

4 PROJECT PURPOSE AND NEED

The need for an interchange at I-75 and NW 49th/35th Street can be summarized into four (4) different discussion areas:

- ***Economic Viability and Job Creation:*** The proposed interchange is needed to support the economic viability of the Ocala-Marion County Commerce Park (OMCCP) which is intended to serve as an economic engine for job creation in the region and is envisioned as a strategic central inland hub for freight related traffic.
- ***Improve Interstate and Regional Mobility:*** The proposed interchange is needed to improve interstate and regional mobility by providing a direct, more efficient, improved access to I-75 in order to serve interstate and regional travel. In particular, the interstate is needed to serve the “long haul” trips associated with the OMCCP.
- ***Address Locally Supported Long Term Regional Needs:*** The proposed project is needed to provide important access to I-75 as part of a locally supported long range vision to develop an east-west corridor parallel to US 27 and SR 326. In addition, the I-75 and NW 49th/35th Street interchange is currently listed as the number one (1) priority project on the Ocala/Marion Transportation Planning Organization (TPO) Fiscal Year (FY) 2021 Priority Projects List and the PD&E Study for the project is currently planned and programmed in the FDOT FY 2015-2020 Work Program.
- ***Accommodate Future Traffic Growth:*** The proposed interchange is needed to accommodate projected future year traffic volumes, including higher truck volumes, which would otherwise degrade the operations at the adjacent interchanges at I-75 and US 27 and at I-75 and SR 326, in the future analysis years.

The following sections discuss the need for the project in more detail within the context of these four areas.

4.1 Economic Viability and Job Creation

The proposed interchange is needed to support the economic viability of the OMCCP and contiguous commerce district/employment center. The proposed interchange will provide an improved connection to I-75 (as detailed more in Section 4.2) and will better allow the OMCCP, envisioned as a strategic central inland hub for freight-related industry, to serve as an economic engine for job creation in the region.

As the population in Marion County continues to increase (as discussed in Section 4.4), the OMCCP will drive additional employment; infrastructural investment such as additional housing, schools and businesses; and, lead to an improved standard of living. The OMCCP was established by the State as a Florida Enterprise Zone and is intended to promote more jobs in the region and includes the new FedEx Ground hub currently under construction.

The Florida Enterprise Zone designation provides the following incentives to businesses to locate within the Commerce Park:

- Enterprise Zone Jobs Tax Credit
- Enterprise Zone Property Tax Credit
- Community Contribution Tax Credit Program
- Sales Tax Refund for Business Machinery & Equipment Used in an Enterprise Zone
- Sales Tax Refund for Building Materials Used in an Enterprise Zone
- Sales Tax Exemption for Electrical Energy Used in an Enterprise Zone

Apart from being a Florida Enterprise Zone, the OMCCP has been designated a CSX “Select Site”, the first site to receive this designation in Florida. Select Sites are properties identified and vetted as capable locations for future manufacturing facilities along the CSX rail network. These sites can be developed quickly since standard land use issues and comprehensive due diligence items have already been addressed. Through the Select Site program, OMCCP can significantly reduce the time it takes for companies to evaluate a competitive site, and ultimately construct manufacturing facility and bring products to market. To receive CSX Select Site designation, the location must meet a rigorous list of criteria, including infrastructure and utility availability, environmental reviews, appropriate zoning and entitlement, rail serviceability, proximity to highways or interstates, and other attributes.

In addition, a portion of a site adjacent to the OMCCP has been identified as the preferred location for the establishment of an Intermodal Logistics Center (ILC) for the transfer of freight between transportation modes or large and small vehicles; breaking down large “unit loads” into smaller or mixed loads; storage; manufacturing; and, value-added processing.

As previously mentioned, the site is best known today as the home of the now under construction FedEx Ground Hub which includes a \$170 million first phase that will employ 350 people when it opens in the third quarter of 2016. Florida Governor, Rick Scott, toured the OMCCP location in Spring 2013 and indicated the location was a perfect fit for FedEx Ground and would help provide needed jobs to address increased unemployed that occurred during the Economic Downturn/Recession.

I-75 is the one of the economic backbones of Central Florida facilitating the movement of traffic between three mega-regions nationally (i.e. Great Lakes, Piedmont Atlantic, and Florida) and six Florida Economic Regions (i.e. Southeast, Southwest, South Central, Tampa Bay, East Central, and North Central), as show in Figure 4-1.

