



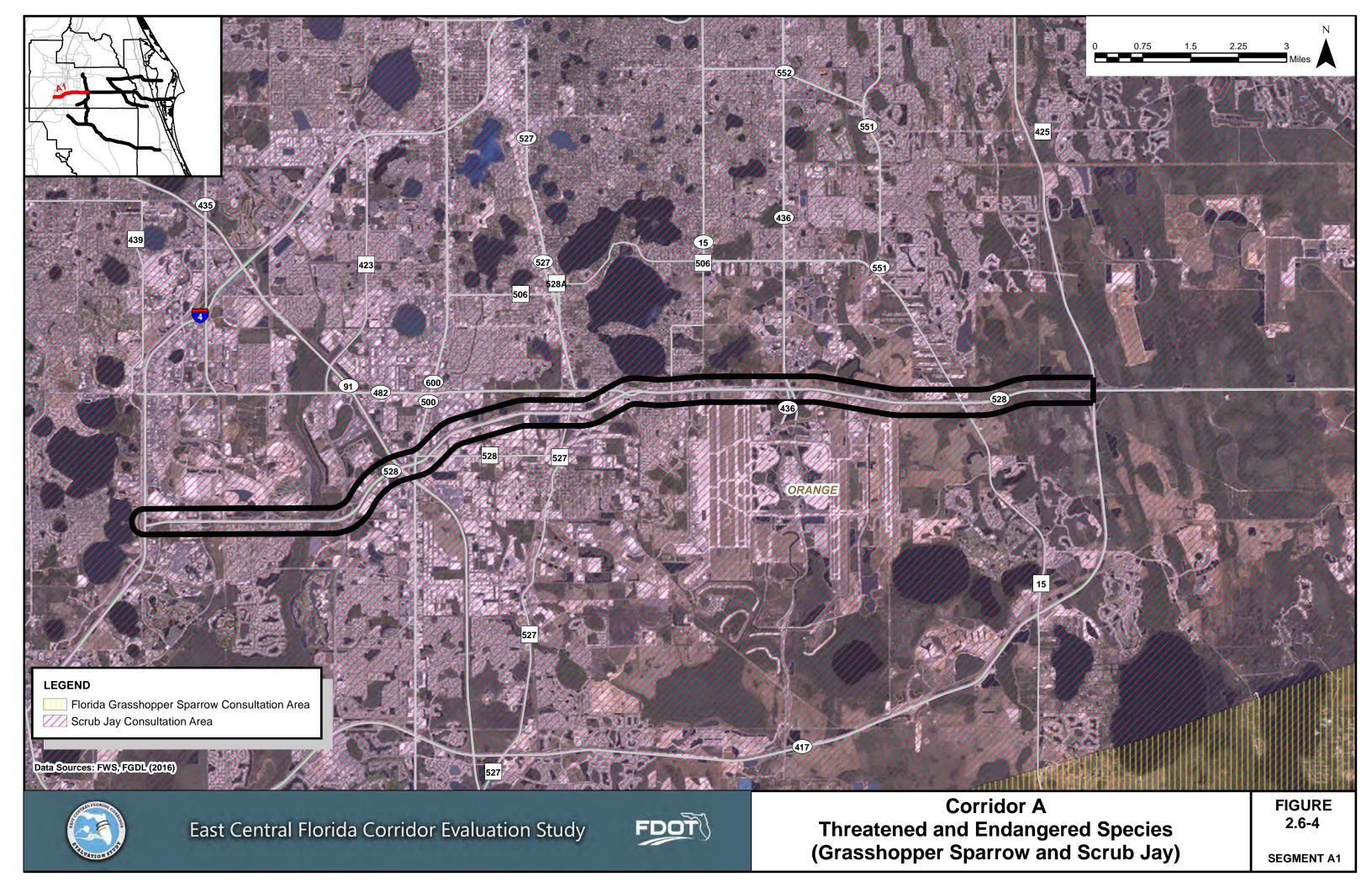


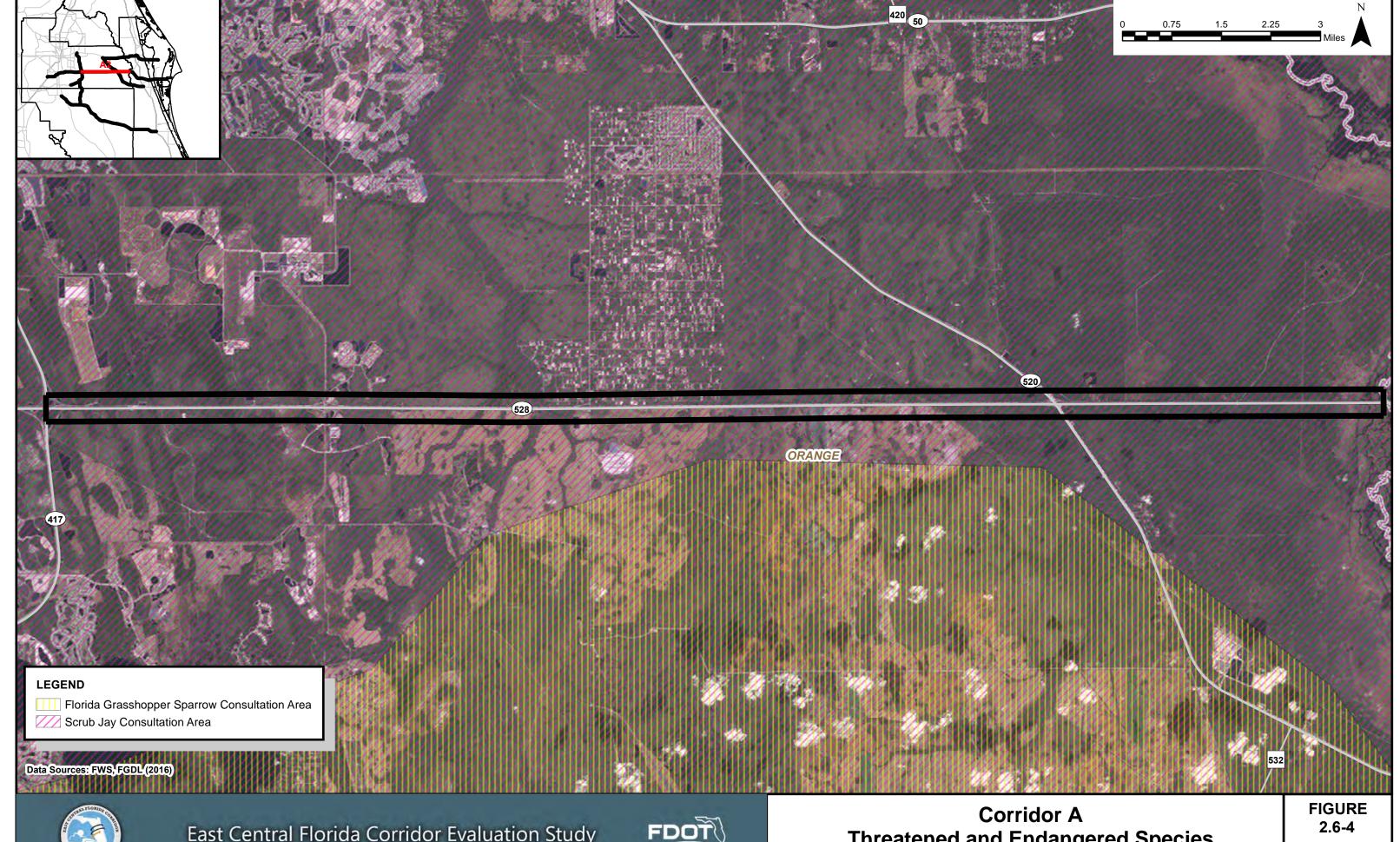






Threatened and Endangered Species (Sand Skink, Blue-Tailed Mole Skink and Black Bear)

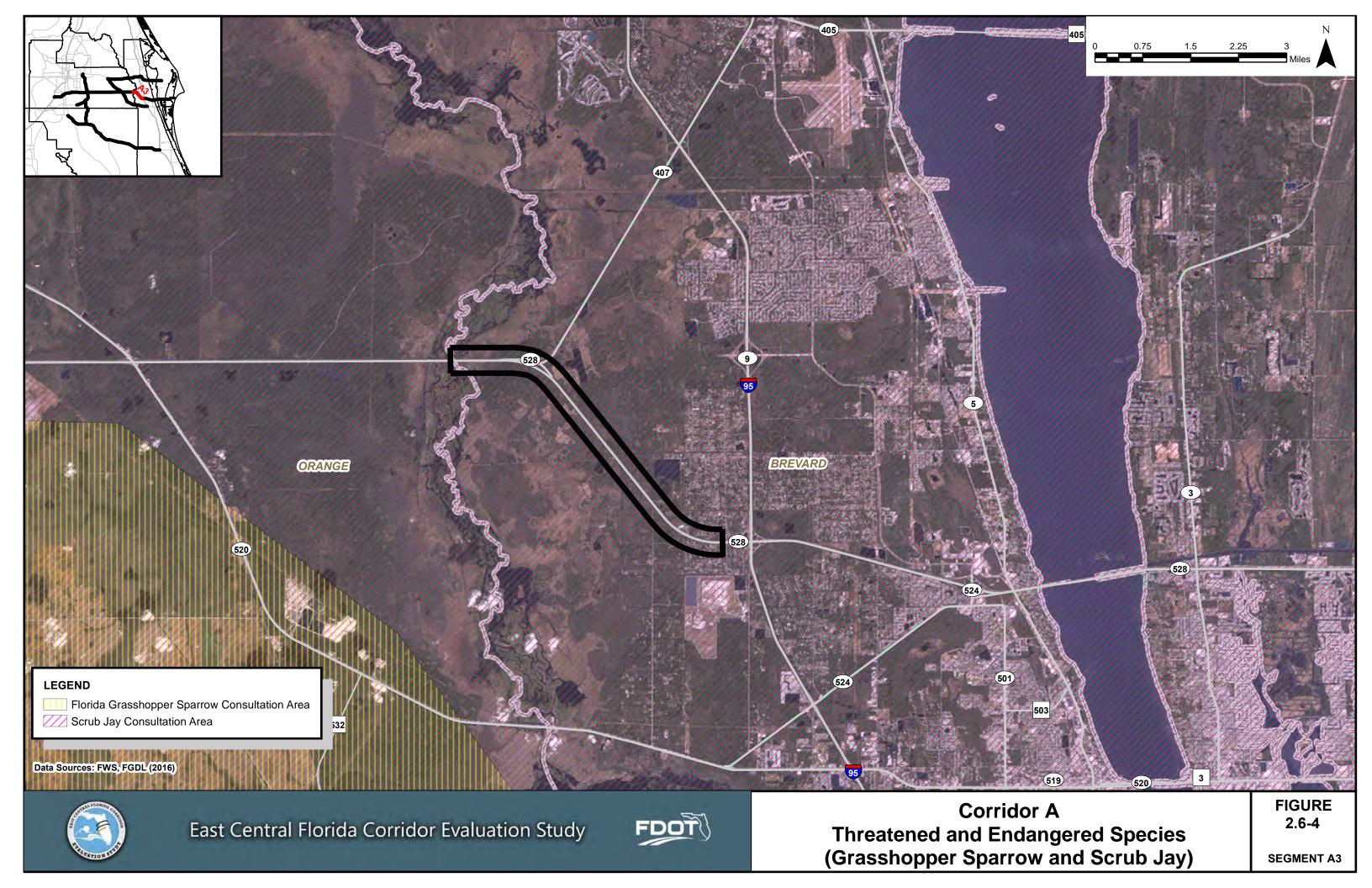


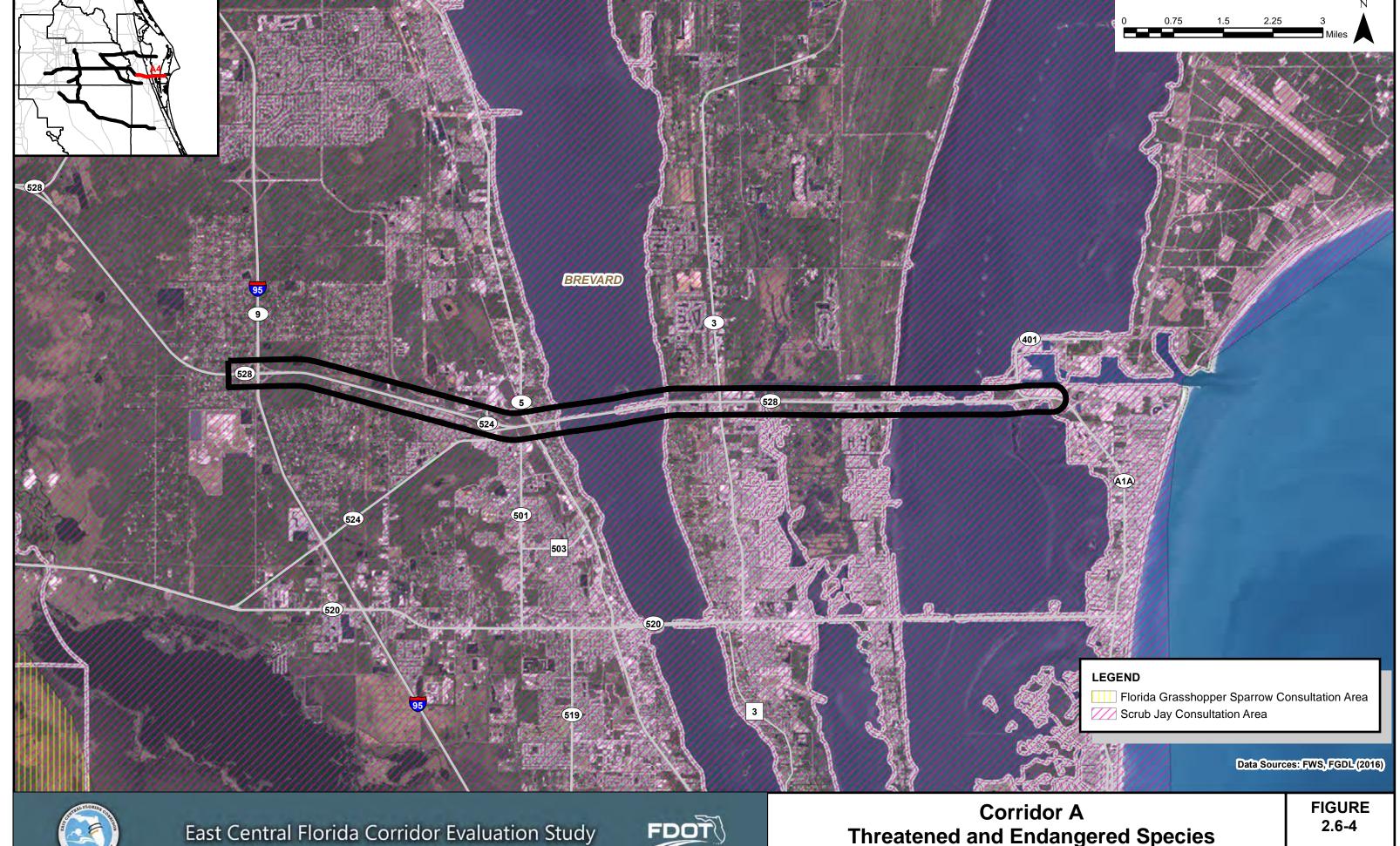


East Central Florida Corridor Evaluation Study



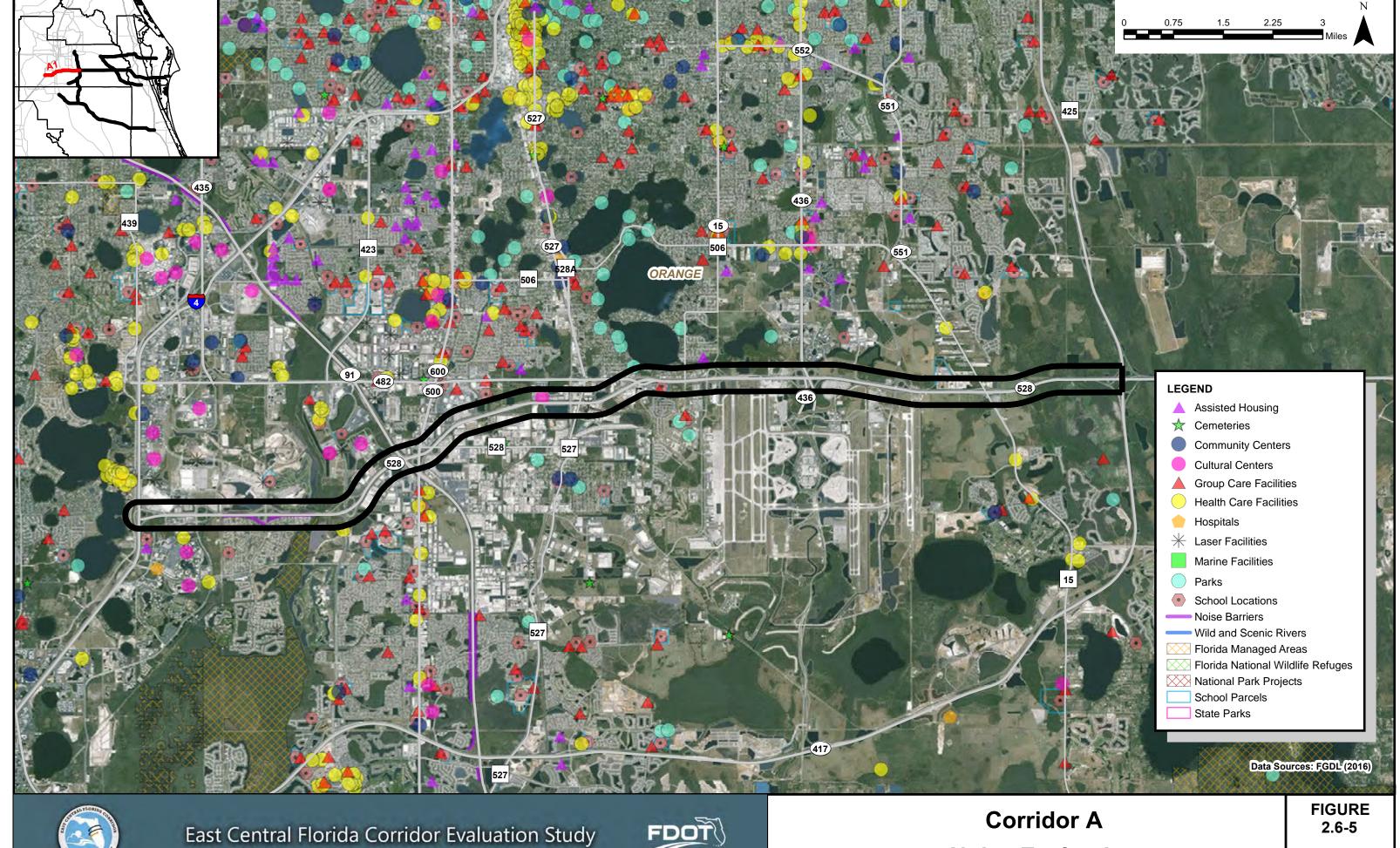
Threatened and Endangered Species (Grasshopper Sparrow and Scrub Jay)





