

3. Alternatives Considered

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3.1 Study Area Development

The analysis to define the study area for the Wekiva Parkway was performed by FDOT and the Expressway Authority using land suitability mapping (LSM). The LSM incorporated the traditional factors of constraints and opportunities including regulatory constraints such as wetlands, floodplains, public parks and recreations areas (Section 4(f)), archaeological and historic sites (Section 106 and Section 4(f)), as well as threatened and endangered species (Section 7). Other constraints associated with cultural, natural and social environment components were also mapped.

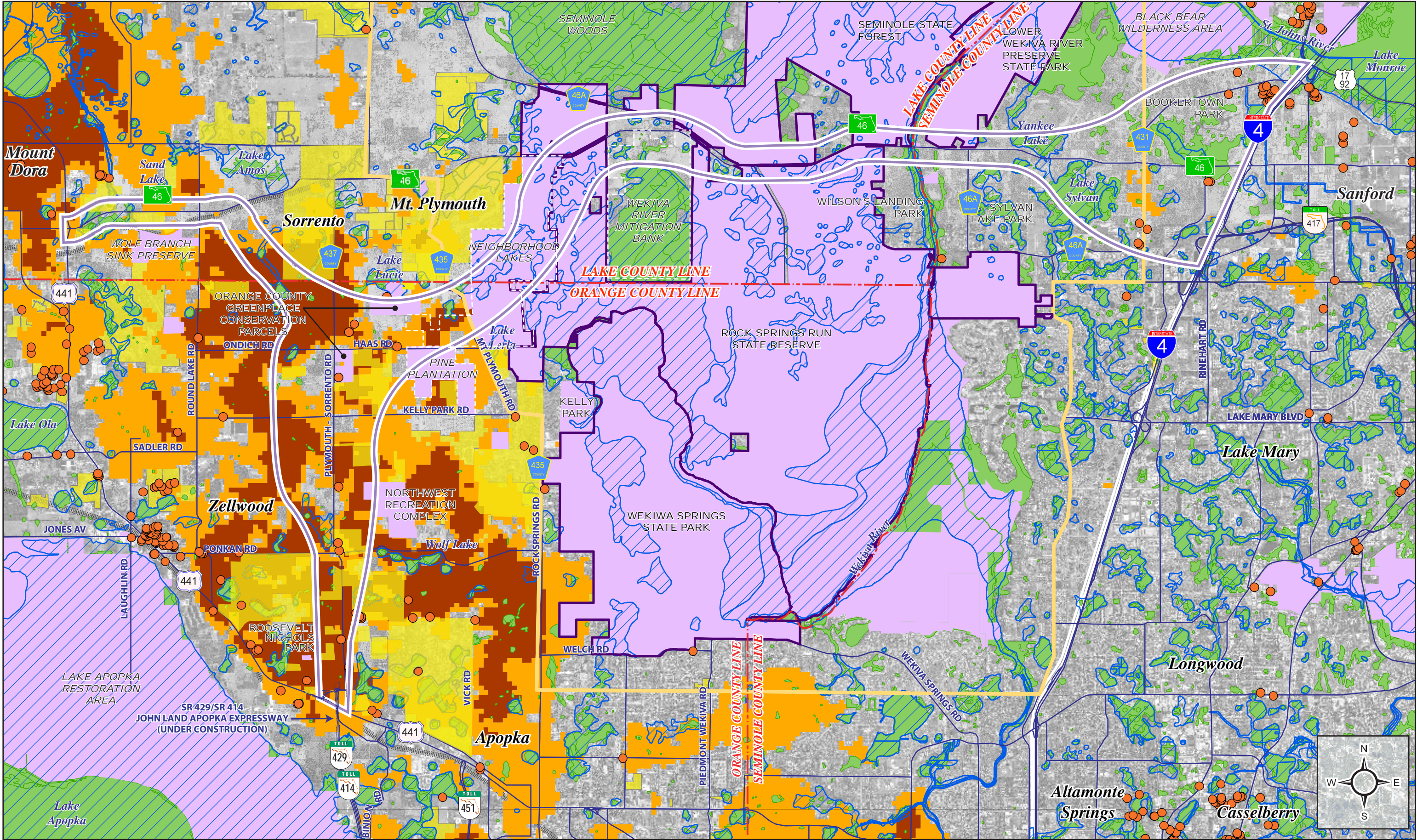
The driving principle in developing the study area was to define a range of reasonable alternatives for the Wekiva Parkway in light of the project's purpose and need. The screening included added focus on social and cultural considerations and the natural environment, particularly those features that are unique to the specific areas and resources.

The assessments for the study area were presented to the Task Force and Coordinating Committee for input. Other stakeholders and the public were offered numerous opportunities to provide comment and input to the purpose and need and the study area evaluations. The deliberations on the study area focused on meeting the transportation needs and providing protection to the Wekiva River Basin area. The geographic location of the study area was culled based on two factors:

- 1) Consistency with the Purpose and Need,
- 2) Exclude areas that would involve higher levels of impacts while providing less potential benefits.

Exhibit 3-1 provides a composite constraints map that formed the basis for defining the study area. Specific areas of note include the extensive coverage of public recreation lands, expansive wetlands adjacent to the Wekiva River, large tracts of high recharge areas, and several neighborhoods and communities. Additional mapping and detailed discussion of the development of the study area is included in **Appendix G**.

After the study area was defined, the Wekiva Parkway (SR 429)/SR 46 Realignment PD&E Study began with a comprehensive data collection effort within and adjacent to the study area. Controlled aerial photography of the study area (flown in April, 2005) was used for base mapping. Along with property parcel lines/ numbers, street names, geographic features and other identifiers, the data collected on such items as the locations of community facilities, public lands, known or potential historic sites, wetlands, floodplains, wildlife habitat, potential contamination sites, and others were put on the base map. Avoidance or minimization of impact to these facilities and sensitive areas, as well as homes and businesses, to the greatest extent possible was the primary focus in the development of conceptual alignment alternatives.



LEGEND

- Wekiva Parkway Study Area
- Public Conservation/Park & Recreation Lands

- Existing and Planned Neighborhoods (Orange and Lake Counties)
- Wekiva River Protection Area
- Wetland

- Potential Historic Sites
- Recharge Rate 12- 20 in/yr
- Recharge Rate > 20 in/yr

- Floodplains
- State Park Boundary

Exhibit 3-1
Composite Constraints Map

This section of the *Environmental Assessment* summarizes the No Build Alternative and the various Build Alternatives, and describes the process whereby the alignment alternatives for the proposed Wekiva Parkway and SR 46 Realignment were developed and analyzed. Coordination activities with local and state governmental agencies, as well as many other stakeholders, and various public involvement efforts have been extensive. This section provides information on the numerous initial and viable alternative concepts in Orange, Lake, and Seminole Counties and indicates how those alternatives were assessed and evaluated for potential impacts to private property, public lands, residences, businesses, community facilities, historic sites, wetlands, floodplains, wildlife habitat, etc.

3.2 No Build Alternative

The No Build Alternative assumes that a major new expressway project is not provided within the project study area. Only those projects for which funding was committed (at the time of the traffic analysis) in the Expressway Authority's 2030 Expressway Master Plan, METROPLAN ORLANDO's 2025 Long Range Transportation Plan Update, and the Lake-Sumter MPO 2025 Long Range Transportation Plan were assumed to be provided to meet the transportation need. The results of the No Build Alternative analysis form the basis of the comparative analysis with the viable Build Alternatives presented later in this section.

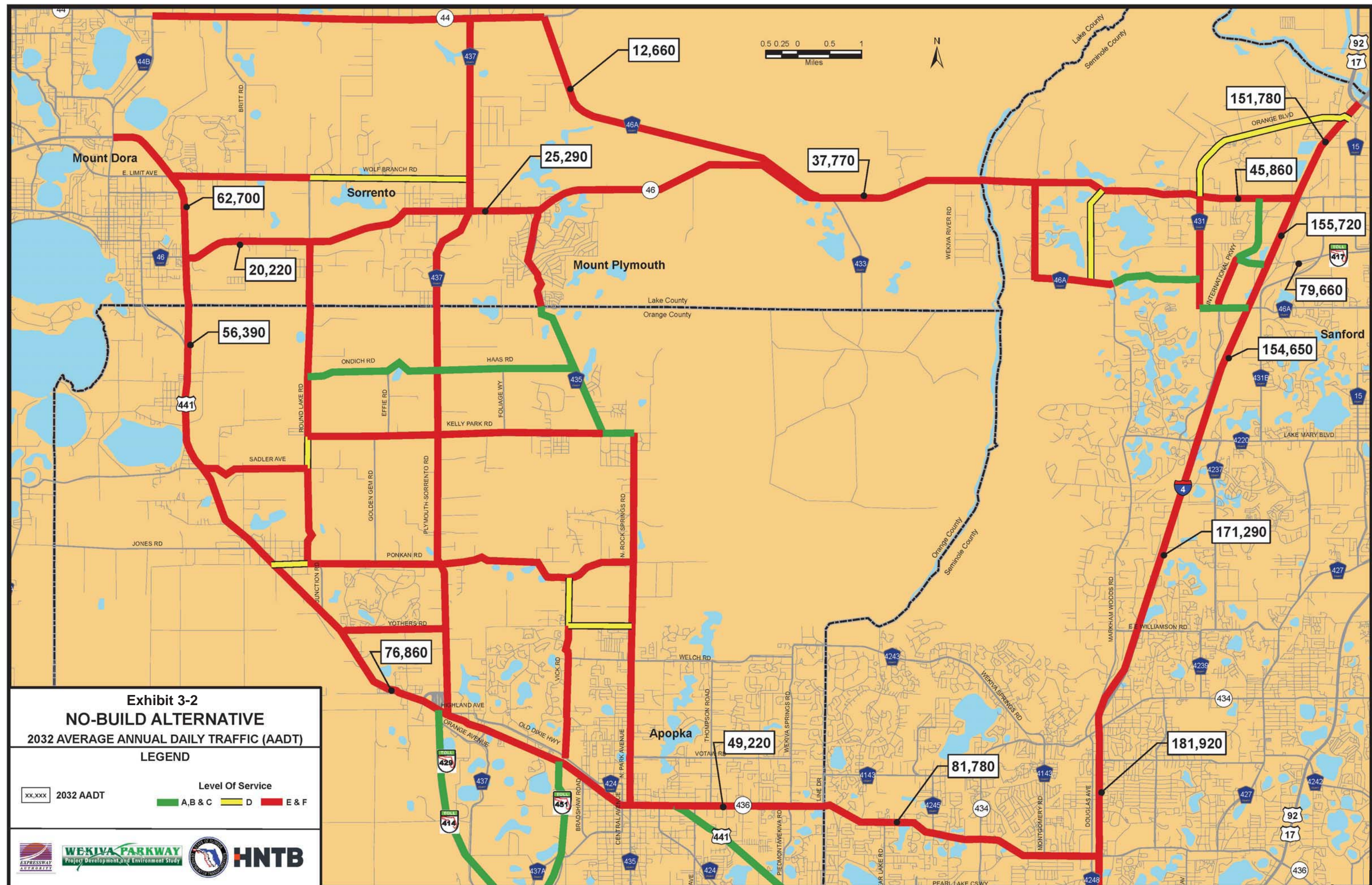
The benefits of the No Build Alternative include the absence of long term impacts such as residential displacements and natural environmental intrusion, as well as short term impacts associated with actual construction of a major new expressway. However, long term benefits associated with serving future traffic demand and improved safety will not be realized with the No Build Alternative. Also, improved wildlife habitat connectivity in east Lake County and reduced vehicle-wildlife conflicts will not be achieved. As discussed in *Section 2.2* of this document, many of the existing roadways within the project study area are currently operating at less than desirable service levels, and operating/safety conditions are projected to worsen in the future as congestion would increase under the No Build Alternative. This expected level of service deterioration is depicted in **Exhibit 3-2** which shows projected 2032 (design year) No Build conditions on roadways within the study area.

As Exhibit 3-2 shows, nearly all roadways in the study area would be operating at level of service E or F conditions in 2032 under the No Build Alternative. The updated final *SR 429–Wekiva Parkway/SR 46 Realignment PD&E Study Traffic Report* (HNTB, September 2010) states “the No Build Alternative does not meet the transportation needs within the study area. This alternative does not relieve traffic congestion along SR 46 or along US 441.”

Some distinct advantages and disadvantages associated with the No Build Alternative are listed below.

Advantages

- No expenditure of funds for right of way acquisition, engineering, design or construction;
- No impact to the adjacent natural, physical, and human environments;
- No impedance to traffic flow during construction; and
- No disruption to existing land uses due to construction related activities.



Disadvantages

- No connectivity of regional beltway system in northwest metropolitan area;
- Increase in traffic congestion, resulting in unacceptable levels of service and an increase in road user costs;
- Increase in vehicle crashes associated with increased traffic volumes and congestion on an inadequate roadway network;
- No improvement in wildlife habitat connectivity, as well as an increase in vehicle-wildlife conflicts;
- Increase in carbon monoxide levels and other air pollutants caused by an increase in traffic congestion;
- Increase in maintenance costs due to aging roadway and structure deterioration;
- Increase in emergency service response time due to heavy congestion; and
- Increase in evacuation time during severe weather emergencies as a result of heavy congestion on inadequate roadways.

The No Build Alternative remained a viable alternative throughout the study and the public involvement process. The final selection of the Proposed Build Alternative was not made until after all the public hearing comments were evaluated.

3.3 Transportation System Management

Transportation System Management (TSM) Alternatives are defined as low capital cost transportation improvements designed to maximize the utilization and efficiency of the existing transportation system through improved system management. The various forms of TSM activities include:

- Traffic signal improvements;
- Intersection/interchange improvements;
- Widening of parallel arterials;
- Ridesharing programs;
- HOV lanes;
- Reversible flow roadway systems;
- Transit;
- Intelligent Transportation System (ITS); and
- Ramp to ramp auxiliary lanes.

Although the implementation of TSM strategies would certainly aid in localized operation of the existing roadways, the projected traffic volumes for the design year 2032 require substantial capacity enhancements to maintain or improve the existing levels of service. Therefore, the TSM Alternative is not considered a viable alternative and no further evaluation of the TSM Alternative will be conducted during this study.

3.4 Multi-Modal Alternatives

Multi-modal alternatives that address the need without building additional capacity may include bus, rail, and/or transit. The potential for a multi-modal alternative to become the preferred alternative is evaluated early in the planning stages to determine if the project should follow the Federal Transit Administration (FTA) process. FTA follows the NEPA process; however, the process and funding are different than that of FHWA.

Within the Wekiva Parkway (SR 429)/SR 46 Realignment PD&E Study area, there are no multimodal options, either motorized or non-motorized, that would meet the project purpose and need; specifically to provide regional connectivity and to meet the increased travel demand within the project study area while protecting the fragile ecosystem of the Wekiva River Basin and preserving the rural character of the area. The majority of the project is on a new alignment, with the exception of portions of SR 46 utilized to minimize impacts to the extent possible.

The Wekiva Parkway is itself part of a multi-modal system and is listed on the FDOT SIS Multi-Modal Unfunded Needs Plan (May 2006) for SIS Eligible Multi-Modal Unfunded Highway Capacity Improvements Needed by 2030.

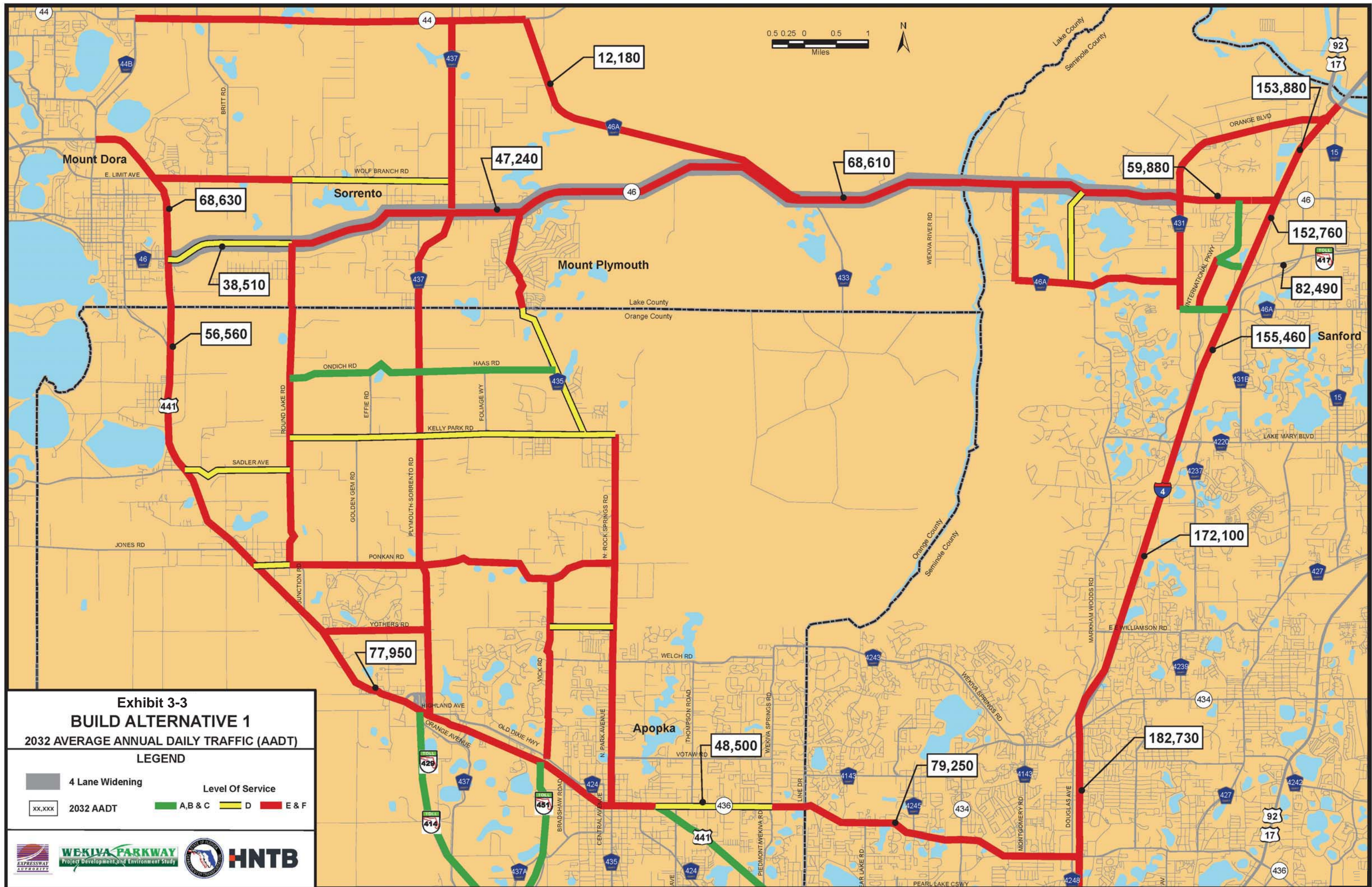
Non-motorized modes of travel would not meet the purpose and need of the project within the 30-mile corridor. Recreational trails and pedestrian sidewalks are not permitted within the limited-access expressway right-of-way; however, in areas of the project where the typical section permits, sidewalks and/or bicycle lanes may be provided. Connection points for county multi-use recreational trails are provided at defined areas within the project study area.

