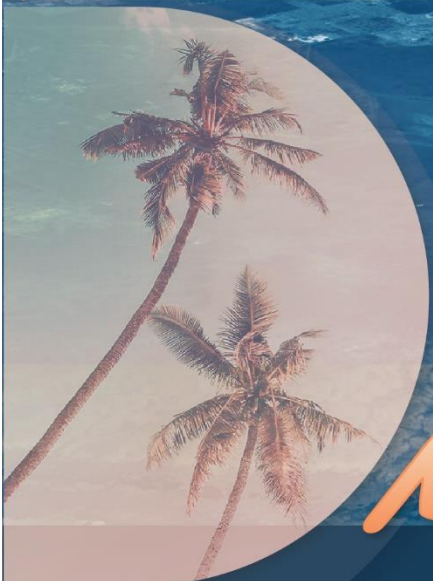
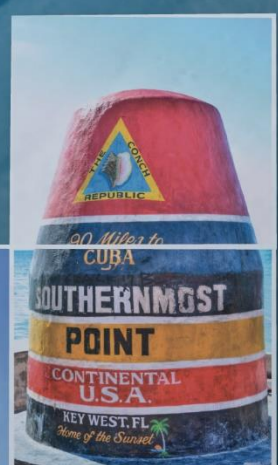




Manroe County

Freight Improvement Plan

Final Report



February 2024

Monroe County Freight Mobility Improvement Study

Final Report



Florida Department of Transportation - District Six
Modal Development Office

Contract C-A148 | FM #443625-1-22-01

Task Work Order #8 Amendment 1

February 2024

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Acronyms

AADT	Annual Average Daily Traffic
AADTT	Annual Average Daily Truck Traffic
ATTDS	Arterial Travel Time and Delay Study
BEBR	Bureau of Economic and Business Research
BOCC	Board of County Commissioners
COAST	Connecting Overseas to Advance Safe Travel
FDOT	Florida Department of Transportation
FHWA	Federal Highway Administration
FLSWM	Florida Statewide Model
FLZ	Freight Logistics Zone
FMTP	Freight Mobility and Trade Plan
FTAC	Freight Transportation Advisory Committee
HCM	Highway Capacity Manual
LOS	Level of Service
L RTP	Long Range Transportation Plan
MCFS	Monroe County Freight Study
MIA	Miami International Airport
PTMS	Portable Traffic Monitoring Sites
S4	Signal 4 Analytics
SERPM	Southeast Regional Planning Model
SIS	Strategic Intermodal System
TDM	Travel Demand Model
TPO	Transportation Planning Organization
TTMS	Telemetered Traffic Monitoring Sites
QLOS	Quality Level of Service

Executive Summary

Overview

The Monroe County Freight Improvement Study is one of several freight subarea studies that have been conducted by the Florida Department of Transportation - District 6. The aim of this plan is to enhance freight mobility across Monroe County along the US 1 corridor connecting the Florida Keys from Key Largo to Key West.

The US 1 corridor study area in Monroe County possesses a diverse and extensive freight and logistics presence. It supports both inputs and outputs of the seafood and agricultural industry, business and commercial sites, construction projects and material suppliers, institutional, military and governmental facilities, the tourism industry, and, of course, the consumer-based goods and foodstuff distribution chain. This freight and logistics presence is not as visible and dominant as the multimodal freight-centric districts of neighboring Miami-Dade County, but it is just as vital to the Monroe County economy on a proportional basis. The Monroe County freight and logistics network is reliant solely on trucking for the movement of goods and commodities and is further solely dependent upon US 1 as its lifeline to support a population base of 80,000 persons which nearly doubles during the peak tourism season (February through March). In addition, the US 1 Overseas Highway is known as one of the most scenic drives in the country, connecting tourists to a myriad of tropical vistas and attractions known worldwide.

The US 1 corridor in Monroe County is unique as it is the only route serving the length of the Florida Keys. The roadway is subject to Monroe County growth management regulations which stipulate that no additional through travel lanes can be constructed along US 1. Other actions including left and right turn lanes, access management, and upgrades to intersection street approaches and signalized intersection timing and phasing are permitted. Traffic concurrency along the corridor to the stipulated level of service (LOS) standard of LOS C is monitored by the periodic *Arterial Travel Time and Delay Study* which utilizes travel time runs along the corridor following a specified methodology to assess segment and corridor travel time, delays, and resulting travel speeds to assess compliance with the LOS C standard. Monroe County also completed the *US 1 Transportation Master Plan*, a multimodal analysis of transportation needs and recommendations across the length of US 1. The traffic analyses of this study were correlated to the findings of both these studies to put its recommendations in proper context.

This study examines the existing and planned transportation infrastructure with an emphasis on how effectively the study area road network accommodates the existing and forecasted vehicular and truck traffic volumes. The transportation network was tested by applying various travel demand of growth scenarios.

Project Recommendations

The study formulates a set of proposed improvement actions centered around roadway improvements and supported by other recommendations. Recommendations were formulated through the review of other prior and relevant studies, roadway network analysis, field reviews, and outreach to key stakeholders in the study area. This integrated approach was crucial in formulating the recommendations.

The plan recommendations were prioritized into three implementation time frames (short, intermediate, and long-term). The list of recommended projects and actions by implementation time frame can be found in Section 10 of this report. Improvements were proposed at nine of the 10 intersections studied, and 26 improvements were identified for segments of the corridor roadway. The study also reviewed truck parking needs and identified a potential truck parking facility at the existing FDOT weigh station at Mile Marker 86.

As freight and logistics providers and users evolve in how they plan for efficiency in their distribution of goods, materials, and food stuffs, there is one constant – the need for reliable travel times along the US 1 corridor under the traffic concurrency requirements embodied in the County's growth management regulations. The implementation of the intersection and road segment improvements identified by the network analysis in this study will contribute to addressing areas of traffic friction affecting operational speeds and helping to maintain the LOS C standard generally experienced today. Pursuit of the study recommendations will further complement the advancement of freight mobility and general community mobility along the US 1 corridor in the Florida Keys into the future.

1.0 Introduction

1.1 Study Background

Developed and updated by the Florida Department of Transportation (FDOT), the 2019 Freight Mobility and Trade Plan (FMTP) documents a comprehensive strategy for guiding freight investments throughout the State of Florida. This plan identifies transportation facilities that are critical for the State's economic growth and promotes innovations in transportation planning to provide a safe, efficient, and resilient freight system. Using the strategy documented by the FMTP, FDOT District Six developed a program of freight mobility improvement studies to assess the unique freight communities within the counties of Miami-Dade and Monroe.

This program focuses on partnering with local communities to determine local needs by evaluating different freight growth scenarios. Using these results, each study within the program recommends a list of projects to improve the freight infrastructure of each community to ensure regional resiliency. Each subarea study within the program develops independent improvements that, once aggregated, will result in regional significance and improve freight connectivity, accessibility, safety, and mobility within FDOT District Six.

FDOT is analyzing the existing freight infrastructure, operations, and characteristics in Monroe County to develop a list of viable projects that prepares the county for increases in freight volumes and improves current conditions where needed. Since freight-related decisions may have a wide-range of impacts beyond the limits of their implementation, a regional perspective to all analyses shall be considered.

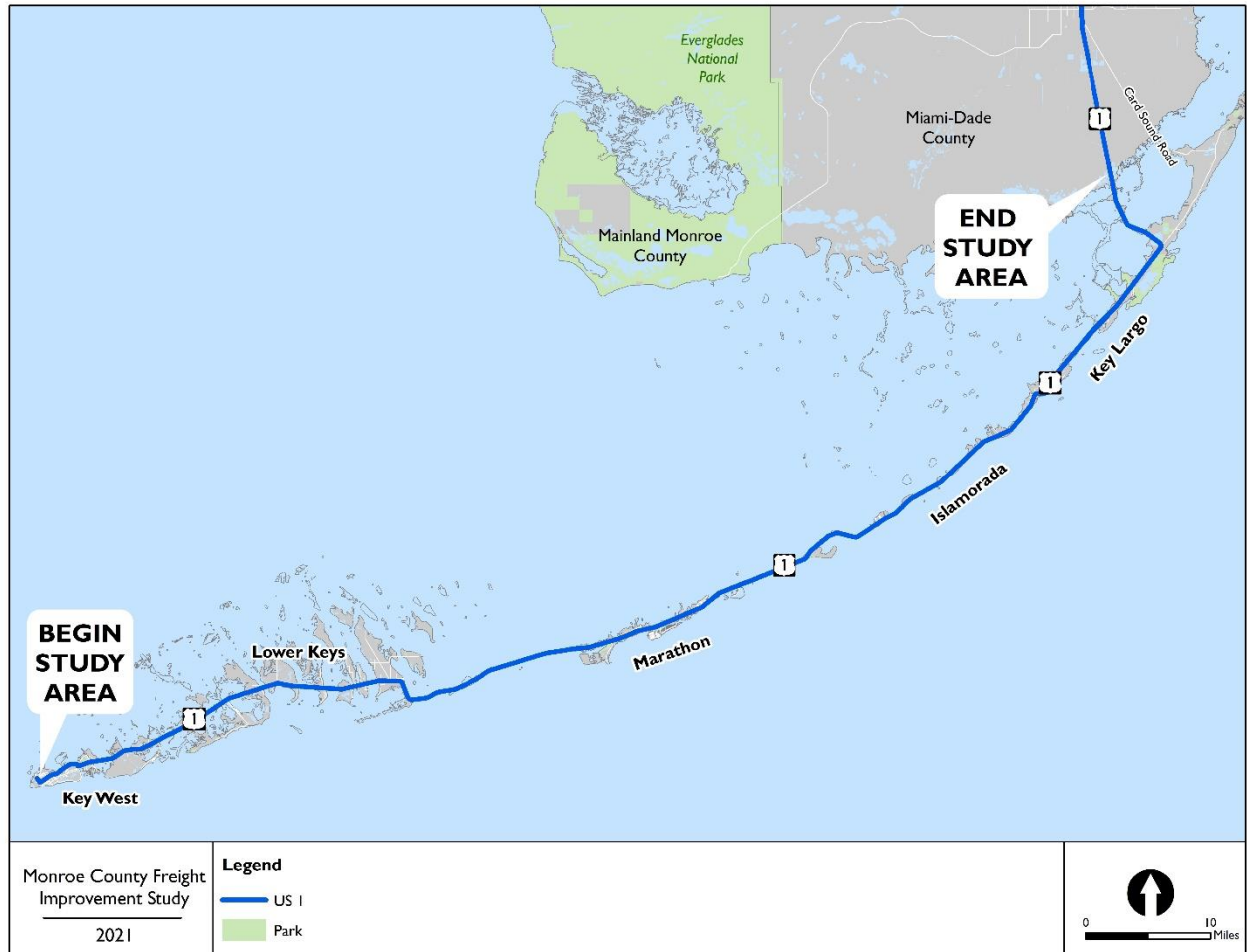
Objectives for this study include:

- ◆ Examining freight movements throughout the study area with an emphasis on impacts to the area roadway system.
- ◆ Describing products and markets in terms of their relation to Monroe County and the South Florida regional economy.
- ◆ Determining the origin and destination of truck traffic moving through the study area.
- ◆ Determining appropriate facilities needed to meet current and future freight needs.
- ◆ Identifying specific recommendations to match roadway capacities with future demand.
- ◆ Broadly assessing the need for truck parking facilities within the study area.

1.2 Study Area

The study area includes the county limits of Monroe County, excluding the Everglades National Park. The focus of the study is the US 1/SR 5 corridor between Key West and the Miami-Dade/Monroe County Line (see **Figure 1-1**).

Figure 1-1 Study Area



1.3 Document Organization

This document is organized into the following sections:

- ◆ 1.0 Introduction
- ◆ 2.0 Study Context
- ◆ 3.0 Study Area Characteristics
- ◆ 4.0 Purpose and Need
- ◆ 5.0 Roadway Network Analysis
- ◆ 6.0 Other Improvement Actions
- ◆ 7.0 Truck Parking Analysis
- ◆ 8.0 Stakeholder Outreach and Feedback
- ◆ 9.0 Recommendations

2.0 Study Context

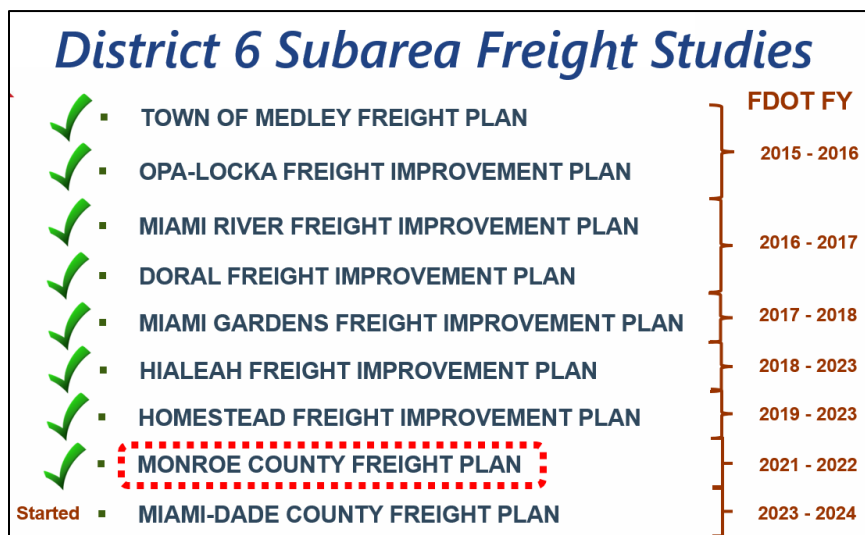
2.1 FDOT District 6 Freight Planning Activities

A critical part of the overall FDOT agency mission is the advancement of freight mobility. Each district office of FDOT has a District Freight Coordinator whose role is to monitor and support freight mobility needs within the district. The position facilitates incorporation of freight-supportive projects within the FDOT project work program, works with partner agencies in identification and advancement of priority freight initiatives, collaborates with freight stakeholders in a variety of coordination and outreach efforts, and conducts relevant studies that investigate and characterize freight needs across the district. District 6 also coordinates with District 4 to the north and District 1 to the west on matters of mutual interest.

In addition, District Freight Coordinators coordinate on projects that span District boundaries. Furthermore, at the state level, FDOT performs a variety of freight program functions, including enhancing multimodal networks that drive commerce, leveraging funding opportunities, implementing effective countermeasures that improve rail and motor carrier safety, developing system planning documents including the Florida Mobility and Trade Plan, and partnering with industry to support innovation. To guide its efforts, the Florida Freight Advisory Committee comprising public and private sector representatives provides input and guidance into freight improvement needs.

More specifically, District 6 has conducted a series of freight subarea studies within the district to conduct analyses tailored to the various freight and logistics areas, focusing on identification of specific freight mobility needs affecting these localities as listed in **Figure 2-1**. In addition to the eight studies, including this one which has concluded, a county-wide freight plan is being developed to capture the findings of the preceding studies, and to address broader freight needs confronting the major transportation nodes and network links in Florida's principal international freight and logistics hub.

Figure 2-1 D6 Subarea Freight Studies



2.2 Literature Review

As part of this study, previous goods movement studies and study area-related reports that were conducted by the County, the FDOT and other agencies were reviewed. The purpose of this research was to obtain relevant freight movement information, with special attention paid to freight movement data, identified areas of need, major freight generators, and projects identified by the private industry to facilitate the movement of freight. These reports are listed below and summarized on the following pages.

Statewide Plans and Studies:

- ◆ FDOT Strategic Highway Safety Plan (2021)
- ◆ FDOT – Freight Mobility and Trade Plan (FMTP) (2020)
- ◆ FDOT – Seaport and Waterways System Plan (2016)
- ◆ FDOT -Florida Cruise Industry: A Statewide Perspective (2013)

Study Area-Related and Regional Plans and Studies:

- ◆ Southeast Florida Regional Freight Plan (2014)
- ◆ Miami-Dade County 2017/2018 Freight Plan Update (2017)
- ◆ Miami-Dade TPO 2045 Long Range Transportation Plan/Freight Plan Update
- ◆ PortMiami Strategic Plan
- ◆ FDOT District 6 Connecting Overseas to Advance Safe Travel (COAST) Project (TSM&O)
- ◆ Florida Keys Scenic Highway Interpretive Master Plan
- ◆ Miami-Dade County Freight Logistics Zone Designation Strategic Plan (2018)

District 6 Subarea Freight Planning Studies:

- ◆ City of Doral Subarea Freight Plan (2017)
- ◆ Town of Medley Freight Mobility Improvement Plan (2017)
- ◆ City of Opa-Locka Freight Implementation Plan (2017)
- ◆ Miami River Freight Improvement Plan (2018)
- ◆ Miami Gardens Freight Improvement Plan (2018)
- ◆ Hialeah Freight Mobility Implementation Plan (2023)
- ◆ Homestead Freight Improvement Plan (2023)

Monroe County Plans and Studies:

- ◆ Capacity Improvements Feasibility Study – Monroe County
- ◆ US 1 Travel Time and Delay Study (2019, 2021) – Monroe County
- ◆ O-D Study (2018) – Monroe County
- ◆ Monroe County Year 2030 Comprehensive Plan
- ◆ US 1 Transportation Master Plan – Monroe County (2021)

Commercial Motor Vehicle / Truck Parking Literature

- ◆ Miami-Dade TPO – Comprehensive Parking Study for Freight
- ◆ Miami-Dade TPO – Development of Truck Parking Facilities in Miami-Dade County (Phase II)
- ◆ FDOT, District 6 – Assessment for Potential Truck Parking Locations within Miami-Dade County (FM# 439150-1-12-01)
- ◆ Miami-Dade Regulations for Parking & Storing Commercial Vehicles in Residential Districts

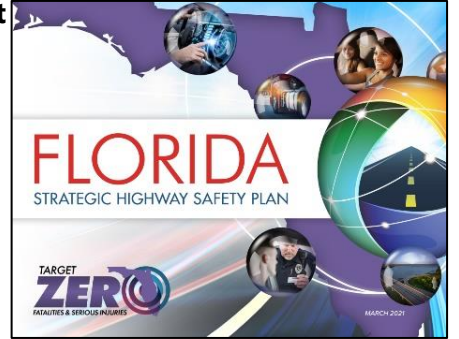
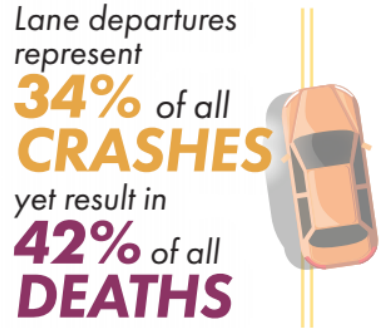
The matrix on the following page in **Table 2-1** provides an overview of the key topics covered in each of the documents reviewed. The key topics are color coded and tagged for quick reference throughout this section and are defined as follows:

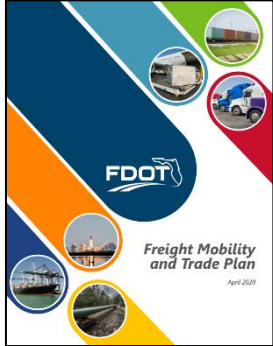
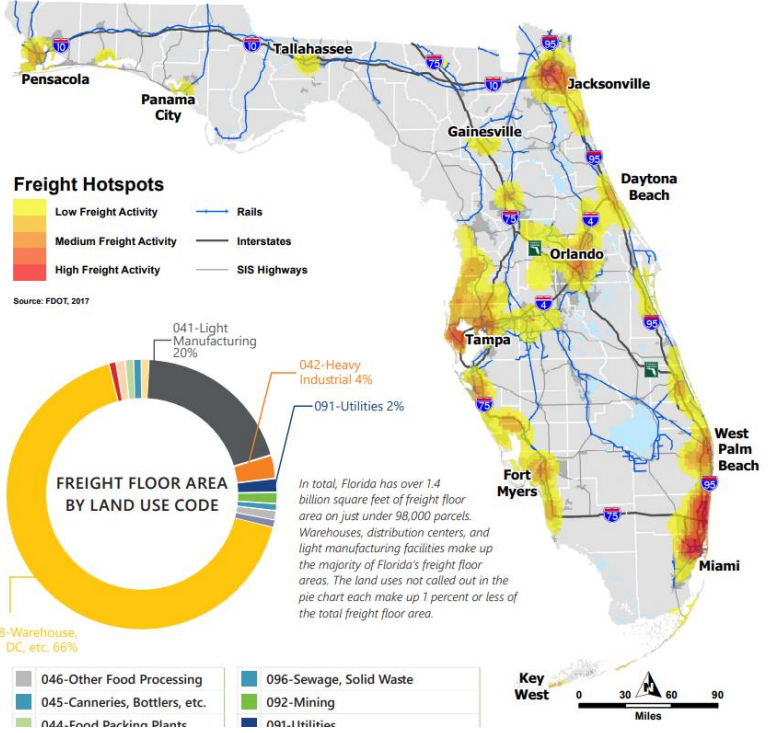
Key Topic	Tag	Description
Policy Guidance	Policy	Offers freight-related policy guidance.
Identified Areas of Need	Areas/Need	Identified areas where freight improvements are needed.
Major Freight Generators	Generators	Includes information on freight generators in the area.
Private Industry Projects	Industry	Provides details on private industry projects.
Implementation Guidance	Implementation	Provides example freight solutions and implementation guidance.
Freight Movement Data	Movement	Includes information on freight movement.

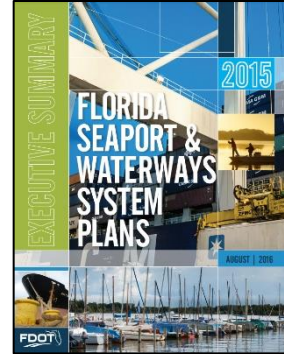
Table 2-1 Literature Review Summary

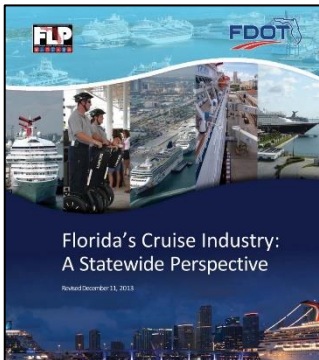
Plan/Study	Policy Guidance	Identified Areas of Need	Major Freight Generators	Private Industry Projects	Implementation Guidance	Freight Movement Data
Statewide Plans and Studies						
FDOT Strategic Highway Safety Plan	X				X	
FDOT Freight Mobility and Trade Plan	X	X	X		X	X
FDOT Seaport and Waterways System Plan	X	X	X		X	X
FDOT Florida Cruise Industry: A Statewide Perspective		X				
Study-Area Related Plans and Studies						
Southeast Florida Regional Freight Plan		X	X	X	X	X
MDC 2017/2018 Freight Plan Update	X	X	X	X	X	X
2045 Long Range Transportation Plan/Freight Plan Update	X	X	X	X	X	
PortMiami Strategic Plan	X	X	X			
FDOT D6 COAST Project	X	X			X	X
Florida Keys Scenic Highway Interpretive Master Plan	X					
MDC Freight Logistics Zone Designation Strategic Plan	X	X	X		X	X
District 6 Subarea Freight Planning Studies						
Doral Subarea Freight Plan		X	X	X		X
Medley Freight Improvement Plan		X	X			X
Opa-Locka Freight Implementation Plan		X	X	X	X	X
Miami River Freight Improvement Plan		X	X		X	X
Miami Gardens Freight Improvement Plan		X	X			X
Hialeah Freight Mobility Implementation Plan		X	X		X	X
Homestead Freight Improvement Plan						
Monroe County Plans and Studies						
US 1 Capacity Improvements Feasibility Study	X	X				
US 1 Travel Time and Delay Study (2019, 2021)		X			X	X
Origin-Destination Study (2018)		X				
Monroe County Year 2030 Comprehensive Master Plan	X	X			X	
US 1 Transportation Master Plan	X	X				
Commercial Motor Vehicle/Truck Parking Literature						
Comprehensive Parking Study for Freight	X	X	X	X	X	X
Development of Truck Parking Facilities in MDC	X	X	X	X	X	X
Assessment for Potential Truck Parking Locations within MDC		X	X		X	X
Parking & Storing Commercial Vehicles in Residential Districts	X	X		X	X	

2.2.1 Statewide Plans and Studies

Document Title: Florida Strategic Highway Safety Plan	Document Cover: 
Agency: FDOT	
Geography: State of Florida	
Document Year: 2021	
Tags: Policy, Implementation	
Document Summary: The vision of the Florida Strategic Highway Plan (2021) is to eliminate all transportation-related fatalities and serious injuries for all modes of travel. The plan provides a framework for how Florida's traffic safety partners will move toward the vision of a fatality-free transportation system during the next five years.	
Key Findings: The plan introduces a <i>Safe System</i> approach with new priorities and strategies for the state of Florida. This approach includes: - Safe road users - Safe vehicles - Safe speeds - Safe roads - Post-crash care	
	
The plan also identifies three emphasis areas to focus safety initiatives and specific strategies: - Roadways: lane departures and intersections - Road users: bikes and pedestrians, aging road users, motorcycles and motor scooters, commercial motor vehicle operators, and teen drivers - User behavior: impaired driving, occupant protection, speeding and aggressive driving, and distracted driving	
The following evolving emphasis areas were highlighted: - Work zones - Drowsy and ill driving - Rail grade crossings - Roadway transit - Micromobility - Connected and automated vehicles	
Various crash and fatality statistics. Source: Florida Strategic Highway Safety Plan, 2021.	

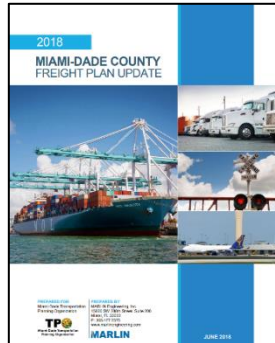
Document Title: Freight Mobility and Trade Plan (FMTP) Agency: FDOT Geography: State of Florida Document Year: 2020 Tags: Policy, Areas/Need, Generators, Implementation, Movement	Document Cover: 
Document Summary: A comprehensive plan that identifies freight transportation facilities critical to the state's economic growth and guides multimodal freight investments in the state. The FMTP develops objectives from the goals in the Florida Transportation Plan.	
Key Findings: Developed qualitative and quantitative performance measures and criteria to be used in project prioritization such as: - Truck injuries/fatalities - Vicinity to hubs - Truck parking - Labor force size - Safety or security enhancements - Alternative fuels corridors - Technology driven The top 3 issues and challenges to freight mobility in the state are: - Congestion/bottlenecks - Truck parking (identified as more than 100% utilized in Monroe County) - Empty backhaul	 Freight Hotspots Low Freight Activity Medium Freight Activity High Freight Activity Rails Interstates SIS Highways Source: FDOT, 2017 FREIGHT FLOOR AREA BY LAND USE CODE 041-Light Manufacturing 20% 042-Heavy Industrial 4% 091-Utilities 2% 48-Warehouse, DC, etc. 66% 046-Other Food Processing 045-Canneries, Bottlers, etc. 044-Food Processing Plants 096-Sewage, Solid Waste 092-Mining 091-Utilities In total, Florida has over 1.4 billion square feet of freight floor area on just under 98,000 parcels. Warehouses, distribution centers, and light manufacturing facilities make up the majority of Florida's freight floor areas. The land uses not called out in the pie chart each make up 1 percent or less of the total freight floor area. Key West 0 30 60 90 Miles
Technology trends in goods movement include: - Drone/robot delivery: currently being tested to fulfil last-mile delivery needs - Alternative fuels: as battery and quick charging technology improves, trucking companies may explore shifting from diesel to electric - Connected and automated vehicles: by synchronizing multiple truck operations, trucks run closely together resulting in fuel savings and increased safety.	

Document Title: Florida Seaport & Waterways System Plan Executive Summary	Document Cover:
Geography: FDOT	
Jurisdiction: State of Florida	
Document Year: 2016	
Tags: Policy, Areas/Need, Generators, Implementation, Movement	
Document Summary: Covers both the Seaport System Plan and the Waterways System Plan. Highlights of both plans are included illustrating the seaport and waterways conditions, challenges, trends, strategies, initiatives, and areas of focus for the FDOT Seaport and Waterways office.	
Key Findings: Port of Key West is classified as a Cruise and Other Seaport; PortMiami is a Cruise and Cargo Seaport	
The top constraints to growth identified by the stakeholder outreach included:	
♦ Highway access or bottlenecks; Local Funding (Matching Requirements) ♦ Navigation issues; Gate Operations; Security Access ♦ Highway (Cruise and Cargo Traffic Interaction)	
The top issues or needs identified by the stakeholder outreach included:	
Increased bulkhead and berthing infrastructure	
Cargo handling equipment needs; Site Expansion Development Needs	
Studies, Plans, Economic Analysis; Education of Law Makers and Public	
Seaport Program Focus Areas include:	
Seaport Access Enhancement; Seaport Capacity Expansion	
Seaport Efficiency Improvement; Waterborne Freight Supply Chain Optimization	
Waterway Focus Areas include:	
Maintenance of current waterway network; Encouragement of appropriate uses	
Explore needs and benefits of additional data acquisition to better understand the range of impact of non-freight users of the waterways	

Document Title: Florida Cruise Industry: A Statewide Perspective	Document Cover: 
Geography: FDOT	
Jurisdiction: State of Florida	
Document Year: 2013	
Tags: Areas/Need	
Document Summary: Provides a framework for actions to ensure that Florida retains and enhances its longstanding position as the nation's leading cruise state. The intent of the report is to furnish extensive background information and provide possible implementation actions that encourage cruise-related economic growth within Florida.	
Key Findings: ◆ The four primary considerations of cruise line decision-makers in positioning vessels are: port infrastructure availability, airlift capabilities, marketing of the home port as a destination, and proximity of ports of call and regulation. ◆ Florida ports have many ships in them based on a year-round basis, but activity level is increased with seasonal home-portings in winter months ◆ As cruise lines build and deploy larger vessels, it is essential that facilities keep pace so that the industry continues to position its newest and biggest cruise ships in Florida ◆ Sufficient landside and waterside capacity are essential to state's growth ◆ Florida should start working to determine how to best capture the upcoming River Cruise market, particularly in Key West ◆ Port of Key West received 832,887 port-of-call passengers in 2012 ◆ Port of Key West also hosts ships and ferry activities ◆ Port of Key West required infrastructure improvements (widening and deepening of the channel) as of 2013 to continue to be competitive in the cruising industry. The City of Key West has not committed to those improvements. ◆ Port-of-call expenditures are the primary source of industry for Key West as no ships are home ported there. ◇ Port-of-call passengers spend an average of \$123.58 per visit including tours and excursions	 Cruise ships at PortMiami

2.2.2 Study-Area Related and Regional Plans and Studies

Document Title: Southeast Florida Regional Freight Plan Agency: Broward MPO, Miami-Dade MPO, Palm Beach MPO, FDOT Geography: Region Document Year: 2014 Tags: Areas/Need, Generators, Industry, Implementation, Movement	Document Cover: 
Document Summary: Provides an overview of the freight transportation system and key logistics infrastructure elements, identifies key state, national, and international developments and initiatives impacting the region, documents the economic impacts of the freight industry in Southeast Florida, includes a list of prioritized freight needs, and strategies with key next steps.	
Key Findings: ◆ The most concentrated truck commodity flows in the region are concentrated around PortMiami, MIA, Port Everglades, and the Port of Palm Beach ◆ US 1 in southern Miami-Dade and near Everglades National Park experience heavier than anticipated truck tonnage ◆ Interregional trade accounts for 50% of movement ◆ Traffic along the Atlantic Intracoastal Waterway (Jacksonville to Key West) fluctuate annually, largely driven by petroleum movements ◆ Available land for development of industrial capacity is a key factor impacting future growth in trade and logistics ◆ Truck parking continues to be a significant concern for the region; parking must become a focal point within the region's identity ◆ Freight system needs and priorities include: ◆ Additional investments in highway and rail corridors and connectors ◆ Warehouse and distribution infrastructure ◆ Truck parking and service facilities ◆ Work force development ◆ Maintenance and enhancements to existing facilities	 <i>Truck commodity flows, Transearch 2011.</i>

Document Title: 2018 Miami-Dade Freight Plan Update	Document Cover: 
Agency: Miami-Dade TPO	
Geography: Miami-Dade County	
Document Year: 2018	
Tags: Policy, Areas/Need, Generators, Industry, Implementation, Movement	
Document Summary: The purpose of the report is to highlight the importance of freight mobility in Miami-Dade County, to update the County Freight Plan from 2014 to 2018, to develop an application for a county-designated Freight Logistics Zone (FLZ) and to coordinate with freight stakeholders to prepare an updated list of transportation needs. The list of projects developed in this update will be considered for funding in the development of the TPO’s Year 2045 Long Range Transportation Plan (2045 TPO LRTP).	
Key Findings: The TPO Goals from the 2040 LRTP and the State Freight Plan Goals are similar. The FDOT State Freight Plan – Motor Carrier System Plan Goals are specific to freight include: ♦ Safety and Security: Identify, support, and implement freight highway safety improvements and initiatives, ♦ Agile, Resilient, and Quality Infrastructure: Continue to invest in quality infrastructure that can be adapted to meet the needs of future freight vehicles and technology, ♦ Efficient and Reliable Mobility: Increase operational efficiency of goods movement and maintain reliable mobility for trucks, ♦ Economic Competitiveness: Support Florida’s global competitiveness and increase the flow of domestic and international trade, ♦ More Transportation Choices: Increase the number of quality options for moving freight to, from, and within Florida, ♦ Environment and Conserve Energy: Balance the need for environmental protection and conservation with seeking motor carrier efficiencies, ♦ Quality Places: Coordinate early and often with local communities to ensure mobility for trucks that is consistent with local and regional priorities.	
The 2040 TPO LRTP Goals cover all modes and freight-specific objectives are included in the plan as a subset of the Goals. The 2040 TPO Goals include: ♦ Improve the Transportation System and Travel ♦ Increase the Safety of the Transportation System for All Users ♦ Support Economic Vitality ♦ Protect and Preserve the Environment and Quality of Life ♦ Promote Energy Conservation ♦ Enhance the Integration & Connectivity of the System for People and Freight Across and Between Modes of Transportation ♦ Optimize Sound Investment Strategies for System Improvement and Management/Operation Maximize and Preserve the Existing Transportation System	

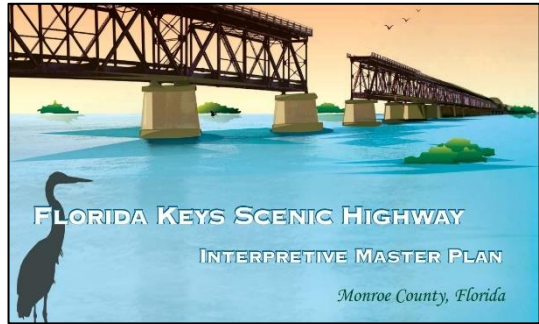
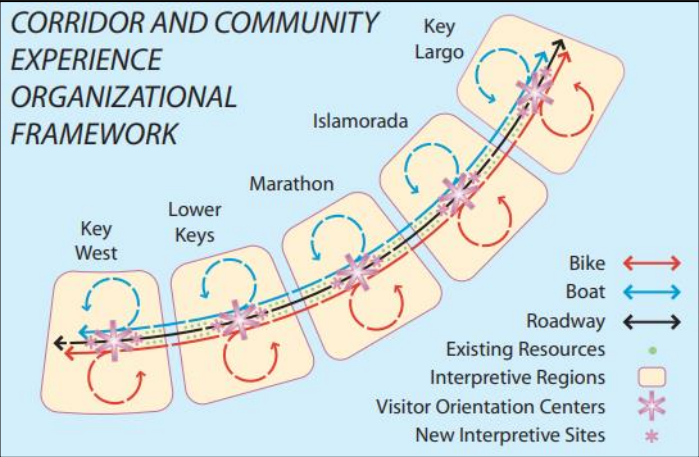
Document Title: 2045 Miami-Dade Freight Plan Update	Document Cover: 
Agency: Miami-Dade TPO	
Geography: Miami-Dade County	
Document Year: 2019	
Tags: Policy, Areas/Need, Generators, Industry, Implementation	Document Summary: The existing transportation system was analyzed with the projected increased population in 2045 to identify deficiencies in the transportation system for the 26-year period from 2020 to 2045. Over 300 improvement projects were identified to meet the desired mobility conditions. These projects were reviewed and evaluated to develop the 2045 Cost Feasible Plan. The 2045 LRTP highlights changes in transportation over the last five years, from focus areas and policy changes to innovative and emerging technologies: the SMART Plan, Bus Express Rapid Transit (BERT), and rapid transit corridors; a standardized built environment classification system; rideshare services, scooters and mobile applications to increase mobility and connectivity; and the emergence of connected, autonomous and electric vehicles. Key Findings: Since the adoption of the 2040 LRTP, the TPO Governing Board adopted a series of resolutions that were incorporated into the development of the LRTP. 1. Resolution # 06-16 of February 16, 2016, set as "highest priority" the advancement of rapid transit corridors and transit supportive projects for the County. 2. Resolution # 26-16 of April 21, 2016, adopted and endorsed the proposed Strategic Miami Area Rapid Transit (SMART) Plan consisting in the development of six (6) rapid transit corridors and a Bus Express Rapid Transit (BERT) Network. 3. Resolution # 41-17 of September 26, 2017, establishing the financial plan framework for the SMART Plan which includes the commitment of local funds and the pursuit of federal, state, and additional local funds. 4. Resolution # 47-17 of October 19, 2017, advancing the North and South Dade Transitway Corridors of the SMART Plan to Priority I in the LRTP and the TIP for the development of said corridors. 5. Resolution # 14-18 of April 26, 2018, endorsing the identification and implementation of demonstration projects that advance elements of the SMART Plan. 6. Resolution # 23-18 of June 21, 2018, approving the financial plan of the BERT Network. 7. Resolution # 29-18 of June 21, 2018, endorsing the SMART Plan Demonstration Projects and approving identified funding framework to advance said demonstration projects for inclusion in the 2020-2024 TPO Program Priorities. 8. Resolution # 31-18 of August 30, 2018, selecting bus rapid transit (BRT) with the conversion to at-grade Metrorail upon reaching an average weekday ridership of 35,000 daily trips as the Locally Preferred Alternative (LPA) for the South Dade Transitway Corridor of the SMART Plan. 9. TPO Governing Board Resolution # 52-18 of December 6, 2018, selecting elevated fixed guideway transit as the Locally Preferred Alternative (LPA) for the North Corridor of the SMART Plan.

