STATE ROAD 15

PONCE DELEON SPRINGS
BOULEVARD TO STATE ROAD 40

SEPTEMBER 2006

PRELIMINARY ENGINEERING REPORT

FPID: 410251-1-22-01

PREPARED FOR

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HNTB

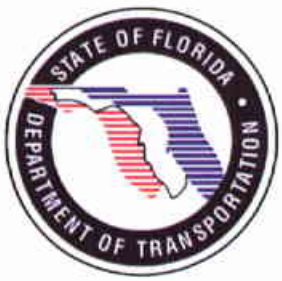
Preliminary Engineering Report

State Road 15 (US 17)
From Ponce DeLeon Boulevard to SR 40

Volusia County, Florida

Project Development and Environment Study

FLORIDA DEPARTMENT OF TRANSPORTATION
District Five



Financial Project ID: 410251-1-22-01
FAP Project Number: 4011-052-P

September 2006

PD&E / DESIGN Coordination Checklist

CRITICAL ELEMENT (Needed for Design Phase)	STATUS (Complete or Needs Resolution)	RESOLUTION RQMNTS. (i.e. - Flag in WP, Mini-PD&E prior to Design, etc.)	LOCATION in PD&E (i.e. - Pg. #'s, Commitments Section; Appendix; Etc.)
1. Preferred Alignment with Concept Maps	Complete	None	Appendix C - Concept Plans
2. Intersection R/W Impacts (R/W for turn lanes, corner clips)	Complete	Intersection realigned as part of PD&E	Appendix C - Concept Plans
3. Local Agency Commitments	Complete	Bike Trails	Section 1 of PER, pg. 1-1
4. Agreements for Local Agency/Other Commitments	***List Agreements & Status on Next Page	See next Sheet	See Next Sheet
5. Identification of Funding Sources for Commitments	None	None	None
6. Environmental & Permitting Commitments/Requirements	Complete	Wildlife Crossing Contamination, Wetlands Groundwater Sampling	Section 1 of PER, pg. 1-1
7. Approved Typical Sections	Complete	Variance for shoulder and border width	Appendix B, TS Package
8. Bridge Recommendation (Widen / Replace / Remove)	Complete	Agreed upon with FDOT/FFWSC	Section 9 of PER, pg. 9-26
9. Recommended Pond Sites (on aerials/concept plans)	Complete	Approved pond siting report	Appendix C - Concept Plans
10. Location Hydraulics Report (structures, flood plain impacts)	Complete	Approved Location Hydraulics Report	Section 4 of PER, pg. 4-21
11. Notable Soil Conditions Id'd (sink hole areas, muck, etc.)	Complete	Approved Preliminary Geotech Report	Section 4 of PER, pg. 4-4
12. Access Management Plan	Complete	Reclassification from 4 to 3	Section 9 of PER, pg. 9-26
13. MOT Concept (constructible at estimated cost)	Complete	MOT calculated at 10% of total project cost	Section 9 of PER, pg. 9-15
14. Bike / Ped. Requirements	Complete	CR 3 as Alternative in commitments	Section 1 of PER, pg. 1-1 Section 9 of PER, pg. 9-5
15. Public Involvement Plan (state/local/public consensus)	Complete	All requirements met	Section 9 of PER, pg. 9-15
16. Major Utilities - Preliminary Impacts Identified	Complete	Utility report prepared by GAI for this project	Section 9 of PER, pg. 9-14
17. Construction & R/W Estimates (Enough detail to secure in WP)	Complete	Cost estimate completed for project along with LRE updates	Section 9 of PER, pg. 9-4
18. Development Coordination (DRI's, PUD's, etc.)	Complete	None	Section 3 of PER, pg. 3-1
19. Railroad Coordination	Complete	Railroad non responsive to any request	Section 9 of PER, pg. 9-3 Appendix C - Concept Plans

*** Agreements required with local agencies or other entities are as follows:

Agreements for Local Agencies or Other Commitments				
Type of Agreement (JPA, LFA, Maint., Other)	**Agency or Entity Agreement is With**	**Agency/Entity Contact** (Name, Phone #, Email)	**Status** (Complete/ Needs Resolution)	**Funding Considerations of Agreement**
See Commitments Section of the Preliminary Engineering Report	None	None	None	None

PROFESSIONAL ENGINEER CERTIFICATION

I hereby certify that I am a Registered Professional Engineer in the State of Florida practicing with HNTB Corporation and that I have supervised the preparation and approve the evaluation, findings, opinions, conclusions, and technical advice hereby reported for:

PROJECT: SR 15 PD&E Study

FINANCIAL PROJECT ID: 410251-1-22-01

FEDERAL AID PROJECT NO: 4011-052-P

LOCATION: SR 15 (US 17) from Ponce DeLeon Boulevard to SR 40 in Volusia County, Florida.

This report includes a summary of data collection efforts, corridor analysis, conceptual design analyses, and environmental evaluations for the above referenced project. I acknowledge that the procedures and references used to develop the results contained in this report are standard to the professional practice of transportation engineering and planning as applied through professional judgment and experience.

NAME: Kent L. Black, P.E.
Florida P.E. Number 47971

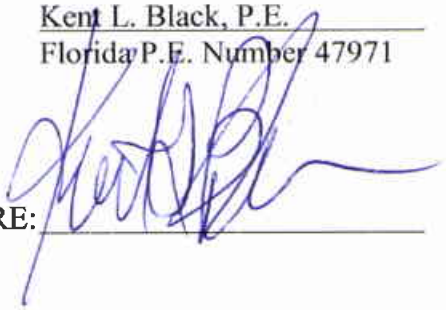
SIGNATURE: 

TABLE OF CONTENTS

Chapter

Appendix

List of Figures

List of Tables

1.0 Summary

The Florida Department of Transportation (FDOT) has conducted a Project Development and Environment (PD&E) Study that addresses the proposed roadway improvements to State Road 15 (SR 15)/United States Highway 17 (US 17) in Volusia County, Florida. The project begins just north of the intersection of Ponce DeLeon Boulevard and SR 15 and extends to just north of the intersection of SR 40 and SR 15, a total length of approximately 6.3 miles.

The objective of this PD&E Study is to identify and evaluate alternative alignments for the widening of SR 15/US 17. The process evaluates the social, economic, and environmental impacts resulting from the proposed improvements. The evaluation and public comments are used by FDOT to reach a decision on the type, location and conceptual design of the required improvements to SR 15. The proposed improvements are required to accommodate future traffic demand, safely and efficiently. These proposed improvements consist of widening SR 15 to a four-lane divided rural roadway throughout the entire project limits. The widening of this section of roadway will match the existing corridor south of the southern project limits.

1.1 Commitments

Throughout the study process the FDOT may establish commitments with organizations, entities, or individuals regarding issues concerning the project.

The FDOT will adhere to the following commitments with regard to the proposed improvements to SR 15.

- The FDOT is committed to continuing coordination with Volusia County and the towns of DeLeon Springs and Barberville regarding side street improvements, stormwater retention pond locations and other amenities such as landscaping and lighting.
- The FDOT is committed to constructing improvements at Deep Creek Bridge to facilitate black bear, as well as other wildlife species, crossings within this segment of SR 15.
- FDOT is committed to conducting soil and groundwater sample analysis at any facilities with a "medium" or "high" risk rating. Each of the locations that fall into this category are listed below and are described in more detail in the *Contamination Screening Report* completed for this project:
  - Deleon Car Wash,
  - Valero Gas Station,
  - Undeveloped residential subdivision immediately north of Spring Garden Ranch Road and west of SR 15,
  - Theodore Strawn Packing Plant,
  - Handy Way Food Store #2258,

  - Express Mart #169 and
  - The agricultural fields along the east side of SR 15 near Dawson Road.
- The FDOT is committed to periodically reviewing files to ascertain when a no further action (NFA) will be granted for those contamination sites that are undergoing active remediation.
- The FDOT is committed to coordinating with the St. Johns River Water Management District to include SR 15 as a Senate Bill project as it currently is not listed within the St. Johns River Water Management District (SJRWMD) as a Senate Bill project for wetland mitigation.
- The FDOT is committed to continuing to work with property owners in the area to complete an access management plan that meets the needs of the community while satisfying the requirements of design.
- The FDOT is committed to continuing to support Division of Forestry (DOF) in developing an access plan that addresses their needs. The FDOT has agreed to purchase a portion of an adjacent parcel for the DOF to utilize for access to Spring Garden Avenue. The FDOT is committed to constructing this new roadway connection as part of the SR 15 roadway improvements.
- The FDOT is committed to developing drainage and typical section plans that promote the minimization of wetland impacts.
- The FDOT is committed to further consideration of the grade separation of the CSXT rail lines as part of future studies and plans for SR 40 improvements in the vicinity of SR 15.
- The FDOT is committed to construction of a new parking area for the SRJWMD at the trail head for the Heart Island Conservation Area, if a land purchase agreement is reached between the SJRWMD and the FDOT. This parking area will replace in kind area of the parking lot used for widening of SR 15. The current parking area is a grassed area approximately 50 feet wide by 100 feet long. It is surrounded with a wooden type picket fence and has a kiosk delineating the trails and features of the conservation area.
- The FDOT is committed to the recommendation that in future phases of the project it is aware of the possible desire of the local Heritage corridor groups, the Office of Greenway and Trails, and other bicycle advocacy groups to identify a bicycle trial within the SR 15/US 17 corridor, including the railroad and CR 3. Future coordination may be necessary with these groups.
- The FDOT is committed to providing one mile of twelve (12) foot high wildlife fence on the north side of Deep Creek. A twelve (12) foot high wildlife fence will also be provided south of Deep Creek; one quarter mile is the maximum amount achievable due to private lands and access restrictions.
- The FDOT is committed to relocating the Barberville Billboard that is located 700 feet north of the SR 15 / SR 40 intersection. The concrete block sign measures approximately 24 feet wide by 12 feet high. The FDOT is committed to preserving the structural integrity of the billboard, and restoring the original image on the billboard. FDOT will coordinate with SHPO in the moving and restoration process of the billboard.

1.2 Recommendation

This section summarizes the design recommendations for the preferred build alternative. Detailed analysis of the engineering and environmental issues associated with the preferred alternative is presented in Section 9 of this report.

1.2.1 Study Alternatives

Alternative Typical Section Concepts

Four (4) alternative concepts were developed and evaluated for this project, including the No-Build Alternative, the West Alternative, the East Alternative and the Existing Alternative.

Three (3) Build Alternative typical section concepts were developed for this study. The three (3) build alternatives considered were entire reconstruction of SR 15 to the west, entire reconstruction of SR 15 to the east, and utilization of the existing SR 15 for the southbound lanes and construction of the northbound lanes to the east of the existing roadbed. The alternatives all use a design speed of 65 mph. Figures 1-1, 1-2, and 1-3 present the proposed build typical sections for the west alignment, east alignment, and existing alignment alternatives, respectively. These typical sections are valid for the section of the corridor where only 150' of right-of-way currently exists, from 0.85 miles north of Lake Winona Road to SR 40.

Figure 1-1: Proposed West Alignment Typical Section (Build Alternative1)

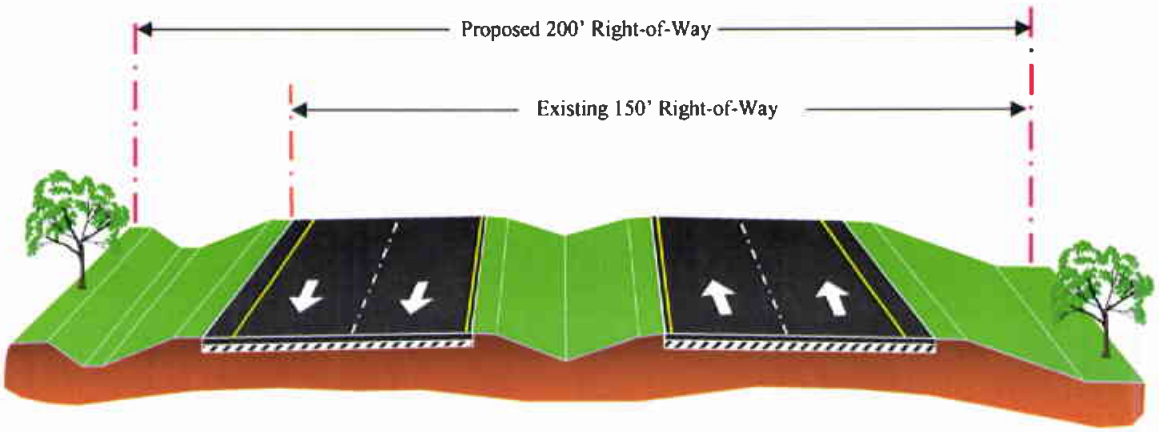


Figure 1-2: Proposed East Alignment Typical Section (Build Alternative 2)

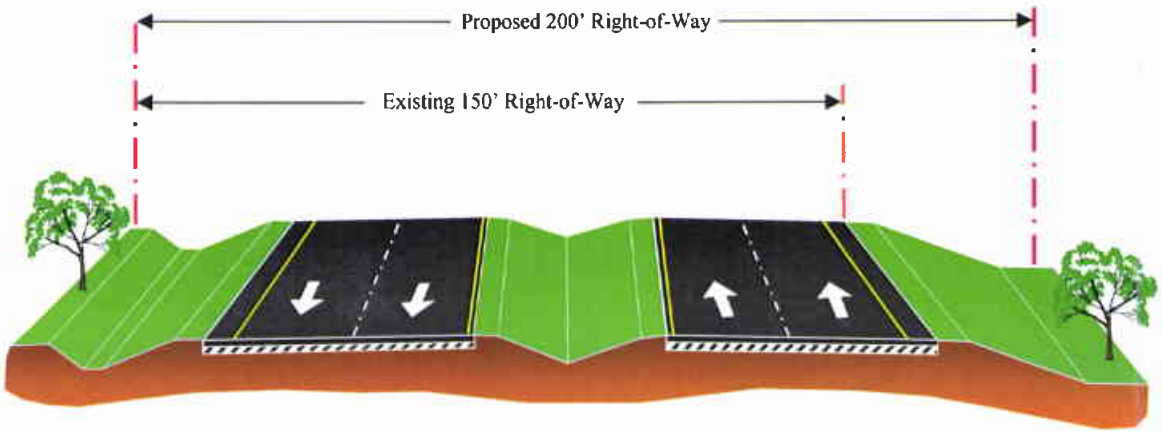
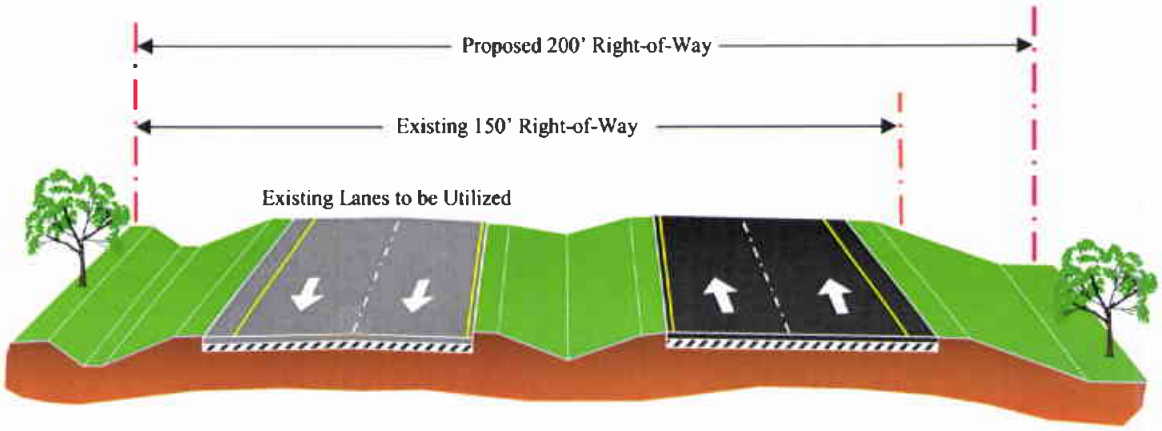


Figure 1-3: Proposed Existing Alignment Typical Section (Build Alternative 3)



Alternative SR 15/SR 40 Intersection Concepts

Six (6) alternative intersection concepts were developed and evaluated for this project, including the following:

A: This alignment alternative requires an additional 50 feet of right-of-way on the west side of SR 15; see Appendix C for concept plans. Alternative A proposes to shift the SR 15 and SR 40 intersection approximately 35 feet closer to the railroad tracks.

B1: This alignment alternative requires an additional 50 feet of right-of-way on the east side of SR 15; see Appendix C for concept plans. Alternative B1 proposes no shifting of the SR 15 and SR 40 intersection any closer or any further from the railroad tracks because this alternative utilizes the existing roadway as the new southbound lanes.

B2: This alignment alternative requires an additional 100 feet of right-of-way on the east side of SR 15; see Appendix C for concept plans. Alternative B2 proposes to shift the SR 15 and SR 40 intersection approximately 35 feet further from the railroad tracks.

C: This alignment alternative requires an additional 50 feet of right-of-way on the east side of SR 15, and an additional 50 feet on the west side of SR 15; see Appendix C for concept plans. Alternative C proposes no shifting of the SR 15 and SR 40 intersection any closer or any further from the railroad tracks. This alternative proposes to center SR 15 within the 200 foot right-of-way and would provide adequate room for the intersection geometry.

D1: This alignment alternative requires an additional 229 feet of right-of-way on the east side of SR 15; see Appendix C for concept plans. Alternative D1 proposes to shift the SR 15 and SR 40 intersection approximately 180 feet away from the railroad tracks.

D2: This alignment requires an additional 229 feet of right-of-way on the east side of SR 15; see Appendix C for concept plans. Alternative D2 proposes to shift the SR 15 and SR 40 intersection approximately 180 feet away from the railroad tracks and tie back into the existing roadway closer to the intersection location.

1.2.2 Alternatives Evaluation

Alternative Typical Section Concepts

Each of the four (4) typical section concept alternatives was evaluated in detail during the PD&E Study. A detailed analysis of the impacts, advantages, and disadvantages of each is presented in Section 8 of this report.

Table 1-1 provides a summary of the impacts of each of the study alternatives, where the No-Build Alternative has no impact to the factors evaluated during this study.

Alternative SR 15/SR 40 Intersection Concepts

Each of the six (6) intersection alternatives was evaluated in detail during the PD&E Study. A detailed analysis of the impacts, advantages, and disadvantages of each is presented in Section 8 of this report.

Table 1-2 provides a summary of the impacts of each of the intersection study alternatives.

Table 1-1: Impacts Associated with each Alternative Typical Section

EVALUATION FACTORS	ALTERNATIVE #1 WEST	#2 EAST	#3 EXISTING	"NO-BUILD"
Business Impacts				
Expected Number of Business Relocations	0	0	0	0
Number of Businesses Impacted	0	1	1	0
Residential Impacts				
Expected Number of Residential Relocations	0	0	0	0
Number of Residences Impacted	0	2	2	0
Right of Way Impacts				
Number of Parcels Impacted	1	25	25	0
Area of ROW to be Acquired for Roadway (acres)	22.6	23.9	23.9	0
Area of ROW to be Acquired for Pond Sites (acres)	18.0	18.0	18.0	0
Drainage				
Treatment Volume Requirements (acre-feet)	12.97	12.97	12.97	0
Impacts on Cultural/Historical Resources and Public Parks				
Number of Historic Sites Impacted	1	0	0	0
Impacts to 4(f) Lands (acres)	0	9.4	9.4	0
Natural Environmental Impacts				
Wetland Impacts (acres)	4.7	6.7	6.7	0
Floodplain Impacts (acres-feet)	1.5	1.5	1.5	0
Threatened and Endangered Species	0	0	0	0
Potential Contamination Sites				
Number of Potential Contamination Sites Impacted	1	1	1	0
Estimated Project Cost				
Engineering Design Cost (12%)	$2,400,360	$2,400,360	$2,212,920	$0
ROW Acquisition Cost	$7,250,000	$7,710,000	$7,710,000	$0
Construction Cost with a 15% Contingency	$20,003,000	$20,003,000	$18,441,000	$0
Construction Eng. & Inspection Cost (12%)	$2,400,360	$2,400,360	$2,212,920	$0
Total Cost	**$32,053,720**	**$32,513,720**	**$30,576,840**	**$0**

Table 1-2: Estimated Impact Evaluation for SR 15 / SR 40 Study Alternatives

EVALUATION FACTORS	ALTERNATIVE						
	A	B1	B2	C	D1	D2	"NO-BUILD"
Business Impacts							
Expected Number of Business Relocations	5	1	1	6	2	2	0
Number of Businesses Impacted	0	0	0	0	0	0	0
Residential Impacts							
Expected Number of Residential Relocations	0	0	0	0	1	1	0
Number of Residences Impacted	0	0	0	0	0	0	0
Right of Way Impacts							
Number of Parcels Impacted	6	8	8	14	14	11	0
Area of ROW to be Acquired for Roadway (acres)	2.08	2.25	4.17	4.31	16.01	12.14	0
Area of ROW to be Acquired for Pond Sites (acres)	1.5	1.5	1.5	1.5	0	0	0
Drainage							
Treatment Volume Requirements (acre-feet)	1.01	1.01	1.01	1.01	1.01	1.01	0
Impacts on Cultural/Historical Resources and Public Parks							
Number of Historic Sites Impacted	1	0	0	1	0	0	0
Impacts to 4(f) Lands (acres)	0	0	0	0	0	0	0
Natural Environmental Impacts							
Wetland Impacts (acres)	0	0	0	0	0	0	0
Floodplain Impacts (acres-feet)	0	0	0	0	0	0	0
Threatened and Endangered Species	0	0	0	0	0	0	0
Potential Contamination Sites							
Number of Potential Contamination Sites Impacted	0	1	1	1	1	1	0
Estimated Project Cost							
Engineering Design Cost (12%)	$172,080	$172,080	$216,000	$151,200	$243,360	$228,000	$0
ROW Acquisition Cost	$2,766,000	$2,882,000	$3,462,000	$5,648,000	$7,134,000	$5,485,700	$0
Construction Cost with a 15% Contingency	$1,434,000	$1,434,000	$1,800,000	$1,260,000	$2,028,000	$1,900,000	$0
Construction Eng. & Inspection Cost (12%)	$172,080	$172,080	$216,000	$151,200	$243,360	$228,000	$0
Total Cost	**$4,544,160**	**$4,660,160**	**$5,694,000**	**$7,210,400**	**$9,648,720**	**$7,841,700**	**$0**

2.0 Introduction

The following subsections provide a description of the purpose of this report and a brief description of the project.

2.1 Purpose

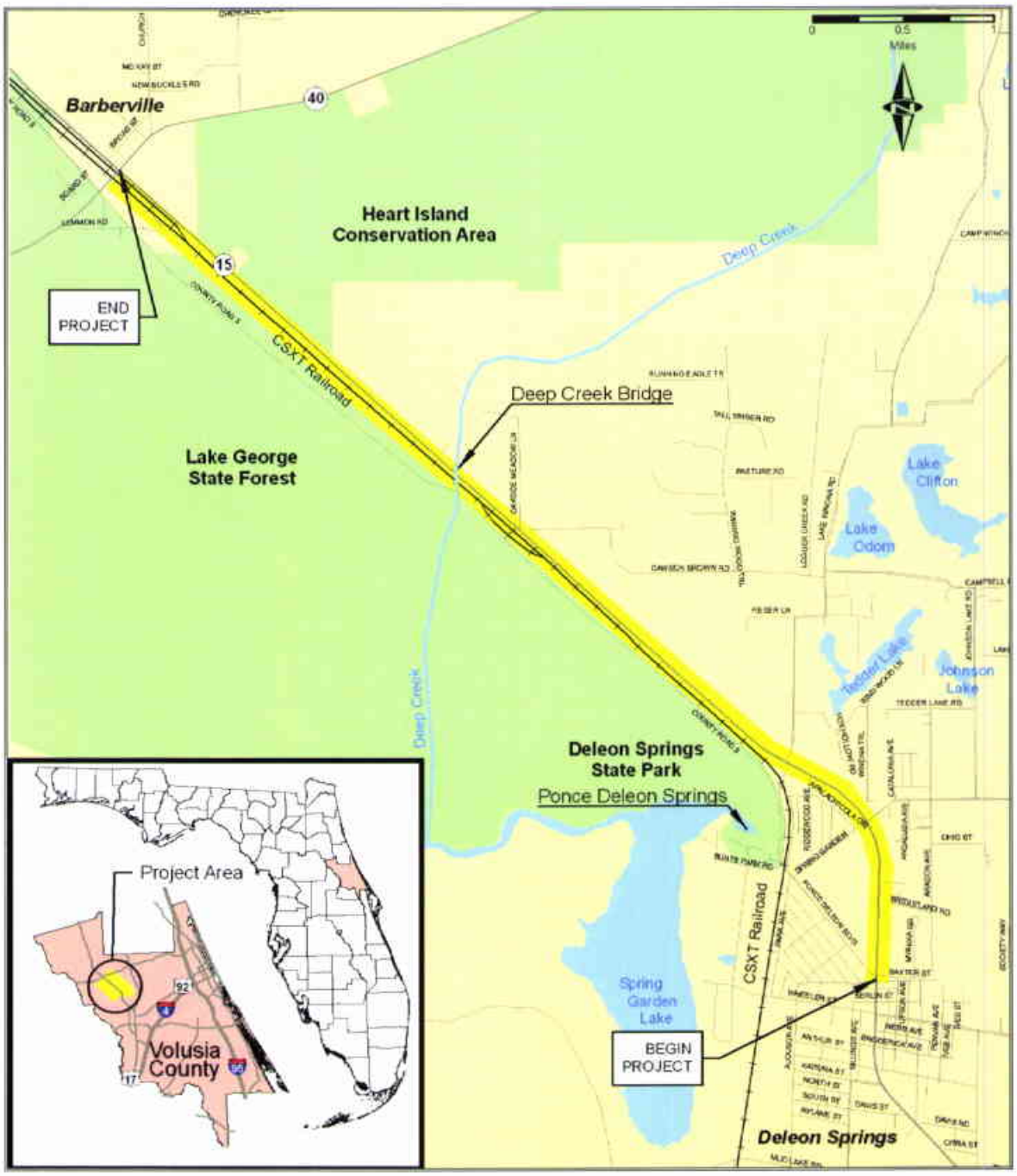
The purpose of this Preliminary Engineering Report is to document the findings of the engineering elements and provide a summary of certain elements of the environmental evaluation for the proposed improvements to the SR 15 transportation corridor in Volusia County, Florida. This report presents the engineering data and analysis needed to define the proposed project improvements. It documents the existing physical features of the roadway and the existing environmental characteristics of the project corridor. This report also defines the need for improvement, including the analysis of existing and projected traffic conditions that establish the requirements for the proposed project improvements. The impacts to the social, economic, and environmental aspects of the transportation corridor are evaluated for each alternative. The results of the analysis of the viable alternatives are documented, including the presentation of an alternatives evaluation matrix that provides the framework for comparing the relative strengths and weaknesses of the individual alignment alternatives developed for this study. From this evaluation matrix, a preferred alternative is then identified for which a preliminary design analysis is completed and conceptual plans are prepared.

This report will serve as the document of record to move this project forward and to support the subsequent engineering decisions as the project advances through design and construction phases. This PD&E study was conducted in accordance with FDOT and Federal Highway Administration (FHWA) requirements.

2.2 Project Description

The proposed action involves the expansion of the existing SR 15 transportation corridor through Volusia County, Florida. The project begins just north of the intersection of Ponce DeLeon Boulevard and SR 15. The project terminus is just north of the intersection of SR 40 and SR 15, the total length of the project is a distance of approximately 6.3 miles. The project ties into the existing corridor just north of the SR 40 intersection. The project location map is shown in Figure 2-1.

Figure 2-1: Project Location Map



3.0 Need for Improvement

3.1 Area Needs

Recent Federal initiatives, most notably the *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users* and its predecessor the *Transportation Equity Act for the 21st Century*, encourage public transportation investment that increases national productivity and regional transportation.

The basic need for this project is an effort to maximize the use of the project corridor to meet future traffic demands, while minimizing impacts to the surrounding community.

3.1.1 System Linkage

In 2003, the Florida Legislature established the Florida Strategic Intermodal System (SIS) which includes "...those facilities that play a critical role in moving people and goods to and from other nations and states as well as among economic regions within Florida." As Volusia County continues to see an increase in residents, visitors, and work based trips, the regions roadways will need to be enhanced to provide the necessary infrastructure to move the people.

The SR 15/US 17 project is included and identified in the SIS plan as an emerging highway corridor. SIS corridors are highways, rail lines, waterways and other exclusive-use facilities that connect markets within Florida or between Florida and other states or nations. The project is needed to facilitate, as well as advance, the concepts and policies of the Florida's SIS Plan.

3.1.2 Transportation Demand

The SR 15 corridor serves as a direct transportation line for freight, for people, for intrastate commerce and for interstate commerce. Enhancing the corridor to provide additional capacity and avenues for movement will allow for benefits to the people of the state and Volusia County.

There is a large amount of truck traffic that utilizes this section of SR 15 on a daily basis. Some trucks are accessing the Division of Forestry as well as the Heart Island Conservation Area. Others are passing through the area as they travel through Volusia County. There is a large amount of truck traffic due to the logging industry and agriculture properties along SR 40 and north on SR 15. This route is highly traveled and throughout the years, truck traffic will continue to increase. A safer roadway for the trucks to traverse will also provide a safer area for personal vehicles.

Between 2000 and 2003, there was approximately $14.5 million in economic loss due to crashes within this project corridor. These crashes resulted in 54 injuries and 4 fatalities based on information obtained from FDOT and Volusia County. The widening of this road is needed to ensure a safer passage for vehicles utilizing the roadway. As traffic and

congestion increase in the area it will be important to provide the capacity and a safer roadway to meet this transportation demand.

The intersection of SR 15 and SR 40 has deficiencies that are felt by motorists now and will be more identifiable based on traffic projections in the future. The intersection configuration currently does not allow for safe turning movements nor does it allow for the capacity that will be seen in the future. With the widening of SR 15, the intersection will need to be improved to meet the demand and to provide for safer movement.

A CSX rail line runs approximately 110 feet to the west of the SR 15/SR 40 intersection. This has caused some issues with vehicles that are in queue at the intersection and can lead to conflict points with the railroad. A shift in location of the intersection will work to reduce the conflict point. The existing geometry of the intersection has also proven challenging for recreational vehicles (RV), vehicles towing boats, and other extended personal automobiles. The turning radii are being addressed in this study to accommodate these types of vehicles.

Several bear crashes have been identified throughout the project corridor that need to be addressed with this project. The project proposes to provide a wildlife crossing under the Deep Creek bridge to allow for less conflicts with vehicles and wildlife. This need is identified and discussed in future sections of this report.

3.1.3 Federal, State or Local Government Authority

The Town of Pierson has pursued this project for numerous years. This has resulted in the corridor being a high priority of the Volusia County MPO priority list for SIS facilities. The design phase for the SR 15 project has also been added to the FDOT Work Program.

This PD&E study is being conducted to comply with the National Environmental Policy Act (NEPA).

3.1.4 Social Demands or Economic Developments

Based on the traffic forecasts developed for this project, and the level of service analyses conducted for SR 15, it was found that the current SR 15 geometry will not provide adequate level of service in the future. With the widening of SR 15 to four (4) lanes throughout the length of this corridor, this need will be met.

SR 15 acts as part of evacuation routes for many of the Volusia County residents. The effects of population growth and traffic demand threaten this plan. The widening of SR 15 is needed to increase the effectiveness of this corridor during evacuation exercises.

3.1.5 Modal Interrelationships

Currently any bicycle or pedestrian users must travel on the shoulder of SR 15. This shoulder is 4 feet wide and provides a safe passage for bicyclists. For pedestrians, there is currently a proposed trail included in the Volusia County Trail Plan that will run along

CR 3. This trail is a priority on the Volusia County MPO project list. This trail paired with existing and proposed shoulders, in the proposed typical section for this project, will provide safety for bicyclists and pedestrians, alike.

3.2 Project Corridor Need

3.2.1 Capacity

Based on existing traffic conditions portions of SR 15 within in this corridor operate below the minimum acceptable levels of service based on the FDOT criteria. The traffic forecasts also show that by 2030 all but one of the intersections within the study corridor operates at an unacceptable level of service. More information on the traffic capacity in existing and future conditions is provided in Section 6 of this report.

3.2.2 Safety

Numerous crashes have occurred along the length of the project corridor. Numerous residents have also expressed concerns over the speeds traveled by both the trucks and the personal vehicles. Several locations exist where ingress and egress to public and private properties has been identified as problematic by many residents.

This project will work to identify safety improvements that meet current standards and to solve issues that have been identified by the community. The widening of SR 15 and the development of an access management plan is needed to address these issues.

Crash records for the study area were obtained from FDOT and Volusia County for collisions occurring between 2000 and 2003. Table 3-1 provides a summary of the crash information throughout the study limits. Based on the information provided in the table, no segments of SR 15 were identified as critical segments.

Table 3-1: Crash Summary (2000 - 2003)

Year	Begin MP	End MP	Length (miles)	ADT	Crash Rate		No. of Injuries	No. of Fatalities	Economic Loss
					Actual	Critical			
2000	5.789	12.166	6.377	8,400	0.665	1.158	15	0	$3,556,000
2001	5.789	12.166	6.377	8,600	0.450	1.154	18	1	$4,505,000
2002	5.789	12.166	6.377	8,400	0.460	1.158	11	2	$3,820,000
2003	5.789	12.166	6.377	8,700	0.346	1.153	10	1	$2,608,000

Based on the crash data available, a critical intersection was identified at SR 15 and SR 40. The types of crashes occurring at this intersection in the years from 2000 to 2003 are provided in Table 3-2 provided below. The crash data cited fifteen (15) crashes over the four year period occurring in this intersection. It should be noted from the table below

that 13 of the 15 crashes at the intersection were severe types – head on and left turn crashes.

Table 3-2: Critical Intersection Analysis - SR 40

Year	Crash Type							
	Rear End	Head On	Angle	Sideswipe	Left Turn	Right Angle	Other	Total
2000	0	2	0	0	0	0	1	**3**
2001	0	1	0	0	4	0	0	**5**
2002	0	3	0	0	0	0	0	**3**
2003	0	2	0	1	1	0	0	**4**

3.2.3 Structural

There is only one bridge within the project study area. The existing bridge is 180 feet long with four 45-foot spans and crosses over Deep Creek. The bridge was constructed in 1972. The superstructure consists of six (6) AASHTO Type II prestressed concrete beams made composite with a seven (7) inch cast-in-place concrete deck slab. The substructure consists of two (2) end bents and three (3) intermediate bents with 18-inch precast concrete piles and cast-in-place pile caps. In 1989 and under the Project No. 241045-1-52-01, all deteriorated concrete piles at the Intermediate Bent Nos. 2 and 3 were repaired and retrofitted with fiberglass jackets. In 1994 and under Project No. 79050-3516, both bridge traffic railings and deck overhangs were replaced.

Based on the Bridge Inspection Report dated 8/3/2005, the Sufficiency Rating for this bridge is 86.4 and all load rating factors based on the Load Factor Design (LFD) are above 1.0. However, Load Resistance Factor Ratings (LRFR) performed in April 2006 by HNTB indicated a rating factor of 0.737. A load rating factor of less than 1.0 will require a variance or exception to avoid load posting.

If the existing bridge is to be maintained, it would be necessary to assess the structural condition and capacity of the existing Intermediate Bents with repaired and jacketed piles. It is expected that the repairs made in 1989 were cosmetic in nature and did not restore the piles to their full load bearing capacity. Therefore, further strengthening/retrofit of these two intermediate bents would be required.

Additionally, the existing bridge width cannot accommodate the proposed widening on SR 15 and will need to be widened.

Furthermore, due to the presence of bear kills within the study area and the concern for the safety of the wildlife in the area, wildlife crossings along both banks of Deep Creek are required by Florida Fish and Wildlife Conservation Commission (FDWCC) staff. Wildlife crossings can be accommodated by lengthening of the existing bridge or providing a longer new bridge.

HNTB proposes that the existing bridge be replaced by a longer and wider new bridge that will accommodate the widened roadway and wildlife crossings, eliminate the need to obtain a variance or exception to avoid load posting, and avoid costly repairs at two intermediate pier bents with jacketed piles.

There are also a total of seven (7) culverts within the project limits. Six (6) of these culverts are single cell concrete box culverts and there is a 30-inch diameter reinforced concrete pipe culvert. Details of these culverts are depicted on Table 4-3 in Section 4 of this report. All existing culverts will be extended to accommodate the proposed widening of SR 15.

4.0 Existing Conditions

4.1 Existing Roadway Characteristics

SR 15 begins in Belle Glade (Palm Beach County) on the east side of Lake Okeechobee in south Florida, and extends north to the Florida/Georgia border (Nassau County) in north Florida. For this PD&E, the portion of SR 15 that is being studied extends northward from DeLeon Springs (Volusia County) to Barberville (Volusia County). More specifically the study limits extend northerly from Ponce DeLeon Boulevard to SR 40.

4.1.1 Functional Classification

FDOT assigns classifications to roadways according to the nature and character of their uses. Within the study area, SR 15 has been classified as a rural arterial. The existing access classification for SR 15 is Class 4.

4.1.2 Typical Sections

SR 15 through this area is generally described by one typical section. The section consists of two 12-foot lanes, one in each direction and a four (4) foot shoulder on both sides of the road.

Stormwater runoff from the roadway is collected in roadside ditches that discharge into stormwater treatment facilities or surrounding surface waters.

The existing typical section is illustrated in Figure 4-1. The figure and accompanying descriptions are generalized; there are slight deviations throughout.

4.1.3 Pedestrian and Bicycle Facilities

Pedestrian and bicycle facilities, except for the 4' paved outside shoulders, are currently nonexistent along SR 15 within the study area. Typically the four (4) foot shoulder is utilized by the bicyclist.

4.1.4 Right-of-Way

Existing right-of-way maps, roadway plans, construction plans and tax maps from the Volusia County Property Appraisers office were reviewed to identify the existing SR 15 right-of-way. Table 4-1 summarizes the existing right-of-way information for this segment of SR 15.

Figure 4-1: Existing SR 15 Typical Section

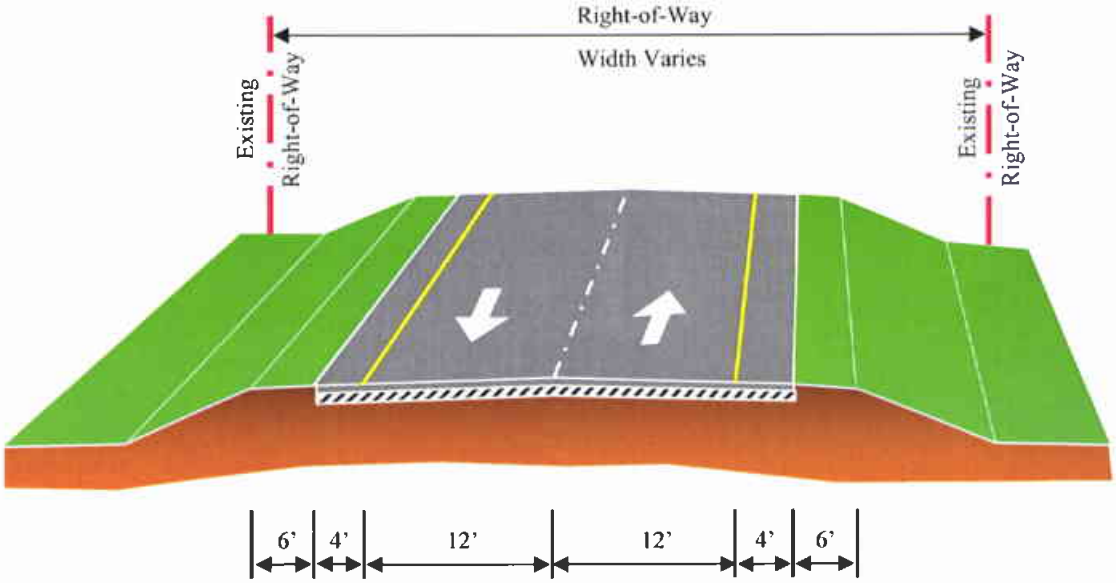


Table 4-1: Existing Right-of-Way

SEGMENT DESCRIPTION	RIGHT-OF-WAY WIDTH
South of Ponce DeLeon Blvd.	107.5 ft.
Ponce DeLeon Blvd. to 0.85 miles north of Lake Winona Rd.	200 ft.
0.85 miles north of Lake Winona Rd. to 1,200 feet south of SR 40	150 ft.
1,200 feet south of SR 40 to SR 40	100 ft.
SR 40 to 1,500 feet north of SR 40	100 ft.

4.1.5 Horizontal Alignment

The existing horizontal alignment of SR 15 runs generally in a northeast direction. There are two existing horizontal curves along the alignment of SR 15, both are found at the beginning of the project just north of DeLeon Springs Boulevard. Table 4-2 provides the characteristics of these two curves. The remaining portion of the corridor has posted speeds ranging from 45 – 60 mph, speeds vary in the north and south bound directions.

Table 4-2: Existing Horizontal Curve Characteristics

CURVE	RADIUS	DESIGN SPEED	SUPERELEVATION
1	2,865 ft.	60 mph	5.5 %
2	5,370 ft.	60 mph	3.0%

4.1.6 Vertical Alignment

The profile of SR 15 varies and consists mainly of point of intersection (PI) points. Two 400 foot vertical curves were identified at the end of the project limits: station 325+00 and station 340+00. Appendix C identifies the specific location of these curves. The vertical curve information for the end of the project was retrieved from plans dated 1936; vertical curve information was not available for the beginning of the project. Field reviews indicate that there may be vertical curves near the beginning of the project for which plans are not available.

4.1.7 Drainage

The project corridor is located within the St. Johns River Water Management District (SJRWMD). There are seven (7) existing cross culverts providing conveyance within the project limits. A summary of existing cross culverts is provided in Table 4-3.

All of the existing cross culverts will be extended in the proposed condition to maintain the existing flow patterns of the region. Each culvert has been analyzed for the pre-development and post-development conditions in order to quantify the expected rise in headwater elevation, determine upstream impacts and to assess the hydraulic capacity of each culvert. The results of this analysis are summarized in the last column of Table 4-3 titled Proposed Length. Additional information, including drainage calculations can be found in a separate document that was prepared in support of this study entitled: *State Road 15 PD&E Study Location Hydraulics Report, December 2005.*

Table 4-3: Existing Cross Culverts with Proposed Lengths

Structure Number	Station Location	Description from FDOT Original Construction Plans				Design Flood Q (cfs)	Proposed Length (ft)
		Count	Size	Type	Length (ft)		
S-1	87+34.15	1	6' x 4'	CBC	96	96	202
S-2	126+40.23	1	11' x 3'	CBC	85	132	139
S-3	159+09.79	1	10' x 4'	CBC	95	160	160
S-4	173+22.35	1	11' x 4'	CBC	137	176	235
S-5	254+05.03	1	30"	RCP	97	20	167
S-6	283+82.32	1	11' x 4'	CBC	87	176	162
S-7	322+58.25	1	8' x 4'	CBC	84	128	182

CBC - Concrete Box Culvert
RCP - Reinforced Concrete Pipe

4.1.8 Geotechnical Data

Generally the roadway borings encountered Stratum 1 (A-3) soils to depths of 3 feet to the boring termination depths, followed by Stratum 2 (A-2-4) soils to depths of 6 feet to the boring termination depths, then encountered Stratum 4 (A-7-5, A-7-6)soils to the boring termination depths of 20 feet. Stratum 3 (A-4) soils were encountered in three (3) of the borings; and Stratum 5 (A-8) soils in one of the borings at depths of about 4 to 11.5 feet. See Figure 4-2 for soil information.

In the location of the ponds the depth at which the groundwater was encountered varies greatly and depends upon the location the pond in relation to the south and north ends of the project. At the south end of the project ground water was encountered at depths of 17 to 22 feet below the surface. At the north end of the project ground water was encountered 0.5 to 4 feet below the surface.

The bridge boring performed encountered primarily sandy and silty soils that were very loose to dense soils to a depth of about 123.5 feet. A very dense limestone was then encountered to the boring termination depth of 125 feet. Soft clay soils were encountered at depths of 11 to 16 feet, and very loose mucky soils were encountered at depths of 16 to 18.5 feet.

The groundwater level that was measured in the open borehole during the field exploration indicated that the groundwater was approximately at a depth of about 1.5 feet below existing grade. The seasonal high groundwater level was estimated based on encountered groundwater levels, USDA Volusia County Soil Survey, the existing profile grades, rainfall history and geotechnical engineering judgment. Groundwater levels will fluctuate with the amount of local rainfall and with site development.

