4.3.1.4 Effects on Area Network

There is a total projected reduction in VMT of 13.41 percent, and a reduction of 13.53 percent to the weighted average v/c ratio. The traffic analyses comparison of the VMT differences between alternatives 3A/3B are insignificant with a difference of less than 1 percent.

Table 4.3-1 provides a summary of each alternative related to daily volume.

Table 4.3-1
2035 Daily Volume Summary

Road	**From-To**	NO BUILD **AADT**	ALT 2 MILLER **AADT**	ALT 3 **AADT**
CR 951/ Collier Boulevard	Golden Gate Boulevard to Pine Ridge Road	54,300	52,800	51,600
CR 951/ Collier Boulevard	Pine Ridge Road to Green Boulevard	52,200	51,300	53,400
CR 951/ Collier Boulevard	Green Boulevard to Golden Gate Parkway	51,100	50,400	50,800
CR 951/ Collier Boulevard	Golden Gate Parkway to North of I-75	51,200	51,900	53,800
CR 951/ Collier Boulevard	North of I-75 to South of I-75	69,400	69,900	64,700
CR 951/ Collier Boulevard	South of I-75 to Davis Boulevard	98,000	97,400	89,300
CR 951/ Collier Boulevard	Davis Boulevard to Rattlesnake Hammock Road	50,500	47,200	40,100
CR 951/ Collier Boulevard	Rattlesnake Hammock Road to US 41	52,400	47,900	37,400

Table 4.3-2 provides a summary of each alternative related to daily volume reduction.

Table 4.3-2
2035 Daily Volume Reduction Summary

Road	From-To	NO BUILD % Reduction	ALT 2 MILLER % Reduction	ALT 3 % Reduction
CR 951/ Collier Boulevard	Golden Gate Boulevard to Pine Ridge Road	0.00%	-2.76%	-4.97%
CR 951/ Collier Boulevard	Pine Ridge Road to Green Boulevard	0.00%	-1.72%	2.30%
CR 951/ Collier Boulevard	Green Boulevard to Golden Gate Parkway	0.00%	-1.37%	-0.59%
CR 951/ Collier Boulevard	Golden Gate Parkway to North of I-75	0.00%	1.37%	5.08%
CR 951/ Collier Boulevard	North of I-75 to South of I-75	0.00%	0.72%	-6.77%
CR 951/ Collier Boulevard	South of I-75 to Davis Boulevard	0.00%	-0.61%	-8.88%
CR 951/ Collier Boulevard	Davis Boulevard to Rattlesnake Hammock Road	0.00%	-6.53%	-20.59%
CR 951/ Collier Boulevard	Rattlesnake Hammock Road to US 41	0.00%	-8.59%	-28.63%

Table 4.3-3 provides a summary of each alternative related to VMT by road segment, and by total.

Table 4.3-3
2035 VMT Summary

Road	**From-To**	NO BUILD **VMT**	ALT 2 MILLER **VMT**	ALT 3 **VMT**
CR 951/ Collier Boulevard	Golden Gate Boulevard to Pine Ridge Road	61,902	60,192	58,824
CR 951/ Collier Boulevard	Pine Ridge to Green Boulevard	46,458	45,657	47,526
CR 951/ Collier Boulevard	Green Boulevard to Golden Gate Parkway	52,633	51,912	52,324
CR 951/ Collier Boulevard	Golden Gate Parkway to North of I-75	78,336	79,407	82,314
CR 951/ Collier Boulevard	North of I-75 to South of I-75	35,394	35,649	32,997
CR 951/ Collier Boulevard	South of I-75 to Davis Boulevard	24,500	24,350	22,325
CR 951/ Collier Boulevard	Davis Boulevard to Rattlesnake Hammock Road	151,500	141,600	120,300
CR 951/ Collier Boulevard	Rattlesnake Hammock Road to US 41	172,920	158,070	123,420
Total CR 951/ Collier Boulevard		**623,643**	**596,837**	**540,030**

Table 4.3-4 provides a summary of each alternative related to VMT reduction by road segment, and by total.

Table 4.3-4
2035 VMT Reduction Summary

Road	From-To	NO BUILD **VMT % reduction**	ALT 2 MILLER **VMT % reduction**	ALT 3 **VMT % reduction**
CR 951/ Collier Boulevard	Golden Gate Boulevard to Pine Ridge Road	0.00%	-2.76%	-4.97%
CR 951/ Collier Boulevard	Pine Ridge to Green Boulevard	0.00%	-1.72%	2.30%
CR 951/ Collier Boulevard	Green Boulevard to Golden Gate Parkway	0.00%	-1.37%	-0.59%
CR 951/ Collier Boulevard	Golden Gate Parkway to North of I-75	0.00%	1.37%	5.08%
CR 951/ Collier Boulevard	North of I-75 to South of I-75	0.00%	0.72%	-6.77%
CR 951/ Collier Boulevard	South of I-75 to Davis Boulevard	0.00%	-0.61%	-8.88%
CR 951/ Collier Boulevard	Davis Boulevard to Rattlesnake Hammock Road	0.00%	-6.53%	-20.59%
CR 951/ Collier Boulevard	Rattlesnake Hammock Road to US 41	0.00%	-8.59%	-28.63%
Total CR 951/ Collier Boulevard		**0.00%**	**-4.30%**	**-13.41%**

Table 4.3-5 provides a summary of each alterative related to v/c ratio on CR 951/Collier Boulevard by road segment, and by average.

Table 4.3-5
2035 V/C Ratio Summary

Road	**From-To**	NO BUILD **V/C**	ALT 2 MILLER **V/C**	ALT 3 **V/C**
CR 951/ Collier Boulevard	Golden Gate Boulevard to Pine Ridge Road	1.015	0.987	0.964
CR 951/ Collier Boulevard	Pine Ridge to Green Boulevard	0.976	0.959	0.998
CR 951/ Collier Boulevard	Green Boulevard to Golden Gate Parkway	0.956	0.942	0.950
CR 951/ Collier Boulevard	Golden Gate Parkway to North of I-75	0.957	0.970	1.006
CR 951/ Collier Boulevard	North of I-75 to South of I-75	1.088	1.096	1.014
CR 951/ Collier Boulevard	South of I-75 to Davis Boulevard	1.536	1.527	1.400
CR 951/ Collier Boulevard	Davis Boulevard to Rattlesnake Hammock Road	0.944	0.882	0.750
CR 951/ Collier Boulevard	Rattlesnake Hammock Road to US 41	0.980	0.895	0.700
Weighted Average CR 951/ Collier Boulevard		**0.985**	**0.942**	**0.852**

Table 4.3-6 provides a summary of each alternative related to v/c reduction by road segment, and by average.

Table 4.3-6
2035 V/C Ratio Reduction Summary

Road	From-To	NO BUILD **V/C % reduction**	ALT 2 MILLER **V/C % reduction**	ALT 3 **V/C % reduction**
CR 951/ Collier Boulevard	Golden Gate Boulevard to Pine Ridge Road	0.00%	-2.76%	-4.97%
CR 951/ Collier Boulevard	Pine Ridge to Green Boulevard	0.00%	-1.72%	2.30%
CR 951/ Collier Boulevard	Green Boulevard to Golden Gate Parkway	0.00%	-1.37%	-0.59%
CR 951/ Collier Boulevard	Golden Gate Parkway to North of I-75	0.00%	1.37%	5.08%
CR 951/ Collier Boulevard	North of I-75 to South of I-75	0.00%	0.72%	-6.77%
CR 951/ Collier Boulevard	South of I-75 to Davis Boulevard	0.00%	-0.61%	-8.88%
CR 951/ Collier Boulevard	Davis Boulevard to Rattlesnake Hammock Road	0.00%	-6.53%	-20.59%
CR 951/ Collier Boulevard	Rattlesnake Hammock Road to US 41	0.00%	-8.59%	-28.63%
Weighted Average CR 951/ Collier Boulevard		**0.00%**	**-4.37%**	**-13.50%**

Supporting documentation is provided in Appendix 4; p.A4-3.

