3.0 BASIS FOR THE CORRIDOR MASTER PLAN

3.1 FUNCTIONAL PERFORMANCE

3.1.1 Level of Service

The mainline of I-10 in Segment 2 meets or exceeds the minimum LOS standards. As shown in Table 3-1 and the existing LOS presented in Figure 2-1, there are two locations that do not meet those minimum standards under the existing year roadway and traffic conditions.

Table 3-1: 2001 Existing Conditions LOS

I-10 Eastbound							
Element			From	To	LOS		LOS Standard
					AM	PM	
Ramp Terminal	I-10 at I-75	On-ramp diverge	I-75 NB	I-10 EB	**C**	**C**	B
		Off-ramp merge	EB I-10	I-75 SB	**C**	**C**	B

Note **:** **Bold** letters indicate failing LOS
Source: HCS, PBS&J

3.1.2 Geometric Design Elements

The typical section, horizontal and vertical alignment, interchange, spacing, ramp, sight distance and elements presented in this section are based on the design parameters outlined in the following references:

- A Policy on Geometric Design of Highway and Streets, 2001 American Association of State Highway and Transportation Officials (AASHTO),
- FDOT Roadway Plan Preparation Manual, 2003,
- FDOT Design Standards for Design, Construction, Maintenance and Utility Operations on the State Highway Systems, 2002, and
- FDOT Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways, 2002.

Descriptions of specific design elements such as ROW limits and lane widths, as well as the applicable design standard and source is summarized in the DASR. Exceptions to and / or updated design standards applicable to Segment 2 of I-10 were reviewed and established in conjunction with FDOT.

The design standards presented in the following table are based on design parameters outlined in A Policy on Geometric Design of Highway and Streets (AASHTO, 2001), Roadway Plan Preparation Manual (FDOT, January 2003), Design Standards for Design, Construction, Maintenance and Utility Operations on the State Highway Systems (FDOT, January 2002), and Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways (Commonly Known as the "Florida Greenbook", FDOT, May 2002). The design standards are based on the most critical parameter concerning the same design element.

Table 3-2: I-10 Roadway Design Standards

Design Element	Design Standard	Sources
Design Vehicle	WB 65 or WB 67	AASHTO (2001), Page 18
Design Year	2030	Per Scope of Services, Page 18
Design Speed - Mainline (I-10) - Diamond Ramp - Loop Ramp	 70 mph 50 mph 30 mph (1)	 AASHTO (2001), Pages 829, & 830 PPM, Vol. I, Tables 1.9.1 & 1.9.2
Min. Decision Sight Distance (2) - Mainline (I-10) Rural Suburban Urban - Diamond Ramp (rural) - Loop Ramp (rural)	 1105' 1275' 1445' 750' 450'	 AASHTO (2001), Exhibit 3-3 Florida Greenbook, Page 3-8, Chapter 3, Section C.3.c.
Min. Stopping Sight Distance - Mainline (I-10) - Diamond Ramp - Loop Ramp	 820' (≤ 2% grade) 425' 200' (30 mph)	 PPM, Vol. I, Table 2.7.1
Max. Degree of Curve - Mainline (I-10) - Diamond Ramp - Loop Ramp	 3°00' 8°15' 24°45' (30 mph) (1)	 PPM, Vol. I, Table 2.8.3 (eMax = 0.10) AASHTO (2001), Exhibit 3-14
Max. Profile Grade - Mainline (I-10) - Diamond Ramp - Loop Ramp - All others	 3% 5% - 3% (45-50 mph) 7% - 5% (25-30 mph) 7% - 3%	 PPM, Vol. I, Table 2.6.1
Max. Change in Grade w/o Vertical Curve - Mainline (I-10) - Ramps - All others	 0.20% 1.00% - 0.60% (30-50 mph) 1.00% - 0.60% (30-50 mph)	 PPM, Vol. I, Table 2.6.2
Min. Crest Vertical Curve Length - Mainline (I-10) - Diamond Ramp - Loop Ramp	 1000' 1800' min. within interchanges 150' (50 mph) 90' (30 mph)	PPM, Vol. I, Table 2.8.5 - Interstate - Other Facility - Other Facility
Min. Sag Vertical Curve Length - Mainline (I-10) - Diamond Ramp - Loop Ramp	 800' 150' (50 mph) 90' (30 mph)	PPM, Vol. I, Table 2.8.6 - Interstate - Other Facility - Other Facility

