



# I-75 PD&E Studies

from Moccasin Wallow Road  
to North of Fletcher Avenue

WPI Segment Number - 419235-1

## Design Traffic Technical Memorandum

Technical Report No. 2  
Evaluation of Build  
Alternative Concepts

Prepared for  
**Florida Department  
of Transportation**  
District Seven

September 2009

Manuel Santos, E.I.  
FDOT Project Manager



INTERSTATE 75





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Prepared by  
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INTERSTATE 75

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## EXECUTIVE SUMMARY

The *Design Traffic Technical Memorandum (DTTM), Technical Report No. 1 – Evaluation of Alternatives*, presented design year (2035) traffic volume forecasts and level of service analyses for the Project Development and Environment (PD&E) Studies conducted on two contiguous projects on I-75 (State Road (SR) 93A). The southern PD&E Study (WPI Segment Number 419235-2) extends from Moccasin Wallow Road in Manatee County to south of US 301 (SR 43) in Hillsborough County. The northern PD&E Study (WPI Segment Number 419235-3) extends from south of US 301 to north of Fletcher Avenue (County Road (CR) 582A), in Hillsborough County.

DTTM Technical Report No. 1 focused on the evaluation of the design year traffic operations along the I-75 mainline and collector/distributor (C/D) roads for the No-Build and three build alternatives. Technical Report No. 1 concluded that Build Alternative 3, although it could not accommodate the traffic demand at all locations analyzed, was the most advantageous of all alternatives because it would provide mobility options and would preserve acceptable levels of service for the regional travelers. This alternative was recommended for further analysis.

Build Alternative 3 would maintain the existing number of general use lanes (GULs) – three GULs in each direction of I-75 for both projects – and would add special use lanes (SUL) to the inside of the GULs in each direction of I-75. The GULs would be physically separated from the SULs through barrier walls or pavement markings and/or plastic pylons. While the GULs would accommodate local traffic and provide access to all existing interchanges along I-75, the SULs would generally accommodate regional trips and provide access to a select number of interchanges either through direct system-to-system connections or through “slip ramps” that would connect the SULs with the GULs at select locations along the mainline. For the southern project, two SULs would be added in each direction of I-75. For the northern project, three SULs would be added in each direction of I-75.

This report, *DTTM Technical Report No. 2 – Evaluation of Build Alternative Concepts*, presents the level of service analyses and comparisons performed for the improvement concepts developed to address the deficiencies of Build Alternative 3, which were identified in the DTTM Technical Report No. 1.

Based on the Build Alternative 3 lane geometry recommendations, alternative conceptual plans were developed and evaluated for the I-75 mainline for both projects. Specifically, Mainline Alternatives 1A, 1B, and 2 were developed for the southern project and Mainline Alternatives 1 and 2 were developed for the northern project. Mainline Alternative 1 (1A and 1b for the southern project) assumed that the widening of I-75 would take place along the outside edges of the existing pavement, thus preserving the existing median width. Mainline Alternative 2 assumed that all of the widening of I-75 (or most of the widening for the northern project) would take place along the inside edges of the existing pavement (within the existing median). Since all typical section alternatives would generally provide the same capacity, it is recommended that the selection of the most advantageous mainline alternative should be based on consideration of factors other than traffic operations, such as costs; providing the transit envelope in the median or in either of the outside borders; safety and emergency vehicle access; evacuation operations; compatibility with staged construction and/or interim improvements; compatibility with adjacent projects (i.e., Florida Department of Transportation (FDOT) District 1 I-75 project in Manatee and Sarasota Counties and FDOT District 7 I-75

projects north of Fletcher Avenue); FDOT Central Office policy on interstate median widths; noise impacts; and public input. After consideration of these factors, Mainline Alternative 2 was recommended for both projects.

Alternative conceptual plans – called *options* – were also developed and analyzed for the ten existing interchanges of I-75, located within the study areas of both projects. The southern project includes three interchanges at SR 674, Big Bend Road, and Gibsonton Drive. The northern project includes seven interchanges at US 301, Selmon Expressway (SR 618), SR 60, Dr. Martin Luther King, Jr. (MLK) Boulevard (SR 574), I-4 (SR 400), Fowler Avenue (SR 582), and Fletcher Avenue. Due to the close spacing of the interchanges along the northern project, alternate conceptual plans were developed for three segments: Segment 1 extended from south of US 301 to south of MLK Boulevard; Segment 2 extended from south of MLK Boulevard to north of I-4; and Segment 3 extended from north of I-4 to north of Fletcher Avenue.

Three alternate options – Options A, B, and C – were evaluated for the SR 674 interchange: Option A would replace the existing interchange with a diverging diamond interchange (DDI); Option B would replace the existing interchange with a single point urban interchange (SPUI); and Option C would consist of modifications to the existing partial cloverleaf (PARCLO) interchange. Based on the traffic analyses and other considerations (i.e., costs, impacts, etc.), it was recommended that Option C should be selected for this interchange.

Three alternate options – Options A, B, and C – were evaluated for the Big Bend Road interchange: Options A and B would consist of improving the existing PARCLO interchange by adding a southbound exit ramp and a northbound entrance ramp in the northwest and northeast quadrants, respectively. Option A would keep Old Big Bend Road open for the traffic traveling under and across I-75 by carrying the ramps over this road, whereas Option B would close it at the I-75 ramps. Option C would modify the existing PARCLO interchange by replacing the eastbound-to-northbound entrance ramp with a flyover ramp. Based on the traffic analyses and cost considerations, Option B was selected for this interchange.

Only one improvement option, Option A, was considered and recommended for the Gibsonton Drive interchange. Option A would consist of a PARCLO configuration with two exit loop ramps in the northeast and southwest quadrants to accommodate the northbound-to-westbound and southbound-to-eastbound movements, respectively.

Three options – Options A, B and C – were evaluated for Segment 1 of the northern project, which includes the interchanges at US 301, Selmon Expressway, and SR 60.

- For the US 301 interchange, all options considered only minor improvements to the existing PARCLO interchange.
- For the Selmon Expressway interchange, Option A considered adding two loop ramps and two directional ramps to directly connect the Selmon Expressway with the I-75 SULs. The loop ramps would accommodate the northbound I-75 SUL to westbound Selmon Expressway and the eastbound Selmon Expressway to northbound I-75 SUL movements. The directional ramps would accommodate entrance and exit for the southbound I-75 SULs to the Selmon Expressway. The I-75 SULs would be constructed through the interchange as third level structures.

Option B considered keeping the existing interchange unaltered, except for the relocation of the northbound C/D road to accommodate the I-75 mainline widening. Also, a direct exit ramp would be added to accommodate the southbound I-75 GUL to



westbound Selmon Expressway movement and eliminate the existing weaving deficiency at this area. Option C considered reconfiguring the southbound I-75 to westbound Selmon Expressway ramp and the eastbound Selmon Expressway to southbound I-75 ramp to connect with the relocated southbound C/D road.

Option C also included providing a new ramp from the northbound C/D road to allow alternate access to the Brandon Town Center Drive, Causeway Boulevard, Gornto Lake Road, and other points south and alleviate some congestion on SR 60. This ramp would diverge from the existing ramp that connects the northbound C/D road with westbound Selmon Expressway, would provide a short connection (entrance and exit) that would intersect with Brandon Town Center Drive at the south entrance to Westfield Brandon Mall, and would continue to reconnect with the northbound C/D road north of the Selmon Expressway interchange.

- For the SR 60 interchange, Option A considered maintaining the existing PARCLO configuration. The northbound and southbound exit ramps would be expanded/extended to provide additional storage and the ramp termini intersections would be expanded to add turn lanes.

Option B considered replacing the existing interchange with a SPUI and extending the northbound and southbound exit ramps to provide additional storage.

Option C considered eliminating the existing loop ramp that accommodates the westbound SR 60 to southbound I-75 movement. The existing eastbound SR 60 to northbound I-75 loop ramp would be slightly reconfigured and would connect to the northbound I-75 GULs. The southbound I-75 to SR 60 exit and entrance ramps would be reconfigured and would commence and operate at SR 60 as legs of a diamond interchange. An additional lane would be constructed at the southbound I-75 exit ramp and additional turn lanes would be provided at its terminus. The westbound SR 60 to northbound I-75 entrance ramp would be reconstructed and would connect to the proposed northbound C/D road. The I-75 SUL traffic north of the interchange would connect with SR 60 through braided ramps to the C/D roads, thus avoiding weaving with the GUL traffic.

All options for Segment 1 also considered widening, extending, and realigning the existing C/D roads. Based on the traffic analyses and other considerations, Option C was recommended as the preferred option for Segment 1, except for the SR 60 interchange where Option A (maintaining the existing PARCLO configuration) was recommended.

Two options – Options A and B – were evaluated for Segment 2, which includes the interchanges at MLK Boulevard and I-4.

- For the MLK Boulevard interchange, both options considered replacing the existing PARCLO with a SPUI.
- For the I-4 interchange, Option A considered replacing the existing interchange with a modified five-level turbine interchange that would include additional directional ramps. The I-75 GULs would cross over I-4 on the second level while the I-75 SULs would cross over I-4 on the third level. All of the existing ramps would be utilized in the proposed interchange and would connect the I-75 GULs with I-4. The proposed new directional ramps would be used to connect the I-75 SULs with I-4.

Option B considered replacing the existing I-4 interchange with a combination directional “turbine/stack” interchange that would allow direct connections between the I-75 SULs and the potential SULs on I-4. All stack design structures would be fourth and fifth level

ramps. The directional ramps would provide access between all of the I-75 and I-4 GULs not serviced by the proposed C/D roads. The directional ramp structures are proposed as first, second, and third level ramps.

Both options for Segment 2 also included adding three-lane C/D roads along both directions of I-75 to eliminate existing weaving deficiencies. The northbound C/D road would commence at the SPUI at MLK Boulevard and terminate approximately 1 mile north of I-4. The southbound C/D road would commence approximately 1 mile north of I-4 and terminate at the SPUI at MLK Boulevard. The southbound C/D road, by way of directional ramps, would provide access to and from the eastbound and westbound I-4 GULs. Based on the traffic analyses and other considerations, Option A was recommended as the preferred option for Segment 2.

Two options – Options A and B – were evaluated for Segment 3, which includes the interchanges at Fowler Avenue and Fletcher Avenue.

- For the Fowler Avenue interchange, Option A considered maintaining the existing interchange with minor modifications. Option B considered replacing the existing flyover ramp that accommodates the northbound I-75 to westbound Fowler Avenue movement with a two-lane loop ramp in the northeast quadrant. Also, the existing loop ramp that accommodates the eastbound Fowler Avenue to northbound I-75 movement would be eliminated. This movement would be accommodated by constructing a one-lane ramp in the northeastern quadrant that would connect with the existing westbound Fowler Avenue to northbound I-75 entrance ramp, which would be lengthened.
- For the Fletcher Avenue interchange both options considered maintaining the existing interchange with the improvements proposed under the currently ongoing design project (FPID No. 408456-2-52-01, Section No. 10075).

Both options also included adding two-lane C/D roads along both directions of I-75 between Fowler Avenue and Fletcher Avenue to eliminate existing weaving and merge/diverge deficiencies along this segment of I-75. The northbound C/D road, which would commence approximately 1 mile south of Fowler Avenue and terminate at the northbound exit loop ramp at Fletcher Avenue, would provide the only access to the northbound exit ramps at Fowler Avenue and Fletcher Avenue. The southbound C/D road would commence approximately 0.75 miles north of Fletcher Avenue and terminate at the southbound loop ramp at Fowler Avenue. The southbound C/D road would provide the only access to the southbound exit ramps at Fletcher Avenue and Fowler Avenue. Interchange “hopping” between the Fowler Avenue and Fletcher Avenue interchanges would be eliminated by not providing exits at Fowler Avenue when entering southbound I-75 from Fletcher Avenue and exits at Fletcher Avenue when entering northbound I-75 from Fowler Avenue. Based on the traffic analyses and other considerations, Option A was recommended as the preferred option for Segment 3.



## 1.0 INTRODUCTION

The *Design Traffic Technical Memorandum (DTTM), Technical Report No. 1 – Evaluation of Alternatives*, presented design year (2035) traffic volume forecasts and level of service analyses for the Project Development and Environment (PD&E) Studies conducted on two contiguous projects on I-75:

- The southern PD&E Study (WPI Segment Number 419235-2) extends from Moccasin Wallow Road in Manatee County to south of US 301 in Hillsborough County
- The northern PD&E Study (WPI Segment Number 419235-3) extends from south of US 301 to north of Fletcher Avenue in Hillsborough County

The DTTM Technical Report No. 1 focused on the evaluation of traffic operations along the I-75 mainline and collector/distributor (C/D) roads. Only minor improvements were evaluated at the interchanges. The following alternatives were evaluated for both projects:

- **No-Build Alternative** assumed that no capacity improvements – other than those already planned and funded – will be made to the I-75 corridor.
- **Build Alternative 1** would provide one additional general use lane (GUL) along each direction of I-75 throughout the study limits. Minor improvements were also evaluated at the ramp termini intersections.
- **Build Alternative 2** would provide two additional GULs along each direction of I-75 throughout the study limits. Minor improvements were also evaluated at the ramp termini intersections.
- **Build Alternative 3** would maintain the existing number of GULs – three GULs in each direction of I-75 for both projects – and would add special use lanes (SUL) to the inside of the GULs in each direction of I-75. The GULs would be physically separated from the SULs through barrier walls or pavement markings and/or plastic pylons. While the GULs would accommodate local traffic and provide access to all existing interchanges along I-75, the SULs would generally accommodate regional trips and provide access to a select number of interchanges either through direct system-to-system connections or through “slip ramps” that would connect the SULs with the GULs at select locations along the mainline. For the southern project, two SULs would be added in each direction of I-75. For the northern project, three SULs would be added in each direction of I-75.

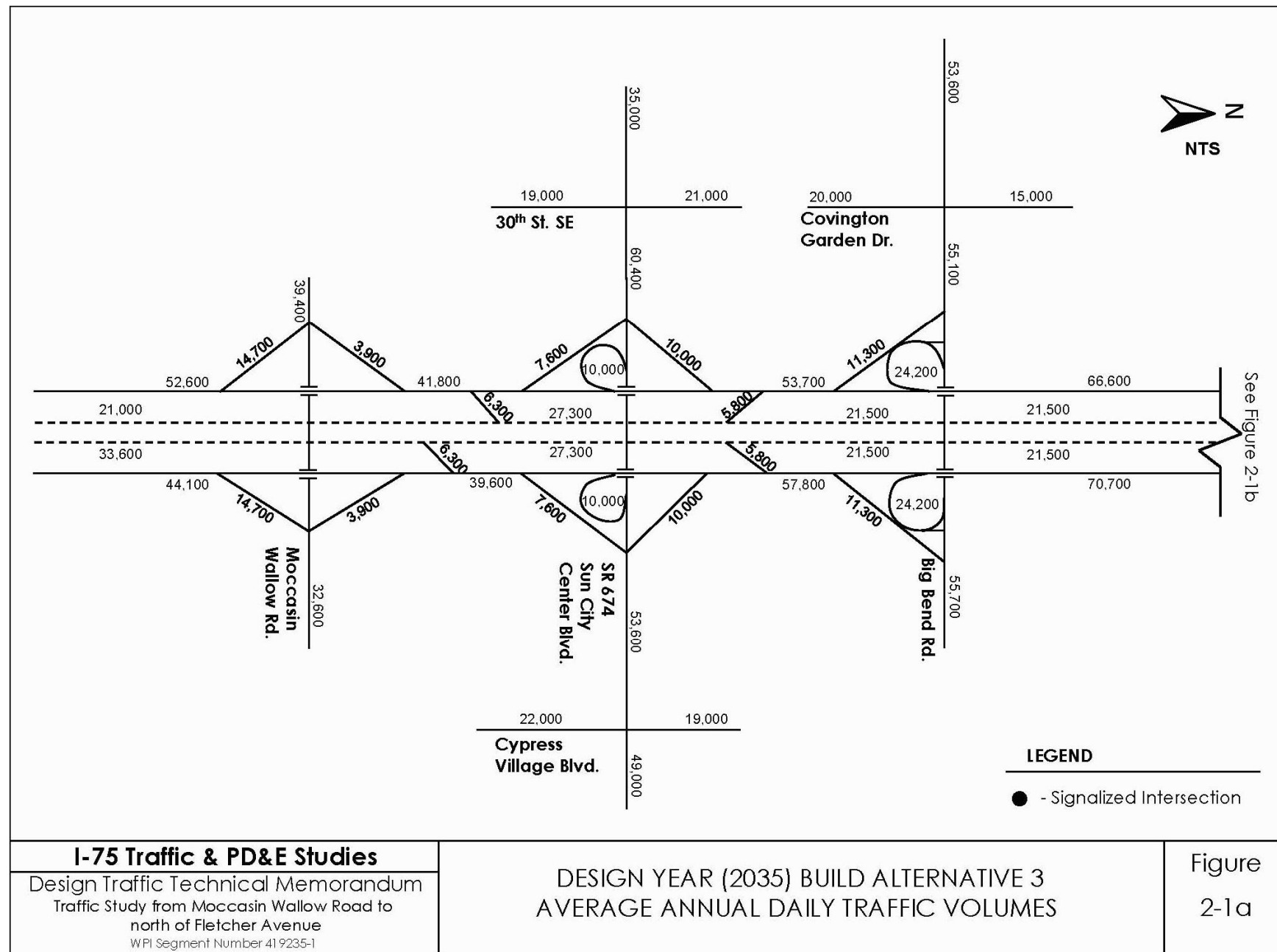
Technical Report No. 1 concluded that Build Alternative 3, although it could not accommodate the traffic demand at all locations analyzed, was the most advantageous of all alternatives because it would provide mobility options and would preserve acceptable levels of service for the regional travelers. This alternative was recommended for development of conceptual plans that would address the identified operational deficiencies.

Based on the Build Alternative 3 recommendations on the I-75 mainline lane-geometry and the locations of the slip-ramps connecting the GULs with the SULs, a number of improvement concepts were developed for the interchanges and the mainline segments of I-75 within the study area. This report, DTTM Technical Report No. 2 – Evaluation of Build Alternative Concepts, presents the level of service analyses and comparisons performed for the improvement concepts developed to address the deficiencies of Build Alternative 3.

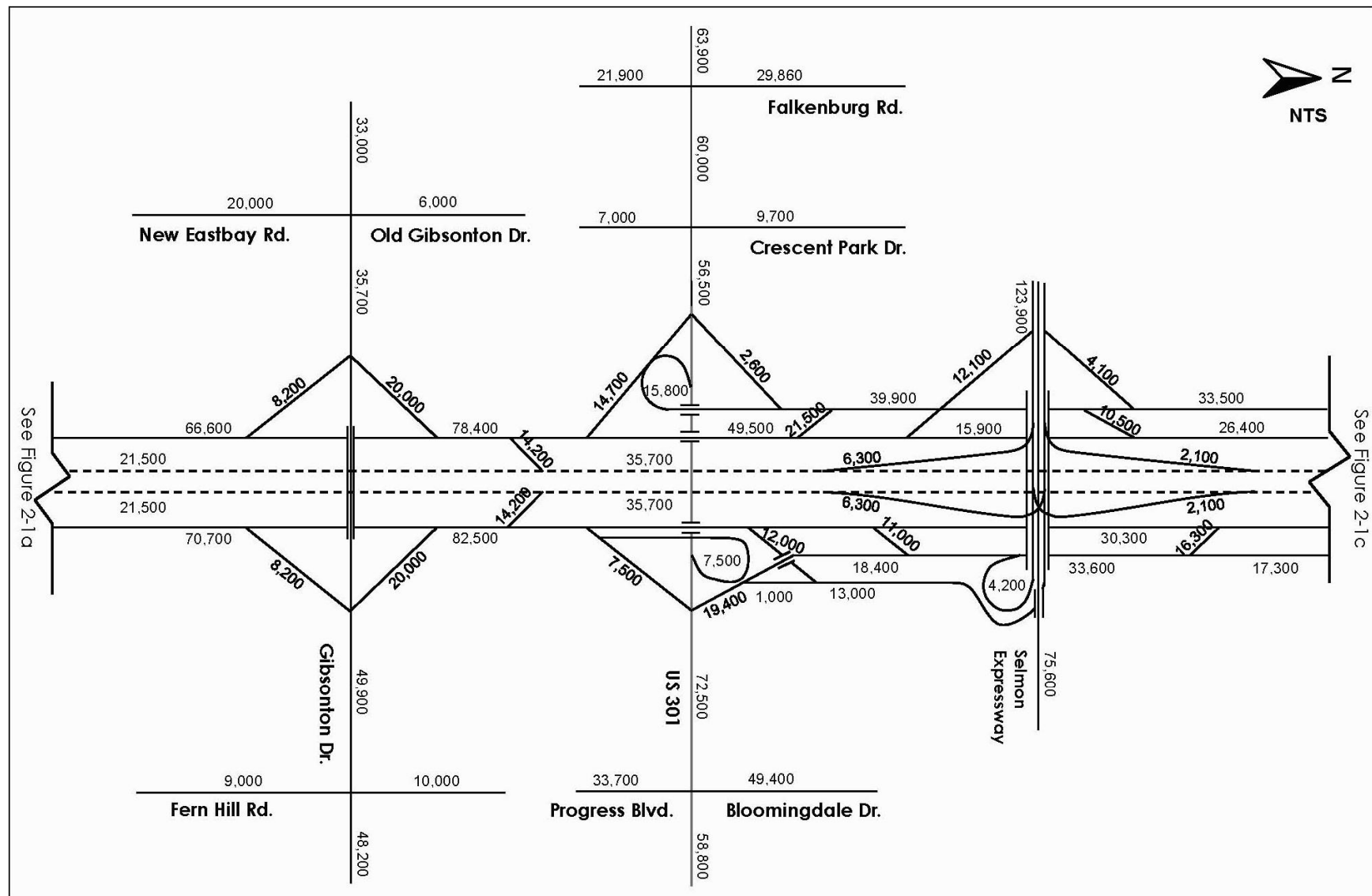
## 2.0 TRAFFIC VOLUME PROJECTIONS

Technical Report No. 1 presented design year 2035, average annual daily traffic (AADT) volumes and AM and PM design hour volume projections for Build Alternative 3. While performing the detailed improvement concepts evaluation, it was found that several signalized intersections located adjacent to the ramp termini intersections at several interchanges affected the operations of the interchanges and needed to be included in the analyses. Therefore, the study area was expanded to include these intersections. Figure 2-1 (a, b, c, and d) presents the projected design year AADT volumes for Alternative 3 in the expanded study area. Figure 2-2 (a, b, c, and d) presents the PM design hour volumes in the expanded study area.

TRAFFIC VOLUME PROJECTIONS

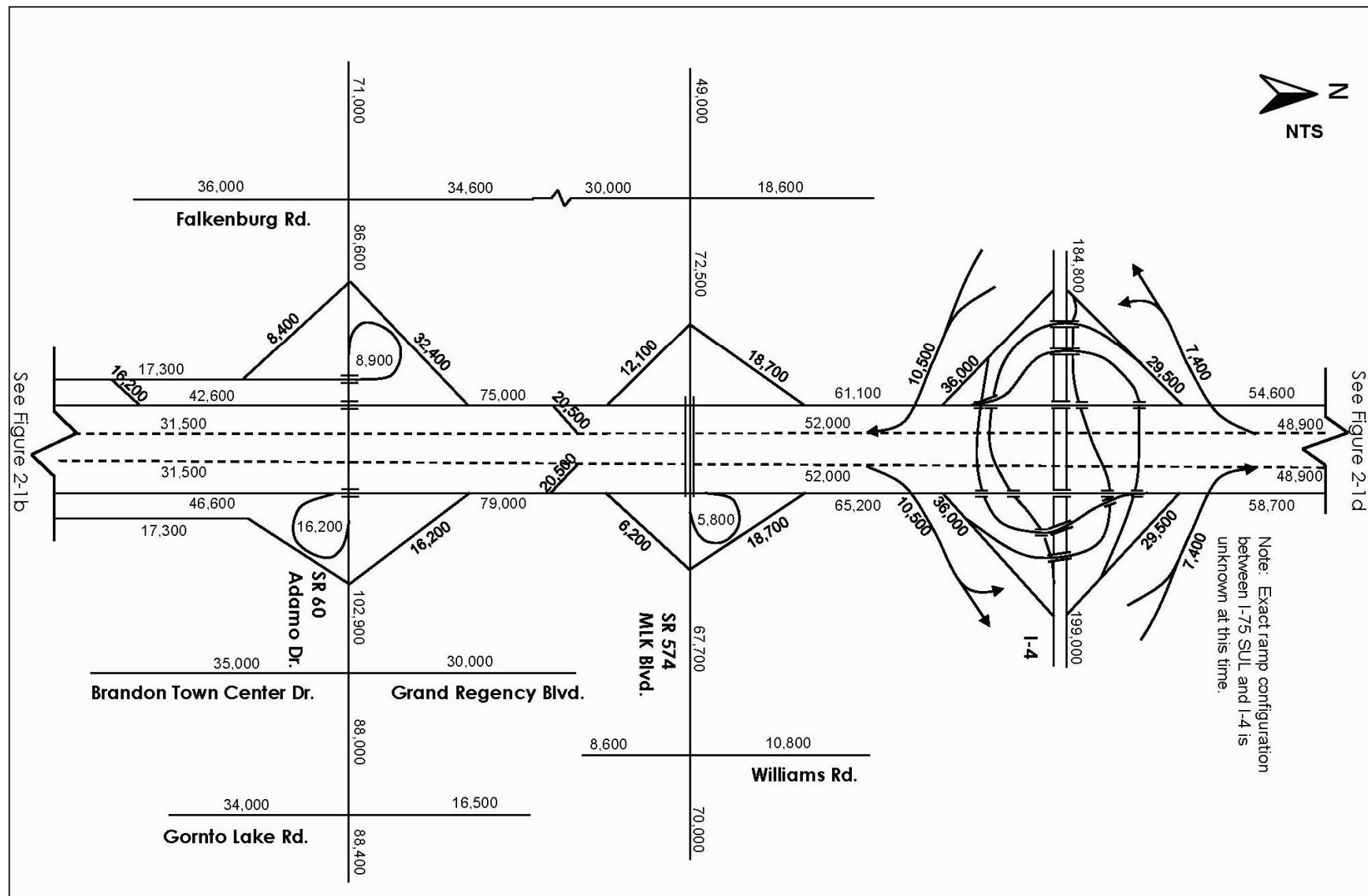


TRAFFIC VOLUME PROJECTIONS



<p><b>I-75 Traffic &amp; PD&amp;E Studies</b>                  Design Traffic Technical Memorandum                  Traffic Study from Moccasin Wallow Road to                  north of Fletcher Avenue                  WPI Segment Number 419235-1</p>	<p>DESIGN YEAR (2035) BUILD ALTERNATIVE 3                  AVERAGE ANNUAL DAILY TRAFFIC VOLUMES</p>	<p>Figure                  2-1b</p>
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TRAFFIC VOLUME PROJECTIONS



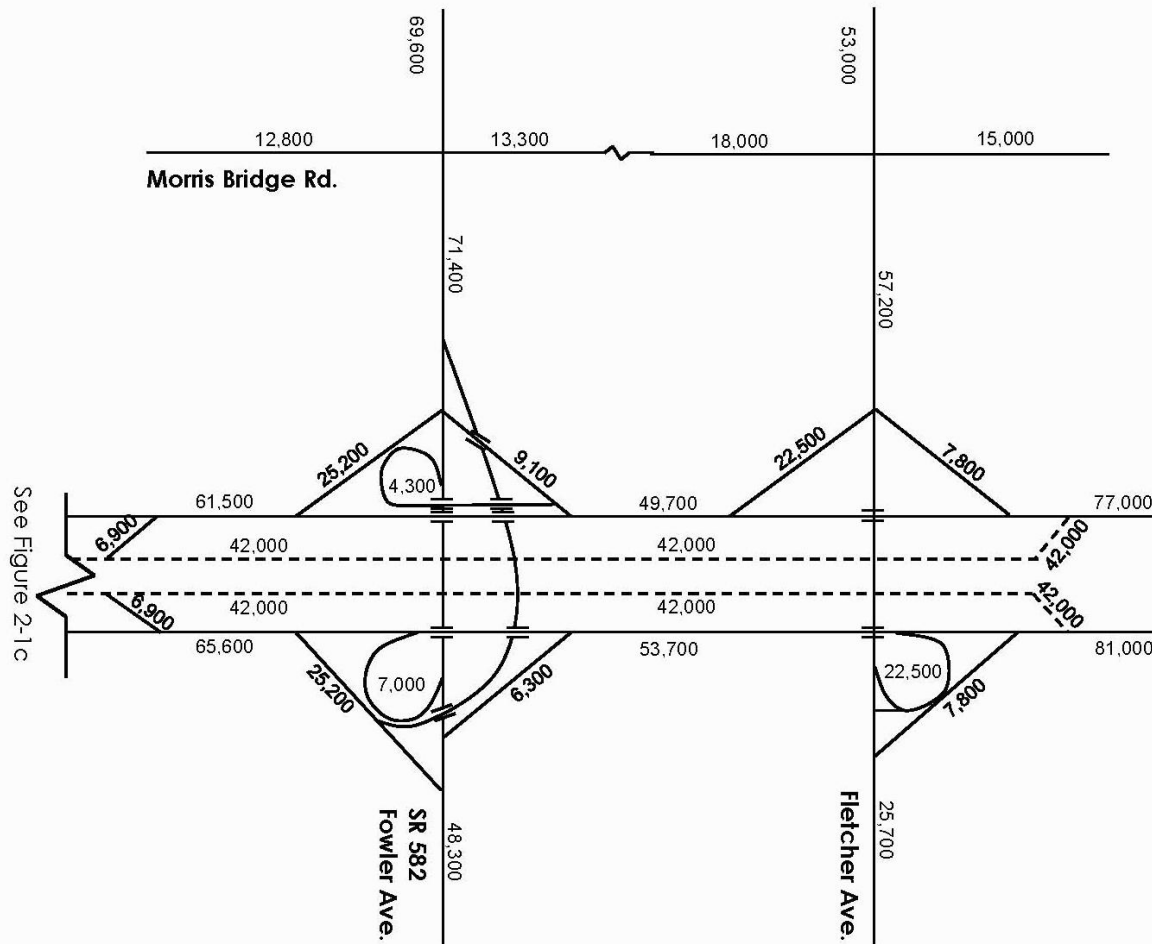
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 WPI Segment Number 419235-1