Based on the analyses provided above, alternative 3 provides a significantly greater relief to CR 951/Collier Boulevard than alternative 2 (Miller Boulevard). Note that although portions of CR 951/Collier Boulevard are projected to operate at or below the LOS standard up to the year 2035, further growth in this region will continue to load CR 951/Collier Boulevard to the point of failure. Providing a parallel facility such as alternative 3 would be the necessary solution to provide a reduction of traffic to CR951/Collier Boulevard.

4.3.1.5 Findings

CR 951/Collier County presently experiences operational problems due to capacity constraints that affect traffic flow. Many of the intersections in the corridor currently operate below the Level of Service Standard. Development pressures within the corridor that have arisen over the past decade are expected to continue into the future, with associated increased impact on CR 951/Collier Boulevard if no transportation improvements within the region are considered.

An additional north-south corridor within the study area will reduce transportation related impacts on CR 951/Collier Boulevard.

Based on the analysis provided, alternative 3 is projected to provide the greatest relief to CR 951/Collier Boulevard. While this alternative reduces traffic on CR 951/Collier Boulevard, it may have the additional benefit of reducing overflow impact to adjacent facilities such as Santa Barbara Boulevard, Rattlesnake Hammock Road, and Grand Lely Drive. From a traffic engineering perspective, it would well serve the growing transportation needs of the region east of CR 951/Collier Boulevard.

Further consideration such as environmental impacts and associated costs and public input are important in the determination of the final recommended alternative.

4.3.2 Natural Environment

Impacts to the natural environment associated with each potential alignment carried forward into the Tier 2 analysis were quantified and presented in an Alternatives Evaluation Matrix within Section 4.4 (Table 4.4-1). With regards to the natural environment, impacts to wetlands, panther habitat, and public lands were calculated by comparing the proposed alternatives against existing GIS data, provided by natural resource agencies.

Wetlands Habitat

Wetland impacts for all three build alternatives will be significant, which is to be expected when the overall project study area is comprised of nearly two-thirds wetland habitat. Acreages of anticipated impacts per alignment are presented below in Table 4.3-7. Alternative 2, the Miller Boulevard alignment, has the least direct impacts to wetlands because a portion of this alignment would occur within the existing Miller Boulevard right-of-way, incorporating areas that have previously been cleared, filled, and in some areas, paved.

Table 4.3-7.
Wetland Impact Summary by Alignment Alternative

	Alt. 2	**Alt. 3A**	**Alt. 3B**
Wetland Impact (acres)	286	363	371
Wetland Mitigation ($60K/credit at Big Cypress Mitigation Bank; assumes 1.5:1 ratio – credit/acres of impact)	$25.7M	$32.7M	$33.4M

Additional measures to eliminate and reduce wetland impacts to the greatest extent practicable will be necessary in order to obtain the required wetland impact permits from South Florida Water Management District (SFWMD) and the US Army Corps of Engineers (ACOE). These measures could include, but are not limited to:

- Reduced typical section width within wetland areas, including reduction of the center median, and/or the use of retaining walls or steeper side-slopes, and guard-rails
- Spanning of wetland flow ways with bridge or culvert structures
- Alignment modification where possible to avoid wetlands

Multiple mitigation banks are available to the County for purchase of mitigation bank credits, which could offset wetland impacts due to this project. For the purpose of this preliminary study, base mitigation ratios were developed, to approximate a potential mitigation cost associated with each alternative. However, ratios will not be accepted for use in determining required mitigation during the permitting process. Uniform Mitigation Assessment Method (UMAM) calculations will need to be performed for each specific wetland impacted, in order to determine the wetland Functional Loss due to the proposed project. This Functional Loss will be used to determine the amount of credits needed to purchase to make up the Functional Gain required to offset the impacts.

The County may also have lands that they may wish to place into Conservation Easement, such as the Pepper Ranch Preserve, which could provide replacement wetland function that could offset wetland impacts from this project. In such a case, UMAM calculations should be performed on the mitigation site, to determine the Functional Gain that the mitigation site can provide, and compare that to the projects Functional Loss. Such a parcel may provide all or some of the necessary wetland mitigation. If a proposed mitigation parcel did not provide enough mitigation to completely compensate for wetland impacts, the remaining Functional Loss could be compensated through purchase of mitigation bank credits.

Although not quantified, the Comprehensive Everglades Restoration Plan will have an impact within the study area; most notably, the Miller Boulevard alternative. The southern section, from US 41 to I-75 falls within the plan, which will return this section of land to the Everglades for habitation and restoration.

Listed Species

Listed Species Permitting

It is anticipated that an ACOE dredge and fill permit will be required for the development of the preferred alignment; therefore, Section 7 consultation with the USFWS will be required for impacts to federally threatened and endangered species habitat. These species may include, but are not limited to, the Florida panther, wood stork, Everglade snail kite, RCW, and Eastern indigo snake. A detailed evaluation and comprehensive listed species survey of the preferred alignment should be conducted during the permitting phase to determine potential direct and indirect impacts to listed species habitat.

As part of the USFWS review of the project, it is anticipated that the USFWS will require a wood stork foraging analysis be completed to determine the potential habitat impacts and the appropriate mitigation for the species. Habitat compensation for the wood stork may be addressed as part of the wetland mitigation requirements for the road.

Consultation with the FFWCC and the USFWS may be required for potential impacts to RCW habitat. Specific surveys including, spring nesting season and fall non-nesting season surveys, will be required during the permitting phase for the preferred alignment. Per discussions with the USFWS, habitat compensation for impacts to RCW occupied habitat must include acquisition and restoration/enhancement of currently occupied habitat.

Consultation with the FFWCC may also be required for the gopher tortoise, state listed wading birds, Florida black bear, and Big Cypress fox squirrel as part of the SFWMD Environmental Resource Permit review process and Collier County development approval processes.

Detailed mapping of the habitat types within and in the vicinity of the preferred alignment will be required to assess potential impacts to suitable scrub jay habitat. Based on the SFWMD FLUCFCS database within or adjacent to the alignments, consultation with the FFWCC or the USFWS for this species is not anticipated.

The FFWCC database for the Florida black bear documents numerous occurrences in close proximity to each of the alternatives (Appendix 2; p.A2-3). The Florida black bear is listed as a threatened species with the FFWCC.

Florida Panther Habitat Impacts

A map of the Panther Zones as identified by Kautz *et al.* 2006 with an overlay of the alternatives is included in Appendix 2; p.A2-9. Approximately 90 percent of each alternative occurs within the USFWS Panther Focus Area. A breakdown of the direct impacts to the panther primary, secondary and other zones according to each alternative is included in Table 4.3-8 below.