Design Element	Design Standard		Sources
Min. Vertical Clearance - Bridges over I-10 - I-10 over Roadway [3] • State Roads & US Highways • Local Roads - I-10 over Railroad [4]	 16.5’ 16.5’ 14.5’ 23.5’ (New Structures)		 PPM, Vol. I, Table 2.10.1 (14.5’ – AASHTO, Pg. 451)
Min. Median Width - Without Barrier - With Barrier	 64’ 26’		PPM, Vol. I, Table 2.2.1
Lane Width - Mainline (I-10) - HOV (separated or concurrent flow) - Single Lane Ramp - Dual Lane Ramp	 12’ (Tangent) 12’ (Tangent) 15’ (Tangent) 24’ (Tangent)		 PPM, Vol. I, Tables 2.1.1 & 2.1.2 PPM, Vol. I, Table 2.1.3
Shoulder Width w/o Shoulder Gutter - Full Width General Use HOV Single Lane Ramp Dual Lane Ramp - Paved Width General Use HOV Single Lane Ramp Dual Lane Ramp	Median/Left 12’ 14’ 6’ 8’ 10’ 10’ 2’ 4’	Outside 12’ n/a 6’ 12’ 10’ n/a 4’ 10’	 PPM, Vol. I, Table 2.3.1
Shoulder Width w/ Shoulder Gutter - Full Width General Use HOV Single Lane Ramp Dual Lane Ramp - Paved Width General Use HOV Single Lane Ramp Dual Lane Ramp	Median/Left 15.5’ n/a 11.5’ 13.5’ 8’ n/a 4’ 6’	Outside 15.5’ n/a 11.5’ 15.5’ 8’ n/a 4’ 8’	 PPM, Vol. I, Table 2.3.1
Roadway Cross Section Slope - Roadway Standard Pavement - Inside Shoulder - Outside Shoulder	 0.03 max. (> 45mph) 0.04 max. (≤ 45mph) 0.05 – 0.06 0.06		 PPM, Vol. I, Figure 2.1.1 & Table 2.3.1
Max. Superelevation (e)	0.10		PPM, Vol. I, Page 2-19
Max. Shoulder “Roll-Over”	7%		Design Standard Index 510
Max. Lane “Roll-Over”	4%		PPM, Vol. I, Page 2-5
Clear Zone (min. from edge of travel way) - Mainline (I-10) - Single Lane Ramp - Dual Lane Ramp	 36’ 10’ – 14’ 18’ – 24’		 PPM, Vol. I, Table 2.11.9 ≥ 1500 AADT

Design Element	Design Standard	Sources
Min. Ramp Terminal Spacing, Freeway - Entrance to Exit - Exit to Entrance - Exit to Exit - Entrance to Entrance	 1600’- 2000’(5) 500’ 1000’ 1000’	AASHTO (2001), Exhibit 10-68
Entrance Ramp - Taper Length - Accel. Length	300’ min. Varies (6)	AASHTO (2001), Exhibits 10-69B & 10-70 Design Standard Index 525
Exit Ramp Decel. Length	Varies	AASHTO (2001), Exhibits 10-73 Design Standard Index 525
Min. Lane Drop Taper - Basic Lane - Auxiliary Lane	 70:1 50:1	 AASHTO (2001) Exhibit 10-51, Pages 819 & 822
Entrance Ramp Type - Single Lane - Dual Lane Exit Ramp Type - Single Lane - Dual Lane	 Parallel Parallel Taper Taper or parallel as geometry and conditions dictate	 Design Standard Index 525 AASHTO (2001), Exhibits 10-69 & 10-72
Exit Ramp Design - Divergence	 4°	 Design Standard Index 525
Border Width	94’(7)	PPM, Vol. I, Table 2.5.1
ROW Limits - Mainline (I-10) - Limited Access	 Mainline - Existing Urban - 100’ beyond radius return and/or end of taper Rural - 300’ beyond radius return and/or end of taper	 PPM, Vol. I, Page 2-27
Access Management - Cross Road Median Opening	 660’ minimum from ramp intersection	

(1) Existing 25 mph design speed ramps may remain if no other I/C geometry revisions are proposed or if ROW constraints dictate.
(2) Decision Sight Distance – all new alignment configurations to adhere to values listed.
(3) Refer to PPM, Vol. I, Table 2.10.1 for additional standards.
(4) RR vertical clearance: existing clearances to be maintained as a minimum (including widening), 23’-6” for all new.
(5) Not applicable to cloverleaf loop ramps.
(6) For new I/C configurations, desirable to obtain 50 mph operating speed at physical gore of entrance ramp.
(7) Measured from the edge of the outside travel lane to the R/W. Width may be reduced to no less than 50 feet as long as the design criteria meets requirements for clear zone, horizontal clearance, drainage, maintenance access, etc.

3.2 NEED FOR IMPROVEMENTS

This section presents a summary of the findings of the data analysis for Segment 2 of the I-10 study corridor. To facilitate upcoming study activities, primarily the identification of the CMEA elements that will be combined to form study alternatives, I-10 deficiencies are summarized in relation to the following:

- Design deficiencies, in terms of FDOT design standards for physical design of facilities,
- Mobility deficiencies, in terms of satisfaction of traffic LOS standards,
- Safety deficiencies, in terms of the extent of crash experience and high crash locations, and
- Environmental deficiencies, in terms of the degree to which current environmental protection standards are not being met.

3.2.1 Design Deficiencies

Design deficiencies refers to the how well the facility complies with current FDOT and FIHS standards. As a FIHS facility, these standards are the minimum engineering and planning criteria that apply to Segment 2 of I-10.