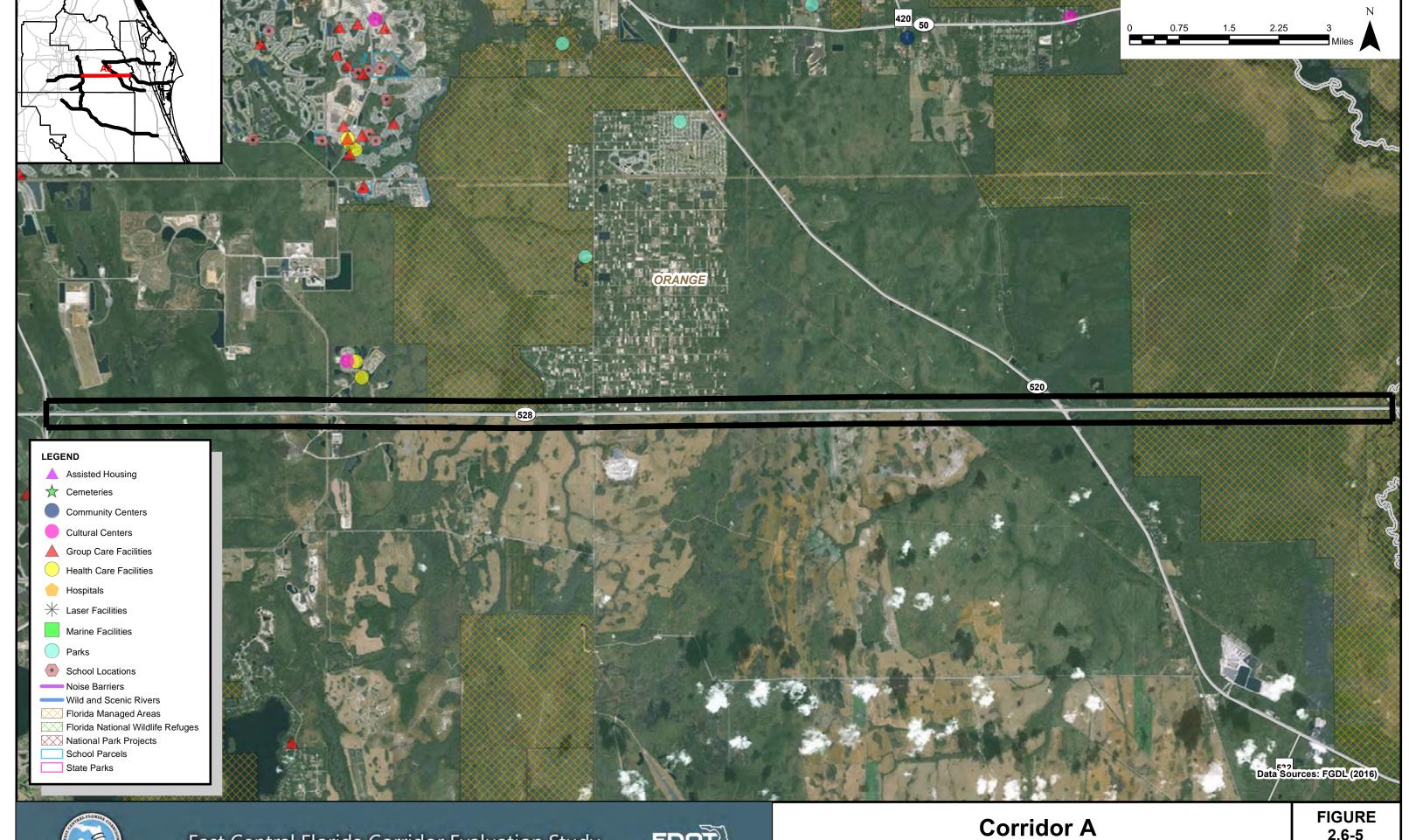










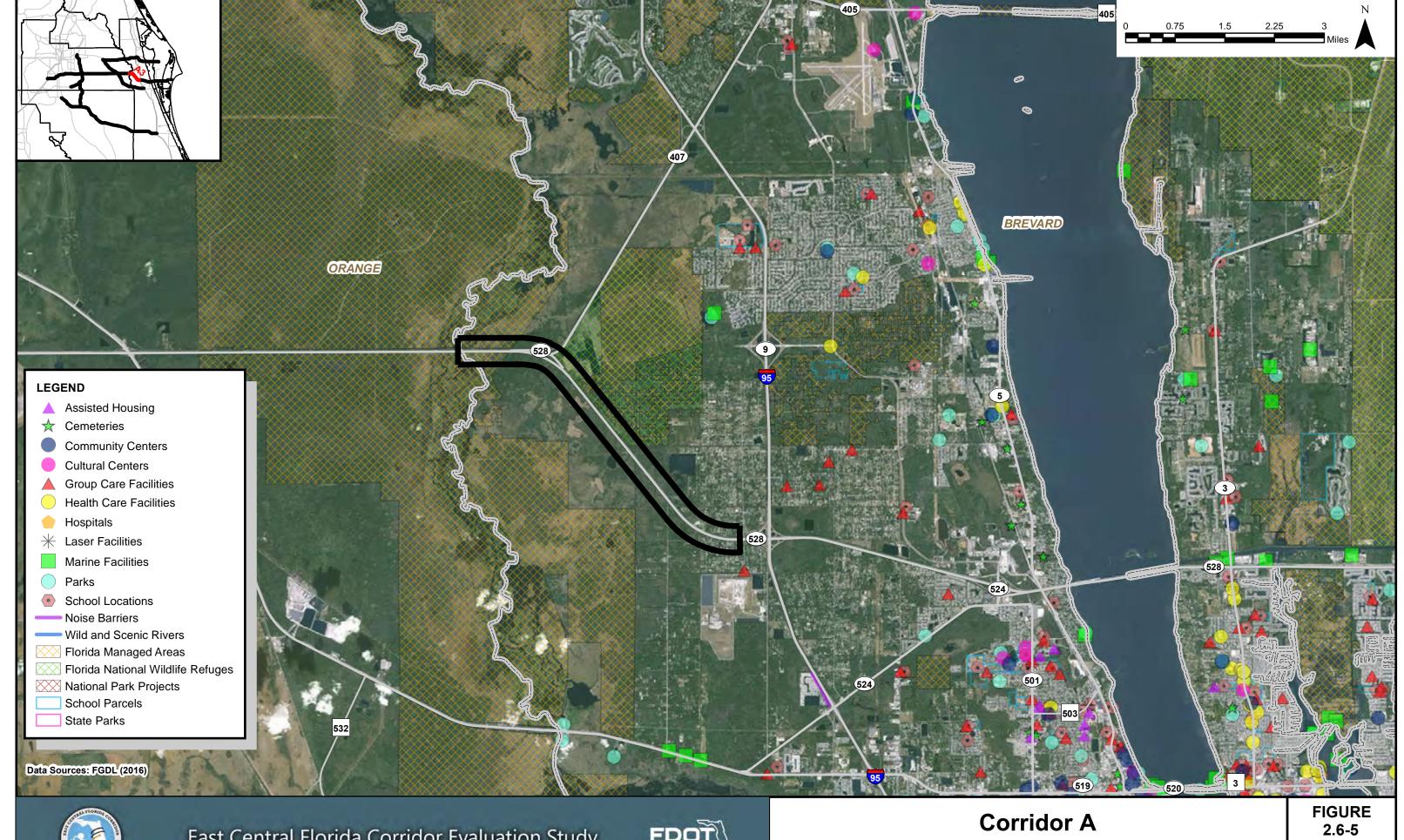






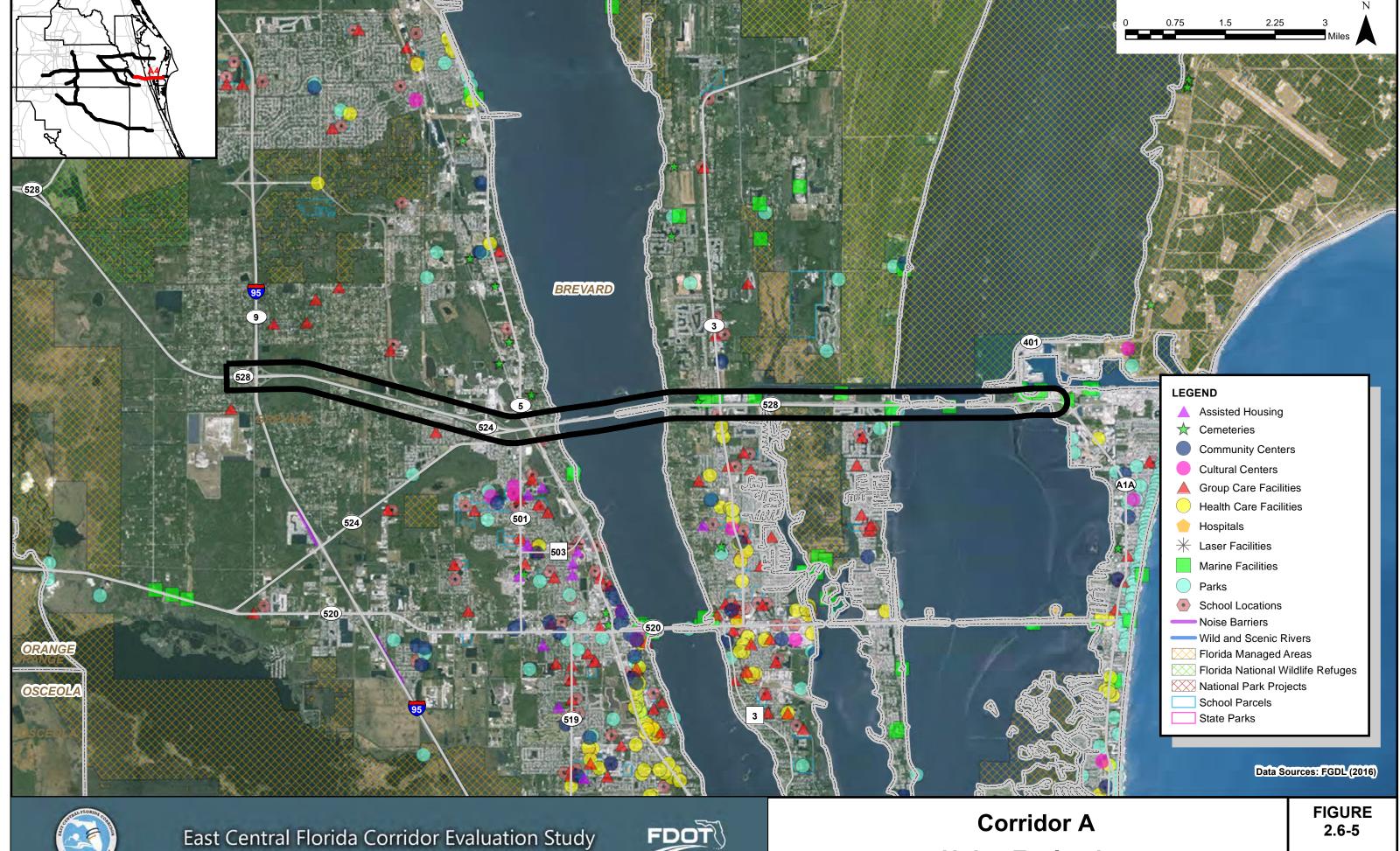
Noise Evaluation

2.6-5





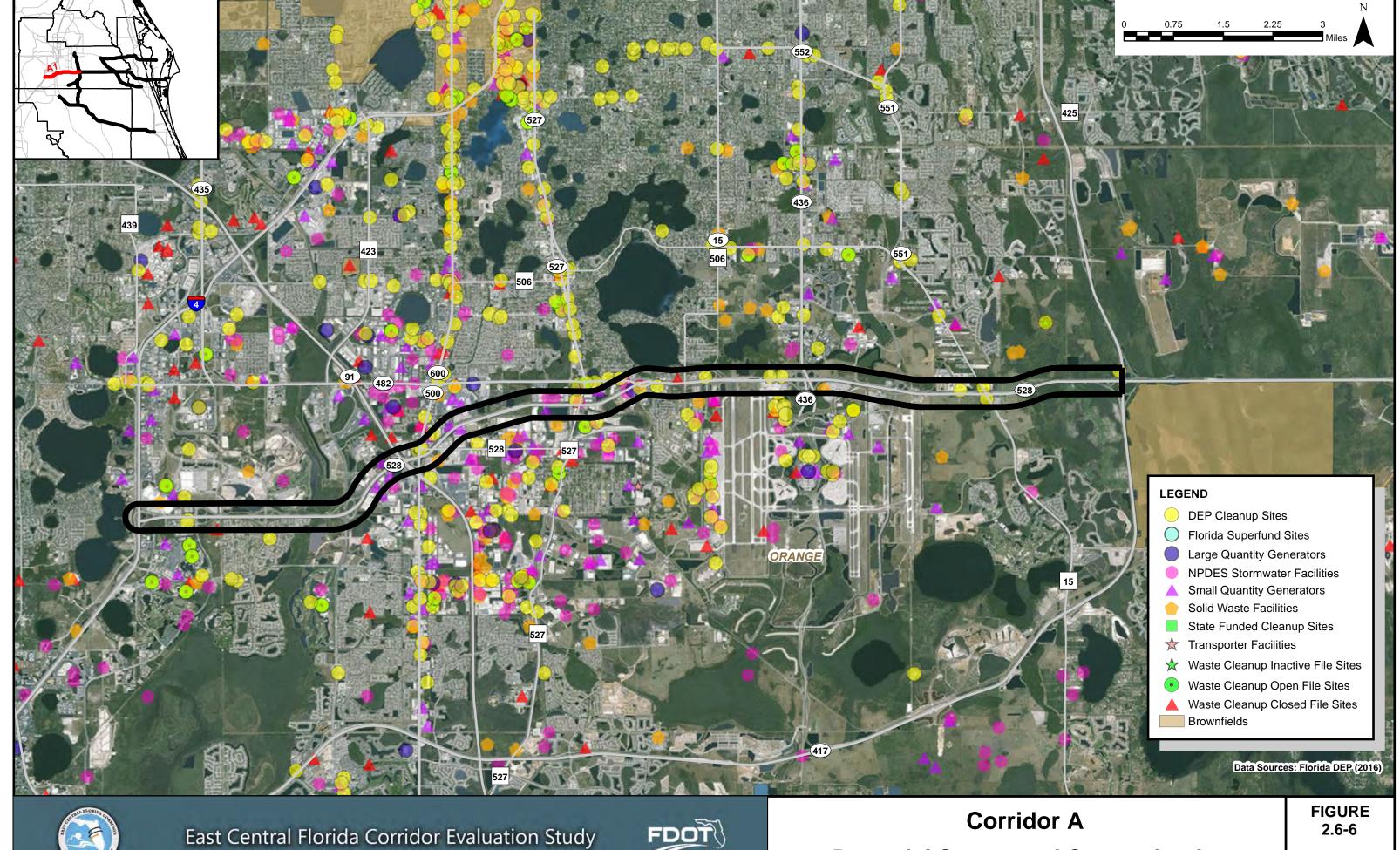






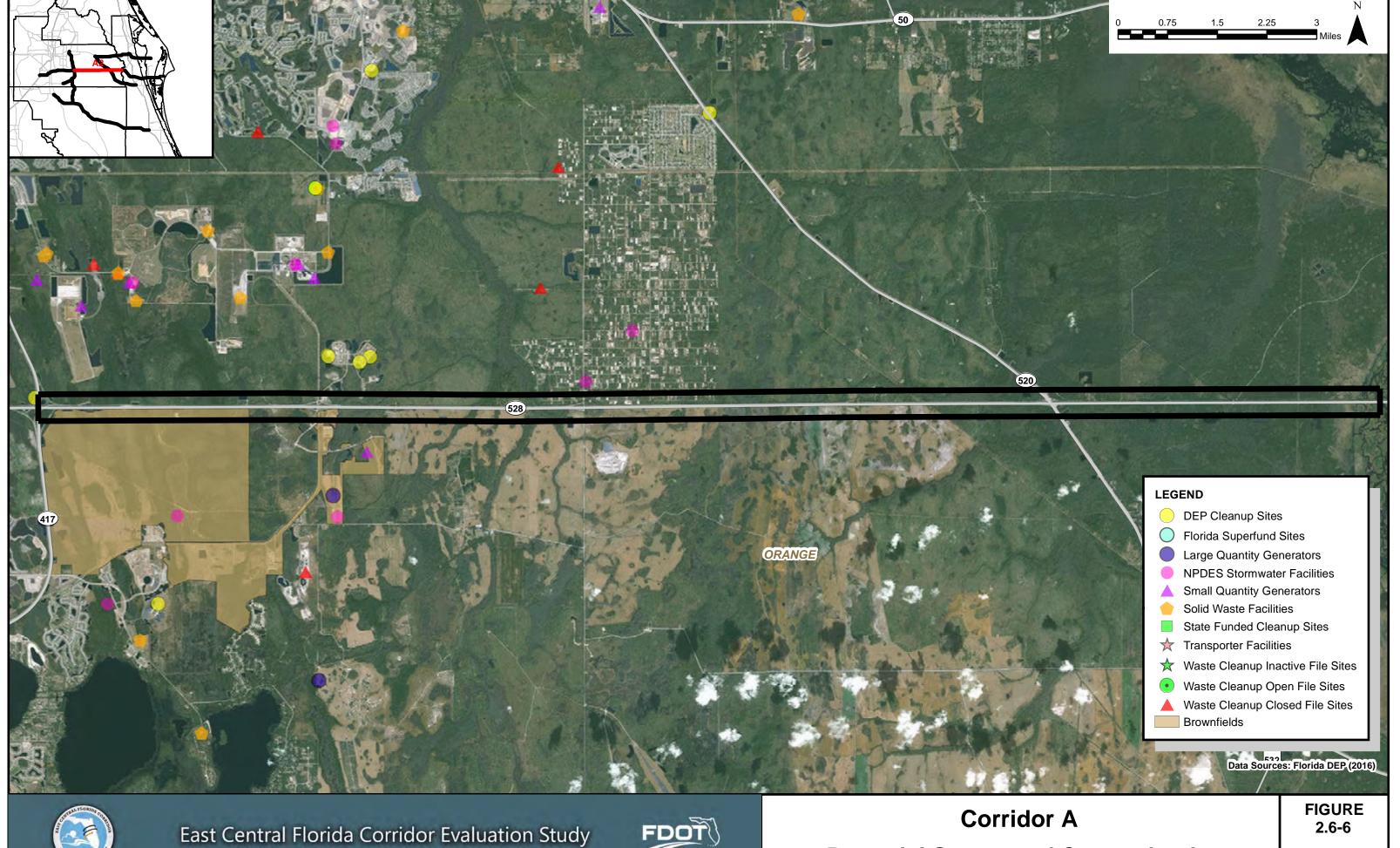
Noise Evaluation

2.6-5



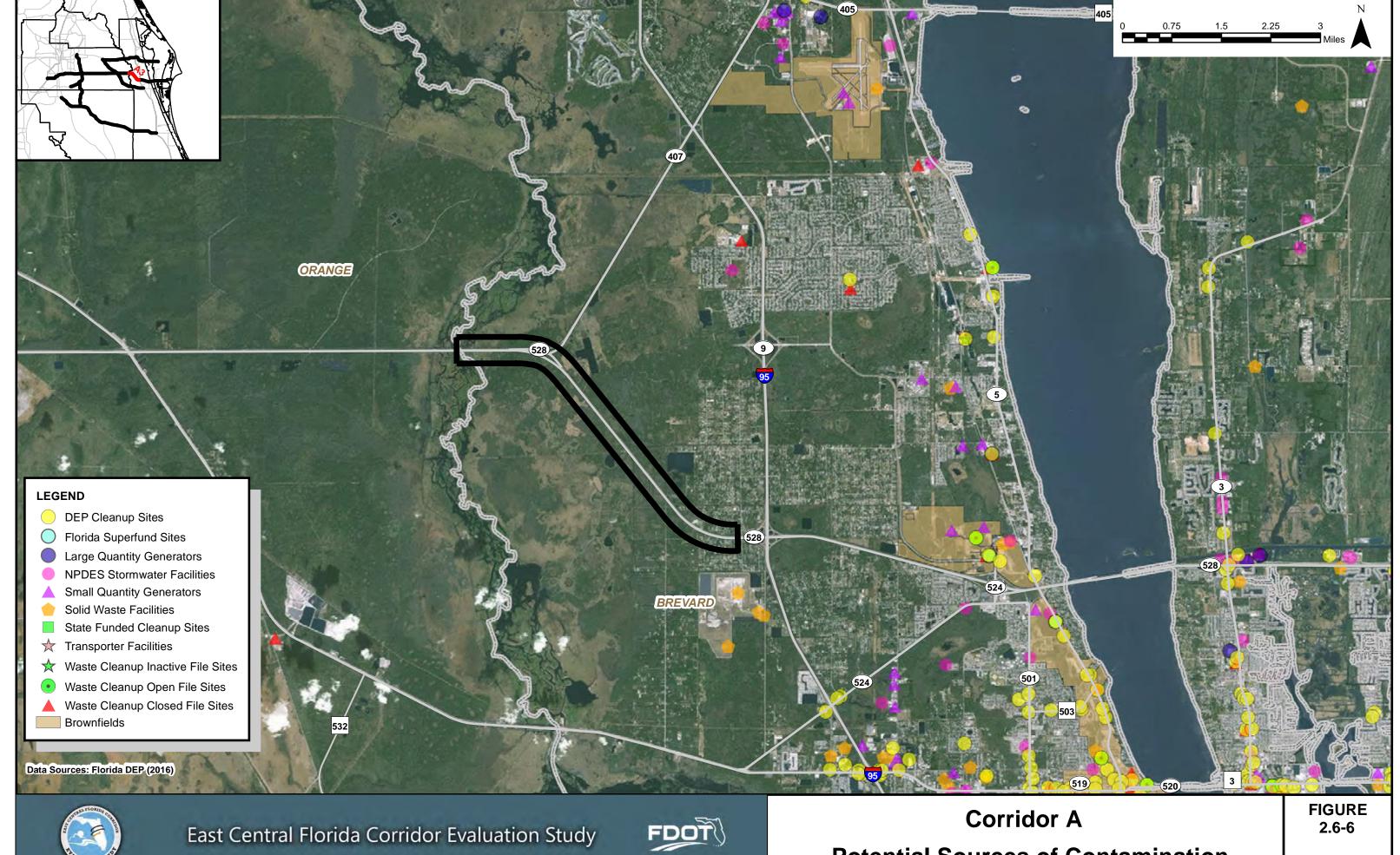








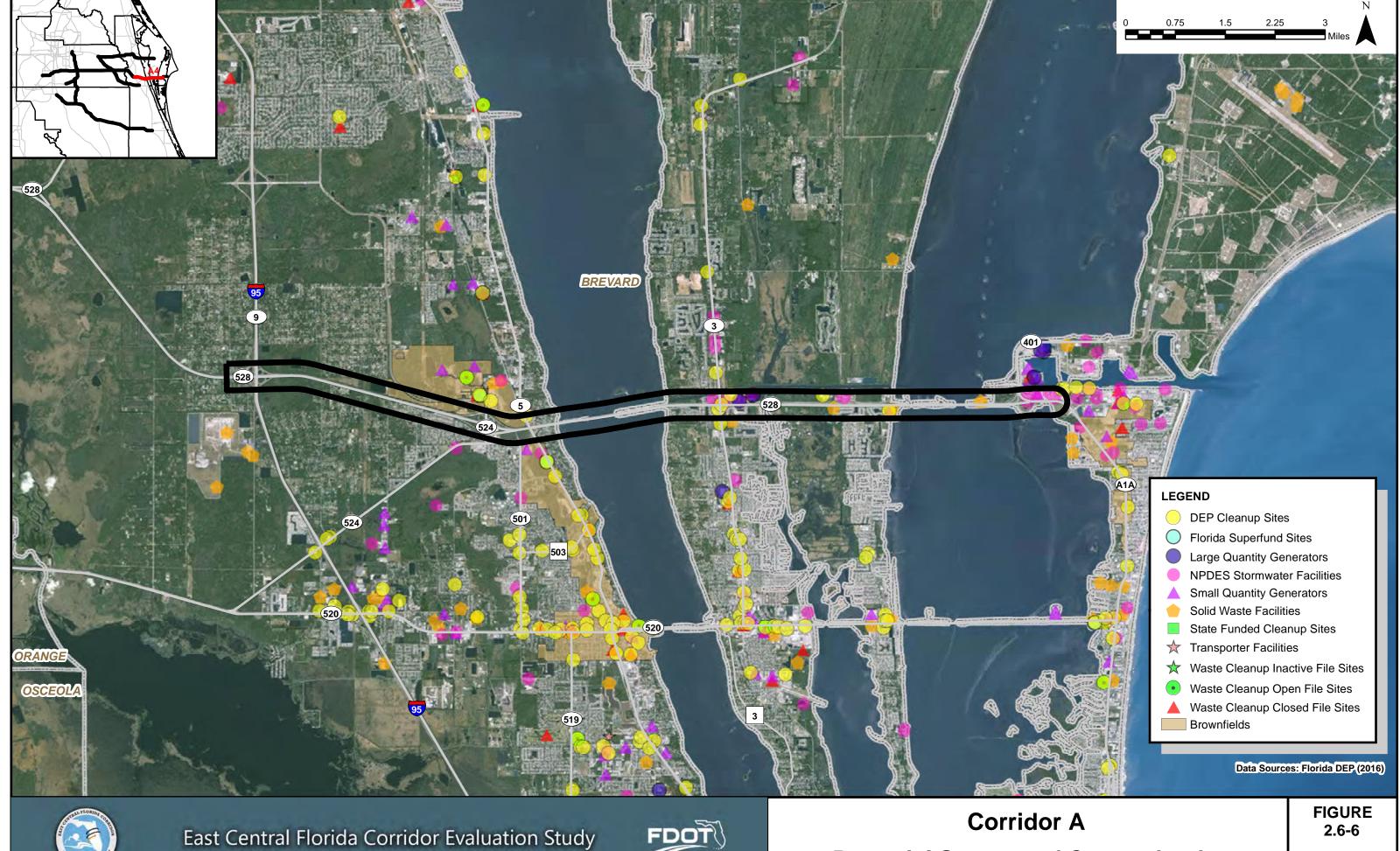








Potential Sources of Contamination







Potential Sources of Contamination

2.6-6

Corridor B: SR 50/SR 405

3.1 General Corridor Overview

Corridor B, SR 50/SR 405, is an east-west, multimodal state highway that serves commuter, tourist, commercial, and goods mobility (notably "space freight") travelling between Orlando and the Space Coast. This corridor serves all major targeted industries today and is designated as part of the Strategic Intermodal System (SIS) (from I-95 to the NASA Parkway bridge), and at the federal level as part of the National Highway System (NHS). Further, this corridor provides a major coastal evacuation route.

SR 50 connects downtown Orlando and the University of Central Florida to Titusville; SR 405 provides a connection from Titusville to Cape Canaveral. They primarily handle regional and local traffic. SR 408, the East-West Expressway, runs parallel to SR 50 from downtown Orlando to the University of Central Florida area and provides a limited-access tolled expressway as an alternative to SR 50 (Table 3.1-1 and Figure 3.1-1).

County. Corridor B runs from the SR 50/SR 520 interchange in Orange County to Space Commerce Way in Brevard County. Corridor B is divided into four segments: B1, B2, B3, and B4. Segment B1 forms the westernmost portion of the corridor in the "rural" area of Orange County from the SR 50/SR 520 interchange to the Orange/Brevard County line. Segment B2 constitutes the first strip of "rural" roadway in Brevard County from Orange/Brevard County line to I-95. Segment B3 constitutes the entirety of urban roadway in Brevard County along Corridor B, running from I-95 to the Indian River. Segment B4 constitutes the easternmost portion of the corridor from the Indian River across NASA Parkway to Space Commerce Way on Merritt Island near the Kennedy Space Center. The lengths of Corridor B segments are listed below in Table 3.1-1.

Table 3.1-1: Corridor B Segment Lengths

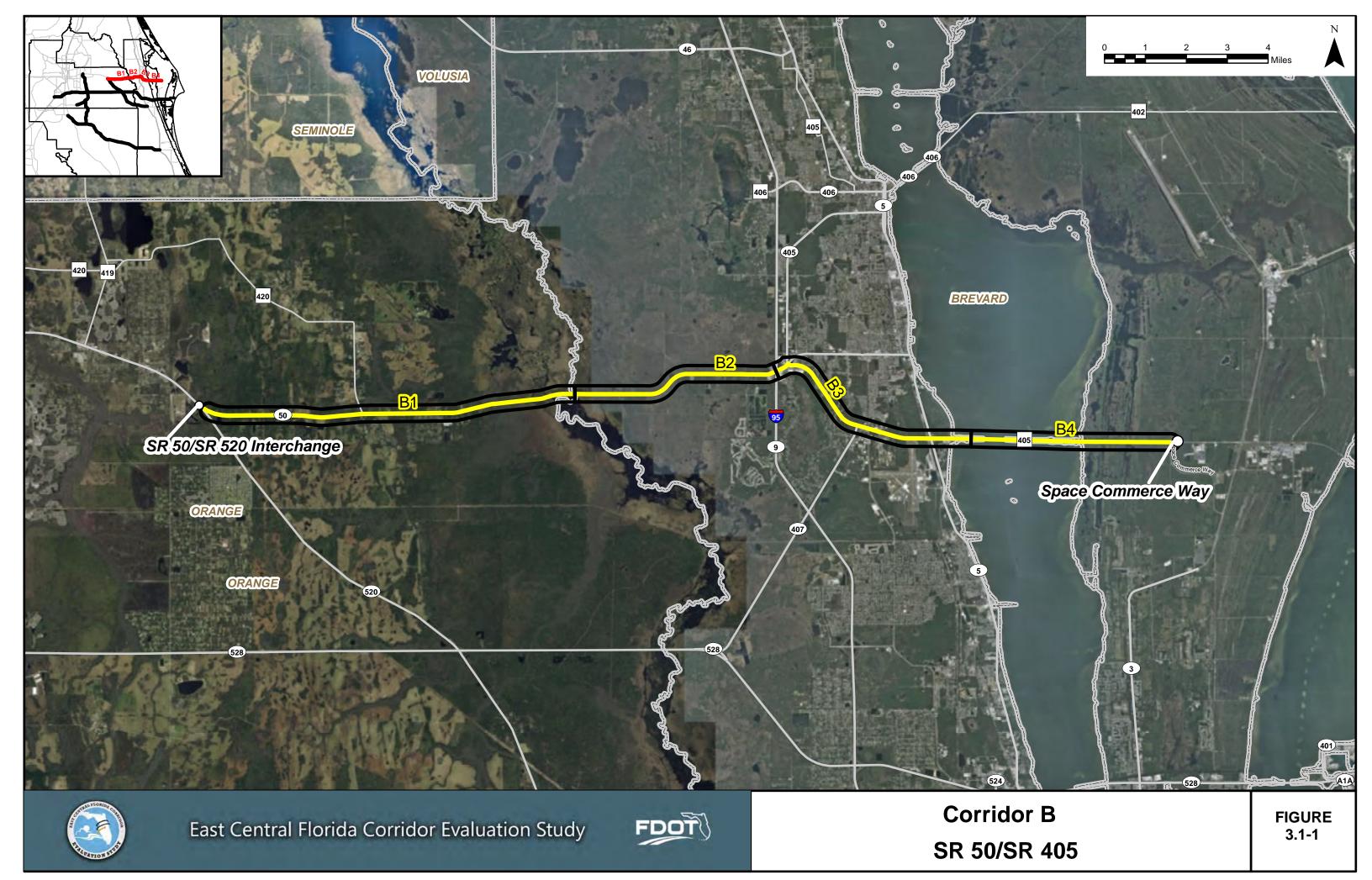
Segment	Length (miles)		
B1	9.0		
B2	4.9		
В3	5.6		
B4	5.1		
Corridor B	24.6		

Throughout the Existing Conditions Analysis, the Study Team met with the PAG and stakeholders as part of an extensive due diligence process to collect the appropriate available data and inventory physical characteristics of transportation facilities and the natural environment within the corridor. These discussions provided the Study Team with a greater understanding of the community characteristics to help identify potential issues and opportunities in the region, such as:

- SR 50/SR 405 serves space freight (periodically, over-dimensional loads), tourism (Kennedy Space Center, Exploration Park, and coastline), and a growing commuter population between Brevard and Orange counties. This is the only east-west corridor for several miles.
- The Space Coast Transportation Planning Organization (SCTPO) identified SR 50/SR 405 as a major corridor for connecting Brevard County residents to the UCF/Medical City area.
- Brevard County includes a bicycle/pedestrian design in the future concept for the SR 405 bridge.
- With Orlando International Airport's plans to expand, fuel demand will increase. Opportunities for
 utilities must also be examined as future improvements will need to preserve an envelope for fuel
 transmission.
- The Kennedy Space Center (KSC) Bridge (SR 405) is a critical corridor/bridge serving KSC payloads. An environmental study for the replacement of the bridge is underway.
- Drawbridges need to be updated/improved as they are the only evacuation routes for residents and visitors of the island.
- A long-term solution could involve a multimodal corridor from the University of Central Florida area to I-95 or Cape Canaveral through further extension of SR 408, major improvements to SR 50 and SR 405, and/or extension of the planned high-capacity transit services.
- Preservation of regionally significant land and water resources in established rural communities must be prioritized.







3.2 Community Characteristics

3.2.1 Demographics

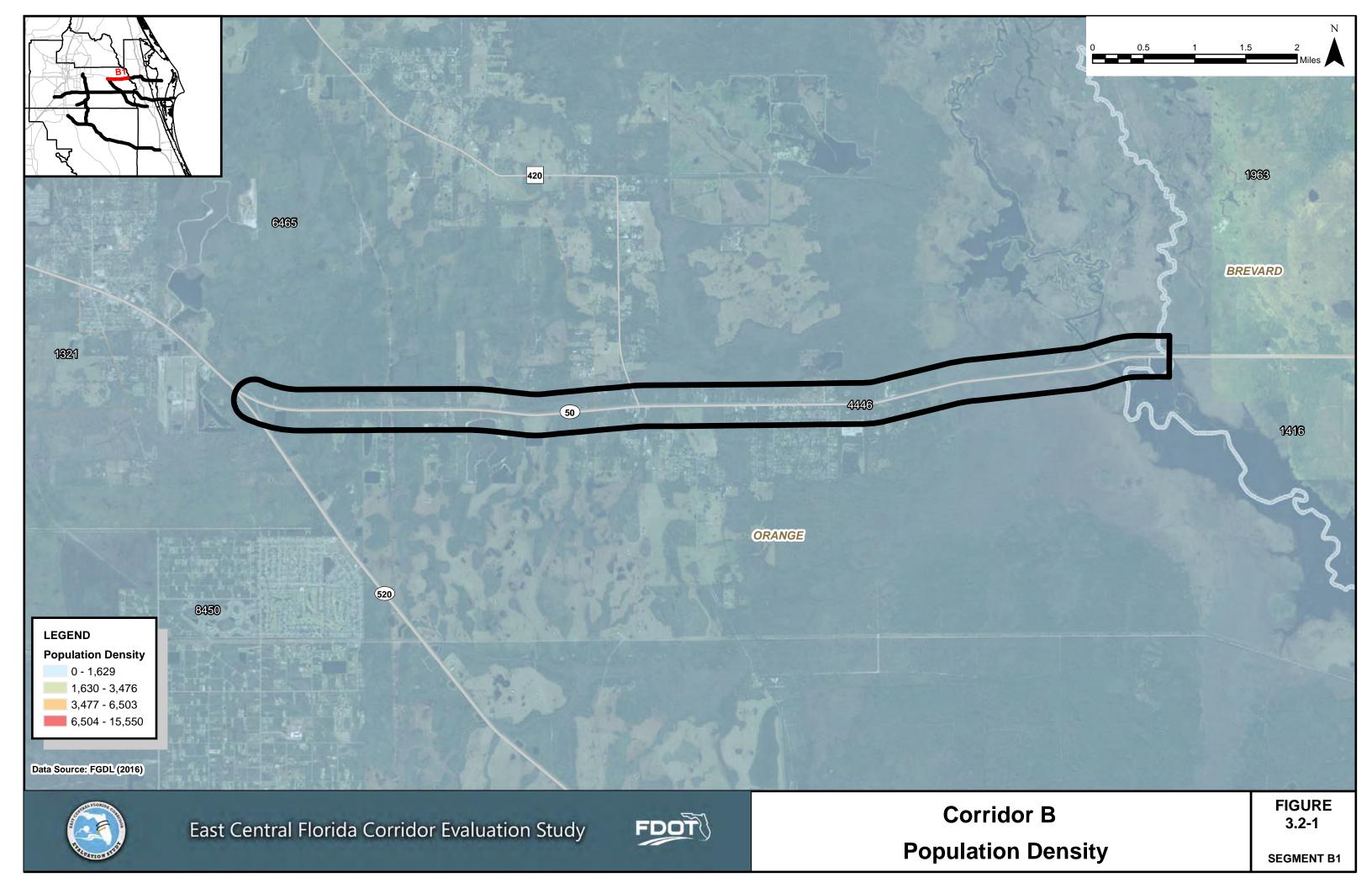
The total population for all Census Block Groups in the Corridor B is 38,802. Population density for Segment B3 was generally above the Florida average of 346.16 people per square mile. The poverty rates for Corridor B block groups ranged between 0.8% and 17.2%. Each segment includes at least one block group with a poverty rate higher than the statewide average of 11.97%. However, the majority of B1 block groups have poverty rates above the statewide average. The percent of population identifying as minority for block groups in Corridor B range from 2.0% to 50.3%. Percent of the population with LEP in block groups for Corridor B range from 0.0% to 4.5%. No census block groups have LEP population percentages above the statewide average. Demographics data can be found in Table 3.2-1 below and Figure 3.2-1, Figure 3.2-2, Figure 3.2-3 and Figure 3.2-4.