Table 4.3-8
Panther Zone Direct Impact Acreages per Alternative

Panther Zone	Approximate Acreage	Percent Total
Alternative 2		
Primary	417.20	76.60
Secondary	74.15	13.61
Other	53.31	9.79
Total	**544.68**	**100.00**
Alternative 3A		
Primary	506.54	89.83
Secondary	0.34	0.06
Other	57.04	10.12
Total	**563.92**	**100.00**
Alternative 3B		
Primary	512.38	89.91
Secondary	0.34	0.06
Other	57.04	10.03
Total	**569.76**	**100.00**

The proposed alternatives will also have indirect effects to habitat. Indirect effects may include future development of land that may be accessed by the new road, fragmentation of habitat and public lands by creating a barrier for panther movement within the landscape, and an increase in traffic into panther habitat as a result of the Project. Based on a meeting with the USFWS and the FFWCC on January 23, 2008 and April 1, 2009, habitat compensation will be required for both direct and indirect effects resulting from the construction of the road within the study area. Indirect effects may be minimized by limiting access to the road and including bridges or culverts to maintain surface water sheet flow and to provide wildlife crossings. Bridges sized and designed to allow for panther movement under the road would minimize habitat fragmentation and indirect effects. Based on the discussions with the USFWS and the FFWCC, implementing such measures in the North Belle Meade area will require close evaluation of the final alignment configuration with respect to remaining habitat to the west. The USFWS and the FFWCC acknowledged the major challenge will be to prevent the isolation of large mammals in the Golden Gate Estates while also precluding movement of large mammals into the area. Table 4.3-9 includes the estimated fragmented acreage (i.e., acreage west of each alignment) per each option.

Table 4.3-9
Panther Zone Indirect Impact Acreages per Alternative

Panther Zone	Approximate Fragmented Acreage	Percent Total
Alternative 2		
Primary	62,197	52.0
Secondary	46,412	39.0
Other	11,164	8.0
Total	**119,773**	**100.0**
Alternative 3A		
Primary	13,347	50.0
Secondary	1,797	6.7
Other	11,554	43.3
Total	**26,699**	**100.0**
Alternative 3B		
Primary	12,543	50.0
Secondary	1,053	4.2
Other	11,495	45.8
Total	**25,090**	**100.0**

Listed Species Mitigation Alternatives

The species requiring the greatest consideration for habitat compensation is the Florida panther. Each of the proposed alternatives will require compensation for direct and indirect impacts to panther habitat. There are a number of variables that will determine the appropriate amount and form of habitat compensation. These variables generally include cover type impacts, location within Panther Zone, habitat/public lands fragmentation, net traffic increase into the focus area,

and mitigation measures such as wildlife crossings. The final required compensation will be determined through the Section 7 Consultation process with the USFWS.

Florida Panther Habitat Compensation Discussion

The potential habitat compensation for the panther will be determined during the PD&E or permitting/design phase of this study. At such time, the most recent USFWS panther habitat assessment method should be utilized to determine the amount of potential panther habitat that would be impacted by each possible road alignment. The current USFWS assessment methodology calculates the number of panther habitat units (PHUs) required for compensation based on the land's vegetative cover types and panther zones. The vegetation types within the road alignment are given a habitat suitability value of zero to ten based on the known preferred habitat types of the Florida panther. A score of zero would be applied to land uses such as development, roads, or open water. A score of ten would be applied to habitats such as hardwood forest or xeric oak scrub. It should be noted that revised cover type values are currently pending review with the USFWS. The values are multiplied by the acreage of the habitat types to produce a preliminary PHU sum for the habitat type. A base ratio of 2.5 is then applied to this sum. The purpose for the base ratio is to provide for the protection of sufficient acreage of Primary Zone lands. Additionally, the USFWS applies a landscape multiplier of 1.0, 0.69, or 0.33 depending on the location of the project (i.e., primary zone, secondary zone, or other zone, respectively). The final functional value for the project can be calculated as follows:

- Habitat Value x Acreage x Base Ratio x Landscape Multiplier = Panther Habitat Units

The Florida Panther Effect Determination Key issued by the USFWS (2007), states that projects resulting in a net increase of traffic into the Panther Focus Area may require additional habitat compensation. As previously noted, this will be evaluated as an indirect affect of the preferred alignment.

Panther habitat compensation options include land acquisition and habitat enhancement or the purchase of PHUs. PHUs can be purchased through a USFWS approved panther conservation bank. Additionally, it is important to note that if the purchase of wetland mitigation credits is required for the construction of the road, some PHU value is associated with each wetland credit. The number of PHUs per wetland mitigation credit varies per mitigation bank. For example, each wetland credit at Big Cypress Mitigation Bank is worth 8.96 PHUs and each wetland credit at Panther Island Mitigation Bank is worth 25.6 PHUs. Generally speaking, if mitigation and conservation banks are going to be used, it makes economic sense to first purchase the least expensive wetland credits available to off-set the project's wetland impacts and then find the least expensive PHU cost from a panther conservation bank.

Another wetland and panther compensation option available to Collier County government departments, such as the Department of Transportation, is the use of properties purchased through Conservation Collier. The property will need to be located within a panther zone and additional assessments will be needed to determine the site's wetland and PHU compensation values.

Public Lands

Each of the three alignment alternatives, as currently proposed, would have some impacts to properties within the Picayune Strand State Forest, though the Miller Boulevard alignment,

alternative 2, would have a significantly greater impact to Public Lands than either alternative 3A or 3B. Acreages of anticipated Public Land impacts per alignment are presented below in Table 4.3-10.

Table 4.3-10
Public Lands Impact Summary by Alignment Alternative

	Alt. 2	**Alt. 3A**	**Alt. 3B**
Direct Public Lands Impact (acres)	216	6	20
Fragmented Public Lands Impact (acres)	19,403	13	37
Public Lands Mitigation (a ratio that compares the magnitude of impact between the three alternatives)*	1,033 times greater than alt. 3A	Least impactful	3 times greater than alt. 3A