Along the mainline of I-10 in Segment 2, there are 30 vertical curves with deficient "K" values, according to FDOT standards. There are seven bridges over I-10 with vertical clearances less than 16.5 feet. Nine I-10 bridges over crossroads have vertical clearances less than 16.5 feet. Also, there are 11 areas where the superelevation is not adequate for the degree of horizontal curve. The acceleration/deceleration lengths associated with the rest area do not meet current FDOT criteria. Twenty-four of the 28 interchange ramps do not meet current FDOT design criteria. Deficiencies identified at interchanges located within Segment 2 are listed below.

<u>I-75 Interchange</u>

- I-10 Eastbound to I-75 Southbound exit ramp taper length does not meet current FDOT requirements.
- I-10 Eastbound to I-75 Northbound exit ramp taper length does not meet current FDOT requirements.
- I-75 Southbound to I-10 Eastbound entrance ramp taper length does not meet FDOT requirements.
- I-75 Northbound to I-10 Eastbound entrance ramp taper length does not meet current FDOT requirements.
- I-10 Westbound to I-75 Southbound exit ramp taper length does not meet current FDOT requirements.
- I-75 Northbound to I-10 Westbound entrance ramp taper length does not meet current FDOT requirements.
- I-75 Southbound to I-10 Westbound entrance ramp taper length does not meet current FDOT requirements.

- Insufficient vertical clearance I-10 bridge structure going over I-75.
- Insufficient vertical clearance for I-75 ramp bridge structures going over I-10.

US 41 Interchange
- Eastbound exit ramp taper length does not meet current FDOT requirements.
- Eastbound entrance ramp taper length does not meet current FDOT requirements.
- Westbound entrance ramp taper length does not to meet current FDOT requirements.

US 441 Interchange
- Eastbound exit ramp taper length does not meet current FDOT requirements.
- Eastbound entrance ramp taper length does not meet current FDOT requirements.
- Westbound entrance ramp taper length does not meet current FDOT requirements.
- Westbound exit ramp taper length does not meet current FDOT requirements.
- Insufficient vertical clearance on bridge structures going over US 441.

US 90 Interchange
- Eastbound entrance ramp taper length does not meet current FDOT requirements.
- Westbound exit ramp taper length does not meet current FDOT requirements.
- Insufficient vertical clearance on bridge structures going over US 90.

CR 229 Interchange
- Eastbound exit ramp taper length does not meet current FDOT requirements.
- Eastbound entrance ramp taper length does not meet current FDOT requirements.
- Westbound entrance ramp taper length does not meet current FDOT requirements.
- Westbound exit ramp taper length does not meet current FDOT requirements.
- Insufficient vertical clearance on bridge structure going over I-10.

According to the FDOT Interchange Handbook, Technical Resource Document 1, Department Engineering Standards, the minimum desired spacing for interchanges is six miles for rural areas, three miles for urban areas, and two miles for urbanized areas. As Segment 2 is rural in character, the six-mile criterion applies. A review of interchange spacing shows that the interchange spacing criterion is met except for the spacing between I-75 to US 41 (5.1 miles), US 41 to US 441 (2.2 miles), and US 90 to CR 229 (2.8 miles). While below the minimum, these interchange locations are the result of the prevailing irregular road geography in the area, all but I-75 are relatively low-volume crossroads, and there is no apparent adverse impact of these spacing situations.

Two other areas of potential concern regarding interchange facilities are access management and interchange configuration. Control of access around interchange termini is essential to maintain the quality and safety of traffic operations at these junctions. Access control at some interchanges within Segment 2 may require evaluation for consistency with current best management practices, and changes may be recommended where FDOT's current practices do not comply with current standards.

According to FDOT Design Standard 450, Sheet 2 of 2, for rural interchanges, LA ROW should extend a minimum of 300 feet beyond the end of the acceleration and deceleration taper, with the

taper most remote from the Interstate establishing the limits of LA ROW for both sides. For interchange quadrants having no ramp, such as in the partial cloverleaf interchanges at US 41, US 90 and CR 229, the LA ROW should extend along the crossroad to a point opposite the limit of LA ROW established by the side with the ramp. It was found that none of the four service interchanges in Segment 2 meet the LA ROW requirements as there is no extension of access control beyond the stipulated starting point. This LA ROW standard does not apply at the I-10/I-75 interchange (system level interchange) where the LA ROW of I-10 intersects the LA ROW of I-75.

Interchange configuration is another potential concern in this segment. Three of four interchanges in this segment have a partial cloverleaf design (excluding I-10 at I-75 interchange). These interchange designs may have resulted from the need to accommodate physical constraints, such as the geometry of cross roads or the pattern of interchange turning movements, or they may have been for cost economy in land acquisition.