The proposed interchange at NW 49th/35th Street is needed to accommodate future forecasted traffic volumes in Marion County and on I-75. This future demand is predicated on the high growth that has occurred in Marion County in recent years, a trend expected to continue. This is evidenced by the City of Ocala’s position near the top of the list of state Metropolitan areas’ population growth increase change (ranked 5th) between 2000 and 2010.

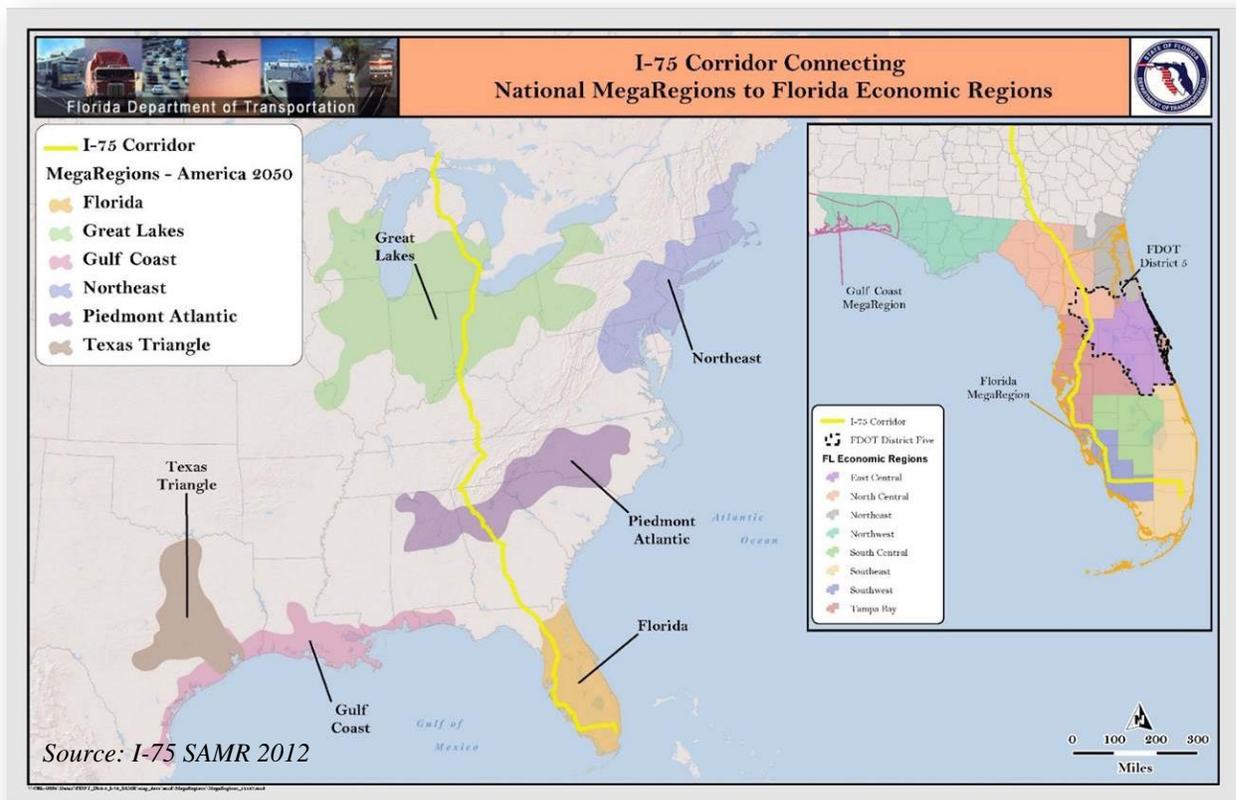


Figure 4-1: I-75 Corridor Connecting National MegaRegions to Florida Economic Regions