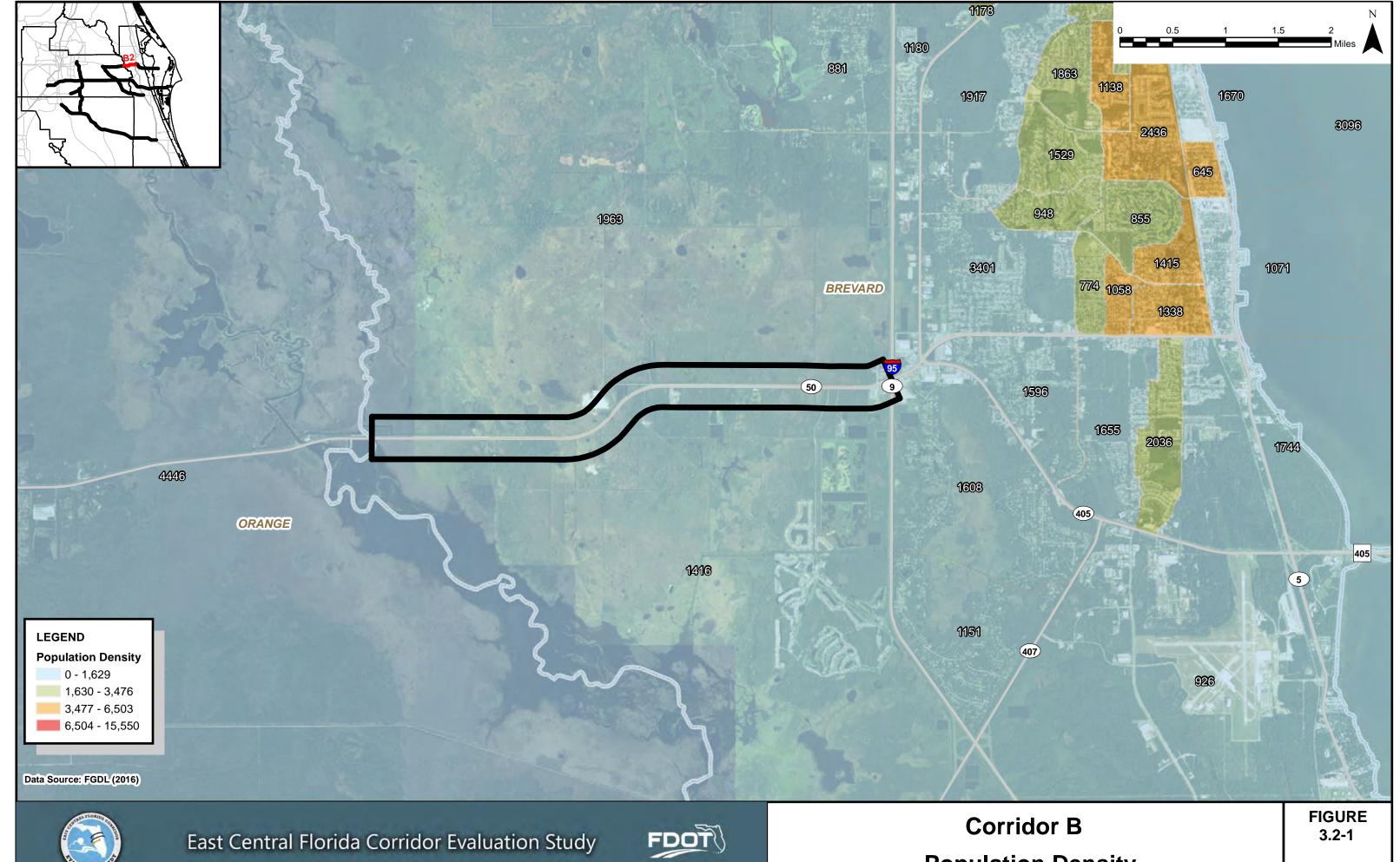
Table 3.2-1: Corridor B Demographics

	Block Group	Population			Modian	Percent	Median	Percent	No	LEP	
Segment		Total	Density	Minority	5-17 & 65 and Over	Age	Poverty	HH Income	Disabled		
B1	12-009-0711001	1,963	23.48	144	715	50	17.2%	\$ 66,188	16.7%	2.8%	0.5%
	12-095-0166012	4,446	46.21	1,311	1,201	42	16.5%	\$ 59,239	6.8%	2.9%	4.5%
	12-095-0166011	6,465	371.55	2,717	1,780	33	14.8%	\$ 54,220	6.4%	2.2%	2.0%
	12-095-0166022	8,450	269.8	4,252	2,253	35	12.7%	\$ 71,404	7.7%	3.3%	2.3%
	Total	21,324	113.95	8,424	5,949	34.2	14.5%	\$ 63,318	7.8%	2.8%	2.5%
	12-009-0612021	1,608	578.42	387	422	44	3.7%	\$ 65,461	8.6%	1.6%	0.0%
	12-009-0711002	1,416	75.44	28	989	70	8.8%	\$ 55,083	13.1%	3.5%	0.0%
B2	12-009-0711001	1,963	23.48	144	715	50	17.2%	\$ 66,188	16.7%	2.8%	0.5%
	12-095-0166012	4,446	46.21	1,311	1,201	42	16.5%	\$ 59,239	6.8%	2.9%	4.5%
	Total	9,433	51.33	1,870	3,327	48.2	13.3%	\$ 61,038	9.7%	2.8%	2.2%
	12-009-0612013	2,036	3,283.87	216	566	40	13.0%	\$ 39,104	10.4%	0.0%	1.9%
	12-009-0612021	1,608	578.42	387	422	44	3.7%	\$ 65,461	8.6%	1.6%	0.0%
	12-009-0612011	1,596	1,437.84	222	491	47	6.6%	\$ 52,480	18.0%	1.9%	1.1%
	12-009-0711002	1,416	75.44	28	989	70	8.8%	\$ 55,083	13.1%	3.5%	0.0%
В3	12-009-0612014	1,744	350.91	862	661	34	0.8%	\$ 42,038	8.3%	4.7%	0.0%
	12-009-0611001	3,401	1,376.92	747	1,192	47	7.8%	\$ 61,250	8.2%	1.6%	0.5%
	12-009-0612023	926	77.75	169	295	53	13.1%	\$ 56,578	19.0%	2.7%	0.0%
	12-009-0711001	1,963	23.48	144	715	50	17.2%	\$ 66,188	16.7%	2.8%	0.5%
	12-009-0612012	1,655	1,439.13	275	714	54	1.8%	\$ 42,000	7.0%	0.0%	1.7%
	Total	16,345	756.66	3,050	6,045	47.8	8.1%	\$ 53,771	11.5%	2.0%	0.7%
B4	12-009-0612014	1,744	350.91	862	661	34	0.8%	\$ 42,038	8.3%	4.7%	0.0%
	12-009-0612023	926	77.75	169	295	53	13.1%	\$ 56,578	19.0%	2.7%	0.0%
	12-009-0699013	3,096	15.95	277	1,370	58	5.8%	\$ 63,365	7.0%	11.1%	3.0%
	Total	5,766	43.98	1,308	2,326	49.9	5.5%	\$ 56,131	9.6%	7.8%	1.6%