Partial cloverleaf interchanges are serviceable from a capacity standpoint for the lower range of traffic volumes. However, they do introduce relatively sharp ramp geometry with degree of curvature greater than 180 degrees for certain entrance and exit movements. Also at this type of interchange, exit ramps, in particular can be less compatible with desirable safety and traffic operations, given that they require significant speed reductions from the mainline. The age of the facility's design has resulted in ramp tapers and deceleration lane lengths that are insufficient by current FDOT standards. Depending on the vertical geometry, partial cloverleaf interchanges may have less than desirable decision sight distance and inadequate lateral clearance situations as well, although crash data do not indicate any particular safety issue in recent years. The geometry and operation of these partial cloverleaf interchanges will be further examined to both determine the extent of remedial treatments to improve their safety and operation, and to investigate whether potential modification of the interchange to another configuration might be warranted.

3.2.2 Mobility Deficiencies

A major concept central to understanding transportation is mobility. Mobility refers to the ability to move between different activity sites (e.g., from home to a grocery store). The range of mobility is identified as the extent to which the roadway meets the FDOT LOS standards for the given area type. Segments of the mainline of I-10 that do not meet the minimum LOS standard for the given area type are considered mobility deficient.

The FDOT maintains minimum acceptable operating LOS standards for the SHS as well as the FIHS. The statewide minimum LOS for the SHS differs according to area type. The three broad area types identified in the FDOT Quality / LOS Handbook include urbanized, transitioning and rural areas. Segment 2 is classified as a rural area.

I-10 is classified as a LA Highway (Freeway). LA highways are multilane divided highways with a minimum of two lanes for exclusive use of traffic in each direction and full control of ingress and egress. The requirements for intersecting roads also consider each county's Comprehensive Plan and the corresponding location of an interchange. The minimum LOS standards applicable to Segment 2 of I-10, based on area type and facility classification, are summarized in Table 2-9.

The mainline of I-10 in Segment 2 meets or exceeds the minimum LOS standards. As shown in Table 3-1 and the existing LOS presented in Figure 2-1, there are two locations that do not meet those minimum standards under the existing year roadway and traffic conditions.

3.2.2.1 2030 Future Year No-Build LOS

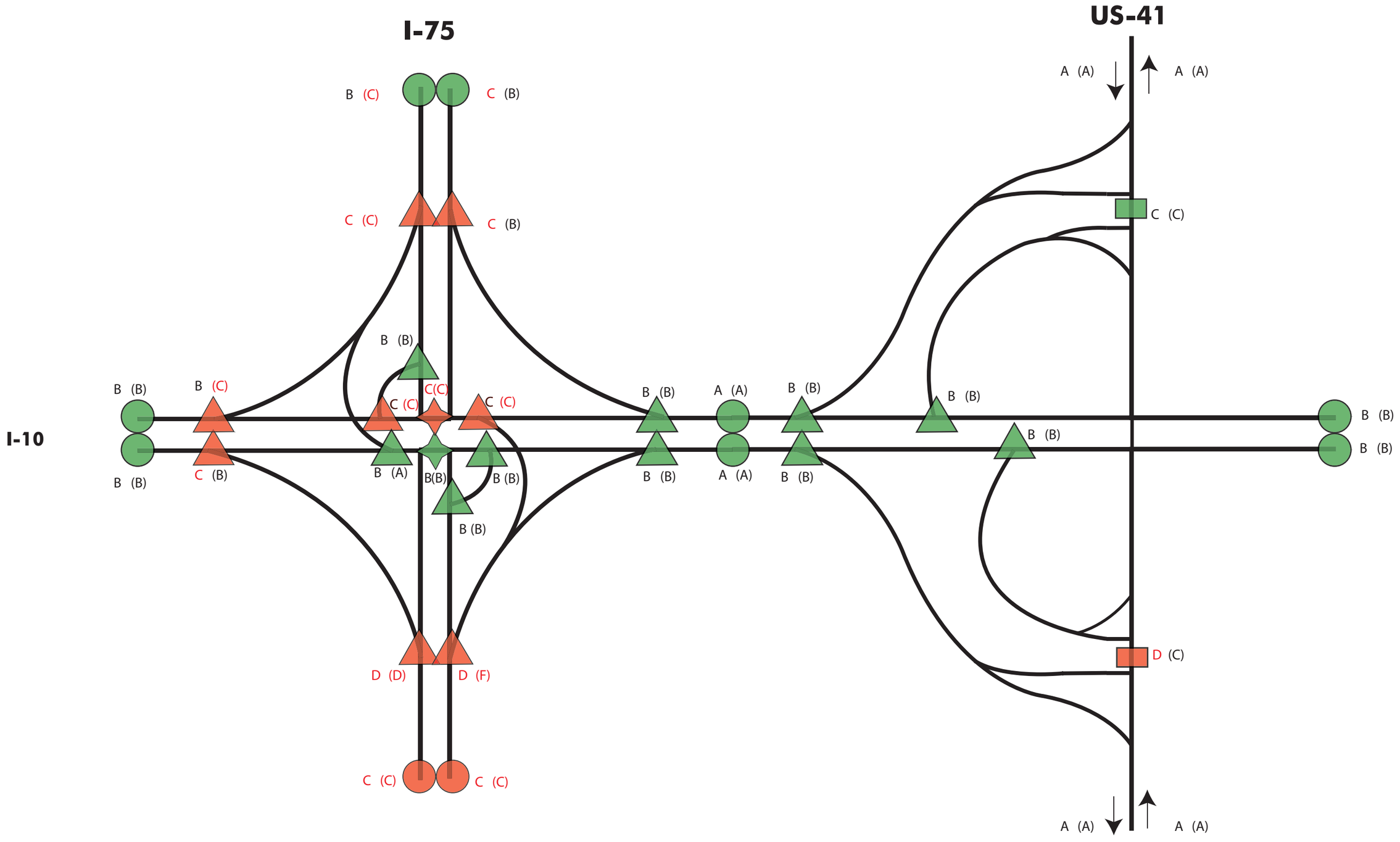
The No-Build Alternative LOS analysis assumes that the mainline of I-10 in Segment 2 remains a four-lane section. As a rural section, Segment 2 meets the FDOT minimum LOS B standard except for the eastbound and westbound mainlines between CR 229 and CR 125 where LOS C occurs eastbound in the AM peak period and westbound in the PM peak period. Numerous off-ramp diverges and on-ramp merges also fall below standard. Future year LOS conditions are illustrated on Figure 3-1 and summarized below in Table 3-3.

