the least amount of benefit.
February 2, 1999	Orlando Police Department	45	Provide updated information on revisions to the I-4 PD&E Study and the potential for changes in response to public input.	Provided project and PD&E process overview. Department expressed interest in downtown interchanges, HOV lane enforcement, traffic control during accidents, and emergency vehicle access. Discussed SR 408 and I-4 interchange modifications and the volume of traffic.
February 6, 1999	Southwest Volusia Summit Meeting	30	Review the PD&E Study, project improvements, HOV access points, bridge, noise, and aesthetic abatement.	Against barrier separated HOV lanes. Eliminate barriers and reduce cost. Concerned about rest areas being used as truck stops. Noise walls will not help. Accelerate construction - 2032 is too long a wait.
February 11, 1999	Volusia Co. MPO/MetroPlan Alliance	--	Review I-4 PD&E Study and the summary of FHWA meetings. Discuss Griffin Park HOPE VI Grant, design speed impacts to	Concerned with access impacts, LRT, and neighborhood impacts.

Table 5-2. Government Officials (Continued)

Date	Organization	No. Attendees	Topics	Issues
February 16, 1999	Eatonville Town Council	84	College Park and bridge. Provide information on potential impacts to local communities and neighborhoods. Discuss proposed mitigation activities regarding historic properties, parks, and noise abatement issues. Seek input from the public.	Provided project and PD&E process overview. Discussed noise study and findings, recommendations, and information on potential impacts from I-4 on the historical district. Wymore Road area qualifies for noise barrier. Interested in Urban Design for barriers.
February 19, 1999	Orlando Housing Authority – Griffin Park	17	Discuss key objectives, constraints and top priorities for the resolution of concerns for the current I-4/SR 408 interchange concept. Discuss acceptable adjustments to schedule for the DEIS process to allow time for redesign. Seeking input and schedule	The HOPE VI-grant application will not permit the isolation of Griffin Park as the result of highways and noise walls. HOPE VI will integrate the community, provide for economic growth, and improve the income mix of the area.
February 24, 1999	METROPLAN ORLANDO – CAC		Review I-4 PD&E Study and the summary of FHWA meetings. Discuss Griffin Park HOPE VI Grant, design speed impacts to College Park and bridge.	Concerned with impacts to College Park Neighborhood as the result of the project improvements.
February 26, 1999	METROPLAN ORLANDO – TTC	65	Review I-4 PD&E Study and the summary of FHWA meetings. Discuss Griffin Park HOPE VI Grant, design speed impacts to College Park and bridge.	Concerned with impacts to College Park Neighborhood as the result of the project improvements. Impacts must be reduced. Interested in the partnership between communities and the technical team on the application of aesthetic treatments.
March 10, 1999	METROPLAN ORLANDO – Board Meeting	65	Review I-4 PD&E Study. Need to minimize impacts to the community. Discuss auxiliary lanes, interchanges, ramps, safety features, and Collector Distributor road. Discuss the advantages of barrier separated HOV lanes and the flexibility of expanding to 2 lanes.	Suggested developing alternatives to using I-4. Questioned the completion of the Interim HOV project and the alteration of I-4 with new technologies. Why not include 2 HOV lanes per side of I-4 now? Stated there is a need for more GUL lanes.
March 12, 1999	I-4/SR 408 Technical Committee with OHA	16	Discuss potential impacts to neighborhoods near I-4/SR 408 from proposed improvements in PD&E Study and current Hope VI revitalization plans.	Overview of Hope VI for distressed public housing areas and the objective of “new urbanism”. Plans include a landscape/lake system and the development of a civic area. Recommended that a working group form and meet periodically to reach conceptual solutions since FDOT and Hope VI each have deadlines and have direct impacts on each other. Consensus reached for consideration to modify interchange and re-connecting it with the rest of the neighborhood, and to establish a series of meeting to discuss objectives, options, and potential ramifications to ID major stakeholders.
March 24, 1999	METROPLAN ORLANDO – CAC	21	Update on I-4 PD&E Study.	Reviewed bridge typicals to show access. Will provide for proposed bike trails along/crossing I-4.
March 24, 1999	METROPLAN ORLANDO – Bike/Ped Committee	21	Update on I-4 PD&E Study.	Reviewed bridge typicals to show access. Will provide for proposed bike trails along/crossing I-4.
March 31, 1999	OOCEA	10	Discuss the refined concepts for the I-4/SR 408 interchange.	Discussed proposed concepts for the I-4/SR 408 interchange. Key discussions centered on design speed, slip ramps, and local access. Do not proceed with Options 5 and 6.
August 5, 1999	Tri-County Freeway Incident Management	15	Review changes and updates regarding I-4 improvements and PD&E Study. Discuss HOV	Provided current status of I-4 project.

Table 5-2. Government Officials (Continued)

Date	Organization	No. Attendees	Topics	Issues
	Team		lanes.	
April 7, 1999	Orlando Utilities Coordination Group	18	Provide update on project.	Provided update on project to all utility coordinators in tri-county area.
April 16, 1999	METROPLAN ORLANDO – Bic./Ped. Committee	–	Reviewed project improvements.	Concerned with impacts to bike and pedestrian facilities.
April 28, 1999	MPO Alliance	25	Discuss delays caused by issues relating to Orlando, the redesign of SR 408, and impacts to neighborhoods and historic sites. Discuss the inclusion of the SJR bridge with Section 3 and 6 laning I-4 from US 17-92 to I-95.	Concerned that the River Walk project bike/ped access will be coordinated with I-4 and SJR bridge plan. Feel the need for the VOTRAN bus service and Volusia Rail Study need to be coordinated with I-4 improvements.
May 10, 1999	City of Winter Park Commission Workshop	35	Review DEIS. Discuss project improvements, including HOV lanes/access points, interchanges, design speed, and the effects to high and low points along I-4. Discuss the use of an exfiltration system instead of retention ponds.	Is LRT still being considered as the study progresses? The study will move forward taking into consideration the possibility of some form of mass transit in the future. Construction is still slated for 2007 & 2013 in this area along I-4.
May 13, 1999	Orlando Housing Authority	31	Discuss potential impacts to neighborhoods as a result of proposed improvements to I-4/SR 408 interchange, and concerns of the Orlando Housing Authority BOD regarding specific properties in the area of the interchange.	Concerned with the possible impact of ripple effects on Lake Cherokee community and neighboring areas. Possible impacts from proposed tunnel and flyover. Issues with impacts to historic resources, access, housing, increased traffic back up, HOV, and the stormwater retention ponds.
May 20, 1999	Orlando Community District 6	200	Overview of PD&E Study and project improvements, including 6 GUL + 2 HOV lanes, bus services, interchange improvements, downtown access, noise abatement, aesthetics, and historic sites. Web site, business, and educational outreach programs.	Due to full agenda, no question answer period took place. Consultants emphasized the use of Comment Forms to obtain input and provide sufficient information regarding areas of concern.
May 26, 1999	METROPLAN ORLANDO – CAC	30	Provide an overview of the PD&E Study process and changes to the I-4 improvements. Discuss the development of two new alternatives for the I-4/SR 408 interchange. Compare cost, benefits, and impacts of each.	Reviewed agenda items. No comments from the CAC.
May 26, 1999	OOCEA	60	Discuss alternative concepts to the I-4/SR 408 interchange.	Overview of I-4 PD&E Study and the preparation of EIS for federal approval for the move forward with subsequent phases of the project. Alternatives 1A and 2A proposed for the I-4/SR 408 interchange.
May 26, 1999	Heathrow Town Council	33	Overview of I-4 PD&E Study process. Discuss potential impacts to area and community.	Concerned with flow of traffic in the event of accidents in HOV lanes. Reviewed plan for EMT access. Questioned the use of HOV lanes and the enforcement of them. Concerned about LRT and its impact on I-4. Make HOV lanes reversible.
May 28, 1999	METROPLAN ORLANDO – TTC	50	Review I-4 PD&E process and status of project improvements.	Discussed alternatives for the I-4/SR 408 interchange. Reviewed plans to replace retention ponds with exfiltration system in College Park area. Discussed concepts for the I-4/Kennedy Blvd. Interchange request. Group feels there is a need to expedite construction.

Table 5-2. Government Officials (Continued)

Date	Organization	No. Attendees	Topics	Issues
June 8, 1999	Orange Co. Commission/I-4 Workshop	85	Discuss traffic in relation to I-4 East & West Beltways and LRT. Look at I-4 functioning as a commuter roadway with many short trips. Review HOV lanes, the bridge, I-4/SR 408 interchange design, and funding.	Group feels that building a western beltway would be less expensive than LRT and would take some of the congestion off of I-4. Not confident HOV lanes will work in Central Florida. Create arterial roads, connect John Young Parkway to SR 434.
June 9, 1999	METROPLAN ORLANDO Workshop	80	Review I-4 from a regional and statewide perspective. Provide information on short and long term planned improvements. Develop consensus on key policy issues. Provide discussion on project impacts/issues, funding, construction schedule, etc.	Concerns included ROW and pond impacts to College Park, interchange impacts to Griffin Park, west Orlando and Lake Cherokee. Review request for interchange at I-4/Kennedy Blvd. In Eatonville. Exfiltration system will breakdown in time.
July 8, 1999	OOCEA	--	Reviewed SR 408 interchange alternatives.	Access issues.
July 13, 1999	Pat Northey/ Commissioner – Volusia Co.	8	Provide a review and update of the I-4 PD&E Study and project.	No ROW needed for SJR bridge. Reviewed options for six-lane bridge. Discussed improvements to interchange at US 17-92, noise walls and funding. Requested installing noise walls now along the eastside of I-4. In favor of LRT from Volusia to Orange County.
July 14, 1999	City of Orlando Staff	--	Reviewed SR 408 interchange alternatives.	Access issues and neighborhood impacts.
July 19, 1999	Volusia Co. Staff	13	Provide project update, including six-laning and the SJR bridge. Request input regarding bridge options. Discuss improvements proposed for US 17-92.	Staff supported six-laning of SJR bridge and the widening to the inside. Use funds for extra lanes on other roadways that are in need of repair now. Volusia County supports rail system. Interested in LRT in Orange County. Discussed Park & Ride facility at Enterprise Road.
July 26, 1999	Volusia Co. Commissioners	16	Provide project update, including six-laning options for the SJR bridge, funding and time schedule. Review archaeological sites and dig information. Request input on bridge options.	Questioned I-4 project and the outcome if funding is approved for rail before I-4. Would like barriers removed. If county provides money for the project FDOT can expedite the project. Council recommended widening to the inside.
July 28, 1999	METROPLAN/ Volusia Co. MPO Alliance	21	Review PD&E Study and the SJR bridge.	Redefining Section 3 to include SJR bridge. Six laning I-4 from Lake Mary Blvd. To Dirksen Drive/DeBary Avenue exit. Council members concerned about the cost of documentation and the required studies for the project. Mayor approves plans for the SJR bridge.
August 3, 1999	Ann McFall/ Commissioner – Volusia Co.	8	Provide a review and update of the I-4 PD&E Study and project.	Concerned about the conflict between rail and project improvements. Has issues with the traffic flow during bridge construction. Discuss bond funding and the best use for it.
August 11, 1999	OOCEA	--	Reviewed SR 408 interchange alternatives.	Access issues.
August 23, 1999	Daisy Lynum/Commissioner District 5 – City of Orlando	4	Review PD&E Study and project improvements. Discuss alternative improvements to I-4/SR 408 interchange.	Commissioner supports Alternative 1A tunnel option. Allows better development of area and is more aesthetic.
August 30, 1999	OOCEA	--	Reviewed SR 408 interchange alternatives.	Access issues.
August 30, 1999	City of Deltona Staff	11	Present status of the I-4 PD&E Study process.	Provided an overview of I-4 project. Discussed the funding for the SJR bridge.
September 1, 1999	Tri-County Freeway Incident Management Team	4	Present alternative concepts considered for the I-4/SR 408 interchange. Discuss potential impacts to emergency services.	Overview of concepts for the I-4/SR 408 interchange. Management Team must consider possible impacts that each alternative will have on the delivery of the services provided by the agencies they

Table 5-2. Government Officials (Continued)

Date	Organization	No. Attendees	Topics	Issues
				represent and identify the alternative that be most beneficial.
September 1, 1999	DeBary City Commission	48	Brief overview of the project limits and the need for multi-modal options.	The addition of HOV lane to the SJR bridge will be included with Section 2 improvements.
September 2, 1999	Town of Eatonville Staff	6	Present proposed plans for I-4/Kennedy Blvd. Interchange as requested by the Town Council.	Provided brief overview of I-4 project improvements. Reviewed a normal diamond-like interchange. Spacing is not adequate. Resulting in a weave movement. Collector Distributor (CD) or braid systems were designed after further study. This is a complicated interchange.
September 7, 1999	Town of Eatonville Commission	26	Present proposed plans for I-4/Kennedy Blvd. Interchange as requested by the Town Council.	Brief overview of project limits. Reviewed a normal diamond-like interchange. Spacing is not adequate. Resulting in a weave movement. Collector Distributor (CD) or braid system were designed after further study. This is a complicated interchange.
September 8, 1999	State Representative Stan Bainter	2	Reviewed proposed I-4 improvements.	Reviewed proposed improvements and widening of the SJR bridge.
September 17, 1999	City of Orlando Staff	11	Discuss I-4 project, the widening of SR 50, interchange improvements, including I-4/SR 408.	City suggested limiting the re-alignment of SR 50 to allow room for a gateway and hold impacts to only one side of the road. City supports Option 3 for Hughey Avenue. City will not support loss of both Robinson Street and Amelia Street access to downtown.
September 22, 1999	Volusia Co. MPO – Board	25	Overview of the proposed I-4 improvements.	Provided project update. Discussed proposed schedule for the SJR bridge. Expecting word on the acceleration of construction. MPO does not want HOV on I-4 in Volusia County or SJR bridge. Would like to see additional GUL's regardless.
September 22, 1999	OOCEA Board Meeting	–	Reviewed SR 408 interchange alternatives.	
September 28, 1999	Seminole Co. Commission	15	Overview of project study, HOV lanes, design speed, SJR bridge, noise walls, and funding.	County seeking variance on design speed to reduce impacts to area. Issues with noise, HOV and tolls on HOT lanes. Concerned about the elevation of the SJR bridge. Would be interested in seeing a change in the policy governing the number of lanes on interstate.
October 18, 1999	METROPLAN ORLANDO/ Volusia Co. MPO Strategy Meeting	19	Meeting to review status of I-4 project and HOV lanes.	Determined ways to further educate local governmental officials about I-4 PD&E Study process and HOV lanes.
October 18, 1999	I-4 Interim Reversible HOV Lane Workshop Strategy	7	Meet and review status of Reversible HOV lane project with FDOT representatives. Prepare for reversible HOV lane workshop.	Enforcement zones will be located at South Street, Princeton Street, Fairbanks Avenue, Maitland Blvd., and east of SR 436. Tow trucks and law enforcement present within these areas during hours of operation. Discussed timesavings related to using the reversible lane.
October 21, 1999	Volusia Co. Council	28	Provide info on status of I-4 project.	Brief overview of project, the widening of the SJR bridge and six-laning of I-4.
October 25, 1999	OOCEA	–	Reviewed SR 408 interchange alternatives.	Access issues.
November 3, 1999	Tri-County Freeway Incident Management Team	22	Review current status of I-4 Reversible HOV lane design plans.	Brief overview of Interim Reversible HOV lane project. Included discussion of enforcement zones, barrier wall access points/control, typical sections and widening of Lee Road to Princeton Avenue which is key to building this project.
November 15, 1999	Deltona City Council	11	Provide update on I-4 improvements.	Brief overview of project study and improvements. Discussed SJR bridge improvements, design, and funding. MPO not in favor of HOV lanes. Support the addition of more GUL. Concerned about barrier-

Table 5-2. Government Officials (Continued)

Date	Organization	No. Attendees	Topics	Issues
				separated lanes and safety issues.
November 29, 1999	OOCEA Board Meeting	--	Reviewed SR 408 interchange alternatives.	---
December 10, 1999	I-4/SR 408 Interim Improvements w/ OOCEA	9	Discuss proposed options for the I-4/SR 408 interchange in efforts to identify the preferred alternative.	Summarized alternatives and how each could impact the interim and ultimate modification to downtown Orlando interchanges.
December 13, 1999	I-4/SR 408 Interim Improvements w/ City of Orlando	14	Discuss details of the alternatives proposed for I-4/SR 408 interchange. Review Downtown Alternative Design Concepts.	Review alternatives for I-4/SR 408 interchange. Discussed HOV access points and noise walls. Schedule meeting with counties in 2000 to discuss interchange improvements and interim/ultimate improvement.
December 22, 1999	METROPLAN ORLANDO – Transportation Systems Committee	13	Discuss implications of developments with LRT in relation to the region's transportation system.	Recommended waiting for new figures from FDOT prior to formalizing their support for the continued development of the I-4 MMMP.
December 23, 1999	Richard Levy w/ City of Orlando	3	Reviewed SR 408 interchange alternatives.	Access issues, schedule, and neighborhood impacts.
January 17, 2000	OOCEA	--	Reviewed SR 408 interchange alternatives.	Access issues.
January 24, 2000	Maitland City Council	40	Review status of the I-4 Interim Reversible HOV lane project with City Council members and meeting participants.	Provided general overview of proposed improvements for the Interim Reversible HOV lane project. Reviewed design plans, typical sections, and HOV slip ramp diagram.
January 26, 2000	METROPLAN ORLANDO – CAC	42	Provide Status Report of Section 2 and 3 activities.	Provided a review of project status and anticipated schedule for the project. No questions.
February 9, 2000	METROPLAN ORLANDO – Board Meeting	--	Provide Status Report of Section 2 and 3 activities.	Provided a review of project status and anticipated schedule for the project. No questions.
February 10, 2000	DeLand Chamber of Commerce/ Governmental Relations Committee	12	Provide update on I-4 PD&E Study, Reversible HOV lane project, and ITS information.	Discussed the replacement of SJR bridge in Section 3, in addition to the interim six-laning from US 17-92 to Saxon Blvd. In Volusia County.
February 11, 2000	MPO Alliance	35	Provide status of project.	A review of the status of the I-4 studies was provided. Additional focus was given to educate new board members about the PD&E process and history of I-4 project.
February 25, 2000	METROPLAN ORLANDO – TTC	45	Provide Status Report of Section 2 and 3 activities.	Provided a review of project status and anticipated schedule for the project. No questions.
March 29, 2000	City of Orlando	--	Coordination of SR 408 interchange.	Access issues and neighborhood impacts.
April 13, 2000	Orlando Housing Authority – Board Meeting	21	To review the 5 alternatives proposed for the I-4/SR 408 interchange improvements.	Provided an in-depth review of alternative alignments proposed for the I-4/SR 408 interchange including the tunnel with Amelia Street, the tunnel without Amelia Street, the flyover with Amelia Street, the flyover without Amelia Street, and the avoidance alternative.
May 3, 2000	Tri-County Freeway Incident Management Team	25	Discuss issues in respect to the proposed I-4/SR 408 interchange alternatives.	Reviewed status of I-4 project and a flyover bridge and tunnel alternatives. Issues regarding the tunnel include transportation of hazardous waste, ongoing maintenance, ventilation, torrential rains, and flooding. Flyover issues include sidewalks/safety, wind hazards, noise, and drainage. General issues discussed included reviewing success/failure in other cities utilizing these alternatives, 10 ft. wide shoulders is not adequate. Committee suggested another alternative that would involve a land swap with OHA. General consensus of Committee that both alternatives presented meet their needs providing safety issues are addressed.

Table 5-2. Government Officials (Continued)

Date	Organization	No. Attendees	Topics	Issues
June 6, 2000	I-4 /SR 408 Technical Committee	17	Review revised alternatives proposed for the I-4/SR 408 interchange. Identify and discuss the impacts and issues associated to each alternative. Determine support for the design alternative(s).	Presented the revisions of the proposed alternatives for the I-4/SR 408 interchange. City of Orlando favors the tunnel alternative, Orlando Housing Authority favors the tunnel and OOCEA favors the flyover. All five alternatives are being carried forward in the I-4 Section 2 DEIS. Suggested that the committee members meet in smaller sessions in upcoming months and address concerns, issues, and possible mitigation.
November 8, 2000	Orlando Housing Authority	5	Provide overview of I-4 PD&E Study, the proposed improvements to I-4 and the I-4/SR 408 interchange, and the potential impacts to the Orlando Housing Authority.	Orlando Housing Authority's primary concern is understanding the potential impacts to Griffin Park and Carver Court. Data is required for the New Hope VI Grant application.
March 9, 2001	Orlando Housing Authority Staff	5	Overview of the I-4 project with focus on the improvements to I-4/SR 408 Interchange.	Coordinated with the Orlando Housing Authority to provide information on the five proposed alternatives for the I-4/SR 408 Interchange. Information to be utilized by OHA in Hope VI Grant application.
March 26, 2001	City of Orlando Staff	22	Overview of the I-4 project, focusing on Section 2.	Concerned about downtown access changes, traffic management, and impacts to adjacent facilities.
April 2, 2001	Orlando City Council	56	Overview of the I-4 project, focusing on Section 2.	Concerned about downtown access changes, traffic management, and impacts to adjacent facilities.
April 20, 2001	Orange County	20	Provide an update on the I-4 PD&E Study. Discuss the status of the DEIS.	None.
May 23, 2001	METROPLAN ORLANDO – CAC	51	Provide an update on the I-4 PD&E Study prior to the public hearing.	Outlined the progress of the I-4 PD&E Study. Discussed project funding, realistic time frame for project, and accommodating a future rail system by including a 44' rail envelope along the project corridor. Group pleased with proposed changes to Gore Street; however, they still have issues with interchange standards for left access.
May 23, 2001	METROPLAN ORLANDO – Bicycle/Ped. Committee	51	Provide update on I-4 PD&E Study prior to public hearing of the project to be held June 2001.	Brief over of I-4 project. Members questioned the reconfiguration of access to the downtown area and the effect on bike traffic. Pavement markings will maintain bike traffic under the interchanges. Discussed auxiliary lanes, safety issues, ROW, and the effects on neighboring communities.
May 25, 2001	METROPLAN ORLANDO – TAC	43	Provide update on I-4 PD&E Study prior to public hearing for Section 2 of the project to be held June 2001.	Overview of the progress on the I-4 PD&E Study. Chairman commended Keith and Schnars for the extensive public outreach. City is concerned about the Amelia Street ramps. It is the opinion of the City that if these ramps are closed, there will be a negative impact to downtown access.
June 13, 2001	METROPLAN ORLANDO – Board Meeting	47	Provide a review of the I-4 PD&E Study and information to be presented at the public hearing.	No questions or concerns.
June 14, 2001	Orlando Housing Authority Board Meeting	27	Provide a review of the I-4 PD&E Study and information to be presented at the public hearing.	Requested additional workshop in July with the community at Griffin Park.
June 19, 2001	Orange County Commission	43	Provide a review of the I-4 PD&E Study and information to be presented at the public hearing.	No questions or concerns.
June 19, 2001	Volusia County MPO – TAC	12	Provide a review of the I-4 PD&E Study and information to be presented at the public	Meeting focused on the I-4 project, with the addition of questions regarding the possibility of commuter rail in the future.