DESIGN YEAR (2035) BUILD ALTERNATIVE 3  
 AVERAGE ANNUAL DAILY TRAFFIC VOLUMES

Figure  
 2-1c



TRAFFIC VOLUME PROJECTIONS



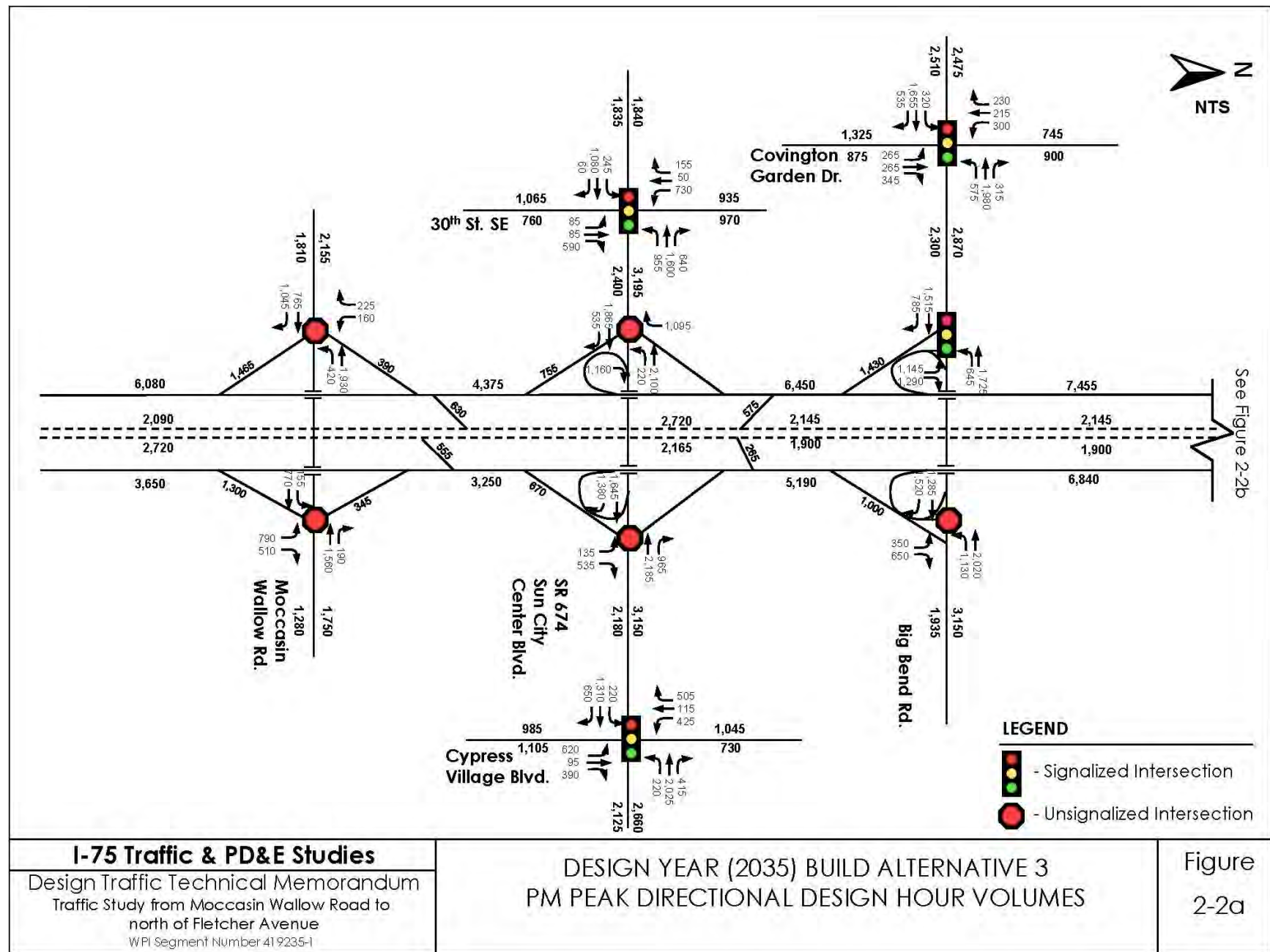
**I-75 Traffic & PD&E Studies**

Design Traffic Technical Memorandum  
 Traffic Study from Moccasin Wallow Road to  
 north of Fletcher Avenue  
 WPI Segment Number 41 9235-1

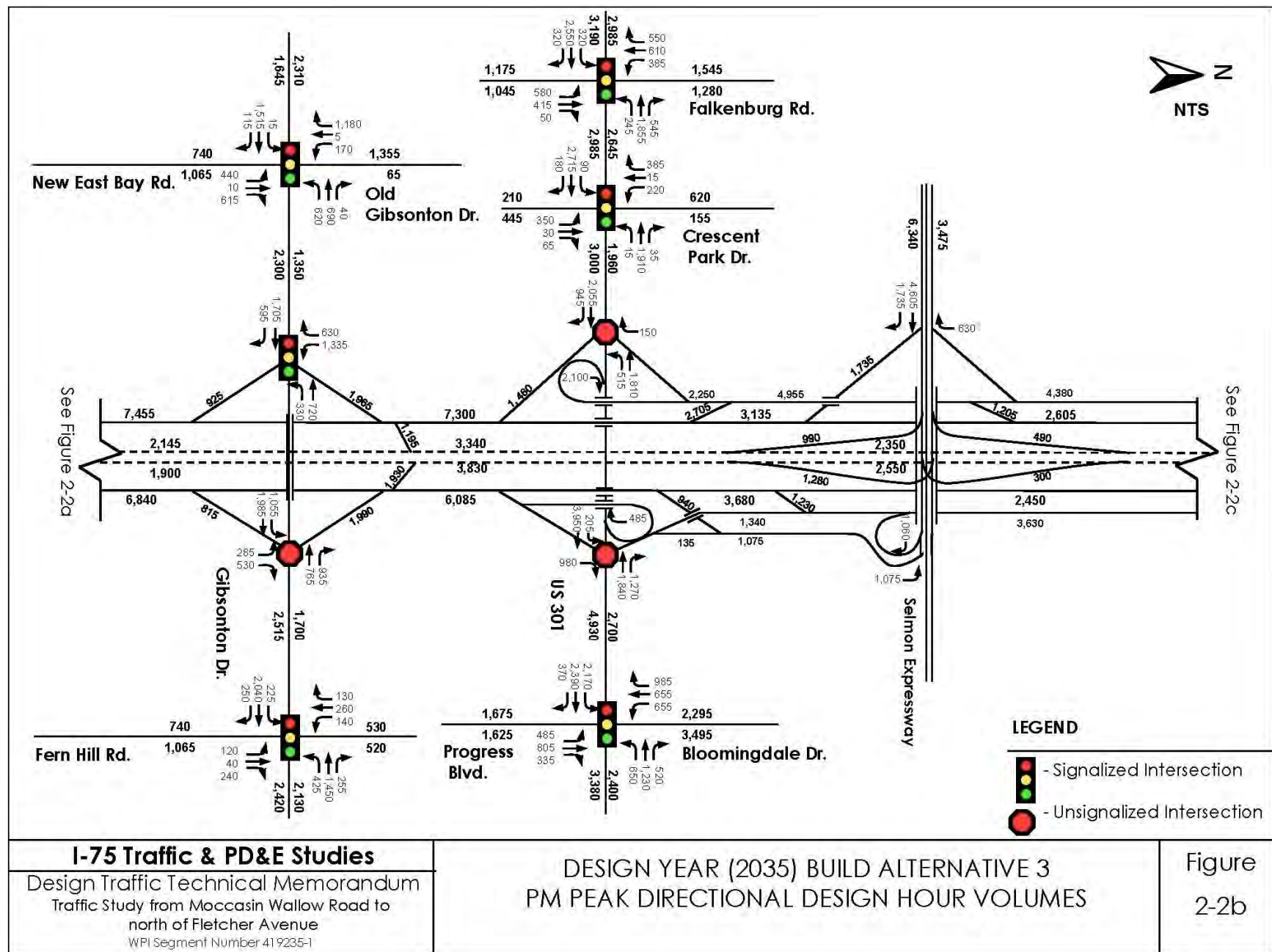
DESIGN YEAR (2035) BUILD ALTERNATIVE 3  
 AVERAGE ANNUAL DAILY TRAFFIC VOLUMES

Figure  
 2-1d

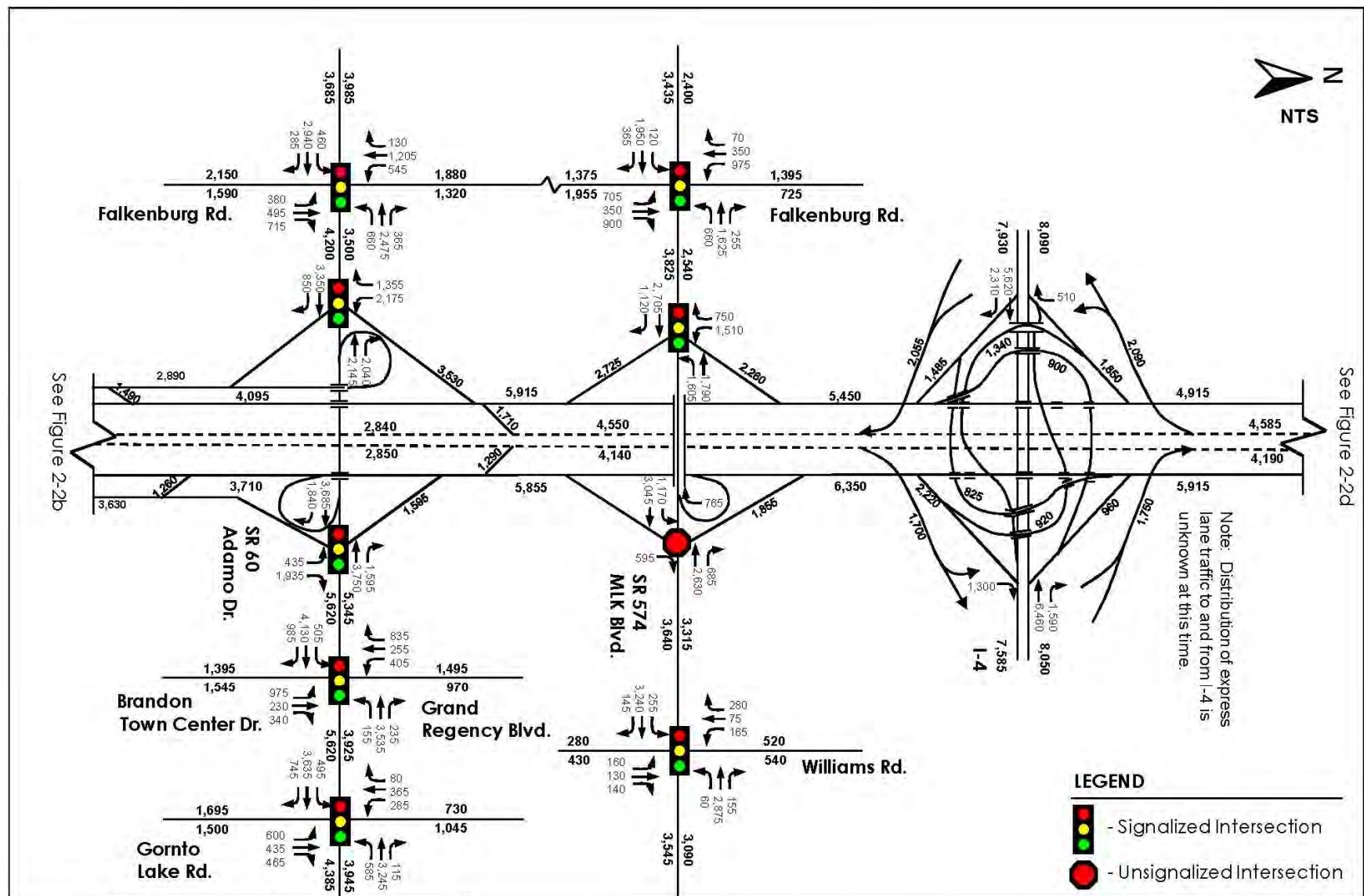
TRAFFIC VOLUME PROJECTIONS



TRAFFIC VOLUME PROJECTIONS



TRAFFIC VOLUME PROJECTIONS



See Figure 2-2b

See Figure 2-2d

**I-75 Traffic & PD&E Studies**

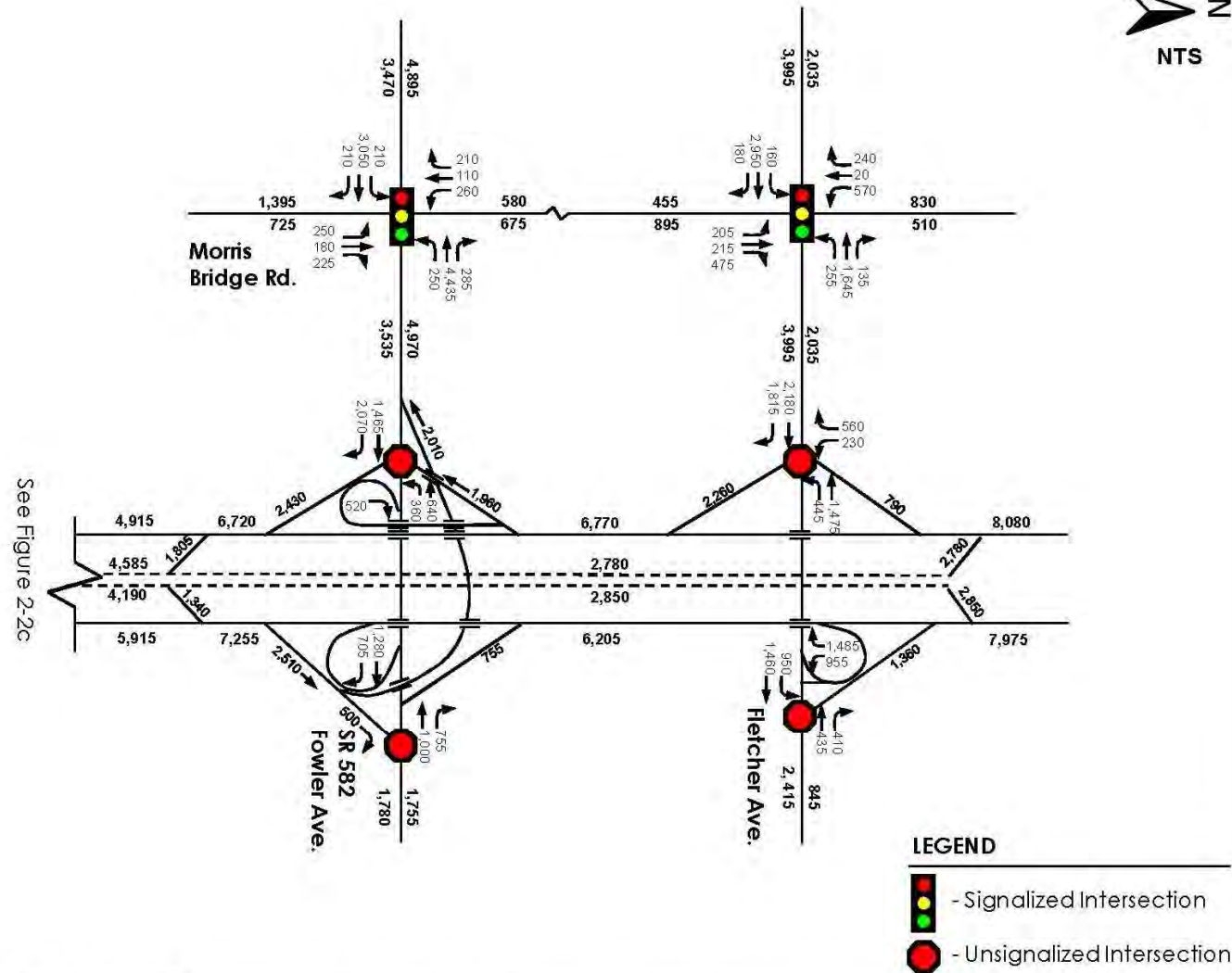
Design Traffic Technical Memorandum  
 Traffic Study from Moccasin Wallow Road to  
 north of Fletcher Avenue  
 WPI Segment Number 419235-1

DESIGN YEAR (2035) BUILD ALTERNATIVE 3  
 PM PEAK DIRECTIONAL DESIGN HOUR VOLUMES

Figure  
 2-2c



TRAFFIC VOLUME PROJECTIONS



See Figure 2-2c

LEGEND

- Signalized Intersection
- Unsignalized Intersection

I-75 Traffic & PD&E Studies

Design Traffic Technical Memorandum  
 Traffic Study from Moccasin Wallow Road to  
 north of Fletcher Avenue  
 WPI Segment Number 419235-1

DESIGN YEAR (2035) BUILD ALTERNATIVE 3  
 PM PEAK DIRECTIONAL DESIGN HOUR VOLUMES

Figure  
 2-2d



## 3.0 BUILD ALTERNATIVE 3 OPERATIONAL DEFICIENCIES

The Florida Department of Transportation (Department), after consideration of costs and environmental impacts, has decided that Build Alternative 3 would represent the highest level of improvements that could be accomplished for the I-75 mainline. Build Alternative 3 includes substantial increases of the I-75 mainline capacity compared to its current condition. Despite this capacity increase, however, Technical Report No. 1 identified several components of the I-75 mainline, interchange ramp termini intersections, and C/D roads that, under Build Alternative 3, would continue to operate at deficient levels of service during the design hours. The main reason for this occurrence is that as more capacity is added to the I-75 mainline, travelers divert from adjacent congested corridors to I-75, absorbing the added capacity and causing the levels of service for some segments to remain at E and F. Review of the travel demand projections for the No-Build Alternative and Build Alternatives 1, 2 and 3 shows that these volumes are progressively higher with the No-Build Alternative serving the lowest volumes and Build Alternative 3 serving the highest volumes.

For reference, Figure 3-1 (a and b) – extracted from the Technical Report No. 1 – provides the forecasted PM design hour levels of service in the study area. Build Alternative 3 did not consider any interchange improvements (i.e. interchange re-configurations) other than minor improvements at the ramp merge/diverge areas and at the ramp termini intersections at the cross streets. The following is a summary of the major deficiencies.

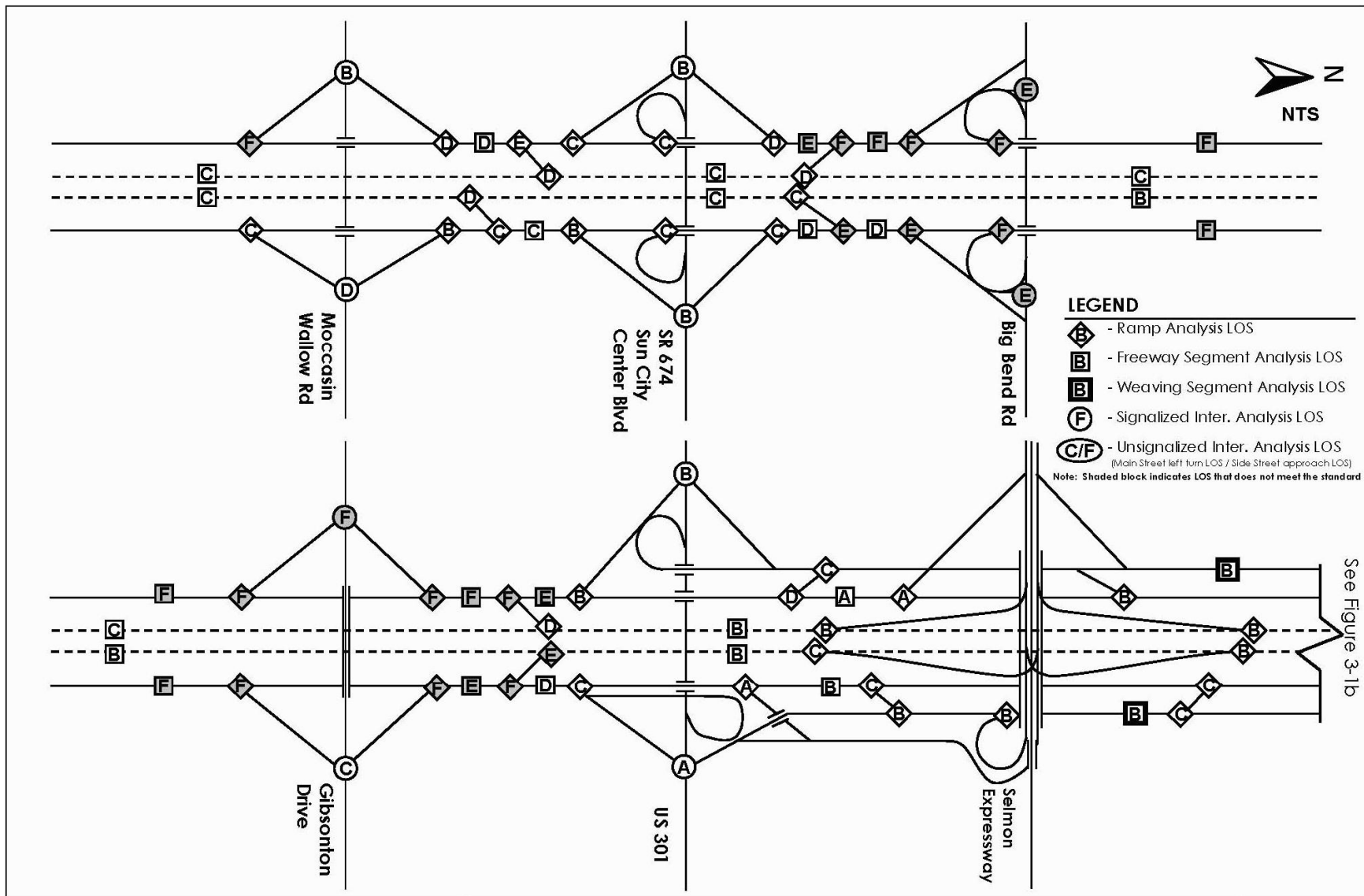
### 3.1 I-75 Mainline

Under Build Alternative 3, the SULs on the I-75 mainline would operate at LOS C or better in both directions, throughout both projects. However, some segments of the GULs would operate at deficient levels of service (LOS E or worse). A summary of those segments is provided below.

#### 3.1.1 Northbound I-75

The following northbound GUL segments would operate at LOS E or worse during at least one peak design hour:

- From the SR 674 entrance ramp merge to the slip-ramp exit ramp diverge north of Gibsonton Drive
- From the slip-ramp entrance ramp merge north of I-4 to the Fletcher Avenue entrance ramp merge

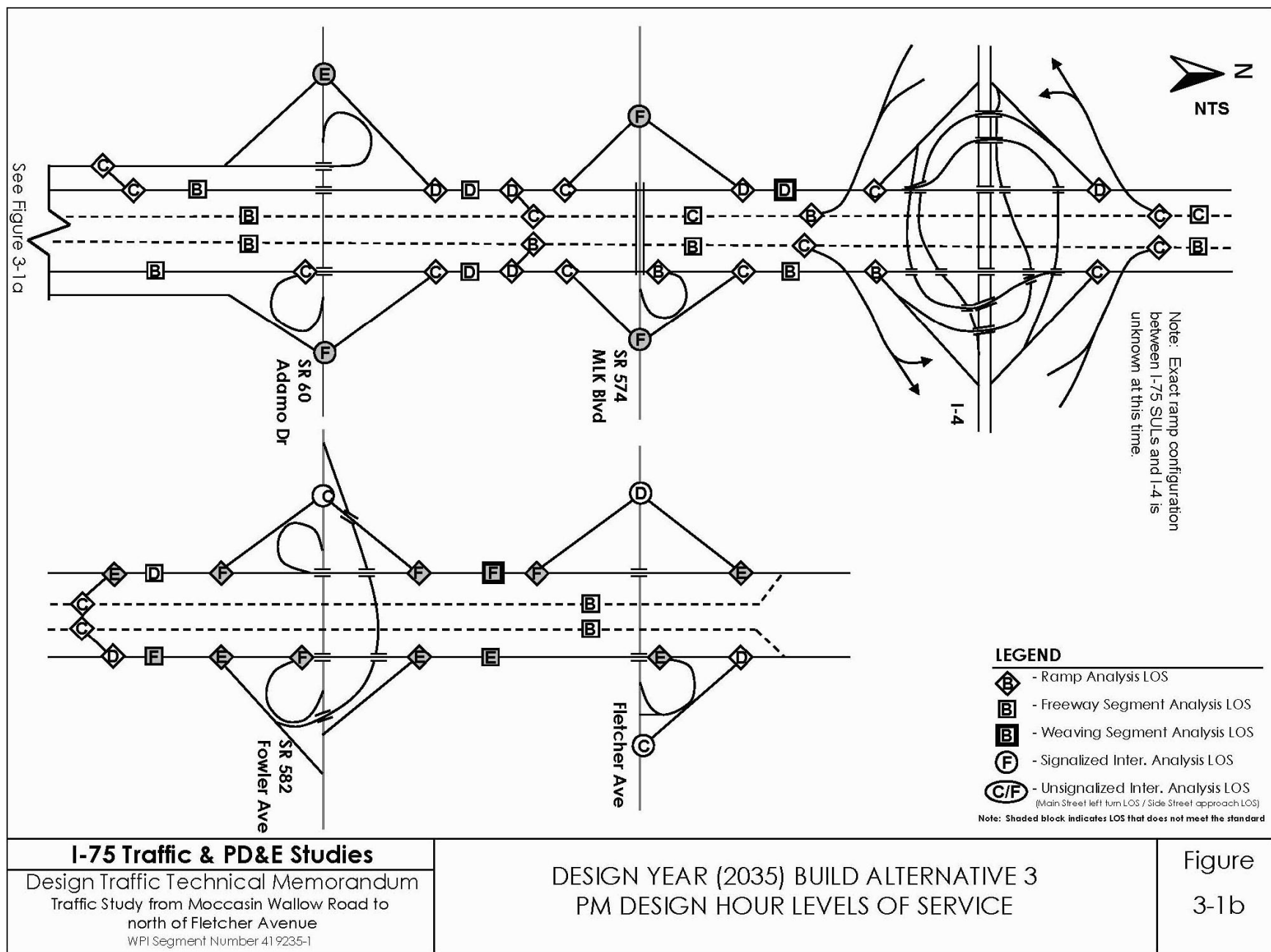


**I-75 Traffic & PD&E Studies**  
 Design Traffic Technical Memorandum  
 Traffic Study from Moccasin Walloway Road to  
 north of Fletcher Avenue  
 WPI Segment Number 41 9235-1

DESIGN YEAR (2035) BUILD ALTERNATIVE 3  
 PM DESIGN HOUR LEVELS OF SERVICE

Figure  
 3-1a

BUILD ALTERNATIVE 3 OPERATIONAL DEFICIENCIES



### 3.1.2 Southbound I-75

The following southbound GUL segments would operate at LOS E or worse:

- From the Fletcher Avenue exit ramp diverge to the Fowler Avenue entrance ramp merge
- From the US 301 entrance ramp merge to the SR 674 exit ramp diverge

## 3.2 I-75 Interchanges

Several ramp merge/diverge areas and ramp termini intersections would operate at LOS E or worse, as described below.

### 3.2.1 SR 674 Interchange

This partial cloverleaf (PARCLO) interchange would operate satisfactorily with the exception of the northbound entrance ramp merge which would operate at LOS E during the AM design hour.

### 3.2.2 Big Bend Road Interchange

All ramp merge and diverge areas (both directions of I-75) as well as the ramp termini intersections at Big Bend Road would operate at LOS E or worse.