Three (3) corrosion series test were performed on a soil sample obtained at the preliminary SPT boring and on water samples in the proposed bridge foundation area. The results indicated that the subsurface environment should be classified as moderately aggressive (pH=6.5) for use in selection of an appropriate class of concrete or steel for substructure components in accordance with FDOT Standards.

Complete geotechnical analyses and documentation, including auger borings results at the alternative pond locations, and corrosion testing can be found in a separate report entitled *Preliminary Geotechnical Report State Road 15 (U.S. 17) PD&E.*

4.1.9 Crash Data

Crash records for the study area were obtained from FDOT and Volusia County for collisions occurring between 2000 and 2003. These were reviewed in an effort to identify roadway segments with potential safety deficiencies. A segment with a safety ratio greater than 1.0 is considered to be critical. Table 4-4 provides a summary of the safety ratios throughout the study limits. Based on the information provided in the table, no segments of SR 15 were identified as critical segments.

Figure 4-2: Soil Survey

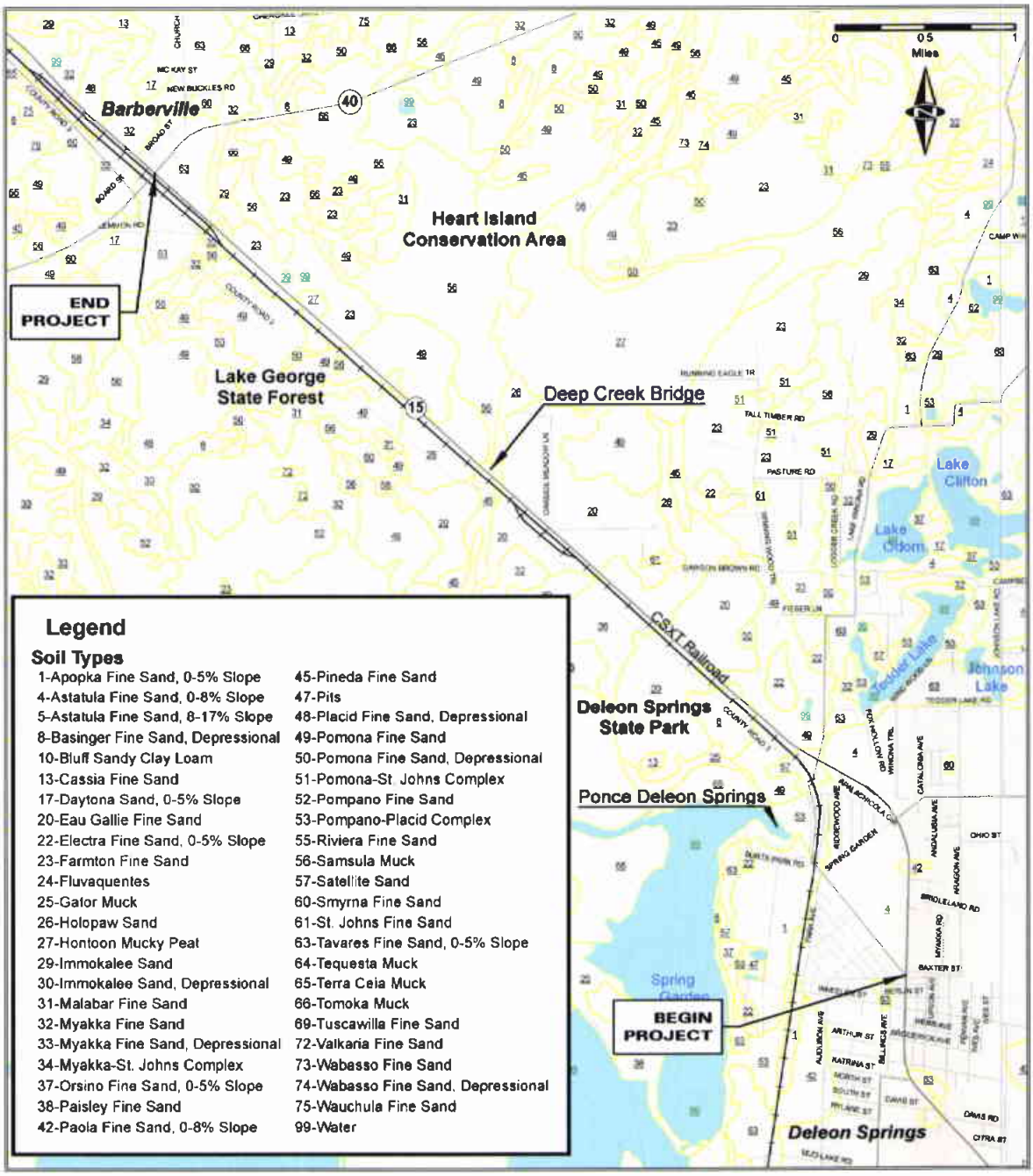


Table 4-4: Crash Summary (2000 - 2003)

YEAR	BEGIN MP	END MP	LENGTH (MILES)	ADT	CRASH RATE		SAFETY RATIO	NO. OF INJURIES	NO. OF FATALITIES	ECONOMIC LOSS
					Actual	Critical				
2000	5.789	12.166	6.377	8,400	0.665	1.158	0.574	15	0	$3,556,000
2001	5.789	12.166	6.377	8,600	0.450	1.154	0.389	18	1	$4,505,000
2002	5.789	12.166	6.377	8,400	0.460	1.158	0.398	11	2	$3,820,000
2003	5.789	12.166	6.377	8,700	0.346	1.153	0.300	10	1	$2,608,000

Based on the crash data available, a critical intersection was identified at SR 15 and SR 40. The types of crashes occurring at this intersection in the years from 2000 to 2003 are provided in Table 4-5 provided below. The crash data cited 15 crashes over the four year period occurring in this intersection.

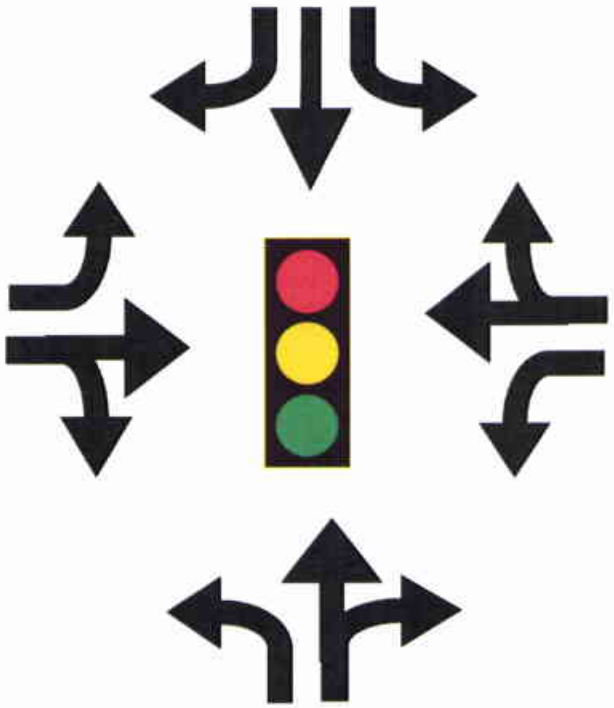
Table 4-5: Critical Intersection Analysis - SR 40

YEAR	CRASH TYPE							
	REAR END	HEAD ON	ANGLE	SIDESWIPE	LEFT TURN	RIGHT ANGLE	OTHER	TOTAL
2000	0	2	0	0	0	0	1	**3**
2001	0	1	0	0	4	0	0	**5**
2002	0	3	0	0	0	0	0	**3**
2003	0	2	0	1	1	0	0	**4**

4.1.10 Intersection and Signalization

One intersection along the SR 15 corridor is signalized, this intersection is at the north end of the project at SR 40. The northbound and southbound SR 15 approaches to the intersection each include a thru lane and a dedicated left turn lane. The eastbound approach of SR 40 to SR 15 includes a thru lane, a dedicated left lane, and a dedicated right turn lane. The westbound approach of SR 40 to SR 15 includes a thru lane and a dedicated left turn lane only. The intersection lane configuration is shown in Figure 4-3 below.

Figure 4-3: Intersection Lane Configuration for SR 15 and SR 40.



4.1.11 Lighting

There is no existing roadway lighting along the SR 15 study corridor.

4.1.12 Utilities

In addition to serving vehicular traffic, pedestrians, and other users, most road right-of-ways also accommodates a variety of underground and aboveground utilities, which are owned by private and public entities. Since the horizontal and vertical location of these utilities must be coordinated with the road improvements, it is important to consider the existing and proposed utilities in the early stages of project development. Existing utilities identified within the project vicinity are generally described in Table 4-6. In addition, the utility company contacts are presented in Table 4-7.

Table 4-6: Existing Utilities

UTILITY	TYPE OF SERVICE	GENERAL LOCATION
Clay Electric	3 Phase system overhead electrical system	System located on east side of SR 15 from SR 40 to Dawson Brown Road
Bright House Networks	Aerial cable	Facilities located along Ponce DeLeon Boulevard only
Progress Energy	Overhead transmission lines	Lines parallel SR 15 and substation located near the Heart Island Conservation Area
MCI	Buried fiber optic cable	Fiber optic lines are located along east side of the CSX right-of-way
BellSouth	Aerial facilities	Lines are located parallel to SR 15

Table 4-7: Utility Company Contact for Existing Utilities

UTILITY COMPANY	CONTACT NAME	ADDRESS	PHONE #	FAX #
Clay Electric	Herman Dyal	P.O. Box 308 Highway 100 West Keystone Heights, FL 32656	(352) 473-8000 ext. 220	(352) 759-3577
Bright House Networks	Marvin Usry	844 Maguire Road Ocoee, FL 34761	(407) 532-8509	(407) 532-8508
Progress Energy	Jeannie Rodgers	3300 Exchange Place MAC NP 3B Lake Mary, FL 32746	(407) 942-9471	(407) 942-9233
MCI	Tim Cole	69 W. Concord Street Orlando, FL 32801	(407) 841-4226	(407) 425-6821
BellSouth	Phil Lyon	900 N. Nova Road Daytona Beach, FL 32117	(386) 252-7045	(386) 254-8523

4.1.13 Pavement Conditions

A visual inspection of the pavement was made during a site visit to the project in October 2005, and it was observed that the roadway had been milled and resurfaced. Prior to this resurfacing, it was last resurfaced in 1996. Pavement condition ratings are provided in Table 4-8. A rating of less than 6 indicates failing pavement as it relates to the distress.

Table 4-8: Existing Pavement Condition Ratings

Pavement Distress	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Cracking	Re-paved	10.0	10.0	10.0	8.5	8.5	7.0	4.5	3.5	re-paved
Ride	Re-paved	8.7	8.6	9.1	9.1	9.0	8.9	8.7	7.7	re-paved
Rutting	Re-paved	10.0	10.0	10.0	10.0	10.0	9.0	9.0	9.0	re-paved

Note: Rating of less than 6 is considered failing.

4.2 Existing Bridges

Along the SR 15 project corridor there is only one bridge that crosses over Deep Creek. The existing bridge width is inadequate to accommodate the proposed four-lane section of SR 15 considered in this study. Figure 4-4 illustrates the existing typical bridge section and Figure 4-5 depicts the existing bridge elevation.

Figure 4-4: Existing Deep Creek Bridge Typical Section

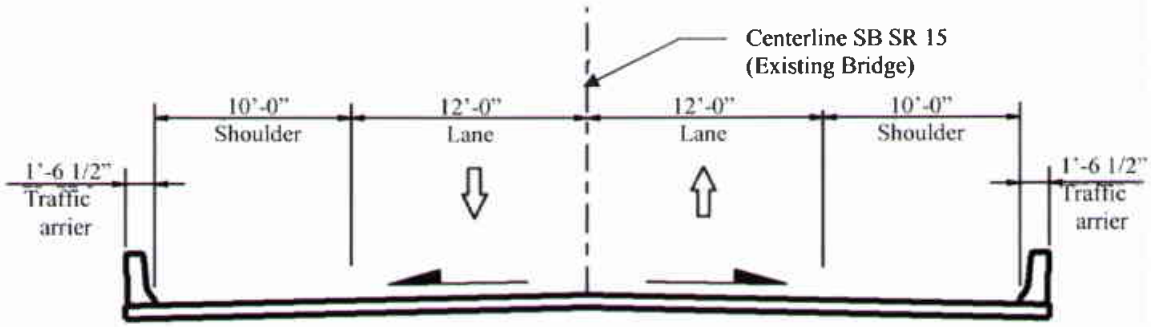
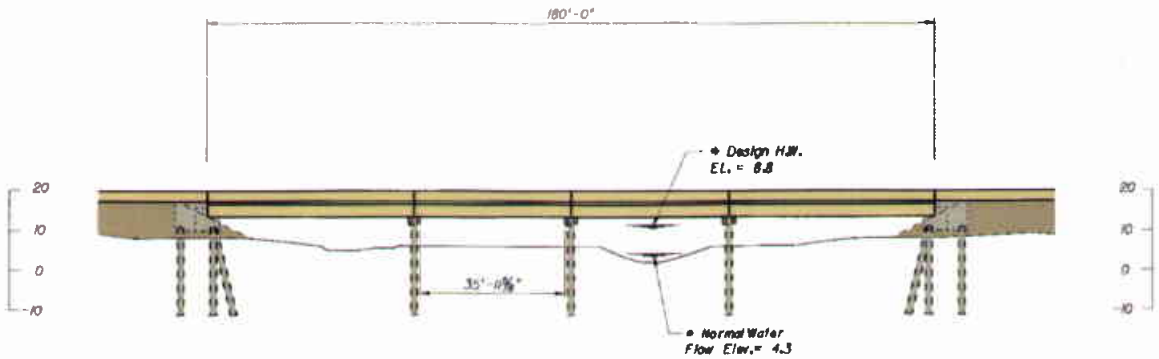


Figure 4-5: Existing Deep Creek Bridge Elevation



4.2.1 Type of Structure

The superstructure consists of six (6) AASHTO Type II prestressed concrete beams made composite with a seven (7) inch cast-in-place concrete deck slab. The substructure consists of two (2) end bents and three (3) intermediate bents with 18-inch precast concrete piles and cast-in-place pile caps.

4.2.2 Current Condition and Year of Construction

Based on the Bridge Inspection Report dated 8/3/2005, the Sufficiency Rating for this bridge is 86.4 and all load rating factors based on the Load Factor Design (LFD) are above 1.0. However, Load Resistance Factor Ratings (LRFR) performed in April 2006 by HNTB indicated a rating factor of 0.737. A load rating factor of less than 1.0 will require a variance or exception to avoid load posting.

The bridge was constructed in 1972. In 1989 and under the Project No. 241045-1-52-01, all existing precast concrete piles at the Intermediate Bent Nos. 2 and 3 were retrofitted with fiberglass jackets. In 1994 and under Project No. 79050-3516, both bridge traffic railings and deck overhangs were replaced.

4.2.3 Horizontal and Vertical Alignment

There are no horizontal curves or vertical curves within the limits of the bridge. The total length of the structure is 180 feet, and the total width of the structure is 47'-1". There are two 12 foot lanes and two 10 foot shoulders flanked by 1'-6 ½" wide Type F traffic railing barriers. A minimum vertical clearance of 2'-7 9/16" was provided over the Design High Water of Elevation 8.8 feet.

4.2.4 Span Arrangement

There are four bridge spans; each span is approximately 45 feet long.

4.2.5 Channel Data

In the vicinity of the bridge, Deep Creek is approximately 20 feet wide and approximately 2 feet deep.

4.2.6 Bridge Openings

The existing bridge has four (4) spans/openings and Deep Creek flows under the third northernmost span.

4.2.7 Ship Impact Data

Channel is not navigable except for a canoe or small john boat.

4.3 Environmental Characteristics

4.3.1 Land Use Data

Existing and future land use data was assembled for Volusia County in this project corridor. The following two sections explain the land use characteristics of the corridor in greater detail.

4.3.1.1 Existing Land Use

Existing land use information along the SR 15 project corridor was based on recent aerial photography (April 2005) and field inspections during project site visits. The study area includes commercial/business, residential, public lands and agricultural/undeveloped land uses. The following is a brief description of the existing land uses and the general location of these uses. Figure 4-6 illustrates the existing land use derived from Geographic Information System (GIS) data available from Volusia County and the Florida Geographic Data Library (FDGL) along SR 15.

Residential

There are several single family residences that front SR 15, some of which have direct access off of SR 15. There are a few subdivisions and multi-family dwellings along the SR 15 corridor, but they have no direct access to SR 15. The vast majority of residences are located at the southern end of the project (from Ponce DeLeon Boulevard to Dawson Brown Road).

Commercial

Commercial properties are located mostly on the northern portion of the corridor, at the intersection of SR 15 and SR 40. This intersection consists of a convenience store, and several automotive repair facilities. At the south end of the project there is a bed and breakfast inn and the Florida Division of Forestry.

Public Lands

Public lands are adjacent to the majority of the project corridor. These lands include the Lake George State Forest, the Heart Island Conservation Area, and the DeLeon Springs State Park. These areas are used for various purposes and allow varying amounts of public access depending on its use.

Agricultural

Aside from tree harvesting that is done within the Heart Island Conservation Area, there is no perceptible presence of agricultural activities. There are also ferneries throughout the corridor which are currently operational. There is an area of land that in the existing land use is identified as agricultural land use in the southern portion of the project corridor.

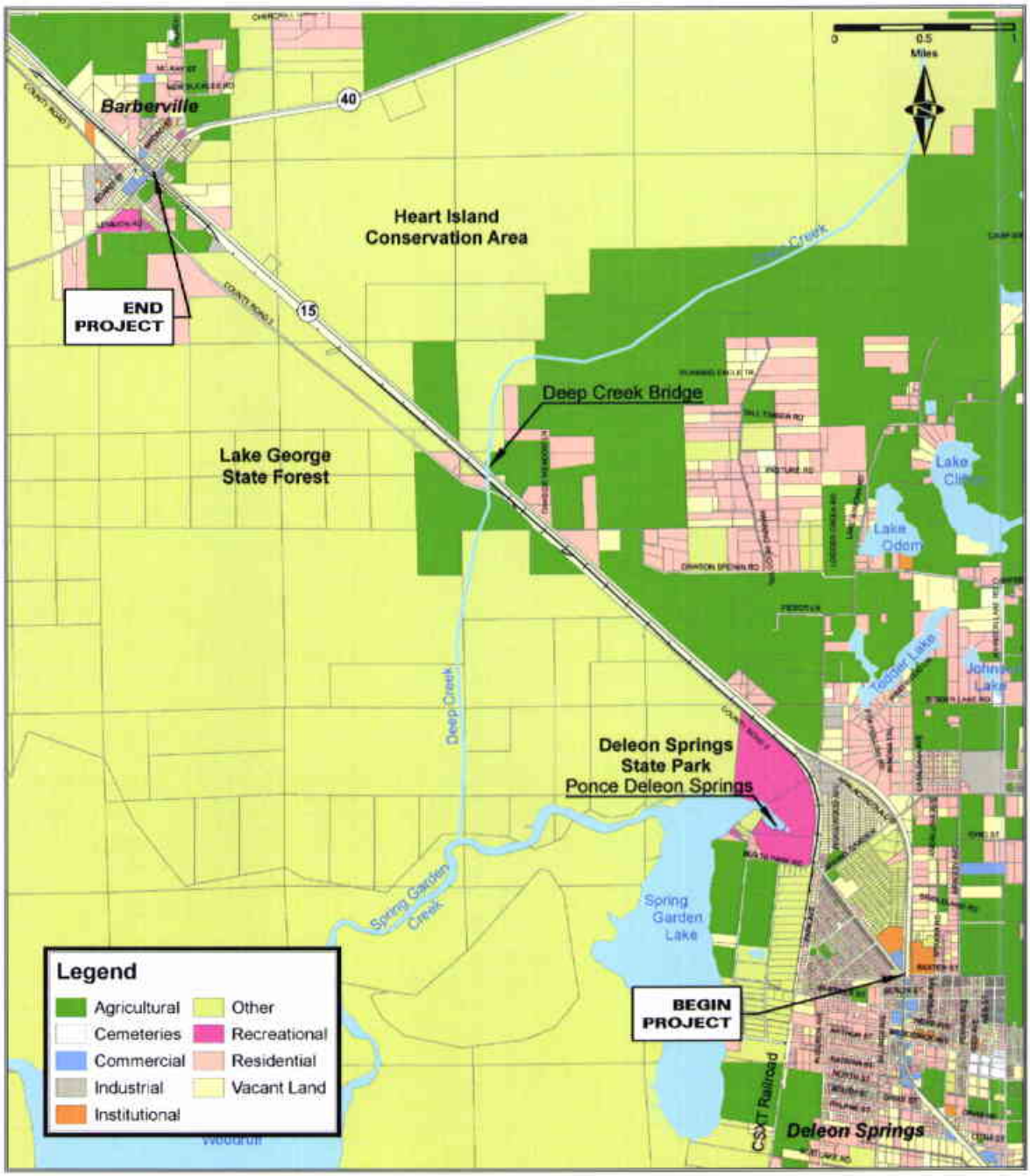
Institutional

There are no schools located within the project limits. Louise S. McInnis Elementary School is located just outside the project limits at the beginning of the project, where the proposed roadway improvement matches the existing four-lane section of SR 15.

Industrial

There are minor industrial land use areas located within the project limits. These are in the vicinity of the old sugar mill near the southern end of the project. This sugar mill is no longer an active site.

Figure 4-6: Existing Land Use



4.3.1.2 Future Land Use

Future land use data was obtained from Volusia County Planning Department. This information was combined into one figure that illustrates future land use designations along the study corridor.

The following land uses were identified in the future land use identified in Figure 4-7 below.

Commercial

Very little of the land use along SR 15 is commercial. The primary commercial area is located at the intersection of SR 15 and SR 40 at the north end of the corridor.

Agricultural

There is very little agricultural land use along the SR 15 corridor. There are a few locations which support livestock and horses, these are primarily large homestead residences.

Institutional

There is no institutional land use within the limits of the corridor.

Industrial

There are no industrial land uses within the limits of the corridor.

A comparison of existing and future land use indicates a slight change. In general some lands have been identified as agricultural land uses which previously were classified as other or residential lands. A larger uninterrupted tract in the southern end of the corridor is classified as residential in the future land use when the existing land use is identified as a mixture of uses. Also the recreational area near DeLeon Springs State Park in the existing land use has shifted south and the previously identified area is shown as public lands.

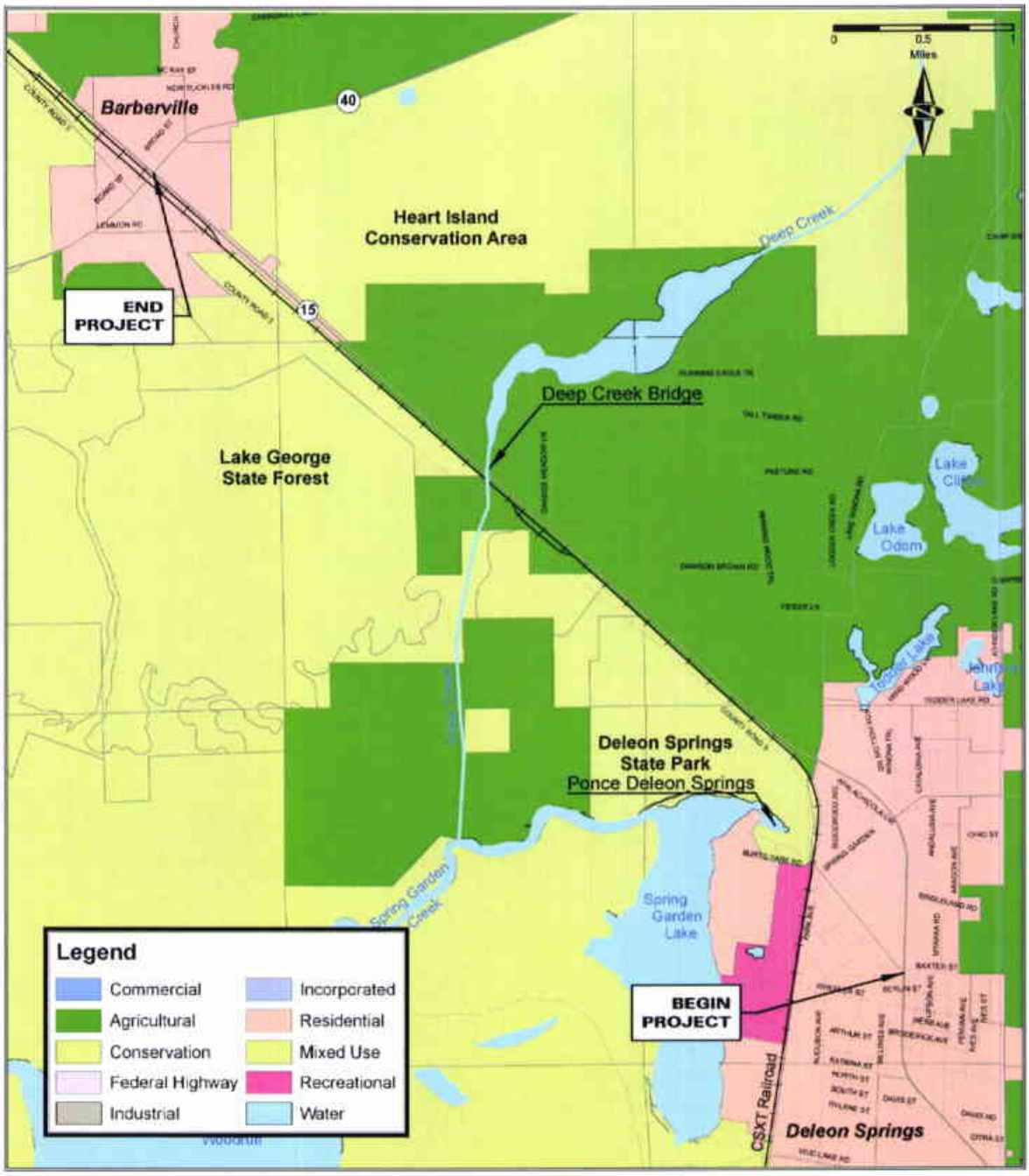
4.3.2 Cultural Features and Community Services

4.3.2.1 Cultural Resource Assessment Survey

The area of potential effect (APE) proposed for this project includes the existing right-of-way along SR 15 and sufficient adjacent area within which various left, right, and center alternatives can be developed. It was also defined with the consideration of proposed storm water management and other drainage issues in mind. The APE was defined to consider any visual, audible, and atmospheric effects that the roadway improvements and subsequent maintenance may have to historic properties. The APE boundary was adjusted to take into account the more urban development at the north and south ends of the project (DeLeon Springs and Barberville) and the extensive, sparsely developed rural areas in between these population concentrations.

The APE includes the existing 150 to 200 foot wide right-of-way of SR 15 and the area within 330 feet of the right-of-way on the east side of SR 15 and within 100 feet of the west side. The extent of the APE on the west side of the project is constrained due to the CSX railroad corridor, which will limit roadway expansion to this side of the roadway.

Figure 4-7: Future Land Use



In the more developed areas, the APE was adjusted to the rear property line of the adjacent properties. In the rural areas, the APE is 580 to 630 feet wide, but widens to as much as 2,185 feet to include adjacent parcels in the developed areas. The archaeological shovel testing will be conducted within the existing right-of-way limits and will include any areas that will need to be acquired as new right-of-way. All other historic properties within the entire APE will be recorded and evaluated.

The Florida Master Site File (FMSF) was reviewed in April 2005 to determine if any cultural resources are recorded within 2,000 feet of the project area. Three properties listed in the National Register of Historic Places (NHRP), three archaeological sites, 95 historic structures and a historic bridge have been recorded in the project vicinity.

The three NRHP-listed properties include the Barberville High School (8VO4375), the Strawn Historic Sawmill District (8VO5267), and the Strawn Historic Citrus Packing House District (8VO5267). The Barberville High School is located away from the SR 15 corridor, and will likely not be an issue for this project. The Sawmill district and the Packing House district are clusters of historic resources adjacent to the SR 15 corridor at the south end of the project. There is some discussion about possibly moving these buildings to another location, but for now, this area should be avoided.

Archaeological

Three archaeological sites along the corridor include the DeLeon Spring Mound (8VO31), the Scarborough Homestead (8VO5276), and the Ditch Site (8VO5277). The DeLeon Springs Mound is a prehistoric burial mound located in the vicinity of the spring. Its precise location has never been determined. The Scarborough Homestead is the remains of an early 20th century settler's house and farm. The buildings have been removed, but the archaeological remains – trash pits, building foundations, and landscape features - remain. The Ditch site is a prehistoric site of undetermined age or cultural affiliation.

Architectural/Historical

The Deep Creek Bridge (8VO7105) carries County Road 3 over Deep Creek to the west of SR 15 at Deep Creek. This 1923 arch deck bridge was constructed by the Luten Bridge Company of York, Pennsylvania. Luten bridges, although once common, have become rarer and less common as these massive concrete structures have become functionally obsolete. They are, however, often considered eligible for listing in the NRHP. The Deep Creek Bridge (794081) was considered potentially eligible for listing in the NRHP during a recent re-evaluation of historic bridges conducted by the FDOT's Central Environmental Office (Jackson 2004).

The Barberville Billboard (8VO7676) is located on the east side of SR 15, north of SR 40 in Township15 South, Range 29 East, Section 17. This billboard was built circa 1953 and served as a billboard for Pond DeLeon Springs. The present site of DeLeon Springs State Park was once a popular tourist attraction following the World War II period. This billboard associated with DeLeon Springs State Park meets the minimum criteria for listing in the NHRP under Criteria A and C.

The FMSF lists 95 historic buildings within 200 feet of the SR 15 corridor. Most of these buildings are concentrated in the communities of Barberville and DeLeon Springs. Copies of the FMSF forms for each of these structures have been obtained from the Florida Division of Historical Resources in Tallahassee.

4.3.2.2 Cultural Features and Community Services

Cultural features preserve and enhance the cultural nature of a community and include parks and other recreation areas, schools, churches and other religious institutions, historic sites, archaeologically significant sites, and other neighborhood gathering places. Community services include facilities that provide necessary services such as fire stations, police stations, public and private schools, hospitals, cemeteries, public buildings, and civic facilities. Figure 4-8 identifies these cultural and community features adjacent to SR 15 throughout the project.

Schools

Louise S. McInnis Elementary School - This school is located just outside the project limits, at the south end of the corridor where the proposed project ties to the existing four (4) lane section of SR 15.

Recreational Facilities/Areas

DeLeon Springs State Park is located at the south end of the project corridor. Lake George State Forest is located on the west side of the corridor just north of Deep Creek. There is also the Heart Island Conservation Area that is located on the east side of the corridor just past Deep Creek. There is a public access/parking area for the Heart Island Conservation Area located adjacent to the Progress Energy Sub Station roughly a half mile south of SR 40.

Churches/ Social Service Agencies/ Medical Facilities/ Community Centers

None of the community services identified in this section exist within the limits of the project corridor.

Police and Fire Protection

There are no police facilities located directly on SR 15 through the project corridor. The Division of Forestry offers protection from forest fires; they are located at the corner of SR 15 and Spring Garden Ranch Road.

4.3.2.3 Section 4(f) Lands

Section 4(f) Lands in the project corridor include the Heart Island Conservation Area and Lake George State Forest. The Heart Island Conservation Area parking facility is located adjacent to the Progress Energy Sub Station at the north end of the project corridor; approximately one half mile south of SR 40.

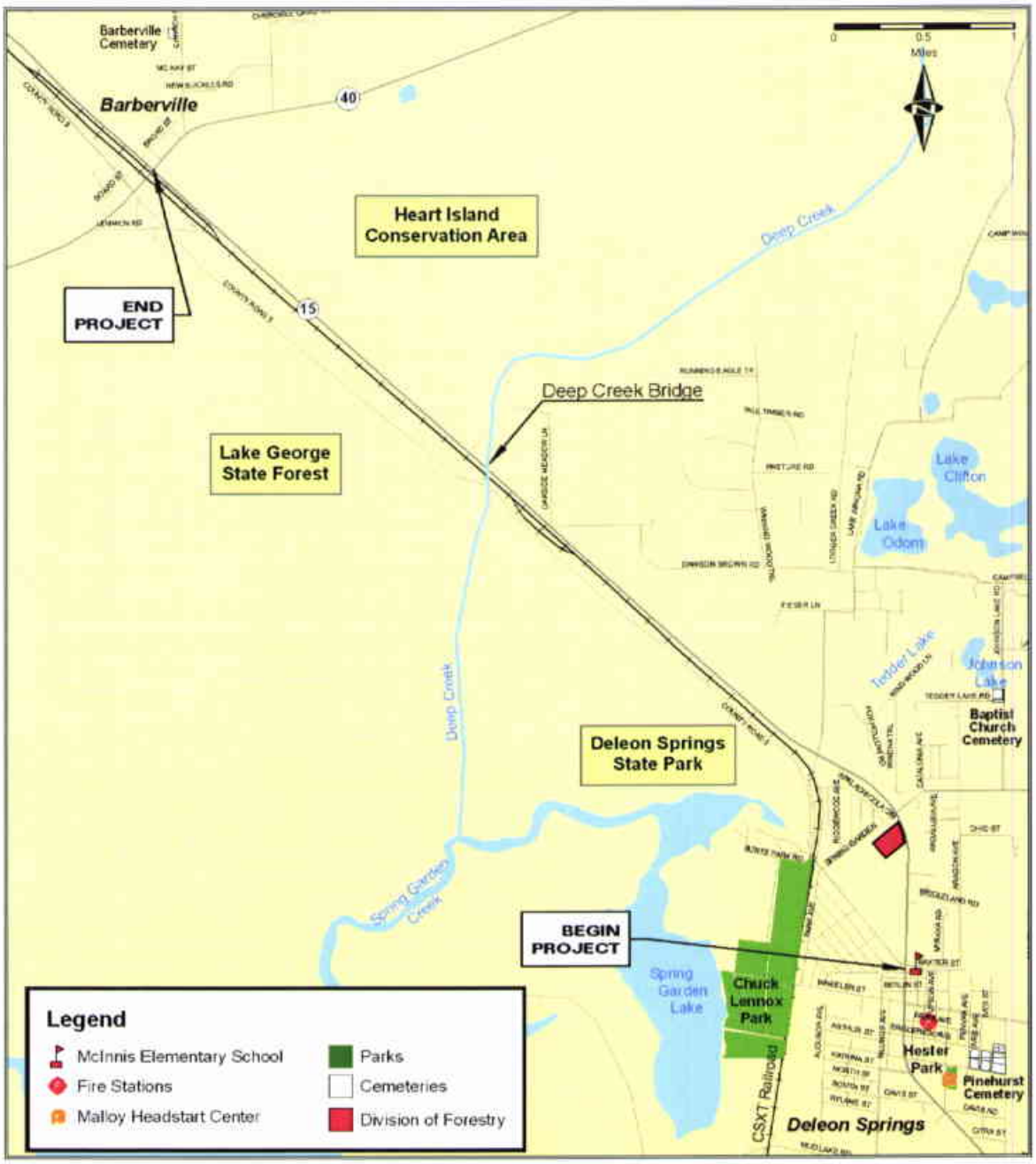
A Determination of Applicability (DOA) was conducted for both of these facilities.

4.3.3 Natural and Biological Features

4.3.3.1 Wetlands

Project biologists conducted field studies of the project area during May and June 2005. Site inspections were performed along the corridor to determine the location and extent of wetlands within the proposed right-of-way, and at the same time conduct an ecological assessment of the wetlands. Sufficient field data was collected in order to respond to the appropriate sections of the US Army Corps of Engineers Wetland Rapid Assessment

Figure 4-8: Community Facilities



Procedure (WRAP). The wetlands within 300 feet either side of the alignment are shown in and numbered in Appendix D.

Using the WRAP methodology, the twenty-one (21) wetland impact areas potentially affected by the proposed project were identified and primary wetland functions were identified. The following is an overall summary of the results.

Wildlife Utilization

Wildlife utilization is a measure of observations and signs of wildlife, primarily wetland dependent species. In addition, potential wildlife use through the presence of food sources, nesting areas, roosting trees, and protective cover is also considered. Wetlands 12, 13 and 18-20, shown in Appendix D, scored the highest on wildlife utilization. Several signs of wildlife were observed along the corridor.

Vegetative Composition

Wetland vegetation (canopy and groundcover) is a measure of the health and appropriateness of the types of vegetation found within each wetland. The functional assessment is evaluated based on the food resources, cover, nesting potential, and appropriateness of the vegetation based on the type of wetland. Appropriateness includes the presence and percentage of exotic and nuisance vegetation. Wetlands 2, 4, 6, 7, 10, 11, and 14 contain little or no canopy vegetation (see Appendix D).

Adjacent Buffer

The adjacent upland/wetland buffer variable is a measure of the area adjacent to the subject wetland and the landscape setting of the wetland. This variable is evaluated based on the adjacent buffer size and the ecological attributes that this area is providing in association with the wetland being assessed. Most all wetlands scored low on adjacent buffer due to existing road side between the wetland and SR 15. A "low" ranking by indicates that little or no natural buffers surround these wetland areas and therefore there is no potential for associated wildlife usage.

Hydrology

Hydrology is measured relative to the expected water regime within each typical wetland type. If hydroperiod has been altered via man made improvements, scores would be lowered. Hydrology scores for the five ditch/surface waters were low due to the altered nature of these systems. Appendix D shows the locations of wetland areas 3, 11 and 14 which also received low scores due to altered hydrologic conditions resulting from agricultural activities (Wetlands 11 and 14) and construction of the railroad (Wetland 3), west of SR 15.

Water Quality

The evaluation of water quality variables is a two-fold measurement of the quality of surface water flowing into the subject wetland from adjacent land uses. The percent and type of surrounding land uses as well as any on-site pre-treatment of surface waters prior to the discharge into wetlands is considered. All twenty-one (21) potential impact areas, shown in Appendix D, received low ratings for land use and pre-treatment except, areas 12, 13, 15, 16, 17, 18 20. These areas are natural undeveloped wetlands which have not

been altered. Surrounding land uses consist of residential development, pasture land, railroad, and highway right-of-way. Pre-treatment of stormwater is found within the roadside ditches (areas 2, 4, 6, 7 and 10) along SR 15. Areas 1, 3, 5, 8, 9 and 11-13, receive untreated stormwater directly from SR 15 and areas 14-21 receive pre-treated stormwater from the roadside ditches along SR 15.

4.3.3.2 Wildlife Habitat Survey

Figure 4-9 provides a graphical depiction of the threatened and endangered species that have been identified within the project area. The figure indicates that no plant or animal species that are listed as Endangered or Threatened by the United States Fisheries and Wildlife Services (USFWS) were observed within the project corridor. No federally designed "Critical Habitat" occurs within the project limits. There is an eagle nest that has been identified outside of the project corridor. The project corridor does not lie within the 1,500 foot buffer of this eagle nest. There have been six bear kills identified along the project corridor. The location of each kill is shown in Figure 4-9.

4.3.3.3 Outstanding Florida Waters and Aquatic Preserves

There are no listed Outstanding Florida Waters (OFW) or aquatic preserves in the project corridor.

4.3.3.4 Floodplains / Floodways

Floodplains (100-year) are present at two locations within the SR 15 study limits and are hydraulically connected to the St. Johns River as shown in Figure 4-10. Surface drainage from the project corridor flows to the southeast into Lake Woodruff. Lake Woodruff is hydraulically connected to Lake Dexter to the west and Lake George to the north. Lake George is hydraulically connected to the St. Johns River which flows to the north and outfalls to the Atlantic Ocean in Duval County, Florida.

4.3.3.5 Farmlands

The SR 15 PD&E Study was evaluated for farmland involvement in accordance with the Florida Department of Transportation, PD&E Manual, Part 2, Chapter 28, Rev. 04-14-99 and subsequent directives from the United States Department of Agriculture, Natural Resource Conservation Services (NRCS), dated April 30, 1999 and November 1, 1999. After reviewing the NRCS directives, it has been determined that the widening of SR 15 is under no requirement to make a farmland determination.

4.3.4 Contamination

A *Contamination Screening Evaluation Report (CSER), December 2005,* was prepared to determine the likelihood of petroleum or other hazardous substance impacts to existing FDOT right-of-way or to properties proposed for acquisition.

Figure 4-9: Threatened and Endangered Species

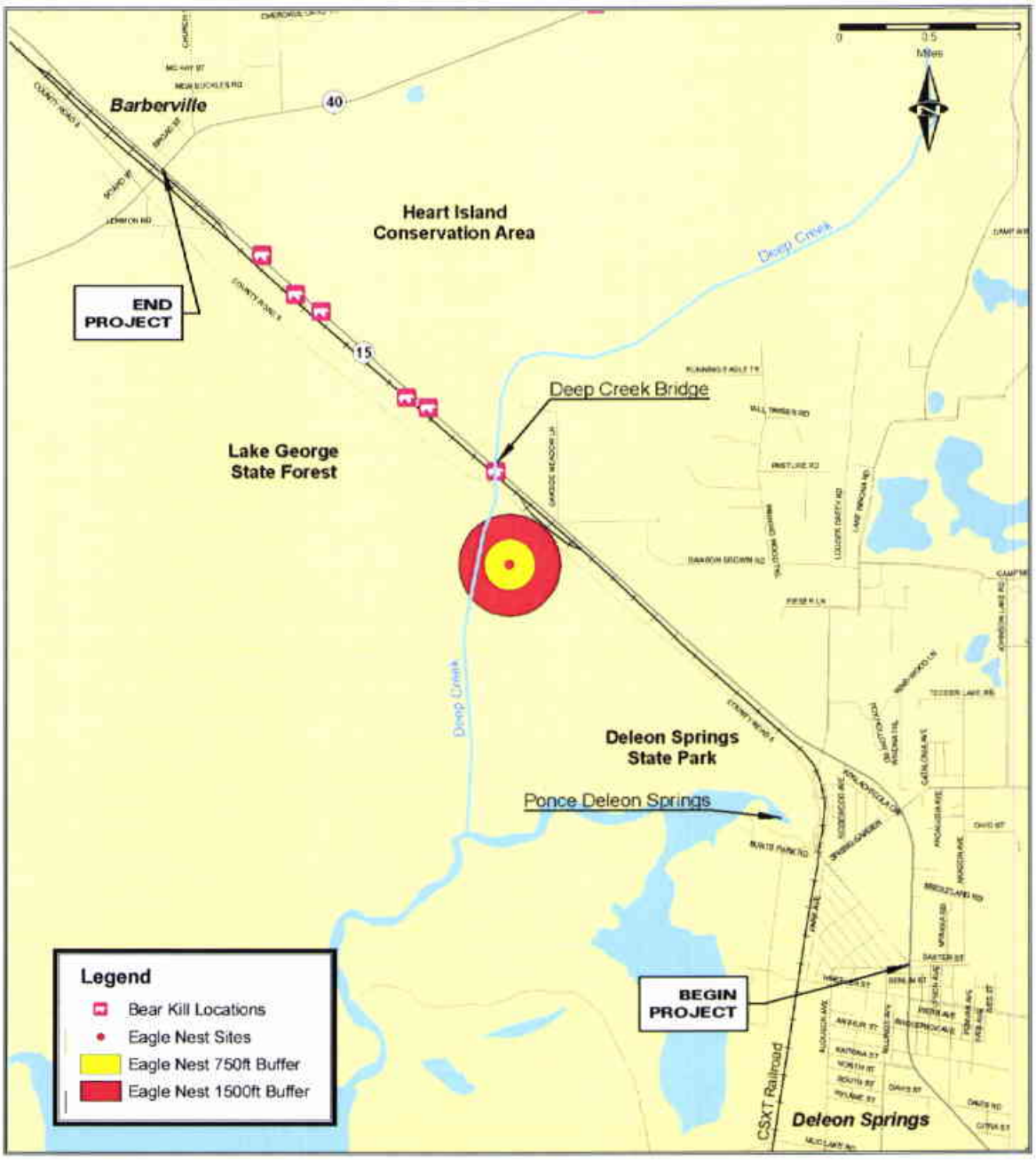
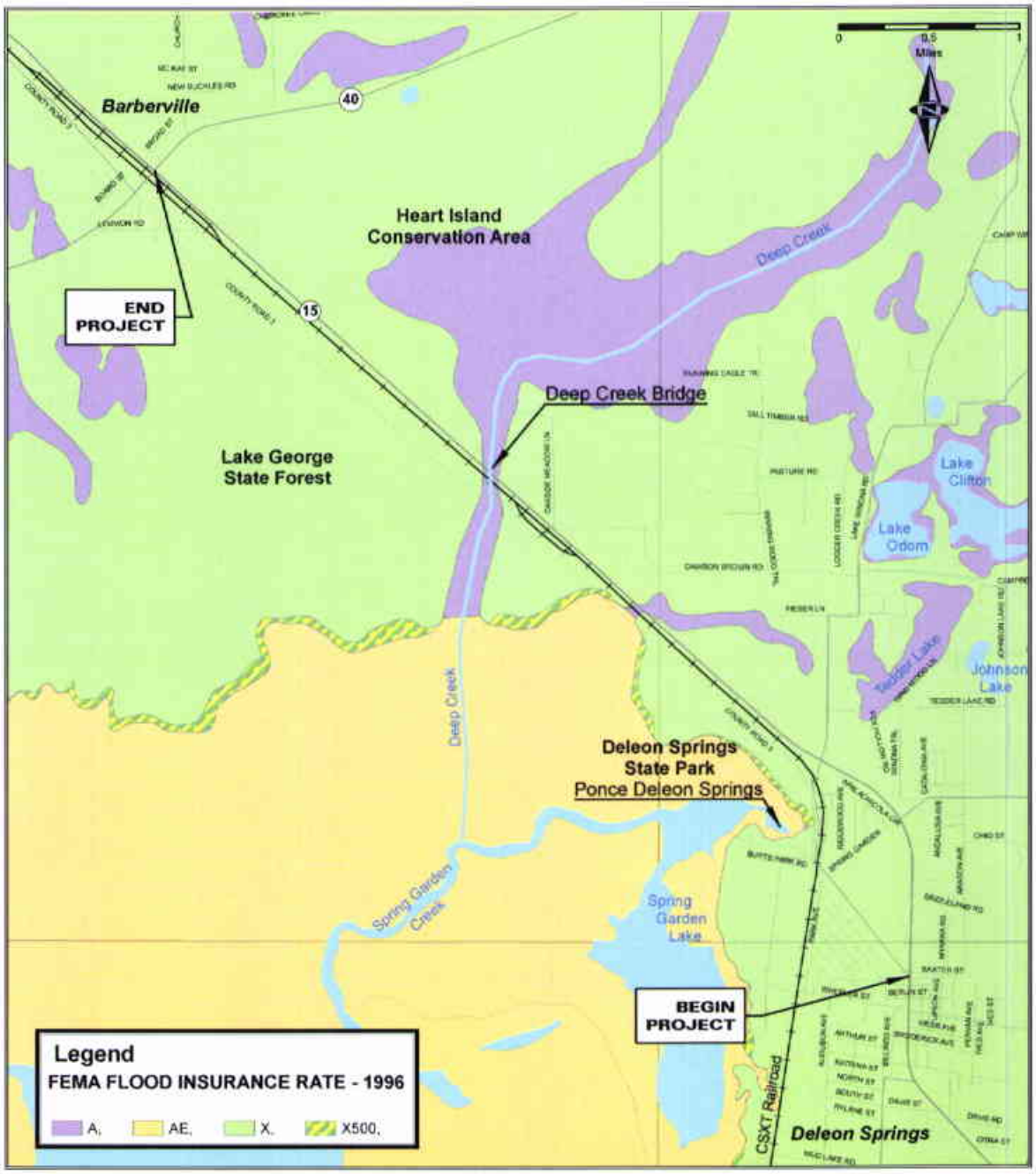


Figure 4-10: Floodplains



The CSER results from a physical site investigation of the SR 15 right-of-way, a limited investigation of properties along the corridor adjacent to right-of-way as viewed from areas of public access, a review of Florida Department of Environmental Protection (FDEP), Volusia County records and available environmental databases. A detailed site inspection of the roadway corridor was conducted on June 22, 2005. Prior to the site inspection, a review of the Environmental FirstSearch Database Report was conducted to determine locations of contaminated sites. The corridor was inspected along the right-of-

way via vehicular windshield survey. The survey also included a limited inspection of the adjacent properties and properties within one-quarter mile of the roadway. Any observed potential hazardous or petroleum sources were noted and recorded.

