

TECHNICAL MEMORANDUM: FREIGHT CONGESTION CONSIDERATIONS

FOR THE COLLIER 2040 LONG RANGE
TRANSPORTATION PLAN (LRTP)



BY

RENAISSANCE PLANNING

FOR THE

COLLIER METROPOLITAN PLANNING ORGANIZATION

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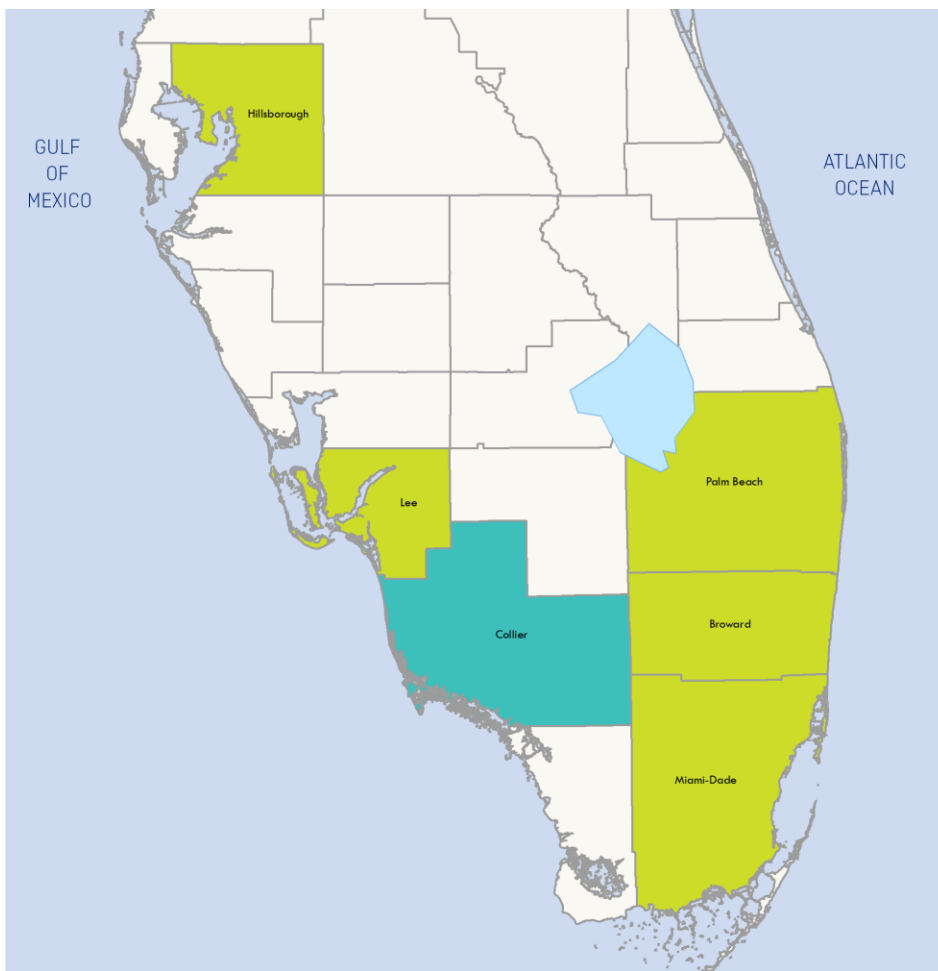
Overview

The growing importance of freight movement is reflected in the latest federal transportation authorization legislation, Moving Ahead for Progress in the 21st Century (MAP-21). The Florida Legislature has also recognized the importance of freight mobility to the state’s economic growth. The Florida Department of Transportation (FDOT) created the Office of Freight Logistics and Passenger Operations that establishes policies and investments that will enhance Florida’s economic development efforts in the present and into the future. The Collier 2040 Long Range Transportation Plan (LRTP) recognizes the growing importance of freight movement in the overall transportation system.

Collier County Trading Partners

Within the State of Florida, the primary trading partners for Collier County (both imports and exports) are Lee County, Miami-Dade County, Broward County, Palm Beach County, and Hillsborough County.