3.5 Build Alternatives

The Build Alternatives for Orange, Lake and Seminole Counties that were developed, analyzed and refined in the PD&E Study are summarized in this section.

3.5.1 SR 46 Widening Only

The first Build Alternative to be analyzed was the least cost, least impact option – that is, widening the existing two-lane SR 46 to four-lanes from US 441 in Lake County to Orange Boulevard just west of I-4 in Seminole County (a distance of about 17 miles); included in this alternative were those projects for which funding was committed (at the time of the traffic analysis) in the Expressway Authority's 2030 Expressway Master Plan, METROPLAN ORLANDO's 2025 Long Range Transportation Plan Update, and the Lake-Sumter MPO 2025 Long Range Transportation Plan. However, after analysis of this concept the updated final *SR 429–Wekiva Parkway/SR 46 Realignment PD&E Study Traffic Report* (HNTB, September 2010) states “this Build Alternative does not meet the transportation needs within the study area. Any additional capacity along the SR 46 corridor added with the widening of SR 46 is consumed by the latent demand for east-west travel within the corridor. Thus, even with the widening, SR 46 would continue to operate at level of service F. This alternative also does not relieve congestion along US 441.” The projected 2032 (design year) conditions for study area roadways under Build Alternative 1 (SR 46 Widening to Four-Lanes) are depicted in **Exhibit 3-3**.



After the traffic analysis of Build Alternative 1 for the four-laning of SR 46 indicated it would not meet the transportation needs of the study area, a six-lane widening scenario for SR 46 was analyzed. In the traffic analysis, that alternative also demonstrated the inability to meet future transportation needs as the additional capacity provided by six-lanes was consumed by the latent demand for east-west travel within the SR 46 corridor. Even with widening to six-lanes, SR 46 would continue to operate at level of service F. This alternative also had potential for greater impacts within the environmentally sensitive Wekiva River Basin, as well as in the Mount Plymouth and Sorrento communities.

In order to identify concepts which would be more effective in meeting travel demand than merely widening SR 46, Initial Alternatives were developed for four general areas within the study area:

- Orange County from the SR 429/SR 414 John Land Apopka Expressway/US 441 interchange north to the Lake County line;
- Lake County from US 441 to the Orange County line (referred to as Lake County West);
- Lake County from the Orange County line to the Seminole County line (referred to as Lake County East); and
- Seminole County from the Lake County line to Interstate 4 (I-4).

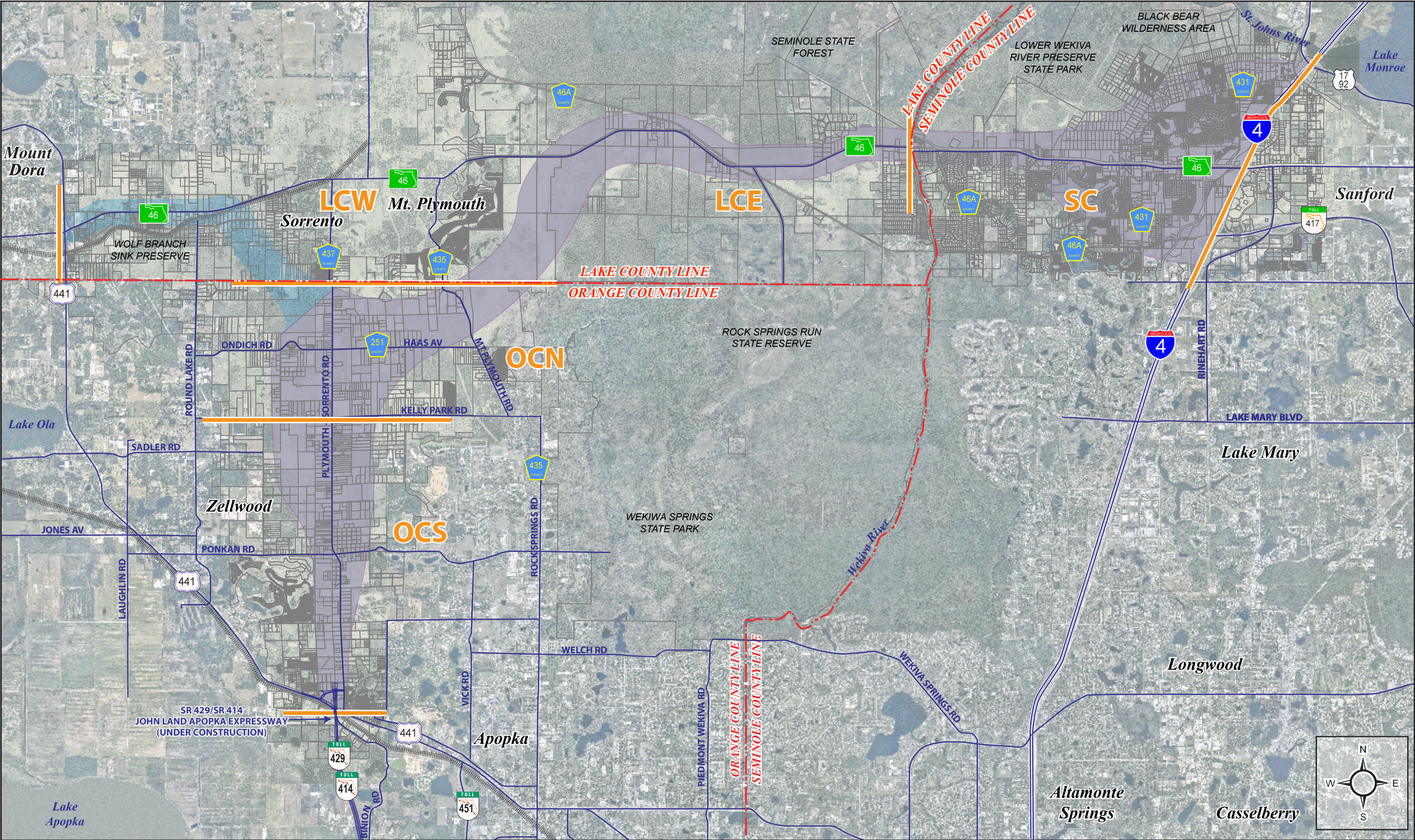
The sub-areas described above are shown in **Exhibit 3-4**.

3.5.2 Initial Alternatives

As depicted in **Exhibit 3-4**, Orange County was separated into two sub-areas from US 441 north to Kelly Park Road (Orange County South or OCS) and from Kelly Park Road north to the Lake County line (Orange County North or OCN); Lake County was also separated into two sub-areas from the Orange County line west to US 441 (Lake County West or LCW) and from the Orange County line east to the Seminole County line (Lake County East or LCE); Seminole County was evaluated as one area from the Lake County line east to I-4 (Seminole County or SC).

Numerous initial alignments were developed in each county and were identified by using the area or sub-area prefixes shown above (i.e., OCS, OCN, LCW, LCE, and SC). The alignments were initially composed of segments which could be common to several alternatives. The alignment segments were identified by sequential numbers which followed the area/sub-area prefix (e.g., OCN-6, LCE-3).

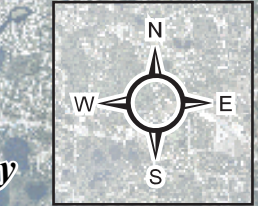
Exhibits showing the alignment concepts initially developed within the study area, along with the corresponding impact analysis spreadsheets, are provided in **Appendix A**. Exhibits and impact analysis spreadsheets for the initial alignments presented at the first Public Workshops in November 2005 are provided in **Appendix B**. **Exhibit B-1** in **Appendix B** shows an overall view of the initial alignments within the study area as presented at the November 2005 Public Workshops. A document prepared for this study entitled *Technical Memorandum – Development and Analysis of Initial Alternatives* (CH2M HILL, December 2006) provides additional details.



LEGEND

- Wekiva Parkway Study Corridor
- SR 46 Realignment Study Corridor

Exhibit 3-4
Study Area Sub-Areas



3.5.2.1 Orange County Initial Alternatives

The section of the proposed project located within Orange County is within unincorporated Orange County and the City of Apopka. The area has experienced tremendous growth in recent years as the Orlando metropolitan area spreads outward. Annexations into the City of Apopka have grown substantially since the onset of the Wekiva Parkway (SR 429)/SR 46 Realignment PD&E Study. Several new subdivisions have been built and planned developments approved since early 2005, primarily east of Plymouth Sorrento Road.

The SR 429 Northwest Extension PD&E Study had previously determined that alignment alternatives in the vicinity of Plymouth Sorrento Road would provide the most relief to local roads. For this reason, the recommended study area from US 441 north to the proposed systems interchange location is generally centered on Plymouth Sorrento Road.

The alignment concepts initially developed within the Orange County section of the proposed project were divided into two sections: alignments east of Plymouth Sorrento Road and alignments west of Plymouth Sorrento Road, as shown in **Exhibits A-1, A-2, and A-3** located in **Appendix A**. For the purpose of the naming convention, the segments comprising the alignments were further separated into sub-areas south of Kelly Park Road (OCS) and north of Kelly Park Road (OCN), as shown in the previously referenced **Exhibit 3-4**. In all, there were 52 initial segments (i.e., OCS 1-12 and OCN 1-40). Those segments could be combined into 42 possible alignment alternatives from the southern limits of the project study area in Orange County to Lake County East in the Neighborhood Lakes area. The connection to Lake County West would be accomplished by a systems interchange in northern Orange County linking the Wekiva Parkway alignment alternatives to the SR 46 Realignment concepts.

From the SR 429/SR 414 John Land Apopka Expressway/US 441 interchange at the southern limits of the project north to Ponkan Road, three initial alignment alternatives were developed that generally ran through the western, central, and eastern portions of the study area. In addition to minimizing impacts to developed parcels within the study area, constraints considered within this section included meeting the geometric criteria for tying into the planned interchange, avoiding impacts to the Zellwood Station senior community, and avoiding conflicts with Plymouth Sorrento Road (CR 437), the main north-south arterial through the area.

North of Ponkan Road the alignment segments further branch out to produce many potential alignments and systems interchange locations. Based on the initial data collection effort, constraints identified within this area of Apopka and unincorporated Orange County include relic sinkholes, numerous foliage nurseries, a historic cemetery, and several potentially historic structures identified in the Florida Master Site File database.

The areas known as Pine Plantation and Neighborhood Lakes are located adjacent to Mount Plymouth Road (CR 435). These parcels were identified for acquisition in the *Wekiva Parkway and Protection Act* to be used as right-of-way for Wekiva Parkway and as buffer/conservation lands to protect the Wekiva River Basin. Maximizing the use of these undeveloped areas while minimizing impacts to developed parcels was considered in the selection of alignment alternatives between the general area in which the systems interchange would be located and Lake County East. As the study progressed, more

detailed information was obtained regarding constraints within the study area and the alignments were refined or removed from consideration based on the updated information.

Since 1912, ferns and tropical plants have been the industry of the City of Apopka, which is known as “Indoor Foliage Capital of the World”. There are over 40 foliage nurseries in the vicinity of the study area north of US 441. The majority of these foliage nurseries are located along and east of Plymouth Sorrento Road, with the highest concentration in the area of Kelly Park Road and Foliage Way, east of Plymouth Sorrento Road. The foliage nurseries collectively define the unique character and identity of the City of Apopka. Avoiding impacts to the foliage nurseries, to the extent practical, was an important consideration in the development of alignment alternatives.

Impacts to residential, foliage nursery, and commercial properties, public lands, floodplains, wetlands, wildlife species and habitat were assessed for the initial alternatives. The results of the impact assessment were analyzed by the project team and discussed with representatives of Orange County and the City of Apopka. The alignments were modified or eliminated based in part on these discussions as described in the following paragraphs.

Prior to the November 2005 Public Workshops, all conceptual alignments east of Plymouth Sorrento Road were removed from consideration due to the results of the initial impact analysis. Development is considerably denser east of Plymouth Sorrento Road, and the results of the impact analysis of the initial alternatives east of Plymouth Sorrento Road showed that there were higher social impacts for those alignments, as was previously concluded in an earlier analysis done by the SR 429 Northwest Extension Working Group. In addition to impacting more parcels and requiring more residential and foliage nursery relocations, an expressway alignment east of Plymouth Sorrento Road could be considered a barrier and potentially impact community cohesion, as it would physically separate neighborhoods from the Northwest Recreation Complex, the Apopka Little League facility, and other recreational areas such as Kelly Park. Alignments east of Plymouth Sorrento Road also impacted one or more planned developments within unincorporated Orange County (Palmetto Ridge) and the City of Apopka (Wekiva Run, Arbor Ridge, and Oak Ridge). These alignments were inconsistent with the City of Apopka Land Use Plan. The eliminated alignments east of Plymouth Sorrento Road are shown in the previously referenced **Exhibit A-1**.

The segments of the blue alignment west of Plymouth Sorrento Road and north of Ponkan Road were also eliminated prior to the November 2005 Public Workshops after evaluation of parcel impacts. The number of parcels impacted by the blue alignment, and the resulting access issues, were determined to be greater than those of the gold alignment just to the west of the blue alignment. It was further determined that it would be preferable to acquire right-of-way for an alignment further west of Plymouth Sorrento Road. At a meeting with Orange County Public Works/Transportation staff on September 30, 2005, they concurred with removal of the blue alignment. Subsequent to the removal of the blue alignment, the gold alignment was modified to connect with the remaining segments leading into Lake County East. The blue and gold alignments are shown in the previously referenced **Exhibits A-2 and A-3**.

Following the elimination and modification of the alignment segments discussed above, the north and south designators (N and S) in the prefix were dropped and the remaining segments in Orange County were renamed and numbered as OC 1-28. Those remaining

segments resulted in 16 potential alignment options from the SR 429/SR 414 John Land Apopka Expressway/US 441 interchange to Lake County East. The initial alignment alternatives presented at the November 2005 Public Workshops are shown in **Exhibit B-2**, located in **Appendix B**.

3.5.2.2 Lake County West Initial Alternatives

The Lake County West concepts are generally within the area identified in the previously referenced **Exhibit 3-4** as the SR 46 Realignment Study Area. This portion of the proposed project runs from northwest of the Wekiva Parkway systems interchange location in Orange County into Lake County and then west along the existing SR 46 alignment to the SR 46/US 441 interchange near Mount Dora. The alignment concepts initially developed for the Lake County West (LCW) portion of the study area are shown in **Exhibits A-4 and A-5**, located in **Appendix A**.

It was recognized early in the study that the existing two-lane rural SR 46 east of US 441 could not be reconstructed as a limited access facility, nor could any parallel alternative alignment connecting to US 441 within the identified project study area be limited access. Based on existing and future land use plans and access issues along SR 46, a controlled access four or six-lane divided facility would be needed to accommodate projected traffic demand. It was also recognized that the existing SR 46/US 441 interchange would require modification and reconstruction to meet current criteria and increased traffic demand consistent with the SR 46 reconstruction. Concepts for the SR 46/US 441 interchange modification would be developed later as part of the Viable Alternatives phase of the PD&E Study.

The initial concepts developed for the reconstruction of existing SR 46 from US 441 to east of Round Lake Road were alternatives to widen to the north (green) or to the south (red). The majority of development along the existing alignment, both residential and commercial, is concentrated on the south side of the roadway. The project study area presents many challenges to widening the facility while maintaining existing access points. Also, constraints identified during the data collection phase of the study include substantial grade changes, wetlands and floodplains through the Wolf Branch and Sunset Pond areas, existing drainage issues from US 441 to Round Lake Road, and an existing CSX railroad line. The railroad line runs south of SR 46 from US 441 and then turns north, intersecting existing SR 46 east of Round Lake Road. The railroad line has limited operations by Florida Central Railroad. In addition to these constraints, the City of Mount Dora has identified an area north of the existing SR 46 alignment as an industrial center on the Future Land Use Map in the city's Comprehensive Plan.

The existing railroad line presented a considerable geometric challenge for a grade separated crossing in close proximity to SR 46, and partially for this reason, an alternative alignment (yellow) outside of the study area was developed. That concept took the SR 46 Realignment section through the Wolf Branch Sink Preserve, a 150-acre tract surrounding a sinkhole that provides direct recharge to the aquifer. Also, the rural area south and east of the Preserve is sparsely populated with few residential or commercial structures.

The portion of the study area east of Round Lake Road between SR 46 and the Orange County line is characterized by large, sparsely developed rural parcels. Constraints within the area include the Sorrento Cemetery, wetlands, floodplains, and potential scrub jay and

gopher tortoise habitat within an upland scrub oak region identified for inclusion in the Wekiva-Ocala Greenway Florida Forever project boundary.

The previously referenced **Exhibits A-4 and A-5** show the initial alignment and systems interchange connection concepts for the SR 46 Reconstruction and Realignment alternatives developed early in the study. Six segments, numbered LCW-1 through LCW-6, provided two alternatives to realign SR 46 and connect at a common point with one of three initial systems interchange concepts. An assessment was completed to compare the impacts of the two alternative routes. The assessment indicated that an alignment through the Wolf Branch Sink Preserve would require approximately 20 acres less right-of-way than the alignment east of Round Lake Road, incur fewer residential and commercial impacts, and provide for a better rail crossing grade separation option; however, this alignment would require ten acres of public land within the Wolf Branch Sink Preserve. The alignment was determined to warrant further consideration. These early concepts were then expanded upon and refined prior to the November 2005 Public Workshops. **Exhibit B-3**, located in **Appendix B**, shows the initial alignment alternatives presented at those Public Workshops along with the corresponding impact analysis spreadsheets.

As shown in **Exhibit B-3**, prior to the Public Workshops an additional alternative was developed east of Round Lake Road and several segments were added to the previously developed concepts to provide 12 alternatives for connection from SR 46 to one of three possible termination points. Those termination points represented the location where the SR 46 Realignment would connect with the systems interchange ramps. The approach used in developing the potential alignments was to minimize impacts to developed parcels and avoid as much as possible other previously described constraints while providing several alternatives routes. An impact assessment was then completed for each segment combination to determine which alignments warranted further consideration.

At the time of the initial alternatives analysis, further development of the SR 46 Realignment concepts was awaiting results of field reviews of the scrub oak parcels that straddle the border of Orange and Lake Counties, as well as the locations/layouts of various systems interchange concepts with which the potential alignments would connect.

3.5.2.3 Lake County East Initial Alternatives

Alternatives for the Lake County East portion of the study area, from the Orange County line in Neighborhood Lakes eastward to the Seminole County line at the Wekiva River, include the Wekiva Parkway alignment concepts with local access interchange locations and the CR 46A Realignment concepts. The local access interchange alternatives would be developed later as part of the Viable Alternatives phase of the PD&E Study.

This section of the study area traverses the environmentally and ecologically sensitive Wekiva River Protection Area and is within the boundaries of the Wekiva-Ocala Greenway Florida Forever project. The study area encompasses portions of Neighborhood Lakes, Rock Springs Run State Reserve, Seminole State Forest, and the Wekiva River Mitigation Bank property (formerly New Garden Coal). Both Neighborhood Lakes and the Wekiva River Mitigation Bank properties were identified for acquisition as part of the Wekiva-Ocala Greenway Florida Forever project. The *Wekiva Parkway and Protection Act* states that the properties are required in order to provide right-of-way for the Wekiva Parkway, to protect

the surface water and groundwater resources within the Wekiva Study Area, and to alleviate pressure on these resources due to growth and development.