### 3.2.3 Gibsonton Drive Interchange

All ramp merge and diverge areas (both directions of I-75) and the southbound ramp termini intersection would operate at LOS E or worse.

### 3.2.5 Selmon Expressway (SR 618) Interchange

The interchange at Selmon Expressway would operate satisfactorily with the exception of the northbound entrance ramp merge at the C/D road which would operate at LOS E during the AM design hour.

### 3.2.6 SR 60 Interchange

Both the southbound and northbound ramp termini intersections at SR 60 would operate at LOS E or worse during the AM and PM design hours.

### **3.2.7 MLK Boulevard (SR 574) Interchange**

Both the southbound and northbound ramp termini intersections at Dr. Martin Luther King, Jr. (MLK) Boulevard would operate at LOS E or worse during the AM and PM design hours.

### **3.2.8 Fowler Avenue (SR 582) Interchange**

All ramp merge/diverge areas along both directions of I-75 would operate at LOS E or worse.

### **3.2.9 Fletcher Avenue (CR 582A) Interchange**

The merge and diverge areas of the southbound ramps and the diverge area of the northbound exit ramp would operate at LOS E or worse. The ramp termini intersections on Fletcher Avenue would operate at LOS E or worse during the AM design hour.



## 4.0 ALTERNATIVE CONCEPTS DESCRIPTION

The land use and the spacing of the interchanges along the I-75 study corridor are different within the limits of the southern and northern projects. Along the southern project, the land uses are primarily rural and the interchanges at SR 674, Big Bend Road, and Gibsonton Drive are spaced far apart. For the northern project the land uses are primarily suburban type development (residential, office, and commercial); the seven interchanges (located at US 301, Selmon Expressway, SR 60, MLK Boulevard, I-4, Fowler Avenue, and Fletcher Avenue) are closely spaced; and a major portion (from US 301 to SR 60) includes northbound and southbound C/D roads that interconnect the interchanges at US 301, Selmon Expressway, and SR 60. These differences were considered during the development and evaluation of alternative improvement concepts for the two projects.

### 4.1 I-75 Mainline Improvement Concepts

#### 4.1.1 Southern Project Mainline Improvement Concepts

For the I-75 mainline, build alternatives were developed and evaluated based on three alternate typical sections. The three typical sections consisted of 10 travel lanes with six GULs (three in each direction) and four SULs (two in each direction). The two main differences between the typical sections were the type of separation provided between the SULs and the GULs and whether widening takes place within the median or to the outside.

- **Mainline Alternative 1A:** For this alternative, the widening of I-75 would occur to the outside. The 10-lane typical section would maintain the existing 88-foot-wide median and would provide a double-faced concrete barrier to separate the SULs from the GULs. This alternative would require additional right of way along both sides of I-75. Figure 4-1 depicts this proposed typical section.
- **Mainline Alternative 1B:** This typical section is similar to Mainline Alternative 1A except that its footprint is intended to be constructed within the existing right of way. As a result, the border width would be less than standard. Due to the elevation differences between the pavement and the side ditches, retaining walls would be required at the outside shoulders, on both sides, for a significant portion of the corridor. Figure 4-2 depicts this proposed typical section.
- **Mainline Alternative 2:** For this alternative, the widening of I-75 would occur to the inside within the existing median. The proposed typical section would provide a minimum 28-foot-wide median that would include a barrier wall and paved shoulders on both sides. A 6-foot buffer consisting of paint and/or plastic pylons would separate the SULs from the GULs. If a multi-modal envelope is included in the typical section, this envelope would be placed to the outside on either side of I-75. Figure 4-3 depicts this proposed typical section.

Figure 4-1  
 Southern Project – Mainline Alternative 1A Proposed Typical Section

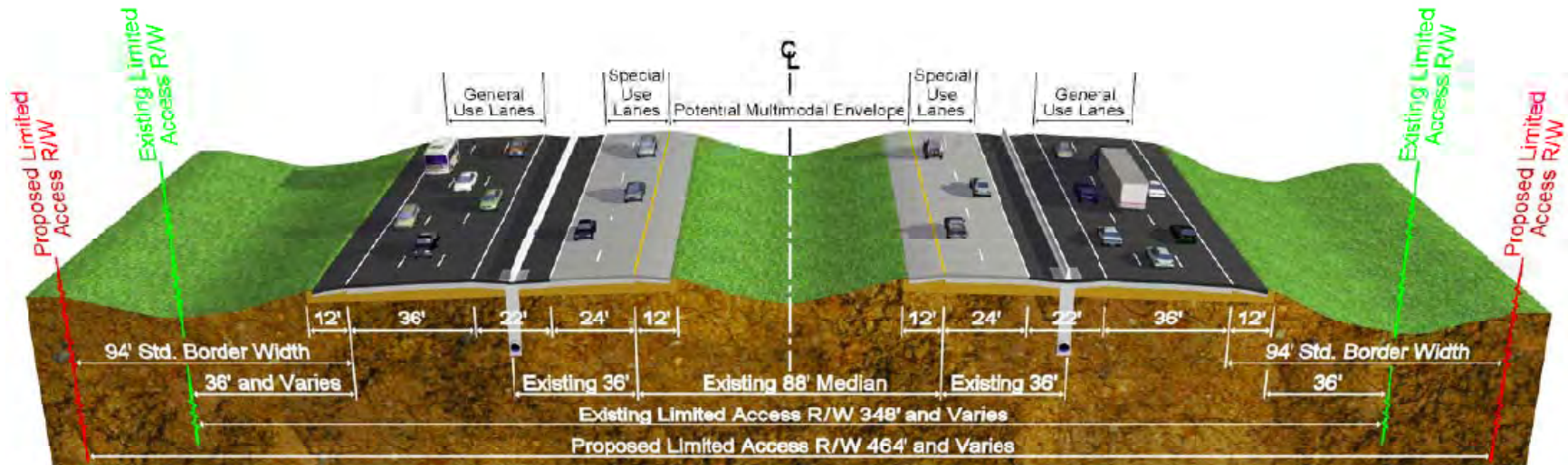


Figure 4-2  
Southern Project – Mainline Alternative 1B Proposed Typical Section

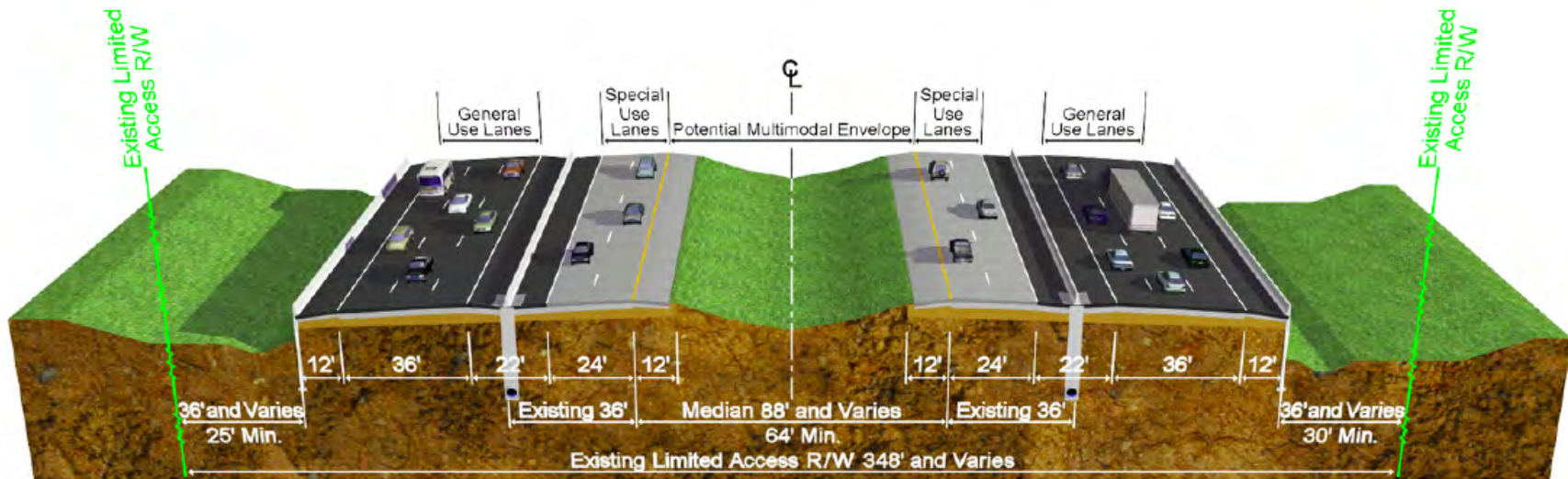
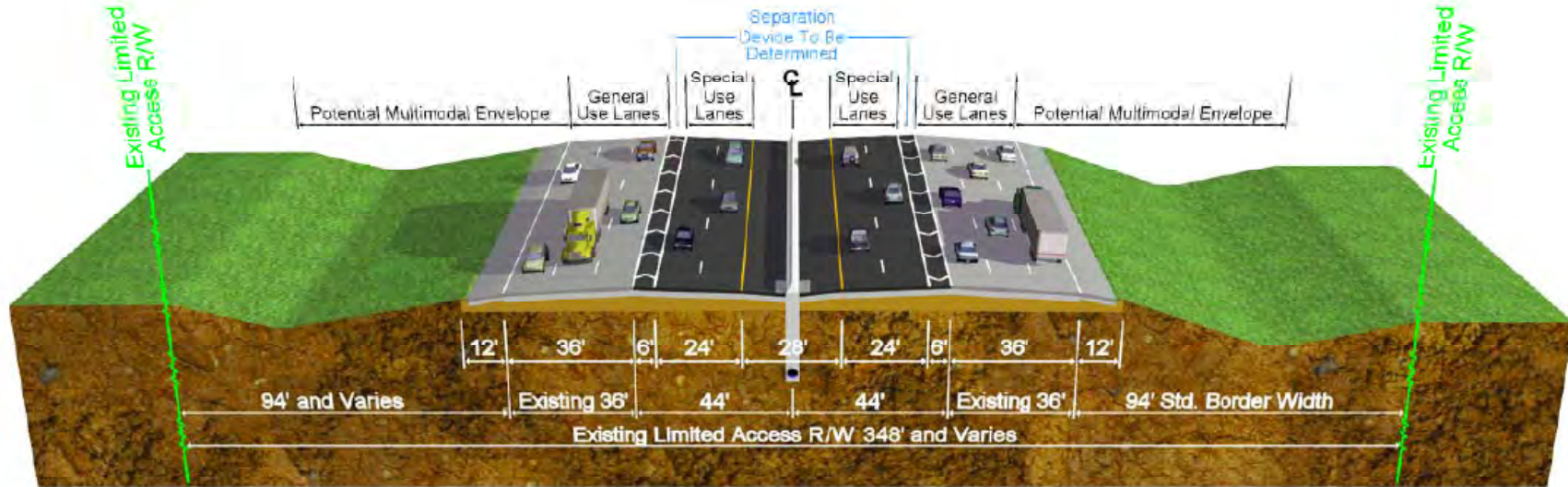


Figure 4-3  
Southern Project – Mainline Alternative 2 Proposed Typical Section



Since the typical sections for Mainline Alternatives 1, 1A, and 2 provide the same mainline capacity, they should not affect the levels of service along I-75. Therefore, traffic operations will have no bearing in the selection of the preferred mainline typical section alternative.

#### 4.1.2 Northern Project Mainline Improvement Concepts

Within the northern project limits, build alternatives were developed and evaluated based on two alternate typical sections. Both typical sections consisted of 12 travel lanes with six GULs (three in each direction) and six SULs (three in each direction) and included C/D roads between interchanges. The two main differences between these typical sections was the type of separation provided between the SULs and the GULs, and whether widening takes place within the median or to the outside.

- **Mainline Alternative 1:** For this alternative, as illustrated in Figure 4-4, the proposed widening of I-75 would occur to the outside. The 12-lane typical section would provide a minimum 88-foot median (for potential future use as a multi-modal envelope), which would include 12-foot inside shoulders (10 feet paved), and a double-faced concrete barrier to separate the SULs from the GULs.
- **Mainline Alternative 2:** For this alternative, as illustrated in Figure 4-5, the proposed widening of I-75 would occur to the inside within the existing median. The proposed typical section would provide a minimum 22-foot median that would include a barrier wall and a 10-foot paved shoulder on both sides. A 6-foot buffer consisting of paint and/or plastic pylons would separate the SULs from the GULs. A 9-foot widening would also be required to the outside on both sides of I-75. Should a multi-modal envelope be desired to be added to the typical section, this envelope would be placed to the outside on either side of I-75.

Both alternatives could be constructed within the existing right of way. Additional right of way may be required, however, for interchange improvements, slip ramps, C/D roads, stormwater management facilities, and floodplain compensation sites.

Since the typical sections for Mainline Alternatives 1 and 2 provide the same mainline capacity, they should not affect the levels of service along I-75. Therefore, traffic operations will have no bearing in the selection of the preferred mainline typical section alternative. However, interchange configurations, the location and configuration of the C/D roads, and the location of the ramps connecting the C/D roads with the GULs are components of the conceptual plans that could affect the mainline levels of service within the northern project's study area.



Figure 4-4  
Northern Project – Mainline Alternative 1 Proposed Typical Section

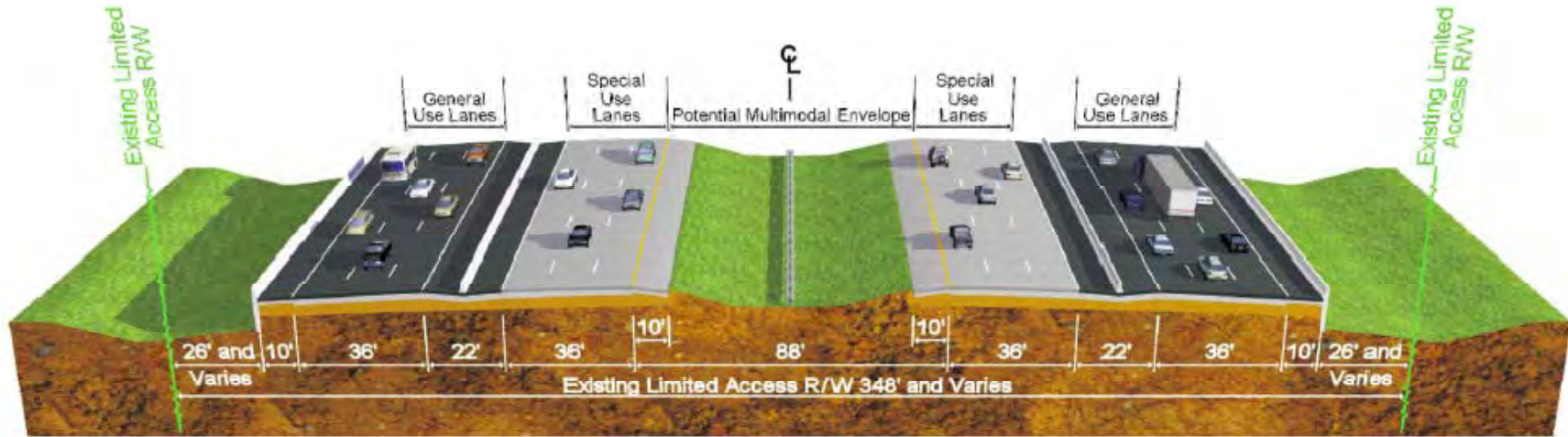
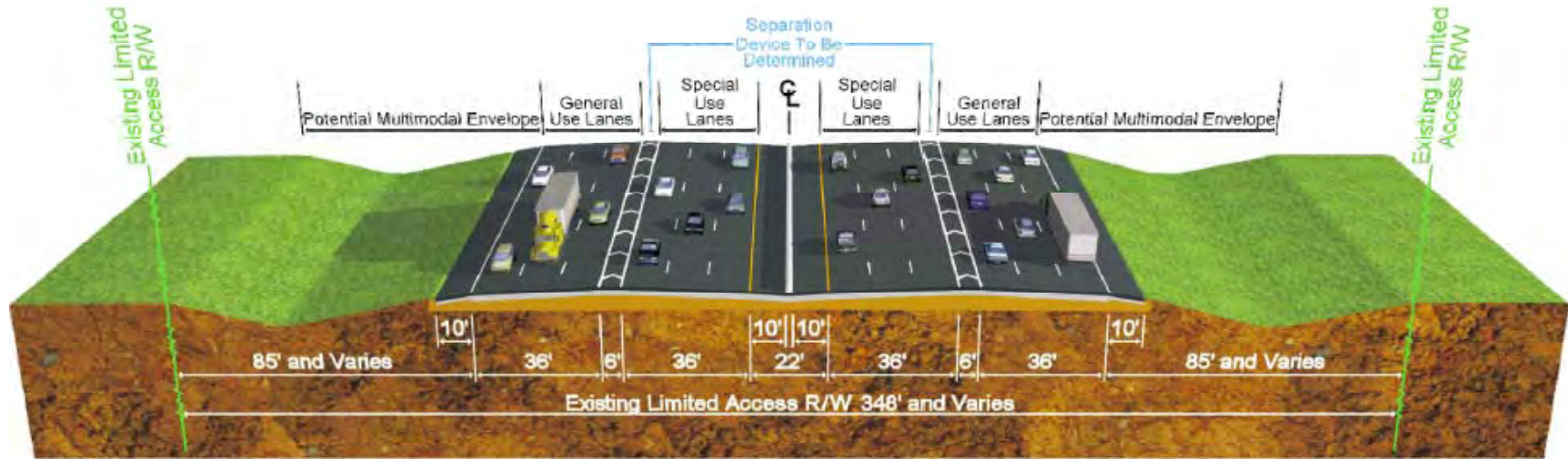


Figure 4-5  
Northern Project – Mainline Alternative 2 Proposed Typical Section



## 4.2 Interchange Improvement Concepts

Alternative improvement concepts, named *options*, were developed and evaluated for all interchanges in the study area. Each option provided, in general, the same configuration for all mainline alternatives. For the northern project, in addition to the interchanges, the improvement concepts considered the existing C/D roads and included new C/D roads.

### 4.2.1 Southern Project Interchange Improvement Concepts

#### 4.2.1.1 SR 674 Interchange Improvement Options

Three improvement options were evaluated:

- **Option A**, illustrated in Figure 4-6, considered the construction of a diverging diamond interchange (DDI) with the I-75 mainline crossing over SR 674.
- **Option B**, illustrated in Figure 4-7, considered the construction of a single-point urban interchange (SPUI). The SPUI has the advantage of allowing opposing left turns to proceed simultaneously by compressing the two ramp termini intersections of the typical diamond interchange into a single intersection.
- **Option C**, illustrated in Figure 4-8, considered modifying the existing partial cloverleaf (PARCLO) configuration. Under this option, the I-75 southbound to westbound exit ramp and southbound-to-eastbound loop ramp would be combined with two lanes exiting eastbound onto SR 674.

#### 4.2.1.2 Big Bend Road Interchange Improvement Options

Three improvement options were evaluated, all involving a modified PARCLO concept:

- **Option A**, illustrated in Figure 4-9, would allow Old Big Bend Road to remain open while providing grade-separated entrance and exit ramps at the northeast and northwest quadrants, respectively. A one-lane westbound-to-northbound entrance ramp would be provided. In the northwest quadrant, a two-lane southbound exit ramp would split to one lane exiting to westbound Big Bend Road and two lanes exiting through the loop ramp to eastbound Big Bend Road. All ramps in the southeast and southwest quadrants would be reconfigured to provide access to eastbound and westbound Big Bend Road.
- **Option B**, illustrated in Figure 4-10, is similar to Option A with the exception that it would close Old Big Bend Road while providing entrance and exit ramps at the northeast and northwest quadrants, respectively. At the northeast quadrant, Bullfrog Creek Road would be realigned to provide access to eastbound traffic on Old Big Bend Road.
- **Option C**, illustrated in Figure 4-11, would close Old Big Bend Road and an eastbound-to-northbound flyover would replace the existing loop ramp at the southeast quadrant. At the northeast quadrant, Bullfrog Creek Road would be realigned and the westbound-to-northbound entrance ramp would merge with the flyover before entering northbound I-75.