This CSER incorporates the Environmental FirstSearch Database Report to locate available regulatory agency information pertaining to hazardous materials. The following files were searched for any sites with hazardous or petroleum material records and/or violations:

- Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS),
- Toxic Site Directory (TSD),
- Generators (GEN),
- Emergency Response Notification System (ERNS),
- National Priority List (NPL),
- Resource Conservation and Recovery Information System (RCRIS),
- Facility Index System (FINDS),
- RCRA Administrative Action Tracking System (RAATS),
- Registered Underground Storage Tanks (UST),
- Leaking Registered Underground Storage Tanks (LUST),
- Toxic Release Inventory (TRI),
- State Superfund Sites, Solid Waste Facilities, and
- Volusia County records.

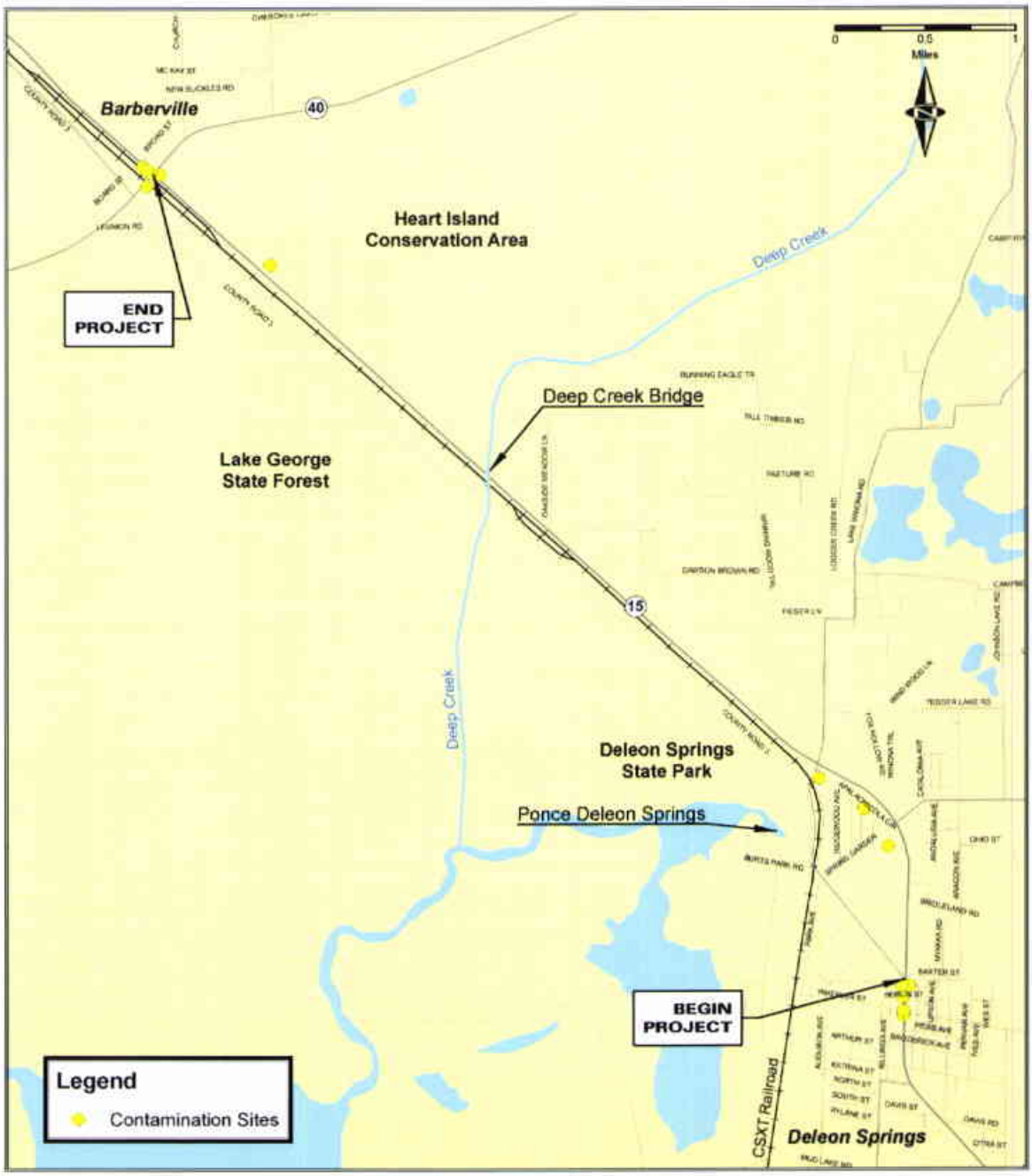
Historic aerial photos from 1943 through 2004 were reviewed to identify any activities that may have shown that contamination from hazardous or petroleum substance generation, storage, or transportation may have occurred within the project area. A total of fourteen (14) areas adjoining SR 15 were identified that could have potential hazardous materials contamination influence on the right-of-way. The sites are located in Figure 4-11.

It is recommended to conduct soil and groundwater sample analysis at any facilities with a "medium" or "high" risk rating. The facilities or locations that would fall into this category include:

- Deleon Car Wash,
- Valero Gas Station,
- Casey Furniture,
- Undeveloped residential subdivision immediately north of Spring Garden Ranch Road and west of SR 15,
- Theodore Strawn Packing Plant,
- Handy Way Food Store #2258,
- Express Mart #169 and
- The agricultural fields along the east side of SR 15 near Dawson Road.

Additionally, files should be periodically reviewed to ascertain when a no further action (NFA) will be granted for those sites that are undergoing active remediation.

Figure 4-11: Potential Contamination Sites



4.3.5 Noise

The noise sensitive sites identified for this project are twenty-eight single-family residences and one educational institution. No additional noise sensitive sites such as parks, hospitals, libraries, or other areas that require quiet conditions were located within

the corridor. Other structures within the corridor included commercial enterprises, government buildings, and agricultural facilities (barns). Each of the sites can be seen in Appendix E, Noise Sensitive Site Maps.

4.3.6 Air Quality

The SR 15 project is in an area which has been designated as attainment for all air quality standards under the criteria provided in the Clean Air Act of 1990, therefore conformity does not apply.

An air quality study was conducted to evaluate potential air quality impacts resulting from the proposed improvements to SR 15. The study was based on Part 2, Chapter 16 "Air Quality Analysis" of the FDOT *PD&E Manual*. The purpose of the study is to analyze the air quality impacts, based on current (2005) field conditions and future design year (2030) traffic data for the study corridor.

The reasonable receptor sites within the corridor currently operate within the standards for carbon monoxide concentrations. This evaluation included an assessment of design-hour traffic volumes, roadway geometrics, reasonable receptor sites, and average speeds for the proposed improvements.

5.0 DESIGN CRITERIA

The SR 15 PD&E Study incorporates project elements with various design requirements. Table 5-1 presents the roadway design criteria established for each design element. The design criteria and standards are based on design parameters in accordance with *A Policy on Geometric Design of Highway and Streets (*AASHTO, 2000), *Roadway Plans Preparation Manual*, Volumes I and II (FDOT, 2000), and *Roadway and Traffic Design Standards* (FDOT, 2000).

Table 5-1: Design Criteria

DESIGN ELEMENT	CRITERIA	SOURCE
Functional Classification	Rural Minor Arterial	FDOT Planning Office
Design Year	2030	FDOT
Design Speed	65 MPH	PPM Chapter II
Design Vehicle	WB-50	PPM Chapter II
Horizontal Alignment		
Max. Superelvation	0.10	PPM Table 2.8.3
Max. Curvature	4°15'	PPM Table 2.8.3
Max. Curvature w/o Superelevation	0°15' (0°30' with RC)	PPM Table 2.9.1
Max. Deflection w/o Horizontal Curve	0°45'	PPM Table 2.8.1a
Min. Length of Horizontal Curve	975' Desirable, 400' Min.	PPM Table 2.8.2a
Vertical Alignment		
Max. Grade	3% (Flat Terrain)	PPM Table 2.6.1
Min. Grade	N/A (Rural Section)	
Min. K Value for Crest Vertical Curves	313	PPM Table 2.8.5
Min. K Value for Sag Vertical Curves	157	PPM Table 2.8.6
Max. Change in Grade w/o Vertical Curve	0.30%	PPM Table 2.6.2
Min. Roadway Base Clearance above DHW	3'	PPM Table 2.6.3
Roadway Cross Section		
Lane Widths	12'	PPM Table 2.1.1
Shoulder Widths	10' (5' Paved)	PPM Table 2.3.2
Cross Slopes	2% Travel Lanes	PPM Table 2.1.1
	6% Shoulders	PPM Table 2.3.2
Median Width	40'	PPM Table 2.1.1
Clear Zone	36' From Travel Lanes	PPM Table 2.11.9
	24' From Aux Lanes	PPM Table 2.11.9
Minimum Border Width	40' From Outside Edge of Shoulder	PPM Table 2.5.1
Right-of Way Requirements	200' Typical	
Access Classification Existing	Class 4	FDOT Access Management Rule: Rule Chapter 14-97-005, F.A.C.
Access Classification Proposed	Class 3	

5.1 Design Exceptions and Variations

Occasionally, it becomes necessary to deviate from the standard criteria used in the design process. If deemed necessary, two specific deviations may occur: (1) Design Exception or (2) Design Variation. A Design Exception is required when design criteria applied falls below the minimums established by AASHTO. A Design Variation is required when design criteria applied falls below the minimums established by FDOT and the deviation is not covered by the Design Exception.

Design Exceptions and Variations for SR 15 are based upon a design speed of 65 mph. Table 5-2 below presents fifteen design elements and specifies whether AASHTO or FDOT design criteria are satisfied, or if a Design Exception / Variation is required for the specified design element for the proposed SR 15 improvements. These elements apply to the existing roadway as it exist today, and does not take into account the proposed design alternatives.

Table 5-2: SR 15 Design Exceptions and Variations

Design Criteria	Design Exception ≤ AASHTO	Design Variation ≤ FDOT
1. Design Speeds	S	S
2. Lane Widths	S	S
3. Shoulder Widths	S	**R**
4. Bridge Widths	S	S
5. Structural Capacity	S	S
6. Grades	S	S
7. Cross Slope	S	S
8. Superelevation	S	S
9. Horizontal Alignment	S	S
10. Vertical Alignment	S	S
11. Stopping Sight Distance	S	S
12. Horizontal Clearance	S	S
13. Border Width	S	**R**
14. Median Width	S	S
15. Length of Horizontal Curve	S	S

Note: S - Satisfactory, R - Required

5.1.1 Shoulder Width

An outside shoulder width of 5 feet is required by FDOT. Currently SR 15 has four (4) foot shoulders on the outside. Alternative 3 (Existing) proposes to utilize the existing outside should as the southbound inside shoulder. In this instance, a variance will be required for the four (4) foot shoulder width.

5.1.2 Border Width

A border width of 40 feet for rural arterials is required by FDOT. The SR 15 border width will be maintained as much as possible throughout the area of the improvements. In order to minimize right-of-way impacts, the border width for the proposed southbound lanes will be 29 feet, therefore requiring a variance.

6.0 Traffic

The information in this chapter is taken from the *SR 15 Design Traffic, Project Traffic, Existing and Future Conditions Technical Memorandum*, dated June 2005, by Ghyabi & Associates, Inc. This report documents the existing traffic conditions and the analysis of the Build and No Build scenarios in support of this Project Development and Environment Study. This report includes a detailed discussion of existing traffic conditions, planned roadway improvements in the area, existing traffic characteristics, and development of the projected traffic in the design years and level of service analyses for the design year.

6.1 Existing Intersections

- SR 15 and Ponce DeLeon Boulevard
- SR 15 and Spring Garden Ranch Road
- SR 15 and Lake Winona Road
- SR 15 and Dawson Brown Road
- SR 15 and SR 40
- CR 3 and SR 40 (adjacent to the corridor)
- CR 3 and Lake Winona Road (adjacent to the corridor)

Figure 6-1 provides the existing intersection geometry for the listed intersections.

6.2 Multi-modal Transportation System Considerations

The project runs through an area of north Volusia County that is primarily rural in nature. SR 15 serves mainly large residential and agricultural land uses. The private automobile is the primary mode of transportation in the area. There are no park and ride facilities in the area.

6.3 Traffic Analysis Assumptions

6.3.1 Design Assumptions

Design traffic forecasts for the SR 15 corridor were provided for the following years:

Existing Year -2005

Opening Year -2010

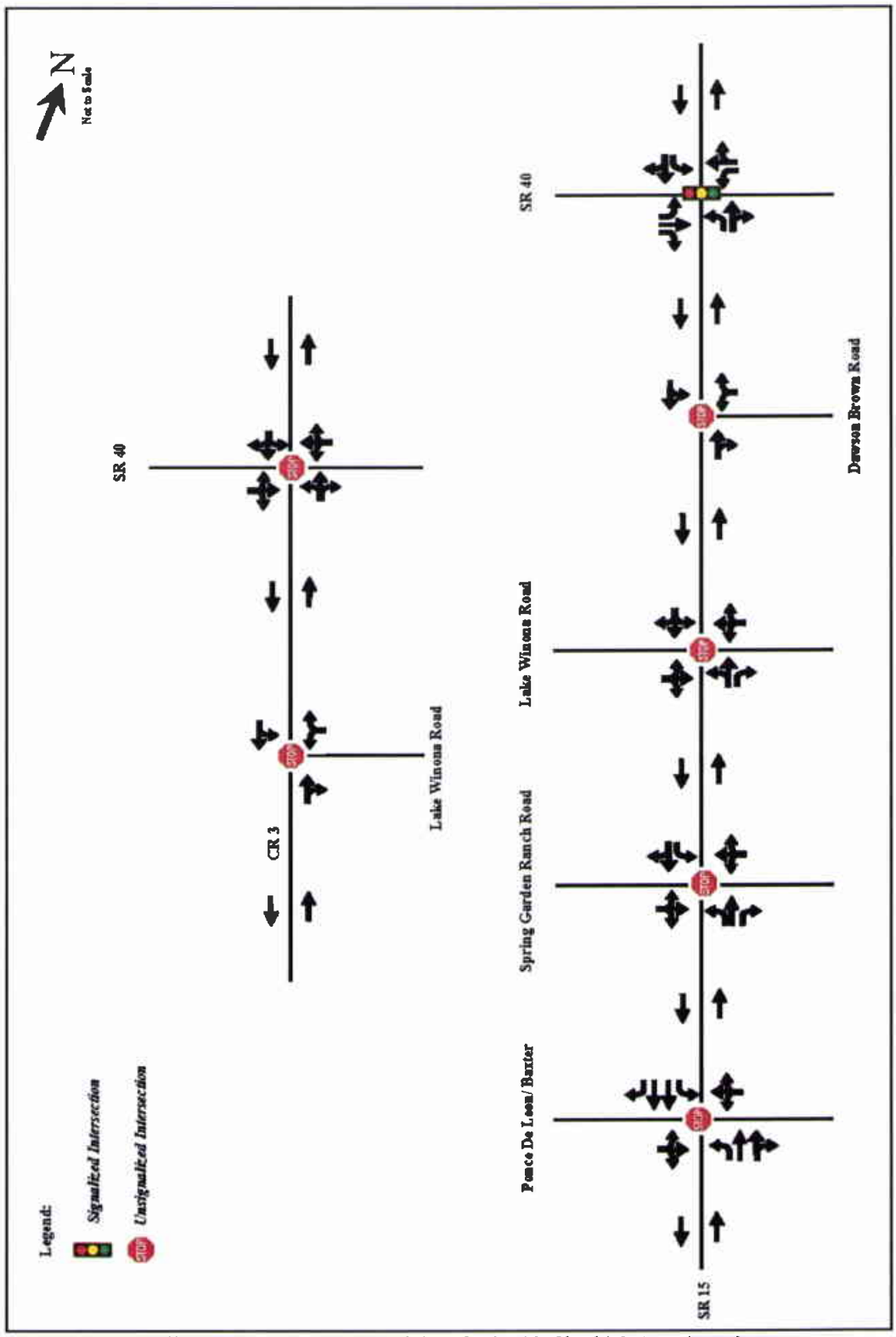
Mid-Year -2020

Design Year -2030

6.3.2 Analysis Scenarios

Two scenarios were evaluated in the development of Design Traffic Forecasts for the SR

Figure 6-1: Existing Geometry



Source: Project Traffic – Existing & Future Conditions for SR 15, Ghyabi & Associates, Inc.

15 corridor. These included the No Build and the Build scenarios. The No Build alternative assumed that for the opening (2010), mid (2020) and design years (2030), the existing mainline laneage was present and that all other planned and programmed improvements will be in place. The Build analysis assumed that the ultimate laneage required for the design year would be in place at the opening year 2010.

6.3.3 Design Characteristics

Existing travel characteristics and information from the FDOT Roadway Characteristics Inventory (RCI) were used to determine the Design Characteristics for the project. Based on the vehicle volume and vehicle classification counts, peak traffic direction and percentage of trucks for the peak and daily periods were determined and compared with the RCI information. Table 6-1 provides the recommended design characteristics (K_{30}, D and T) for the project.

Table 6-1: Recommended Design Characteristics

DESIGN CHARACTERISTIC	VALUE
K_{30}	9.46%
D (Directional Distribution)	53.75%
T_{daily}	10.11%

6.4 Existing Traffic Volumes

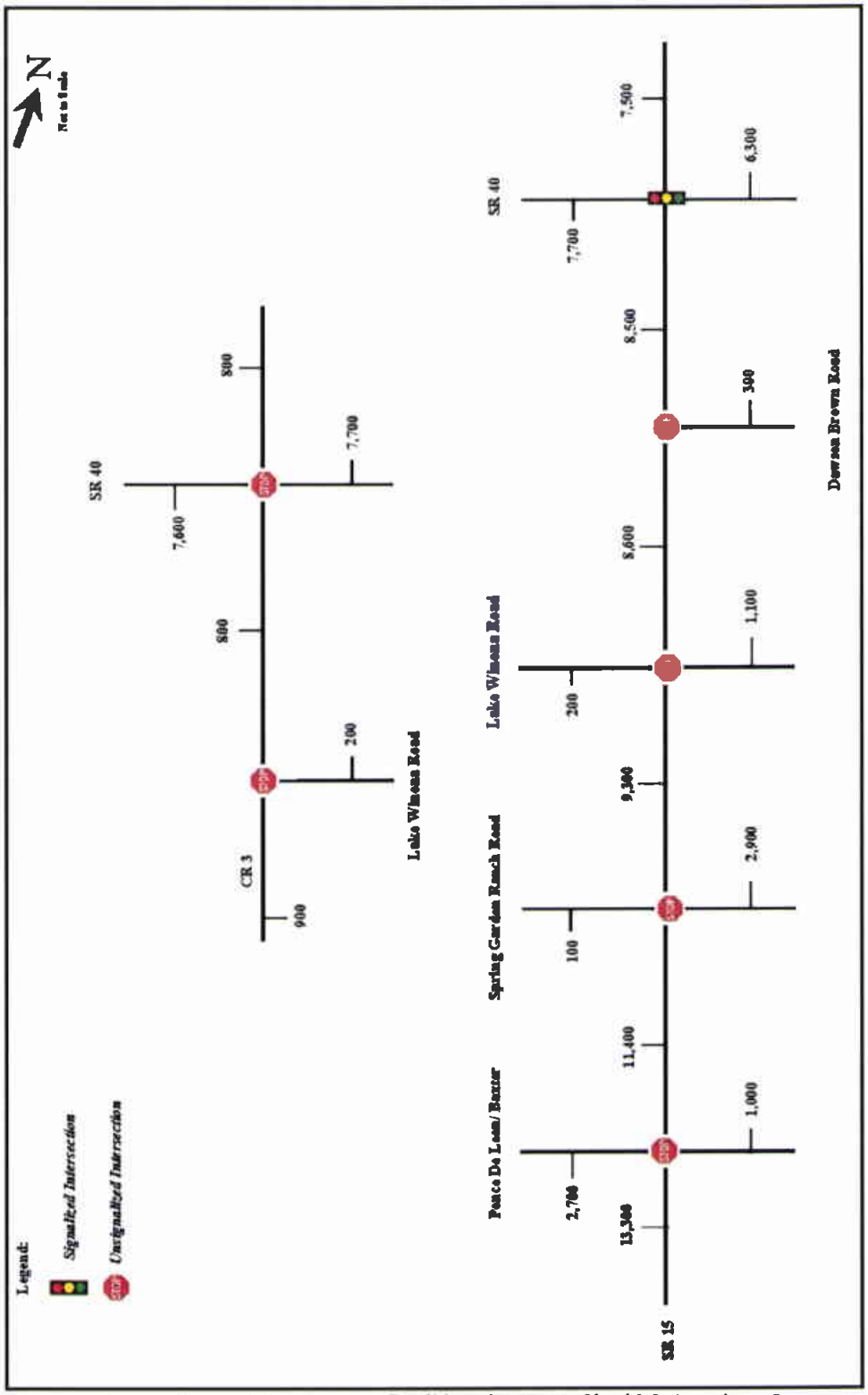
Figures 6-2 and 6-3 provide the existing Average Annual Daily Traffic (AADT) volumes and the Directional Design Hour Volume (DDHV), respectively. Figure 6-4 provides the existing peak hour traffic volumes based on the design hour demand (K_{30}).

6.5 Existing Intersections Level of Service

Level of Service for the intersections in the SR 15 corridor was determined using the current adopted procedures as outlined in the Transportation Research Board's Special Report 209 – Highway Capacity Manual (HCM). The Highway Capacity Software (HCS2000 Version 4.1e) was utilized to determine intersections level of service.

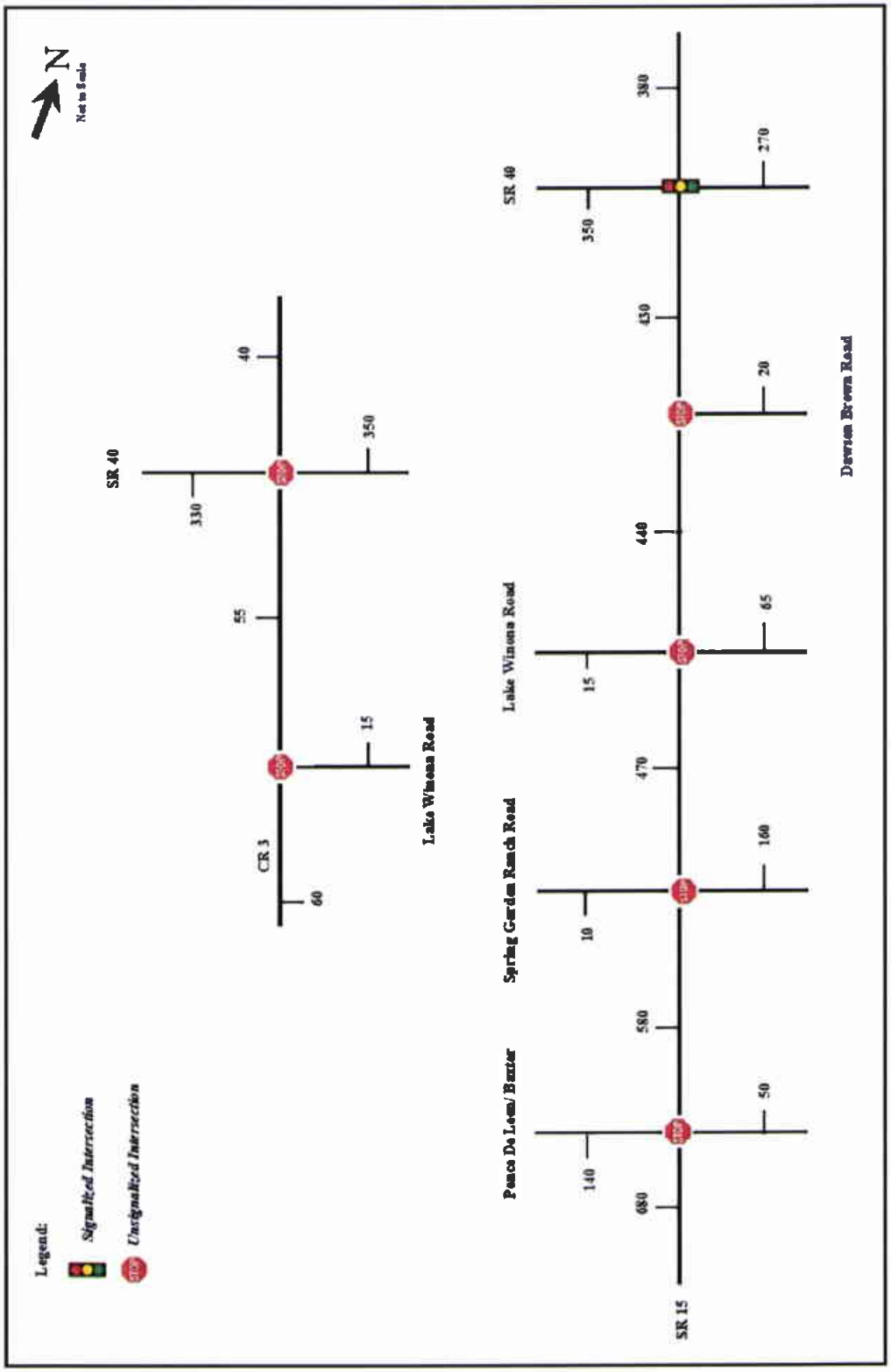
The existing design hour traffic volumes, as illustrated on Figure 6-4, were used to evaluate the existing intersections conditions. Intersection signal timings and phasing plans for the PM peak hour provided by Volusia County was used in analyzing the signalized intersection at SR 40. The existing intersection levels of service (LOS) are shown on Figure 6-5. As illustrated, all of the seven (7) intersections analyzed operate at or above the acceptable minimum LOS C, with the exception of the side street approaches at Ponce DeLeon Boulevard/Baxter Road and at Spring Garden Ranch Road.

Figure 6-2: Existing (2005) Average Annual Daily Traffic



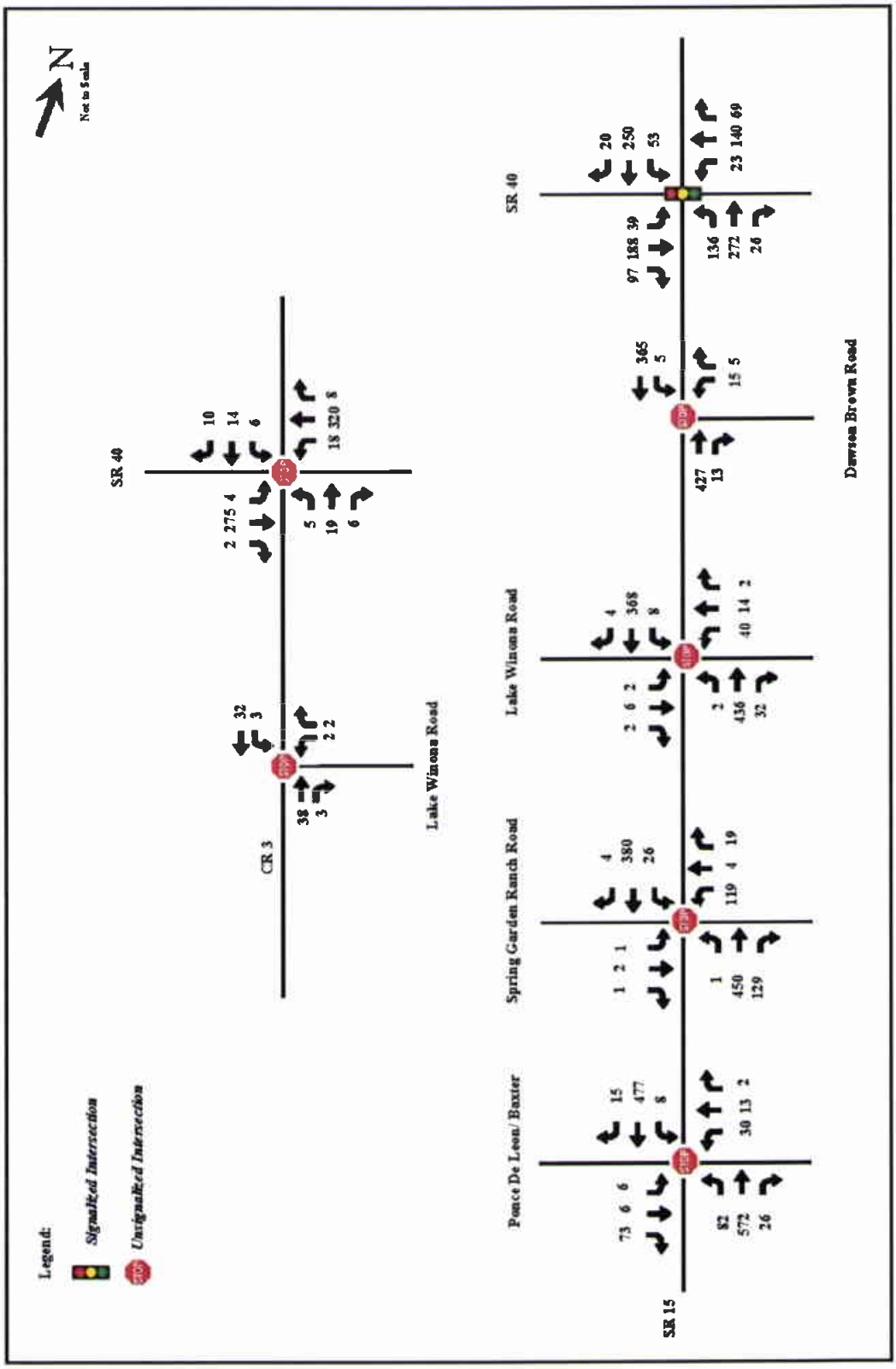
Source: Project Traffic – Existing & Future Conditions for SR 15, Ghyabi & Associates, Inc.

Figure 6-3: Existing (2005) Directional Design Hour Volume



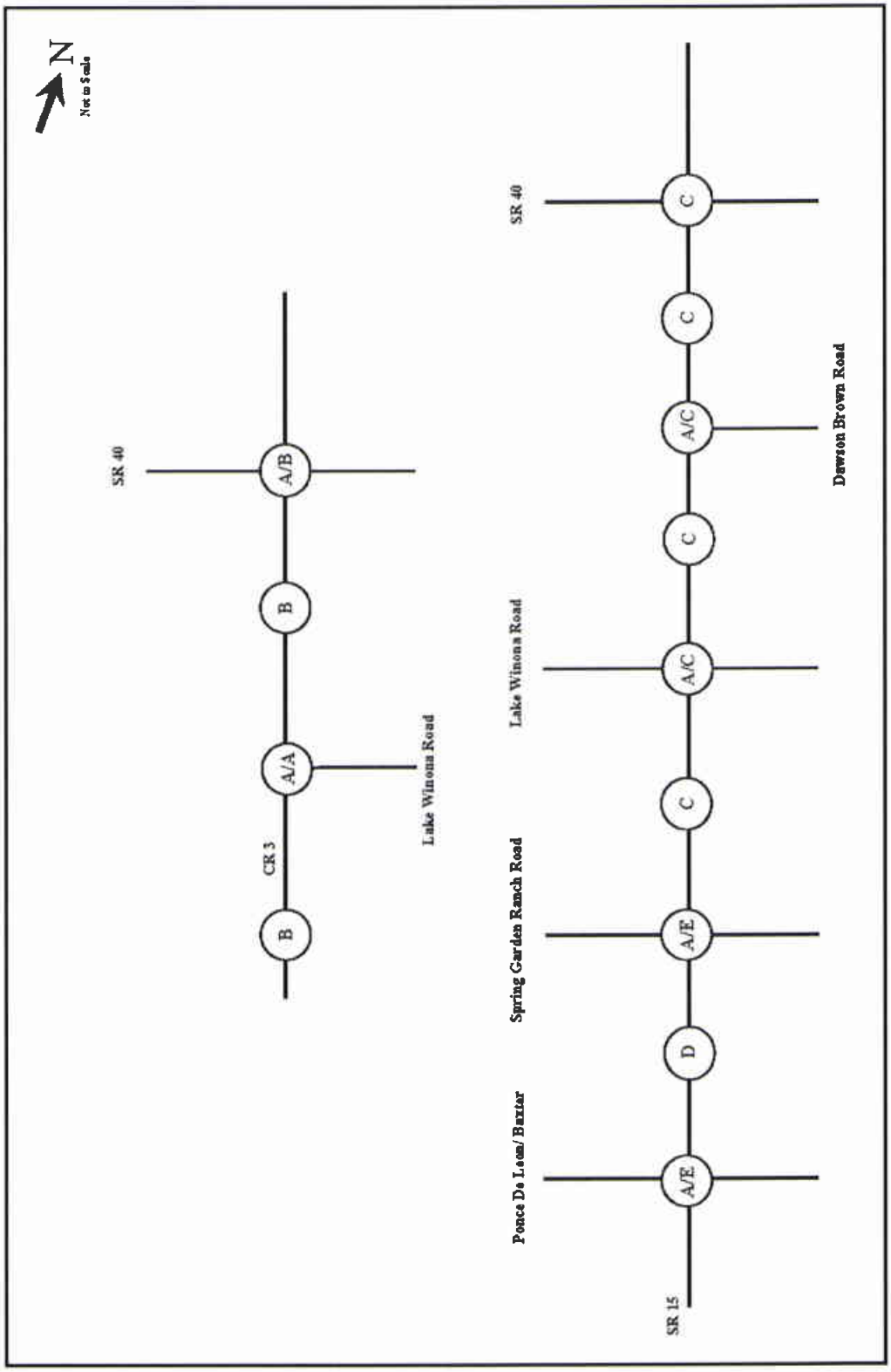
Source: Project Traffic – Existing & Future Conditions for SR 15, Ghyabi & Associates, Inc.

Figure 6-4: Existing (2005) Design Hour Volumes



Source: Project Traffic – Existing & Future Conditions for SR 15, Ghyabi & Associates, Inc.

Figure 6-5: Existing (2005) Level of Service



Source: Project Traffic – Existing & Future Conditions for SR 15, Ghyabi & Associates, Inc.

6.6 Existing Roadway Segments Level of Service

Operational analysis for the basic arterial segments was performed utilizing HIGHPLAN version 1.2.0 (7/19/04) procedures. The existing roadway segments level of service are shown on Figure 6-5. Based on the analysis, the existing SR 15 corridor in the study area operates at or below the minimum acceptable LOS except for the segment between Ponce DeLeon Boulevard and Spring Garden Ranch Road. This segment currently operates in unacceptable conditions, LOS D.

6.7 Future Traffic Projections

The methodology used to develop the Future Traffic Projections is documented in detail in the *SR 15 Design Traffic, Project Traffic, Existing and Future Conditions Technical Memorandum* dated June 2005, by Ghyabi & Associates, Inc. The future year traffic volumes were developed using a combination of methodologies.

In order to determine projected growth rates for traffic along SR 15, two methods were analyzed. The first method is a trends analysis that involves a review of historic traffic counts to develop an anticipated growth rate. The second method involves the use of the Metropolitan Planning Organization's (MPO) approved Orlando Urban Area Transportation Study (OUATS), Florida Standard Urban Transportation Model Structure (FSUTMS) traffic model to determine a growth rate between existing traffic volumes and the year 2020 projected traffic model volumes.

For the No-Build condition, the FSUTMS growth rate of 2.34% per year was used to develop projected traffic volumes along SR 15 and the side streets. For the Build condition, the FSUTMS growth rate of 3.27% per year was used to develop the design traffic forecasts on SR 15 and the side streets.

6.7.1 No-Build Traffic Projections

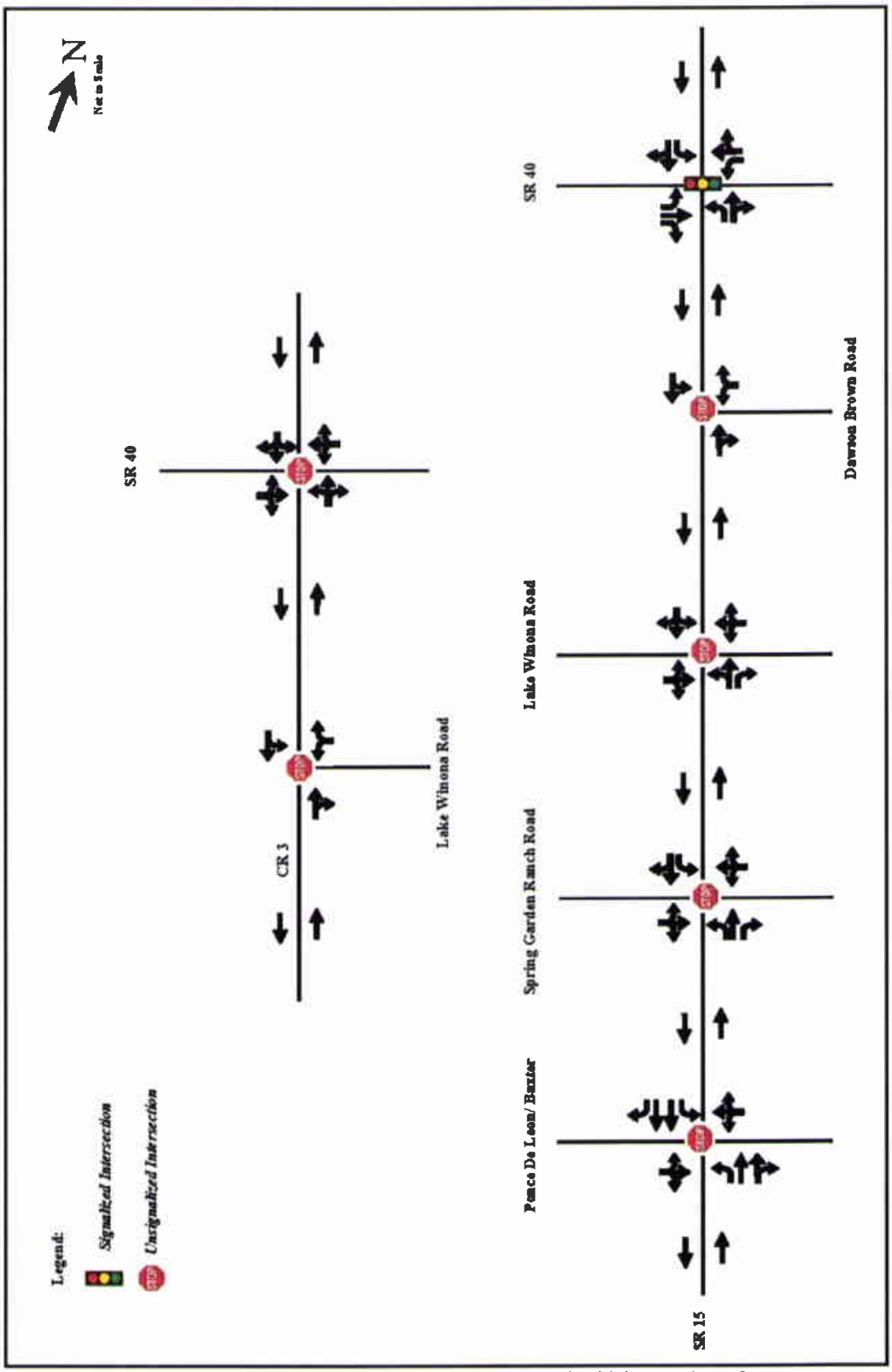
Figure 6-6 illustrates the No-Build intersection geometry. Traffic projections were made for the No-Build scenario as described above. The projected No-Build AADT volumes and DDHV for the opening (2010), mid (2020) and design (2030) years are illustrated on Figures 6-7 and 6-8, respectively.

The recommended AADTs along with the recommended design characteristics and existing counts were used to develop design hour turning movements at the intersections. The design hour turning movements were developed based on the existing PM peak hour turning movement percentages. Figures 6-9, 6-10, and 6-11 provide the opening, mid design, and design year No-Build turning movement volumes.