The alignments initially developed for Lake County East focused on minimizing impacts to residences adjacent to existing SR 46, while also minimizing environmental impacts and utilizing portions of the parcels identified for acquisition. The initial alignment alternatives for Lake County East (LCE) are shown in **Exhibit A-6**, located in **Appendix A**. Two alignments through Neighborhood Lakes were developed to connect with either of two alignments through the Wekiva River Mitigation Bank property. The results of the impact assessment for these alternatives showed that the westernmost alignment through Neighborhood Lakes required more total right-of-way as it was a longer route; however, the easternmost alignment required more land for right-of-way within Rock Springs Run State Reserve. The two alignment alternatives through the Wekiva River Mitigation Bank property merge east of the existing SR 46/CR 46A intersection. For these segments, the southern (blue) alternative impacted three residential properties while the northern (red) impacted a foliage nursery.

Prior to the November 2005 Public Workshops, a meeting was held with the PD&E Study Environmental Advisory Committee (EAC) on October 14, 2005. Several members of the EAC objected to the eastern alignment through Neighborhood Lakes and the southern (blue) alignment through the Wekiva River Mitigation Bank property due to their impacts on Rock Springs Run State Reserve. As a result of that meeting, a new alignment alternative (beige) that more closely followed the existing SR 46 alignment was developed prior to the Public Workshops, as shown in **Exhibit B-4** of **Appendix B**.

One potential concept for the proposed CR 46A Realignment was developed as shown in **Exhibit B-4**. Other realignment alternatives for CR 46A, as well as the location of the interchange providing access to Wekiva Parkway and attendant improvements to SR 46, were awaiting further development of the Wekiva Parkway alignment and local access interchange alternatives in the Viable Alternatives phase of the study.

3.5.2.4 Seminole County Initial Alternatives

Six initial alignment alternatives with three potential connection points to I-4 were developed for Seminole County (SC) as shown in **Exhibit A-7**, located in **Appendix A**. Three alternatives (magenta, green, and yellow) would connect with I-4 south of the St. Johns River Bridge, two concepts (blue/orange) closely followed the existing SR 46 alignment to the SR 46/I-4 interchange, and one (red) would connect at the SR 417/I-4 interchange.

Three typical sections were utilized in Seminole County: a rural expressway section, a bantam expressway section (later changed to a limited access with frontage roads section) and a six-lane urban section within the existing SR 46 right-of-way. In the naming convention used to identify the alternatives in the graphics and impact assessment spreadsheets, the suffix indicates the typical section of the segment (e.g., SC-3EX is an expressway section, SC-2BE and SC-2LAFR refer to a bantam expressway/limited access with frontage roads section, and SC-7SL is a six-lane urban section).

The magenta alignment alternative remained an expressway typical section from the Wekiva River eastward to I-4. The red, green, and yellow alignments transitioned from a bantam expressway/limited access with frontage roads typical section to an expressway

typical section when they departed from the existing SR 46 corridor and continued on north or south of SR 46 toward I-4.

The blue/orange alternatives that followed the existing SR 46 corridor consisted of a bantam expressway/limited access with frontage roads typical section from the Wekiva River eastward that transitioned to a six-lane urban typical section for the connection to I-4. The variation in those two alternatives was in the location of that transition: one alternative would transition to a six-lane urban section east of Lake Markham Road and the other alternative would transition east of Orange Boulevard.

During a meeting on September 23, 2005, the magenta alignment (segment SC-3EX) was removed from consideration at the request of the Seminole County Engineer due to potential alignment impacts to the Seminole County Northwest Water Reclamation Facility property, the proposed Yankee Lake Elementary School site, and the Black Bear Wilderness Area, as well as wetland impacts and the need to bridge Yankee Lake.

At the EAC meeting held on October 14, 2005, several members of the EAC asked that the green alignment (segments SC-5EX and SC-13EX) be removed from consideration due to potential significant impacts to wetlands, floodplains, public lands/conservation area, and the Black Bear Wilderness Area. Subsequently, this matter was discussed at a meeting of the PD&E Study Project Advisory Group (PAG) also held on October 14, 2005. The members of the PAG, particularly the Seminole County Engineer, concurred that the green alignment should be removed from consideration. Therefore, the green alignment was removed from all plots prior to the first Public Workshops in November of 2005.

Subsequent to removing the magenta and green alignment alternatives, the remaining alignment segments were renamed and the bantam expressway (BE) suffix was changed to limited access with frontage roads (LAFR). Those remaining alternatives were presented at the November 2005 Public Workshops as shown in **Exhibit B-5**, located in **Appendix B**.

3.5.2.5 Coordination with Stakeholders and Initial Alternatives Public Workshops

During the process of developing the initial alternatives, extensive project coordination was undertaken with local and state government agencies, advisory groups, and other entities. Those meetings and/or presentations provided study updates, specific information, and opportunities for feedback on the initial alternatives. After development of the initial alternatives and refinement of them based on the feedback received at many of those meetings, three workshops were held to present the initial alternatives to the public for review and comment. Those Public Workshops were on the dates and at the locations shown below:

- November 9, 2005 – Orange County Public Workshop at Apopka High School
- November 10, 2005 – Lake County Public Workshop at Lake Receptions in Mount Dora
- November 14, 2005 – Seminole County Public Workshop at the Sanford Civic Center

A total of 1,147 attendees signed in at the three workshops and 285 comment forms were submitted after the workshops. All public comments were reviewed and responded to in writing. Many of the comments expressed opinions in favor of or against specific alignment alternatives or interchange concepts. The public comments on the initial alternatives were analyzed by county and utilized by the project team in the evaluation and assessment of alternatives. A complete summary and analysis of the public comments received after the

workshops can be found in a separate document entitled *Wekiva Parkway PD&E Study Initial Alternatives, Summary of Public Meetings, November 2005* (QCA and CH2MHILL).

Some meetings and presentations after November of 2005, particularly those with decision makers, were to provide information on the public feedback received at and after the initial alternatives workshops. That also provided opportunities for those decision makers to give their comments on the alternatives. Thereafter, the project team began the process of alternatives refinement and identification of viable alternatives. A second document on the development and assessment of Wekiva Parkway and SR 46 Realignment alternatives entitled *Technical Memorandum – Identification and Evaluation of Viable Alternatives* (CH2M HILL, December 2006) details the refinement process and related activities.

3.5.3 Viable Alternatives

After the first Public Workshops and meetings with local and state governmental agencies and other stakeholders on the initial alternatives, the project team began the process of alternatives evaluation and refinement. The concepts and impact assessments developed in the initial alternatives phase of the study served as the basis for commencing the identification of potential viable alternatives. The initial alternatives presented at the Public Workshops in November of 2005 were analyzed and evaluated in greater detail, their impacts were assessed more thoroughly, and they were scrutinized for negative aspects. This resulted in the elimination or modification of some alternatives and the further evaluation of others as potential viable alternatives. The work plan which was utilized for identifying viable alternatives is shown below. It outlines the sequential steps that were followed in the process.

Work Plan for Identifying Viable Alternatives

1) *Evaluate the initial alternatives based on:*

- *Adherence to the “Guiding Principles” recommended by the Task Force, endorsed by the Coordinating Committee, and required by the Wekiva Parkway and Protection Act.*
- *Impacts to the natural environment (e.g., wetlands, floodplains, wildlife species and habitat, springs, seepage areas, recharge, karst features).*
- *Impacts to public land, especially conservation lands (with particular focus on minimizing fragmentation of the wildlife corridor).*
- *Impacts to the human environment (e.g., homes, businesses, community facilities, plant nurseries, property access, cultural resources, community cohesion).*
- *Total number of parcels impacted, total estimated right-of-way needed, and generalized (conceptual) construction cost delta based on alignment length and location.*
- *Estimated mitigation and compensation requirements based on wetland, floodplain, and wildlife impacts.*
- *Comments/suggestions/preferences expressed by the public and other stakeholders.*
- *Preferences/recommendations received from the various local governments.*
- *Feedback received from the Project Advisory Group (PAG) and the Environmental Advisory Committee (EAC).*
- *Sound engineering judgment and practice (e.g., design criteria, geometrics, best transportation solution, safety, long term traffic concerns vs. facility adequacy, constructability issues, cost).*

- 2) *Compare the initial alternatives based on the data and information that results from the above evaluation process and identify those alternatives which have the most negative aspects and the greatest impacts.*
- 3) *Select those initial alternatives which, based on analysis of available data and information, appear to have the characteristics of “viable” alternatives.*
- 4) *Prepare a brief summary of the above process, supported by a spreadsheet with the impact categories and information for each alternative, which identifies the proposed viable alternatives.*
- 5) *Present the proposed viable alternatives, with supporting documentation, to the PAG and to the EAC.*
- 6) *Make any reasonable revisions requested by the PAG and/or EAC.*
- 7) *Meet with elected officials and staff from affected local governments to review the selected viable alternatives.*
- 8) *Utilizing all input received, prepare the selected viable alternatives for public presentation.*
- 9) *Display and discuss the selected viable alternatives at Public Workshops and solicit public comments.*

Utilizing the work plan outlined above, viable alternatives were identified for four general areas:

- Orange County from the SR 429/SR 414 John Land Apopka Expressway/US 441 interchange north to the Lake County line;
- Lake County from US 441 to the Orange County line (referred to as Lake County West);
- Lake County from the Orange County line to the Seminole County line (referred to as Lake County East); and
- Seminole County from the Lake County line to Interstate 4 (I-4).

As with the previously developed initial alternatives, the naming convention for the various alignments in each of the four areas noted above was based upon area or sub-area prefixes (i.e., OC for Orange County, LCW for Lake County West, LCE for Lake County East, and SC for Seminole County). The alignments were composed of segments, some of which were utilized in more than one alternative. The segments were numbered sequentially (e.g., OC-2, LCE-4). Prior to the Viable Alternatives Public Workshops held in late July and early August of 2006, the segment names were deleted and replaced with descriptive alignment names or alternative numbers (e.g., Systems Interchange Alternative 3 or Neighborhood Lakes Alternative 2) to assist public understanding and allow easier reference.

The overall layout of the viable alternative concepts in Orange County, Lake County West, Lake County East, and Seminole County as presented at the July/August 2006 Public Workshops is shown in **Exhibit 3-5**. **Appendix C** contains exhibits of the viable alternatives in each of the four general areas presented at those public workshops and the corresponding impact/cost analysis spreadsheets.

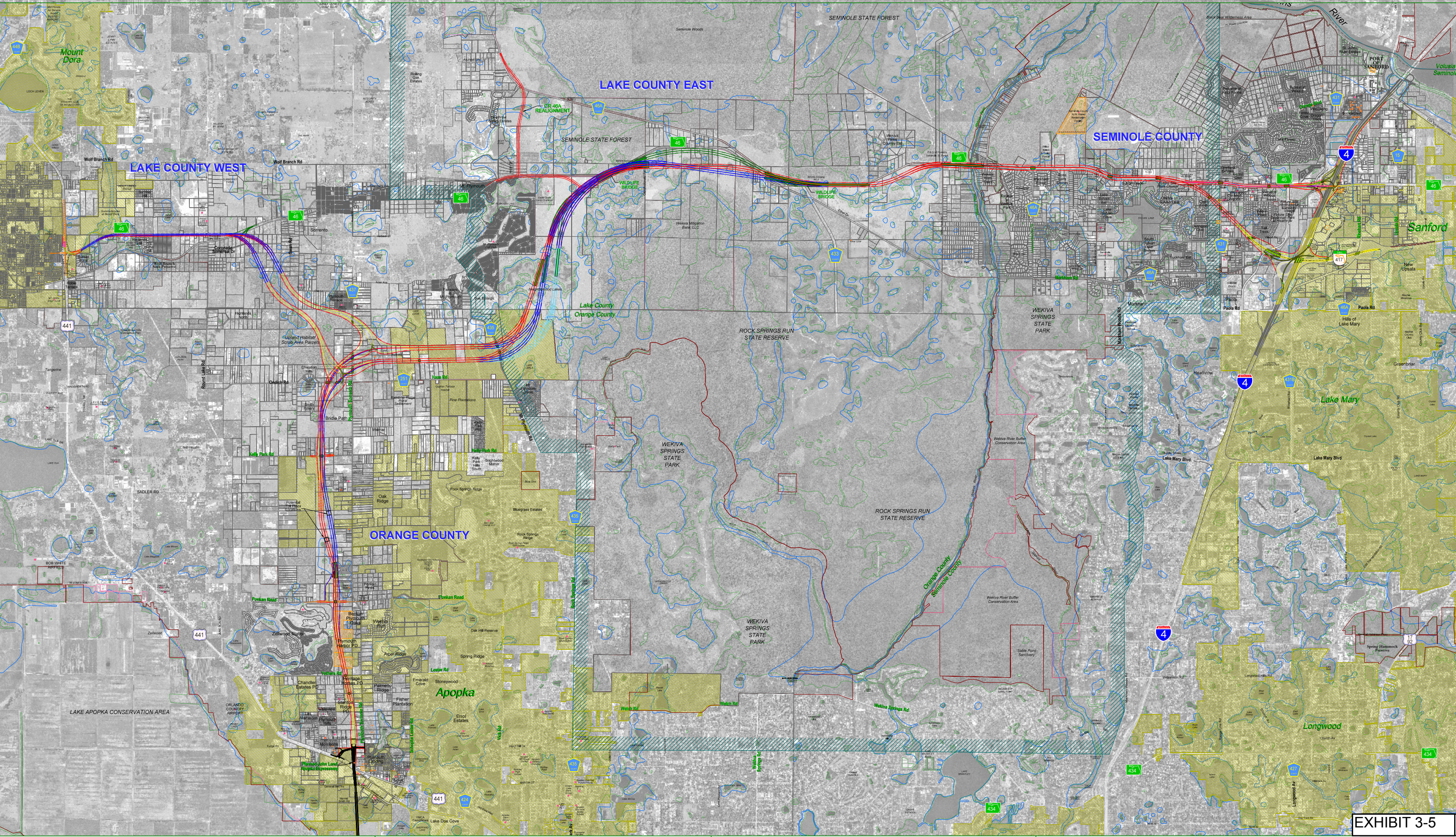


EXHIBIT 3-5

LEGEND

PROPOSED LIMITED ACCESS	POTENTIAL PUBLIC LAND ACQUISITION
PROPOSED RIGHT-OF-WAY	WEKIVA RIVER PROTECTION AREA
EXISTING PARCEL/RIGHT-OF-WAY	COMMUNITY FACILITY SITE
FLOODPLAIN BOUNDARY	HISTORICAL SITE
WETLAND LINE	POTENTIAL CONTAMINATION SITE
CITY BOUNDARY	PROPOSED BRIDGE
PUBLIC LAND	

CH2MHILL
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Florida License No. 000072

WEKIVA PARKWAY
Project Development and Environment Study
Orange, Lake & Seminole Counties

**Overall Project Layout
Viable Alternatives**

JULY 25, 2006 1"= 2000'

3.5.3.1 Orange County Viable Alternatives

Members of the project team met with the manager and staff of the Orange County Environmental Protection Division (OCEPD) on December 1, 2005 to discuss the initial alignment alternatives presented at the November 2005 Public Workshops. OCEPD made several requests at that meeting which were formally stated in a letter dated December 28, 2005. In the letter, OCEPD requested that the final alignment of Wekiva Parkway avoid impacts to two conservation properties known as the former “Fazio” and “Strite” properties, recently purchased by Orange County, as well as a seepage spring located on the parcel currently owned by the Strite family which is directly north of the former Strite property. OCEPD also requested that impacts to Rock Springs Run State Reserve in Lake County be avoided by having a more westerly alignment through the Neighborhood Lakes property.

Initial alignment segments OC-5 and OC-7 directly impacted the former Strite property and the seepage spring, and initial alignment segments OC-14, OC-16, and OC-18 directly impacted the former Fazio property. By eliminating those segments, 12 of the 16 initial alignment combinations were affected. The remaining initial alignment combinations all included segment OC-17, which OCEPD officially stated as their preference (or another alignment similar to it). Segment OC-17 took the alignment just to the south of the former Fazio property. OCEPD has stated that the primary access to the former Fazio property is from Rainey and Swain Roads to the north, so an alignment directly adjacent to the south property line of the former Fazio property would not cut off access to the property. That revision to OC-17 (i.e., moving it slightly north) reduced impacts to the parcels contiguous and adjacent to the south property line of the former Fazio property by leaving useable remnants of several large parcels with frontage on the north side of Boch Road. Another alternative revision to segment OC-17 (i.e., moving it south) took the alignment south of Boch Road yet avoided direct impact to the 110 year old Bock House, a historic home subsequently determined to be eligible for listing in the *National Register of Historic Places* (NRHP). Also, these revisions to OC-17 (i.e., south of and north of Boch Road) do not directly impact either the former Strite property or the seepage spring to the north of it. A realignment of Boch Road was not evaluated due to opposition expressed by residents at the Orange County Public Workshop; however, this realignment was assessed as part of the Section 106 evaluation (refer to *Sections 3.5.4.4 and 4.2.1*). The revised alignments, from west of Plymouth Sorrento Road to west of CR 435, became known as the “southern” and “northern” alignments. Prior to the Viable Alternatives Public Workshops held in July and August 2006, the alignment segments were renamed Orange County Alternative 1 and Orange County Alternative 2, respectively. **Exhibits C-2 and C-3 in Appendix C** show those revised alignments in Orange County.

Refinements to the remaining initial alignment segments were made with several constraints taken into consideration in addition to OCEPD’s requests. Alignment revisions to reduce impacts to the floodplain north of Ponkan Road were developed. The alignment concepts were further refined from south of Ponkan Road to north of Kelly Park Road to provide adequate tangent sections for interchange approaches and toll plaza concepts for each of the local access interchange options. The refined alignments are referred to as the Kelly Park Road Interchange Alignment and the Ponkan Road Interchange Alignment, and are shown in the previously referenced **Exhibits C-2 and C-3**, respectively. *The Kelly Park Road & Ponkan Road Alignment Alternatives Comparison spreadsheet follows Exhibits C-2 and C-3 in Appendix C.*

Field reviews of the scrub parcels north of Ondich Road and west of Plymouth Sorrento Road were conducted in June 2005 and March 2006 by the project team's field biologists. Those reviews indicated that the north and east portions have an extremely dense canopy and would not support a scrub jay population; however, there are areas in the south and west portions that have an open canopy with exposed white sand, and understory and groundcover, that can support scrub jays, indigo snakes, and gopher tortoises. Based on the field reviews, it was recommended that alignment and systems interchange alternatives be located as far north and east as possible, and while there would potentially be some impact to species, preserving the largest contiguous portion possible would provide an area that could be managed and improved to support scrub jays and gopher tortoises.

In consideration of the biologists' recommendation, as well as other constraints, three general configurations for the Wekiva Parkway/SR 46 Realignment Systems Interchange were developed. There are variations in those systems interchange configurations for connection to the Kelly Park Interchange Alignment or the Ponkan Road Interchange Alignment and Orange County Alternatives 1 or 2, as well as variations for connection to Lake County West Alternatives 1 or 2 (described in greater detail in the Lake County West Alternatives discussion).