Document Title: PortMiami 2035 Master Plan Agency: Miami-Dade County Geography: Miami-Dade County Document Year: 2010 Tags: Policy, Areas/Need, Generators	Document Cover: 
Document Summary: This document is a planning tool used to update the Port of Miami Master Plan Sub element of Miami-Dade County's CDMP. Included was a market analysis for both cruise and cargo and a financial analysis of capital infrastructure. The document also proposes projects and a phased implementation plan.	
Key Findings: The three main components to the Port's future progress are cargo, cruise, and commercial with an overarching theme of sustainability: ◆ Sustainability progress through shore power (cold ironing), electrification of cranes, LEED buildings, green energy initiatives, and other sustainable projects ◆ Cargo progress through three major projects: construction of the PortMiami tunnel, dredging the main channel, and the rehabilitation of rail on Port ◆ Cruise progress by investing in new, larger terminal complexes and multimodal centers ◆ Commercial progress by providing commercial development onsite including a cruise ferry, marina, hotel and commercial, trans-shipment, and utilities ◆ Additionally, cargo movements are limited to ship-to-truck transfers and vice versa since the rail had not been used in several years. ◆ Port Miami is a general cargo port with strict limitations on handling certain types of bulk products. Main cargos passing through the port include: fruits and vegetables, apparel and textiles, non-refrigerated food products / groceries, paper, electronic equipment, stone, clay and cement tiles, construction and industrial equipment, trucks, buses, and automobiles. ◆ There are three major terminal operators at the port: Seaboard Marine, South Florida Container Terminal, and Port of Miami Terminal Operating Company ◆ The main distribution center locations from the port are: Hialeah, Medley, Orlando, and Jacksonville ◆ Continuing with the tunnel implementation to provide interstate access for trucks is a key cargo strategy	



Central port aerial.

Document Title: Connecting Overseas to Advance Safe Travel (Keys COAST Project) Agency: FDOT Geography: FDOT District Six Document Year: 2019 Tags: Policy, Areas/Need, Implementation, Movement	Document Cover: 
Document Summary: This document is the Project Systems Engineering Management Plan (PSEMP) for the Connecting Overseas to Advance Safe Travel (Keys COAST) project. A PSEMP is a plan that helps manage and control a project by using systems engineering processes (SEP). The PSEMP identifies what items are to be developed, delivered, integrated, installed, verified, and supported. The rest of this document is organized as follows: ◆ Section 2 – Need for a PSEMP ◆ Section 3 – Applicable Documents ◆ Section 4 – Systems Engineering Processes ◆ Section 5 – Project Management and Control This document serves as the PSEMP for the District 6, Florida Keys, US 1 Connected Vehicle and Automated Traffic Signal Performance Measures (CV/ATSPM) Project.	
Key Findings: The Florida Department of Transportation (FDOT) requires high-risk intelligent transportation systems (ITS) in projects using federal funds. FDOT policy maintains that non-federal aid ITS projects also follow a SEP for the project to be eligible for federal aid in the future. The PSEMP documents how systems engineering will be used for ITS project management. Florida's Statewide Systems Engineering Management Plan (SEMP) was used as a reference guide in the creation of this PSEMP. It provides planning guidance for the technical management, procurement, installation, and acceptance of the project. This project falls within the District 6 Regional Traffic Management Center's (RTMC) operations and within FDOT District 6 in Monroe County. It should be noted that District 6 Transportation Systems Management and Operations (TSM&O) will be expanding operations and maintenance in Monroe County to include State traffic signals in the City of Key West starting July 1, 2020 since the City has decided to opt out from the Traffic Signal Maintenance and Compensation Agreement (TSMCA). The FDOT plans to create a CV corridor consisting of 50 traffic control elements involving traffic signals (intersections; mid-block, emergency), pedestrian hybrid beacons (PHBs), one drawbridge signal; and a weigh station along 112.5 miles of US 1 from mile marker (MM) 0.0. in Key West to MM 112.5 at Monroe County and the Miami Dade County line. Additionally, the project will deploy ATSPM software in the RTMC.	

Document Title: Florida Keys Scenic Highway Interpretative Master Plan Agency: Florida Scenic Highways Advisory Group Geography: Monroe County Document Year: 2006 Tags: Policy	Document Cover: 
Document Summary: Provides a comprehensive set of planning and design strategies to create a unique interpretative experience for the residents and visitors of the Florida Keys. The mission for the plan is to create a unifying orientation and visitation framework for the interpretation of the scenic, ecological, historical, cultural, and recreational resources of the Keys.	
Key Findings: This plan did not speak to truck movements, freight, truck parking, or the movement of goods. However, it did provided insight on the overall vision and local and tourism use of the US 1 corridor along the Keys. - Almost 90% of users visit the Keys by motor vehicle categorized into week-long, one day, or two hour trips - Land preservation and restoration of natural habitats is of utmost importance, especially on Big Pine and the Lower Keys - Tension exists between preservation/conservation and development - As this is an interpretative plan, Community Interpretive Sites are planned along the US 1 corridor to allow travelers to stop and learn about the unique aspects of the community - There are 16 total rest areas proposed along US 1 - Visitors to the Keys go directly to one of these five locations: Key Largo, Islamorada, Marathon, Lower Keys, and Key West. Very few journey the entire length leisurely - The plan includes three levels of their interpretive structure: 1) Story of the Keys Landscape level, 2) Community Specific level, and 3) Existing intrinsic resources throughout the Keys - Implementation of this plan includes five elements: governance, administration, marketing, construction, and funding - Six facility types are proposed: corridor trailhead stations, visitor orientation centers, community interpretative sites, rest areas, bike stops, and airport kiosks - The total facilities cost is estimated to be \$58 million and implemented over two phases over 15 years	
CORRIDOR AND COMMUNITY EXPERIENCE ORGANIZATIONAL FRAMEWORK 	

Document Title: Miami-Dade County Freight Logistics Zone Designation Strategic Plan Agency: Miami-Dade TPO Geography: Miami-Dade County Document Year: 2018 Tags: Policy, Areas/Need, Generators, Implementation, Movement	Document Cover: 
Document Summary: In 2015, the Florida Legislature created a new section in Florida Statutes Chapter 311, "Designation of state freight logistics zones (FLZs)". FLZs provide a framework for directing potential funding to freight projects within the defined boundaries. These designations have the potential to qualify projects for funding or incentive programs, and ultimately compete for available funding. A proposed Freight Logistics Zone designation has been prepared as part of the Miami-Dade Transportation Planning Organization (TPO) 2018 Update to the Miami-Dade County Freight Plan. The findings and recommendations for this designation are supported by the Freight Plan, the designation has been vetted through the Freight Transportation Advisory Committee (FTAC) and the Miami-Dade TPO reached out to all municipalities informing them of the proposed designation.	
Key Findings: Strategic Plan Requirements: 1. Map identifying the area to be included 2. Identification of existing or planned freight facilities or logistics clusters 3. Identification of existing transportation infrastructure within or in close proximity to the proposed FLZ 4. Identification of existing workforce availability 5. Identification of existing or planned local, state, or federal workforce training capabilities available 6. Identification of existing or planned local, state, or federal plans concerning the movement of freight 7. Identification of financial or other local government incentives to encourage new development, expansion of existing development, or redevelopment within the proposed zone 8. Documentation that the plan is consistent with applicable local government comprehensive plans and adopted long-range transportation plans of a metropolitan planning organization, where applicable 1.3 Freight Facilities or Logistics Clusters Available land use data helps to illustrate the location of freight and industrial operations in Miami-Dade County. Four categories of land use data illustrate freight intensive areas, as follows: • Transportation land uses (e.g., airports, seaports, railroads/rail terminals, roadways). Transportation land uses capture the major freight terminals as well as key roadway and rail corridors. Several of these terminals represent intermodal logistics centers. • Industrial land uses (e.g., warehousing/distribution centers). Industrial land uses represent warehouses, distribution centers, foreign trade zones, light manufacturing, and other light and heavy industrial uses. Based on the operation, several of these facilities also represent intermodal logistics centers. • Agricultural land uses (e.g., farms, packing facilities). Miami-Dade County is home to an established and historic agricultural community, located largely to the south and west. These operations vary by season but represent significant freight activity. • Mining land uses (e.g., aggregate mining). Aggregate mining has long existed in Miami-Dade County, generating significant truck and rail traffic throughout the region. These operations are concentrated in the Lake Belt in northwestern Miami-Dade County.	

2.2.3 D6 Subarea Freight Planning Studies

Document Title: City of Doral Subarea Freight Mobility Improvement Plan	Document Cover: 																				
Agency: FDOT																					
Geography : City of Doral																					
Document Year: 2017																					
Tags: Areas/Need , Generators , Industry , Movement																					
Document Summary: This study was part of a series of Subarea Freight Mobility Plans prepared by FDOT D6. This plan documents existing conditions, challenges and opportunities, evaluates a range of growth scenarios, and provides a list of improvements to enhance freight mobility.																					
Key Findings: ♦ The Doral study area represents the largest concentration of industrial, warehousing, and distribution center locations in Florida with 65 million square feet of freight-related uses. ♦ Traffic is highly congested in this area, with travel speeds as slow as 6-10 mph during peak periods ♦ Freight continues to grow in the area, along with residential, commercial, and hotel/resort development. ♦ Recommendations include the following: ◇ Advancing 6 corridor projects to PD&E: Hialeah Expressway to Okeechobee Boulevard, NW 25th extensions to MIC and NW 82nd Avenue, NW 117th extension to NW 74th Street, reconstruction of NW 74th Street interchange at the HEFT, and NW 72nd to Okeechobee Road ◇ Coordinating with PortMiami on the locations for an Inland Terminal; 3 are in or near the Doral project area (see table)																					
 <table><tr><th>Facility</th><th>Limits of Work</th><th>Total Acres</th><th>Roadway Access</th><th>Proximity to Rail</th></tr><tr><td>Site 1B Proposal</td><td>Intermodal Facility</td><td>975</td><td>NW 95th Ave. @ NW 95th St.</td><td>900' from FEC</td></tr><tr><td>Site 4 Proposal</td><td>Intermodal Facility / Transload Facility</td><td>2350</td><td>Potential Access to NW 74th St. Interchange at the HEFT and NW 106th St.</td><td>3,260' to FEC and 2.13 miles to CSX</td></tr><tr><td>Site 9 Proposal</td><td>Transload Facility</td><td>316</td><td>NW 114th St. and potential access to NW 106th St. HEFT Interchange</td><td>1,000' from FEC</td></tr></table> <i>Doral study area.</i>		Facility	Limits of Work	Total Acres	Roadway Access	Proximity to Rail	Site 1B Proposal	Intermodal Facility	975	NW 95th Ave. @ NW 95th St.	900' from FEC	Site 4 Proposal	Intermodal Facility / Transload Facility	2350	Potential Access to NW 74th St. Interchange at the HEFT and NW 106th St.	3,260' to FEC and 2.13 miles to CSX	Site 9 Proposal	Transload Facility	316	NW 114th St. and potential access to NW 106th St. HEFT Interchange	1,000' from FEC
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Document Title: City of Miami Gardens Freight Mobility Improvement Plan

Agency: FDOT

Geography: City of Miami Gardens

Document Year: 2018

Tags: Areas/Need, Generators, Movement

Document Cover:



Document Summary: This study was part of a series of Subarea Freight Mobility Plans prepared by FDOT D6. The focus of this subarea plan was the City of Miami Gardens with the purpose of partnering with the community to develop strategies that advance freight and logistic systems and identifies viable freight improvement projects. A truck parking feasibility study was also performed.

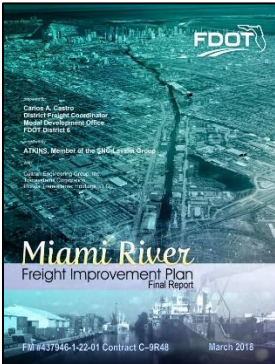
Key Findings:

- ◆ The city is located with direct access to I-95, SR 826, and Florida's Turnpike providing north-south and east-west movements
- ◆ The city's local roadway system is a grid with connectivity issues such as one-way roads and dead-end streets
- ◆ The commercial and industrial areas are focused on three corridors: NW 27th, NW 2nd, and SR 826
- ◆ The freight hotspots are the Golden Glades Interchange and the area north of Opa-Locka Airport
- ◆ Major freight generators:
 - ◇ Identified based on space available within the study area
 - ◇ Currently contains over 177 facilities of 50,000 square feet, with 135 facilities with at least 5 permitted dock positions
 - ◇ 75 properties have at least 10 dock positions; 20 properties have at least 30 dock positions
- ◆ The top freight generators include: Public Super Markets, Con-Way/XPO Logistics, Flowers Foods, Inc., Sun Electronics, and Miami Freight Solutions
- ◆ There is only one truck parking location within the city and it is equipped with 8 parking spaces
- ◆ The main considerations for the truck parking locations were: ownership/management, amenities, study boundary, and creative opportunities

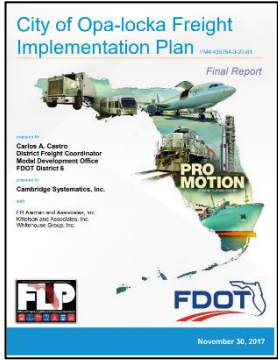


Miami Gardens study area.

Document Title: Town of Medley Freight Mobility Improvement Plan Agency: FDOT Geography: Town of Medley Document Year: 2017 Tags: Areas/Need, Generators, Movement	Document Cover: 
Document Summary: This study was part of a series of Subarea Freight Mobility Plans prepared by FDOT D6. The purpose of this study is to improve freight movement and circulation in and around the Town's existing transportation system, investigate freight corridors within the Medley area, and develop a plan to enhance freight connectivity and minimize conflicts.	
Key Findings: ◆ The Town of Medley is an 8-square mile municipality in northwest Miami-Dade County ◆ Medley is home to over 1,800 business, a large majority are warehouse and distribution centers ◆ Due to proximity to freight logistics facilities and key infrastructure, Medley has been established as a prime location for industrial development resulting in a high concentration of industrial and freight-logistic related activities. As a result, congestion is high and impacting the town's aging infrastructure ◆ Using different growth scenarios, recommendations were developed based on an alternatives analysis ◆ The plan was developed in coordination with the <i>Town of Medley Mobility Plan</i> and recognizes the value of reducing single occupant vehicle trips as benefiting the Town's mobility as well as local freight mobility and connectivity ◆ Several of the recommendations include the following: ◇ Resurfacing to fix potholes and flood retention issues ◇ Use of Traffic Adaptive Signal System throughout the corridor ◇ Widening roadways and bridges ◇ Building new roadways ◇ Enhancing ITS systems such as CCTV devices and dynamic message systems	 <i>Medley study area.</i>

Document Title: Miami River Freight Improvement Plan	Document Cover: 
Agency: FDOT	
Geography: Miami River Subarea	
Document Year: 2018	
Tags: Areas/Need, Generators, Implementation, Movement	
Document Summary: This study was part of a series of Subarea Freight Mobility Plans prepared by FDOT D6. This study focuses on the subarea surrounding the western reach of the federally navigable section of the Miami River with a secondary study area following the Downtown Lead rail spur. The study examines the existing and planned transportation infrastructure along the Miami River with an emphasis on how the existing network accommodates existing and forecasted traffic volumes.	
Key Findings: ◆ Current shipping volumes are nearly 400,000 tons per year ◆ Marine shipping movements are much lower in number than the recreational boat movements on the lower river ◆ The study area has growth potential, but is confronted with older, smaller, and less modern industrial building stock and a somewhat deteriorated marine and upland infrastructure ◆ The closest truck parking facility to the study area is approximately 6 miles away ◆ Dolphin Expressway between NW 12th Avenue and NW 27th Avenue has the highest number of daily trucks within the project area (between 4,000-5,500 daily trucks) ◆ The five largest freight generators within the study area are: Antillean Marine Shipping, Beruth Marine Shipping, Air Marine Terminal, Betty K, and Bimini shipping ◆ Warehousing and truck terminal uses account for 71% of the industrial sites ◆ Recommendations include: ◇ Improvements to roadways, rail crossings, and supporting facilities ◇ Improved connectivity to the regional network ◇ Preservation of the marine industrial land uses ◇ Develop a truck staging area and truck travel center	



Document Title: City of Opa-locka Freight Implementation Plan Agency: FDOT Geography: City of Opa-locka Document Year: 2017 Tags: Areas/Need, Generators, Industry, Implementation, Movement	Document Cover: 
Document Summary: This study was part of a series of Subarea Freight Mobility Plans prepared by FDOT D6. This plan documents existing conditions, identifies key challenges and opportunities, evaluates a range of growth scenarios, and provides recommendations to support the efficient movement of freight into, out of, and within Opa-Locka.	
Key Findings: - Existing warehousing and distribution sites within the city primarily have older building configurations and experience tight road access and/or flooding issues - The city allows heavy industrial uses that are not always allowed in other municipalities which has led to recycling, salvage, and industrial businesses to concentrate there - The city also faces institutional stability challenges, high tax rates, security concerns, and limited supply of developable land - A recent major freight opportunity is the location of an Amazon distribution center at the Miami-Opa-Locka Airport. Many of the short-term recommendations in this plan are focused on ensuring efficient access for this facility and to its markets - Redevelopment and reuse of existing properties within Opa-Locka will likely occur after development in more competitive areas like Doral and Medley - Recommendations include: - Capacity and operational improvements close to the Miami-Opa Locka Executive Airport to handle traffic generated by the new Amazon fulfillment center - Corridor-level operational improvements - Access management improvements near the new Amazon facility - Long-term improvements include new lanes, interchange reconstruction, and corridor level improvements - Develop a designated truck route network - Incentivize and support new truck parking facilities	 <i>Opa-locka study area.</i>

Document Title: Hialeah Freight Mobility Implementation Plan

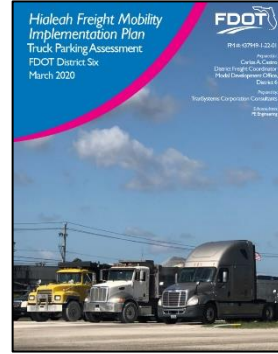
Agency: FDOT

Geography: City of Hialeah

Document Year: 2023

Tags: **Areas/Need**, **Generators**, **Industry**, **Implementation**, **Movement**

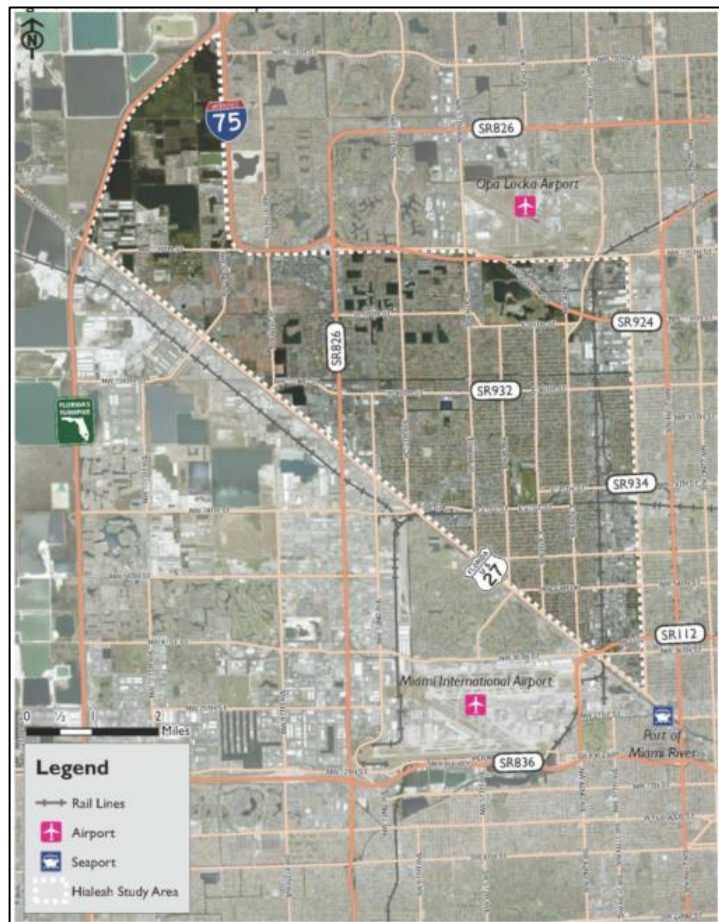
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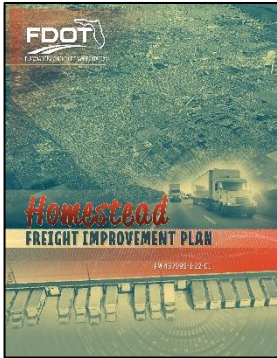
Document Summary: This study began in January 2019 as part of a series of Subarea Freight Mobility Plans prepared by FDOT D6. This study focuses on the subarea of the City of Hialeah as well as surrounding areas of interest. The study includes recommendations to enhance connectivity, mobility, and minimize conflicts for freight transportation for the subarea.

Key Findings:

- ◆ In Hialeah, 10-20% of the vehicles on major roadways are trucks
- ◆ The Hialeah industrial building market currently totals 55.4 million square feet
- ◆ Employment in freight-based sectors is 26% of Hialeah's total employment
- ◆ Connections to international air and seaports, primary rail lines, and major arterial roadways and highways create an optimal industrial position for Hialeah
- ◆ Affordability in the industrial market is a key advantage for Hialeah
- ◆ A sizeable portion of Hialeah is located within Miami-Dade wellfield areas due to the proximity to the Biscayne Aquifer
- ◆ Aging industrial structures as well as the repurposing/gentrification of industrial uses are challenges to industrial growth within the area
- ◆ Multiple gateway and TOD districts are bringing more pedestrian and entertainment-oriented uses to the area – specifically along the north/south industrial corridor between the residential areas and CSX tracks



Hialeah study area.

Document Title: Homestead Freight Improvement Plan	Document Cover: 
Agency: FDOT	
Geography: Homestead Subarea	
Document Year: 2023	
Tags: Areas/Need, Generators, Industry, Implementation, Movement	
Document Summary: This study was part of a series of Subarea Freight Mobility Plans prepared by FDOT D6. This study focuses on the subarea of southern Miami-Dade County, with a primary study area lying south of SW 268 th Street and encompassing the cities of Homestead and Florida City, surrounded by a secondary study area lying south of SW 184 th Street. The study examines the existing and planned transportation infrastructure with an emphasis on how effectively the study area road network accommodates the existing and forecast vehicular and truck traffic volumes.	
Key Findings: - Recommendations were centered around roadway traffic signal and capacity improvements supported by other types of recommendations such as monitoring other studies and programs and exploring the implementation of future truck parking sites - The study area includes a diverse and extensive freight and logistics presence - Legacies of industrial land exist along the south ends of the CSX and former FEC railroad corridors - A new area of industrial concentration is emerging in the southeastern sector of the study area near the Homestead Air Reserve Base and the Homestead Miami Speedway where there are larger tracts of land inside the UDB with separation from residential areas - The newly approved UDB expansion for an industrial park adjacent to the Turnpike at the SW 112th Avenue interchange is another sign of industry recognition of the market - The forecasted population and employment across the two study areas exceeds 70% by 2045	

2.2.4 Monroe County Plans and Studies

Document Title: US 1 Arterial Travel Time and Delay Study

Agency: Monroe County Planning Department

Geography: Monroe County

Document Year: 2021

Tags: Areas/Need, Implementation, Movement

Document Cover:

2021
US 1 ARTERIAL TRAVEL TIME
AND DELAY STUDY

MONROE COUNTY, FLORIDA

Prepared for:
Monroe County Planning Department



Prepared by:
AECOM

110 East Broadway Boulevard - Suite 700, Fort Lauderdale, Florida 33301
June 2021
Updated July 2021

Document Summary:

The primary objective of this study was to determine the LOS on US 1 for concurrency management purposes. The methodology established a procedure for using travel speed as a means of assessing the LOS and reserve capacity for US 1.

Key Findings:

Both Monroe County and FDOT have adopted a LOS C standard for US 1

45 mph has been adopted as the LOS C standard for the entire length of US 1 regardless of posted speed limits

Under the adopted growth management process, if the overall LOS for US 1 falls below the LOS C standard, then no additional land development will be allowed in the Florida Keys, unless mitigation measures are proposed to address the LOS deficiencies

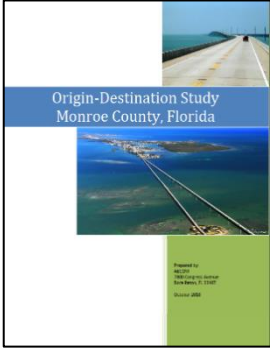
The 2019 study was not adopted or used for development review. Therefore, the 2017 results were used for comparison purposes in this report

The overall travel speed was 45.5 mph

Segment	Name of Segment	Beginning Control Point	Ending Control Point	Beginning Mile Marker	Ending Mile Marker	LOS 2017	LOS 2019	LOS 2021	Median Speed 2017	Median Speed 2019	Median Speed 2021
1	Stock Island	Cow Key Bridge (N)	Key Haven Boulevard	4.0	5.0	B	B	A	29.4	33.0	40.0
2	Boca Chico	Key Haven Boulevard	Rockland Drive	5.0	9.0	A	B	A	59.6	55.8	59.9
3	Big Coppitt	Rockland Drive	Boca Chico Road	9.0	10.5	B	B	B	46.6	46.1	47.5
4	Saddlebunch	Boca Chico Road	Harris Channel Bridge (N)	10.5	16.5	B	C	B	53.3	52.0	53.5
5	Sugarloaf	Harris Channel Bridge (N)	Bow Channel Bridge (N)	16.5	20.5	A	A	A	48.3	48.1	48.8
6	Cudjoe	Bow Channel Bridge (N)	Spanish Main Drive	20.5	23.0	A	A	A	48.2	47.2	47.9
7	Summertime	Spanish Main Drive	East Shore Drive	23.0	25.0	B	B	B	45.0	45.2	46.1
8	Ramrod	East Shore Drive	Torch-Ramrod Bridge (S)	25.0	27.5	B	A	A	46.1	46.7	46.5
9	Torch	Torch-Ramrod Bridge (S)	N. Pine Channel Bridge (N)	27.5	29.5	A	A	A	47.7	48.1	48.8
10	Big Pine	N. Pine Channel Bridge (N)	Long Beach Drive	29.5	33.0	C	B	A	39.4	42.4	42.7
11	Bahia Honda	Long Beach Drive	7-Mile Bridge (S)	33.0	40.0	B	A	A	53.7	54.2	54.8
12	7-Mile Bridge	7-Mile Bridge (S)	7-Mile Bridge (N)	40.0	47.0	B	B	B	53.3	53.4	53.2
13	Marathon	7-Mile Bridge (N)	Coco Plum Drive	47.0	54.0	A	A	A	37.9	37.9	39.6
14	Grassy	Coco Plum Drive	Toms Harbor Ch Bridge (S)	54.0	60.5	C	C	C	51.6	50.7	51.4
15	Duck	Toms Harbor Ch Bridge (S)	Long Key Bridge (S)	60.5	63.0	C	C	C	53.3	53.3	53.2
16	Long	Long Key Bridge (S)	Channel #2 Bridge (N)	63.0	73.0	C	B	C	50.5	52.0	49.9
17 ⁽¹⁾	Lower Matecumbe	Channel #2 Bridge (N)	Lignumvitae Bridge (S)	73.0	77.5	C	C	C	49.8	49.6	48.2
18 ^{(1) (2)}	Tea Table	Lignumvitae Bridge (S)	Tea Table Relief Bridge (N)	77.5	79.5	D	D	A	47.6	46.9	46.6
19 ⁽¹⁾	Upper Matecumbe	Tea Table Relief Bridge (N)	Whole Harbor Bridge (S)	79.5	84.0	D	E	E	39.2	36.4	35.3
20 ⁽¹⁾	Windley	Whole Harbor Bridge (S)	Snake Creek Bridge (N)	84.0	86.0	C	E	D	41.0	37.0	39.3
21 ^{(1) (2)}	Plantation	Snake Creek Bridge (N)	Ocean Boulevard	86.0	91.5	B	D	C	40.5	35.3	34.7
22	Tavernier	Ocean Boulevard	Atlantic Boulevard	91.5	99.5	A	A	A	47.4	46.9	49.4
23	Key Largo	Atlantic Boulevard	C-905	99.5	106.0	A	A	A	44.4	44.2	45.0
24	Cross	C-905	County Line Sign	106.0	112.6	B	B	C	52.7	50.2	49.1
Overall				4.0	112.6	C	D	C	46.0	44.6	45.5

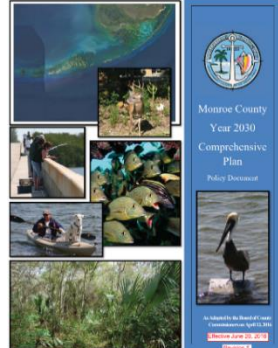
(1) - Village of Islamorada
(2) - Segments with Speed Limit Changes

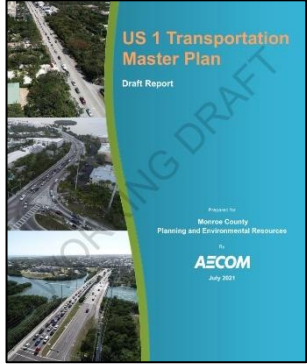
Segments with NO Reserve Capacity

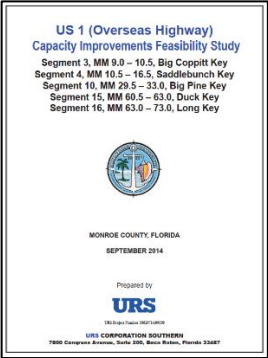
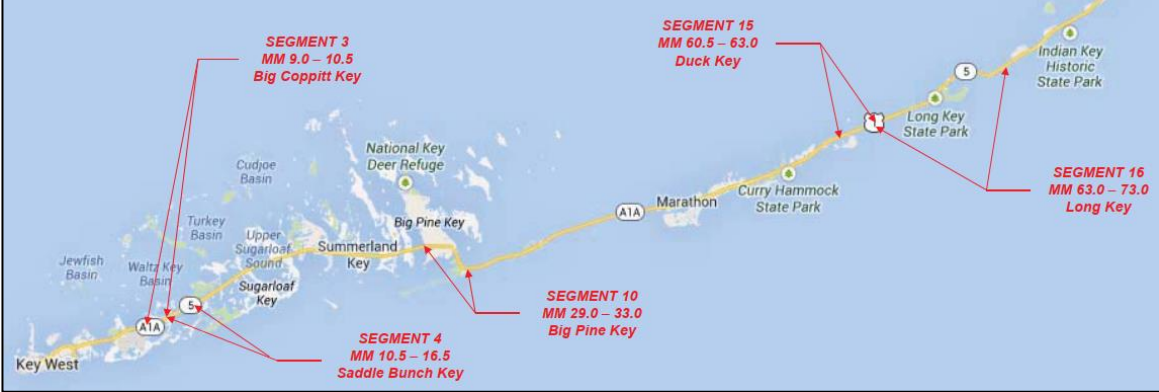
Document Title: Origin-Destination Study Agency: Monroe County Geography: Monroe County Document Year: 2018 Tags: Areas/Need	Document Cover: 
Document Summary: Summarizes the results of a comprehensive study to identify travel patterns along US 1 in Monroe County. Types of analysis in this study included: Census data, origin-destination, zone activity, visitor home-work analysis, FDOT traffic data, RITIS data, and Monroe County Tourism Development Council (TDC) data.	
Key Findings: ◆ The major destinations for work related travel are Key West, Stock Island, and Marathon ◆ The origin-destination data revealed that internal trips within Key West accounted for approximately 40% of the total trips. Other major destinations were Islamorada, Key Largo, and Marathon. ◆ Internal trips within a single zone and trips to/from neighboring zones were consistently ranked among the top 10% ◆ With the exception of morning peak hours, a majority (60%-80%) of the travelers appear to be tourists from mainland Florida or out of state ◆ In Key Largo, southbound US 1 experiences higher volumes on Fridays/Saturdays and northbound US-1 experiences higher volumes on Sundays ◆ The most common mode of travel in 2017 shifted from "fly to Miami and rent a car" to "drive personal vehicle" ◆ 60% of travelers surveyed also visited other parts of Florida, with Orlando being the most common destination ◆ The average speed is around 40 mph with the exception of a few mid-day periods where the speeds drop to 30-40 mph ◆ This study did not include specific data for truck or freight travel.	

	2017	2016	Diff
	%	%	+/- chg
QE - How did you get to the Keys for this trip?			
Sample Size	3152	3600	
Drive personal vehicle	1151 36.5%	706 19.6%	16.9%
Drive rental vehicle	516 16.4%	639 17.8%	-1.4%
Come by Tour Bus	25 0.8%	107 3.0%	-2.2%
Fly into Marathon	37 1.2%	74 2.1%	-0.9%
Fly into Key West	450 14.3%	621 17.3%	-3.0%
Fly to Miami and rent a car	912 28.9%	1330 36.9%	-8.0%
Other FL airport and drive rental	61 1.9%	88 2.4%	-0.5%
Other	2 0.0%	35 1.0%	-0.9%

Monroe County TDC traveler survey results.