Figure 4-6  
 SR 674 Interchange – Improvement Option A

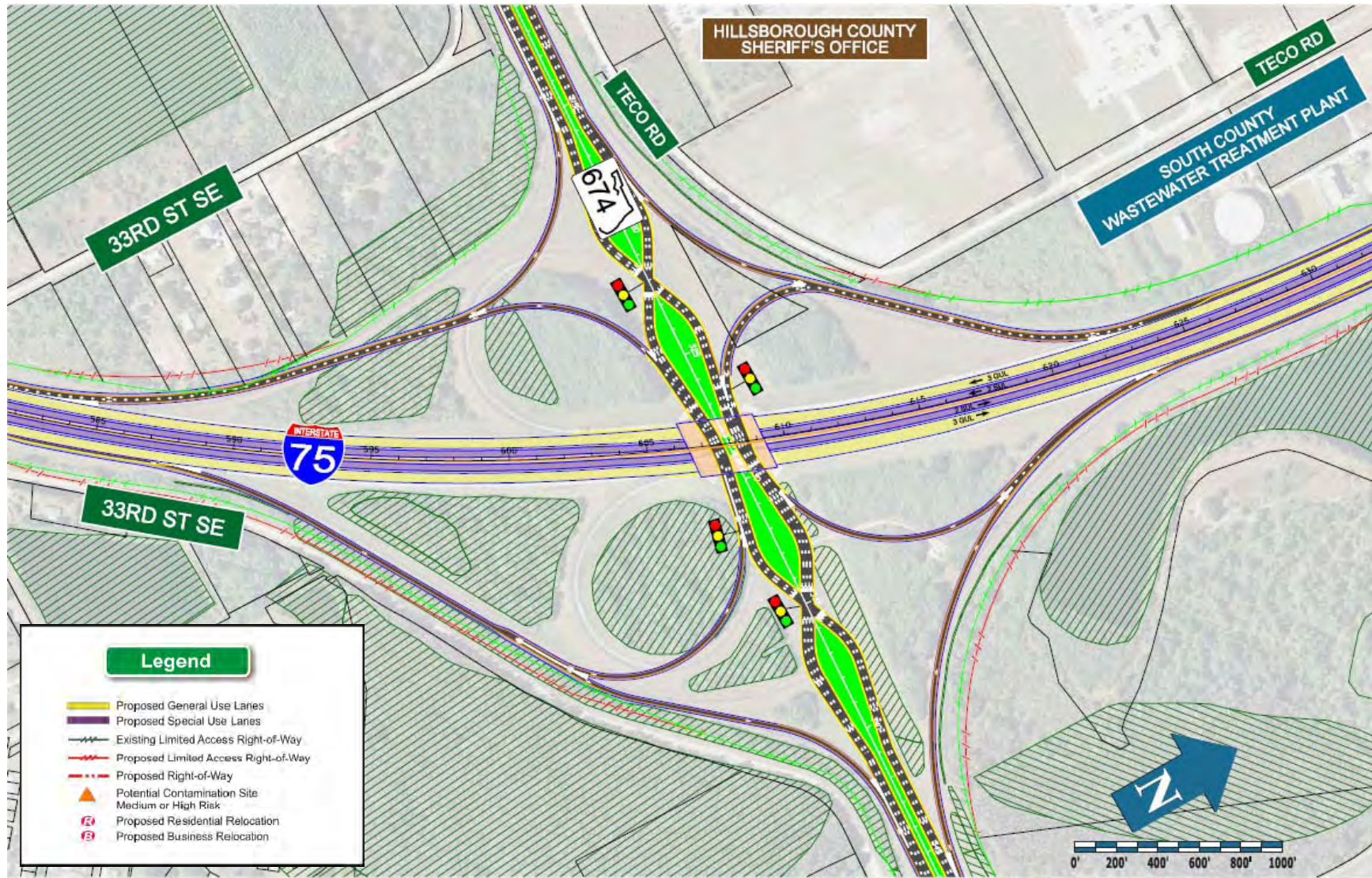




Figure 4-7  
SR 674 Interchange – Improvement Option B

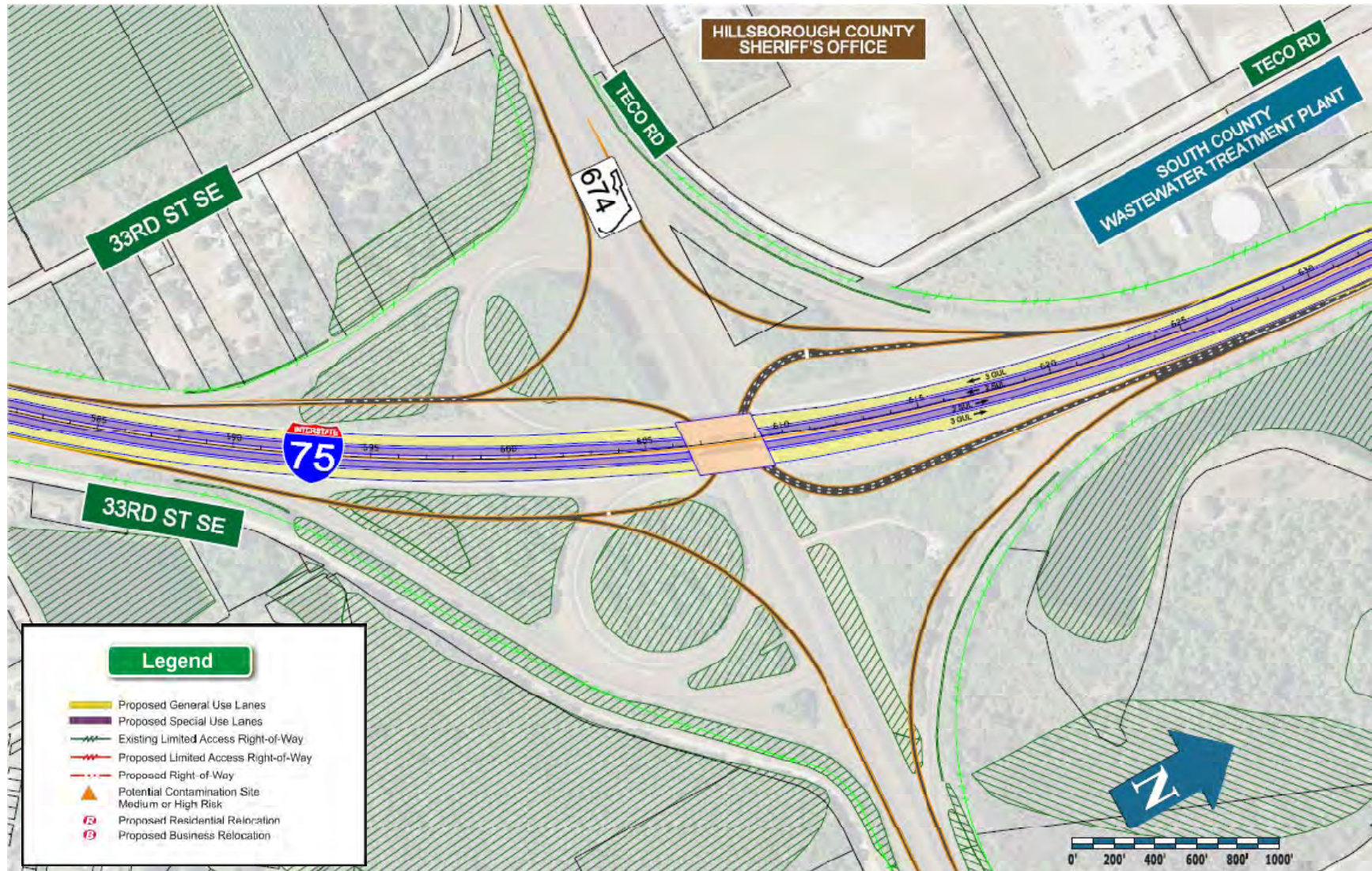




Figure 4-8  
SR 674 Interchange – Improvement Option C

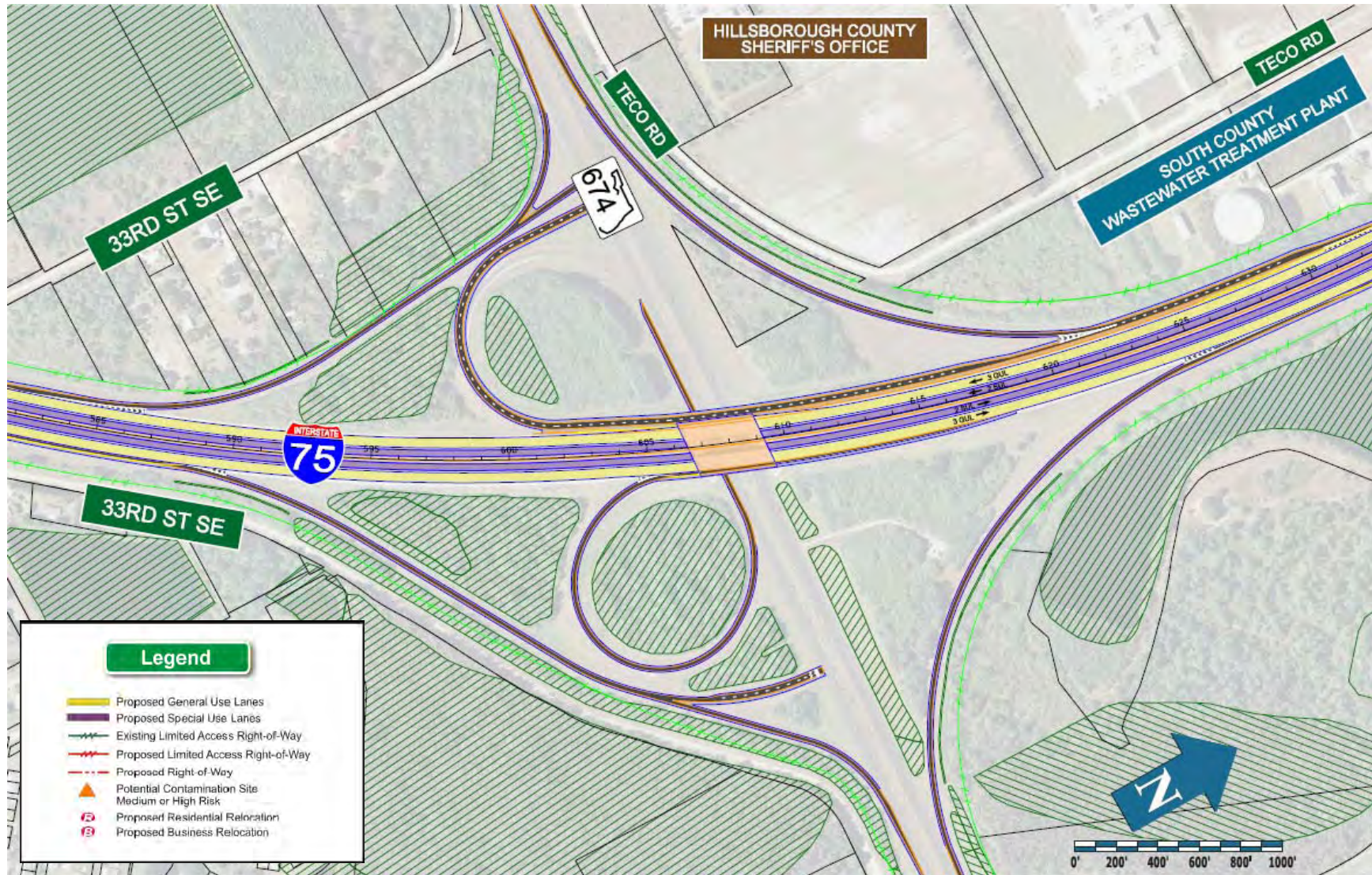




Figure 4-9  
Big Bend Road Interchange – Improvement Option A

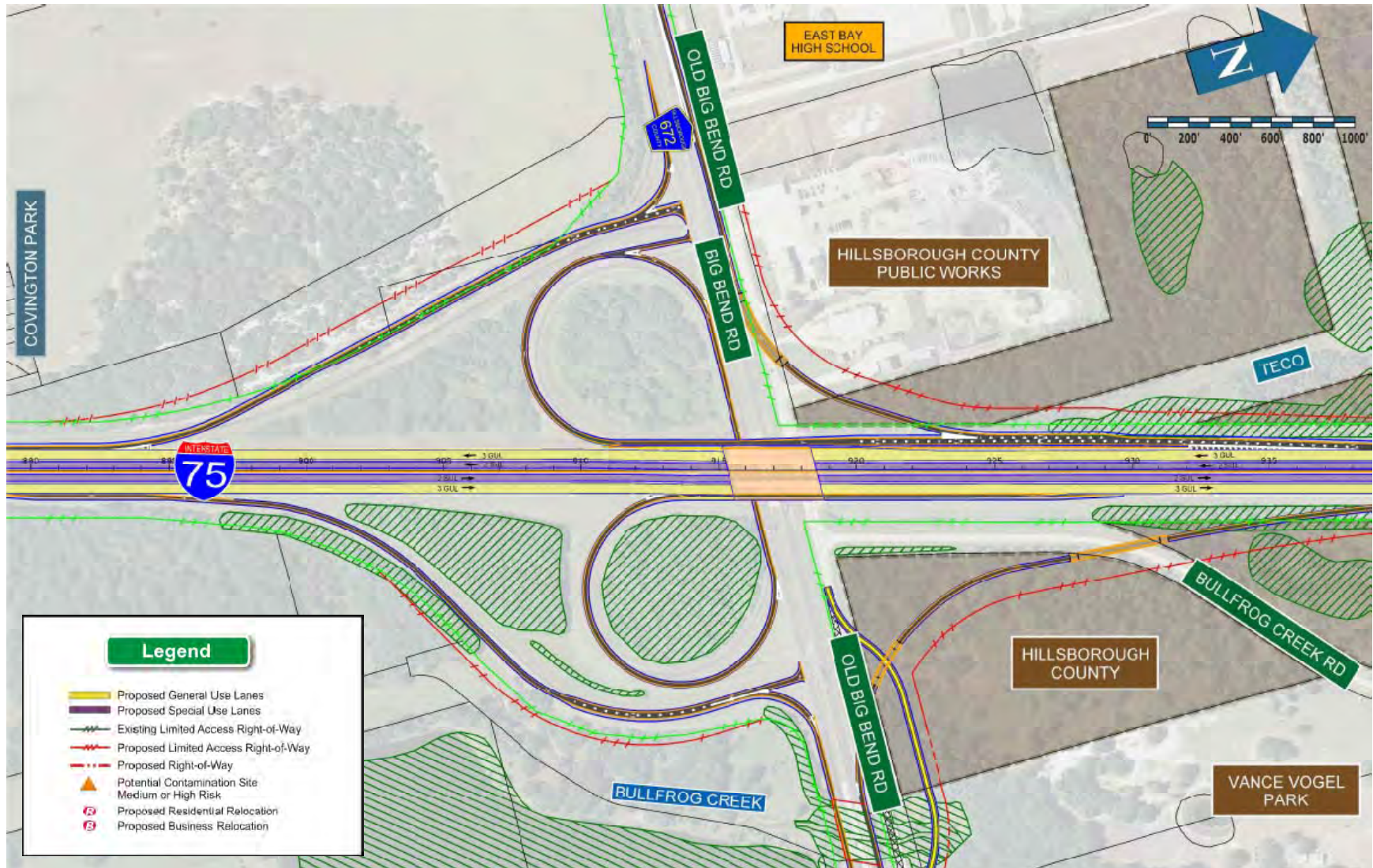




Figure 4-10  
Big Bend Road Interchange – Improvement Option B

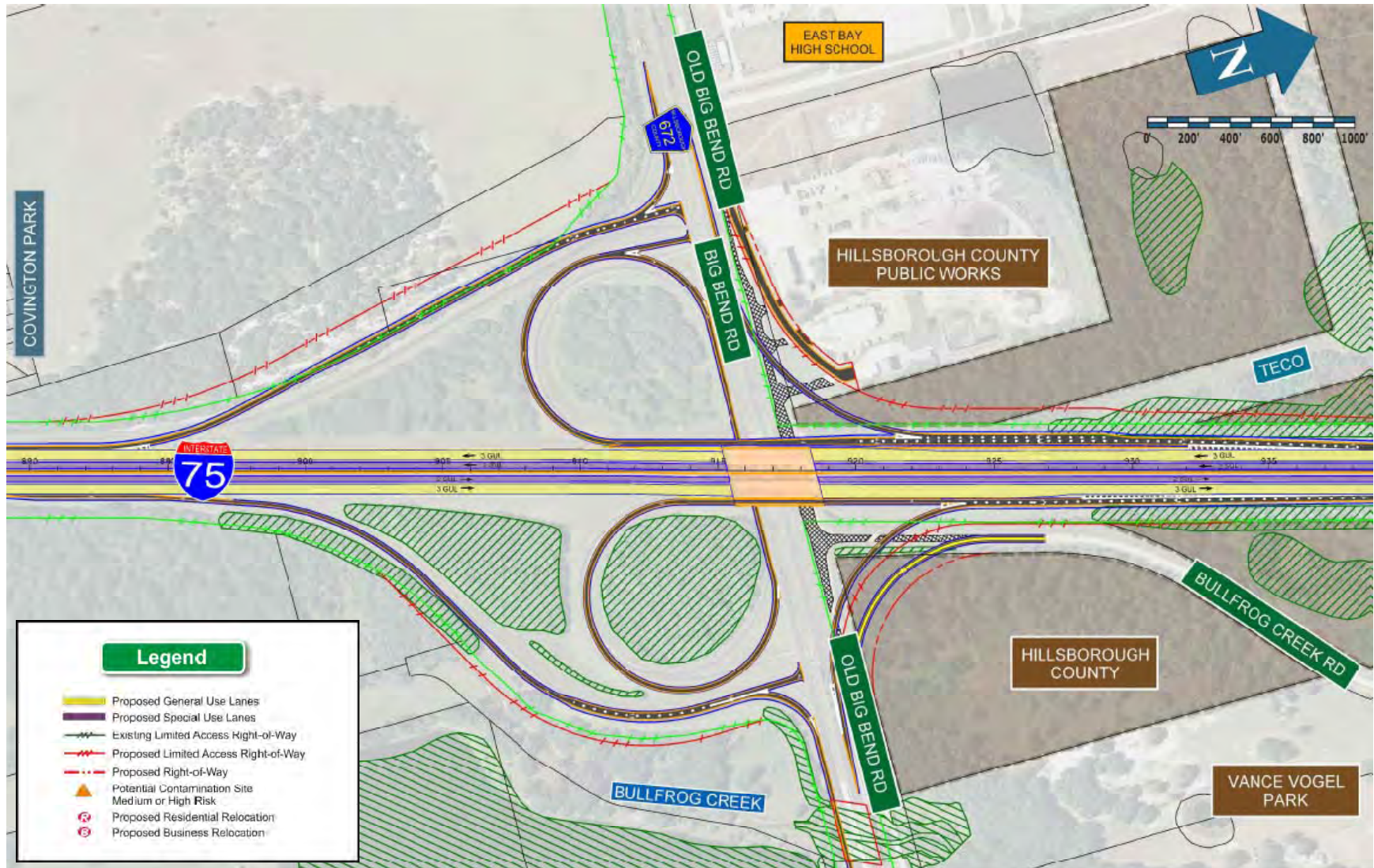
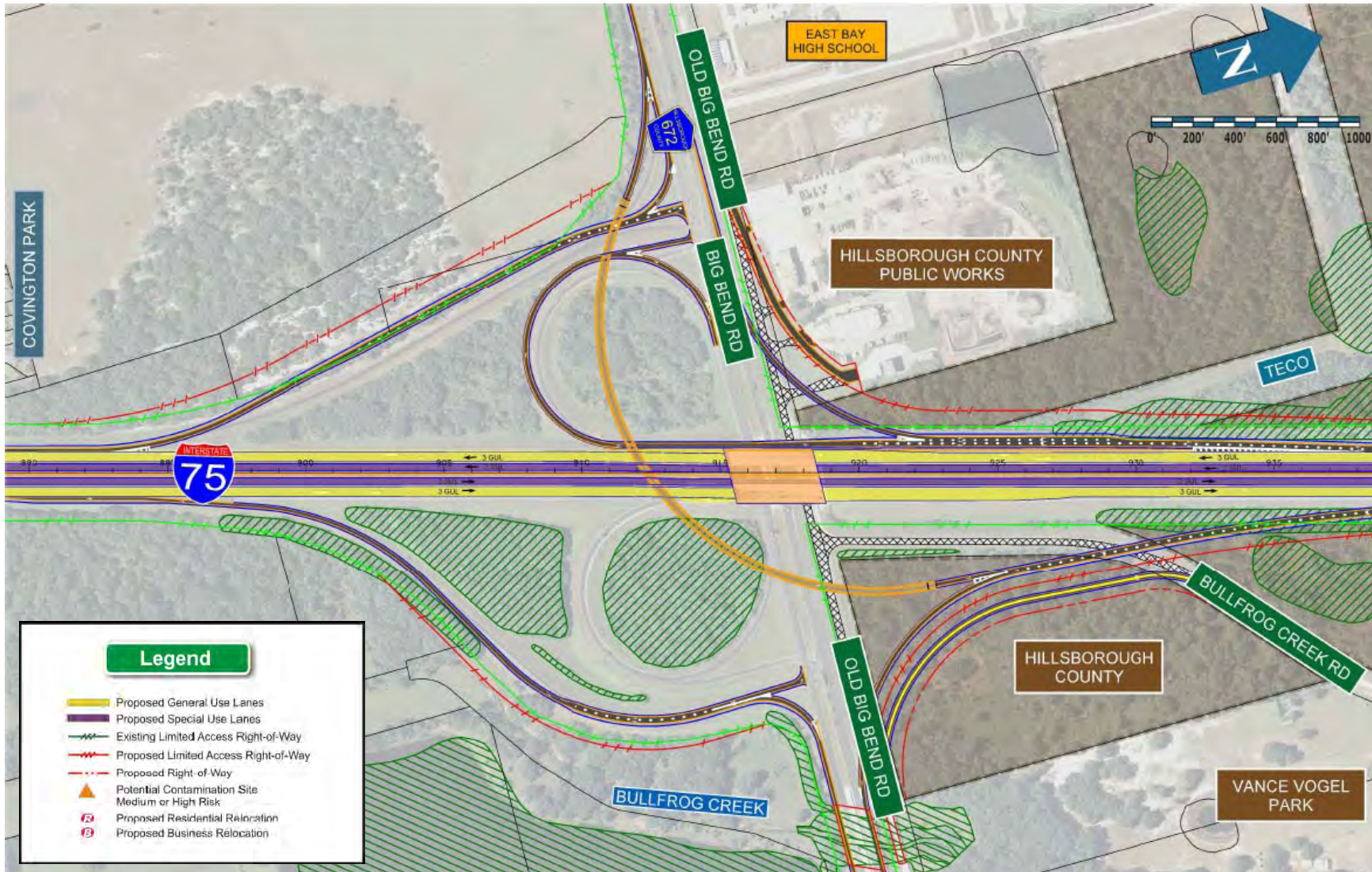




Figure 4-11  
 Big Bend Road Interchange – Improvement Option C



### 4.2.1.3 Gibsonton Drive Interchange Improvement Options

Only one improvement option, Option A, illustrated in Figure 4-12, was considered for this interchange. Option A would consist of a PARCLO configuration with two exit loop ramps in the northeast and southwest quadrants to accommodate the northbound-to-westbound and southbound-to-eastbound movements, respectively.

## 4.2.2 Northern Project Interchange Improvement Concepts

Improvement concepts for the northern project included concepts for the seven interchanges and the C/D roads. Due to the close spacing of the interchanges, improvements at several interchanges and C/D roads were carried through and affected the improvements at adjacent interchanges. Therefore, conceptual plans were developed for three segments of I-75:

- **Segment 1: From south of US 301 to south of MLK Boulevard.** This segment includes the interchanges at US 301, Selmon Expressway, and SR 60
- **Segment 2: From south of MLK Boulevard to north of I-4.** This segment includes the interchanges at MLK Boulevard and I-4
- **Segment 3: From north of I-4 to north of Fletcher Avenue.** This segment includes the interchanges at Fowler Avenue and Fletcher Avenue

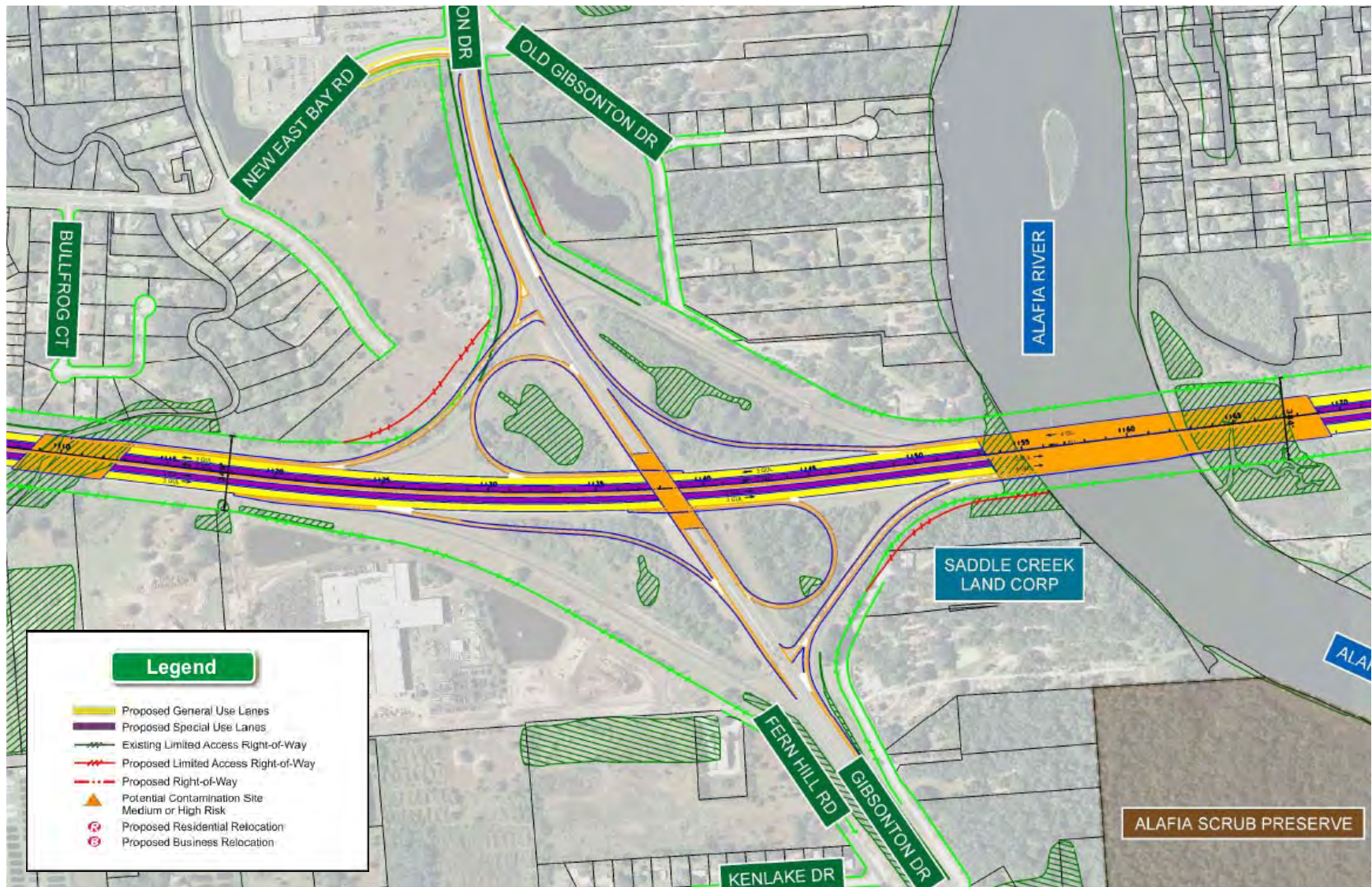
### 4.2.2.1 Segment 1 Interchange Improvement Options

Three improvement options – Option A, Option B, and Option C – were evaluated for Segment 1. Table 4-1 summarizes the key features of each option.

- **Option A** – This option, illustrated in Figure 4-13 (a, b, and c), would include the following improvements:
  - Keeping the US 301 interchange unaltered, except for minor ramp realignments to bring them up to standards and to tie with the I-75 mainline improvements.
  - Adding two loop ramps and two directional ramps at the Selmon Expressway interchange to directly connect the Selmon Expressway with the I-75 SULs. The loop ramps would accommodate the northbound I-75 SUL to westbound Selmon Expressway and the eastbound Selmon Expressway to northbound I-75 SUL movements. The directional ramps would accommodate entrance and exit for the southbound I-75 SULs to the Selmon Expressway. The I-75 SULs would be constructed through the interchange as third level structures.
  - Redesigning the entrance and exit ramps at SR 60 to increase the ramp storage lengths. An additional lane would be constructed on the I-75 southbound and northbound exits.
  - Relocating the southbound exit ramp to the C/D road approximately 1 mile north of SR 60 to improve weaving operations in this area.



Figure 4-12  
Gibsonton Drive Interchange – Improvement Option A



**Table 4-1**  
**Segment 1 – Main Features of Improvement Options**

Location	Option A	Option B	Option C
US 301 Interchange	<ul style="list-style-type: none"> <li>No major improvements</li> <li>Realign some ramps to match I-75 mainline improvements</li> </ul>	<ul style="list-style-type: none"> <li>No major improvements</li> <li>Realign some ramps to match I-75 mainline improvements</li> </ul>	<ul style="list-style-type: none"> <li>No major improvements</li> <li>Realign some ramps to match I-75 mainline improvements</li> </ul>
US 301 to Selmon Expressway	<ul style="list-style-type: none"> <li>Expand/extend NB and SB C/D roads</li> <li>Combine NB exit slip ramps to C/D road accessing Selmon Expressway and SR 60</li> <li>Eliminate existing slip ramp connecting NB US 301 with Selmon Expressway and SR 60</li> </ul>	<ul style="list-style-type: none"> <li>Eliminate NB and SB C/D roads</li> <li>Eliminate existing slip ramp connecting NB US 301 with Selmon Expressway</li> <li>Allow access to SR 60 from NB US 301</li> </ul>	<ul style="list-style-type: none"> <li>Expand/extend NB and SB C/D roads</li> <li>Combine three NB exits from the I-75 GULs to US 301, Selmon Expressway and SR 60 into one</li> <li>Maintain connection from NB US 301 to Selmon Expressway and SR 60</li> </ul>
Selmon Expressway Interchange	<ul style="list-style-type: none"> <li>Direct access to/from the I-75 GULs and SULs in both directions</li> <li>No access from NB US 301</li> </ul>	<ul style="list-style-type: none"> <li>Direct access only to/from the I-75 GULs</li> <li>I-75 SULs access Selmon Expressway by shifting to the GULs through slip ramps away from the interchange</li> <li>No access from NB US 301</li> </ul>	<ul style="list-style-type: none"> <li>Direct access only to/from the I-75 GULs</li> <li>I-75 SUL traffic south of the interchange connects with Selmon Expressway by shifting to the GULs through slip ramps away from the interchange</li> <li>I-75 SUL traffic north of the interchange connects with Selmon Expressway through braided ramps to the C/D roads placed north of SR 60, thus avoiding weaving with GUL traffic</li> <li>Allows access to Brandon Town Center Drive and Causeway Boulevard from/to NB I-75</li> </ul>
Selmon Expressway to SR 60	<ul style="list-style-type: none"> <li>Extend/expand NB and SB C/D roads to north of SR 60</li> </ul>	<ul style="list-style-type: none"> <li>Eliminate NB and SB C/D roads</li> </ul>	<ul style="list-style-type: none"> <li>Extend/expand NB and SB C/D roads to north of SR 60</li> <li>Combines entry points for NB traffic from Selmon Expressway and SR 60</li> </ul>
SR 60 Interchange	<ul style="list-style-type: none"> <li>Maintain existing partial cloverleaf configuration</li> <li>Expand/extend SB and NB exit ramps to provide more storage</li> <li>Expand ramp termini intersections to add turn lanes</li> </ul>	<ul style="list-style-type: none"> <li>Replace existing interchange with a SPUI</li> <li>Extend NB and SB exit ramps to provide more storage</li> </ul>	<ul style="list-style-type: none"> <li>Modify west half of existing partial cloverleaf interchange to a diamond configuration</li> <li>I-75 SUL traffic north of the interchange connects with SR 60 through braided ramps to the C/D roads, thus avoiding weaving with GUL traffic</li> </ul>



Figure 4-13a  
I-75 Improvement Concepts from South of US 301 to South of MLK Boulevard – Option A

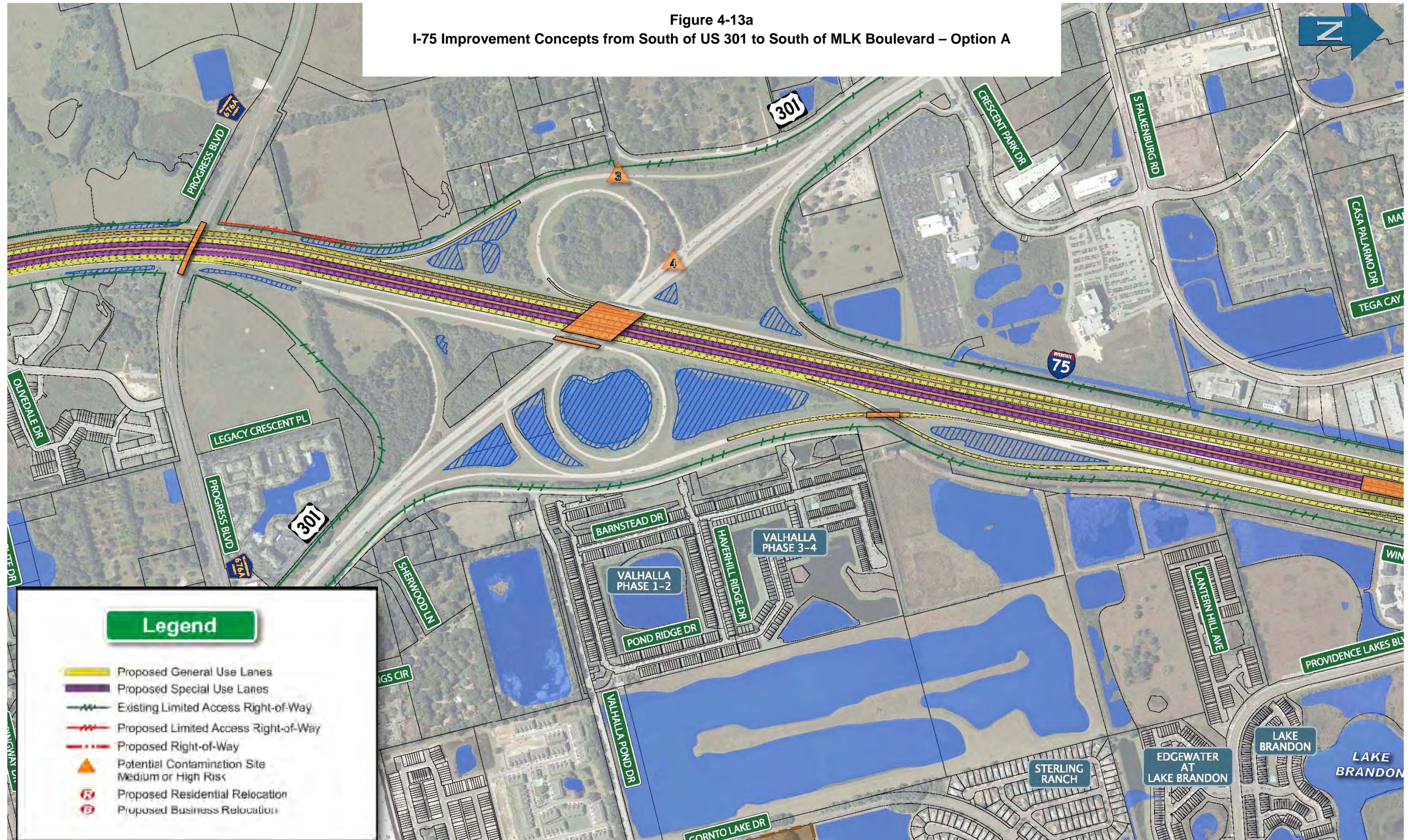




Figure 4-13b  
I-75 Improvement Concepts from South of US 301 to South of MLK Boulevard – Option A