6.7.2 Build Traffic Projections

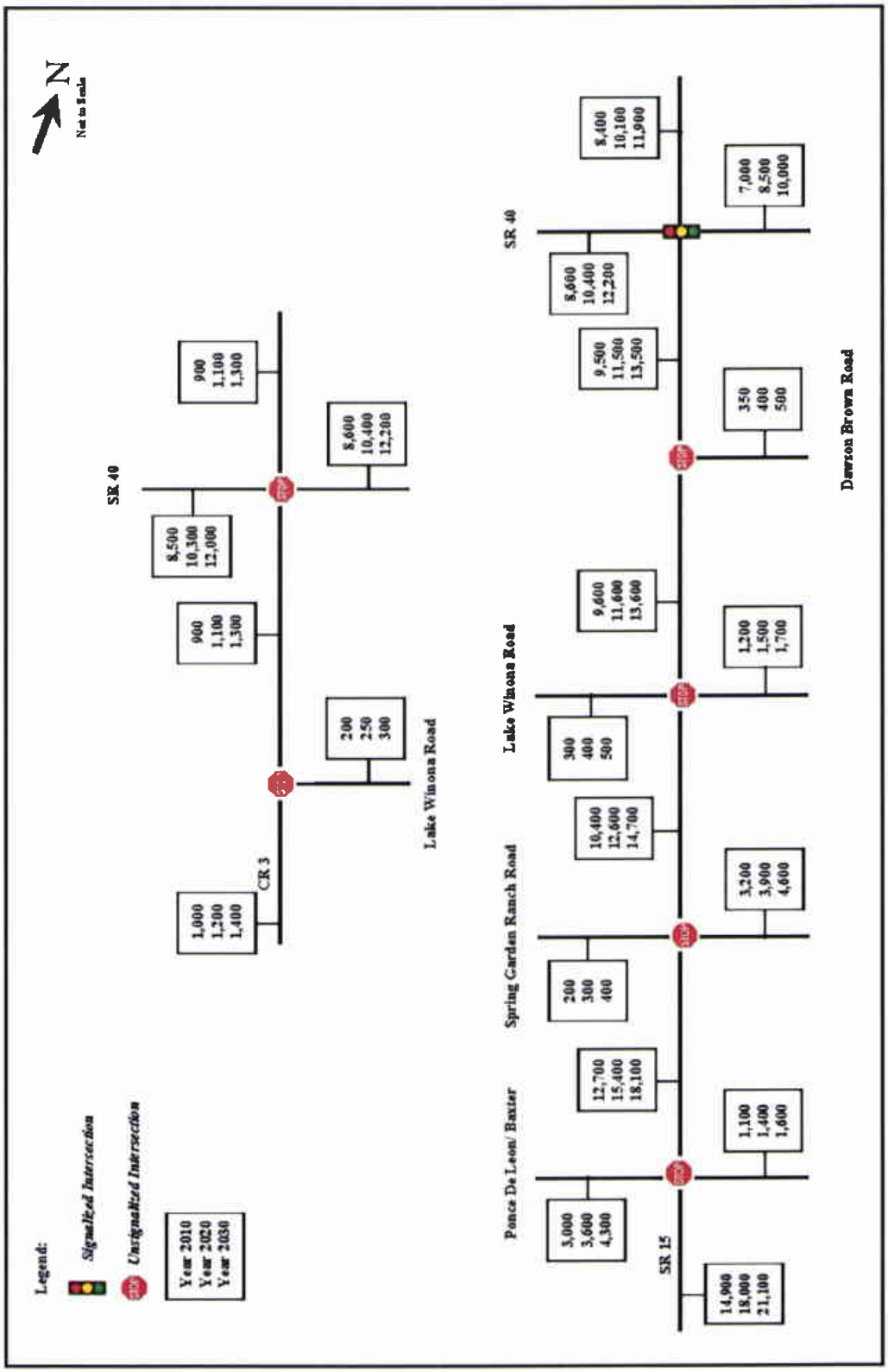
The proposed Build intersection geometry is illustrated in Figure 6-12. Traffic projections were made for the Build scenario using the MPO's approved OUATS traffic model as described previously. The projected Build AADT volumes and DDHV for the opening (2010), mid (2020) and design (2030) years are illustrated on Figure 6-13 and 6-14, respectively.

Figure 6-6: No-Build Geometry



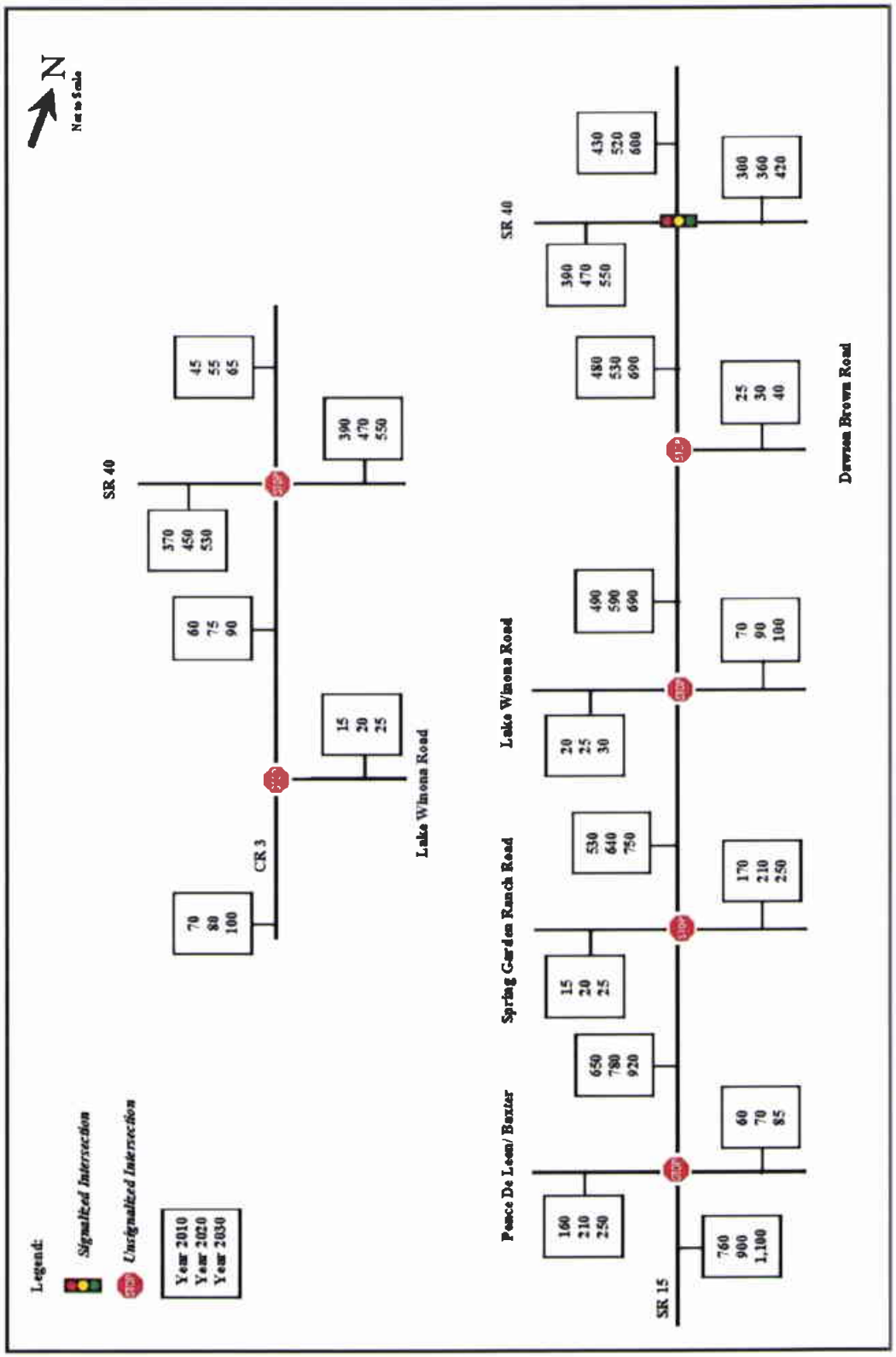
Source: Project Traffic – Existing & Future Conditions for SR 15, Ghyabi & Associates, Inc.

Figure 6-7: No-Build Average Annual Daily Traffic



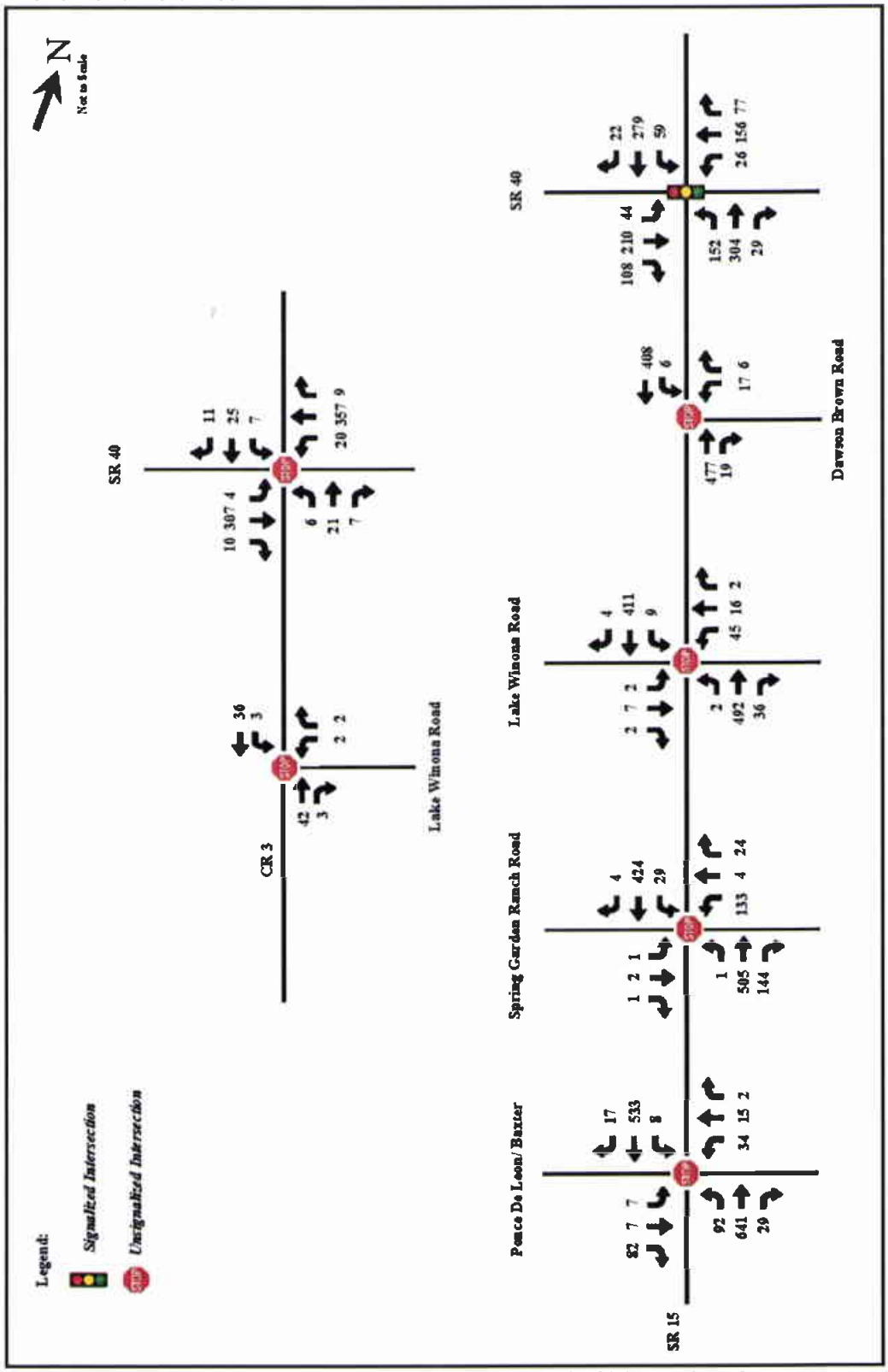
Source: Project Traffic – Existing & Future Conditions for SR 15, Ghyabi & Associates, Inc.

Figure 6-8: No-Build Directional Design Hour Volume



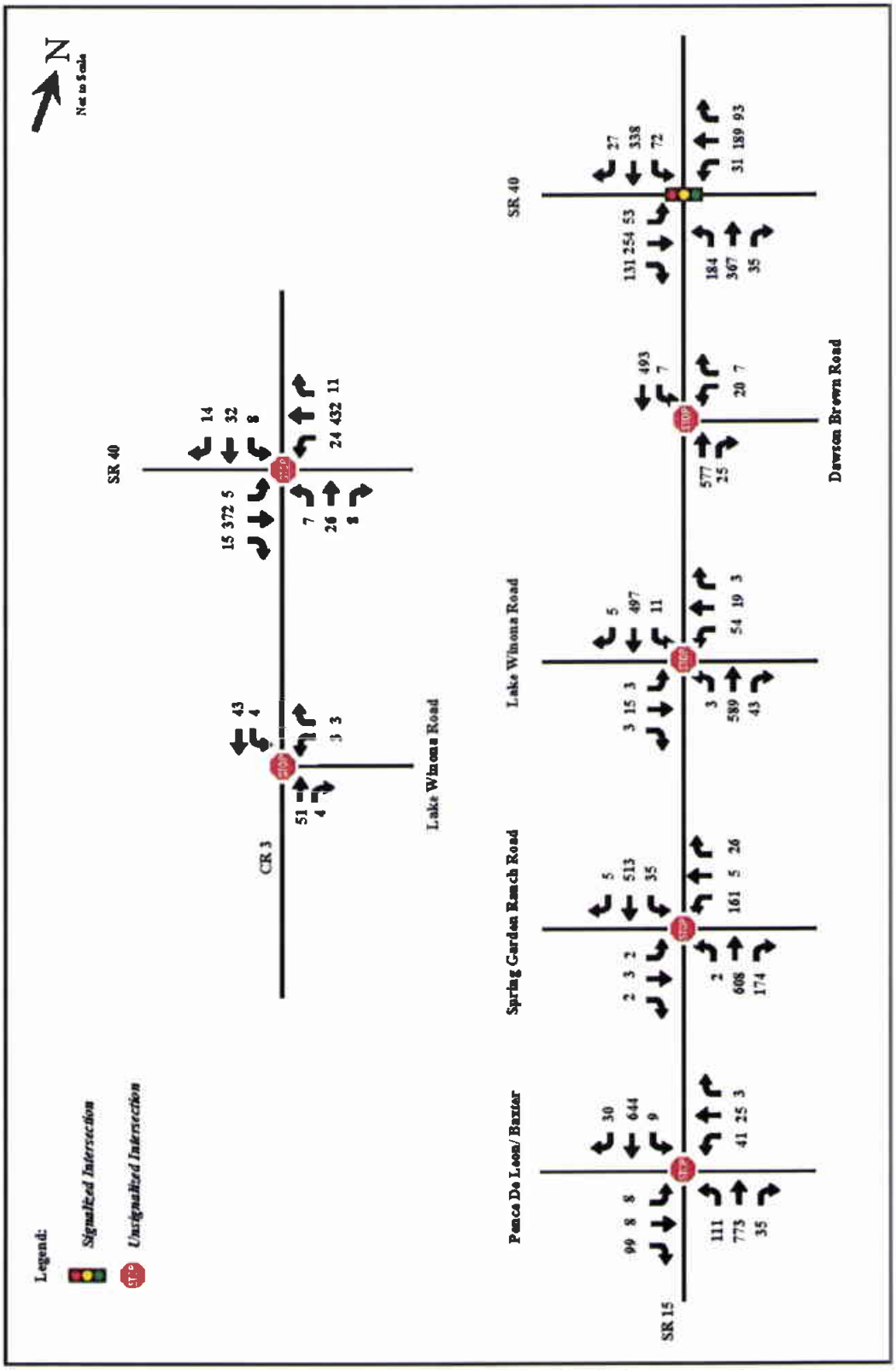
Source: Project Traffic – Existing & Future Conditions for SR 15, Ghyabi & Associates, Inc.

Figure 6-9: Opening Year (2010) – No-Build Design Hour Turning Movement Volumes



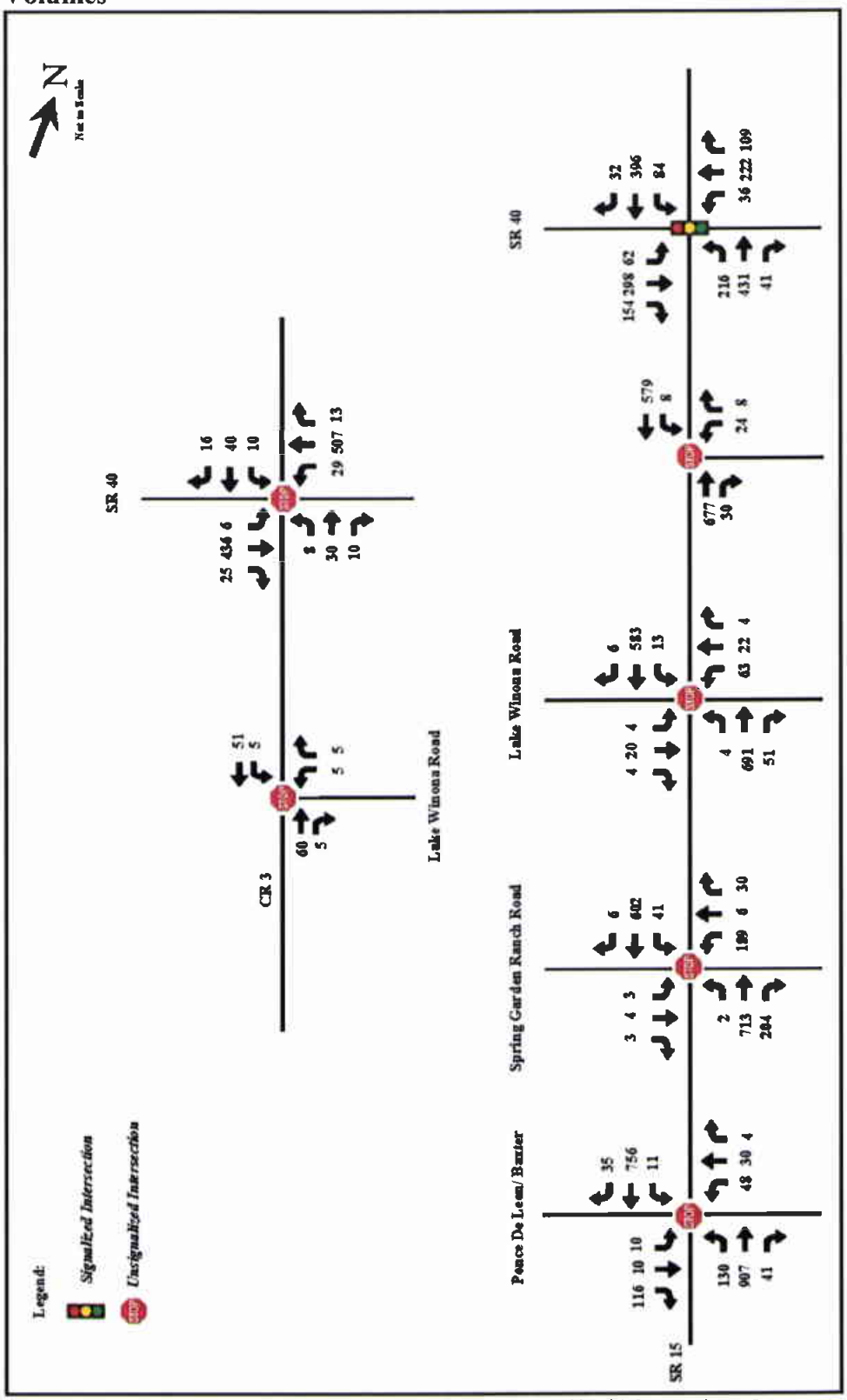
Source: Project Traffic – Existing & Future Conditions for SR 15, Ghyabi & Associates, Inc.

Figure 6-10: Mid-Design Year (2020) – No-Build Design Hour Turning Movement Volumes



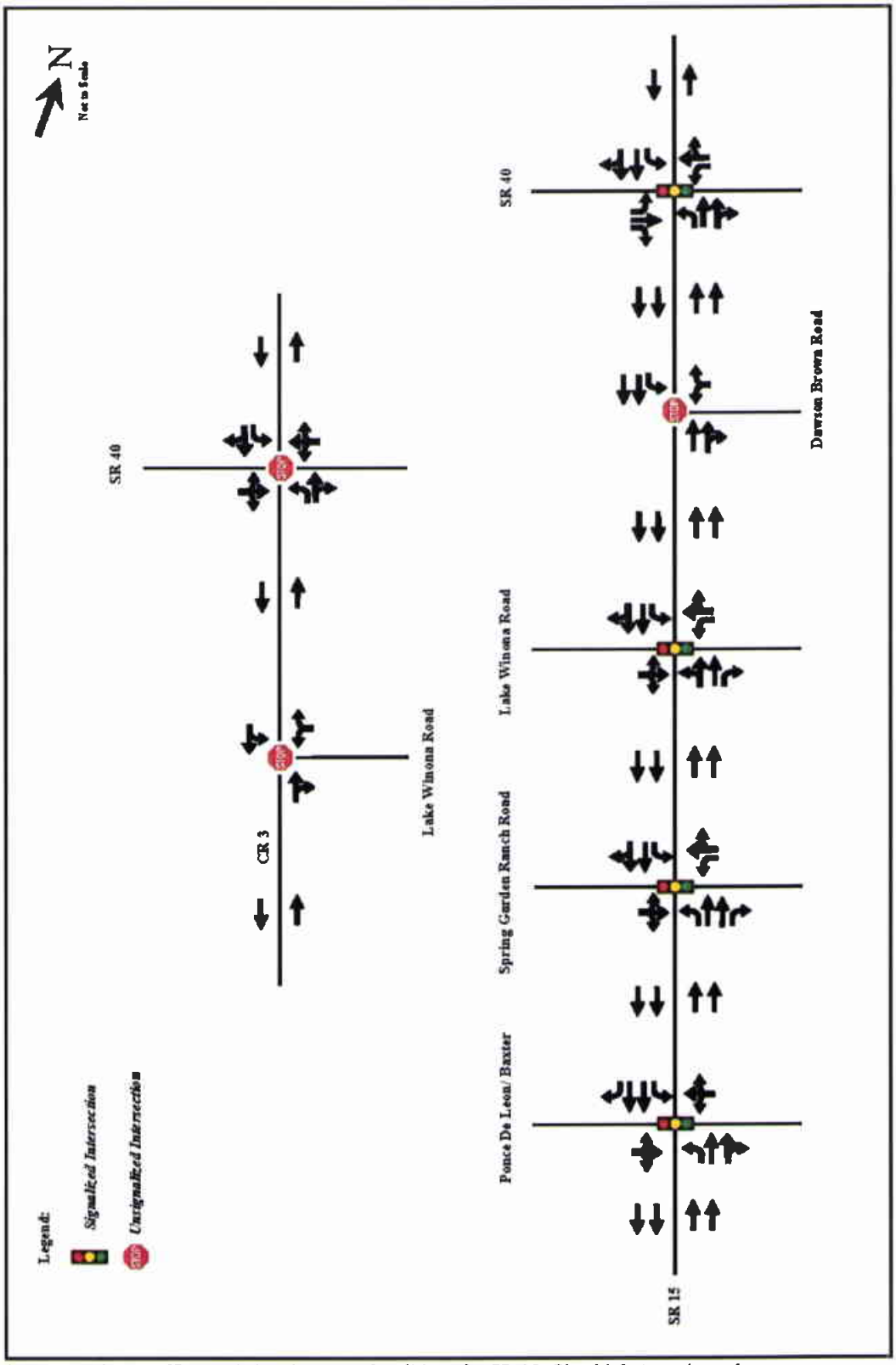
Source: Project Traffic – Existing & Future Conditions for SR 15, Ghyabi & Associates, Inc.

Figure 6-11: Design Year (2030) – No-Build Design Hour Turning Movement Volumes



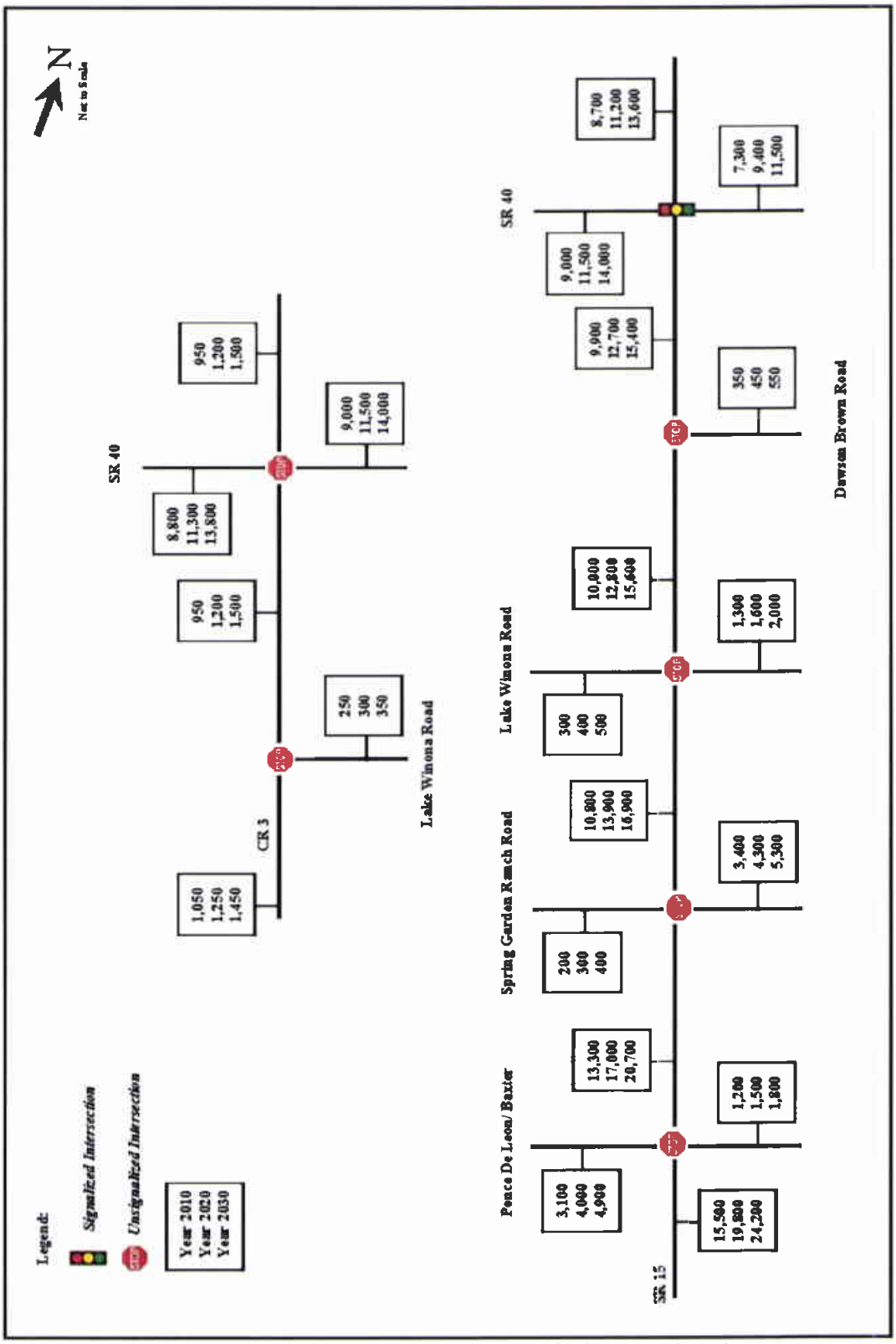
Source: Project Traffic – Existing & Future Conditions for SR 15, Ghyabi & Associates, Inc.

Figure 6-12: Build Geometry



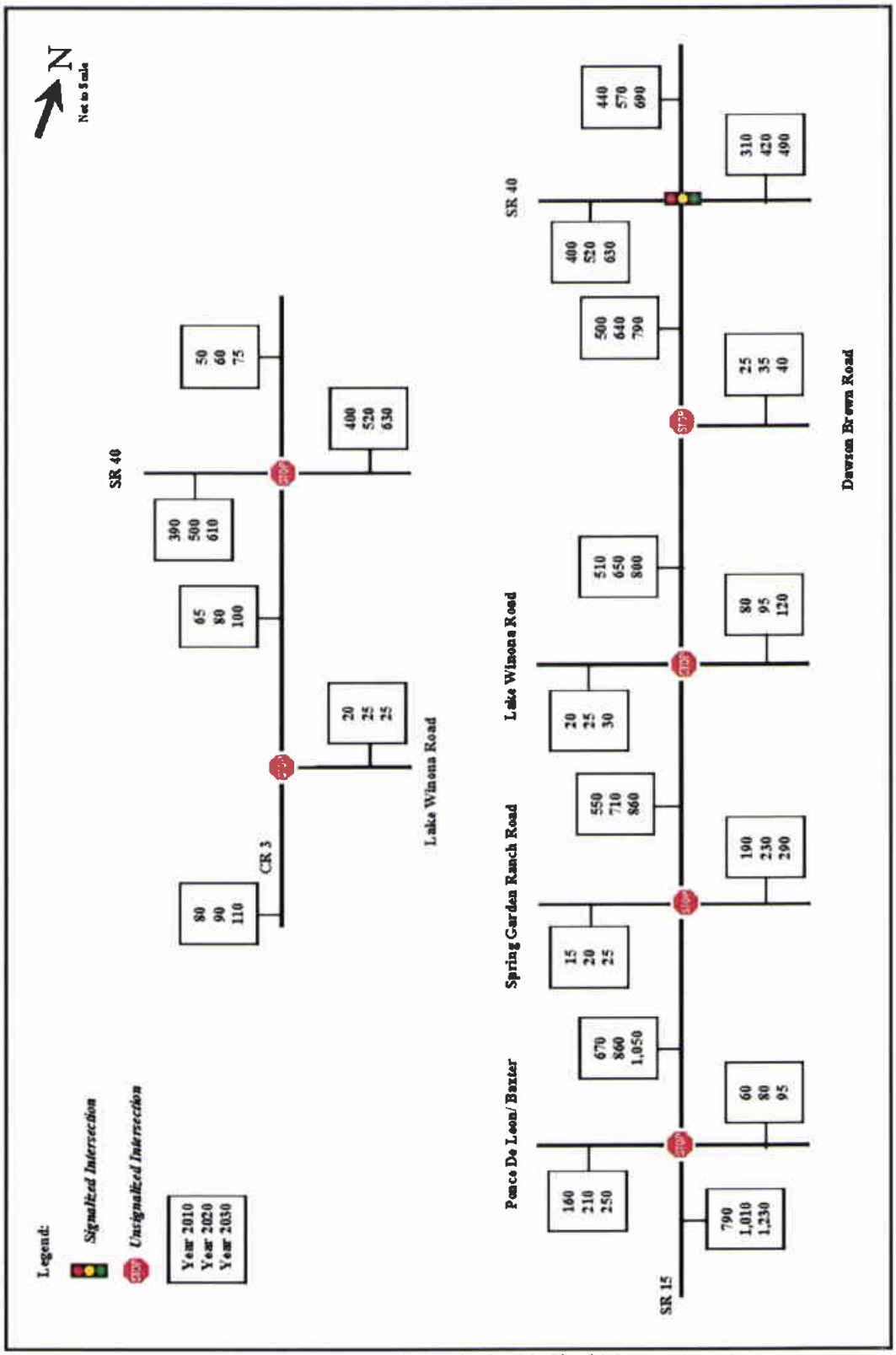
Source: Project Traffic – Existing & Future Conditions for SR 15, Ghyabi & Associates, Inc.

Figure 6-13: Build Average Annual Daily Traffic



Source: Project Traffic – Existing & Future Conditions for SR 15, Ghyabi & Associates, Inc.

Figure 6-14: Build Directional Design Hour Volume



Source: Project Traffic – Existing & Future Conditions for SR 15, Ghyabi & Associates, Inc.

The recommended AADTs along with the recommended design characteristics and existing counts were used to develop design hour turning movements at the intersections. The design hour turning movements were developed based on the existing PM peak hour turning movement percentages. Figures 6-15, 6-16, and 6-17 provide the opening, mid design, and design year Build turning movement volumes.

6.8 Future Intersections Level of Service

Future levels of Service for SR 15 were determined using the current adopted procedures as outlined in the Transportation Research Board's Special Report 209 –HCM. The Highway Capacity Software (HCS2000 Version 4.1e) was utilized to determine intersection levels of service.

6.8.1 No-Build Intersections Level of Service

The future No-Build design hour traffic volumes, as illustrated on Figures 6-9, 6-10, and 6-11, were used to evaluate the anticipated No-Build intersection conditions. Intersection signal timings and phasing plans for the PM peak hour provided by Volusia County were used in analyzing the signalized intersections. The No-Build intersections LOS for the opening, mid and design years are shown on Figures 6-18, 6-19, and 6-20. As illustrated, three (3) of the seven (7) intersections analyzed operate below the acceptable minimum LOS C in the opening year (2010). By the design year (2030), all of the intersections analyzed, with the exception of SR 15 at SR 40 and CR 3 at Lake Winona Road, operate below LOS C.

6.8.2 Build Intersections Level of Service

The future Build design hour traffic volumes, as illustrated on Figures 6-15, 6-16 and 6-17, were used to evaluate the anticipated Build intersection conditions. Signal timings and phasing plans for the PM peak hour provided by Volusia County were optimized and used in analyzing signalized intersection. The Build intersection levels of service for the opening, mid and design years are shown on Figures 6-21, 6-22 and 6-23. As illustrated, all intersections are expected to operate above the minimum acceptable LOS C through the design year (2030).

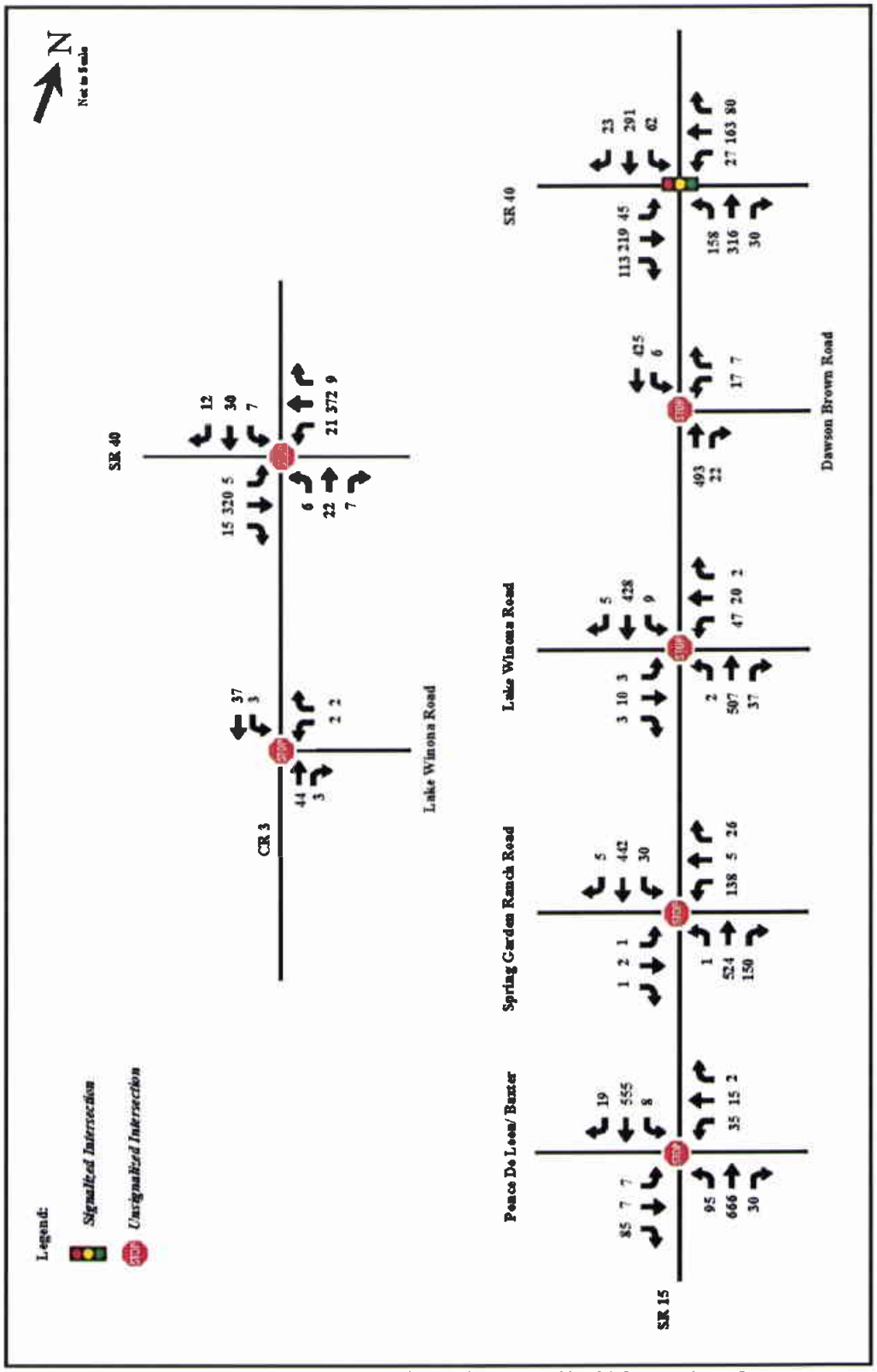
6.9 Future Roadway Levels of Service

Operational analysis for the basic arterial segments was performed utilizing HIGHPLAN version 1.2.0 (7/19/04) procedures.

6.9.1 No-Build Roadway Segments Level of Service

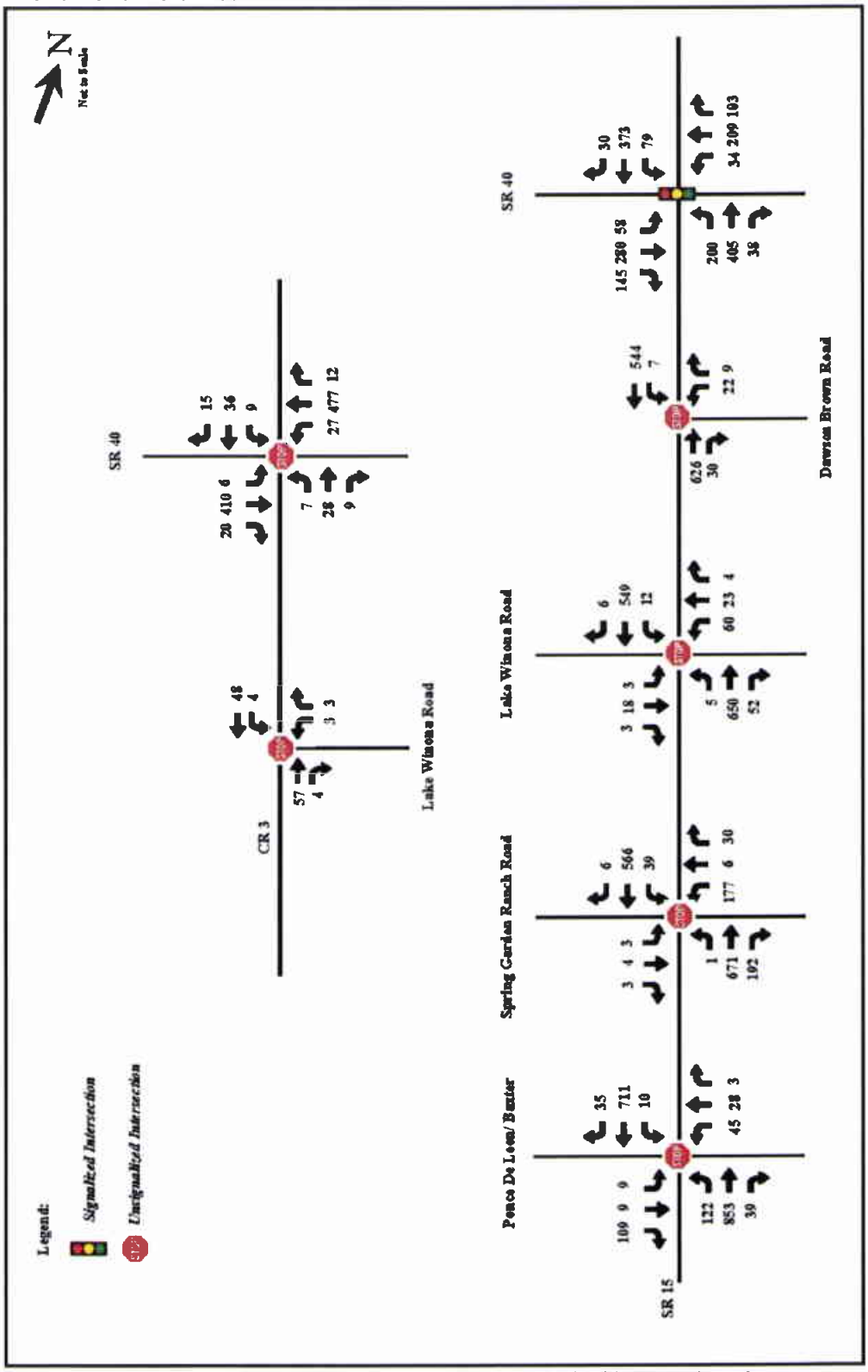
The future No-Build DDHVs, as illustrated on Figure 6-8, were used to evaluate the anticipated No-Build roadway links LOS. The opening, mid and design year roadway link levels of service were illustrated on Figures 6-18, 6-19 and 6-20, respectively.

Figure 6-15: Opening Year (2010) – Build Design Hour Turning Movement Volumes



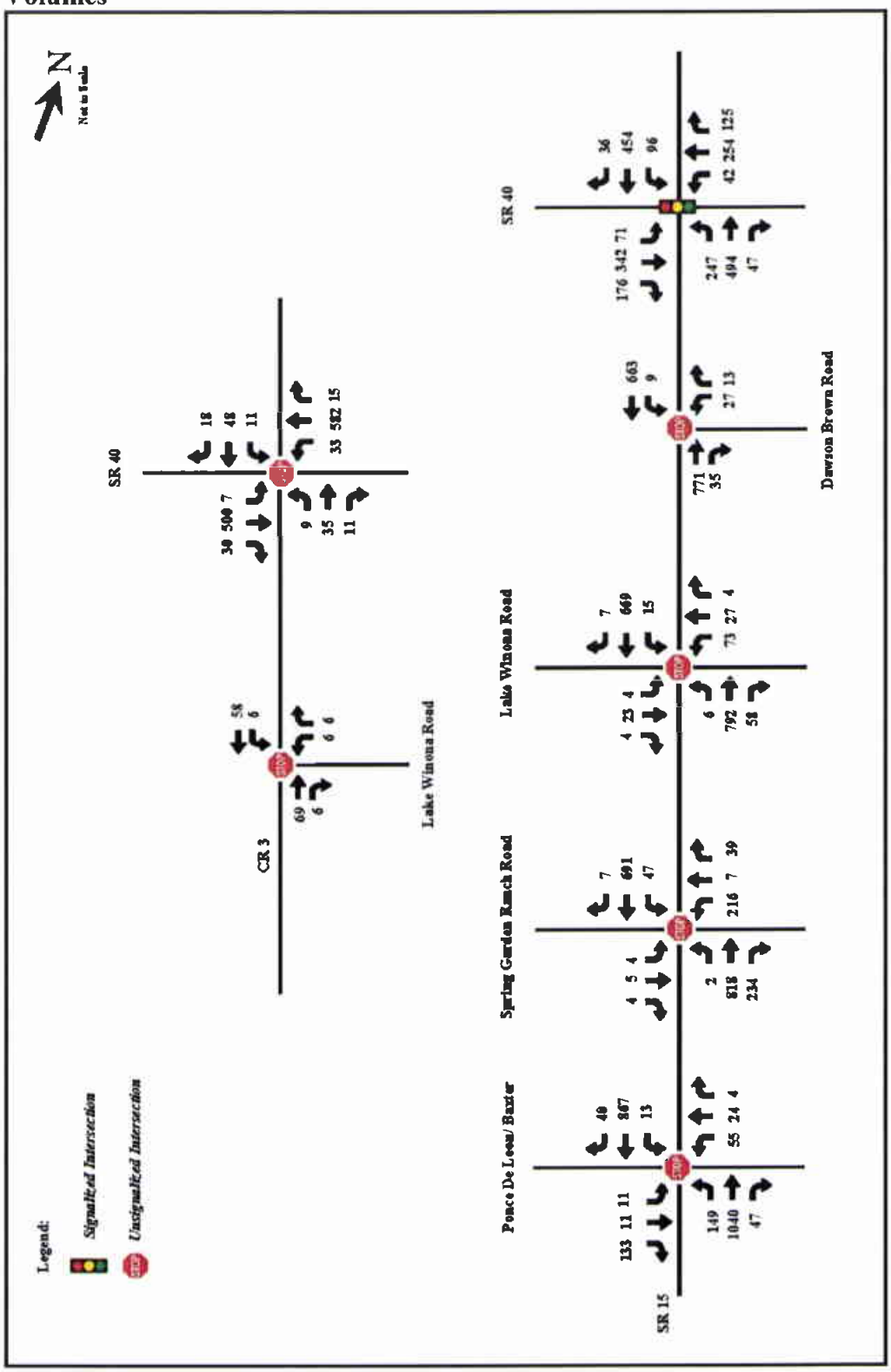
Source: Project Traffic – Existing & Future Conditions for SR 15, Ghyabi & Associates, Inc.