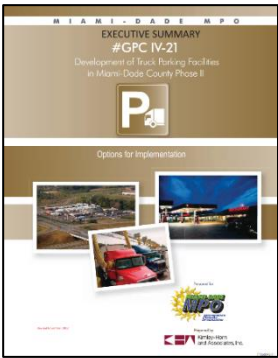
Document Title: Monroe County Year 2030 Comprehensive Plan	Document Cover: 
Agency: Monroe County, Florida	
Geography: Monroe County, Florida	
Document Year: June 20, 2016 Rev.5	
Tags: Policy, Areas/Need, Implementation.	
Document Summary: The Florida Keys Carrying Capacity Study and Work Program: In 1996, the Governor issued Rule 28.20-100 (the "Rule"), a five-year work program for Monroe County (Florida Administration Commission Rule 28.20-100, 1996). The Rule required the completion of the Florida Keys Carrying Capacity Study (FKCCS) and its companion, the Carrying Capacity Impact Analysis Model (CCIAM). According to the Rule, the CCIAM was to be designed " . . . to determine the ability of the Florida Keys ecosystem and the various segments thereof, to withstand all impacts of additional land development activities." The FKCCS provided four main guidelines for future development in the Florida Keys: 1. Prevent encroachment into native habitat. 2. Continue and intensify existing programs. 3. If further development is to occur, focus on redevelopment and infill. 4. Increase efforts to manage the resources.	
Key Findings: 380.0552(7), F. S. – PRINCIPLES FOR GUIDING DEVELOPMENT. State, regional, and local agencies and units of government in the Florida Keys Area shall coordinate their plans and conduct their programs and regulatory activities consistent with the principles for guiding development as specified in chapter 27F-8, Florida Administrative Code, as amended effective August 23, 1984, which is adopted and incorporated herein by reference. For the purposes of reviewing the consistency of the adopted plan, or any amendments to that plan, with the principles for guiding development, and any amendments to the principles, the principles shall be construed as a whole and specific provisions may not be construed or applied in isolation from the other provisions. However, the principles for guiding development are repealed 18 months from July 1, 1986. After repeal, any plan amendments must be consistent with the following principles: (a) Strengthening local government capabilities for managing land use and development so that local government is able to achieve these objectives without continuing the Area of Critical State Concern designation. (b) Protecting shoreline and marine resources, including mangroves, coral reef formations, seagrass beds, wetlands, fish and wildlife, and their habitat. (c) Protecting upland resources, tropical biological communities, freshwater wetlands, native tropical vegetation (for example, hardwood hammocks and pinelands), dune ridges and beaches, wildlife, and their habitat. (d) Ensuring the maximum well-being of the Florida Keys and its citizens through sound economic development. (e) Limiting the adverse impacts of development on the quality of water throughout the Florida Keys. (f) Enhancing natural scenic resources, promoting the aesthetic benefits of the natural environment, and ensuring that development is compatible with the unique historic character of the Florida Keys. (g) Protecting the historical heritage of the Florida Keys. (h) Protecting the value, efficiency, cost-effectiveness, and amortized life of existing and proposed major public investments, [remainder omitted]	

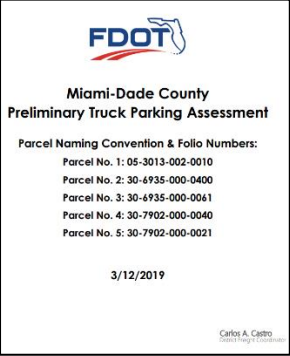
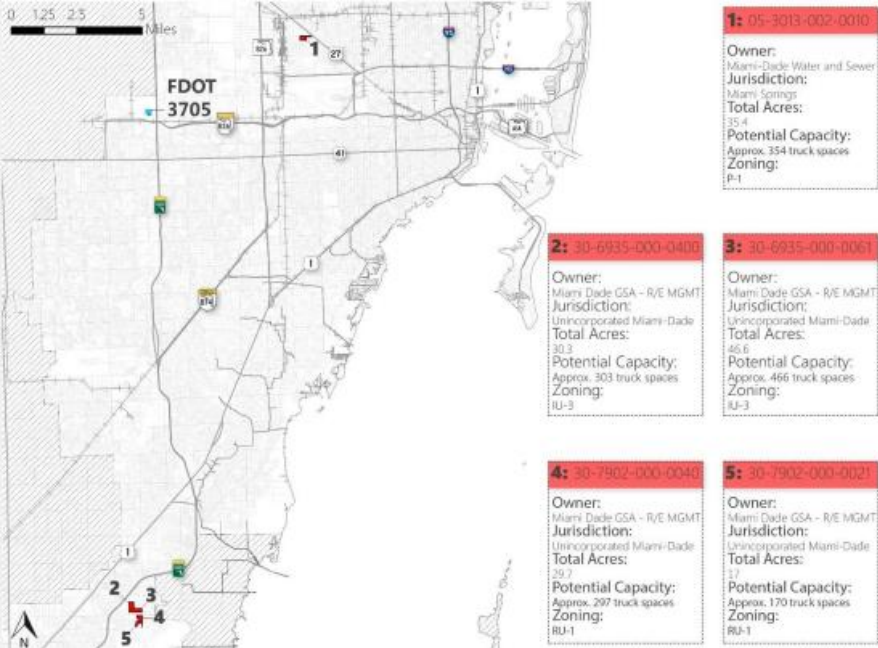
Document Title: US 1 Transportation Master Plan Agency: Monroe County Planning and Environmental Resources Geography: Monroe County Document Year: 2021 Tags: Policy, Areas/Need	Document Cover: 
Document Summary: A transportation master plan for the US 1 corridor in Monroe County. The master plan identifies transportation needs, goals/objectives, and an action plan to meet those goals. The recommendations emphasize technology trends to address traffic safety, operations, and roadway improvement projects.	
Key Findings: ◆ Technology trends identified for freight management improve delivery times, inventory management, and customer satisfaction. The plan proposes implementing the following: ◇ Consider freight signal priority at select signals along the US 1 corridor ◇ Promote eCommerce by considering to form a coalition of freight companies modeled after Transportation Demand Management programs ◇ Coordinate with FDOT D6 on the upcoming deployment of the Keys COAST project as well as future needs to address Monroe County's connected vehicle needs and system requirements for traffic signal optimization ◆ Other recommendations include: ◇ Coordinate with FDOT D6 to identify gaps in existing ITS infrastructure and field devices (e.g., CCTV devices, vehicle detectors) and tie into existing microwave communications ◇ Consider installing workstations at Monroe County Sheriff's Office to provide a higher level of incident management in the Keys ◇ Promote more active use of the Rapid Incident Scene Clearance (RISC) program to address severe incidents ◇ Have qualified Traffic Homicide Investigators (THI) located within Monroe County to help expedite traffic homicide investigations and thus reduce the impact of major lane/road closures on traffic flow and secondary crashes ◆ Three new bridge options were identified to provide alternative routes to help improve traffic flow in three critical areas: Stock Island to/from Key West Bridge; Big Pine Key Bridge; Upper Matecumbe. Feasibility studies still need to be conducted for each of these options.  <i>Stock Island bridge options.</i>	

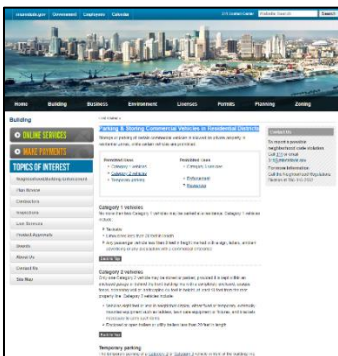
Document Title: US 1 (Overseas Highway) Capacity Improvements Feasibility Study Agency: Monroe County Planning Department Geography: Monroe County Document Year: 2014 Tags: Policy, Areas/Need	Document Cover: 
Document Summary: Identifies appropriate improvements to address the capacity deficiencies along US 1 and to evaluate their implementation feasibility in five segments along the corridor.	
Key Findings: ◆ The five segments evaluated in this study are listed below. Three of the segments were chosen based on the US 1 Travel Time Delay Study (TTDS) and the other two were selected based on historical trends: ◇ Segment 3, MM 9.0 – 10.5, Big Coppitt Key (Historical Trend) ◇ Segment 4, MM 10.5 – 16.5, Saddlebunch Key (2013 TTDS) ◇ Segment 10, MM 29.5 – 33.0, Big Pine Key (Historical Trend) ◇ Segment 15, MM 60.5 – 63.0, Duck Key (2013 TTDS) ◇ Segment 16, MM 63.0 – 73.0, Long Key (2013 TTDS) ◆ Road widening along US 1 in Monroe County is restricted by the adopted comprehensive plan policies with the intent to preserve and protect the fragile ecological conditions ◆ Other, less intrusive remedies to improve traffic flow include: ◇ Adding turn lanes at strategic locations ◇ Enhancing signal timing ◇ Consolidating driveways/access points ◇ Conduct speed studies to confirm/correct posted speed limits ◇ Not allowing new signalized intersection if there is alternative safe access ◇ Improve conditions along the county maintained local streets ◆ The plan includes a list of specific improvements to the US 1 corridor as Phase 1 improvements to mitigate existing and projected LOS	
	

2.2.5 Commercial Motor Vehicle/Truck Parking Literature

Document Title: Comprehensive Parking Study for Freight Transport	Document Cover: 
Agency: Miami-Dade TPO	
Geography: Miami-Dade County, Florida	
Document Year: September 30, 2010	
Tags: Policy, Areas/Need, Generators, Industry, Implementation, Movement	
Document Summary: Miami-Dade County relies heavily on trucks for the movement of its freight. Major load centers, like the Port of Miami, the Miami International Airport, and the Florida East Coast Railway's intermodal terminal in Hialeah, generate significant truck traffic. The trucks service local and regional consumption markets, as well as customers located outside of the region and state. In addition, there is a dense network of warehouses and distribution centers in western Miami-Dade County that rely upon truck service. The type of trucking operation directly impacts parking demand. Local delivery services transport relatively small quantities of goods to a variety of customers throughout the region. These drivers pick up their truck and trailer at a centralized terminal that provides its own overnight parking. However, local independent dray operators hauling containers back and forth between major hubs like the Port of Miami and a rail intermodal terminal or warehouse are generally responsible for their own overnight, local parking accommodations. Finally, long haul interstate drivers who transport loads into and out of the region require an overnight parking facility between loads that provides amenities such as showers and truck washing equipment. Often, due to a lack of these long haul truck parking facilities, drivers coordinate their deliveries within the urbanized area to end their trip along the Interstate and Turnpike rest areas and entrance/exit ramps, using them as substitute overnight parking facilities. Key Findings: The parking demand and supply analyses conducted substantiates a severe truck parking shortage in Miami-Dade County. Results indicate that woefully inadequate truck parking supplies exists throughout the county. In total, Miami-Dade County currently provides only 293 truck parking spaces for local, independent operators and long haul interstate drivers. However, it is estimated that the overall parking demand for these trucks exceeds 12,000 spaces, indicating that the current supply meets less than 3 percent of the demand. To fully satisfy the estimated truck parking demand of 12,000 spaces in Miami-Dade County, an additional 1,177 acres of property would need to be identified, purchased, and developed as truck parking facilities. These properties would need to be located throughout the county. Ideally, long haul truck parking sites that provide amenities such as showers, food, and mechanical repair services would be larger parcels in excess of 10 acres located near highway interchanges. Local truck parking sites would be smaller, provide few amenities besides security, and would be strategically located throughout Miami-Dade County.	

Document Title: Development of Truck Parking Facilities in Miami-Dade County Phase II	Document Cover: 
Agency: Miami-Dade MPO (now TPO)	
Geography: Miami-Dade County, Florida	
Document Year: August 2012	
Tags: Policy, Areas/Need, Generators, Industry, Implementation, Movement	
Document Summary: The Miami-Dade Metropolitan Planning Organization (MPO) conducted the Development of Truck Parking Facilities in Miami-Dade County Phase II to serve as a guide for implementing truck parking facilities it builds upon the Comprehensive Parking Study for Freight Transport Phase I. The potential truck parking locations identified in Phase I were examined in greater detail and additional truck parking locations were identified. These locations were analyzed in a detailed screen analysis.	
Three (3) screening processes were used to analyze the potential truck parking locations. The screening process included a preliminary screen, initial detailed screen, and in-depth detailed screen. The preliminary screen concentrated on distinguishing between local trucking and interstate trucking, focusing on interstate trucking and identifying parcels where truck parking is allowed that are within 1-mile of interstate interchanges and greater than 10 acres. The initial detailed screen verified folio numbers, assessed adjacent land uses, identified usable site acreage, and determined truck routes in relation to truck parking locations, and limited potential locations to sites north of S^W 8th Street within the Urban Development Boundary (UDB) and with paved access. The in-depth detailed screen assessed the neighborhood impacts, parcel distance from freeways, site visibility from freeway, freeway truck percentages, property proximity to terminal-major hubs/industrial-commercial truck generators, site accessibility, and developed a land cost feasibility threshold. Prototype sites were developed to assist developers and landowners in determining truck parking layouts and amenities for the facilities. Local and national overnight truck parking facilities were also examined and used to determine the specific amenities to be considered in the conceptual/prototype design. Order of magnitude costs were prepared to estimate the financial capital required for site development.	
Key Findings: This study developed options for implementing overnight truck parking for Miami-Dade County due to the shortage of overnight truck parking within the County. Input was obtained from the Freight Transportation Advisory Committee which served as the study advisory committee, Miami-Dade County DTPW and FDOT. This study is a unique effort for the MPO, as the target audience for this study is not the typical public agency but rather the private sector, specifically landowners and potential developers of truck parking facilities. This study provides information that may facilitate the partnerships likely to be required to advance the development of truck parking facilities in Miami-Dade County.	

Document Title: Miami-Dade County Preliminary Truck Parking Assessment	Document Cover: 
Agency: FDOT	
Geography: Miami-Dade County, Florida	
Document Year: 2019	
Tags: Areas/Need, Generators, Industry, Implementation, Movement	Document Summary: Miami-Dade County faces a severe shortage of truck parking spaces. Understanding this issue, the county has identified five (5) parcels for potential truck parking development. This document provides a preliminary assessment of the viability of truck parking development at these locations.
Key Findings: The assessment including three tiers: ◆ Tier 1: Documented each parcel's legal, geometric, and geographical characteristics such as zoning, land use, and accessibility. ◆ Tier 2: Environmental assessment focusing on eight environmental issues (e.g., flood zones) ◆ Tier 3: Evaluated freight transportation demand based on existing literature and engineering judgement. Of the five parcels evaluated, two were determined to be suitable locations (parcels 2 and 3). Both of these parcels are in the Homestead Base census-designated area. However, this area has a very small estimated truck parking demand as compared to the rest of the county. Parcels 2 and 3 are anticipated to provide a minimum of 303 and 466 parking spaces, respectively (assuming 10 truck spaces per acre). The risks with these parcels is that they are located near residential areas (approximately 50% of the land use within a 1-mile buffer of Parcel 2 and 41% within Parcel 3 are residential).  <i>Map of the five parcels.</i>	

Document Title: Parking & Storing Commercial Vehicles in Residential Districts	Document Cover:
Agency: Miami-Dade Government	
Geography: Miami-Dade County, Florida	
Document Year: Current code	
Tags: Policy, Areas/Need, Industry, Implementation,	
Document Summary: A summary of the current Miami-Dade regulations for truck parking in residential districts.	
Key Findings: Storage or parking of certain commercial vehicles is allowed on private property in residential zones, while certain vehicles are prohibited. Permitted uses: Category 1 vehicles , Category 2 vehicles , Temporary parking . Prohibited uses: Category 3 vehicles .	
♦ Category 1 Vehicles: No more than two Category 1 vehicles may be parked at a residence. Category 1 vehicles include: Taxicabs, Limousines less than 20 feet in length; any passenger vehicle less than 8 feet in height marked with a sign, letters, emblem advertising or any association with a commercial enterprise • Category 2 Vehicles: Only one Category 2 vehicle may be stored or parked, provided it is kept within an enclosed garage or behind the front building line with a completely enclosed, opaque fence, screening wall or landscaping six feet in height, at least 10 feet from the rear property line. Category 2 vehicles include: Vehicles eight feet or less in height that display, either fixed or temporary, externally-mounted equipment such as ladders, lawn care equipment or fixtures, and brackets necessary to carry such items; Enclosed or open trailers or utility trailers less than 20 feet in length • Temporary parking: The temporary parking of a Category 2 or Category 3 vehicle in front of the building line, or on a right-of-way, is only permitted for the purpose of loading or unloading materials, or while actively engaged in providing commercial service at the premises. A convenience store is permitted so long as it does not exceed one hour in any 24-hour period. ♦ All Category 3 vehicles are prohibited in all residential zoned districts. Category 3 vehicles include: Vehicles exceeding 20 feet in length and more than eight feet in height. They include: Tow trucks, dump trucks, construction or earth-moving vehicles or equipment, Semi-tractors, Trailers ♦ Enforcement: Violations are subject to the issuance of a Courtesy Warning Notice. Both the tenant and property owner may receive notices in connection with enforcement. However, the property owner is ultimately responsible for compliance. Citations: ♦ First offense - \$500 ♦ Second offense within five years - \$1,000 ♦ Third or subsequent offense within five years - \$2,500	

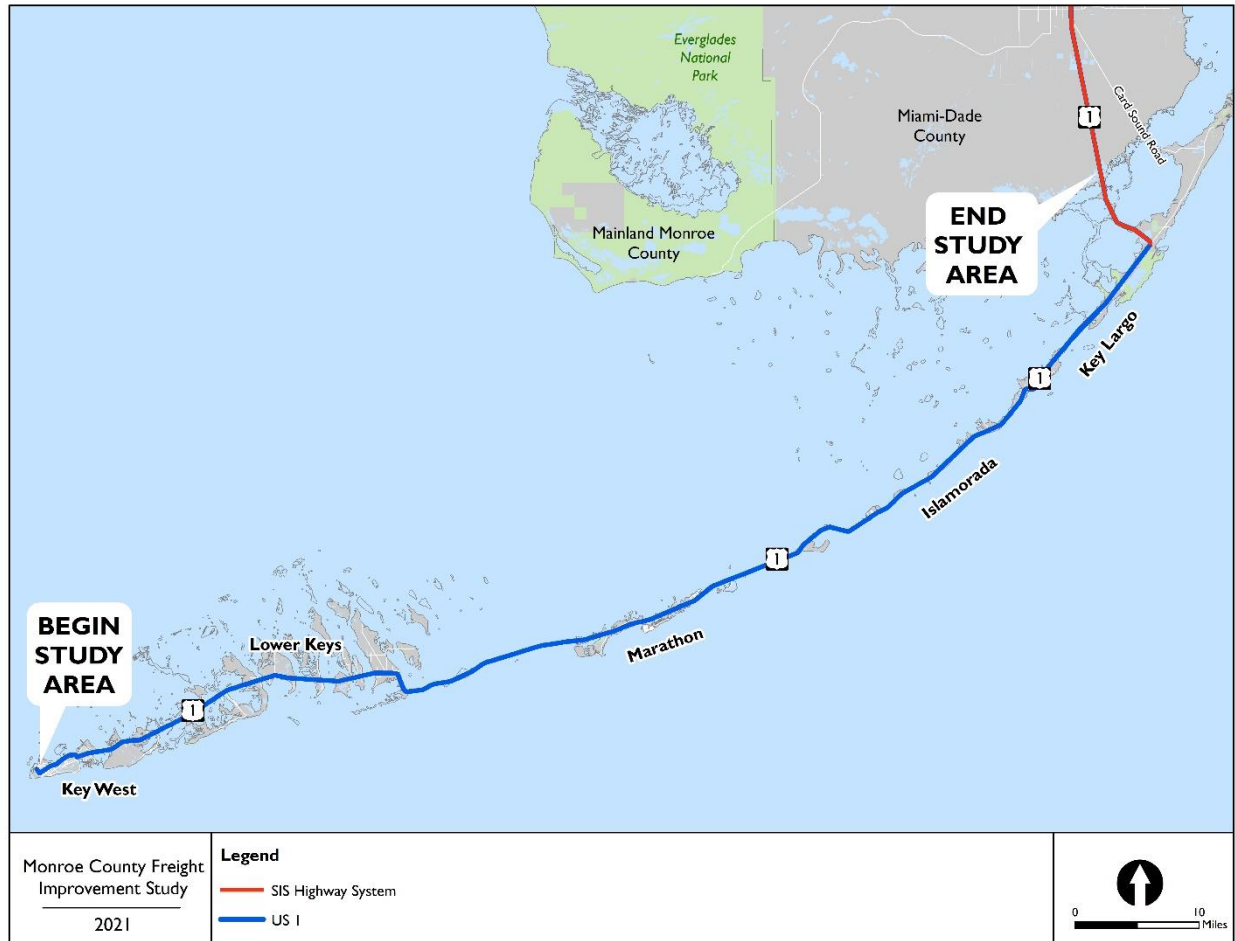
3.0 Study Area Characteristics

3.1 Roadway Network

3.1.1 FDOT Strategic Intermodal System

A majority of the study area is not within the FDOT Strategic Intermodal System (SIS). However, the approximate 7.3 mile stretch between Key Largo and the mainland is part of the SIS (see **Figure 3-1**).

Figure 3-1 Strategic Intermodal System

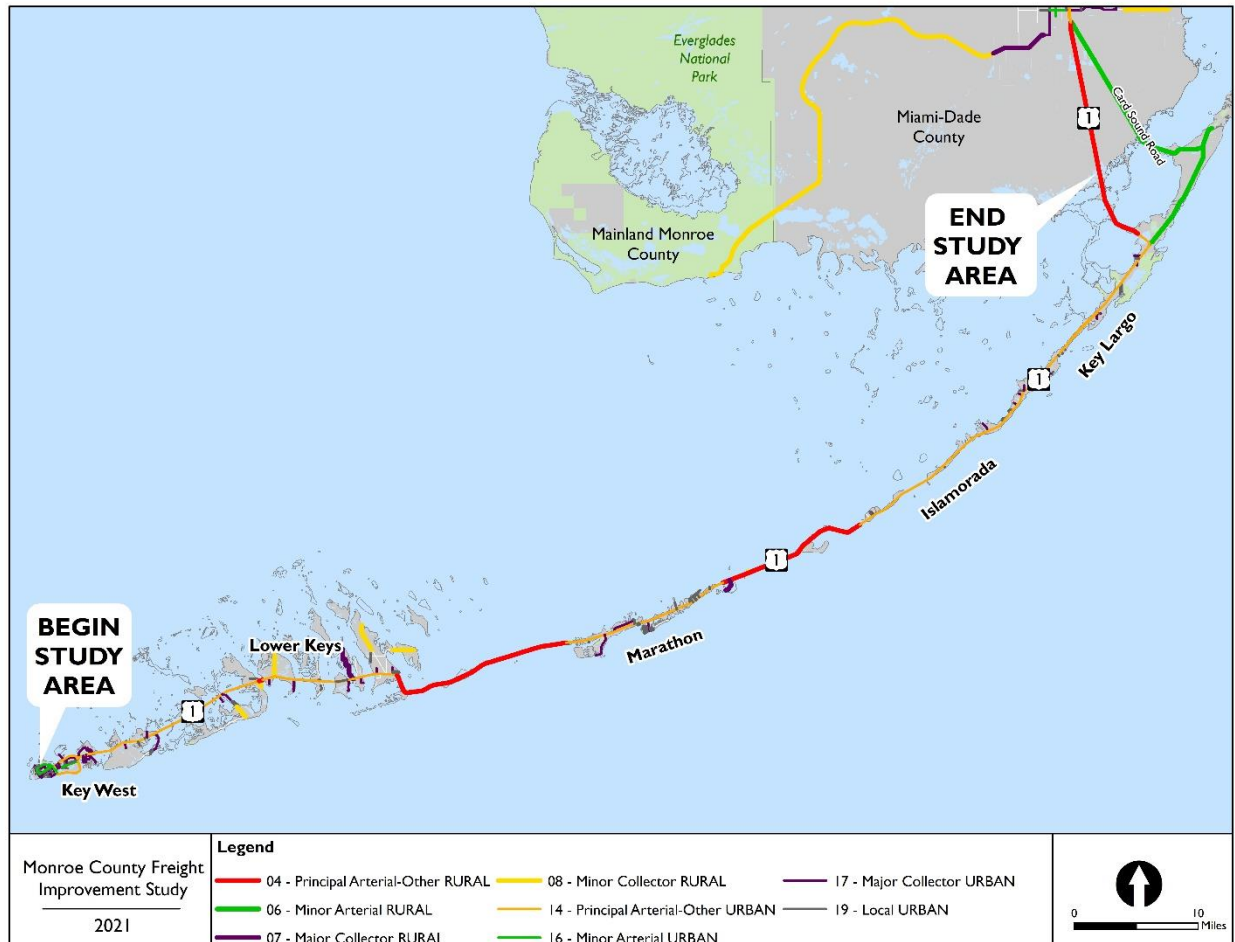


Data source: FDOT Open Data Hub, SIS Highway shapefile, 2021.

3.1.2 Functional Classification

The FDOT functional classification is either *04 Principal Arterial – Other RURAL* shown in red or *14 Principal Arterial – Other URBAN* shown in orange (see **Figure 3-2**).

Figure 3-2 Functional Classification

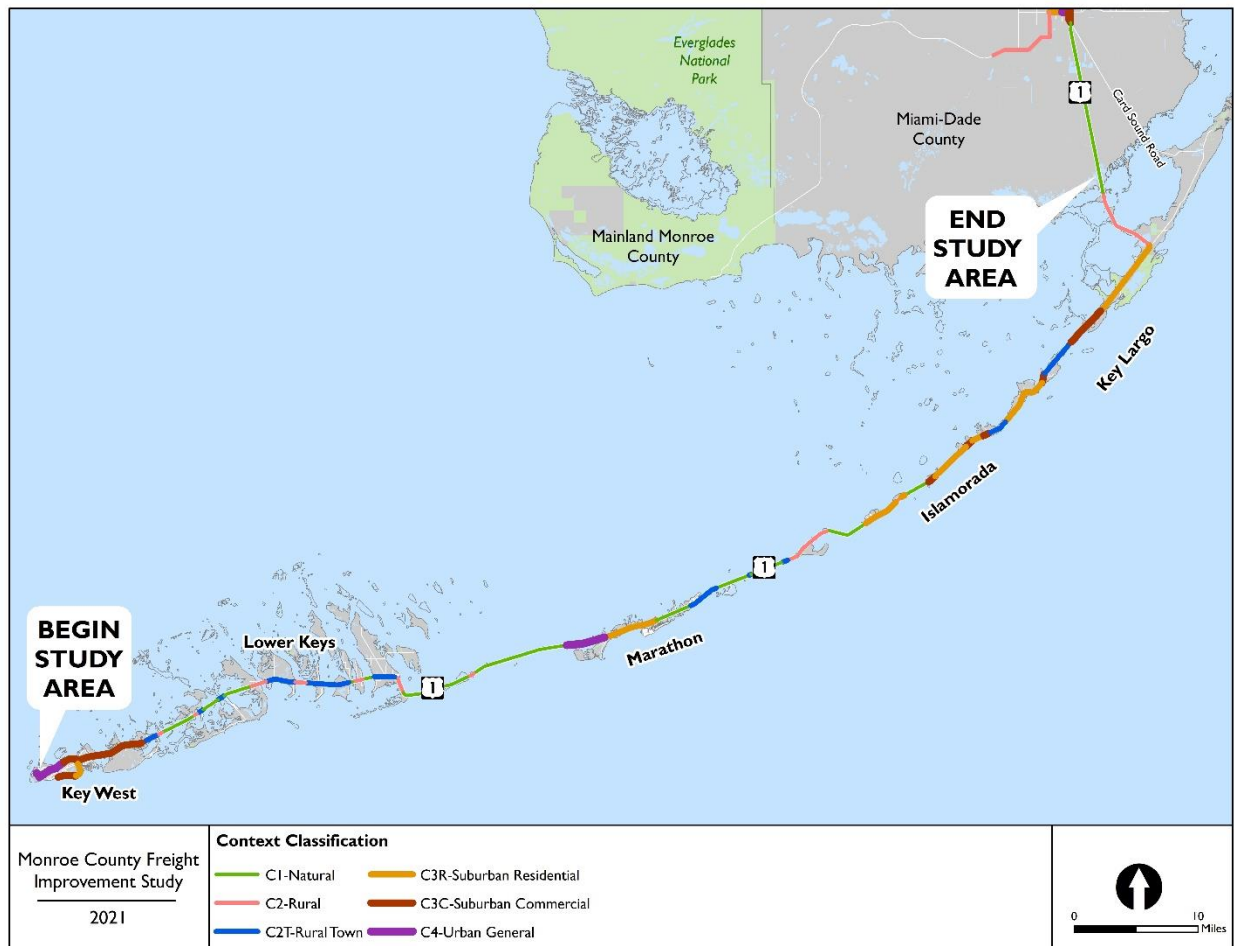


Data source: FDOT Open Data Hub, Functional Classification TDA shapefile, 2021.

3.1.3 Context Classification

As shown in **Figure 3-3**, the context classification ranges from C1 Natural (green) to C4 Urban General (purple). Key West, Marathon, Islamorada, and Key Largo have the higher concentrations of suburban/urban context classifications. The Lower Keys and the areas between the keys are generally classified as natural or rural.

Figure 3-3 Context Classification



Data source: District 6 Context Classification shapefile, 2019.

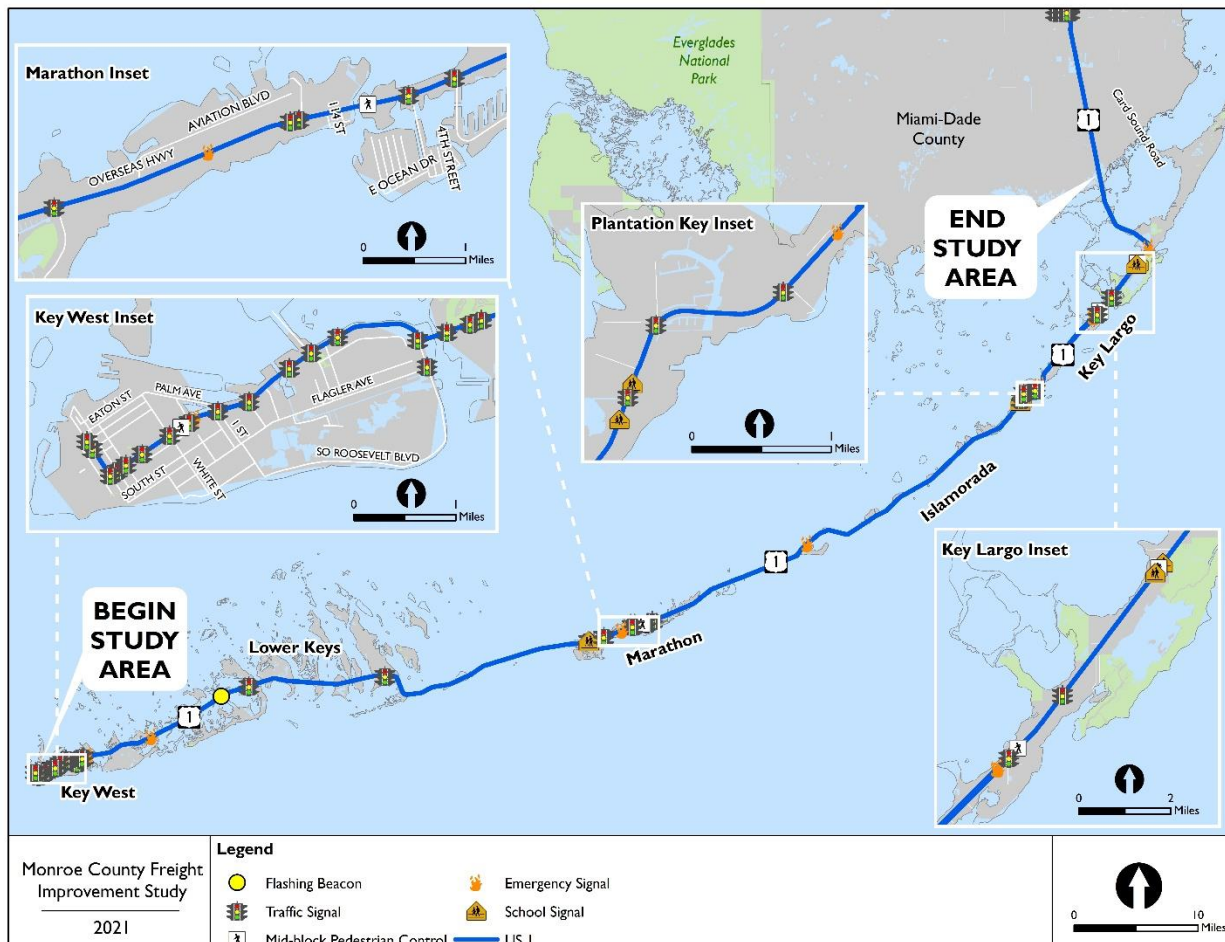
3.1.4 Traffic Signals

There are 50 traffic signal locations within the project corridor. **Table 3-1** displays the signal type and quantity, and **Figure 3-4** displays the signal location. There are 30 intersection control signals, 9 emergency signals, 6 school signals, 4 midblock pedestrian controls, and 1 flashing beacon. Nearly half of the signals (21 total) are on Key West alone, 9 of the signals are on Marathon Key, 6 are on Plantation Key, and 9 are on Key Largo.

Table 3-1 Traffic Signals

Signal Type	Location				Other	Total
	Key West	Marathon	Plantation	Key Largo		
Intersection Signal	18	6	3	2	1	30
Emergency Signal	2	1	1	3	2	9
School Signal	-	2	2	2	-	6
Mid-Block Pedestrian	1	1	-	2	-	4
Flashing Beacon	-	-	-	-	1	1
Total	21	10	6	9	4	50

Figure 3-4 Traffic Signal Locations



Data source: FDOT Open Data Hub, Traffic Signal Locations TDA shapefile, 2021.

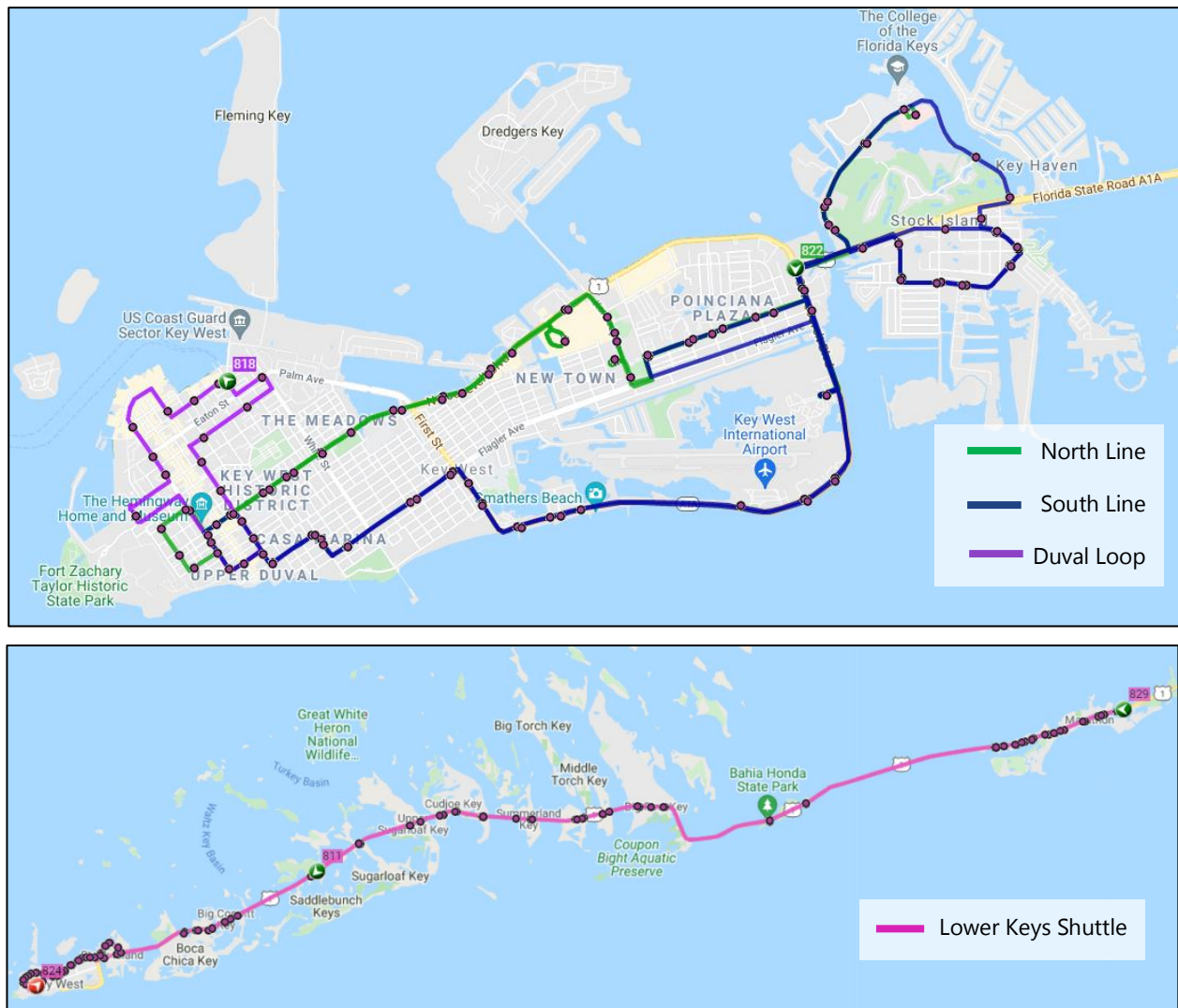
3.2 Transit Services

Transit services include services provided by the City of Key West from Key West to Marathon and service from Miami-Dade County to the Upper and Middle Keys.

Key West Transit

The Key West transit system includes city routes and the Lower Keys shuttle. The city routes are shown in **Figure 3-5** and include the North Line (green), the South Line (blue), and the Duval Loop (purple). The Lower Keys Shuttle operates along US 1 from Key West to Marathon (shown in pink in **Figure 3-5**). All routes operate seven days a week from generally 5:30 AM to 10 PM.

Figure 3-5 Key West Transit Routes



Data source: kwtransit.com/map, October 2021.

Metrobus

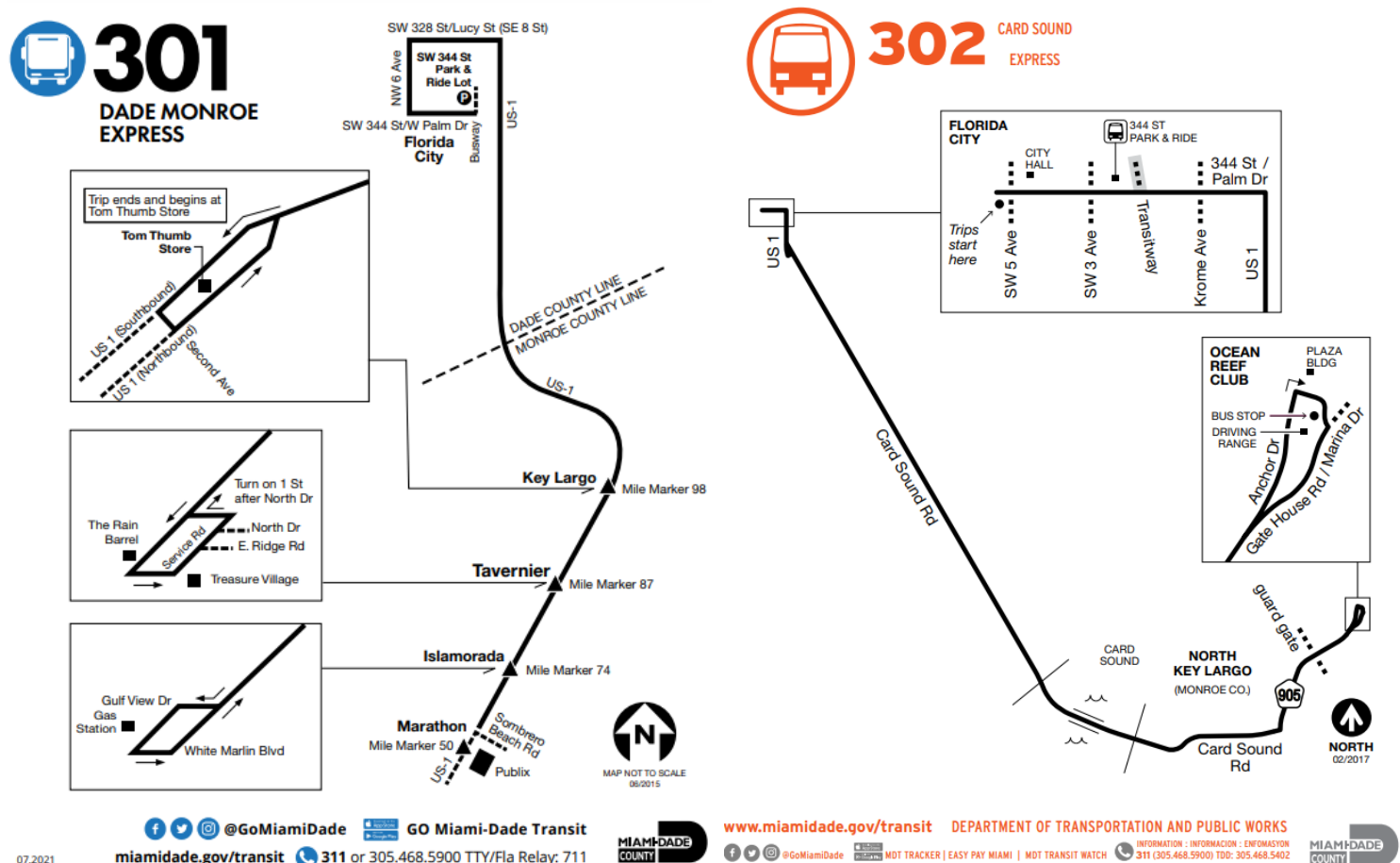
Metrobus is operated by Miami-Dade Transit (MDT) and operates Route 301 and Route 302 along the corridor (**Figure 3-6**).