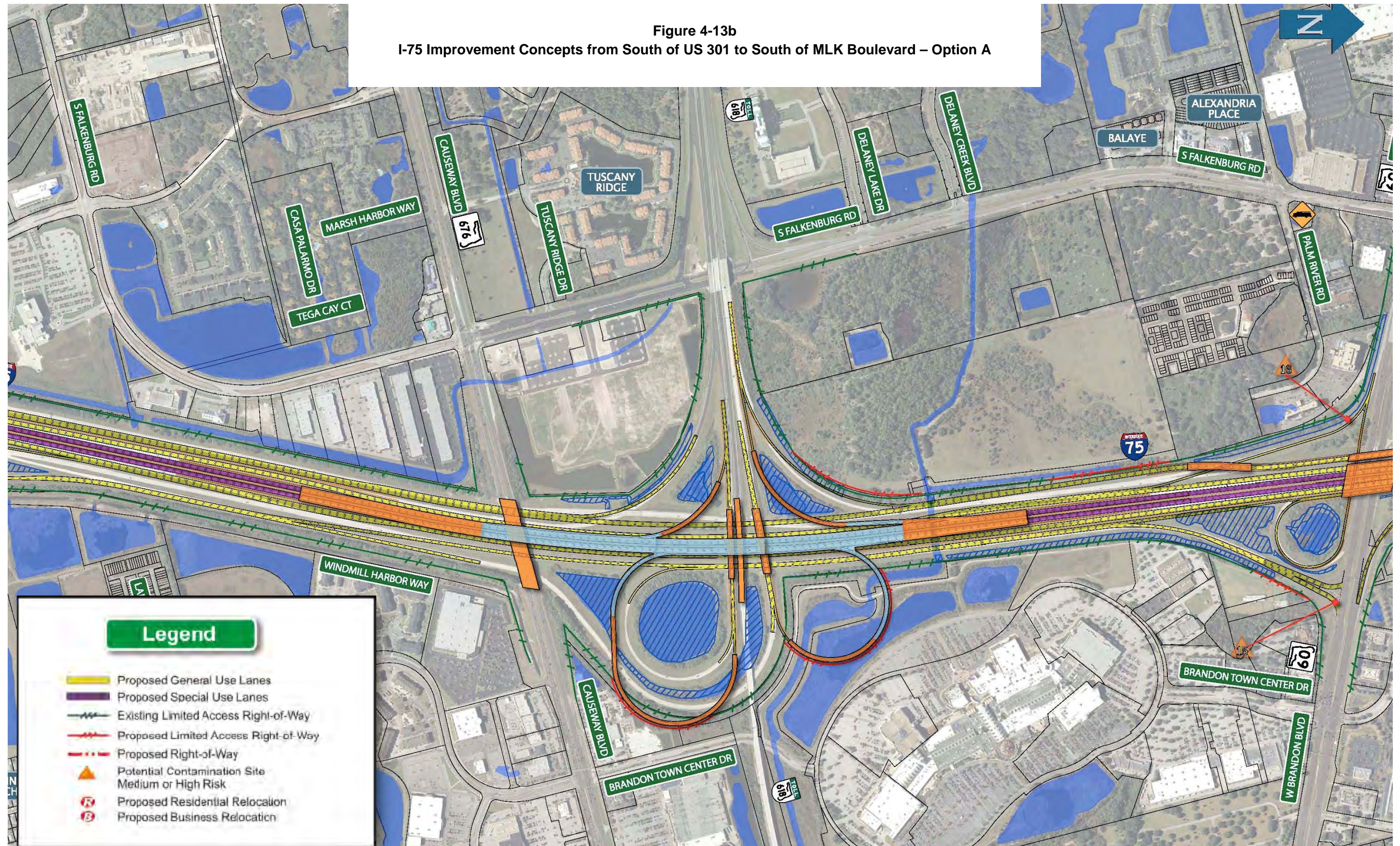
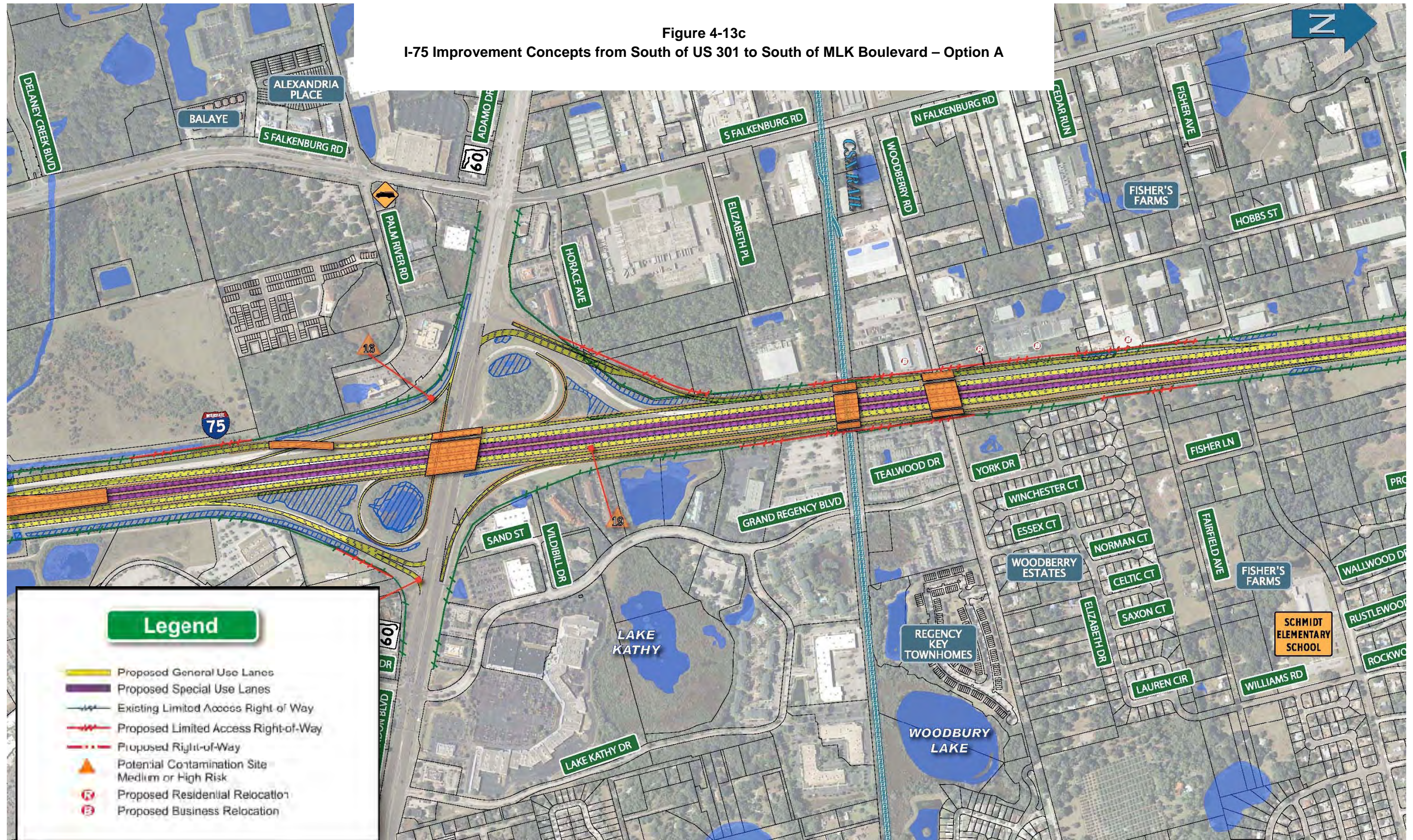




Figure 4-13c  
I-75 Improvement Concepts from South of US 301 to South of MLK Boulevard – Option A





- Extending the southbound C/D road at US 301 beyond the southbound I-75 exit ramp. This improvement would allow the eastbound US 301 to southbound I-75 movement to enter onto the southbound C/D road prior to entering the I-75 southbound mainline. The southbound I-75 to eastbound US 301 exit ramp would be reconstructed to accommodate the new mainline and southbound C/D road alignment.
  - Widening of the northbound C/D and southbound C/D roads to provide three travel lanes and four travel lanes, respectively. Both C/D roads would be slightly realigned.
- **Option B** – This option, illustrated in Figure 4-14 (a, b and c), would include the following improvements:
  - Keeping the existing interchange at US 301 unaltered, except for the southbound I-75 to eastbound US 301 exit ramp which would be relocated to accommodate the I-75 mainline widening.
  - Eliminating the existing northbound and southbound C/D roads between US 301 and the Selmon Expressway.
  - Keeping the existing interchange at Selmon Expressway unaltered, except for the northbound C/D road which would be relocated to accommodate the I-75 mainline widening. Also, a direct exit ramp would be added to accommodate the southbound I-75 GUL to westbound Selmon Expressway movement and eliminate the existing weaving deficiency at this area.
  - Replacing the existing interchange at SR 60 with a SPUI. The SPUI at this location would allow for efficient use of space relative to the amount of traffic it would accommodate and would increase the spacing between the traffic signals provided along SR 60 at Falkenburg Road, at the ramp termini intersections, and at Grand Regency Boulevard.
  - Providing access to the SR 60 entrance and exit ramps directly from the I-75 GULs.
- **Option C** – This option, illustrated in Figure 4-15 (a, b, and c), would include the following improvements:
  - Keeping the US 301 interchange unaltered, except for minor ramp realignments to bring them up to standards and to tie with the I-75 mainline improvements.
  - Reconfiguring the southbound I-75 to westbound Selmon Expressway ramp and the eastbound Selmon Expressway to southbound I-75 ramp at the Selmon Expressway interchange to connect with the relocated southbound C/D road.

Providing a new ramp from the northbound C/D road to allow alternative access to the Brandon Town Center Drive, Causeway Boulevard, Gornto Lake Road, and other points south and alleviate some congestion on SR 60. This ramp would diverge from the existing ramp that connects the northbound C/D road with westbound Selmon Expressway, would provide a short connection (entrance and exit) that would intersect with Brandon Town Center Drive at the south entrance to Westfield Brandon Mall, and would continue to reconnect with the northbound C/D road north of the Selmon Expressway interchange.



Figure 4-14a  
 I-75 Improvement Concepts from South of US 301 to South of MLK Boulevard – Option B





Figure 4-14b  
I-75 Improvement Concepts from South of US 301 to South of MLK Boulevard – Option B

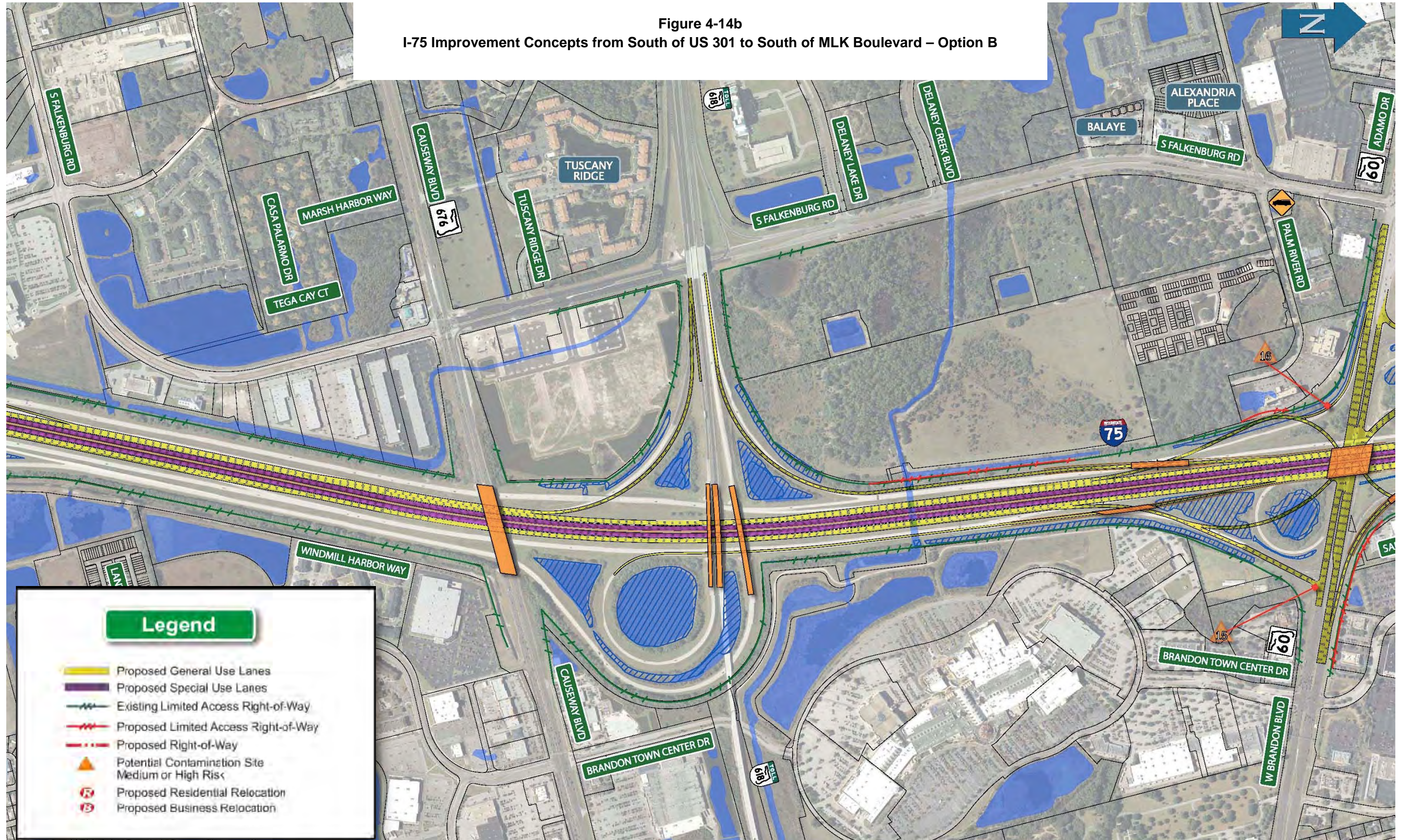




Figure 4-14c  
I-75 Improvement Concepts from South of US 301 to South of MLK Boulevard – Option B

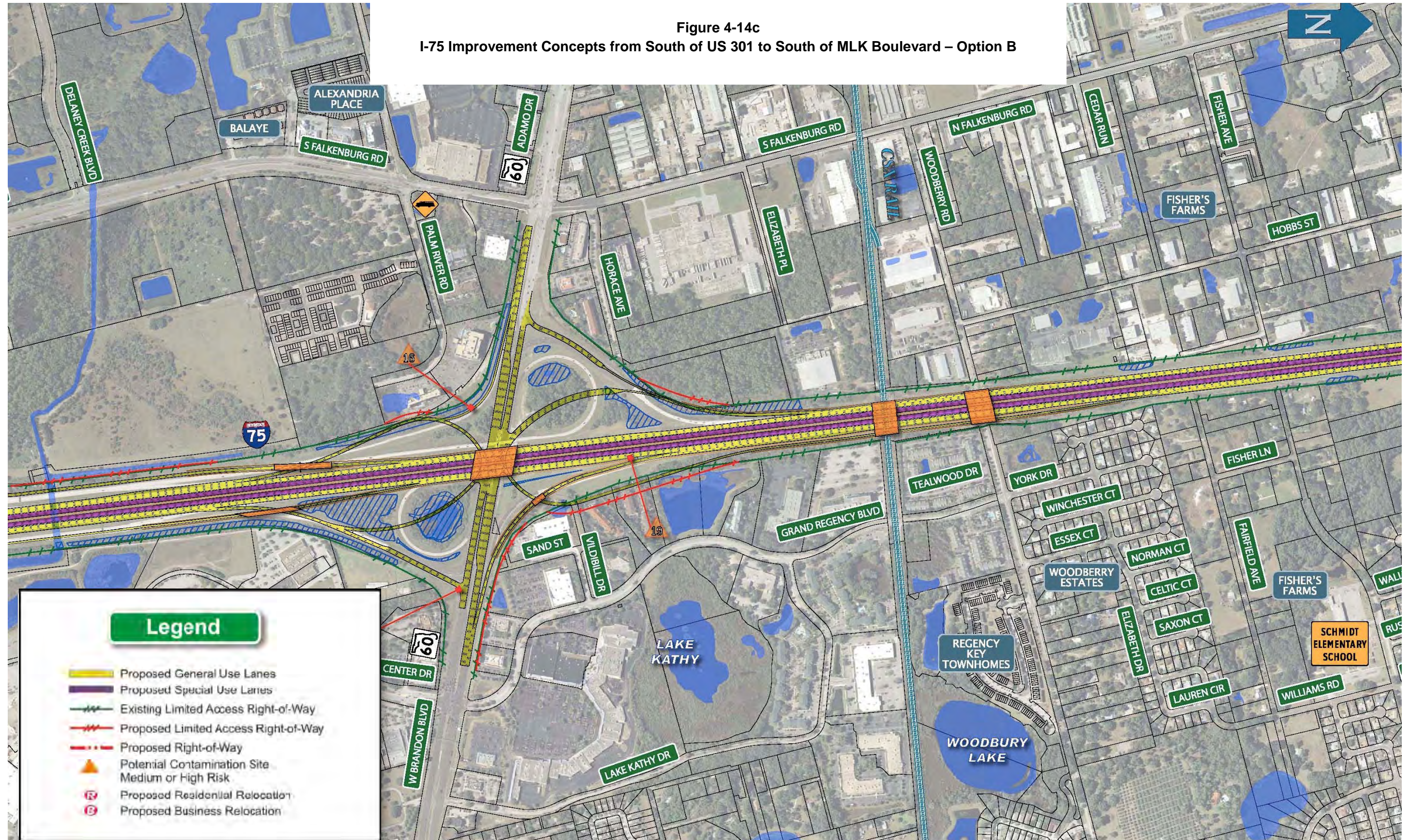




Figure 4-15a  
 I-75 Improvement Concepts from South of US 301 to South of MLK Boulevard – Option C





Figure 4-15b  
I-75 Improvement Concepts from South of US 301 to South of MLK Boulevard – Option C

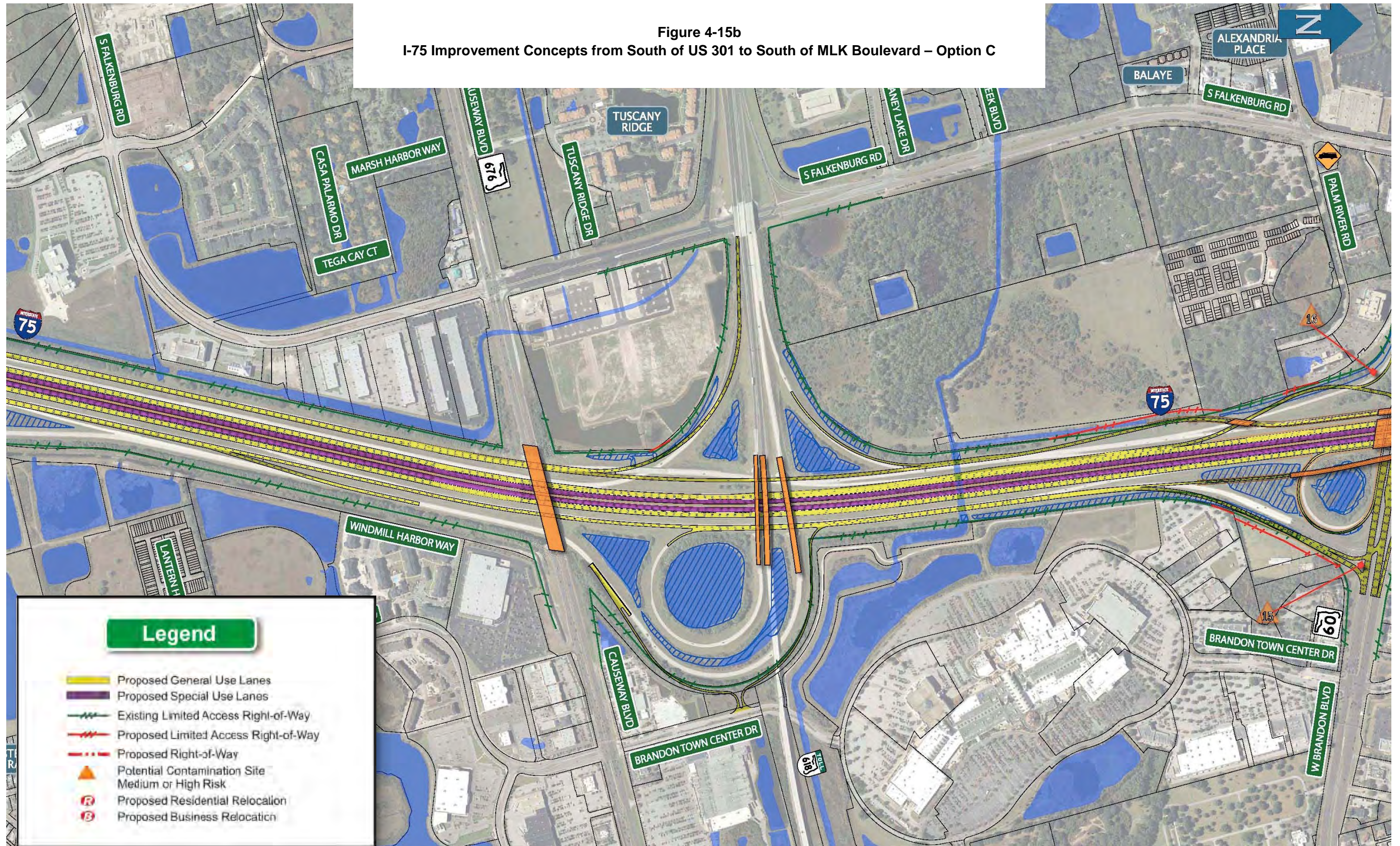
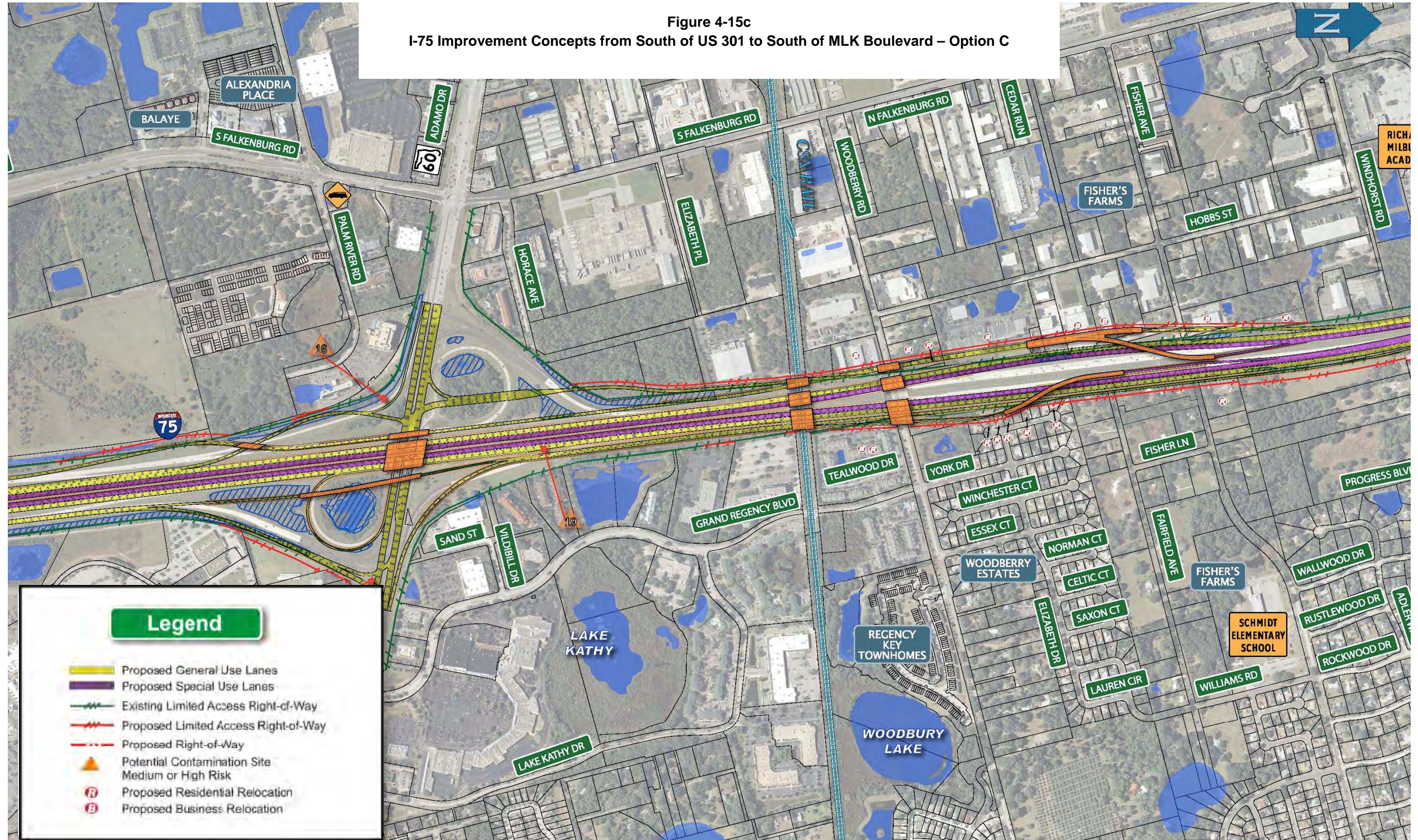




Figure 4-15c  
I-75 Improvement Concepts from South of US 301 to South of MLK Boulevard – Option C





- Eliminating the existing loop ramp that accommodates the westbound SR 60 to southbound I-75 movement at the SR 60 interchange. The existing eastbound SR 60 to northbound I-75 loop ramp would be slightly reconfigured and would connect to the northbound I-75 GULs. The southbound I-75 to SR 60 exit and entrance ramps would be reconfigured and would commence and operate at SR 60 as legs of a diamond interchange. An additional lane would be constructed at the southbound I-75 exit ramp and additional turn lanes would be provided at its terminus. The westbound SR 60 to northbound I-75 entrance ramp would be reconstructed and would connect to the proposed northbound C/D road.
- Extending the existing northbound and southbound C/D roads between US 301 and SR 60 to approximately 1 mile north of SR 60. Access from the northbound C/D road to the northbound I-75 SULs and from the southbound I-75 SULs to the southbound C/D road would be accommodated via flyover ramps.

The extension of the C/D roads north of SR 60 would eliminate the existing weaving deficiencies on the southbound C/D road caused by the insufficient separation between the southbound I-75 exit to the C/D road and the exit from the C/D road to westbound Selmon Expressway.

#### 4.2.2.2 Segment 2 Interchange Improvement Options

Two improvement options – Option A and Option B – were evaluated for Segment 2. Table 4-2 summarizes the key features of each option.

**Table 4-2**  
**Segment 2 – Main Features of Improvement Options**

Location	Option A	Option B
MLK Boulevard Interchange	<ul style="list-style-type: none"> <li>• Replace existing partial cloverleaf interchange with a SPUI</li> <li>• Begin NB C/D road at interchange</li> <li>• End SB C/D road at interchange</li> </ul>	<ul style="list-style-type: none"> <li>• Replace existing partial cloverleaf interchange with a SPUI</li> <li>• Begin NB C/D road at interchange</li> <li>• End SB C/D road at interchange</li> </ul>
MLK Boulevard to I-4	<ul style="list-style-type: none"> <li>• Provide NB and SB C/D roads from north of I-4 to MLK Boulevard; MLK Boulevard traffic to/from I-4 never enters I-75</li> </ul>	<ul style="list-style-type: none"> <li>• Provide NB and SB C/D roads from north of I-4 to MLK Boulevard; MLK Boulevard traffic to/from I-4 never enters I-75</li> </ul>
I-4 Interchange	<ul style="list-style-type: none"> <li>• Upgrade existing “turbine” configuration by adding directional ramps to connect the I-75 SULs with I-4</li> </ul>	<ul style="list-style-type: none"> <li>• Replace existing interchange with a combined directional “turbine/stack” configuration</li> <li>• SUL ramps touchdown in the median of I-4 to allow connection with the I-4 SULs to be constructed in the future</li> <li>• Requires reconstruction of I-4 at the interchange</li> </ul>

- **Option A**, illustrated in Figure 4-16 (a, b, and c), would include the following improvements:
  - Replacing the existing interchange at MLK Boulevard with a SPUI. A SPUI at this location would increase the spacing of the traffic signals provided along MLK Boulevard at Falkenburg Road, at the ramp termini intersections, and at Williams Road.