Figure 6-16: Mid-Design Year (2020) – Build Design Hour Turning Movement Volumes



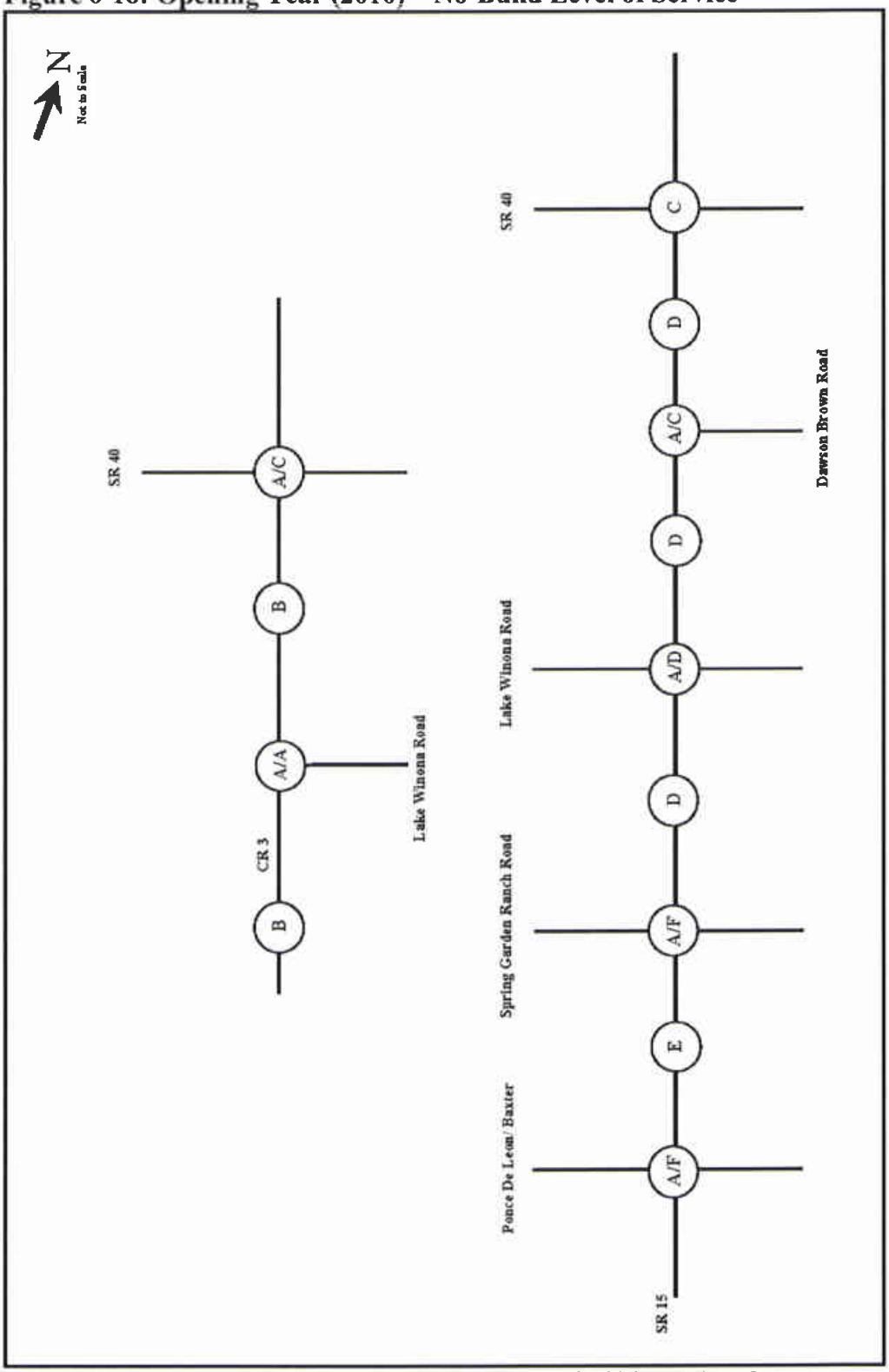
Source: Project Traffic – Existing & Future Conditions for SR 15, Ghyabi & Associates, Inc.

Figure 6-17: Design Year (2030) – Build Design Hour Turning Movement Volumes



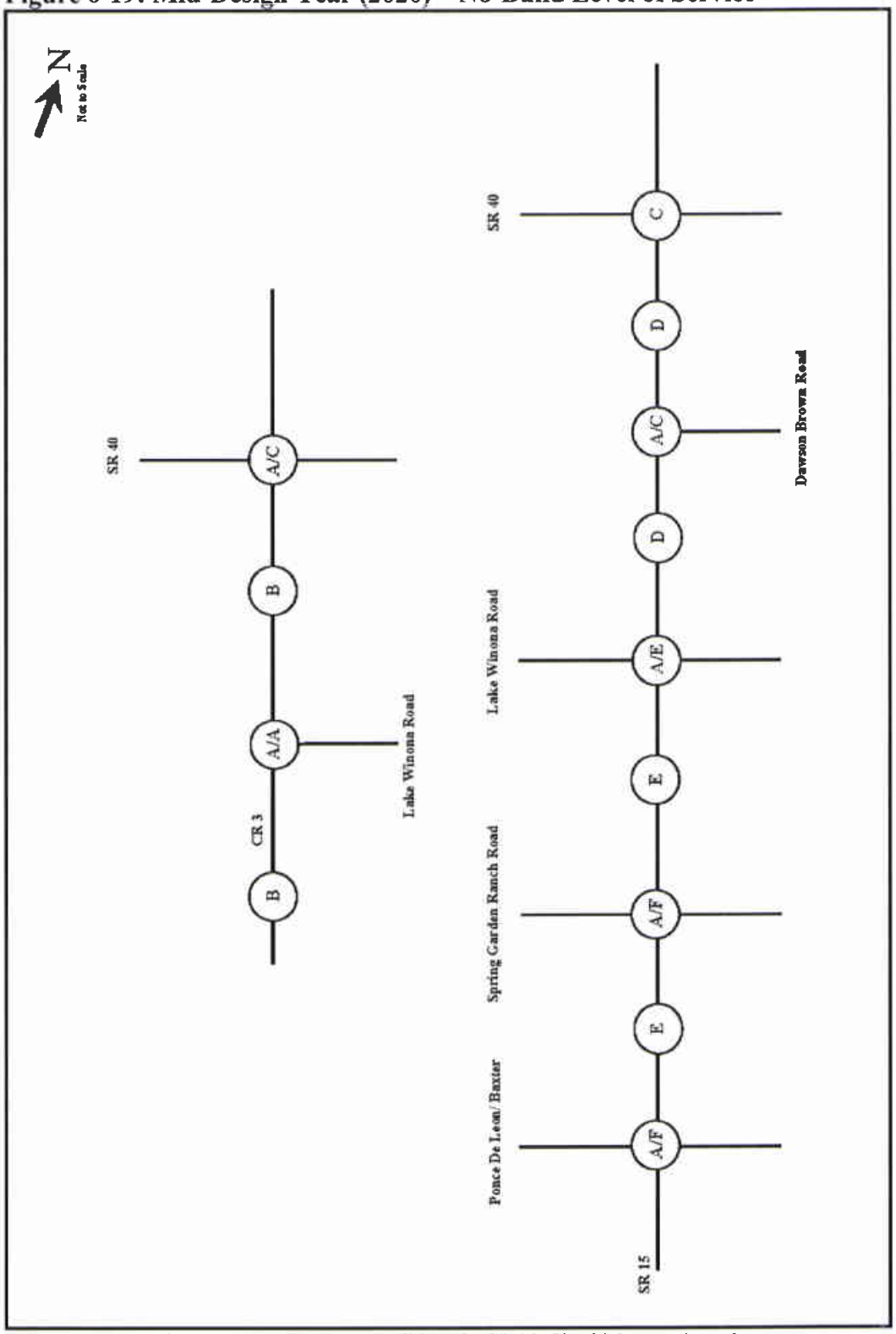
Source: Project Traffic – Existing & Future Conditions for SR 15, Ghyabi & Associates, Inc.

Figure 6-18: Opening Year (2010) – No-Build Level of Service



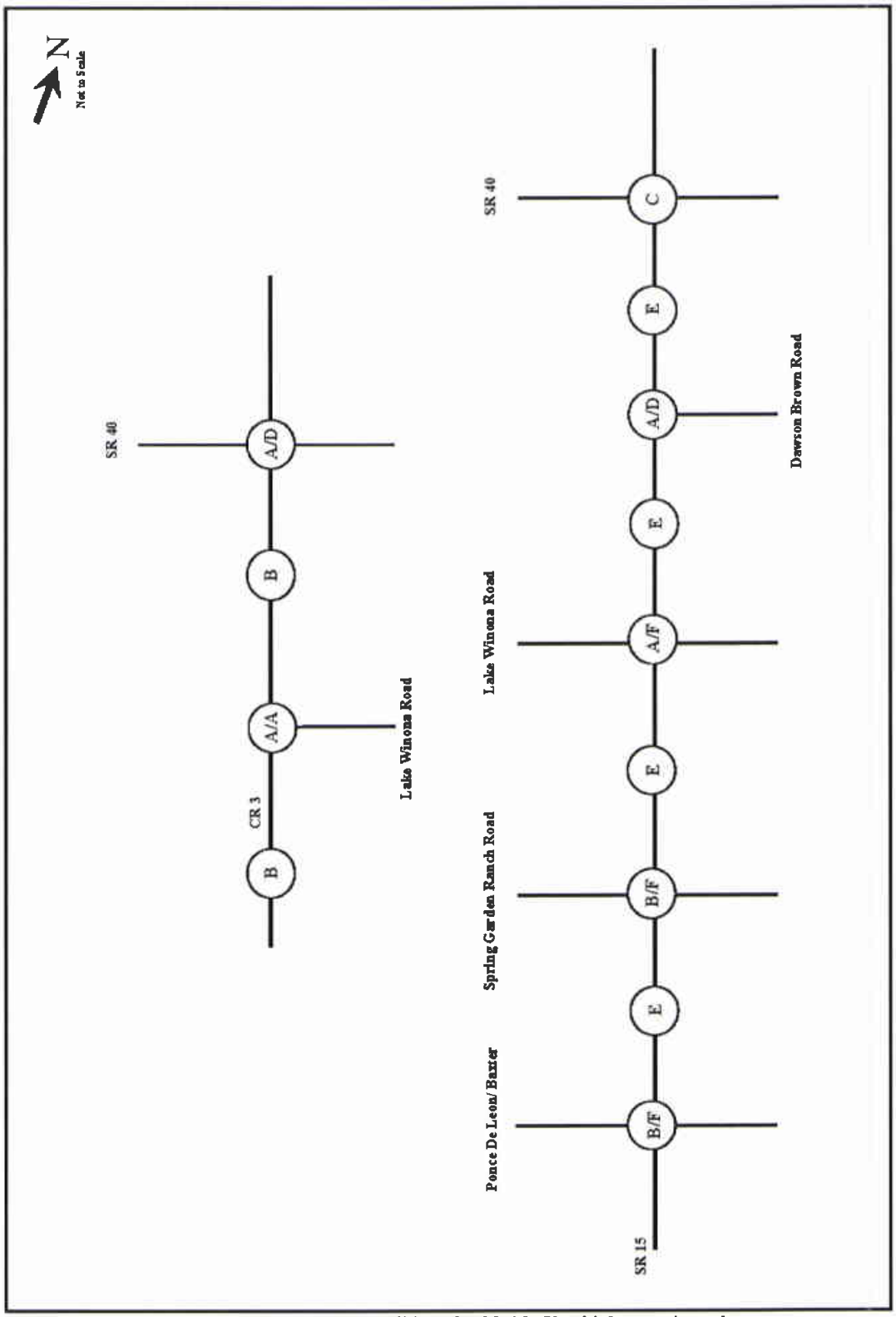
Source: Project Traffic – Existing & Future Conditions for SR 15, Ghyabi & Associates, Inc.

Figure 6-19: Mid-Design Year (2020) – No-Build Level of Service



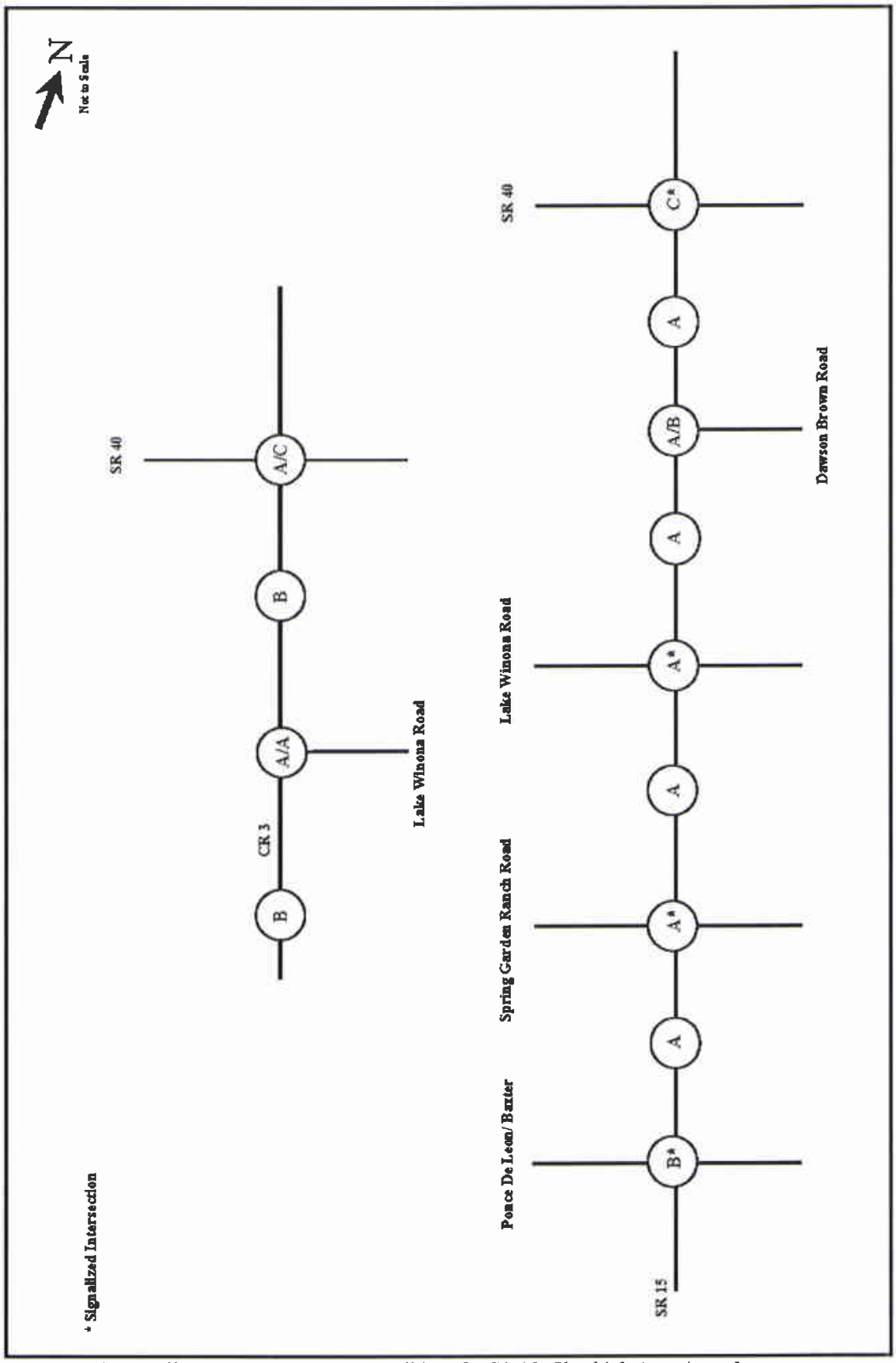
Source: Project Traffic – Existing & Future Conditions for SR 15, Ghyabi & Associates, Inc.

Figure 6-20: Design Year (2030) – No-Build Level of Service



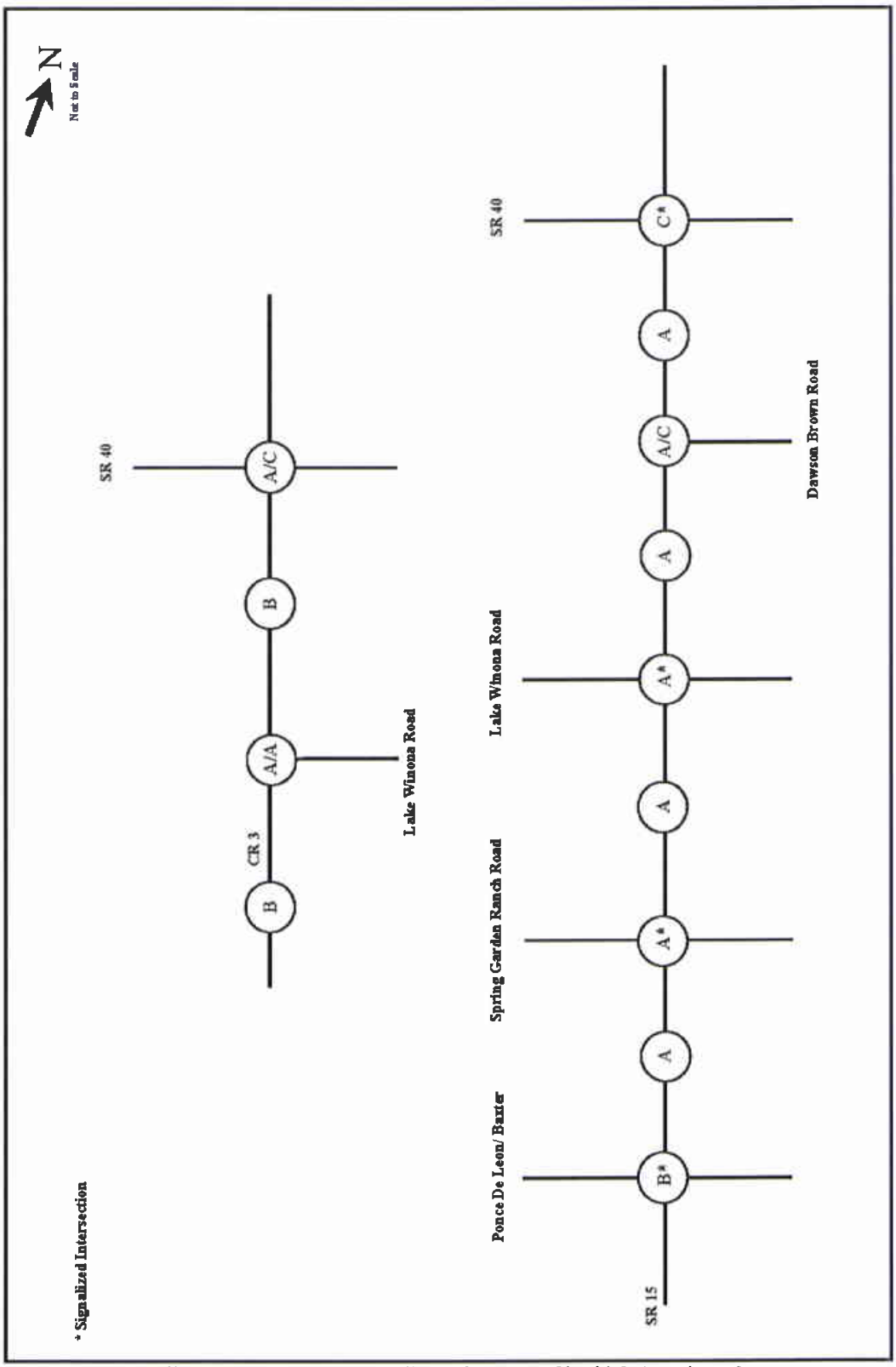
Source: Project Traffic – Existing & Future Conditions for SR 15, Ghyabi & Associates, Inc.

Figure 6-21: Opening Year (2010) – Build Level of Service



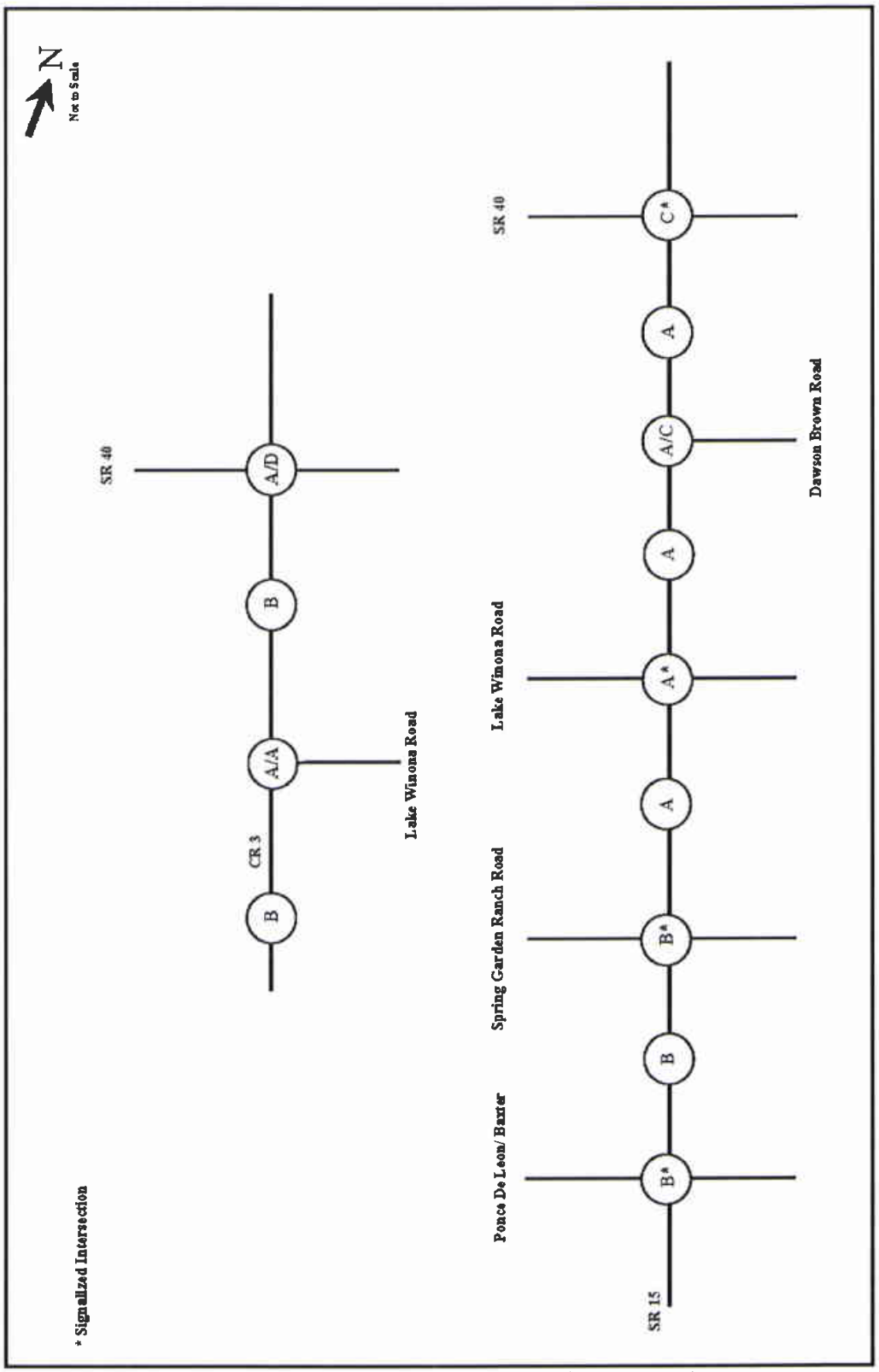
Source: Project Traffic – Existing & Future Conditions for SR 15, Ghyabi & Associates, Inc.

Figure 6-22: Mid-Design Year (2020)– Build Level of Service



Source: Project Traffic – Existing & Future Conditions for SR 15, Ghyabi & Associates, Inc

Figure 6-23: Design Year (2030) – Build Level of Service



Source: Project Traffic – Existing & Future Conditions for SR 15, Ghyabi & Associates, Inc

During the opening year, all roadway segments along SR 15 can be expected to operate below the minimum acceptable LOS C.

6.9.2 Build Roadway Segments Level of Service

The future Build DDHVs, as illustrated on Figure 6-14, were used to evaluate the anticipated Build roadway links LOS. The opening, mid and design year roadway links LOS were illustrated on Figures 6-21, 6-22 and 6-23, respectively.

All roadway segments can be expected to operate above the minimum acceptable LOS C through the design year (2030).

A review of the expected roadway and intersections LOS indicates that the four laning of SR 15 will satisfy the projected traffic needs along the SR 15 corridor.

6.10 Recommended Intersection Geometry

The proposed intersection geometry for the Build condition, as shown in Figure 6-12, was reviewed to determine right-of-way impacts associated with the recommended side street improvements. Table 6-2 lists the intersection modifications that are recommended. The implementation of adding signals to the intersections will be based on the intersection meeting the warrants for signalization, to be determined during the design phase.

Table 6-2: Recommended Intersection Modifications

INTERSECTING ROADWAY	RECOMMENDED CHANGE
SR 15 at Ponce DeLeon Boulevard	Signalize intersection
SR 15 at Spring Garden Ranch Road	Signalize intersection Add a separate westbound left turn lane
SR 15 at Lake Winona Road	Signalize intersection Add a separate westbound left turn lane
SR 15 at Dawson Brown Road	Add a separate southbound left turn lane

7.0 Corridor Analysis

7.1 Overview

The objective of the corridor analysis process is to select a viable corridor in which to provide engineered and environmentally sound alignment alternatives that are cost effective and acceptable to the community. The current SR 15 corridor must be widened to meet capacity, growth and safety needs. The existing corridor can feasibly meet the requirements of the need identified during this study with the purchase of a minimal amount of right-of-way. Due to the abilities of this corridor to meet the needs, no other corridors were studied.

8.0 Alternative Alignment Analysis

The SR 15 PD&E Study is being performed to address access, safety and capacity improvements. The analysis described herein adheres to the project development process by examining the various concepts considered for this project. These alternatives include No Project (No-Build) and Study (Build) Alternatives, and the advantages and disadvantages of each.

8.1 No Project (No-Build) Alternative

The No Project (No-Build) Alternative assumes no changes to the transportation facilities within the project corridor beyond currently planned and programmed projects already committed to within the Volusia County MPO's *2025 Refined Long Range Transportation Plan* and the Fiscal Year 2006 – 2010 *Transportation Improvement Program*. The No-Build Alternative forms the basis of the comparative analysis for each of the viable Study Alternatives.

The benefits of the No-Build Alternative are the absence of construction-related and short-term operational impacts associated with the Build Alternatives. However, long-term benefits accrued from serving future traffic demands will not be realized with this alternative. As discussed in Chapter 6 of this report, portions of SR 15 are projected to operate at less than acceptable LOS by the design year (2030). Operating conditions are anticipated to worsen with time, while further increasing delays and congestion.

Specifically, the No-Build Alternative will offer no benefits to the existing or future traffic congestion anticipated on SR 15. The issues identified in the needs for this project, including safety, bear crashes, vehicle crashes and capacity will not be addressed by the No-Build Alternative. Without any improvements, the geometric and capacity issues at the SR 15/SR 40 intersection will not be addressed. Distinct advantages and disadvantages associated with this alternative are described below.

Advantages

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

Disadvantages

- Increase in traffic congestion and road user cost, unacceptable level of service, and an increase in crashes associated with an increase in travel times and traffic volumes due to excessive delays,

- Increase in carbon monoxide levels and other air pollutants caused by an increase in traffic congestion,
- Increase in maintenance cost due to roadway and structural deterioration,
- Increase in emergency service response time in addition to an increase in evacuation time during weather emergencies as a result of heavy congestion,
- Does not meet the criteria of a SIS facility,
- Increase in safety-related accidents due to heavy congestion, and
- The existing roadway is not compatible with the adopted Volusia County MPO's *2025 Refined Long Range Transportation* and local government comprehensive plan.

8.2 Transportation System Management

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

- Traffic signal improvements,
- Intersection improvements,
- Widening of parallel arteries,
- Ridesharing programs,
- Transit, and
- Intelligent Transportation Systems (ITS)

Although the implementation of TSM strategies would aid in localized operations of the existing roadway, the projected traffic volumes, for the design year (2030) require SR 15 to be widened to provide the additional capacity necessary to maintain or improve the existing LOS. Therefore, the TSM Alternative is not considered a viable alternative and no further evaluation of the TSM Alternative will be conducted during this study.

8.3 Study Alternatives

Three Study Alternative typical section concepts were developed for this study. The three alternatives considered were the entire reconstruction of SR 15 with the acquisition of additional right-of-way to the west, the entire reconstruction of SR 15 with the acquisition of additional right-of-way to the east, and the utilization of the existing SR 15 for the southbound lanes and construction of the northbound lanes to the east of the existing roadbed by utilizing new right-of-way purchased on the east side. Each

alternative was developed using a design speed of 65 mph. Figures 8-1, 8-2, and 8-3 present the proposed typical sections for the west alignment, east alignment, and existing alignment alternatives, respectively. See Appendix C for detailed alternative plan sheets.

Figure 8-1: Proposed West Alignment Typical Section (Alternative 1)

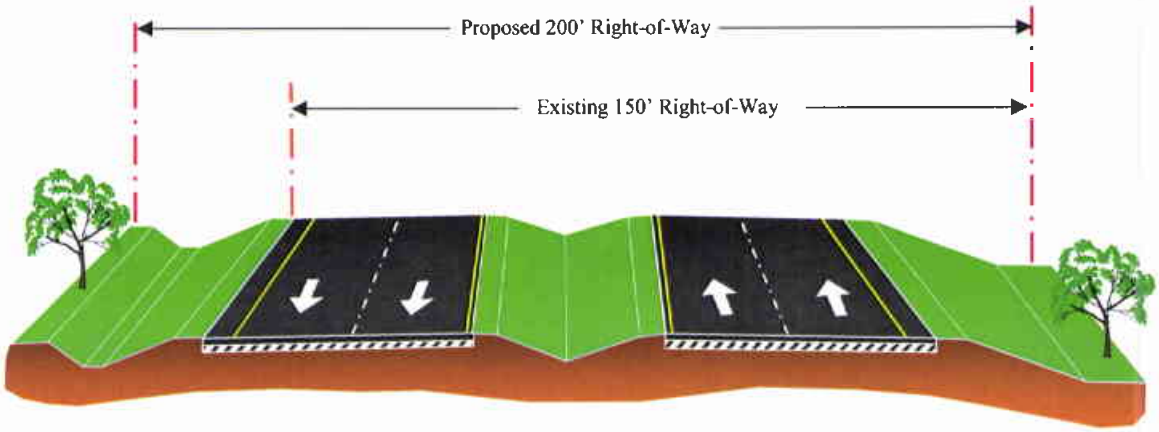


Figure 8-2: Proposed East Alignment Typical Section (Alternative 2)

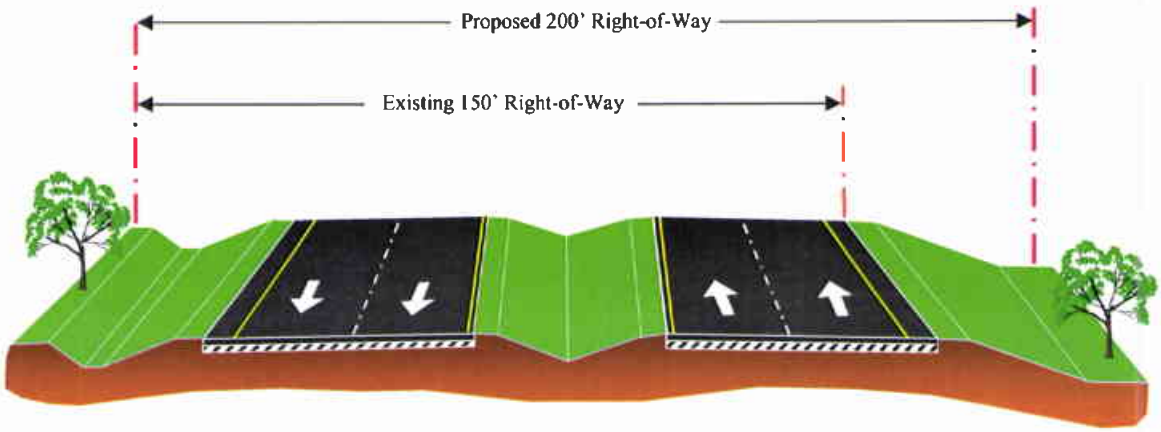
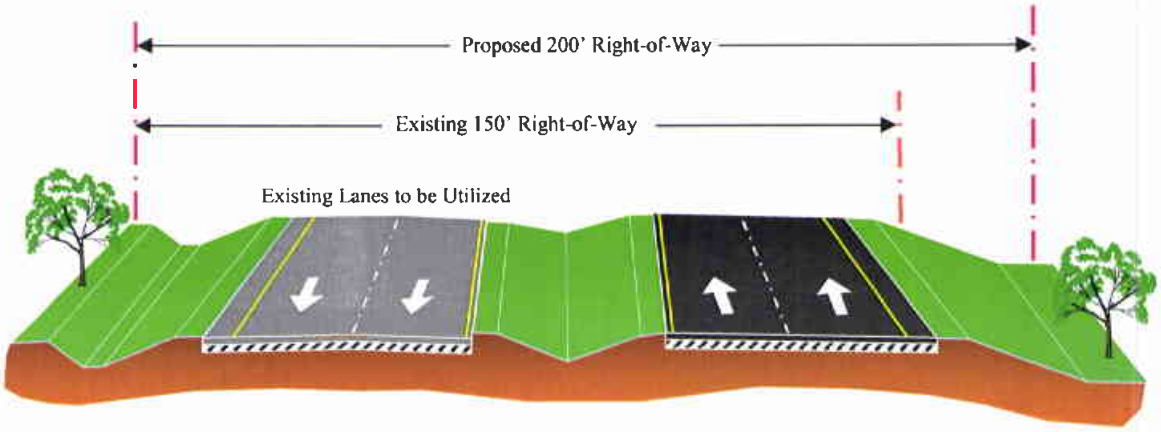


Figure 8-3: Proposed Existing Alignment Typical Section (Alternative 3)



8.3.1 Alternative 1 (West Alternative)

The West Alternative consists of total reconstruction of SR 15 from Ponce DeLeon Boulevard to SR 40. The right-of-way from Ponce DeLeon Boulevard to 0.85 miles north of Lake Winona Road is 200 feet wide, within this segment additional right-of-way is not required and the 4 lane section would be centered within the existing right-of-way. The West Alternative would require that 50 feet of additional right-of-way be acquired 0.85 miles north of Lake Winona Road to SR 40. The right-of-way needed would be made available by acquiring 50 feet of new right-of-way to the west of the existing right-of-way.

It is proposed that the new section of SR 15 would have a 40 foot median, 12 foot travel lanes and 5 foot shoulders, as required in the FDOT *Plans Preparation Manual.* The existing bridge over Deep Creek would require demolition and a new set of structures constructed. Widening to the west would impact the CSX railroad corridor.

Proposed Drainage

The new SR 15 cross slope will be set to drain to the outside of the roadway similar to the existing condition. There will be conveyance ditches located on each side of the roadway which will convey the roadway runoff to various stormwater ponds throughout the corridor. For the West Alternative it was estimated that approximately 18.0 acres of right-of-way would be required for stormwater treatment.

Environmental Impacts

Wetland impacts, as a result of roadway improvements, were quantified for the West Alternative; approximately 4.7 acres of impacts are associated with this alternative.

Advantages of West Alternative

- Minimization of residential impacts – zero impacts,

- Minimization of parcels impacted – 1 parcel,
- Least number of wetland impacts, 4.7 acres,
- A five (5) foot shoulder can be provided throughout entire corridor,
- There are no business relocations,
- There are no impacts to 4(f) lands,
- Can provide adequate border width.

Limitations of West Alternative

- Impacts to historic CSX railroad corridor,
- Roadway moves closer to the active CSX railroad tracks,
- Maintenance of traffic during construction would be complex.

8.3.2 Alternative 2 (East Alternative)

The East Alternative consists of total reconstruction of SR 15 from Ponce DeLeon Boulevard to SR 40. The right-of-way from Ponce DeLeon Boulevard to 0.85 miles north of Lake Winona Road is 200 feet wide, within this segment additional right-of-way is not required and the 4 lane section would be centered within the existing right-of-way. The East Alternative would require that 50 feet of additional right-of-way be acquired 0.85 miles north of Lake Winona Road to SR 40. The right-of-way needed would be acquired by shifting the east right-of-way line 50 feet to the east.

The proposed section of SR 15 would have a 40 foot median, 12 foot travel lanes and 5 foot shoulders, required by the FDOT *Plans Preparation Manual.* The existing bridge over Deep Creek would require demolition and a new set of structures constructed.

Proposed Drainage

The new SR 15 cross slope will be set to drain to the outside of the roadway similar to that of the existing condition. There will be conveyance ditches located on each side of the roadway which will convey the roadway runoff to various stormwater ponds throughout the corridor. It was estimated that approximately 18.0 acres of right-of-way would be required for stormwater treatment for the East Alternative.

Environmental Impacts

Wetland impacts, as a result of roadway improvements, were quantified for the East Alternative; approximately 6.7 acres of impact are associated with this alternative.

Advantages of East Alternative

- There are no impacts to the historic railroad corridor,
- Five (5) foot shoulder can be provided throughout entire corridor,

- Can provide adequate border width.

Limitations of East Alternative

- Number of residential impacts - 2 residences,
- Business impacts - 1 business,
- Larger amount of parcels impacted - 25 parcels,
- Impacts to 4(f) lands, approximately 9.4 acres,
- 6.7 acres of wetland impacts,
- Maintenance of traffic during construction would be more complex.

8.3.3 Alternative 3 (Existing Alternative)

The Existing Alternative consists of reconstruction of SR 15 from Ponce DeLeon Boulevard to 0.85 miles north of Lake Winona Road. The right-of-way from Ponce DeLeon Boulevard to 0.85 miles north of Lake Winona Road is 200 feet wide, within this segment additional right-of-way is not required and the 4-lane section would be centered within the existing right-of-way. In this section, the existing roadbed will not be used as it is currently centered within the existing right-of-way and would not allow adequate room to construct the new lanes. The Existing Alternative would require that 50 feet of additional right-of-way be acquired 0.85 miles north of Lake Winona Road to SR 40. The right-of-way needed would be acquired by shifting the east right-of-way line 50 feet to the east. The Existing Alternative would convert the existing SR 15 lanes, from 0.85 miles north of Lake Winona Road to SR 40, to the new southbound lanes and an additional two (2) lanes would be constructed to the east, these new lanes will be the new northbound lanes.

The new section of SR 15 would have a 40 foot median, 12 foot travel lanes and 5 foot shoulders. The existing shoulders on the new southbound lanes are 4 foot paved shoulders, 5 foot shoulders are required by FDOT. Instead of constructing a 1 foot wide piece of pavement to widen the shoulder to 5 feet, a variance was prepared for this project. The existing bridge over Deep Creek would be used for the southbound lanes for traffic control purposes during construction. The existing bridge over Deep Creek would require demolition and a new set of structures constructed.

Alternative 3 will also have a reduced border width on the west side of the existing lanes. Currently the border width is 29 feet, and the proposed border width will be the same since we are not anticipating any construction to the outside of the new southbound lanes. The proposed section of SR 15 would have a 29 foot border width in lieu of a 40 foot border required by the FDOT *Plans Preparation Manual.* A border width variance was prepared for this project.

Proposed Drainage

The new SR 15 cross slope will be set to drain to the outside of the roadway, the existing drainage patterns for the existing SR 15 will remain the same. The southbound lanes will remain crowned in the middle of the roadway; the roadway will still drain to the ditch on the outside and now the median. There will be conveyance ditches located on each side of the new southbound lanes which will convey the roadway runoff to various stormwater ponds throughout the corridor. For the Existing Alternative it was estimated that approximately 18.0 acres of right-of-way would be required for stormwater treatment.

Environmental Impacts

Wetland impacts, as a result of roadway improvements, were quantified for the Existing Alternative; approximately 6.7 acres of impact are associated with this alternative.

Advantages of Existing Alternative

- There are no impacts to the historic railroad corridor,
- Construction cost significantly reduced since existing road is being utilized,
- Number of residences impacted – two (2) impacts,
- Construction of northbound lanes will have minimal impact to existing traffic flow.

Limitations of Existing Alternative

- 25 parcels impacted,
- Variance required for a 4 foot shoulder on the southbound roadway,
- Variance required for the border width for the southbound roadway,
- Impacts to 4(f) lands, approximately 9.4 acres,
- 6.7 acres of wetland impacts.

8.3.4 SR 15 and SR 40 Intersection Alternatives

Six alternatives were developed for the intersection of SR 15 and SR 40. Some of the items that were taken into consideration in developing these alternatives were the proximity of the intersection to the railroad tracks, and the proximity of the intersection to County Road 3. These two items are safety related items and were considered extensively in the intersection alternatives. The intersection lane geometry, which is provided in chapter 6 of this report, outlines the recommended lane configuration of the intersection. The alternatives developed for the intersection were based on this recommended geometry. The number of businesses that would be impacted by the alignment shift was also considered.

Alternative A - West Alignment (150' Right-of-Way)

This alignment alternative requires an additional 50 feet of right-of-way on the west side of SR 15; see Appendix C for concept plans. Alternative A proposes to shift the SR 15 and SR 40 intersection approximately 35 feet closer to the railroad tracks. This shift is not enough to bring the intersection under full control of the railroad crossing gates. There would be five (5) businesses impacted by this shift in the alignment, each of the businesses would be fully displaced.

Alternative B1 - East Alignment (150' Right-of-Way)

This alignment alternative requires an additional 50 feet of right-of-way on the east side of SR 15; see Appendix C for concept plans. Alternative B1 proposes no shifting of the SR 15 and SR 40 intersection any closer or any further from the railroad tracks because this alternative utilizes the existing roadway as the new southbound lanes. There would be one (1) business impact by this shift in the alignment; the business would be fully displaced.

Alternative B2 - East Alignment (200' Right-of-Way)

This alignment alternative requires an additional 100 feet of right-of-way on the east side of SR 15; see Appendix C for concept plans. Alternative B2 proposes to shift the SR 15 and SR 40 intersection approximately 35 feet further from the railroad tracks. There would be one (1) business impacted by this shift in the alignment; the business would be fully displaced.

Alternative C - Center Alignment (200' Right-of-Way)

This alignment alternative requires an additional 50 feet of right-of-way on the east side of SR 15, and an additional 50 feet on the west side of SR 15; see Appendix C for concept plans. Alternative C proposes no shifting of the SR 15 and SR 40 intersection any closer or any further from the railroad tracks. This alternative proposes to center SR 15 within the 200 foot right-of-way and would provide adequate room for the intersection geometry. There would be six (6) businesses impacted by this shift in the alignment; the businesses would be fully displaced.

Alternative D1 - East Alignment (229' Right-of-Way)

This alignment alternative requires an additional 229 feet of right-of-way on the east side of SR 15; see Appendix C for concept plans. Alternative D1 proposes to shift the SR 15 and SR 40 intersection approximately 180 feet away from the railroad tracks. This alternative takes advantage of the entire Citgo property on the southeast corner of the intersection. There would be two (2) business impacts by this shift in the alignment; the businesses would be fully displaced. There would also be one residence displaced, the displaced residence is a home that is combined with a beauty salon (one of the displaced businesses).

Alternative D2 - East Alignment (229' Right-of-Way)

This alignment alternative requires an additional 229 feet of right-of-way on the east side of SR 15; see Appendix C for concept plans. Alternative D2 proposes to shift the SR 15 and SR 40 intersection approximately 180 feet away from the railroad tracks. This alternative takes advantage of the entire Citgo property on the southeast corner of the intersection. This alternative also ties in to the existing roadway sooner, therefore minimizing impacts to adjacent right-of-way parcels. There would be two (2) business impacts by this shift in the alignment; the businesses would be fully displaced. There would also be one residence displaced, the displaced residence is a home that is combined with a beauty salon (one of the displaced businesses).