- ◆ *Route 301 Dade-Monroe Express (Florida City to Key Largo, Tavernier, Islamorada, and Marathon):* Provides express bus service seven days a week traveling from the Park and Ride Lot at the 344 Street Transit Way station in Florida City to Key Largo at Mile Marker 98, Tavernier at Mile Marker 87, Islamorada at Mile Marker 74, and Marathon at Mile Marker 50 along US1. Service runs from approximately 5:00 AM to 1:00 AM.

Route 302 Card Sound Express (Card Sound to Ocean Reef): Provides express service seven days a week, two trips in the morning (6:20 AM and 7:55 AM) and afternoon (3:25 PM and 5:00 PM). Travels from Florida City Hall to Ocean Reef Club (only employees are admitted beyond the entrance to the club) in North Key Largo along W. Palm Dr, US 1, and Card Sound Road

- ◆ d.

Figure 3-6 Metrobus Routes

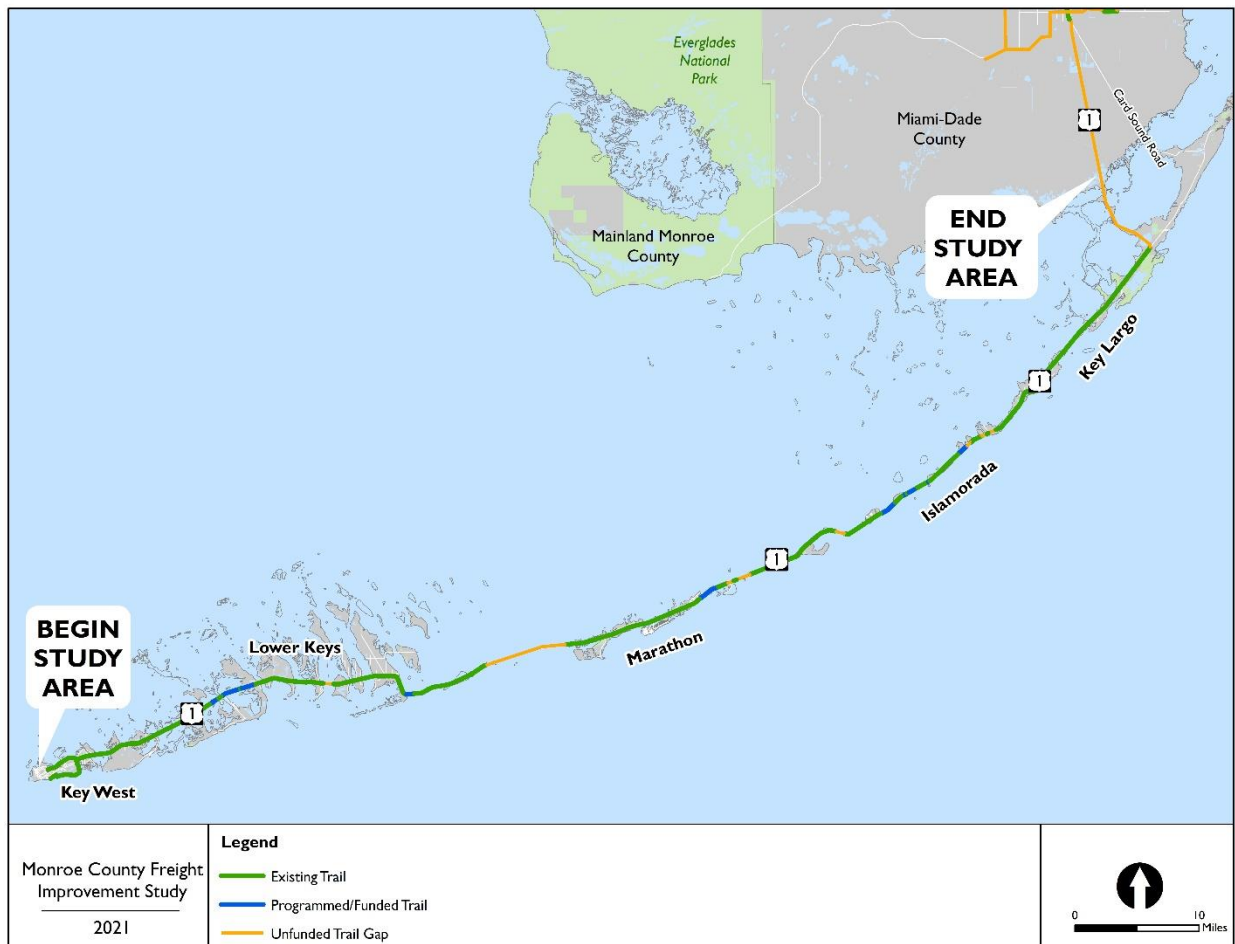


3.3 Paved Pathways and Bike Facilities

The Florida Keys Overseas Heritage Trail is a multi-use bicycle and pedestrian resource that serves as a recreational and alternative transportation corridor for the Florida Keys. There are more than 90 linear miles of existing paved trail segments along the planned 106-mile corridor from Key Largo to Key West. More information about this trail system can be found at the following website: <https://www.floridastateparks.org/parks-and-trails/florida-keys-overseas-heritage-trail>.

Figure 3-7 displays the existing trail segments (green), programmed/funded trail segments (blue), and the unfunded trail gaps (yellow). The largest unfunded gap is between the Lower Keys and Marathon.

Figure 3-7 Paved Pathways and Bike Facilities



Data source: FDEP Office of Greenways and Trails, SUN Trail Status shapefile, August 2021.

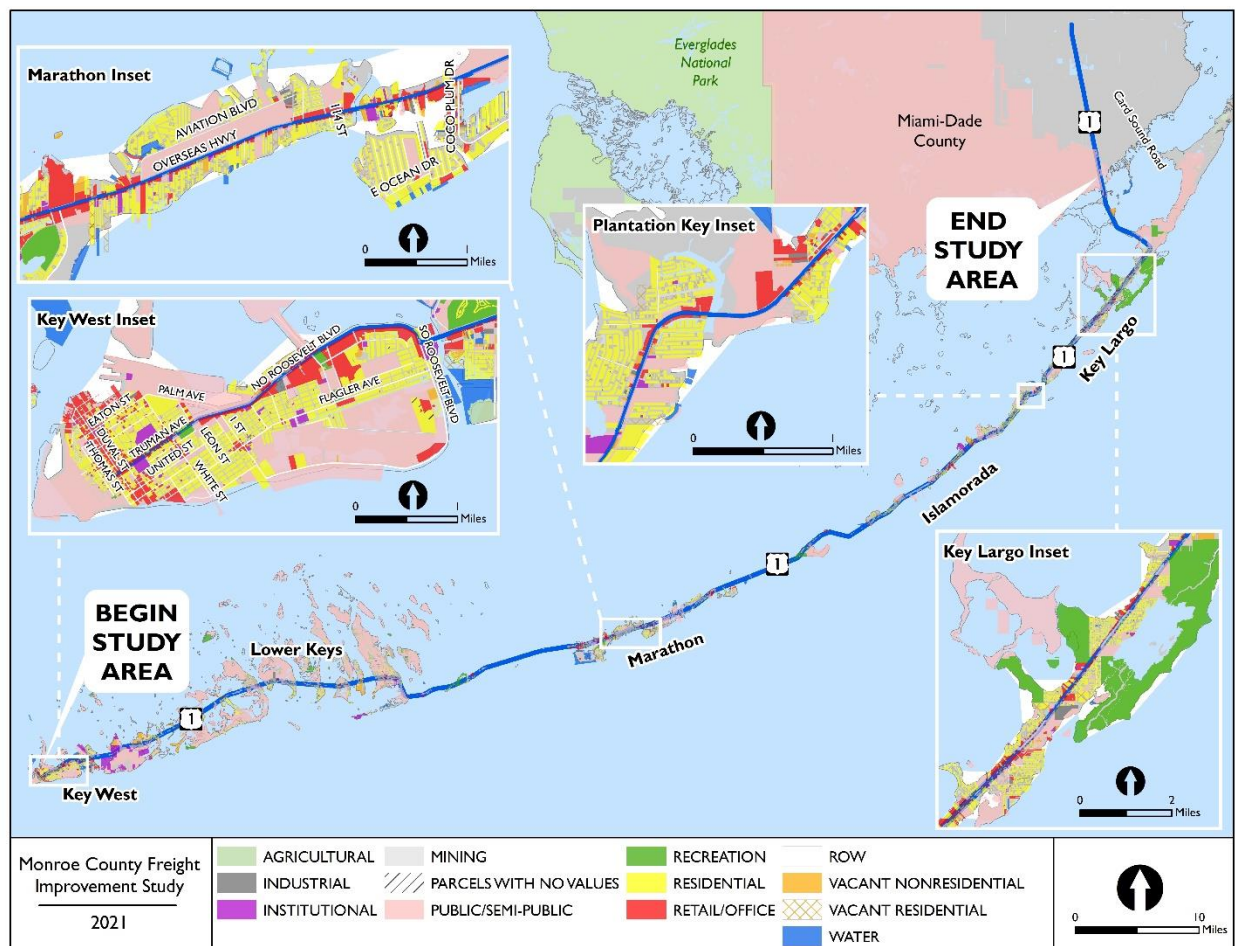
3.4 Land Use

3.4.1 Existing Land Use

The existing land use along the US 1 corridor is displayed in **Figure 3-8**. Generally, the existing land uses are either Commercial (red), Public/Semi-Public (pink), Residential (yellow), or Recreation (green).

The existing land use data was created by the Florida Department of Revenue, County Property Appraisers and the GeoPlan Center and was downloaded from the Florida Graphic Data Library (FGDL). This dataset contains generalized land use derived from 2019 parcel specific land use for the Florida Department of Transportation (FDOT). The original 99 land use classes from the parcel data have been collapsed into 15 generalized classes. Please Note: As of 2015 there has been a change to the original FDOR 99 Land Use Values. Value 080 is now 'Vacant Governmental' this land use value does not maintain the same Generalized Land Use code—7 - OTHER, instead it is now classified as Generalized Land Use Code 8 - PUBLIC/SEMI-PUBLIC.

Figure 3-8 Existing Land Use

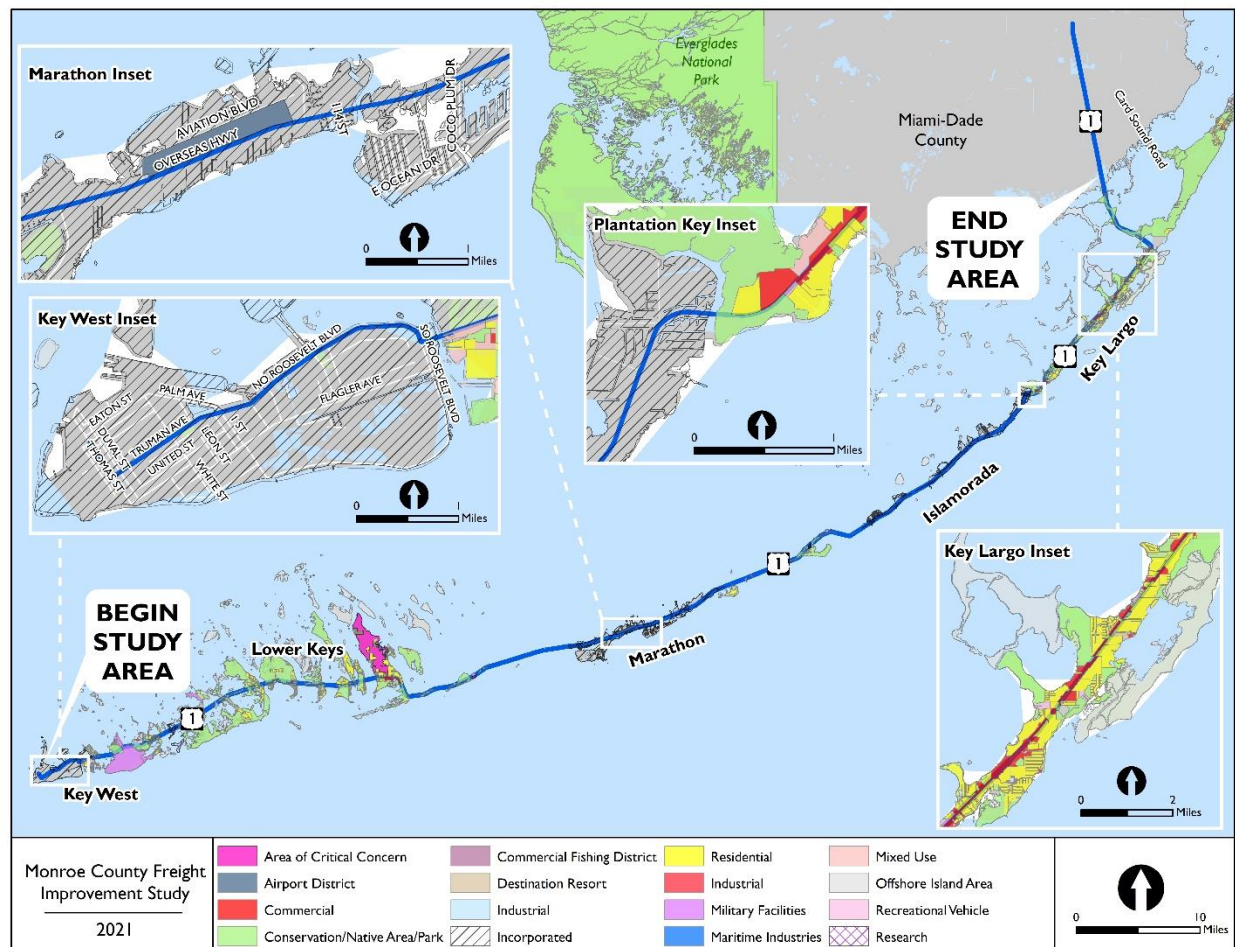


Data source: FGDL, lu_gen_2019 shapefile, 2019.

3.4.2 Zoning

The generalized zoning for unincorporated Monroe County and the municipalities near the US 1 corridor is Residential, Commercial, Mixed-Use or Conservation/Native Area/Park. **Figure 3-9** displays the generalized zoning districts for unincorporated Monroe County and **Figure 3-10** displays the zoning for the City of Key West. More detailed and interactive zoning maps for Monroe County and the municipalities are available on their respective public websites.

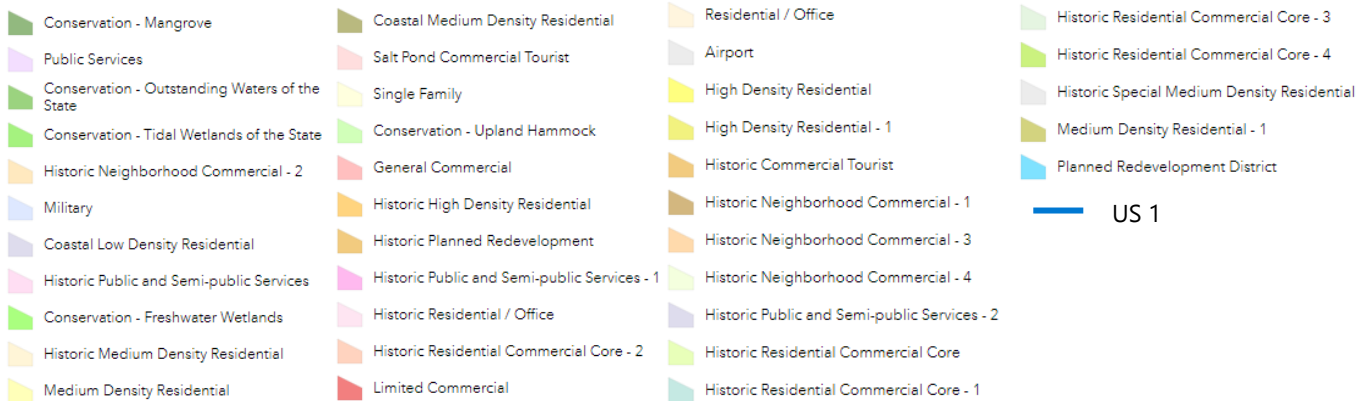
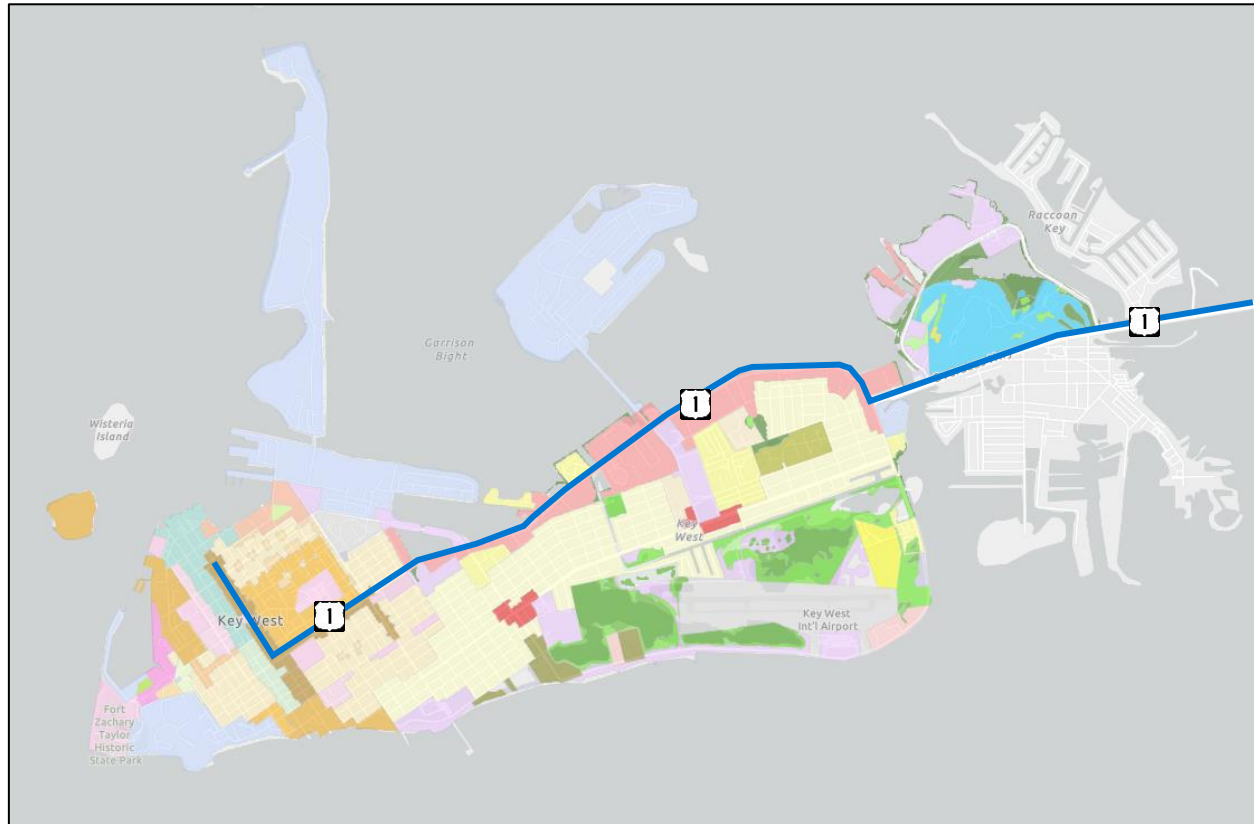
Figure 3-9 Monroe County Zoning



Data source: Monroe County LUD Zoning shapefile, obtained in October 2021.

The zoning within the City of Key West (**Figure 3-10**) along the US 1 corridor is primarily General Commercial (red) or Historic Neighborhood Commercial-1 (brown).

Figure 3-10 City of Key West Zoning Map



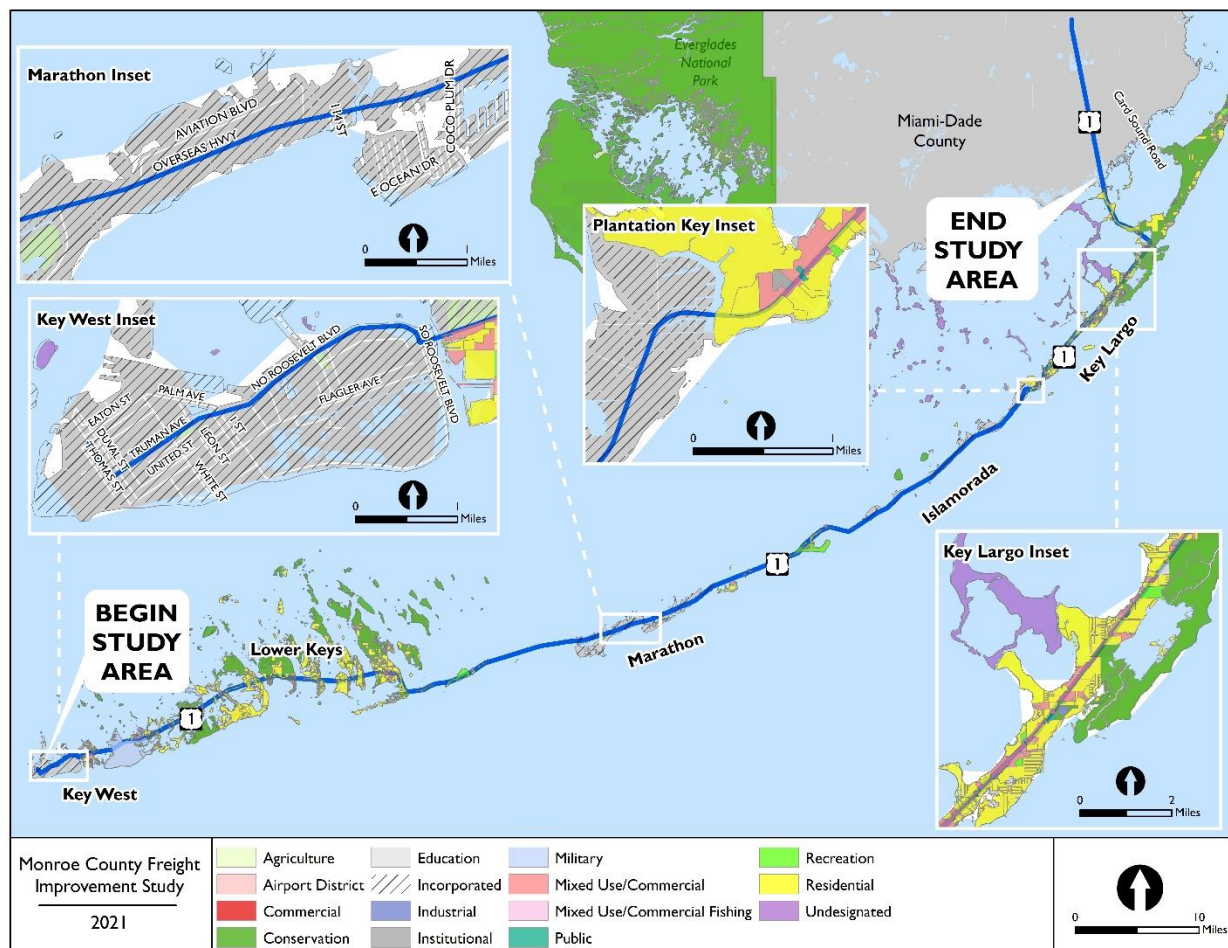
Data source: Key West Land Use Map, City of Key West website, October 2021.

3.4.3 Future Land Use

Consistent with the existing land use and zoning characteristics of the corridor, the future land use designations are primarily Residential (yellow), Commercial (red), Conservation/Recreation (green) or Mixed-Use (pink).

Figure 3-11 displays the future land use for unincorporated Monroe County. More detailed and interactive zoning maps for Monroe County and the municipalities are available on their respective public websites.

Figure 3-11 Monroe County Future Land Use



Data source: Monroe County Future Land Use shapefile, obtained in October 2021.

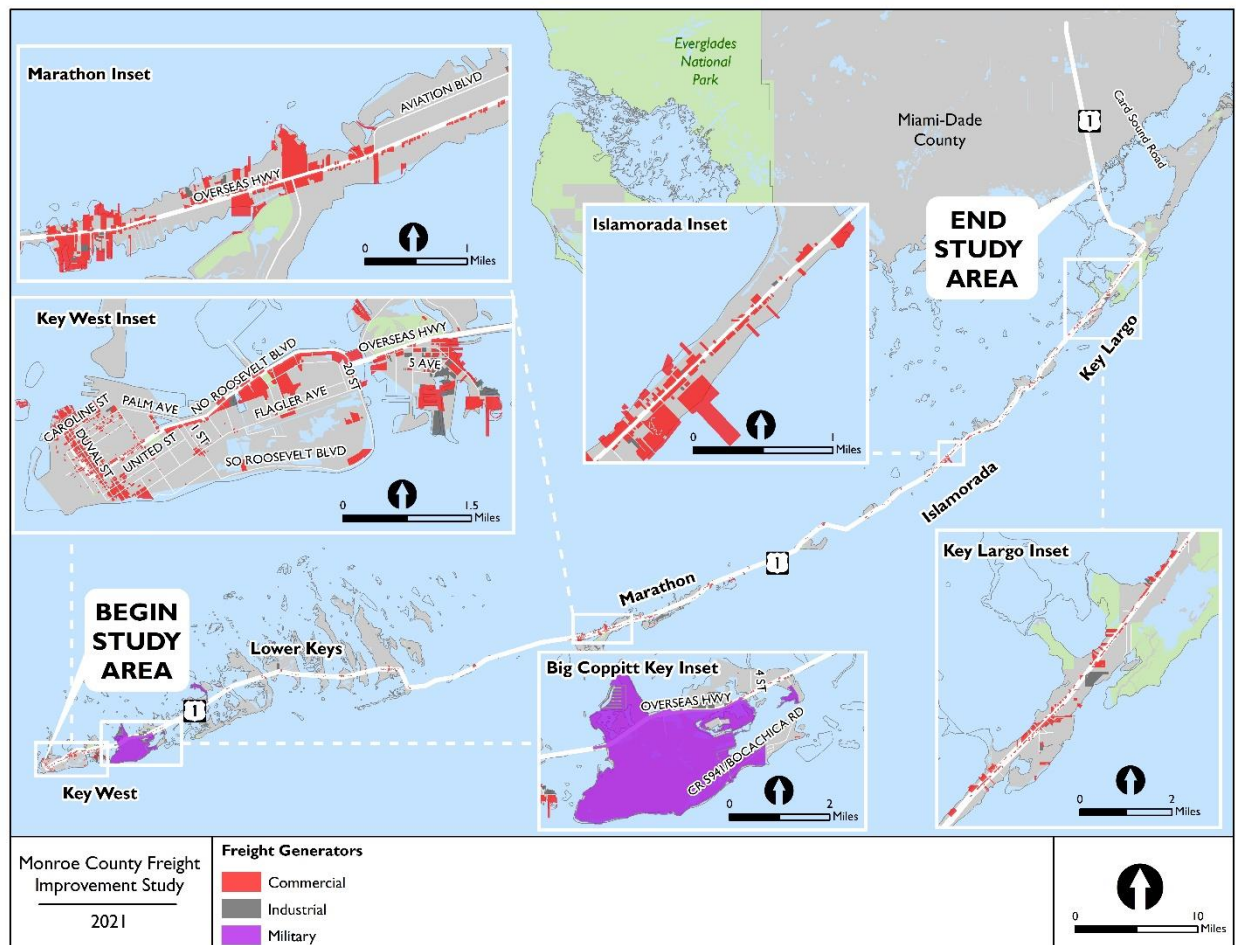
3.5 Freight Activity Areas

As defined by the FHWA Freight and Land Use Handbook, traditional freight generating land uses include agriculture, natural resources and mining, construction, warehousing, manufacturing, logistics, and port and harbor operations (FHWA Freight and Land Use Handbook Section 1.2). However, due to the unique geography of the Florida Keys, many of these traditional major freight generators are not present within the project area.

Therefore, the freight activity generators within the project area include mainly industrial, commercial, and military operations. Using the existing land use data from the Florida Department of Revenue, these land uses are displayed in **Figure 3-12** to highlight areas where trucks are most likely to be making deliveries.

The higher concentrations of commercial land uses (red) are found at the southern end of Key West, Marathon, Islamorada, and Key Largo. There are a few industrial (dark grey) land uses along the eastern end of Key West and central Key Largo (boat repair/marina uses). Additionally, the Naval Air Station Key West represents a concentration of military land uses.

Figure 3-12 Freight Activity Areas



Data source: FGDL, lu_gen_2019 shapefile, 2019.

3.6 Population and Visitors

The population for Monroe County was determined using the functional population, which is the sum of permanent year-round residents and seasonal residents. According to the 2010 Census Monroe County had a permanent population of 73,090, rising to 82,874 according to the 2020 Census. The seasonal population is defined as part-time and overnight visitors, which on a given peak season (late February – early March) evening is approximately 80,000 persons. Therefore, the functional population of Monroe County is 160,000 persons.

Permanent Population Distribution

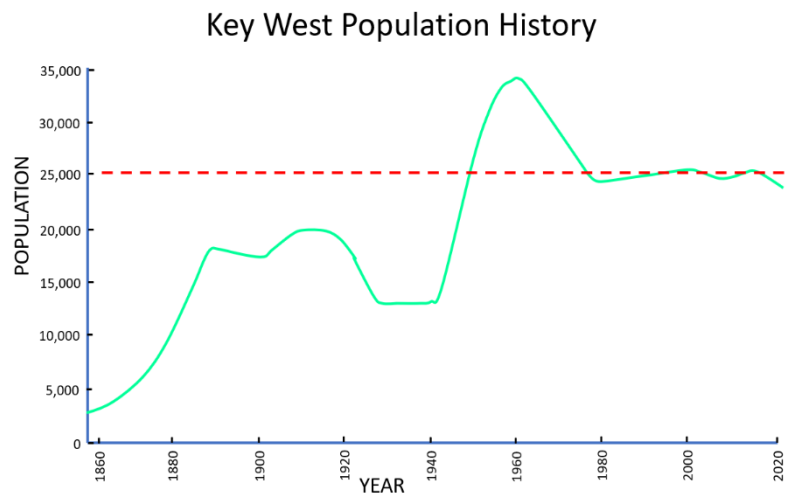
According to the US Census, in terms of permanent population, Key West has a total of approximately 26,000 persons with an overall growth trend of 0.5% per year (see Figure 3-13).

The following is the population distribution of Monroe County (see Figure 3-14):

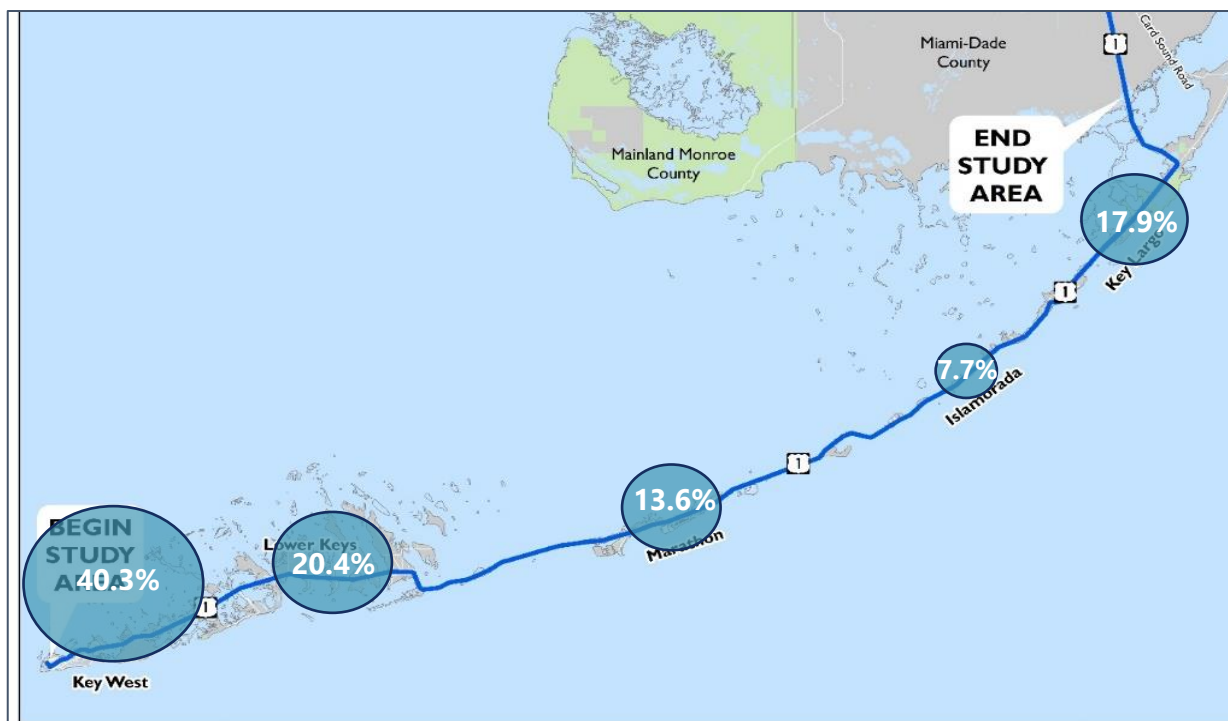
◆ Key Largo	17.9%
◆ Islamorada	7.7%
◆ Marathon	13.6%
◆ Lower Keys	20.4%
◆ Key West/Stock Island	40.3%

Figure 3-14 Permanent Population Distribution

Figure 3-13 Key West Population History



Source: US Census, Atkins



Seasonal Population

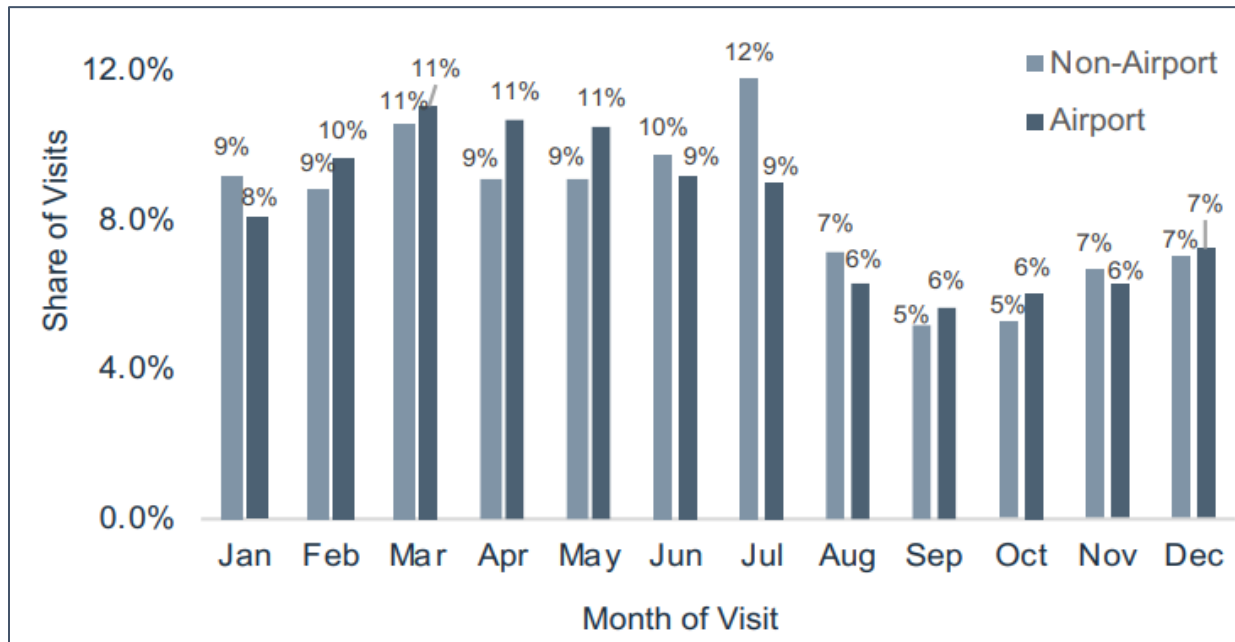
According to the [Economic Impact of Tourism in the Florida Keys](#) report from the Monroe County Tourist Development Council, seasonal (part-time) residents total approximately 50,000 persons, peak season visitors total 20,000 persons, and 10,000 persons are classified as other and apply to neither category of resident. For Monroe County, the seasonal (part-time) residency pattern is more pronounced than the visitor pattern.

Visitor Distribution

The following is the visitor distribution and lodging type of Monroe County (see Figure 3-15):

- ◆ Key Largo
 - ◇ Share of non-airport visitors: 16%
 - ◇ Share of airport visitors: 2%
 - ◇ Dwellings make up more than half of the lodging properties (52%) in Key Largo
 - ◇ Key Largo and Marathon both have 21% of all motels in the Florida Keys and 11% of the hotels
- ◆ Islamorada
 - ◇ Share of non-airport visitors: 13%
 - ◇ Share of airport visitors: 2%
 - ◇ Islamorada has the largest share of motels in the Florida Keys (28%)
 - ◇ Dwellings make close to two thirds of all the lodging properties (63%) in Isla Morada
- ◆ Marathon
 - ◇ Share of non-airport visitors: 17%
 - ◇ Share of airport visitors: 5%
 - ◇ Marathon has the largest share of dwellings in the Florida Keys (41%)
 - ◇ Marathon has the second largest number of total properties, second only to Key West
- ◆ Lower Keys
 - ◇ Share of non-airport visitors: 2%
 - ◇ Share of airport visitors: 2%
 - ◇ The Lower Keys have the smallest share of motels (4%) and apartments and condos (4%) in the Florida Keys
 - ◇ Nearly 8 in 10 of all the properties in the Lower Keys are dwellings
- ◆ Key West
 - ◇ Share of non-airport visitors: 52%
 - ◇ Share of airport visitors: 89%
 - ◇ About 36% of the properties in Key West are apartments and condos
 - ◇ Key West has the second largest share of motels in the Florida Keys (26%)

Figure 3-15 Florida Keys Visitation (2018)



Source: *Economic Impact of Tourism in the Florida Keys*

Visitors Impact on Roadways

Also according to the [Economic Impact of Tourism in the Florida Keys](#) report from the Monroe County Tourist Development Council, Monroe County is a destination, receiving around 5.2 million visitors annually with 11,200 net average daily driving arrivals. This population varies significantly by month. During the peak season the over average is +30%, and in the off-peak season the under average is reported at -40%. Below is an estimate for the road count on US 1 at Key Largo:

- ♦ Average peak daily traffic: 30,000
- ♦ 90% of visitors drive in: 10,000
- ♦ Allow for round-trip (x2): 20,000
- ♦ Estimated vehicle occupancy: 2.5
- ♦ Average day visitor vehicles: 8,000
- ♦ Peak day visitor vehicle count: 10,400
- ♦ Peak day share of total traffic: 30%
- ♦ Average day share of total traffic: 26%
- ♦ Off peak day share of total traffic: 20%



4.0 Existing Transportation Conditions

Transportation conditions evaluated in this section include the following:

- ◆ Historic Traffic Growth (using Annual Average Daily Traffic - AADT)
- ◆ Seasonal AADT
- ◆ Historic Truck Percentage Growth
- ◆ Historic Safety Review
- ◆ Existing Traffic Data and System Performance
- ◆ Origin-Destination Analysis
- ◆ SERPM Truck Trips

4.1 Historic Traffic Growth

Historic traffic growth was analyzed using the AADTs on FDOT's Florida Traffic Online database. There are 30 traffic monitoring count sites along US 1 in Monroe County; 27 of the sites are Portable Traffic Monitoring Sites (PTMS) and three are Telemetered Traffic Monitoring Sites (TTMS). A map of the site locations is included in **Figure 4-2**. Data was analyzed for the previous six available years, from 2015 through 2020 (**Table 4-1**).