Figure 4-16a  
I-75 Improvement Concepts from South of MLK Boulevard to North of I-4 – Option A

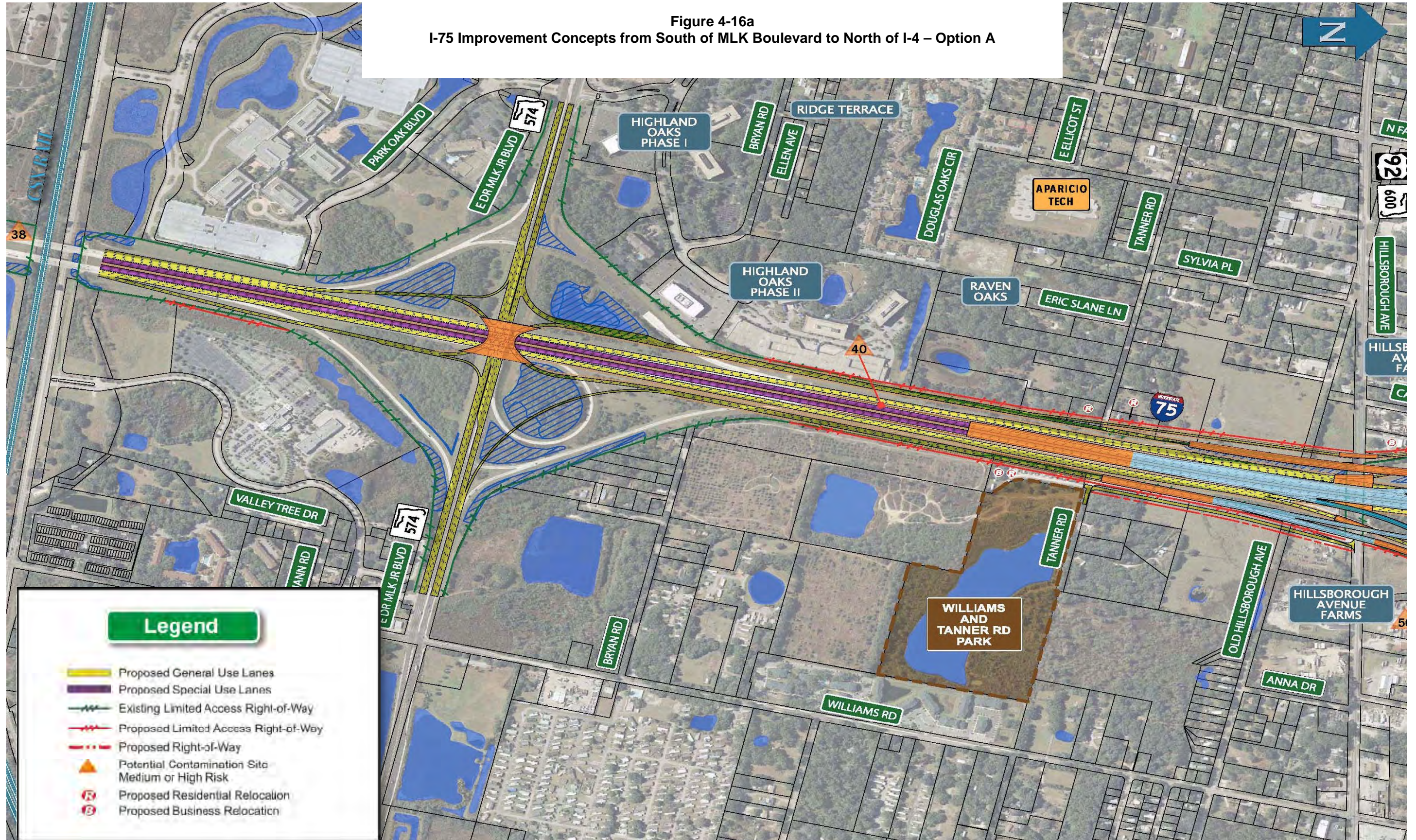




Figure 4-16b  
I-75 Improvement Concepts from South of MLK Boulevard to North of I-4 – Option A

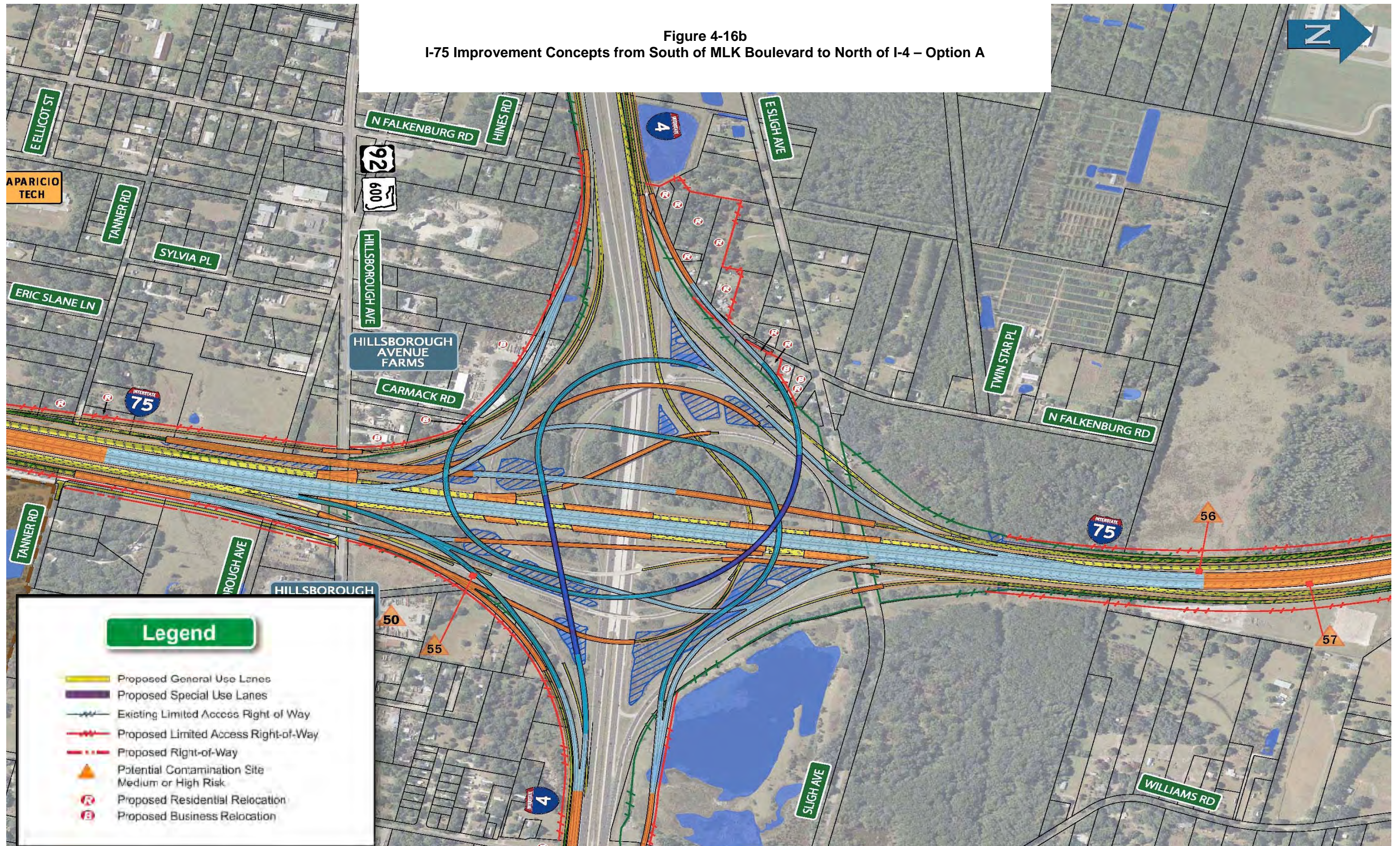
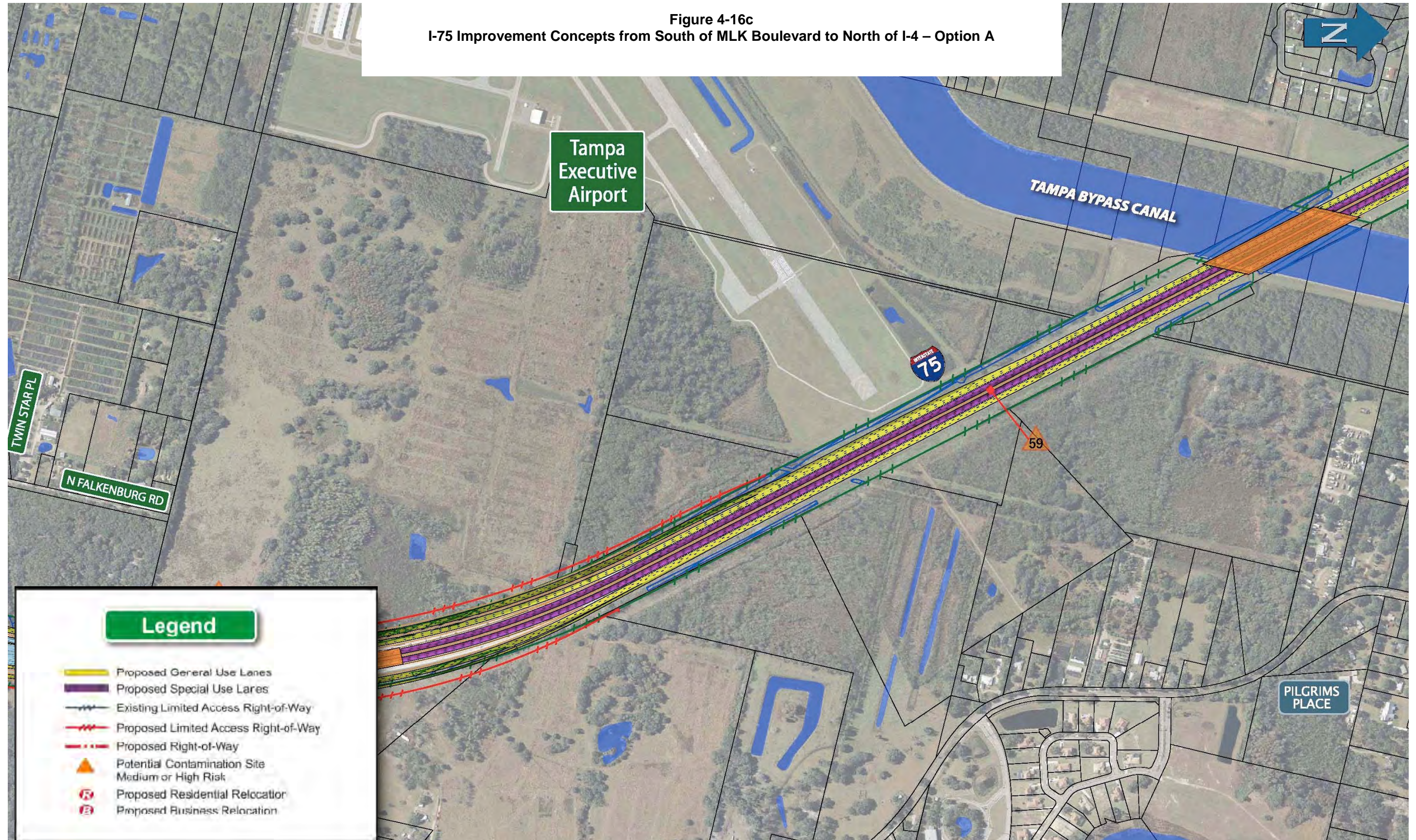




Figure 4-16c  
I-75 Improvement Concepts from South of MLK Boulevard to North of I-4 – Option A





- Adding three-lane C/D roads along both directions of I-75 to eliminate existing weaving deficiencies. The northbound C/D road would commence at the SPUI at MLK Boulevard and terminate approximately 1 mile north of I-4. The southbound C/D road would commence approximately 1 mile north of I-4 and terminate at the SPUI at MLK Boulevard. The southbound C/D road would accommodate the southbound I-75 to westbound I-4 movement and would provide direct access to MLK Boulevard from eastbound I-4.
- Upgrading the existing I-4 interchange to a modified five-level turbine interchange that would include additional directional ramps. The I-75 GULs would cross over I-4 on the second level while the I-75 SULs would cross over I-4 on the third level. All of the existing ramps would be utilized in the proposed interchange and would connect the I-75 GULs with I-4. The proposed new directional ramps would be used to connect the I-75 SULs with I-4.
- **Option B**, illustrated in Figure 4-17 (a, b, and c), would include the following improvements:
  - Replacing the existing interchange at MLK Boulevard with a SPUI. A SPUI at this location would increase the spacing of the traffic signals provided along MLK Boulevard at Falkenburg Road, at the ramp termini intersections, and at Williams Road.
  - Adding three-lane C/D roads along both directions of I-75 to eliminate existing weaving deficiencies. The northbound C/D road would commence at the SPUI at MLK Boulevard and terminate approximately 1 mile north of I-4. The southbound C/D road would commence approximately 1 mile north of I-4 and terminate at the SPUI at MLK Boulevard. The southbound C/D road, by way of directional ramps, would provide access to and from eastbound and westbound I-4 GULs.
  - Replacing the existing I-4 interchange with a combination directional “turbine/stack” interchange that would allow direct connections between the I-75 SULs and the potential SULs on I-4. All stack design structures would be fourth and fifth level ramps. The directional ramps would provide access between all of the I-75 and I-4 GULs not serviced by the proposed C/D roads. The directional ramp structures are proposed as first, second, and third level ramps.



Figure 4-17a  
I-75 Improvement Concepts from South of MLK Boulevard to North of I-4 – Option B

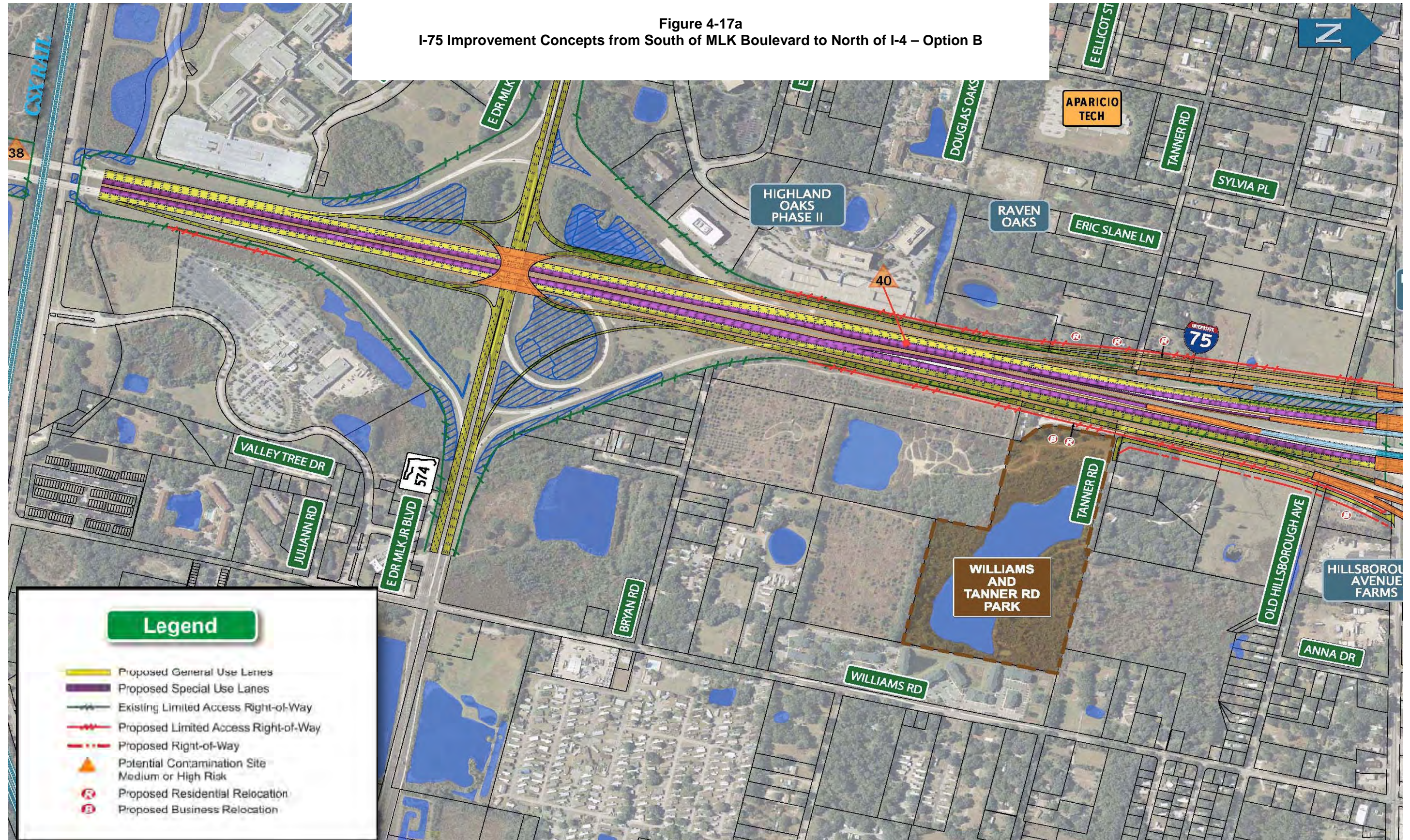




Figure 4-17b  
 I-75 Improvement Concepts from South of MLK Boulevard to North of I-4 – Option B

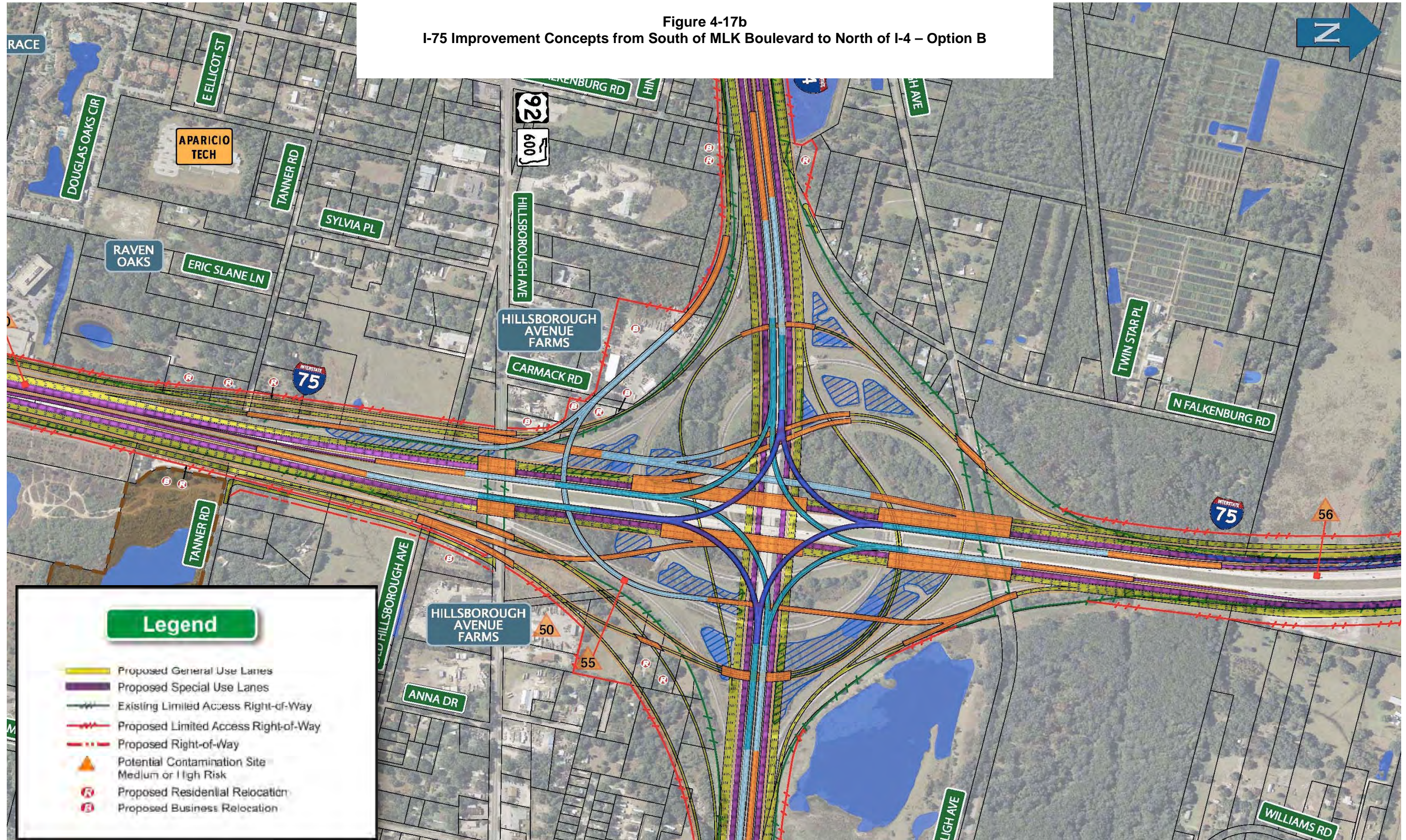
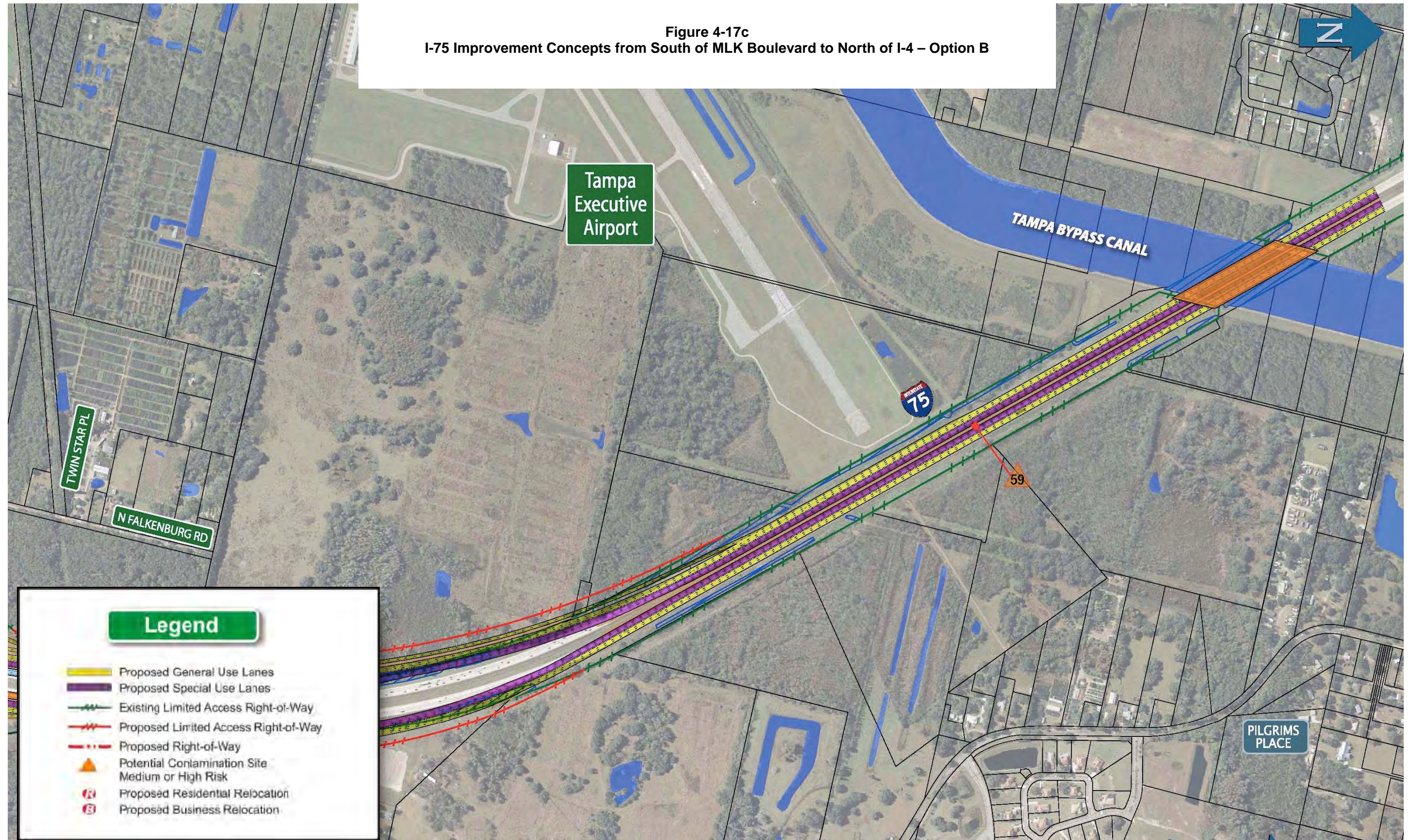




Figure 4-17c  
I-75 Improvement Concepts from South of MLK Boulevard to North of I-4 – Option B





### 4.2.2.3 Segment 3 Interchange Improvement Options

Two improvement options – Option A and Option B – were evaluated for Segment 3. Table 4-3 summarizes the key features of each option.

**Table 4-3**  
**Segment 3 – Main Features of Improvement Options**

Location	Option A	Option B
Fowler Avenue Interchange	<ul style="list-style-type: none"> <li>Maintain existing configuration with slight adjustments of some ramps to match C/D roads and mainline alignments</li> </ul>	<ul style="list-style-type: none"> <li>Replace existing flyover ramp carrying the NB I-75 to WB Fowler Avenue traffic with a two-lane loop ramp in NE quadrant</li> <li>Eliminate loop ramp in SE quadrant carrying EB Fowler Avenue to NB I-75 traffic; accommodate this movement by allowing left turns from EB Fowler Avenue and connecting with the WB Fowler Avenue to NB I-75 ramp</li> </ul>
South of Fowler Avenue to north of Fletcher Avenue	<ul style="list-style-type: none"> <li>NB and SB C/D roads remove diverge areas at the interchanges from the mainline of I-75 onto the C/D roads in both directions</li> <li>Eliminate short trips between Fletcher Avenue and Fowler Avenue in both directions</li> </ul>	<ul style="list-style-type: none"> <li>NB and SB C/D roads remove merge and diverge areas from the mainline of I-75 onto the C/D roads in both directions</li> <li>Eliminate short trips between Fletcher Avenue and Fowler Avenue in both directions</li> </ul>
Fletcher Avenue Interchange	<ul style="list-style-type: none"> <li>Maintain existing configuration with enhancements proposed by current design project (FPID No. 408456-2-52-01, Section No. 10075)</li> </ul>	<ul style="list-style-type: none"> <li>Maintain existing configuration with enhancements proposed by current design project (FPID No. 408456-2-52-01, Section No. 10075)</li> </ul>

- Option A**, illustrated in Figure 4-18 (a and b), would include the following improvements:
  - Adding two-lane C/D roads along both directions of I-75 between Fowler Avenue and Fletcher Avenue to eliminate existing weaving deficiencies along this segment of I-75. The northbound C/D road, which would commence approximately 1 mile south of Fowler Avenue and terminate at the northbound exit loop ramp at Fletcher Avenue, would provide the only access to the northbound exit ramps at Fowler Avenue and Fletcher Avenue. The southbound C/D road would commence approximately 0.75 miles north of Fletcher Avenue and terminate at the southbound loop ramp at Fowler Avenue. The southbound C/D road would provide the only access to the southbound exit ramps at Fletcher Avenue and Fowler Avenue.
  - Eliminating interchange “hopping” between the Fowler Avenue and Fletcher Avenue interchanges by not providing the exits at Fowler Avenue when entering southbound I-75 from Fletcher Avenue and exits at Fletcher Avenue when entering northbound I-75 from Fowler Avenue.
  - Keeping, in general, the existing Fletcher Avenue interchange configuration unaltered. Improvements at this interchange would include the design modifications proposed for this interchange under the currently ongoing design project (FPID No. 408456-2-52-01, Section No. 10075).