Table 5-2. Government Officials (Continued)

Date	Organization	No. Attendees	Topics	Issues
June 19, 2001	Volusia County MPO – CAC	17	hearing. Provide a review of the I-4 PD&E Study and information to be presented at the public hearing.	Meeting focused on the I-4 project, with the addition of questions regarding the possibility of commuter rail in the future.
June 26, 2001	Volusia County MPO	47	Provide overview of the I-4 PD&E Study to board members.	Overview of the I-4 project in Section 2. Questions focused on plans and possible impacts to Volusia County. Discussed the format, dates, times, and locations of the upcoming Public Hearings. Attendees were advised of the public comment period for the Study.
July 12, 2001	Orlando Housing Authority – Board Meeting	43	Provide update on the I-4 project focusing on the five alternatives for the I-4/SR 408 interchange and potential impacts to community.	Brief overview of I-4 project. Discussed pertaining to different alternatives. The flyover has fewer noise impacts than the other alternatives. The air pollution levels are approximately equal for both the flyover and tunnel. Access to Gore Street will be eliminated with all options. In the Griffin Park area, two buildings at Division will be relocated with both the flyover and tunnel option. The playground would also have to be relocated. A new park would likely be included in the mitigation process. If it is necessary to impact Historic Resources, FDOT would follow through with positive improvements to offset the negative impacts. Interim improvements to the I-4/SR 408 interchange are slated to begin sometime in 2004.
July 12, 2001	City of Orlando and Lake Eola Heights Historic NA	35	Provide an overview of the I-4 PD&E Study and process to representatives, of the City of Orlando and the Lake Eola Heights Historic NA.	Overview of the PD&E Study and process. Group opposed to the Amelia Street access issue. They feel access will encourage and increase cut-thru traffic. Group in agreement that access is necessary for mid-downtown area, but it was suggested to locate it at Robinson Street. Members feel that Robinson Street is better equipped to handle higher volume of traffic as opposed to Amelia Street, which is primarily a residential street. They believe that access at Robinson Street could be redesigned to fit into the I-4/SR 408 interchange and that FDOT and project engineers should redesign the I-4 system. The NA feels that the cost of redesign, additional ramps, or impacts shouldn't be an issue for other areas. They expressed that the Lake Eola Heights NA is a historic district and preventing impacts to this area should have priority over issues to other areas. The NA is going to circulate a petition on the referenced issues and forward it to the City of Orlando.
July 20, 2001	Orange County Commissioner Homer Hartage	6	Provide overview of I-4 PD&E Study. Discuss proposed ultimate improvements, I-4/SR 408 Interchange alternatives and interim improvements, access changes to Downtown Orlando, potential impacts to the community, and auxiliary lane project.	Orange County requested attractive Gateways on I-4 near the jail facility to shield it from public view. County also requested a Gateway interchange at John Young Parkway. Funds and Urban Design Guidelines are available, but County and businesses may need to contribute. County concerned about high levels of lead along project corridor. FDOT will research to determine if lead is present. County requested update on issue. Discussed Anderson Street relocation in Interim improvements and flow of traffic through downtown access points in addition to Texas U-turn system at Kaley and Michigan Streets.

Table 5-2. Government Officials (Continued)

Date	Organization	No. Attendees	Topics	Issues
August 9, 2001	Orlando Housing Authority – Board Meeting	24	Provide update on the I-4 project focusing on the five alternatives for the I-4/SR 408 Interchange and potential impacts to community.	The Board called for a vote and the motion was approved with no negative votes. The OHA recommends that FDOT select Alternative 2B1, the Flyover Alternative for I-4/SR 408 Interchange improvements.
January 2, 2002	City of Orlando	20	City has reviewed the DEIS and is providing input on concerns and making recommendation for Preferred Alternative at SR 408.	City supports Alternative 2B1, the Flyover Ramp with access at Amelia Street due to traffic circulation and downtown access. City recommends Typical Section C with Exfiltration.
February 4, 2002	Orlando Housing Authority	18	Meet with OHA, OOCEA, FDOT, and the Hope VI Committee to discuss I-4 PD&E DEIS and potential impacts to Griffin Park and the Hope VI Plan and consider mitigation options.	Roundtable discussion.
February 6, 2002	Orlando Housing Authority	16	Meet with OHA, OOCEA, FDOT, and the Hope VI Committee to discuss I-4 PD&E DEIS and potential impacts to Griffin Park and the Hope VI Plan and consider mitigation options.	Roundtable discussion.
February 12, 2002	Orlando Housing Authority	20	Meet with OHA, OOCEA, FDOT, and the Hope VI Committee to discuss I-4 PD&E DEIS and potential impacts to Griffin Park and the Hope VI Plan and consider mitigation options.	Roundtable discussion.

Table 5-3. Environmental Justice

Date	Organization	No. Attendees	Topics	Issues
April 17, 1997	International Right-of-way Association	8	Present overview of I-4 project.	Provided overview of I-4 improvements.
January 15, 1998	ABWA	34	Introduce the group to I-4 improvements.	Reviewed proposed improvements to the I-4 corridor. General questions regarding time of construction and process.
March 18, 1998	ABWA	34	Introduce the group to I-4 improvements.	Reviewed proposed improvements to the I-4 corridor. General questions regarding time of construction and process.
April 2, 1998	Habitat for Humanity of Greater Orlando	4	Introduce the I-4 PD&E Study and improvements. Discuss HOV lanes and access points.	Provided overview of project. No impacts to this site.
April 6, 1998	Coalition for the Homeless	6	Discuss proposed improvements on I-4 and potential impacts to facility.	Believe current site (two buildings with four apartments each) is close to main building and health center. TB patients can't take public transportation. Need to be within walking distance of the Health Dept.
April 7, 1998	House of Hope	4	Discuss proposed improvements on I-4 and potential impacts to facility.	Issues include noise, visual, safety, and access. No impacts to ROW. Possible sale of property with movement to 36 th Street and Lake Catherine.
April 13, 1998	Compassion National Children's Foundation	2	Provide an overview of the I-4 PD&E process.	Declined meeting. Phone contact only. Housed in Central Florida Christian Church (met them @ 250 SW Ivanhoe Blvd.) No impacts to this site.
April 24, 1998	St. Francis House	4	Overview of I-4 Study and improvements.	Provided general overview of PD&E process. Concerned about pedestrian crossover be maintained. No direct impact. No other concerns.
April 30, 1998	Social Security Administration	4	Review I-4 improvements, including HOV.	No additional impacts with the exception of access during construction.
May 5, 1998	Orlando Day Care Nursery	4	Overview of I-4 project. Discuss FDOT relocation assistance and property acquisition process.	Property is owned by the Kiwanis Club, purchased in 1927 and is funded through the United Way. Impacts to the entire property and building. Facility will have to be relocated.
May 7, 1998	Orlando Day Care Nursery	4	Overview of the I-4 PD&E Study. Discuss FDOT's relocation assistance program.	Entire building and property impacted (2.6 acres). Facility will have to be relocated. Facility services mostly minority and low-income population in Pine Hills and Maitland areas. Needs to stay in the area.
June 3, 1998	Living Hope Ministries and Shelter	4	Present overview of I-4 PD&E Study process.	Discussed project study. Facility concerned with impacts to property, noise and downtown access.
July 2, 1998	Holden Heights Community Center	13	Discuss proposed improvements to I-4, potential impacts to the Center/area and the tentative construction schedule.	ROW issues. The facility is located adjacent to I-4. If current plans are implemented, building may need to be removed. If site is acquired now, Orange Co. could buy the lot across the street (currently up for sale) so that a new center could be built.
July 2, 1998	Jackson Neighborhood Center	4	Discuss PD&E Study, proposed improvements to I-4, possible impacts to the facility, concerns of the staff, and services provided to the community.	Access issues. Changes to access may cause serious impact to neighborhood and center. There are concerns about the realignment of Anderson Street and changes to I-4 from Hughey Avenue/Robinson Street and Garland Avenue/Amelia Street.
August 12, 1998	Covenant House	4	Discuss proposed improvements to I-4, potential impacts to the facility, and the tentative construction schedule.	No direct impacts to facility. No concerns.
September 3, 1998	St. Francis House	4	Provide project overview. Discuss impacts to the area.	Provided project overview. Concerned that pedestrian crossover be maintained. No direct impacts. No other concerns.

Table 5-3. Environmental Justice (Continued)

Date	Organization	No. Attendees	Topics	Issues
September 10, 1998	Goodwill Industries	4	Provide overview of PD&E Study and I-4 improvements. Obtain input regarding potential changes in access to downtown Orlando.	No direct impacts to property. Concerned with access changes: 1) Downtown I-4 access changes reduce access to the facility, 2) Garland access appears to be adequate, and 3) South St. HOV only may impact access for eastbound traffic.
September 29, 1998	Allen Outreach and Development	4	Review PD&E Study and the I-4 improvements. Obtain input regarding potential impacts to the Center. How does the Center serve the community.	Concerned that fewer access points will have a negative impact on businesses and reduce the potential growth in the area. The cost of additional manpower to enforce HOV lanes should come from fines, be self-supporting, and not create more taxes.
October 1, 1998	Salvation Army	4	Discuss PD&E Study, proposed improvements to I-4, possible impacts to the facility, concerns of the staff, and services provided to the community.	The women's and children's shelter sits back 20 ft. from SR50. The widening of SR50 will eliminate most of the front yard of the shelter. The entrance to the Women's and Children's Shelter is located on SR50, creating a safety issue.
November 12, 1998	ABC Learning Center	4	Review PD&E Study and the I-4 improvements. Obtain input regarding potential impacts to the Center. How does the Center serve the community.	After modifications, goal is to pull traffic from Kaley to Michigan, which can handle the load. Construction in this area is scheduled to begin about 2004. Center will not be directly impacted by improvements. Access to center by minority population is by foot.
February 25, 1999	Parramore Development Board	15	Provide information update on the I-4 PD&E Study and the potential impacts to the neighboring communities. FDOT seeking public input from the Parramore Heritage Development Board.	Provided brief overview of the PD&E Study. The I-4/SR 408 interchange will be modified. An estimated 50 dwelling units and less than 10 businesses will be impacted. FDOT will provide relocation assistance. Griffin Park is historic area.
July 27, 1999	Living Hope Association		Provide information update on the I-4 PD&E Study and the potential impacts to the neighboring communities.	---
August 17, 1999	Parramore Heritage Development Corp.	8	Present two additional alternative interchange concepts developed for consideration for the I-4/SR 408 interchange. Discuss potential impacts to the neighborhoods and facility. Seeking public input.	Provided brief overview of PD&E Study, physical impacts to the environment, and social impacts to the community. Alternative 1A is a tunnel design. No new impacts to the community, maintains access to downtown Orlando, reduces impacts to Griffin Park and Carter Street.
August 20, 1999	Salvation Army	5	Provide an overview of the I-4 project and improvements. Discuss potential impacts to the facility.	Brief overview of project status. The original concept impacted properties to both the north and south of SR 50. Since previous meeting, more data have been gathered and concepts refined, and two alternative concepts have been developed. Impacts have been reduced.
October 12, 1999	Salvation Army Board	29	Provide discussion of the potential impacts to the facility. Seeking input from the organization.	Review of project status. Concerned about safety issues in relation to access to the facility from SR 50. Further study to take place regarding alignment issues. Safe access and adequate parking are practical requirements for the use of a site.

Table 5-3. Environmental Justice (Continued)

Date	Organization	No. Attendees	Topics	Issues
December 7, 1999	Salvation Army	8	Review potential NHRP sites on SR 50 and protection issues. Discuss options for the widening of SR 50 and subsequent impacts to the Women's and Children's Shelter, Judge Cheney House, and other properties.	Concerned about the planning for the facility's future and decision deadlines for the I-4 project and widening of SR 50. Discussed ROW acquisition. Concerned about loss of parking area and the impact of moving Women's and Children's Shelter to new location.
April 10, 2000	Holden Heights Community Center	5	Provide update on the I-4 PD&E Study. Discuss direct impacts to the Holden Heights Community Center and neighborhoods.	Discussed ROW impacts, ponds, and Orange County's plan to improve drainage and install a sewage system in this area. County needs FDOT to expedite the acquisition of the Center.

Table 5-4. Special Interest Groups

Date	Organization	No. Attendees	Topics	Issues
October 31, 2000	Salvation Army	6	Provide an update on the revised I-4 PD&E Study, including the two alternatives for the SR 50 interchange. Access issues and potential impacts to property and the neighboring communities.	Overview of the I-4 project. Group advised that the projected date for the Section 2 public hearing is February 2001. The alternatives are still under review and will be carried forward for the public hearing.
June 4, 1997	Florida Engineering Society	70	Overview of PD&E Study process.	Provided a review of the I-4 improvements.
June 10, 1997	Universal Studios	5	Review updates of I-4 PD&E Study.	Pond location (at Mile Post 74.9) is not good. No excess land available for use. Suggest looking at infield area of Republic Drive for additional capacity. Approve of Alternative "C." Additional ROW problems with Alternative "E." Operational issues with Alternative F.
September 18, 1997	Florida Hospital	6	Present I-4 project overview.	Provided overview of I-4 improvements. Concerned about any changes in access to Hospital and ROW impacts.
January 8, 1998	College Park Baptist Church (LLL Club)	40	Introduce the I-4 PD&E Study, improvements, and impacts to the community.	Provided overview of proposed improvements to attendees.
February 18, 1998	Calvary Assembly of God Church	3	Present overview of proposed improvements to I-4 in the vicinity of the Church.	Important that visibility is maintained from I-4. ROW impacts to church buildings. Raised profile would result in the construction of a retaining wall. Church not in favor of 15-ft. noise barrier. Safety issues.
February 23, 1998	Central Christian Church Disciples	10	Discuss PD&E Study, proposed improvements to I-4, possible impacts to the Church, concerns of the staff, and services provided to the community.	No direct impacts to the Church property. Visual and noise impacts with proposed raised I-4 profile. Stated that this is oldest "drive-in" church in Florida. Services broadcast over radio to members (mostly elderly) who can remain in their cars in church.
March 3, 1998	Nazarene Church	4	Discuss PD&E Study, proposed improvements to I-4, possible impacts to the Church, concerns of the staff, and services provided to the community.	Concerned with impacts to church and change of access.
April 7, 1998	Sand Lake Hospital	5	Discuss access issues for EMS/ambulance vehicles during construction.	Construction will present access impacts for emergency vehicles. I-4 overpass near hospital entrance would improve access and the mobility of EMS and its response time. Requested that a temporary emergency exit with gate be installed that allows only EMS vehicles.
April 7, 1998	Orlando Regional Medical Center	8	Discuss access issues for EMS/ambulance vehicles during construction.	Construction will present access impacts for emergency vehicles.
April 21, 1998	Orange Co. Convention Center	4	Provide overview of I-4 PD&E Study and project improvements. Discuss potential impacts to facility.	Reviewed project with staff. Concerned about access to convention center from I-4 and Bee Line Expressway.
April 30, 1998	Downtown Development Board	--	Introduce the I-4 improvements. Review issues and impacts to the area.	Access to downtown and LRT issues.
June 1, 1998	Orange Co. Correctional Facility	8	Introduce the I-4 improvements. Review issues and impacts to the area.	Great concern with access to facility. The location of the median is crucial to access.

Table 5-4. Special Interest Groups (Continued)

Date	Organization	No. Attendees	Topics	Issues
June 9, 1998	Memorial Middle School	4	Review I-4 improvements in relation to the school.	Discussed safety issues regarding students riding the bus and the elimination of the bus stop at Rio Lane and LB McLeod. Several bus stops located elsewhere in the area. There is a high volume of traffic and improvements will cause an increase in both traffic and pedestrians getting to facility.
June 9, 1998	Wekiva Church and School	4	Introduce I-4 PD&E Study and improvements.	There are plans to expand the facility, but the church would consider selling the building/property to FDOT for use as a retention pond. Discussed problems with severe flooding and the church requested a drainage system located underneath I-4 so drainage from I-4 does not impact them.
June 12, 1998	Orangewood Church and School	3	Review I-4 PD&E Study and improvements. Discuss noise, aesthetics and stormwater systems.	Discussed the I-4 drainage design. Church questioned if improvements on I-4 can solve existing flooding problems on property. The present pond is inadequate in size for the number of acres draining into it. Suggested signal at intersection east of church.
June 15, 1998	Killamey Elementary School	2	Review I-4 PD&E Study and improvements. Discuss access, traffic flow, interchange improvements, and stormwater systems.	Discussed the mitigation of access to the school due to heavy traffic congestion. Possible impact at the intersection of Wymore and Foxbury due to the proposed improvements. There are some drainage problems with runoff and pipe overflow at Stanley Street.
June 16, 1998	Maitland Christian School	2	Review I-4 PD&E Study and improvements. Discuss impacts to noise, aesthetics, access, and traffic safety.	Safety issues with the occurrence of accidents with cars exiting at Wymore Road. Noise is not too great a concern.
June 23, 1998	Orlando Technical Institute	5	Discuss PD&E Study, proposed improvements to I-4, possible impacts to the facility, concerns of the staff, and services provided to the community.	Impacts from I-4 improvements include access, parking, and noise. About 15 ft. of the parking lot will be acquired for improvements. An increase in noise will affect the facility.
June 30, 1998	Jewish Family Services of Greater Orlando	3	Discuss PD&E Study, proposed improvements to I-4, possible impacts to the facility, concerns of the staff, and services provided to the community.	No meeting. Phone and letter. No major impacts to building or property.
June 30, 1998	YMCA Aquatic Center	2	Review I-4 PD&E Study and improvements. Discuss noise, aesthetics, access, and traffic control.	Need improvements to Sand Lake Road and Int'l Drive. Create another street from I-4 ramp to connect to Jamaican Court that would allow traffic to bypass Int'l Drive.
July 6, 1998	Calvary Assembly of God Church	3	Discuss status of I-4 PD&E Study. Administrator of the Church had requested a follow-up to previous meeting at the Church.	Issues to building and property include ROW, safety, visual, ponds, and design. Concerned that accidents will penetrate church property. Outside recreation area facing I-4 is not utilized. Changes in I-4 elevation will affect church visibility by raising elevation.
July 7, 1998	US Post Office/Sand Lake	7	Overview of the I-4 project and study. Discuss impacts to the area.	Impacts to grassed area in front of lot and possibly some of the parking lot. Proposed improvements will maintain access to employee and public parking lots. Important that access is adequate during construction. Adjacent lots

Table 5-4. Special Interest Groups (Continued)