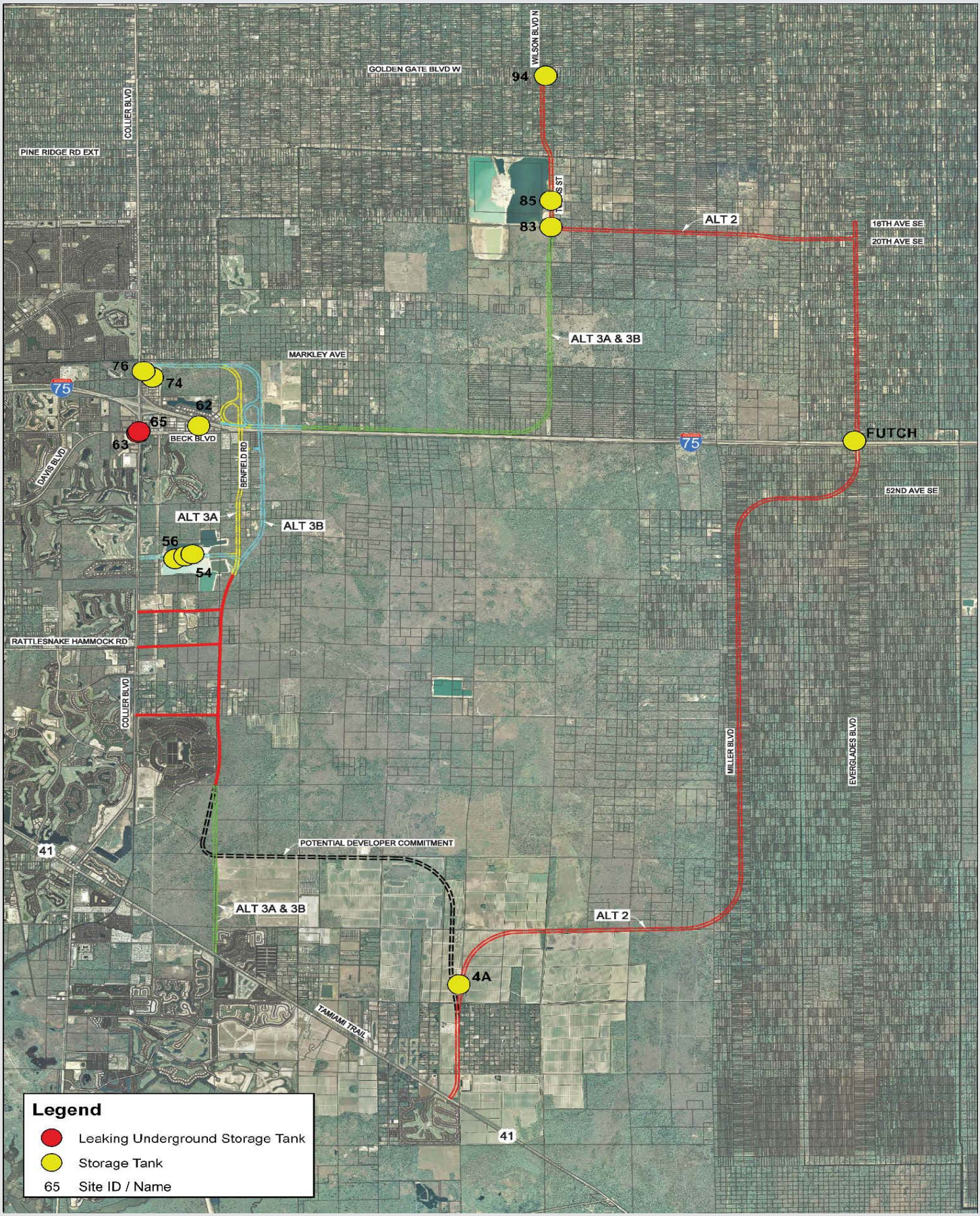
*Fragmented Public Lands Impacts based on discussions with USFWS on January 23, 2008. This study is too preliminary to accurately anticipate Public Lands mitigation costs. Further negotiation between USFWS, Florida TIITF, and Collier County will be necessary during the project PD&E or design/permitting phase. For the purpose of this table, each alternative is compared to the least impactful build alternative, such that Alt. 2 is approximately 1,033 times greater than Alt. 3A, and Alt. 3B is approximately 3 times greater than Alt. 3A.

Permitting approval of the Miller Boulevard alignment would face significant opposition from multiple state and federal regulatory agencies, as well as special interest environmental groups, because of the substantial impacts to state conservation lands. Based on the evaluation of impacts to this resource, the Miller Boulevard alignment does not appear to be a viable alternative.

4.3.3 Physical Environment

A contamination screening of the Tier 2 corridors was conducted to determine the potential for contamination of the proposed right-of-way from within the right-of-way and adjacent properties. (Figure 4.3-4) Of the 17 sites identified during the Tier 1 screening, 13 of the sites were identified as potential hazardous and/or petroleum contamination risks to the Tier 2 corridor alternatives. Sites numbered 11, 19, 1A and the Citgo are the four facilities identified during the Tier 1 screening that will not affect the Tier 2 corridor alternatives.

Of the 13 identified sties, 11 sites were identified as registered underground or aboveground storage tanks by the FDEP. Two sites were identified as LUSTs from the FDEP as facilities and/or locations that have notified the FDEP of a possible release of contaminants from petroleum storage systems. Based on the facilities' distances from the Tier 2 alternatives and the current regulatory status of the facilities; the 13 sites are ranked as "low" risks based on the guidelines provided in Chapter 22 in Part 2 of FDOT's PD&E Manual. Table 4.3-11 summarizes of the 13 sites indentified during the screening of the Tier 2 corridor alternatives. The regulatory status of each site is provided following the summary table.



AIM Engineering & Surveying, Inc.

FIGURE 4.3-4

Tier 2—Contamination

Wilson Boulevard Extension/Benfield Road Corridor Study
Collier County, Florida

Table 4.3-11
Potential Contamination Sites

Site No.	Property Description (name, address)	Permit or Facility ID	Potential Contaminant (Hazardous or Petroleum)	Activity or Concern
54	Better Roads Inc Plant #4	9300223	Heating Oil/Diesel	Tanks
55	Southern Sand and Stone Inc.	8732404	Gas/Diesel/Waste Oil	Tanks
56	Preferred Materials Inc.	9200423	Diesel	Tanks
63	Mobil Alligator Alley	8518131	Unleaded Gasoline/ Vehicular Diesel	Discharge Notification/ Tanks
65	J&T Travel Mart	8518199	Vehicular Diesel	Discharge Notification/ Removed Tanks
68	Raymond Building Supply	9805442	Unleaded Gas	In service tanks
74	Collier County South Regional WTP	9201777	Diesel/Ammonia/ Mineral Acid	Tanks
76	BP Amoco	9808082	Diesel/Gasoline	Tanks
83	Collier County Well House #25	9700103	Diesel	Tank
85	Collier County Well House #25	9700104	Diesel	Tank
94	E's Country Stores LLC	8944898	Unleaded Gas	Discharge Notification/ Site Rehabilitation Complete/Tanks
4A	Farm Op Inc. #7	8944625	Diesel, Unleaded Gas	In service tanks
Futch	Futch Construction Inc.	8736871	Diesel	Tanks

Regulatory Status of Sites

Site Number 54 - Better Roads Inc. Plant No. 4 is listed in the FDEP Storage Tanks report as having three tanks. One 4,000 gallon fuel oil aboveground tank is listed as status 'non-regulated substance'; one 15,000 gallon aboveground fuel oil tank listed as 'non-regulated substance' and one 10,000 gallon aboveground vehicular diesel tanks listed as removed as of 2003. This non-retail site is listed as open. Based on the facility's status and location, the site ranked as a LOW risk.

Site Number 55 - Southern Sand and Stone, Inc. has 4 removed tanks listed in the FDEP Storage Tanks report. Three 1,000 gallon tanks and one 4,000 gallon tank contained petroleum products (leaded and unleaded gas, waste oil, and vehicular diesel), and were aboveground. The facility is listed as closed. Based on the facility's status and location, the site ranked as a LOW risk.

Site Number 56 - Preferred Materials Inc. has one 1,000 gallon tank listed in the FDEP Storage Tanks report. The tank is listed as aboveground and in service, containing petroleum products

(vehicular diesel). The facility is listed as open. Based on the facility's status and location, the site ranked as a LOW risk.

Site Number 63 - Mobil Alligator Alley is listed in the FDEP LUST report as well as the Storage Tanks report. One active clean up is in progress at the site as of 2001, and four tanks are listed for the site. Three 10,000 gallon underground tanks containing unleaded gas and vehicular diesel are listed as in service. One 1,000 gallon underground tank is listed as removed as of 1985. This retail station is listed as open. Based on the facility's status and location, the site ranked as a LOW risk.