Data from 2020 may not be the most indicative of historic traffic trends due to the impact on travel and commuting behaviors from the Covid-19 pandemic. Therefore, trend data from 2015-2019 was included and may be more representative of typical traffic conditions along the corridor in addition to trend data extending through 2020.

Corridor-wide trends were determined based on an average of growth change among the count sites along the corridor:

- ◆ **2015-2019 AADT trend:** 10% growth in overall traffic
- ◆ **2015-2020 AADT trend:** -10% decrease in overall traffic

4.1.1 Seasonal AADT *Figure 4-1 Average of Peak Daily Volume by Month*

Seasonal AADT was analyzed using average peak daily volume from the Hourly Continuous Counts Final Reports for the three TTMS for 2019 (Figure 4-1).

Peak Daily Volume was highest in January, March-May, August and October and were the lowest in February, June, and September.

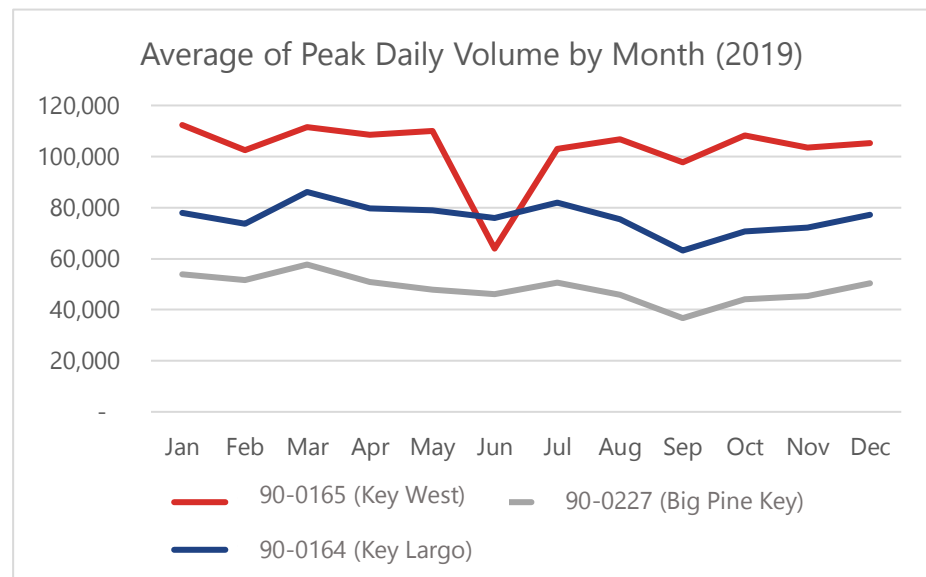


Table 4-1 Historic Traffic Growth (AADT)

Count Site**	2015	2016	2017	2018	2019	2020	2015-2019 Growth	2015-2020 Growth	Average
908100	3,400	6,000	6,000	6,000	6,000	4,200	76%	24%	50%
905013	7,700	7,100	7,500	8,200	7,600	6,500	-1%	-16%	-8%
905011	10,200	9,100	9,300	11,200	11,900	9,200	17%	-10%	3%
905008	16,700	15,700	15,700	15,700	17,300	14,600	4%	-13%	-4%
905004	18,100	21,000	23,000	22,500	26,500	23,700	46%	31%	39%
905034	36,000	34,500	39,000	40,000	41,000	35,000	14%	-3%	6%
900105	33,000	32,500	34,000	36,000	39,500	34,500	20%	5%	12%
900201	41,000	41,000	43,500	47,000	51,500	49,500	26%	21%	23%
900165*	39,909	42,403	35,525	40,284	40,837	35,408	2%	-11%	-4%
900009	27,500	26,500	25,000	25,000	29,000	22,000	5%	-20%	-7%
900010	22,500	23,500	24,000	24,000	25,500	21,200	13%	-6%	4%
900106	19,800	19,400	16,800	17,800	18,600	13,500	-6%	-32%	-19%
900108	16,800	15,300	19,100	17,500	18,400	14,200	10%	-15%	-3%
900109	20,000	20,000	18,000	19,900	19,100	14,200	-5%	-29%	-17%
900227*	18,496	18,143	18,590	17,513	18,355	15,134	-1%	-18%	-9%
900016	20,400	18,100	19,600	17,600	15,900	10,300	-22%	-50%	-36%
900066	17,900	15,500	12,800	11,900	12,800	10,600	-28%	-41%	-35%
900642	19,700	22,000	18,300	18,500	19,300	16,500	-2%	-16%	-9%
900110	32,000	31,500	30,000	28,000	29,000	24,000	-9%	-25%	-17%
900045	27,000	27,000	24,000	24,000	24,000	18,700	-11%	-31%	-21%
905040	15,700	16,200	15,400	14,200	14,900	13,700	-5%	-13%	-9%
900623	14,200	14,900	14,300	15,100	14,600	13,600	3%	-4%	-1%
905043	16,000	15,000	14,000	15,500	16,000	13,500	0%	-16%	-8%
900062	14,500	15,000	15,500	15,000	15,000	13,000	3%	-10%	-3%
905041	29,500	24,000	29,500	28,500	31,000	26,500	5%	-10%	-3%
905042	13,500	16,500	15,500	16,500	19,500	16,500	44%	22%	33%
900094	28,500	34,000	32,000	34,500	40,500	30,500	42%	7%	25%
900164*	28,162	29,175	29,001	29,304	29,617	25,578	5%	-9%	-2%
900200	23,500	20,400	27,000	27,500	33,000	24,500	40%	4%	22%
900001	23,500	20,500	23,500	24,000	24,500	22,500	4%	-4%	0%
Corridor-Wide Average Growth							10%	-10%	0%

*Telemetered Site. **Count sites in order from west to east. Data source: FDOT Florida Traffic Online.

Figure 4-2 Traffic Monitoring Site Locations

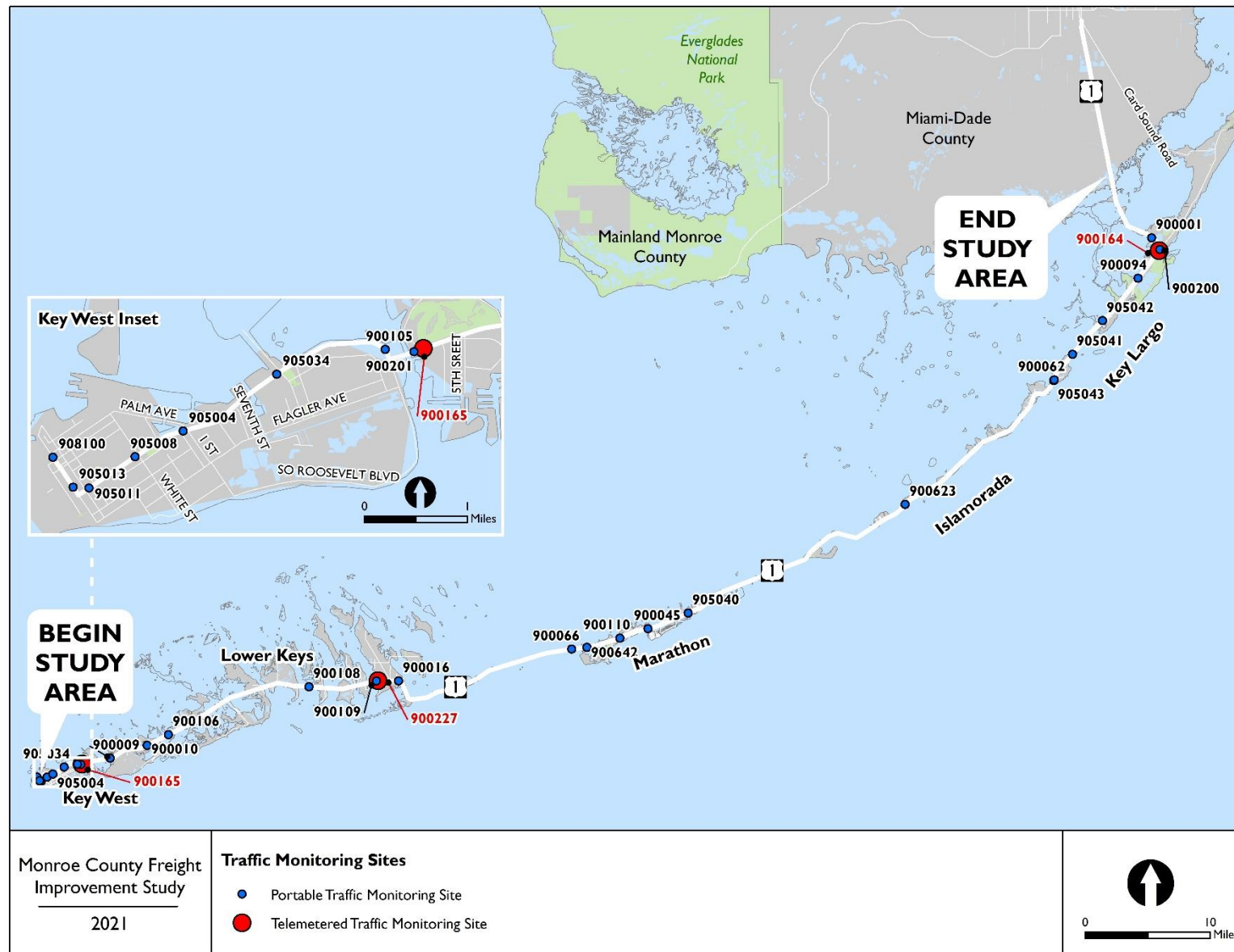
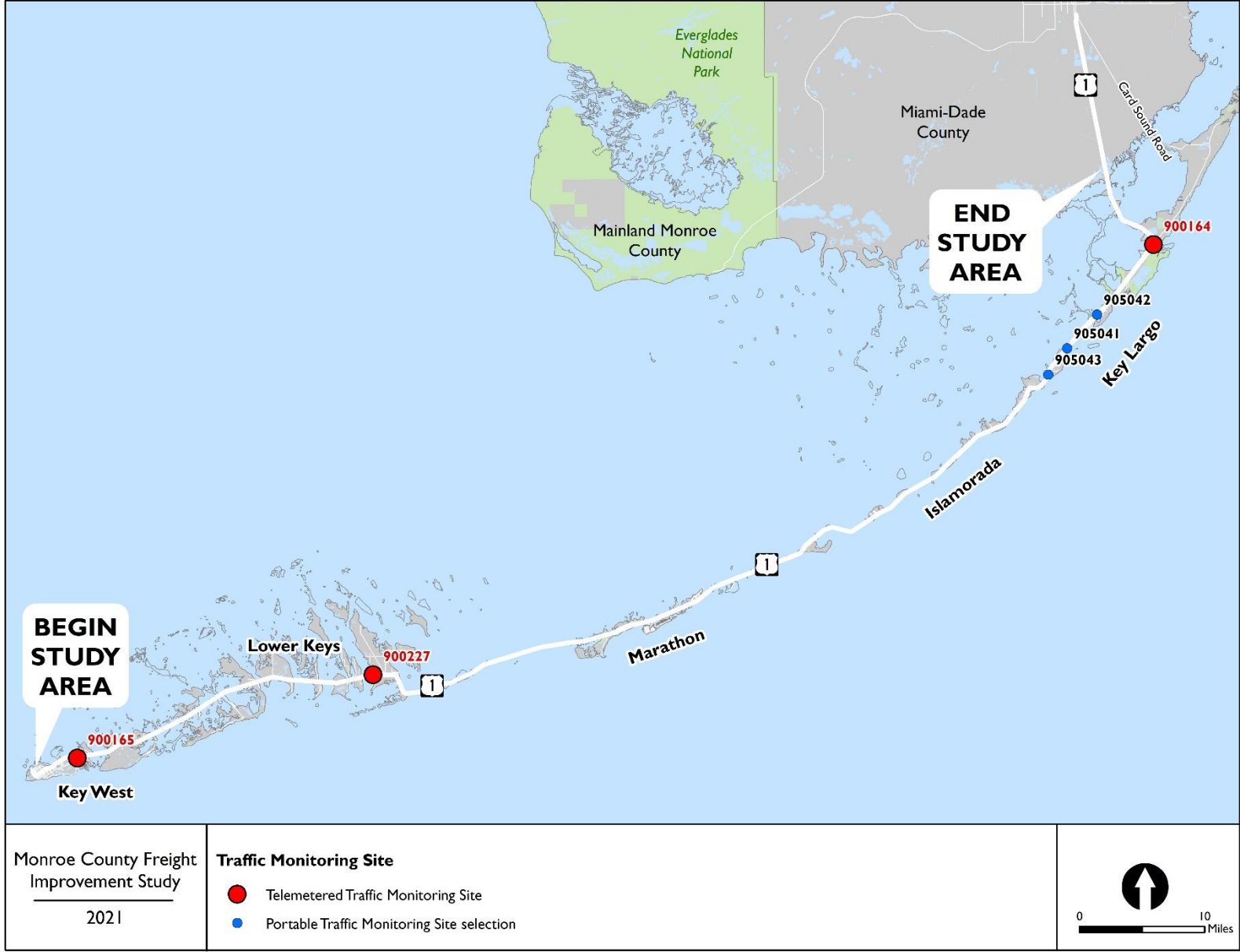


Figure 4-3 Class History Monitoring Site

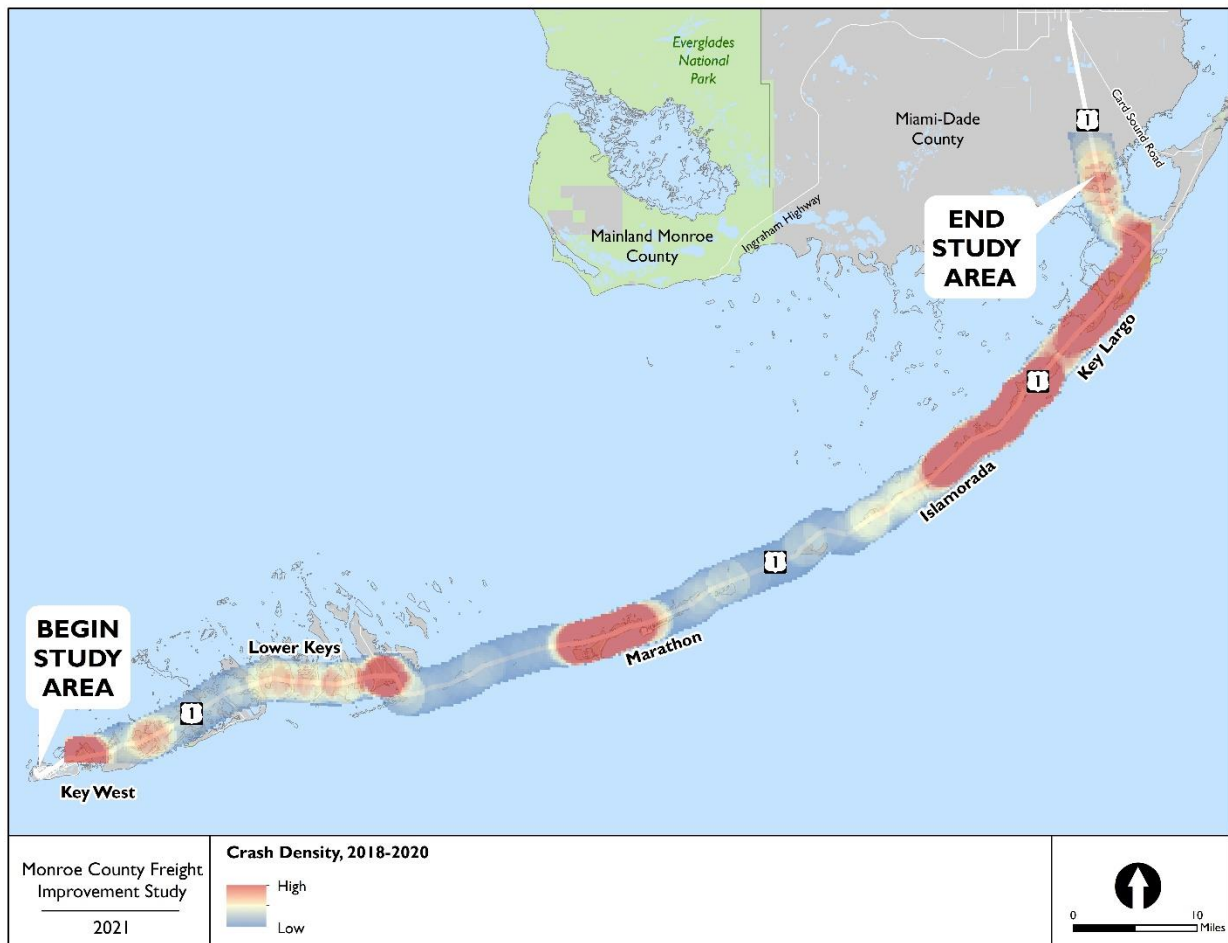


4.2 Historic Safety Review

A historical safety review was conducted in the form of a crash analysis using the Signal 4 Analytics (S4) database to summarize crashes within the 500-foot buffer of the US 1 corridor (250 feet on either side of the centerline) from the previous three years of available data (2018 through 2020). General crash trends are summarized below and further detailed in this section. Furthermore, historic crash data from 2014 to 2018 was documented and is available in the *US 1 Transportation Master Plan* for Monroe County that was published in 2021.

- ◆ **4,493** total crashes ranging from 1,200 to 1,645 crashes each year
- ◆ Approximately **27%** of the crashes occurred on **Key Largo**, **19%** occurred in **Marathon**, and **24%** occurred in **unincorporated** Monroe County (see **Figure 4-4** for crash density)
- ◆ **32** of the crashes were **fatal** (<1%) and **228** resulted in **incapacitating injuries** (5%)
- ◆ **81** crashes involved a **bicycle** (2%) and **40** crashes involved a **pedestrian** (1%). Three of the bicycle crashes were fatal and 8 of the pedestrian crashes were fatal.
- ◆ Most crashes occurred during **Daylight** (79%) and **Clear** (83%) weather conditions
- ◆ The most common type of known crash was **Rear End** (35%)

Figure 4-4 Crash Density



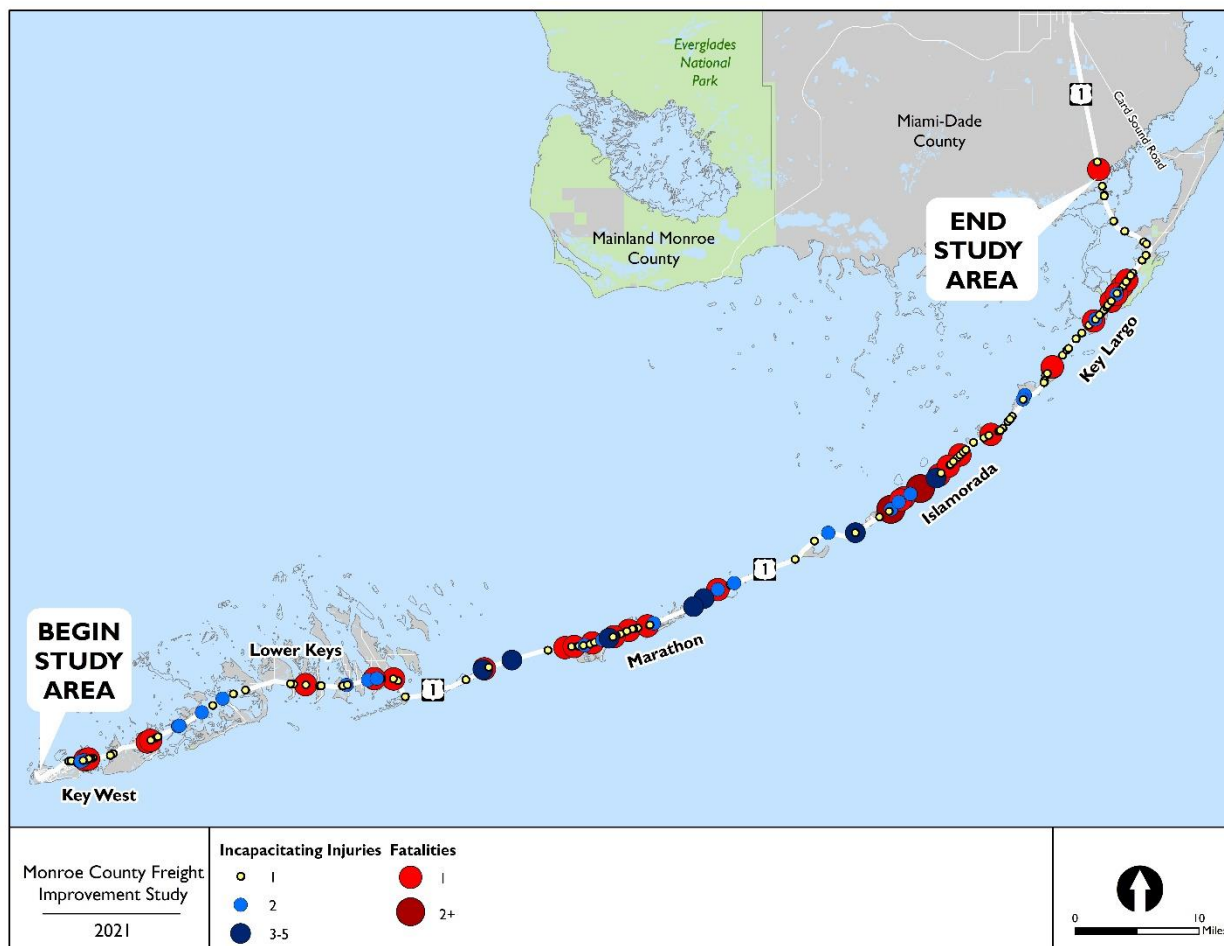
Data source: Signal 4 Analytics database, obtained in September 2021.

4.2.1 Crash Severity

Of the 4,493 crashes, 32 resulted in fatalities, 1,019 resulted in injuries, 228 of which were classified as incapacitating injuries (**Figure 4-5**).

- ◆ The most common type of fatal crash was pedestrian, with 8 total. Other common fatal crash types were Head On (4 crashes), Left Turn (4 crashes), Angle (3 crashes), and Bicycle (3 crashes)
- ◆ 10 of the crashes occurred in unincorporated Monroe County, 8 in Marathon, 7 Key Largo, and 6 Islamorada
- ◆ US 1/Knights Key Boulevard and US 1/ Mile Marker 77 both had 2 fatalities each
- ◆ Most of the fatal crashes (84%) did not occur at an intersection
- ◆ Nearly half of the fatal crashes (47%) were determined to be related to alcohol, drugs, or distracted driving
- ◆ 11 fatal crashes occurred during Dark – Not Lighted conditions

Figure 4-5 Crash Severity



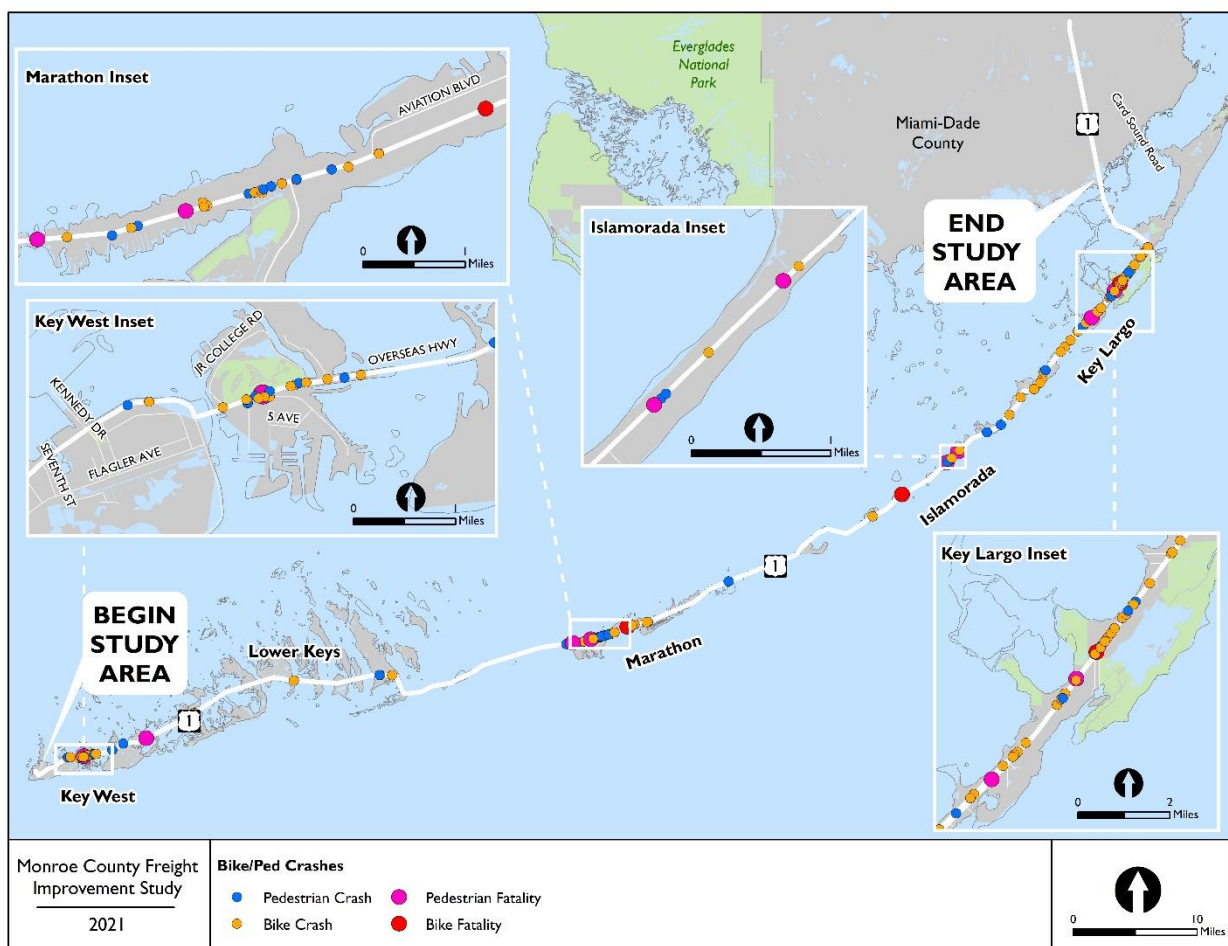
Data source: Signal 4 Analytics database, obtained in September 2021.

4.2.2 Bicycle and Pedestrian Crashes

121 of the crashes involved either a bicycle (81 crashes) or a pedestrian (40 crashes) (**Figure 4-6**).

- ◆ Three bicycle crashes and eight pedestrian crashes were fatal. None of these fatal crashes were classified as alcohol, distraction, or drug-related.
 - ◆ All three bicycle crashes occurred during daylight conditions. One occurred in Key Largo, one in Marathon, and one in unincorporated Monroe County. Two of these crashes occurred when the bicyclist failed to yield at a midblock or sign-controlled intersection.
 - ◆ Five of the pedestrian crashes occurred during dark – not lighted conditions; two during dark – lighted conditions, and one at dusk. Two occurred in the rain. The pedestrian failed to yield during four of the crashes. One crash was the result of a speeding vehicle.
- ◆ Key Largo had the most bicycle and pedestrian crashes (34%) followed by Marathon with 28 crashes (23%)

Figure 4-6 Bicycle and Pedestrian Crashes



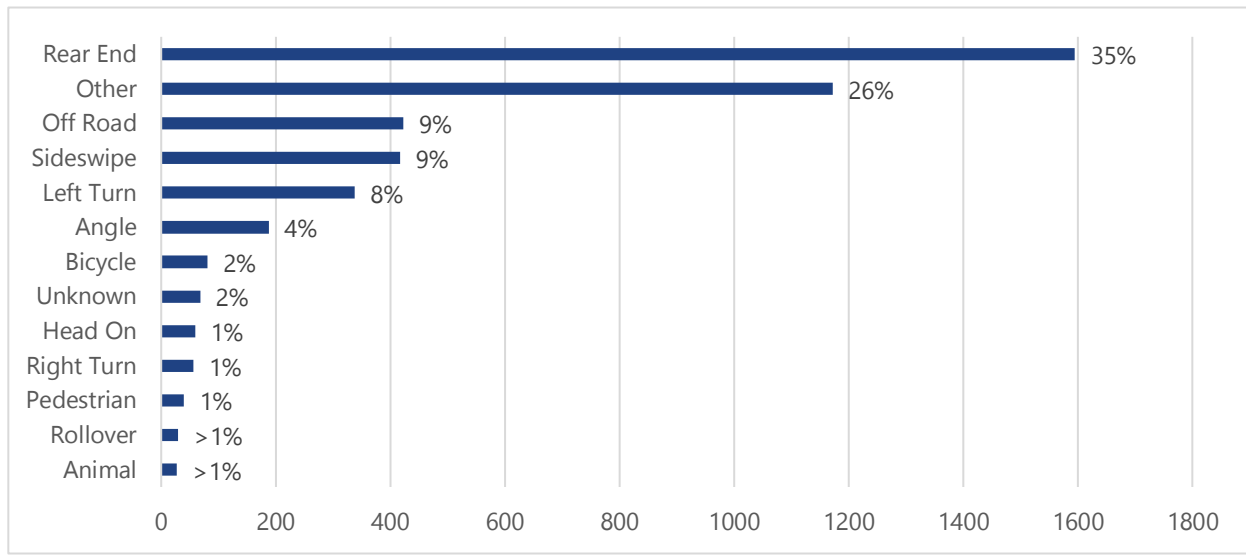
Data source: Signal 4 Analytics database, obtained in September 2021.

4.2.3 General Crash Characteristics

Crash Type

The most common type of crash was rear ends comprising about 35% of total crashes. Off-road and sideswipes were also common crash types with 9% of the crashes each. The least frequent crash types were animal, rollover, and pedestrian (see Figure 4-7).

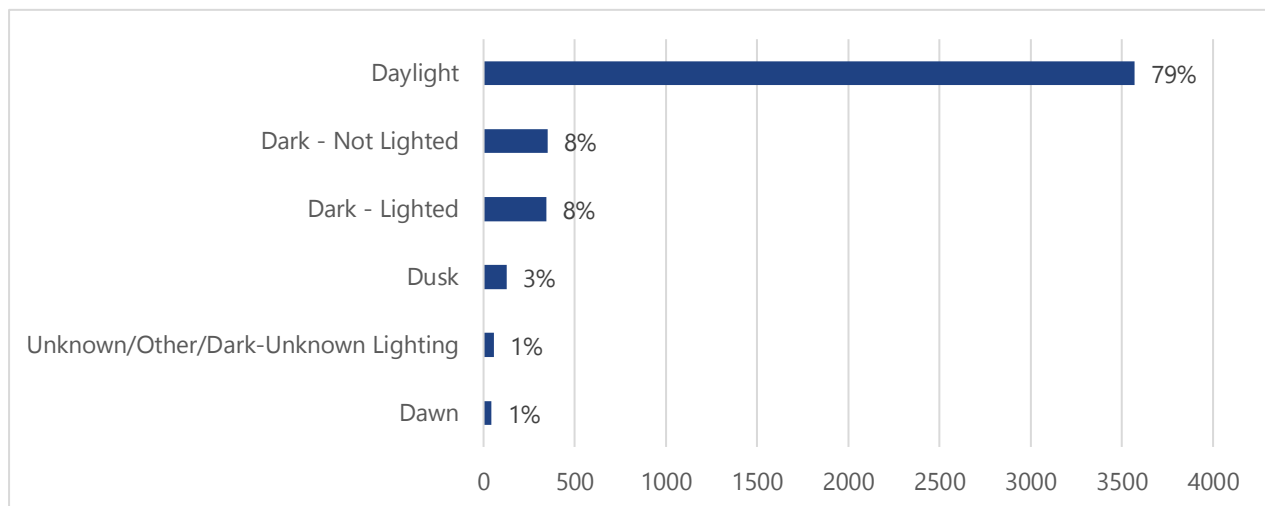
Figure 4-7 Crashes by Type



Lighting Conditions

Most of the crashes occurred during daylight conditions (79%). Approximately 16% of the crashes occurred in either dark – not lighted or dark – lighted conditions (see Figure 4-8).

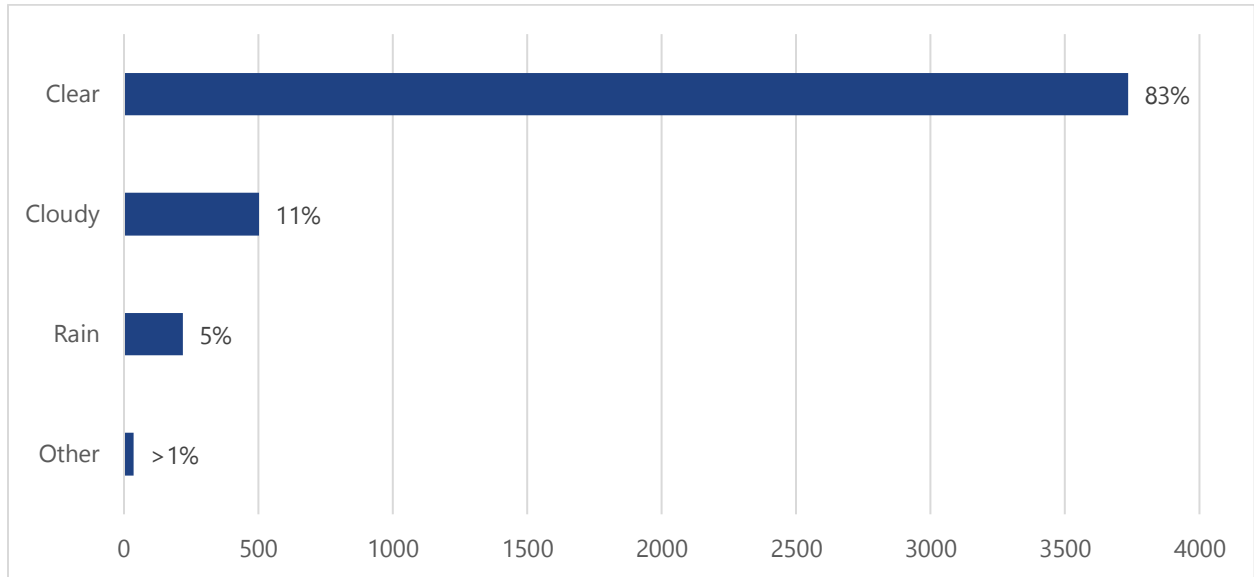
Figure 4-8 Crash Lighting Conditions



Weather Condition

A majority of the crashes occurred during clear weather conditions (83%). Approximately 11% of the crashes occurred during cloudy weather conditions, and 5% of the crashes occurred in the rain (see Figure 4-9).

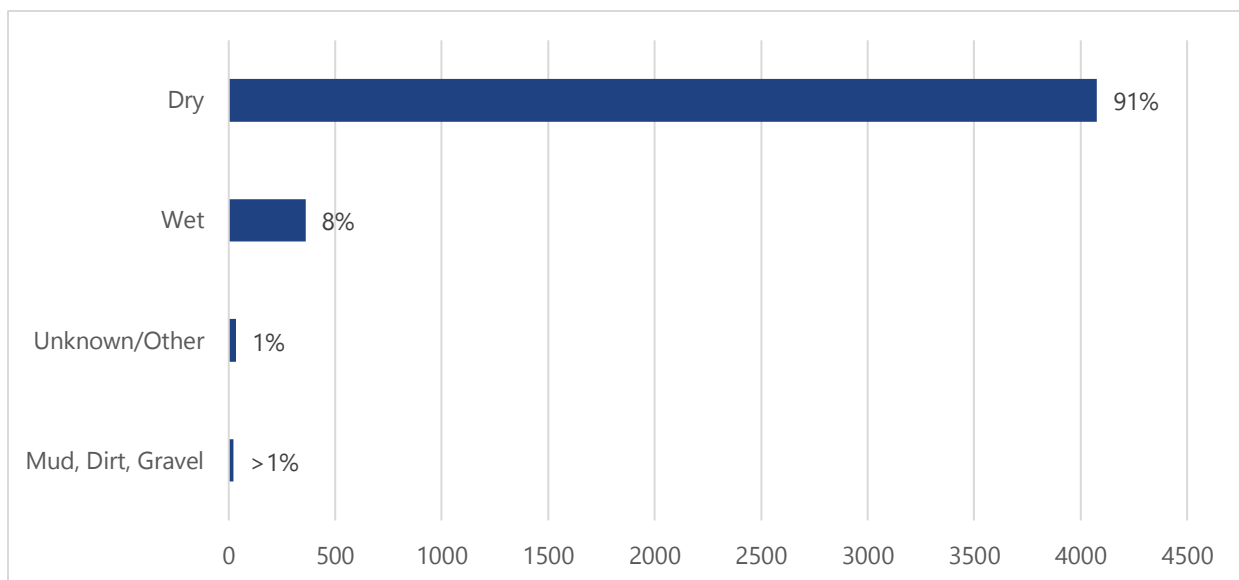
Figure 4-9 Crash Weather Condition



Road Surface Condition

Most of the crashes occurred during dry road surface conditions (91%). Approximately 8% of the crashes occurred during wet road conditions (see Figure 4-10).