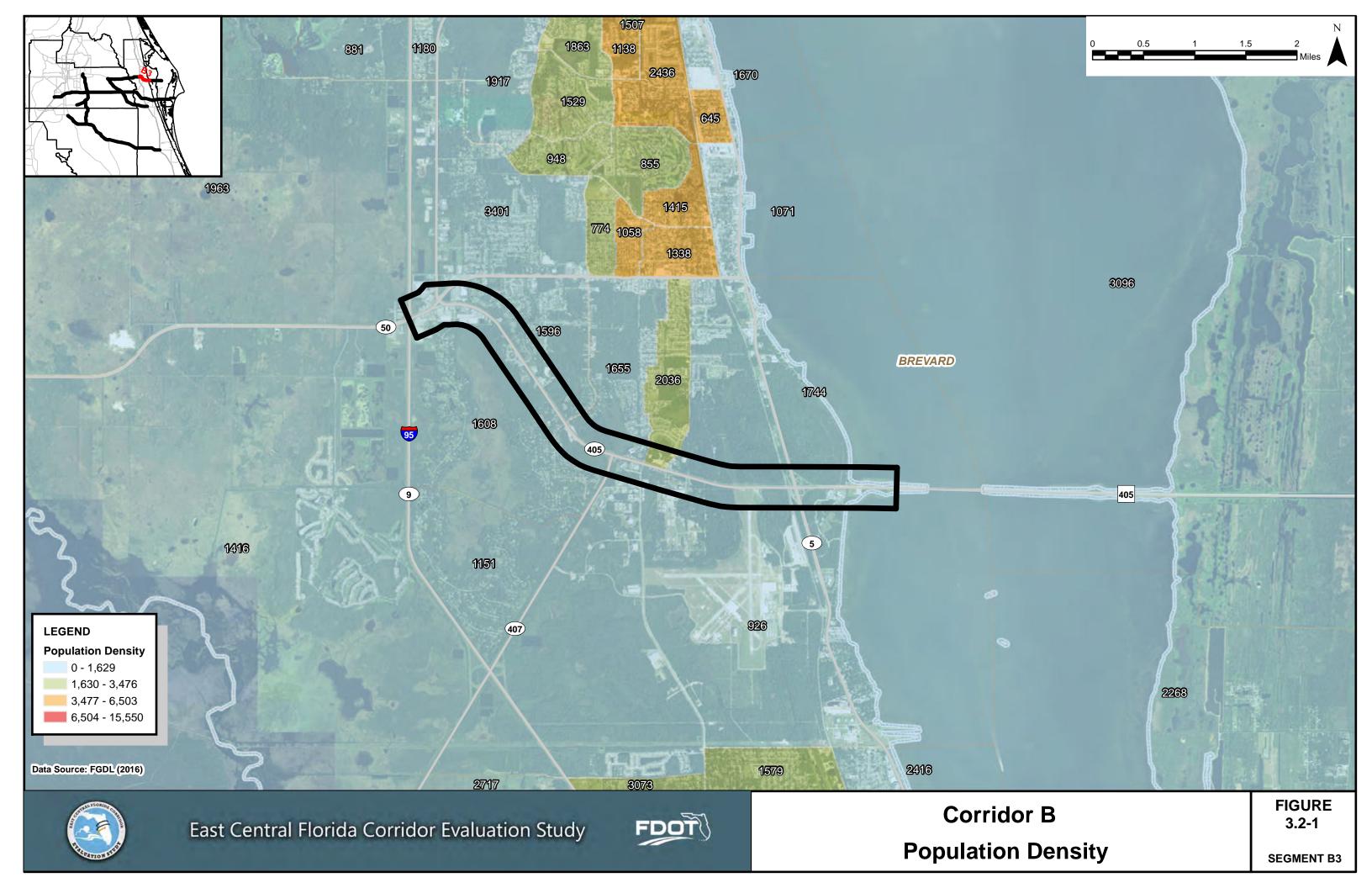


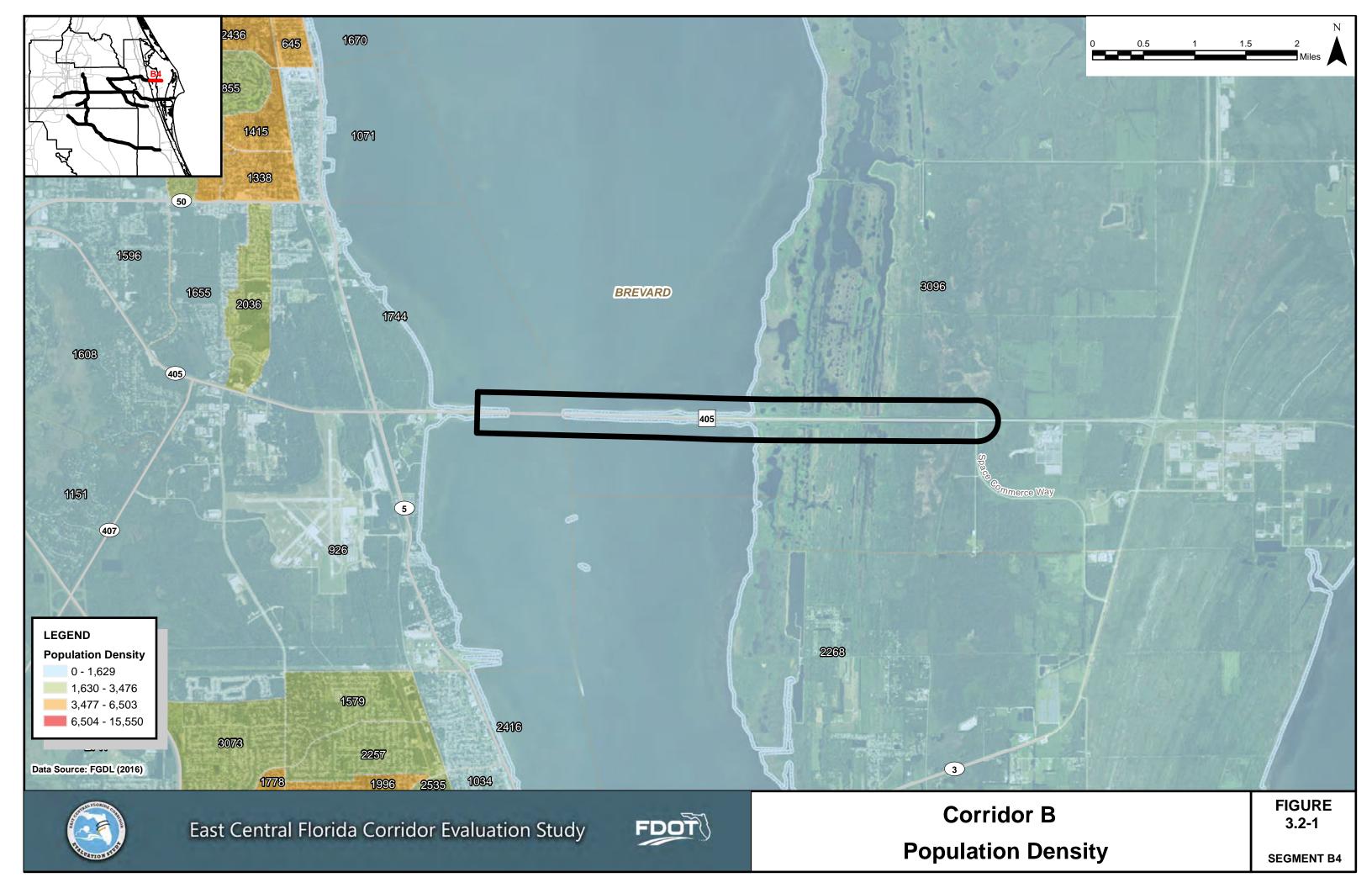


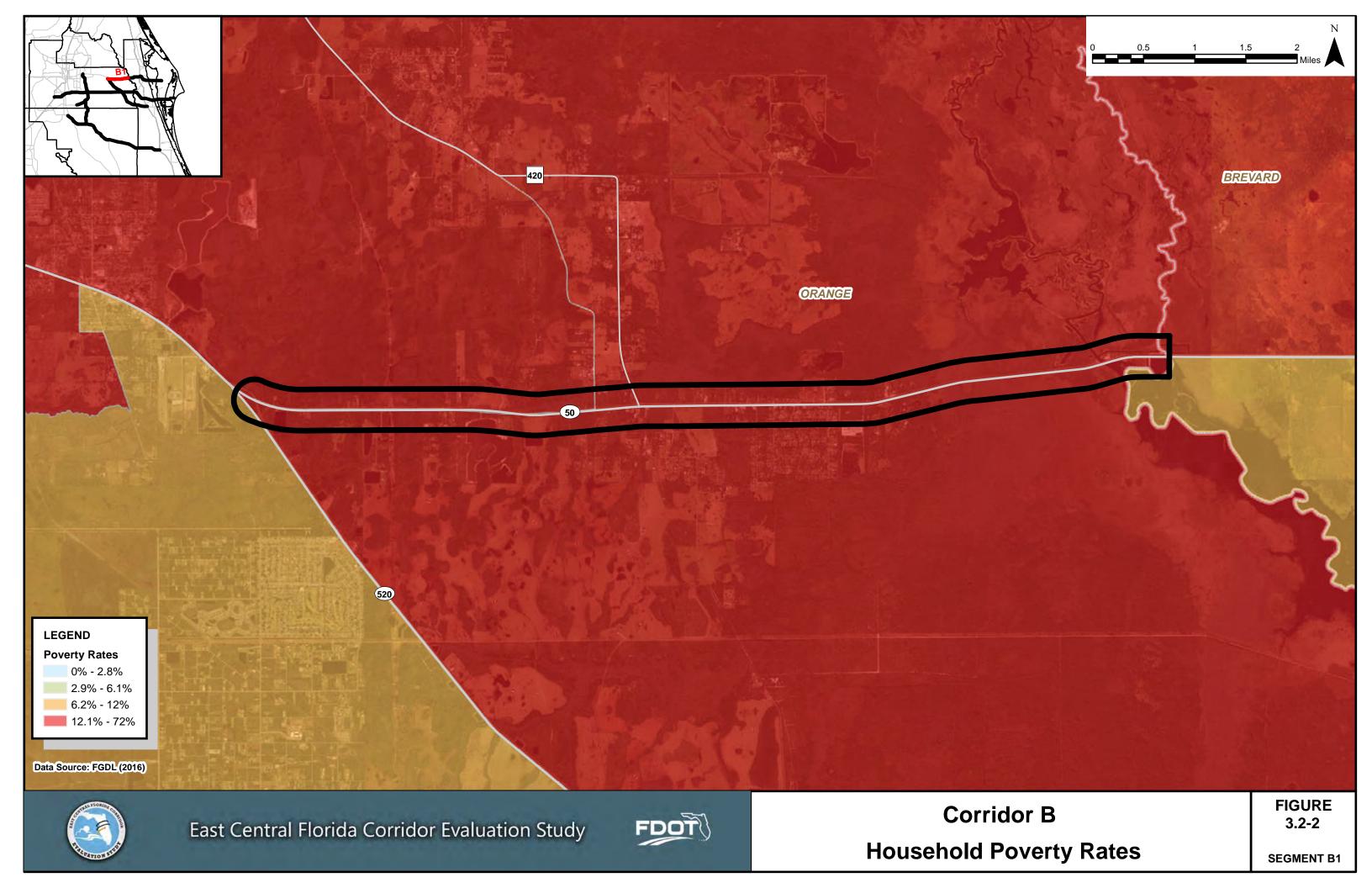


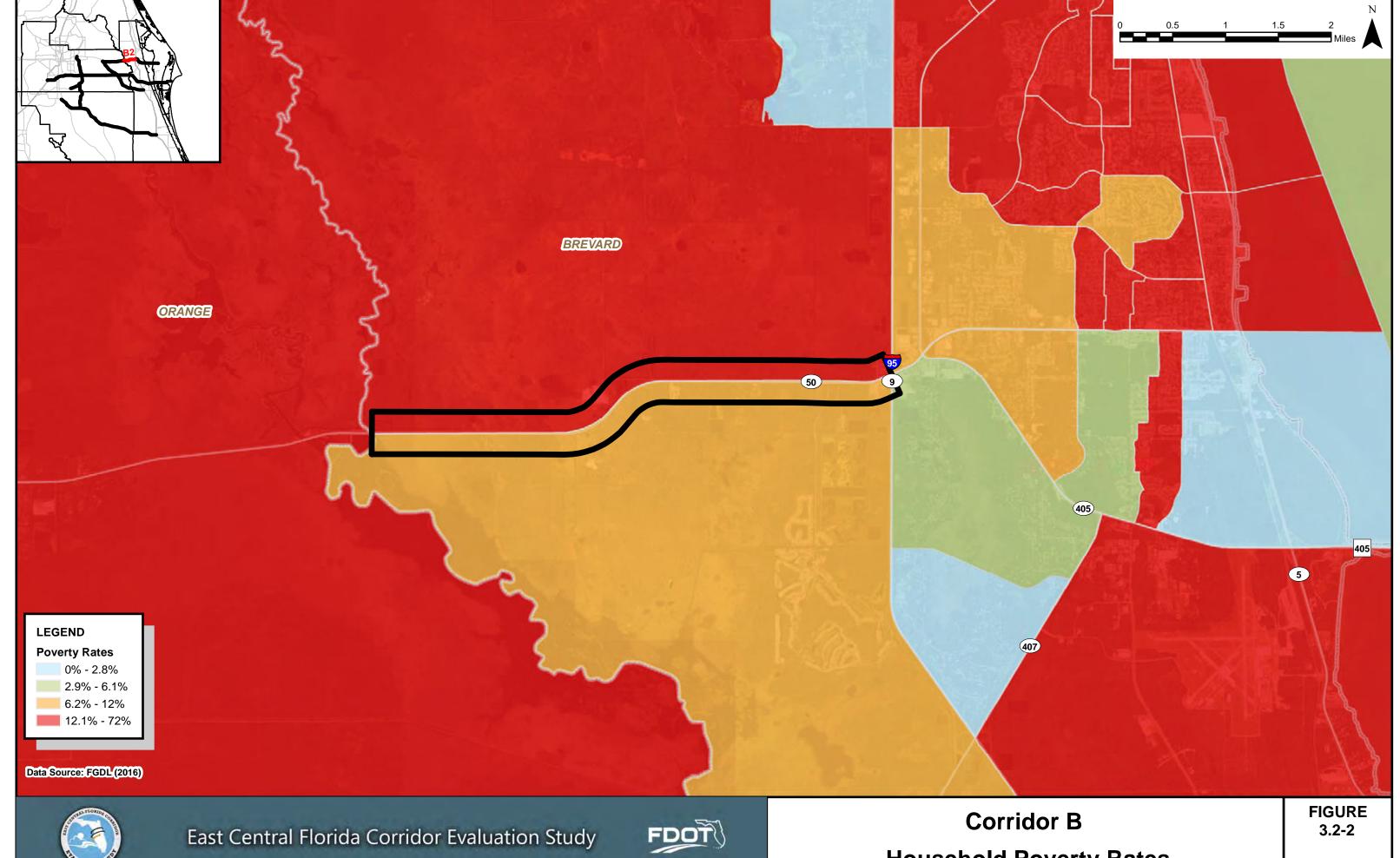
Population Density

SEGMENT B2







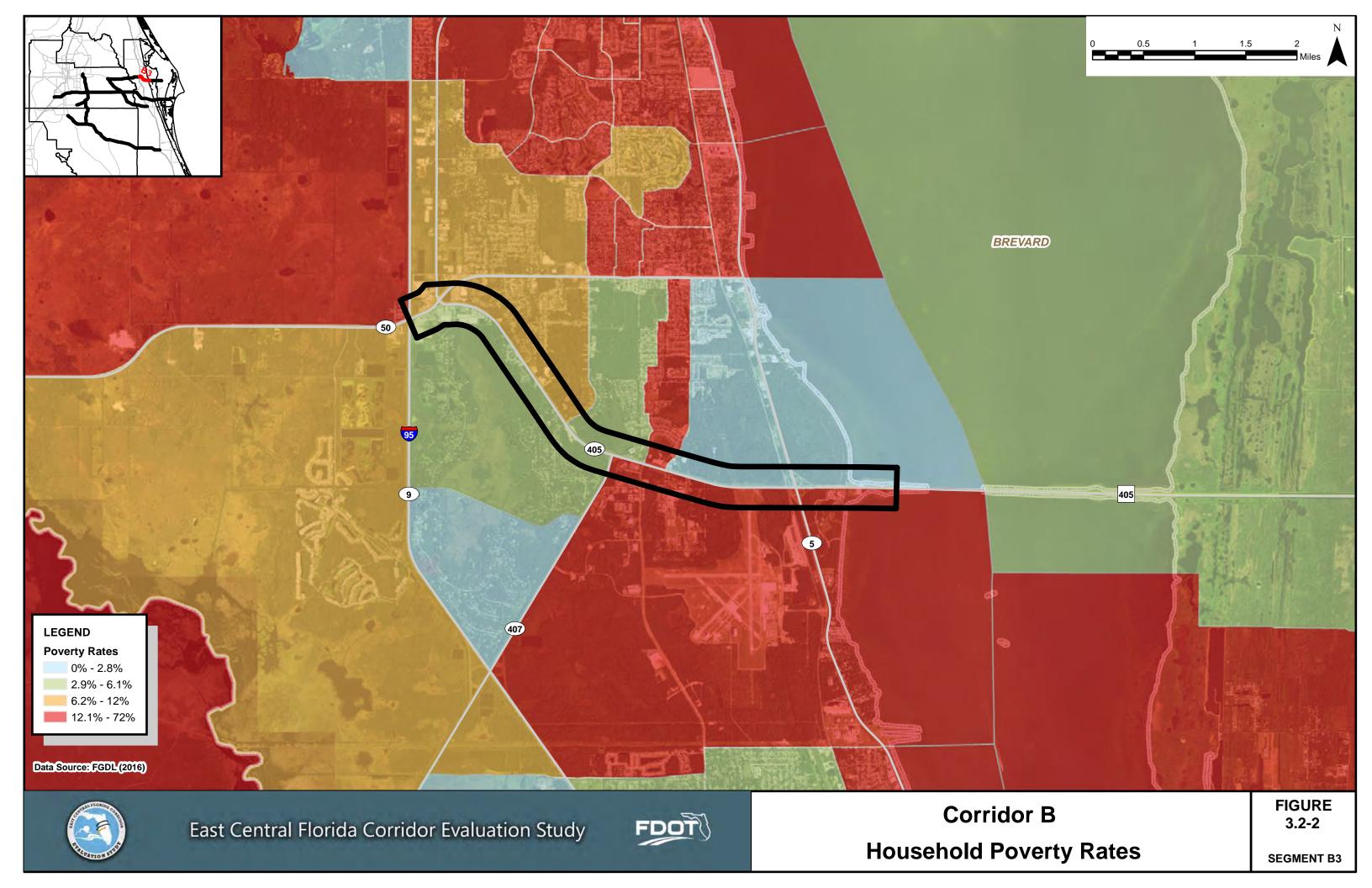


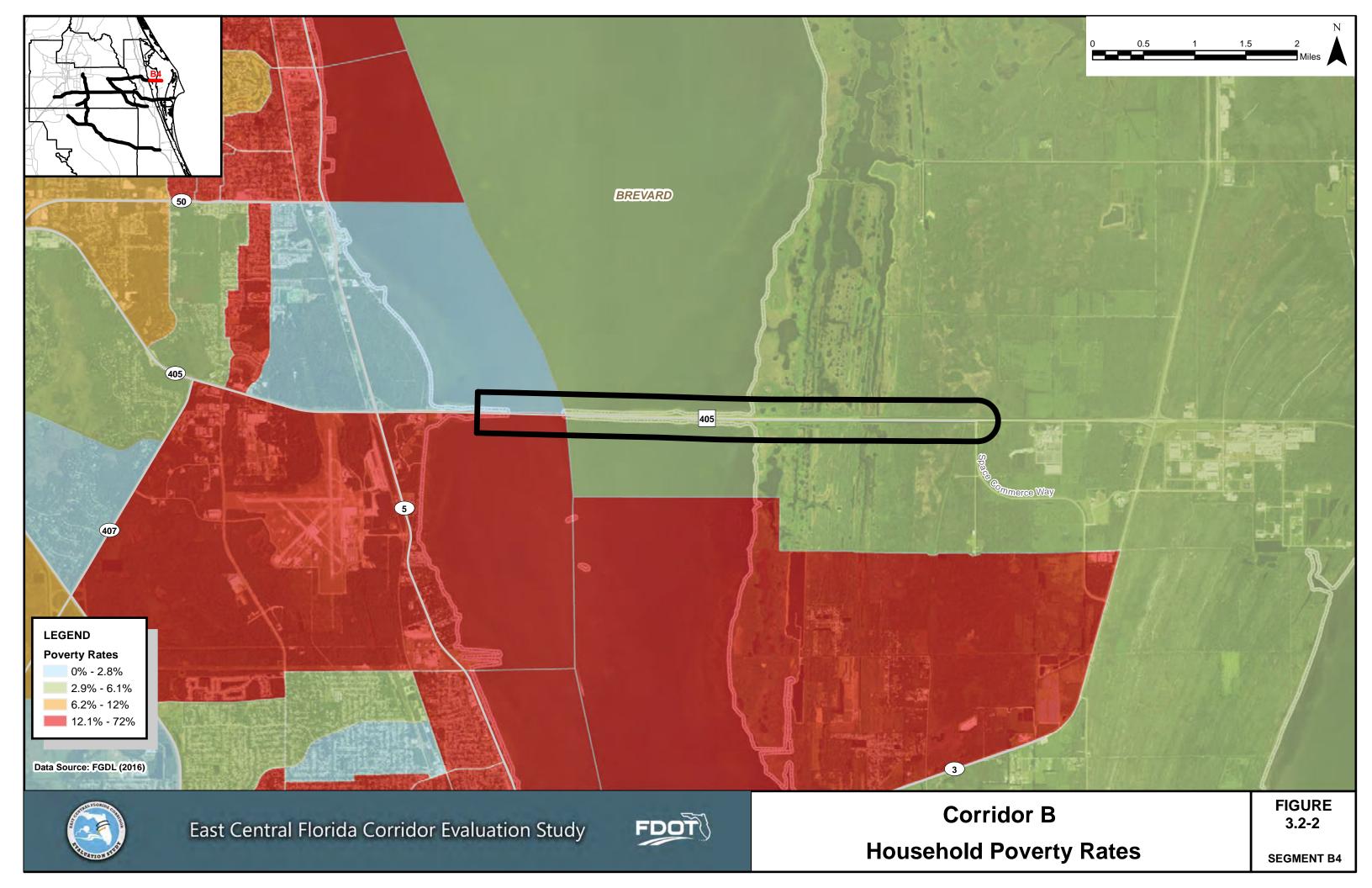


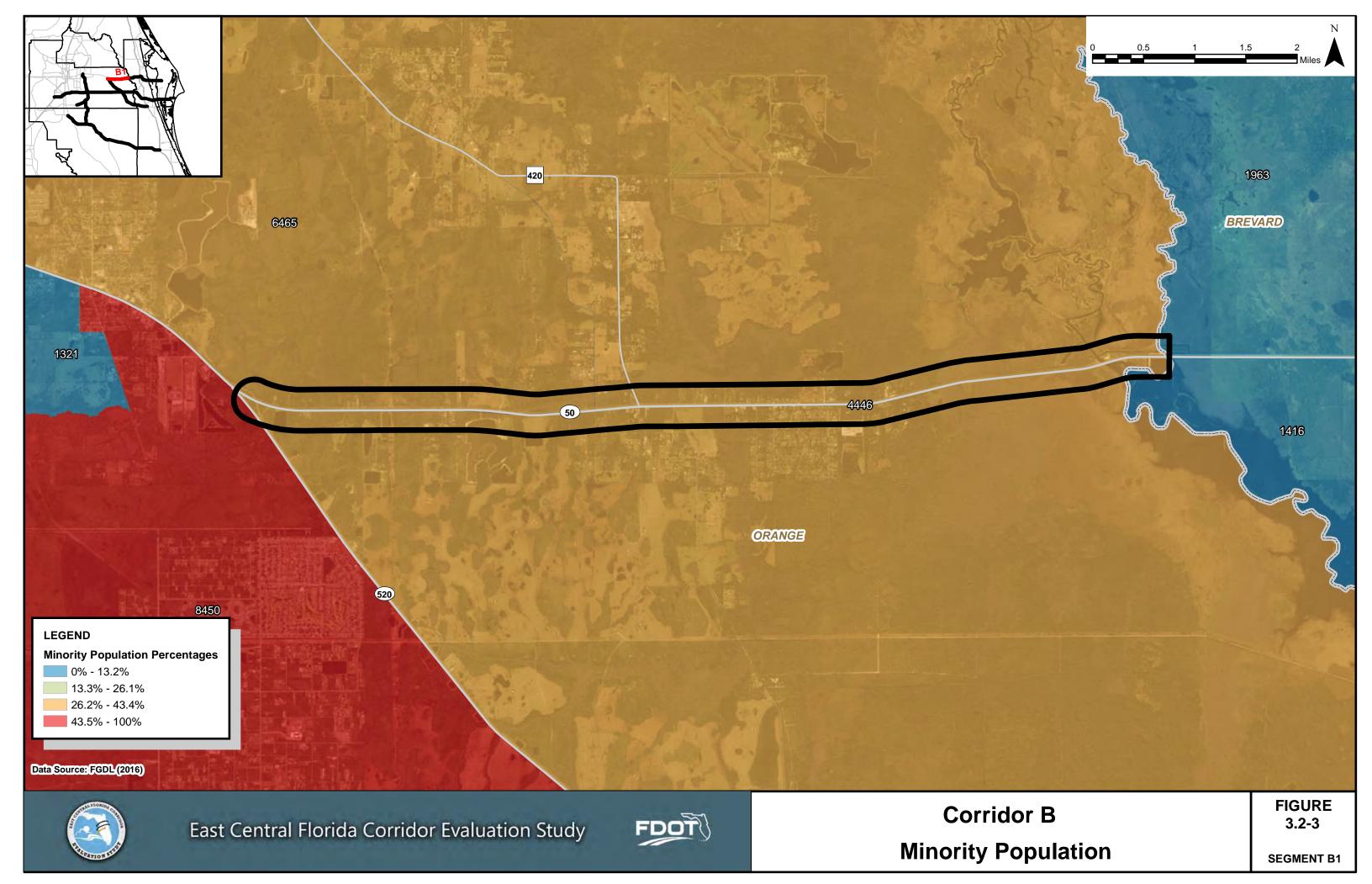


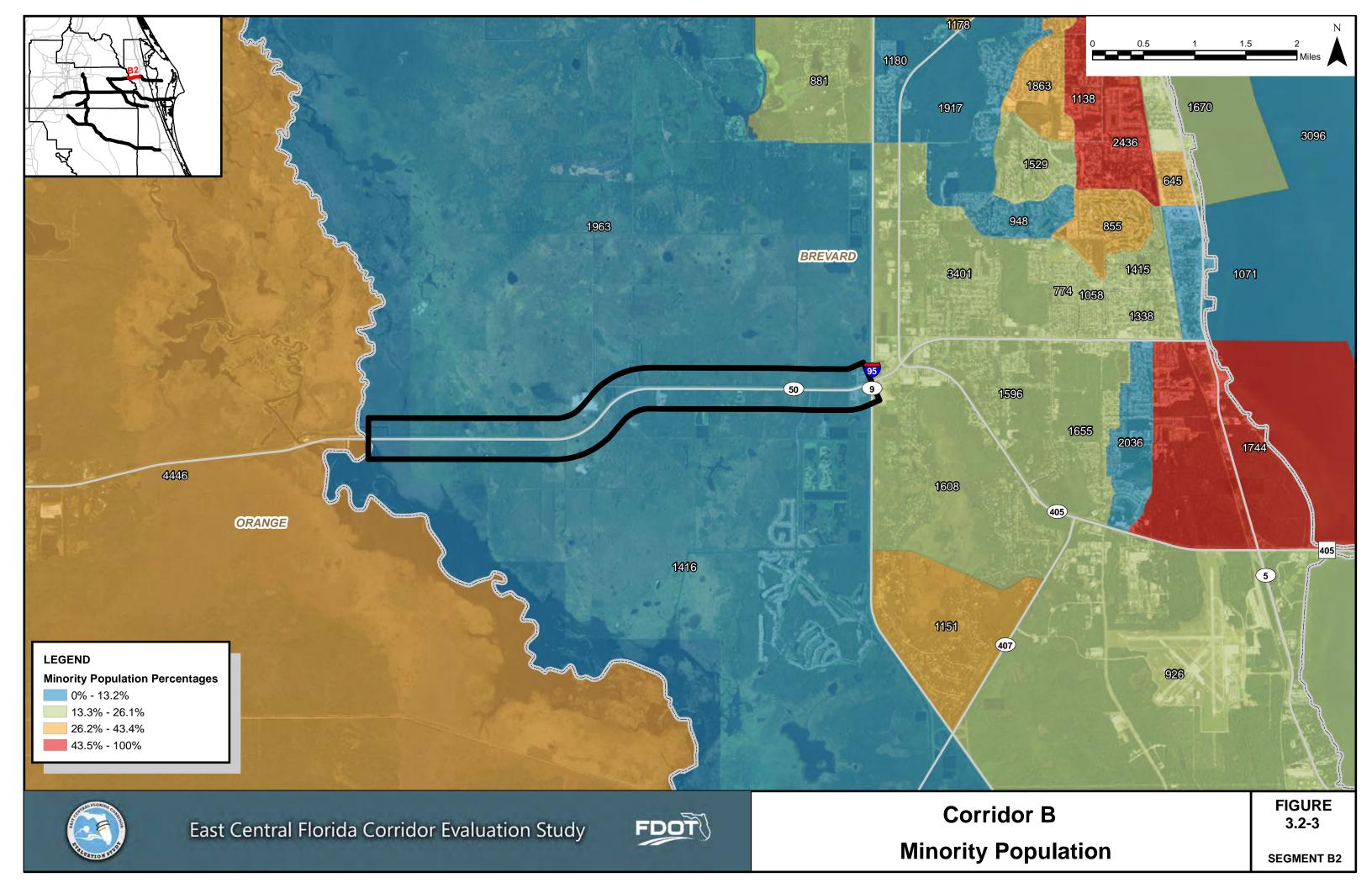
Household Poverty Rates

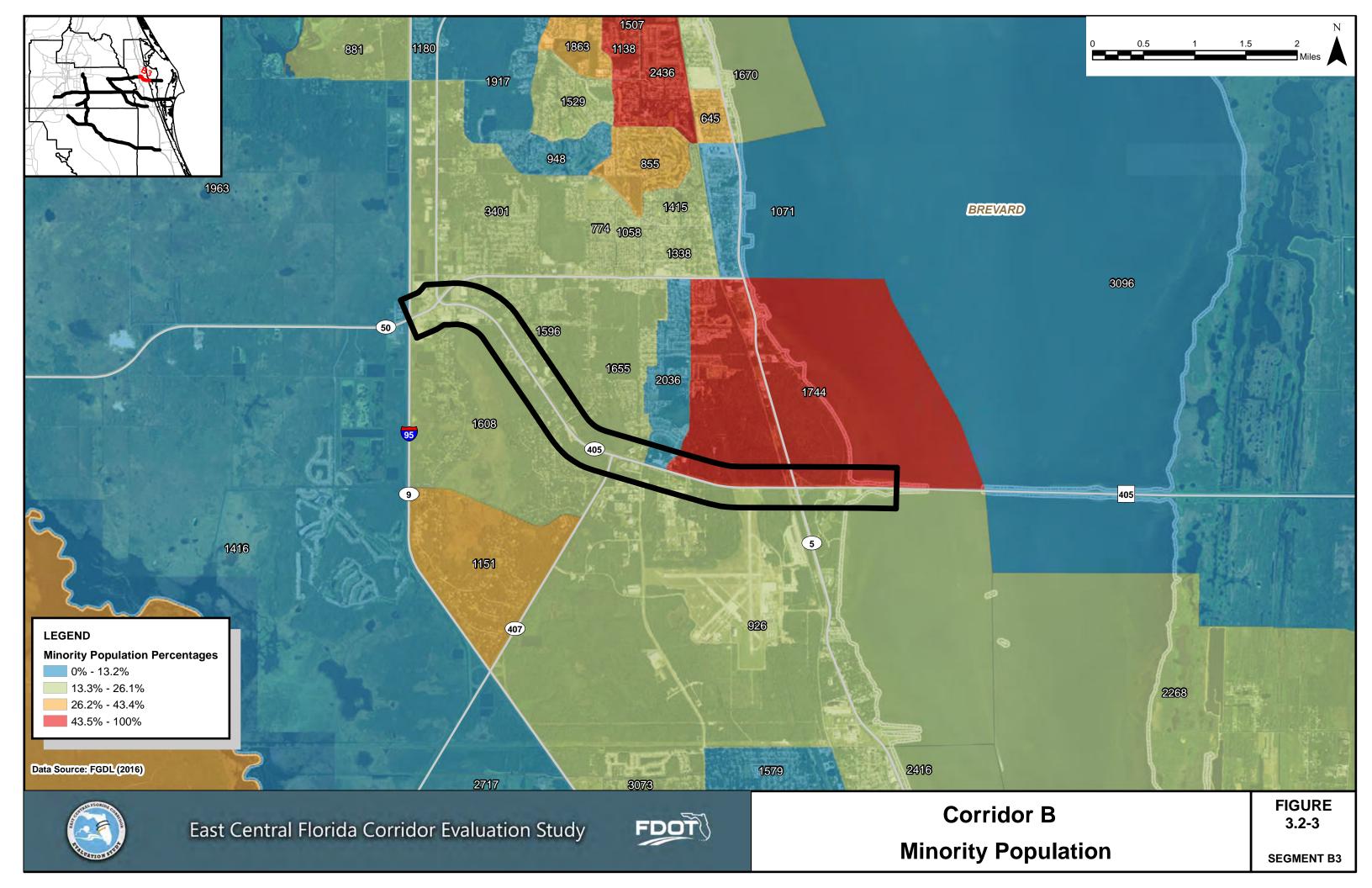
SEGMENT B2

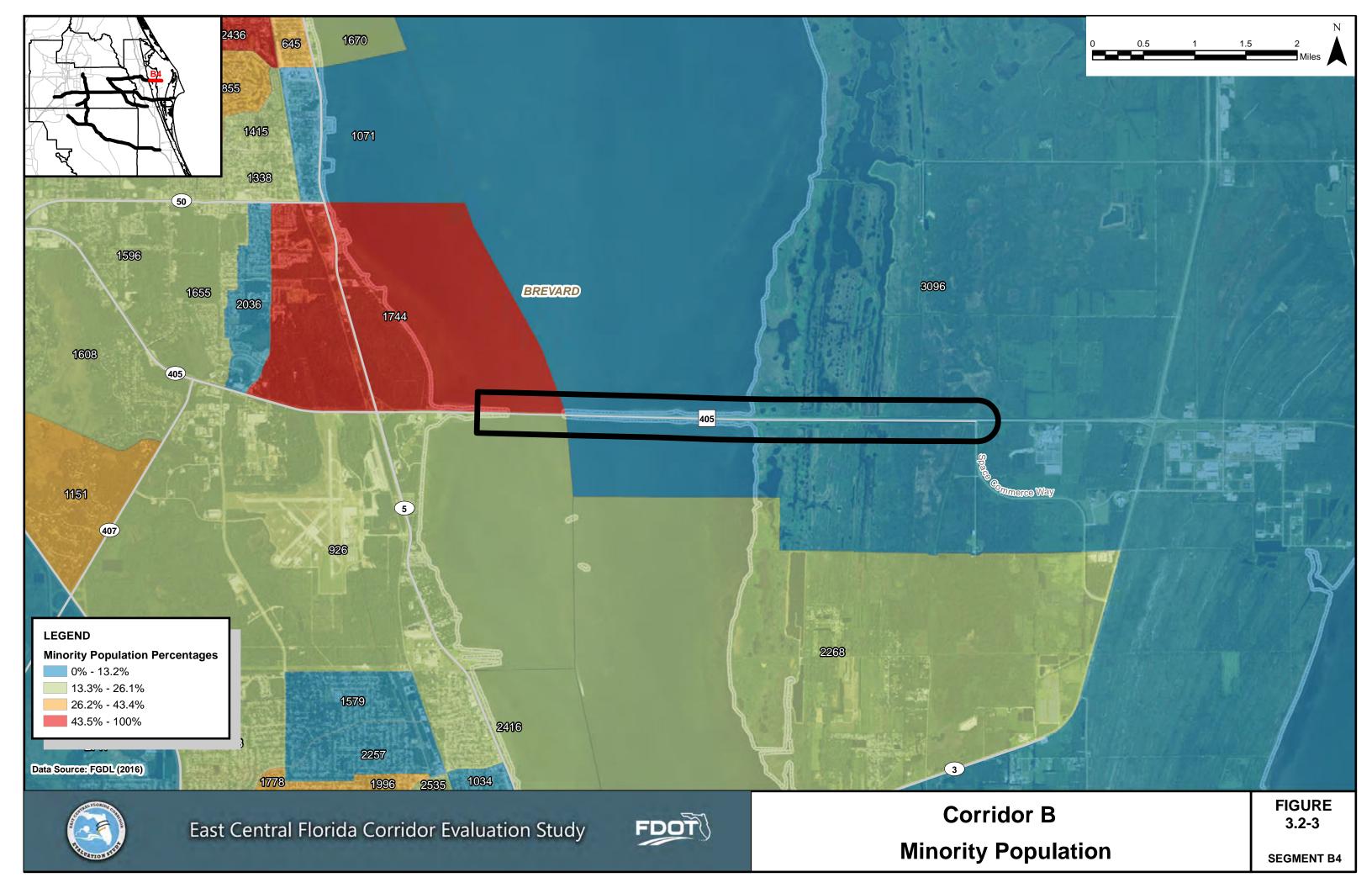


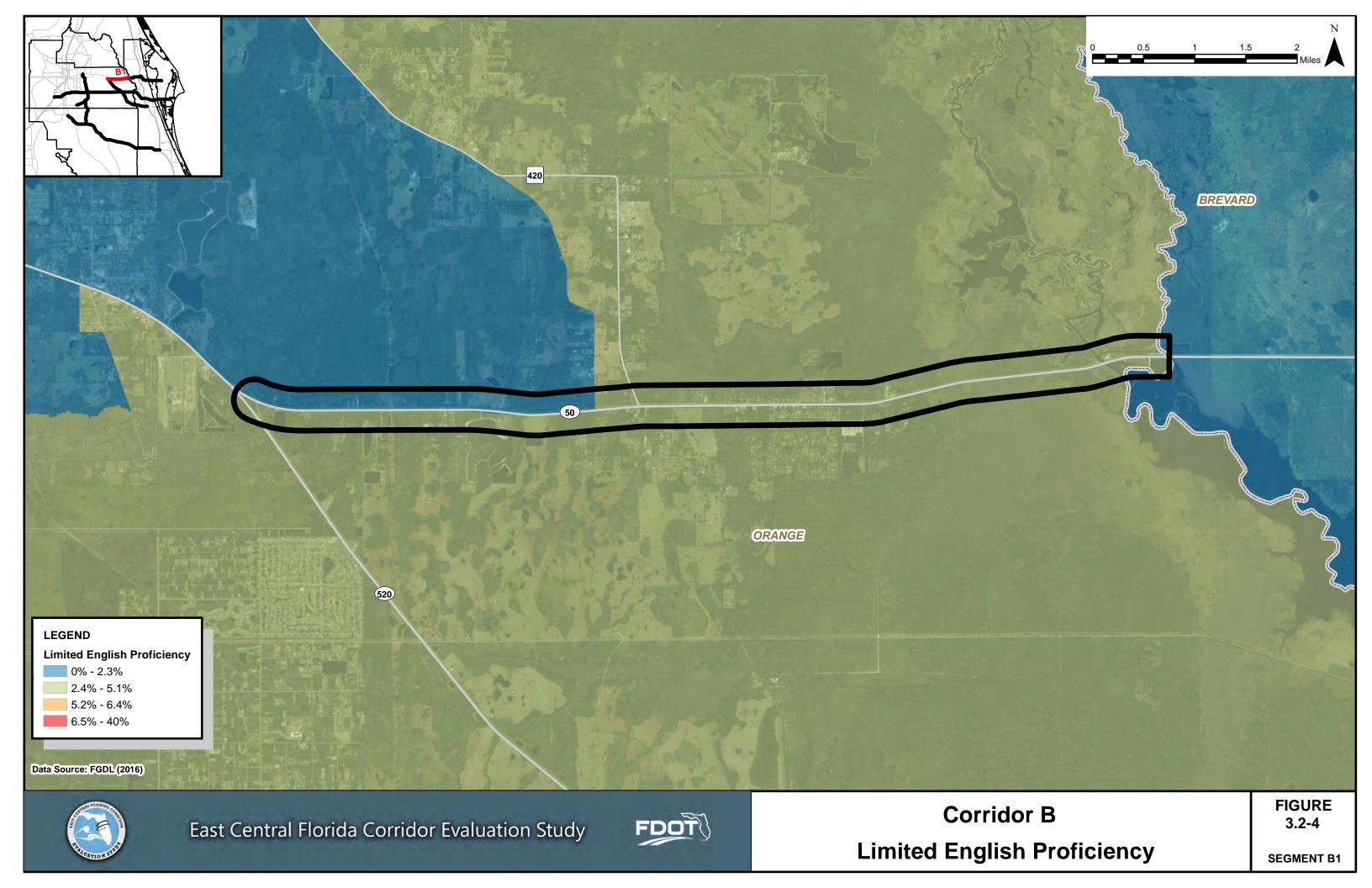


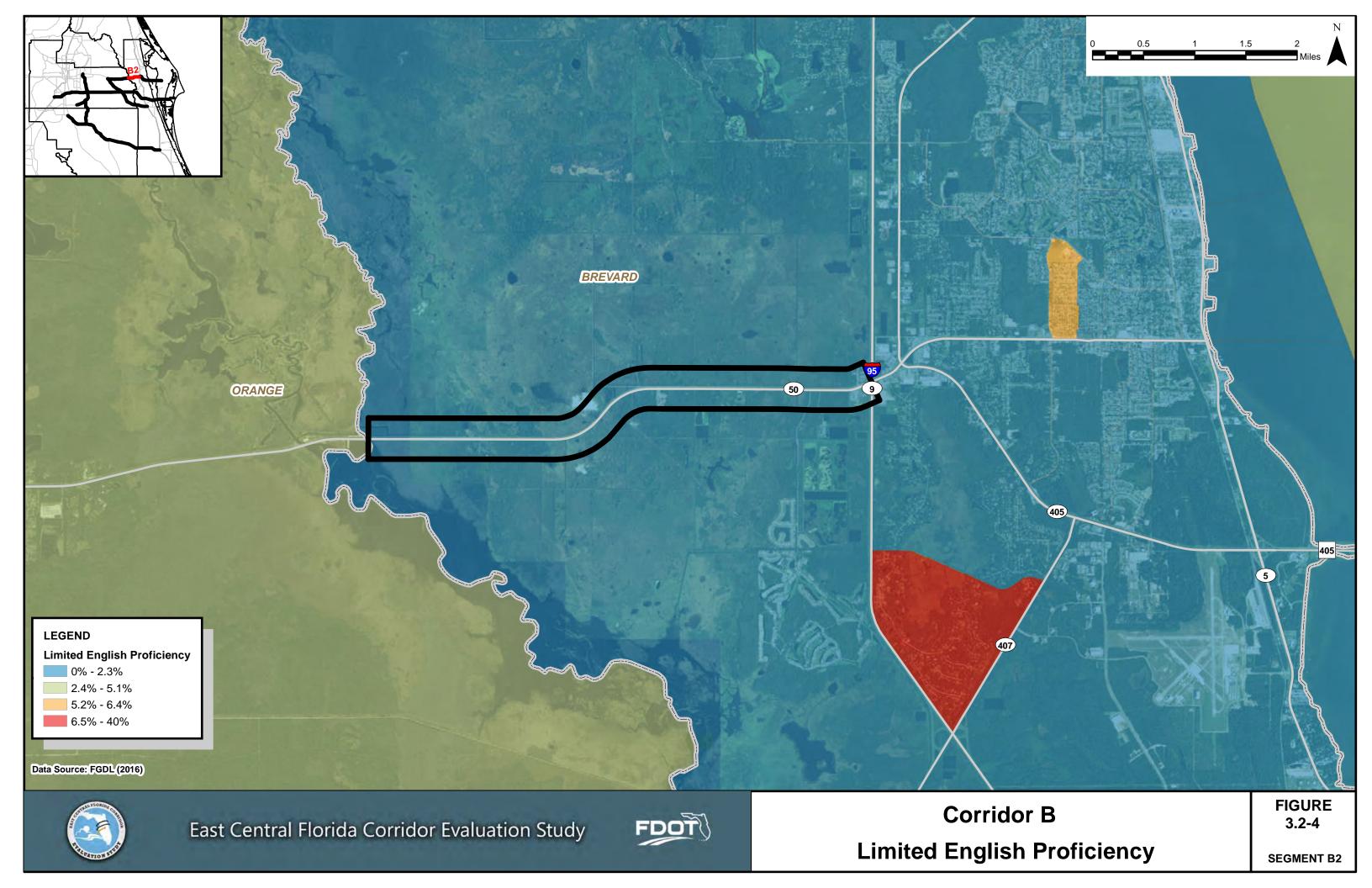


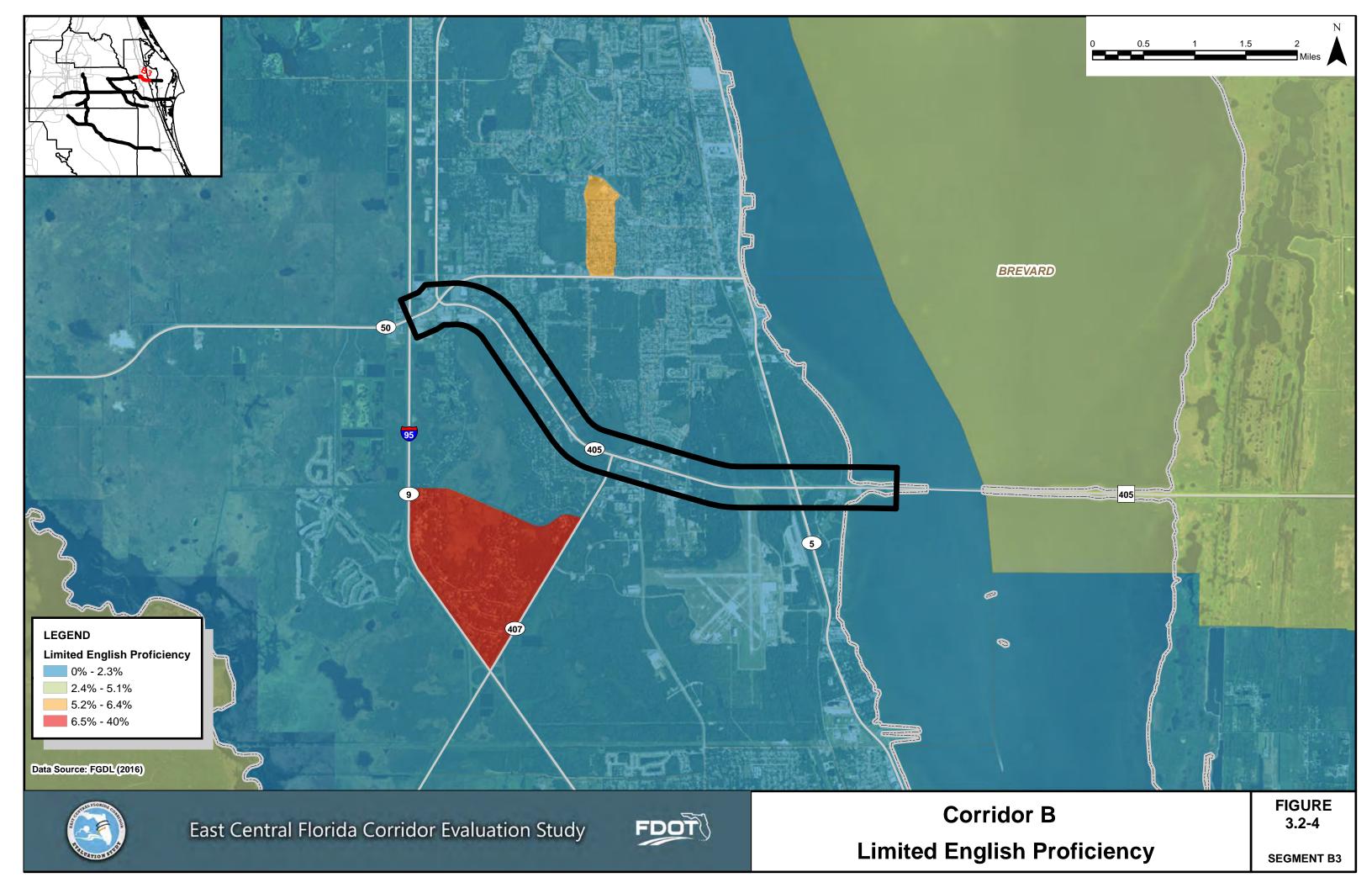


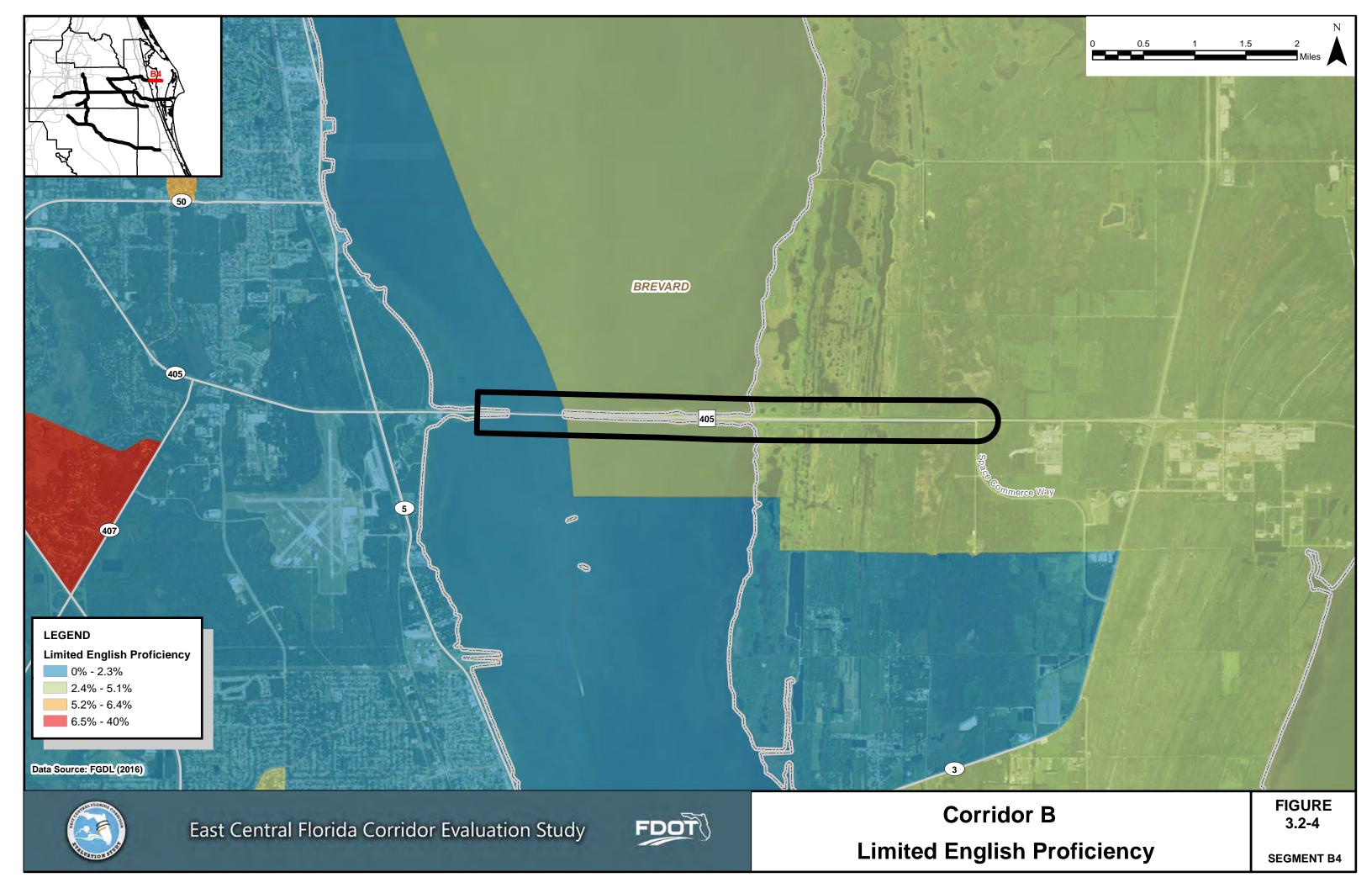












3.2.2 Land Use

As shown in Figure 3.2-5, existing land use along Corridor B is mostly vacant/unclassified (54.2%), institutional (16.3%) and agricultural (11.2%). Land use is fairly consistent across Segments B1, B2 and B3 with the majority being vacant/unclassified land. Segment B4 is part of the Kennedy Space Center and is vacant/unclassified (Table 3.2-2). Prime farmland occupies 26.42 acres out of 3,263 acres of the Corridor B buffer. These acres are almost exclusively at the end of Segment B4. The majority of the institutional land use in Corridor B occurs in Segment B4 and the Kennedy Space Center.