Site Number 65 - J&T Travel Mart is listed in the FDEP LUST report as well as the Storage Tanks report. An inactive cleanup is listed for monitoring well pollution at the site by vehicular diesel. Four underground tanks containing unleaded gas and vehicular diesel are listed as having been removed. This retail station is listed as closed. Based on the facility's status and location, the site ranked as a LOW risk.

Site Number 68 - Raymond Building Supply Corp. has one 2,000 gallon tank listed in the FDEP Storage Tanks report. The tank is listed as in service as of January, 2003 and containing petroleum products (unleaded gas). It is an aboveground tank and the facility is listed as open. Based on the facility's status and location, the site ranked as a LOW risk.

Site Number 74 - Collier County South Regional WTP is listed in the FDEP Storage Tanks report as having three 10,000 gallon aboveground tanks (two containing mineral acid and one containing emergency generator diesel), two 1,000 gallon aboveground tank containing ammonia compound, one 6,000 gallon aboveground tank containing emergency generator diesel, and two 12,000 gallon aboveground tanks containing emergency generator diesel. One 10,000 gallon underground tank has been removed as of 1999. It had contained emergency generator diesel. This is a county government facility and it is listed as open. Based on the facility's status and location, the site ranked as a LOW risk.

Site Number 76 - BP AMOCO is listed in the FDEP Storage Tanks report as having two underground in service tanks. One 30,000 gallon tanks containing unleaded gas and one 20,000 gallon tank containing vehicular diesel. This retail station is listed as open. Based on the facility's status and location, the site ranked as a LOW risk.

Site Number 83 - Collier County Well House #25 is listed in the FDEP storage tanks report for one 1,500 gallon aboveground tank. The tank is listed as in service, containing petroleum products (emergency generator diesel) and the facility is listed as open. Based on the facility's status and location, the site ranked as a LOW risk.

Site Number 85 - Collier County Well House #23 is listed in the FDEP storage tanks report for one 1,500 gallon aboveground tank. The tank is listed as in service, containing petroleum products (emergency generator diesel) and the facility is listed as open. Based on the facility's status and location, the site ranked as a LOW risk.

Site Number 94 - E's Country Store is listed in the FDEP Leaking Underground Storage Tanks (LUST) report as well as the FDEP storage tanks report. The LUST incident was recorded July 1990, and reported as No Further Action – Complete April 2006. The pollutant is listed as unleaded gas, and the facility is listed as open. The FDEP storage tanks report lists three tanks for this site; two 8,000 gallon underground, unleaded gas tanks; removed, and one 22000

underground unleaded gas tank; in service. The facility is listed as a retail station. Based on the facility's status and location, the site ranked as a LOW risk.

Site Number 95 - Pena Trucking and Excavating is listed in the FDEP storage tanks report as having one 1,000 gallon aboveground tank, containing petroleum products (new/lube oil). This tank was removed in August of 1998 and the facility is listed as closed. Based on the facility's status and location, the site ranked as a LOW risk.

Site Number 4A - Farm Op Inc. #7 is listed in the FDEP storage tanks report as having in service, aboveground tanks; two 6,000 gallon tanks for vehicular diesel, one 25,000 gallon vehicular diesel tank, and one 8,000 gallon unleaded gas tank. Additionally the USEPA has a RCRIS listing for this site. A non-TSD violation dating September 6, 1991 is listed. Based on the facility's status and location, the site ranked as a LOW risk.

Futch - Futch Construction Inc. is listed in the FDEP storage tanks report as a closed, non-retail, fuel user with one vehicular diesel tank. This facility is listed as closed as of November 2007. Based on the facility's status and location, the site ranked as a LOW risk.

Potential contamination associated with these sites should be identified and evaluated during the design and right-of-way acquisition phase of the project. The evaluation should include subsurface investigations where warranted.

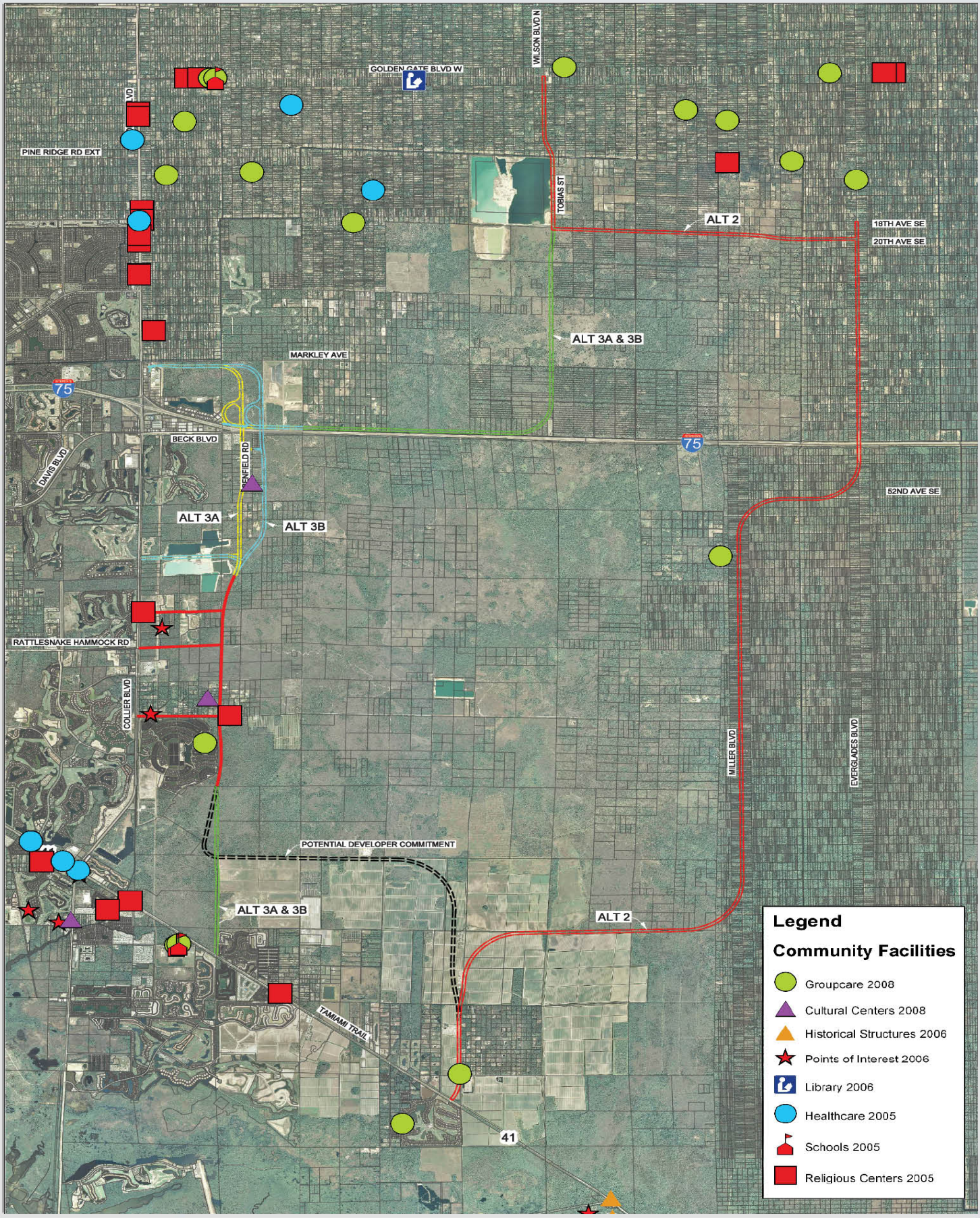
4.3.4 Social Environment

4.3.4.1 Community Cohesion

Alternatives 2, 3A and 3B loosely follow community boundaries as outlined in ETDM data, indicating overall no significant community division or isolation would occur. However, just south of I-75, alternative 2 shifts alignment to the east, potentially changing access for a small group of residents at the northwestern most corner of Miller Boulevard and I-75. These properties would potentially need driveway modification to access the new facility. Access roads connecting CR 951/Collier Boulevard and alternatives 3A and 3B are designed to increase connectivity between the build alternative and CR 951/Collier Boulevard to further alleviate congestion.