The Kelly Park Road Interchange Alignment and the Ponkan Road Interchange Alignment alternatives are very similar north of Kelly Park Road; for this reason, only the Kelly Park Road Interchange Alignment was used in depictions of the Systems Interchange alternatives to assist public understanding and allow easier reference. As shown in **Exhibits C-4 through C-6 in Appendix C**, Systems Interchange Alternatives 1 through 3 connect the Kelly Park Interchange Alignment to Orange County Alternative 1, with variations for connection to Lake County West Alternatives 1 and 2. Systems Interchange Alternatives 4 through 6 connect the Kelly Park Interchange Alignment to Orange County Alternative 2, with variations for connection to Lake County West Alternatives 1 and 2, as shown in **Exhibits C-7 through C-9**. The corresponding *Orange County/Lake County West Systems Interchange Alternatives Comparison* spreadsheet is located after **Exhibit C-9 in Appendix C**.

3.5.3.2 Lake County West Viable Alternatives

In Lake County West, an alignment composed mainly of segments LCW-3 and LCW-6, and portions of alternative segments LCW-7, LCW-13, and LCW-14, was evaluated for its potential as a SR 46 Realignment concept connecting the existing SR 46 corridor to the Wekiva Parkway Systems Interchange in northwest Orange County. The segment (LCW-3) which connected to the existing SR 46 corridor turned to the southeast approximately 3,000 feet west of Round Lake Road and passed through the easternmost portion of the Wolf Branch Sink Preserve. At its closest point, the conceptual alignment was approximately 2,200 feet from the sink, which discharges directly to the aquifer. The concept for the alignment was evaluated as a better alternative for overpassing the existing CSX railroad tracks and for avoiding existing residential development. However, any potential impacts to the environmentally important and sensitive Wolf Branch Sink Preserve were viewed as unacceptable. On December 6, 2005, the Mount Dora City Council passed a resolution that contained a request to eliminate the alignment alternative which passed through the Wolf Branch Sink Preserve. The Lake County Water Authority Board of Trustees, which owns and manages the Wolf Branch Sink Preserve, unanimously passed a motion on February 22,

2006 requesting elimination of the alignment alternative. On February 27, 2006, the Lake County Public Works Director indicated “no objection” to the elimination of that alignment alternative. Therefore, it was eliminated from further consideration and removed from all alternative plots before the July/ August 2006 Viable Alternatives Public Workshops. The remaining segments for the SR 46 Realignment alternatives from the existing SR 46 corridor to Wekiva Parkway were refined to minimize social and environmental impacts while providing connection options to the Systems Interchange alternatives discussed previously. Two viable alignment alternatives, as shown in the previously referenced **Exhibits C-4 through C-9 in Appendix C**, were presented as Lake County West Alternatives 1 and 2 at the July/ August 2006 Viable Alternatives Public Workshops. The impact and cost analysis for those segments is included with the *Orange County/Lake County West Systems Interchange Alternatives Comparison* spreadsheet located after **Exhibit C-9**.

The City of Mount Dora’s preference for widening SR 46 on the north side of the existing alignment from US 441 to east of Round Lake Road was indicated at a meeting between the city’s Planning and Development Director and project team members held on September 20, 2005. The majority of development along the existing alignment, both residential and commercial, is concentrated on the south side of the roadway. An initial impact assessment showed that parcel impacts and displacements were considerably higher for widening to the south. The widening to the south alternative was not eliminated, but was not evaluated for right-of-way costs due to the results of the initial impact assessment and Mount Dora’s stated preference for widening to the north. It is reasonably expected that the right-of-way costs for the south widening concept would be higher. The viable alignment alternatives for the existing SR 46 corridor are shown on **Exhibit C-10 in Appendix C**, followed by the *Lake County West Alignment Alternatives Comparison* spreadsheet.

Four US 441/SR 46 interchange modification alternatives were developed as part of the viable alternatives portion of the study: two grade-separated alternatives and two at-grade alternatives. A loop ramp in the southwest quadrant of the interchange was analyzed at the request of Mount Dora officials and, due to impacts, was later eliminated at their request. Alternatives with an at-grade intersection of US 441 and SR 46 were also developed and analyzed, including a traffic operations analysis, in response to the Mount Dora City Council’s December 6, 2005 resolution requesting examination of alternatives to discourage traffic continuing on SR 46 west of US 441. The viable alternatives include 1) a grade-separated interchange with a southbound US 441 to eastbound SR 46 flyover ramp, 2) an at-grade intersection with an outside take off southbound US 441 to eastbound SR 46 flyover ramp, and 3) an at-grade intersection with an inside take off southbound US 441 to eastbound SR 46 flyover ramp. The viable interchange modification alternatives are shown in **Exhibits C-11 through C-13 in Appendix C**, followed by the *Lake County West Interchange Alternatives Comparison* spreadsheet.

3.5.3.3 Lake County East Viable Alternatives

In Lake County East, an alignment composed mainly of segments LCE-22 and LCE-24 (referred to as the “blue” alignment) was the initial alternative farthest south of existing SR 46; it passed through the northwest portion of the Rock Springs Run State Reserve and an uplands portion of Wekiva River Mitigation Bank property (formerly New Garden Coal). Since segments of the “blue” alignment passed through the state reserve managed by the Florida Department of Environmental Protection (FDEP) Recreation and Parks Division,

several environmental groups that compose the Wekiva Coalition, the project Environmental Advisory Committee, the Seminole Soil and Water Conservation Commission, and the FDEP Park Service all objected to the “blue” alignment alternative and requested that it be removed from project maps depicting the alternatives. It was therefore eliminated from further consideration and removed from all alternative plots after the first Public Workshops in November 2005.

Several alternatives for avoiding impacts to Rock Springs Run State Reserve, and the floodplains and wetlands to the maximum extent possible, were developed through the Neighborhood Lakes parcels using the geometric criteria for an expressway typical section with a 70 mile per hour design speed. Three of these alignments were selected for further evaluation: one that was as far west as possible, one as far east as possible, and one through the central section of the parcels. The three alignments were named Neighborhood Lakes Alternatives 1 through 3, from west to east, and are shown in **Exhibits C-14 through C-16 in Appendix C**, followed by the *Lake County East Neighborhood Lakes Alignment Alternatives Comparison* spreadsheet. These alignments were tied into the remaining “red” and “green” initial alternatives from the eastern boundary of Neighborhood Lakes to the Wekiva River, and a new “blue” alignment was developed through that section. The new “blue” alignment was developed based on an alignment suggested by the Nature Conservancy. The three Neighborhood Lakes alignments combined with the southern “red” and “blue” alignments and the northern “green” alignment resulted in nine alternatives from the Orange/Lake County line to the Wekiva River.

The proposed realignment of CR 46A is shown in Figure 3 of the *Wekiva River Basin Coordinating Committee Final Report*, as endorsed from the recommendations of the Wekiva Basin Area Task Force. The recommendation was to continue the existing CR 46A alignment on approximately the same bearing as the tangent section connecting to SR 44 to the north, to an interchange with SR 46 and Wekiva Parkway in the Neighborhood Lakes area. Several potential alignments and interchange alternatives were considered in that location; however, the majority of the property through which the proposed CR 46A realignment traverses is under single ownership. Discussions with the landowner resulted in an alignment along the western boundary of the property that also provided a large remnant parcel for stormwater and floodplain compensation ponds.

Other stakeholders in the area include Easter Seals Camp Challenge on the south side of SR 46 and Florida Gas Transmission on the north side of SR 46. Efforts to avoid or minimize impacts to these properties/facilities resulted in an alternative that would hold the south gas pipeline easement line and widen the existing SR 46 more to the north than to the south, avoiding impacts to the gas pipeline and minimizing impacts to Camp Challenge. A second alternative developed for comparative analysis holds the north SR 46 right-of-way line and widens the existing corridor to the south. This alternative results in more impact to Camp Challenge; however, it lessens the impact to the landowner most impacted by the CR 46A realignment. These alternatives were presented at the Viable Alternatives Public Workshops as CR 46A Alternative 1 and Alternative 2, respectively, and are shown with the viable interchange alternative in **Exhibits C-17 and C-18 in Appendix C**, followed by the *CR 46A and Neighborhood Lakes Interchange Alignment Alternatives Comparison* spreadsheet.

Once the Neighborhood Lakes and CR 46A alignments and interchange concepts were developed, local access interchange alternatives for the developed parcels to the east were evaluated. As stated in the Task Force recommendations endorsed by the Coordinating

Committee and the *Wekiva Parkway and Protection Act*, remnant portions of SR 46 and CR 46A could remain in place to provide local access. This area has seen high numbers of Florida black bear fatalities, and two wildlife crossings under SR 46 have been constructed in recent years to help mitigate the problem. Enhanced wildlife crossings would be integrated into the design of the Wekiva Parkway through this area. As discussed previously, CR 46A would be realigned to connect with SR 46 in the area of Neighborhood Lakes, and sections of SR 46 and CR 46A not required for local access would be removed. With these considerations in mind, options for either two half (“split”) diamond interchanges or two full interchanges were developed from east of Neighborhood Lakes to west of the Wekiva River to provide access to the developed parcels. The split diamond interchange alternatives would leave a remnant section of SR 46 open between the interchange locations so that local traffic has access to both eastbound and westbound Wekiva Parkway. The two full interchange alternatives allow for closing more of the existing roadway, but require more right-of-way and would have substantially higher construction costs. The conceptual location of the easternmost interchange just west of Wekiva River Road is common to all alternatives and differs only in that it may be a half or full interchange at that location. The conceptual locations of the interchange further to the west vary with the alignment and these could be either half or full interchanges.

Four interchange alternatives were developed for the red alignment: one split diamond configuration, two full diamond configurations, and one full diamond configuration with collector-distributor (C-D) roads. The latter alternative was eliminated prior to the Viable Alternatives Public Workshops due to the additional costs and impacts that would be associated with carrying the C-D roads on structure over the wildlife crossing east of Neighborhood Lakes, as well as the additional right-of-way that would be required. The remaining alternatives on the red alignment were presented at the Viable Alternatives Public Workshops as Local Access Interchange Alternatives 1, 2, and 3, and are shown in **Exhibits C-19, C-20, and C-21 in Appendix C**. Local Access Alternative 1 is a split diamond configuration with a half diamond interchange west of the existing SR 46/CR 46A intersection and another half diamond interchange west of Wekiva River Road. The existing section of SR 46 between the interchanges would remain open for local access. Local Access Alternative 2 is similar to Alternative 1, but has two full diamond interchanges and SR 46 is closed between the interchanges. Alternative 3 has a full diamond interchange located on Wekiva River Mitigation Bank property south of SR 46, and another west of Wekiva River Road.

Interchange alternatives for the new blue alignment were not developed prior to the Viable Alternatives Public Workshops due to the similarity with the red alignment. It was assumed that the costs and impacts associated with the interchanges for either the blue or red alignments would be similar. Two interchange configurations on the blue alignment were developed subsequent to the Public Workshops for refined impact and cost analysis. Local Access Alternative 1A is similar to Local Access Alternative 1 on the red alignment with the split diamond configuration. Likewise, Alternative 2A is similar to Alternative 2 with the two full interchanges. Alternatives 1A and 2A are shown in **Exhibits C-19a and C-20a in Appendix C**.

Three interchange alternatives were developed for the northern “green” alignment. One alternative featured a half diamond and a loop west of the existing SR 46/CR 46A intersection, and a full diamond interchange west of Wekiva River Road. This configuration

did not provide any additional benefits when compared with the two full diamond configurations, and was eliminated from further consideration prior to the Viable Alternatives Public Workshops. The remaining alternatives on the green alignment were presented at the Public Workshops as Local Access Alternatives 4 and 5, and are shown in **Exhibits C-22 and C-23 in Appendix C**. Alternative 4 is the split diamond configuration similar to Alternative 1. Alternative 5 is a full diamond configuration similar to Alternative 2.

The corresponding *Lake County East Local Access Interchange Alternatives Comparison* spreadsheet follows **Exhibits C-19 through C-23 in Appendix C**.

3.5.3.4 Seminole County Viable Alternatives

In Seminole County, the northern or “yellow” alignment (segment SC-7EX) shown at the November 2005 Initial Alternatives Public Workshops was eliminated following the Seminole County Expressway Authority (SCEA) Board meeting on December 20, 2005. At the meeting, members of the SCEA voted unanimously to have the yellow alignment removed from further consideration due to impacts to wetlands, floodplains, public lands/conservation area and the Black Bear Wilderness Area, as well as public comments against it and the potential for 32 residential displacements, adverse effects to the Port of Sanford, and interchange impacts on the St. Johns River. Given the high level of impact and the SCEA input, the yellow alignment was eliminated from further consideration.

Two concepts presented at the November 2005 Initial Alternatives Public Workshops consisted of a limited access with frontage roads typical section from the Wekiva River to a) east of Lake Markham Road or b) east of Orange Boulevard, where the typical section transitioned to a six-lane urban facility connecting to an unmodified SR 46/I-4 interchange. These alternatives were eliminated from consideration as viable alternatives due to their lack of capacity to meet projected traffic demand and resultant level of service F conditions. In addition, this type of facility would not provide a direct expressway-to-expressway connection since there would be signalized intersections along SR 46 on the six-lane urban section. These concepts were modified to eliminate the transition to a six-lane section and continue the limited access facility with frontage roads to a modified SR 46/I-4 interchange. However, this would still not provide a direct expressway-to-expressway connection, as explained later in this section.

The limited access expressway with frontage roads concept was developed for both north widening and south widening alternatives along the existing SR 46 corridor, before transitioning to a rural expressway typical section for connection to the SR 417/I-4 interchange. **Exhibits C-24 and C-25 in Appendix C** show the Wekiva Parkway with Frontage Roads North Widening and South Widening alternatives, respectively.

Widening the existing 200-foot SR 46 right-of-way to the north would require relocation of a 26” natural gas pipeline located in a 50-foot easement adjacent to the SR 46 northern right-of-way line and replacement of the easement. The gas line and easement run immediately adjacent to the existing SR 46 right-of-way for approximately two miles from the Wekiva River to an existing Progress Energy easement which crosses SR 46 just east of Lake Markham Road. North widening would also impact the Lower Wekiva River Preserve State Park, which is FDEP property. Widening to the south would avoid relocation of the gas pipeline and impact to FDEP property, however, most of the development through this

section is concentrated on the south side of SR 46. As a result, impacts to residential and commercial parcels would be greater with this alternative.

Exhibit C-26 in **Appendix C** shows the concept for connecting Wekiva Parkway to a modified SR 417/I-4 interchange. The concept was developed to work within the FDOT I-4 Master Plan right-of-way limits to the maximum extent possible, while providing a systems interchange between two major expressways (SR 429 and SR 417) and I-4. Approximately 12 residential displacements would be required south of SR 46 for the expressway connection to the SR 417/I-4 interchange.

For the concept of limited access with frontage roads to the SR 46/I-4 interchange, two interchange modification alternatives were developed, as shown in **Exhibits C-27** and **C-28** in **Appendix C**. Both interchange alternatives would accommodate a loop ramp in the northwest quadrant of the existing interchange that is currently in the design phase and is funded for right-of-way acquisition. Considerable impacts to commercial properties and relocation of Seminole County Fire Station #34 are unavoidable with any systems interchange concept at this location, and third level flyover ramps are necessary to minimize the impacts. Also, both concepts would require use of the I-4 corridor and local streets for east-west trips to/from Wekiva Parkway and SR 417. Alternative 1, shown in **Exhibit C-27**, has a flyover ramp that comes down to grade in the northeast quadrant of the interchange and impacts several commercial properties. Alternative 2, shown in **Exhibit C-28**, impacts the perimeter road and parking lot of Seminole Towne Center Mall. Both alternatives would impact two large automobile dealerships, one in the northwest quadrant and the other in the southwest quadrant.

The corresponding impact and cost assessment spreadsheet for the *Seminole County Alternatives Comparison (from the Wekiva River to I-4)* follows **Exhibits C-24** through **C-28** in **Appendix C**.

3.5.3.5 Coordination with Stakeholders and Viable Alternatives Public Workshops

During the process of identifying the viable alternatives, extensive project coordination was undertaken with local and state government agencies, advisory groups, and other entities. Those meetings and/or presentations provided study updates, specific information, and opportunities for feedback on the viable alternatives. After development of the viable alternatives and refinement of them based on the feedback received at many of those meetings, three workshops were held to present the viable alternatives to the public for review and comment. Those Public Workshops were on the dates and at the locations shown below:

- July 25, 2006 – Seminole County Public Workshop at the Sanford Civic Center
- July 26, 2006 – Orange County Public Workshop at Apopka High School
- August 1, 2006 – Lake County Public Workshop at Lake Receptions in Mount Dora

A total of 1,201 attendees signed in at the workshops and 573 comment forms were submitted after the workshops. All public comments were reviewed and responded to in writing. Many of the comments expressed opinions in favor of or against specific alignment alternatives or interchange concepts/locations. The public comments on the viable alternatives were analyzed by county and utilized by the project team in further evaluation and assessment of the alternatives. A complete summary and analysis of the public comments received after the workshops can be found in a separate document entitled

After the Public Workshops, the project team began attending a series of meetings with homeowners associations, property owners, and others to discuss possible refinements to the viable alternatives in specific areas. There were numerous meetings in August, September, and October of 2006, particularly with homeowners near the alignment alternative for connecting Wekiva Parkway to the SR 417/I-4 interchange. As a result, refinements and additional alignment alternatives were developed and evaluated. This was also the case in Lake County East for the CR 46A realignment and in northern Orange County for the Wekiva Parkway alignment north of Haas Road and east of Plymouth Sorrento Road.

3.5.4 Viable Alternatives Refinement

As indicated, several alternatives were refined and in some cases additional alignment concepts were developed after meetings with homeowners associations and others following the Viable Alternatives Public Workshops. This further analysis and evaluation of alternatives was undertaken for four specific areas:

- the Wekiva Parkway alignment from the SR 46 corridor southeast to the SR 417/I-4 interchange in Seminole County;
- the CR 46A Realignment in Lake County East;
- local access interchange concepts for the Wekiva Parkway alignment in Lake County East; and
- the Wekiva Parkway alignment north of Haas Road and east of Plymouth Sorrento Road in Orange County.

3.5.4.1 Seminole County

In response to concerns expressed at and after the July 25, 2006 Viable Alternatives Public Workshop in Seminole County, separate meetings were held in Sanford with the Capri Cove and Tall Trees Homeowners Associations, the pastor and members of the Lakeside Fellowship United Methodist Church, and the owner of the Twelve Oaks RV Resort to discuss possible refinements to the Wekiva Parkway alignment from the SR 46 corridor southeast to the SR 417/I-4 interchange. Alignment refinements referred to as Alternatives A, B and C, as well as Refined Viable Alternatives 1 and 2, were developed by the project team to comparatively evaluate the impacts of the adjustments requested by the various parties. Those alternatives are shown in **Exhibits D-1, D-2, D-3, D-4, and D-5** located in **Appendix D**, along with the comparative assessment spreadsheet. The results of that evaluation indicated, in most cases, refinements to satisfy one party often meant greater impacts to another party. For example, moving the roadway alignment further east away from the Capri Cove development resulted in greater impacts to the United Methodist Church. The alignment was refined to minimize impacts, as much as possible, to all parties.