According to the District 2 Five-Year Work Program, there are no capacity improvements programmed for I-10 or to the connecting roadways in the vicinity of I-10 study area. There are ITS improvements to I-10 are identified within the FIHS 2025 Cost Feasible Plan. While the fiber optics and traveler information systems will improve freight mobility and mobility for non-exiting traffic, the lack of planned capacity improvements to these intersections will not alleviate the future LOS deficiencies noted in Table 3-3. However, it should be noted that most of these capacity deficiencies are for rural interchanges performing at LOS C against the FDOT LOS B standard for such facilities. While below the FDOT standard, LOS C does not represent congested conditions. There are project LOS deficiencies for I-75 mainline segments which are beyond the scope of this study.

Table 3-3: 2030 No-Build LOS

I-10 Eastbound							
Element			**From**	**To**	**LOS**		**LOS Standard**
					AM	**PM**	
Freeway Mainline			CR 229	CR 125	**C**	B	B
Ramp Terminal	I-10 at I-75	Off-ramp diverge	I-10 EB	I-75 SB	**C**	B	B
	I-10 at US 90	On-ramp merge	US 90	I-10 EB	**C**	B	B
	I-10 at CR 229	Off-ramp diverge	I-10 EB	CR 229	**C**	B	B
		On-ramp merge	CR 229	I-10 EB	**C**	**C**	B
I-10 Westbound							
Freeway Mainline			CR 125	CR 229	B	**C**	B
Ramp Terminal	I-10 at CR 229	On-ramp merge	CR 229	I-10 WB	B	**C**	B
		Off-ramp diverge	I-10 WB	CR 229	**C**	**C**	B
	I-10 at US 90	Off-ramp diverge	I-10 WB	US 90	**C**	**C**	B
	I-10 at I-75	On-ramp merge	I-75 SB	I-10 WB	B	**C**	B
		Off-ramp diverge	I-10 WB	I-75 SB	**C**	**C**	B
		On-ramp merge	I-75 NB	I-10 WB	**C**	**C**	B
Weaving area between On-Ramp of I-75 NB to I-10 WB and Off-Ramp of I-10 WB to I-75 SB					**C**	**C**	B
I-75 Northbound							
			From	**To**	**LOS**		**Minimum LOS**
					AM	**PM**	
Freeway Mainline			South	I-10	**C**	**C**	B
			I-10	North	**C**	B	B
Ramp Terminal	I-75 at I-10	Off-Ramp diverge	I-75 NB	I-10 EB	**D**	**F**	B
		On-Ramp merge	I-10 WB	I-75 NB	**C**	B	B
I-75 Southbound							
Freeway Mainline			North	I-10	B	**C**	B
			I-10	South	**C**	**C**	B
Ramp Terminal	I-75 at I-10	Off-Ramp diverge	I-75 SB	I-10 WB	**C**	**C**	B
		On-Ramp merge	I-10 EB	I-75 SB	**D**	**D**	B

Note 1: **Bold** letters indicate failing LOS
Note 2: Calculated following the 2000 Highway Capacity Manual methodology.
Source: FDOT Quality / LOS Handbook (2002 Edition), HCS 2000, PBS&J.