Date	Organization	No. Attendees	Topics	Issues
July 9, 1998	Bethel Baptist Church	7	Discuss proposed improvements to I-4, potential impacts to the Church, and concerns of the representatives.	proposed for ponds. Potential impacts on East/West Expressway. Access reduced, noise increased, visibility and air quality decreased. Concerned with the shift of the Expressway closer to Church Street. Church believes that the improvements will deny followers access to church.
July 15, 1998	US Post Office/Rinehart	8	Discuss PD&E Study, proposed improvements to I-4, possible impacts to the building/property, concerns of the staff, and services provided to the community.	No impacts or concerns regarding I-4 improvements.
July 16, 1998	La Petite Academy	2	Phone conversation.	Letter on file of phone conversation. Academy did not want to have meeting.
July 16, 1998	Neighborhood Alliance Church	3	Discuss PD&E Study, proposed improvements to I-4, possible impacts to the Church, concerns of the staff, and services provided to the community.	Church pleased that there are no physical impacts to building or property; however, the roadway will be expanded 20 ft. closer to existing ROW fence, increasing the noise level and decreasing the quality of air. Visibility from I-4 is good, but concerned with more impacts.
July 20, 1998	Jones High School Workshop	--	Overview of the I-4 project and study. Discuss impacts to the area.	---
July 21, 1998	Holy Trinity Greek Orthodox Church	6	Discuss PD&E Study, proposed improvements to I-4, possible impacts to the Church, concerns of the staff, and services provided to the community.	The church is high profile and visible from the I-4. There are concerns about visual impacts due to the elevation of I-4. The church has future plans to expand. After review, found no ROW required. The modifications to Wymore Bridge will not impact the church.
July 23, 1998	Webster University	5	Discuss PD&E Study, proposed improvements to I-4, possible impacts to the building that leases office space, concerns of the staff, and services provided to the community.	Direct impact on parking lot, ROW will be acquired.
August 25, 1998	King of Kings Church	5	Review PD&E Study and the I-4 improvements. Obtain input about possible impacts to the Church, property and other concerns about the I-4 expansion.	Noise and impacts to the church and school. When the expanded ROW moves closer to the property, the potential for vehicle accidents increases the risk of safety for people on church grounds.
September 17 - 18, 1998	Florida Planning and Zoning Conference	30	Booth set-up.	Distributed literature. Answered questions.
October 21, 1998	Seminole Community College Council	40	Provide overview of proposed improvements to I-4 and PD&E Study.	Concerned about HOV lanes, land acquisition, and funding.
November 3, 1998	Florida Conference of Seventh Day Adventist	5	Review PD&E Study and the I-4 improvements. Obtain input regarding potential impacts to the Center. How does the Center serve the community.	Site is directly affected by proposed ROW expansion and pond location. Concerned that HOV lanes will not work as planned. The construction in Maitland area is tentatively scheduled for 2007 to 2013. The final selection of pond sites will be made after the PD&E processor.
November 5, 1998	Orlando Regional Medical Center	8	Overview of proposed improvements to I-4 and the PD&E Study. Discuss concerns and potential impacts to the facility.	Concerned about access around the hospital and the impact of EMS vehicles getting to and from hospital.
November 10, 1998	Killarney Elementary School	4	Discuss revised alternatives for improvements to the I-4 PD&E Study proposed for the school area. Review	Concerned with safe pedestrian vehicle access and bus routing. Coordinating I-4 changes to improve

Table 5-4. Special Interest Groups (Continued)

Date	Organization	No. Attendees	Topics	Issues
			impacts to pedestrian, bus, and private vehicle access routes. Obtain input and concerns about the plan.	the flow of traffic around the school. I-4 proposal needs to create additional walkway access to school. Underground walkway poses safety issues for children.
November 23, 1998	First Baptist Church	4	Discuss proposed improvements to I-4, potential impacts to the Church, and concerns of the representatives.	Concerned with impacts to church and any changes in access to church.
November 24, 1998	Jones High School & Wymore Adult Center	5	Discuss revised alternatives for improvements to the I-4 PD&E Study proposed for the school area. Review impacts to pedestrian, bus, and private vehicle access routes. Obtain input and concerns about the plan.	I-4 improvements do not seem adequate for expected traffic. Interested in changes (design & ponds) to Lee Rd. and Wymore Rd, and access to another school facility located there. No access ramp for Eatonville. This area needs direct access to I-4 from Orange Ave.
December 8, 1998	Becky's Preschool	2	Review I-4 improvements. Discuss potential impacts to access routes involving pedestrians, buses, and vehicles entering/exiting the pre-school.	Provided project and PD&E process overview. School's population from local area not impacted by I-4 changes. Interested in Kaley Street, Michigan Street, and downtown area access. No negative comments.
December 16, 1998	Catalina Elementary School	3	Overview PD&E Study and I-4 improvements. Discuss potential impacts or changes to school access and the John Young Parkway interchange.	Provided project and PD&E process overview. No direct impacts to school or bus routes. General interest in I-4. No comments.
January 6, 1999	Trinity United Methodist Church, Preschool, Quest	5	Review PD&E Study, project schedule, and I-4 improvements. Discuss I-4/SR 408 interchange. Discuss changes to access points in downtown Orlando.	Provided project overview. No impacts to Church. Explained I-4 and SR 408 to be kept open during construction.
January 7, 1999	First Baptist Church	3	Review PD&E Study, project schedule, and I-4 improvements. Discuss John Young Parkway interchange, church access, I-4 ramp adjacent to property, noise abatement, and aesthetic treatments.	Want screening/landscaping for noise abatement on John Young Pkwy and I-4 flyover that crosses over or is adjacent to their property. Both FDOT and Church are claiming to own the same property. Concerns about visual impact to Church. Also want Urban Design treatments.
January 11, 1999	Hungerford Elementary School	4	Provide overview of project improvements, schedule, improvements to interchanges, and noise study. Discuss access to the school and the community. Introduce Educational Outreach Program.	Provided project and PD&E process overview, stormwater retention requirements, and noise study. No impacts to school or bus routes.
January 12, 1999	Wymore Secondary School	4	Provide overview of project improvements, schedule, improvements to interchanges and noise study. Discuss access to the school and the community. Discuss potential economic growth.	Provided project and PD&E process overview, stormwater retention requirements. No impacts to school or bus routes. Concerned about interference from FDOT because I-4 visibility to their property and reported impacts on traffic flow.
January 25, 1999	Killarney Elementary School Advisory Committee	10	FDOT to present three options for the expansion of I-4 in this area that have direct impacts to neighborhood and school. Discuss traffic flow patterns, pedestrian, and bike access over I-4.	Provided project and PD&E process overview. Explained the two different alternatives providing access to school area from I-4 and pedestrian crossover. School principal and Advisory Committee favor the alternative that paves Riddle, adds sidewalk.
February 10, 1999	Florida Hospital	7	Discuss PD&E Study, proposed improvements to I-4, possible impacts to the hospital, concerns of the staff, and services provided to the community.	Interested in noise barriers and the impacts of I-4 on properties they own along I-4. Concerned about a high maintenance exfiltration system. FDOT trading acquisition costs for maintenance. Inquired about

Table 5-4. Special Interest Groups (Continued)

Date	Organization	No. Attendees	Topics	Issues
March 16, 1999	Calvary Assembly of God Church	14	Discuss proposed I-4 improvement alternatives and possible impacts in the area adjacent to the church property.	mitigation. Issues include design, land acquisition, exfiltration, noise walls, and visibility.
June 29, 1999	Jones High School & Adult Education Center	6	Discuss Alternate Plans 1A and 2A both featuring changes to connecting ramps on I-4 and surrounding areas. Seek public involvement.	Flow of traffic to Citrus Bowl would be improved with Options 1A and 2A. Options also resolve the issues of access to OBT. Members pleased with additional access to area from highways. Safer access to the school. School would be impacted by noise issues.
July 13, 1999	NAIOP	125	Provide overview of I-4 improvements.	Reviewed I-4 improvements. Concerned there is not enough to meet traffic demand. Need more general use lanes.
October 13, 1999	Killarney Elementary School	12	Meet with school and community representatives. Review status of the I-4 Interim Reversible HOV lane design plans.	Brief overview of design plans for nine mile corridor from South Street to east of SR 436. Meeting focused on existing I-4 pedestrian overpass. No overpass limits students to utilize Grenada Dr. and Roxbury Rd. to reach school. Route does not provide adequate facilities for students.
October 27, 1999	Eatonville/Kennedy Blvd. Interchange Task Force	11	Provide follow-up to request for interchange at I-4 and Kennedy Blvd. Obtain input from Task Force Team appointed by the mayor.	Brief overview of project improvements and request for interchange at Kennedy Blvd. Three to four concepts presented to the Council and the Community at 9/7/99 meeting. Task Force Team has not provided new technical input for the consultants to review.
August 22, 2000	Downtown Development Board/Community Redevelopment Agency Annual Workshop	39	Provide an update regarding the I-4 PD&E Study, focusing on access to downtown Orlando and alternative improvements under study for the I-4/SR 408 interchange.	Overview of project improvements. Discussed 6+2 laning (3 GUL and 1 HOV) in each direction and auxiliary lanes. Provided update on improvements to major interchanges along I-4 including alternative designs to the I-4/SR 408 interchange.
August 23, 2000	Calvary Assembly Church	-	Provide an update on the I-4 PD&E Study and review limited access issues with the Church committee.	Discussed the recent re-evaluation of limited access at all interchanges along the corridor. Streets within 100 feet of access ramp must not cause interference; therefore, there will be no access to Pinehurst Avenue from Par Street.
November 15, 2000	Church Street Station	13	Overview of project and proposed alternatives for the I-4/SR 408 interchange and potential impacts to the downtown area and Church Street Station properties, including limited access issues.	Concerns about access to Church Street Station, the actual loss of access for one parcel, and changes to funding and time frames as a result of the passing of the high-speed rail amendment. Looking for information for their development plans.
March 2, 2001	Zora N. Hurston Towers	6	Present information regarding access changes to downtown Orlando, overview of PD&E Study, improvements and alternatives to SR 408 and the I-4 interchange, in addition to the Interim Auxiliary Lane project.	Display boards made available to visitors in addition to one-on-one conversation regarding the I-4 project. Some attendees live in Volusia County and were pleased to learn that the St. Johns River Bridge replacement had been expedited.

Table 5-5. Civic Groups

Date	Organization	No. Attendees	Topics	Issues
February 20, 1997	I-4 Association	56	Review project study.	Presented overview of PD&E process and I-4 project, status, and schedule.
June 10, 1997	College Park Rotary Club	35	Present overview of project improvements.	Provided an overview of the I-4 improvements.
September 18, 1997	College Park Rotary Club	12	Presented overview of project improvements.	---
January 8, 1998	Sierra Club	45	Discuss I-4 improvements, PD&E Study, EAC, and future meetings with the organizations.	Provided an overview of the project. Concerned about impacts to existing lakes and wetlands, and to bears.
March 18, 1998	Sierra Club	--	Discuss I-4 improvements, PD&E Study, EAC, and future meetings with the organizations.	Provided an overview of the project. Concerned about impacts to existing lakes and wetlands, and to bears.
June 12, 1998	I-4 Association	--	Presented overview of project improvements.	Provided an overview of the I-4 improvements.
June 4, 1998	Florida Bar Association/ Citizen Dispute	3	Introduce I-4 PD&E Study and improvements.	No impacts to facility or services.
August 11, 1998	Rotary Club of Bay Hill	42	Introduced study process and proposed I-4 improvements.	Provided an overview of proposed improvements to I-4. General questions regarding processing and scheduling.
October 6, 1998	Kissimmee Kiwanis Club	27	Provide overview of I-4 PD&E Study.	Concerns about construction schedule, funding, ped/bike paths, and HOV lanes.
October 15, 1998	American Association of Cost Engineers International	9	Review PD&E Study and I-4 improvements. Obtain input regarding impacts to Central Florida.	Provided overview of the I-4 improvements.
December 11, 1998	Maitland Men's Club	32	Review status of I-4 study process.	Provided overview of the proposed improvements.
February 16, 1999	East Orlando Kiwanis Club/ Elk Club Lodge 1079	15	Present information on I-4 improvements and PD&E Study to group.	Overview of I-4 project. Concerns included start date of construction, length of project, cost, completion date of SJR bridge, I-4 traffic, and improvements to College Park.
May 11, 1999	DeLand Kiwanis Club	33	Present overview of I-4 PD&E Study and proposed improvements. Discuss potential impacts, project schedule, issues, and concerns.	Discussed status of project improvements. Concerned about design improvements, schedule for SJR bridge, HOV access, noise walls, and aesthetics.
November 17, 1999	Sierra Club	33	Provide an overview of the I-4 PD&E Study process and improvements. Discuss potential impacts to the community.	Brief overview of project and improvements. Explained the concept behind HOV, GUL, and auxiliary lanes. Project plan allows FDOT to maximize the use of existing ROW and minimize the impacts to adjacent communities.
August 17, 2000	Orlando Lutheran Towers	40	Provide an update regarding the I-4 PD&E Study. Focusing on access to downtown Orlando and alternative improvements under study for the I-4/SR 408 interchange.	Provided brief history of project to date. Concentrated on the I-4/SR 408 interchange. Outlined options being considered to improve the interchange (i.e., tunnel or flyover option). No negative comments.
September 20, 2000	Association for the Advancement of Cost Engineers	20	Provide an update on the revised I-4 PD&E Study, focusing on alternatives for SR 408, access issues, and the potential impacts to the neighboring communities.	Overview of the I-4 project. Group advised that the projected date for the Section 2 public hearing is February 2001. The FEIS could be developed sometime about November 2001.
March 7, 2001	I-4 Association	47	Overview of the I-4 project and interim improvements along the corridor.	Brief overview of I-4 project and process. Reviewed anticipated project schedule and potential dates for construction. Discussed priority projects and brainstormed on potential funding mechanisms.
March 15, 2001	Central Florida Chapter of Environmental Professionals	42	General overview of the I-4 PD&E Study with emphasis on Section 2.	None.

Table 5-5. Civic Groups (Continued)

Date	Organization	No. Attendees	Topics	Issues
March 21, 2001	Sierra Club	25	Provide an update on the I-4 PD&E Study, including the improvements/alternatives to I-4/SR 408 interchange and changes to downtown Orlando.	Brief overview of I-4 project, identifying the boundaries of all three sections. Discussed alternatives for the I-4/SR 408 interchange, access management, impacts to neighboring communities, the St. Johns River Bridge, HOV, and auxiliary lanes.
April 2, 2001	Central Florida Utility Coordinating Group Expo	28	Present an overview of the I-4 PD&E Study and to inform members of interim I-4 improvement projects.	Brief overview of I-4 project, identifying the boundaries of all three sections. Discussed interim I-4 projects scheduled in the near future. Attendees mostly concerned with the St. Johns River Bridge and interchanges located at I-4/SR 408 and at Johns River Bridge.
April 4, 2001	Longwood Rotary Club	50	Provide an update on the I-4 PD&E Study, including access issues, potential noise impacts, and abatement alternatives. Discuss the status of the DEIS.	Brief overview of I-4 project, identifying the boundaries of all three sections. Discussed the two options proposed for SR 434 Interchange (longer entrance/exit ramps or circular ramp). Option 2 is the more expensive alternative requiring land acquisitions.
May 8, 2001	DeBary Civic Association	30	Provide update on the I-4 PD&E Study including the replacement of the St. Johns River Bridge and the six-laning project. FDOT is seeking public involvement and requesting input from the DCA.	Brief overview of the I-4 project. FDOT has secured the funding to accelerate the reconstruction of the St. Johns River Bridge (now a Design/Build project expected to begin in 2001). The next I-4 improvement in this area will be the Six-Laning Project that extends from Lake Mary across the St. Johns River Bridge to Saxon Blvd. It is also a Design/Build project with the start of construction in 2001 in Lake Mary and 2004 in the Saxon Blvd. area. HOV lanes will be successful with enforcement and barrier separation. During the design phase, FDOT will look closely at ways to reduce traffic jams along the roadway. The height of noise walls will vary by the geometry of each location and constructed on top of I-4 within the ROW. Group advised that landscaping doesn't effectively reduce noise levels. The existing St. Johns River Bridge will remain open until traffic can be diverted to the new span(s). Advised that any questions should be directed to Keith and Schnars. Stormwater retention ponds will be constructed.
August 23, 2001	College Park Rotary Club	50	Provide an update on the I-4 project improvements, including access issues, potential noise impacts, and abatement. Discuss the status of the DEIS.	Provided an overview of the I-4 PD&E Study Plan, identifying the boundaries of the three sections. Discussed slip ramps, HOV, interim auxiliary lane project. Briefly reviewed the FDOT five-year work program, which includes several funded I-4 interim programs. Overview of access to downtown Orlando, and alternative improvements to I-4/SR 408 Interchange. Advised group that with multiple alternatives, it is difficult to ascertain what acquisitions will occur until final decisions are made by FHWA.

At the onset of the project, potential impacts to historic resources were presented to the public in accordance with the 1986 Section 106 process and its implementing regulations and procedures (36

CFR, Part 800). At the meetings, a flowchart illustrating the four basic steps of the Section 106 process was displayed. This flowchart is presented in Figure 5-1. A video was presented at the Urban Design Workshops that reviewed the Section 106 process for historic places (refer to Section 5.2.3.6).

In June 1999, the project's Section 106 Public Involvement Coordination was revised to reflect the procedures outlined in the revised Section 106 process. A flowchart of the revised Section 106 process is presented in Figure 5-2. As part of the new process, a CRC was created to involve a broad spectrum of interested parties including federally recognized Native American tribes. Information on the CRC is presented in Section 5.2.2.6.

5.2.4 Information Elements

The PIP was designed to inform the public and provide an opportunity for the public to express their ideas and concerns about the scope and impact of the study. Activities included newsletters, working with the media, a project information booth and billboards, a project web site, and an educational outreach program.

5.2.4.1 Newsletters

FourCast, the project newsletter, was published throughout the study effort, providing opportunities for the public to learn about project progress and about upcoming meetings. Through March 2002, 14 issues of *FourCast* have been published. A total of over 100,000 copies of *FourCast* were distributed to the public through direct mail, as handouts at meetings, in the Trans4mation Station, and the project office.

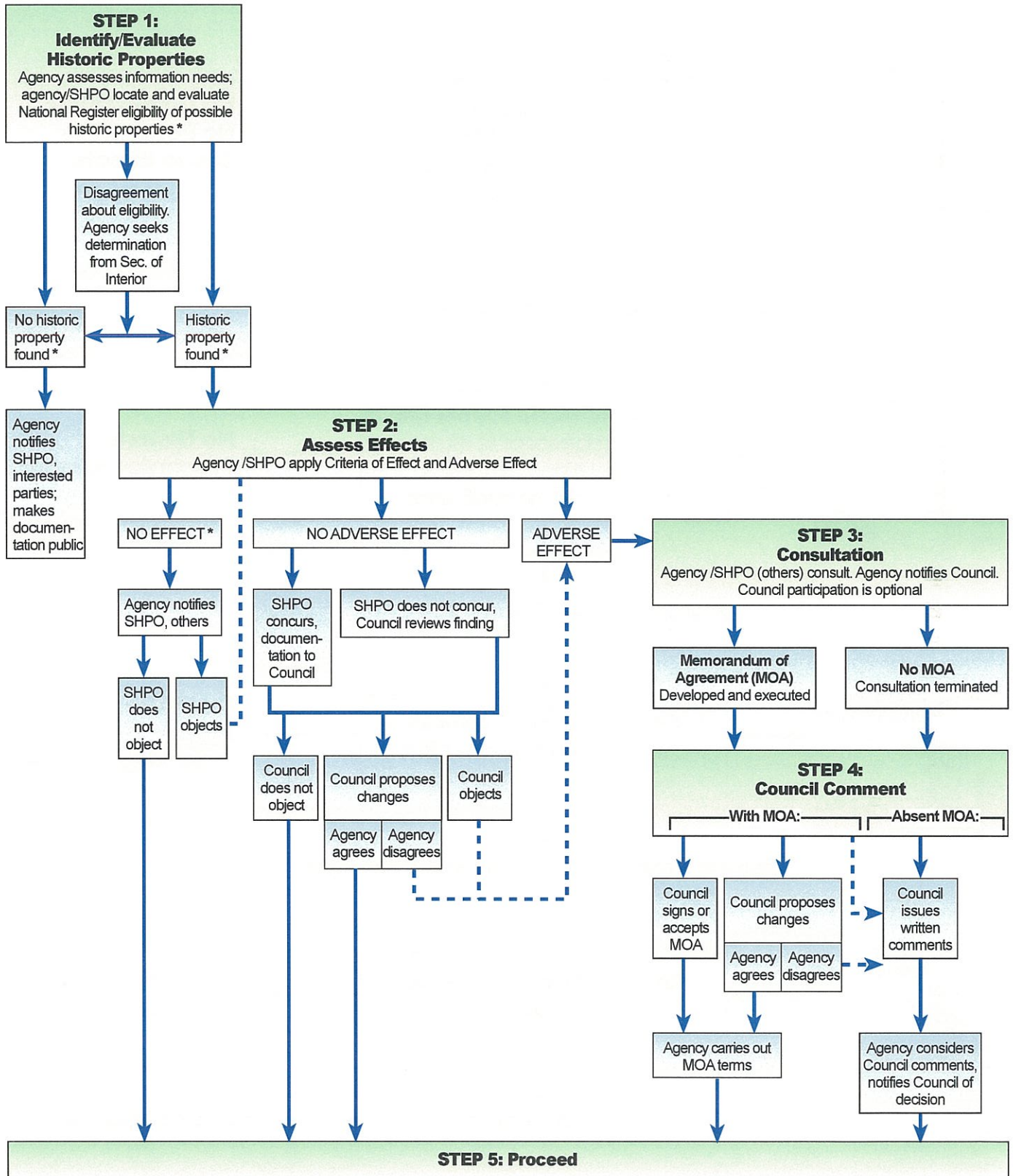
The newsletter was sent to the project mailing list, which includes the following groups:

- Elected officials – local, state, and federal delegations
- Neighborhood associations
- Media
- Property owners whose property lies, in whole or part, within 300 feet on either side of the centerline of each project alternative
- Project Advisory Group
- Urban Design Group
- Environmental Justice Group
- Environmental interest groups
- Civic and professional associations
- Schools within the project area
- Major employers, public and private groups, organizations, and agencies or businesses requesting to be placed on the mailing list for the duration of the study

5.2.4.2 Other Interested Parties Media

Project information was disseminated through the local print and broadcast media. Information was in the form of news releases and news stories generated either through the project office or unilaterally by individual media outlets. Media contacts were made prior to important public meetings and at key milestones, as well as when requested by the media or FDOT.

- **Newspapers** – Display advertisements were placed in local community and metropolitan newspapers with the largest circulation in the project area. The newspapers included *Orlando Sentinel*, *Orlando Business Journal*, *Sanford Herald*, *Central Florida Advocate*, *La Prensa*, and *Orlando Times*.