8.4 Comparative Analysis

8.4.1 SR 15 Corridor

The three (3) Study Alternatives (West Alternative, East Alternative, and Existing Alternative) were evaluated for the full length of the corridor to provide a basis for proceeding to the specific concept refinements. Table 8-1 presents the estimated impact evaluation for the conceptual Study Alternatives; the No-Build alternative is presented for comparison purposes.

Table 8-1: Estimated Impact Evaluation for SR 15 Corridor Study Alternatives

EVALUATION FACTORS	ALTERNATIVE #1 WEST	#2 EAST	#3 EXISTING	"NO-BUILD"
Business Impacts				
Expected Number of Business Relocations	0	0	0	0
Number of Businesses Impacted	0	1	1	0
Residential Impacts				
Expected Number of Residential Relocations	0	0	0	0
Number of Residences Impacted	0	2	2	0
Right of Way Impacts				
Number of Parcels Impacted	1	25	25	0
Area of ROW to be Acquired for Roadway (acres)	22.6	23.9	23.9	0
Area of ROW to be Acquired for Pond Sites (acres)	18.0	18.0	18.0	0
Drainage				
Treatment Volume Requirements (acre-feet)	12.97	12.97	12.97	0
Impacts on Cultural/Historical Resources and Public Parks				
Number of Historic Sites Impacted	1	0	0	0
Impacts to 4(f) Lands (acres)	0	9.4	9.4	0
Natural Environmental Impacts				
Wetland Impacts (acres)	4.7	6.7	6.7	0
Floodplain Impacts (acres-feet)	1.5	1.5	1.5	0
Threatened and Endangered Species	0	0	0	0
Potential Contamination Sites				
Number of Potential Contamination Sites Impacted	1	1	1	0
Estimated Project Cost				
Engineering Design Cost (12%)	$2,400,360	$2,400,360	$2,212,920	$0
ROW Acquisition Cost	$7,250,000	$7,710,000	$7,710,000	$0
Construction Cost with a 15% Contingency	$20,003,000	$20,003,000	$18,441,000	$0
Construction Eng. & Inspection Cost (12%)	$2,400,360	$2,400,360	$2,212,920	$0
Total Cost	**$32,053,720**	**$32,513,720**	**$30,576,840**	**$0**

8.4.2 SR 15 and SR 40 Intersection

The six (6) alternative intersection concepts were evaluated to provide a basis for selection of the preferred intersection alternative. Table 8-2 presents the estimated impact evaluation for the conceptual intersection alternatives; the No-Build alternative is presented for comparison purposes.

Table 8-2: Estimated Impact Evaluation for SR 15 / SR 40 Study Alternatives

EVALUATION FACTORS	ALTERNATIVE A	B1	B2	C	D1	D2	"NO-BUILD"
Business Impacts							
Expected Number of Business Relocations	5	1	1	6	2	2	0
Number of Businesses Impacted	0	0	0	0	0	0	0
Residential Impacts							
Expected Number of Residential Relocations	0	0	0	0	1	1	0
Number of Residences Impacted	0	0	0	0	0	0	0
Right of Way Impacts							
Number of Parcels Impacted	6	8	8	14	14	11	0
Area of ROW to be Acquired for Roadway (acres)	2.08	2.25	4.17	4.31	16.01	12.14	0
Area of ROW to be Acquired for Pond Sites (acres)	1.5	1.5	1.5	1.5	0	0	0
Drainage							
Treatment Volume Requirements (acre-feet)	1.01	1.01	1.01	1.01	1.01	1.01	0
Impacts on Cultural/Historical Resources and Public Parks							
Number of Historic Sites Impacted	1	0	0	1	0	0	0
Impacts to 4(f) Lands (acres)	0	0	0	0	0	0	0
Natural Environmental Impacts							
Wetland Impacts (acres)	0	0	0	0	0	0	0
Floodplain Impacts (acres-feet)	0	0	0	0	0	0	0
Threatened and Endangered Species	0	0	0	0	0	0	0
Potential Contamination Sites							
Number of Potential Contamination Sites Impacted	0	1	1	1	1	1	0
Estimated Project Cost							
Engineering Design Cost (12%)	$172,080	$172,080	$216,000	$151,200	$243,360	$228,000	$0
ROW Acquisition Cost	$2,766,000	$2,882,000	$3,462,000	$5,648,000	$7,134,000	$5,485,700	$0
Construction Cost with a 15% Contingency	$1,434,000	$1,434,000	$1,800,000	$1,260,000	$2,028,000	$1,900,000	$0
Construction Eng. & Inspection Cost (12%)	$172,080	$172,080	$216,000	$151,200	$243,360	$228,000	$0
Total Cost	**$4,544,160**	**$4,660,160**	**$5,694,000**	**$7,210,400**	**$9,648,720**	**$7,841,700**	**$0**

8.5 Preferred Alternative

8.5.1 SR 15 Corridor

Based on the results of the initial alternatives evaluation matrix shown in Table 8-1, the Existing Alignment Alternative (Alternative 3) was selected as the Preferred Alternative to widen SR 15 to a four (4) lane facility. The Existing Alignment Alternative has less environmental impacts and has a reduced construction cost.

8.5.2 SR 15 and SR 40 Intersection

Based on the results of the initial alternatives evaluation matrix shown in Table 8-2, the Alternative D2 was selected as the Preferred Alternative to widen the SR 15 and SR 40 Intersection. Alternative D2 has the greatest net safety improvements.

More detail regarding the preferred corridor and intersection alternatives is provided in Section 9 of this report.

9.0 Preliminary Design Analysis

Section 9 addresses the design analysis in regards to engineering and environmental impacts of the preferred alternative. The preferred alternative based on the analysis presented in Section 8 of this report is the Existing Alignment (Alternative 3), and Alternative D2 for the intersection of SR 15 / SR 40.

9.1 Design Traffic Volumes

The analysis of the design traffic volumes was previously presented in Chapter 6 of this PER. Figures 6-7 and 6-13 (shown previously) show the No-Build and Build AADT's, respectively, while Figures 6-8 and 6-14 show the No-Build and Build DDHV's, respectively. No-Build turning movement volumes are shown in Figures 6-9, 6-10, and 6-11 and the corresponding levels of service provided in Figures 6-18, 6-19, and 6-20 for the Opening (2010), Mid-design (2020), and Design (2030) Years, respectively. Build turning movement volumes are shown in Figures 6-15, 6-16, and 6-17 and the corresponding levels of service provided in Figures 6-21, 6-22, and 6-23 for the Opening (2010), Mid-design (2020), and Design (2030) Years, respectively.

9.2 Typical Sections

The preferred typical section for the segment of SR 15 from Ponce DeLeon Boulevard to 0.85 miles north of Lake Winona Road is a four (4) lane divided rural typical section with two twelve (12) foot travel lanes in each direction. The section includes a five (5) foot paved outside shoulders and two (2) foot paved inside shoulders. The proposed median is 40 feet in width, which allows for development of left turn lanes in the median. The proposed typical section for the corridor of SR 15 from 0.85 miles north of Lake Winona Road to SR 40 is also a four-lane divide rural typical section with two twelve (12) foot travel lanes in each direction. This typical section utilizes the existing roadbed for the southbound lanes and constructs new northbound lanes. The proposed paved outside shoulder on the northbound roadway is a five (5) feet; the existing paved outside shoulder will be used on the southbound lanes, this shoulder is four (4) feet wide and will require a variance to be utilized. A shoulder variance has been developed as part of this project, and approved by FDOT. The proposed inside shoulder for the northbound and southbound lanes is a two (2) foot wide paved shoulder. The proposed median is a 40 foot median; this allows adequate room for left turn lanes to be constructed in the future.

The preferred typical section at the intersection of SR 15 / SR 40 provides the appropriate lane configuration for the 2030 design year. The northbound and southbound approaches to the intersection are comprised of two twelve (12) foot travel lanes, a twelve (12) foot dedicated right turn lane and a twelve (12) foot dedicated left turn lane. The northbound and southbound dedicated left turn lanes will be separated from opposing traffic by a four (4) foot concrete traffic separator. The eastbound approach to the intersection has one

thru lane, one dedicated left turn lane and one dedicated right turn lane, each of these lanes is twelve (12) foot wide. The westbound approach has one thru lane and one dedicated left turn lane, each of these lanes is twelve (12) foot wide. In keeping with the rural characteristic of the corridor, five (5) foot shoulders will be used at the intersection.

9.3 Intersection Improvements and Signal Analysis

9.3.1 Lane Geometrics and Signalization

The methodology used to develop the future turning movement volumes at the project intersections is documented in detail in the *Project Traffic for SR 15 PD&E, and Design, 2004,* prepared by Ghyabi & Associates, Inc. Intersection geometric requirements were determined through a series of signalization analyses. The design year (2030) Build Alternative includes a total of four through lanes for northbound and southbound directions: a dedicated northbound and southbound left turn lane and a dedicated northbound and southbound right turn lane. SR 40 also has dedicated eastbound and westbound left turn lanes and eastbound and westbound dedicated right turn lanes.

The results of the signalized intersection analyses conducted for the year 2030 Build Alternative show that the SR 15 / SR 40 operates below a level of service C.

9.4 Alignment and Right-of-Way Needs

The existing right-of-way widths are described in section 4.1.4. The proposed roadway alignments by Segment are described below.

9.4.1 Segment 1 - DeLeon Springs Boulevard to 0.85 miles north of Lake Winona Road

The existing right-of-way throughout this segment is 200 feet. This right-of-way provides enough width for the proposed section to be built without requiring the acquisition of additional right-of-way.

9.4.2 Segment 2 – 0.85 miles north of Lake Winona Road to 1,200 feet south of SR 40

The existing right-of-way throughout this segment is 150 feet. Additional right-of-way is required throughout this segment of the corridor in order to accommodate the preferred alternative. Based on the utilization of the existing roadbed, the right-of-way is needed on the east side of the existing corridor. Fifty (50) additional feet will be acquired to meet the proposed corridor width.

9.4.3 Segment 3 - 1,200 feet south of SR 40 to SR 40

The existing right-of-way throughout this segment is 100 feet. Additional right-of-way is required in order to accommodate the intersection geometry. The 100 feet is proposed to be acquired from the east side of the existing right-of-way.

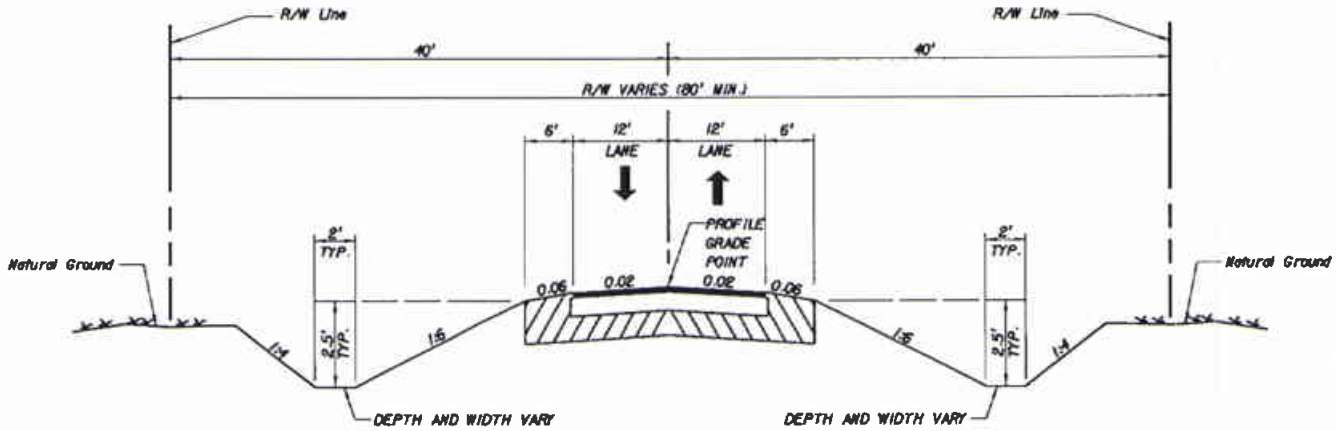
9.4.4 SR 15 and SR 40 Intersection

The existing right-of-way through the intersection is 100 feet wide; an additional 229 feet of right-of-way will be required to the east of the existing right-of-way line.

9.4.5 Division of Forestry Access

As previously mentioned in the commitments, FDOT has agreed to purchase an 80 foot strip of an adjacent parcel; this 80 foot strip will allow the FDOT to construct an access road to allow the Division of Forestry vehicles to have access to Spring Garden Avenue. This access is important in that it provides the Division of Forestry vehicles full access at the intersection of Spring Garden Avenue and SR 15. The parcel to be acquired is approximately 80 feet wide and 215 feet long; see Appendix C for concept plans. Below is a typical section of the Division of Forestry Access Road.

Figure 9-1: Proposed Typical Section for the Division of Forestry Access Road



9.4.6 Dawson Brown Road / Oakside Meadow Lane

The area where Dawson Brown Road and Oakside Meadow Lane intersect SR 15 will require additional right-of-way in order to provide a single access point at SR 15. An additional ten (10) feet of right-of-way is required. For a distance of approximately 250 feet a total of 60 feet of right-of-way will be needed; see Appendix C for concept plans.

9.5 Relocation

The proposed project would require the relocation of two commercial businesses.

There are no public facilities, major shopping centers, hospitals, schools, or other related establishments that would be displaced by the proposed improvements. The project is not anticipated to involve relocating any handicapped or disabled persons. Over the long

term, the project is expected to have a positive influence on the regional economic climate. Therefore, the relocation impacts to the community are considered minimal.

At the intersection of SR 15 and SR 40 two businesses will require relocating, one is the Citgo/Subway on the southeast quadrant and the other is a hair salon in the northeast quadrant. There is also a residence that will require relocating; this residence is located in the same building as the hair salon. Both the business and the residence share the same building.

A Conceptual Stage Relocation Plan, (CSRP) April 2006 has been development by the project team in accordance with Florida Statutes, Chapter 339.09, the Uniform Relocation Assistance and Real Property Acquisition Act of 1970 (Public Law 91-646, as amended by Public Law 100-17) and FHWA Technical Advisory T6640.8A.

9.6 Project Cost Estimates

Estimated project cost estimates are summarized in Table 9-1. These costs include preliminary engineering (design), right-of-way acquisition for SR 15 mainline and the SR 15 / SR 40 intersection improvements, construction for SR 15 and SR 15 / SR 40 intersection improvements, and construction engineering and inspection (CEI). The preferred alternative costs are presented below. A total cost of $41.6 million has been estimated for these alternatives.

Table 9-1: Estimated Project Costs

ESTIMATED PROJECT COSTS	
SR 15 Mainline ROW Acquisition Cost	$ 7,710,000
SR 15 / SR 40 Intersection ROW Acquisition Cost	$ 5,485,700
SR 15 Mainline Construction Cost with a 15% Contingency	$ 18,441,000
SR 15 / SR 40 Intersection Construction Cost with a 15% Contingency	$ 1,900,000
Construction Eng. & Inspection Cost (12%)	$ 4,024,404
Engineering Design Cost (12%)	$ 4,024,404
Total Cost	**$ 41,585,508**

9.7 Recycling of Salvageable Material

The opportunity to recycle any salvageable materials by the contractor is encouraged by the FDOT. Such material may include old asphaltic concrete pavement, base material, and drainage structures. The existing pavement may be milled for recycling during the construction of the project. Any other salvageable materials would be identified during

the design of the project. If these materials should be removed from the construction site, it is to be done as specified in the current *FDOT Standard Specifications for Road and Bridge Construction.* The opportunity to utilize existing pavement would also be identified during the design of the project.

9.8 User Benefits

Highway user costs are defined by AASHTO's *A Manual on User Benefit Analysis of Highway and Bus-Transit Improvements*, 1977, as the sum of (1) motor vehicle running cost, (2) the value of the vehicle user travel time and (3) traffic accident cost. User benefits are the cost reductions and other advantages that occur to highway motor vehicle users through the use of a particular transportation facility as compared with the use of another. Benefits are generally measured in terms of a decrease in user cost. Since the "No Project" concept will operate at an unacceptable Level of Service and delays in travel time and higher accident rates can be expected in comparison with the build alternatives, it is anticipated that the build alternatives would provide user benefits in comparison with the "No Project" Alternative.

9.9 Pedestrian and Bicycle Facilities

The proposed four-lane rural section would provide a paved shoulder which could be used by a bicyclist. The Volusia County Trails Plan currently includes a proposed trail, the Spring to Spring Trail, which would be constructed adjacent to CR 3. This trail would provide cyclists an alternate means to traveling along the shoulder of SR 15. CR 3 runs parallel to SR 15 and would serve as an appropriate multi-use trail corridor, therefore keeping bicyclists and pedestrians away from the higher speeds and truck traffic on SR 15. The CR 3 pedestrian/bicycle facility is currently under study by another consulting firm.

9.10 Safety

The purpose of this project is to reduce congestion in the transportation corridor. Without improvements to the current transportation facilities in the region, additional traffic would create greater congestion which would lead to increased accidents.

Safety related features have been incorporated into every aspect of design in this project. Some of the design aspects that have been considered are listed:

- Effective clear zone widths have been factored into the typical sections.
- The use of appropriate taper, deceleration, and storage lengths have been designed for turn lanes throughout the project.
- Adequate provisions for vertical and horizontal sight distances have been incorporated into the design of this project.
- Appropriate designs that meet driver expectancy have been incorporated into the conceptual plans.

- Increased separation of the SR 40 railroad crossing at the SR 15 / SR 40 intersection from 110 feet to 300 feet of separation.
- The conceptual design addresses access management standards that would increase the operational efficiency and safety throughout the corridor. Reclassification to a Class 3 – restrictive standards.
- A wildlife crossing has been considered for inclusion in the Deep Creek bridge to allow for safe passage of wildlife and reduce conflict points with vehicles traveling on the roadway.
- Addresses concerns of roadway flooding from the section of SR 15 from the Deep Creek to SR 40.

Final design of this project will be in accordance with all FDOT criteria.

9.11 Economic and Community Development

The Volusia County Comprehensive Plan identifies the future land uses along SR 15 as predominantly residential and agricultural. There is very little planned development for the corridor within the next few years; it is the intent of Volusia County to maintain the rural characteristic of this corridor.

Current and future development in DeLeon Springs and Barberville will place additional demands on the existing transportation corridor. A major impetus for the proposed action comes from economic development and the need to sustain area growth trends, including provisions for future employment and tax base. Improvements to expand the SR 15 transportation facility are expected to enhance the realization of approved land use plans within the project corridor, and improve access to adjoining properties. Therefore, the proposed roadway improvements would increase economic and community development along the SR 15 corridor, DeLeon Springs, and Barberville.

Improvements to the SR 15 corridor support the SIS which enhances the economic conditions of State, Regional and Local Communities.

9.12 Environmental Impacts

9.12.1 Section 4(f) Lands

A *Request for Determination of Section 4(f) Applicability* was prepared for the FDOT in April of 2006 for the Heart Island Conservation Area. The Conservation Area is a 13,900-acre preserve managed by the St. Johns River Water Management District (SJRWMD) as part of the Lake George Wildlife Management Area through an agreement with the Florida Fish and Wildlife Conservation Commission. The Heart Island Conservation Area is open to the public for various recreation activities with access provided at four locations with one along SR 15. As part of this project the SJRWMD has requested that improvements to SR 15 include a full median opening with tractor-trailer

access to the property. The portion of Conservation Area along the existing SR 15 right-of-way is not an area of environmentally sensitive lands, mainly a pine flatwoods area.

As part of this PD&E process this area was identified as a potential resource by the process outlined in the Department of Transportation Act of 1966 (PL 89-670) and its implementing regulations. It must be first determined if whether the property represents a Section 4(f) resource and then if the proposed project entails the "use" of that property within the meaning of a Section 4(f). This decision is made by the FHWA. Should Section 4(f) has been found to apply to this property; a *de minimus* impact determination has be granted, correspondence can be found in Appendix A of this report.

The preferred alternative will require the expansion of the roadway from its current configuration requiring the acquisition of approximately 50 feet of additional right-of-way in the vicinity of the Heart Island Conservation Area, a 13,900-acre wildlife preservation area directly adjacent to the roadway corridor. This alternative requires the direct acquisition of approximately 9.4 acres of new right-of-way from the Heart Island Conservation Area.

9.12.2 Cultural Resources

The area of potential effects (APE) proposed for this project includes the existing right of way along SR 15 and sufficient adjacent area within which various left, right, and center alternatives can be developed. It was also defined with the consideration of proposed storm water management and other drainage issues in mind. This APE was defined to consider any visual, audible, and atmospheric effects that the roadway improvements and subsequent maintenance may have to historic properties. The APE boundary was adjusted to take into account the more urban development at the north and south ends of the project (DeLeon Springs and Barberville) and the extensive, sparsely developed rural areas in between these population concentrations.

The APE includes the existing 150 to 200 foot wide right of way of SR 15 and the area within 330 feet of the right of way on the east side of SR 15 and within 100 feet of the west side. The extent of the APE on the west side of the project is constrained due to the CSX railroad corridor, which will limit roadway expansion to this side of the roadway. In the more developed areas, the APE was adjusted to the rear property line of the adjacent properties. In the rural areas, the APE is 580 to 630 feet wide, but widens to as much as 2,185 feet to include adjacent parcels in the developed areas. The archaeological shovel testing will be conducted within the existing right of way limits and will include any areas that will need to be acquired as new right of way. All other historic properties within the entire APE will be recorded and evaluated.

The Florida Master Site File (FMSF) was reviewed in April 2005 to determine if any cultural resources are recorded within 2000 feet of the project area. Three properties listed in the National Register of Historic Places, three archaeological sites, 95 historic structures, and a historic bridge has been recorded in the project vicinity.

The three NRHP-listed properties include the Barberville High School (8VO4375), the Strawn Historic Sawmill District (8VO5267), and the Strawn Historic Citrus Packing House District (8VO5267). The Barberville High School is located away from the SR 15 corridor, and will likely not be an issue for this project. The Sawmill district and the Packing House district are clusters of historic resources adjacent to the SR 15 corridor at the south end of the project. There is some discussion about possibly moving these buildings to another location, but for now, this area should be avoided.

Archaeological

The three archaeological sites along the corridor include the DeLeon Spring Mound (8VO31), the Scarborough Homestead (8VO5276), and the Ditch Site (8VO5277). The DeLeon Springs Mound is a prehistoric burial mound located in the vicinity of the spring. It precise location has never been determined. The Scarborough Homestead is the remains of an early 20th century settler's house and farm. The buildings have been removed, but the archaeological remains – trash pits, building foundations, and landscape features, remain. The Ditch site is a prehistoric site of undetermined age or cultural affiliation.

Architectural/Historical

The Deep Creek Bridge (8VO7105) carries County Road 3 over Deep Creek to the west of SR 15 at Deep Creek. This 1923 arch deck bridge was constructed by the Luten Bridge Company of York, Pennsylvania. Luten bridges, although once common, have become rarer and less common as these massive concrete structures have become functionally obsolete. They are, however, often considered eligible for listing in the NRHP. The Deep Creek Bridge (794081) was considered potentially eligible for listing in the NRHP during a recent re-evaluation of historic bridges conducted by the Florida Department of Transportation's Central Environmental Office (Jackson 2004).

The Barberville Billboard (8VO7676) is located on the east side of SR 15, north of SR 40 in Township15 South, Range 29 East, Section 17. This billboard was built circa 1953 and served as a billboard for Pond DeLeon Springs. The present site of DeLeon Springs State Park was once a popular tourist attraction following the World War II period. This billboard associated with DeLeon Springs State Park meets the minimum criteria for listing in the NHRP under Criteria A and C.

The FMSF lists 95 historic buildings within 200 feet of the SR 15 corridor. Most of these buildings are concentrated in the communities of Barberville and DeLeon Springs. Copies of the FMSF forms for each of these structures have been obtained from the Florida Division of Historical Resources in Tallahassee.

9.12.3 Wetlands

As a result of field identification and mapping of wetlands, it was determined that sixteen (16) wetland areas which are part of seven (7) larger wetland systems located along the project corridor may be affected by the project.

The preferred alignment for the proposed widening of SR 15 is expected to be to the east. Additional right-of-way will be required for the widening as well as stormwater management areas. Two stormwater treatment areas have been located within each drainage sub-basin within the project, for a total of twelve sites. The preferred stormwater treatment ponds will impact approximately 0.30 acres of wetlands. The preferred roadway alternative has 6.44 acres of wetland impacts anticipated for the roadway right-of-way, this consist of dredge and fill of ditches and swales along the corridor (4.04 acres) and minor clips of large forested systems (2.40 acres). Every effort will be made during design to minimize wetland impacts both during and after construction. Temporary impacts may occur during construction, but these will be repaired to the satisfaction of the environmental regulatory agencies following the completion of the work. The total wetland impacts anticipated for the preferred roadway alternative and pond sites is 6.74 acres (0.30 acres of pond impacts + 6.44 roadway right-of-way impacts).

Wetland impacts, which will result from the construction of this project, will be mitigated pursuant to Section 373.4137 F.S. to satisfy all mitigation requirements of Part IV, Chapter 373, F.S. and 33 U.S.C.s. 1344. Of the total of 6.7 acres of wetland impacts, it is estimated that 2.7 acres of wetland impacts will require mitigation. Approximately 4.04 acres of impacts are to other surface waters (ditches) and will be mitigated through in-kind replacement of ditches and stormwater ponds within the project limits.

9.12.4 Water Quality

The evaluation of water quality variables is a two-fold measurement of the quality of surface water flowing into the subject wetland from adjacent land uses. The percent and type of surrounding land uses as well as any on-site pre-treatment of surface waters prior to the discharge into wetlands is considered. All twenty-one (21) potential impact areas received low ratings for land use and pre-treatment except, seven (7) of them. These areas are natural undeveloped wetlands which have not been altered. Surrounding land uses consist of residential development, pasture land, railroad, and highway right-of-way. Pre-treatment of stormwater is found within the roadside ditches along SR 15. Some areas receive untreated stormwater directly from SR 15 and some received pre-treated stormwater from the roadside ditches.

9.12.5 Outstanding Florida Waters

There are no Outstanding Florida Waters associated with this project.

9.12.6 Floodplains / Floodways

The project lies within the jurisdiction of SJRWMD.

Floodplain impacts resulting from the proposed widening of SR 15 are located at cross culvert X-3 (Station 159+12) and the crossing of Deep Creek (Station 218+38 to Station 220+17). Calculated floodplain impact volumes are essentially the same regardless of

which alignment alternative is selected. The floodplain impact volume associated with the lengthening of X-3 is approximately 0.67 ac-ft and the floodplain impact volume associated with the proposed Deep Creek crossing is approximately 0.81 ac-ft. The total floodplain impact resulting from the proposed widening is approximately 1.48 ac-ft and is transverse in nature.

The floodplains along the SR 15 corridor are hydraulically connected to the St. Johns River floodplain. As such, existing floodplain volume is in many orders of magnitude greater than the volume of the proposed encroachment. When compared with the combined floodplain volumes of Deep Creek, Lake Woodruff, Lake Dexter, Lake George, and the St. Johns River, the proposed floodplain encroachment is negligible.

Floodplain impacts will be minimized by designing the SR 15 widening to allow for the provision of maximum allowable back slope, storm sewer conveyance, and retaining walls at those locations where floodplain impacts are greatest. It is anticipated that floodplain impact compensation will not be required due to the transverse nature and negligible size of the impacts.

Based on the PD&E Manual, the proposed project can be best described as having a Category 6 classification, which includes those projects that will cause changes in flood stages and flood limits.

"The construction of the drainage structures proposed for this project will cause changes in flood stage and flood limits. These changes will not result in any significant adverse impacts on the natural and beneficial floodplain values or any significant changes in flood risk or damage. These changes have been reviewed by the appropriate regulatory authorities who have concurred with the determination that there will be no significant impacts. There will be no significant change in the potential for interruption or termination of emergency service or emergency evacuation routes. Therefore, it has been determined that this encroachment is not significant."

More information regarding floodplains and floodplains impacts can be found in the *Location Hydraulic Report* prepared for this project – December, 2005.

9.12.7 Wildlife and Habitat

Based upon the descriptions of on-site habitats and the habitat requirements of potentially occurring listed species, it has been determined that no federally listed species will be adversely affected by this project. The impact to and removal of natural habitat from construction activity will be minimal, and no federally listed species will be directly affected by the addition of two travel lanes and stormwater treatment areas on this roadway.

Two state listed species, the little blue heron and Florida black bear were observed. To off-set secondary impacts to the black bear, FDOT District Five is committed to constructing improvements at Deep Creek Bridge location to facilitate black bear, as well

as other wildlife species, crossing within this segment of SR 15. Improvements will consist of constructing two (2) new bridges, one southbound and one northbound, and extending the existing bridge length 30 feet to allow dry passage for wildlife north of Deep Creek. A dry area will also be maintained on the south portion of the new bridge structure, this area will be 10-15 feet in width. Each of the crossings will be designed to allow for 6-8 feet of vertical clearance.

9.12.8 Farmlands

No farmlands are affected by the proposed alternative.

9.12.9 Noise

Noise monitoring was conducted on July 14, 2005. A Quest Model M-28 Noise Logging Dosimeter was used to collect sound levels. The meter was placed at a height of five feet which is standard and equivalent to the average height of the human ear. Noise readings were taken three separate times for fifteen minute intervals. Traffic counts were taken simultaneously during each of the three noise reading events.

The updated Traffic Noise Model (TNM) program, Version 2.5, was used for noise evaluation for the proposed project corridor. Traffic volumes for the No Build and Build scenarios were modeled based on the design year of 2030.

Future noise was modeled for Alternative 3 at the potential noise receptor sites for the year 2030. The projected noise level at one location is above the noise abatement criteria for the preferred alignment. The highest dBA predicted at this site was 67.4, approximately 0.4 dBA above FHWA standards.

The FHWA requires that various noise abatement measures be considered for a proposed project when the predicted noise levels approach or exceed noise abatement criterion, or will increase substantially over existing levels. Although one receiver is projected to exceed abatement criterion, a noise barrier is not feasible due to the substantial cost.

9.12.10 Air Quality

An air quality study was conducted to evaluate air quality impacts resulting from the proposed improvements to SR 15. The study was based on Part 2, Chapter 16, "Air Quality Analysis" of the PD&E Manual. Projected traffic volumes and directional patterns were established for the study corridor for input into the FDOT's, Air Quality Screening Test. The Screening Test makes various conservative worst case assumptions about meteorology, traffic and site conditions to identify receptors located within areas of significant air quality impacts.

Based on the projected traffic volumes, distance of travel lanes to potential receivers, and slowest recommended design speed of the roadway (45 mph) it was determined that no receptors will experience a significant drop in air quality as a result of this project.

This project is in an area which has been designated as attainment for all air quality standards under the criteria provided in the Clean Air Act Amendments of 1990, therefore conformity does not apply.

Construction activities will cause minor short-term air quality impacts in the form of dust from earthwork. These impacts will be minimized by adherence to the FDOT's *Standard Specification for Road and Bridge Construction.*

9.12.11 Contamination

Based on the preferred alternative the sites in Table 9-2 were identified as potential contamination sites. Each is followed by a risk ranking. The sites were rated "low" due to the distance from the proposed right-of-way expansion or the fact that no history of contamination was found after a review of the Florida Department of Environmental Protection (FDEP) records. The sites rated as "medium" or "high" are those sites which have had contamination or violations reported which could impact soil and/or groundwater conditions on or adjacent to the roadway, or, are potential contamination sites in which the threat of contamination was undetermined. Some of these sites likely pre-dated FDEP regulation. The size, constituents, and distance of potential plumes from the roadway, as well as groundwater flow direction, were also used to rate each risk.

Table 9-2: Potential Contamination Sites

FACILITY NAME	LOCATION	RISK RANKING
US Postal Service	5042 US 17	Low
Deleon Car Wash and Used Tire Facility	NW corner of Wheeler and US 17	High
Snell Motors	5124 US 17	Low
Valero	5145 US 17	High
Division of Forestry	5460 US 17	Low
Undeveloped residential subdivision	Immediately north of Spring Garden Ranch Road and west of US 17	Medium
Theodore Strawn Inc.	5707 US 17	High
Florida Power – Barberville	North of the entrance to Heart Island Preserve	Low
Handy Way Food Store #2258	1717 US 17	High
Express Mart #169	1692 US 17	High
Underhill Fernery	6395 Taft Street	Low
All in One Auto Sales	1658 US 17	Low
Tom's Automotive	1660 US 17	Low

Note: SR 15 is also US 17 and for U.S. Postal Services the addresses are US 17.

More information can be found regarding each of these sites in the *Contamination Screening Evaluation Report* completed for this report, December 2005.

Based on the visual observations and other research reported herein, evidence of soil and/or groundwater contamination impacts at known contamination sites may have occurred within or near the SR 15 right-of-way. Any sites rated as "medium" or "high", may warrant further intrusive investigation prior to construction. It is recommended that a soil and groundwater sample analysis is conducted at any facilities with a "medium" or "high" risk rating. Additionally, files should be periodically reviewed to ascertain when a no further action (NFA) will be granted for those sites that are undergoing active remediation.

9.13 Utility Impacts

9.13.1 Existing Utilities

The existing utilities, within the SR 15 study area, that have the potential to be affected by the proposed project and their general locations are discussed in Section 4.1.12. The general locations of these facilities, based on information provide by GAI Consultants for this study (Utility Impact Report, September 2005) is presented in Table 4-6. The exact locations of these utility systems will be determined during subsequent design phases of this project and conflict with these systems will be further identified and addressed at that time. Potential impacts to the utility systems are discussed below and the associated relocation costs resulting from this project are presented in Table 9-3.

Clay Electric - The Clay Electric lines are located on the east side of SR 15 from Dawson Brown Road to SR 40. It is anticipated that there will be impacts to this line.

Bright House Networks - Facilities are located along Ponce DeLeon Boulevard only, there are no anticipated impacts to this cable.

Progress Energy - The lines parallel SR 15 and there is a substation at the north end of the corridor. There are no impacts anticipated to the substation, however; impacts are anticipated to the overhead distribution lines.

MCI - Fiber optic lines are located along the east side of the CSX right-of-way, there are no anticipated impacts.

Bellsouth - Lines are located parallel to SR 15, impacts are anticipated.

Table 9-3: Utility Relocation Cost

UTILITY COMPANY	RELOCATION COST
Clay Electric	$ 10,000
Bright House Networks	$ 1,000
Progress Energy	$ 1,616,000
MCI	$ 0
BellSouth	$ 487,000

A border width of 40 feet (from edge of shoulder to right-of-way line) is required for this design. Requirements allow for no obstructions/utilities within this border width. However, based on the Value Engineering Team review, it has been determined that any utilities inside the clearzone (36 feet from edge of the travel lane) must be relocated and anything outside that may remain.

9.14 Traffic Control Plan

The traffic control plan developed to construct the SR 15 improvements shall adhere to the latest FDOT Design Standards, Series 600, must maintain the existing number of through travel lanes and maintain access to businesses and residences along the corridor. The traffic control plan anticipates maintaining traffic on the existing roadbed while the northbound SR 15 lanes are being constructed. Upon construction of the northbound lanes, traffic will be shifted to the newly constructed northbound lanes, at which time the existing roadbed will be widened, milled and resurfaced and will then become the southbound lanes.

The construction of the new Deep Creek bridge will follow the same methodology as previously mentioned for the corridor.

9.15 Results of Public Involvement Program

9.15.1 Public Involvement Plan

A Public Involvement Plan was prepared for the project and approved on April, 2005. This plan is in compliance with the Project Development and Environmental Guidelines; Florida Statue 339.155; Executive Orders 11990 and 11988; CEQ Regulations for Implementing the Procedural provisions of the Natural Environmental Policy Act; and FHWA Order 5610.1C.

9.15.2 Advanced Notification

The Advance Notification package was prepared and issued in accordance with the FDOT PD&E Manual. The package was mailed out to the respective agencies and elected officials on May 6, 2005.

9.15.3 Newsletters

Newsletters were sent to agencies, elected officials, and property owners prior to public meetings for this project. Copies of the newsletters were also available at the meetings in both English and Spanish.

- Prior to the Public Kick-off Meeting
- Prior to the Alternatives Meeting

9.15.4 Public Involvement Workshops

9.15.4.1 Agency Kick-off Meeting

An Agency Kick-off meeting was held on May 31, 2005 at Louise S. McInnis Elementary School. The necessary agencies (as identified in the PD&E Manual) were

invited by letter to the meeting. The invitations were mailed on May 9, 2005. Included with the invitation was a copy of the project newsletter.

The following people attended the meeting representing the listed agency. Each listing is followed by any comments attributed to them at the meeting.

- Mayor James Sowell – Mayor of Pierson
  - Agreed with Deputy Chief that the flooding mentioned below does occur.
- Deputy Chief Stephen Plummer – Volusia County Fire Services
  - Currently parts of SR 15/US 17 from Lake Winona to the northern end of the project, there is much flooding that occurs during high rains. Sections of this area in the Northbound lane is mainly under water
  - Advanced warning signaling both North and South of the SR 40 intersection would be advantageous. With this area prevalent to ground fog, this would give the motorists additional warning of a signal change.
  - Include adequate turn-arounds, in areas without cross streets/intersections, to assist emergency vehicles with ability to change directional responses to either North or Southbound.
  - Consider turn lane extensions at SR 40 due to traffic density and heavy trailer and vehicle traffic
  - Consider right-of-way radius changes to reduce rollover potential near DOT facility and Lake Winona Road.
- Saralee Morrissey – Volusia County Schools
  - Interested in any impacts to the elementary school
  - Bus pick-up/drop-off in FDOT R/W – any concerns or impacts?

Following the meeting, each comment was addressed in a letter from the project team regarding the individual comments. The responses can be found in Appendix II.

9.15.4.2 Public Kick-off Meeting

A Public Kick-off meeting was held on May 31, 2005 at Louise S. McInnis Elementary School following the agency meeting. The property owners within 300 feet of either side of the corridor were identified and were invited by newsletter to the meeting. The invitations were mailed on May 12, 2005. A presentation was conducted following an Open House period allowing attendees to review the information presented on various alignment, aerial, and graphical boards.

Attendees were requested to sign in and comment sheets were provided during the meeting.

Three people representing agencies attended the public meeting. They are as follows, along with any comments they may have made:

- Bill Scaramellino – Florida Division of Forestry
  - My main concern is our forestry vehicles entering & exiting the forestry headquarters. We have large trucks that haul fire suppression bulldozers that need this to accelerate on the highway heading south. Southbound traffic approaches, over a hill, on a curve. A southbound acceleration lane leaving our driveway would help.
  - Also, turning into our drive, while traveling south to north, is dangerous. Traffic that is also northbound tries to go around you on the right side, there is not enough room. There has been accidents before and many near misses. Can you please address these problems? Thank you.
- Cathy Lowenstein – Florida Division of Forestry
  - Access concern at DOF tower/public information center office with heavy equipment. Need to improve safe access into/out of site for heavy equipment and limited line of sight with highway curve.
  - Wildlife crossing concern – provide adequate crossing(s) for bear, etc.
  - Incorporate county plan for Trails & Recreation connections between Lake George SF and Heart Island Conservation Area (WMD) by exploring connections between existing trail entrances on each side of highway. Might combine with wildlife crossing opportunity.
  - Please fax copy of ETAT Report to Division of Forestry (List of ETAT members)
- Roy Walters – Volusia County Bicycle-Pedestrian Advisory Committee
  - State law requires that bicycle lanes be included on road sections not considered as "rural". Much of this widening is in an area that is not rural.
  - Call me at 321-438-7662 to discuss.
  - I am a member of the Volusia County Bicycle-Pedestrian CAC.

Sixteen persons representing property or commercial owners were present at the meeting. The majority of those that left comments were concerned about access issues as well as safety issues when turning along SR 15. There is a large amount of truck traffic that is reducing the feeling of safety for the motoring public.

Each of the comments received from the meeting was addressed by letter from HNTB.

9.15.4.3 Alternatives Public Meeting

An Alternatives Public meeting was held on October 13, 2005 at Louise S. McInnis Elementary School. Agencies and elected officials as required per the FDOT PD&E Manual were notified of the meeting by letter invitation. Included with the invitation was a copy of the newsletter. The agency invitations were mailed on September 19, 2005. The property owners within 300 feet of either side of the corridor were identified and were invited by newsletter to the meeting. The property owner invitations were mailed on September 22, 2005.

The Alternatives Meeting began at 6:00 p.m. on October 13, 2005. Meeting attendees were greeted and requested to sign-in to be sure that everyone was included on the mailing list. Extra copies of the newsletter were available for those who may not have received one. Attendees were notified that around the room were many boards with project specific information and any questions could be addressed by members of the project team wearing project nametags.

The room set-up included long project corridor boards with aerial images and right-of-way lines displayed on the aerial. Proposed pond locations were also identified on the boards. Boards also described the study schedule, traffic projections for existing case, 2010 (opening year) and 2030, the three alternative typical sections and the bridge sections including a potential wildlife crossing. Two sets of plans were also available which detailed the 3 alternatives on aerial mapping.

A formal presentation was given by Mr. Kent Black beginning at 7:00 p.m. for those interested in hearing more about the study process and results. The audience was encouraged to ask questions and those asked are summarized below.

During the discussion of Access Management, one citizen asked what the difference between full and direction median openings. Mr. Black noted that full median openings allow all movements to be made through the intersection, where directional openings allow for only right-turning movements (for example).

Questions concerning the locations of specific ponds were also discussed. Mr. Black indicated that the team would meet with the owners to discuss their specific questions and concerns either following the meeting or during individual meetings later in the process.

A property owner also questioned the validity of utilizing a full 40' median rather than utilizing a tighter median and adding guardrail. He also suggested adding trees as a barrier rather than guardrail along the corridor. The property owner asked that the team look into various alternatives for median treatment.

After the formal presentation, participants were invited to ask more questions of the staff and to take their time reviewing the available materials. The meeting concluded at 8:00 p.m.

Eleven people attended the meeting. The general comments received during this meeting regarded access issues again and the only alternative identified as being desirable by one property owner was Alternative 1.

9.15.5 Public Hearing

A Public Hearing was held on April 25, 2006 at the First Baptist Church of DeLeon Springs. Agencies and elected officials as required per the FDOT PD&E Manual were notified of the meeting by letter invitation. Included with the invitation was a copy of the newsletter. The agency invitations were mailed on March 31, 2006. The property owners

within 300 feet of either side of the corridor were identified and were invited by newsletter to the meeting. The property owner invitations were mailed on April 5, 2006.

The Public Hearing began at 5:30 p.m. on April 25, 2006. Meeting attendees were greeted and requested to sign-in to be sure that everyone was included on the mailing list. Extra copies of the newsletter were available for those who may not have received one. A separate public hearing handout was also available and included information on the alternatives as well as the evaluation of the impacts. Attendees were notified that around the room were many boards with project specific information and any questions could be addressed by members of the project team wearing project nametags.

Boards providing graphics of the preferred alternative, its impacts, necessary requirements of the PD&E process and the right-of-way process were throughout the room along with other project specific information.

A formal presentation was given by Mr. Kent Black beginning at 6:30 p.m. for those interested in hearing more about the study process and results. A court reporter was available prior to the formal presentation for those interested in providing comments for the record, but without having to make a comment in front of the audience. The court reporter transcribed the meeting for the record. A public comment period was held and responses were sent in writing pertaining to each question asked.

An Access Management Hearing was held following the project hearing. This Hearing focused on the change in Access class of this section of the roadway. A comment period was also available for this portion of the meeting.

The meeting concluded at 7:35 p.m.

Fifty-four (54) people were in attendance at Public Hearing.

9.16 Value Engineering

9.16.1 VE Recommendation 1

At the US 17 and SR 40 intersection, stay within the existing right-of-way with an urban typical section and reduce the speed limit. (Potential Savings: $500,000)

9.16.1.1 HNTB Response to VE Recommendation 1

- Disagree
- District 5 Traffic operations identified that we should either move closer to the RR to bring it under control of the signal or move as far away as possible to increase the capacity of the eastbound SR 40 lanes.

- District Design Engineer did review the preliminary concept of staying within the right-of-way and deemed it as unacceptable.
- Issues include awkward sections, speed limit, curb&gutter, driver expectancy, border width and clearzone issues.
- HNTB recommends utilizing the entire take from the Citgo gas station to move the entire intersection as far to the east as possible (away from RR tracks). Alternative D has been developed to show this alignment.

9.16.1.2 FDOT Response to VE Recommendation 1

Rejected: Due to operational issues related to the SR 40 rail crossing, introduction of curb in a rural setting, driver expectancy, border width and clear zone.