LEGEND

FREEWAY
RAMPS
UNSIGNALIZED INTERSECTION
WEAVE (TYPE C)
MULTI-LANE

LOS
AM (PM)

Green indicates meeting LOS
Red indicates failing LOS

Florida Department of Transportation District 2

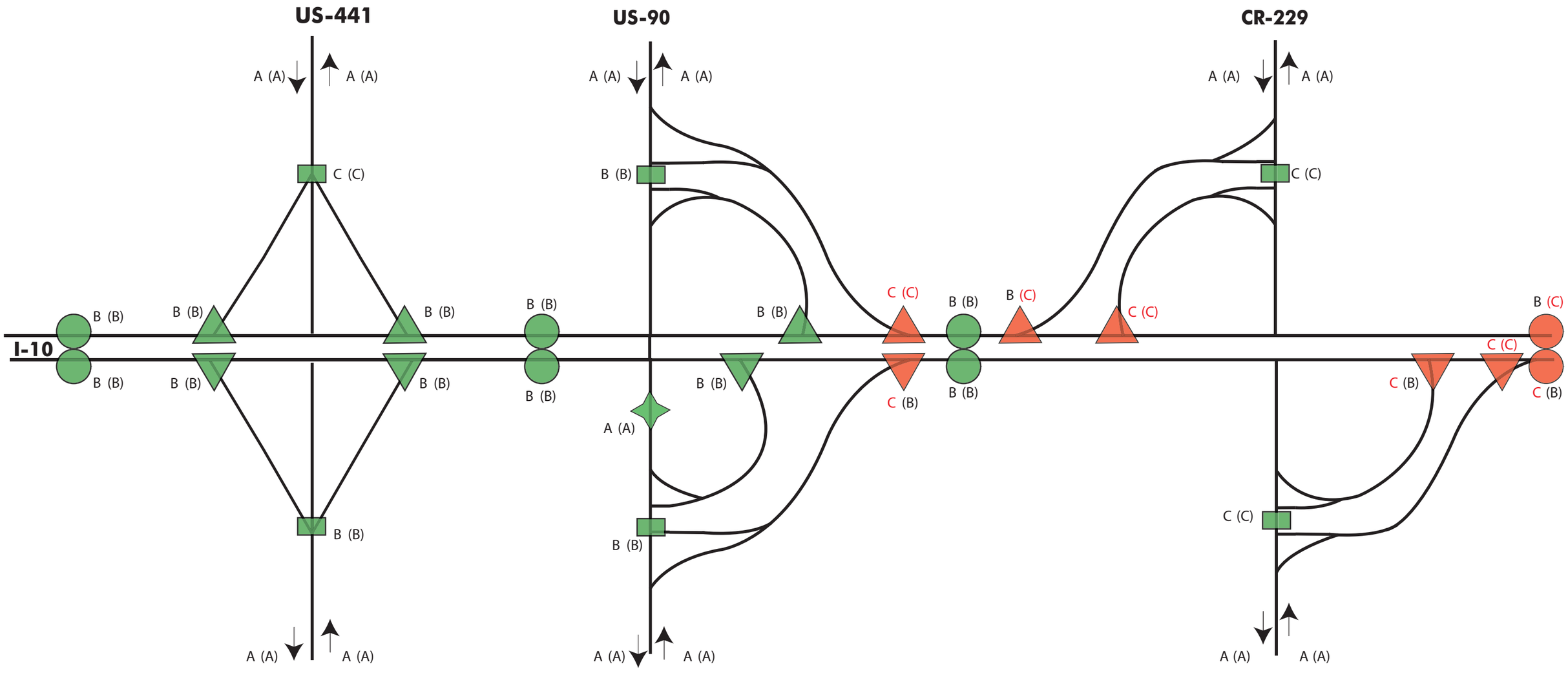
I-10 Master Plan

The PBSJ Team

SEGMENT 2:
Design Traffic LOS AM (PM)
2030

Figure 3-1

SHEET 1 of 2



Florida Department of Transportation District 2

I-10 Master Plan

The PBS&J Team

LEGEND

FREEWAY
RAMPS
UNSIGNALIZED INTERSECTION
WEAVE (TYPE C)
MULTI-LANE

LOS
AM (PM)

Green indicates meeting LOS
Red indicates failing LOS

SEGMENT 2: Design Traffic LOS AM (PM) 2030

Figure 3-1

3.2.3 Safety Deficiencies

Five years of crash data for this segment of I-10 was provided by the FDOT. The data includes the number of crashes by milepost for each year, the number of crashes, number of vehicles, types of crashes, number of injuries and / or fatalities, cause, economic loss and average daily traffic.

Crash rates (number of crashes per million vehicle-miles) were calculated for each year of available data. The five-year data was assessed and the crash rates were computed for each year of available data. The analysis revealed that in 2001 one high crash location occurred within Segment 2. No other incident at high crash locations occurred during the five-year period.

This area is located from 1.12 miles west to 0.72 miles west of the US 41 overpass (milepost 6.400 – 6.800, Columbia County). During 2001, nine accidents occurred within this section, eight of which occurred 1.0 mile west of the US 41 overpass (milepost 6.520, Columbia County). Of the nine accidents, three of them involved vehicles which ran into a ditch or culvert; seven occurred while it was raining; seven of the accidents were reported as being contributed to by careless driving or exceeding the safe speed limit. Since 2001, the FDOT has taken measures to ensure the increased safety of this segment; as a result, this segment is no longer recognized as a high accident location.

Therefore, based on this analysis, there are no significant safety issues and no high crash locations have been identified.