Figure 4-10 Crash Road Surface Condition

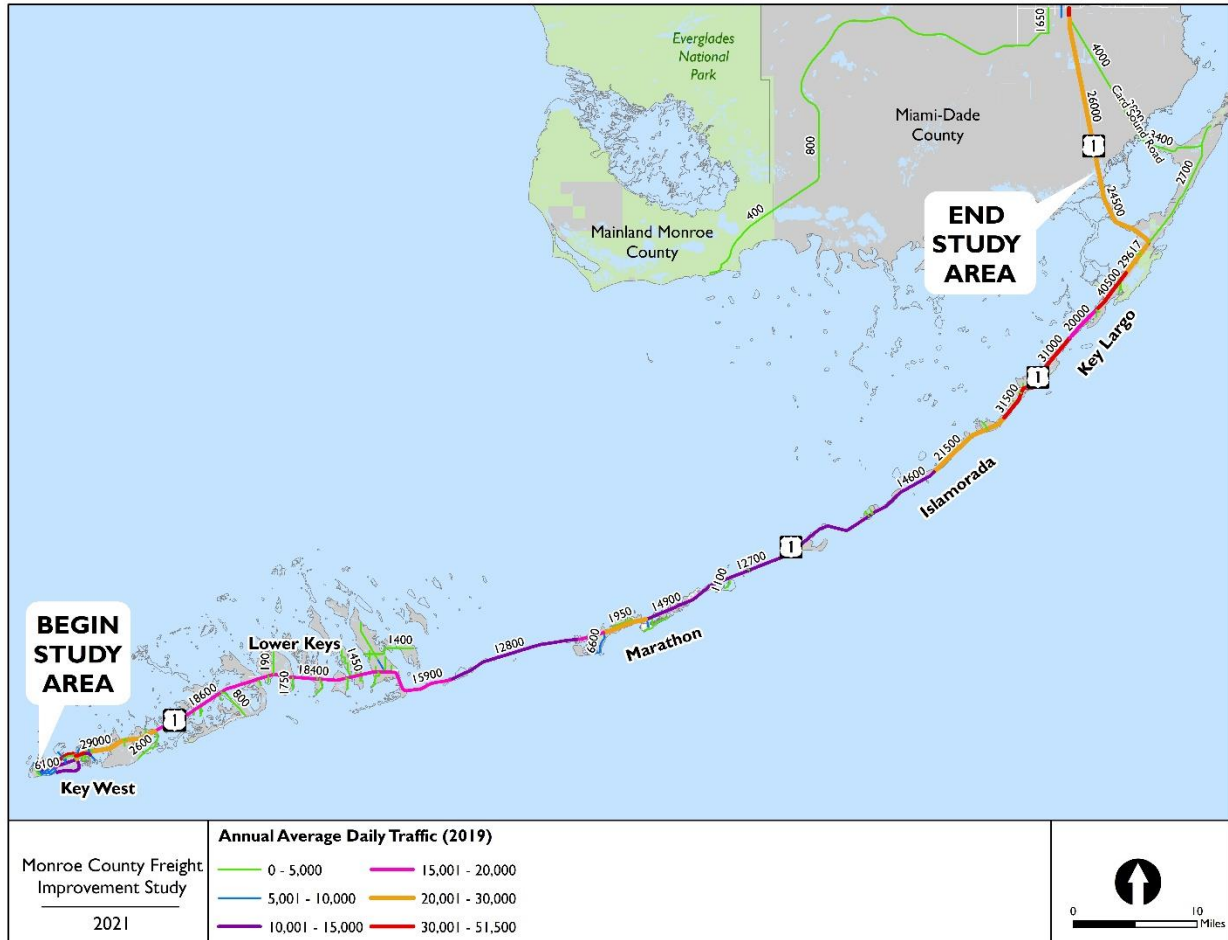


4.3 Existing Traffic Data and System Performance

4.3.1 Annual Average Daily Traffic

The annual average daily traffic (AADT) data was derived using FDOT's AADT data from 2019. As shown in **Figure 4-11**, the AADT along US 1 varies between 10,000 and 50,000 vehicles per day depending on the segment. The segments with the heaviest AADT are the ones between Islamorada and Key Largo and on Key West.

Figure 4-11 AADT (2019)

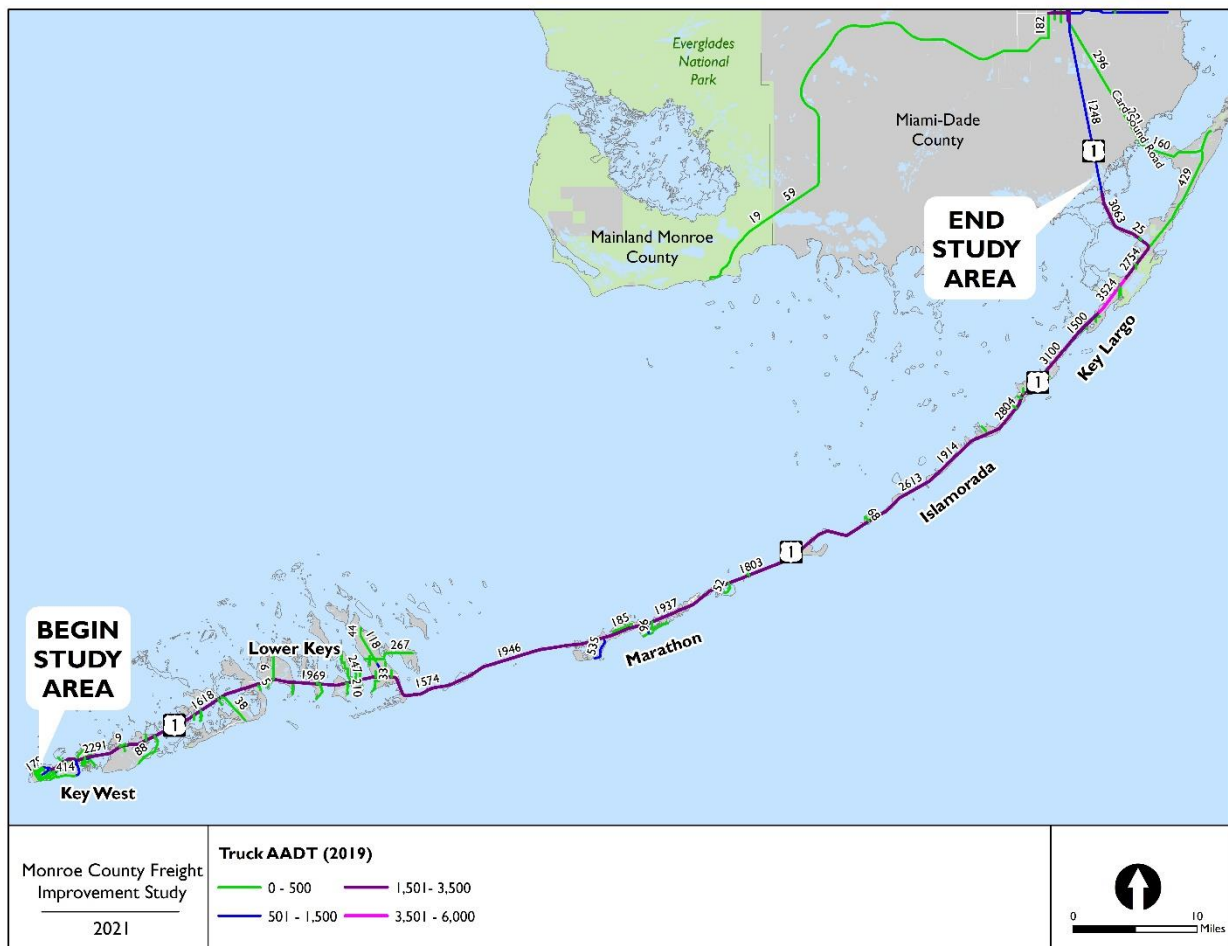


Data source: FDOT Open Data Hub Annual Average Daily Traffic TDA shapefile, obtained October 2021.

4.3.2 Annual Average Daily Truck Traffic

The annual average daily truck traffic data was derived using FDOT's Truck AADT data from 2019. As shown in **Figure 4-12**, the truck AADT along US 1 primarily ranges between 1,501 – 3,500 trucks (purple). There is a segment in Key Largo that experiences slightly higher truck traffic (3,524, shown in pink).

Figure 4-12 Truck AADT (2019)

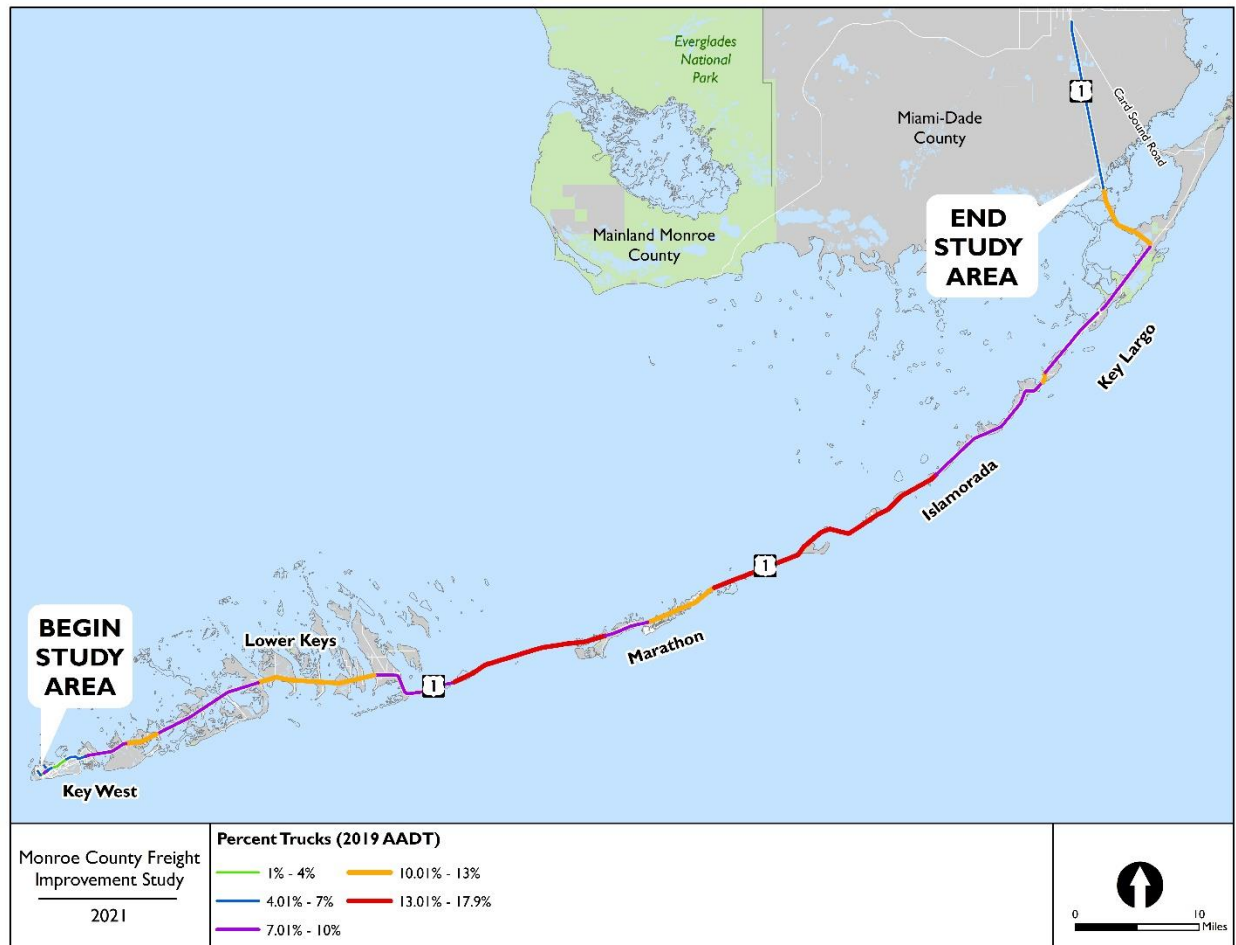


Data source: FDOT Open Data Hub Truck Volume TDA shapefile, obtained in October 2021.

4.3.3 Truck Percentage

The truck percentage was determined using the T Factor from the 2019 AADT data. As shown in **Figure 4-13**, truck percentage ranges from about 3% to 17.9%. The segments with the highest truck percentage are between the Lower Keys and Marathon and between Marathon and Islamorada.

Figure 4-13 Truck Percentage, 2019



Data source: FDOT Open Data Hub Truck Volume TDA shapefile, obtained in October 2021.

4.3.4 Truck Travel Patterns

Truck travel patterns can be summarized by the following purposes:

- ◆ Commercial/Retail Product Deliveries
 - ◇ Company fleet
 - ◇ Contract trucking
 - ◇ Rental truck
- ◆ Construction
 - ◇ Bulk distribution
 - ◇ Job site delivery
 - ◇ Equipment delivery
 - ◇ Trades vehicles
- ◆ Service Provision
 - ◇ Utilities
 - ◇ Emergency (fire, rescue)
 - ◇ Trash
 - ◇ Street cleaning
 - ◇ Home/business repair



Truck cargo types can be summarized as the following:

- ◆ Food and beverages
 - ◇ Grocers and retail outlets
 - ◇ Restaurants and hotels
- ◆ Mail and parcels
- ◆ Fuel (gasoline, diesel, gas)
- ◆ Waste (liquid, solid)
- ◆ Construction
 - ◇ Materials
 - ◇ Equipment
- ◆ General retail products
- ◆ Movers (households, businesses)
- ◆ Automobiles and boats



In 2018, the Monroe County Planning and Environment Resources Department, acting on a Board of County Commissioners resolution, commissioned the Origin-Destination Study, completed in October 2018. Data from that study are summarized in Sections 4.3.5 and 4.3.6 and provide useful insights into the travel and traffic patterns along the US 1 corridor.

4.3.5 Journey-to-Work Data

The Monroe County Journey-to-Work data is displayed in **Figure 4-14** and **Table 4-2** below. Zone 1 (Key West) had the most from/to trips with 6,287 trips total comprising approximately 30% of the trips. Most of these trips were within Key West. Zone 2 (Stock Island) had the second highest from/to trips with 2,715 trips, which was about 13% of the total trips. The least frequent from/to trips were Zones 17 (Palm Beach County) with 30 trips and Zone 13 (Miami-Dade County West) with 44 trips.

Figure 4-14 Journey-to-Work Analysis Zones

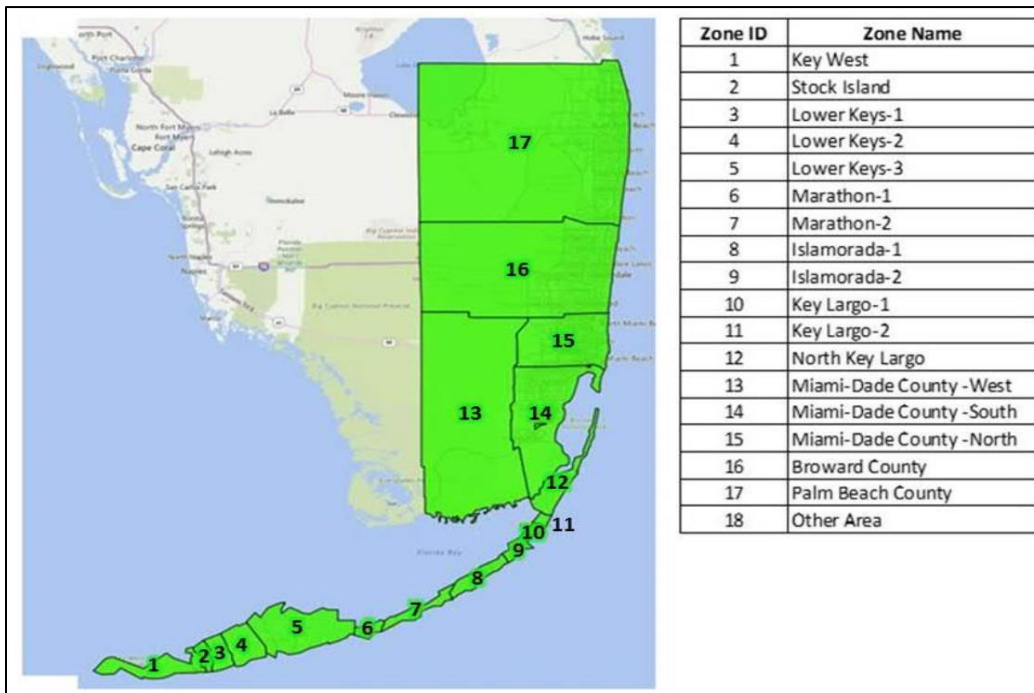


Table 4-2 Total Monroe County Journey-to-Work Flow

From/To*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Total
1	5155	554	0	0	10	435	0	35	0	4	0	10	0	0	0	4	0	80	6287
2	1485	1055	0	0	15	50	0	25	10	20	10	0	0	0	20	0	0	25	2715
3	395	270	120	0	0	15	0	0	0	0	0	0	0	0	20	0	0	10	830
4	264	15	0	80	4	10	15	0	0	0	0	0	0	0	0	0	0	0	388
5	654	160	0	40	450	185	0	0	0	0	0	15	0	0	15	0	10	65	1594
6	145	35	0	15	25	1285	185	10	0	10	0	0	0	0	10	15	0	70	1805
7	14	10	0	10	0	144	235	14	0	14	0	0	0	15	15	35	0	92	598
8	4	30	0	0	0	75	0	780	20	45	15	4	0	120	55	29	10	185	1372
9	19	25	0	0	0	0	0	275	320	85	0	0	0	60	20	50	4	180	1038
10	0	0	0	0	10	20	0	200	160	720	105	125	0	199	89	100	0	204	1932
11	20	0	0	0	4	30	0	60	49	70	100	70	0	178	35	45	0	20	681
12	0	0	0	0	0	0	0	0	30	0	0	235	0	0	0	0	0	114	379
13	0	0	0	0	0	0	0	0	4	30	0	10							44
14	35	65	0	0	0	95	0	65	25	150	14	289							738
15	20	0	0	0	0	0	0	15	0	40	15								90
16	90	20	0	0	15	0	0	15	0	0	0								140
17	15	0	0	0	0	0	0	0	15	0	0								30
18	14	14	0	0	0	25	0	25	0	25	0								103
Total	8329	2253	120	145	533	2369	435	1519	633	1173	284	773	0	572	279	278	24	1045	20764

4.3.6 Origin-Destination Data

Origin-Destination (O-D) data analysis was based on navigation- Global Positioning System (GPS) /Location Based Services data provided by a national data vendor. This data source provides access to a vast data set much quicker than any of the traditional data collection methods. The O-D data was derived using 2017 winter GPS data for an average day (**Table 4-3**). The green cells show the top 10% origin/destinations. The top destinations include Key West (38%), Key Largo (6.2%) and Islamorada 1 (5.4%).

Table 4-3 Monroe County Origin-Destination (2017)

Zone		2017 Winter GPS Average Day (M-Su) All Day																									
		Destination																									
		KEY WEST	STOCK ISLAND	LOWER KEYS 1	LOWER KEYS 2	BIG PINE KEY	MARATHON 1	MARATHON 2	ISLAMORADA 1	ISLAMORADA 2	KEY LARGO	NORTH KEY LARGO	MONROE	MIAMI-DADE	BROWARD	PALMBEACH	COLLIER	LEE	CHARLOTTE	SARASOTA	MANATEE	TAMPA AREA	OSCEOLA	ORANGE	OTHER FL	Total	
Origin	KEY WEST	38.0%	3.4%	0.3%	0.4%	0.2%	0.4%	0.1%	0.2%	0.0%	0.1%	0.0%	0.0%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	43.5%	
	STOCK ISLAND	3.5%	1.6%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.5%	
	LOWER KEYS 1	0.5%	0.2%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	
	LOWER KEYS 2	0.5%	0.1%	0.1%	1.3%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.6%	
	BIG PINE KEY	0.3%	0.0%	0.0%	0.5%	1.9%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.1%	
	MARATHON 1	0.4%	0.0%	0.0%	0.1%	0.2%	5.2%	1.2%	0.2%	0.0%	0.1%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.8%	
	MARATHON 2	0.2%	0.0%	0.0%	0.0%	0.1%	1.1%	1.3%	0.2%	0.0%	0.1%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.2%	
	ISLAMORADA 1	0.2%	0.0%	0.0%	0.0%	0.1%	0.2%	0.2%	5.4%	0.9%	0.7%	0.0%	0.0%	0.8%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.8%	
	ISLAMORADA 2	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	1.0%	1.0%	0.6%	0.0%	0.0%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.2%	
	KEY LARGO	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.7%	0.6%	6.2%	0.3%	0.0%	1.7%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	10.4%	
	NORTH KEY LARGO	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	4.0%	0.0%	0.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.2%	
	MONROE	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	
	MIAMI-DADE	0.3%	0.0%	0.0%	0.0%	0.0%	0.1%	0.2%	0.2%	0.8%	0.3%	1.6%	0.7%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	4.3%
	BROWARD	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.3%	0.1%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	0.7%
	PALMBEACH	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	0.2%
	COLLIER	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	0.1%
	LEE	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	0.0%
CHARLOTTE	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	
SARASOTA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	
MANATEE	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	
TAMPA AREA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	
OSCEOLA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	
ORANGE	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	0.0%	
OTHER FL	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-	-	-	-	-	-	-	-	-	-	-	-	0.1%	
Total		44.2%	5.4%	0.9%	2.6%	3.0%	7.7%	3.2%	8.8%	2.9%	10.1%	5.2%	0.3%	4.4%	0.9%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	100.0%	
*Green Cells = Top 10 %																											

*Green Cells = Top 10%

Florida Keys Trip Distribution

Table 4-4 displays the distribution of trips ending in each of the Florida Keys zones. As far as airport connections, 3% of external trips were to the Miami airport and 1.5% of external trips were to the Ft. Lauderdale airport. Furthermore, mainland trip share declines with Mile Marker value.

Table 4-4 Florida Keys Trip Distribution

Trip Ending Zone	Winter 2017 Average Day			Summer 2017 Average Day		
	Percent of Trips within Zone	Percent of Trips from Other Keys	Percent of Trips from Mainland	Percent of Trips within Zone	Percent of Trips from Other Keys	Percent of Trips from Mainland
KEY WEST	85.9%	13.2%	0.9%	84.7%	13.9%	1.4%
STOCK ISLAND	30.2%	69.0%	0.8%	24.3%	74.5%	1.1%
LOWER KEYS 1	25.8%	71.4%	2.9%	21.2%	75.2%	3.6%
LOWER KEYS 2	50.3%	47.5%	2.2%	42.9%	54.3%	2.8%
BIG PINE KEY	61.9%	35.2%	2.9%	51.2%	44.6%	4.2%
MARATHON 1	68.0%	28.2%	3.8%	65.2%	30.9%	3.9%
MARATHON 2	39.7%	53.0%	7.3%	35.7%	54.0%	10.3%
ISLAMORADA 1	61.4%	27.2%	11.3%	57.6%	29.0%	13.4%
ISLAMORADA 2	34.2%	54.2%	11.6%	31.5%	53.4%	15.1%

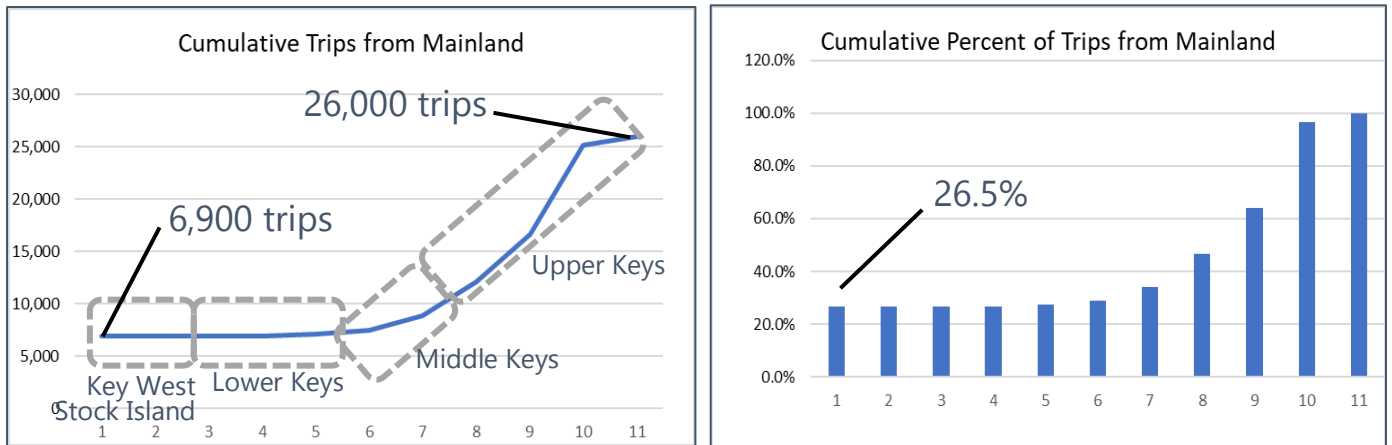
Trips To/From the Mainland

Trips to/from the mainland are displayed in **Table 4-6** and **Figure 4-15** below. Approximately 6,900 daily trips were between the mainland and Key West. Few trips were between the Lower Keys and the mainland. The balance of trips were between the area from Marathon northward and the mainland.

Table 4-6 Mainland Trips

Winter 2017 Average Day						
Trip Ending Zone	Zone	Zone Traffic	Percent of Zone Trips from Mainland	Trips from Mainland	Cumulative Trips from Mainland	Cumulative Percent of Trips from Mainland
1	Key West	767,000	0.9%	6,900	6,900	26.5%
2	Stock Island	112,000	0.0%	0	6,900	26.5%
3	Lower Keys 1	36,000	0.0%	0	6,900	26.5%
4	Lower Keys 2	69,000	0.0%	0	6,900	26.5%
5	Big Pine Key	73,000	0.2%	200	7,100	27.3%
6	Marathon 1	211,000	0.2%	400	7,500	28.8%
7	Marathon 2	72,000	0.2%	1,400	8,900	34.2%
8	Islamorada 1	156,000	2.0%	3,200	12,100	46.5%
9	Islamorada 2	65,000	0.7%	4,500	16,600	63.8%
10	Key Largo	214,000	4.0%	8,500	25,100	96.5%
11	N. Key Largo	55,000	1.6%	900	26,000	100.0%
TOTAL		1,830,000		26,000		

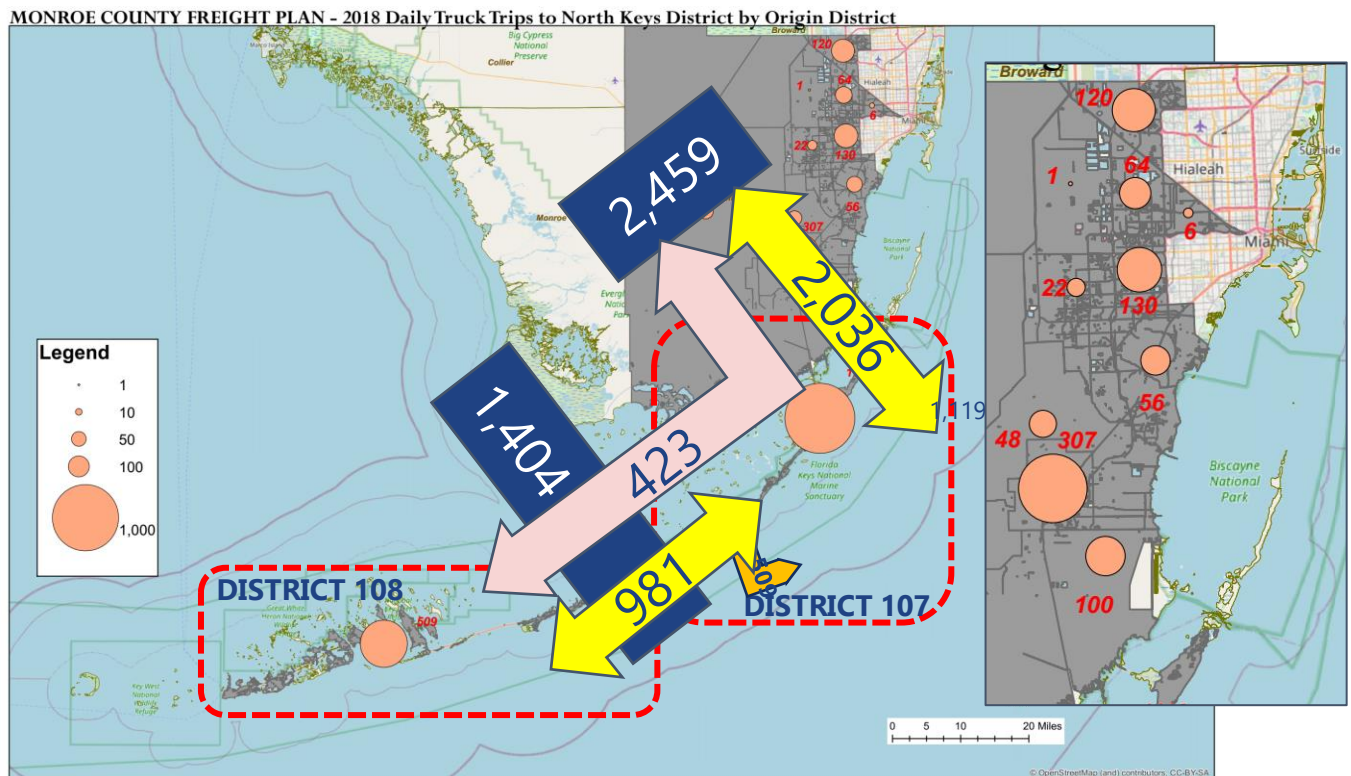
Figure 4-15 Mainland Trip Summary



Daily Truck Trips to/from The Keys

Using 2018 FDOT Streetlight Origin-Destination data, truck trips to/from the Keys and are summarized in the figure below. There were approximately 2,450 truck trips to/from the Keys, 1,404 of which were to/from the Lower Keys. The trip distribution from the mainland was approximately 83% to/from the Upper Keys and 17% to/from the Lower Keys. Mainland truck trips began and ended mostly in Miami-Dade County. There were also 981 truck trips between the Lower and Upper Keys (see Figure 4-16).

Figure 4-16 Truck Trips to/from The Keys (2018)



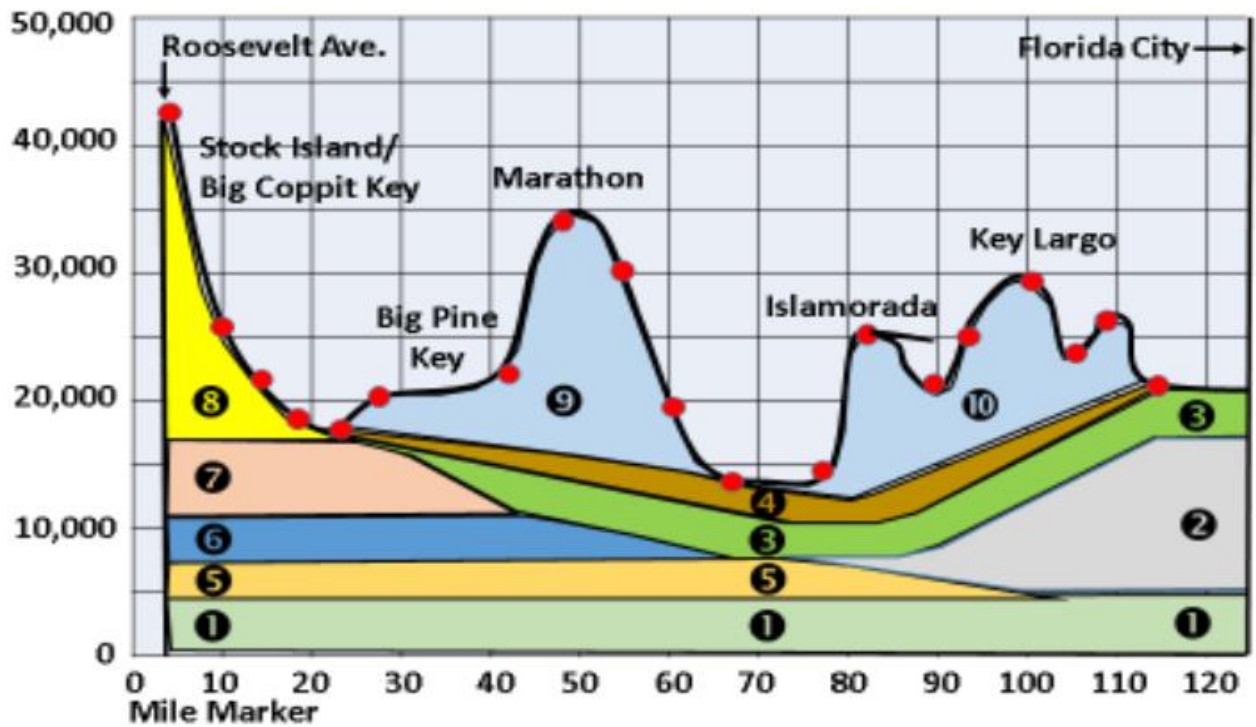
4.3.7 Overall Traffic Pattern

A prior FDOT District Six study investigated travel patterns on US 1 in Monroe County. That analysis used daily traffic volumes at several locations along US 1 as “control volumes”, cross checked by the data utilized in **Figure 4-17**. The US 1 traffic profile comprises ten overlapping travel demand patterns, as displayed in **Figure 4-18**. Truck travel patterns generally follow total traffic patterns. The diagram is helpful in understanding the traffic volume contributions of the mainland multiple urban settlements along US 1. Although only an approximation, the pattern map provides insight as to how travelers use US 1. Given that there are approximately 5,000 estimated daily trips between the mainland and Key West, then there are about 500 daily truck trips between the mainland and Key West.

Figure 4-17 US 1 Bidirectional Daily Travel Demand Patterns

No.	Travel Pattern
1	Mainland – Key West
2	Mainland – Key Largo/Islamorada
3	Mainland – Marathon/Big Pine Key
4	Marathon/Big Pine Key – Key Largo/Islamorada
5	Key West – Key Largo/Islamorada
6	Key West – Marathon
7	Key West – Big Pine Key
8	Key West - Stock Island/Big Coppitt Key
9	Marathon/Big Pine Key local traffic
10	Key Largo/Islamorada local traffic

Daily Traffic



5.0 Purpose and Need

5.1 Background

The State of Florida has embraced the importance of freight and logistics to the economy of the State. This vision addresses the need for an improved freight infrastructure and logistics system that ensures the mobility of goods and enhancement of the economic prosperity of the State.

The Florida Department of Transportation has led the pursuit of this opportunity with major investments in the first-ever statewide Freight Mobility and Trade Plan (FMTP) fully adopted in 2014 and its subsequent 2020 update, innovative programs for employer-driven training and company-specific export developments (Florida: Made for Trade – Florida Trade and Logistics Study 2.0, 2013), the Statewide Truck Parking Study, implementation of strategic transportation infrastructure projects, and multiple other efforts.

This subarea freight study is an important step in identifying specific needs and improvements that support the State's vision in elevating its role as a global transportation hub. Monroe County is one of the least populous of Florida's 67 counties with a population near 82,000 people, essentially all of whom reside in the Florida Keys island chain extending from Key Largo to Key West. This population base is entirely depending on goods and commodity movement supported by trucks traversing the US 1 Overseas Highway.

The freight logistics scene in Monroe County is a small part of the County's overall economic picture which is dominated by tourism in the form of short-term visitors, seasonal visitors, ecological and natural attractions, sport fishing and marine activity, and a military presence at Naval Air Station Key West. However, freight movements along US 1 are a vital part to the daily lives and commerce of the permanent residents and visiting population. This non-redundant transportation link crucially sustains the services-oriented economy of the Florida Keys.

Furthermore, the Miami-Dade 2045 Long Range Transportation Plan (LRTP) has forecast that South County will grow 60% in population and 40% in employment. Per the 2045 LRTP, the City of Homestead is forecast to grow from 66,900 persons in 2015 to 118,900 persons in 2045, an increase of 77.6%, nearly a 2% compounded annual growth rate.

Essentially all goods and commodities consumed within the Florida Keys are supplied by trucking from the mainland. Data indicates that the vast majority of those truck trips have their origins or destinations in Miami-Dade County. There is a very small level of package delivery occurring through the Key West International Airport.

To guide the study efforts, this purpose and need statement was defined early in the study process. This statement was informed by review of relevant studies and findings, initial input from study area stakeholders, and the team familiarity of the study area.

5.2 Purpose

The aim of this plan is to develop a set of viable improvement concepts to enhance freight connectivity and mobility. To accomplish that, the improvements to be proposed should broadly address these purposes:

- ◆ Examine freight movement patterns in the study area.
- ◆ Assess existing and future freight mobility needs.
- ◆ Identify opportunities for intermodal connectivity.
- ◆ Mitigate traffic congestion and safety risks.
- ◆ Investigate opportunities for truck parking sites.
- ◆ Develop a prioritized list of freight improvement projects.

5.3 Need

The study area is situated along the US 1 corridor in the Florida Keys of Monroe County. Transportation forecasts show that the background traffic volumes are expected to continue to grow at a slow pace, and gradually consuming the latent capacity of the transportation network of today, and over the long-term put further stress on the transportation network. Associated with this growth will be a proportionate growth in truck traffic volumes.