3.5.4.2 Lake County East

In response to concerns expressed at and after the August 1, 2006 Viable Alternatives Public Workshop in Lake County, meetings were held with the Heathrow Country Estates Homeowners Association near Mount Plymouth to discuss possible additional alternatives

for the realignment of CR 46A. The project team developed several alternative realignment concepts for comparative evaluation, including those requested by the homeowners association. Those alternatives are shown in **Exhibit D-6** located in **Appendix D**, along with the comparative assessment spreadsheet.

At the request of the Lake County Commissioners, additional meetings with the Heathrow Country Estates Homeowners Association were held to further discuss and evaluate the realignment alternatives for CR 46A. At the conclusion of that process, the Commissioners supported CR 46A Realignment Alternative 1A as the Proposed Build Alternative.

Based on the impact and cost analysis, as well as existing and future traffic projections, the recommended alternative for the local access interchange concepts in Lake County East was the split diamond interchange concept that would leave a portion of SR 46 open between the interchange locations, as documented in *Wekiva Parkway/ SR 46 Realignment: Consultant Recommendation on the Preferred Alternative*, CH2M HILL, April 2007. This concept minimized impacts to public lands and was less expensive than two full interchanges. The *Wekiva Parkway and Protection Act* allows for portions of SR 46 to remain open for local access; however, while this concept was less costly and minimized impacts to Rock Springs Run State Reserve and Seminole State Forest, the land managers from both FDEP, Division of Recreation and Parks and the Florida Department of Agriculture and Consumer Services (FDACS), Division of Forestry requested that the two full interchanges concept be selected as the Proposed Build Alternative. Several meetings were held with FDEP personnel in both Orlando and Tallahassee on the recommendation for split diamond interchanges in Lake County East. FDEP wanted no remnants of SR 46 to remain open for local access and requested full interchanges. In addition, the FDACS, Division of Forestry stated their preference for the full interchange concept based on the fact that this section of SR 46 is the location of the first wildlife structure installed on SR 46 and is the most frequently used crossing between Seminole State Forest and Rock Springs Run State Reserve. Subsequently, the Wekiva River Basin Commission and the Lake County Board of County Commissioners concurred with the position of FDEP and the Division of Forestry. Although projected traffic demand does not require full interchanges in that area of Lake County East, and the cost delta between half and full interchanges is substantial, FDOT agreed to revise the Proposed Build Alternative to include full interchanges. In this case, planning efforts that would help to reduce Section 4(f) impacts were rejected by the public land managers in order to ensure unobstructed wildlife habitat connectivity between Rock Springs Run State Reserve and Seminole State Forest. However, due to the addition of a non-tolled Service Road to the design concept in the spring of 2010 (as discussed in *Section 3.6*) those two local access interchanges are no longer needed and are not in the Proposed Build Alternative.

3.5.4.3 Orange County

In response to a resident's request made at and after the July 26, 2006 Viable Alternatives Public Workshop in Orange County, a meeting was held with the staff of the Orange County Environmental Protection Division concerning potential use of the Orange County GreenPlace conservation parcels (formerly the Fazio property) for the Wekiva Parkway alignment north of Haas Road and east of Plymouth Sorrento Road. OCEPD had previously requested that the conservation parcels not be impacted by any of the alignment alternatives, however, it was agreed that an impact analysis would be performed for comparative evaluation with the viable alternatives for that alignment segment. The project team prepared two alternative alignment concepts; one 150 feet on and the other 300 feet on

the GreenPlace conservation property. Those alternatives are shown in **Exhibits D-7 and D-8** located in **Appendix D**, along with the comparative assessment spreadsheet. The impacts of the alternatives on the conservation parcels were determined to be unacceptable.

3.5.4.4 Section 4(f) and Section 106 Consultation Alternatives

Alternatives were developed to avoid or minimize impacts to Section 4(f) resources and Section 106 sites. Detailed discussions on Section 4(f) lands (state parks/forest and Wild & Scenic River) and related alternatives analysis are provided in *Sections 4.2.2.2 and 4.3.10*, respectively. With regard to Section 106 sites, the proposed improvements related to the Wekiva Parkway (SR 429)/SR 46 Realignment project will impact two historic resources eligible for listing in the *NRHP* which are within the project area of potential effect for the Proposed Build Alternative. Those two resources are:

- Paul Bock House (8OR7946)/2626 Boch Road, Apopka, FL (8OR7946), individually eligible for listing in the *NRHP*, and
- Strite House (8OR9844)/6229 Plymouth-Sorrento Road (8OR9844), Apopka, FL, individually eligible for listing in the *NRHP*

Descriptions of the Bock House and the Strite House, as well as more detailed information on potential impacts, are provided in *Section 4.2.1* of this document.

On April 21, 2008, a Cultural Resource Consultation meeting was held with a representative of the State Historic Preservation Office (SHPO) and local stakeholders including the property owners of the Bock House and the Strite House. That meeting was held as part of the Section 106 consultation and review process to discuss potential Section 4(f) impacts to the *NRHP* eligible historic resources. The meeting focused on the range and types of proposed effects to historic resources in Orange County and potential mitigation measures. The following possibly viable alternatives were discussed:

- Systems Interchange Alternative 4 (combined with Orange County Alternative 2) for the Section 106 avoidance alternative, and
- Systems Interchange Alternative 1 (combined with Orange County Alternative 1) for the build alternative.

Following the meeting, two Section 106 minimization alternatives (Alternatives 1A and 1B) were developed and evaluated at the request of the SHPO. Alternative 1A is similar to Alternative 1 but with an alignment shift further south to avoid impacts to the mature oak trees on the Bock property. Alternative 1B is similar to Alternative 1 but with an alignment shift further south to avoid impacts to the mature oak trees on the Bock property and to avoid the Strite House.

The potential effects to the two cultural resources, resulting from the Proposed Build Alternative (Alternative 1), Avoidance Alternative (Alternative 2), and the Minimization Alternatives (Alternatives 1A and 1B) were documented in the draft *Section 106 Documentation and Determination of Effects Case Study Report for the Wekiva Parkway (SR 429)/SR 46 Realignment PD&E Study* (Janus Research with CH2M HILL, July 2008). After review of that document, the SHPO concurred with the finding that Alternative 1 would have an adverse effect on both the Paul Bock House and the Strite House, indicated that Alternative 2 should be considered, and requested further coordination in a letter to FHWA dated September 10, 2008 (a copy of the letter is provided in **Appendix F**).

During project sponsor consultation with FHWA from September 2008 to April 2010, the potential environmental effects to these two cultural resources were analyzed further and documented as part of the draft *Individual Section 4(f) Evaluation for Historic Resources* (April 2010). Those additional analyses were also included in the revised draft *Section 106 Documentation and Determination of Effects Case Study Report for the Wekiva Parkway* (SR 429)/SR 46 Realignment PD&E Study (Janus Research with CH2M HILL, June 2010).

The “Determination of Effects”, documented in Section 4.4 of the revised draft *Case Study Report*, indicated that the minimization alternatives (Alternative 1A and 1B) would result in minimized effects to the Bock House (decreased right-of-way impacts, noise effects and visual effects) as compared to Alternative 1; however, these alternatives would also result in increased effects to the Strite House. Alternative 2 avoids direct use of both the Bock House and Strite House properties, but would have cumulative environmental, community disruption, social, and cost impacts of extraordinary magnitude in comparison to Alternative 1.

FHWA engaged in on-going consultation with the SHPO as required by 36 CFR, Part 800 and regulations implementing Section 106 of the National Historic Preservation Act of 1966, as amended, regarding the potential impacts of the proposed project and its alternatives on significant historic resources. An update on the project study was provided to SHPO staff in a conference call on March 9, 2010. After SHPO review of the revised draft *Case Study Report*, a second Section 106 Cultural Resource Consultation meeting was held on August 16, 2010, with the affected property owners, SHPO staff, FHWA, and other stakeholders. Measures to minimize and/or mitigate effects to the two historic resources were identified, discussed and evaluated. Consistent with the discussions at the second Section 106 Cultural Resource Consultation meeting, measures to minimize and/or mitigate adverse effects to the two historic resources by Orange County Alternative 1 have been addressed in a *Memorandum of Agreement* (MOA) dated June 2011 between FHWA and the SHPO. A copy of the executed MOA, signed by the FHWA Florida Division Administrator and the SHPO, with concurrence signatures by the FDOT District Five Secretary and the OOCEA Executive Director, is provided in the final *Section 106 Documentation and Determination of Effects Case Study Report* (November 2011). See *Section 4.2.1* for further related information, including U.S. Department of the Interior concurrence with the *Individual Section 4(f) Evaluation*.

3.6 Proposed Build Alternative

Based upon comparative assessment of the results of the engineering/environmental analysis and the evaluation of impacts/costs, and after extensive coordination with stakeholders, the Expressway Authority and FDOT, District Five identified the overall Proposed Build Alternative for the proposed Wekiva Parkway (SR 429) and SR 46 Realignment project in April 2007. Subsequent coordination with state and local agencies, residents, homeowners associations, and other stakeholders resulted in some refinements to or further evaluation of portions of the overall alternative, as discussed below.

Seminole County Alternative Evaluation

In May of 2008, the SCEA Board asked FDOT to analyze and evaluate several Wekiva Parkway alignment alternatives in Seminole County proposed by a group of homeowners and others called the Wekiva Parkway Community Coalition (WPCC). Initially, the WPCC proposed nine alternative alignments which FDOT analyzed and evaluated for several months. After a meeting with FDOT to review the results of the alignment analyses, the WPCC then requested that only one specific alignment alternative (referred to as the

Northern Alternative or Map G) be further evaluated. The WPCC requested that FDOT perform a detailed assessment of the Map G alternative, including environmental and social impacts, traffic operations, construction costs, etc. After the evaluation was completed, FDOT met again with the WPCC to advise them of the estimated additional costs and substantial environmental impacts of the Map G alternative, as well as the undesirable traffic operations of the concept, compared to the Proposed Build Alternative. FDOT indicated to the WPCC that because of those factors, as well as environmental justice issues, the Map G concept could not be considered a viable alternative. FDOT recommended to the SCEA Board in November 2008 that the Map G concept be eliminated from further consideration and the Proposed Build Alternative was maintained in Seminole County.

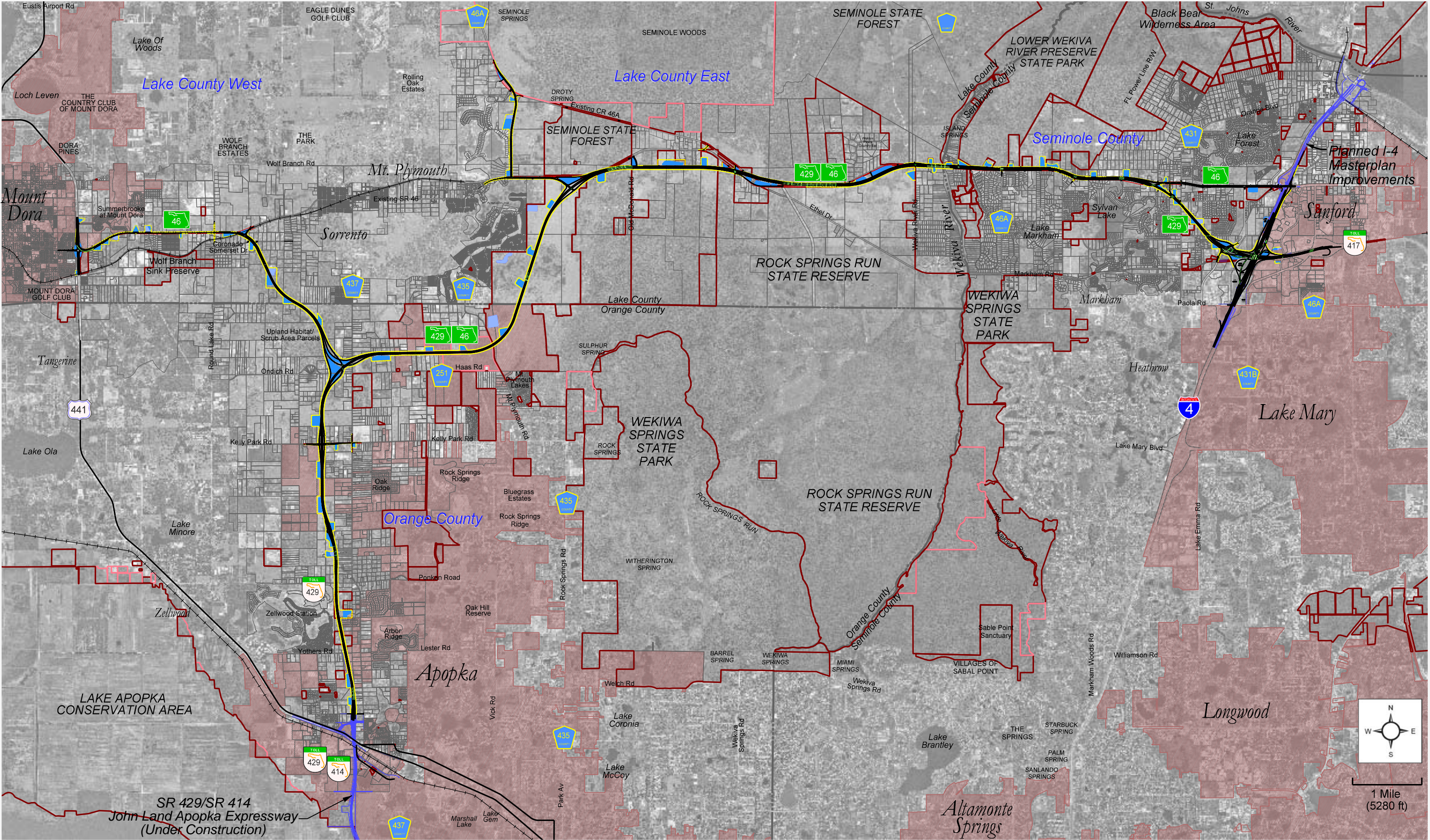
Lake County East Alternative Revision

Following the identification of the Proposed Build Alternative for the overall project, extensive discussions on funding options reached a crucial decision point in early 2009. Due to declining transportation dollars available to FDOT, it was determined that the preliminary estimated cost of the project (\$1.8 billion) would not be financially feasible to fund without tolls on the Wekiva Parkway in Lake and Seminole Counties.

As stated in the purpose and need for the Wekiva Parkway, a higher capacity east-west facility is needed in east Lake County and west Seminole County. The PD&E Study initially assumed that Wekiva Parkway would be a non-tolled expressway upgrade for SR 46 through the Wekiva River Protection Area, and in compliance with the *Wekiva Parkway and Protection Act*, only those sections of SR 46 needed for local access would remain open to traffic. As such, this was the only area within the proposed project where an alternative route to the expressway would not be provided.

In response to residents in the east Lake County area who expressed concerns over paying a toll for a local trip, FDOT and the Expressway Authority analyzed options to provide a non-tolled alternative for local trips. After several meetings during mid to late 2009 with area residents, local government officials, the Florida Department of Environmental Protection, and representatives of the environmental stakeholder community, a two-lane, two-way service road concept parallel to the Wekiva Parkway was developed. To minimize impacts, the service road is proposed to be within the previously identified Wekiva Parkway right-of-way. The service road would extend from just north of the Wekiva Parkway interchange near Neighborhood Lakes to just east of the Wekiva River in Seminole County; that concept was presented at a Public Workshop in Lake County on December 17, 2009. Public comments resulting from the workshop were reviewed and incorporated into the preliminary design of the service road and the Wekiva Parkway mainline. The incorporation of the service road eliminates the need for the local access interchange concepts that were previously discussed in *Sections 3.5.3.3 and 3.5.4.2*.

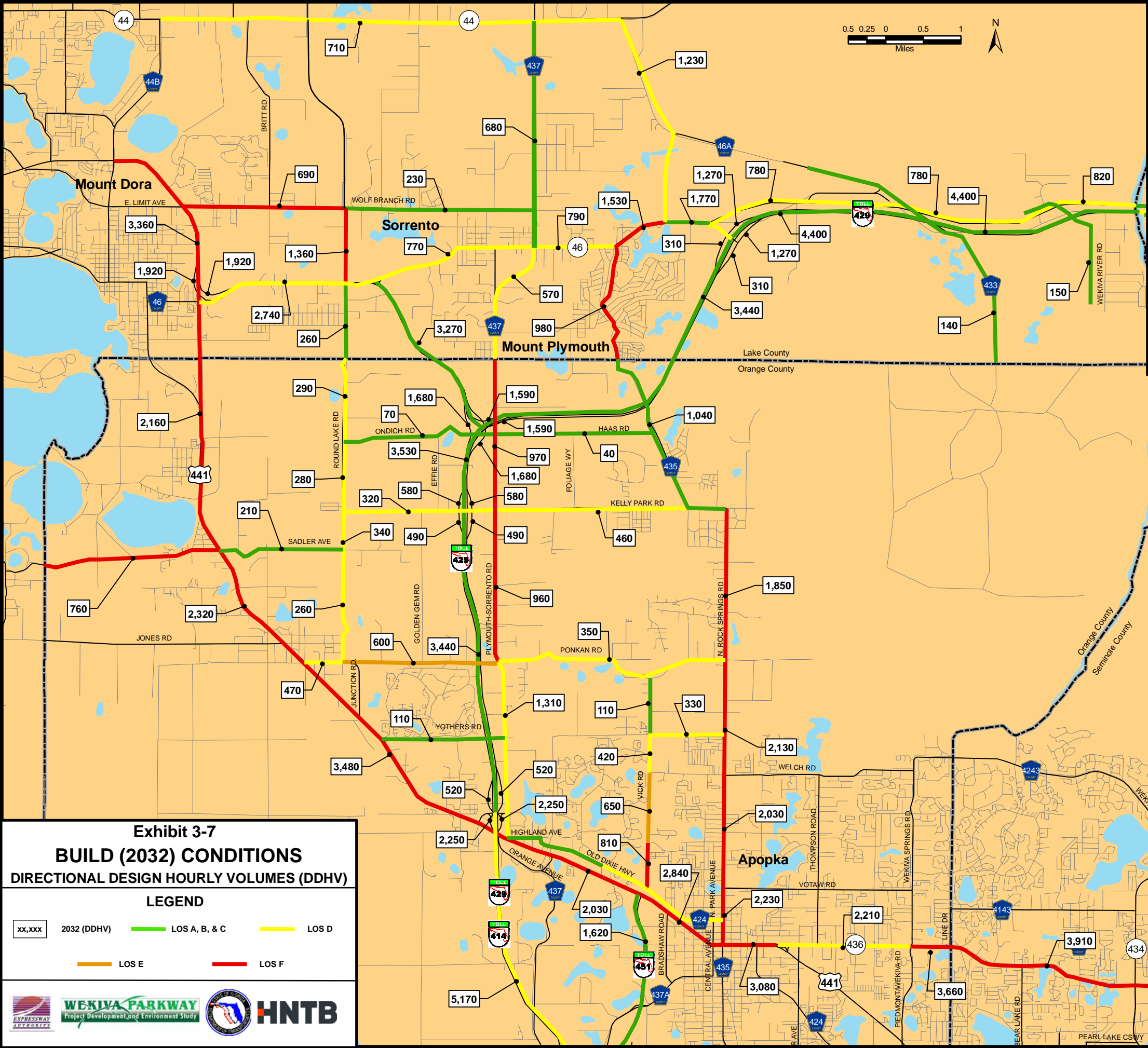
The overall Proposed Build Alternative is depicted in **Exhibit 3-6**. The comparative assessment spreadsheets prepared for the viable and refined viable alternatives, as well as the projected design year (2032) traffic, were analyzed to assist in identification of the Proposed Build Alternative. In most cases, the alternative components selected for each sub-area have the least number of overall impacts and/or the lowest total estimated cost. Future traffic operations were especially important in the evaluation of I-4 connection alternatives. The projected 2032 (design year) conditions for study area roadways under the Build scenario for the Proposed Build Alternative are shown in **Exhibits 3-7 and 3-8**. The components of the Proposed Build Alternative in the study sub-areas are described in the following subsections.