3.2.4 Environmental Deficiencies

I-10 was constructed in the 1960's, prior to implementation of stormwater management regulations within the State. At that time, the roadway was designed with a rural section with side ditches to convey runoff, without treatment to the nearest waterway or wetland. Segment 2 of the project crosses through two major river watersheds, the Suwannee River and the St. Johns River. The Suwannee River Water Management District and the SJRWMD have authority in each of these watersheds and are charged with the protection of the state's water resources. Any improvements to the project will be subject to the water management district criteria that are current at the time of proposed improvement. The FDOT Drainage Manual currently requires that roadway projects comply with the Department's drainage connection rule. Based on existing stormwater regulations of these agencies, any project improvements other than resurfacing would require stormwater quality treatment, attenuation of runoff rate, and limitation of discharge volume (typically closed basins only).

Segment 2 of I-10 crosses Falling Creek, an Outstanding Florida Waters (OFW), in two places. One crossing occurs east of the interchange with US 441 but before I-10 passes the Tomas Camp Road within the Osceola National Forest. In both cases untreated stormwater runoff discharges directly into Falling Creek. Another OFW close to I-10, Ocean Pond, is also located in the Osceola National Forest but in Baker County. Ocean Pond is approximately one mile south of I-10, near Olustee, and does not receive direct discharge of stormwater from I-10.

Current regulations require that stormwater quality treatment volume for discharges to OFWs be 50% greater than the treatment volumes for Class III waters. Therefore, nay project improvements other than resurfacing would require stormwater quality treatment and attenuation of runoff rate and volume. Any improvements that involve discharges to OFW water bodies would be required to meet the additional treatment volume requirements.

3.2.5 Hurricane Evacuation

In response to evacuation complications associated with Hurricane Floyd, FDOT in cooperation with the Florida Department of Community Affairs (DCA) and Florida Department of Law Enforcement (FDLE) completed an operations analysis in June 2000 entitled Analysis of Florida's One Way Operations for Hurricane Evacuation: I-10 Jacksonville to Tallahassee / Monticello (US 19). The purpose of the study was to investigate the feasibility of reverse-laning I-10 from Jacksonville to Tallahassee in an effort to mitigate the travel delays, highway congestion, and lack of information to evacuees that characterized Hurricane Floyd in 1999.

According to this report, approximately 50,000 vehicles will attempt to use I-10 westbound from northeast Florida and southern Georgia in the event of a Category 4 or 5 storm. While some of this traffic is expected to exit at US 301, most of it will be replaced by evacuation traffic entering the highway in Baker and Columbia Counties. Thus, an estimated 50,000 vehicles would travel through Segment 2.

The reversible-lane configuration is projected to service a travel flow of approximately 5,000 vehicles per hour. The operation was planned to end at US 19 with the two contraflow lanes taken down to one lane that would exit on the existing eastbound ramp. The lane reduction was needed because geometric and topographic features will not allow for two off-lanes; thus creating a bottleneck. To reduce the significance of this bottleneck, the report states several operational elements must be in place, including various ITS components to disseminate to the public how to proceed to their destinations in a clear and understandable manner. While all of the elements specifically mentioned would take place outside the boundaries of Segment 2, the report implies a need for effective public dissemination of information throughout the entire I-10 corridor.

Subsequent coordination between the participants led to the tentative intent to transition the contraflow movement back to the westbound roadway just west of the I-75 interchange.

The report cites the need to provide and/or maintain adequate communications infrastructure along I-10 in order to effectively execute these evacuation scenarios. Such infrastructure would primarily be that needed to adequately accommodate the dynamic message sign network and other mechanisms to keep the public informed throughout the evacuation. In addition, some improvements related to signing and fixed object protection would be necessary to safely serve westbound traffic flow on the eastbound roadway.

3.3 CORRIDOR IMPROVEMENT GOALS AND ALTERNATIVES EVALUATION CRITERIA

The adopted master plan for the I-10 study corridor reflects the policies and goals both of the state and of the region served by this roadway. The goals and corresponding objectives focus on mobility improvements, environmental protection, economic development, creation of livable communities, and the cost effectiveness of investments. By evaluating identified CMEAs against a common set of goals and objectives, a master plan that guides future corridor improvements is developed. Policy elements, corridor goals, objectives, and corresponding measures of effectiveness (MOE) that guide the development and evaluation of alternatives are summarized below.

3.3.1 Improvement Goals

FDOT Interstate Highway Policy, local and regional needs, and the five I-10 Master Plan policy elements provide the framework from which improvement goals are developed. The relationship of these goals to the five policy elements is summarized below in Table 3-4.

Table 3-4: Policy Elements and Improvement Goals

Policy Element	Goal
Mobility	Enhance mobility of corridor residents and visitors.
Regional Commerce	Support regional commerce and goods movement.
Land Use	Support land use policies and livable communities.
Environment	Support environmental quality.
Affordability and Constructibility	Develop financially feasible and implementable plans.

Development and evaluation of CMEAs will occur in two steps, or tiers. In the first tier, mainline alternatives are developed to address the mobility needs of the mainline corridor. To evaluate and compare these alternatives, a set of objectives for each goal is identified, consistent with the more conceptual nature of the Tier 1 CMEAs.