Figure 1 | Primary Trading Partners for Collier County

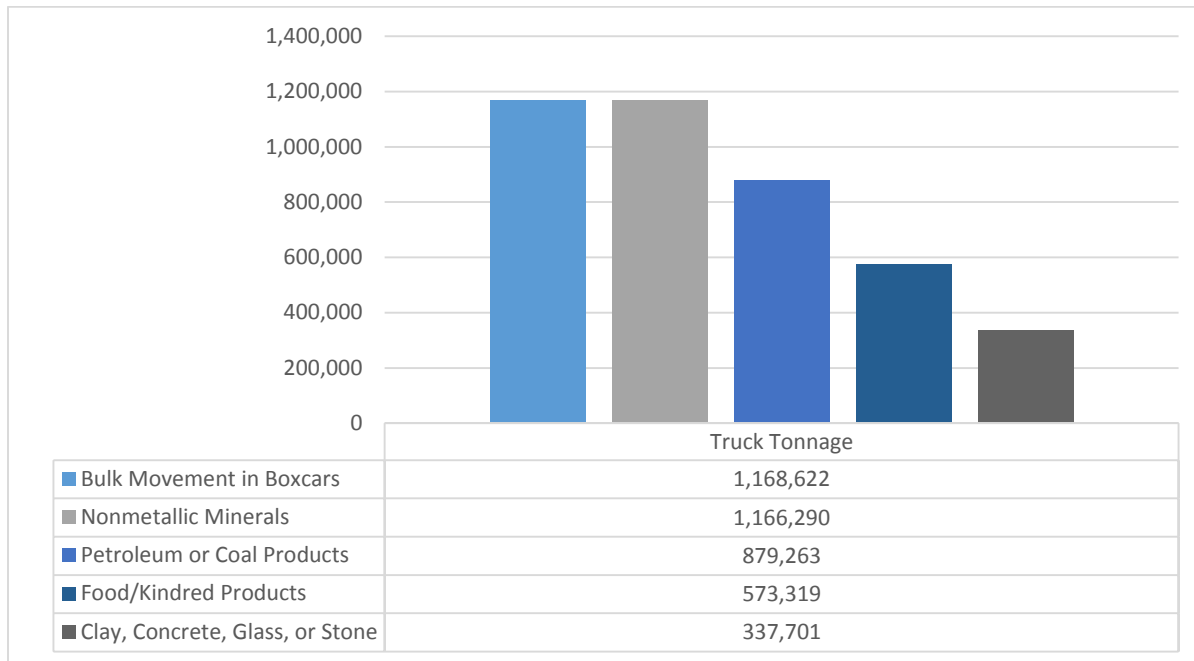


Source: IIHS Global, Inc., Transearch, 2011



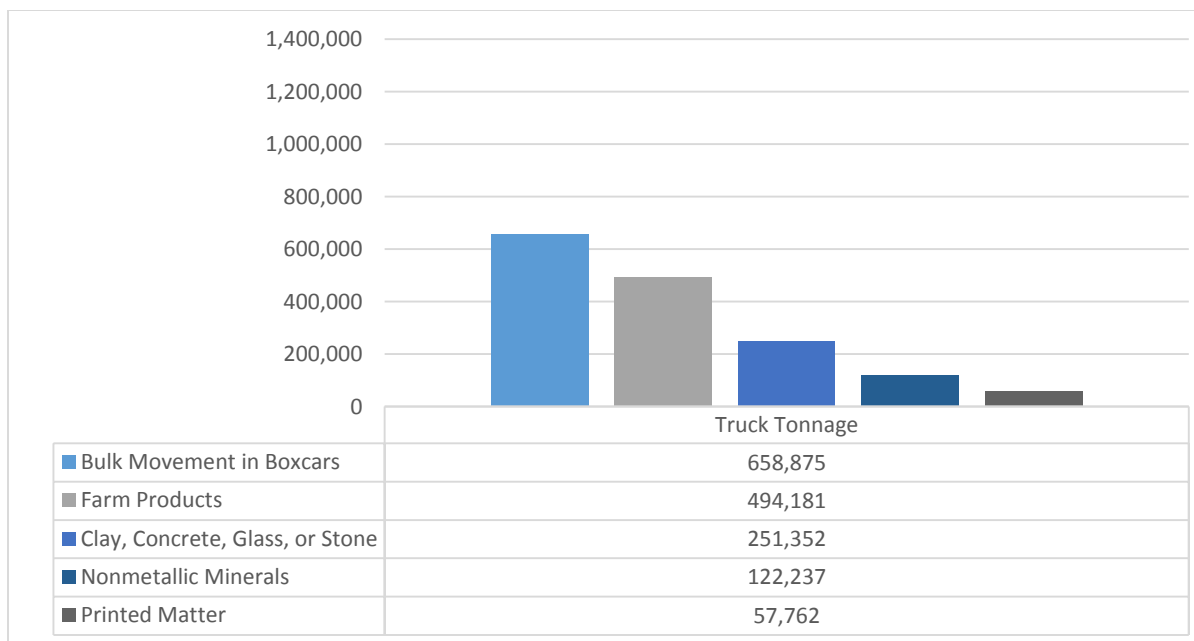
As indicated in Figures 2 and 3, there is a significant imbalance in freight flows, with Collier County importing much more than it exports.

Figure 2 | Collier County Imports



Source: Source: IIHS Global, Inc., Transearch, 2011

Figure 3 | Collier County Exports



Source: IIHS Global, Inc., Transearch, 2011



This imbalance is reflected in the makeup of major employers in Collier County, which are presented in **Table 1**. As noted, primary employers are the public sector agencies, healthcare providers, and tourism facilities, which reflect the consumer characteristic of the county.

Table 1 | Collier County Largest Employers

Employer	Employees
Collier County Public Schools	5,281
NCH Healthcare System	4,000
Publix Supermarkets	2,805
Collier County Government (excl. Sheriff)	2,211
Collier County Sheriff's Office	1,389
Gargiulo, Inc.	1,110
Ritz Carlton Hotel	1,110
Arthrex, Inc.	1,056
Hometown Inspection Services	900
Waldorf Astoria (Registry Resort)	760
Marriott Corporation	700

Source: Collier County 2014 Comprehensive Annual Financial Report

Freight is not a primary driver of the local economy, as only two of the largest employers, Gargiulo, Inc. (agriculture) and Anthrex, Inc. (medical products) can be expected to generate significant freight activity. Although Collier County has modest industrial infrastructure, it does generate considerable movement of agricultural products and mining materials. In addition, consumables coming into Collier County require ease of freight movement. Movement of freight affects the cost of production and the cost of goods for Collier County businesses and consumers. As a result, special attention has been given to freight movement in the development of the 2040 LRTP. Freight mobility was



considered in the determination of needed transportation improvement projects and in the evaluation of cost-feasible projects.

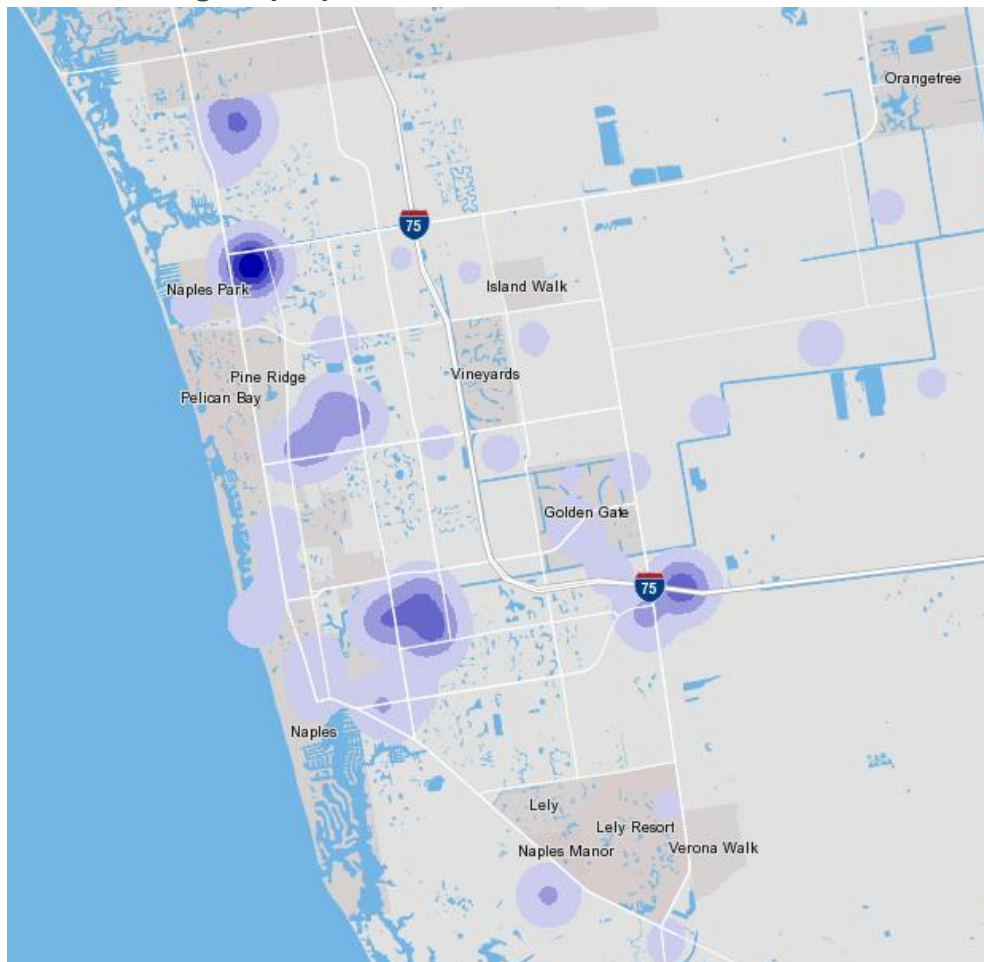
The Collier County freight transportation system includes regional freight activity centers (FACs) and the freight transportation network that connects FACs to markets within and outside of the county.

Freight Activity Centers

Freight activity centers (FACs) contribute to the economic well-being of an area. Freight activity centers are defined as large industrial and manufacturing areas that send and/or receive freight in large quantities or for further distribution to the consumer market. They have been identified throughout Collier County to provide context for where industrial and freight logistics activity are most abundant and as well as to define strategies for preserving and improving mobility on the transportation facilities that serve them.

Concentrations of employment for three key freight-oriented industry sectors are presented in Figures 4-6, for manufacturing, wholesale trade, and transportation & warehousing, respectively.