* Public may request Council review of agency's findings at these points

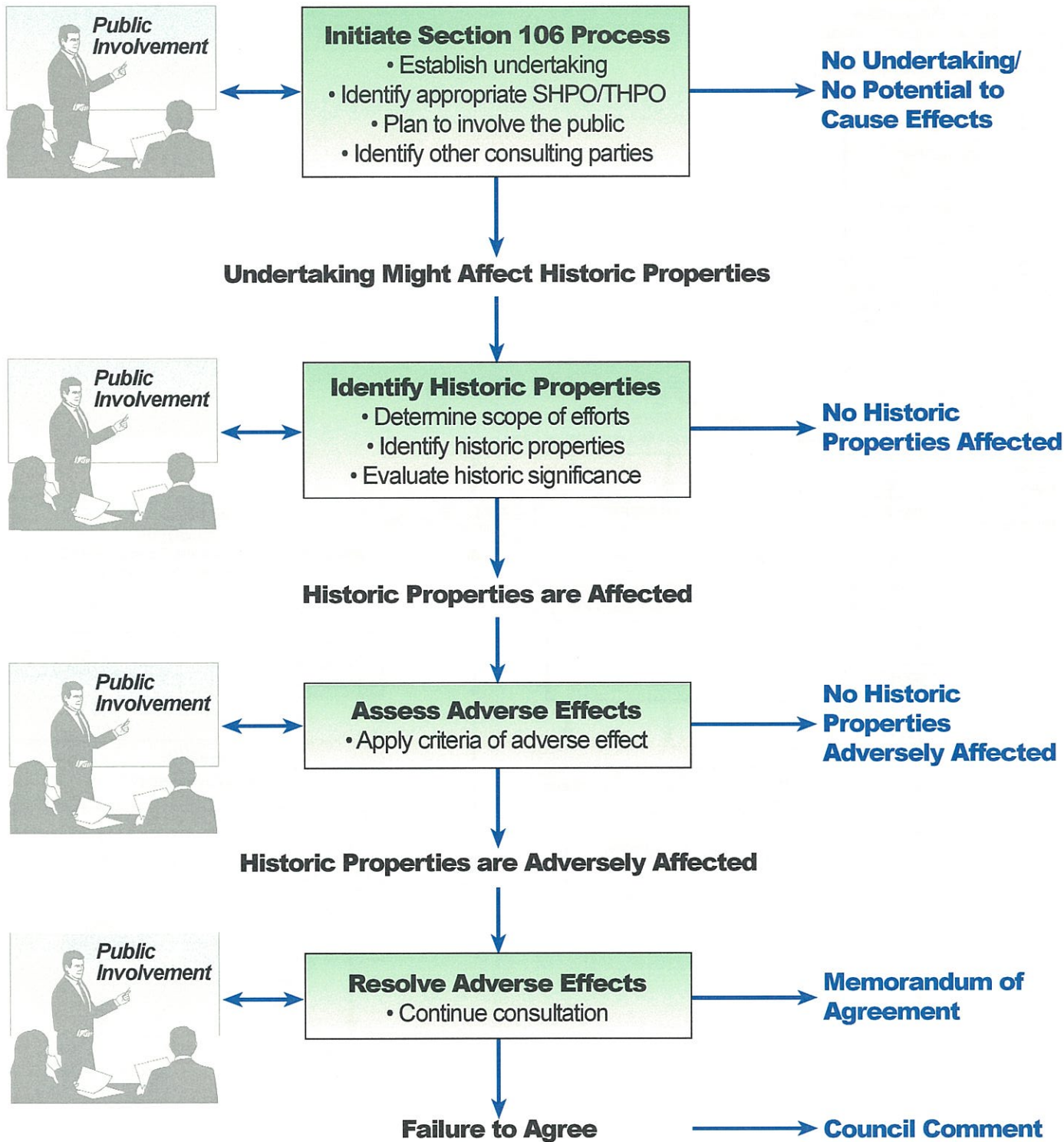


Figure 5-2
The Revised Section 106 Process: Flow Chart
 May 1999
 I-4 PD&E Study - Section 2

Project team members were interviewed by and provided information to reporters during the project's evolution. Copies of newspaper articles are included in the project files.

- **Radio and Television Stations** - In addition to the local area newspapers, local radio and televisions stations were provided project news releases. The radio and television stations included:

Radio - WHTQ, WMMO, WDBO, WTKS, WAJL, and WUCF.

Television - WFTV Channel 9, WKMG Channel 6, WKCF Channel 18, WESH Channel 2, WOFL Channel 35, WMFE Channel 24, WACX Channel 55, Central Florida News Channel 13, Orange County TV (closed circuit), and WCEU Channel 15 Daytona Beach.

Through March 2002, the public involvement team has been interviewed on numerous occasions by television reporters with over 60 news clips being aired at noon and evening news broadcasts. Please refer to the table below for specific dates and station identification.

Station	Channel	Date	Time
WFTV	CH-9	08/11/98	6:00 PM
NEWS	CH-13	08/18/98	NOON
WESH	CH-2	08/18/98	4:00 PM
WFTV	CH-9	08/18/98	NOON
WFTV	CH-9	08/18/98	5:00 PM
WKMG	CH-6	08/20/98	NOON
WFTV	CH-9	08/20/98	NOON
WESH	CH-2	01/12/99	NOON
WKCF	CH-18	01/18/99	10:00 PM
WESH	CH-2	01/18/99	NOON
WOFL	CH-35	01/18/99	10:00 PM
WKMG	CH-6	01/18/99	6:00 PM
WKMG	CH-6	01/18/99	11:00 PM
WFTV	CH-9	01/18/99	6:00 PM
WFTV	CH-9	01/19/99	11:00 PM
NEWS	CH-13	01/20/99	11:00 PM
WESH	CH-2	01/20/99	11:00 PM
WOFL	CH-35	01/20/99	10:00 PM
WKMG	CH-6	01/20/99	5:00 PM
WKMG	CH-6	01/20/99	11:00 PM
WESH	CH-2	01/21/99	5:30 AM
WESH	CH-2	01/21/99	NOON
WESH	CH-2	01/28/99	NOON
WKCF	CH-18	02/01/99	10:00 PM
WESH	CH-2	02/01/99	NOON
WOFL	CH-35	02/01/99	10:00 PM
WKMG	CH-6	02/01/99	11:00 PM
WFTV	CH-9	02/01/99	NOON
WESH	CH-2	02/02/99	NOON
WESH	CH-2	02/03/99	6:00 PM
WKCF	CH-18	02/08/99	10:00 PM
WESH	CH-2	02/08/99	6:00 PM
WKMG	CH-6	02/08/99	11:00 PM

Station	Channel	Date	Time
WKCF	CH-18	02/11/99	10:00 PM
WKMG	CH-6	02/11/99	6:00 PM
WKMG	CH-6	02/12/99	5:00 PM
WFTV	CH-9	02/12/99	5:00 PM
WKCF	CH-18	02/16/99	10:00 PM
WKMG	CH-6	02/16/99	11:00 PM
NEWS	CH-13	05/03/99	NOON
NEWS	CH-13	05/03/99	11:00 PM
WESH	CH-2	05/03/99	NOON
WESH	CH-2	05/03/99	6:00 PM
WKMG	CH-6	05/03/99	NOON
WKMG	CH-6	05/03/99	5:00 PM
WFTV	CH-9	05/03/99	NOON
WFTV	CH-9	05/03/99	5:30 PM
WFTV	CH-9	05/04/99	NOON
WFTV	CH-9	05/04/99	11:00 PM
WFTV	CH-9	12/14/99	6:00 PM
WESH	CH-2	12/15/99	6:00 PM
WESH	CH-2	12/15/99	11:00 PM
WKMG	CH-6	12/15/99	6:00 PM
WFTV	CH-9	12/15/99	6:00 PM
WESH	CH-2	01/25/00	4:30 PM
WKMG	CH-6	01/25/00	6:00 PM
WKMG	CH-6	01/25/00	11:00 PM
WFTV	CH-9	01/25/00	5:30 PM
WFTV	CH-9	01/25/00	11:00 PM
NEWS	CH-13	01/25/00	NOON
WKCF	CH-18	01/25/00	10:00 PM
WOFL	CH-35	01/25/00	11:00 PM
WFTV	CH-9	06/26/01	11:00 PM
NEWS	CH-13	06/26/01	NOON

Additionally, speaking opportunities, such as community affairs and business talk shows, were pursued. The project team participated in 12 radio and five television talk show interviews. Selective broadcast stations, including the Orange County closed circuit broadcasts, were utilized to disseminate project information.

Materials were provided to local government, civic, professional, and neighborhood associations for publication in their newsletters. Updated media kits were provided to a comprehensive media mailing list at project milestones. The media were provided copies of salient information as deemed appropriate by the project media liaison.

5.2.4.3 Project Information Booth, Posters, and Billboards

A project information booth was developed and includes study information displays. The booth provided a method for distributing newsletters, comment forms, and other project data. The booth was used in arenas where logistically the Trans4mation Station was unsuitable. The booth was used at art shows, farmers' markets, shopping centers, the convention center, shopping centers, and community buildings.

Posters promoting the project were prepared and mounted in 256 LYNX buses that travel throughout the Orlando metropolitan area. Project calendars also were prepared and distributed to area businesses outlining where project information could be obtained.

Billboards advertising the public involvement office phone number were prepared and provided to major outdoor advertising operations in the greater Orlando area. The firms that were provided the materials included Paxon Outdoor Advertising, Universal Outdoor Advertising, 3M Multimedia Co., and Lamar Outdoor Advertising.

These billboard covers were posted periodically on a gratis, space-available basis with most postings on I-4 approaching roads such as Michigan Street, SR 408 (East/West Expressway), SR 50 (Colonial Drive), and US 17-92.

5.2.4.4 Web Site

A web site was also created (www.trans4mation.org) and has been available since April 1998. It provides general project information, including project meeting schedules, milestones, process explanations, and other information. Through March 2002, over 22,500 interested parties have visited the web site.

5.2.4.5 Educational Outreach

A focus of the I-4 PD&E Study - Section 2 is to promote carpooling and mass transit options to the travelers in the Central Florida area. Given the long-term efforts required to complete the construction of the improvements, an element of the outreach program included an educational program to the future drivers in the Central Florida area, the elementary school kids. The program includes Buddy, the program mascot and educator, who helps deliver the important message that "It's Cool to Carpool." Buddy is a remote controlled, voice-operated car that meets with the third grade students in Orange, Seminole, and Volusia Counties delivering the message on carpooling, how it benefits the environment, eases congestion, and will make traveling on I-4 quicker, safer, and more fun.

Through March 2002, Buddy and his friends have made more than 122 appearances. Project team members distribute educational materials that include activity books, posters, bookmarks, decals, give-a-ways, carpool brochures, and certificates for each student.

Additional appearances by Buddy within Section 2 are included in the comprehensive public involvement meeting list in Appendix I.

5.3 Agency Coordination

Meetings were held with various agencies to review the project and identify environmental issues. Environmental issues discussed include air, noise, wetlands, threatened and endangered species, drainage, historic, and archaeological. Information on the meetings is provided in the project file and in Appendix C. A list of the meetings is provided below and in Appendix I.

Meeting Date	Itinerary
January 17, 1997	SFWMD – Review the project and discuss potential environmental issues
January 22, 1997	USACE – Review the project and discuss potential environmental issues
January 24, 1997	SJRWMD & FDEP – Review the project and discuss potential environmental issues
February 11, 1998	SHPO – Review the project and discuss potential environmental issues
March 24, 1998	SJRWMD – Discuss project status and review potential environmental issues
April 24, 1998	SFWMD – Discuss project status and review potential environmental issues
May 1, 1998	SJRWMD – Discuss project status and review potential environmental issues
May 11, 1998	SJRWMD – Discuss project status and review potential environmental issues
June 5, 1998	SJRWMD – Discuss project status and review potential environmental issues
September 1, 1998	SJRWMD – Discuss project status and review potential environmental issues
October 30, 1998	SHPO – Discuss project status and review potential environmental issues
January 28, 1999	SHPO – Discuss project status and review potential environmental issues
February 22 - 25, 1999	FHWA Workshops – Review concepts and discuss potential impacts
March 10, 1999	SHPO/FHWA – Discuss potential impacts to historic resources
June 1, 1999	SHPO – Discuss potential impacts to historic resources
June 25, 1999	SJRWMD – Discuss potential impacts to wetlands
July 29, 1999	USFWS (Jacksonville) – Discuss potential impacts to T&E species
August 3, 1999	SJRWMD – Discuss project status and review potential environmental issues
January 31, 2000	SHPO – Discuss potential impacts to historic resources
March 28, 2000	SHPO – Discuss primary goals for Section 106 and 4(f) issues
May 2, 2000	SHPO – Discuss NEPA process and DEIS, interchange alternatives, and potential impacts to historically significant sites
June 21, 2000	SHPO – Discuss the range and types of potential effects on historic properties
January 30, 2001	SHPO – Discuss determination of effect for historic properties
April 16, 2001	USACE – Discuss coordination of DEIS
September 17, 2001	FDEP – Discuss review comments on DEIS concerning contamination, aquatic preserves, construction impacts, spring locations, and trail issues
September 19, 2001	FHWA – Discuss review comments on DEIS and how to formulate responses
January 16, 2002	FHWA – Discuss limits of preferred alternative and recommendation, update of Section 106 progress, and FEIS methodology
April 23, 2002	SHPO – Discuss determination of effect for historic properties.

In addition to the project meetings, correspondence with various local, state, and federal agencies was initiated. Copies of the agency correspondence are provided in the project files and Appendix C.

5.4 Public Hearing

Florida Statutes mandate that a public hearing must be held on all projects that are defined as major transportation improvements and require the preparation of an EIS. A public hearing for the I-4 PD&E Study – Section 2 was held on June 26, 27, and 28, 2001. In order to provide easy access to meeting locations along the 43-mile project corridor, a series of three consecutive meetings were held at the following locations:

- Orlando Expo Center in Orange County
- Altamonte Holiday Inn in Seminole County
- Enterprise Elementary School in Volusia County

In preparation for this hearing, a notification mailing was sent to 5,104 property owners and approximately 2,444 elected and appointed officials and other interested parties. Notices were placed in the *Florida Administrative Weekly*, *Orlando Sentinel*, *Orlando Times*, *Orlando Business Journal*,

La Prensa, *Central Florida Advocate*, and the *Seminole Herald*, as well as *FourCast* (Issue 13). In addition to the display ad in the local newspapers, a press release was distributed to all media forms including television and radio on June 21, 2001. The press release provided a brief description of the study and details of the public hearing, including date, time, and location.

Approximately 405 people attended the three-day event. The hearing included an informal review of the project, followed by a formal presentation. A court reporter transcribed the proceedings from the formal portion of the hearing. A copy of the transcript (for each evening) and the handout packet that was distributed at the public hearing are provided in the *Public Hearing Summary (July 2002)*. In addition, the project team was available to answer questions and to hold "one on one" conversations each evening. The official public hearing record period ended August 1, 2001.

A total of 116 written comment forms were received. Responses to the comments were prepared and mailed to each inquiry. Copies of the comment forms and response letters are provided in Appendix K. Generally, the comments received were focused in the areas of noise, cultural/historic resources, urban design guidelines, and requests for more information. The comments received are summarized below.

Area of Concern	Number of Comments
Total written comment forms received	116
Request plan sheets	17
Add to mailing list only	14
Request relocation information	1
Request copy of hearing transcript	1
Comments on Communities Adjacent to the Corridor	
Noise barriers in non-eligible areas	20
Noise impacts and quality of life concerns	18
Protect historic districts	14
Pollution effects	7
Eliminate neighborhood cut-through traffic	2
Comments on Study Findings	
Preferences for an alternative	18
Improve arterial roads and intersections	10
Retain downtown Orlando access	7
Prefer No Build Concept	6
Eliminate tolls on existing expressways	5
Against HOV lanes	4
Create alternative routes	4
Noise study	3
Widen secondary roads	2
Comments on Mass Transit	
Add extra HOV lanes instead of rail	1
Improve mass transit	1
Comments on Urban Design Guidelines	
Reduce funds for aesthetics on the St. Johns River Bridge	2
Safety lights only for the St. Johns River Bridge	2
Use vegetation with barrier walls	2
Concern for graffiti on barrier walls	1
Be consistent with local municipal guidelines	1

In addition to the written comments, two petitions were received with numerous signatures. The first petition was written to express concerns against the closing of the Robinson Street off-ramp in downtown Orlando and maintaining the Amelia Street off-ramp open. This petition was signed by 40 members of the Lake Eola Heights Historic Neighborhood Association. The second petition expressed concerns of opposition to the closing of Pinehurst Avenue where it connects to Par Street at the I-4 overpass. Approximately 50 nearby residents and members of the Calvary Assembly Church of God signed this petition.

A detailed summary of the public hearing is presented in the *Public Hearing Summary* (July 2002). The input received is utilized in selecting the Preferred Alternative and making a final recommendation to FHWA in the form of this environmental document. Upon receiving approval from FHWA, EPA publishes a notice of availability in the *Federal Register*. A period of 30 days is established and a ROD is submitted and signed by FHWA.

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Chapter 6

Commitments and
Recommendations



6. Commitments and Recommendations

This chapter of the FEIS summarizes FDOT's commitments to minimize impacts on the human environment as a result of the proposed action and describes the Preferred Alternative, which is being recommended for Location and Design Concept acceptance.

6.1 Commitments

In order to minimize the impacts of this project on the human natural and physical environment, the Department is committed to the following measures for significant impacts as a result of the Preferred Alternative.

6.1.1 Land Use Impacts

The Preferred Alternative will require approximately 97 acres of right-of-way for public transportation use. Approximately 57 acres are required for roadway and approximately 40 acres are required for stormwater ponds.

The I-4/SR 408 (East/West Expressway) interchange modifications alter downtown Orlando access and require a number of residential and business relocations. As indicated in Chapter 2, the I-4/SR 408 (East/West Expressway) interchange will alter access to downtown Orlando. Businesses located adjacent to existing interchanges may experience land use impacts due to the proposed improvements. These impacts will be significant due to the number of relocations, change in access, and Section 106 impacts as a result of the proposed improvements. Through these impacts, pressure for land use transitions may occur.

Mitigation measures for the land use impacts at the I-4/SR 408 (East/West Expressway) interchange will include several techniques. The relocations will be mitigated through the FDOT relocation program. A description of the relocation program is presented below in Section 6.1.2.

To limit the impacts associated with change in access at the I-4/SR 408 (East/West Expressway), Alternative 2B1 was chosen as the Preferred Alternative. This alternative maintains a westbound on-ramp at Gore Street and provides an eastbound off-ramp and a westbound on-ramp at Amelia Street.

An MOA has been developed among SHPO, FHWA, and FDOT regarding adverse effects to cultural resources and suitable mitigation measures for the Preferred Alternative. Mitigation measures for historical resource impacts have been coordinated according to the Section 106 process and the agreed upon commitments with SHPO and appropriate consulting parties as documented in the MOA. A copy of the MOA is included in Appendix L.

6.1.2 Displacements and Relocations

The Preferred Alternative will result in the right-of-way impact of 362 parcels (approximately 97 acres). Most of these parcel impacts are related to roadway improvements, which impact 309 parcels (approximately 57 acres); whereas, stormwater pond improvements impact 53 parcels (approximately 40 acres). The Preferred Alternative will result in 111 full acquisitions and 251 partial acquisitions. A majority of the impacted parcels are non-residential (244 parcels, mostly commercial businesses). The non-residential impacts involve the relocation of 63 businesses (this includes community facilities). Business relocations comprise approximately 90 percent of commercial facilities. The residential impacts involve the relocation of 195 residential units (118 parcels).

In addition, the Preferred Alternative will result in right-of-way impacts composed of an additional 45 parcels (including five relocations) due to limited access impacts.

In order to minimize the unavoidable effects of right-of-way acquisition and displacement of people, FDOT will carry out a right-of-way and relocation program in accordance with Florida Statute 339.09 and the Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970 (Public Law 91-646 as amended by Public Law 100-17).

FDOT provides advance notification of impending right-of-way acquisition. Before acquiring right-of-way, all properties are appraised on the basis of comparable sales and land use values in the area. Owners of property to be acquired will be offered and paid fair market value for their property rights.

It should be noted that FDOT has proceeded with advanced right-of-way acquisition for a number of the parcels affected by the Ultimate project. However, this advanced right-of-way acquisition has not affected the selection of the Preferred Alternative.

6.1.3 Community Facilities

The neighborhoods that have a significant direct use impact include Angebilt, Holden Heights, and Holden-Parramore including the Griffin Park Historic District.

Community facilities include schools; day care; places of worship; residential shelters and crisis centers; social service agencies; cultural centers; hospitals; senior citizen centers; public services; and fire, evacuation, and police stations. The Preferred Alternative will impact a total of 17 community facilities including 9 relocations.

The neighborhood impacts of the Preferred Alternative will be evaluated on a case-by-case basis. There are several mitigation measures being proposed for the impacted neighborhoods and community facilities.

The community facilities impacted by the I-4 improvements provide important local and/or regional community services. Although the impacts to these facilities are not considered a significant regional impact to community services, loss of these facilities would reduce important neighborhood and regional services. Through the assessment efforts of these impacts, coordination has been undertaken with each facility.

As indicated in Section 6.1.2, displacements and relocations as a result of the Preferred Alternative will be mitigated through FDOT's relocation program. Before acquiring right-of-way, all properties are appraised on the basis of comparable sales and land use values in the area. Owners of property to be acquired will be offered and paid fair market value for their property rights.

To soften significant visual impacts associated with the Preferred Alternative, urban design amenities will be implemented along the I-4 corridor. A description of proposed urban design amenities is provided in Section 6.1.15. Detailed information of the urban design amenities proposed for the Preferred Alternative is provided in the *Urban Design Guidelines* (February 2000).