The primary focus of CMEAs at the Tier 1 stage of analysis is on the identification and characterization of alternatives that address mobility options along the mainline of I-10. This will include options that relate to vehicular capacity, multimodal services, goods movement capabilities and ITS. Subsidiary elements, such as interchange improvements, remediation of various physical deficiencies and other additional features of the corridor will be addressed specifically in the Tier 2 level of analysis.

Tier 1 corridor evaluation objectives which correspond to the study goals listed above, and that are used to compare alternatives are identified in Table 3-5.

Table 3-5: Tier 1 Evaluation Goals and Objectives Matrix

Policy Elements	Tier Corridor Evaluation Objectives	
Policy Goals	Tier 1	Tier 2
Mobility		
Enhance Mobility Of Corridor Residents And Visitors	Provide Acceptable LOS	Provide Acceptable LOS
	Provide For Safe Roadway Environment	Provide for Efficient Traffic Operations
	Facilitate Corridor Transit Plans	Provide for Safe Roadway Environment
		Facilitate Corridor Transit Plans
		Support Hurricane Evacuation
Regional Commerce		
Support Regional Commerce And Goods Movement	Facilitate Freight Movements	Facilitate Freight Movements
	Provide Access To Intermodal Facilities	Provide Access to Intermodal Facilities
Land Use		
Support Land Use Policies And Livable Communities	Promote Compatibility With Land Uses And Growth Management	Promote Compatibility With Land Uses And Growth Management
	Minimize Relocations And ROW Acquisition	Minimize Relocations And ROW Acquisition
		Minimize Cultural Resource Impacts
		Minimize Utility Impacts
Environment		
Support Environmental Quality	Minimize Wetland Impacts	Minimize Wetland Impacts
	Enhance Air Quality	Enhance Air Quality
		Minimize Contamination Site Conflicts
		Minimize Drainage Impacts
Affordability & Constructability		
Develop Financially Feasible And Implemental Plan	Minimize Capital Cost	Minimize Capital Cost
	Facilitate Constructability	Minimize Operating and Maintenance Costs
		Facilitate Constructability

3.3.2 Measures of Effectiveness and Evaluation Criteria

The degree to which CMEAs achieve study goals and objectives is determined through application of a series of MOEs. The MOEs utilize data generated to evaluate defined objectives and range from stand-alone quantitative results, comparison against a baseline condition, and qualitative assessments tempered by study team experience and public input.

The relationship between the Tier 1 corridor evaluation objectives, MOEs and rating scale is summarized on the following page in Table 3-6.

Table 3-6: Tier 1 Corridor Evaluation Objectives and Measures of Effectiveness

Study Objective	MOE Tier 1	Rating Scale (See Note)		
		O	⊙	●
Mobility				
Provide Acceptable LOS	LOS	Below required LOS standard.	At LOS standard.	Exceeds LOS Standard.
Provide for Safe Roadway Environment	Remediation of geometrics Deficiencies.	Bridges over I-10 and other bridges that have safety issues remediated.	Brides over I-10, other bridges that have safety issues, and all other deficiencies remediated.	All deficiencies remediated.
Facilitate Corridor Transit Plans	Extent of non-SOV travel.	<2% reduction	2% - 5% reduction	>5% reduction
Regional Commerce				
Facilitate Freight Movements	Traffic Service and access for trucks.	Poor Truck Access and LOS.	Some improvements to truck access and LOS.	Quality truck access and LOS.
	Minimize conflicts between truck and autos.	No actions to minimize conflicts.	Minimal actions to minimize conflicts.	Significant actions to minimize conflicts.
Provide Access to Intermodal Facilities	Adequacy of access to intermodal facilities.	Poor access provided.	No change in access provided.	Adequate access provided.
Land Use				
Promote Compatibility with Land Uses & Growth Mgmt.	Quality of access to approved land use.	Significant Incompatibility.		Significant compatibility.
Minimize Relocations and ROW Acquisitions	Number of residential relocations and acres of ROW required.	Significant takings and relocations.		Limited or no takings and relocations.
	Number of business relocations and acres of ROW required.	Significant takings and relocations.		Limited or no takings and relocations.
Environment				
Minimize Wetland Impacts	Extend of wetland encroachments.	Significant encroachments.		Minimal encroachments.
Enhance Air Quality	Effect on vehicle miles and/or VHT.	<2% reductions	2% - 5% reduction	>5% reduction
Affordability & Constructability				
Minimize Capital Cost	Conceptual construction cost.	Highest cost option.	Middle cost option.	Lowest cost option.
Facilitate Constructability	Complexity of maintenance of traffic and constructability.	Relatively complicated; large scope, numerous phase or long duration; requires new temporary facilities.	Moderately complicated, moderate in scope, phase or duration; requires construction of new permanent facilities.	Relatively simple; limited scope, phase or duration; uses existing facilities.

Rating Scale
O Minimally Satisfies Criterion
⊙ Moderately Satisfies Criterion
● Highly Satisfies Criterion