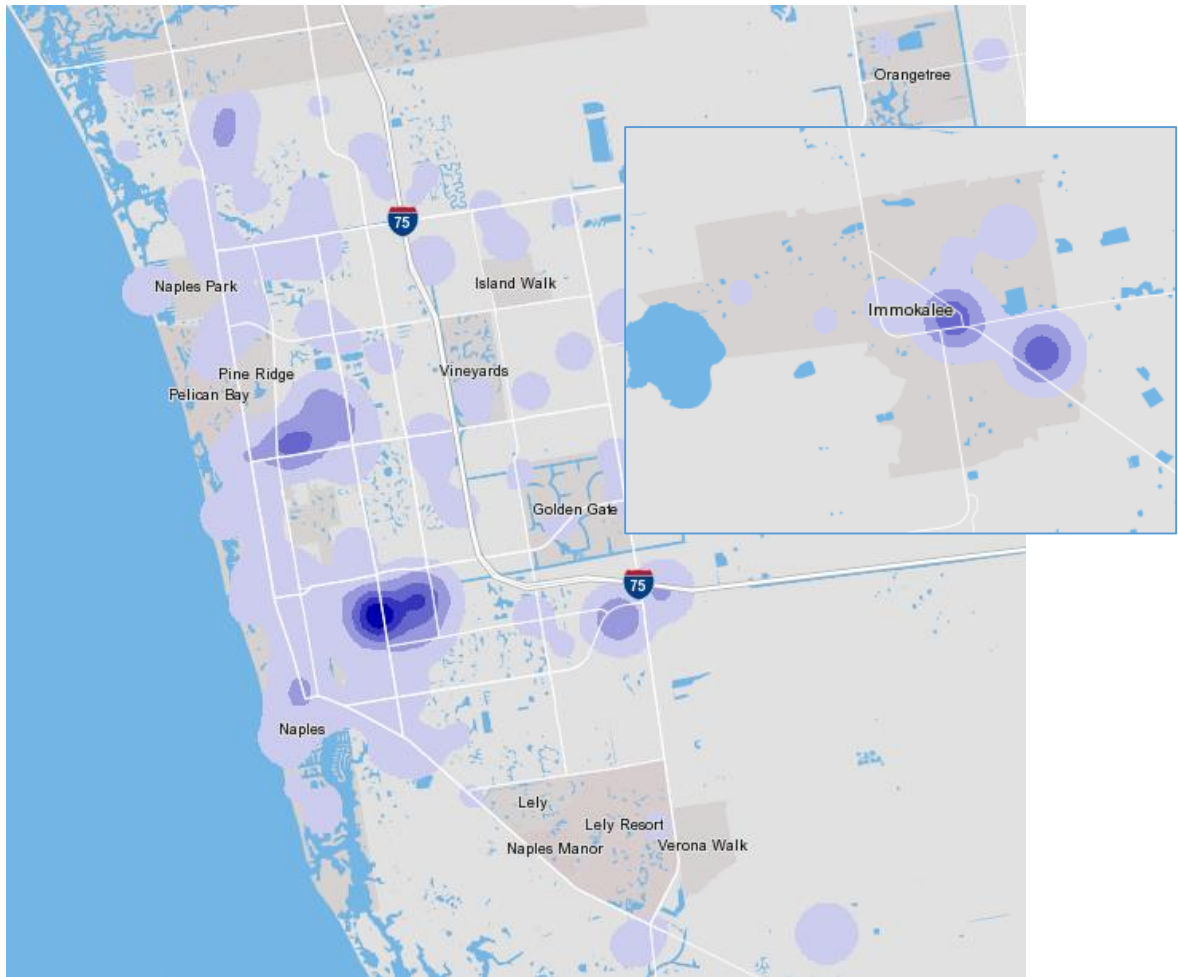
Figure 4 | Manufacturing Employment Concentrations



Source: U.S. Census Bureau – LEHD Program



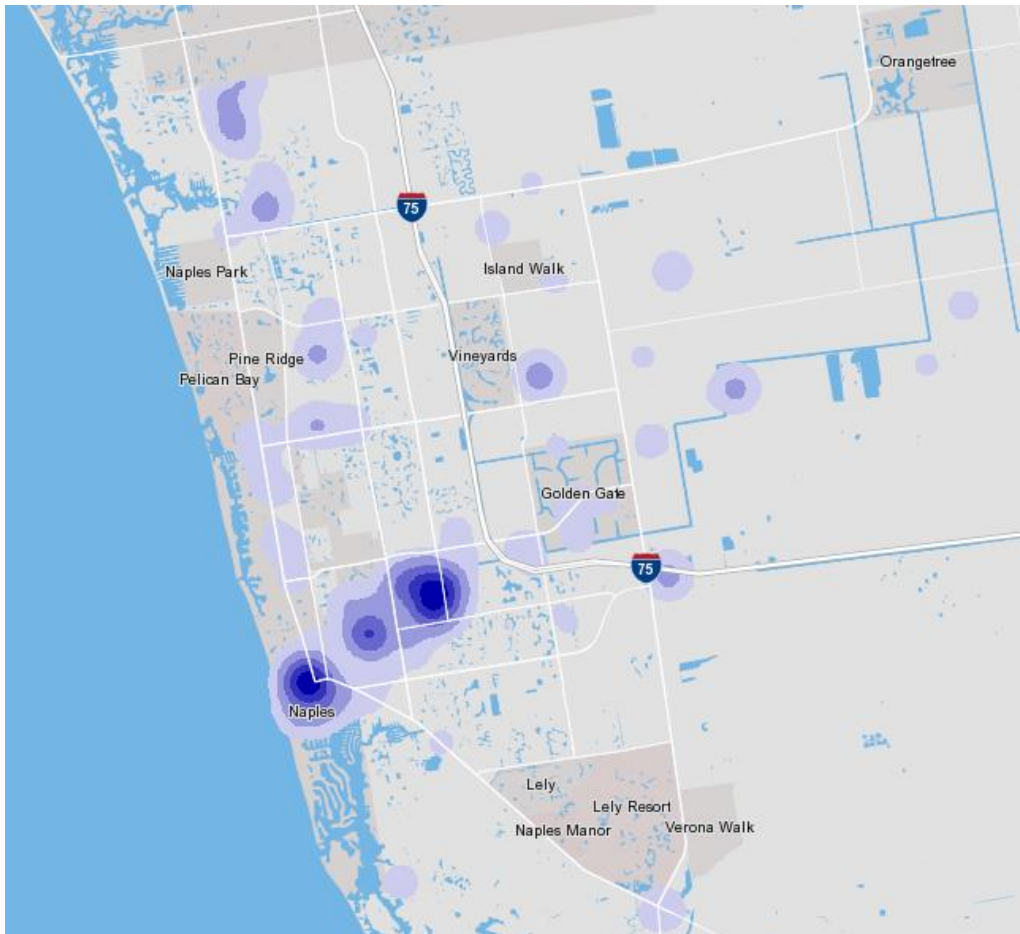
Figure 5 | Wholesale Trade Employment Concentrations



Source: U.S. Census Bureau – LEHD Program



Figure 6 | Transportation & Warehousing Employment Concentrations



Source: U.S. Census Bureau – LEHD Program

Note: The apparent concentration of transportation employment in downtown Naples is an anomaly of the LEHD data set, which is based on U.S. Department of Labor data and reflects the office locations of A&S Transportation, a major provider of school bus transportation; Naples Transportation, which provides for hire transportation services, including limos, SUVs, and other vehicles; and Everglades Excursions. These companies employ significant numbers of drivers, which are classified by the Department of Labor as transportation workers and are not related to freight activities.