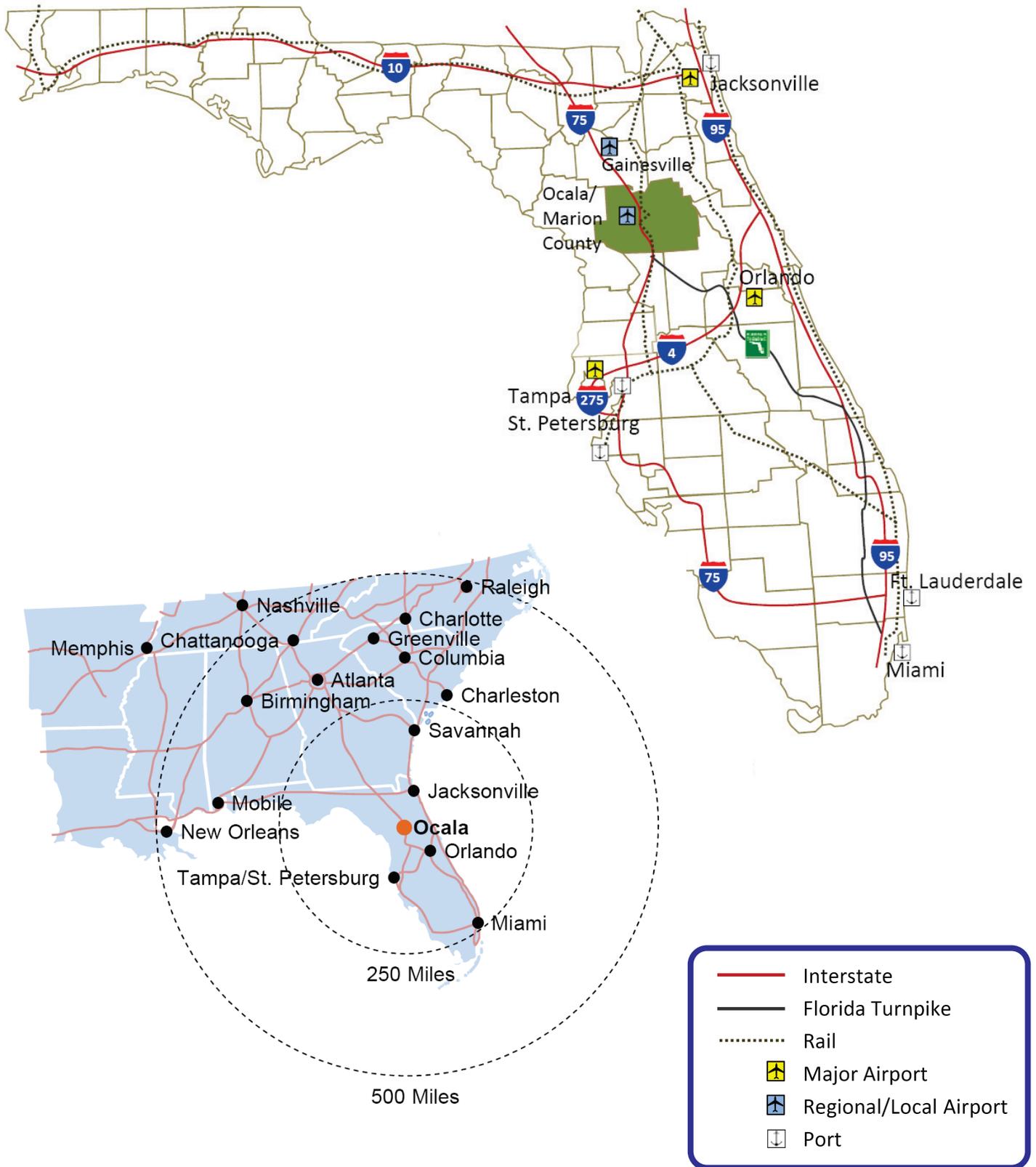
In summary, due to its strategic location and incentives, the OMCCP and the commerce district/employment center will provide needed jobs in the area. By providing vital interstate access, the estimated benefits of the I-75 and NW 49th/35th Street interchange via the OMCCP, will be hundreds of jobs and capital investments in excess of \$200 million.

4.2 Improve Interstate and Regional Mobility

The proposed interchange is needed to improve interstate and regional mobility by providing a direct, more efficient, improved access to I-75 in order to serve interstate and regional travel. In particular, the interstate is needed to serve the “long haul” trips associated with the OMCCP and contiguous commerce district/employment center.

This area of Marion County and specifically the City of Ocala, is located in the heart of North Central Florida and is the approximate midway point between Atlanta and Miami and is centered among the major metropolitan areas of Jacksonville, Orlando and Tampa. This strategic location (see Figure 4-2) coupled with major interstate facilities such as I-75 and the CSX rail line makes this area a key potential hub for commercial industry.