Noise walls have been determined to be reasonable and feasible in several of the neighborhoods with significant impacts. These include Holden Heights, Holden-Parramore, and College Park. The noise walls can mitigate noise impacts associated with the Preferred Alternative. The locations of the reasonable and feasible noise walls is provided on Figure 4-16. Prior to implementing noise walls, a detailed noise evaluation, including the desires of the benefited receptors, will be completed.

6.1.4 Neighborhood and Community Cohesion

The neighborhood and community cohesion impacts are expected to be significant within Segment 2, especially in the vicinity of the I-4/SR 408 (East/West Expressway) interchange.

Adverse effects on neighborhood and community cohesion have been a principal concern since the study began in 1996. FDOT and FHWA coordinated a public outreach effort to gain a clear

understanding of potential mitigation options desired by the affected residents, businesses, and organization in order to help strengthen the community. Extensive public involvement and creative community suggestions regarding design and mitigation measures have led to the protection of, and in many instances the enhancement of, community cohesion. FDOT has conducted over 400 meetings with jurisdictions, neighborhoods, agencies, and special interest groups during the PD&E phase in order to gather public input. As a result, proposed mitigation measures including noise walls, urban design guidelines, pedestrian enhancements, and relocation efforts will help minimize to residential and non-residential effects, and improve the quality of life in each affected neighborhood.

It is anticipated that the interstate improvements, combined with the proposed mitigation plans and design amenities, will help stimulate the urban renewal process in some depressed areas along the I-4 corridor, facilitating new development. The anticipated new development will be fueled, in part, by better neighborhood and community access, improved safety and mobility, provision for maintaining public services, and enhancements to visual and audible environments. The proposed improvements in combination with the urban design amenities are intended to increase property values and improve the quality of life for area residents.

The alternatives that comprise the Preferred Alternative were selected to minimize impacts to neighborhood and community cohesion. In Segment 2, the Kaley-Michigan Exfiltration Alternative was chosen because it had the least number of impacts to residents and businesses.

The SR 408 (East/West Expressway) Interchange Alternative 2B1 was chosen because it provided access to downtown Orlando with the Amelia Street ramps. In addition, the alternative reconfigures the interchange to eliminate the physical barrier between the Griffin Park and Holden-Parramore neighborhoods and open the area to redevelopment. Alternative 2B1 also provides for a westbound Gore Street on-ramp for better access to I-4 from the neighborhoods.

The SR 50 Alternative 2 minimizes impacts to community facilities such as the Salvation Army Community Center and historic resources such as the Colonial Garage.

In Segment 3, the Preferred Alternative results in a limited number of neighborhood and community cohesion impacts. The Typical C Alternative with Exfiltration minimizes impacts to residents and businesses. In addition, the Preferred Alternative maintains access to Pinehurst Avenue. As a result, access to the Calvary Assembly of God is maintained.

To minimize neighborhood and community cohesion impacts and improve the quality of life adjacent to the interstate, the use of urban design treatments, noise barrier walls, enhanced pedestrian access, and relocation efforts in the vicinity of the I-4/SR 408 (East/West Expressway) Interchange are being proposed as part of the Preferred Alternative. These urban design treatments may include:

- Ensuring that bridge structures are architecturally compatible with the design and with all other design elements;
- Reducing visual effect of retaining walls and noise walls using landscaping, texture, color, or lighting;
- Providing landscaping where possible;
- Including aquatic plantings and fountains for stormwater treatment ponds;
- Painting the right-of-way fence to blend into the surrounding context;
- Incorporating public art into appropriate areas;
- Placing utilities underground, where feasible; and
- Ensuring that color and finish of sign columns compliment surrounding vertical structure elements.

Refer to the *Urban Design Guidelines* (February 2000) for a complete description of possible urban design amenities.

Noise walls have been determined to be reasonable and feasible to mitigate noise impacts. The locations of the noise walls are shown on Figure 4-16.

As indicated in Section 6.1.8 and 6.1.9, the Preferred Alternative includes a provision for future development of bikeway, trail, greenway, and pedestrian facilities on cross streets. Future road widening projects within the state have been recommended to include roadway facilities to accommodate bicycle and pedestrian traffic. All interstate overpasses proposed for reconstruction as part of this project have been designed to ensure that all cross streets will have sufficient room to incorporate proposed bikeway, trail, greenway, and pedestrian facilities during future cross street improvement projects. In addition, cross street overpasses proposed for reconstruction will be designed to accommodate proposed bikeway, trail, greenway, and pedestrian facilities.

The pedestrian overpass located just north of the I-4/Kaley Street interchange will not be reconstructed to accommodate the wider interstate facility. However, FDOT has committed to provide funding for sidewalk and pedestrian facilities that allow for pedestrian access from the current overpass location to the Gore Street underpass. FDOT will coordinate with the City of Orlando during the design phase of this project to determine the location of the sidewalk and pedestrian facilities.

As indicated in Section 6.1.2, displacements and relocations as a result of the Preferred Alternative will be mitigated through FDOT's relocation program. Before acquiring right-of-way, all properties are appraised on the basis of comparable sales and land use values in the area. Owners of property to be acquired will be offered and paid fair market value for their property rights.

6.1.5 Environmental Justice

The Preferred Alternative will result in disproportionate environmental justice impacts primarily due to the large number of individuals impacted in Segment 2, a segment with relatively high numbers of minority and low-income residents. This preliminary determination of disproportionate impacts does not take into account any offsetting benefits.

The project impacts that could become an Environmental Justice concern are the neighborhood impacts in Angebilt (BG 144.00-3), Holden Heights (BG 115.00-1, BG 115.00-2), and Holden-Parramore (BG 104.00-1, BG 105.00-1, and BG 105.00-2). The removal of community services in these neighborhoods would likely alter the existing character of the neighborhood. Measures will be undertaken to relocate noted community services within the general neighborhood area.

Those impacts that can and will be mitigated sufficiently would not translate into adverse and disproportionate Environmental Justice impacts. Applicable mitigation is discussed above in Section 6.1.4.

In addition, to the mitigation measures discussed in Section 6.1.4, FDOT will continue the community outreach program during project design and construction to ensure community concerns continue to be addressed. Specifically, the following measures are recommended, particularly in the Environmental Justice target populations.

- Continue to provide a telephone hotline to receive and respond to neighborhood concerns. In particular, this service should be available during active construction periods so that residents have an opportunity to express concerns over any acute problems that may arise in their neighborhoods. At best, this hotline should be available 24 hours per day if construction is planned for evening and early morning hours. If project personnel are not available 24 hours per day, an answering service should be provided to ensure that residents' comments can be received;

- Set up an information booth in the construction vicinity to provide a communication line between construction management and residents. This booth could disseminate information regarding specific construction activities as well as provide residents with the opportunity to express their concerns about construction activity; and
- Provide for direct mailings or community postings of any construction activity that is anticipated to be a particular nuisance (e.g., to inform residents of the period of pile driving in their neighborhood).

The I-4 Project Team has made every effort to identify and address impacts to target populations. The project is expected to have an overall positive and beneficial effect on local and regional transportation needs of target populations by improving access to the surrounding community.

6.1.6 Historic Resources

The Preferred Alternative will adversely affect two historic resources: Griffin Park Historic District and College Park Historic District.

An MOA has been developed among SHPO, FHWA, and FDOT regarding adverse effects to cultural resources and suitable mitigation measures for the Preferred Alternative as part of the FEIS phase of the project. Mitigation measures for historical resource impacts have been coordinated according to the Section 106 process and the agreed upon commitments with SHPO and appropriate consulting parties as documented in the MOA. A copy of the MOA is included in Appendix L.

In addition, FDOT is committed to provide a higher level of urban design treatment for publicly sensitive historic resources that have potential impacts due to the proposed improvements and a determination of no adverse effect. These publicly sensitive historic resources include Lake Cherokee Historic District, Peckham-Phillips House, Downtown Orlando Historic District, Woodford James Maxey House, Parramore Avenue and Conley Street Historic District, and the Eatonville Historic District. Higher levels of urban design treatments may include:

- Ensuring that bridge structures are architecturally compatible with the design and with all other design elements;
- Reducing visual effect of retaining walls and noise walls using landscaping, texture, color, or lighting;
- Providing landscaping where possible;
- Including aquatic plantings and fountains for stormwater treatment ponds;
- Painting the right-of-way fence to blend into the surrounding context;
- Incorporating public art into appropriate areas;
- Placing utilities underground, where feasible; and
- Ensuring that color and finish of sign columns compliment surrounding vertical structure elements.

During the design phase, FDOT will coordinate with the Urban Design Committee. The Urban Design Committee consists of representatives from each of the jurisdictions potentially impacted by the proposed improvements.

6.1.7 Section 4(f) Impacts

As indicated in Section 6.1.6, the Griffin Park Historic District and the College Park Historic District are adversely affected by the Preferred Alternative.

In addition, the Preferred Alternative has a direct use impact on the Harry P. Leu, Inc. and the Downtown Orlando Historic District.

Section 6.1.6 describes the mitigation measures for the adversely affected historic resources and publicly sensitive historic resources.

Based on the Section 4(f) evaluation, there is no feasible and prudent alternative to the use of land from the Griffin Park Historic District, the Harry P. Leu, Inc. and the Downtown Orlando Historic District. The Preferred Alternative includes all possible planning to minimize harm to these Section 4(f) resources resulting from such use. Refer to the *Section 4(f) Evaluation* (August 2002) for detailed information on avoidance alternatives and measures to minimize harm for impacted facilities.

6.1.8 Bicycle, Greenway, and Trail Facilities

The Preferred Alternative will impact 28 existing and proposed bicycle, greenway, and trail facilities.

The Preferred Alternative includes provision for future development of bikeway, trail, and greenway facilities on cross streets. Future road widening projects within the state have been recommended to include roadway facilities to accommodate bicycle and pedestrian traffic.

All interstate overpasses proposed for reconstruction as part of this project have been designed to ensure that all cross streets will have sufficient room to incorporate proposed bikeway, trail, and greenway facilities during future cross street improvement projects. In addition, cross street overpasses proposed for reconstruction will be designed to accommodate proposed bikeway, trail, and greenway facilities.

Construction of the Preferred Alternative is not expected to have significant long-term impacts to any of the bikeway and trail facilities existing or proposed within the Preferred Alternative. FDOT has committed to installing a fence around the limited access right-of-way and stormwater ponds adjacent to the I-4 corridor for the protection of trail users. Any additional fencing requested will be coordinated with the local jurisdictions and FDOT during the design phase of the project. All negative impacts to any of these facilities will only be temporary during construction of the proposed improvements. Temporary re-routings may be required due to construction activities.

A public involvement program will be implemented and maintained during the construction phase to ensure information regarding construction issues reaches the public and to accommodate questions or concerns.

6.1.9 Pedestrian Facilities

The Preferred Alternative will impact 72 sidewalk facilities that cross or are adjacent to I-4. In addition, there is one pedestrian overpass, located in Segment 2, which crosses I-4 and will be impacted by the Preferred Alternative. The pedestrian overpass is located approximately 2,150 feet north of the I-4/Kaley Street interchange. This pedestrian crosswalk connects Indiana Street and Grand Avenue, which leads to the Grand Avenue Elementary School. The pedestrian bridge crossing is a 10-foot wide concrete structure.

The Preferred Alternative includes provision for future development of pedestrian facilities on cross streets. Future road widening projects within the state have been recommended to include roadway facilities to accommodate pedestrian traffic. All interstate overpasses proposed for reconstruction as part of this project have been designed to ensure that all cross streets will have sufficient room to incorporate pedestrian facilities during future cross street improvement projects. In addition, cross street overpasses proposed for reconstruction will be designed to accommodate pedestrian facilities.

The pedestrian overpass located just north of the I-4/Kaley Street interchange will not be reconstructed to accommodate the wider interstate facility. However, FDOT has committed to provide funding for sidewalk and pedestrian facilities that allow for pedestrian access from the current overpass location to Gore Street underpass. FDOT will coordinate with the City of Orlando during the design phase to determine the location of the sidewalk and pedestrian facilities.

Construction of the Preferred Alternative is not expected to have significant long-term impacts to any pedestrian facilities. FDOT has committed to installing a fence around the limited access right-of-way and stormwater ponds adjacent to the I-4 corridor for the protection of pedestrian users. Any additional fencing requested will be coordinated with the local jurisdictions and FDOT during the design phase of the project. All negative impacts to any of the pedestrian facilities will only be temporary impacts during construction of the proposed improvements. Temporary re-routings may be required due to construction activities.

6.1.10 Groundwater

The effect of the Preferred Alternative on area groundwater resources will be minimal.

The Preferred Alternative will adhere to all state requirements for providing stormwater treatment and attenuation per Section 40C-4.302 F.A.C., or local agency regulations if more stringent. The proposed stormwater management systems will be maintained to remain in compliance with state and local agency permitting requirements.

Groundwater resources in the Preferred Alternative will be protected according to the requirements of EPA and the local and state agencies having jurisdiction. Surface runoff discharges to groundwater will be avoided, since stormwater management systems will be constructed to provide the required stormwater treatment and attenuation. Prior to design and construction activities, further coordination with FDEP will be initiated to develop action plans with respect to existing interceptor wells, bridge pilings, borings, stormwater ponds, and other related construction activities. FDOT is also committed to repairing and/or replacing any interceptor wells damaged and/or disturbed due to construction activities.

Management practices that describe spill response procedures and methods to minimize the potential for impacts due to spills will be developed during design and further finalized in construction in accordance with the requirements and regulations of EPA and the local and state agencies having jurisdiction. The EPA requires a National Pollutant Discharge Elimination System (NPDES) General Permit for construction activities that require more than five acres of land disturbance. The Preferred Alternative will adhere to these permit requirements by establishing BMPs and implementing a stormwater management plan.

6.1.11 Surface Water

The water quality impacts in relation to surface waters will be temporary and associated with construction. The proposed improvements will not have any significant long-term effect on the quality of surface waters within the Preferred Alternative. BMPs will be maintained in accordance with Section 40C-4.301, 4.302, FAC, and will be used to minimize water quality impacts during construction and achieve a no-net effect on water quality in the system.

Avoidance, minimization, and compensation measures will be conducted during the design phase of the project to avoid surface and groundwater quality impacts. A stormwater management plan will be established and implemented during construction in accordance with the EPA NPDES General Permit for construction projects with greater than five acres of land disturbance. As required by local and state agencies, stormwater management systems, such as stormwater ponds, are required to be constructed initially, and may serve as sedimentation basins during construction if necessary.

6.1.12 Water Quality

The Preferred Alternative will not have any significant long-term effect on the quality of surface waters and groundwater (Refer to Sections 6.1.10 and 6.1.11). Short-term, construction-related impacts will be minimized to the maximum extent possible through the use of BMPs, control of surface water runoff, and strict adherence to FDOT's *Standard Specifications for Road and Bridge Construction*.

6.1.13 Wetlands

Approximately 19 percent of the total wetland area (82 out of 437 acres) within the Preferred Alternative will be impacted. These impacts will be due to roadway construction or pond construction.

Wetland impacts that will result from the construction of the Preferred Alternative will be mitigated pursuant to Section 373.4137 F.S. to satisfy all mitigation requirements of Part VI, Chapter 373, F.S. and 33 U.S.C. Section 1344. The use of the Section 373.4137 F.S. for mitigation of wetland impacts associated with the Preferred Alternative has been coordinated with USACE, SJRWMD, and SFWMD. Coordination efforts have included sit-down meetings and field reviews with these agencies. At the meetings, potential impacts, minimization techniques, and mitigation measures were discussed. Refer to Section 5.3 for additional information on agency coordination.

Application for the permits will occur during the design phase of the project. Design will occur after the completion of the PD&E study. Impacts to wetlands will be minimized and avoided where possible based on safe and sound engineering and construction practices.

Coordination with the regulatory agencies will continue during the permitting phases of the project. Wetland mitigation concepts will be determined through pre-application meetings with USACE and the water management districts. Typically, mitigation requirements are based on a compilation of wetland parameters including quality, type, function, and size. All of the Preferred Alternative wetlands have been previously impacted by development. Some of the wetlands are man-made. Based on preliminary design, it is determined that there are no practicable alternatives to the proposed construction in these wetland areas, and that avoidance of wetlands has been maximized to the maximum extent possible at this time. Further impact minimization efforts will include detailed design considerations such as steep-ended side slopes or the use of retaining walls to reduce/prevent wetland encroachment. The use of silt screens, hay bales, and other discharge prevention measures during construction will minimize impacts to wetlands within the vicinity of the Preferred Alternative. In addition, during final design, minor alignment shifts will be examined to minimize impacts to wetlands.

6.1.14 Threatened and Endangered Species

No significant impacts to regional populations of protected plant and animal species are anticipated at this time as a result of the Preferred Alternative roadway improvements.

Coordination with federal, state, and local agencies and mitigation planning will continue during the permitting phases of the project.

FDOT will, prior to construction activities, have a qualified biologist survey all the undeveloped lands within the Preferred Alternative footprint, with a focus on appropriate habitat, to determine the presence or absence of the flora species. If new or existing occupied plants are found, the locations of the individual plants will be marked in the field. FDOT will contact USFWS within three days to consult on the potential removal and relocation of the plants to a suitable habitat.

For the Preferred Alternative, survey and assessment efforts will be conducted on all undeveloped lands, with a focus on those habitats of high potential, such as:

- Two large parcels of vacant land located along Segment 1 north of Kirkman Road that contain a diverse assemblage of upland and wetland ecosystems.

If protected species are identified, permits will be obtained, if needed. Prior to construction, the locations of the individual plants will be marked in the field so they can be protected until removed and relocated to a suitable habitat.

Discussions and coordination meetings have taken place with agencies and special interest groups including Orange County, FDOT, Habitat for Bears Campaign, FDEP, FWC, FNAI, and USFWS.

Where federally protected fauna species are determined to be present, the timing and location of construction activities will be in accordance with accepted regulatory guidelines where applicable, and as established with agencies during the permitting process.

6.1.15 Visual

Visual impacts will occur throughout the Preferred Alternative; however, the most significant visual impacts will occur in Segments 1, 2, and 3.

Visual impacts to neighborhoods and commercial centers within this portion of Segment 1 will primarily occur at the I-4/Kirkman Road interchange. At this location, the interchange will be at a higher elevation than the existing interchange.

Segments 2 and 3 will experience the greatest visual impacts of all the segments within the Ultimate and Project Alternative study areas. Neighborhoods, historic resources, and commercial centers located adjacent to the I-4 corridor can expect an increase in the elevation of I-4 from Orange Blossom Trail to Lee Road, the replacement of vegetated sloped embankments with retaining walls, and the roadway closer to the right-of-way.

Options to mitigate the visual impacts of the Preferred Alternative are assessed in the *Urban Design Guidelines* (February 2000). The following is a list of mitigation options that may be used to reduce the visual impacts:

- Ensuring that bridge structures are architecturally compatible with the design and with all other design elements;
- Reducing perceived height of retaining walls using terracing, landscaping, texture, color, or lighting;
- Providing landscaping where possible;
- Including aquatic plantings and fountains for stormwater treatment ponds;
- Ensuring that placement of lighting reflects a relationship with other structural elements;
- Painting the right-of-way fence to blend into the surrounding communities;
- Incorporating public art into appropriate areas;
- Placing utilities underground, where feasible;
- Ensuring that color and finish of sign columns compliment surrounding vertical structure elements; and
- Ensuring close coordination with the public for input.

6.1.16 Noise

A total of 1,494 noise sensitive sites are predicted to experience traffic noise impacts for the Preferred Alternative.

Noise barriers are considered reasonable and feasible at the following noise sensitive areas: NSA 2-E, 2-F, 2-H, 2-I, 2-J, 3-B, 3-C, 3-D, 3-E, and 3-F (refer to Figure 4-16). The implementation of reasonable and feasible noise abatement is contingent upon the Preferred Alternative meeting the following conditions during the final design phase of the project:

- Detailed noise analyses during the final design process support the need for abatement;
- Reasonable cost analyses indicate that the economic cost of the barriers will not exceed the guidelines;
- Community input regarding desires, types, heights, and locations of barriers has been solicited by FDOT;
- Preferences regarding compatibility with adjacent land uses, particularly as addressed by officials having jurisdiction over such land uses, has been noted;
- Safety and engineering aspects as related to the roadway user and the adjacent property owner have been reviewed; and
- Any mitigating circumstances found in Part 2, Chapter 17-4.6.1 of FDOT's *PD&E Manual* have been analyzed.

6.1.17 Contamination

The Preferred Alternative could require partial or total right-of-way acquisition of 21 Medium or High rated sites.

It is recommended that the data accumulated in the project files for all sites within the 600-foot corridor rated No or Low for potential contamination be revisited during final design prior to project right-of-way acquisition and construction. This examination should include an updated review of agency files and the public record to determine if any significant change in status has occurred since the report was prepared.

In addition, a Phase II site assessment will be conducted during the design phase of the project for those sites identified as having a potential to affect the project. Select sampling of the soil and groundwater will be conducted at those sites to help determine the absence or presence of contamination. At a minimum, soil and groundwater investigations will be conducted at those sites affected by project right-of-way acquisition to determine if additional, more in-depth testing is required to identify the actual extent of contamination. A preferred method of testing will be determined on a site-by-site basis during final design.

Resolution of problems associated with contamination will be coordinated with the appropriate regulatory agencies and, prior to right-of-way acquisition, appropriate action will be taken, where applicable.