Table 3.2-2: Corridor B Land Use

Segment	Land Use	Acres	Percent
	Vacant/Unclassified	1,250.13	46.5%
	Low Density Residential	111.91	4.2%
	Medium Density Residential	486.38	18.1%
	High Density Residential	0.01	0.0%
	Mixed Use	7.49	0.3%
	Light Commercial	97.05	3.6%
	Heavy Commercial	42.57	1.6%
Corridor B	Light Industrial	24.13	0.9%
	Heavy Industrial	0	0.0%
	Institutional	375.18	13.9%
	Transportation/Utilities	8.45	0.3%
	Recreation/Conservation	22.88	0.9%
	Agricultural	259.56	9.7%
	Water	5.27	0.2%
	Total	2,691.01	100.0%
	Vacant/Unclassified	183.00	21.0%
	Low Density Residential	53.94	6.2%
	Medium Density Residential	77.79	8.9%
	High Density Residential	0.01	0.0%
	Light Commercial	66.81	7.7%
B1	Heavy Commercial	7.06	0.8%
DI	Light Industrial	2.91	0.3%
	Institutional	257.04	29.4%
	Transportation/Utilities	6.81	0.8%
	Recreation/Conservation	14.00	1.6%
	Agricultural	198.68	22.7%
	Water	5.27	0.6%
	Total	873.32	100.0%
Pa	Vacant/Unclassified	356.16	73.0%
B2	Low Density Residential	12.80	2.6%
	Light Commercial	3.74	0.8%

Segment	Land Use	Acres	Percent
	Light Industrial	3.32	0.7%
	Institutional	50.17	10.3%
	Transportation/Utilities	0.88	0.2%
	Agricultural	60.88	12.5%
	Total	487.95	100.0%
	Vacant/Unclassified	213.80	25.7%
	Low Density Residential	45.17	5.4%
В3	Medium Density Residential	408.59	49.1%
	Mixed Use	7.49	0.9%
	Light Commercial	26.50	3.2%
	Heavy Commercial	35.51	4.3%
	Light Industrial	17.90	2.1%
	Institutional	67.97	8.2%
	Transportation/Utilities	0.76	0.1%
	Recreation/Conservation	8.88	1.1%
	Total	832.57	100.0%
B4	Vacant/Unclassified	497.17	100.0%
	Total	497.17	100.0%

3.2.3 Community Features

Segment B1 in rural Orange County includes a number of community services, and recreational areas, particularly in the City of Christmas. The origin point of Corridor B is at the intersection of SR 50 with SR 520, which is just north of Hal Scott Preserve. This is the first preservation area the corridor passes. As SR 50 approaches the Orange/Brevard County line, it crosses through both the Seminole Ranch Conservation Area and Tosohatchee State Preserve. The final segment of the corridor passes through the Pine Island Conservation Area on (Table 3.2-3 and Figure 3.3-1)

Multiple park boundaries associated with the St. Johns River (two boat ramps) and the City of Christmas (Christmas Creek Environmental Park and East Orange District Park) are within the Segment B1 buffer (Table 3.2-3). Segment B2 in rural Brevard County traverses Florida managed lands on both the north and south sides of the road, with one civic center, and a Days Inn, at the end of the corridor. Community features including a police department, fire station, community center, cultural center, and a school are in the Segment B3 buffer (largely to the north), which is a major thoroughfare south of the City of Titusville. Residential parcels, including an apartment complex, are located west of Challenger Memorial Highway on the south side of Columbia Boulevard. The Space Coast Regional Airport and Enchanted Forest natural area are located on the south and north sides of Columbia Boulevard respectively, between Grissom Parkway and Washington Avenue. Segment B4 is predominantly the Merritt Island National Wildlife Refuge west of the Kennedy Space Center. There is no residential community on this stretch.





Table 3.2-3: Corridor B Community Features

Segment	Туре	Name		
	Existing Trails	Seminole Ranch Conservation Area to Tosohatchee Wildlife Management Area Connector		
	Florida Managed Areas	Savage/Christmas Creek Preserve		
	Florida Managed Areas	Eagan Parcels		
	Florida Managed Areas	Tosohatchee Wildlife Management Area		
	Florida Managed Areas	Seminole Ranch Conservation Area		
B1	FFWCC Management Areas	Tosahatchee WMA		
D 1	FFWCC Management Areas	Seminole Ranch WMA		
	Parks	Highway 50 and St. Johns River Airboat Ramp		
	Parks	SR 50 Boat Ramp		
	Park Bounds	Christmas Creek Environmental Park		
	Park Bounds	East Orange District Park		
	Park Bounds	Highway 50 and St. Johns River Airboat Ramp		
	Park Bounds	SR 50 Boat Ramp		
	Florida Managed Areas	Tosohatchee Wildlife Management Area		
	Florida Managed Areas	St. Johns National Wildlife Refuge		
B2	Florida Managed Areas	Seminole Ranch Conservation Area		
	Florida Managed Areas	Canaveral Marshes Conservation Area		
	FFWCC Management Areas	Tosahatchee WMA		
	Florida Managed Areas	Enchanted Forest Sanctuary		
	Florida Managed Areas	Merritt Island National Wildlife Refuge		
В3	FFWCC Management Areas	Brevard Coastal Scrub Ecosystem Florida Forever BOT Project - Titusville Wellfield		
	Schools Parcels	Jen-Lee Development Inc.		
B4	Existing Trails	Florida Circumnavigational Paddling Trail		
D4	Florida Managed Areas	Merritt Island National Wildlife Refuge		

3.2.4 Context Zone Classification

Corridor B is a 24.6 mile long, mostly rural and natural, corridor with the exception of Titusville. Segment B1 is mostly rural (C2) with a short natural (C1) context zone. Included is a rural town (C2T) over 3 miles. From approximately Hellen Houser Boulevard to the intersection with SR 405 and along SR 405 to approximately 0.4 east of Windover Trail the existing context is urban center (C5). From this point to the intersection with SR 407 the context changes to general urban residential (C4). The area east of SR 407 is dominated by high tech corporations and factories supporting the space mission at NASA and private rocket developers as well as the Titusville Airport. As a result, the context zone was designated as an urban center (C5) to the NASA Causeway beginning at the Banana River. The NASA Causeway is a natural (C1) context zone (Table 3.2-4 and Figure 3.2-6).





Table 3.2-4: Corridor B Context Zones

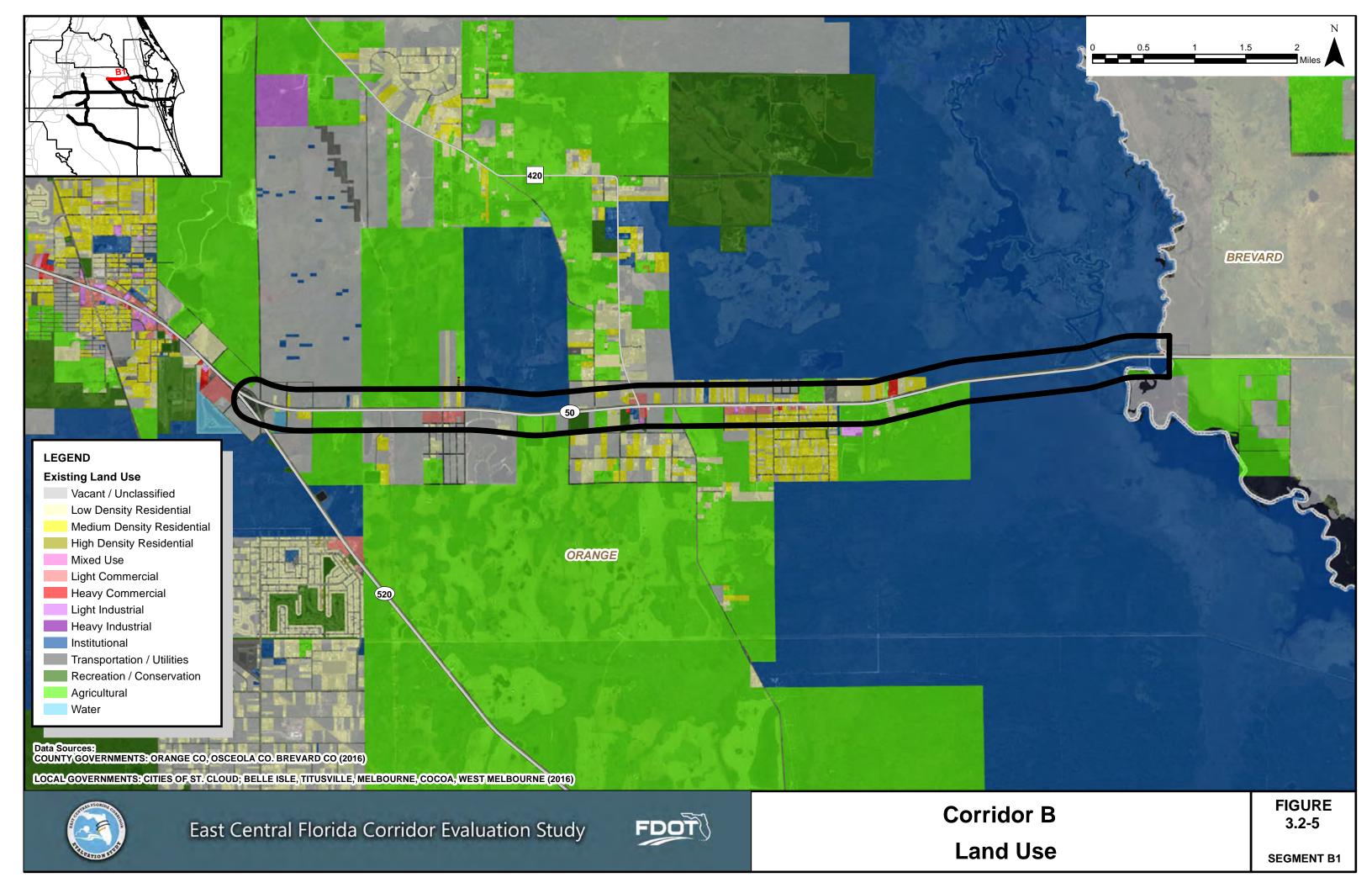
Corridor	SR 50/SR	SR 50/SR 405					
From	SR 520						
То	Space Con	nmerce Way					
Distance	24.6 miles						
Segment	Sub- Segment	From To Zones					
	oegment			(Mics)	Existing		
	1	SR 520	Hodges Blvd.	3.1	C2		
B1	2	Hodges Blvd.	.7 mi E of St. Nicholas Ave.	3.3	С2Т		
	3	0.7 mi E of St. Nicholas Ave. Brevard County Line 2.6 C1					
B2	1	Brevard Co. Line	.4 mi E of Brevard Co. Line	0.4	C1		
DZ	2	0.4 mi E of Brevard Co. Line	E of Hellen Houser Blvd.	4.5	C2		
	1	E of Hellen Houser Blvd.	0.4 mi E of Windover Trail	1.1	C5		
В3	2	.4 mi E of Windover Trail	1.9	C4			
	3	SR 407	Banana River	2.6	C5		
B4	1	Banana River	Space Commerce Way	5.1	C1		

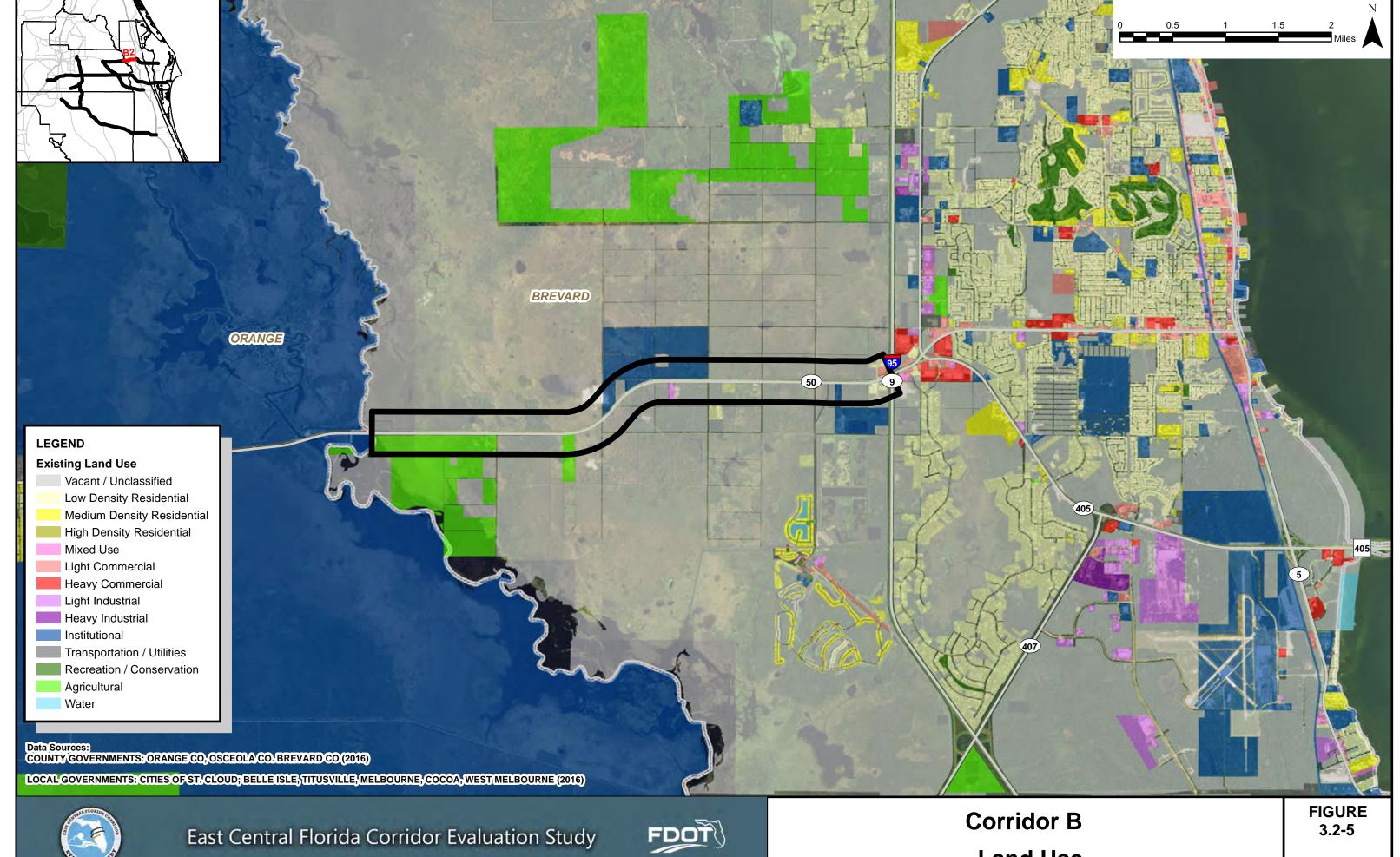
3.2.5 Major Developments

There are two major developments along Corridor B for a total of 19.71 acres as listed in Table 3.2-5. As shown in Figure 3.3-1, there is one Development of Regional Impact (DRI).