The OMCCP is zoned M-1/M-2 or Light/Heavy Industrial and the businesses that are intended to occupy the commerce park will depend heavily on interstate and regional movement to transport raw materials and finished goods regionally, around the State and beyond.



Source: Economic Development Resource Guide, MS&B 2012



Interstate & Regional Transportation



Figure:

4-2

The proposed interchange is needed to provide interstate access to support this movement of goods. If the proposed interchange is not constructed, it would be detrimental to the ability of these businesses to be economically viable as discussed in the previous section.

4.3 Address Locally Supported Long Term Regional Needs

In addition to being needed to accommodate future traffic growth, improve interstate and regional mobility and improve the economic viability of the OMCCP, the proposed interchange is needed to address locally supported long term regional needs. Specifically, the proposed project is needed to provide important access to I-75 as part of a locally supported long range vision to provide a future east-west corridor parallel to US 27 and SR 326. In addition, the I-75 and NW 49th/35th Street interchange is currently listed as the number one (1) priority project on the Ocala/Marion TPO and the PD&E Study for the project is currently planned and programmed in the FDOT FY2015-2020 Work Program.

Consistency with Long Range Plans

The need for this interchange has been consistently documented over the last five years. It is identified as a needed project in the Ocala/Marion TPO adopted 2035 Long Range Transportation Plan (see Appendix F). In addition, the I-75 and NW 49th/35th Street interchange is currently listed as the number one (1) priority project on the Ocala/Marion TPO Future Year (FY) 2021 Priority Projects list adopted on March 24th, 2015 (see inset below).

Table 7-4 (continued): 2016-2035 Cost Feasible Plan– Roadway Projects

Facility	From	To	Improvement	Current TIP 2011-2015	LRTP Funding Status	Funding Source ²	Estimated Cost by Expenditure Timeframe (Present Day Cost)				Total
							2016-2020	2021-2025	2026-2030	2031-2035	
Local Projects											
Impact Fee District 1 (NW)											
	Interchange @ I-75		New			OA, F-1, TRIP		\$ 7,900,000	\$ 12,100,000	\$ 20,000,000	

Ocala-Marion TPO | 2035 Long Range Transportation Plan
Chapter 7: Cost Feasible Plan



In addition, the PD&E Study for this project is included in the current FDOT Five Year (2015-2020) Work Program in Year 2018. The following inset provides excerpts from this document.

Five Year Work Program						
Selection Criteria						
District 05 (Updated: 4/6/2015-21:15:02) Category:Highways Item Number:435209-1			2015-2020 G1 Marion County Phase:PD & E			
Project Summary						
Transportation System: INTRASTATE INTERSTATE					District 05 - Marion County	
Description: I-75 (SR 93) FROM END OF NW 35TH STREET TO NW 49TH STREET						
Type of Work: INTERCHANGE (NEW)					View Scheduled Activities	
Item Number: 435209-1					SIS	
Length: 0.001						
Project Detail						
Fiscal Year:	2015	2016	2017	2018	2019	2020
Highways/PD & E						
Amount:			\$10,000	\$2,030,000		

Future East-West Corridor

The proposed interchange is needed to improve regional connectivity as part of an overall long range transportation plan by Marion County to develop a corridor parallel to US 27 and SR 326 north of the City of Ocala.