6.1.17.1 Hazardous Materials/Petroleum Transport

The State of Florida has no designated routes for hazardous materials transport; however, interstate travel is considered to be the safest. Improvements to the interstate will improve safety on the freeway and help to reduce the possibility of accidents and hazardous material spills. A Health and Safety Plan and a Hazardous Materials Management Plan, which describe the spill response procedures and minimize the potential for impacts due to spills, will be developed during the design phase of the project in accordance with the requirements and regulations of EPA and the local and state agencies having jurisdiction. In addition, FDOT is committed to obtaining the necessary permits for storage of hazardous wastes associated with the construction of the Preferred Alternative.

6.1.18 Floodplains

The Preferred Alternative will impact approximately 40 acre-feet of floodplains and one regulated floodway.

Impacts to floodplains may be mitigated using the following measures:

- Stormwater management ponds; and
- Excavating existing fill adjacent to the interstate.

Potential impacts to the regulated floodway, Shingle Creek, will be mitigated during the design phase of the project. As part of the proposed improvements, a bridge will be constructed over Shingle Creek. The construction of the bridge will include the placement of bridge piles within the floodway to accommodate the roadway widening. The piles will be placed and oriented so that no impact to this floodway will occur. A hydraulic analysis will be conducted during final design to determine if there will be any encroachment into the floodway due to the bridge piers. Any impacts to the floodway will be permitted through Orange County and FEMA. A discussion of the permits required is included in Section 6.1.20.

6.1.19 Utilities

The Preferred Alternative will impact 113 existing utilities within the project corridor. Refer to Table 4-34 for information on the impacted existing utilities.

Most utility companies have technologies to alter facilities without inconveniences to the customers. However, to the extent feasible, mitigation measures for utility disruptions will include:

- Maintaining utility connections in temporary locations;
- Minimizing the time without service;
- Installing alternative service before disconnecting the existing service; and
- Allowing service disruption only during periods of non-usage or minimum usage.

6.1.20 Required Permits

FDOT is committed to obtaining required permits from federal and state regulatory agencies prior to the construction of the Preferred Alternative. Permits will be required for wetland impacts, stormwater discharge, and treatment and attenuation.

FDOT has sovereign immunity from local permits within its jurisdiction and, therefore, the Preferred Alternative will not require permits from Orange County. Complying with all federal and state regulations concerning impacts to wetlands and water resources will satisfy county ordinances pertaining to such impacts.

A list of the potential permits required prior to commencement of construction for the Preferred Alternative is as follows:

Potentially Required Permits	Issuing Agency	Review and Commenting Agencies	Jurisdiction
Federal Dredge and Fill Permit, filed jointly with Environmental Resource Permit (ERP)	USACE	USFWS, EPA	Federal
NPDES General Permit	EPA	none	Federal
No-Rise Certification, or a Conditional Letter of Map Revision (CLOMR)	FEMA, Orange County	none	Federal
Protected Wildlife Take Permit (<i>not anticipated to be needed</i>)	USFWS	none	Federal
Protected Wildlife Take Permit (<i>not anticipated to be needed</i>)	FWC	none	State
ERP	SJRWMD, SFWMD	FDHR, FDEP	State
Water Use Permit (dewatering)	SJRWMD, SFWMD	none	State

6.1.21 Construction Impacts

The construction activities for the Preferred Alternative will result in temporary air, noise, water quality, traffic flow, and visual impacts for those residents, businesses, and travelers within the vicinity of the construction areas of the proposed improvements.

Construction impacts will be minimized to the maximum extent possible by adherence to all state and local regulations and the FDOT's *Standard Specifications for Road and Bridge Construction*. Detailed minimization techniques that will be employed are described in Section 4.8.

6.1.22 Other Commitments

The following is a description of other measures FDOT is committed to as part of the Preferred Alternative.

6.1.22.1 Special Use Lanes

FDOT is committed to reassess and define the appropriate operational use for the special use lanes (SULs) based on technical, regulatory, and public input as implementation of the Ultimate improvements on I-4 progress. Such re-assessments will include transportation and mobility effects as well as any environmental impact changes.

6.1.22.2 Cogon Grass

Prior to construction, the Preferred Alternative project limits will be inspected for the presence of cogon grass (*Imperata cylindrica*). If infestations are found, they will be eradicated with the "Soil Sterilization Treatment" under the provisions of Section 579 of the FDOT's *Standard Specifications for Road and Bridge Construction*.

6.2 Recommendations

FDOT recommends the improvements to the 15.4-mile section of I-4 from just south of Kirkman Road (SR 435) to just north of Maitland Boulevard (SR 414) in Orange County. This recommendation is based on input from the community, coordination with local governments and other agencies, and engineering and environmental analyses conducted as part of the PD&E study. The proposed improvements are anticipated to provide additional mobility options, enhance traffic safety, and enhance general use lane operations.

As indicated in Chapter 1, at the initiation of the I-4 PD&E Study – Section 2, the LRTPs for METROPLAN ORLANDO and the Volusia County MPO included the proposed improvements to I-4 from just west of the SR 528 (Bee Line Expressway) interchange in Orange County to just east of the SR 472 interchange in Volusia County. However, the 2020 LRTP Update and Refinement performed by METROPLAN ORLANDO and the Volusia County MPO, respectively, identified additional financial constraints, which dictated that the Ultimate improvements for I-4 not be included in the cost feasible plan for 2020. Therefore, METROPLAN ORLANDO reduced the limits of the Ultimate improvements on I-4 to include the segment extending from Kirkman Road to Maitland Boulevard in Orange County (identified as the Preferred Alternative).

6.2.1 Rationale for Selection of the Preferred Alternative

The basic improvements for the Preferred Alternative involve reconstruction of existing I-4 and implementation of the following:

- Six general use lanes, three in each direction;
- Two HOV lanes, one in each direction;
- Auxiliary lanes between interchanges as needed for traffic operations;

- Reconstruction of arterial interchanges along I-4 including:
 - Kirkman Road
 - Orange Blossom Trail (US 441)
 - Michigan Street
 - Kaley Street
 - Anderson Street
 - South Street
 - Robinson Street (SR 526)
 - Amelia Street
 - SR 50 (Colonial Drive)
 - Ivanhoe Boulevard
 - Princeton Street (SR 438)
 - Par Street
 - Fairbanks Avenue (SR 426)
 - Lee Road (SR 423)
 - Maitland Boulevard (SR 414)
- Construction of drainage and retention pond facilities; and
- Mitigation components identified to ameliorate significant impacts.

As part of the DEIS, viable Ultimate Build Alternatives were proposed within the Preferred Alternative limits. These viable Ultimate Build Alternatives included:

- Kaley-Michigan Stormwater Treatment Alternatives
- I-4/SR 408 Interchange and Downtown Access Alternatives
- I-4/SR 50 (Colonial Drive) Alternatives
- College Park Typical Section and Stormwater Treatment Alternatives

The following discussions provide a recommendation along with the rationale for the recommendations related to the Preferred Alternative for each of the above locations.

6.2.1.1 Kaley-Michigan Stormwater Treatment Alternatives

Two alternatives were carried in the DEIS for this portion of the I-4 corridor:

- Kaley-Michigan Pond
- Kaley-Michigan Exfiltration

The assessment of these alternatives indicated that the Kaley-Michigan Pond alternative impacted more businesses (22 versus 9), more residential dwelling units (29 versus 21), more total parcels impacted (62 versus 44), and higher project costs than the Kaley-Michigan Exfiltration Alternative.

Given the lower impacts and costs for the Kaley-Michigan Exfiltration Alternative, this alternative was included as part of the Preferred Alternative.

6.2.1.2 I-4/SR 408 Interchange Alternatives

Five alternatives were carried in the DEIS for this interchange area:

- Alternative 1A1 - Ramp Tunnel with Amelia Street Access
- Alternative 1A2 - Ramp Tunnel without Amelia Street Access
- Alternative 2B1 - Ramp Flyover with Amelia Street Access
- Alternative 2B2 - Ramp Flyover without Amelia Street Access
- Alternative 4 - Griffin Park Avoidance Alternative

In general, Alternative 4 had the least impacts and Alternatives 2B1 and 2B2 had slightly greater impacts of the five alternatives evaluated. The primary impacts associated with the alternatives were related to historic resources, most notably the Griffin Park Historic District.

As indicated in Section 2.5.2.2, an extensive coordination effort was undertaken to identify potential solutions to the transportation needs in the downtown Orlando area. A technical group of primary stakeholders was assembled to assist in the development and assessment of alternatives for the

I-4/SR 408 (East/West Expressway) interchange. Participating parties included representatives from FDOT, City of Orlando, Orange County, Orlando-Orange County Expressway Authority, Orlando Housing Authority, Downtown Development Board, and Orlando Community Redevelopment Agency. Through these efforts, Alternatives 1A1, 1A2, 2B1, and 2B2 were developed.

In addition, significant community outreach was undertaken as a part of the alternatives development. As the technical group defined concepts and alternatives, coordination with neighborhoods, community agencies, and historic interests was accomplished, which resulted in further refinements of the alternatives. In general, the conclusions of the stakeholders group indicated the following:

- Alternative 4, although avoiding direct use impacts to the Griffin Park area, was not consistent or acceptable to the City of Orlando due to sustaining impacts to access and economic opportunity in this area of downtown. Furthermore, Alternative 4 was not consistent and did not support redevelopment plans of the City and the Orlando Housing Authority.
- Alternatives 1A1 and 1A2 involved the use of a short tunnel for one of the ramp movements. The Orlando-Orange County Expressway Authority did not support Alternatives 1A1 and 1A2 due to maintenance and operation concerns. These alternatives are also more costly than the Flyover Alternatives (Alternatives 2B1 and 2B2), given the construction requirements of the tunnel.
- The City of Orlando indicated a strong support for alternatives that include the I-4 access ramps at Amelia Street. Based on traffic circulation assessments, the City indicated that this access is essential for downtown traffic circulation.
- Furthermore, through deliberations after circulation of the DEIS, the City of Orlando and the Orlando Housing Authority have indicated their specific preference for the Flyover Alternatives, and most specifically with the City, Alternative 2B1.

Given the wide range of support for the Flyover Alternatives, the importance of the Amelia Street access, and the land use incompatibility of Alternative 4; Alternative 2B1 was included as part of the Preferred Alternative.

6.2.1.3 I-4/SR 50 (Colonial Drive) Alternatives

Two alternatives were carried in the DEIS for the SR 50 improvements:

- Alternative 1 – Judge Cheney Avoidance, improve SR 50 to south
- Alternative 2 – Colonial Garage Avoidance, improve SR 50 to the north

Alternative 1 had higher impacts compared to Alternative 2. Most notably, Alternative 1 resulted in an adverse effect to the Colonial Garage (eligible for listing on the NRHP) and the alternative impacted two buildings within the Salvation Army campus west of I-4. Alternative 2 impacted several businesses and required right-of-way near the NRHP-eligible Judge Cheney house. However, coordination with SHPO indicated that Alternative 2 did not involve adverse effects to this resource. The City of Orlando indicated support for Alternative 2.

Given the lower impacts with Alternative 2 and the local government support for Alternative 2, this alternative was included as a part of the Preferred Alternative.

6.2.1.4 College Park Typical Section and Stormwater Treatment Alternatives

Four alternatives were carried in the DEIS for the College Park area improvements:

- Typical Section C Ponds
- Typical Section C Exfiltration

- Typical Section F' Ponds
- Typical Section F' Exfiltration

The Typical Section F' alternatives involved maintaining the existing centerline alignment of I-4, which in turn created impacts to Matthews Park, which is owned by the City of Orlando. The Typical Section F' alternatives also required more new right-of-way, impacted more parcels, relocated more businesses, and relocated more residential dwellings than the respective Typical Section C alternatives. In contrast, the Typical Section F' alternatives were less costly than the Typical Section C alternatives.

The impact comparisons of the Pond alternatives versus the Exfiltration alternatives indicated that the Pond alternatives have more impacts. Most notably, the Pond alternatives involved 79 to 97 more residential dwelling unit relocations than the Exfiltration alternatives. In addition, the Exfiltration alternatives were less costly.

Given the Section 4(f) impacts at Matthews Park associated with the Typical Section F' alternatives, these alternatives were eliminated as part of the Preferred Alternative. In consideration of the lower cost and fewer impacts of the Exfiltration alternatives, the Typical Section C Exfiltration Alternative was included as part of the Preferred Alternative.

6.2.2 Summary of Preferred Alternative

The preliminary concept plans, submitted as part of the *Preliminary Engineering Report* (June 2002), illustrate the proposed alternatives that are being carried forward as part of the FEIS. The preliminary concept plans include proposed alternatives for the entire 43-mile project corridor. However, this section only provides a summary of the proposed improvements within the limits of the Preferred Alternative. For a detailed description of the Preferred Alternative, refer to Section 2.9.2. For a description of the proposed improvements outside the limits of the Preferred Alternative, refer to Section 2.6.

The preliminary concept plans for the Preferred Alternative are composed of three main components, which consist of the I-4 mainline improvements (both GUL and HOV lanes), interchanges for the GUL system, and interchanges for the HOV system. In addition, the proposed improvements to the I-4/SR 408 (East/West Expressway) interchange will impact the SR 408 (East/West Expressway) mainline.

Typical section C is being proposed for the entire length of the Preferred Alternative. Typical section C provides three GULs in each direction, one barrier-separated 34-foot HOV facility in each direction, and a 44-foot rail corridor in portions of the Preferred Alternative project corridor. To satisfy operational requirements such as lane balance, additional auxiliary lanes are also proposed.

The proposed Preferred Alternative is summarized by segment in the following sections and is provided in Table 2-9.

6.2.2.1 Segment 1

The limits of the Preferred Alternative begin within the Segment 1 limits and extend from just south of Kirkman Road to John Young Parkway. The following is a summary of the Preferred Alternative for Segment 1:

I-4 Mainline Improvements

Proposed improvements to the I-4 mainline include:

- Providing three GULs, one HOV lane, and one auxiliary lane in each direction;
- Providing a 44-foot rail corridor east of the Kirkman Road interchange to the end of the Segment 1 limits;

- Providing retention ponds to treat stormwater runoff; and
- Tying into the existing conditions at the Universal Boulevard interchange.

GUL Interchange Improvements

Improvements to the GUL interchanges within Segment 1 include:

- Kirkman Road – Replacing existing interchange with a partial access four-level directional interchange with one loop ramp;
- Florida’s Turnpike – Existing interchange configuration will remain the same; and
- Conroy Road – Existing interchange configuration will remain the same.

HOV Interchange Improvements

The Preferred Alternative will provide HOV interchanges at the following locations:

- Kirkman Road – Providing HOV slip ramps south of the Kirkman Road interchange. These slip ramps signify the start/end of the HOV system;
- Kirkman Road – Providing full directional HOV direct access ramps at the Kirkman Road interchange; and
- Conroy Road – Providing full directional HOV slip ramps at the Conroy Road interchange.

6.2.2.2 Segment 2

The following is a summary of the Preferred Alternative for Segment 2:

I-4 Mainline Improvements

Proposed improvements to the I-4 mainline include:

- Providing three GULs, one HOV lane, and one auxiliary lane in each direction;
- One additional auxiliary lane will be provided in portions of Segment 2 for lane balance;
- Providing a 44-foot rail corridor to approximately 2,600 feet south of Rio Grande Avenue. The 44-foot rail corridor will then be closed for the remaining portion of Segment 2; and
- Providing a combination of retention ponds and exfiltration to treat stormwater runoff.

Proposed improvements in Segment 2 will also impact the SR 408 (East/West Expressway) mainline. These impacts affect interchanges along SR 408 (East/West Expressway) from Tampa Street to Bumby Avenue.

GUL Interchange Improvements

Improvements to the GUL interchanges within Segment 2 include:

- John Young Parkway – Maintaining the approved interchange concept;
- Orange Blossom Trail – Modifying the westbound left-side exit to a right-side exit. Maintaining all other movements;
- Michigan Street/Kaley Street – Combining Michigan Street and Kaley Street into a full access, inverted diamond interchange. Providing two-lane, one-way frontage road connections between Kaley and Michigan with U-turns. Interchange modifications will require closure of Unitah Avenue at Michigan Street and Tallokas Avenue at Kaley Street. In addition, Avondale Avenue will be closed at Kaley Street and from Miller Street to Indiana Street;

- SR 408 (East/West Expressway) – Providing a full access directional four-level interchange with loop ramp and flyover ramp;
- Gore Street – Eliminating I-4 westbound off-ramp. The I-4 westbound on-ramp will be provided. The westbound Gore Street on-ramp will result in the closure of Avondale Avenue from Columbia Street to Miller Street. Avondale Avenue will be reopened at Gore Street;
- Hughey Avenue/Garland Avenue – Providing direct access ramp from eastbound I-4 to Garland Avenue and from Hughey Avenue to westbound I-4;
- Anderson Street – Modifying existing interchange to a partial access diamond interchange for westbound I-4 to Anderson Street and Anderson Street to eastbound I-4. Relocating Anderson Street and providing a two-way street from Orange Avenue to Division Avenue;
- Robinson Street – Eliminating eastbound I-4 off-ramp and westbound I-4 on-ramp;
- Amelia Street – Modifying existing interchange to a partial access diamond interchange for eastbound I-4 to Amelia Street and Amelia Street to westbound I-4; and
- SR 50 (Colonial Drive) – Replacing existing interchange with a full access single point interchange. Providing direct access to Hughey Avenue and Garland Avenue. Garland Avenue converted to one-way north of SR 50. Hughey Avenue will be realigned between Concord Street and SR 50. Interchange modifications will result in closure of Concord Street at Garland Avenue.

HOV Interchange Improvements

The Preferred Alternative will provide HOV interchanges at the following locations:

- Orange Blossom Trail – Providing HOV slip ramps to and from the HOV system at the Orange Blossom Trail interchange; and
- South Street – Modifying existing interchange to a full access diamond interchange for HOV access only. Providing a two-way street from Orange Avenue to Division Street.

6.2.2.3 Segment 3

The following is a summary of the Preferred Alternative for Segment 3:

I-4 Mainline Improvements

Proposed improvements to the I-4 mainline include:

- Providing three GULs, one HOV lane, and one auxiliary lane in each direction;
- Closing 44-foot rail corridor throughout Segment 3; and
- Providing exfiltration to treat stormwater runoff with the exception of the Ivanhoe Boulevard interchange. At this interchange, a combination of exfiltration and retention ponds will treat stormwater.

GUL Interchange Improvements

Improvements to the GUL interchanges within Segment 3 include:

- Ivanhoe Boulevard – Modifying the existing interchange to a partial access directional interchange for westbound I-4 to Ivanhoe Boulevard and Ivanhoe Boulevard to eastbound I-4;
- Princeton Street – Existing interchange configuration will remain the same. Interchange modifications will acquire right-of-way on Cornell Avenue south of Princeton Street and Dade Avenue north of Princeton Street;

- Par Street - Existing interchange configuration will remain the same. Interchange modifications will close Cornell Avenue at Par Street; and
- Fairbanks Avenue - Existing interchange configuration will remain the same.

HOV Interchange Improvements

The Preferred Alternative will provide an HOV interchange at the following location:

- Ivanhoe Boulevard - Providing HOV direct access ramps to and from the east.

6.2.2.4 Segment 4

The limits of the Preferred Alternative end within the Segment 4 limits and extend from just south of Lee Road to just north of Maitland Boulevard. The following is a summary of the Preferred Alternative for Segment 4:

I-4 Mainline Improvements

Proposed improvements to the I-4 mainline include:

- Providing three GULs, one HOV lane, and one auxiliary lane in each direction;
- Closing 44-foot rail corridor within this portion of Segment 4;
- Providing retention ponds to treat stormwater runoff with the exception of south of Lee Road to the Lee Road interchange. At this location, exfiltration will treat stormwater runoff; and
- Tying into the existing north of Maitland Boulevard interchange.

GUL Interchange Improvements

Improvements to the GUL interchanges within Segment 1 include:

- Lee Road - Existing interchange configuration will remain the same; and
- Maitland Boulevard - Replacing existing interchange with loop ramps in northeast and southwest quadrants. Directional unsignalized left-turn ramps from Maitland Boulevard to westbound and eastbound I-4.

HOV Interchange Improvements

The Preferred Alternative will provide HOV interchanges at the following locations:

- Lee Road - Providing HOV slip ramps to and from the west north of the Lee Road interchange; and
- Maitland Boulevard - Providing HOV slip ramps north of the Maitland Boulevard interchange. These slip ramps signify the start/end of the HOV system.

Chapter 7

List of Preparers



7. List of Preparers

7.1 Federal Highway Administration

James E. St. John Division Administrator	B.S. degree in Civil Engineering, M.S. degree in Interdisciplinary Studies, and 31 years experience in highway engineering.
Derek A. Fusco, P.E. Transportation Engineer	B.S. degree in Civil Engineering and 14 years experience in highway engineering and transportation-related projects.

7.2 Florida Department of Transportation – District 5

Frederick Birnie, P.E. <i>(with FDOT through January 2002)</i> District Environmental Management Office Engineer	B.S. degree in Engineering, M.S. degree in Business Administration and 15 years experience in highway engineering.
Robert Cortelyou, P.E. District Director of Production	B.S. degree in Civil Engineering and 25 years experience in highway engineering.
Noranne Downs, P.E. District Design Engineer	B.S. degree in Civil Engineering and 19 years experience in drainage for transportation-related projects.
Robert Gleason District Environmental Administrator	M.S. degree in Hydrology and 22 years experience in environmental studies for a variety of highway projects.
Michael Snare, P.E. Interstate Program Manager	B.S. degree in Civil Engineering and 19 years experience in highway engineering.
Michael Snyder, P.E. District Secretary	B.S. degree in Engineering and 30 years experience in highway engineering.
Harold Webb Project Manager	41 years experience in highway engineering.