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|--|---|--|---------------------------------------|--|-----------------------------------|
| | PROPOSED BUILD ALTERNATIVE RIGHT-OF-WAY | | PROPOSED BRIDGE | | PUBLIC LAND |
| | EXISTING RIGHT-OF-WAY | | PROPOSED STORMWATER POND | | POTENTIAL PUBLIC LAND ACQUISITION |
| | EXISTING PARCEL LINE | | PROPOSED FLOODPLAIN COMPENSATION POND | | MUNICIPAL BOUNDARY |

Exhibit 3-6
Overall Layout of Proposed Build Alternative



SEE EXHIBIT 3-8
FOR
SEMINOLE COUNTY

Exhibit 3-7

BUILD (2032) CONDITIONS

DIRECTIONAL DESIGN HOURLY VOLUMES (DDHV)

LEGEND

xx,xxx

2032 (DDHV)

LOS A, B, & C

LOS D

LOS E

LOS F

3.6.1 Orange County

The Proposed Build Alternative for the Orange County portion of the project area is:

- Wekiva Parkway
 - Kelly Park Road Interchange Alternative and Alignment (from north of US 441 to systems interchange) – four-lane divided expressway expandable to six-lane divided in median
 - Orange County Alternative 1 (from systems interchange east to Lake County Line) – four-lane divided expressway expandable to six-lane divided in median
 - Systems Interchange Alternative 1
- SR 46 Realignment
 - Lake County West Alternative 1 (from systems interchange northwest to Lake County line) – four-lane divided expressway expandable to six-lane divided in median

The following is a brief summary of the viable alternatives assessment used to identify the components of the Proposed Build Alternative.

Local Access Interchange and Alignment:

Four viable alternatives for two local access interchange options were identified for north-south and east-west alignments of Wekiva Parkway in Orange County. They are as follows:

- *Kelly Park Road Interchange Alignment with Orange County Alternative 1*
- *Kelly Park Road Interchange Alignment with Orange County Alternative 2*
- *Ponkan Road Interchange Alignment Alternative with Orange County Alternative 1*
- *Ponkan Road Interchange Alignment Alternative with Orange County Alternative 2*

The impacts and costs of each of those viable alternatives were comparatively assessed. The estimated costs for construction and right-of-way for the two Kelly Park Road interchange and alignment alternatives are considerably less than the two Ponkan Road interchange and alignment alternatives. The higher estimated construction costs for the Ponkan Road interchange alternatives are mainly due to the need for more extensive floodplain bridging with that interchange concept.

Generally, the estimated environmental, residential, and business (foliage nursery) impacts of the two Kelly Park Road interchange and alignment alternatives are equal to or less than the impacts of the two Ponkan Road interchange and alignment alternatives. Of the two Kelly Park Road interchange and alignment alternatives, the Kelly Park Road Interchange Alignment with Orange County Alternative 1 would have less impact to floodplains, require fewer residential displacements, and have slightly less business impact.

The traffic analysis of the local access interchange options at either Kelly Park Road or Ponkan Road indicated little difference between the interchange locations. However, the traffic analysis report recommended the Kelly Park Road local access interchange location due to better spacing from the SR 429/SR 414 John Land Apopka Expressway /US 441 interchange and better access, mobility, and user benefits for both northwest Orange County and east Lake County. On February 23, 2007 the City of Apopka's Chief Administrative

Officer indicated the Kelly Park Road interchange and alignment alternative, as well as the Orange County Alternative 1 alignment, were acceptable to the city. The Orange County Board of County Commissioners voted on March 6, 2007 to approve the Kelly Park Road alternative as the local access interchange recommendation.

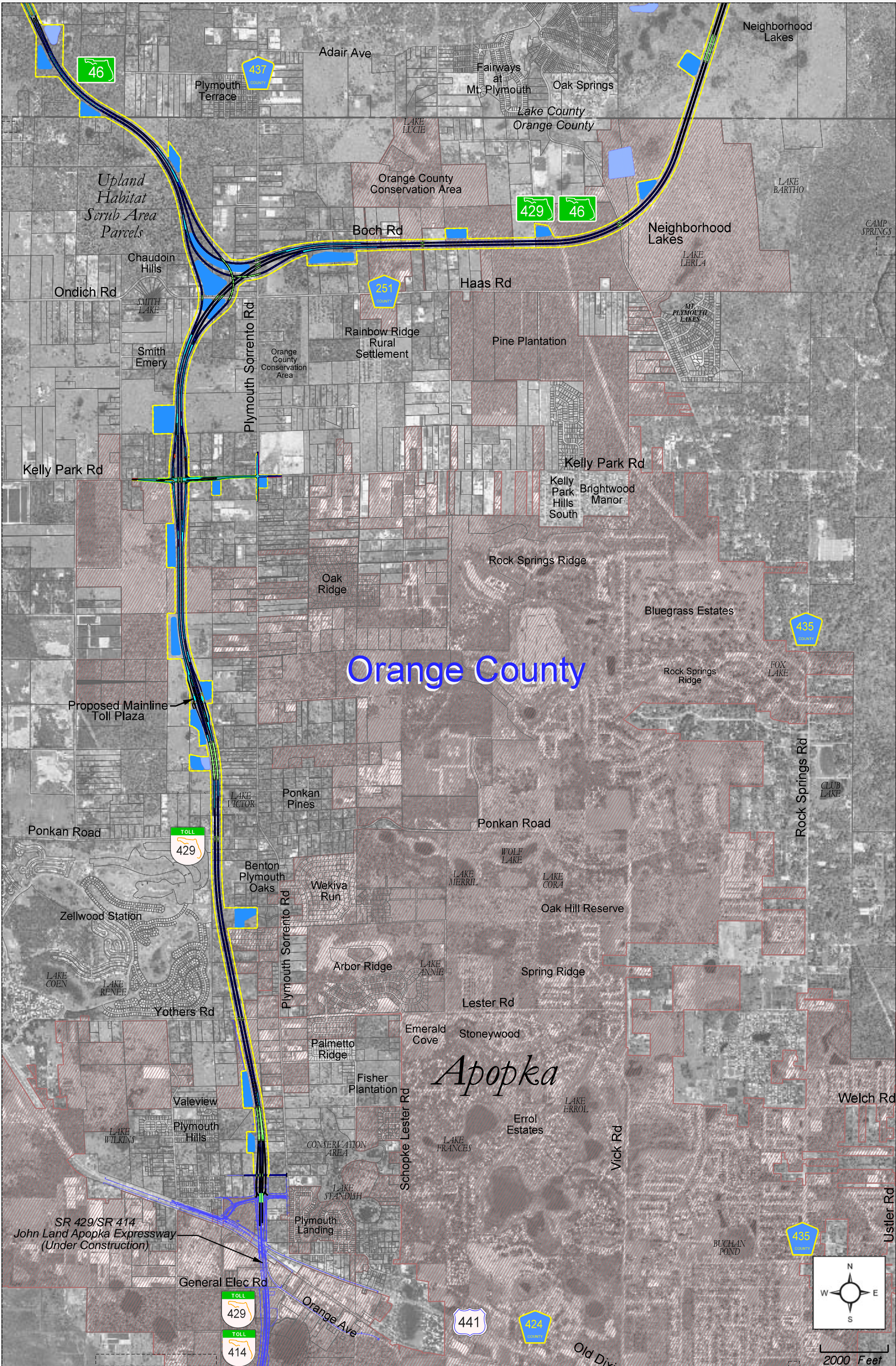
The estimated total cost for either of the two Kelly Park Road interchange and alignment alternatives is essentially the same, but because the Kelly Park Road Interchange Alignment with Orange County Alternative 1 has the overall fewest impacts, it is recommended as the Proposed Build Alternative alignment and local access interchange in Orange County.

Systems Interchange and SR 46 Realignment:

Six viable alternatives were identified for the systems interchange between Wekiva Parkway and realigned SR 46. Each of the systems interchange alternatives was analyzed with two alternative alignments for connection to SR 46 in Lake County West. The impacts and costs of those viable alternatives were comparatively assessed.

Systems Interchange Alternative 1, the most westerly of the three alternative locations, is the only concept which would neither directly impact the historic Bock House (which is eligible for listing in the National Register of Historic Places) nor affect existing access between Boch Road and Plymouth Sorrento Road. Systems Interchange Alternative 4 with Lake County West Alternative 1 would terminate Boch Road about 800 feet east of the existing intersection with Plymouth Sorrento Road. Realignment of Boch Road to maintain access would require additional right-of-way acquisition and construction costs, and would result in more residential displacements. Those additional costs and impacts were not estimated initially because substantially affecting the existing access was considered by area residents to be unacceptable; however, the realignment of Boch Road was assessed as part of the Section 4(f)/Section 106 evaluation as previously discussed in *Section 3.5.4.4*.

The estimated impacts and costs of Systems Interchange Alternative 1 with Lake County West Alternative 1 for SR 46 Realignment are comparable to or less than the other alternatives. Therefore, Systems Interchange Alternative 1 with Lake County West Alternative 1 is recommended as the Proposed Build Alternative concept. **Exhibit 3-9** depicts the Kelly Park Road Interchange Alignment with Orange County Alternative 1 and the Systems Interchange Alternative 1 with Lake County West Alternative 1, which in combination form the overall Proposed Build Alternative for Orange County.



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





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|---|--|
|  Stormwater Ponds |  Proposed Bridge |
|  Floodplain Compensation Ponds |  Proposed Build Alternative R/W |
|  Municipal Boundaries |  Existing R/W |
| |  Existing Parcel Line |

Exhibit 3-9
Orange County Proposed Build Alternative

3.6.2 Lake County West

The Proposed Build Alternative for the Lake County West portion of the project area is:

- SR 46 Reconstruction and Realignment
 - US 441/SR 46 Interchange Modification Alternative 2
 - SR 46 North Widening Alternative (from US 441 to east of Round Lake Road) – six-lane divided urban section with controlled access
 - Lake County West Alternative 1 (southeast to Orange County line) – six-lane divided urban section transitioning to four-lane divided expressway expandable to six-lane divided in median

The following is a brief summary of the viable alternatives assessment used to identify the components of the Proposed Build Alternative.

SR 46 Reconstruction:

In order to reconstruct SR 46 to a six-lane divided urban section to meet projected travel demand from US 441 to east of Round Lake Road, widening of the existing SR 46 corridor would have to be either to the north or to the south. The impacts and costs of those two viable alternatives were comparatively assessed; analysis indicated widening to the south would have more impacts and costs. Both Lake County and the City of Mount Dora expressed a preference for widening to the north. Since the residential/business impacts and right-of-way costs for widening to the south would be higher, SR 46 Widening to the North is recommended as the Proposed Build Alternative.

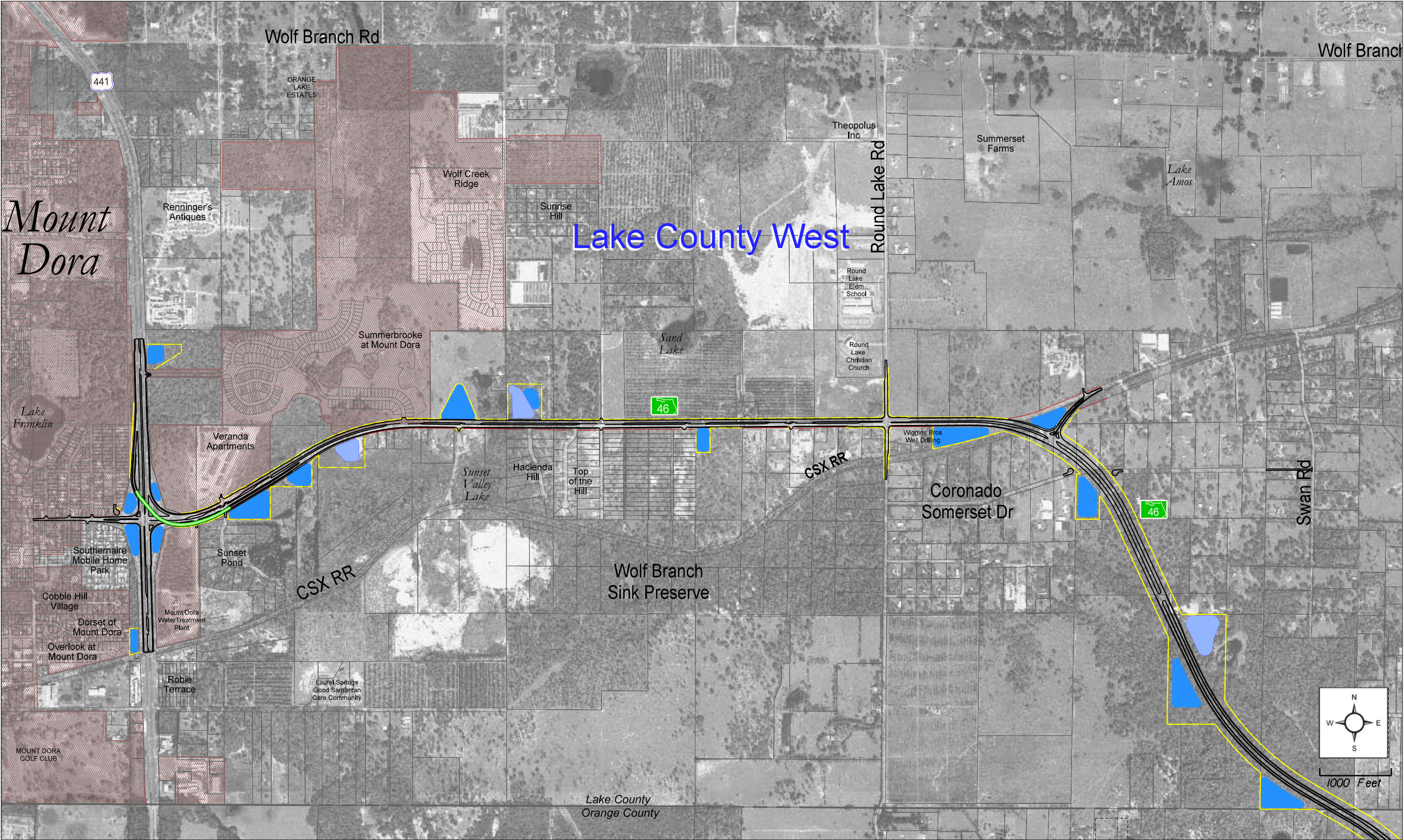
US 441/SR 46 Interchange Reconstruction:

Three viable alternatives were identified for reconstruction of the existing US 441/SR 46 interchange. They are as follows:

- *Alternative 1 – Grade Separated Interchange of US 441 and SR 46 with Southbound to Eastbound Flyover (Outside Take off)*
- *Alternative 2 – At-Grade Intersection of US 441 and SR 46 with Southbound to Eastbound Flyover (Outside Take off)*
- *Alternative 3 – At-Grade Intersection of US 441 and SR 46 with Southbound to Eastbound Flyover (Inside Take off)*

At the request of the City of Mount Dora, the at-grade concepts were developed as a means to limit traffic continuing on SR 46 west of US 441. Traffic operations analyses indicated both the at-grade and grade separated concepts would function adequately. Alternative 1 would operate better, but Alternative 2 would have acceptable operations.

The impacts and costs of each of the viable alternatives were comparatively assessed. The three alternatives would have similar impacts, however, Alternative 1 would cost substantially more to construct. Since an outside take off on the flyover ramp is the preference for traffic operations and safety, Alternative 2 is the Proposed Build Alternative. There has been on-going coordination with the City of Mount Dora on these interchange modification concepts. FDOT has committed to reassess projected traffic operations at the US 441/SR 46 interchange during the design phase of the project. **Exhibit 3-10** depicts the US 441/SR 46 Interchange Alternative 2, SR 46 Widening to the North, and Lake County West Alternative 1 for SR 46 Realignment, which in combination form the Proposed Build Alternative for Lake County West.



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






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|--|--|--|
|  Stormwater Ponds |  Municipal Boundaries |  Proposed Build Alternative R/W |
|  Floodplain Compensation Ponds |  Proposed Bridge |  Existing R/W |
| | |  Existing Parcel Line |

Exhibit 3-10
Lake County West Proposed Build Alternative

3.6.3 Lake County East

The Proposed Build Alternative for the Lake County East portion of the project area is:

- Wekiva Parkway
 - Neighborhood Lakes Alignment Alternative 1 (from Orange County line northeast to Neighborhood Lakes interchange) – four-lane divided expressway expandable to six-lane divided in median
 - South (Red) Alignment Alternative 2, revised to incorporate a parallel two-way, non-tolled Service Road within the Wekiva Parkway 300-foot wide right-of-way (from Neighborhood Lakes interchange east across Wekiva River) – 6-lane divided expressway with parallel two-lane rural service road on north side
- CR 46A Realignment
 - Alternative 1A, with SR 46 widening to the south (from existing SR 46 north to Arundel Way) – two-lane rural roadway expandable to four-lane rural roadway

The following is a brief summary of the viable alternatives assessment used to identify the components of the Proposed Build Alternative.

Neighborhood Lakes Alignment:

Three viable alternative alignments (western, central, and eastern) were identified through the Neighborhood Lakes area. The impacts and costs of each of those viable alternatives were comparatively assessed.

There is no substantial difference in the estimated impacts and costs for the three alternatives. After joint acquisition of the entire Neighborhood Lakes property, the Florida Department of Environmental Protection (FDEP) indicated a preference for Alternative 1 since it would provide the most contiguous land with the existing Rock Springs Run State Reserve. Because all of the alternatives have substantial floodplain impacts, FDEP has agreed to consider additional floodplain compensation on the west side of Alternative 1 with shortened bridge lengths to reduce construction costs. Also, FDEP has asked that all stormwater ponds be located on the west side of the alignment if possible. Alternative 1, the Western Alignment, is the Proposed Build Alternative in Neighborhood Lakes.