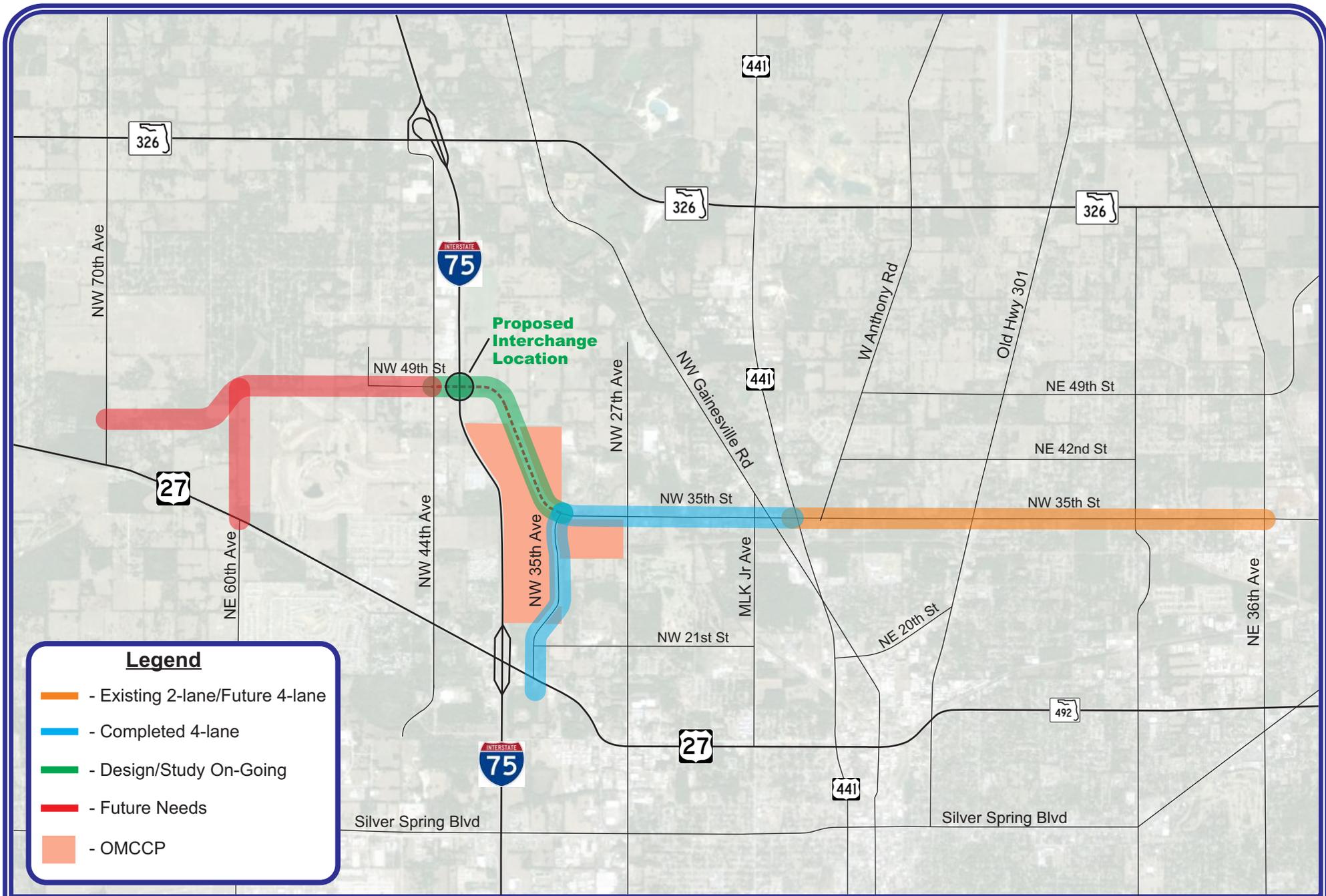
Portions of this corridor are already complete. The corridor starts at NE 36th Avenue located east of I-75 and east of Downtown Ocala, continues west following NE 35th Street, interchanges with I-75 via an extension of NW 49th/35th Street, continuing west to NW 70th Avenue/CR 255A located west of I-75. In conjunction with this new east-west corridor is the connection to US 27 at NW 35th Avenue and at NW 60th Avenue. The corridor sections are illustrated in Figure 4-3.

The corridor project was segmented in various phases and as noted in Table 4-1, the County recently (in 2015) completed the four-laning of NW 35th Street from NW 35th Avenue to US 441 and also the NW 35th Avenue connection to US 27.

Table 4-1: East-West Corridor Phase Status

Roadway	Section	Status
NE 35th St	NE 36th Ave to US 441	Existing 2-lane section
NW 35th St	US 441 to NW 35th Ave	Completed widening to 4-lanes
NW 35th Ave	US 27 to NW 35th St	Completed widening to 4-lanes
NW 35th St/NW 49th St	NW 35th Ave to NW 44th Ave	Includes interchange. PD&E Funded.
NW 49th St Ext	NW 44th Ave to CR 255A/NW 70 th Ave	Currently Unfunded
NW 60th Ave	US 27 to NW 49th St Ext	Currently Unfunded

Note: Colors correspond to corridor concepts shown in Figure 4-3.