7.3 URS Team

7.3.1 URS Corporation

Wafic Armoush, P.E. Structures	B.S. degree in Civil Engineering and 24 years experience in structural engineering.
Jane F. Burner, ASLA, AICP Urban Design	B.S. degree in Landscape Architecture and 23 years experience in planning and site development.
Mike Coleman, P.E. Conceptual Design	ICS (Engineering Degree Equivalent) in Civil Engineering and 46 years experience in transportation planning and design.
Kevin Doyle Parks & Recreational Facilities	B.S. degree in Agriculture and 19 years experience providing environmental/social assessments.

Jan Everett, P.E. Contract Administration, Quality Assurance	M.S. degree in Civil Engineering and 24 years experience in highway and transportation projects.
Jim Gilman, RLA Urban Design	B.L.A. degree (Bachelor of Landscape Architecture) and 7 years experience in planning and site development.
Steve Hart, P.E. Drainage	B.S. degree in Civil Engineering and 32 years experience in drainage design.
Michael A. Kenney, CHMM, QEP Air Quality and Noise Impact Scientist	M.S. degree in Environmental Engineering and 21 years experience in pollution assessment.
Marty Peate, AICP Parks & Recreational Facilities	M.S.P. degree in Environmental Planning and Resource Management and 11 years experience in environmental planning.
Chris Rizzolo, P.E. Conceptual Design, Engineering Reports	B.S. degree in Civil Engineering and 8 years experience in highway engineering.
Tom Ross Traffic Analysis, ITS	B.S. degree in Civil Engineering and 12 years experience in traffic engineering.
Mike Sadeghi, P.E. Preliminary Engineering Coordinator	B.S. degree in Civil Engineering and 21 years experience in highway engineering.
Michael Darby Senior CADD Technician	A.S. degree in Computer Technology and 18 years experience in CADD.
Carey Goldin CADD Technician	16 years experience in CADD.
Trey Rapp Graphic Designer	15 years experience in graphic design.

7.3.2 CH2M HILL

Carol Barker, P.E. Drainage	B.S. degree in Civil Engineering and 16 years experience in drainage design.
Jim Bays Ecologist	M.S. degree in Environmental Engineering Science and 16 years experience in ecological assessment.
Mark Callahan, P.E. Vice President, Senior Consultant	B.S. degree in Civil Engineering and 20 years experience in highway and transportation engineering.
Sandra Gutierrez Project Engineer	B.S. degree in Civil Engineering and 4 years experience in environmental analysis and document preparation.
Tara Jones, P.E. Assistant Project Coordinator, Project Engineer	B.S. degrees in Civil/Environmental Engineering and 4 years experience in environmental analysis and document preparation.

Martha Klein Environmental Scientist	M.S. degree in Earth Science and Hydrogeology and 9 years experience in wetland delineation.
Jean Koch Senior Technical Editor	B.S. degree in Business Administration and 15 years experience in environmental document preparation.
Rose Lovell Document Layout and Production	A.S. degree in Computer Applications and Programming and 7 years experience in document production.
F. Didier Menard Traffic Analysis, Cost Estimating, and Data Collection	B.S. degree in Civil Engineering and two years experience.
Tawny Olore, P.E. Project Manager, Lead Project Coordinator	M.S. degree in Civil Engineering and 13 years experience in environmental assessment and impact analysis of highway projects.
Richard Oujevolk, P.E. Traffic Analysis	B.S. degree in Civil Engineering and 15 years experience in transportation engineering.
Patty Perkins CADD Technician	Expert in CAD software and 15 years experience in civil/site design.
Rosanne Prager Professional Wetland Scientist	B.S. degree in Biology and 18 years experience in wetland and ecological studies.
Karen Snyder, P.E. Drainage	B.S. degree in Civil Engineering and 7 years experience in highway and drainage design.
Amy Stewart, P.E. Drainage	M.S. degree in Civil Engineering and 12 years experience in water resources and drainage design.
Cassandra Yarbrough Graphic Designer	B.A. degree in Graphic Design and 2 years experience in graphic design.

7.3.3 Geotechnical and Environmental Consultants, Inc.

Bryant Marshall, P.E. Chief Engineer	M.S. degree in Civil Engineering and 27 years experience in geotechnical engineering.
Richard P. McCormick Project Geologist, Environmental Scientist	B.S. degree in Environmental Earth Science and 7 years experience in geological and environmental investigations.

7.3.4 Geotechnical Professional Associates, Inc.

Shelley B. Gisclar, P.E. President, Project Manager	B.S. degree in Civil Engineering and 17 years experience in geotechnical engineering and project management.
Christopher P. Meyer, P.E. Senior Project Engineer	M.S. degree in Civil Engineering and 10 years experience in geotechnical engineering.
Tammy Schiess, P.E. Project Engineer	B.S. degree in Civil Engineering and 7 years experience in geotechnical engineering.

7.3.5 Archaeological Consultants, Inc.

Marion Almy President	M.A. degree in Archaeology and 25 years experience in cultural resources management, archaeological investigations, and historical research.
Kimberly Hinder Architectural Historian	M.A. degree in Historic Preservation and 5 years experience in architectural history and historic preservation planning.

7.3.6 Janus Research

Amy M. Streelman Senior Architectural Historian	M.A. degree in Historic Preservation and 5 years experience in architectural history and historic preservation planning.
Kenneth W. Hardin President, Project Manager	M.A. degree in Archaeology and 20 years experience in project management and dissemination of research.

7.3.7 Environmental Management and Design, Inc.

Elizabeth Barker Senior Environmental Scientist	B.S. degree in Zoology and 15 years experience in ecosystem management studies, biological assessments, and environmental permitting.
Kathleen Hale President	B.S. degree in Botany and over 30 years experience in environmental permitting and wetland and impact evaluations.

7.3.8 DKS Associates, Inc.

C. William Ockert, P.E. Project Engineer	M.S. degree in Civil Engineering and 40 years experience in transportation planning and traffic engineering.
Jerry Wentzell, P.E. Project Manager	M.S. degree in Civil Engineering and 30 years experience in traffic engineering.

7.3.9 Transportation Engineering, Inc.

Kent L. Black, P.E. Director of Planning	M.S. degree in Civil Engineering and 17 years experience in traffic engineering and transportation planning.
Luis E. Diaz, P.E. Planning Manager	M.S. degree in Civil Engineering and 16 years experience in traffic engineering and transportation planning.
Colleen T. Jarrell Project Manager	B.S. degree in Environmental Engineering and 6 years experience in traffic engineering and transportation planning.
Garth Lynch, E.I. Project Engineer	B.S. degree in Civil Engineering and 4 years experience in traffic engineering and transportation planning.

7.3.10 Ardaman & Associates

Ernest A. Cox, III, P.E. Senior Project Manager	M.S. degree in Geotechnical Engineering and 30 years experience as a consulting geotechnical engineer for a variety of transportation projects.
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7.3.11 Keith and Schnars, P.A.

Wendy Goldstein Senior Graphic Designer	A.A. degree in Art/Drafting and 17 years experience in graphic design.
Derek D. Hudson Public Involvement Specialist	B.S. degree in Physical Science, 15 years of experience in public relations.
D. Elaine Laycock Public Involvement Specialist	B.S. degree in Environmental Engineering with 16 years experience.
Vicki L. Smith, P.E. Regional Director, Project Manager	B.S. degree in Civil Engineering and 21 years experience in project development and environmental studies.
Jeffrey R. Tanner Public Involvement Specialist	B.S. degree in Advertising Communication with 8 years experience in marketing and public relations.

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Chapter 8

List of Agencies, Organizations,
and Persons to Whom Copies
of the Statement are Sent



8. List of Agencies, Organizations, and Persons to Whom Copies of the Statement are Sent

8.1 Federal Agencies

Advisory Council on Historic Preservation, Office of Cultural Resources Preservation (1)

Colorado State University, The Libraries, Documents Librarian (1)

U.S. Department of Agriculture

- Natural Resources Conservation Service, State Conservationist (1)

U.S. Department of Commerce

- National Marine Fisheries Service, Southeast Regional Office (1)
- National Marine Fisheries Service, Habitat Conservation Division (1)
- National Oceanic and Atmospheric Administration, Ecology and Conservation Office (1)

U.S. Department of Defense

- U.S. Army Corps of Engineers, Regulatory Branch, District Engineer (2)

U.S. Department of Health and Human Services

- Center of Environmental Health and Injury Control, Centers for Disease Control (1)
- Office of Management Analysis and Systems, Environmental Officer (1)

U.S. Department of Housing and Urban Development

- Southeast Region, Regional Environmental Officer (1)

U.S. Department of Interior

- Bureau of Indian Affairs, Office of Trust Responsibilities, Environmental Services (1)
- Bureau of Land Management, Eastern States Office (1)
- National Park Service, Southeast Regional Office (1)
- Office of Environmental Policy and Compliance, Director (6)
- U.S. Fish and Wildlife Service, Jacksonville Field Office, Field Supervisor (1)
- U.S. Geological Survey, Environmental Affairs Program, Chief (1)

U.S. Department of State

- Office of Environment, Health and Natural Resources, OES-E (1)

U.S. Department of Transportation

- Federal Aviation Administration, Airport District Office (1)
- Federal Aviation Administration, Southern Region, Regional Director (1)
- Federal Highway Administration, Division Administrator (1)
- Federal Railroad Administration, Office of Economic Analysis, Director (1)
- U.S. Coast Guard, Seventh District, Commander (2)

U.S. Environmental Protection Agency

- Program Development Management Branch, NEPA Compliance Division (5)
- Region IV, Regional Administrator (5)

U.S. Federal Emergency Management Agency

- Associate General Counsel for Insurance and Mitigation (1)
- Natural Hazards Branch, Chief (1)

8.2 State Agencies

Executive Office of the Governor

- Florida State Clearinghouse, Intergovernmental Affairs Policy Unit (15)

Florida Department of State, Division of Historical Resources (1)

Florida Department of Transportation – District 5, District Secretary (5)

8.3 Regional Agencies

East Central Florida Regional Planning Council, Executive Director (1)

METROPLAN ORLANDO, Chairman (1)

South Florida Water Management District, Executive Director (1)

St. Johns River Water Management District, Executive Director (1)

Volusia County Metropolitan Planning Organization, Staff Director (1)

8.4 County and Local Agencies/Jurisdictions

Orange County

- Board of County Commissioners, Chairman (1)
- Planning Division, Chief Planner (1)
- Public Library - Downtown Branch (1)
- Public Works, Director (1)

Seminole County

- Board of County Commissioners, Chairman (1)
- Planning and Development Department, Director (1)
- Public Works, Director (1)

Volusia County

- Board of County Commissioners, Chairman (1)
- Planning Division, Director (1)
- Public Works, Director (1)

City of Altamonte Springs, Growth Management, Director (1)

City of DeBary, Planning Department, Director (1)

City of Deltona, Planning Services Division, Director (1)

Town of Eatonville, Planning Department, Director (1)
City of Lake Mary, Planning Department, Director (1)
City of Longwood, Planning Department, Director (1)
City of Maitland, Planning Department, Director (1)
City of Orange City, Planning Division, Director (1)
City of Orlando, Downtown Development Board, Director (1)
City of Orlando, Transportation Planning Bureau, Chief Planner (1)
City of Sanford, Engineering and Planning Department, Director (1)
City of Winter Park, Planning and Community Development, Director (1)

8.5 Other

Micosukee Tribe of Indians of Florida, Business Committee, Chairman (1)
Muscogee (Creek) Nation of Oklahoma, Principal Chief (1)
Poarch Band of Creek Indians, Chairman (1)
Seminole Nation of Oklahoma, Principal Chief (1)
Seminole Tribe of Florida, Chairman (1)
Rollins College Olin Library, Government Documents Librarian (1)
University of Central Florida Library, Reference Librarian (1)

8. Recipients of Executive Summary

8.1 State Agencies

Florida Department of Transportation

- District 1, District Secretary (1)
- District 5, District Secretary (5)
- Turnpike District, District Secretary (1)

8.2 Regional Agencies

Orlando-Orange County Expressway Authority (1)

Seminole County Expressway Authority (1)

8.3 County Agencies

Orange County, Office of Emergency Management, Director (1)

Orange County, Parks and Recreation, Director (1)

Orange County, Utilities Department, Director (1)

Orange County, Environmental Protection Department, Director (1)

8.4 Others

8.4.1 U.S. Legislators

U.S. Senators

The Honorable Bob Graham (1)

The Honorable Bill Nelson (1)

U.S. Representatives

The Honorable Corrine Brown, District 3 (1)

The Honorable Clifford Stearns, District 6 (1)

The Honorable John Mica, District 7 (1)

The Honorable Ric Keller, District 8 (1)

The Honorable David Weldon, District 15 (1)

8.4.2 State Elected Officials

The Honorable Jeb Bush, Governor (1)

State Senators

The Honorable Lee Constantine, District 9 (1)

The Honorable Anna Cowin, District 11 (1)

The Honorable Daniel Webster, District 12 (1)

The Honorable Buddy Dyer, District 14 (1)

The Honorable Locke Burt, District 16 (1)

State Representatives

The Honorable Carey Baker, District 25 (1)

The Honorable Joyce Cusack, District 26 (1)

The Honorable Bob Allen, District 32 (1)

The Honorable Tom Feeney, District 33 (1)

The Honorable David Meador, District 34 (1)

The Honorable Allen Trovillion, District 36 (1)

The Honorable David Simmons, District 37 (1)

The Honorable Fred Brummer, District 38 (1)

The Honorable Gary Siplin, District 39 (1)

The Honorable Andy Gardiner, District 40 (1)

The Honorable Randy Johnson, District 41 (1)

8.4.3 Local Elected Officials

City of Altamonte Springs Mayor, The Honorable Russel Hauck (1)

City of DeBary Mayor, The Honorable Carmen Rosamonda (1)

City of Deltona Mayor, The Honorable John Masiarczyk (1)

Town of Eatonville Mayor, The Honorable Anthony Grant (1)

City of Lake Mary Mayor, The Honorable Thomas Greene (1)

City of Longwood Mayor, The Honorable Paul Lovestrand (1)

City of Maitland Mayor, The Honorable Sascha Rizzo (1)

City of Orange City Mayor, The Honorable Albert "Ted" Erwin (1)

City of Orlando Mayor, The Honorable Glenda E. Hood (1)

City of Sanford Mayor, The Honorable Larry A. Dale (1)

City of Winter Park Mayor, The Honorable Roland F. Hotard (1)

8.4.4 Chambers of Commerce

African-American Chamber of Commerce, Executive Director (1)

Hispanic Chamber of Commerce of Central Florida, Executive Director (1)

Maitland Area Chamber of Commerce, Executive Director (1)

Orlando Regional Chamber of Commerce, Executive Director (1)

8.4.5 Environmental Interest Groups

1000 Friends of Florida, Executive Director (1)

Florida Audubon Society, Vice President (1)

Friends of the Wekiva River, Executive Director (1)

Sierra Club Central Florida Group, Executive Director (1)

8.4.6 Other Interest Groups

Environmental Advisory Committee (10)

Project Advisory Group (10)

Chapter 9

Index



9. Index

A

Activity Center... 1-38, 1-41, 1-43, 3-22, 3-37, 4-9

Aesthetics4-147, 4-148, 4-149, 4-150, 4-153

Air QualityS-38, S-43, 1-9, 3-227, 3-230, 3-231, 4-55, 4-59, 4-69, 4-130, 4-139, 4-204, 4-212, 5-29, 7-2

AlternativesS-1, S-13, S-15, S-16, S-19, S-20, S-25, S-26, S-27, S-45, S-57, 1-9, 1-39, 2-1, 2-2, 2-3, 2-4, 2-6, 2-14, 2-19, 2-24, 2-32, 2-39, 2-42, 2-43, 2-44, 2-51, 2-53, 2-57, 2-58, 2-59, 2-60, 2-65, 2-66, 2-87, 2-88, 2-89, 2-93, 2-95, 2-96, 2-97, 2-99, 2-100, 2-120, 2-122, 3-62, 3-77, 3-78, 3-87, 3-97, 4-10, 4-13, 4-14, 4-15, 4-28, 4-30, 4-37, 4-40, 4-42, 4-43, 4-44, 4-45, 4-46, 4-47, 4-48, 4-49, 4-52, 4-55, 4-56, 4-79, 4-88, 4-89, 4-90, 4-91, 4-92, 4-213, 4-214, 4-215, 5-3, 5-12, 5-14, 5-15, 5-35, 5-57, 6-13, 6-14

- **Alternative 1A1**..... S-16, 2-42, 2-43, 2-45, 2-64, 2-88, 2-96, 6-13
- **Alternative 1A2**..... S-16, 2-43, 2-46, 2-64, 2-88, 2-96, 6-13
- **Alternative 2B1** S-16, S-19, S-26, S-30, S-34, S-46, S-47, S-48, 2-43, 2-47, 2-64, 2-88, 2-89, 2-96, 2-99, 2-103, 2-121, 2-122, 4-1, 4-2, 4-9, 4-10, 4-14, 4-17, 4-28, 4-29, 4-50, 4-61, 4-73, 4-132, 4-157, 5-41, 6-1, 6-3, 6-13, 6-14
- **Alternative 2B2** S-16, 2-43, 2-48, 2-64, 2-88, 2-96, 6-13
- **Alternative 4**..... S-16, S-19, 2-42, 2-43, 2-44, 2-49, 2-64, 2-65, 2-88, 2-96, 4-1, 4-2, 4-88, 4-133, 6-13, 6-14
- **Build**.....S-13, S-14, S-15, S-16, S-17, S-45, S-57, 1-31, 1-32, 1-34, 1-35, 1-36, 1-37, 1-89, 2-1, 2-14, 2-19, 2-53, 2-55, 2-56, 2-65, 2-66, 2-68, 2-70, 2-72, 2-74, 2-76, 2-78, 2-87, 2-88, 2-89, 2-95, 2-120, 2-122, 4-52, 4-55, 4-78, 4-79, 4-81, 4-82, 4-84, 4-85, 4-88, 4-89, 4-90, 4-92, 4-141, 4-142, 4-144, 4-145, 4-149, 4-150, 4-151, 4-152, 4-154, 4-213, 4-214, 4-215, 5-51, 5-58, 6-13

- **Exfiltration Alternative**S-16, S-20, S-48, 2-97, 4-1, 4-13, 4-14, 4-25, 4-28, 4-43, 4-50, 6-15
- **Existing Bee Line**.....2-53, 2-54, 2-88, 4-1, 4-13, 4-40, 4-42
- **Existing SR 472**.....4-1, 4-15
- **Kaley-Michigan Exfiltration**S-16, S-48, 2-63, 2-95, 4-1, 4-13, 4-14, 4-25, 4-28, 4-43, 4-50, 6-3, 6-13
- **Kaley-Michigan Pond**.....S-16, 2-63, 2-95, 4-25, 4-28, 4-43, 6-13
- **No-Action**.. S-13, S-14, 2-1, 2-2, 4-1, 4-2, 4-3, 4-141, 4-142, 4-213, 4-214
- **Pond Alternative**S-16, 4-28
- **Preferred Alternative**.....S-1, S-2, S-5, S-6, S-7, S-9, S-10, S-13, S-14, S-15, S-16, S-19, S-20, S-21, S-22, S-25, S-26, S-27, S-28, S-29, S-30, S-31, S-32, S-33, S-35, S-36, S-37, S-38, S-43, S-44, S-45, S-46, S-47, S-48, S-49, S-50, S-51, S-52, S-53, S-54, S-55, S-56, S-57, 1-1, 1-2, 1-5, 1-9, 1-10, 1-13, 1-14, 1-15, 1-39, 1-42, 1-54, 1-62, 1-65, 1-73, 1-88, 2-1, 2-2, 2-14, 2-19, 2-38, 2-54, 2-93, 2-94, 2-95, 2-96, 2-97, 2-98, 2-99, 2-100, 2-101, 2-103, 2-104, 2-105, 2-106, 2-108, 2-110, 2-112, 2-114, 2-116, 2-118, 2-119, 2-120, 2-121, 3-126, 4-1, 4-2, 4-3, 4-4, 4-5, 4-6, 4-7, 4-8, 4-9, 4-10, 4-11, 4-12, 4-13, 4-15, 4-16, 4-17, 4-18, 4-25, 4-26, 4-27, 4-28, 4-30, 4-37, 4-38, 4-39, 4-40, 4-41, 4-42, 4-43, 4-44, 4-45, 4-46, 4-47, 4-48, 4-50, 4-51, 4-52, 4-55, 4-56, 4-57, 4-58, 4-59, 4-61, 4-62, 4-69, 4-70, 4-71, 4-73, 4-78, 4-79, 4-80, 4-81, 4-82, 4-83, 4-84, 4-85, 4-86, 4-87, 4-88, 4-89, 4-90, 4-91, 4-92, 4-93, 4-95, 4-96, 4-97, 4-98, 4-99, 4-100, 4-108, 4-109, 4-110, 4-111, 4-115, 4-117, 4-118, 4-119, 4-120, 4-121, 4-122, 4-127, 4-128, 4-127, 4-129, 4-130, 4-131, 4-140, 4-141, 4-142, 4-143, 4-144, 4-145, 4-146, 4-147, 4-152, 4-153, 4-154, 4-156, 4-160, 4-161, 4-173, 4-176, 4-185, 4-186, 4-185, 4-194, 4-195, 4-196, 4-198, 4-199, 4-200, 4-201, 4-202, 4-206, 4-207, 4-209, 4-211, 4-212, 4-213, 4-214,