Table 3.2-5: Corridor B Major Developments

		*
Segment	Name	Acres
B2	Great Outdoors	0.66
В3	Vectorspace	19.05

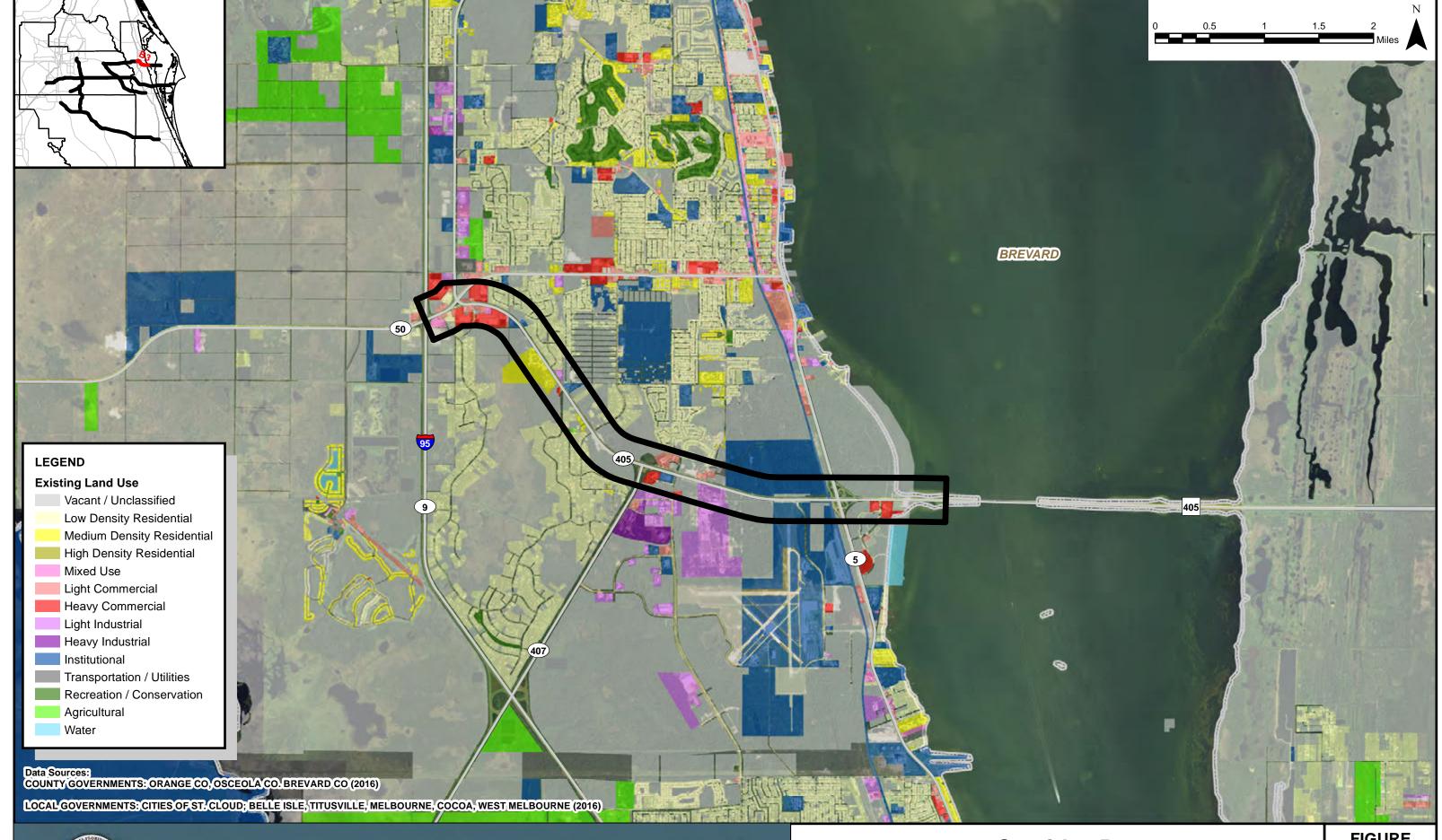








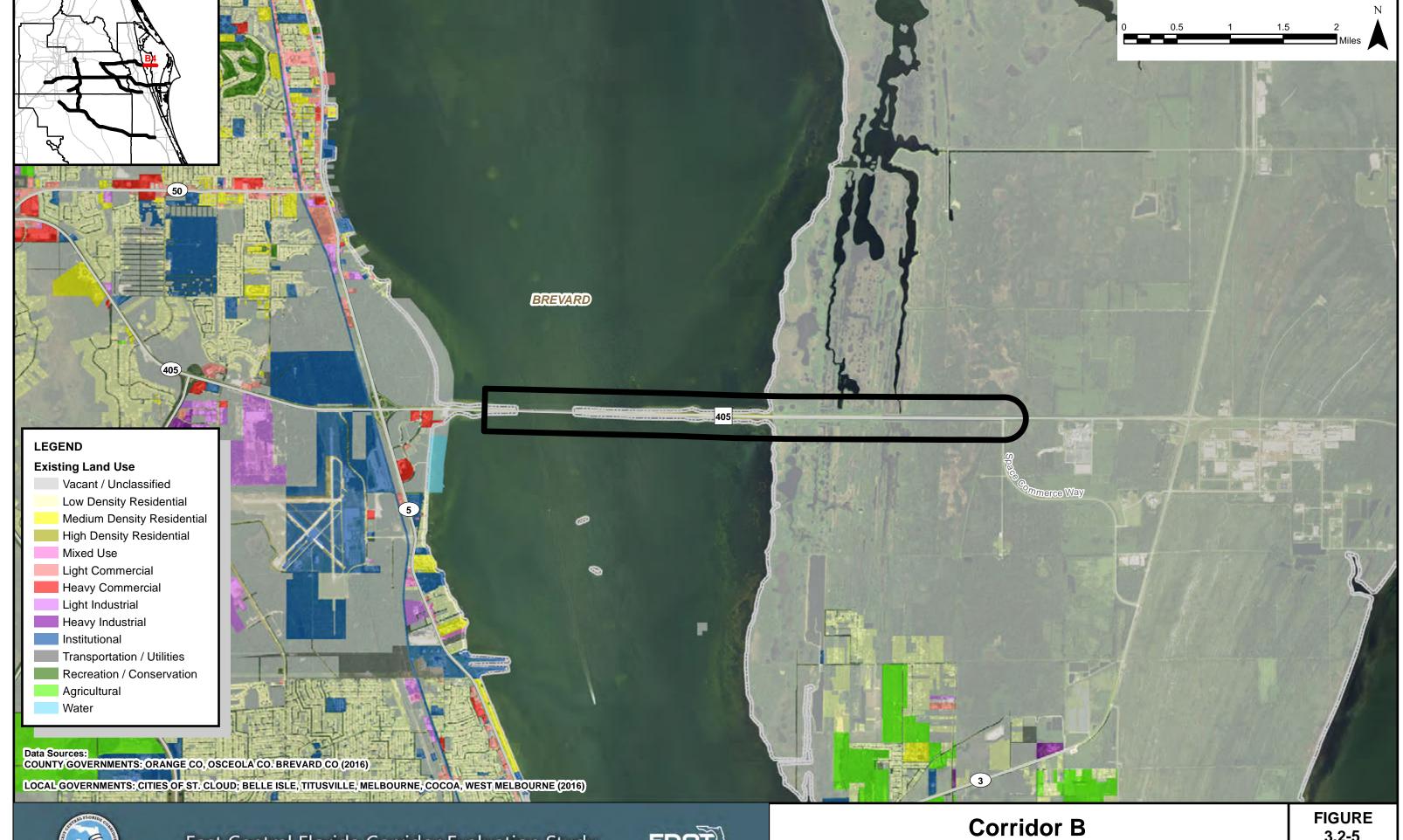
Land Use







Corridor B Land Use FIGURE 3.2-5

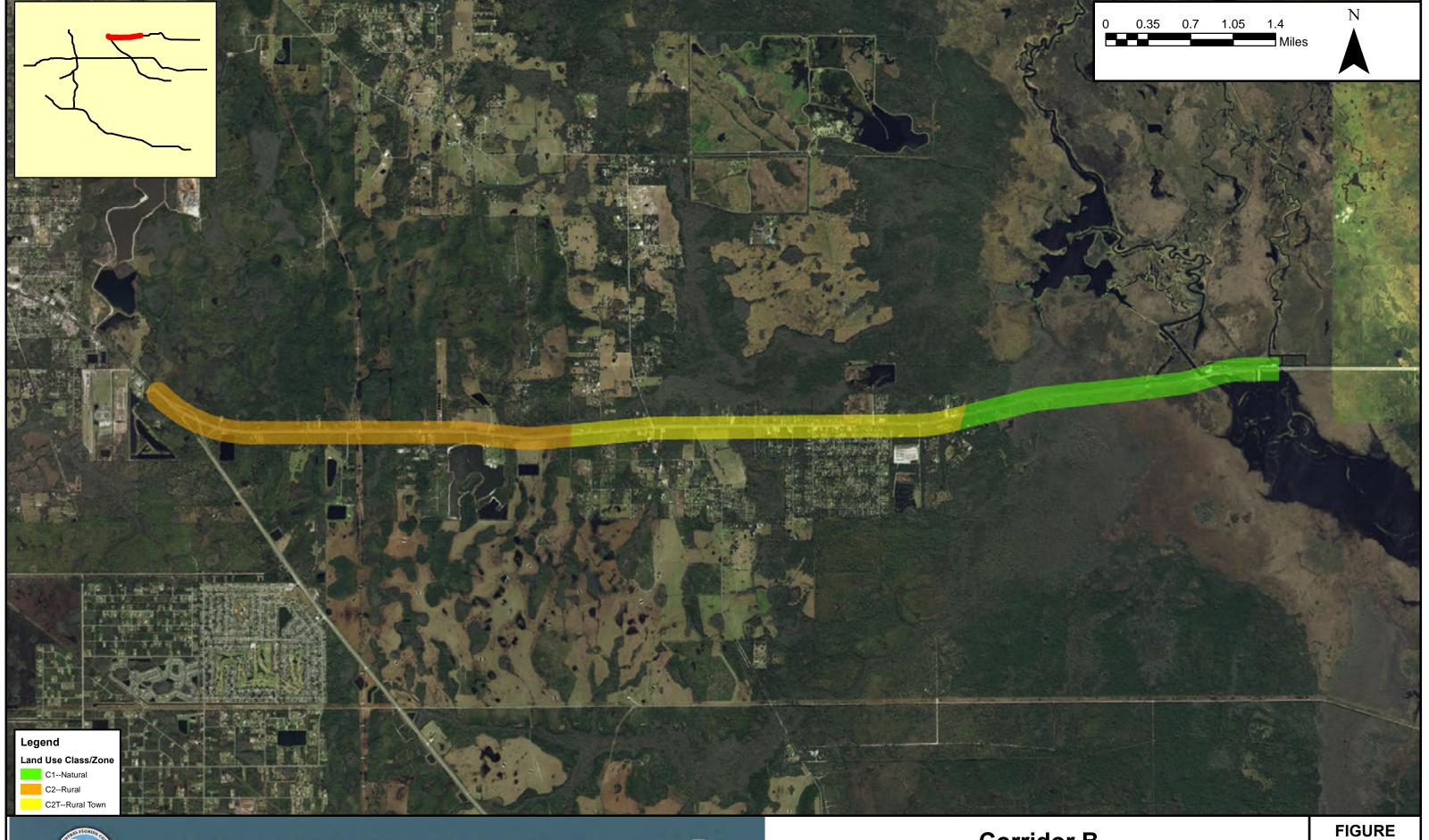






Land Use

3.2-5

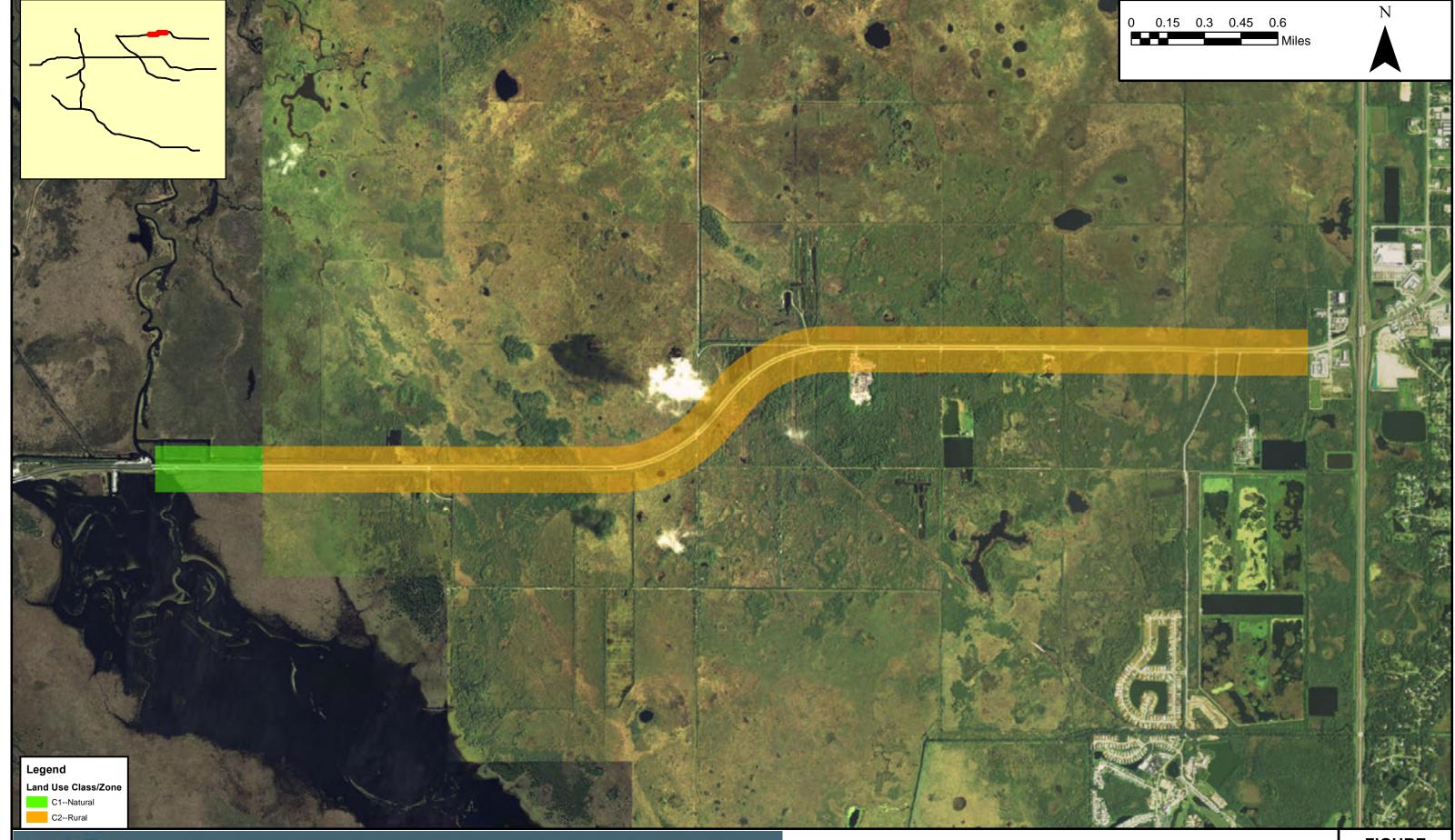






Corridor B
Context Zone

FIGURE 3.2-6

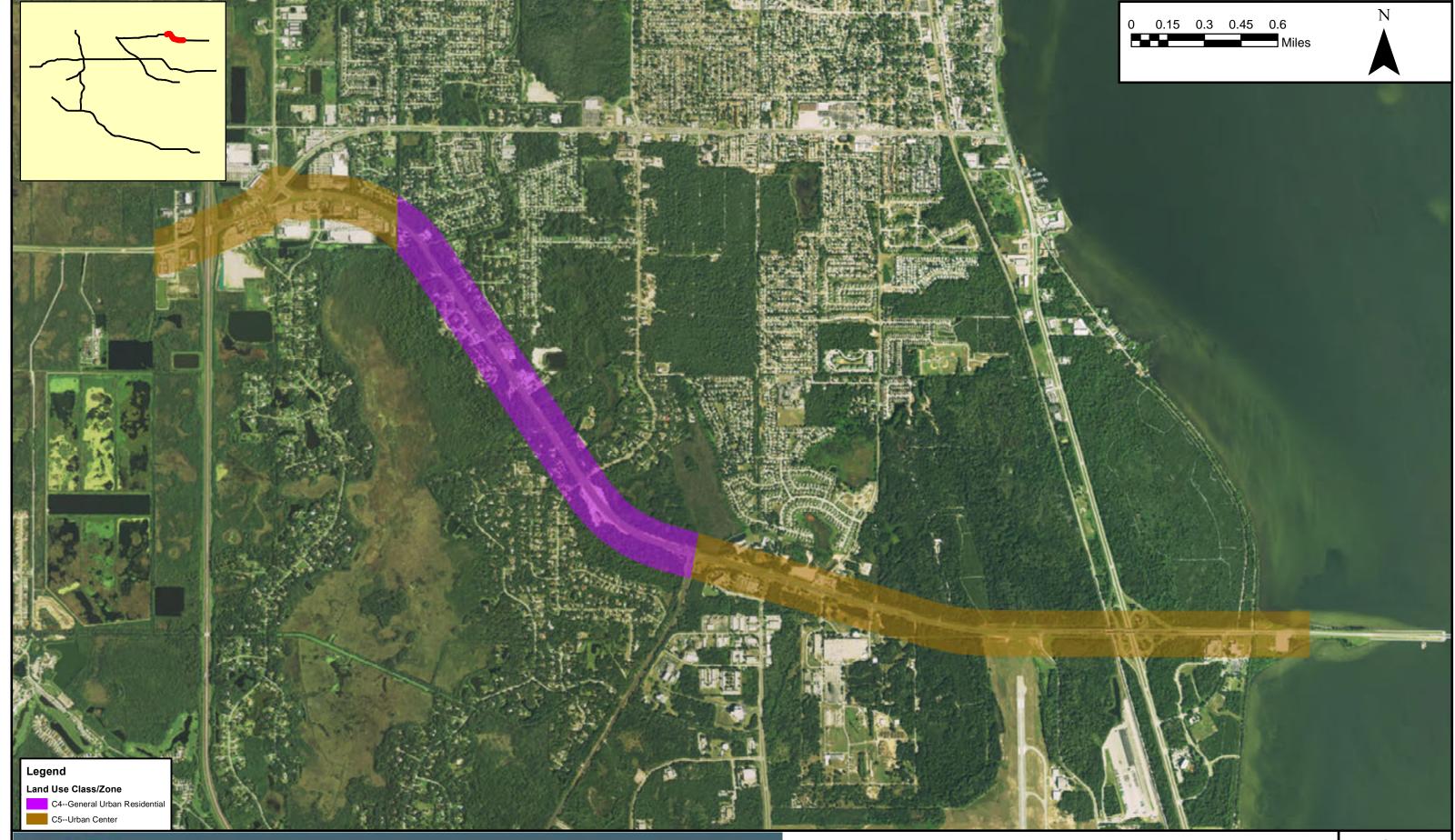






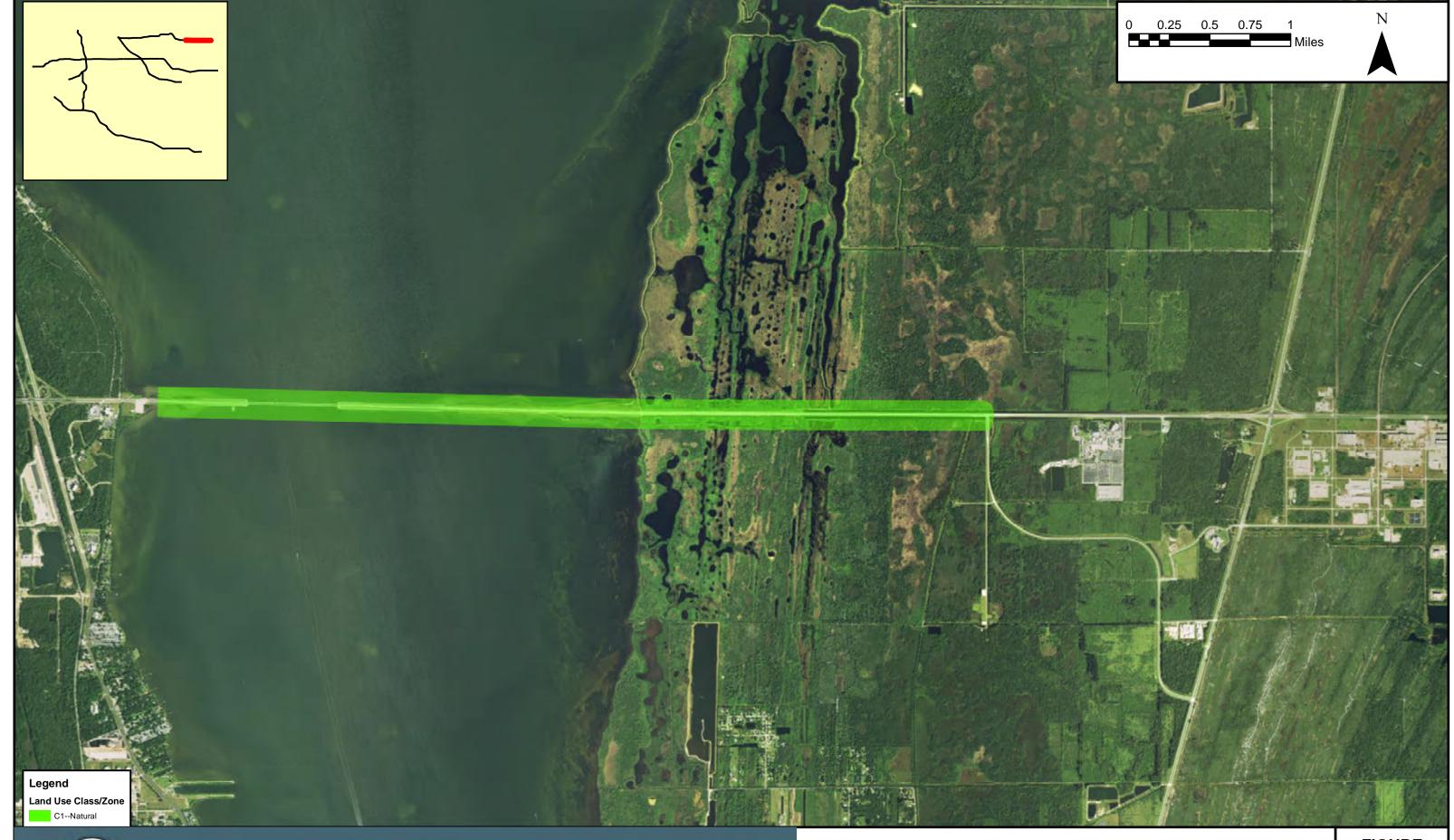
Corridor B
Context Zone

FIGURE 3.2-6













Corridor B
Context Zone

FIGURE 3.2-6

Roadway Characteristics/Operations

3.3.1 Jurisdiction and Classification

Corridor B is currently owned and operated by the FDOT. It consists of two roadways: SR 50 and SR 405. Roadway Functional Classification is primarily Principal Arterial-Other Rural, with an Urban status between I-95 to US 1 in the City of Titusville. The corridor is a SIS Connector from I-95 to the NASA Parkway Bridge.

3.3.2 Typical Section and Posted Speed

The width of Segments B1 and B3 varies slightly with a minimum of 200 feet, while B2's minimum is higher, at 300 feet. The entire corridor is otherwise consistent in its typical section, with four 12-foot through lanes, a 40-foot median (20 feet between edges of curbs sloped at 1:6 to a ditch, with an eightfoot paved interior shoulder on each side), and 10-foot paved outside shoulders. It consists of four through lanes of traffic for the entirety of its length.

The posted speed limit on the SR 50 portion of Corridor B starting at the intersection of SR 520 is 55 mph. The limit increases to 65 mph once the road exits the urbanized area of the City of Christmas in East Orange County, and is maintained until the corridor intersects with I-95. This is the area where Corridor B changes from SR 50 to SR 405. Here the posted speed is initially 35 mph, then increases to 45 mph, and eventually 55 mph where the road passes through a less developed area. The limit lowers to 45 mph once more, then increases back to 55 mph when nearing the Enchanted Forest Nature Sanctuary. This limit is maintained for most of the remaining corridor, only decreasing to 50 mph on a small section of the bridge crossing the Indian River. Details are depicted in Table 3.3-1 below.

Traffic Volumes 3.3.3

Annual Average Daily Traffic (AADT) and Level of Service (LOS) 2015 on both segments of Corridor B are shown on Table 3.3-1 and Figure 3.3-1.

1 adi	e 3.3-1: Corri	dor b Annual Average Dany Trame and	Level of S	ervice 20	13
dwav	Corridor	Count Location	AADT	LOS	9

Roadway	Corridor Section	Count Location	AADT	LOS	Speed
	B1	SR 520 - CR 420	11,100	В	55-60
	B 1	CR 420 - I-95	10,300	В	45-65
SR 50	B 1	I-95 - SR 405	26,000	С	55
SK 30	B 1	SR 405 - SR 407	14,600	С	45-55
	B 1	SR 407 - US 1	12,800	С	45-55
	B2	US 1 - Space Commerce Way	13,100	С	50



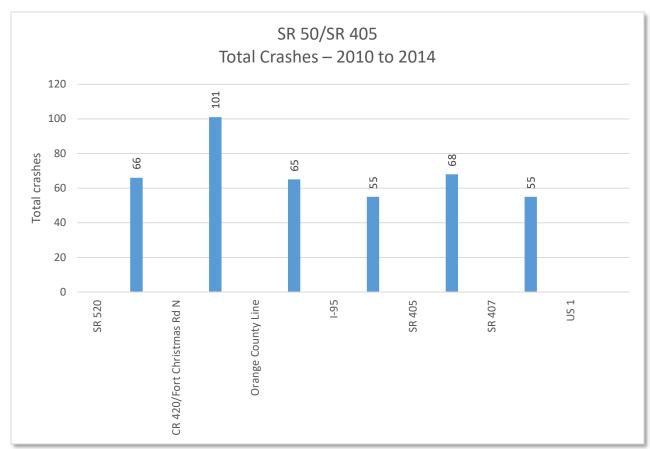


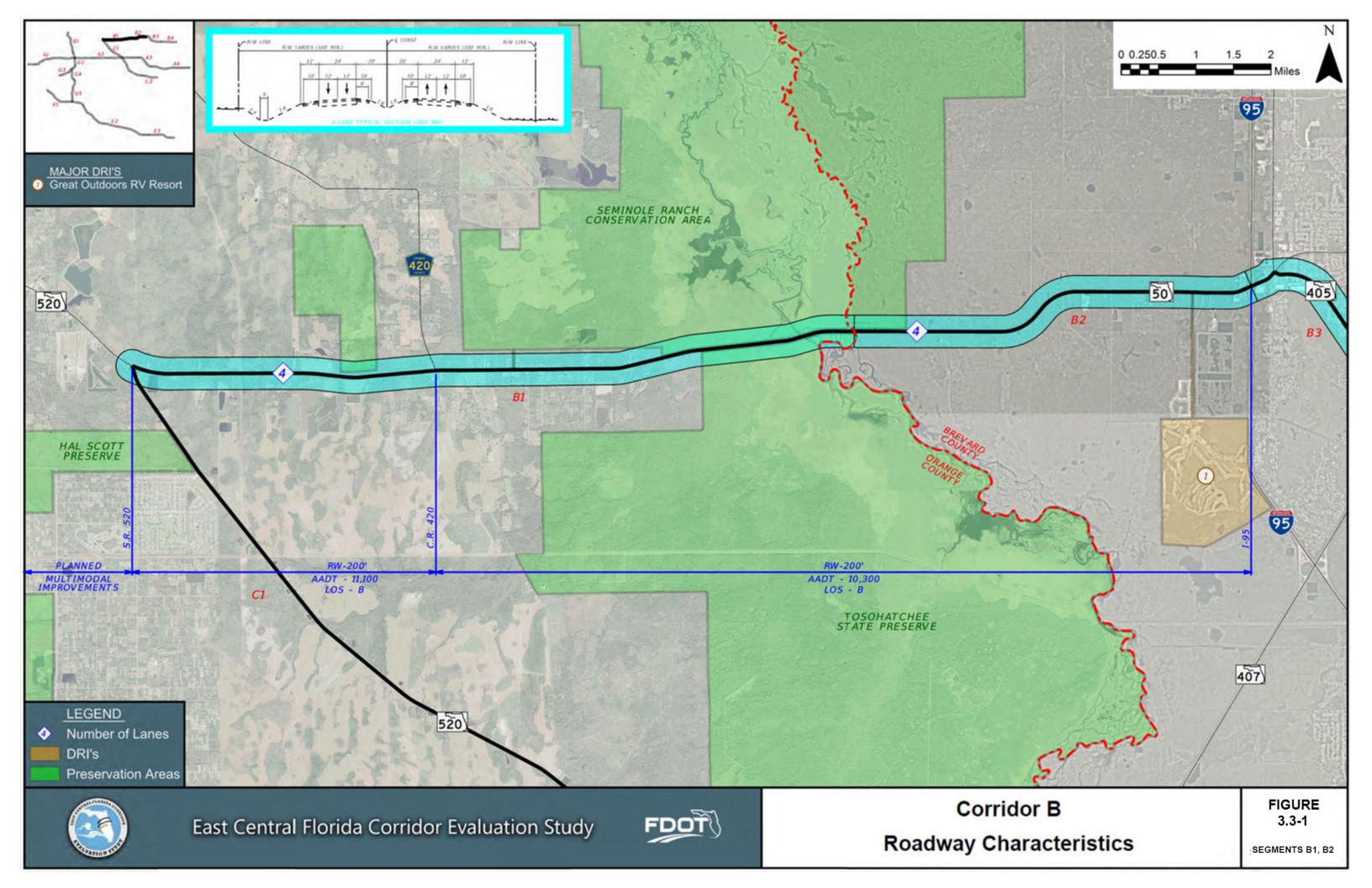
Safety and Crash Data 3.3.4

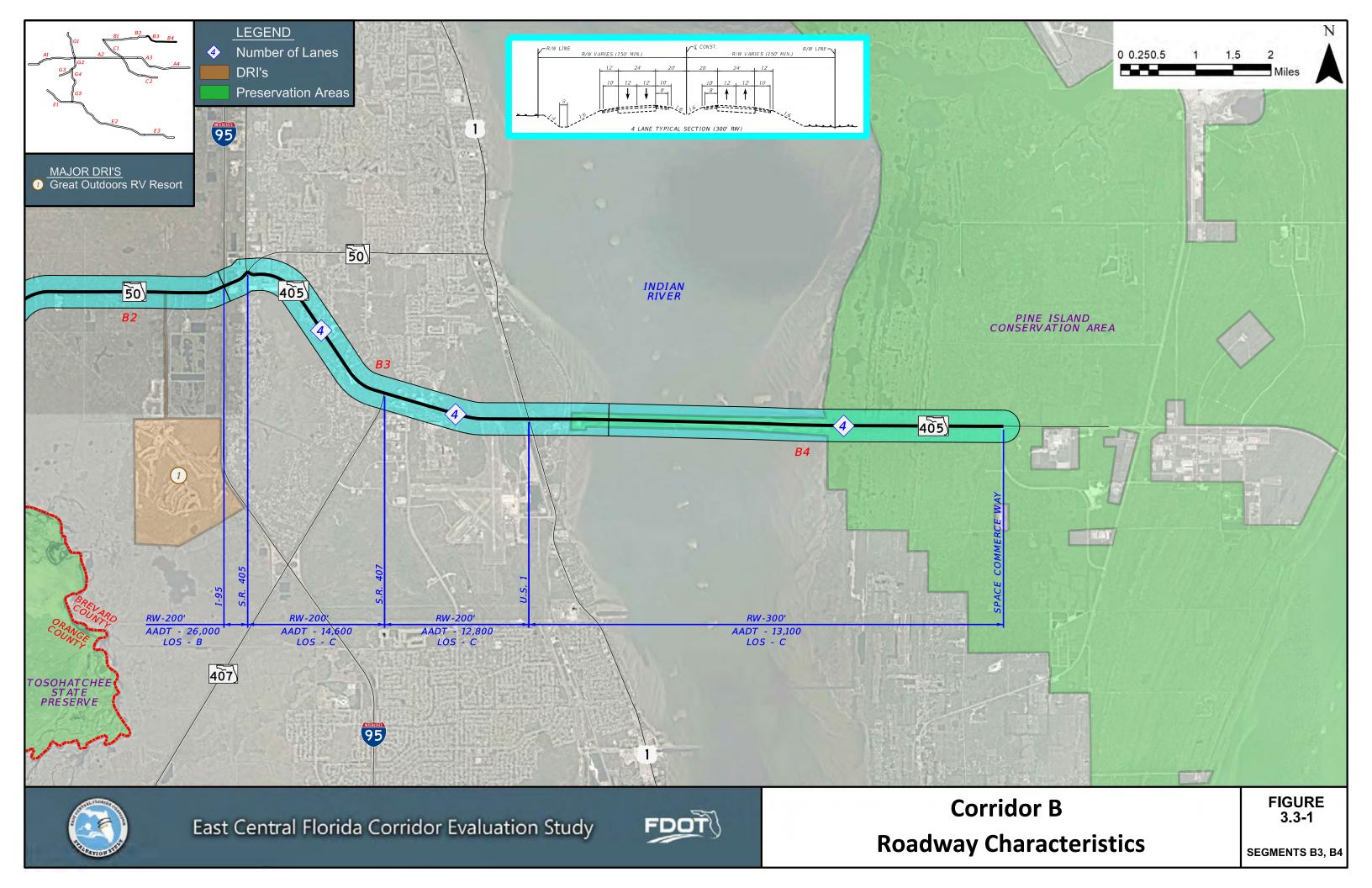
The results of the historical crash analysis are used to identify or confirm safety problems in the project study area. Understanding crash characteristics and crash contributing factors helps to determine and evaluate corrective actions or countermeasures that can be applied to Corridor B.

The following bar chart summarizes the total crashes for SR 50 for the five-year period between 2010 and 2014. Per the crash data received there are no recorded crashes between US 1 and Space Commerce Blvd, therefore only data from SR 520 to US 1 was analyzed. As can be seen, the highest number of crashes occurred between CR 420/Fort Christmas Road North and the Orange County Line. This may be due to the fact that when compared to the total length of the other segments listed below, this one is the longest and the data is split this way simply because not many intersections exist between CR 420 and I-95. The interchange at I-95 has the highest concentration of collisions when compared to anywhere else in the corridor. At this intersection there were 24 total crashes of which 19 were rearend collisions. The rest of the crashes were spread relatively evenly throughout the study area with a few small concentrations at the intersection of SR 405 and the split at SR 520.

Corridor B SR 50/SR 405 Total Crashes – 2010 to 2014





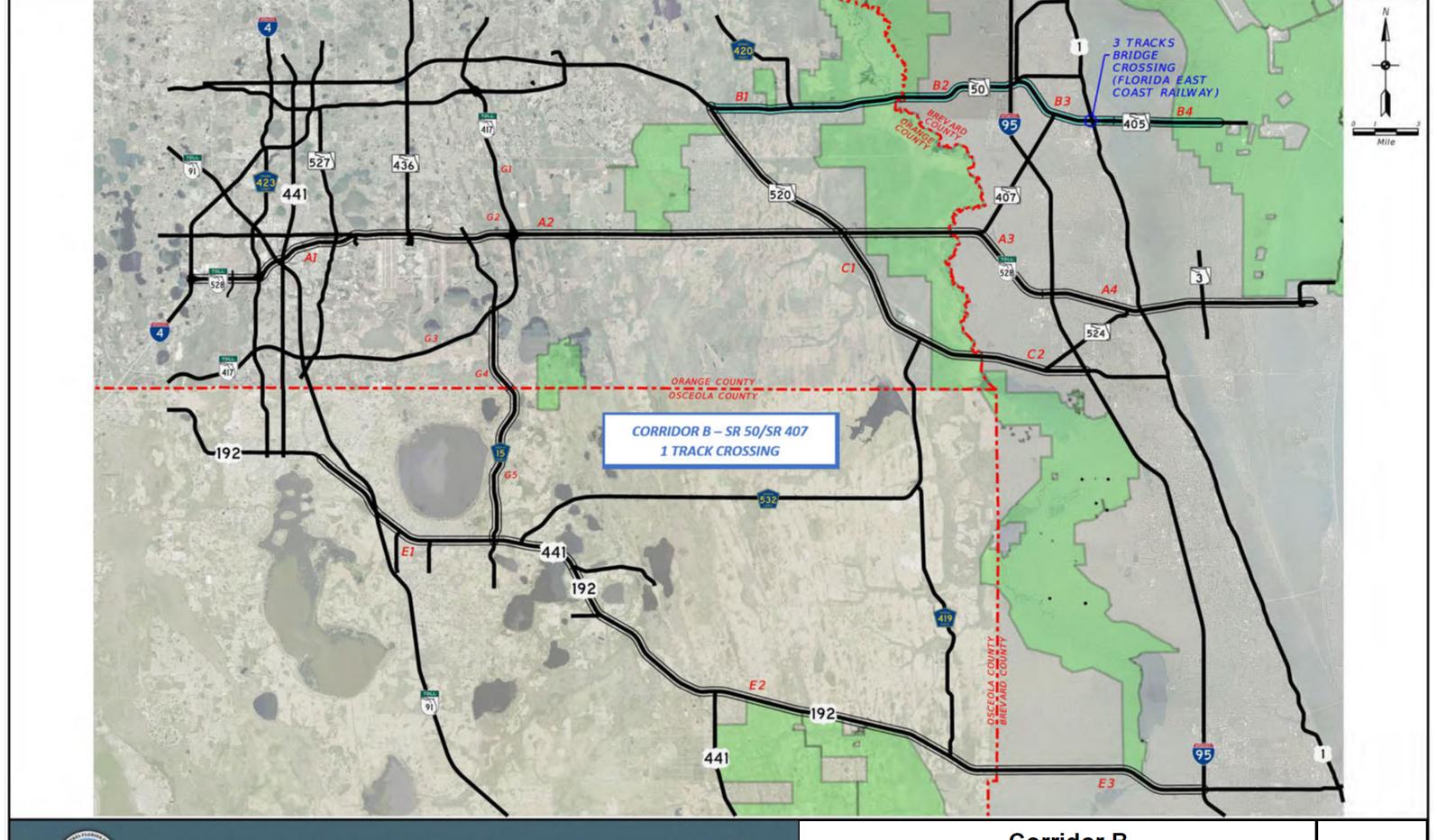


3.4 Railroad Crossings

There is a single railroad crossing along Segment B3 on SR 405 in Brevard County. In this location, the corridor passes over US 1 and takes on the name NASA Causeway. The road is elevated over three tracks owned by Florida East Coast Railway with haulage rights given to South Central Florida Express as shown in Figure 3.4-1.











3.5 Engineering and Site Characteristics

As noted previously, one of the key benefits of this phase of the study is that it provides an opportunity to plan on a holistic, system-level, while also providing an opportunity to collect data, conduct analyses, and develop packages of projects and strategies to move into future project development. Engineering analyses and documentation of site characteristics is a required step in the PD&E process. The following section provides the results of the ECFCES Engineering and Site Characteristics analyses.

3.5.1 Structures

Corridor B has 7 crossings with bridges or underpasses. At these various locations, there are 15 structures. This section focuses on underpasses only. Corridor B underpasses SR 520 and I-95. Information was collected from FDOT Straight Line Diagrams, FDOT Bridge Reports, and Google Maps.