East-West Corridor Concepts



Figure:

4-3

4.4 Accommodate Future Traffic Growth

The proposed interchange is needed to accommodate projected future year traffic volumes, including higher truck volumes, which would otherwise degrade the operations at the adjacent interchanges on I-75 at US 27 and at SR 326, in the future analysis years.

4.4.1 Population and Traffic Volume Increase

Marion County has experienced a sustained average growth in population of over 10% since 1970 (see Figure 4-4). The growth is attributed to several factors, including construction of the I-75 that enhanced access to the area, the mild weather, a relatively low cost of living and the construction of large-scale developments such as On Top of the World Communities, Inc. in the County and The Villages located partially in the County. Based on the currently adopted Central Florida Regional Planning Model (CFRPM) socioeconomic data for 2009 and 2035, the projected population for Marion County is expected to grow from approximately 329,500 to over 536,000 in population by year 2035.

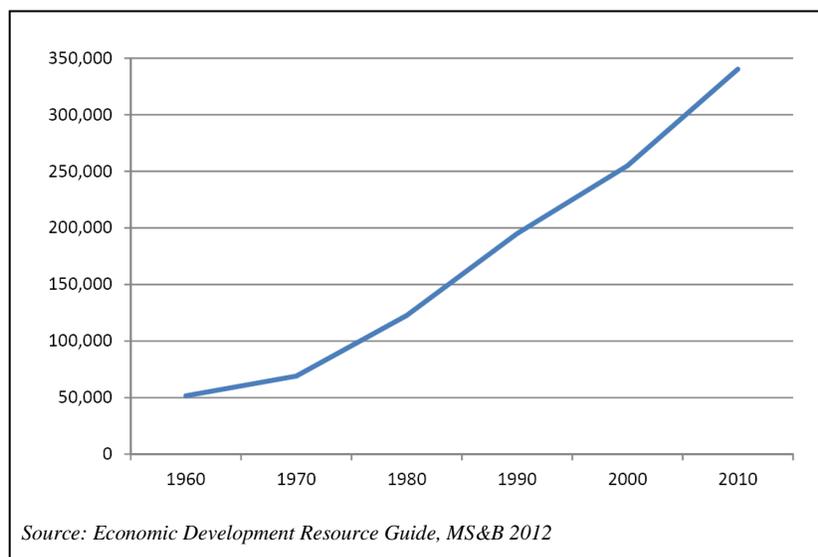


Figure 4-4: Population Growth in Marion County: 1960 to 2010

As a result of this population growth, traffic volumes in the region are increasing and will continue to increase in future years. Review of the CFRPM model data indicated that traffic volumes along US 27 and SR 326, in the vicinity of the interchanges with I-75, are projected to double to 55,500 and 35,600 vehicles per day by 2045. These volumes include the full buildout of the OMCCP (anticipated to be 2025) which adds a projected 25,000 daily trips (using guidance from the *Institute of Transportation Engineers Trip Generation Manual*) to the roadway network, 12% or 3,000 of which are projected to be trucks.

The proposed interchange is needed to help reduce localized congestion at the adjacent interchanges on I-75 at US 27 and at SR 326 due to the projected traffic volume increase. As shown in Table 4-2, the proposed interchange will result in a consistent reduction in the traffic

volumes on US 27 and SR 326. The need for the proposed interchange is further discussed in the following sub-sections.

Table 4-2: Traffic Benefits of the Proposed Interchange

Segment	Projected 2045 AADT Volumes		
	Without Interchange	With Interchange	% Reduction
US 27 west of I-75	48,700	40,300	-17%
US 27 east of I-75	55,500	50,000	-10%
SR 326 west of I-75	15,000	12,300	-18%
SR 326 east of I-75	35,600	33,600	-6%

4.4.2 Limitations of the Existing Adjacent Interchanges

Circuitous Routes

The SR 326 interchange, located north of the proposed interchange, would be a circuitous option for trucks traveling to and from I-75 from the OMCCP and therefore most of the projected truck traffic associated with the Commerce Park will utilize the US 27 interchange (Figure 4-5), severely degrading operations and safety at the interchange throughout the day with Level of Service (LOS) values of F projected on key movements in both the AM and PM peak hours in the 2045 design year [as show in Table 7-5: Design Year (2045) No-Build Intersection LOS]. Conversely, the proposed interchange is projected to operate at LOS D or better and will alleviate some of the congestion at the US 27 interchange in the future analysis years [as show in Table 7-10: Design Year (2045) Build Intersection LOS].