Freight activity centers in Collier County were defined based on the following considerations:

- Existing and future industrial land use plans were reviewed to identify conglomerations of industrial, manufacturing and warehousing/distribution uses;
- Level of existing and future freight activity;
- Intermodal aspects, such as rail and roadway service;
- Designation as part of the Florida Strategic Intermodal System; and
- Capacity for expansion and growth.



Five FACs were identified within Collier County. These FACs are listed and characterized in **Table 2** and illustrated on **Figure 7**.

Table 2 | Collier County Freight Activity Centers

MA P ID	Name	FAC Type	Acres	Available Mode(s) of Cargo Transport				Comments
				Intermodal Facility	Truck	Rail	Air	
1	Old US 41 Industrial	Industrial	472	X	X	X		Bisected by Seminole Gulf Railroad, which has its southern terminus within the FAC; Mostly industrial parks and includes a large CEMEX operation
2	North Naples Industrial	Industrial	367		X			Primarily industrial parks; Large big-box retailers adjacent to FAC include Costco, Best Buy, Home Depot, Kohl's, and Lowe's
3	East Naples Industrial	Industrial	731		X			Mixture of industrial parks containing manufacturing, warehousing, office, and personal storage units
4	Gateway Industrial	Industrial	204		X			Smallest FAC; Mostly small manufacturing; A wastewater treatment plant and several hotels are located near the FAC
5	Immokalee Airport Industrial	Industrial	2,553		X		X	Foreign Trade Zone status has been obtained for 60 acres of the airport; Mostly agricultural related packing and processing businesses; room for expansion

Several of the sites are mostly characterized by mixtures of industrial park activities. The Old US 41 Industrial area has limited rail service at this time. However, it should be recognized as the only site in Collier County with the potential for rail/truck intermodal activities. It should be preserved for future freight related development as economic conditions warrant. The Immokalee Airport area is primarily devoted to agricultural functions. A 60 acre



portion of this FAC has acquired status as a designated foreign trade zone which allows for easier customs clearance and provides other advantages for international trade.

Agriculture and Mining

Agricultural and mining operations are significant contributors to Collier County’s economy. While these types of operations are not as intense as freight activity centers in terms of truck traffic, it is important to acknowledge their intermittent and seasonal demands upon certain roadway facilities within Collier County.

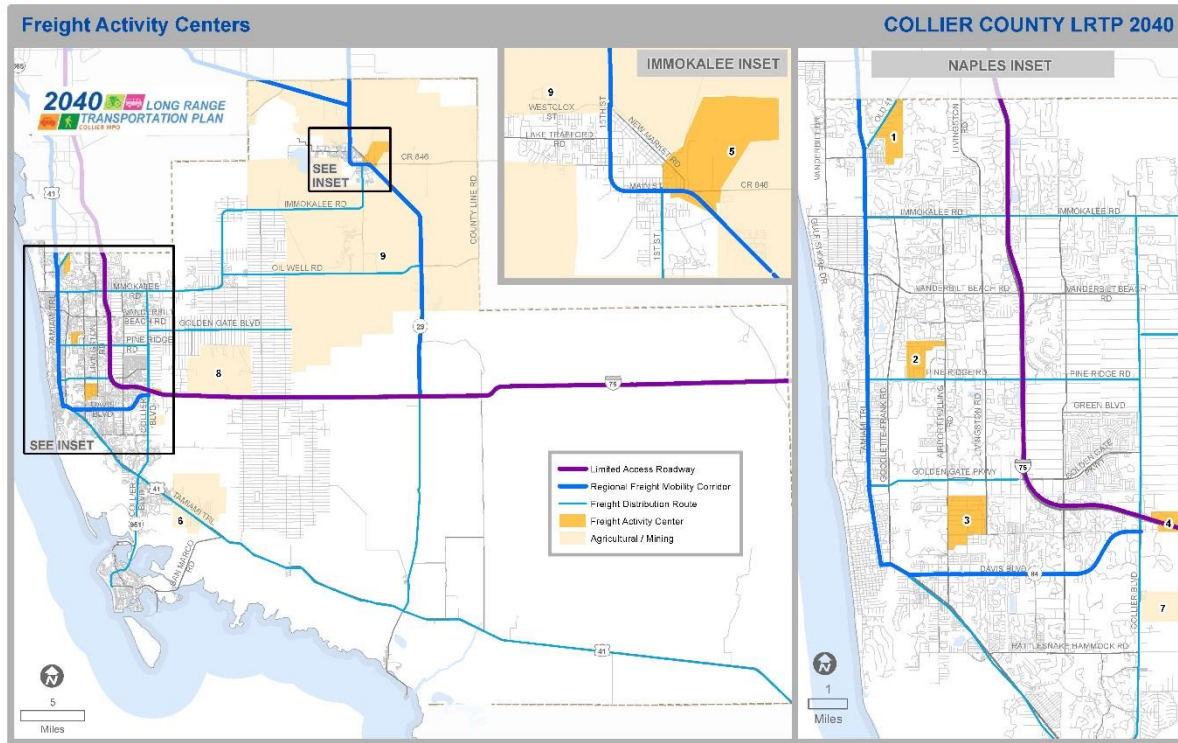
Four agricultural and mining areas were identified within Collier County. These areas are listed and characterized in **Table 3** and are also illustrated on **Figure 7**.

Table 3 | Collier County Agricultural and Mining Areas

MAP ID	Name	FAC Type	Acres	Comments
6	US 41 Agricultural Fields	Agricultural	1,064	Variety of agricultural products; Accessible by truck
7	Collier Boulevard Mine	Mining	597	Willow Run Limestone Quarry; Accessible by truck
8	East of Collier Blvd. Mining and Agricultural Fields	Agricultural and Mining	1,202	Variety of agricultural products; Preferred Materials mine – asphalt, building materials, cement products; Accessible by truck
9	North County Agricultural Fields	Agricultural	186,400+	Variety of agricultural products; Accessible by truck



Figure 7 | Collier County Freight Activity Centers, Agricultural and Mining Areas





Freight Network

Collier County’s freight transportation network system is dominated, almost exclusively, by its highway network. The only rail access to Collier County is provided by a short section of the Seminole Gulf Railway in the far northwest corner of the county. The hierarchy of the County’s freight roadway network includes limited access facilities, regional freight mobility corridors, and freight distribution routes.

Current truck traffic volumes are depicted on **Figure 8**. As noted, only the northernmost section of Interstate-75 has daily truck volumes exceeding 7,500. Other high volume truck routes, exceeding 2,500 per day are limited to the portions of I-75 east of SR 29 and west of Collier Boulevard. Also depicted are routes with truck volumes with lesser amounts of daily truck traffic. It has also been noted that a major solid waste landfill, intended to serve Florida’s east coast, is being proposed in Hendry County. Should this development move forward, it is anticipated to add 300-400 daily truck trips to SR 29 between I-75, through Immokalee, and into Hendry County.