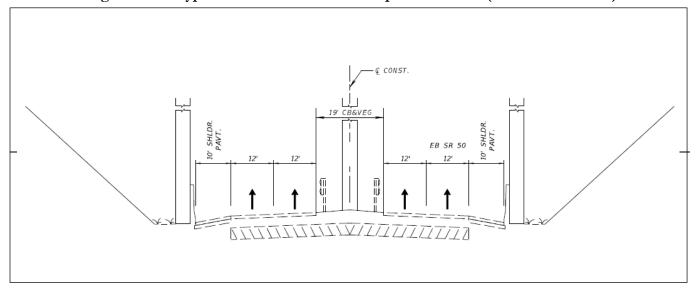
SR 50 Underpass at SR 520 (Structure #750951)

- One structure at the interchange
- Structure #750951 has a vertical clearance of 16.2 feet





Figure 3.5-1: Typical Section at SR 50 Underpass at SR 520 (Structure #750951)







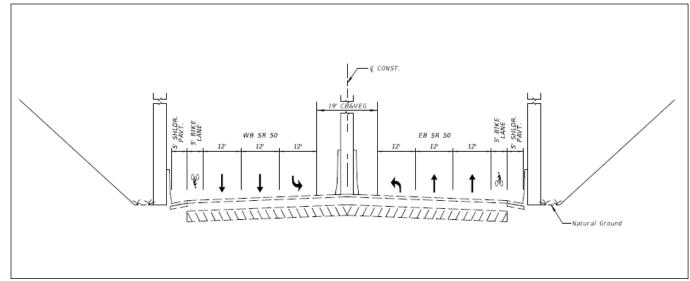
SR 50 underpass at I-95 (Structure #s 700058, 700132)

- Two structures at the interchange
- Structure #700058 has a vertical clearance of 15.7 feet
- Structure #700132 has a vertical clearance of 15.4 feet





Figure 3.5-2: Typical Section at SR 50 Underpass at I-95 (Structure #s 700058, 700132)



Sufficiency Rating for Bridges

Sufficiency Rating is essentially an overall rating of a bridge's fitness for the duty that it performs based on factors derived from over 20 NBI data fields. Ratings reported in this report are based on the FDOT's 2017 3rd Quarter Bridge Information Report. The designation of a bridge as Structurally Deficient (SD) or Functionally Obsolete (FO) has impact on decisions for bridge maintenance, rehabilitation or replacement. According to the FHWA Highway Bridge Replacement and Rehabilitation Program (23 CFR 650.409), highway bridges are considered eligible for rehabilitation or replacement with a sufficiency rating of less than 50.0. Highway bridges with a sufficiency rating of 80.0 or less will be eligible for rehabilitation. Ratings are on a scale of 1 to 100, with 100 considered as an entirely sufficient bridge, usually new. The Sufficiency Rating for each bridge along Corridor B is identified on Table 3.5-1.





Table 3.5-1: Corridor B Sufficiency Ratings for Bridges

Roadway Name	County	Roadway ID	Interchange/Intersection	Structure #	Sufficiency Rating (%)
	Orange	75060000	SR 520	750951	85.6 – FO
	Orange	75060000	St. Johns River	750015	94.3
	Grange	73000000	ot. Johns Rever	750170	95.3
	Orange	75060000	St. Johns River	750016	77.6
SR 50	Orange	73000000	St. Johns River	750171	94.3
	Brevard	70110000	C. I.I. D.	700013	83.6
	Dievaid		St. Johns River	700107	83.6
	Brevard	70110000	I-95	700058	97
	brevard	70110000	1-93	700132	97
				700002	80.4
	D	70001000	At US 1/SR 5	700103	80.4
CD 405	Brevard	70001000	At US 1/SR 5	700029	82.4
SR 405				700116	83
	Duorrand	70001000	T 1' D' D'1	703001	Not
	Brevard	70001000	Indian River Bridge	703002	Available

3.5.2 Drainage

In Orange County, Corridor B is contained mostly in the Upper St. Johns River Basin with only the most westerly portion of the corridor lying in the Middle St. Johns River Basin. These surface water management basins are defined by the Florida Department of Environmental Protection (FDEP). Stormwater in this portion of the Middle St. Johns River Basin generally flows west to the Econlockhatchee River which flows into the St. Johns River, while stormwater in the Upper St. Johns River Basin generally flows east to the St. Johns River. There are seven major drainage crossings (greater than five-foot diameter pipes equivalent opening), including two bridges and five box culvert crossings in the Orange County portion of the corridor. Figure 3.5-3 depicts the drainage crossing locations.

Table 3.5-2 denotes impaired drainage basins, as defined by FDEP, through which the corridor passes. The northwest end of Corridor B, at the interchange with SR 520, lies within the St. Johns River Water Management District's designated Econlockhatchee River Hydrologic Basin.



Corridor B: SR 50 /SR 405

Table 3.5-2: Corridor B Orange County, Impaired Waterbodies

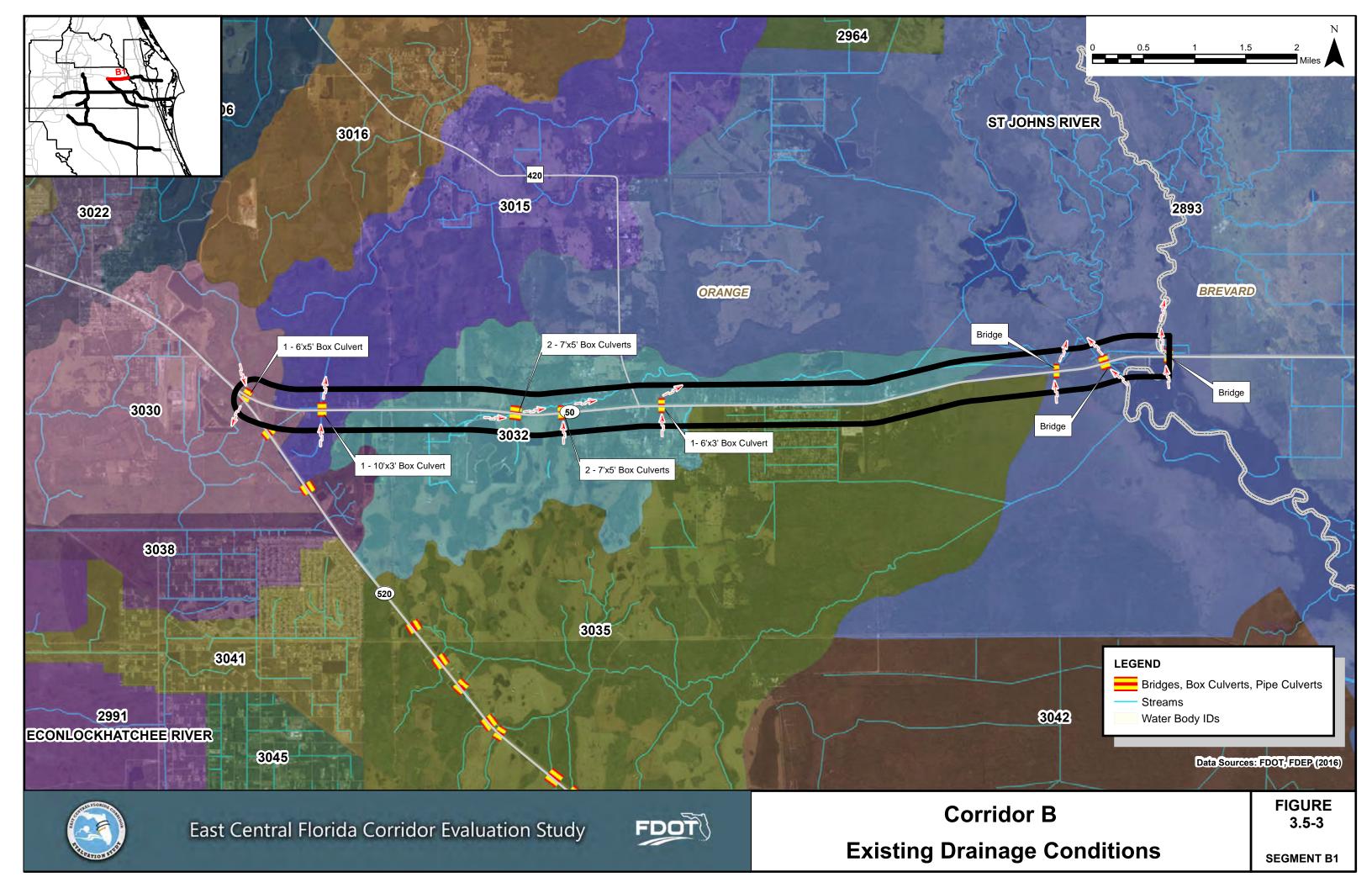
Waterbody Name	Group Name	Water Body ID	Impairment Parameter
Long Branch	Middle St. Johns River	3030	Fecal Coliform
St. Johns River above Puzzle Lake	Upper St. Johns River	2893I	Nutrients
St. Johns River above Puzzle Lake (South Segment)	Upper St. Johns River	28395	Dissolved Oxygen

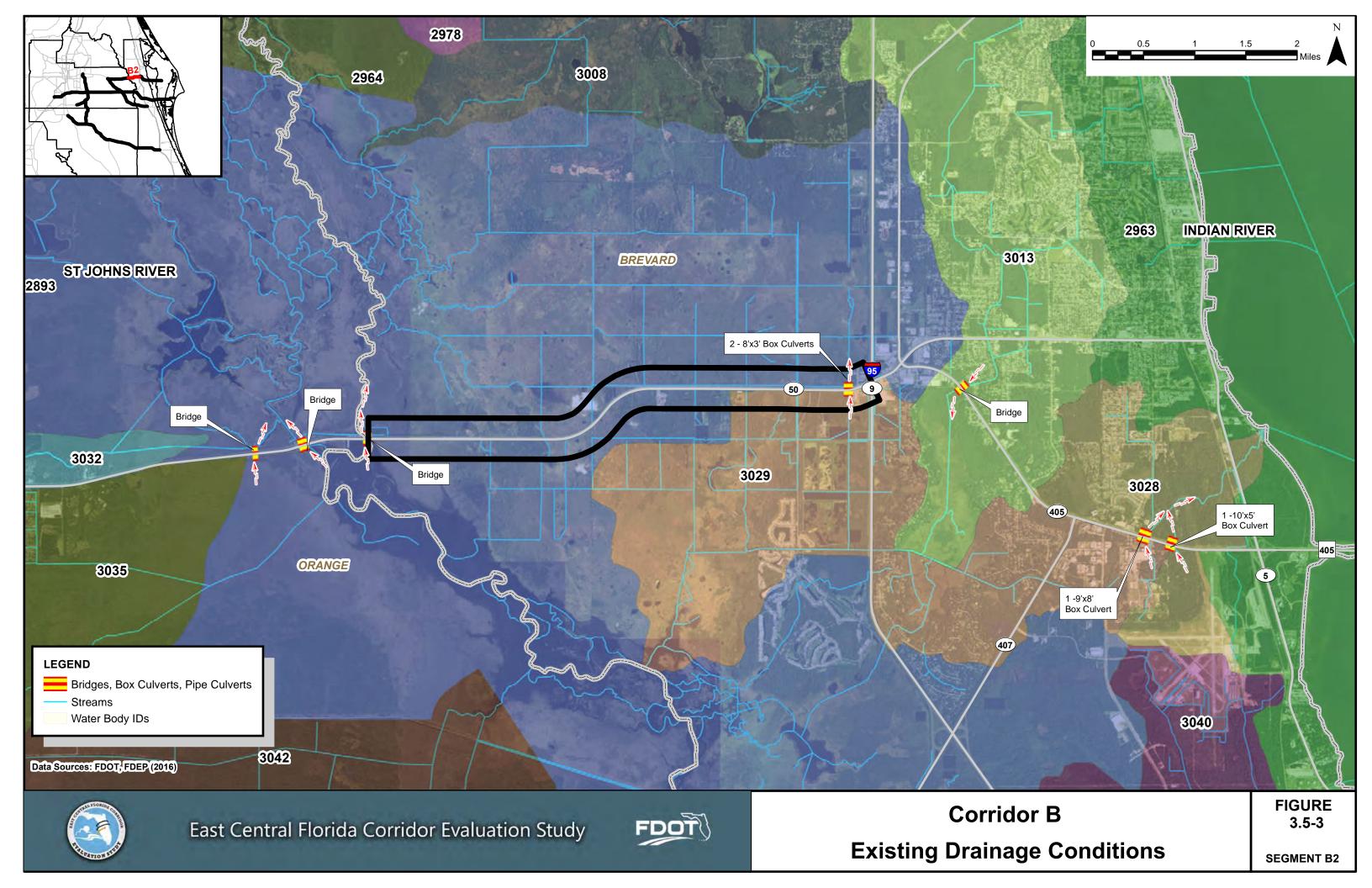
Corridor B in Brevard County passes from west to east through two major FDEP-defined surface water management basins: the Upper St. Johns River Basin and the Indian River Lagoon Basin. Stormwater in the Upper St. Johns River Basin flows generally flows west into the St. Johns River. Stormwater in the Indian River Lagoon Basin flows into the Indian River and Banana River with ultimate discharge into the Atlantic Ocean. The Brevard County portion of Corridor B includes eight major drainage crossings, including three bridges, four box culvert crossings, and one large pipe culvert. Figure 3.5-3 depicts the drainage crossing locations while Table 3.5-3 denotes impaired drainage basins, as defined by FDEP, through which the corridor passes.

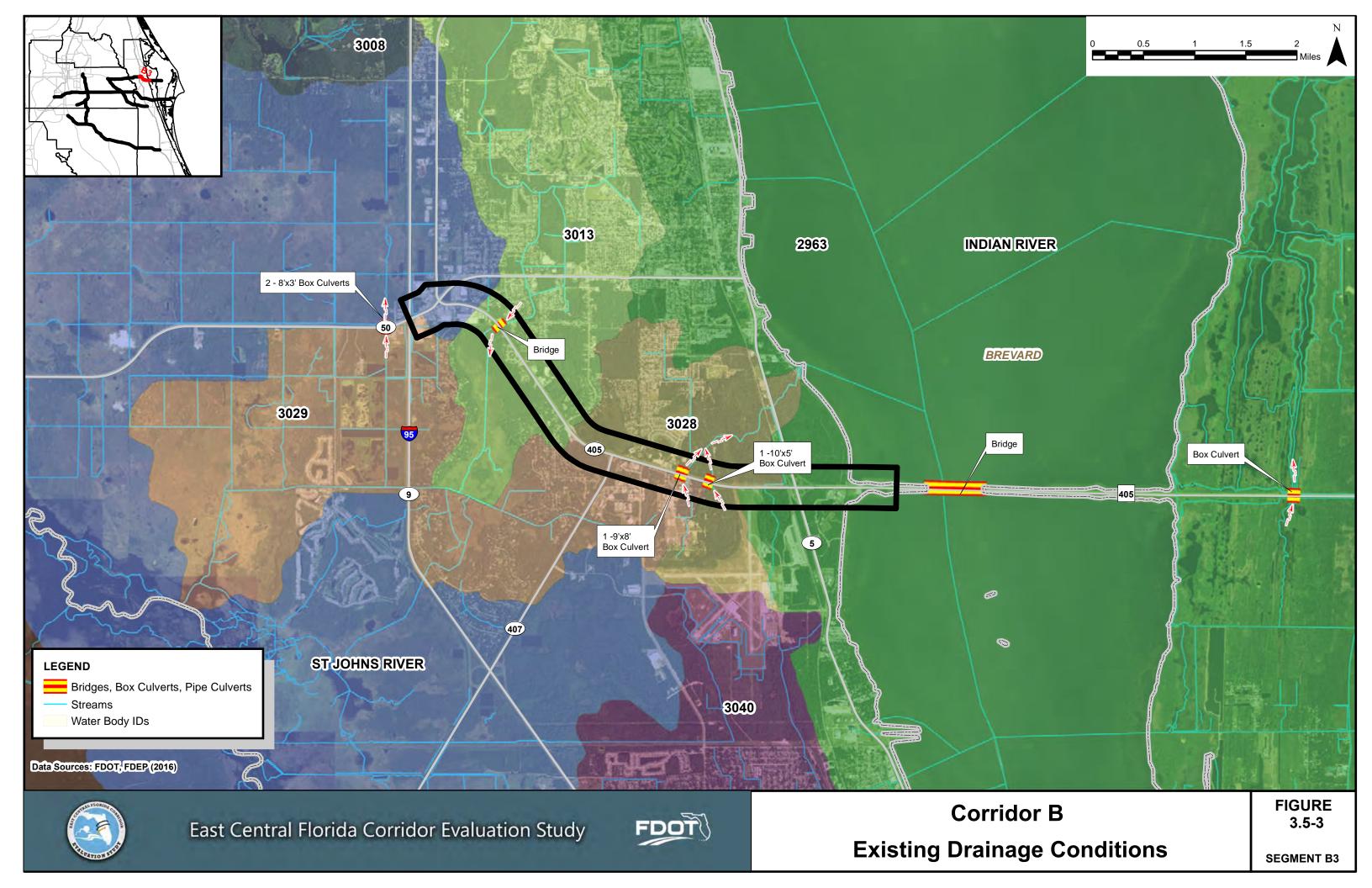
Table 3.5-3: Corridor B Brevard County, Impaired Waterbodies

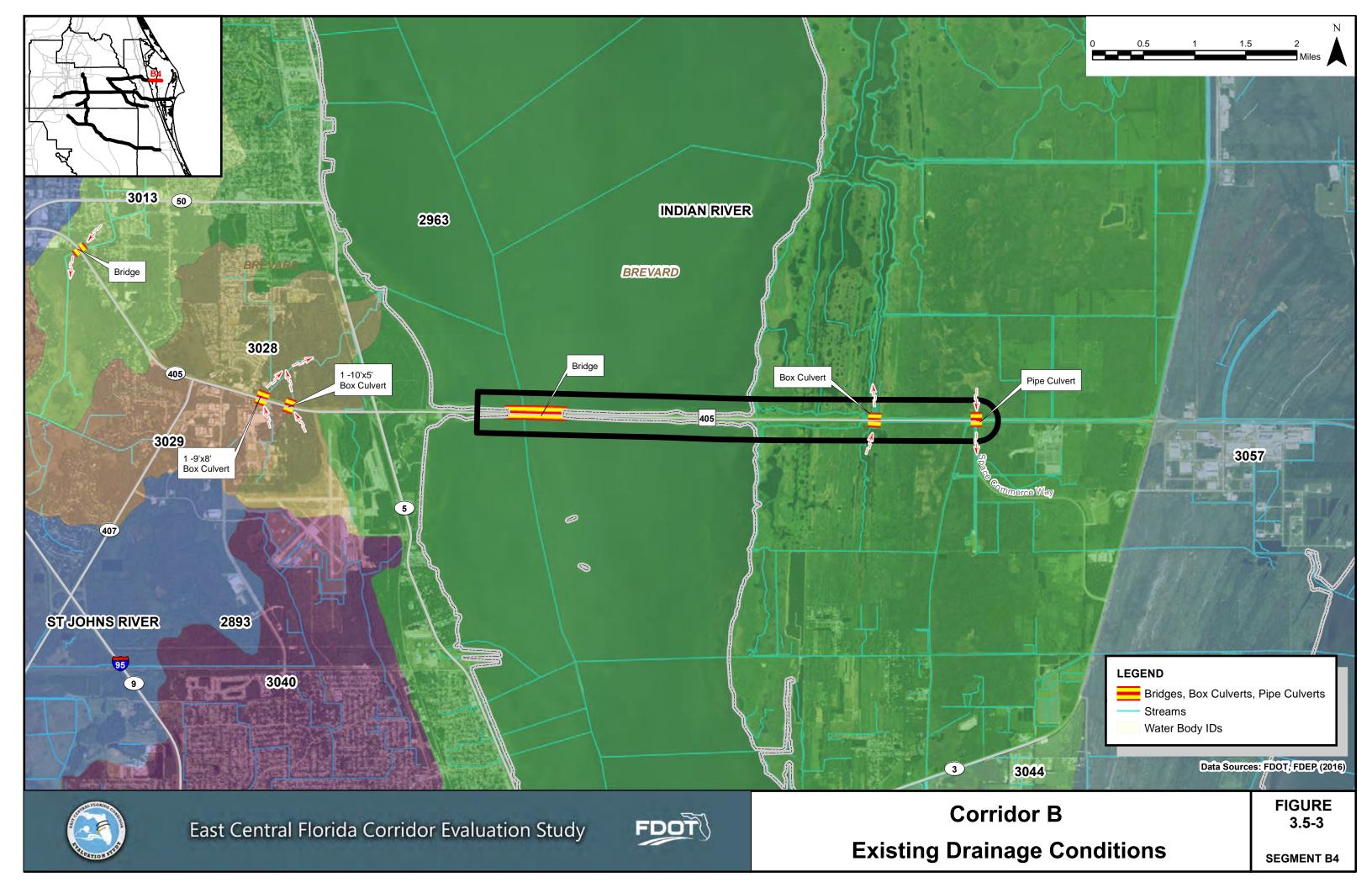
Waterbody Name	Group Name	Water Body ID	Impairment Parameter
St. Johns River above Puzzle Lake	Upper St. Johns River	2893I	Nutrients
St. Johns River above Puzzle Lake (South Segment)	Upper St. Johns River	28395	Dissolved Oxygen
Bird Lake Slough	Upper St. Johns River	3013	Dissolved Oxygen
Addison Creek	Indian River Lagoon	3028	Dissolved Oxygen
Indian River above NASA Causeway	Indian River Lagoon	2963EA	Mercury
Indian River above 520 Causeway	Indian River Lagoon	2963D1	Mercury











3.5.3 Utilities

With the exception of the community of Christmas, SR 50 traverses an isolated area with very little infrastructure requirements. For that reason, the number of utilities in that area are limited to communication and electric transmission lines. SR 405 serves as an arterial road for a moderately populated area between I-95 and SR 5. There, more instances of communications, electric and gas appear in the right-of-way. The utilities then dwindle down to primarily overhead electric transmission lines on the eastern end of the proposed corridor where a causeway and conservation areas make up the majority of the surrounding land uses. The most common types of utilities include:

- Electric transmission and distribution, both aerial and underground.
- Communication lines are located throughout in various forms. This includes aerial and
 underground transmission and distribution lines for telephone, cable television and internet
 services. Fiber optic cables, mainly underground, are attributed to multiple communications and
 internet providers. In many instances, several communication lines would appear in a particular
 segment of the corridor in different aspects and locations.
- A gas transmission pipeline also crosses the corridor.

The initial listing of utilities within the corridors were obtained employing the Sunshine State One-Call system. Those utilities having a major presence in the study areas were contacted to verify the location and configuration of their facilities. The significant utilities are summarized for each of the corridor's counties.

Orange County

The following table lists the primary utilities acknowledging a presence in Orange County as well as their general locations:

	0	,		
Utility Name	Utility Type	Parallel or Crossing	Highway of Corridor	Cross Road/Extent
Summit Broadband	Phone/Fiber	Parallel	SR 50	SR 520 to County Line
Florida Power & Light	Electric - OH	Parallel	SR 50	SR 520 to County Line

Table 3.5-4: Corridor B Orange County, Primary Utilities



Brevard County

The following table lists the primary utilities acknowledging a presence in Brevard County as well as their general locations:

Table 3.5-5: Corridor B Brevard County, Primary Utilities

Utility Name	Utility Type	Parallel or Crossing	Highway of Corridor	Cross Road/Extent
Charter Communications	Internet/CATV/ Phone/Fiber - OH	Crossing	SR 405	FEC RR
Florida Gas Transmission	Gas	Crossing	SR 405	US 1
Florida Power & Light	Electric - UG	Crossing	SR 405	West of US 1
Florida Power & Light	Electric - OH	Crossing	SR 405	Between SR 407 & US 1
Florida Power & Light	Electric - OH	Parallel	SR 405	East of I-95 to end of corridor, East of SR 407 to East of US 1
Level 3 Communications	Fiber	Crossing	SR 405	FEC RR
Level 3 Communications	Fiber	Parallel	SR 405	US 1
Verizon Business	COMM/Fiber	Crossing	SR 405	US 1
Charter Communications	Internet/CATV/ Phone/Fiber	Crossing	SR 50	Helen Hauser Blvd
Charter Communications	Internet/CATV/ Phone/Fiber	Parallel	SR 50	OH Deep Marsh Road to Helen Hauser Blvd, UG Helen Hauser Blvd to Windover Way
Florida Power & Light	Electric - OH	Crossings (2)	SR 50	Between County Line & I-95, West of I-95
Florida Power & Light	Electric - OH	Parallel	SR 50	West of I-95
Summit Broadband	Phone/Fiber	Parallel	SR 50	County Line to SR 405



3.6 Environmental Characteristics

3.6.1 Wetlands

All four segments buffer traverse wetlands and the 100-year floodplain. Wetlands are most prevalent around water bodies such as the St. Johns River in Segments B1 and B2, and the Indian River on the western side of Merritt Island in Segment B4 (Table 3.6-1 and Figure 3.6-1).

Table 3.6-1: Corridor B Wetlands

Segment	Wetland Type	Acres
	Freshwater Emergent Wetland	160.58
	Freshwater Forested/Shrub Wetland	179.87
B 1	Freshwater Pond	7.11
	Lake	0.30
	Riverine	14.27
	Freshwater Emergent Wetland	256.64
B2	Freshwater Forested/Shrub Wetland	103.01
D2	Freshwater Pond	6.72
	Riverine	5.91
	Estuarine and Marine Deepwater	3.03
	Estuarine and Marine Wetland	5.11
В3	Freshwater Emergent Wetland	4.33
	Freshwater Forested/Shrub Wetland	114.85
	Freshwater Pond	9.60
	Estuarine and Marine Deepwater	177.04
	Estuarine and Marine Wetland	83.07
В4	Freshwater Emergent Wetland	25.71
D4	Freshwater Forested/Shrub Wetland	151.37
	Freshwater Pond	56.01
	Lake	0.97





3.6.2 Floodplains

As shown in Figure 3.6-2, flood zone acres are greatest in Segment B4, where the buffer crosses the Indian River and ends on Merritt Island (Table 3.6-2). Segment B4, the NASA Parkway, is bordered by long stretches of waterway on both sides of the road.

Table 3.6-2: Corridor B Flood Zones

Segment	Flood Zone	Acres
B1	A	52.59
DI	AE	304.93
B2	AE	163.47
В3	A	82.1
БЭ	AE	11.85
B 4	AE	481.06

3.6.3 Historic and Cultural Resources

Historic resources in Corridor B include one historic bridge, four historic structures, five resource groups, one scenic highway, three archaeological sites and 64 recorded surveys (Figure 3.6-3). Segment B1 features a cluster of historic structures in the center of Christmas including two historic churches on the south side of the existing roadway. This is coupled with a Daughters of the American Revolution (DAR) placed historical plaque on the north side of the roadway commemorating Fort Christmas. The three archaeological sites along Corridor B are located on the north side of the existing roadway to the east of Sabal Palm Drive, directly under the roadway east of the St. Johns River and south of the roadway east of the intersection of SR 50 and SR 405. Due to the large number of historical features, the corresponding table can be found in Appendix E.

3.6.4 Threatened and Endangered Species

Corridor B goes through consultation areas for the Caracara (Segments B1-B4), West Indian Manatee (Segments B3 and B4), piping plover (Segments B3 and B4), red-cockaded woodpecker (Segment B1), scrub jay, and snail kite (Segments B1-B3). Corridor B also notably crosses through wood stork core foraging area and critical habitat for the West Indian Manatee (Segments B1-B4). Seven black bear nuisance reports have been reported in the buffer for Corridor B, one in Segment B1, and six in Segment B3. (Table 3.6-3 and Figure 3.6-4).