Table 7-11, on page 7-14, presents a comparison of the No-Build vs. Build Conditions overall intersection delay. The comparison indicates that on average, delays in the Build Condition (with proposed interchange constructed) are approximately 51% less that in the No-Build Conditions. Review of the traffic volumes associated with each scenario indicate that the proposed interchange significantly reduces the traffic demand along US 27 (at the I-75 and US 27 interchange and at the US 27 and NW 35th Avenue intersection) leading to the reduction in delays noted. This reduction in delay to the overall roadway network further substantiates the need for the proposed I-75 and NW 49th/35th Street interchange.

Truck Traffic on US 27

In addition, if trucks were to primarily utilize the US 27 interchange, a significant amount of truck traffic would be routed onto US 27. This truck traffic is expected to queue on the 0.25 mile section along US 27 between I-75 and NW 35th Avenue, severely degrading operations along US 27 (see Figure 4-6). As US 27 is an important east-west connection between the City of Ocala and I-75, this is an undesirable situation from an operations and safety perspective. (Note: the segment analysis conducted as part of this study follows the typical FDOT procedure; however, these procedures do not inherently take into account truck volumes that are as high as those anticipated with the OMCCP. This was considered an analysis limitation).

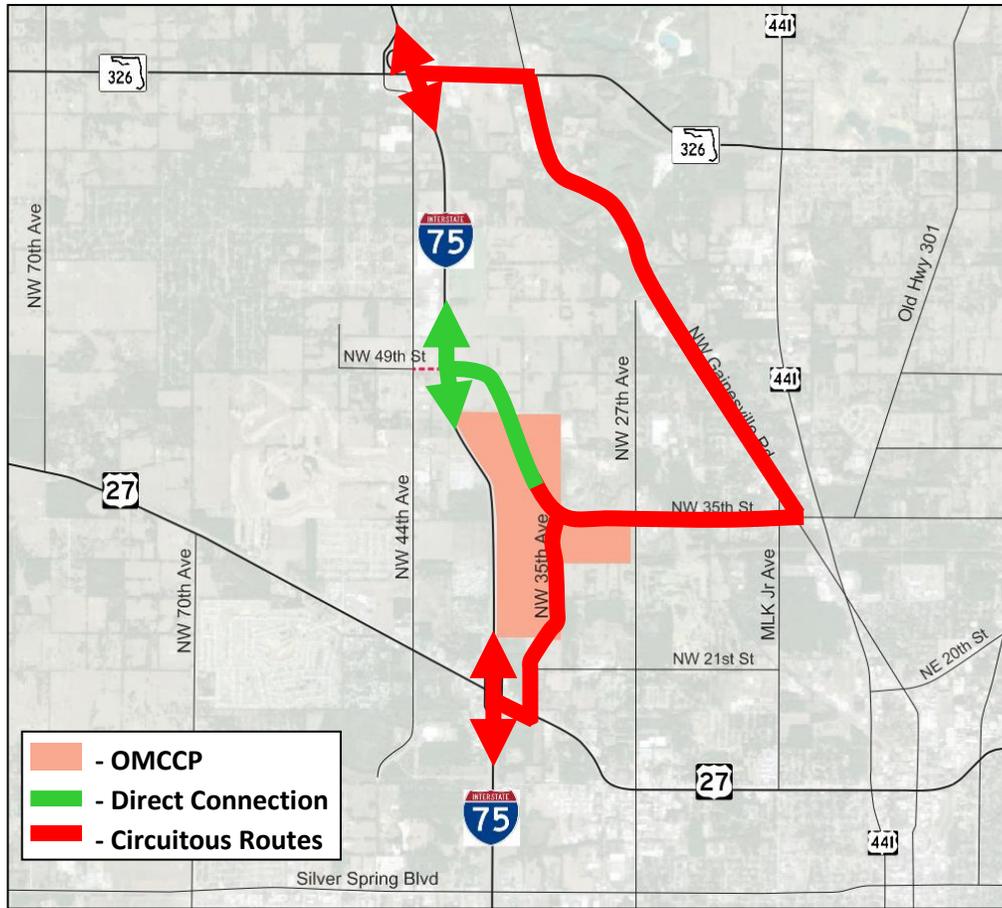


Figure 4-5: Movements between I-75 and OMCCP

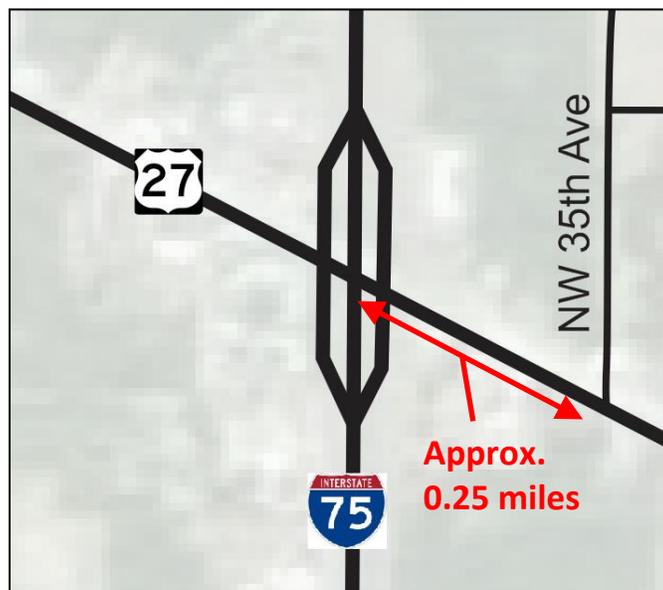


Figure 4-6: Short Segment on US 27 between I-75 and NW 35th Avenue

4.4.3 Structural Considerations to improve the US 27 Interchange

To accommodate this anticipated increase in traffic and truck volumes, improvements to the US 27 interchange would be required. At a minimum, dual left turn lanes would be required under the US 27 interchange bridge. However, to add a second left turn lane would require a bridge modification and/or replacement to lengthen the bridge due to the limited right-of-way under the bridge (see Figure 4-7). In addition, embankment slope modification is not an option at this location because, as noted in the *I-75 Systems Access Management Report (SAMR)* dated October 2013, an embankment pilot study conducted by FDOT indicated that adding additional lanes by modifying the embankment slopes under the bridge was not feasible due to the I-75/US 27 bridge skew.