Figure 4-18a  
I-75 Improvement Concepts from of I-4 to North of Fletcher Avenue – Option A

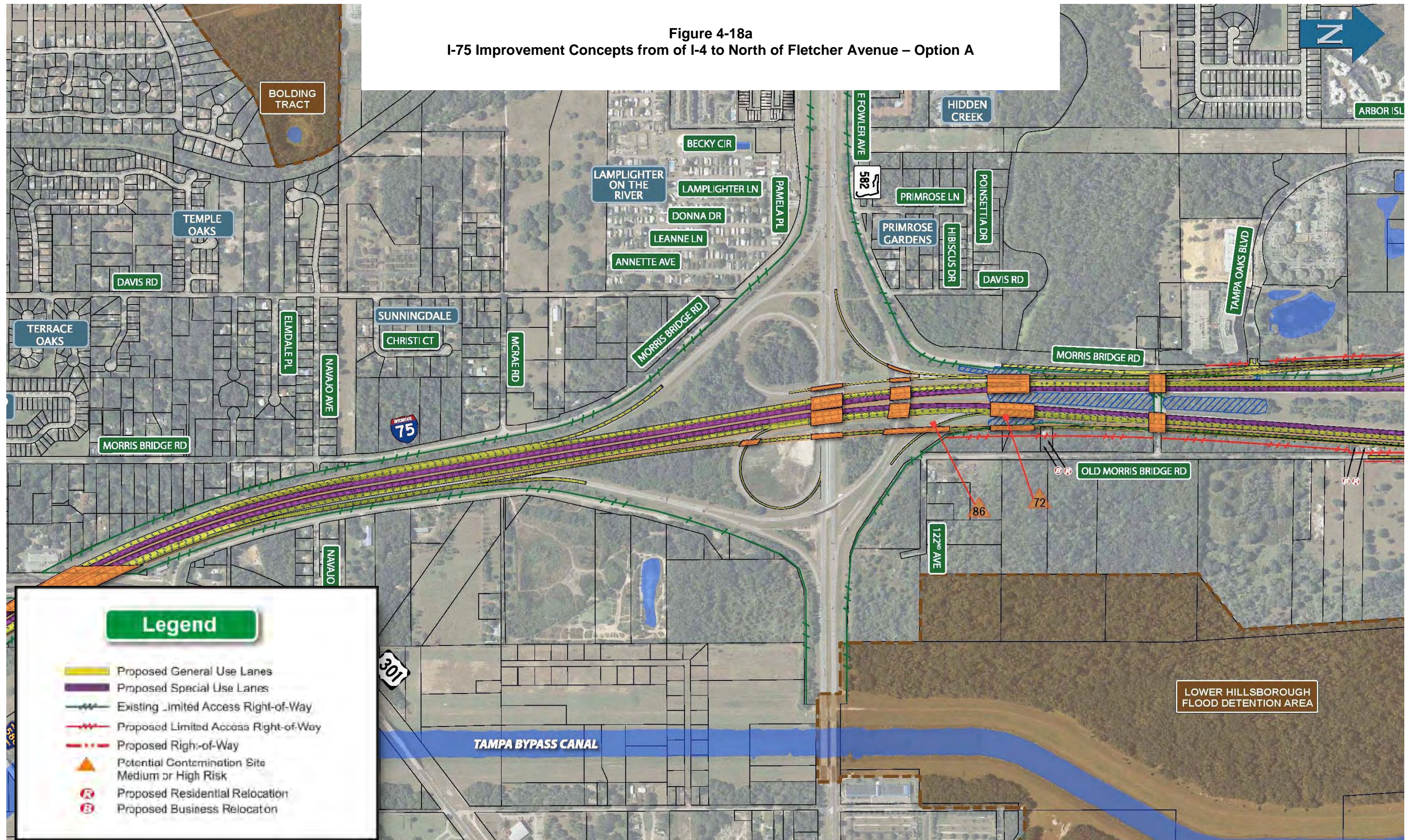




Figure 4-18b  
I-75 Improvement Concepts from of I-4 to North of Fletcher Avenue – Option A

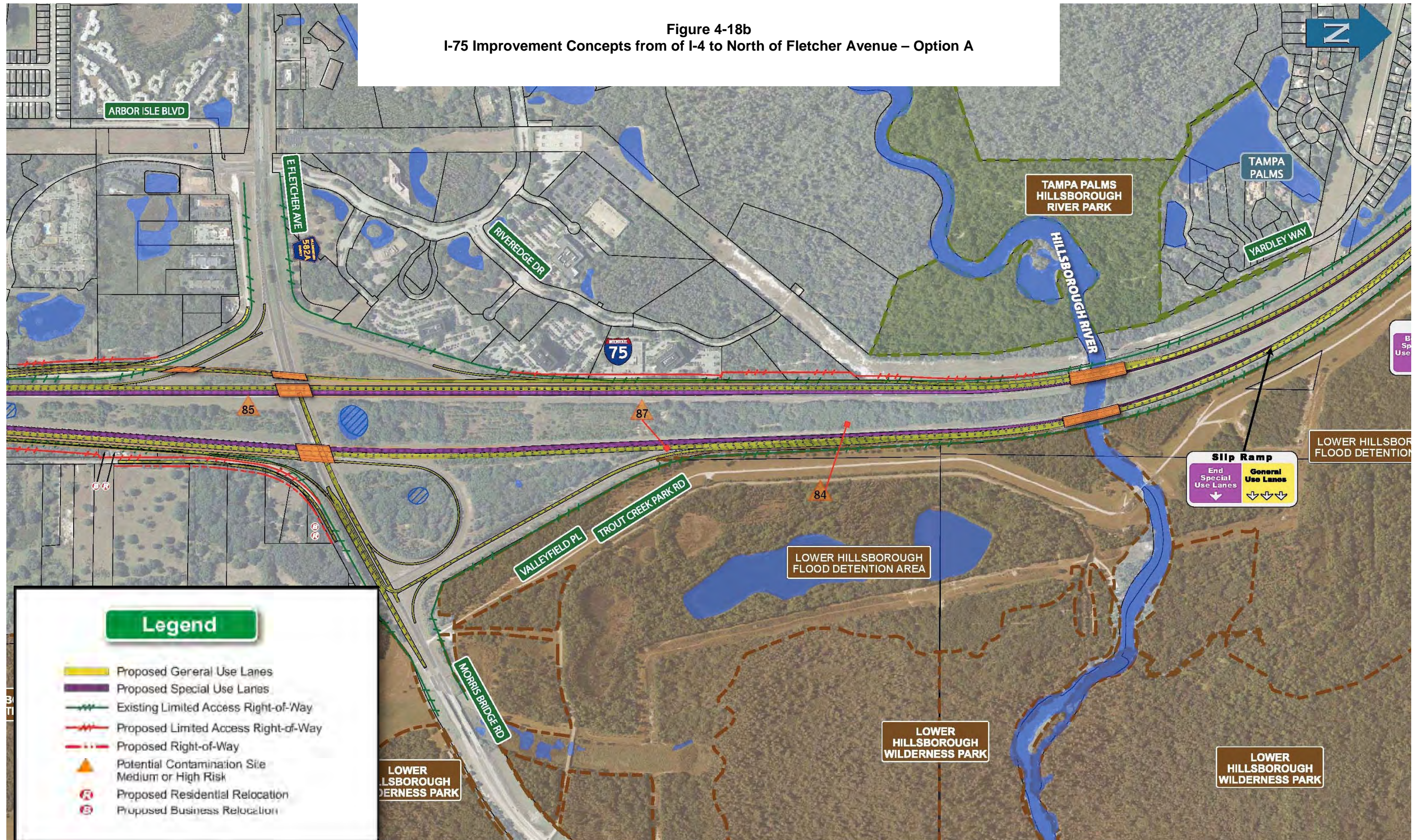
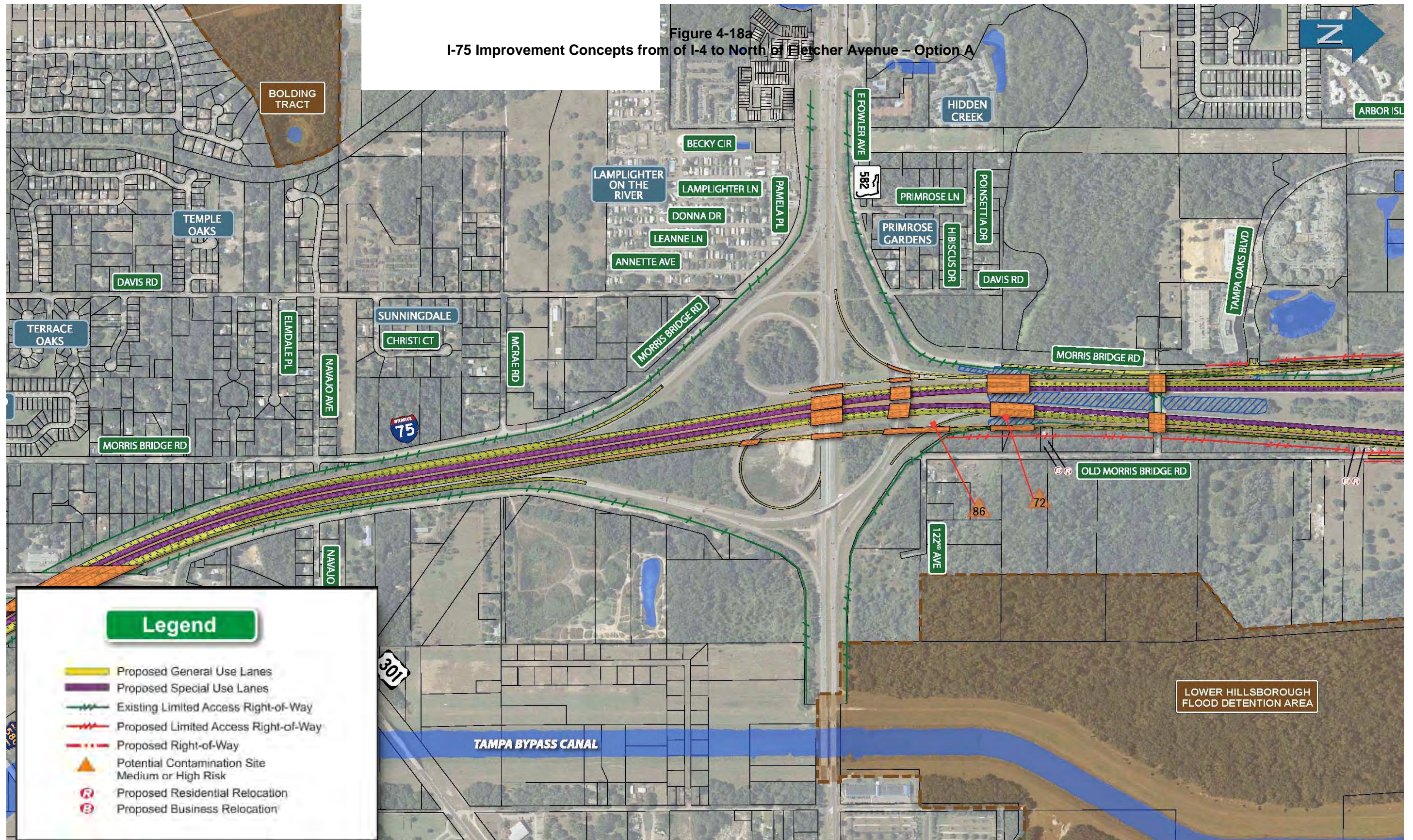




Figure 4-18a  
I-75 Improvement Concepts from of I-4 to North of Fletcher Avenue – Option A





- **Option B**, illustrated in Figure 4-19 (a and b), would include the following improvements:
  - Adding two-lane C/D roads along both directions of I-75 between Fowler Avenue and Fletcher Avenue to eliminate existing weaving deficiencies along this segment of I-75. The northbound C/D road, which would commence approximately 1 mile south of Fowler Avenue and terminate at the northbound exit loop ramp at Fletcher Avenue, would provide the only access to the northbound exit ramps at Fowler Avenue and Fletcher Avenue. The southbound C/D road would commence approximately 0.75 miles north of Fletcher Avenue and terminate at the southbound loop ramp at Fowler Avenue. The southbound C/D road would provide the only access to the southbound exit ramps at Fletcher Avenue and Fowler Avenue.
  - Eliminating interchange “hopping” between the Fowler Avenue and Fletcher Avenue interchanges by not providing exits at Fowler Avenue when entering southbound I-75 from Fletcher Avenue and exits at Fletcher Avenue when entering northbound I-75 from Fowler Avenue.
  - Replacing the northbound I-75 to westbound Fowler Avenue directional exit ramp with a two-lane loop ramp to solve the existing weaving deficiency on Fowler Avenue between the ramp terminus and Morris Bridge Road. Also, the existing eastbound Fowler Avenue to northbound I-75 loop ramp would be eliminated. This movement would be accommodated by constructing a one-lane ramp in the northeastern quadrant that would connect with the existing westbound Fowler Avenue to northbound I-75 entrance ramp, which would be lengthened.
  - Keeping, in general, the existing Fletcher Avenue interchange configuration unaltered. Improvements at this interchange would include the design modifications proposed for this interchange under the currently ongoing design project (FPID No. 408456-2-52-01, Section No. 10075).



Figure 4-19a  
 I-75 Improvement Concepts from of I-4 to North of Fletcher Avenue – Option B

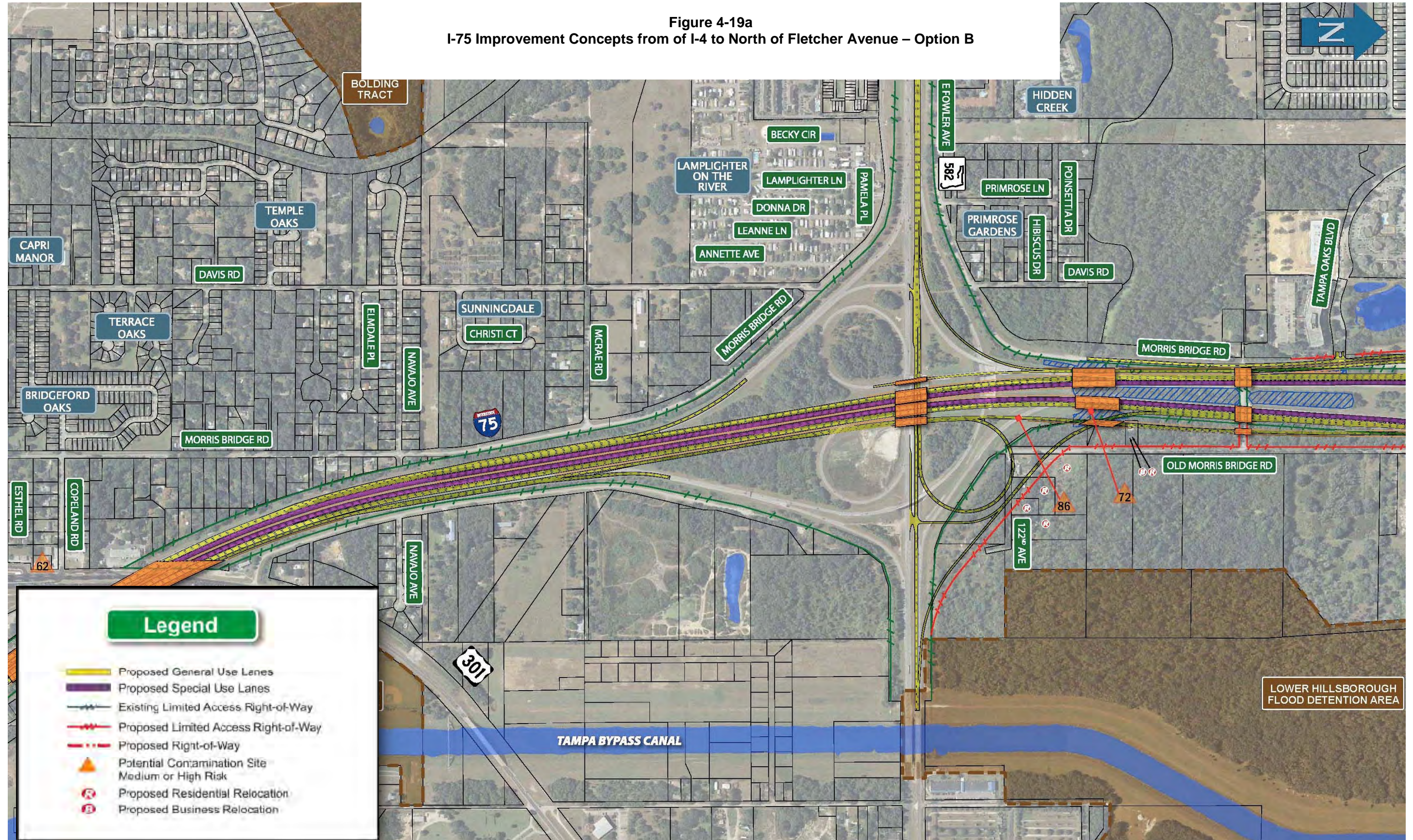
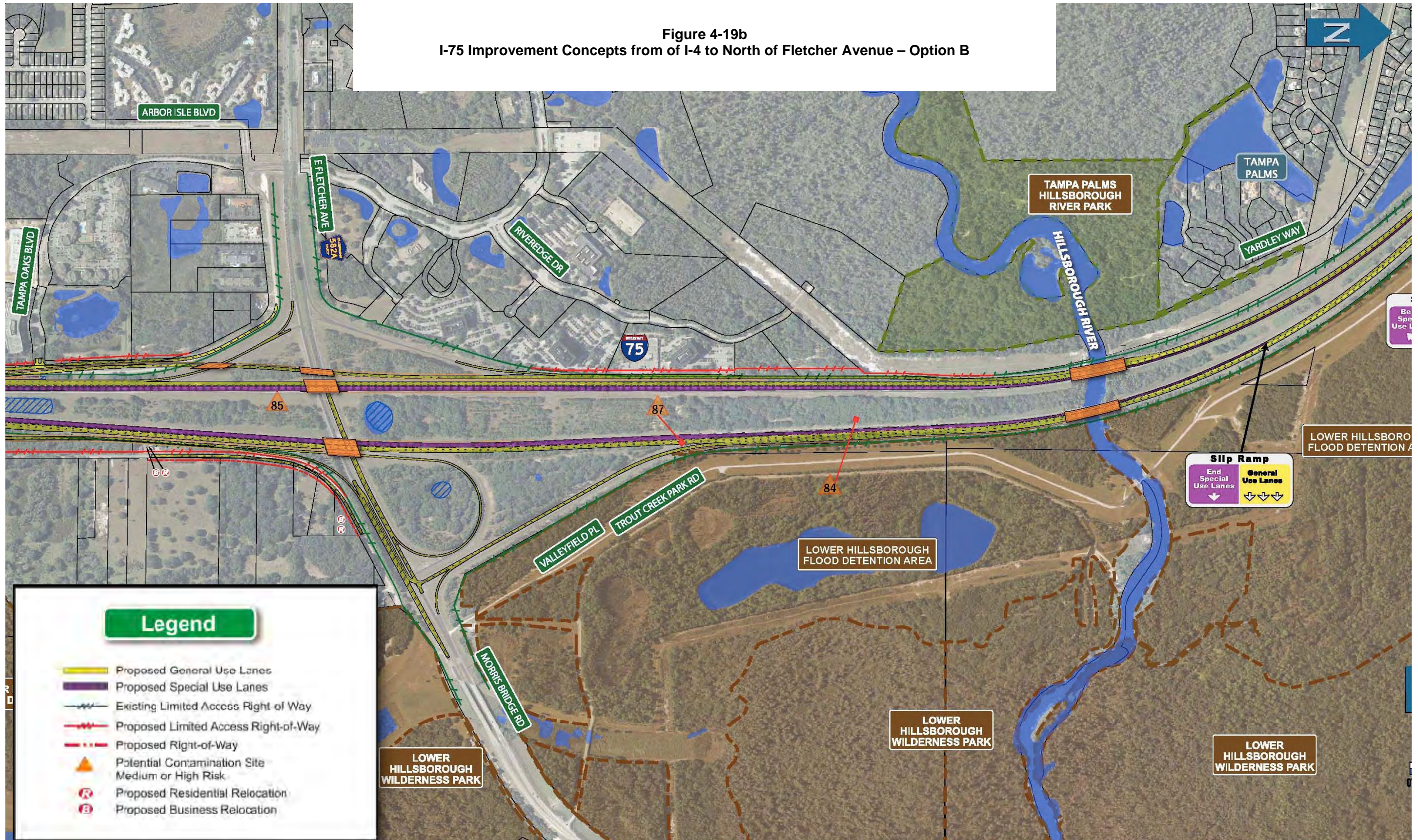




Figure 4-19b  
I-75 Improvement Concepts from I-4 to North of Fletcher Avenue – Option B





## 5.0 LEVEL OF SERVICE ANALYSES

Year 2035 traffic operating conditions were evaluated for the PM design hour for mainline freeway segments, ramp termini intersections, ramp merge and diverge areas, and weaving sections. VISSIM (Version 5.0) software was used to conduct all traffic operations analyses. The VISSIM model provides both analytical results and animation results, which were used to verify the corridor-wide operational results. The minimum acceptable level of service (LOS) for the I-75 mainline GUL segments, ramp merge/diverge areas, weaving areas, and signalized and unsignalized intersections was assumed to be LOS D. The minimum acceptable LOS for the I-75 mainline SUL segments was assumed to be LOS C to guarantee higher speeds and better operating conditions than the GULs during the peak periods.

### 5.1 Mainline Level of Service Analyses Results

As noted in Sections 4.1.1 and 4.1.2, three alternate typical sections were evaluated for the southern project and two alternate typical sections were evaluated for the northern project. The main differences between the typical sections were the type of separation provided between the SULs and the GULs and whether widening takes place within the median or to the outside.

#### 5.1.1 Level of Service Analyses Results for Southern Project

The results of the traffic operations analysis for the GUL and SUL segments in the southern project study area are shown in Table 5-1.

**Table 5-1**  
**Southern Project – Mainline Level of Service Analyses Results**

Mainline Segment	GUL LOS			SUL LOS
	Alternative 1A LOS	Alternative 1B LOS	Alternative 2 LOS	
<b>I-75 Northbound</b>				
Moccasin Wallow Road to SR 674	B	B	B	A
SR 674 to Big Bend Road	C	D	C	B
Big Bend Road to Gibsonton Drive	E <sup>1</sup>	D	C	C
Gibsonton Drive to US 301	C	C	F <sup>1</sup>	C
<b>I-75 Southbound</b>				
US 301 to Gibsonton Drive	E <sup>1</sup>	B	C	B
Gibsonton Drive to Big Bend Road	E <sup>1</sup>	D	C	B
Big Bend Road to SR 674	C	B	B	B
SR 674 to Moccasin Wallow Road	B	B	B	A

Note: <sup>1</sup> The LOS deficiency is due to upstream operational deficiencies and not due to mainline capacity constraints along this segment.



Most of the northbound and southbound mainline segments should be expected to operate at the minimum acceptable level of service or better. However, Under Alternative 1A, the segments from Big Bend Road to Gibsonton Drive in the northbound direction, and US 301 to Big Bend Road in the southbound direction, should be expected to operate at LOS E. Under Alternative 1B, all mainline segments should be expected operate at LOS D or better. Under Alternative 2, all segments except the northbound segment from Gibsonton Drive to US 301 should be expected to operate at or better than the minimum acceptable level of service. Since all alternatives would provide, in general, the same capacity along the I-75 mainline, the variation in the levels of service is attributed to the influence of the interchange configurations on the mainline operations.

### 5.1.2 Level Analyses Results for Northern Project

The results of the traffic operations analysis for the GUL segments along the northern project are shown in Table 5-2.

**Table 5-2  
Northern Project – Mainline Level of Service Analyses Results for GUL Segments**

Mainline Segment	Alternative 1 LOS	Alternative 2 LOS
<b>I-75 Northbound</b>		
US 301 to Selmon Expressway	B	B
Selmon Expressway to SR 60	B	B
SR 60 to Martin Luther King Boulevard	D	C
Martin Luther King Boulevard to I-4	C	C
I-4 to Fowler Avenue	E	F
Fowler Avenue to Fletcher Avenue	B	A
<b>I-75 Southbound</b>		
Fowler Avenue to I-4	F	E
I-4 to Martin Luther King Boulevard	F	F
Martin Luther King Boulevard to SR 60	E	F
SR 60 to Selmon Expressway	D	B
Selmon Expressway to US 301	D	B
<b>Weaving Segment<sup>1</sup></b>		
I-75 SB - Fletcher Avenue to Fowler Avenue	F	N/A <sup>2</sup>
NB C/D Road from US 301 to Selmon Expressway	N/A	C

Note: <sup>1</sup> Only the weave sections that correspond to the HCM definition of weaving influence areas (less than 2,500 feet between ramps) are included in this table.

<sup>2</sup> N/A: Not applicable

Some of the GUL mainline segments under both alternatives would not meet the minimum level of service standard. For both alternatives, all northbound I-75 segments would operate at satisfactory levels of service except the segment between I-4 and Fowler Avenue which would operate at LOS E or F. All southbound GUL segments would operate at LOS E or F, except the segment from SR 60 to US 301 which should be expected to operate at LOS D or better.



Under Alternative 1, the weaving segment of I-75 from Fletcher Avenue to Fowler Avenue should be expected to operate at LOS F. Under Alternative 2, the segment of the northbound C/D road from US 301 to the Selmon Expressway should be expected to operate at LOS C.

The results of the traffic operations analysis for the SUL segments along the northern project are shown in Table 5-3. All I-75 SUL segments should be expected to perform at LOS C or better in both directions, under both alternatives.

**Table 5-3**  
**Northern Project – Mainline Level of Service Analyses Results for SUL Segments**

Mainline Segment	Alternative 1 LOS	Alternative 2 LOS
<b>I-75 Northbound</b>		
US 301 to Selmon Expressway	B	B
Selmon Expressway to Slip Ramp (North of I-4)	A	B
Slip Ramp (North of I-4) to I-4	B	B
I-4 to Slip Ramp (South of I-4)	C	B
Slip Ramp (South of I-4) to Fowler & Fletcher Avenue	B	B
<b>I-75 Southbound</b>		
Fowler & Fletcher Avenue to Slip Ramp (South of I-4)	B	B
Slip Ramp (South of I-4) to I-4	B	C
I-4 to Slip Ramp (North of I-4)	C	B
Slip Ramp (North of I-4) to Selmon Expressway	B	A
Selmon Expressway to US 301	B	A

## 5.2 Interchange Level of Service Analyses Results

### 5.2.1 Level of Service Analyses Results for Southern Project

The southern project includes three interchanges at SR 674, Big Bend Road, and Gibsonton Drive.

#### 5.2.1.1 SR 674 Interchange

Three improvement options were evaluated for the SR 674 interchange, as summarized in Section 4.2.1.1. Option A considered the construction of a DDI. Option B considered the construction of a SPUI. Option C considered modifying the existing PARCLO configuration.

For Option A, the results from the VISSIM model analysis were not meaningful, as gridlock conditions were observed in the VISSIM simulation model at one or more intersections. Vehicle delay times were beyond LOS F conditions, so no delay or LOS measures were reported from the model. Therefore, Option A was dismissed as inoperable.

The level of service analyses results for Option B are shown in Table 5-4. Four out of the eight possible movements at the SPUI intersection – the eastbound through, the eastbound left turn,



and the northbound and southbound left turn movements – would not meet the minimum acceptable LOS standard.

**Table 5-4**  
**SR 674 Interchange – Ramp Termini Level of Service Analyses Results – Option B**

Intersection	Option B Single Point Urban Interchange		
	Movement	Delay (sec/veh)	LOS
I-75 / SR 674	WB LT	51.1	D
	WB TH	50.4	D
	EB LT	282.9	F
	EB TH	147.7	F
	NB LT	61.8	E
	NB RT	44.0	D
	SB LT	70.7	E
	SB RT	19.1	B

The level of service analyses results for Option C are shown in Table 5-5. All but three of the vehicle movements should be expected to operate at or above the minimum LOS standard. The southbound right and the eastbound through and right movements would operate at LOS E or F.

**Table 5-5**  
**SR 674 Interchange – Ramp Termini Level of Service Analyses Results – Option C**

Intersection	Option C Modified Partial Cloverleaf Design		
	Movement	Delay (sec/veh)	LOS
I-75 NB / SR 674	NB LT	34.1	C
	NB RT	4.2	A
	EB LT (Loop)	11.1	B
	EB TH	4.0	A
	WB TH	11.0	B
	WB RT	5.4	A
I-75 SB / SR 674	SB LT (Loop)	37.7	D
	SB RT	81.5	F
	EB TH	72.3	E
	EB RT	84.2	F
	WB LT	23.4	C
	WB TH	50.0	D

The ramp merge/diverge level of service analyses results for Options B and C are summarized in Table 5-6. Under both Options B and C, the northbound on-ramps from SR 674, and the southbound off-ramps to SR 674 should be expected to operate below the minimum LOS standard.



**Table 5-6**  
**SR 674 Interchange – Ramp Merge/Diverge Level of Service Analyses Results –**  
**Options B and C**

Option B Single Point Urban Interchange			Option C Modified Partial Cloverleaf Design		
Movement	Delay (sec/veh)	LOS	Movement	Delay (sec/veh)	LOS
I-75 NB off-ramp to SR 674	18.9	B	I-75 NB off-ramp to SR 674	20.2	C
I-75 NB on-ramp from SR 674	53.4	F	I-75 NB on-ramp from EB SR 674	43.0	F
I-75 SB off-ramp to SR 674	40.7	E	I-75 NB on-ramp from WB SR 674	64.0	F
I-75 SB on-ramp from SR 674	19.2	B	I-75 SB off-ramp to SR 674	20.0	C
			I-75 SB on-ramp from SR 674	17.5	B

### 5.2.1.2 Big Bend Road Interchange

Three improvement options were evaluated for the Big Bend Road interchange, as summarized in Section 4.2.1.2. All three options involved a modified PARCLO concept. Options A and B are geometrically identical. Option A would allow Old Big Bend Road to remain open while providing grade-separated entrance and exit ramps in the northeast and northwest quadrants. Option B would provide the same ramps as Option A, but would close Old Big Bend Road and realign Bullfrog Creek Road. Option C would close Old Big Bend Road and an eastbound-to-northbound flyover ramp would replace the existing loop ramp in the southeast quadrant.

The ramp termini intersection level of service analyses results for Options A, B, and C are shown in Table 5-7. Since the only difference between Options A and B would be closing Old Big Bend Road or keeping it open, and since VISSIM does not make a distinction for this difference, identical sets of level of service analyses results are provided for Options A and B. All options would include movements that would operate below the minimum level of service standard. However, Options A and B would overall perform better than Option C.

The ramp merge/diverge level of service analyses results for Options A, B, and C are summarized in Table 5-8. For all options, the northbound off-ramp to Big Bend Road and the northbound on-ramp from Big Bend Road would not meet the minimum level of service standard. The southbound off-ramp to Big Bend Road and the southbound on-ramp from Big Bend Road should be expected to operate at LOS C for all options.



**Table 5-7  
Big Bend Road Interchange – Ramp Termini Level of Service Analyses Results –  
Options A, B, and C**

Intersection	Options A and B Modified Partial Cloverleaf Design			Option C Modified Partial Cloverleaf Design (With a Flyover Ramp)		
	Movement	Delay (sec/veh)	LOS	Movement	Delay (sec/veh)	LOS
I-75 NB Ramps/ Big Bend Road	NB LT	54.1	D	NB LT	57.9	E
	NB RT	15.3	B	NB RT	19.1	B
	EB LT (Loop)	170.3	F	EB LT (Flyover)	120.0	F
	EB TH	11.0	B	EB TH	10.5	B
	WB TH	14.3	B	WB TH	41.2	D
	WB RT	170.6	F	WB RT	155.4	F
I-75 SB Ramps/ Big Bend Road	SB LT (Loop)	6.7	A	SB LT (Loop)	3.9	A
	SB RT	14.2	B	SB RT	5.4	A
	EB TH	53.8	D	EB TH	56.6	E
	EB RT	15.4	B	EB RT	57.2	E
	WB LT	44.3	D	WB LT	36.0	D
	WB TH	5.8	A	WB TH	3.0	A

**Table 5-8  
Big Bend Road Interchange – Ramp Merge/Diverge Level of Service Analyses Results –  
Options A, B, and C**

Option A and B Modified Partial Cloverleaf Design			Option C Modified Partial Cloverleaf Design (With a Flyover Ramp)		
Movement	Delay (sec/veh)	LOS	Movement	Delay (sec/veh)	LOS
I-75 NB off-ramp to Big Bend Road	56.1	F	I-75 NB off-ramp to Big Bend Road	54.6	F
I-75 NB on-ramp from Big Bend Road	64.5	F	I-75 NB on-ramp from Big Bend Road	65.2	F
I-75 SB off-ramp to Big Bend Road	24.6	C	I-75 SB off-ramp to Big Bend Road	24.3	C
I-75 SB on-ramp from Big Bend Road	25.1	C	I-75 SB on-ramp from Big Bend Road	23.9	C

### 5.2.1.3 Gibsonton Drive Interchange

Only one improvement option – Option A – was considered at Gibsonton Drive. As summarized in Section 4.2.1.3, it would consist of a PARCLO configuration with additional loop ramps.