The Redlands Christian Migrant Association is within the vicinity of the southern terminus for alternative 2. This facility provides daycare and social services to migrant workers and their families, in the area. This facility could be directly impacted by the proposed improvement, but shifts in specific placement of the alignment could potentially avoid impacts to this facility entirely. See Figure 4.3-5, Community Facilities, Tier 2 Alternatives.

Alternatives 3A and 3B also pose a potential business impact concerning the private equestrian boarding facility near Newman Drive, in addition to trail and facility access concerns.



AIM Engineering & Surveying, Inc.

FIGURE 4.3-5

Tier 2—Community Facilities

Wilson Boulevard Extension/Benfield Road Corridor Study
Collier County, Florida

4.3.4.2 Economic

In comparison to the projected growth rate for Collier County, 3.5 percent by 2030, the study area is growing more than twice as fast as the county average, an estimated 8.2 percent by 2030 (ETDM, 2008). Much of the projected growth in this area is dependent on anticipated development. Industries within the study area consist mainly of Construction, Agriculture, Retail and Education related employment (U.S. Census, 2000). Alternatives 2, 3A and 3B are likely to show similar economic advantages of moving people and goods, also benefiting CR 951/Collier Boulevard in commuter traffic issues and improving travel times to and from employment centers. The No Build alternative (or alternative 1) is likely to have business impacts involving CR 951/Collier Boulevard. These are related impacts based on not constructing a new north-south corridor and thus creating a scenario where CR 951/Collier Boulevard would need to be improved. For the purposes of this study, the No Build alternative does not address the related impacts to CR 951/Collier Boulevard.

4.3.4.3 Development

Three of six Developments of Regional Impact (DRIs) in the one-mile project buffer would be involved with alternative 3A and 3B. No DRIs are recorded through GIS data or ETDM in the vicinity of alternative 2. Only approved, pending and abandoned DRIs are shown in Figure 4.3-6, Developments of Regional Impact. DRIs applied for but not approved, are not included in this analysis.

4.3.5 Public Input

Since the study began in 2007, Collier County has conducted a series of public outreach events, including two Public Workshops, the Benfield Road Community Meeting, the VeronaWalk Community Meeting and other meetings/presentations to agencies and stakeholders for this corridor study. In addition, two newsletters were prepared and information was posted on the County's website to provide project information and updates.

The local public was notified of the workshops and community meetings in advance. These events were held at the following locations:

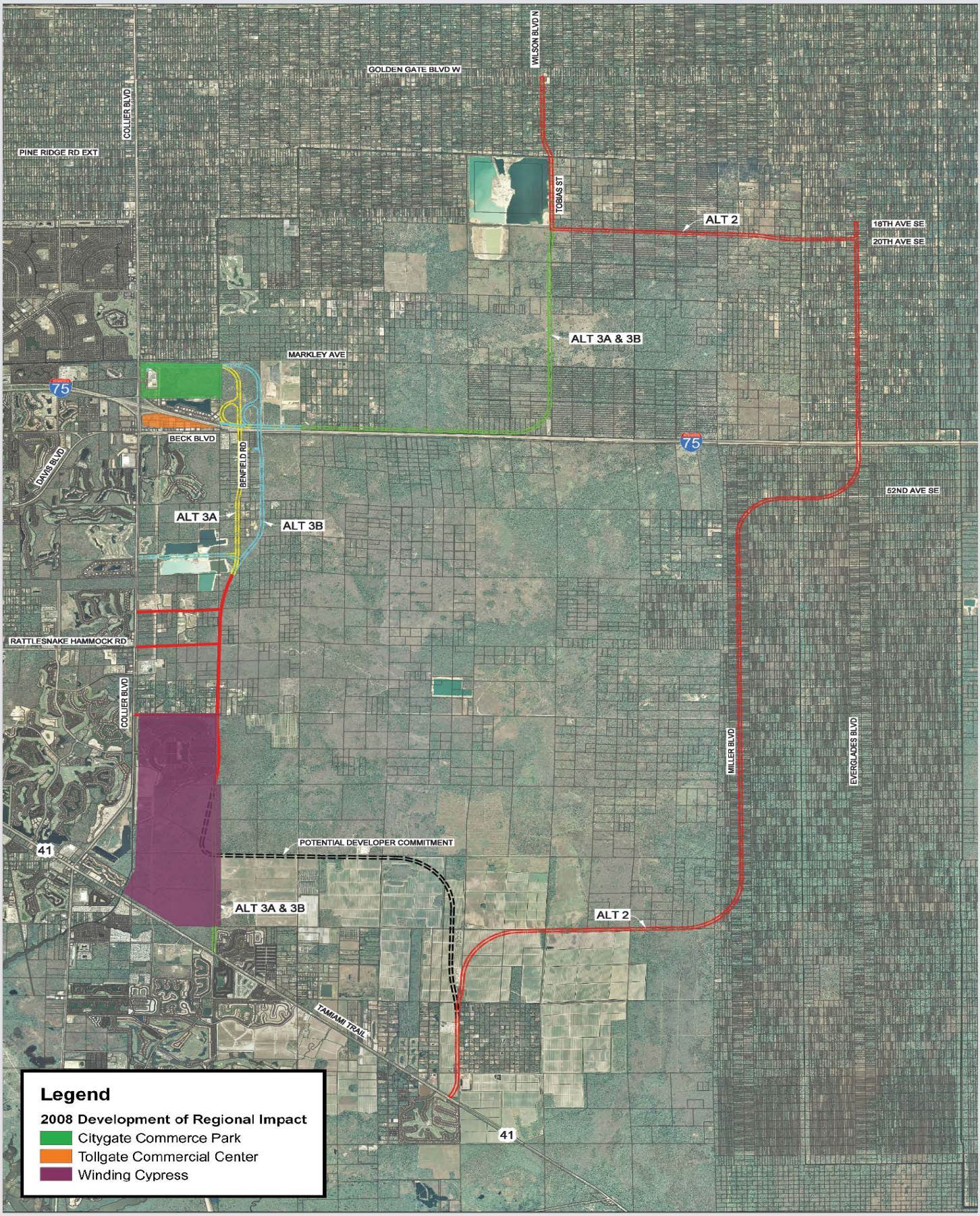
- Public Workshop held at St. Agnes Church in Naples on March 26, 2008
- Benfield Area Community Meeting held at Lely Elementary School in Naples on September 10, 2008
- VeronaWalk Community Meeting held at VeronaWalk Community Ballroom in Naples on December 3, 2008
- Public Workshop at Shepherd of the Glades Lutheran Church in Naples on February 12, 2009

The format of these events was very successful because it provided citizens' an opportunity to learn about the project, understand the social, environmental and economic character of the area, ask questions and offer input to county staff and consultant team members. Citizens were

encouraged to share their voices by providing comments at the time of the event, or via email, fax, USPS mail or by directly contacting the county office.