Figure 4-7: Pictorial views of US 27 under the I-75 Interchange Bridge

Improving the I-75 and US 27 interchange to accommodate the project traffic volumes and heavy truck traffic would involve not only the cost of the bridge modification and/or replacement to lengthen the bridge but also the cost to likely construct temporary bridges to maintain traffic flow on the I-75 mainline. Construction of temporary bridges will result in a lane shift on I-75 leading to an increased Maintenance of Traffic (MOT) cost. In comparison, the construction of the proposed interchange structure at I-75 and NW 49th/35th Street would be more simplified as it would only involve the cost of constructing a bridge over I-75 with additional temporary bridges not required.

A planning level bridge cost estimate was developed for the bridge improvements need to add dual left turn lanes under the US 27 bridge. The estimate indicates that the structural cost to improve the US 27 bridge would be approximately \$6.78 million as detailed in Table 4-3. This structural cost is not insignificant and even if the construction considerations described above were overcome, improving US 27 is not a viable option/alternative as this still would not alleviate issues with heavy truck traffic on the 0.25 mile section of US 27 between I-75 and NW 35th Avenue nor would address circuitous route issues for OMCCP truck traffic going to and from I-75. This indicates that improving the I-75 and US 27 interchange is not a cost beneficial option.

Table 4-3: Planning Level Bridge Replacement Cost Estimate

Bridge Construction Component	Unit Cost¹	Area (sf)⁴	Cost (\$ Mil)
Demolition	\$47.50/sf ³	2x (190'x65')	1.17
New Bridge ²	\$160/sf ³	2x (216'x65')	4.49
MOT Phasing	25% Add.	--	1.12
Total			\$6.78

Notes:

1. Source: *FDOT Transportation Cost Reports – Bridge Costs, April 29, 2014*
2. *Concrete Deck/ Steel Box Girder assumed because of bridge span*
3. *Average of the Low and High costs used for planning purposes*
4. *Planning level bridge deck square footage*