9.16.2 VE Recommendation 2

At the US 17 and SR 40 intersection, drop the right-turn only lane and provide one through lane and one left turn lane, NB. (Potential Savings: $122,000)

9.16.2.1 HNTB Response to VE Recommendation 2

- Disagree
- HNTB does not agree with dropping a lane before the SR 15/SR 40 intersection.
- It has always been HNTB's intent to make any modifications to the intersection based upon the Design Traffic Report. By not providing adequate lanes the safety of the intersection would be compromised.
- At some point right-of-way will need to be required.

9.16.2.2 FDOT Response to VE Recommendation 2

Rejected: This recommendation does not meet the needs justified in the Design Traffic.

9.16.3 VE Recommendation 3

At the US 17 and SR 40 intersection, shift the roadway alignment east of Alt. B2 to get further away from the railroad crossing. (Value Added: #304, 000)

9.16.3.1 HNTB Response to VE Recommendation 3

- Agree
- Since we will be making a full take of the Citgo property we should take advantage of the entire property and make the SR 15/SR 40 intersection safer.
- HNTB has added Alternative D to the Preliminary Engineering Report

9.16.3.2 FDOT Response to VE Recommendation 3

Accepted.

9.16.4 VE Recommendation 4

Elevate the railroad over SR 40, leave US 17 and SR 40 intersection at grade. (Value Added: $1,878,000)

9.16.4.1 HNTB Response to VE Recommendation 4

- Disagree
- Various implications – Cost being one of them, and the SR 40 master plan shows a grade separated intersection with SR 15 and SR 40, a railroad bridge would preclude this from happening.

9.16.4.2 FDOT Response to VE Recommendation 4

Pending: Continued evaluation through PD&E.

9.16.5 VE Recommendation 5

Use MSE wall to avoid wetlands and/or save right-of-way.

9.16.5.1 HNTB Response to VE Recommendation 5

- Agree – some wetland impacts may be avoided by use of gravity wall.

9.16.5.2 FDOT Response to VE Recommendation 5

Design Suggestion.

9.16.6 VE Recommendation 6

Shift the Deep Creek channel within the existing bridge opening, eliminate the bridge extension for a wildlife crossing. (Potential Savings: $279,200)

9.16.6.1 HNTB Response to VE Recommendation 6

- Disagree
- The proposed bridge extension to the north of Deep Creek was chosen at the recommendation of Florida Fish and Wildlife Conservation Commission (FDWCC) staff. A field inspection of the bridge depicted unfavorable hydrologic conditions under the existing bridge structure. Without a bridge hydraulics report the PD&E team was unable to convince FFWCC staff that a dry passage under the bridge would be available to large wildlife species such as the Florida black bear or deer. Even during low water conditions, the existing bridge spans would allow for less than 25 feet of width and as little as 4-5 feet of clearance. These small openings are less than previously approved wildlife structures on SR 46 and I-4. The bridge extension has been sized to match, as close as possible, the opening widths and clearances at SR 46. (The wildlife crossing structure at I-4 are much larger due to the wider right-of-way and higher volume of traffic proposed.
- The cost estimate did not include an allocation for mitigation to offset impacts to the channel of Deep Creek. If impacts were deemed temporary, FDOT would be responsible for re-planting the area and providing monitoring reports. (Approximate cost of $25,000 to $30,000 per acre). If impacts are deemed to severe and counted as permanent, the appropriate amount of mitigation money (approximately $90,000 per acre) would be required consistent with the Senate Bill 1986 program.
- Channel relocation would include a Sovereign Land determination from the Florida Department of Environmental Protection. Any work within the channel would be subject to further review by FDEP (in addition to review under ERP by the water management district) with no guarantee of approval. This would also extend the permitting review timeframes for the project. The SJRWMD would not be able to approve the ERP until all Sovereign Land issues were resolved.
- One disadvantage not listed in the report are the potential effects to the railroad bridge located downstream from the bridge over SR 15. The realigning of the creek may change flow rates or several other hydraulic factors, which would require additional cost to modify the railroad bridge or additional maintenance cost at SR 15 and/or the railroad bridges.

9.16.6.2 FDOT Response to VE Recommendation 6

Rejected: Not consistent with FFWCC's requirements as a wildlife crossing. Complexity of permitting with DEP/SJRWMD.

9.16.7 VE Recommendation 7

Combine the two bridges at Deep Creek into one structure to minimize the wetland impacts. (Potential Savings: $270,000)

9.16.7.1 HNTB Response to VE Recommendation 7

- Disagree
- Median width variance would be required.
- Different ages of bridge halves would complicate replacement of older half at some point in time.
- The spacing between the bridge structures was put into place at the request of the FFWCC. This allows for natural light to pass between the structures, thereby reducing the "tunnel" effect. One single structure would require a much wider opening to offset the loss of direct light into the mid-section of the structure. As cited earlier, the wildlife underpass structure also would require raising the roadway approaches to gain a minimum of 8 feet of clearance under the structure. The longer support beams can be two to three times deeper than beams for shorter spans (less than 50').

9.16.7.2 FDOT Response to VE Recommendation 7

Rejected: Due to median width variance, FFWCC's requirement to daylight the wildlife crossing in the median area.

9.16.8 VE Recommendation 8

Eliminate the bridge extensions at Deep Creek, provide a separate wildlife crossing elsewhere. (Potential Savings: $241,000)

9.16.8.1 HNTB Response to VE Recommendation 8

- Disagree
- This comment is based on Recommendation 7.
- HNTB is proposing to reuse the existing structure for the southbound lanes and build a new structure for the northbound lanes.
- The box culverts proposed are much smaller than any wildlife crossing structure approved by FFWCC, when the focal species is the Florida black

bear. The smallest such structures in Central Florida are on SR 46. One structure on SR 46 is 25 feet by 8 feet, which was a test structure. A second structure is 50 feet by 8 feet, the minimum size now approved by the FFWCC. At a minimum, the structures presented in this recommendation should be doubled to 20', which would result in no cost savings.

- Please be advised that if FFWCC is not satisfied with the design commitments at Deep Creek to accommodate large wildlife, a separate wildlife structure north of Deep Creek will be required. Cost estimates of a separate wildlife crossing structure have been around $1.5 million.

9.16.8.2 FDOT Response to VE Recommendation 8

Rejected: The box culverts proposed in the VE Alternate will not meet the FFWCC's requirements for Florida Black Bear. The minimum required is 50' by 8' which would deplete the savings projected.

9.16.9 VE Recommendation 9

Modify typical section to 160-ft right-of-way using a 22-ft median with guardrail. (Potential Savings: $6,200,000)

9.16.9.1 HNTB Response to VE Recommendation 9

- Disagree
- Installing guardrail in the center of SR 15 would limit the access that adjacent property owners have to the roadway.
- Crash cushions would be required throughout the corridor.
- New precedence would be set for the use of guardrail.
- Guardrail in itself is a safety hazard; by installing guardrail in the median we would effectively be adding a new safety hazard.

9.16.9.2 FDOT Response to VE Recommendation 9

Rejected: Due to access and safety concerns.

9.16.10 VE Recommendation 10

Avoid relocation of existing utilities within private easements adjacent to right-of-way by seeking border width variance. (Potential Savings: $936,000)

9.16.10.1 HNTB Response to VE Recommendation 10

- Disagree
- Since this is a new section of roadway, roadside safety should not be compromised.

9.16.10.2 FDOT Response to VE Recommendation 10

Pending: Further evaluation.

9.16.11 VE Recommendation 11

Use compensatory treatment to reduce ponds.

9.16.11.1 HNTB Response to VE Recommendation 11

- Compensatory treatment is usually not used unless a hardship can be shown.
- The drainage ponds were located utilizing 5' contours. Additional topographic information would be required to determine whether compensatory storage would be feasible.

9.16.11.2 FDOT Response to VE Recommendation 11

Design Suggestion: Only used as a last resort, hardship must be proven.

9.16.12 VE Recommendation 12

Optimize pond 6 location by locating the pond in the SW quadrant of US 17 and SR 40. (Potential Savings: $264,000)

9.16.12.1 HNTB Response to VE Recommendation 12

- Alternatives A through C do not allow enough space between the railroad and SR 15.
- Alternative D (SR 15 is shifted 180 feet to the east) would allow for enough space between the roadway and the railroad tracks for a potential pond site.

9.16.12.2 FDOT Response to VE Recommendation 12

Accepted.

9.17 Drainage

The proposed drainage system will be designed to convey stormwater runoff away from the roadway to a roadway drainage system. It is expected that the proposed roadway drainage system will consist of a closed conveyance system directing runoff to

stormwater management ponds. Additional right-of-way for stormwater management facilities is anticipated. The Pond Siting Report (Final submitted August 2006) identifying potential locations for stormwater management ponds, which included detailed drainage calculations, was prepared for this project. The alternative pond sites are identified in Appendix C. The subsequent design phase of this project will assess the availability and suitability of the stormwater management pond locations identified in the Pond Siting Report. Table 9-4 identifies the recommended pond sites.

Table 9-4: Recommended Pond Sites

BASIN	RECOMMENDED ALTERNATIVE	PONDS
Basin 1	Alternative 3	TBD
Basin 2	Alternative 3	TBD
Basin 3	Alternative 3	TBD
Basin 4	Alternative 3	TBD
Basin 5	Alternative 3	TBD
Basin 6	Alternative 3	TBD

9.18 Structures

The limits of the SR 15 PD&E Study involve one bridge located at Deep Creek. Based on the findings of this report, the existing structure will be removed and two new structures constructed. The proposed structures will be designed such that they will accommodate the additional horizontal and vertical clearance required for the wildlife crossing.

9.19 Special Features

Based on the Value Engineering Team review, a design suggestion was made to consider the use of MSE walls to avoid wetlands and decrease the need for additional right-of-way where possible.

9.20 Access Management

Pursuant to the provisions of Rule Chapter 14-97, Florida Administrative Code, and Florida Statute 335.18, the Florida Department of Transportation conducted public hearings on April 25, 2006.

These hearings are conducted to afford interested persons the opportunity to express their views concerning the reclassification of the existing access management classification of SR 15 from Access Class 4 to an Access Class 3, per Rule Chapter 14-97-005, F.A.C. and FDOT Procedure 525-030-155-c. An Access Class 3 designation would allow full

median openings every one-half mile (2,640 feet) and directional openings every one-quarter mile (1,320 feet).

The proposed access management plan, showing possible directional and full median openings, is included on the Concept Plans in Appendix C of this report. Future median openings can be constructed, and approved by FDOT, at a later date as future development warrants.

9.21 Recommended Alternative

Based on input received through the public involvement process and with consideration of estimated cost and impacts of the alternatives, it is recommended that SR 15 be widened to a four-lane divided rural typical section as described in this section.

The preferred typical section is a four-lane divided rural typical section with two, twelve (12) foot travel lanes in each direction. Five foot paved outside shoulders are provided from Ponce DeLeon Boulevard to 0.85 miles north of Lake Winona Road. A five foot paved outside shoulder is provided on the northbound lanes and a four foot paved shoulder is provided on the outside of the southbound lanes of SR 15 from 0.85 miles north of Lake Winona to SR 15 / SR 40 intersection. Two (2) foot paved inside shoulders are also provided thought the entire length of the project. The proposed median is 40 feet in width. Stormwater runoff is collected in roadway ditches and swales and conveyed to the pond sites. This typical section requires a total of 200 feet of right-of-way.

It is also recommended that the Deep Creek Bridge be replaced, and reconstructed to accommodate the wildlife crossing.

The recommended SR 15 / SR 40 intersection alternative is Alternative D2. This alternative has greatest overall net safety improvement for the intersection. This alternative was supported by the public and local governments.

APPENDIX A

Agency Coordination

Florida Department of Transportation

JEB BUSH
GOVERNOR

719 South Woodland Boulevard
DeLand, FL 32720-6834

DENVER J. STUTLER, JR.
SECRETARY

November 10, 2005

Mr. Steve Miller
St Johns River Water Management District
Division of Land Acquisition
4049 Reid Street
Palatka, Florida 32178-1429

Subject: **Heart Island Conservation Area** – Section 4(f) Applicability
State Road (SR) 15 (US 17) PD&E Project
From De Leon Springs Boulevard to SR 40
Volusia County, Florida
Financial Management Number: 410251-1-22-01
Federal Aid Project Number: 4011 052 P

Dear Mr. Miller;

The Florida Department of Transportation (FDOT), District 5, is evaluating various improvements to SR 15 (US 17) from De Leon Spring Boulevard to SR 40 in Volusia County, Florida. SR 15 (US 17) runs along the western boundary of the 13,900-acre Heart Island Conservation Area, a property owned by the St. Johns River Water Management District (SJRWMD). One of the SR 15 (US 17) improvement alternatives involves the expansion from the existing two-lane undivided configuration to a four-lane divided roadway. The proposed expansion of SR 15 (US 17) will require that additional right of way be acquired along the existing corridor in order to construct these improvements. Right of way needs along the northern portion of the SR 15 corridor may require the potential acquisition of up to 9.4 acres of land from the Heart Island Conservation Area. The proposed FDOT roadway improvements will have no direct or indirect impact to the current uses of the Heart island Conservation Area.

On July 19, 2005 you and Leota Wilkerson attended a meeting with FDOT personnel and the FDOT consultants currently working on the SR 15 Project Development and Environment (PD&E) Study. This letter serves to document some of the important decisions of that meeting. I am also requesting a brief statement from you describing the overall importance of the Heart Island Conservation Area to the mission of the SJRWMD. The FDOT needs a letter from the SJRWMD, as the agency with jurisdiction over the Heart Island Conservation Area, to evaluate the applicability of Section 4(f) to this property.

The July 19, 2005 meeting confirmed that the Heart Island Conservation Area is solely owned by the SJRWMD; that it is primarily used by the public for horseback riding and hunting; that it contains a passive primitive camping area; and that there are no trails or other recreational facilities along the existing SR 15 boundary. Fire management and timber harvesting are employed to maintain the property. Wildlife management is identified as a goal of the Heart

Island Management Plan, although the property is not officially designated as a wildlife refuge. Most of the land along the SR 15 right of way is pine flatwoods which is not considered significant habitat for listed species or species of special concern.

The SJRWMD has requested that the FDOT consider a shared access point along SR 15 to both the Heart Island Conservation Area and the power substation. This access point should be sufficiently large to allow large logging vehicles (18-wheel) to access the Heart Island Conservation Area. Replacement of the existing parking area and the interpretive kiosk should also be a part of any proposed mitigation provided by the FDOT. The SJRWMD has also requested that stormwater management areas (retention ponds) not be considered within the conservation area boundaries.

The decision to request this land from the SJRWMD will be made once a preferred alternative for the SR 15 improvements project is selected. I understand that should this request be made, a map and written request must be submitted to the SJRWMD for your consideration. The compensation and mitigation options discussed at the July 5, 2005 meeting will be formalized at that time.

A letter from you concerning the significance of the Heart Island Conservation Area will allow the FDOT to complete the Section 4(f) applicability process.

If you have any questions, please feel free to contact me at (386) 943.5390 or bob.gleason@dot.state.fl.us.

Sincerely,

Bob Gleason
Environmental Administrator
FDOT - District 5

cc. Bill Walsh, FDOT – District Five
Derek Fusco, FHWA - Tallahassee
Kent Black, HNTB, Inc.
Robert Denney, HNTB, Inc.
Luis Diaz, HNTB, Inc.
Tom Roberts, EMS
Richard Estabrook, SEARCH - Gainesville

BG – BW

St. Johns River Water Management District

Kirby B. Green III, Executive Director • David W. Fisk, Assistant Executive Director

4049 Reid Street • P.O. Box 1429 • Palatka, FL 32178-1429 • (386) 329-4500
On the Internet at *www.sjrwmd.com.*

Received

JAN 09 2006

FDOT
Environmental Management

December 28, 2005

Mr. Bob Gleason
Environmental Administrator
FDOT- District 5
719 South Woodland Boulevard
DeLand, FL 32720-6834

Dear Mr. Gleason:

This letter is in response to your request for a statement from the St. Johns River Water Management District regarding our management of the Heart Island Conservation Area as it relates to the expansion of SR15/US 17.

In evaluating requests for rights-of-way the District has the following criteria within Administrative Rule 40C-9:

40C-9.380 Right of Way Easements.

(1) The District does not encourage the use of District Lands for utility right-of-way easements or other similar purposes. However, the District will grant right-of-way easements if the following criteria are met in the sequence listed below:

(a) First, an analysis is performed by the person or entity requesting the right-of-way demonstrating why the right-of-way cannot be located in a manner which will avoid the District Lands;

(b) Second, to the greatest extent possible, the proposed right-of-way must be located within an existing utility right-of-way easement, along the District Land boundary, or within an existing fireline or roadway;

(c) Third, the proposed right-of-way does not fragment wetland or other functioning habitat; and

(d) Fourth, the proposed right-of-way is not located on or under environmentally sensitive lands as defined by the District in the land management plan

(2) The District must be compensated for the loss of intended use of the land within the proposed right-of-way.

Specific Authority 373.044, 373.113 FS. Law Implemented 373.139, 373.59 FS. History--New 1-16-94. Amended 5-11-94.

The District feels that DOT's request has met all the requirements for the actual roadway because: a) the roadway can not be aligned to avoid District land, since the existing road is trapped between the railroad and District land; b) the widening of the roadway meets the requirement to co-locate and is along the boundary; c) the right of

way will impact a small wetland but does not fragment the wetland or other habitat; d) the requested land does not impact any environmentally sensitive lands. The District is not convinced that a request for borrow and detention ponds will meet the same tests because they can be located in such a fashion as to avoid District land.

The Heart Island Conservation Area helps the District meet the Legislative mission by protecting wetlands and groundwater recharge areas. Both are important because: the wetlands protect and supply Deep Creek; and the recharge is adjacent to the Priority Water Resource Caution Area where water use is forecasted to exceed available groundwater. Heart Island also meets the District's Legislative recharge to provide for public recreation. The property is open to both passive recreation and public hunting through a wildlife management area agreement with the Florida Fish and Wildlife Conservation Commission.

The widening project will impact the public access/parking area and the trails that connect to it. While this is not an insurmountable situation because these facilities can be relocated, the District expects that the cost of the relocation will be borne by DOT.

I hope this letter has addressed all of the issues identified within your request. If it has not, please contact me at (386) 329-4399.

Sincerely,

Steven R. Miller (Rnd)

Steven R. Miller, Director
Division of Land Management

cc: Robert Christianson
Lisa Grant
Leota Wilkinson

St. Johns River
Water Management District
Kirby B. Green III, Executive Director • David W. Fisk, Assistant Executive Director

4049 Reid Street • P.O. Box 1429 • Palatka, FL 32178-1429 • (386) 329-4500
On the Internet at www.sjrwmd.com.

April 10, 2006

Richard W. Estabrook
Principal Investigator
Southeastern Archaeological Research, Inc.
315 NW 138th Terrace
Jonesville, Florida 32669

Dear Mr. Estabrook:

This letter is in response to your questions regarding the potential impacts to the management of the Heart Island Conservation Area resulting from the proposed widening of US 17 (SR 15). Please realize this letter reflects the District's proprietary interest only, and in no way affects our regulatory responsibility.

Because the project, as described, is merely widening an existing corridor, and because DOT has agreed to take the minimum footprint necessary, the St Johns River Water Management District has determined that the project will not adversely affect the activities, features, and conservation attributes for which the property was purchased and is managed. We also feel that the project should not impact public access to, or the recreational value of, the Heart Island Conservation Area.

I hope that this letter answers your concerns. If you have any questions, please contact me at (386) 329-4399.

Sincerely,

Steven R. Miller, Director
Division of Land Management

cc: Robert Christianson
Jack Eckdahl
Tom Workman
Lisa Grant

U.S Department
of Transportation
Federal Highway Administration

545 John Knox Road, Suite 200
Tallahassee, Florida 32303

(850) 942-9650

In Reply Refer To: HPO-FL

April 13, 2006

Mr. George Gilhooley
District Five Secretary
Florida Department of Transportation
719 South Woodland Boulevard
DeLand, Florida 32720

Attention: Mr. Robert Gleason

Dear Mr. Gilhooley:

Subject: Section 4(f)
SR 15 (U.S. 17) from Deleon Springs Boulevard to SR 40
Federal-aid Project No: 4011 (052) P
Financial Project No.: 410251-1-22-01
Volusia County

The project extends from DeLeon Spring Boulevard in DeLeon Springs north 6.42 miles, to SR 40 in Barberville. The proposed improvements to SR 15 (U.S. 17) will require the expansion of the roadway from its current two-lane undivided, rural typical section configuration to a four-lane divided urban section. This expansion will require the acquisition of approximately a 50 foot wide strip for 0.7 miles of additional right-of-way (ROW) of the Heart Island Conservation Area (HICA), a 13, 900 acre wildlife preservation area directly to the roadway corridor.

A corridor analysis identified the existing SR 15 corridor as the only viable corridor to connect the project termini in DeLeon Springs and Barberville. Within the existing roadway corridor, three build alternatives and a "no-build" alternative are being considered. These alternatives include expanding the roadway to the west towards the railroad (left), expanding to both sides (center), or expanding to the east (right). Due to projected impacts to the railroad and the cost of relocating and rebuilding the railroad facilities, the alternatives that expand the roadway to the west (with left and center alternatives) are not identified as viable alternatives.

The HICA is owned managed by the St. Johns River Water Management District (SJRWMD). The SJRWD will be compensated at the fair market value for any ROW acquisition during the ROW acquisition phase of the project. And the existing parking area will be relocated further to the east, and the proposed relocation of the parking area will not change the access or use of the facility.

Mr. George Gilhooley
April 13, 2006

Steven Miller, the SJRWMD official with jurisdiction over HICA, has agreed in writing that the proposed project will not adversely affect the activities, features, and attributes that qualify the property for protection under Section 4(f).

Since the resources of this site are not being adversely affected, it is the intent of FHWA to pursue a *de minimis* finding. If you have any questions, please contact Mr. Derek Fusco at (850) 942-9650, extension 3026.

Sincerely,

Derek A Fusco

For: David C. Gibbs
Division Administrator

cc: Mr. Bill Walsh, FDOT District Five EMO (MS-501)

Florida Department of Transportation

JEB BUSH
GOVERNOR

719 South Woodland Boulevard
DeLand, FL 32720-6834

DENVER J. STUTLER, JR.
SECRETARY

June 8, 2006

Mr. Derek A. Fusco, P.E.
District Transportation Engineer
U.S. Department of Transportation
Federal Highway Administration
Florida Division Office
545 John Knox Road, Suite 200
Tallahassee, Florida 32303

Dear Mr. Fusco;

Subject: **Request for Issue**
Section 4(f) Evaluation *de minimis* Finding
Heart Island Conservation Area
State Road 15
From Deleon Springs Boulevard to SR 40
Volusia County, Florida
Financial Management # 410251-1-22-01
Federal Aid Project # 4011 (052) P

The Florida Department of Transportation, District Five, is proposing to make improvements to State Road 15 (US 17) from Deleon Spring Boulevard in DeLeon Springs north to SR 40 in Barberville, a district of 6.42 miles. These improvements will require the expansion of the roadway from its current two-lane undivided, rural typical section configuration to a four-lane divided urban typical section. This expansion will require the acquisition of an approximately 500 foot by 0.7-mile strip of additional right of way from the Heart Island Conservation Area (HICA), a 13,900 acre wildlife preservation area directly adjacent to the roadway.

The HICA is owned and managed by the St. Johns River Water Management District (SJRWMD). The SJRWMD will be compensated at the fair market value for any right of way acquisition during the right of way acquisition phase of the project. The existing parking area will be relocated further to the east; the proposed relocation of the parking area will not change the access or use of the facility. Steven Miller, the SJRWMD official with jurisdiction over the HICA, has agreed in writing that the proposed project will not adversely affect the activities, features, and attributes that qualify the HICA for protection under Section 4(f).

On April 13, 2006 the Federal Highway Administration issued a letter stating their intent to pursue a *de minimis* finding for this property. A Public Hearing was held on April 25, 2006 concerning this project. There was no public comment concerning the Section 4(f) findings or the intent to pursue the *de minimis* finding.

I am respectfully requesting that the FHWA complete their review of the Section 4(f) evaluation for the HICA and issue the *de minimis* finding.

If there are any questions, please feel free to contact me at 386.943.5390 or bob.gleason@dot.state.fl.us.

Sincerely,

Bob Gleason
Environmental Administrator
FDOT - District 5

cc. William Walsh, P.E., FDOT District Five Project Manager
Kent Black, P.E., HNTB Project Manager
Robert M. Denney, P.E., HNTB Project Engineer
Richard W. Estabrook – SEARCH, Gainesville

U.S. Department
of Transportation
Federal Highway Administration

545 John Knox Road, Suite 200
Tallahassee, Florida 32303

(850) 942-9650

In Reply Refer To: HPO-FL

June 16, 2006

Mr. George Gilhooley
District Five Secretary
Florida Department of Transportation
719 South Woodland Boulevard
DeLand, Florida 32720

Attention: Mr. Robert Gleason

Dear Mr. Gilhooley:

Subject: Section 4(f) *de minimis* Finding
SR 15 (US 17) from Deleon Springs Boulevard to SR 40
Federal-aid Project No: 4011 (052) P
Financial Project No.: 410251-1-22-01
Volusia County

The project extends from DeLeon Spring Boulevard in DeLeon Springs north 6.42 miles to SR 40 in Barberville. The proposed improvements to SR 15 (U.S. 17) will require the expansion of the roadway from its current two-lane undivided, rural typical section configuration to a four-lane divided urban section. This expansion will require the acquisition of approximately a 50 foot wide strip for 0.7 miles of additional right-of-way (ROW) of the Heart Island Conservation Area (HICA), a 13, 900 acre wildlife preservation area directly to the roadway corridor.

A corridor analysis identified the existing SR 15 corridor as the only viable corridor to connect the project termini in DeLeon Springs and Barberville. Within the existing roadway corridor, three build alternatives and a "no-build" alternative are being considered. These alternatives include expanding the roadway to the west towards the railroad (left), expanding to both sides (center), or expanding to the east (right). Due to the projected impacts to the railroad and the cost of relocating and rebuilding the railroad facilities, the alternatives that expand the roadway to the west (with left and center alternatives) are not identified as viable alternatives.

The HICA is owned managed by the St. Johns River Water Management District (SJRWMD). The SJRWD will be compensated at the fair market value for any ROW acquisition during the ROW acquisition phase of the project. And the existing parking area will be relocated further to the east and the proposed relocation of the parking area will not change the access or use of the facility.

Steven Miller, the SJRWMD official with jurisdiction over HICA, has agreed in writing that proposed project will not adversely affect the activities, features, and attributes that qualify the property for protection under Section 4(f).

Since the resources of this site are not being adversely affected, the official with jurisdiction over the property has concurred that the project will not adversely affect the subject Section 4(f) property, and the public has been afforded an opportunity to review and comment on the effects of the project on the Section 4(f) resource through the public hearing process, it is FHWA's determination that the requirements of *de minimis* have been met. As a result, the FHWA finds that the use of the land from the HICA is a *de minimis* impact under the provisions of Section 6009 of SAFETEA-LU. If you have any questions, please contact Mr. Derek Fusco at (850) 942-9650, extension 3026.

Sincerely,

For: David C. Gibbs
Division Administrator

cc: Mr. Bob Gleason, FDOT District Five EMO (MS-501)

DAF: awa S:/Progops/District5/ 4(f)SR15 File: 4011 (052) P

FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

APR 5 2006

April 3, 2006

MARY ANN POOLS, DIRECTOR
OFFICE OF POLICY AND STAKEHOLDER COORDINATION
(850)488-6661 TDD (850)488 9542
FAX (850)922 5679

Ms. Lauren P. Milligan
Florida State Clearinghouse
Department of Environmental Protection
3900 Commonwealth Boulevard, Mail Station 47
Tallahassee, Florida 32399-3000

Re: Volusia County, SAI #FL200602281960C,
FDOT Advance Notification – S.R. 15 (U.S. 17)
PD&E Study, From De Leon Springs Blvd. to
S.R. 40

Dear Ms. Milligan:

The Habitat Conservation Scientific Services Section of the Florida Fish and Wildlife Conservation Commission (FWC) has coordinated agency review of the referenced document, and provides the following comments and recommendations. These are being provided in accordance with the National Environmental Policy Act and the Coastal Zone Management Act/Florida Coastal Management Program.

The Florida Department of Transportation (FDOT), District 5, proposes to widen an approximately six-mile-long stretch of State Road (S.R.) 15 from Ponce de Leon Boulevard to S.R. 40. This is a rural road that traverses a mix of upland and wetland habitats including pine flatwoods, hardwood/conifer mixed forest, and a stream crossing (Deep Creek) along with pastures and low-density residential use. A railroad parallels the west side of the highway. The road is located east of the Ocala National Forest and Lake Woodruff National Wildlife Refuge. The St. Johns River Water Management District (SJRWMD) owns land on the east side of the road.

The road segment is in an area frequented by the threatened Florida black bear (*Ursus americanus floridanus*). Seven bears have been killed along this stretch of road between 1984 and 2001. This roadway segment was evaluated for the suitability of highway crossing sites for bears. Seven potential wildlife crossing locations were evaluated. One location, at the existing bridge location over Deep Creek, has been proposed for creation of a wildlife underpass for bears and other wildlife. Other crossing locations were dropped for various reasons including lack of suitable habitat on both sides of the road, and proximity to residences, the railroad, and S.R. 40.

To help mitigate for potential impacts to the Florida black bear, the FDOT has proposed the following for the wildlife crossing at Deep Creek:

1. Lengthen the existing bridge by 30 feet to the north to create additional wildlife crossing area with a height of 6 to 8 feet.
2. Clean debris and re-grade the south side of the existing bridge to create an upland crossing width of 15 to 20 feet with 4 to 6 feet of clearance.

3. Construction of a separate structure that will provide 50 feet of wildlife crossing with 8 feet of clearance for north-bound traffic.
4. Construct the new second bridge so that it is a minimum of 20 feet from the existing structure to allow light to reach the ground and reduce the "tunnel effect" of one wide bridge structure
5. Collect roadside runoff at the bridge to reduce standing water along the right-of-way and at the railroad crossing.

To funnel wildlife to this crossing, the right-of-way would be fenced for one mile north of the crossing, with gates of matching height, for SJRWMD personnel to access their lands. Fencing to the south would be limited to ¼ mile due to the presence of private properties. FDOT has committed to coordinating with these property owners to determine if fencing would be allowed along the private property boundaries Additionally, the SJRWMD is evaluating additional land purchases along Deep Creek. If these lands come under public ownership, FDOT is committed to providing fencing along these parcels south of the creek

The FWC concurs that the Deep Creek location is the best location for a wildlife crossing along this stretch of highway. The railroad is also elevated at this location allowing wildlife to pass underneath the tracks. In addition to the above commitments, we recommend that the FDOT monitor both the crossing and this entire segment of road for a period of at least five years to evaluate the crossing's effectiveness in reducing bear/vehicle conflicts. Provided the above measures are included in the project design, the FWC has no objections to this proposed highway widening project and has determined that this project is consistent with Chapters 370 and 372, Florida Statutes.

Thank you for the opportunity to comment on this project. If you or your staff would like to coordinate further on the recommendations contained in this report, please feel free to contact me at 850-488-6661 or e-mail me at maryann.poole@MyFWC.com, and I will be glad to help make the necessary arrangements. If your staff has any specific questions regarding our comments, please contact Mr. Steve Lau at our office in Vero Beach (772-778-5094; e-mail steve.lau@MyFWC.com).

Sincerely,

Mary Ann Poole

Mary Ann Poole, Director
Office of Policy and Stakeholder Coord

map/sl
ENV 1-3-2
SAI FL200602281960C
cc: Dennis David, FWC
Brian Scheick, FWC
Stephanie Simek, FWC
Terry Gilbert, URS Corp
Paul Sebert, EMS Scientists, Engineers, Planners, Inc

Florida Department of Transportation

JEB BUSH
GOVERNOR

719 South Woodland Boulevard
DeLand, FL 32720-6834

DENVER J. STUTLER, JR.
SECRETARY

June 12, 2006

Steve Jennings, Chief
Forest Management Bureau
Division of Forestry
3125 Conner Blvd. C-25
Tallahassee, FL 32399-1650

Re: DeLeon Forestry Station

Dear Mr. Jennings:

The Florida Department of Transportation (FDOT), District Five, will construct an access connection from the DeLeon Forestry Station to Spring Garden Ranch Road as part of the construction of the roadway project to expand the capacity of SR 15 to 4 lanes. This connection will provide for all turning movements at the full median opening on SR 15 at Spring Garden Ranch Road. This decision was make in the interest of emergency response and access needs at the DeLeon Forestry Station, public safety, and the integrity of the design of SR 15 (US 17).

Designated as Access Alternative I during the Project Development and Environment (PD&E) Study, this is the alternative preferred by the Department of Forestry. FDOT will assume the right-of-way and construction costs to provide this connection. The proposed typical section and concept aerial for this driveway are attached.

It was a pleasure working with Mike Kuypers and his staff during the study. We look forward to building on this relationship as we move into the design phase of this project.

Should you have any questions or need more information, do not hesitate to call me at 386-943-5411.

Sincerely

William G. Walsh, Project Manager
Project Development & Environment Office
FDOT, District Five

Cc: Brian Stanger, FDOT
Kent Black, HNTB Corp.

Florida Department of Transportation

JEB BUSH
GOVERNOR

719 South Woodland Boulevard
DeLand, FL 32720-6834

DENVER J. STUTLER, JR.
SECRETARY

June 21, 2006

RECEIVED
JUN 26 2006
HNTB ORLANDO

William T. Girard
5657 US Highway 17 North
DeLeon Springs, Florida 32130

Re: Full Median Opening at Residence

Dear Mr. Girard:

I am responding to your letter to Representative Pat Patterson regarding access to your residence on US 17. Thank you for your correspondence. We appreciate your participation in the public involvement process for this project.

The project to expand the capacity of US 17 by increasing the number of through travel lanes from 2 to 4 has been designed as an Access Management Class 3 roadway. Access management is the process by which access points along a roadway are controlled and restricted to maintain capacity and control friction and the number of conflict points along the road. An Access Class 3 is often implemented along roads that have a rural character and can help to maintain the rural character of an area. A Public Hearing to change the Access Management Class for this roadway was held on April 25, 2006.

The standards for an Access Management Class 3 allow for full median openings every 2640 feet (1/2 mile). This is precisely the distance from the median opening at Lake Winona Road to the median opening located in front of the residence of your neighbor to the north. This is why this median opening was located there. The newly constructed roadway will have a 40-foot wide median and the width of 2 travel lanes and the outside shoulder to accommodate a U-turn at this location. The turning radius is more than adequate to facilitate this turning movement by the vehicles described in your letter. This movement is actually safer that the current situation where one must contend with traffic from 2 directions when turning south on US 17 from your residence. This same situation exists at the median opening at Lake Winona Road.

Although the new roadway will be closer to your residence, the project will be built within the existing FDOT right-of-way at your location. The required clear zones and border widths for this type of roadway will be maintained for the safety of motorists and residents.

I hope that this adequately explains the reasons for the spacing of median openings along US 17 and the safety issues that you have raised. Please feel free to call me at 386-943-5411 should you have any further questions or concerns.

Again, thank you for your interest and input into the development of this project.

Sincerely,

William G. Walsh, Project Manager
Project Development & Environment Office
FDOT, District Five

Cc: Brian Stanger, FDOT, District Five
Robert Denney, HNTB Corp.

FLORIDA DEPARTMENT OF STATE
Sue M. Cobb
Secretary of State
DIVISION OF HISTORICAL RESOURCES

August 30, 2006

Mr. David C. Gibbs
Division Administrator
Federal Highway Administration
545 John Knox Road, Suite 200
Tallahassee, FL 32303

RE: DHR Project File Number: 2006-6729(b)
Received by DHR: August 24, 2006
Project: *Determination of Effects SR 15 (U.S. 17) from DeLeon Springs Boulevard to SR 40*
Financial Management #: 410251-1-22-01
Federal-aid Project #: 4011 (052) P
County: Volusia

Dear Mr. Gibbs:

Our office received and reviewed the above referenced project in accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended, 36 CFR Part 800: Protection of Historic Properties, Chapter 267, *Florida Statutes*, and applicable local ordinances. It is the responsibility of the State Historic Preservation Officer to advise and assist, as appropriate, Federal and State agencies and local governments in carrying out their historic preservation responsibilities; to cooperate with Federal and State agencies to ensure that historic properties are taken into consideration at all levels of planning and development; and to consult with the appropriate Federal agencies in accordance with the *National Historic Preservation Act of 1966*, on Federal undertakings that may affect historic properties and the content and sufficiency of any plans developed to protect, manage, or to reduce or mitigate adverse effects to such properties.

The cultural resources assessment survey (CRAS) for this project resulted in the identification of two historic districts listed in the National Register of Historic Places (NRHP) and seven resources potentially individually eligible for listing. These include the *Strawn Historic Sawmill District* (8VO5267), the *Strawn Historic Citrus Packing House District* (8VO5268), the *Barberville Post Office* (8VO4295), the *Lemmon Plantation House* (8VO4297), the *Deep Creek Bridge* (8VO7105), the *Jacksonville, Tampa & Key West Railroad* (8VO7641), the *DeLeon Springs Fire Tower* (8VO7662), the *DeLeon Springs Billboard* (8VO7664), and the *Barberville Billboard* (8VO7676). Our office also concluded that the house at *4990 Commerce Avenue* (8VO2954) is potentially individually eligible and the *Florida Division of Forestry Public Lands Information Office* (8VO7640) would be contributing to the *DeLeon Springs Fire Tower.*

After a field visit undertaken by one of our staff members, Sherry Anderson, as well as information submitted by your office, it is our understanding that the proposed improvements will not impact any of the significant resources identified herein with the exception of the *Barberville Billboard*. The road will be widened in the present location of the historic billboard necessitating its removal. The Florida Department of Transportation (FDOT) plans to relocate the billboard within the SR 15 right-of-way in the vicinity of its present location. Additionally, FDOT plans to rehabilitate the historic image painted on the billboard. Consequently, your office has determined that the project will have no adverse effect on any of the historic properties. Based on continued coordination with our office during relocation and rehabilitation of the *Barberville Billboard*, we concur with these determinations and further agree that the above described changes to the subject Section 4(f) property constitute a *de minimis* impact under the provisions of Section 6009 of SAFETEA-LU.

If you have any questions, please contact Sherry Anderson, Architectural Historian, Transportation Compliance Review Program, at 850-245-6432 or by email *sanderson@dos.state.fl.us*.

Sincerely,

Frederick P. Gaske, Director, and
State Historic Preservation Officer

XC: Bill Walsh, FDOT, District Five
Bob Gleason, FDOT, District Five
Roy Jackson, FDOT, CEMO

Florida Department of Transportation

JEB BUSH
GOVERNOR

719 South Woodland Boulevard
DeLand, FL 32720-6834

DENVER J. STUTLER, JR.
SECRETARY

June 8, 2006

Mr. David C. Gibbs
Division Administrator
U.S. Department of Transportation
Federal Highway Administration
Florida Division Office
545 John Knox Road, Suite 200
Tallahassee, Florida 32303

ATTN: Mr. Derek Fusco

Subject: **Request for Review**
Cultural Resource Assessment Survey Addendum
State Road 15 (U.S. 17)
From DeLeon Springs Boulevard to SR 40
Volusia County, Florida
Financial Management # 410251-1-22-01
Federal Aid Project # 4011 (052) P

Dear Mr. Gibbs;

Enclosed please find two (2) copies of the final technical memorandum and the supporting documentation from the cultural resource assessment survey (CRAS) addendum for the proposed improvements to State Road (SR) 15 from DeLeon Springs Boulevard to SR 40 in Volusia County, Florida. This addendum is a continuation of the cultural resource assessment survey that was recently conducted for the PD&E Study phase of this project. This report, titled *Cultural Resource Assessment Survey, State Road 15 (US 17) from DeLeon Springs Boulevard to SR 40, Volusia County, Florida* (DHR # 2006-2213) has previously been submitted to your office. Recommendations made by the Value Engineering team to improve the SR 15/SR 40 intersection require that the project's area of potential effects (APE) be extended slightly at the north end of the project at the SR 15/SR 40 intersection. The attached CRAS addendum deals only with the resources identified in the APE expansion area. This additional investigation was conducted to ensure that the Florida Department of Transportation (FDOT) has taken into account this project's potential to affect historic properties that are listed or determined eligible for listing on the National Register of Historic Places (NRHP).

The APE defines the area within which visual, audible, and atmospheric effects related to the improvement project and subsequent maintenance extend and includes any historic properties that may be affected by these activities. The APE for this proposed intersection improvements includes the area to the north and east of the SR 15/SR 40 intersection and six (6) additional stormwater management pond locations. The archaeological shovel testing was conducted within the proposed pond site boundaries. All other historic properties within the entire APE were recorded and evaluated.

Three shovel tests were excavated within the proposed pond sites. Additional testing was prohibited by surface water and test pit slumping. No artifacts, above ground features, or structures were observed during a pedestrian survey of the proposed locations.

Five historic properties (8VO7542, 8VO4647, 8VO7674, 8VO7675, and 8VO7676) were identified within the APE expansion area for SR 15. Two of these resources were previously recorded during the original CRAS (8VO7542 and 8VO5647) and it was determined that they do not to meet the minimum criteria for listing on the NRHP. Three previously unrecorded resources were identified within the APE expansion area. 8VO7574 (1864 South US Highway 17) and 8VO7675 (130 Cypress Street) are mid-20th century Frame Vernacular buildings that do not appear to meet the minimum criteria for listing on the NRHP. The Barberville Billboard (8VO7676) is a circa 1953 roadside advertisement for the Ponce de Leon Springs attraction (now the De Leon Springs State Park). This resource is considered to be potentially eligible for listing on the NRHP under Criteria A and C for its association with the Florida post-World War II tourist industry and for its construction technique.

Based on the information provided in the cultural resource assessment report, the FDOT has determined that the previously recorded sites 8VO4647 and 8VO7642 have been determined to be ineligible for listing on the NRHP. No new information was uncovered during this investigation to alter this determination. Frame Vernacular structures 8VO4642 and 8VO4647 also do not appear to be NRHP-eligible. The Barberville Billboard (8VO7676) is considered potentially eligible for listing on the NRHP. I respectfully request your concurrence with these determinations. Should you concur with our findings, please submit one copy of this document along with the accompanying Survey Log Sheet to Mr. Frederick P. Gaske, the Florida State Historic Preservation Officer, for his review and comment.

If there are any questions, please feel free to contact me at 386.943.5390 or bob.gleason@dot.state.fl.us.

Sincerely,

Bob Gleason
Environmental Administrator
FDOT - District 5

Enclosures (2)

cc. William Walsh, FDOT District Five Project Manager
Kent Black, P.E., HNTB Project Manager
Robert M. Denney, P.E., HNTB Project Engineer
Anne Stokes – SEARCH, Orlando

U.S. Department
of Transportation
Federal Highway Administration

545 John Knox Road, Suite 200
Tallahassee, Florida 32303

(850) 942-9650

June 30, 2006

In Reply Refer To: HPO-FL

Mr. Frederick Gaske, Director
Division of Historical Resources
State Historical Preservation Officer
500 South Bronough Street
Tallahassee, Florida 32399-0250

Attn: Mr. Sherry Anderson

Dear Mr. Gaske:

Subject: Cultural Resource Assessment Survey Addendum
SR 15 (U.S. 17) from DeLeon Springs Blvd. to SR 40
Federal-aid Project No.: 4011 (052) P
Financial Management No.: 410251-1-22-01
Volusia County

The Federal Highway Administration (FHWA), in cooperation with the Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) Study for the subject project. A Cultural Resource Assessment Study (CRAS) was conducted to locate, identify, and aerially delimit any prehistoric and/or historic period cultural resources contained within the Area of Potential Effect (APE), and to assess the significance of these resources as per criteria of eligibility for listing in the *National Register of Historic Places (NRHP)*.

Recommendations made by the Value Engineering team to improve the SR 15/SR 40 intersection require that the project's area of potential effects (APE), be extended slightly at the north end of the project at the SR 15/SR 40 intersection. The attached CRAS addendum deals only with the resources identified in the APE expansion area.

The APE defines the area within which visual, audible, and atmospheric effects related to the improvement project and subsequent maintenance extend and includes any historic properties, that may be affected by these activities. The APE for this proposed intersection improvements includes the area to the north and east of the SR 15/SR 40 intersection, and six (6) additional stormwater management pond locations. The archaeological shovel testing was conducted within the proposed site boundaries. All other historic properties within the entire APE were recorded and evaluated.