CR 46A Realignment:

Five alternatives for the CR 46A Realignment were developed for discussion with both the landowner who currently owns the property on which the road would be constructed and the homeowners association for the contiguous property to the west. Those alternatives are as follows:

- *Alternative 1 – CR 46A Realignment with west right-of-way line on landowner's western property boundary and homeowners association's eastern property boundary.*
- *Alternative 1A – approximately 50 feet east of Alternative 1 to provide buffer*
- *Alternative 1B – approximately 800 feet east of Alternative 1*
- *Alternative 1C – approximately 2,700 feet east of Alternative 1*
- *Alternative 1D – on the existing CR 46A alignment*

The homeowners association specifically requested analysis of Alternatives 1C and 1D. The impacts and costs of each of the five alternatives were comparatively assessed. The estimated construction and right-of-way costs include the connection of realigned CR 46A to a widened portion of SR 46 and the Neighborhood Lakes interchange with Wekiva Parkway.

Alternatives 1C and 1D are inconsistent with the *Wekiva Parkway and Protection Act* due to impacts to the Seminole State Forest and wildlife habitat connectivity, and do not meet the project purpose and need. Also, FDEP and the Florida Department of Agricultural and Consumer Services, Division of Forestry have strongly objected to Alternatives 1C and 1D. The estimated costs and impacts of Alternatives 1, 1A and 1B are similar. The homeowners association objects to Alternative 1 because they believe it to be too close to future homes. The landowner has indicated Alternative 1B is too close to his home. Alternative 1A would provide 50 feet of buffer from the west right-of-way line to the homeowner's association property boundary, with an additional 56 feet from the west right-of-way line to the outside edge of the southbound travel lane. In total, over 100 feet would be provided between the homeowner's association property boundary and the outside edge of the travel lane. Alternative 1A, the option requested by the Lake County Commission in an October 24, 2007 letter to FDOT, is the Proposed Build Alternative for CR 46A Realignment.

Wekiva Parkway with Parallel Non-Tolled Service Road:

Prior to incorporating the service road into the design of the Wekiva Parkway through Lake County East, seven viable alternatives based on three alignments with either half or full interchange access concepts were identified for this area. The alignments are described as north (green) and south (red or blue). All of the alternatives had long wildlife bridges for habitat connectivity; those bridge locations were based on wildlife crossing observation data and two existing wildlife crossings under SR 46 (see *Section 4.3.13.3*).

After comparing the estimated costs and impacts of the five alternatives on the green or red alignments with either split diamond interchanges or full interchanges, the red alignment had similar environmental impacts, comparable or fewer impacts to homes and businesses, and the lowest estimated total cost for construction and right-of-way. The estimated right-of-way costs for the red alignment are approximately \$15M less than the green alignment. The blue alignment was eliminated since it provided no advantages over the other south (red) alignment. The results of the traffic analysis had determined that the split diamond interchanges would be adequate for the low travel demand. Therefore, Alternative 1 – South (Red) Alignment with Split Diamond Interchanges was the Proposed Build Alternative; however, as previously noted in *Section 3.5.4.2*, FDOT later agreed to accommodate the FDEP request for full interchanges for the non-tolled expressway. Consequently, in April 2007, Alternative 2 – South (Red) Alignment with Full Interchanges was selected as the Proposed Build Alternative.

The change from a non-tolled expressway to a tolled expressway with a parallel service road within the previously identified expressway right-of-way increases the construction cost substantially due to additional MSE wall and an additional 7,710 feet of wildlife bridging for the service road; however, the right-of-way requirements and environmental impacts are reduced. Local access interchanges are no longer required, as the service road provides a continuous alternative route between the section of SR 46 to remain (west of the CR 46A Realignment) and the one-way frontage roads in Seminole County. There is no change to the alignment of the expressway with the addition of the service road; therefore, the Proposed

Build Alternative is Alternative 2 - South (Red) Alignment with parallel two-way, non-tolled service road.

The existing wildlife culverts/bridges on either side of the “hump” in SR 46 will be replaced by long, low-level bridges. At both locations, the eastbound mainline bridge will be a separate structure, with the westbound mainline and service road carried on a parallel structure. The western wildlife bridges will be approximately 1,960 feet in length. The eastern wildlife bridges will be approximately 4,000 feet in length.

The mainline and service road bridges over the Wekiva River will be approximately 1,750 feet in length. At this location, the SR 429 mainline (eastbound and westbound) will be carried on one structure, and the service road with an adjacent ten-foot multi-use trail will be carried on a parallel structure. The bridges over the Wekiva River will be both longer and higher than the existing SR 46 Wekiva River bridge. The additional length and height of the bridges will open up the shoreline and provide improved wildlife habitat connectivity. Based on subsequent coordination with FHWA and the National Park Service (NPS), the bridges over the Wekiva River will clear span the waters of the river (see *Section 4.3.10*).

Exhibit 3-11 depicts the Neighborhood Lakes Western Alignment, CR 46A Realignment Alternative 1A, and the South (Red) Alignment with the parallel non-tolled Service Road, which in combination form the Proposed Build Alternative for Lake County East.

3.6.4 Seminole County

The Proposed Build Alternative for the Seminole County portion of the project area is:

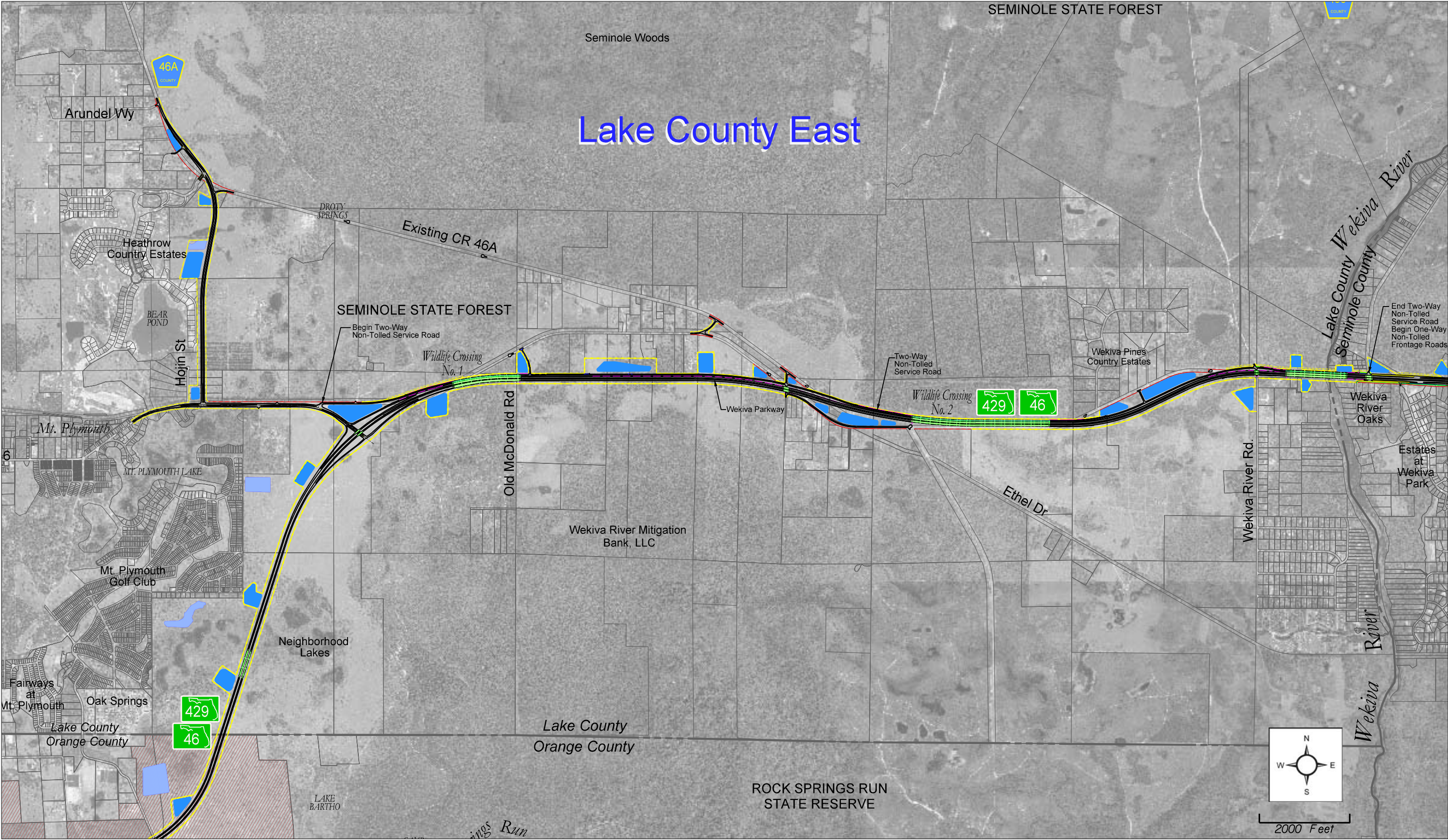
- Wekiva Parkway
 - North Widening Alternative (from Wekiva River east to near Orange Avenue) – 6-lane expressway with two-lane, one-way frontage roads on north and south sides
 - SR 417/I-4 Interchange Modification Alternative B Alignment (from SR 46 southeast to systems interchange) – 6-lane divided expressway
- SR 46 Reconstruction
 - Widen from Wekiva Parkway frontage roads to the SR 46/I-4 Interchange – 6-lane divided urban section with controlled access

The following is a brief summary of the viable alternatives assessment used to identify the components of the Proposed Build Alternative.

SR 46 Corridor Widening:

The existing right-of-way width for the SR 46 corridor from the Wekiva River east to I-4 is approximately 200 feet. To accommodate the estimated 260 feet of right-of-way needed for Wekiva Parkway with frontage roads in Seminole County, widening either to the north or to the south would be required. From the river east to Orange Avenue, the south side of SR 46 is more developed than the north side, mostly with existing, under construction, and planned residential developments. The constraints on the north side are the Lower Wekiva River State Preserve and a 26 inch natural gas pipeline in a 50 foot easement abutting the SR 46 north right-of-way line.

The right-of-way cost estimates indicate widening to the south would cost approximately \$30M more than widening to the north. It is estimated that 37 parcels with currently existing homes would be impacted by widening to the south. Conversely, it is estimated that widening to the north would impact 8 parcels with existing homes. Based on information



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	Stormwater Ponds
	Floodplain Compensation Ponds
	Municipal Boundaries
	Proposed Bridge
	Proposed Build Alternative R/W
	Existing R/W
	Existing Parcel Lines

Exhibit 3-11
Lake County East Proposed Build Alternative

provided by Florida Gas Transmission, it is estimated that relocating the gas pipeline and the 50 foot easement to the north would cost approximately \$14M to \$20M. So from a right-of-way perspective, widening to the north is estimated at a net cost of approximately \$10M to \$16M less than widening to the south. The estimated construction costs for widening to the north or to the south are generally comparable. Therefore, the Proposed Build Alternative is North Widening.

Alignment for Connection to I-4 and Systems Interchange:

Two basic alignment concepts for Wekiva Parkway from Orange Avenue eastward to an I-4 connection at a systems interchange were analyzed as viable alternatives. One alignment concept would follow the existing SR 46 corridor to the SR 46/I-4 interchange. The other concept would follow a new southeast alignment to the SR 417/I-4 interchange.

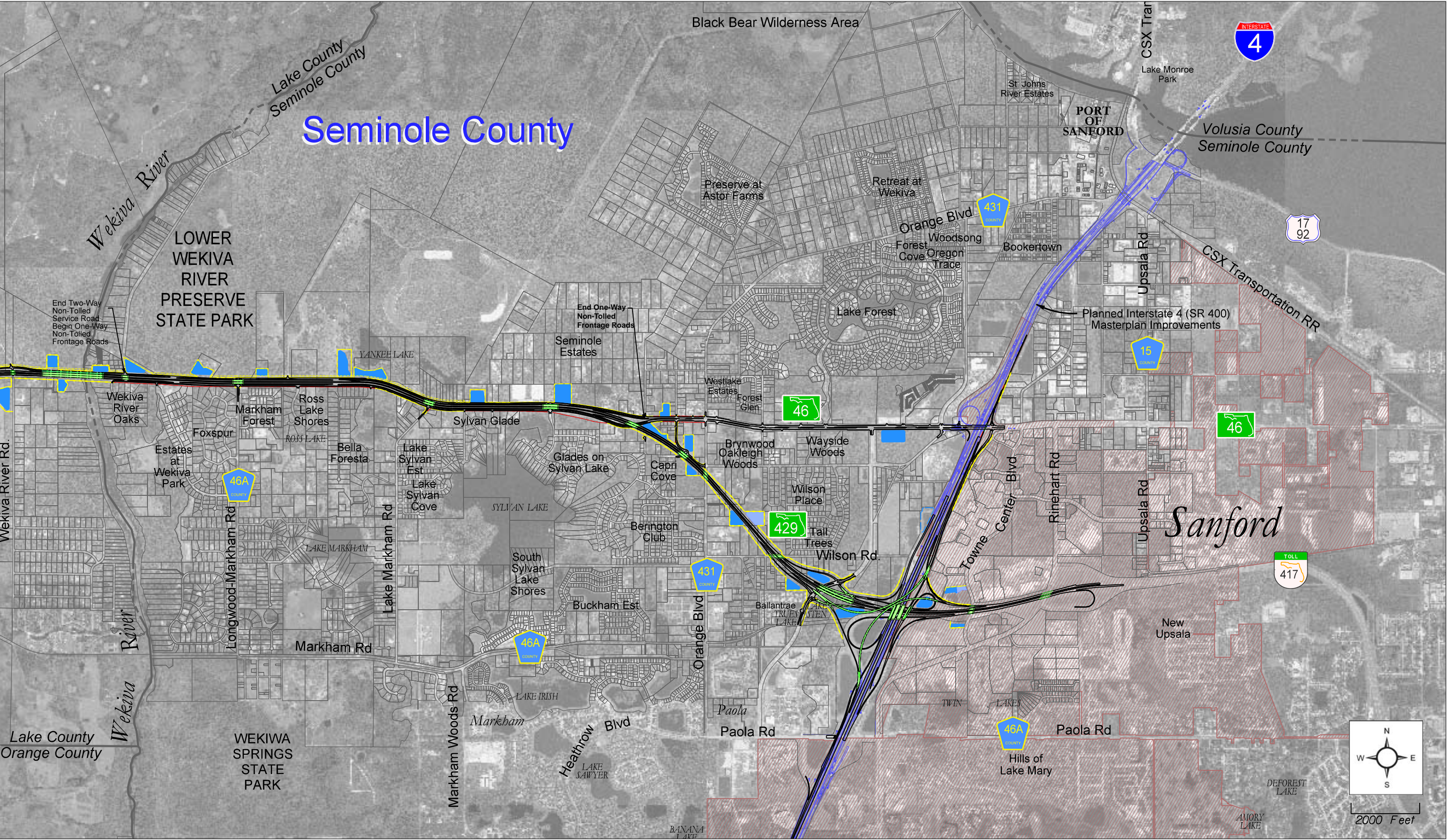
The impact and cost assessment for the alignment to and modification of the SR 46/I-4 interchange indicated that concept would have considerably greater impacts on existing major commercial development and right-of-way costs would be substantially higher than the SR 417/I-4 interchange alternative. Of more significance, the traffic operations analysis performed for the SR 46/I-4 interchange alternative demonstrated that it would fail to provide adequate operational characteristics since it could not serve all desired travel movements and local streets would still be heavily impacted.

The traffic operations analysis of the SR 417/I-4 interchange modification indicated satisfactory operational characteristics, especially for accommodating the substantial east-west movement from SR 417. The commercial impacts and right-of-way costs of the SR 417/I-4 interchange alternative would be substantially less than those of the SR 46/I-4 interchange alternative. Therefore, modification of the SR 417/I-4 interchange is the Proposed Build Alternative with further evaluation outlined below to determine the recommended alignment from the SR 46 corridor southeast to I-4.

Six alignment alternatives for the Wekiva Parkway connection to the SR 417/I-4 interchange, each combined with the recommended North Widening alternative, were assessed for impacts and costs. The various alignment alternatives from the SR 46 corridor southeast to the SR 417/I-4 interchange were developed in response to requests from several groups and individuals, including homeowners associations, businesses, and churches. Unfortunately, shifts in the alignment to accommodate the request of one group often meant another group was more affected. The environmental impacts of the six alignment alternatives are quite similar. The estimated direct impacts to residences vary from a low of 16 to a high of 23; direct impacts to businesses are comparable, but Alternatives A and C directly impact churches. The estimated right-of-way costs range from about \$139M to about \$159M, while the estimated construction costs are approximately \$596M to about \$605M depending upon the alignment alternative.

The project team has endeavored to satisfy as many stakeholders as possible and minimize both direct and indirect impacts. Based on the comparative evaluation of impacts and costs, as well as discussions with the various stakeholders, Alternative B is the Proposed Build Alternative for the alignment of the connection to the SR 417/I-4 interchange.

Exhibit 3-12 depicts the North Widening of the SR 46 corridor and Alternative B for the Wekiva Parkway connection to the SR 417/I-4 Interchange Modification, which in combination form the Proposed Build Alternative for Seminole County.



- LEGEND**
- Stormwater Ponds
 - Floodplain Compensation Ponds
 - Municipal Boundaries
 - Proposed Bridge
 - Proposed Build Alternative R/W
 - Existing R/W
 - Existing Parcel Lines

Exhibit 3-12
Seminole County Proposed Build Alternative

3.6.5 Proposed Typical Sections

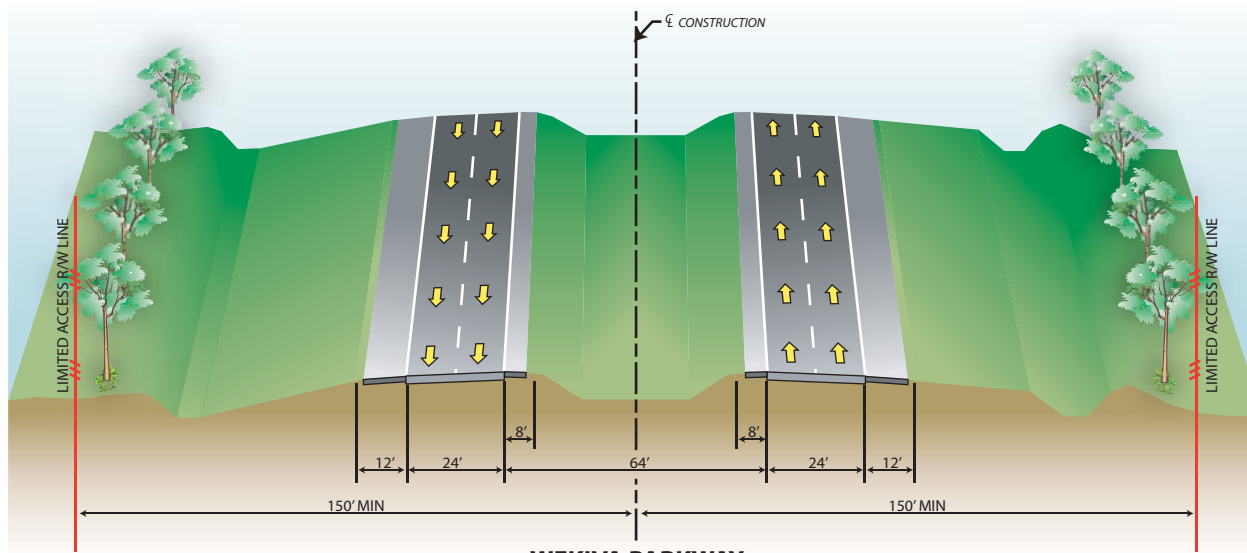
Depictions of the proposed typical sections for the Wekiva Parkway (SR 429) in the various project segments along the alignment, SR 46 Reconstruction, and CR 46A Realignment are shown in **Exhibit 3-13, Sheets 1 – 5**. More detailed typical sections with stationing are provided in the *Preliminary Engineering Report*.