Figure 8 | Annual Average Daily Truck Traffic (Volume)

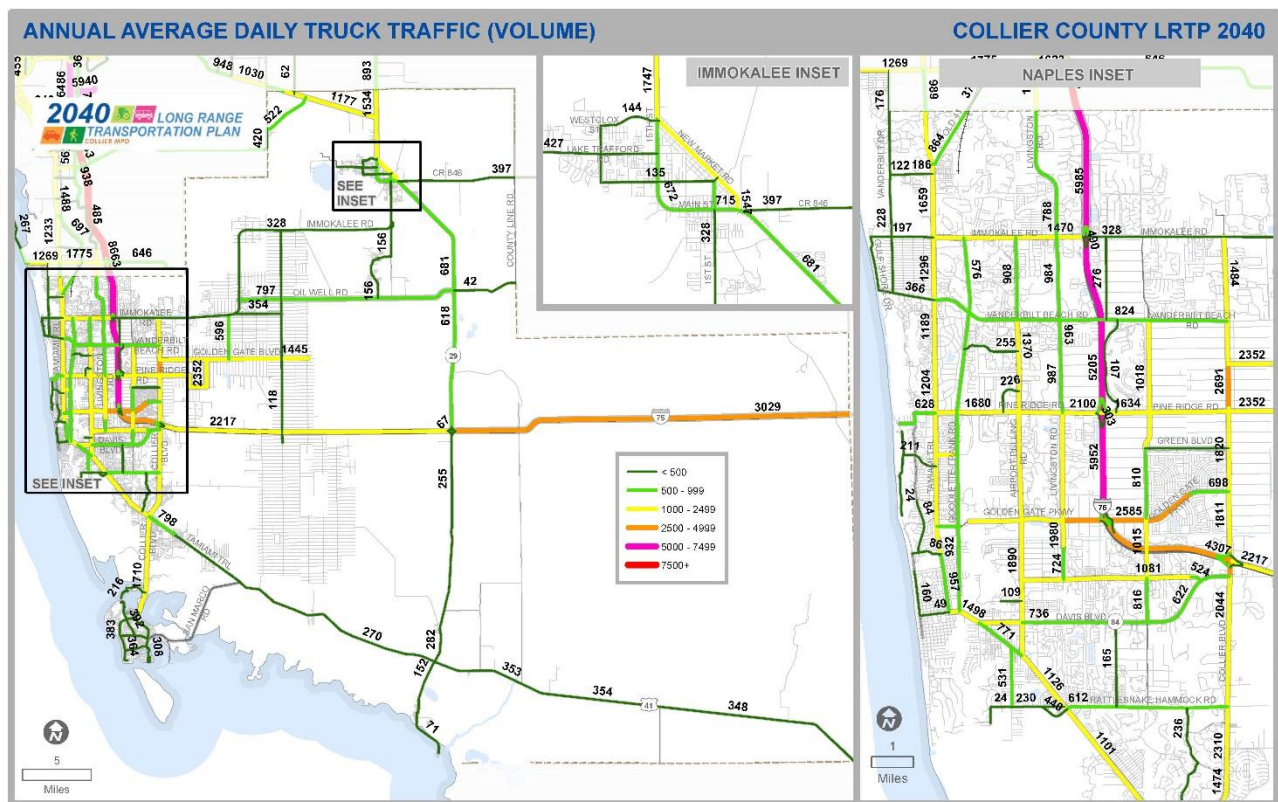
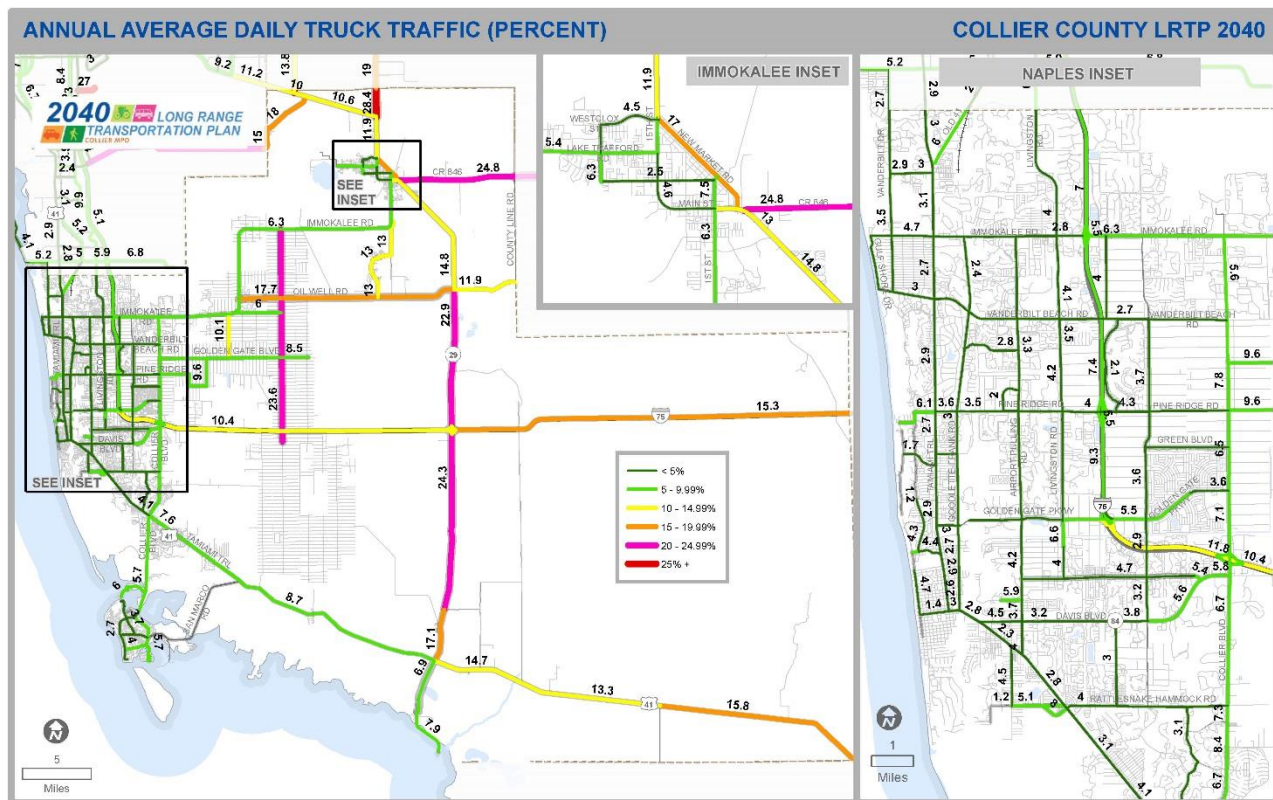


Figure 9 depicts the percentage of trucks included in the average daily traffic. As noted, the amount of truck traffic as a percentage of total traffic is heaviest on portions of SR 29, Oil Well Road, and on lightly traveled portions of Everglades Boulevard. Other facilities with relatively high truck percentages include Tamiami Trail east of SR 29, I-75, Davis Boulevard, and SR 82 northwest of Immokalee.