Three shovel tests were excavated within the proposed pond sites. Additional testing was prohibited by surface water and test pit slumping. No artifacts, above ground features, or structures were observed during a pedestrian survey of the proposed locations.

Mr. Frederick Gaske, Director
June 30, 2006

Five historic properties (8VO4647, 8VO7642, and 8VO7674-8VO7676) were identified within the APE expansion area for SR 15. Two of these resources were previously recorded during the original CRAS (8VO4647 and 8VO7642) and it was determined that they do not meet the minimum criteria for listing on the *NRHP*. Three previously unrecorded resources were identified within the APE expansion area. 8VO7674 (1864 South U.S. Highway 17) and 8VO7675 (130 Cypress Street) are mid-20th century Frame Vernacular buildings that do not appear to meet the minimum criteria for listing on the *NRHP*. The Barberville Billboard (8VO7676) is a circa 1953 roadside advertisement for the Ponce de Leon Springs attraction (now the De Leon Springs State Park). This resource is considered to be potentially eligible for listing on the *NRHP* under Criteria A and C for its association with the Florida post-World War II tourist industry, and for its construction technique.

Based on the information provided in the cultural resource assessment reports, sites 8VO4647 and 8VO7642 have been determined to be ineligible for listing in the *NRHP*. And no new information was uncovered during this investigation to alter this determination. Frame Vernacular structures 8VO7674 and 8VO7675 also do not appear to be *NRHP* eligible. The Barberville Billboard (8VO7676) is considered potentially eligible for listing on the *NRHP*. Pursuant to 36 CFR Part 800.8, we request your review and concurrence with the above stated determination of eligibility. Enclosed please find a copy of the document and Survey Log Sheet.

If you have any questions, please contact Mr. Derek Fusco at (850) 942-9560 extension 3026.

Sincerely yours,

/s/ Derek A. Fusco
For: David C. Gibbs
Division Administrator

Enclosure(s)

cc: Mr. Bill Walsh, FDOT, District Five EMO (MS-501)

FLORIDA DEPARTMENT OF STATE
Sue M. Cobb
Secretary of State
DIVISION OF HISTORICAL RESOURCES

Mr. David C. Gibbs
Division Administrator
Federal Highway Administration
545 John Knox Road, Suite 200
Tallahassee, FL 32303

August 8, 2006

RE: DHR Project File Number: 2006-6729
Received by DHR: July 7, 2006
Project: *Cultural Resource Assessment Addendum, SR 15 (US 17) from DeLeon Springs Boulevard to SR 40*
Financial Management #: 410251-1-22-01
Federal-aid Project #: 4011 (052) P
County: Volusia

Dear Mr. Gibbs:

Our office received and reviewed the above referenced project in accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended, 36 CFR Part 800: Protection of Historic Properties, Chapter 267, *Florida Statutes*, and applicable local ordinances. It is the responsibility of the State Historic Preservation Officer to advise and assist, as appropriate, Federal and State agencies and local governments in carrying out their historic preservation responsibilities; to cooperate with Federal and State agencies to ensure that historic properties are taken into consideration at all levels of planning and development; and to consult with the appropriate Federal agencies in accordance with the *National Historic Preservation Act of 1966*, on Federal undertakings that may affect historic properties and the content and sufficiency of any plans developed to protect, manage, or to reduce or mitigate adverse effects to such properties.

A cultural resources assessment survey (CRAS) was conducted and three previously unrecorded resources (VO7674-7676) were identified within the project's expanded area of potential effect. No archaeological resources were found. The *Barberville Billboard* (VO7676) was identified as potentially eligible for listing in the National Register of Historic Places (NRHP). Our office concurs with these determinations. It should be noted that this billboard is similar to another one, the *DeLeon Springs Billboard* (VO7664), which was also identified as potentially NRHP eligible in the previous cultural resource assessment survey. We look forward to further consultation with your office regarding effects to the significant resources noted herein.

500 S. Bronough Street • Tallahassee, FL 32399-0250 • http://www.flheritage.com

☐ Director's Office (850) 245-6300 • FAX: 245-6435
☐ Archaeological Research (850) 245-6444 • FAX: 245-6452
☑ Historic Preservation (850) 245-6333 • FAX: 245-6437
☐ Historical Museums (850) 245-6400 • FAX: 245-6433
☐ Palm Beach Regional Office (561) 279-1475 • FAX: 279-1476
☐ St. Augustine Regional Office (904) 825-5045 • FAX: 825-5044
☐ Tampa Regional Office (813) 272-3843 • FAX: 272-2340

If you have any questions, please contact Sherry Anderson, Architectural Historian, Transportation Compliance Review Program, at 850-245-6432 or by email *sanderson@dos.state.fl.us*.

Sincerely,

Frederick P. Gaske, Director, and
State Historic Preservation Officer

XC: Bill Walsh, FDOT, District Five
Bob Gleason, FDOT, District Five

U.S.Department
of Transportation
Federal Highway Administration

545 John Knox Road, Suite 200
Tallahassee, Florida 32303

(850) 942-9650

In Reply Refer To: HPO-FL

August 18, 2006

Mr. Frederick Gaske, Director
Division of Historical Resources
State Historical Preservation Officer
500 South Bronough Street
Tallahassee, Florida 32399-0250

Attn: Ms. Sherry Anderson

Dear Mr. Gaske:

Subject: Determination of Effects
SR 15 (U.S. 17) from DeLeon Springs Boulevard to SR 40
Financial Management No.: 410251-1-22-01
Federal-aid Project No.: 4011 (052) P
Volusia County

The Federal Highway Administration (FHWA), in cooperation with the Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) Study for the subject project. A Cultural Resource Assessment Study (CRAS) and a CRAS addendum were conducted to locate, identify, and aerially delimit any prehistoric and/or historic period cultural resources contained within the Area of Potential Effect (APE), and to assess the significance of these resources as per criteria of eligibility for listing in the *National Register of Historic Places (NRHP)*.

The FDOT is proposing to widen SR 15 from two lanes to four lanes in an effort to increase capacity along the roadway. The existing roadway has been determined to be the only viable corridor, and three alignment alternatives (left, right, and center) were considered within the existing corridor. *NRHP* eligible resources will be avoided by the proposed improvements.

The Barberville billboard (8VO7676) is a circa 1953 roadside advertisement for the Ponce de Leon Springs attraction (now the De Leon Springs State Park). This resource was considered to be potentially eligible for listing on the *NRHP* under Criteria A and C for its association with the Florida post-World War II tourist industry and for its construction technique. The Barberville billboard (8VO7676) is considered potentially eligible for listing on the *NRHP*. The billboard is located on SR 15 and is associated with the Deleon Springs Park. The road will be widened in the present location of the historic billboard necessitating its removal. The FDOT is committed to the preservation of this significant historic resource and plans to relocate the billboard within

the SR 15 right-of-way in the vicinity of its present location, but beyond the boundaries of the proposed improvements. Additionally, the FDOT plans to rehabilitate the historic image painted on the billboard which has faded to such an extent that is barely legible.

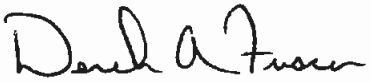
Due to these efforts of avoidance, relocation, and rehabilitation, the proposed widening of SR 15 will have no adverse effects on any of *NRHP* eligible resources and the historic DeLeon Springs billboard (8VO7676).

It is FHWA's determination that since the project permanently incorporates land of a historic site, with or without an adverse affect, which Section 4(f) applies. Since the resource is not being adversely affected, the official with jurisdiction over the property has concurred that the project will not adversely affect the subject Section 4(f) property, and a public consultation has afforded an opportunity on the effects of the project on the Section 4(f) resource, it is FHWA's determination that the requirements of *de minimis* has been met. As a result, the FHWA finds that the use of the resource is a *de minimis* impact under the provisions of Section 6009 of SAFETEA-LU.

Pursuant to 36 CFR Part 800.8, we request your review and concurrence with the above stated determination of effect and the finding of Section 4(f) *de minimis*. Enclosed please find a copy of the construction plans noting the locations of the *NRHP* eligible resources.

If you have any questions, please contact Mr. Derek Fusco at (850) 942-9560 extension 3026.

Sincerely yours,



For: David C. Gibbs
Division Administrator

Enclosure(s)

cc: Mr. Bill Walsh, FDOT, District Five EMO (MS-501)

St. Johns River Country
WEST VOLUSIA COUNTY
FLORIDA

Received
MAY 02 2006
FDOT
Environmental Management

May 1, 2006

Mr. George Gilhooley
Secretary, District 5
Florida Department of Transportation
719 S. Woodland Boulevard
DeLand, Florida 32720

Dear Mr. Gilhooley:

The West Volusia Tourism Advertising Authority is encouraged to learn that FDOT District 5 has made a "commitment" to build a multi-use trail as part of the road-widening of US Highway 17 between DeLeon Springs and Barberville. Such a trail will greatly serve tourism through the River of Lakes Heritage Corridor, the development of which is the chief priority of the Tourism Advertising Authority.

This trail will support initiatives already underway.

For one, in November this year the City of Lake Helen and the Florida Bicycle Association will launch the Florida Discovery Bicycling Center. This is the first year-round adult bicycle safety training and touring program in America. To begin with, the Bicycling Center will use our region's least traveled roads. However, as traffic continues to mount from new development, the multi-use trail planned for the Highway 17 corridor and other Volusia County and neighboring county trails will become increasingly important to the Bicycling Center program.

For another, the River of Lakes Heritage Corridor is well underway toward achieving Scenic Highway designation for Highway 17 and vicinity roads. Scenic Highways attract bicyclists. We want them to cycle safely. The multi-use trail along Highway 17, Volusia County's Spring-to-Spring Trail and additional trails planned to link Lake Helen and Enterprise to east coast beaches will become highly popular. In due course so will the extension of the Highway 17 trail as roadway widening continues north and links with Putnam County, where major trail initiatives are underway and with which Volusia is coordinating.

Further, Volusia County has been designated as the first priority by the St. Johns River Alliance for initiating a multi-use trail through the entire 310 miles of the St. Johns River Basin.

WEST VOLUSIA TOURISM ADVERTISING AUTHORITY
300 South Volusia Avenue, Suite 2 • Orange City, Florida 32763 • 386.775.2006 • 800.749.4350 • Fax 386.775.2007
www.stjohnsrivercountry.com • info@stjohnsrivercountry.com

FDOT studies show that Floridians everywhere call for safer places to ride bicycles. The highest priority for multi-use trails should go where cyclists can most readily access public and not-for-profit managed lands, which, within and close by this 6.5-mile Highway 17 corridor, include the Lake Woodruff National Wildlife Refuge, DeLeon Springs State Park, the Pioneer Settlement for the Creative Arts, state forest lands, and lands of the St. Johns Water Management District.

Support for the multi-use trail in question has been registered (or very soon will be) by letters to your office and the office of Project Manager William G. Walsh (or by inclusion in existing plans) from the Office of Greenways & Trails, from the Volusia County Council, the Volusia County Metropolitan Planning Organization, from the St. Johns River Alliance, and from Bike Florida, further encouraged by editorials in The News-Journal (April 16) and in the Gainesville Sun (April 23).

Indeed, the multi-use trail incorporated in the widening US 17 corridor will become part of an overall 300-to-400-mile north-central Florida loop trail that will become one of the longest in America, much of which is already in place or in construction and/or design through Volusia, Seminole, Orange, Lake, Polk, Hillsborough, Pinellas, Pasco, Hernando, Citrus, Marion and Putnam counties.

Visit Florida reports that the most requested information by visitors at its Welcome Stations concerns bicycling facilities. A brochure published last year that identifies Florida Bicycle Trails (sponsored in part by FDOT) is already in its third printing. Florida attracts more than 80 million visitors a year. This north-central Florida loop trail in development will become an important state attraction and produce widespread economic benefits, especially to rural areas.

We trust that the multi-use trail will remain a commitment of District 5 through the Highway 17 widening. Please keep me informed as the process continues.

Thank you for helping make this trail a reality.

Sincerely,

Renee Tallevast

Renee Tallevast, Executive Director
West Volusia Tourism Advertising Authority

cc: William G. Walsh
Project Manager
District 5

WEST VOLUSIA TOURISM ADVERTISING AUTHORITY
300 South Volusia Avenue, Suite 2 • Orange City, Florida 32763 • 386.775.2006 • 800.749.4350 • Fax 386.775.2007
www.stjohnsrivercountry.com • info@stjohnsrivercountry.com

Florida Department of Transportation

JEB BUSH
GOVERNOR

719 S. Woodland Blvd.
DeLand, FL 32720

DENVER J. STUTLER, JR.
SECRETARY

June 1, 2006

Ms. Renee Tallevast
Executive Director
West Volusia Tourism Advertising Authority
300 South Volusia Avenue, Suite 2
Orange City, Florida 32763

Re: US 17 Widening - Deleon Springs to Barberville
FM # 410251-1

Dear Ms. Tallevast

Thank you for your recent letter dated May 1, 2006 regarding the need for a multi-use trail in the US Highway 17 (SR 15) corridor.

As you know the Florida Department of Transportation (FDOT) has been studying the US 17 corridor for over a year and held the final Public Hearing on April 25, 2006. The Project Development and Environment (PD&E) Study has identified the benefits of widening US 17 from DeLeon Springs to Barberville to a four lane roadway to provide relief from traffic congestion in the future and to enhance the safety of the corridor for the users as well as the wildlife along the corridor. FDOT has studied the effect of a 200 foot typical section through this corridor, a standard rural typical section. The typical section includes four-twelve foot lanes separated by a forty foot median. The section also includes a five-foot shoulder on the outside travel lanes. These shoulders will generally allow for bicyclists to traverse the corridor in a safe and efficient manner.

FDOT has directed its Consultant for this project to include a reference to a proposed trail potentially along CR 3 as the optimal facility for bicyclists and pedestrians. The corridor offers a scenic view, away from high speed traffic and numerous large trucks. The CR 3 trail is under consideration by the Volusia MPO and has been ranked on their list of prioritized enhancement projects.

As part of the PD&E process, recommendations concerning the multi-use trail have been acknowledged. These acknowledgements include a slide during the Public Hearing, a discussion as included in the Public Hearing transcript and in the recommendations section of the Preliminary Engineering Report (PER) developed for this project.

- At the Public Hearing a slide noted FDOT's commitment to "Be aware of bicycle advocacy groups to identify a bicycle trail within the SR 15 (US 17) corridor. A parallel trail corridor has been proposed by Volusia County utilizing the CR 3 corridor west of SR 15 (US17)."

- While speaking to this slide, Mr. Kent Black of HNTB Corporation stated "We're also aware of the bicycle and multi-use trail needs in this area. This expanded corridor that includes County Road 3 and US 17 through this kind of central and north central part of the state had some significant opportunities for bicycle and pedestrian accommodations, and DOT is committing to being involved in the development of a multi-use trail. Whether that ends up – supporting it on County Road 3 or US 17, but we're committing to working with those groups to push that forward in conjunction with the County and the MPO."
- The PER Section 1 lists commitments and recommendations and lists the following concerning trails: "Recommendation that in future phases of the project FDOT be aware of the possible desire of local Heritage Corridor groups, the Office of Greenways and Trails, and other bicycle advocacy groups to identify a bicycle trail within the SR 15 (US 17) corridor. Future coordination will be necessary with these groups."

I applaud the efforts your organization is making for the State. FDOT is excited about being able to partner with Volusia County, the Volusia County MPO, the St. Johns River Alliance, the Office of Greenways and Trails, the West Volusia Tourism Advertising Authority, and all others working within the Heritage corridor. We look forward to partnering in future phases of this project to continue to identify resources within the corridor, including the railroad, US 17, and CR 3.

I hope this addresses your concerns and relays the importance that FDOT is placing on the efforts to develop the trail system of Florida. If you have any further questions, please feel free to contact me.

Sincerely,

George Gilhooley, P.E.
District Secretary
District Five

GG:ww

FDOT racker # 06-23387

Norman p/s prepare response Gr

St. Johns River ALLIANCE

Preserving, Protecting and Promoting America's First River

Received
MAY 0 5 2006
D5 Executive Suite

May 2nd, 2006

Mr. George Gilhooley
Secretary, District 5
Florida Department of Transportation
719 S. Woodland Boulevard
DeLand, Florida 32720

Dear Mr. Gilhooley:

The St. Johns River Alliance proudly leads the effort to incorporate a multi-use trail in the corridor for widening US Highway 17 between DeLeon Springs and Barberville. These 6.5 miles lie altogether in Volusia County, which is the River Alliance's first priority for initiating a multi-use trail through the entire 310 miles of the St. Johns River Basin. Such a trail will bring important quality-of-life benefits to citizens of the 13 counties through which the trail will pass, as well as benefits to all Floridians and visitors whose enjoyment of the trail will produce continuing economic benefits through tourism.

The Florida Department of Transportation's own studies show that Floridians everywhere call for safer places to ride bicycles. The highest priority for multi-use trails should go where cyclists can most readily access public and not-for-profit managed lands, which, within and close by this 6.5-mile Highway 17 corridor, include the Lake Woodruff National Wildlife Refuge, DeLeon Springs State Park, the Pioneer Settlement for the Creative Arts, state forest lands, and lands of the St. Johns Water Management District.

Support for the multi-use trail in question has been registered by letters to your office and the office of Project Manager William G. Walsh (or by inclusion in existing plans) from the Office of Greenways & Trails, from the Volusia County Council, the Volusia County Metropolitan Planning Organization, from the West Volusia Tourism Advertising Authority (operating as the River of Lakes Heritage Corridor), and Bike Florida, further encouraged by editorials in The News-Journal (April 16) and in the Gainesville Sun (April 23).

St. Johns River Alliance
PO Box 2288, Sanford, Florida 32772
407.322.8888
www.stjohnsriveralliance.com

AMERICAN HERITAGE RIVERS

Additional support has come from Putnam County interests, including the Putnam County Board of County Commissioners, the Putnam County Chamber of Commerce and others, although these letters may have been directed to FDOT District 2. This bi-county support reflects that the current corridor widening is part of an overall almost 50-mile planned widening of US 17 between DeLeon Springs and San Mateo, which in its entirety should include a multi-use trail, as called for by the Putnam County Trails Master Plan, which will make many additional public lands accessible by bicycle and connect through San Mateo to East Palatka with trails already underway in every direction.

Indeed, these connecting trail sections along US 17 will become part of an overall 300-to-400-mile north-central Florida loop trail that will become one of the longest in America, much of which is already in place or in construction and/or design through Volusia, Seminole, Orange, Lake, Polk, Hillsborough, Pinellas, Pasco, Hernando, Citrus, Marion and Putnam counties.

Visit Florida reports that the most requested information by visitors at its Welcome Stations concerns bicycling facilities. A brochure published last year about Florida Bicycle Trails (sponsored in part by FDOT) is already in its third printing. Florida already attracts more than 80 million visitors a year. This north-central Florida loop trail in development will become one of our state's most important attractions and produce widespread economic benefits, especially to rural areas.

It's true that the River Alliance has been late to the US 17 widening process. We simply were not informed about the program. We can only conclude that late-to-the-process is better than omission from the process altogether, since it makes more sense to include right of way and plan now than to come back later at greater cost to accommodate the trail.

Chairman of the River Alliance's Corridor & Trails Committee Herb Hiller attended and spoke at the final PD&E hearing for the 6.5-mile section on April 25th. He was gratified to hear a consultant report that the multi-use trail through this section is a "commitment" of District 5. We trust that this will remain the case. The Alliance asks that Mr. Hiller be kept closely informed about next phases for the widening. Mr. Walsh has Mr. Hiller's card.

Thank you for helping make this trail a reality.

Sincerely,

Sue Carlson

Sue Carlson, Commissioner, District IV
Brevard County Board of County Commissioners
Chair, St. Johns River Alliance

cc: William G. Walsh
Project Manager
District 5

Florida Department of Transportation

JEB BUSH
GOVERNOR

719 S. Woodland Blvd.
DeLand, FL 32720

DENVER J. STUTLER, JR.
SECRETARY

May 9, 2006

Ms. Sue Carlson
Commissioner, District IV
Brevard County Board of County Commissioners
Chair, St. Johns River Alliance
Post Office Box 2288
Sanford, Florida 32772

Re: US 17 Widening - Deleon Springs to Barberville
FM # 410251-1

Dear Ms. Carlson:

Thank you for your recent letter dated May 2, 2006 regarding the efforts the St. Johns River Alliance is making to incorporate a multi-use trail in the US Highway 17 (SR 15) corridor area through central and north Florida.

As you know the Florida Department of Transportation (FDOT) has been studying the US 17 corridor for over a year and held the final Public Hearing on April 25, 2006. The Project Development and Environment (PD&E) Study has identified the benefits of widening US 17 from DeLeon Springs to Barberville to a four lane roadway to provide relief from traffic congestion in the future and to enhance the safety of the corridor for the users as well as the wildlife along the corridor. FDOT has studied the effect of a 200 foot typical section through this corridor, a standard rural typical section. The typical section includes four twelve-foot lanes separated by a forty foot median. The section also includes a five-foot shoulder on the outside travel lanes. These shoulders will allow bicyclists to traverse the corridor in a safe and efficient manner.

FDOT has directed its Consultant for this project to include a reference to a proposed trail, potentially along CR 3, as the optimal facility for bicyclists and pedestrians. The corridor offers a scenic view, away from high speed traffic and numerous large trucks. The CR 3 trail is under consideration by the Volusia MPO and has been ranked on their list of prioritized enhancement projects.

As part of the PD&E process, a recommendation concerning the multi-use trail has been acknowledged. These acknowledgements include a slide during the Public Hearing, a discussion as included in the Public Hearing transcript and in the recommendations section of the Preliminary Engineering Report (PER) developed for this project.

- At the Public Hearing a slide noted FDOT's commitment to "Be aware of bicycle advocacy groups to identify a bicycle trail within the SR 15 (US 17) corridor. A parallel

trail corridor has been proposed by Volusia County utilizing the CR 3 corridor west of SR 15 (US17)."

- While speaking to this slide, Mr. Kent Black of HNTB Corporation stated "We're also aware of the bicycle and multi-use trail needs in this area. This expanded corridor that includes County Road 3, and US 17, through this kind of central and north central part of the state had some significant opportunities for bicycle and pedestrian accommodations, and DOT is committing to being involved in the development of a multi-use trail. Whether that ends up – supporting it on County Road 3 or US 17, but we're committing to working with those groups to push that forward in conjunction with the County and the MPO."
- The PER Section 1 lists commitments and recommendations and lists the following concerning trails: "Recommendation that in future phases of the project FDOT be aware of the possible desire of local Heritage Corridor groups, the Office of Greenways and Trails, and other bicycle advocacy groups to identify a bicycle trail within the SR 15 (US 17) corridor. Future coordination will be necessary with these groups."

Having met with and spoken to Mr. Herb Hiller, we understand the Alliance's continued contribution to the corridor and trails of the Volusia and Putnam County region. I applaud the efforts your organization is making for the State. FDOT is excited about being able to partner with Volusia County, the Volusia County MPO, the Alliance, the Office of Greenways and Trails, and all others working within the Heritage corridor. We look forward to partnering in future phases of this project to continue to identify resources within the corridor, including the railroad, US 17 and CR 3.

I hope this addresses the Alliance's concerns and relays the importance that FDOT is placing on your groups efforts. If you have any further questions, please feel free to contact me.

Sincerely,

George Gilhooley, P.E.
District Secretary
District Five

GG:ww

Department of Environmental Protection

Jeb Bush
Governor

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Colleen M. Castille
Secretary

April 24, 2006

William G. Walsh
Project Manager
Florida Department of Transportation
719 S. Woodland Blvd.
DeLand, FL 32720

RE: Proposed Widening of US 17, DeLeon Springs to Highway 40, Volusia County

Dear Mr. Walsh:

The Office of Greenways and Trails (OGT) would like to recommend consideration of a multi-use, paved trail as part of the effort to widen US 17 between DeLeon Springs and Highway 40 in Volusia County. This segment of US 17 coincides with a planned trail corridor that will ultimately link the Orlando area to Palatka, both of which are growing hubs for trails. Specifically, this trail segment would be the southern portion of the proposed DeLeon Springs to East Palatka trail corridor, which will connect Volusia County's Spring to Spring Trail to Palatka in Putnam County. This proposed trail segment also lies within a much larger network of existing and proposed trails that will link together communities throughout Florida.

In coordination with local, regional and state agencies, OGT has developed a set of vision maps for the statewide trails network. These maps, which were updated in 2004, consist of a connected network of corridors that make up a regional and state system of trails, into which local and regional bicycle and pedestrian systems can connect. The segment that coincides with US 17 is not only included in this network, but is also ranked "High Priority" due to its importance for connectivity.

The Florida Department of Transportation (FDOT) has been a critical partner in the development of the Florida Greenways and Trails System, and we look forward to the opportunity to work with FDOT to include a trail as part of this corridor. If you have any questions regarding this project, please feel free to contact Matt Klein, Regional Trails Coordinator, or me at (850) 245-2052.

Sincerely,

Jena Brooks

Jena B. Brooks, Director
Office of Greenways and Trails

JBB/jw/s

Florida Department of Transportation

JEB BUSH
GOVERNOR

719 South Woodland Boulevard
DeLand, FL 32720-6834

DENVER J. STUTLER, JR.
SECRETARY

May 9, 2006

Ms. Jena B. Brooks
Director
Office of Greenways and Trails
Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Thank you for your recent letter regarding the recommendation of a multi-use trail in the US Highway 17 (SR 15) corridor.

As you know the Florida Department of Transportation (FDOT) has been studying the US 17 corridor for over a year and held the final Public Hearing on April 25, 2006. The Project Development and Environment (PD&E) Study has identified the benefits of widening US 17 from DeLeon Springs to Barberville to a four lane roadway to provide relief from traffic congestion in the future and to enhance the safety of the corridor for the users as well as the wildlife along the corridor. FDOT has studied the effect of a 200 foot typical section through this corridor, a standard rural typical section. The typical section includes four twelve-foot lanes separated by a forty foot median. The section also includes a five foot shoulder on the outside travel lanes. These shoulders will allow bicyclists to traverse the corridor in a safe and efficient manner.

FDOT has directed its Consultant for this project to include a reference to a proposed trail potentially along CR 3 as the optimal facility for bicyclists and pedestrians. The corridor offers a scenic view, away from high speed traffic and numerous large trucks. The CR 3 trail is under consideration by the Volusia MPO and has been ranked as a priority by the MPO.

As part of the PD&E process, a recommendation concerning the multi-use trail has been acknowledged. These acknowledgements include a slide during the Public Hearing, a discussion as included in the Public Hearing transcript and in the recommendations section of the Preliminary Engineering Report (PER) developed for this project.

- At the Public Hearing a slide noted FDOT's commitment to "Be aware of bicycle advocacy groups to identify a bicycle trail within the SR 15 (US 17) corridor. A parallel trail corridor has been proposed by Volusia County utilizing the CR 3 corridor west of SR 15 (US17)."
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- The PER Section 1 lists commitments and recommendations and lists the following concerning trails: "Recommendation that in future phases of the project FDOT be aware of the possible desire of local Heritage Corridor groups, the Office of Greenways and Trails, and other bicycle advocacy groups to identify a multi-use trail within the SR 15 (US 17) corridor, including the railroad and CR 3. Future coordination may be necessary with these groups."

FDOT is excited about being able to partner with Volusia County, the Volusia County MPO, the St. Johns River Alliance, the Office of Greenways and Trails, the West Volusia Tourism Advertising Authority, and all others working within the Heritage corridor. We look forward to partnering in future phases of this project to continue to identify resources within the corridor, including the railroad, US 17, and CR 3.

If you have any further questions, please feel free to contact me at 386-943-5411.

Sincerely,

William G. Walsh
Development & Environment Office
FDOT, District Five

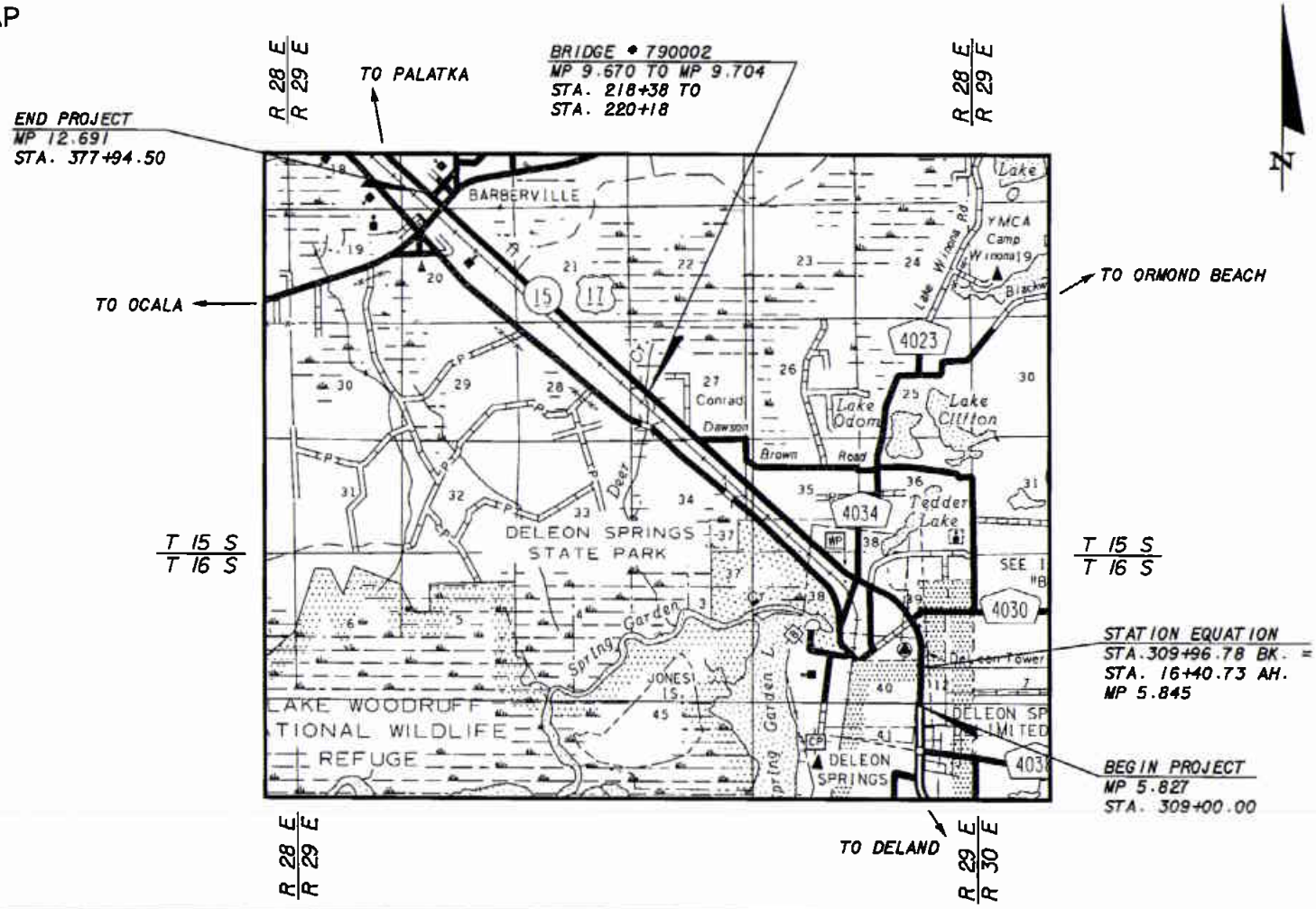
APPENDIX B

Typical Section Package

PROJECT IDENTIFICATION

FINANCIAL PROJECT ID	410251-1-22-01	WORK PROGRAM ITEM	N/A	COUNTY NAME	VOLUSIA
SECTION NO.	79050	ROAD DESIGNATION	SR 15 / (US 17)	LIMITS/MILEPOST	5.827 - 12.691
FEDERAL AID PROJECT NO.	4011-052-P	PROJECT DESCRIPTION	RECONSTRUCTION OF SR 15 (US 17) FROM PONCE DELEON BLVD TO SR 40		

LOCATION MAP



09-AUG-2006 16:22 \\LKMWOD\pmwork\Jobs\4117-4-SR_15-PD&E\410251\2201\roadway\JTYPPKG.DGN

PROJECT IDENTIFICATION

FINANCIAL PROJECT ID 410251-1-22-01 COUNTY VOLUSIA

PROJECT DESCRIPTION RECONSTRUCTION OF SR 15 (US 17) FROM PONCE DELEON BLVD TO SR 40

PROJECT CONTROLS

FUNCTIONAL CLASSIFICATION

(X)	RURAL	( )	URBAN
( )	FREEWAY/EXPWY.	( )	MAJOR COLL.
( )	PRINCIPAL ART.	( )	MINOR COLL.
(X)	MINOR ART.	( )	LOCAL

HIGHWAY SYSTEM

Yes	No	
(X)	( )	NATIONAL HIGHWAY SYSTEM
( )	(X)	FLORIDA INTRASTATE HIGHWAY SYSTEM
(X)	( )	STATE HIGHWAY SYSTEM
( )	(X)	OFF STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

( ) 1 - FREEWAY
( ) 2 - RESTRICTIVE w/Service Roads
(X) 3 - RESTRICTIVE w/660 ft. Connecting Spacing
( ) 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing
( ) 5 - RESTRICTIVE w/440 ft. Connection Spacing
( ) 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
( ) 7 - BOTH MEDIAN TYPES

TRAFFIC

	YEAR	AADT
CURRENT	2006	11,400
OPENING	2010	13,300
DESIGN	2030	20,700

DESIGN SPEED	65 MPH
POSTED SPEED	55 MPH

DISTRIBUTION
K 9.5 %
D 53.8 %
T_{24} 10.1 %

LIST ANY POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION ELEMENTS:

BORDER WIDTH (VARIATION) - 29' EXISTING BORDER WIDTH TO REMAIN IN LIEU OF A 40' BORDER WIDTH.

SHOULDER WIDTH (VARIATION) - 4' EXISTING PAVED SHOULDER TO REMAIN IN LIEU OF A 5' SHOULDER.

LIST MAJOR STRUCTURES LOCATION/DESCRIPTION - REQUIRING INDEPENDENT STRUCTURE DESIGN:

EXISTING BRIDGE OVER DEEP CREEK (BRIDGE #790002) - TO BE REMOVED
PROPOSED BRIDGE OVER DEEP CREEK

LIST MAJOR UTILITIES WITHIN PROJECT CORRIDOR:

OVERHEAD: ELECTRIC, CABLE, TELEPHONE
BURIED: ELECTRIC, TELEPHONE, CABLE, GAS, WATER, SEWER

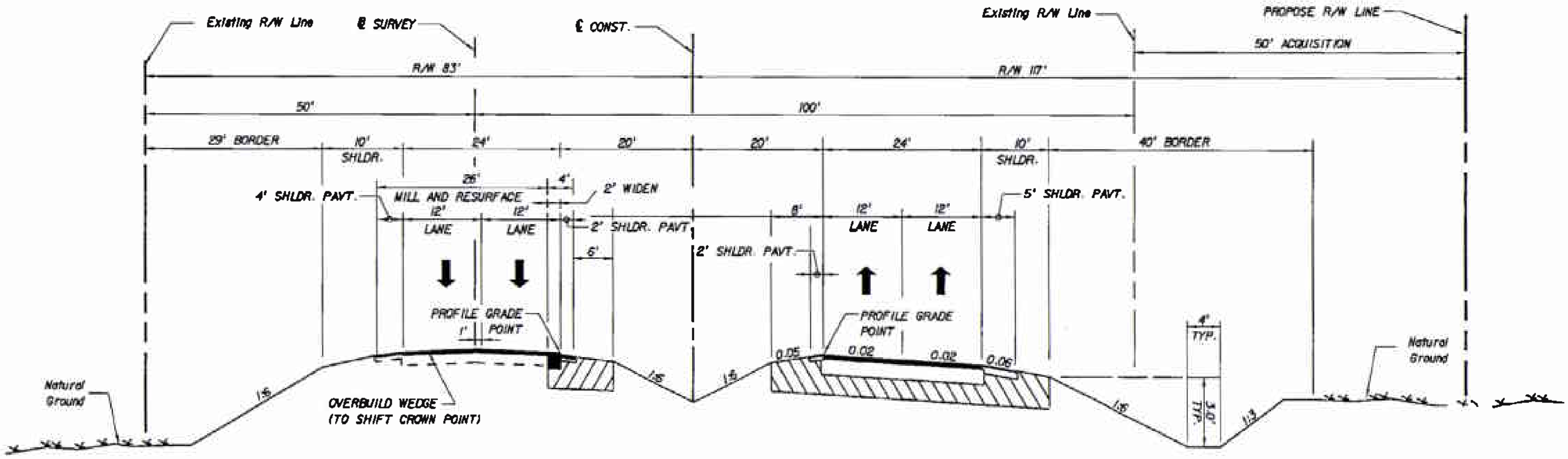
LIST OTHER INFORMATION PERTINENT TO DESIGN OF PROJECT:

PROJECT UTILIZES EXISTING PAVEMENT FOR SB LANES
FROM STA. 135+00 TO STA. 325+00

PROJECT IDENTIFICATION

FINANCIAL PROJECT ID	410251-1-22-01	WORK PROGRAM ITEM	N/A	COUNTY NAME	VOLUSIA
SECTION NO.	79050	ROAD DESIGNATION	SR 15 / (US 17)	LIMITS/MILEPOST	5.827 - 12.691
FEDERAL AID PROJECT NO.	4011-052-P	PROJECT DESCRIPTION	RECONSTRUCTION OF SR 15 (US 17) FROM PONCE DELEON BLVD TO SR 40		

PROPOSED ROADWAY TYPICAL SECTION



TYPICAL SECTION NO. 2
SR 15 / (US 17)

DESIGN SPEED = 65 MPH
STA. 135+00.00 TO STA. 218+38.00
STA. 220+18.00 TO STA. 377+94.50

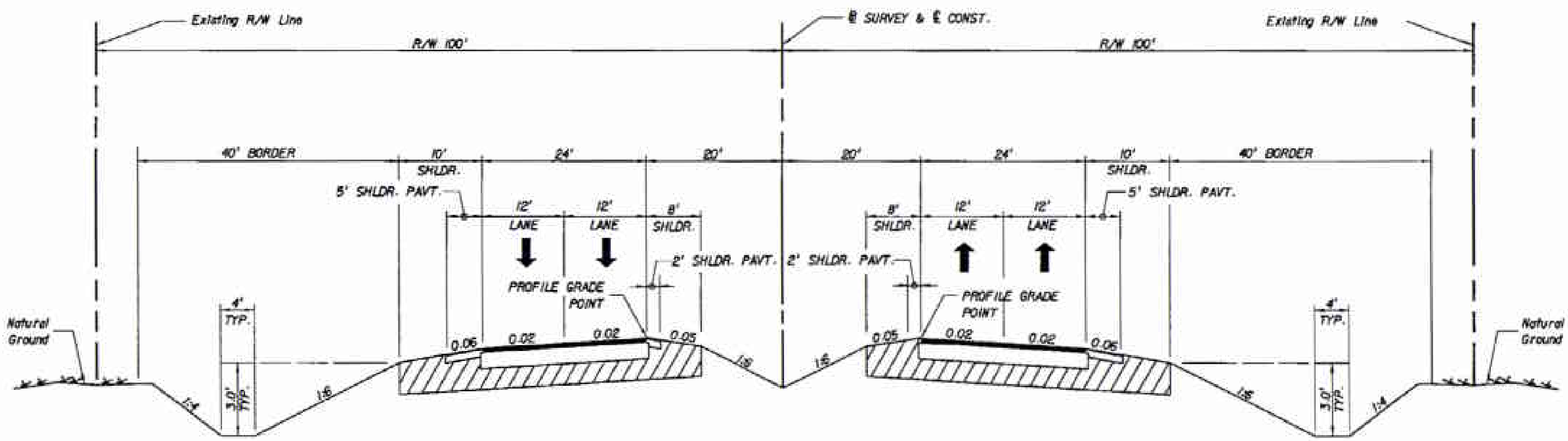
HNTB
HNTB CORPORATION
300 PRIMERA BLVD,
SUITE 200
LAKE MARY, FL 32746
(407) 805-0355
CERT. OF AUTH. NO. 6500

APPROVED BY		FDOT RECOMMENDED BY		FDOT CONCURRENCE	
Robert M. Denney, P.E. Engineer Of Record 58593	8-10-06 Date	Brian Stanger, P.E. FDOT District Project Development Engineer	8/15/06 Date	Annette K. Brennan, P.E. FDOT District Design Engineer	8/14/06 Date

PROJECT IDENTIFICATION

FINANCIAL PROJECT ID	410251-1-22-01	WORK PROGRAM ITEM	N/A	COUNTY NAME	VOLUSIA
SECTION NO.	79050	ROAD DESIGNATION	SR 15 / (US 17)	LIMITS/MILEPOST	5.827 - 12.691
FEDERAL AID PROJECT NO.	4011-052-P	PROJECT DESCRIPTION	RECONSTRUCTION OF SR 15 (US 17) FROM PONCE DELEON BLVD TO SR 40		

PROPOSED ROADWAY TYPICAL SECTION



TYPICAL SECTION NO. 1
SR 15 / (US 17)

DESIGN SPEED = 65 MPH
STA. 18+00.00 TO STA. 135+00.00

HNTB CORPORATION
300 PRIMERA BLVD,
SUITE 200
LAKE MARY, FL 32746
(407) 805-0355
CERT. OF AUTH. NO. 6500

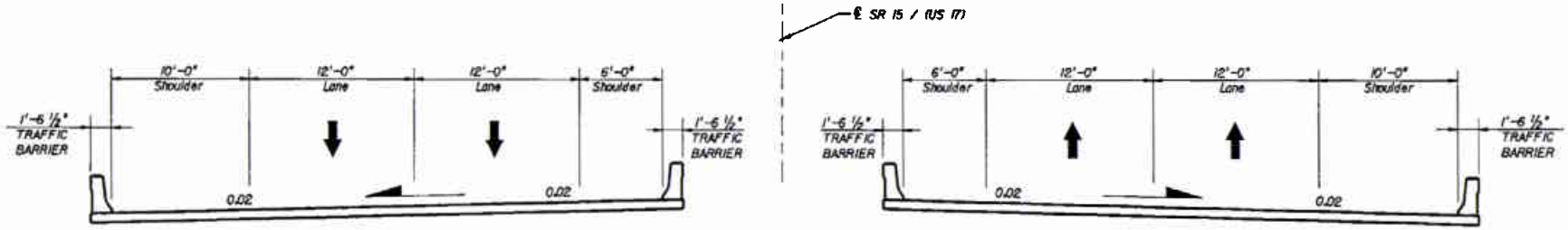
APPROVED BY	FDOT RECOMMENDED BY	FDOT CONCURRENCE
[signature] 8-10-06 Robert M. Denney, P.E. Engineer Of Record 58555 — Date	[signature] 8/15/06 Brian Stanger, P.E. FDOT District Project Development Engineer — Date	[signature] Annette K Brennan 8/14/06 Annette K. Brennan, P.E. FDOT District Design Engineer — Date

10-AUG-2006 09:11 \\...\pmwork\Jobs\41174-SR_15-PD&E\41025112201\roadway\TYPPKG.DGN

PROJECT IDENTIFICATION

FINANCIAL PROJECT ID	410251-1-22-01	WORK PROGRAM ITEM	N/A	COUNTY NAME	VOLUSIA
SECTION NO.	79050	ROAD DESIGNATION	SR 15 / (US 17)	LIMITS/MILEPOST	5.827 - 12.691
FEDERAL AID PROJECT NO.	4011-052-P	PROJECT DESCRIPTION	RECONSTRUCTION OF SR 15 (US 17) FROM PONCE DELEON BLVD TO SR 40		

PROPOSED BRIDGE TYPICAL SECTION



TYPICAL SECTION NO. 3

SR 15 / (US 17) BRIDGE OVER DEEP CREEK

DESIGN SPEED = 65 MPH

STA. 218+38.00 TO STA. 220+18.00

HNTB

HNTB CORPORATION
300 PRIMERA BLVD.
SUITE 200
LAKE MARY, FL 32746
(407) 805-0355
CERT. OF AUTH. NO. 6500

APPROVED BY	FDOT RECOMMENDED BY	FDOT CONCURRENCE
Robert M. Denney, P.E. Engineer Of Record 58593 8-10-06 Date	Brian Stanger, P.E. FDOT District Project Development Engineer 8/15/06 Date	Annette K. Brennan, P.E. FDOT District Design Engineer 8/14/06 Date