Table 5-9 summarizes the level of service analyses results for the ramp termini intersections. All vehicle movements should be expected to operate at LOS C or better, except the northbound right and the westbound left movements which should be expected to operate at LOS E.



**Table 5-9**  
**Gibsonton Drive Interchange – Ramp Termini Level of Service Analyses Results – Option A**

Intersection	Option A Modified Partial Cloverleaf Design		
	Movement	Delay (sec/veh)	LOS
I-75 NB/ Gibsonton Drive	NB LT	0.3	A
	NB RT	60.4	E
	EB LT	25.2	C
	EB TH	24.9	C
	WB TH	6.9	A
	WB RT	12.9	B
I-75 SB/ Gibsonton Drive	SB LT	5.6	A
	SB RT	11.5	B
	EB TH	10.5	B
	EB RT	4.3	A
	WB LT	61.0	E
	WB TH	2.0	A

The results for the ramp merge/diverge level of service analyses are summarized in Table 5-10. All merge/diverge areas should be expected to operate below the minimum level of service standard except for the northbound on-ramp merge area, which should be expected to operate at LOS D.

**Table 5-10**  
**Gibsonton Drive Interchange – Ramp Merge/Diverge Level of Service Analyses Results – Option A**

Option A Modified Partial Cloverleaf Design		
Movement	Delay (sec/veh)	LOS
I-75 NB off-ramp to Gibsonton Drive	52.6	F
I-75 NB on-ramp from Gibsonton Drive	32.6	D
I-75 SB off-ramp to Gibsonton Drive	43.4	F
I-75 SB on-ramp from Gibsonton Drive	45.0	F

## 5.2.2 Level of Service Analyses Results for Northern Project

The northern project includes seven interchanges at US 301, Selmon Expressway, SR 60, MLK Boulevard, I-4, Fowler Avenue, and Fletcher Avenue. Improvement options were developed and analyzed for each interchange.



### 5.2.2.1 US 301 Interchange

Three improvement options were evaluated for the US 301 interchange, as summarized in Section 4.2.2.1. All options maintained the existing configuration with minor ramp modifications to bring the existing interchange up to standard and to tie with the proposed I-75 mainline geometry.

Table 5-11 summarizes the level of service analyses results for the ramp termini intersections. Options A and C should be expected to operate at LOS B or better. For Option B, the northbound left turn and eastbound through movements should be expected to operate at LOS F.

**Table 5-11**  
**US 301 Interchange – Ramp Termini Level of Service Analyses Results –**  
**Options A, B and C**

Intersection	Option A Partial Cloverleaf Design			Option B Partial Cloverleaf Design			Option C Partial Cloverleaf Design		
	Movement	Delay (sec/veh)	LOS	Movement	Delay (sec/veh)	LOS	Movement	Delay (sec/veh)	LOS
I-75 NB/US 301	EB LT	14.3	B	EB LT	95.6	F	EB LT	14.55	B
	EB Thru	0.9	A	EB Thru	120.6	F	EB Thru	1.3	A
	WB Thru	7.5	A	WB Thru	15.3	B	WB Thru	8.1	A
I-75 SB/US 301	WB LT	5.4	A	WB LT	8.8	A	WB LT	11.85	B
	WB Thru	0.8	A	WB Thru	0.8	A	WB Thru	0.55	A
	EB Thru	18.4	B	EB Thru	10.2	B	EB Thru	17.8	B

Table 5-12 summarizes the level of service analyses results for the ramps at the US 301 interchange. Option A would perform at or above the minimum LOS standard. For Option B, the northbound off-ramp and the northbound on-ramp would operate at LOS C or better. However, the southbound off-ramp would not meet the minimum level of service standard. For Option C, all ramps would be expected to operate at LOS C.



**Table 5-12**  
**US 301 Interchange – Ramp Merge/Diverge Level of Service Analyses Results –**  
**Options A, B, and C**

Option A Partial Cloverleaf Design			Option B Partial Cloverleaf Design			Option C Partial Cloverleaf Design		
Movement	Delay (sec/veh)	LOS	Movement	Delay (sec/veh)	LOS	Movement	Delay (sec/veh)	LOS
I-75 NB off-ramp to US 301	30.3	D	I-75 NB off-ramp to US 301	20.3	C	I-75 NB off-ramp to US 301	25.2	C
I-75 NB on-ramp from US 301	8.1	A	I-75 NB on-ramp from US 301	17.1	B	I-75 NB on-ramp from US 301	15.5	B
I-75 SB on-ramp from US 301	19.7	B	I-75 SB on-ramp from US 301	40.1	E	I-75 SB on-ramp from US 301	25.5	C

### 5.2.2.2 Selmon Expressway Interchange

Three improvement options were evaluated for the Selmon Expressway, as summarized in Section 4.2.2.1. Option A recommended adding two loop ramps and two directional ramps to directly connect the Selmon Expressway with the I-75 SULs. Option B recommended that the existing interchange would remain unaltered except for the northbound C/D road, which would be relocated to accommodate the I-75 mainline widening. Option C recommended that the southbound I-75 to westbound Selmon Expressway ramp and the eastbound Selmon Expressway to southbound I-75 ramp would be reconfigured to connect with the relocated southbound C/D road. All ramps at this interchange are free flow ramps without termini intersections.

The merge/diverge areas level of service analyses results for Options A and B are shown in Table 5-13. The merge/diverge areas level of service analyses results for Option C are shown in Table 5-14. For Option A, all ramp merge and diverge movements should be expected to operate at LOS C or better. For Option B, all ramp merge and diverge areas should be expected to operate at LOS C or better, except for the southbound on-ramp from the Selmon Expressway which should be expected to operate at LOS F. For Option C, all ramp merge/diverge areas should be expected to operate at LOS D or better, except for the southbound C/D Road off-ramp to eastbound US 301 and the southbound C/D Road on-ramp from US 301, which should be expected to operate at LOS E and F, respectively.



**Table 5-13**  
**Selmon Expressway Interchange – Ramp Merge/Diverge Level of Service Analyses**  
**Results – Options A and B**

Option A Full Directional			Option B Full Directional		
Movement	Delay (sec/veh)	LOS	Movement	Delay (sec/veh)	LOS
I-75 NB off-ramp to Selmon Expressway	4.5	A	I-75 NB off-ramp to Selmon Expressway/ C/D Road	22.3	C
I-75 NB off-ramp to C/D Road/SR 60	6.3	A	NB C/D Road off-ramp to SR 60	25.1	C
I-75 SB C/D off-ramp to Selmon Expressway	18.4	B	I-75 NB on-ramp from Selmon Expressway	22.6	C
I-75 SB C/D Road off-ramp to SB I-75	20.1	C	I-75 SB on-ramp from Selmon Expressway	51.1	F
			I-75 SB on-ramp from US 301/C/D Road	19.3	B

**Table 5-14**  
**Selmon Expressway Interchange – Ramp Merge/Diverge Level of Service Analyses**  
**Results – Option C**

Option C Full Directional Interchange		
Movement	Delay (sec/veh)	LOS
NB C/D off-ramp to EB US 301	25.6	C
NB C/D off-ramp to WB US 301	12.6	B
SB C/D Road off-ramp to WB US 301	29.5	D
SB C/D Road off-ramp to EB US 301	41.8	E
SB C/D Road on-ramp from US 301	77.0	F
I-75 SB C/D on-ramp from Crosstown	20.1	C
SB C/D Road off-ramp to WB Selmon Expressway	8.1	A
SB C/D Road off-ramp from EB Selmon Expressway	20.5	C



### 5.2.2.3 SR 60 Interchange

Three improvement options were evaluated for the SR 60 interchange, as summarized in Section 4.2.2.1. Option A recommended modifying the existing PARCLO interchange and redesigning the ramps at SR 60 to increase the ramp storage lengths. Option B recommended replacing the existing interchange configuration with a SPUI. Option C recommended eliminating the westbound-to-southbound loop ramp and redesigning the southbound ramps as a compressed diamond configuration.

Table 5-15 summarizes the level of service analyses results for the ramp termini intersections for Options A and C. For Option A, only the northbound right-turn movement would not operate at the minimum LOS standard. For Option C, all movements would operate below the LOS standard except for the eastbound and westbound through movements which should be expected to operate at LOS C and D, respectively.

**Table 5-15  
SR 60 Interchange – Ramp Termini Level of Service Analyses Results –  
Options A and C**

Intersection	Option A Partial Cloverleaf Interchange			Option C Compressed Modified Diamond Interchange		
	Movement	Delay (sec/veh)	LOS	Movement	Delay (sec/veh)	LOS
I-75 NB Ramps/ SR 60	EB Thru	19.5	B	EB Thru	26.5	C
	WB Thru	34.6	C	WB Thru	90.6	F
	NB LT	33.8	C	NB LT	88.7	F
	NB RT	64.7	E	NB RT	165.1	F
I-75 SB Ramps/ SR 60	EB Thru	39.4	D	EB Thru	164.8	F
	WB Thru	43.4	D	WB Thru	42.1	D
	WB LT (Loop)	29.0	C	WB LT (Loop)	209.6	F
	SB LT	31.0	C	SB LT	74.2	E
	SB RT	27.0	C	SB RT	74.3	E

Table 5-16 summarizes the level of service analyses results for the ramp termini intersections for Option B. The eastbound through and left movements, the northbound left movement, and the southbound left movement should be expected to operate at levels of service below the minimum standard LOS. The westbound through and left movements should be expected to operate at LOS D or better.



**Table 5-16**  
**SR 60 Interchange – Ramp Termini Level of Service Analyses Results –**  
**Option B**

Intersection	Option B Single Point Urban Interchange		
	Movement	Delay (sec/veh)	LOS
I-75/SR 60	EB Thru	486.2	F
	EB LT	211.5	F
	NB LT	126.1	F
	SB LT	472.2	F
	WB Thru	22.9	C
	WB LT	46.9	D

The merge and diverge areas level of service analyses results for Options A, B, and C are shown in Table 5-17. For Option A, the on-ramp to the northbound C/D road from eastbound SR 60 should be expected to operate at LOS E. The northbound C/D road off-ramp to SR 60 and the southbound off-ramp to the C/D road should be expected to operate at LOS F. For Option B, all ramps should be expected to fail except for the northbound on-ramp from eastbound SR 60 and the southbound on-ramp from SR 60 which should be expected to operate at LOS C. For Option C, all ramps should be expected to operate at LOS C or better, except for the southbound C/D road off-ramp to SR 60 and the I-75 southbound off-ramp to SR 60 which should be expected to operate at LOS F.

**Table 5-17**  
**SR 60 Interchange – Ramp Merge/Diverge Level of Service Analyses Results –**  
**Options A, B, and C**

Option A Partial Cloverleaf Interchange			Option B Single Point Urban Interchange			Option C Compressed Modified Diamond Interchange		
Movement	Delay (sec/veh)	LOS	Movement	Delay (sec/veh)	LOS	Movement	Delay (sec/veh)	LOS
I-75 NB C/D Road on-ramp from EB SR 60	35.9	E	I-75 NB on-ramp from EB SR 60	20.4	C	I-75 NB on-ramp from EB SR 60	22.3	C
I-75 NB C/D Road on-ramp from WB SR 60	33.3	D	I-75 NB on-ramp from WB SR 60	38.5	E	I-75 NB C/D Road on-ramp from WB SR 60	7.0	A
I-75 NB C/D Road off-ramp to SR 60	69.0	F	NB C/D Road on-ramp from EB SR 60	47.4	F	NB C/D Road off-ramp to SR 60	15.3	B
I-75 NB on-ramp	12.5	B	SB C/D Road off-ramp to SR 60	45.4	F	I-75 NB on-ramp from C/D Road	21.4	C



**Table 5-17 (continued)**  
**SR 60 Interchange – Ramp Merge/Diverge Level of Service Analyses Results – Options A, B, and C**

Option A Partial Cloverleaf Interchange			Option B Single Point Urban Interchange			Option C Compressed Modified Diamond Interchange		
Movement	Delay (sec/veh)	LOS	Movement	Delay (sec/veh)	LOS	Movement	Delay (sec/veh)	LOS
I-75 SB C/D Road on-ramp from WB SR 60	29.2	D	I-75 SB off-ramp to C/D Road	51.1	F	I-75 SB on-ramp from SR 60	12.9	B
I-75 SB off-ramp to C/D Road	75.1	F	N/A	N/A	N/A	SB C/D Road off-ramp to SR 60	58.3	F
I-75 SB on-ramp from SR 60	34.2	D	I-75 SB on-ramp from SR 60	24.6	C	I-75 SB off-ramp to SR 60	68.6	F

#### 5.2.2.4 MLK Boulevard Interchange

As summarized in Section 4.2.2.2, for both options (Option A and Option B) considered for Segment 2, the only alternative evaluated for the MLK Boulevard interchange was replacing the existing PARCLO configuration with a SPUI.

Table 5-18 summarizes the level of service analyses results for the ramp termini intersection at MLK Boulevard. The westbound through and northbound left movements should be expected to operate efficiently at LOS C and D, respectively. All other vehicle movements would operate at levels of service below the minimum LOS standard.

**Table 5-18**  
**MLK Boulevard Interchange – Ramp Termini Level of Service Analyses Results – Options A and B**

Intersection	Single Point Urban Interchange		
	Movement	Delay (sec/veh)	LOS
I-75/MLK Boulevard	WB LT	216.2	F
	WB Thru	27.8	C
	EB Thru	388.8	F
	EB LT	56.8	E
	SB LT	325.3	F
	SB RT	166.4	F
	NB LT	48.8	D

The ramp merge/diverge analysis results for Options A and B are summarized in Table 5-19. For Option A, three of the ramps should be expected to operate efficiently at LOS C or better.



The southbound on-ramp should be expected to operate at LOS F. For Option B, all the ramps should be expected to operate at the minimum LOS standard or better.

**Table 5-19**  
**MLK Boulevard Interchange – Ramp Merge/Diverge Level of Service Analyses Results – Options A and B**

Option A Single Point Urban Interchange			Option B Single Point Urban Interchange		
Movement	Delay (sec/veh)	LOS	Movement	Delay (sec/veh)	LOS
I-75 NB off-ramp to EB MLK Boulevard	23.1	C	I-75 NB off-ramp to EB/WB MLK Boulevard	24.5	C
I-75 NB on-ramp from MLK Boulevard/C/D Road	10.4	B	NB C/D Road on-ramp from WB MLK Boulevard	10.4	B
I-75 NB C/D on-ramp from MLK Boulevard	7.7	A	I-75 SB on-ramp from MLK Boulevard	30.4	D
I-75 SB on-ramp from MLK Boulevard	53.9	F	I-75 SB C/D off-ramp to MLK Boulevard	10.1	B

### 5.2.2.5 I-4 Interchange

Two options were evaluated at the I-4 interchange, as summarized in Section 4.2.2.2. Option A recommended expanding the existing I-4 interchange to a modified five-level turbine interchange that would include additional directional ramps. Option B recommended replacing the existing I-4 interchange with a combination directional “turbine/stack” interchange design. Both options provide a system-to-system interchange with full directional ramps and, therefore, do not have any ramp termini intersections.

The ramp merge/diverge level of service analyses results for Options A and B are summarized in Table 5-20. For Option A, the northbound on-ramp from eastbound/westbound I-4 and the southbound off-ramp to I-4/C/D road should be expected to operate below the LOS standard. All other ramps should be expected to operate at LOS C or better. For Option B, all but one of the ramps should be expected to operate at or above the minimum LOS standard.

**Table 5-20**  
**I-4 Interchange – Ramp Merge/Diverge Level of Service Analyses Results – Options A and B**

Option A Turbine Interchange			Option B Directional Turbine/Stack Interchange		
Movement	Delay (sec/veh)	LOS	Movement	Delay (sec/veh)	LOS
NB I-75 off-ramp to I-4	13.2	B	NB I-75 off-ramp to I-4	19.2	B
NB I-75 on-ramp from EB/WB I-4	49.9	F	NB I-75 on-ramp from I-4	18.5	B
SB C/D Road off-ramp to WB I-4	25.1	C	SB I-75 off-ramp to C/D Road	42.2	E
SB C/D Road on-ramp from WB I-4	4.5	A	SB I-75 off-ramp to I-4	17.3	B
SB C/D Road on-ramp from EB I-4	8.6	A	SB I-75 on-ramp from I-4 WB	14.7	B
SB I-75 off-ramp to I-4 / C/D Road	72.6	F	SB I-75 on-ramp from EB I-4	24.3	C
SB I-75 on-ramp from I-4	19.8	B			



### 5.2.2.6 Fowler Avenue Interchange

Two options were evaluated at Fowler Avenue, as summarized in Section 4.2.2.3. Option A recommended maintaining the existing interchange configuration with minor improvements. Option B recommended replacing the northbound I-75 to westbound Fowler Avenue flyover ramp with a loop ramp. Option B would also eliminate the existing eastbound Fowler Avenue to northbound I-75 loop ramp.

The ramp termini intersection level of service analyses results for Options A and B are summarized in Table 5-21. For Option A, all vehicle movements should be expected to meet the minimum LOS standard. For Option B all vehicle movements should be expected to operate at LOS F.

**Table 5-21  
Fowler Avenue Interchange – Ramp Termini Level of Service Analyses Results –  
Options A and B**

Intersection	Option A Existing Interchange			Option B NB to WB Loop Ramp		
	Movement	Delay (sec/veh)	LOS	Movement	Delay (sec/veh)	LOS
SB I-75/ Fowler Avenue	WB LT	15.1	B	WB LT	909.9	F
	WB Thru	0.2	A	WB Thru	506.4	F
	EB Thru	5.7	A	EB Thru	111.7	F

The operations at the ramp termini of this interchange, for both options, are greatly influenced by the intersection of Fowler Avenue at Morris Bridge Road, located just west of the interchange. The existing flyover ramp terminal at Fowler Avenue (for Option A) may need to be modified or signal controlled and/or improvements are needed (for both options) at the Fowler Avenue / Morris Bridge Road intersection in order to provide efficient operations at the interchange area.

Table 5-22 summarizes the ramp merge/diverge areas level of service analyses results for Options A and B at the Fowler Avenue interchange. For Option A, all ramps should be expected to operate efficiently at LOS D or better. For Option B, the northbound off-ramp to the C/D road and the Fowler Avenue off-ramp should be expected to operate at LOS F. The northbound C/D road off-ramp to eastbound Fowler Avenue and the southbound on-ramp from Fowler Avenue should be also expected to operate at LOS F.



**Table 5-22**  
**Fowler Avenue Interchange – Ramp Merge/Diverge Level of Service Analyses Results – Options A and B**

Option A Existing Interchange			Option B NB to WB Loop Ramp		
Movement	Delay (sec/veh)	LOS	Movement	Delay (sec/veh)	LOS
NB I-75 off-ramp to Fowler Avenue	29.2	D	NB I-75 off-ramp to C/D Road and Fowler Avenue off-ramp	52.0	F
NB I-75 on-ramp from EB Fowler Avenue	6.2	A	NB I-75 C/D Road off-ramp to EB Fowler Avenue	45.1	F
NB I-75 on-ramp from WB Fowler Avenue	12.0	B	NB I-75 C/D Road off-ramp to WB Fowler Avenue	26.2	C
NB C/D Road off-ramp to Fowler Avenue	27.6	C	NB I-75 on-ramp from EB/WB Fowler Avenue	8.6	A
SB C/D Road off-ramp to WB Fowler Avenue	16.9	B	SB I-75 on-ramp from Fowler Avenue	62.3	F
SB I-75 on-ramp from Fowler Avenue	31.2	D	I-75 SB C/D Road off-ramp to EB/WB Fowler Avenue	30.1	D

### 5.2.2.7 Fletcher Avenue Interchange

As summarized in Section 4.2.2.3, only minor improvements – consistent with Design Project FPID No. 408456-2-52-01, Section No. 10075 – were assumed for the Fletcher Avenue interchange. Therefore, only one improvement option was evaluated.

Table 5-23 summarizes the level of service analyses results for the ramp termini intersections. As shown, all vehicle movements should be expected to operate at LOS D or better except for the westbound and southbound left turn movements at the southbound ramps intersection.

**Table 5-23**  
**Fletcher Avenue Interchange – Ramp Termini Level of Service Analyses Results**

Intersection	Modified Diamond Interchange		
	Movement	Delay (sec/veh)	LOS
I-75 NB Ramps/Fletcher Avenue	EB LT	31.6	C
	WB Thru	47.4	D
I-75 SB Ramps/Fletcher Avenue	WB LT	55.1	E
	SB LT	78	E
	WB Thru	6.4	A
	EB Thru	33.8	C

Table 5-24 summarizes the level of service analyses results for the ramp merge/diverge areas at the Fletcher Avenue interchange. As shown, all ramps should be expected to operate at or above the minimum LOS standard.



**Table 5-24**  
**Fletcher Avenue Interchange – Ramp Merge/Diverge Level of Service Analyses Results**

<b>Modified Diamond Interchange</b>		
<b>Movement</b>	<b>Delay (sec/veh)</b>	<b>LOS</b>
NB I-75 C/D Road off-ramp to Fletcher Avenue	18.8	B
NB I-75 on-ramp from Fletcher Avenue	16.0	B
SB I-75 off-ramp to Fletcher Avenue/C/D Road	20.2	C
SB I-75 on-ramp from Fletcher Avenue	31.8	D



## 6.0 RECOMMENDED IMPROVEMENTS

This section describes the Preferred Build Alternative recommendations. These recommendations were developed based on consideration of the results of the level of service analyses (presented in Section 5.0) as well as other factors such as costs, impacts, and public input.

### 6.1 Mainline Improvements

As noted in Section 4.0, levels of service along the I-75 mainline would not be affected by the choice of the typical section alternative. Therefore, the choice of the preferred typical section alternative should be based on other factors such as costs; providing the transit envelope in the median or in either of the outside borders; safety and emergency vehicle access; evacuation operations; compatibility with staged construction and/or interim improvements; compatibility with adjacent projects (i.e. FDOT District 1 I-75 project in Manatee and Sarasota Counties and FDOT District 7 projects north of Fletcher Avenue); FDOT Central Office policy on interstate median widths; noise impacts; and public input. After consideration of these factors, Mainline Alternative 2 was recommended for both projects.

The recommended interchange improvements for the southern and northern projects are described below.

### 6.2 Southern Project Recommended Interchange Improvements

The southern project includes three interchanges at SR 674, Big Bend Road, and Gibsonton Drive.

#### 6.2.1 SR 674 Interchange

The following three improvement options were evaluated for the SR 674 interchange:

- **Option A:** convert the existing PARCLO interchange to a DDI
- **Option B:** convert the existing PARCLO interchange to a SPUI
- **Option C:** maintain and improve the existing PARCLO interchange

Option C is more advantageous compared to the other options with regards to traffic operations construction costs, relocations, and right of way impacts. Therefore, Option C is recommended for this interchange.

#### 6.2.2 Big Bend Road Interchange

The following three improvement options were evaluated for the Bid Bend Road interchange:



**RECOMMENDED IMPROVEMENTS**

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- **Option A:** improve the existing PARCLO interchange by adding a southbound exit ramp and a northbound entrance ramp in the northwest and northeast quadrants, respectively; keep Old Big Bend Road open for traffic traveling under and across I-75.
- **Option B:** improve the existing PARCLO interchange by adding a southbound exit ramp and a northbound entrance ramp in the northwest and northeast quadrants, respectively; eliminate the crossing of Old Big Bend Road under I-75.
- **Option C:** modify the existing PARCLO interchange by replacing the eastbound to northbound entrance ramp with a flyover ramp.

The level of service analyses indicated that Option C would provide slightly better operations compared with the other two alternatives. However, the operational benefits were not substantial enough to warrant the cost of the flyover (\$21.4 million). Option B is recommended for this interchange because it has the lowest costs and, overall, provides acceptable traffic operations.

### 6.2.3 Gibsonton Drive Interchange

One improvement option – **Option A** – was evaluated and is recommended for the Gibsonton Drive interchange. This improvement option consists of converting the existing diamond interchange to a PARCLO interchange with the addition of southbound and northbound exit loop ramps in the southwest and northeast quadrants, respectively.

## 6.3 Northern Project Recommended Interchange Improvements

Due to the close spacing of the interchanges, the northern project was divided into three segments. Each segment included two or more interchanges. Improvement options were developed and evaluated for each segment.

### 6.3.1 Segment 1 – from south of US 301 to south of MLK Boulevard

This segment includes the interchanges at US 301, Selmon Expressway, and SR 60. Three improvement options – **Options A, B, and C** – were developed and evaluated.

Based on the analyses presented in Section 5.0 and for the following reasons, Option C was selected as the recommended improvement alternative for this segment, except for the SR 60 interchange where Option A is recommended):

- Eliminates multiple exits along northbound I-75 between US 301 and Selmon Expressway
- Provides adequate storage on both C/D roads and, thereby, eliminates queuing onto the I-75 mainline
- Allows direct access to Selmon Expressway and SR 60 from northbound US 301
- Provides adequate storage on the northbound and southbound exit ramps at SR 60 and eliminates queuing onto the I-75 mainline



**RECOMMENDED IMPROVEMENTS**

- The braided ramps north of SR 60 directly connect the SULs with the C/D roads and eliminate the weaving through the GULs for the SUL traffic that is destined to and/or oriented from SR 60 and Selmon Expressway. Select link analyses indicated that 40 percent of the design hour volumes at the SR 60 southbound exit and northbound entrance ramps would be arriving from or destined to the SULs. Similarly, 75 percent of the design hour volumes at the Selmon Expressway southbound exit and northbound entrance ramps would be arriving from or destined to the SULs.

For the SR 60 interchange, the traffic analyses indicated that modifying the existing PARCLO interchange to provide additional storage and turning lanes on the off-ramps would be the best option.

After discussions with the Department's staff and further analyses, the following modifications were made to the conceptual plans for Option C:

- The Brandon Town Center Drive connection through the northbound I-75 to westbound Selmon Expressway exit ramp was eliminated. This modification was made to avoid potential traffic queuing onto the ramp resulting from travelers destined to the Brandon Town Center.
- The number of lanes for the segment of the northbound C/D road between the northbound exit ramp and the westbound-to-northbound entrance ramp at SR 60 was increased from one lane to two lanes. In addition, the number of lanes of the westbound-to-northbound entrance ramp at SR 60 was reduced from two lanes to one lane.

### 6.3.2 Segment 2 – from south of MLK Boulevard to north of I-4

This segment includes the interchanges at MLK Boulevard and I-4. Two improvement options – **Options A** and **B** – were developed and evaluated.

Based on the analyses presented in Section 5.0 and for the following reasons, Option A was selected as the recommended improvement alternative for this segment:

- The SPUI configuration at MLK Boulevard combines the ramp termini intersections, thereby resulting in better traffic progression along MLK Boulevard and allowing longer storage bays for left turning traffic. The compressed SPUI configuration also supports the addition of C/D roads along I-75 north of MLK Boulevard.
- The C/D roads along I-75 from MLK Boulevard to north of I-4 eliminate the weaving between the traffic entering/exiting I-75 from/to MLK Boulevard from the traffic exiting/entering I-75 to/from I-4.
- Option A for the I-4 interchange presents the following advantages:
  - Does not require immediate action/implementation of SULs on I-4, but allows for future connections
  - Preserves more of the existing infrastructure than Option B
  - Provides greater storage on the ramps, thus preserving operations on both interstates' mainlines
  - Design speed for SUL connector ramps is higher for Option A and therefore, this option is more conducive to truck traffic



- All SUL exit ramps are on the right side, which is more consistent with driver expectancy

### 6.3.3 Segment 3 – from north of I-4 to north of Fletcher Avenue

This segment includes the interchanges at Fowler Avenue and Fletcher Avenue. Two improvement options – **Options A** and **B** – were developed and evaluated. The two options were similar except for the Fowler Avenue improvement concepts.

Based on the analyses presented in Section 5.0, Option A was selected as the recommended improvement alternative for this segment. The traffic analyses indicated that Option B would provide slightly better operations along Fowler Avenue between the interchange and the Morris Bridge Road intersection than Option A. However, this improvement would not be sufficient enough to warrant the cost for removing the existing flyover and replacing it with a loop ramp. Therefore, Option A (which maintains the existing northbound-to westbound flyover) was recommended.