The Tier 2 alternatives were provided for public display at the Public Workshop at Shepherd of the Glades Lutheran Church in Naples on February 12, 2009

A more detailed summary of the Public Involvement Program is provided in Section 5.



AIM Engineering & Surveying, Inc.

FIGURE 4.3-6

Tier 2—Developments of Regional Impact

Wilson Boulevard Extension/Benfield Road Corridor Study
Collier County, Florida

4.3.6 Estimated Project Costs

To develop generalized cost estimates for arterial and intersection/interchange improvements within the study area, DRMP reviewed data from the FDOT State Estimates Office and from the Collier County 2030 LRTP. FDOT provides some generic costs per mile for some improvements. Additional data is provided by some Districts, namely District Seven. District One, which includes Collier County, does not provide generalized costs, instead deferring to site specific projections of costs based on detailed design. For the purposes of this planning analysis, generalized costs were derived from several sources, namely:

- FDOT State Estimates Office Generic Cost per Mile Models (June 2007-May, 2008)
- FDOT District Seven Roadway Cost per Centerline Mile (June, 2008)
- Wilson/Benfield Alternative Evaluation Matrix (February, 2009)
- Wilson/Benfield Bridge Estimates (February, 2009)

Right-of-Way (ROW) costs vary widely depending on location and can be very sensitive to local real estate market impacts. ROW costs have been developed for the alternatives described above and are included in the decision-making process for the final recommended alternative.

Public lands and listed species mitigation costs have been evaluated based on preliminary assessments using a ratio methodology. The ratio methodology was based on the least impacted Build alternative as a multiplier to the most impacted alternative. For example, alternative 2 has approximately 1,000 times greater impact than alternative 3A/3B on public lands. Similarly, panther habitat impacts for each alternative was compared to the least impactful build alternative, such that alternative 2 is approximately 4.7 times greater than alternative 3A/3B. It should be noted that there was significant discussion amongst the project team on the level of impacts associated with alternative 2. The consensus was that alternative 2 would not bear the brunt of fully mitigating impacts west of the proposed alignment for the entire area in between alternative 2 and CR 951/Collier Boulevard. The project team concurred that there was no additional benefit to a detailed impact analysis at this time.

Volume projections indicate that shortly after 2035, additional portions of CR 951/Collier Boulevard would incur additional costs to restore operating conditions. Also, it is anticipated that significant portions of alternative 3A/3B would be funded and constructed by private development as mitigation for their impacts to CR 951/Collier Boulevard. Example developments include, Florida Rock, Toll Rattlesnake and Six L's Farms. Therefore the cost summary table should be considered with these factors in mind.

The project costs estimated for the three build alternatives are summarized in Table 4.3-12. Preliminary engineering (design) cost were estimated at 5 percent of the estimated construction cost and Construction Engineering and Inspection (CEI) cost were estimated at 5 percent of the estimated construction cost.

Table 4.3-12 also includes consideration of the cost to restore operating conditions along CR 951/Collier Boulevard. With or without the construction of an additional north-south corridor, the interchange at I-75 and CR 951/Collier Boulevard will require a complete reconstruction prior to the year 2035. Estimates have ranged between $125million and $250 million depending on the limits of the reconstruction.

Table 4.3-12
Project Cost

Project Phase	No Build	Miller Boulevard	Alternative 3A	Alternative 3B
Wetland Mitigation	$0	$25,722,000	$32,670,000	$33,390,000
Public Lands Mitigation	N/A	1,033 times greater than Alt 3A*	Least impactful*	3 times greater than Alt 3A*
Panther Habitat Mitigation	$0	4.7 times greater than Alt 3B**	1.1 times greater than Alt 3B**	Least impactful**
Right-of-way Acquisition for Roadway	$0	$8,770,800	$20,225,500	$20,184,000
Right-of-way Acquisition for Stormwater Facilities	$0	$1,884,800	$4,734,500	$4,789,400
Total Right-of-Way Cost	$0	$36,377,700	$57,630,000	$58,363,400
Construction Cost for Roadway	$0	$276,146,300	$221,797,000	$224,260,300
Single Bridge Deck Overpass of I-75 estimated Cost	$0	$0	$18,963,100	$16,574,300
Construction Cost for Stormwater Facilities***	$0	$18,392,000	$13,229,300	$13,487,400
Total Construction Cost	**$0**	**$294,538,300**	**$253,989,400**	**$254,322,000**
Design (5 percent of total construction cost)	$0	$14,726,900	$12,699,500	$12,716,100
CEI (5 percent of total construction cost)	$0	$14,726,900	$12,699,500	$12,716,100
Preliminary Estimate of Total Project Cost	$0	**$360,369,800**	**$337,018,300**	**$338,117,600**
Cost to Restore Operating Conditions	$130,900,000	$125,000,000	$125,000,000	$125,000,000
TOTAL COST	**$130,900,000**	**$485,369,800**	**$462,018,300**	**$463,117,600**

- *Fragmented Public Land Impacts based on discussions with U.S. Fish and Wildlife Service (USFWS) on January 23, 2008. This study is too preliminary to accurately anticipate Public Lands mitigation costs. Further negotiation between USFWS, Florida TIITF, and Collier County will be necessary during project PD&E or design/permitting phases. For the purposes of this matrix, Public Lands impacts for each alternative is compared to the least impactful build alternative, such that Alternative 2 is approximately 1,033 times greater than Alternative 3A, and Alternative 3B is approximately 3 times greater than Alternative 3A.
- ** Fragmented Panther Habitat Impacts based on discussions with U.S. Fish and Wildlife Service (USFWS) on January 23, 2008. This study is too preliminary to accurately anticipate panther mitigation costs. Further negotiation between USFWS and Collier County will be necessary during project PD&E or design/permitting phases. For the purposes of this matrix, panther habitat impacts for each alternative is compared to the least impactful build alternative, such that Alternative 2 is approximately 4.7 times greater than Alternative 3B, and Alternative 3A is approximately 1.1 times greater than Alternative 3B.
- *** Pond Excavation Cost estimate = $10.00 per cubic yard = $161,333.00 per Acre (10 Ft deep ponds), Does not include floodplain compensation site.
- Impacts associated with Potential Side Street Connections for Alternatives 3A and 3B are not included in this matrix.

4.4 Tier 2 Findings

Four combined build alternative alignments running from US 41 in the south, north to the Wilson Boulevard Extension remain. The No Build alternative is also considered, and receives the same scrutiny as each of the build alternatives.