The primary freight mobility needs of the study area are to maintain and improve acceptable traffic service along US 1 to facilitate the continued efficient movement of trucks to and from the Florida Keys. The following points expand upon this need statement:

- ◆ **Need to maintain and enhance connectivity to the regional highway system:** The principal portals for the study area to and from Miami-Dade County are US 1 and Card Sound Road, with US 1 carrying nearly 90% of the traffic from the mainland. As the primary access corridor for most of the Florida Keys, preserving a quality connection to the mainland for residents and visitors is vital. So doing will benefit the efficient movement of both general traffic and truck traffic.
- ◆ **Congestion is expected to begin to affect traffic operations along US 1.** Continued growth in population, employment and visitors to the study area will lead to gradual increases in traffic volumes across the study corridor. Fortunately, the study area does not experience high-volume through traffic. The Monroe County Rate of Growth Ordinance and the traffic concurrency policy work together to manage the pace of new development projects and will mitigate the adverse impact to traffic capacity and service. However, both the travel time analysis and the US 1 Master Plan study identified emerging areas of deficient traffic service that should be addressed.
- ◆ **Infrastructure condition, operations, and safety need to be maintained with growing freight demands.** The US 1 roadway corridor serves multiple functions: through traffic, local area traffic circulation, and property access. A key objective should be to maintain these functions with acceptable traffic service, freight demand, and safety conditions within the constraints of Monroe County growth management and traffic concurrency regulations.

- ♦ **Need to address improved trucking operations.** As the study area develops, it is anticipated that the roadway network will become increasingly stressed. It is critical to plan for the companion freight network mobility requirements. There is an opportunity to identify strategic freight mobility projects that will preserve efficiency in trucking movements into the future. It is critical to plan for freight mobility needs within the US 1 corridor.
- ♦ **Need to support the Florida Keys economy and freight efficiency for the tourism-focused economy.** The study area relies nearly entirely on trucking for transport of products and supplies. Monitoring of traffic service quality will provide for operational efficiency of trucking movements supporting the Florida Keys economy.

6.0 Roadway Network Analysis

The Florida Keys presents an unusual situation from a network scenario analysis standpoint. Under *Monroe County's Comprehensive Development Master Plan*, growth management provisions stipulate that the level of service standard along US 1 shall be speed-based at 45 mph, as monitored by biennial travel time studies and documented in a report assessing the traffic performance along US 1 as is discussed in further detail in this section.

6.1 Approach

The network analysis process for the *Monroe County Freight Improvement Plan* is to consider existing conditions and future freight growth conditions within the study area. Sources of background information for the scenario analysis include historical traffic count data, data compiled for the Existing Conditions Report; the Southeast Florida Regional Planning Model (SERPM, Version 8.0), the Florida Statewide Model (FLSWM), referred to herein as the Travel Demand Model (TDM) and whose coverage includes the Florida Keys; and the recently completed US 1 Master Plan, performed for Monroe County with the participation of FDOT. The SERPM provides information in terms of external stations in its network just south of Florida City on US 1 and Card Sound Road, while the FLSWM included Monroe County in its network coding.

This background data will be used to assess traffic service conditions in the primary study area, in terms of existing and future peak period traffic volumes. The intent of the analysis is to test the network with alternative freight-related conditions to identify the extent of capacity needs for the transportation roadway network and to test prospective improvements that would address linkages that would enhance freight mobility or reduce congestion that would otherwise restrict the movement of goods.

The study area is focused on US 1 throughout Monroe County, between Roosevelt Blvd. and the Miami-Dade County Line. Per the scope of services, 10 turning movement counts and 10 classification counts were performed along this segment at locations outside of the City of Key West. To supplement this analysis, intersections along US 1 within the City of Key West were examined in the recently completed US 1 Master Plan and are generally highly constrained in terms of opportunities for capacity improvements.

The count locations are listed below:

Turning Movement Counts

Count No.	Location	Mile Marker
1	US1 @ Cross Street	4.4
2	US1 @ MacDonald Avenue	4.5
3	US1 @ Crane Boulevard	19.5
4	US1 @ Key Deer Boulevard/Wilder Road	30.5
5	US1 @ 107th Street Gulf	52.6
6	US1 @ 109th Street Gulf	52.7
7	US1 @ Bessie Drive	90.5
8	US1 @ Ocean Bay Drive/Atlantic Avenue	99.5
9	US1 @ Tarpon Basin Drive	101.4
10	US1 @ Key Largo School	105.0

Classification Counts

Count No.	Location	Mile Marker
1	US1 West of Boca Chica Channel Bridge	5.9
2	US1 East of Big Coppitt Key	11.0
3	US1 West of Cudjoe Key/Pirates Cove Bridge	20.5
4	US1 East of Big Pine Key	33.5
5	US1 West of Aviation Boulevard	51.0
6	US1 Over Key Vaca Cut/North of Marathon	53.2
7	US1 East of Duck Key	62.0
8	US1 East of South Islamorada	84.0
9	US1 East of North Islamorada/Tavernier Creek	90.8
10	US1 over Marvin D. Adams Waterway/Cut	103.6

The freight planning scenarios and resource planning documents produced by Monroe County are described in the following sections.

6.1.1 Monroe County Traffic Concurrency Regulations

It is important to understand the context of traffic service and traffic concurrency evaluation in Monroe County on US 1. The following narrative is an excerpt from the *2023 US 1 Arterial Travel Time and Delay Study* for Monroe County, Florida:

This report contains the results and findings of the *2023 Arterial Travel Time and Delay Study* (ATTDS). The primary objective of this study is to determine the Level of Service (LOS) on US 1 for concurrency management purposes pursuant to Chapter 163, Florida Statutes, Monroe County Land Development Regulations and the *Monroe County Comprehensive Plan*.

US 1 (Overseas Highway) is the only principal arterial serving residents and visitors in the Keys. The unique geography, land use patterns and trip making characteristics of the Florida Keys present a challenge in developing and applying a reasonable and acceptable method to assess LOS. Although US 1 in the Florida Keys is predominantly an uninterrupted, two-lane roadway, its uniqueness warrants an alternative LOS evaluation process to the methodology provided in the Highway Capacity Manual (HCM).

The study methodology was developed by the US 1 Level of Service Task Force in 1993. The methodology established a procedure for using travel speed as a means of assessing the LOS and reserve capacity for US 1. The study methodology was modified by the US 1 LOS Task Force in 1997 and 2021 (see Monroe County Resolution 64-2021) to account for the latest changes in the HCM. Both Monroe County and the FDOT have adopted a LOS C Standard for US 1. Further, 45 miles per hour (mph) has been adopted as the LOS C Standard for the entire length of US 1 regardless of the posted speed limits. Under the adopted growth management process, if the overall LOS for US 1 falls below the LOS C Standard, then no additional land development will be allowed in the Florida Keys, unless mitigation measures are proposed to address the LOS deficiencies.

Monroe County has conducted travel time and delay studies along US 1 on an annual basis from 1991 to 2013; and on a biennial basis since 2013. The data collection for years 1991 through 1996 was conducted by the Monroe County Planning Department, with assistance from the Monroe County Engineering Department, and the FDOT. Consulting firm URS and later AECOM have collected the data for years 1997 through 2021, on behalf of the Monroe County Planning Department with assistance from the agencies identified above. This report contains the travel time/delay data and findings for the year 2021. The US 1 ATTDS's primary objective is to monitor the level of service on US 1 for concurrency management purposes pursuant to Chapter 163, Florida Statutes, Section 114 of the Monroe County Land Development Regulations and the *Monroe County Comprehensive Plan*.

Although US 1 is predominantly an uninterrupted two-lane roadway, the US 1 Level of Service Task Force felt that due to US 1's uniqueness, it warrants an alternative LOS evaluation process to that found in the HCM. The US 1 Level of Service Task Force was formulated in 1992 to develop a methodology for US 1 that utilizes an empirical relationship between the volume-based capacities and the speed-based LOS. The US 1 Level of Service

Task Force was a multi-agency group with members from Monroe County, the Florida Department of Transportation, and the Department of Economic Opportunity (formerly known as Florida Department of Community Affairs - DCA). The methodology established by the task force is a procedure for using travel speed as a means of assessing the level of service and reserve capacity for US 1. Each member organization of the Task Force has endorsed the methodology.

The US 1 Level of Service Task Force met in 1997 to re-evaluate the LOS procedure. After several meetings, the Task Force concluded that the speed-based LOS methodology should be used to assess the LOS along US 1 in Monroe County, with a minor change. The signal delay for LOS C was increased to 25 seconds from 15 seconds to account for changes in the HCM. The study methodology was modified again by the US 1 LOS Task Force in 2021 and the signal delay for LOS C was increased to 35 seconds from 25 seconds to account for the latest changes in the HCM. Another change made by the 2021 US 1 Level of Service Task Force includes how the drawbridge delay is considered in the LOS calculations. Pursuant to Section 114-2(a)(1)(a) of the Land Development Code (LDC), US 1 shall have sufficient available capacity to operate at LOS C for the overall length and the 24 roadway segments of US 1, as measured by the US 1 Level of Service Task Force Methodology.

Both Monroe County and the FDOT have adopted a LOS C standard for US 1. The Level of Service (LOS) criteria for overall speeds on US 1 in Monroe County, as adopted by the Task Force, is as follows:

- ◆ **LOS A:** 51.0 mph or above
- ◆ **LOS B:** 50.9 mph to 48 mph
- ◆ **LOS C:** 47.9 mph to 45 mph
- ◆ **LOS D:** 44.9 mph to 42 mph
- ◆ **LOS E:** 41.9 mph to 36 mph
- ◆ **LOS F:** Below 36 mph

In addition, all segments of US 1, as identified in the *US 1 Level of Service Task Force Methodology*, which would be impacted by a proposed development's access to US 1, shall have sufficient available capacity to operate at LOS C. Section 114-2(a)(1)(b) of the LDC states, development may be approved, provided that the development in combination with all other permitted developments will not decrease travel speed by more than five percent (5%) below LOS C, as measured by the *US 1 Level of Service Task Force Methodology*. While development may be approved within 5% of LOS C, the proposed development shall be considered to have an impact that needs mitigation. Development mitigation may be in the form of specific improvements or proportioned shared contribution towards improvements and strategies identified by 2021 – US 1 Arterial Travel Time and Delay Study Monroe County, the County, and/or FDOT to address any level of service degradation beyond LOS C and/or other potential deficiencies.

Although there has never been a countywide development restriction, Big Pine Key experienced a localized development restriction between 1994 and 2002. Following the 2012 LOS evaluation, the Monroe County Board of County Commissioners (BOCC) directed the planning staff to re-write the LDC to remove the segment-based development restriction, but after further consideration between the BOCC and County staff, it was not implemented. In 2016 Monroe County adopted the 2030 Comprehensive Plan and its implementing Land Development Code which maintained the overall and segment-based LOS for transportation concurrency.

It is recommended that the methodology for the *Monroe County Freight Improvement Plan* should consider this growth management framework as it relates to scenario analysis and potential improvement strategies.

6.1.2 US 1 Master Plan

The *US 1 Transportation Master Plan* for Monroe County was completed in July 2021. The master plan identifies transportation needs, goals/objectives, and an action plan to meet those goals. The recommendations incorporate physical and technology-based actions to address traffic safety, operations, and roadway improvement projects.

The study evaluated existing conditions using 2019 traffic data from FDOT count stations and the 2020 FDOT *Quality/Level of Service Handbook*, on a segment LOS basis. For future year conditions, the plan evaluated other traffic forecasts including the SERPM external station on US 1 south of Florida City, the FLSWM US 1 traffic assignments (for 2015 and 2045), and the FDOT traffic trend analysis tool (Version 03) applied to historic traffic count station data. The plan also reviewed the University of Florida Bureau of Economic and Business Research (BEBR) population projections for Monroe County to 2045 which includes low, medium, and high forecasts ranging from -0.5% to 0.6% annual growth rate.

These various sources found annual long-term growth rates ranging from flat to approximately 0.6%/year. The plan determined that the “adjusted” Decaying Exponential Growth rate from the traffic trend analysis tool was appropriate for the base forecast condition, and which varied over groups of road segments based on the individual segment growth rate results. To provide a contrasting stress test of the network, the plan also assumed a higher 1%/year growth rate to 2045 for all road segments. For each growth situation, the daily segment traffic volume was compared to LOS thresholds from the *Quality/Level of Service Handbook* to determine the nominal resulting LOS. Segments with underperforming LOS (relative to the standard of LOS C), along with field observations of existing operational problem areas, were then considered for potential improvement actions.

This approach was considered as a way to identify where LOS degradation could be expected to occur in the future, and then to determine what operational improvements could be considered to remedy those situations. In effect, it is a surrogate to identify more geographically specific target locations for operational actions that should in turn ameliorate forecasted reductions in the

effective travel speeds over that segment of roadway. It is noted that this was a multimodal plan, so proposed corridor improvement actions consider transit, pedestrian, and bicycle modes, as well as other safety and operational actions like lighting, drainage, and landscaping.

The County has reviewed and prioritized with its jurisdictional partners the study's nearly 200 improvement proposals to a priority list of 36 projects. This list has 12 Primary Priority Recommendations and 24 Secondary Priority Recommendations. This list of projects is provided in **Appendix C**. The nature of these priorities is summarized below:

- Primary Priority Recommendations:
 - Roadway-related: 3 projects
 - Traffic operations and management: 5 projects
 - Transit and multimodal: 4 projects
 - Total 12 projects
- Secondary Priority Recommendations:
 - Roadway-related: 5 projects
 - Traffic operations and management: 5 projects
 - Transit and multimodal: 14 projects
 - Total 24 projects

It is observed that the methodology for the *Monroe County Freight Improvement Plan* should consider the analysis of this plan as it relates to network scenario analysis and potential improvement strategies.

6.1.3 Network Analysis Planning Approach and Scenarios

This section describes the approach to conducting the roadway network analysis, including the freight planning scenarios, basic assumptions, and methodology. The analysis includes 2021 existing conditions and 2045 future conditions. This approach builds on the analysis and findings of the *US 1 Transportation Master Plan* and has these features:

- ◆ Maintains consistency with the analysis methodology of the recent *US 1 Transportation Master Plan* which confirmed the relatively low-growth setting of US 1 in the Florida Keys, resulting from the traffic concurrency regulation and growth management policies.
- ◆ Avoids unnecessary duplication of analysis so resources can be directed toward extending the analysis from 2019-2040 period to the 2021-2045 timeframe.
- ◆ Allows more detailed analysis of selected signalized intersections and coordination with the priority recommendations derived from the *US 1 Transportation Master Plan*.
- ◆ Permits additional consideration of improvement actions with freight-related benefits.

The purpose of this section is to present the approach to performing this analysis of the roadway network within the study area. Specifically, this methodology for roadway network analysis

addresses the scope requirements in terms of travel demand analysis and associated network deficiencies. The unique nature of US 1 in Monroe County means that truck traffic is mixed within general traffic for the length of the corridor, with no real freight districts along the corridor. For this reason, consideration of freight movements is necessarily embedded within the analysis of the general traffic analysis. The future planning conditions are developed around the following three scenarios per the scope of services, in terms of increasing impact on the transportation network:

1. No Growth Scenario:

- ◆ **Overview:** Assumes no growth in traffic volumes over the planning period.
- ◆ **Demand:** Assumes no change in traffic volumes (0%/year growth rate).
- ◆ **Network:** Existing and committed roadway improvement projects per the FDOT Five-Year Work Program.

2. Trend Growth Scenario:

- ◆ **Overview:** Assumes growth in traffic volumes over the planning period follows the historical patterns of growth using an adjusted Decaying Exponential Growth trend that varies by section of roadway.
- ◆ **Demand:** Assumes trend growth change in traffic volumes as growth rate varies by segment per the *US 1 Master Plan* analysis. Truck traffic growth taken to be proportional to general traffic growth (% trucks remains fixed).
- ◆ **Network:** Existing and committed roadway improvement projects from the FDOT Five-Year Work Program. Potential improvement actions.

3. High Growth Scenario:

- ◆ **Overview:** Assumes growth in traffic volumes over the planning period is stipulated at 1%/year across all segments. Includes existing and committed roadway improvement projects per the FDOT Five-Year Work Program.
- ◆ **Demand:** Assumes a flat 1%/year change in traffic volumes across all segments (1%/year growth rate) from the *US 1 Master Plan* analysis. Truck traffic growth taken to be proportional to general traffic growth whereas the % trucks remains fixed).
- ◆ **Network:** Existing and committed roadway improvement projects from the FDOT Five-Year Work Program. Potential improvement actions.

6.1.4 Roadway Network Analysis Methodology

This section describes the approach to conducting the roadway network analysis, including the basic methodology, and a summary of the additional truck trip volumes to be tested on the network according to the methodology. This methodology for roadway network analysis addresses the scope requirements in terms of travel demand analysis and associated network deficiencies. The roadway network analysis methodology was developed to support the definition of the freight planning scenarios described in Section 6.1.3.

Travel Demand Model (TDM) and Other Data Collection

The following information was compiled for use in the analysis process:

1. Base year and forecast year traffic volumes on roadway segments.
2. Traffic volume growth (base year and forecast year) information.
3. Review of relevant information in the FLSWM and the SERPM.
4. Strategic Intermodal System cost-feasible and unfunded network.
5. Other projects in planning by public agencies but not yet programmed.
6. Total volume, truck volume, percent trucks.
7. Segment level volume/capacity and level of service.
8. Other report and data sources as may be identified.

Network Analysis Methodology

1. Base Year Network Performance Evaluation (2021)

- a. Utilize a segment-based capacity analysis patterned after the *US 1 Transportation Master Plan*.
- b. Utilize the 10 new 2021 study traffic classification counts where applicable, and the latest available Florida Traffic Online count data, adjusted as needed to 2021.
- c. Evaluate segment LOS using updated traffic data and based on the use of the 2020 FDOT Quality/Level of Service Handbook, as applied in the *US 1 Transportation Master Plan*.
- d. Identify any underperforming segments (less than LOS C).
- e. Compare congestion/delay/LOS issues between the *US 1 Transportation Master Plan* volume-based LOS analysis and the speed-based LOS concurrency methodology in the 2023 *Arterial Travel Time and Delay Study (ATTDS)* to assess the extent of consistency between the two. Formulate appropriate observations on the comparison.

- f. Perform SYNCHRO analysis of 10 signalized intersections with 2021 AM and PM peak period traffic counts, using traffic signal timing data obtained from FDOT.
- g. For any resulting intersection operational deficiencies, identify potential improvement actions, correlated with proposals from the *US 1 Transportation Master Plan*.

2. No Growth Scenario (2045):

- a. Utilize a segment-based capacity analysis patterned after the *US 1 Transportation Master Plan*.
- b. Accept 2021 volumes as 2045 daily traffic volumes (an assumed 0%/year growth factor).
- c. Evaluate segment LOS using the 2045 daily traffic volumes and based on the use of the 2020 FDOT *Quality/Level of Service Handbook*, as applied in the *US 1 Transportation Master Plan*.
- d. Identify any underperforming segments (less than LOS C).
- e. Perform SYNCHRO analysis of 10 signalized intersections with 2045 AM and PM peak period traffic counts.
- f. For any resulting operational deficiencies, identify and test potential improvement actions correlated with proposals from the *US 1 Transportation Master Plan*.

3. Trend Growth Scenario (2045):

- a. Utilize a segment-based capacity analysis patterned after the *US 1 Transportation Master Plan*.
- b. Apply the trend growth factors as developed in the *US 1 Transportation Master Plan* to the base year segment volumes to derive 2045 volumes.
- c. Evaluate segment LOS using the 2045 forecast daily traffic volume and based on the application of the 2020 FDOT *Quality/Level of Service Handbook*, as applied in the *US 1 Transportation Master Plan*.
- d. Identify any underperforming segments (less than LOS C).
- e. Perform SYNCHRO analysis of 10 signalized intersections with extrapolated 2045 AM and PM peak period traffic counts, based on corridor growth factors.
- f. For any resulting operational deficiencies, identify and test potential improvement actions correlated with proposals from the *US 1 Transportation Master Plan*.

4. High Growth Scenario (2045):

- a. Utilize a segment-based capacity analysis patterned after the *US 1 Transportation Master Plan*.
- b. Apply 1%/year growth factor to the base year segment volumes to derive 2045 volumes.
- c. Evaluate segment LOS using the 2045 forecast daily traffic volume and based on the application of the 2020 FDOT *Quality/Level of Service Handbook*, as applied in the *US 1 Transportation Master Plan*.
- d. Identify any underperforming segments (less than LOS C).
- e. Perform SYNCHRO analysis of 10 signalized intersections with extrapolated 2045 AM and PM peak period traffic counts.
- f. For any resulting operational deficiencies, identify and test potential improvement actions correlated with proposals from the *US 1 Transportation Master Plan*.

Matrices were developed to summarize the segment analysis for each scenario, and to present proposed improvements to provide project-related information, project impacts and costs to illustrate the importance of alternatives for ultimate recommendation.

6.2 Network LOS Analysis

6.2.1 Existing Conditions Analysis

Intersection Analysis

The following ten intersections were analyzed using the SYNCHRO 11 traffic analysis software. All intersections below are signalized except for the last one in the list.

- ◆ US 1 at Cross Street
- ◆ US 1 at MacDonald Avenue
- ◆ US 1 at Crane Boulevard
- ◆ US 1 at Key Deer Boulevard
- ◆ US 1 at 107th Street
- ◆ US 1 at 109th Street
- ◆ US 1 at Bessie Drive/Sunshine Avenue
- ◆ US 1 at Ocean Bay Drive/Atlantic Avenue
- ◆ US 1 at Tarpon Basin Drive
- ◆ US 1 at Key Largo School Exit (unsignalized intersection)

The 10 intersections are depicted in **Figure 6-1**.

Figure 6-1 Intersection Traffic Count Locations



Source: Google maps.

AM and PM peak hour counts were adjusted using the appropriate seasonal factors and signal timings from FDOT were input in the Synchro model. The LOS results for these intersections are summarized in **Table 6-1**. Traffic counts and signal timing data are provided in **Appendix A**.

Table 6-1 2021 Intersection LOS

Signalized Intersection	US 1 Orientation	2021 Existing Intersection LOS	
		AM	PM
US 1 at Cross Street	EB/WB	C	B
US 1 at MacDonald Avenue	EB/WB	B	B
US 1 at Crane Boulevard	EB/WB	B	B
US 1 at Key Deer Boulevard	EB/WB	B	B
US 1 at 107th Street	EB/WB	A	B
US 1 at 109th Street	EB/WB	B	B
US 1 at Bessie Drive/Sunshine Avenue	NB/SB	C	B
US 1 at Ocean Bay Drive/Atlantic Avenue	NB/SB	C	D
US 1 at Tarpon Basin Drive	NB/SB	B	B
US 1 at Key Largo School Exit (unsignalized intersection)	NB/SB	F	F

All of the signalized locations demonstrated very good LOS results except for the US 1 at Ocean Bay Drive/Atlantic Avenue intersection with a more complex layout, where LOS D was found for the PM peak period. The US 1 at Key Largo School Exit location has LOS F due to excessive delays for exiting traffic attempting to make left turns.

Segment Analysis

The segment analysis consisted of analyzing the daily capacity compared to the 2021 Annual Average Daily Traffic (AADTs) for 110 segments in the US 1 corridor. The segments were assigned a base capacity using values from the Florida Department of Transportation (FDOT) *2020 Quality Level of Service (QLOS) Handbook*. The capacities were then adjusted for each segment based on its facility characteristics, truck percentages, and speed. The 2021 AADTs used for each segment were based on growing the 2019 AADTs from the *US 1 Transportation Master Plan* or, if applicable, using the 2021 AADTs for the ten locations where daily vehicle classification counts were collected for this study.

Depending on the facility characteristics of each segment, the *QLOS Handbook* assumed a posted speed limit. The adjusted capacities were modified based on the difference between the default speed from the *QLOS Handbook* and the posted speed limit for each segment. The impact to capacity was based on Exhibit 12-38, the "Maximum Service Flow Rates for Multilane Highway Segments Under Base Conditions" table, from the *Highway Capacity Manual (HCM)* 6th Edition.

Truck percentages were adjusted based on the difference between the default truck percentage assumed by the QLOS Handbook and the truck percentage for each segment. Capacity for segments with a higher truck percentage than the default value from the *QLOS Handbook* was decreased. The impact to capacity was based on calculations from the *Simplified Highway Capacity Calculation Method* for the Highway Performance Monitoring System by the Federal Highway Administration (FHWA). A summary of the 2021 LOS analysis for the 110 segments is provided in **Table 6-2**.

The results of this analysis methodology shows LOS results alternating between acceptable and unacceptable values over the length of the corridor. In some cases, the LOS is only marginally LOS D but is so reported. The main areas of unacceptable LOS are summarized as follows:

Mile Marker Range	Location	LOS Results
♦ MM 0.0 – 10.7	Central Key West and part of Stock Island	Mostly LOS E and F
♦ MM 10.7 – 27.8	Coppitt and Torch Key	Mostly LOS D
♦ MM 27.8 – 31.1	Torch and Big Pine Key	Mostly LOS F
♦ MM 38.6 – 48.4	Ohio Key to Marathon	LOS D
♦ MM 56.4 – 65.7	Grass, Duck and Conch Keys	LOS D
♦ MM 67.3 – 73.7	Long, Fiesta and Craig Keys	LOS D
♦ MM 79.7 – 90.1	Upper Matecumbe and Windley Keys	Mostly LOS D
♦ MM 87.7 – 90.1	Plantation Key	LOS E
♦ MM 96.4 – 99.5	Key Largo near Atlantic Blvd.	LOS D
♦ MM 106.3 – 112.5	Key Largo and Cross Key	LOS E and F

Traffic service on US 1 in Key West is generally problematic due to the level of traffic and constraints to adding traffic capacity. Similarly, the southern part of US 1 on Stock Island carries heavier traffic with widening not permitted under growth management regulations. The two-lane sections on the final two segments are critical segments where capacity is inadequate for the

traffic demands at times. It is further noted that this analysis is performed on a daily traffic capacity basis. Variations in how traffic is distributed over a typical day when compared to the analysis input parameters utilized can affect the resulting LOS values calculated and observed.

Table 6-2 2021 Segment LOS Summary

FACILITY	FROM STREET	TO STREET	ROADWAY	Count Station ID	Lanes (2-way)	Begin Mile Post	Segment Length (mi)	2021 Traffic	
								2021 AADT	Base LOS ¹
SR 5 / US 1 / Whitehead St	Fleming St	Truman Ave	90010000	905013	2	0.0	0.4	7,700	D
SR 5 / US 1 / Truman Ave	Whitehead St	Windsor Ln	90010000	905011	2	0.4	0.4	12,000	F
SR 5 / US 1 / Truman Ave	Windsor Ln	White St	90010000	905008	2	0.8	0.3	17,400	F
SR 5 / US 1 / Truman Ave	White St	Jose Mariti Dr	90010000	905004	2	1.1	0.2	26,700	F
SR 5 / US 1 / N Roosevelt Blvd	Jose Mariti Dr	1714 Blk N Roosevelt Blvd	90010000		3	1.3	0.2	26,700	F
SR 5 / US 1 / N Roosevelt Blvd	1714 Blk N Roosevelt Blvd Ent	Palm Ave/1st St	90010000		4	1.5	0.1	26,700	F
SR 5 / US 1 / N Roosevelt Blvd	Palm Ave/1st St	1910 Blk N Roosevelt Blvd Ent / Bay St	90010000	905034	4	1.6	0.1	41,300	F
SR 5 / US 1 / N Roosevelt Blvd	1910 Blk N Roosevelt Blvd Ent / Bay St	Sigsbee Rd	90010000		4	1.7	1.0	41,300	F
SR 5 / US 1 / N Roosevelt Blvd	Sigsbee Rd	S Roosevelt Ave/A1A	90010000	900105	4	2.7	1.2	41,300	F
SR 5 / US 1 / Overseas Highway	S Roosevelt Ave/A1A	College Rd	90010000	900201	4	3.9	0.3	51,900	F
SR 5 / US 1 / Overseas Highway	College Rd	Midpoint of Cross St/MacDonald Ave	90010000	900165	4	4.2	0.3	41,300	F
SR 5 / US 1 / Overseas Highway	Midpoint of Cross St and MacDonald Ave	Saratoga Ave	90020000	MCFS ²	4	4.5	3.5	25,200	C
SR 5 / US 1 / Overseas Highway	Saratoga Ave	Rockland Dr	90020000	900010	4	8.1	1.1	25,600	C
SR 5 / US 1 / Overseas Highway	Rockland Dr	East of Calle Uno	90020000		2	9.2	0.3	25,600	F
SR 5 / US 1 / Overseas Highway	East of Calle Uno	West of Coppitt Rd	90020000		2	9.5	0.3	25,600	E
SR 5 / US 1 / Overseas Highway	West of Coppitt Rd	Boca Chica Rd	90020000		2	9.8	0.9	25,600	E
SR 5 / US 1 / Overseas Highway	Boca Chica Rd	West Boat Ramp/East of Jade Dr	90020000	MCFS ²	2	10.7	0.2	16,400	D
SR 5 / US 1 / Overseas Highway	West Boat Ramp/East of Jade Dr	East Boat Ramp/West of Cannon Royal	90020000		2	10.9	0.2	16,400	D
SR 5 / US 1 / Overseas Highway	East Boat Ramp/West of Cannon Royal Dr	East of Cannon Royal Dr	90020000		2	11.1	0.2	16,400	C
SR 5 / US 1 / Overseas Highway	East of Cannon Royal Dr	West of Blue Water Dr	90020000		2	11.3	3.0	16,400	D
SR 5 / US 1 / Overseas Highway	West of Blue Water Dr	East of Park Dr/Begin of the Bridge	90020000		2	14.3	0.2	16,400	C
SR 5 / US 1 / Overseas Highway	East of Park Dr/Begin of the Bridge	West of W Circle Dr/ End of the Bridge	90020000		2	14.5	0.2	16,400	D
SR 5 / US 1 / Overseas Highway	West of W Circle Dr/ End of the Bridge	Midpoint of E Circle Dr and Begin of the Bridge	90020000		2	14.7	0.4	16,400	C
SR 5 / US 1 / Overseas Highway	Midpoint of E Circle Dr and Begin of the Bridge	West of South Side of US 1 Point Dr/End of the Bridge	90020000		2	15.1	1.5	7,700	D

FACILITY	FROM STREET	TO STREET	ROADWAY	Count Station ID	Lanes (2-way)	Begin Mile Post	Segment Length (mi)	2021 Traffic	
								2021 AADT	Base LOS ¹
SR 5 / US 1 / Overseas Highway	West of South Side of US 1 Point Dr/End of the Bridge	Mosher Dr	90020000		2	16.6	0.6	16,400	D
SR 5 / US 1 / Overseas Highway	Mosher Dr	West of Crane Blvd	90020000		2	17.1	2.1	16,400	D
SR 5 / US 1 / Overseas Highway	West of Crane Blvd	East of Crane Blvd	90020000		2	19.2	0.2	16,400	D
SR 5 / US 1 / Overseas Highway	East of Crane Blvd	SR 939B	90020000		2	19.5	0.5	16,400	D
SR 5 / US 1 / Overseas Highway	SR 939B	Erie Dr	90020000	MCFS ²	2	20.0	0.8	16,400	D
SR 5 / US 1 / Overseas Highway	Erie Dr	East of Spanish Main Dr	90020000		2	20.7	2.4	13,200	D
SR 5 / US 1 / Overseas Highway	East of Spanish Main Dr	West of Henry St/ Parking Area	90020000		2	23.1	0.7	13,200	D
SR 5 / US 1 / Overseas Highway	West of Henry St/ Parking Area	Midpoint of Henry St and Dobie St	90020000		2	23.8	0.2	13,200	D
SR 5 / US 1 / Overseas Highway	Midpoint of Henry St and Dobie St	East of Dobie St	90020000		2	24.0	0.1	13,200	D
SR 5 / US 1 / Overseas Highway	East of Dobie St	East of E Shore Dr	90020000		2	24.1	1.2	13,200	D
SR 5 / US 1 / Overseas Highway	East of E Shore Dr	Indies Rd	90020000		2	25.3	1.9	13,200	D
SR 5 / US 1 / Overseas Highway	Indies Rd	East of W Indies Dr/ Begin of the Bridge	90020000		2	27.2	0.3	13,200	D
SR 5 / US 1 / Overseas Highway	East of W Indies Dr/ Begin of the Bridge	West of Middle Torch Rd/ End of the Bridge	90020000		2	27.5	0.3	13,200	D
R 5 / US 1 / Overseas Highway	West of Middle Torch Rd/ End of the Bridge	Midpoint of SR-4A and Middle Torch Rd	90020000	900109	2	27.8	0.3	13,200	F
SR 5 / US 1 / Overseas Highway	Midpoint of SR-4A and Middle Torch Rd	East of Barry Ave/Begin of the Bridge	90020000		2	28.1	0.6	19,200	F
SR 5 / US 1 / Overseas Highway	East of Barry Ave/Begin of the Bridge	Midpoint of North Side of US 1 Pine Channel	90020000		2	28.6	0.9	19,200	F
SR 5 / US 1 / Overseas Highway	Midpoint of North Side of US 1 Pine Channel	Begin of the Bridge/ West of Ships Way	90020000	900227	2	29.5	0.1	19,200	F
SR 5 / US 1 / Overseas Highway	Begin of the Bridge/ West of Ships Way	Palmetto Ave	90020000		2	29.6	0.5	18,500	F
SR 5 / US 1 / Overseas Highway	Palmetto Ave	Loma Ln	90020000		2	30.1	0.1	18,500	F
SR 5 / US 1 / Overseas Highway	Loma Ln	East of Chapman St	90020000		3	30.2	0.4	18,500	C
SR 5 / US 1 / Overseas Highway	East of Chapman St	Cunningham Ln	90020000		2	30.6	0.2	18,500	F
SR 5 / US 1 / Overseas Highway	Cunningham Ln	Sands Rd	90020000		2	30.8	0.2	18,500	F
SR 5 / US 1 / Overseas Highway	Sands Rd	2nd St	90030000	MCFS ²	2	31.1	0.2	18,500	C
SR 5 / US 1 / Overseas Highway	2nd St	West of Long Beach Rd	90030000		2	31.2	1.5	12,200	C

FACILITY	FROM STREET	TO STREET	ROADWAY	Count Station ID	Lanes (2-way)	Begin Mile Post	Segment Length (mi)	2021 Traffic	
								2021 AADT	Base LOS ¹
SR 5 / US 1 / Overseas Highway	West of Long Beach Rd	East of Long Beach Rd/Begin of the Bridge	90030000		2	32.8	0.3	12,200	C
SR 5 / US 1 / Overseas Highway	East of Long Beach Rd/Begin of the Bridge	Spanish Harbor Key Beach Ent	90030000		2	33.1	1.9	12,200	C
SR 5 / US 1 / Overseas Highway	Spanish Harbor Key Beach Ent	East of Spanish Harbor Key/Begin of the Bridge	90030000		3	35.0	0.3	12,200	B
SR 5 / US 1 / Overseas Highway	East of Spanish Harbor Key/Begin of the Bridge	East of Bahia Honda Park Ent	90030000		4	35.3	1.8	12,200	B
SR 5 / US 1 / Overseas Highway	East of Bahia Honda Park Ent	Converging Point of US-1 S and US-1 N	90030000	900066	2	37.1	0.0	12,900	C
SR 5 / US 1 / Overseas Highway	Converging Point of US-1 S and US-1 N	Begin of Ohio Key	90030000		2	37.1	1.4	12,900	C
SR 5 / US 1 / Overseas Highway	Begin of Ohio Key	Midpoint of Ohio Key	90030000		2	38.6	0.2	19,400	D
SR 5 / US 1 / Overseas Highway	Midpoint of Ohio Key	Palm Island Ave	90030000		2	38.8	9.2	19,400	D
SR 5 / US 1 / Overseas Highway	Palm Island Ave	26 Street	90040000	900642	4	48.0	0.4	19,400	D
SR 5 / US 1 / Overseas Highway	26 Street	30 Street (Marathon)	90040000		4	48.4	0.2	19,400	C
SR 5 / US 1 / Overseas Highway	30 Street (Marathon)	City Marina Ent	90040000		4	48.6	0.4	25,100	C
SR 5 / US 1 / Overseas Highway	City Marina Ent	Sombrero Beach Rd	90040000		4	49.0	1.0	21,700	C
SR 5 / US 1 / Overseas Highway	Sombrero Beach Rd	Lime Ln	90040000	MCFS ²	4	50.0	1.8	15,000	C
SR 5 / US 1 / Overseas Highway	Lime Ln	Sadowski Cswy	90040000	MCFS ²	4	51.8	1.7	15,000	C
SR 5 / US 1 / Overseas Highway	Sadowski Cswy	East of Coco Plum Dr/Converging Point of US-1 S and US-1 N	90040000	905040	4	53.6	0.8	15,000	C
SR 5 / US 1 / Overseas Highway	East of Coco Plum Dr/Converging Point of US-1 S and US-1 N	West of Mm 56.1 Burn Point/Curry Hammock State Park Ent	90040000		2	54.4	1.7	15,000	C
SR 5 / US 1 / Overseas Highway	West of Mm 56.1 Burn Point/Curry Hammock State Park Ent	Midpoint of Curry Hammock State Park Ent and Banana Blvd	90040000		2	56.1	0.3	15,000	C
SR 5 / US 1 / Overseas Highway	Midpoint of Curry Hammock State Park Ent and Banana Blvd	West of Kyle Ave	90040000		2	56.4	1.0	18,100	D
SR 5 / US 1 / Overseas Highway	West of Kyle Ave	West of Blue Isle Blvd	90040000		2	57.4	2.3	18,100	D
SR 5 / US 1 / Overseas Highway	West of Blue Isle Blvd	Midpoint of Blue Isle Blvd and Fishing Area Parking	90050000	MCFS ²	2	59.7	0.2	18,100	D
SR 5 / US 1 / Overseas Highway	Midpoint of Blue Isle Blvd and Fishing Area Parking	West of Duck Key Dr	90050000		2	59.9	1.0	18,100	D
SR 5 / US 1 / Overseas Highway	West of Duck Key Dr	East of Duck Key Dr/Converging Point of US-1 S and US-1 N	90050000		2	60.9	0.4	18,100	D
SR 5 / US 1 / Overseas Highway	East of Duck Key Dr/Converging Point of US-1 S and US-1 N	West of N Conch Ave	90050000		2	61.3	1.4	18,100	D