Figure 9 | Annual Average Daily Truck Traffic (Percent)



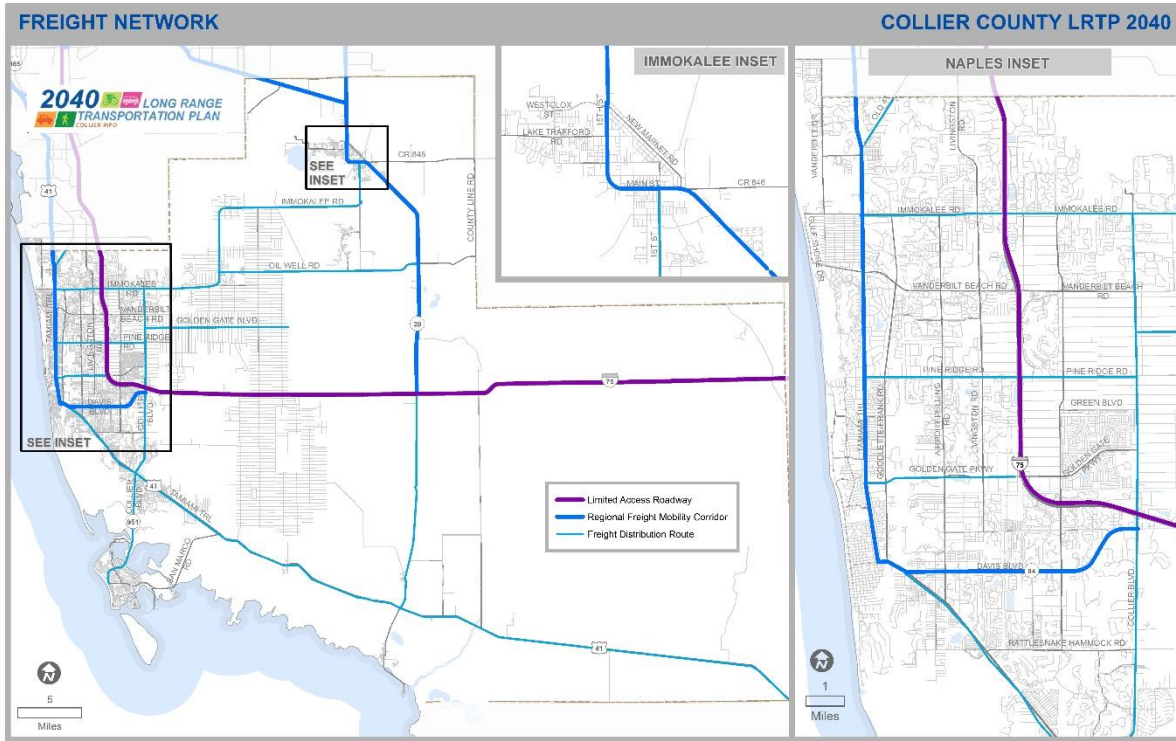
The Collier Freight Network was defined by consideration of the following factors:

- Existing Average Annual Daily Truck Traffic (AADTT) volumes and percentages;
- Roadways that provide good connections between freight activity centers and I-75, the only limited access facility in Collier County;
- Strategic Intermodal System designation, if serving a freight function and not a tourism function; and
- Active freight rail lines.

The freight roadway network is illustrated in Figure 10.



Figure 10 | Collier County Freight Roadway Network



The freight roadway network includes a hierarchy of facilities, with limited access highways representing the highest order of freight movement, regional freight mobility corridors providing access to/from freight activity centers, and finally freight distribution routes, which serve local delivery areas.

Limited Access Facilities

Limited access facilities provide uninterrupted flows for high volumes of traffic and are used to move goods in, out, and through the county and provide connectivity to areas beyond the Collier County boundaries. Interstate 75 (Broward County Line to the Lee County Line) is the only limited-access facility within Collier County and serves as a primary trade route corridor for trucks and connects the county with the rest of Florida as well as the rest of the country. I-75 is a part of the Strategic intermodal System.



Regional Freight Mobility Corridors

Regional freight mobility corridors function as north-south and east-west connectors between limited access facilities and regional freight activity centers. These corridors serve regional through movements for long-haul trucks and host high volumes of traffic. Within Collier County, the regional freight mobility corridors include:

- SR 29 (SIS) (I-75 to Hendry County Line);
- SR 82 (SIS) (SR 29 to Hendry County Line);
- SR 84/ Davis Boulevard (US 41 to I-75);
- US 41 (SR 84/Davis Boulevard to Lee County Line).

Freight Distribution Routes

Freight distribution routes serve to distribute truck traffic to local delivery areas. These include state roadways and other local roadways designated in local truck route ordinances at the county and municipal levels. The freight distribution routes within Collier County include:

- SR 29 (US 41 to I-75)
- SR 951/Collier Boulevard (Marco Island to US 41);
- CR 951/Collier Boulevard (US 41 to CR 846/Immokalee Road);
- Oil Well Road (CR 846/Immokalee Road to SR 29);
- Immokalee Road (US 41 to SR 29);
- Golden Gate Boulevard (CR 951/Collier Boulevard to DeSoto Boulevard);
- Pine Ridge Road (US 41 to CR 951/Collier Boulevard);
- US 41 (SR84/Davis Boulevard to Miami-Dade County Line); and
- Old US 41 (US 41 to Lee County Line)

Freight Transportation Needs

Although freight mobility was one of the considerations in prioritizing projects for the Cost-Feasible Plan, funding limitations made it impossible to address every needed freight improvement project. This section examines the most important freight transportation improvement needs included in the 2040 LRTP Needs Plan and those that are prioritized for inclusion in the Cost-Feasible Plan. While many of the freight network facility needs are adequately addressed in the Cost-Feasible Plan, some of the most important freight needs, particularly those on the Strategic Intermodal System are not addressed. A comparison of needed improvements to the freight network and projects included in the Cost Feasible Plan is summarized in **Table 4** and **Figure 11**.



Table 4 | Freight Roadway Network Needs and Cost Feasible Plan Improvements

Facility and Limits	Annual Average Daily Truck Traffic (Nearest Count Location)	Existing Number of Lanes	Number of Lanes in Needs Plan	Number of Lanes in Cost Feasible Plan
Limited Access Facility				
I-75 - Broward C.L. to Collier Blvd.	3,029	4	6	4
I-75 - Collier Blvd. to Golden Gate Pkwy.	4,307	6	6	6
I-75 - Golden Gate Pkwy. to Immokalee Rd.	5,952	6	10	6
I-75 - Immokalee Rd. to Lee C.L.	5,985	6	10	6
Regional Freight Mobility Corridors				
SR 29 - I-75 to CR-846	681	2	2	2
SR 29 - CR-846 to 15 th St.	715	4	4	4
SR 29 - 15 th St. to New Market Road	715	2	4	2
SR 29 - New Market Road to SR-82	1,747	2	4	2
SR 29 - SR-82 to Hendry C.L.	1,534	2	4	4
SR-29 By-Pass	NA	0	4	0
SR 82 - SR 29 to Hendry C.L.	1,177	2	4	2
SR-84/Davis Blvd. - US 41 to Airport Rd.	736	6	6	6
SR-84/Davis Blvd. - Airport Rd. to Santa Barbara Blvd.	736	4	6	4