- 4-215, 4-216, 4-217, 5-10, 5-11, 5-41, 5-59, 6-1, 6-2, 6-3, 6-4, 6-5, 6-6, 6-7, 6-8, 6-9, 6-10, 6-11, 6-12, 6-13, 6-14, 6-15, 6-16, 6-17, 6-18
- SR 434 Alternative 1 2-82, 2-89, 2-122, 4-1, 4-15, 4-25
- SR 434 Alternative 2 2-82, 2-89, 2-122, 4-15, 4-26
- SR 50 Alternative 1 2-88
- SR 50 Alternative 2 S-30, S-49, 2-88, 2-122, 4-1, 4-2, 4-14, 4-17, 4-50, 6-3
- Typical Section C S-7, S-20, S-47, 2-20, 2-32, 2-37, 2-55, 2-89, 2-97, 2-121, 2-122, 4-1, 4-2, 4-14, 4-15, 4-16, 4-28, 4-47, 5-41, 6-14, 6-15
- Typical Section F' S-20, 2-22, 2-33, 2-56, 2-97, 6-15
- Ultimate Bee Line ... 2-53, 2-54, 2-88, 2-122, 4-13, 4-41, 4-42, 4-56
- Ultimate project S-1, S-2, S-6, S-9, S-10, S-13, S-14, S-15, S-37, S-46, 1-1, 1-2, 1-9, 1-10, 1-13, 1-14, 1-15, 1-32, 1-37, 1-39, 1-42, 1-54, 1-73, 1-74, 1-88, 2-11, 2-14, 2-19, 2-20, 2-53, 2-120, 3-126, 3-173, 3-174, 3-185, 3-186, 3-187, 3-188, 3-208, 3-209, 3-210, 3-211, 3-212, 3-213, 3-214, 3-215, 3-226, 3-227, 3-231, 3-233, 3-245, 3-255, 3-256, 3-272, 3-273, 3-274, 3-276, 3-278, 4-1, 4-2, 4-3, 4-4, 4-5, 4-6, 4-7, 4-9, 4-10, 4-11, 4-12, 4-17, 4-18, 4-25, 4-26, 4-27, 4-30, 4-40, 4-41, 4-42, 4-48, 4-52, 4-55, 4-56, 4-57, 4-58, 4-59, 4-60, 4-61, 4-62, 4-70, 4-71, 4-87, 4-92, 4-93, 4-98, 4-99, 4-100, 4-108, 4-109, 4-110, 4-111, 4-117, 4-118, 4-119, 4-120, 4-121, 4-122, 4-127, 4-128, 4-127, 4-131, 4-140, 4-141, 4-142, 4-144, 4-146, 4-147, 4-153, 4-154, 4-156, 4-160, 4-161, 4-176, 4-185, 4-186, 4-185, 4-195, 4-198, 4-199, 4-200, 4-201, 4-202, 4-207, 4-209, 4-211, 4-212, 4-213, 4-214, 4-215, 4-216, 4-217, 6-2

Archaeological Sites..... S-43, 3-126, 4-215

B

Bicycle Facility 3-147, 3-148, 3-149, 3-150, 3-151, 3-152, 3-153

C

Capacity S-17, 1-1, 1-7, 1-16, 1-29, 1-30, 1-31, 1-33, 1-34, 1-35, 1-36, 1-67

Capital Costs 2-6

Church..... 1-53, 2-35, 3-2, 3-20, 3-21, 3-29, 3-40, 3-49, 3-50, 3-60, 3-61, 3-66, 3-73, 3-74, 3-75, 3-76, 3-77, 3-78, 3-89, 3-97, 3-125, 3-135, 3-137, 3-138, 3-156, 3-230, 3-234, 3-235, 3-243, 3-244, 3-247, 3-281, 4-11, 4-15, 4-37, 4-39, 4-45, 4-46, 4-47, 4-49, 4-79, 4-88, 4-95, 4-133, 4-187, 4-188, 5-15, 5-17, 5-42, 5-45, 5-46, 5-47, 5-48, 5-49, 5-59

Community Services S-32, 3-80, 4-42, 4-43, 4-44, 4-45, 4-46, 4-47, 4-48, 4-49, 4-59, 4-69

Construction impact S-38, S-56, 4-55, 4-204, 4-209, 6-12

Contamination S-38, S-43, S-55, 1-9, 3-243, 3-244, 3-246, 3-247, 3-253, 4-58, 4-59, 4-69, 4-159, 4-160, 4-167, 4-171, 4-211, 4-215, 6-10

Cultural Resources..... S-33, 3-1, 3-125, 3-126, 4-1, 4-70, 5-5, 5-11, 8-1

Cumulative S-43, 4-1, 4-2, 4-59, 4-212, 4-214, 4-215

D

Displacements S-30, S-31, S-46, 4-11, 4-27, 4-56, 4-58, 4-61, 6-1

DRI..... 3-30, 3-34, 3-35, 4-10

E

Economics 3-1

Ecosystems..... 4-208

Elderly 3-11, 3-80, 3-114, 3-115

Emergency S-44, S-45, 3-98, 3-105, 3-111, 3-112, 3-113, 3-255, 4-41, 4-195, 5-29, 5-30, 8-2, 8-4

Employment 1-39, 1-40, 1-44, 3-12, 3-13, 3-14, 3-15, 3-16, 3-17, 3-31, 3-32, 3-33, 3-78, 3-90, 4-4, 4-12, 4-18

Environmental Justice .. S-33, S-50, 3-14, 3-113, 4-28, 4-51, 4-57, 4-58, 4-59, 4-69, 5-14, 5-42, 5-43, 5-44, 5-52, 6-4

Equity 1-5, 3-34

F

Floodplains..... S-38, S-43, S-56, 3-255, 3-257, 4-173, 4-174, 4-215, 6-10

Floodways..... S-38, 3-255, 3-257, 4-173

G

Groundwater ...S-52, S-53, 3-173, 3-174, 3-176, 3-185, 3-273, 3-274, 4-98, 6-7

H

Historic ResourcesS-34, S-45, S-50, 3-125, 3-128, 3-131, 4-70, 4-71, 4-72, 4-73, 4-86, 4-195, 5-7, 5-11, 5-40, 6-5, 6-11

I

I-4 MMMPS-5, S-6, 1-5, 1-6, 1-7, 1-8, 1-68, 1-88, 2-1, 2-2, 2-11, 2-12, 2-13, 2-14, 2-17, 2-19, 2-20, 2-21, 2-31, 2-39, 3-36, 3-161, 5-5, 5-6, 5-7, 5-38

L

Land UseS-29, S-43, S-46, 1-42, 1-46, 3-1, 3-19, 3-21, 3-23, 3-30, 3-34, 3-35, 3-37, 3-187, 3-213, 3-226, 3-229, 3-233, 3-241, 3-242, 4-6, 4-11, 4-145, 4-149, 4-150, 4-151, 4-152, 4-153, 4-213, 6-1

N

Navigation1-1, 1-75, 3-1, 3-276, 4-1, 4-185
NeighborhoodS-32, S-44, S-48, 1-39, 2-40, 2-41, 2-51, 3-20, 3-36, 3-39, 3-40, 3-41, 3-42, 3-49, 3-62, 3-66, 3-75, 3-76, 3-88, 3-90, 3-126, 3-132, 3-133, 3-134, 3-138, 3-234, 3-235, 3-243, 3-244, 4-19, 4-28, 4-29, 4-37, 4-39, 4-42, 4-57, 4-62, 4-70, 4-84, 5-5, 5-8, 5-9, 5-11, 5-14, 5-15, 5-16, 5-19, 5-20, 5-21, 5-29, 5-34, 5-42, 5-47, 5-52, 5-59, 6-2

- **Angebilt**S-31, S-33, S-46, S-50, 3-40, 3-49, 3-116, 4-2, 4-3, 4-13, 4-27, 4-28, 4-43, 4-52, 4-56, 4-57, 4-59, 4-61, 4-62, 4-69, 6-2, 6-4
- **Carter Street**S-35, 2-41, 2-42, 2-43, 3-40, 3-73, 3-77, 3-87, 3-88, 3-125, 3-133, 3-244, 4-14, 4-28, 4-29, 4-37, 4-40, 4-44, 4-45, 4-69, 4-71, 4-86, 4-88, 4-90, 4-93, 4-95, 4-173, 4-189, 5-11, 5-19, 5-21, 5-22, 5-23, 5-24, 5-43
- **College Park**S-16, S-20, S-31, S-34, S-35, S-44, S-48, S-50, S-51, 1-39, 1-41, 1-42, 2-51, 2-95, 2-97, 3-20, 3-40, 3-50, 3-60, 3-125, 3-126, 3-136, 3-230, 3-243, 3-275, 4-2,

4-3, 4-14, 4-28, 4-29, 4-41, 4-46, 4-47, 4-56, 4-57, 4-62, 4-70, 4-73, 4-78, 4-84, 4-85, 4-87, 4-91, 4-92, 4-127, 4-130, 4-140, 4-141, 4-142, 4-214, 5-5, 5-8, 5-11, 5-15, 5-16, 5-17, 5-18, 5-19, 5-20, 5-21, 5-23, 5-24, 5-29, 5-30, 5-34, 5-34, 5-35, 5-36, 5-45, 5-50, 5-51, 6-2, 6-5, 6-13, 6-14

- **Eatonville ..**S-6, S-33, S-34, S-35, S-51, 1-10, 1-38, 1-42, 1-53, 2-36, 2-51, 3-2, 3-10, 3-11, 3-14, 3-20, 3-21, 3-37, 3-41, 3-50, 3-52, 3-61, 3-65, 3-66, 3-74, 3-75, 3-88, 3-90, 3-97, 3-111, 3-125, 3-136, 3-138, 3-151, 3-160, 3-230, 3-243, 3-279, 4-56, 4-57, 4-59, 4-61, 4-62, 4-69, 4-71, 4-73, 4-85, 4-86, 4-87, 4-129, 4-130, 5-6, 5-7, 5-10, 5-15, 5-20, 5-27, 5-28, 5-32, 5-34, 5-36, 5-37, 5-48, 5-49, 6-5, 8-3, 8-5
 - **Griffin Park**S-16, S-19, S-31, S-34, S-35, S-36, S-46, S-48, S-50, S-51, 2-41, 2-42, 2-43, 2-44, 2-88, 2-96, 2-103, 3-14, 3-40, 3-50, 3-125, 3-133, 3-137, 3-155, 3-230, 3-234, 3-244, 4-14, 4-27, 4-28, 4-29, 4-44, 4-45, 4-50, 4-56, 4-59, 4-61, 4-69, 4-73, 4-78, 4-79, 4-80, 4-87, 4-88, 4-89, 4-90, 4-130, 5-11, 5-16, 5-17, 5-18, 5-20, 5-21, 5-22, 5-28, 5-33, 5-34, 5-34, 5-36, 5-39, 5-40, 5-41, 5-43, 6-2, 6-3, 6-5, 6-6, 6-13, 6-14
 - **Holden Heights**S-31, S-33, S-46, S-48, S-50, 2-41, 3-14, 3-19, 3-40, 3-49, 3-73, 3-77, 3-87, 3-88, 3-111, 3-116, 3-230, 3-234, 4-2, 4-3, 4-13, 4-14, 4-27, 4-28, 4-37, 4-40, 4-41, 4-43, 4-44, 4-52, 4-56, 4-57, 4-59, 4-61, 4-62, 4-69, 4-130, 4-214, 5-16, 5-18, 5-19, 5-21, 5-24, 5-29, 5-31, 5-42, 5-44, 6-2, 6-4
 - **Holden-Parramore ..**S-31, S-33, S-46, S-48, S-50, 2-42, 2-43, 2-65, 2-66, 2-71, 2-72, 2-73, 2-74, 2-103, 2-104, 2-111, 2-112, 2-113, 2-114, 3-15, 3-19, 3-20, 3-49, 3-50, 3-76, 3-77, 3-116, 3-125, 3-132, 3-133, 3-134, 4-2, 4-3, 4-14, 4-27, 4-28, 4-29, 4-39, 4-40, 4-44, 4-45, 4-50, 4-52, 4-56, 4-57, 4-59, 4-61, 4-69, 4-130, 4-214, 5-11, 5-16, 6-2, 6-3, 6-4
- Noise**S-34, S-38, S-39, S-43, S-48, S-49, S-55, 1-9, 3-231, 3-232, 3-233, 3-234, 3-235, 3-236, 3-243, 3-244, 3-245, 4-28, 4-41, 4-50, 4-55, 4-59, 4-69, 4-73, 4-78, 4-82, 4-84, 4-85, 4-86, 4-88, 4-92, 4-129, 4-142, 4-143, 4-144, 4-145, 4-146, 4-147, 4-149, 4-150, 4-151, 4-152, 4-154, 4-156, 4-157, 4-158, 4-159, 4-160, 4-163, 4-185, 4-203, 4-205,

4-206, 4-207, 4-208, 4-209, 4-210, 4-213,
4-215, 5-12, 5-16, 5-17, 5-18, 5-19, 5-20, 5-33,
5-46, 5-47, 5-58, 6-2, 6-4, 6-9, 7-2

P

Parks.....S-35, S-43, 3-79, 3-89, 3-90,
3-137, 3-140, 3-187, 3-230, 4-86, 4-215, 5-6,
5-10, 7-1, 7-2, 8-4

Pedestrian.....S-13, S-36, S-52, 1-70, 1-73,
1-76, 1-89, 2-34, 2-35, 3-64, 3-146, 3-153,
3-154, 3-155, 3-156, 3-157, 3-158, 3-159,
3-160, 3-161, 3-169, 4-46, 4-98, 4-216, 5-26,
6-6

Population.....1-39, 1-40, 1-54, 3-1, 3-2, 3-9,
3-10, 3-11, 3-14, 3-15, 3-114, 3-115, 4-2, 4-28,
4-52, 4-57, 4-60, 4-62, 4-69

Port1-2, 1-15, 1-54, 1-62, 1-70, 1-72,
1-75, 3-21, 3-33, 3-35, 3-42, 3-231, 3-278,
3-279, 4-9, 4-10, 5-5

Preferred Alternative ...S-1, S-2, S-5, S-6, S-7,
S-9, S-10, S-13, S-14, S-15, S-16, S-19, S-20,
S-21, S-22, S-25, S-26, S-27, S-28, S-29, S-30,
S-31, S-32, S-33, S-35, S-36, S-37, S-38, S-43,
S-44, S-45, S-46, S-47, S-48, S-49, S-50, S-51,
S-52, S-53, S-54, S-55, S-56, S-57, 1-1, 1-2, 1-5,
1-9, 1-10, 1-13, 1-14, 1-15, 1-39, 1-42, 1-54,
1-62, 1-65, 1-73, 1-88, 2-1, 2-2, 2-14, 2-19,
2-38, 2-54, 2-93, 2-94, 2-95, 2-96, 2-97, 2-98,
2-99, 2-100, 2-101, 2-103, 2-104, 2-105, 2-106,
2-108, 2-110, 2-112, 2-114, 2-116, 2-118,
2-119, 2-120, 2-121, 3-126, 4-1, 4-2, 4-3, 4-4,
4-5, 4-6, 4-7, 4-8, 4-9, 4-10, 4-11, 4-12, 4-13,
4-15, 4-16, 4-17, 4-18, 4-25, 4-26, 4-27, 4-28,
4-30, 4-37, 4-38, 4-39, 4-40, 4-41, 4-42, 4-43,
4-44, 4-45, 4-46, 4-47, 4-48, 4-50, 4-51, 4-52,
4-55, 4-56, 4-57, 4-58, 4-59, 4-61, 4-62, 4-69,
4-70, 4-71, 4-73, 4-78, 4-79, 4-80, 4-81, 4-82,
4-83, 4-84, 4-85, 4-86, 4-87, 4-88, 4-89, 4-90,
4-91, 4-92, 4-93, 4-95, 4-96, 4-97, 4-98, 4-99,
4-100, 4-108, 4-109, 4-110, 4-111, 4-115,
4-117, 4-118, 4-119, 4-120, 4-121, 4-122,
4-127, 4-128, 4-127, 4-129, 4-130, 4-131,
4-140, 4-141, 4-142, 4-143, 4-144, 4-145,
4-146, 4-147, 4-152, 4-153, 4-154, 4-156,
4-160, 4-161, 4-173, 4-176, 4-185, 4-186,
4-185, 4-194, 4-195, 4-196, 4-198, 4-199,
4-200, 4-201, 4-202, 4-206, 4-207, 4-209,
4-211, 4-212, 4-213, 4-214, 4-215, 4-216,
4-217, 5-10, 5-11, 5-41, 5-59, 6-1, 6-2, 6-3, 6-4,
6-5, 6-6, 6-7, 6-8, 6-9, 6-10, 6-11, 6-12, 6-13,
6-14, 6-15, 6-16, 6-17, 6-18

R

Rail.....S-9, S-43, 1-8, 1-61, 1-62, 1-67,
1-68, 1-69, 1-88, 2-3, 2-4, 4-193, 4-215, 4-216,
5-13, 5-35

Recreation..... 3-79, 3-89, 3-90, 3-137, 3-138,
5-2, 5-10, 8-4

Reliability..... 1-7

Relocations..... S-30, S-32, S-43, S-46, 2-88,
2-89, 4-11, 4-12, 4-16, 4-28, 4-30, 4-57, 4-88,
4-89, 4-90, 4-91, 4-215, 6-1, 6-2

S

School S-32, S-36, 1-25, 1-28, 2-41,
2-64, 2-66, 2-71, 2-72, 2-73, 2-74, 2-81, 2-104,
2-111, 2-112, 2-113, 2-114, 2-119, 3-19, 3-20,
3-21, 3-41, 3-42, 3-49, 3-50, 3-51, 3-52, 3-53,
3-59, 3-60, 3-61, 3-62, 3-63, 3-64, 3-65, 3-74,
3-79, 3-87, 3-90, 3-113, 3-138, 3-155, 3-160,
3-234, 3-235, 3-244, 4-15, 4-30, 4-37, 4-38,
4-40, 4-43, 4-47, 4-98, 5-12, 5-13, 5-15, 5-20,
5-46, 5-47, 5-48, 5-49, 5-52, 5-57, 6-6

Social Service .. S-32, 3-52, 3-77, 3-78, 3-79,
3-80, 3-81, 4-30, 4-37, 4-39

Surface Water.. S-36, S-53, 3-174, 3-178, 3-183,
3-184, 3-185, 4-98, 6-7

T

Traffic..... S-2, S-15, 1-2, 1-5, 1-29, 1-30, 1-68,
1-76, 1-77, 1-78, 1-79, 1-80, 1-81, 1-82, 1-83,
1-84, 1-85, 1-86, 1-87, 2-12, 2-14, 2-20, 2-63,
2-86, 2-102, 3-1, 3-90, 3-230, 3-232, 3-233,
4-127, 4-129, 4-140, 4-143, 4-146, 4-202,
4-203, 5-5, 5-26, 5-28, 5-29, 5-30, 7-2, 7-3

Transportation S-1, S-6, S-13, S-14, S-57, 1-1,
1-5, 1-9, 1-10, 1-16, 1-19, 1-20, 1-21, 1-22,
1-23, 1-24, 1-25, 1-26, 1-27, 1-28, 1-29, 1-31,
1-37, 1-38, 1-55, 1-62, 1-67, 1-73, 2-1, 2-4,
2-12, 2-52, 3-1, 3-15, 3-16, 3-36, 3-63, 3-76,
3-79, 3-87, 3-90, 3-113, 3-125, 3-136, 3-139,
3-146, 3-153, 3-188, 3-247, 3-279, 3-283, 4-95,
5-4, 5-5, 5-11, 5-27, 5-29, 5-30, 5-31, 5-32,
5-33, 5-38, 7-1, 7-4, 8-1, 8-2, 8-3, 8-4

U

Ultimate projectS-1, S-2, S-6, S-9, S-10,
S-13, S-14, S-15, S-37, S-46, 1-1, 1-2, 1-9, 1-10,
1-13, 1-14, 1-15, 1-32, 1-37, 1-39, 1-42, 1-54,
1-73, 1-74, 1-88, 2-11, 2-14, 2-19, 2-20, 2-53,
2-120, 3-126, 3-173, 3-174, 3-185, 3-186,
3-187, 3-188, 3-208, 3-209, 3-210, 3-211,
3-212, 3-213, 3-214, 3-215, 3-226, 3-227,
3-231, 3-233, 3-245, 3-255, 3-256, 3-272,
3-273, 3-274, 3-276, 3-278, 4-1, 4-2, 4-3, 4-4,
4-5, 4-6, 4-7, 4-9, 4-10, 4-11, 4-12, 4-17, 4-18,
4-25, 4-26, 4-27, 4-30, 4-40, 4-41, 4-42, 4-48,
4-52, 4-55, 4-56, 4-57, 4-58, 4-59, 4-60, 4-61,
4-62, 4-70, 4-71, 4-87, 4-92, 4-93, 4-98, 4-99,
4-100, 4-108, 4-109, 4-110, 4-111, 4-117,
4-118, 4-119, 4-120, 4-121, 4-122, 4-127,
4-128, 4-127, 4-131, 4-140, 4-141, 4-142,
4-144, 4-146, 4-147, 4-153, 4-154, 4-156,
4-160, 4-161, 4-176, 4-185, 4-186, 4-185,
4-195, 4-198, 4-199, 4-200, 4-201, 4-202,
4-207, 4-209, 4-211, 4-212, 4-213, 4-214,
4-215, 4-216, 4-217, 6-2

V

Vibration..... 4-205, 4-206, 4-207
Visual Impacts S-37

W

Water Resources3-173, 3-174, 3-185,
4-98, 4-209
Wetlands S-36, S-43, S-53, 3-188, 3-189,
3-190, 3-195, 3-208, 3-211, 3-212, 3-213,
3-217, 4-100, 4-101, 4-109, 4-194, 4-215, 6-8
Widening 1-8, 1-29, 2-11, 2-12, 2-13

Y

Yard..... 3-246, 3-255

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