As can be seen from this section of the report, an extensive amount of time and consideration went into the creation of a sound engineering and humane way of determining what would be best for the citizens of Collier County. The remaining four corridor alternatives are:

1. Alternative 1; No Build
2. Alternative 2; Miller Boulevard
3. Alternative 3A
4. Alternative 3B

An alternatives evaluation matrix has been in the process of development since the Tier 1 Alternatives Analysis began. The Alternatives Evaluation Matrix is based upon the following criteria:

- Business Impacts
- Residential Impacts
- Environmental Impacts
  - Panther Habitat Impacts
  - Direct Panther Habitat Impacts Total (Acres)
  - Fragmented Panther Habitat Impacts Total (Acres)
- Right-Of-Way Impacts
- Cost Estimates
  - Total Right-of-Way Cost
  - Total Construction Cost
- Preliminary Estimate of Project Construction Cost
- Total Cost Per Center Line Mile
- Total Estimate of Project Construction Cost

The arrangement of the evaluation criteria was random, unbiased and does not provide any material impact to the result of the analysis. Table 4.4-1 displays the Alternatives Evaluation Matrix developed in the final stages of the study.

Based on the analysis provided, alternatives 3A and 3B are projected to provide the greatest relief to CR 951/Collier Boulevard. From a traffic engineering perspective, they provide similar relief and both would well serve the growing transportation needs of the region east of CR 951/Collier Boulevard. They also both have similar costs in terms of improvements and costs to restore operating conditions within the study area.

Further consideration such as environmental impacts and associated costs and public input are important in the determination of the final recommended alternative.

Table 4.4-1
Alternatives Evaluation Matrix

Evaluation Criteria	Alternative	Alternative 1 No Build	Alternative 2 Miller Boulevard	Alternative 3A	Alternative 3B
	Length (Miles)	n/a	22.49	19.82	20.07
Business Impacts					
Number of Potential Business Relocations		0	0	0	0
Residential Impacts					
Number of Potential Residential Relocations		0	7	3	3
Environmental Impacts					
Archaeological/Historical Sites (Potential)		None	1,2,3,4	1,2,3,4	1,2,3,4
Wetland (Acres)		0	286	363	371
Direct Public Lands Impacts (Acres)		0	216	6	20
Fragmented Public Lands Impacts (Acres)		0	19,403	13	37
Floodplains (Acres)		0	286	363	371
Contamination Sites		0	0	13	12
Panther Habitat Impacts					
Direct Panther Primary Zone Impact (Acres)		0	417	506	511
Direct Panther Secondary Zone Impact (Acres)		0	74	0.34	0.34
Direct Other Zone Impact (Acres)		0	54	57	57
Direct Panther Habitat Impacts Total (Acres)			**546**	**563**	**568**
Fragmented Panther Primary Zone Impact (Acres)		0	62,197	13,347	12,543
Fragmented Panther Secondary Zone Impact (Acres)		0	46,412	1,797	1,053
Fragmented Other Zone Impact (Acres)		0	11,164	11,554	11,495
Fragmented Panther Habitat Impacts Total (Acres)			**119,773**	**26,699**	**25,090**
Right-of-Way Impacts					
Right-of-Way to be Acquired for Roadway (Acres)		0	570	410	418
Right-of-Way to be Acquired for Stormwater Facilities (Acres)		0	114	82	84
Total Acreage		0	684	492	502
Cost Estimates					
Wetland Mitigation ($60K per credit at Big Cypress Mitigation Bank; assumes 1.5:1 ratio - credit/ acre of impact)		$0	$25,722,000	$32,670,000	$33,390,000
Right-of-Way to be Acquired for Roadway		$0	$8,770,823	$20,225,503	$20,183,963
Right-of-Way Acquisition for Stormwater Facilities		$0	$1,884,846	$4,734,453	$4,789,393
Total Right-of-Way Cost		$0	**$36,377,669**	**$57,629,955**	**$58,363,356**
Roadway Construction		$0	$276,146,300	$221,797,000	$224,260,300
Single Bridge Deck Overpass of I-75 Estimated Cost		$0	$0	$18,963,083	$16,574,306
Construction Cost for Stormwater Facility***		$0	$18,391,962	$13,229,306	$13,487,439
Total Construction Cost		$0	**$294,538,262**	**$253,989,389**	**$254,322,045**
Design (5% of Total Construction Cost)		$0	$14,726,913	$12,699,469	$12,716,102
Construction Engineering & Inspection (5% of Total Construction Cost)		$0	$14,726,913	$12,699,469	$12,716,102
Preliminary Estimate of Project Construction Cost		**$0**	**$360,369,757**	**$337,018,284**	**$338,117,605**
Total Length of Alternatives (Miles)		0.00	22.49	19.82	20.07
Total Cost Per Center Line Mile		**$0**	**$16,023,555**	**$17,003,950**	**$16,846,916**
Public Lands Mitigation (a ratio that compares the magnitude of impact between the three alternatives)*		N/A	**1,033 times greater than Alt. 3A***	Least impactful*	3 times greater than Alt. 3A*
Panther Habitat Mitigation (a ratio that compares the magnitude of impact between the three alternatives)**		N/A	**4.7 times greater than Alt. 3B****	1.1 times greater than Alt. 3B**	Least impactful**
Total Estimate of Project Construction Cost		**$0**	TO BE ANALYZED FURTHER AT DESIGN/PERMITTING PHASE		

Project construction costs do not include cost estimates for mitigation to offset impacts to panther habitat or public lands. Offsetting impacts to panther habitat and the Picayune Strand State Forest property has the potential to significantly increase the project cost for each alternative, with Alternative 2 being substantially more impactful than the other alternatives. Total project cost estimates cannot be considered complete until these mitigation costs have been negotiated during the PD&E or design/permitting phase of the potential roadway.

NOTES:

Archaeological/Historical: 1=High/Moderate Archaeological Potential; 2=Low Archaeological Potential; 3= Previously Recorded Site; 4=Possible Historic Archaeological Sites; 5=No sites; * These assignments are not representative of whole alignments, only portions of them

Pond R/W assumed to be 20% per FDOT Stormwater Management Facility Handbook, January 1999 page 2-11. factors that influence pond size such as Seasonal High Water Elevation (SHWE), roadway profile, potential change in permitting requirements).

Compensating storage will need to be provided for any filling of floodplain. Only segment 1 has a determined floodplain. However, each alternative has wetlands. Each wetland is assumed to have a 100 year floodplain. Therefore, for simplicity it is assumed the floodplain acreage impacted is the same as wetlands impacted.

*** Fragmented Public Land Impacts based on discussions with U.S. Fish and Wildlife Service (USFWS) on January 23, 2008. This study is too preliminary to accurately anticipate Public Lands mitigation costs. Further negotiation between USFWS, Florida TIITF, and Collier County will be necessary during project PD&E or design/permitting phases. For the purposes of this matrix, Public Lands impacts for each alternative is compared to the least impactful build alternative, such that Alternative 2 is approximately 1,033 times greater than Alternative 3A, and Alternative 3B is approximately 3 times greater than Alternative 3A.**

**** Fragmented Panther Habitat Impacts based on discussions with U.S. Fish and Wildlife Service (USFWS) on January 23, 2008. This study is too preliminary to accurately anticipate panther mitigation costs. Further negotiation between USFWS and Collier County will be necessary during project PD&E or design/permitting phases. For the purposes of this matrix, panther habitat impacts for each alternative is compared to the least impactful build alternative, such that Alternative 2 is approximately 4.7 times greater than Alternative 3B, and Alternative 3A is approximately 1.1 times greater than Alternative 3B.**

*** Pond Excavation Cost estimate = $10.00 per cubic yard = $161,333.00 per Acre (10 Ft deep ponds), Does not include floodplain compensation site.

Impacts associated with Potential Side Street Connections for Alternatives 3A and 3B are not included in this matrix.

Updated: February 11, 2009