Facility and Limits	Annual Average Daily Truck Traffic (Nearest Count Location)	Existing Number of Lanes	Number of Lanes in Needs Plan	Number of Lanes in Cost Feasible Plan
SR-84/Davis Blvd. - Santa Barbara Blvd. to Collier Blvd.	622	6	6	6
US 41 - Davis Blvd. to Lee C.L.	1,656	6	6	6
Freight Distribution Routes				
SR 29 - US 41 to I-75	282	2	2	2
Collier Blvd. - US 41 to Tower Rd.	1,710	6	6	6
Collier Blvd. - Tower Rd. to Manatee Rd.	1,710	4	6	6
Collier Blvd. - Manatee Rd. to Marco Island	1,710	4	4	4
Collier Blvd. - US 41 to SR-84/Davis Blvd.	2,044	6	6	6
Collier Blvd. - SR-84/Davis Blvd. to G.G. Canal	1,811	8	8	8
Collier Blvd. - G.G. Canal to Green Blvd.	1,820	4	6	6
Collier Blvd. - Green Blvd. to Immokalee Rd.	2,691	6	6	6
Oil Well Rd. - Immokalee Rd. Everglades Blvd.	797	4	4	4
Oil Well Rd. - Everglades Blvd to Oil Well Grade Rd.	797	2	4	4
Oil Well Rd. - Oil Well Grade Rd. to Ave Maria Blvd.	797	6	6	6
Oil Well Rd. – Ave Maria Blvd. to Camp Keais Rd.	797	2	6	2
Oil Well Road - Camp Keais Rd. to SR-92	797	2	2	2

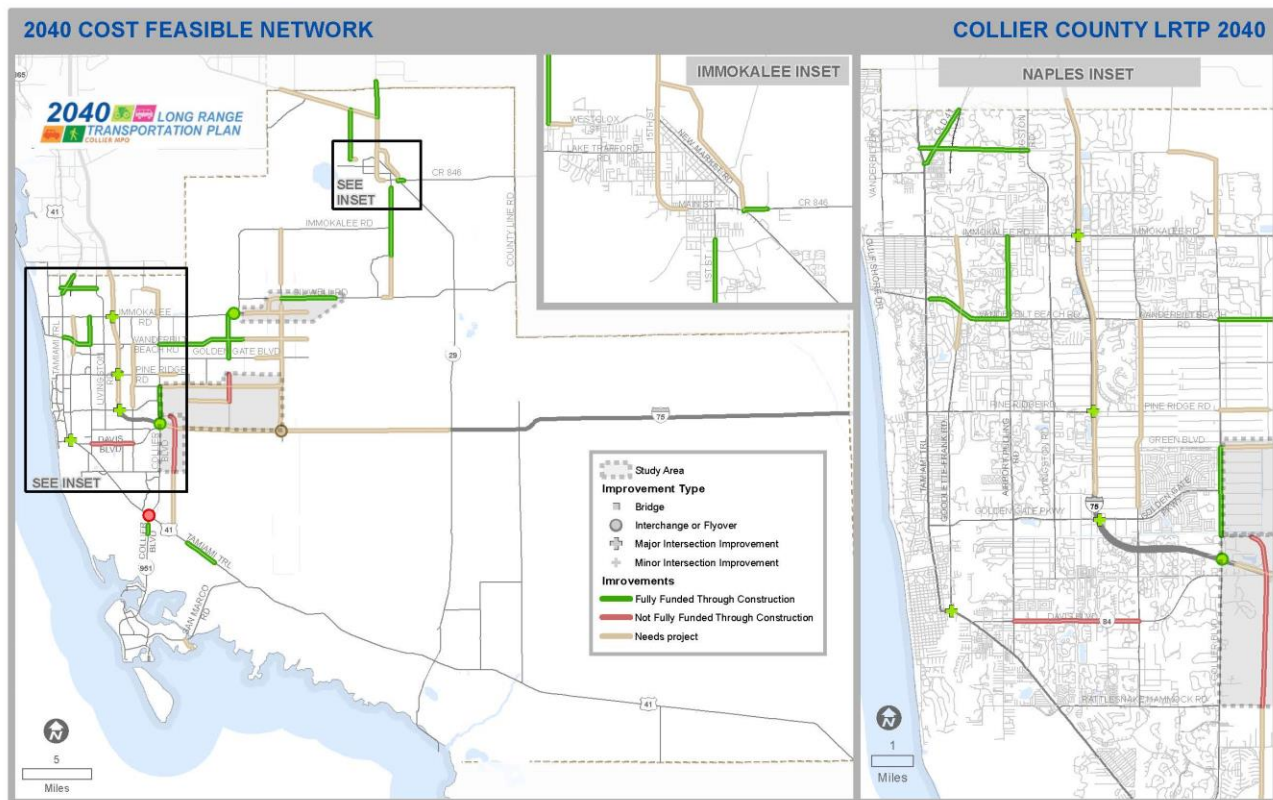


Facility and Limits	Annual Average Daily Truck Traffic (Nearest Count Location)	Existing Number of Lanes	Number of Lanes in Needs Plan	Number of Lanes in Cost Feasible Plan
Immokalee Rd. - US 41 to Oil Well Rd.	1,470	6	6	6
Immokalee Rd. - Oil Well Rd. to 39 th Ave. NE	328	4	4	4
Immokalee Rd. - 39 th Ave. NE to Camp Keais Rd.	328	2	2	2
Immokalee Rd. - Camp Keais Rd. to Carver St.	328	2	4	4
Immokalee Rd. - Carver St. to SR-29	328	4	4	4
Golden Gate Blvd. - Collier Blvd. to 20 th St.	2,352	4	4	4
Golden Gate Blvd. - 20 th St. to Desoto Blvd.	1,445	2	4	4
Pine Ridge Rd. - US 41 to Logan Blvd.	2,100	6	6	6
Pine Ridge Rd. - Logan Blvd. to Collier Blvd.	1,634	4	4	4
US 41 - Davis Blvd. to Greenway Rd.	1,126	6	6	6
US 41 - Greenway Rd. to 6L Farms Rd.	798	2	4	4
US 41 - 6L Farms Rd. to Dade C.L.	353	2	2	2
Old US 41 - US 41 to Lee C.L.	864	2	4	4

Significant remaining deficiencies



Figure 11 | 2040 Cost Feasible Network



Limited Access Facilities, I-75

The single most important freight facility for Collier County is I-75, a major element of the Florida Strategic Intermodal System, and the only limited access facility in Collier County. It serves as the primary transportation facility connecting Collier County with its immediate neighbors and ultimately as a national gateway. It carries the highest truck volumes in Collier County, exceeding 7500 in the northern section of the County. While the section from Collier Boulevard to Golden Gate Parkway is currently being widened to six lanes, much of I-75 north of Golden Gate Parkway is anticipated to be significantly over capacity when measuring the anticipated 2040 traffic compared to the existing and committed network. The Strategic Intermodal System Unfunded Needs Plan includes the addition of special use lanes on I-75. However, these improvements to this section of I-75 are not funded in the SIS Cost-Feasible Plan.

Regional Freight Mobility Corridors

As noted above, regional freight mobility corridors function as important connectors between limited access facilities and regional freight activity centers. They generally carry significant truck movements, ranging from 600 to 1500 per day.