3.6.6 Estimated Overall Impacts and Costs

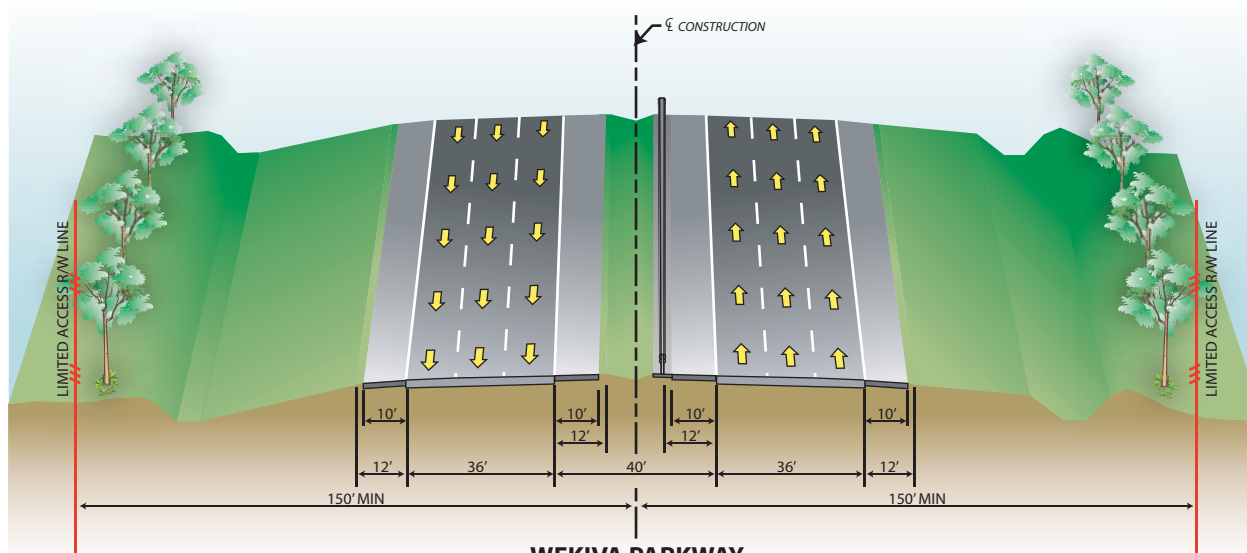
A summary of the estimated total overall impacts and costs of the Wekiva Parkway (SR 429)/SR 46 Realignment Proposed Build Alternative is provided in **Table 3-1**. Assessments of potential impacts to wetlands, floodplains, protected species and wildlife habitat, cultural or historic resources, public lands, and other categories are provided in *Section 4* of this document.

TABLE 3-1
Estimated Impacts and Costs of the Proposed Build Alternative

Proposed Build Alternative	Parcel Impacts	Total Right-of-Way (acres)	Residential Displacements	Businesses/ Other Displacements	Wetland Impacts (acres)	Floodplain Impacts (acre-ft)	Section 4(f) Public Land Impacts (acres)	Section 106 Properties Impacted	Potential for Impacts to T&E Species	Construction Cost Estimate (2010 \$)	Right-of-Way Cost Estimate (2010 \$)	Total Cost Estimate (2010 \$)
Kelly Park Road Interchange Alignment with Orange County Alternative 1	114	418	26	2	3.28	6.29	0	2	Low	260.2 M	90.0 M	350.2 M
Systems Interchange Alternative 1 with Lake County West Alternative 1	33	189	10	2	3.20	0	0	0	Low	102.2 M	39.8 M	142.0 M
SR 46 Widen to North	20	24	2	0	10.65	11.26	0	0	Low	22.5 M	21.4 M	43.9 M
US441/SR 46 Interchange Alternative 2	22	22	0	0	0	0	0	0	Low	64.5 M	9.3 M	73.8 M
Neighborhood Lakes Alternative 1 - Western Alignment	8	157	0	0	13.57	0.94	33.76	0	Low	96.7 M	10.8 M	107.5 M
CR 46A Realignment Alternative 1A, South Widening	57	86	0	0	1.87	33.90	0	0	Low	21.1 M	13.6 M	34.7 M
Lake County East Alternative 2 - South (Red) Alignment with Parallel Service Road	54	278	1	2	18.07	3.16	121.62	0	Low	287.6 M	28.7 M	316.3 M
Wekiva Pkwy to SR 417/ I-4 Interchange - Alternative B, with North Widening	122	191	18	3	46.92	5.24	3.86	0	Low	520.3 M	141.0 M	661.3 M
Totals	430	1,365	57	9	97.56	60.79	159.24	2	--	1.38 B	354.6 M	1.73 B



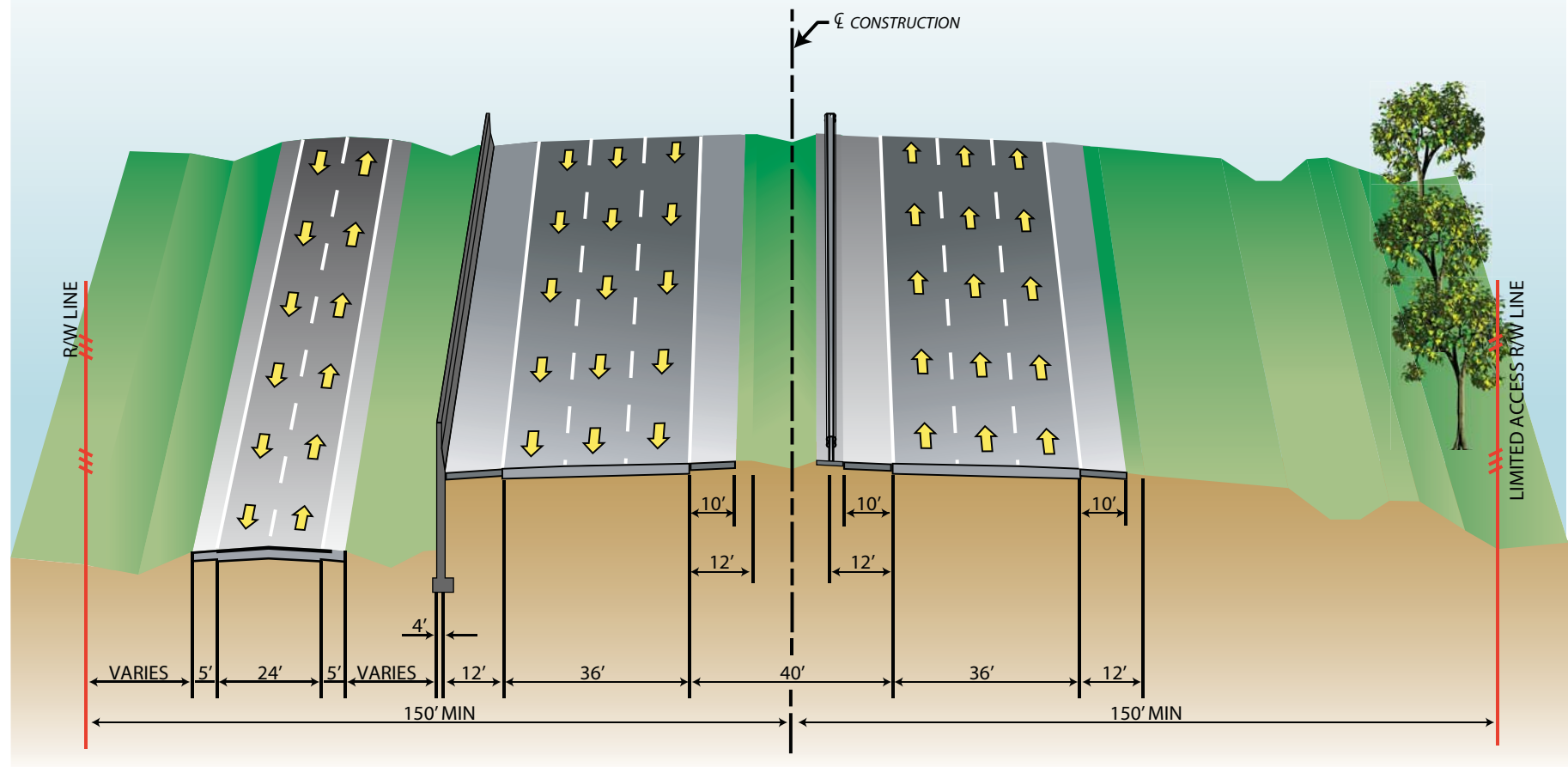
**WEKIVA PARKWAY
4-LANE RURAL EXPRESSWAY**



**WEKIVA PARKWAY
ULTIMATE 6-LANE RURAL EXPRESSWAY**

**Exhibit 3-13
Proposed Typical Sections - Limited Access Rural Expressway**

Sheet 1 of 5



WEKIVA PARKWAY
ULTIMATE 6-LANE RURAL EXPRESSWAY WITH SERVICE ROAD ON NORTH SIDE

Exhibit 3-13
Proposed Typical Section - Limited Access Rural Expressway w/ Service Road

Sheet 2 of 5

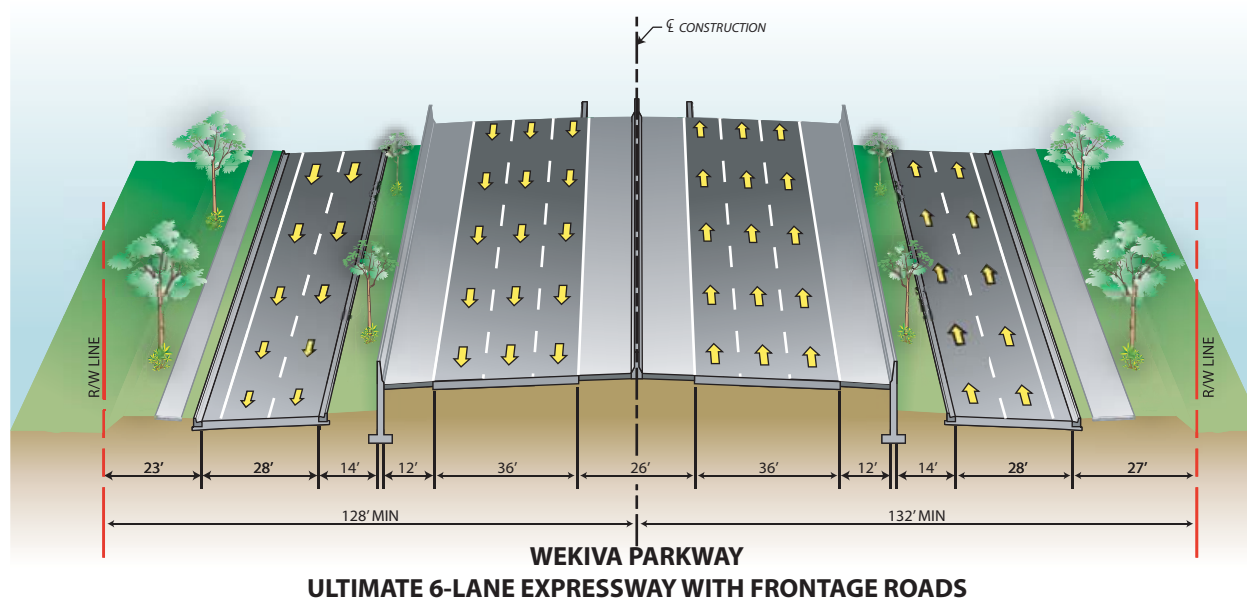
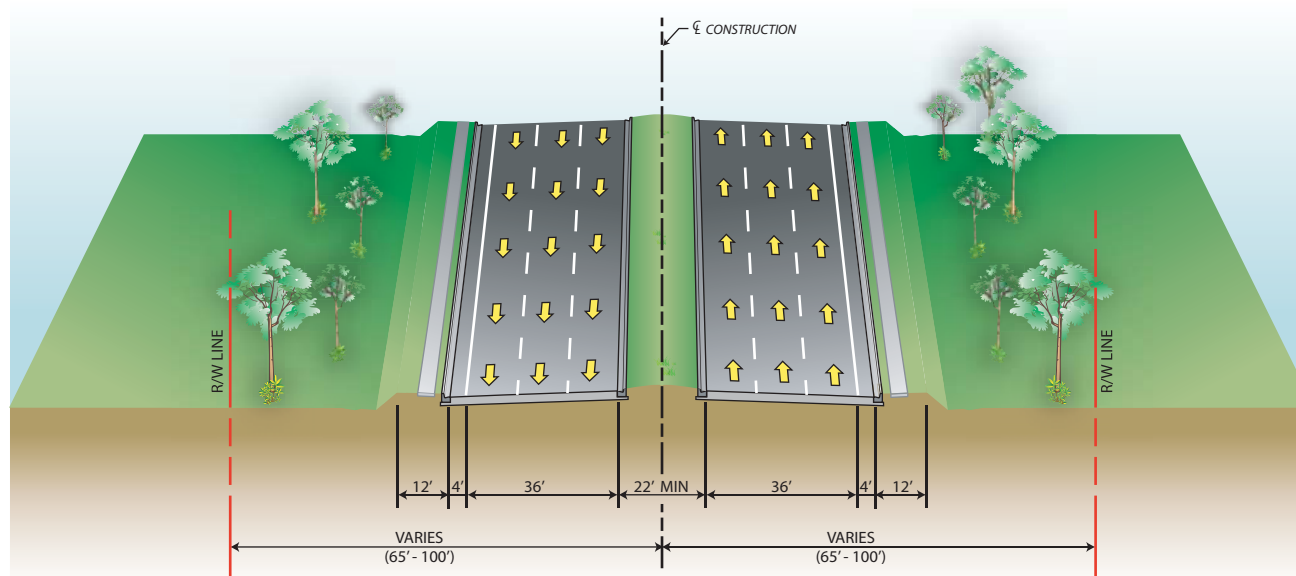


Exhibit ' -%
Proposed Typical Section - Limited Access Urban Expressway w/ Frontage Roads

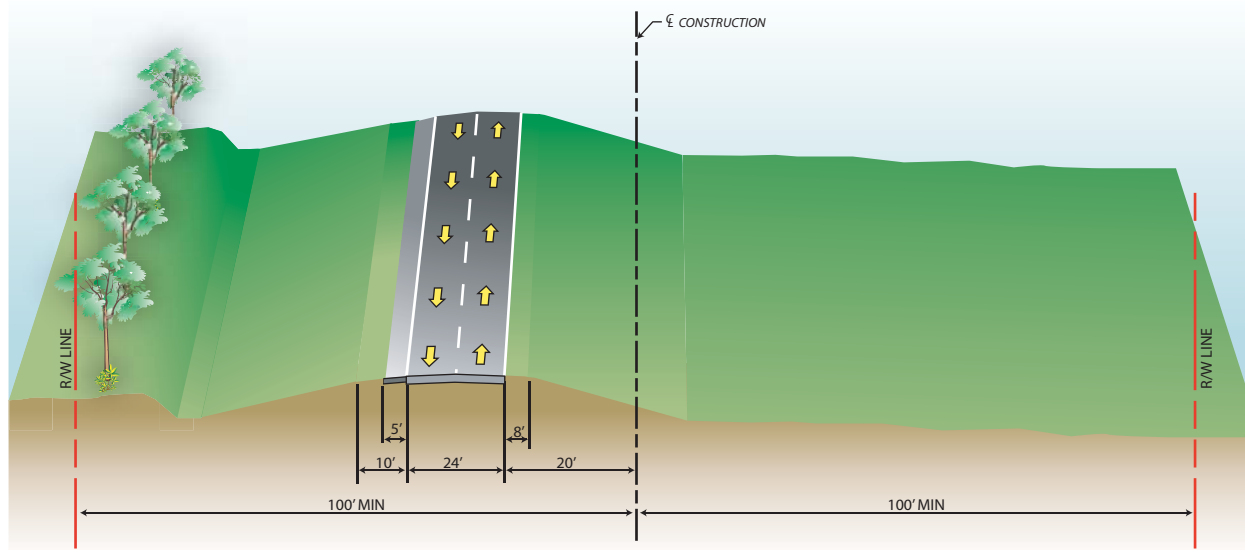
Sheet 3 of 5



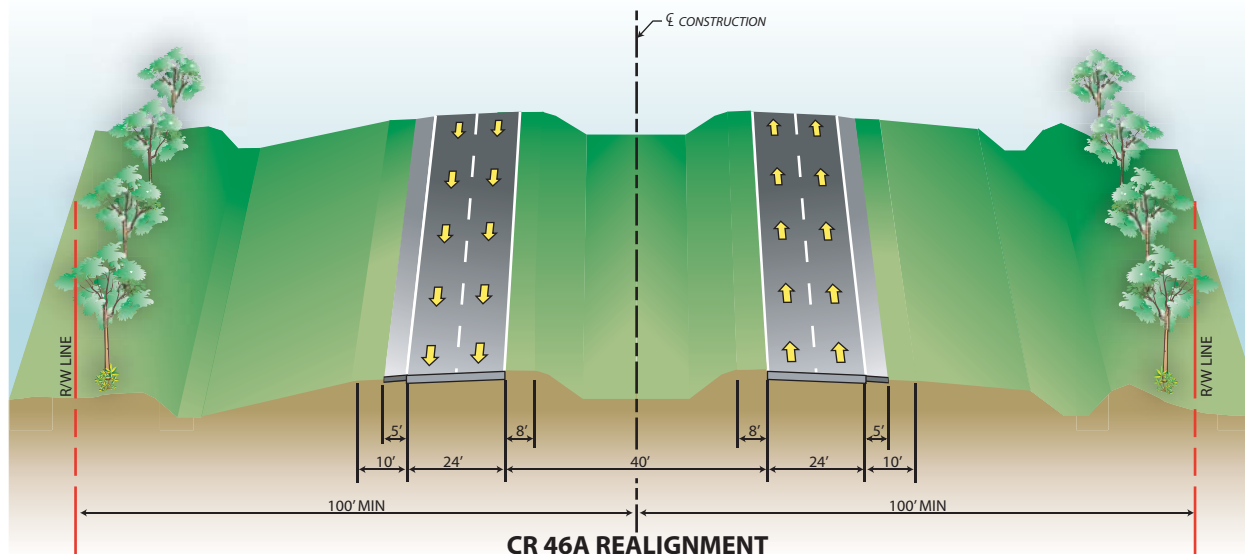
**SR 46 CORRIDOR IMPROVEMENTS
6-LANE DIVIDED URBAN SECTION**

Exhibit 3-13
Proposed Typical Section - Controlled Access Urban Arterial

Sheet 4 of 5



**CR 46A REALIGNMENT
2-LANE RURAL SECTION**



**CR 46A REALIGNMENT
4-LANE RURAL SECTION**

**Exhibit 3-13
Proposed Typical Sections - Rural Arterial**

Sheet 5 of 5