Table 3.6-3: Corridor B Biological Evaluation

г.,	Acres			
Feature	B1	B2	B3	B4
Atlantic Coast Plants Consultation Area	0	0	0	0
Audubon's Crested Caracara Occurrences in Florida (1992-2009)	0	0	0	0
Bald Eagle Nesting Territories	0	0	0	0
Black Bear Range	0	0	0	0
Black Bear Road Kills	0	0	0	0
Caracara Consultation Area	1142.37	620.24	641.58	202.73
Critical Habitat for the Reticulated Flatwoods Salamander and Frosted Flatwoods	0	0	0	0
Critical Habitat in Florida for the West Indian Manatee - 2005	2.11	19.49	10.25	241.54
Crocodile Consultation Area	0	0	0	0
Ecosystem Management Areas	1,142.37	620.24	641.58	855.90
FWC 1999 Wading Bird Rookery Surveys	0	0	0	0
FWC Black Bear Nuisance Reports	1	0	6	0
Final Designation of Critical Habitat in Florida for the Elkhorn and Staghorn Corals - 2009	0	0	0	0
Final Designation of Critical Habitat in Florida for the Smalltooth Sawfish - 2009	0	0	0	0
Florida Forever BOT Projects	0	0	16.04	0
Florida Grasshopper Sparrow Consultation Area	0	0	0	0
Florida Managed Areas	209.34	353.83	59.19	792.71
Florida National Wildlife Refuges	0	215.78	0	497.38
Florida Panther Mortality (1972 through August 2010)		0	0	0
Florida Sand Skink and Blue-tailed (Bluetail) Mole Skink Suitability	0	0	0	0
Florida State Parks	0	0	0	0
Freshwater Mussels Critical Habitat	0	0	0	0
Gopher Tortoise Relocation Permit Recipient Sites in Florida	0	0	0	0
Gulf Sturgeon Critical Marine Habitat	0	0	0	0
Gulf Sturgeon Critical Riverine Habitat	0	0	0	0
Lake Wales Ridge Plants Consultation Area	0	0	0	0
Manatee Consultation Area	0	0	173.40	855.90
National Park Projects		0	0	0
National Parks and Seashores		0	0	0
Okeechobee Gourd Consultation Area	0	0	0	0
Panther Consultation Area	0	0	0	0
Panther Zones		0	0	0
Piping Plover Locations	0	0	0	0
Piping Plover Consultation Area	0	0	239.91	855.90
Piping Plover Critical Habitat	0	0	0	0

Feature		Acres			
		B2	В3	B4	
Public Land	214.04	359.68	67.89	801.24	
Rare and Imperiled Fish	0	0	0	0	
Red-Cockaded Woodpecker Consultation Area	830.25	0	0	0	
Red-cockaded Woodpecker Active and Inactive Occurrences in Florida - 2005		0	0	0	
Sand Skink Consultation Area	0	0	0	0	
Scrub Jay Consultation Area		620.73	642.09	856.57	
Scrub Jay Occurrences in Florida (1992-1993)		0	2	2	
Short-Tailed Hawk and Swallow-Tailed Kite Nests		0	0	0	
Snail Kite Consultation Area		620.24	521.36	0	
Snail Kite Critical Habitat		0	0	0	
Snail Kite Priority Management Zones		0	0	0	
Snowy Plover Nest Locations 2006		0	0	0	
TNC Ecological Resource Conservation Areas		356.13	409.30	0	
Wood Stork Core Foraging Areas		620.24	641.58	855.90	
Wood Stork Nests	0	0	0	0	

3.6.5 Noise Evaluation

As shown in Figure 3.6-5, the Segment B1 buffer in rural Orange County includes a number of potential noise sensitive receptors, particularly in Christmas, Florida. There are five churches, one post office, an RV park, a tourist attraction (Jungle Adventures), and roadside memorials. Additionally, there are 122 residential parcels, predominantly on the south side of SR 50 east of Taylor Creek Road (Table 3.6-4). Throughout Christmas, these potential noise sensitive receptors directly border SR 50 on both sides.

Table 3.6-4: Corridor B Potential Noise Sensitive Receptors

Segment	Туре	Name	Count
	Florida Managed Areas	Savage/Christmas Creek Preserve	
	Florida Managed Areas	Eagan Parcels	
	Florida Managed Areas	Tosohatchee Wildlife Management Area	
	Florida Managed Areas	Seminole Ranch Conservation Area	
	Culture Center	Jungle Adventures	
B 1	Park	Highway 50 & St. Johns River Airboat Ramp	
	Park	SR 50 Boat Ramp	
	Housing Parcels	Single Family Residential	39
	Housing Parcels	Manufactured Home	81
	Housing Parcels	Multi-Family Residential	1
	Housing Parcels	Mobile Home Park	1





Segment	Туре	Name	Count
B2	National Wildlife Refuge Boundary	St. Johns National Wildlife Refuge	
	Florida Managed Areas	Tosohatchee Wildlife Management Area	
	Florida Managed Areas	St. Johns National Wildlife Refuge	
	Florida Managed Areas	Seminole Ranch Conservation Area	
	Florida Managed Areas	Canaveral Marshes Conservation Area	
	Housing Parcels	Mobile Home	1
	Florida Managed Areas	Enchanted Forest Sanctuary	
	Florida Managed Areas	Merritt Island National Wildlife Refuge	
	Community Center	Elks Lodge 2113	
	Culture Center	American Police Hall Of Fame & Museum	
	Laser Facility	McDonnell Douglas Astronautics Company	
	Group Care	Fieldston Preparatory School	
В3	School	Fieldston Preparatory School	
ВЗ	Housing Parcels	Single Family Residential	58
	Housing Parcels	Triplex	1
	Housing Parcels	3 or 4 Living Units	1
	Housing Parcels	Quadruplex	3
	Housing Parcels	Low Rise Apartment Builling	1
	Housing Parcels	Duplex	1
	Housing Parcels	Condominiums	132
	Existing Trail	Florida Circumnavigational Paddling Trail	
B4	National Wildlife Refuge Boundary	Merritt Island National Wildlife Refuge	
	Florida Managed Area	Merritt Island National Wildlife Refuge	

3.6.6 Contamination

The density of potential sources of contamination sites is greatest at the beginning of Segment B3. This segment is notable for some clustering of DEP cleanup sites (mostly fuel stations), one small quantity generator (the American Police Hall of Fame), and one large quantity generator, a Target store (Table 3.6-5 and Figure 3.6-6).

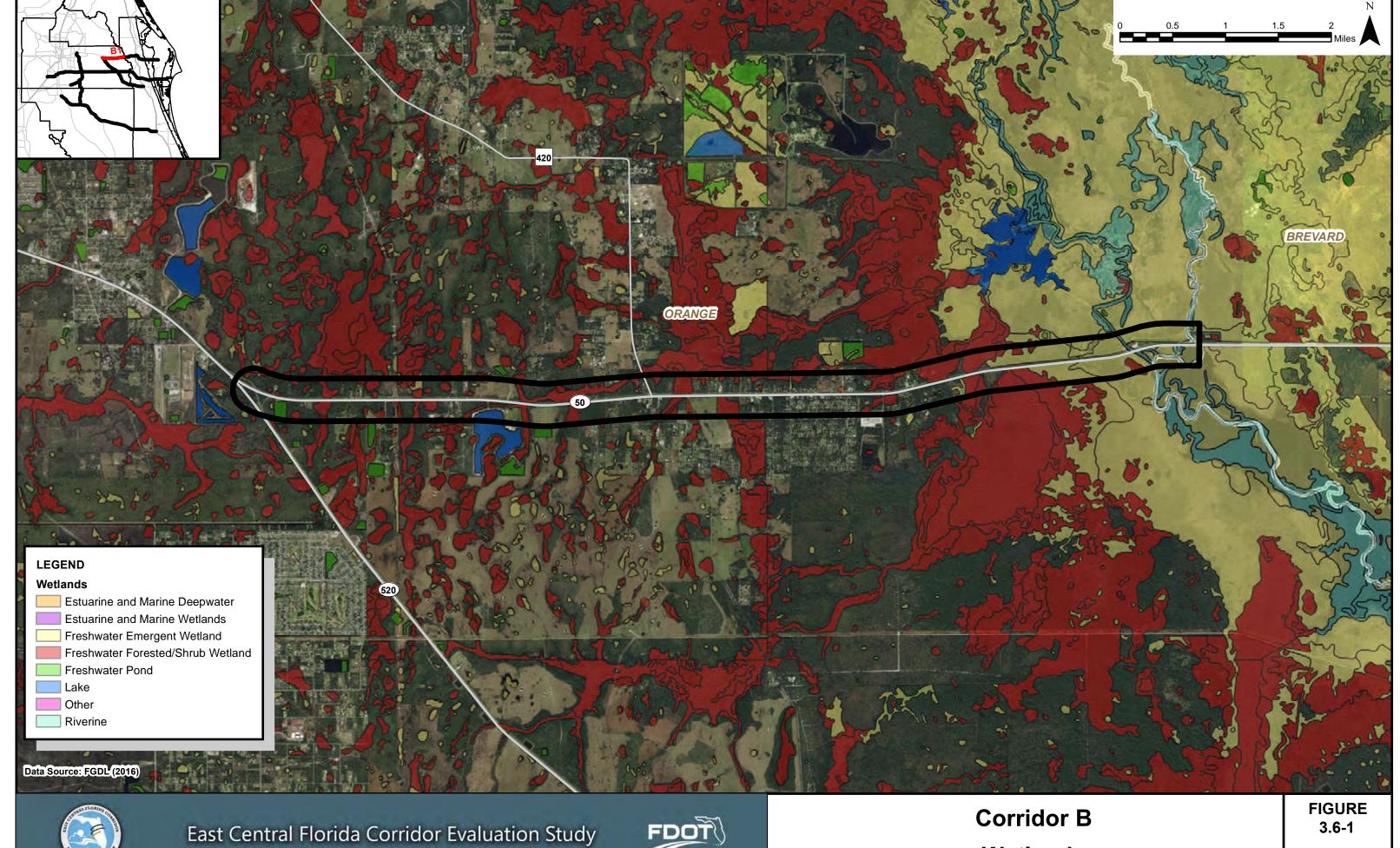
- 72 -Corridor B: SR 50 /SR 405



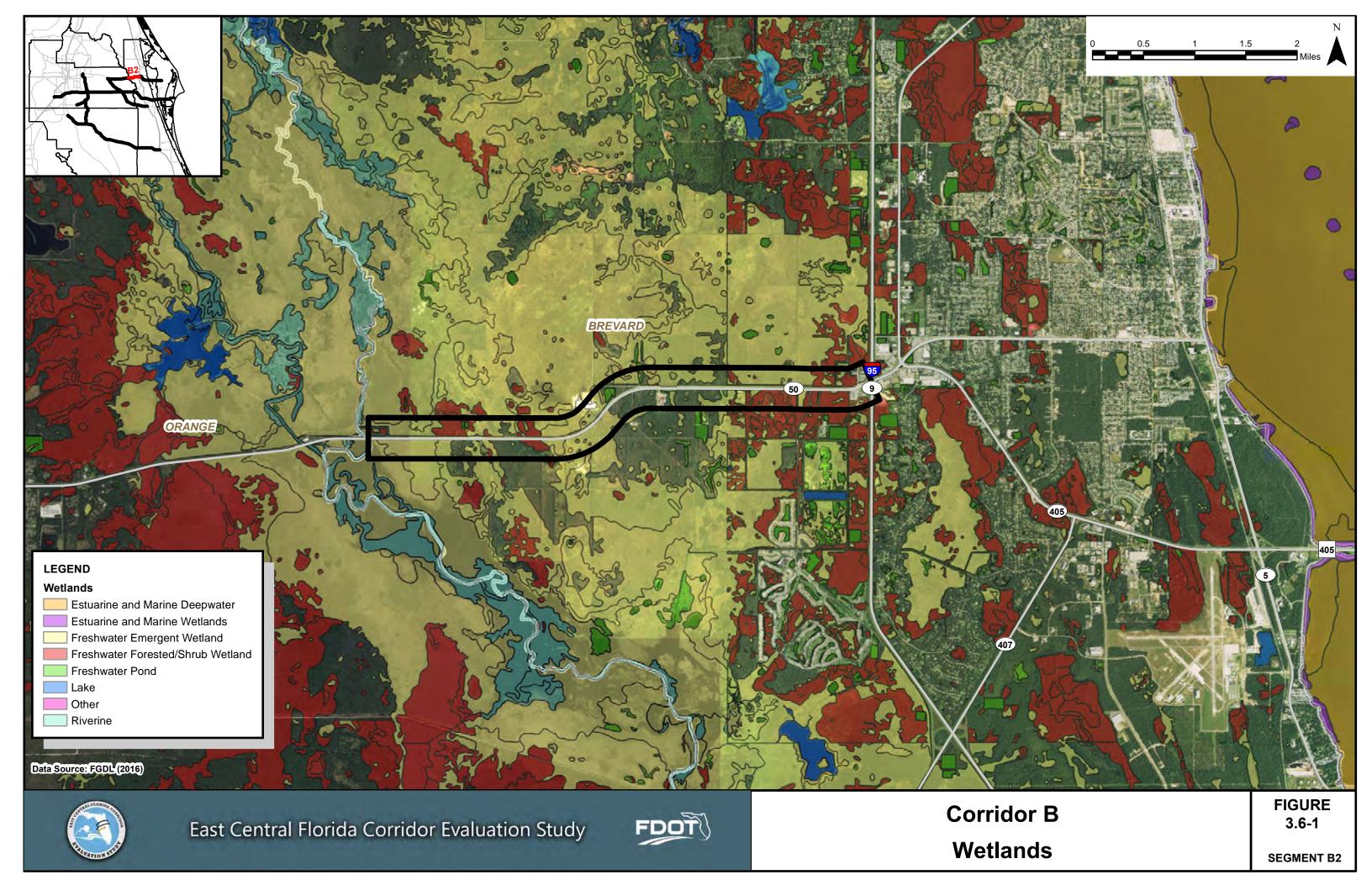


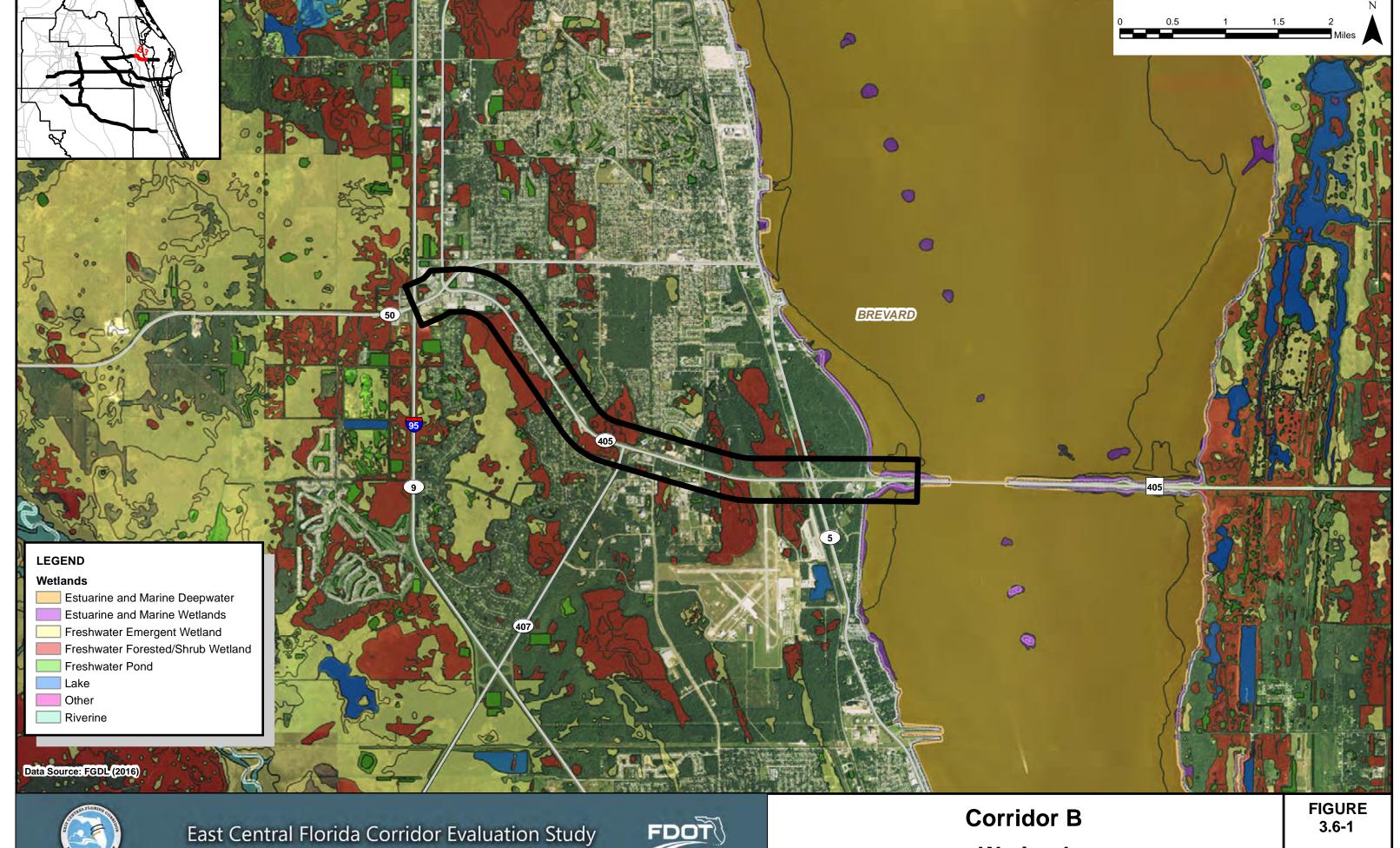
Table 3.6-5: Corridor B Potential Sources of Contamination

Segment	Туре	Name	Acres
B1	N/A		
B2	Brownfield	West 50 Plaza LLC	0.9
В3	Brownfield	Space Coast Regional Airport And Arthur Dunn Airpark Area	21.32
	DEP Cleanup Site	Sunoco #0614-7227	
	DEP Cleanup Site	Sunshine Food Mart #184	
	DEP Cleanup Site	Space Shuttle Foods & Convenience	
	DEP Cleanup Site	Sunshine Food Mart #8	
	DEP Cleanup Site	Sunshine Food Mart #24	
	DEP Cleanup Site	Speedway #3200	
	Large Quantity Generator	Target Store T2269	
	Small Quantity Generator	American Police Hall Of Fame	
B 4	NPDES Facility	KSC Construct Orbiter Display Facility	



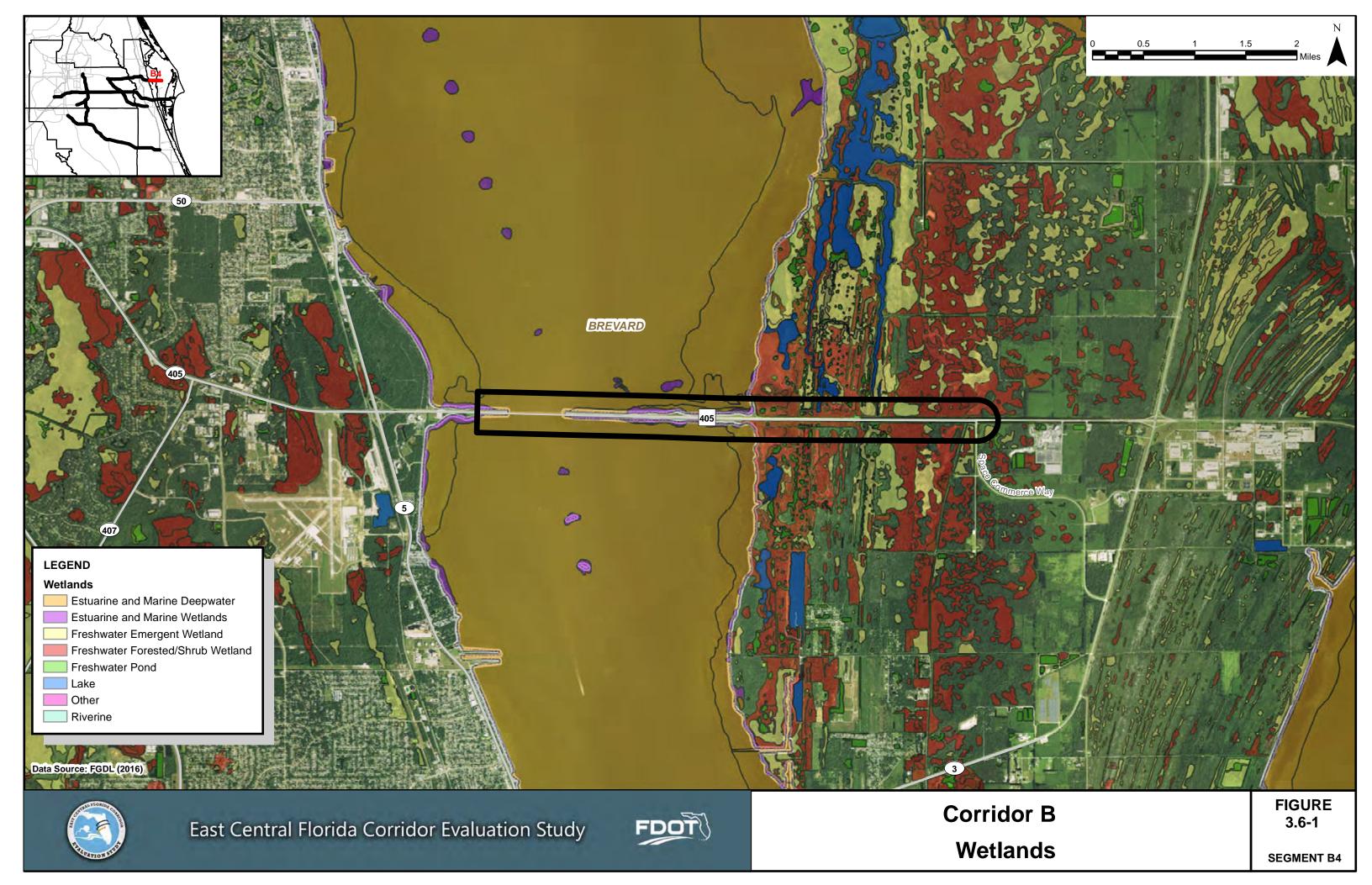


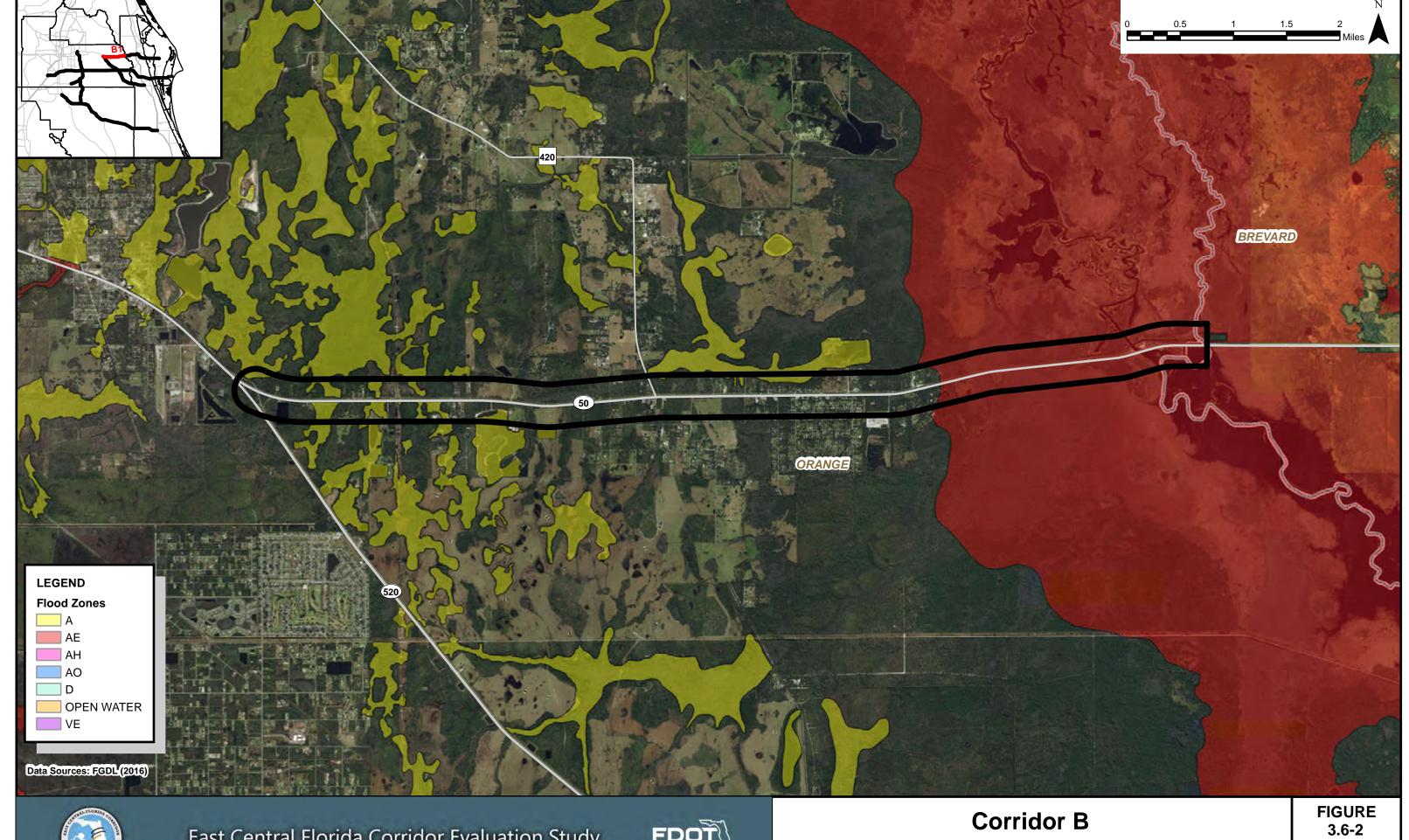








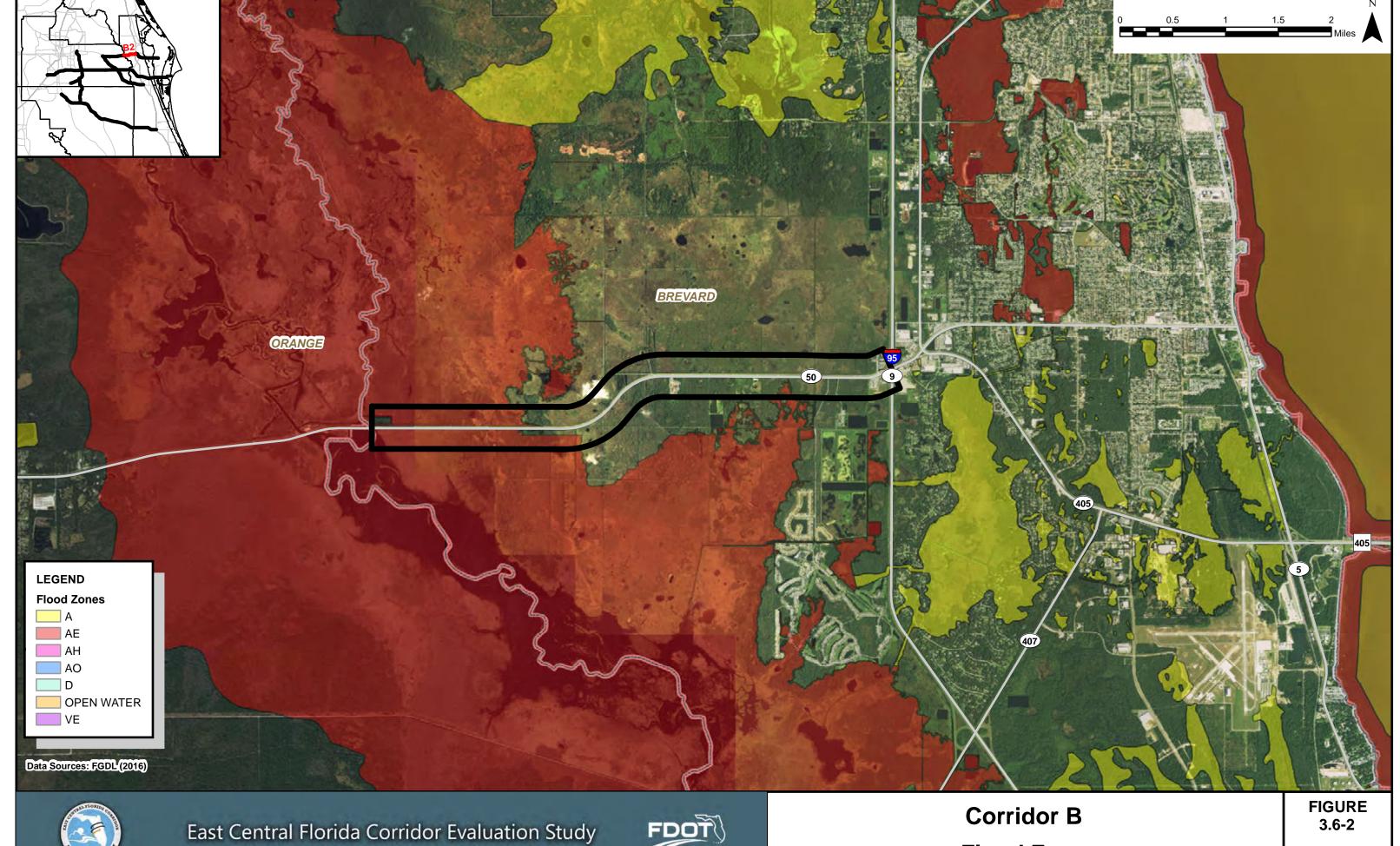




East Central Florida Corridor Evaluation Study



Flood Zones





Flood Zones