- SR 29 (I-75 to Hendry County Line) – This facility is also part of the Strategic Intermodal System (SIS). The section between I-75 and Oil Well Road is included in the SIS Cost-Feasible Plan, but only for design and right of way acquisition. The section from Immokalee south to I-75 generally has adequate capacity, but in



the area of Immokalee it has capacity issues. The section north of SR 82 to the Hendry County line is included in the 2040 Cost Feasible Plan for SIS funding. Other major improvements are included in the 2040 Needs Plan. These needed improvements include Main Street/15th Street through the heart of Immokalee and a much needed northern bypass of Immokalee. Of particular concern is the portion immediately south of SR 82, which is expected to be seriously over capacity in 2040; however there are insufficient SIS funds to undertake these needed improvements, which might best be done in concert with the future construction (unfunded) of the Immokalee Bypass.

- SR 82 (SR 29 to Hendry County Line) –This SIS facility is included in the Needs Plan but not the Cost-Feasible Plan.
- SR84/Davis Boulevard (US 41 to I-75)—Portions of this facility are expected to be moderately congested in 2040. A portion is included in the Cost-Feasible Plan for engineering and right of way acquisition.
- US 41 (SR84/Davis Boulevard to Lee County Line) – This facility is expected to be moderately congested; however no improvements are included in either the Needs or Cost-Feasible Plans.

Freight Distribution Routes

As noted earlier, freight distribution routes serve to distribute truck traffic to local delivery areas. While their role is meaningful in terms of getting freight deliveries to their ultimate destination, their role in regional freight movement is less significant.

- SR 29 (US 41 to I-75) –has adequate capacity;
- SR 951/Collier Boulevard (Marco Island to US 41) – A short piece south of Tamiami Trail is included in the Cost-Feasible Plan; also major interchange improvement included only for engineering in Cost-Feasible Plan;
- CR 951/Collier Boulevard (US 41 to CR 846/Immokalee Road) – The section between Golden Gate Canal and Green Boulevard is included in Cost-Feasible Plan;
- Oil Well Road (CR 846/Immokalee Road to SR 29)—A major section of this is included in Cost-Feasible Plan (Everglades Blvd. to Oil Well Grade Rd.), along with a designated study area for future improvements;
- Golden Gate Boulevard (CR 951/Collier Boulevard to Desoto Boulevard)—A portion between Everglades Blvd and Desoto Boulevard is included in the Needs Plan;
- Pine Ridge Road (US 41 to SR 951/Collier Boulevard) –Major intersection improvement at I-75 and Pine Ridge Road are included in Cost-Feasible Plan;
- US 41 (SR 84/Davis Boulevard to Dade County Line)—Improvements to the congested portion between Collier Boulevard and 6-L Farms Road are included in the Cost-Feasible Plan;
- Old US 41 (US 41 to Lee County Line) – Improvements to this section, which can serve the Seminole Gulf Railway stub, are included in the Cost-Feasible Plan.

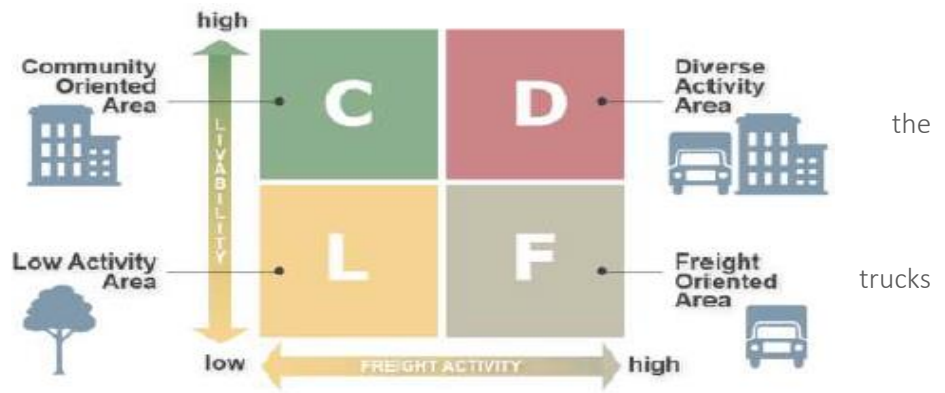
Summary of Needs and Cost Feasible Plan

In summary, the most important freight routes are those included as part of the Strategic Intermodal System. While some improvements are planned, there is insufficient SIS funding to address all the needs. As additional SIS funding becomes available, improvements to I-75 and to SR 29, particularly in the Immokalee area should be given high priorities. Truck traffic generally represents a modest part of the total traffic on both regional freight mobility corridors and freight distribution routes and truck movement can be dealt with as part of the overall improvement program for individual facilities.

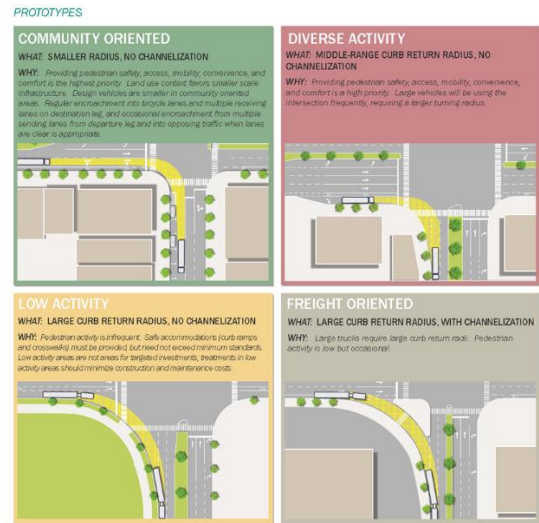


Implementation of Road Improvements on Significant Freight Routes

As roadway projects are implemented, the Collier County Metropolitan Planning Organization should encourage implementation of context supportive design strategies that address the unique operating characteristics and needs of heavy trucks as well as the land use and community context.



Any future improvements to I-75 will be done to Interstate design standards, which fully address freight and passenger needs. On other regional freight mobility corridors and on freight distribution routes, the MPO should promote the use of strategies identified in the FDOT Freight Roadway Design Considerations (FRDC) document (Draft as of October 2015)¹, which are being incorporated into the FDOT Complete Streets guidance. The FRDC presents a process for balancing freight needs with community characteristics and promotes the use of design standards appropriate to the location.



¹ <http://tampabayfreight.com/freight-roadway-design-considerations/>



Summary

This technical memorandum was produced to address freight transportation needs in conjunction with the 2040 Long Range Transportation Plan update. Excerpts of findings from this technical memorandum are included in the LRTP document and this technical memorandum is included by reference.

The technical memorandum has presented Collier County's major trading partners and a profile of employment categories. Freight activity centers, agricultural uses, mining operations, and the freight network have been identified. Transportation improvements needed to assure ease of freight movement have been highlighted as well as freight improvement projects included in the cost-feasible plan.

Anticipated deficiencies that have not been addressed in the cost-feasible plan are primarily associated with facilities eligible for Strategic Intermodal System funding; namely I-75 and SR 29 through Immokalee. The Collier MPO should work with the Florida Department of Transportation to raise the priority of these facilities in the Strategic Intermodal System Plan.

Finally, this technical memorandum highlights elements of roadway design strategies that are appropriate to address freight movement needs for various land use contexts and community character. While freight is a modest component of the Collier County economy, ease of freight movement is important for the many consumer demands of County residents and for the desired growth of the high technology industry.