FACILITY	FROM STREET	TO STREET	ROADWAY	Count Station ID	Lanes (2-way)	Begin Mile Post	Segment Length (mi)	2021 Traffic	
								2021 AADT	Base LOS ¹
SR 5 / US 1 / Overseas Highway	West of N Conch Ave	East of N Conch Ave	90050000	MCFS ²	2	62.8	0.2	18,100	D
SR 5 / US 1 / Overseas Highway	East of N Conch Ave	End of Long Key Channel/ East of Parking Area	90050000		2	62.9	2.8	18,100	D
SR 5 / US 1 / Overseas Highway	End of Long Key Channel/ East of Parking Area	65821 Overseas Hwy Ent	90050000		2	65.7	0.2	12,900	C
SR 5 / US 1 / Overseas Highway	65821 Overseas Hwy Ent	West of Long Key State Park Ent	90050000		2	65.9	1.4	12,900	C
SR 5 / US 1 / Overseas Highway	West of Long Key State Park Ent	East of Long Key State Park Ent	90050000		2	67.3	0.3	18,100	D
SR 5 / US 1 / Overseas Highway	East of Long Key State Park Ent	Annes Beach Area Ent	90050000		2	67.6	6.1	18,100	D
SR 5 / US 1 / Overseas Highway	Annes Beach Area Ent	Caloosa Cove Blvd/Caloosa Cove Ent	90050000		2	73.6	0.1	18,100	D
SR 5 / US 1 / Overseas Highway	Caloosa Cove Blvd/Caloosa Cove Ent	Frontage Rd Entrance/East of Gulfview Dr	90060000	900623	2	73.7	0.7	14,700	C
SR 5 / US 1 / Overseas Highway	Frontage Rd Entrance/East of Gulfview Dr	West of Sandy Cove Ave	90060000		2	74.5	0.2	14,700	C
SR 5 / US 1 / Overseas Highway	West of Sandy Cove Ave	East of Sandy Cove Ave	90060000		2	74.6	0.3	14,700	C
SR 5 / US 1 / Overseas Highway	East of Sandy Cove Ave	West of Leserra Ln	90060000		2	74.9	1.4	14,700	C
SR 5 / US 1 / Overseas Highway	West of Leserra Ln	Midpoint of Columbus Dr Ext and Paloma Dr	90060000		2	76.3	0.3	14,700	C
SR 5 / US 1 / Overseas Highway	Midpoint of Columbus Dr Ext and Paloma Dr	Tiki Ln	90060000		2	76.6	0.6	14,700	C
SR 5 / US 1 / Overseas Highway	Tiki Ln	77522 Overseas Hwy/ Begin of the Bridge	90060000		2	77.2	0.3	14,700	C
SR 5 / US 1 / Overseas Highway	77522 Overseas Hwy/ Begin of the Bridge	79901 Overseas Hwy/End of the Bridge	90060000		2	77.5	2.2	14,700	C
SR 5 / US 1 / Overseas Highway	79901 Overseas Hwy/End of the Bridge	Old State Hwy 4a	90060000		2	79.7	0.7	14,700	D
SR 5 / US 1 / Overseas Highway	Old State Hwy 4a	Begin of the Bridge of Whale Harbor Channel/East of Park Rd	90060000	MCFS ²	2	80.4	3.4	20,000	D
SR 5 / US 1 / Overseas Highway	Begin of the Bridge of Whale Harbor Channel/East of Park Rd	End of the Bridge of Whale Harbor Channel/West of Old Hwy	90060000		2	83.8	0.1	20,000	D
SR 5 / US 1 / Overseas Highway	End of the Bridge of Whale Harbor Channel/West of Old Hwy	East of Old Hwy	90060000		2	84.0	0.6	20,000	D
SR 5 / US 1 / Overseas Highway	East of Old Hwy	Frontage Rd Ent	90060000		2	84.6	0.5	20,000	D
SR 5 / US 1 / Overseas Highway	Frontage Rd Ent	East of Smugglers Cove Ent/Begin of the Bridge of Snake Creek Channel	90060000		2	85.0	0.5	20,000	D
SR 5 / US 1 / Overseas Highway	East of Smugglers Cove Ent/Begin of the Bridge of Snake Creek Channel	West of Venetian Blvd/End of the Bridge of Snake Creek Channel	90060000		2	85.5	0.2	20,000	D
SR 5 / US 1 / Overseas Highway	West of Venetian Blvd/End of the Bridge of Snake Creek Channel	East of Venetian Blvd	90060000		2	85.7	0.3	20,000	D

FACILITY	FROM STREET	TO STREET	ROADWAY	Count Station ID	Lanes (2-way)	Begin Mile Post	Segment Length (mi)	2021 Traffic	
								2021 AADT	Base LOS ¹
SR 5 / US 1 / Overseas Highway	East of Venetian Blvd	West of Weigh Station Exit	90060000	MCFS ²	2	86.0	0.2	20,000	D
SR 5 / US 1 / Overseas Highway	West of Weigh Station Exit	Orange Ln	90060000		2	86.2	1.5	20,000	D
SR 5 / US 1 / Overseas Highway	Orange Ln	Royal Poinciana Blvd	90060000		2	87.7	2.4	28,300	E
SR 5 / US 1 / Overseas Highway	Royal Poinciana Blvd	Harbor View Dr	90060000		4	90.1	2.1	28,300	B
SR 5 / US 1 / Overseas Highway	Harbor View Dr	West of Tree Ln	90060000	900062	4	92.2	0.8	15,100	B
SR 5 / US 1 / Overseas Highway	West of Tree Ln	Harbor View Dr	90060002	905043	4	91.5	0.8	16,200	B
SR 5 / US 1 / Overseas Highway	West of Tree Ln	Buttonwood Bay Clb Ent	90060000	905041	4	93.0	3.3	31,300	B
SR 5 / US 1 / Overseas Highway	Atlantic Blvd/Ocean Bay Dr	Buttonwood Bay Clb Ent	90060001	905042	4	96.4	3.0	19,700	D
SR 5 / US 1 / Overseas Highway	Buttonwood Bay Clb Ent	Atlantic Blvd/Ocean Bay Dr	90060000	MCFS ²	4	96.4	3.1	31,100	D
SR 5 / US 1 / Overseas Highway	Atlantic Blvd/Ocean Bay Dr	99600 Overseas Hwy/East of Atlantic Blvd	90060000		4	99.5	0.0	31,100	C
SR 5 / US 1 / Overseas Highway	99600 Overseas Hwy/East of Atlantic Blvd	Sunset Blvd	90060000		4	99.5	0.4	31,100	C
SR 5 / US 1 / Overseas Highway	Sunset Blvd	Bonefish Ave	90060000		4	99.8	3.5	31,100	C
SR 5 / US 1 / Overseas Highway	Bonefish Ave	Andros Rd	90060000	900200	4	103.3	2.8	31,100	C
SR 5 / US 1 / Overseas Highway	Andros Rd	Trn Ln to CR 905	90060000		4	106.1	0.2	33,400	C
SR 5 / US 1 / Overseas Highway	Trn Ln to CR 905	Summerland Rd	90060000		2	106.3	0.2	33,400	F
SR 5 / US 1 / Overseas Highway	Summerland Rd	Morris Ave	90060000	900001	2	106.5	6.0	24,800	E

1. Reference: 2020 FDOT QUALITY/LEVEL OF SERVICE HANDBOOK

2. Counts obtained as part of the Monroe County Freight Study (MCFS)

6.2.2 Future Conditions Analysis

Intersection Analysis

Traffic analysis was completed for the same three future growth scenarios that were assumed for the segment analysis.. The Synchro models were used to analyze these three scenarios and the LOS results are summarized in **Table 6-3**. **Table 6-4** tabulates the 2045 intersection failing movements.

Table 6-3 2045 Intersection LOS Without Improvements

Signalized Intersection	US 1 Orientation	2045 No-Build, No Growth Traffic Intersection LOS		2045 No-Build, Moderate Growth Traffic Intersection LOS		2045 No-Build, High Growth Traffic Intersection LOS	
		AM	PM	AM	PM	AM	PM
US 1 at Cross Street	EB/WB	C	B	C	C	C	C
US 1 at MacDonald Avenue	EB/WB	B	B	B	B	B	B
US 1 at Crane Boulevard	EB/WB	B	B	B	B	C	B
US 1 at Key Deer Boulevard	EB/WB	B	B	B	B	C	B
US 1 at 107th Street	EB/WB	A	B	A	B	B	B
US 1 at 109th Street	EB/WB	B	B	B	B	B	B
US 1 at Bessie Drive/Sunshine Avenue	NB/SB	C	B	C	B	C	C
US 1 at Ocean Bay Drive/Atlantic Avenue	NB/SB	C	D	C	E	C	E
US 1 at Tarpon Basin Drive	NB/SB	B	B	B	C	B	C
US 1 at Key Largo School Exit (unsignalized intersection)	NB/SB	F	F	F	F	F	F

In summary, across all intersections for all scenarios:

- ♦ AM peak: Overall intersection remains at LOS C or better.
- ♦ PM peak: Overall intersection remains at LOS C or better, except for PM peak at Ocean Bay Drive/Atlantic Avenue in Key Largo.
- ♦ LOS remains acceptable LOS on US 1 approaches.
- ♦ Some traffic delay issues occur on US 1 left turn lanes and side street approaches.



Table 6-4 2045 Intersection Failing Movements

Signalized Intersection	Peak	Failing Movements (LOS D, E, or F) (from both Synchro and HCM 2000)			Failing Movements (V/C > 1) (from Synchro / HCM 2000)		
		2021/2045 No-Growth Traffic	2045 Moderate Growth Traffic	2045 High Growth Traffic	2021/2045 No-Growth Traffic	2045 Moderate Growth Traffic	2045 High Growth Traffic
1: US 1 at Cross St	AM	NB	NB	WBT, NB			
	PM	NB	WBL, NB	WBL, NB			
2: US 1 at MacDonald Ave	AM	NBL	NBL	NBL			
	PM	NBL	NBL	NBL			
3: US 1 at Crane Blvd	AM	SBL, SBR	SBL, SBR	SBL, SBR			
	PM	SBL, SBR	SBL, SBR	SBL, SBR			
4: US 1 at Key Deer Blvd	AM	NB, SBL/T	NB, SBL/T, SBR	NB, SBL/T, SBR			
	PM	SBL/T	SBL/T	NB, SBL/T, SBR			
5: US 1 at 107th St	AM	SB	SB	SB			
	PM	SB	SB	SB			
6: US 1 at 109th St	AM	NB, SB	NB, SB	NB, SB			
	PM	NB, SB	NB, SB	NB, SB			
7: US 1 at Bessie Dr/Sunshine Ave	AM	EBL, EBT/R, WBL/T, WBR, SB2*	EBL, EBT/R, WBL/T, WBR, SB2*	EBL, EBT/R, WBL/T, WBR, SB2*			
	PM	EBL, EBT/R, WBL/T, WBR, SB2*	EBL, EBT/R, WBL/T, WBR, SB2*	EBL, EBT/R, WBL/T, WBR, SB2*			
8: US 1 at Ocean Bay Dr/Atlantic Ave	AM	EB, WBL/T, WBR, NBU/L, SBU/L	EB, WBL/T, WBR, NBU/L, SBU/L	EB, WBL/T, WBR, NBU/L, SBU/L			
	PM	EB, WBL/T, WBR, NB, SBU/L	EB, WBL/T, WBR, NB, SBU/L	EB, WBL/T, WBR, NB, SBU/L	SBU/L	SBU/L	NBT/R, SBU/L
9: US 1 at Tarpon Basin Dr/Publix Entrance	AM	[none]	EB, WBL/T	EB, WBL/T, WBR			
	PM	EB, WBL/T, WBR	EB, WBL/T, WBR	EB, WBL/T, WBR			
10: US 1 at Pompano Ave/Key Largo School	AM	WBL, WBR	WBL, WBR	WBL, WBR	WBL, WBR	WBL, WBR	WBL, WBR
	PM	WBL, WBR	WBL, WBR	WBL, WBR	WBL, WBR	WBL, WBR	WBL, WBR

*SB refers to Sunshine Blvd. for intersection 7.

Segment Analysis

The AADTs for all 110 segments were projected for three future scenarios: 2045 No Growth Scenario, 2045 Moderate Growth Scenario, and 2045 High Growth Scenario. The 2045 No Growth Scenario did not assume any general traffic growth but did assume growth in truck percentages for the segments. Trends in truck traffic were analyzed for several count locations along US 1 and are summarized below in **Table 6-5**. For the locations that showed a negative growth trend in truck percentage, it was assumed that truck percentages would not change in the future. The Moderate Growth Scenario assumed the percent growth as calculated by the previous *US 1 Transportation Master Plan* and assumed growth in truck percentages. The High Growth Scenario assumed one percent traffic growth and assumed growth in truck percentages. The LOS analysis for the three future growth scenarios for the segments without any improvements is summarized in **Table 6-6**.

Table 6-5 Historical Truck Percentage Growth and Projected 2045 Growth

Count Site	2015	2016	2017	2018	2019	2020	2015-2019 Growth	2015-2020 Growth	Average	2019-2045 Growth*
900165	4.13%	n/a	n/a	4.22%	4.24%	3.66%	3%	-11%	-4%	21%
900109	9.44%	9.48%	7.58%	2.85%	10.91%	8.92%	16%	-6%	5%	3%
900227	6.46%	6.87%	7.77%	8.87%	8.85%	9.30%	37%	44%	40%	4%
900642	n/a									7%
905040	9.19%	7.71%	8.98%	11.15%	13.02%	11.76%	42%	28%	35%	4%
900623	n/a									35%
900101	5.75%	9.75%	8.94%	8.86%	8.92%	13.31%	55%	131%	93%	-17%
905043	6.57%	5.95%	7.79%	9.79%	7.13%	6.51%	9%	-1%	4%	2%
905041	8.84%	8.15%	9.14%	8.93%	10.01%	8.72%	13%	-1%	6%	-4%
905042	7.24%	8.95%	8.05%	10.49%	9.79%	10.39%	35%	44%	39%	-14%
900164	9.05%	9.12%	8.36%	9.06%	9.26%	10.69%	2%	18%	10%	20%
900200	11.91%	7.86%	7.50%	9.72%	9.13%	9.05%	-23%	-24%	-24%	-38%
Corridor-Wide Average Truck Percentage Growth							19%	22%	20%	2%

* Growth rate based on linear regression trend from 2005/6/8/9 to 2019

Table 6-6 2045 Segment LOS Without Improvements

FACILITY	FROM STREET	TO STREET	ROADWAY	Count Station ID	Lanes (2-way)	Begin Mile Post	Segment Length (mi)	2045 No Growth Traffic		2045 Moderate Growth Traffic		2045 High Growth Traffic	
								2045 AADT	LOS ¹	2045 AADT	LOS ¹	2045 AADT	LOS ¹
SR 5 / US 1 / Whitehead St	Fleming St	Truman Ave	90010000	905013	2	0.0	0.4	7,700	D	8,300	D	9,600	E
SR 5 / US 1 / Truman Ave	Whitehead St	Windsor Ln	90010000	905011	2	0.4	0.4	12,000	F	13,000	F	15,000	F
SR 5 / US 1 / Truman Ave	Windsor Ln	White St	90010000	905008	2	0.8	0.3	17,400	F	19,000	F	21,800	F
SR 5 / US 1 / Truman Ave	White St	Jose Mariti Dr	90010000	905004	2	1.1	0.2	26,700	F	29,000	F	33,400	F
SR 5 / US 1 / N Roosevelt Blvd	Jose Mariti Dr	1714 Blk N Roosevelt Blvd	90010000		3	1.3	0.2	26,700	F	29,000	F	33,400	F
SR 5 / US 1 / N Roosevelt Blvd	1714 Blk N Roosevelt Blvd Ent	Palm Ave/1st St	90010000		4	1.5	0.1	26,700	F	29,000	F	33,400	F
SR 5 / US 1 / N Roosevelt Blvd	Palm Ave/1st St	1910 Blk N Roosevelt Blvd Ent / Bay St	90010000	905034	4	1.6	0.1	41,300	F	44,900	F	51,700	F
SR 5 / US 1 / N Roosevelt Blvd	1910 Blk N Roosevelt Blvd Ent / Bay St	Sigsbee Rd	90010000		4	1.7	1.0	41,300	F	44,900	F	51,700	F
SR 5 / US 1 / N Roosevelt Blvd	Sigsbee Rd	S Roosevelt Ave/A1A	90010000	900105	4	2.7	1.2	41,300	F	44,900	F	51,700	F
SR 5 / US 1 / Overseas Highway	S Roosevelt Ave/A1A	College Rd	90010000	900201	4	3.9	0.3	51,900	F	56,500	F	64,900	F
SR 5 / US 1 / Overseas Highway	College Rd	Midpoint of Cross St/MacDonald Ave	90010000	900165	4	4.2	0.3	41,300	F	47,400	F	51,400	F
SR 5 / US 1 / Overseas Highway	Midpoint of Cross St and MacDonald Ave	Saratoga Ave	90020000	MCFS ²	4	4.5	3.5	25,200	C	26,900	C	31,300	C
SR 5 / US 1 / Overseas Highway	Saratoga Ave	Rockland Dr	90020000	900010	4	8.1	1.1	25,600	C	27,400	C	32,100	C
SR 5 / US 1 / Overseas Highway	Rockland Dr	East of Calle Uno	90020000		2	9.2	0.3	25,600	F	27,400	F	32,100	F
SR 5 / US 1 / Overseas Highway	East of Calle Uno	West of Coppitt Rd	90020000		2	9.5	0.3	25,600	E	27,400	F	32,100	F
SR 5 / US 1 / Overseas Highway	West of Coppitt Rd	Boca Chica Rd	90020000		2	9.8	0.9	25,600	E	27,400	E	32,100	F
SR 5 / US 1 / Overseas Highway	Boca Chica Rd	West Boat Ramp/East of Jade Dr	90020000	MCFS ²	2	10.7	0.2	16,400	D	17,500	D	20,400	E
SR 5 / US 1 / Overseas Highway	West Boat Ramp/East of Jade Dr	East Boat Ramp/West of Cannon Royal	90020000		2	10.9	0.2	16,400	D	17,500	D	20,400	E
SR 5 / US 1 / Overseas Highway	East Boat Ramp/West of Cannon Royal Dr	East of Cannon Royal Dr	90020000		2	11.1	0.2	16,400	C	17,500	D	20,400	D
SR 5 / US 1 / Overseas Highway	East of Cannon Royal Dr	West of Blue Water Dr	90020000		2	11.3	3.0	16,400	D	17,500	D	20,400	D
SR 5 / US 1 / Overseas Highway	West of Blue Water Dr	East of Park Dr/Begin of the Bridge	90020000		2	14.3	0.2	16,400	C	17,500	D	20,400	D
SR 5 / US 1 / Overseas Highway	East of Park Dr/Begin of the Bridge	West of W Circle Dr/ End of the Bridge	90020000		2	14.5	0.2	16,400	D	17,500	D	20,400	D
SR 5 / US 1 / Overseas Highway	West of W Circle Dr/ End of the Bridge	Midpoint of E Circle Dr and Begin of the Bridge	90020000		2	14.7	0.4	16,400	C	17,500	D	20,400	D
SR 5 / US 1 / Overseas Highway	Midpoint of E Circle Dr and Begin of the Bridge	West of South Side of US 1 Point Dr/End of the Bridge	90020000		2	15.1	1.5	16,400	D	17,500	D	20,400	D

FACILITY	FROM STREET	TO STREET	ROADWAY	Count Station ID	Lanes (2-way)	Begin Mile Post	Segment Length (mi)	2045 No Growth Traffic		2045 Moderate Growth Traffic		2045 High Growth Traffic	
								2045 AADT	LOS ¹	2045 AADT	LOS ¹	2045 AADT	LOS ¹
SR 5 / US 1 / Overseas Highway	West of South Side of US 1 Point Dr/End of the Bridge	Mosher Dr	90020000		2	16.6	0.6	16,400	D	17,500	D	20,400	E
SR 5 / US 1 / Overseas Highway	Mosher Dr	West of Crane Blvd	90020000		2	17.1	2.1	16,400	D	17,500	D	20,400	E
SR 5 / US 1 / Overseas Highway	West of Crane Blvd	East of Crane Blvd	90020000		2	19.2	0.2	16,400	D	17,500	D	20,400	E
SR 5 / US 1 / Overseas Highway	East of Crane Blvd	SR 939B	90020000		2	19.5	0.5	16,400	D	17,500	D	20,400	E
SR 5 / US 1 / Overseas Highway	SR 939B	Erie Dr	90020000	MCF5 ²	2	20.0	0.8	13,200	D	14,100	D	16,400	E
SR 5 / US 1 / Overseas Highway	Erie Dr	East of Spanish Main Dr	90020000		2	20.7	2.4	13,200	D	14,100	D	16,400	D
SR 5 / US 1 / Overseas Highway	East of Spanish Main Dr	West of Henry St/ Parking Area	90020000		2	23.1	0.7	13,200	D	14,100	D	16,400	E
SR 5 / US 1 / Overseas Highway	West of Henry St/ Parking Area	Midpoint of Henry St and Dobie St	90020000		2	23.8	0.2	13,200	D	14,100	D	16,400	D
SR 5 / US 1 / Overseas Highway	Midpoint of Henry St and Dobie St	East of Dobie St	90020000		2	24.0	0.1	13,200	D	14,100	D	16,400	E
SR 5 / US 1 / Overseas Highway	East of Dobie St	East of E Shore Dr	90020000		2	24.1	1.2	13,200	D	14,100	D	16,400	D
SR 5 / US 1 / Overseas Highway	East of E Shore Dr	Indies Rd	90020000		2	25.3	1.9	13,200	D	14,100	D	16,400	D
SR 5 / US 1 / Overseas Highway	Indies Rd	East of W Indies Dr/ Begin of the Bridge	90020000		2	27.2	0.3	13,200	D	14,100	D	16,400	D
SR 5 / US 1 / Overseas Highway	East of W Indies Dr/ Begin of the Bridge	West of Middle Torch Rd/ End of the Bridge	90020000		2	27.5	0.3	13,200	D	14,100	D	16,400	E
R 5 / US 1 / Overseas Highway	West of Middle Torch Rd/ End of the Bridge	Midpoint of SR-4A and Middle Torch Rd	90020000	900109	2	27.8	0.3	19,200	F	20,500	F	24,100	F
SR 5 / US 1 / Overseas Highway	Midpoint of SR-4A and Middle Torch Rd	East of Barry Ave/Begin of the Bridge	90020000		2	28.1	0.6	19,200	F	20,500	F	24,100	F
SR 5 / US 1 / Overseas Highway	East of Barry Ave/Begin of the Bridge	Midpoint of North Side of US 1 Pine Channel	90020000		2	28.6	0.9	19,200	F	20,500	F	24,100	F
SR 5 / US 1 / Overseas Highway	Midpoint of North Side of US 1 Pine Channel	Begin of the Bridge/ West of Ships Way	90020000	900227	2	29.5	0.1	18,500	F	19,700	F	23,200	F
SR 5 / US 1 / Overseas Highway	Begin of the Bridge/ West of Ships Way	Palmetto Ave	90020000		2	29.6	0.5	18,500	F	19,700	F	23,200	F
SR 5 / US 1 / Overseas Highway	Palmetto Ave	Loma Ln	90020000		2	30.1	0.1	18,500	F	19,700	F	23,200	F
SR 5 / US 1 / Overseas Highway	Loma Ln	East of Chapman St	90020000		3	30.2	0.4	18,500	C	19,700	C	23,200	F
SR 5 / US 1 / Overseas Highway	East of Chapman St	Cunningham Ln	90020000		2	30.6	0.2	18,500	F	19,700	F	23,200	F
SR 5 / US 1 / Overseas Highway	Cunningham Ln	Sands Rd	90020000		2	30.8	0.2	18,500	F	19,700	F	23,200	F
SR 5 / US 1 / Overseas Highway	Sands Rd	2nd St	90030000	MCF5 ²	2	31.1	0.2	12,200	C	13,000	C	15,100	D
SR 5 / US 1 / Overseas Highway	2nd St	West of Long Beach Rd	90030000		2	31.2	1.5	12,200	C	13,000	D	15,100	D
SR 5 / US 1 / Overseas Highway	West of Long Beach Rd	East of Long Beach Rd/Begin of the Bridge	90030000	MCF5 ²	2	32.8	0.3	12,200	C	13,000	C	15,100	D

FACILITY	FROM STREET	TO STREET	ROADWAY	Count Station ID	Lanes (2-way)	Begin Mile Post	Segment Length (mi)	2045 No Growth Traffic		2045 Moderate Growth Traffic		2045 High Growth Traffic	
								2045 AADT	LOS ¹	2045 AADT	LOS ¹	2045 AADT	LOS ¹
SR 5 / US 1 / Overseas Highway	East of Long Beach Rd/Begin of the Bridge	Spanish Harbor Key Beach Ent	90030000		2	33.1	1.9	12,200	C	13,000	D	15,100	D
SR 5 / US 1 / Overseas Highway	Spanish Harbor Key Beach Ent	East of Spanish Harbor Key/Begin of the Bridge	90030000		3	35.0	0.3	12,200	B	13,000	B	15,100	B
SR 5 / US 1 / Overseas Highway	East of Spanish Harbor Key/Begin of the Bridge	East of Bahia Honda Park Ent	90030000		4	35.3	1.8	12,200	B	13,000	B	15,100	B
SR 5 / US 1 / Overseas Highway	East of Bahia Honda Park Ent	Converging Point of US-1 S and US-1 N	90030000	900066	2	37.1	0.0	12,900	C	13,700	C	16,100	D
SR 5 / US 1 / Overseas Highway	Converging Point of US-1 S and US-1 N	Begin of Ohio Key	90030000		2	37.1	1.4	12,900	C	13,700	C	16,100	D
SR 5 / US 1 / Overseas Highway	Begin of Ohio Key	Midpoint of Ohio Key	90030000		2	38.6	0.2	12,900	C	13,700	C	16,100	D
SR 5 / US 1 / Overseas Highway	Midpoint of Ohio Key	Palm Island Ave	90030000		2	38.8	9.2	12,900	C	13,700	C	16,100	C
SR 5 / US 1 / Overseas Highway	Palm Island Ave	26 Street	90040000	900642	4	48.0	0.4	19,400	D	20,700	D	24,300	F
SR 5 / US 1 / Overseas Highway	26 Street	30 Street (Marathon)	90040000		4	48.4	0.2	19,400	D	20,700	D	24,300	D
SR 5 / US 1 / Overseas Highway	30 Street (Marathon)	City Marina Ent	90040000		4	48.6	0.4	19,400	D	20,700	D	24,300	D
SR 5 / US 1 / Overseas Highway	City Marina Ent	Sombrero Beach Rd	90040000		4	49.0	1.0	19,400	C	20,700	C	24,300	C
SR 5 / US 1 / Overseas Highway	Sombrero Beach Rd	Lime Ln	90040000	MCFS ²	4	50.0	1.8	25,100	C	26,800	C	31,100	D
SR 5 / US 1 / Overseas Highway	Lime Ln	Sadowski Cswy	90040000	MCFS ²	4	51.8	1.7	21,700	C	23,100	C	26,900	C
SR 5 / US 1 / Overseas Highway	Sadowski Cswy	East of Coco Plum Dr/Converging Point of US-1 S and US-1 N	90040000	905040	4	53.6	0.8	15,000	C	16,000	C	18,800	C
SR 5 / US 1 / Overseas Highway	East of Coco Plum Dr/Converging Point of US-1 S and US-1 N	West of Mm 56.1 Burn Point/Curry Hammock State Park Ent	90040000		2	54.4	1.7	15,000	C	16,000	C	18,800	D
SR 5 / US 1 / Overseas Highway	West of Mm 56.1 Burn Point/Curry Hammock State Park Ent	Midpoint of Curry Hammock State Park Ent and Banana Blvd	90040000		2	56.1	0.3	15,000	C	16,000	C	18,800	D
SR 5 / US 1 / Overseas Highway	Midpoint of Curry Hammock State Park Ent and Banana Blvd	West of Kyle Ave	90040000		2	56.4	1.0	15,000	C	16,000	C	18,800	D
SR 5 / US 1 / Overseas Highway	West of Kyle Ave	West of Blue Isle Blvd	90040000		2	57.4	2.3	15,000	C	16,000	C	18,800	D
SR 5 / US 1 / Overseas Highway	West of Blue Isle Blvd	Midpoint of Blue Isle Blvd and Fishing Area Parking	90050000	MCFS ²	2	59.7	0.2	18,100	D	19,300	D	22,500	E
SR 5 / US 1 / Overseas Highway	Midpoint of Blue Isle Blvd and Fishing Area Parking	West of Duck Key Dr	90050000		2	59.9	1.0	18,100	D	19,300	E	22,500	E
SR 5 / US 1 / Overseas Highway	West of Duck Key Dr	East of Duck Key Dr/Converging Point of US-1 S and US-1 N	90050000		2	60.9	0.4	18,100	D	19,300	D	22,500	E
SR 5 / US 1 / Overseas Highway	East of Duck Key Dr/Converging Point of US-1 S and US-1 N	West of N Conch Ave	90050000		2	61.3	1.4	18,100	D	19,300	D	22,500	E
SR 5 / US 1 / Overseas Highway	West of N Conch Ave	East of N Conch Ave	90050000		2	62.8	0.2	18,100	D	19,300	D	22,500	E
SR 5 / US 1 / Overseas Highway	East of N Conch Ave	End of Long Key Channel/ East of Parking Area	90050000	MCFS ²	2	62.9	2.8	18,100	D	19,300	D	22,500	E

FACILITY	FROM STREET	TO STREET	ROADWAY	Count Station ID	Lanes (2-way)	Begin Mile Post	Segment Length (mi)	2045 No Growth Traffic		2045 Moderate Growth Traffic		2045 High Growth Traffic	
								2045 AADT	LOS ¹	2045 AADT	LOS ¹	2045 AADT	LOS ¹
SR 5 / US 1 / Overseas Highway	End of Long Key Channel/ East of Parking Area	65821 Overseas Hwy Ent	90050000		2	65.7	0.2	18,100	D	19,300	D	22,500	D
SR 5 / US 1 / Overseas Highway	65821 Overseas Hwy Ent	West of Long Key State Park Ent	90050000		2	65.9	1.4	18,100	D	19,300	D	22,500	E
SR 5 / US 1 / Overseas Highway	West of Long Key State Park Ent	East of Long Key State Park Ent	90050000		2	67.3	0.3	18,100	D	19,300	D	22,500	E
SR 5 / US 1 / Overseas Highway	East of Long Key State Park Ent	Annes Beach Area Ent	90050000		2	67.6	6.1	18,100	D	19,300	D	22,500	E
SR 5 / US 1 / Overseas Highway	Annes Beach Area Ent	Caloosa Cove Blvd/Caloosa Cove Ent	90050000		2	73.6	0.1	18,100	D	19,300	D	22,500	E
SR 5 / US 1 / Overseas Highway	Caloosa Cove Blvd/Caloosa Cove Ent	Frontage Rd Entrance/East of Gulfview Dr	90060000	900623	2	73.7	0.7	14,700	C	15,700	C	18,400	D
SR 5 / US 1 / Overseas Highway	Frontage Rd Entrance/East of Gulfview Dr	West of Sandy Cove Ave	90060000		2	74.5	0.2	14,700	C	15,700	D	18,400	D
SR 5 / US 1 / Overseas Highway	West of Sandy Cove Ave	East of Sandy Cove Ave	90060000		2	74.6	0.3	14,700	C	15,700	C	18,400	D
SR 5 / US 1 / Overseas Highway	East of Sandy Cove Ave	West of Leserra Ln	90060000		2	74.9	1.4	14,700	C	15,700	D	18,400	D
SR 5 / US 1 / Overseas Highway	West of Leserra Ln	Midpoint of Columbus Dr Ext and Paloma Dr	90060000		2	76.3	0.3	14,700	C	15,700	C	18,400	D
SR 5 / US 1 / Overseas Highway	Midpoint of Columbus Dr Ext and Paloma Dr	Tiki Ln	90060000		2	76.6	0.6	14,700	C	15,700	D	18,400	D
SR 5 / US 1 / Overseas Highway	Tiki Ln	77522 Overseas Hwy/ Begin of the Bridge	90060000		2	77.2	0.3	14,700	C	15,700	C	18,400	D
SR 5 / US 1 / Overseas Highway	77522 Overseas Hwy/ Begin of the Bridge	79901 Overseas Hwy/End of the Bridge	90060000		2	77.5	2.2	14,700	C	15,700	C	18,400	D
SR 5 / US 1 / Overseas Highway	79901 Overseas Hwy/End of the Bridge	Old State Hwy 4a	90060000		2	79.7	0.7	14,700	D	15,700	D	18,400	D
SR 5 / US 1 / Overseas Highway	Old State Hwy 4a	Begin of the Bridge of Whale Harbor Channel/East of Park Rd	90060000	MCFS ²	2	80.4	3.4	20,000	D	21,300	D	24,800	E
SR 5 / US 1 / Overseas Highway	Begin of the Bridge of Whale Harbor Channel/East of Park Rd	End of the Bridge of Whale Harbor Channel/West of Old Hwy	90060000		2	83.8	0.1	20,000	D	21,300	E	24,800	E
SR 5 / US 1 / Overseas Highway	End of the Bridge of Whale Harbor Channel/West of Old Hwy	East of Old Hwy	90060000		2	84.0	0.6	20,000	D	21,300	D	24,800	E
SR 5 / US 1 / Overseas Highway	East of Old Hwy	Frontage Rd Ent	90060000		2	84.6	0.5	20,000	D	22,300	E	24,800	E
SR 5 / US 1 / Overseas Highway	Frontage Rd Ent	East of Smugglers Cove Ent/Begin of the Bridge of Snake Creek Channel	90060000		2	85.0	0.5	20,000	D	22,300	E	24,800	E
SR 5 / US 1 / Overseas Highway	East of Smugglers Cove Ent/Begin of the Bridge of Snake Creek Channel	West of Venetian Blvd/End of the Bridge of Snake Creek Channel	90060000		2	85.5	0.2	20,000	D	22,300	E	24,800	E
SR 5 / US 1 / Overseas Highway	West of Venetian Blvd/End of the Bridge of Snake Creek Channel	East of Venetian Blvd	90060000		2	85.7	0.3	20,000	D	22,300	E	24,800	E
SR 5 / US 1 / Overseas Highway	East of Venetian Blvd	West of Weigh Station Exit	90060000	MCFS ²	2	86.0	0.2	20,000	D	22,300	E	24,800	E
SR 5 / US 1 / Overseas Highway	West of Weigh Station Exit	Orange Ln	90060000		2	86.2	1.5	20,000	D	22,300	E	24,800	E
SR 5 / US 1 / Overseas Highway	Orange Ln	Royal Poinciana Blvd	90060000	MCFS ²	2	87.7	2.4	28,300	E	31,600	F	35,100	F

FACILITY	FROM STREET	TO STREET	ROADWAY	Count Station ID	Lanes (2-way)	Begin Mile Post	Segment Length (mi)	2045 No Growth Traffic		2045 Moderate Growth Traffic		2045 High Growth Traffic	
								2045 AADT	LOS ¹	2045 AADT	LOS ¹	2045 AADT	LOS ¹
SR 5 / US 1 / Overseas Highway	Royal Poinciana Blvd	Harbor View Dr	90060000		4	90.1	2.1	28,300	B	31,600	C	35,100	C
SR 5 / US 1 / Overseas Highway	Harbor View Dr	West of Tree Ln	90060000	900062	4	92.2	0.8	15,100	B	16,900	B	18,900	B
SR 5 / US 1 / Overseas Highway	West of Tree Ln	Harbor View Dr	90060002	905043	4	91.5	0.8	16,200	B	18,400	B	20,200	C
SR 5 / US 1 / Overseas Highway	West of Tree Ln	Buttonwood Bay Clb Ent	90060000	905041	4	93.0	3.3	31,300	B	34,900	C	39,100	C
SR 5 / US 1 / Overseas Highway	Atlantic Blvd/Ocean Bay Dr	Buttonwood Bay Clb Ent	90060001	905042	4	96.4	3.0	19,700	D	22,400	F	24,600	F
SR 5 / US 1 / Overseas Highway	Buttonwood Bay Clb Ent	Atlantic Blvd/Ocean Bay Dr	90060000	MCFS ²	4	96.4	3.1	31,100	D	35,300	D	38,600	E
SR 5 / US 1 / Overseas Highway	Atlantic Blvd/Ocean Bay Dr	99600 Overseas Hwy/East of Atlantic Blvd	90060000		4	99.5	0.0	31,100	C	35,300	C	38,600	C
SR 5 / US 1 / Overseas Highway	99600 Overseas Hwy/East of Atlantic Blvd	Sunset Blvd	90060000		4	99.5	0.4	31,100	C	35,300	C	38,600	C
SR 5 / US 1 / Overseas Highway	Sunset Blvd	Bonefish Ave	90060000		4	99.8	3.5	31,100	C	35,300	C	38,600	C
SR 5 / US 1 / Overseas Highway	Bonefish Ave	Andros Rd	90060000		4	103.3	2.8	31,100	C	35,300	D	38,600	D
SR 5 / US 1 / Overseas Highway	Andros Rd	Trn Ln to CR 905	90060000	900200	4	106.1	0.2	33,400	C	37,900	C	41,600	D
SR 5 / US 1 / Overseas Highway	Trn Ln to CR 905	Summerland Rd	90060000		2	106.3	0.2	33,400	F	37,900	F	41,600	F
SR 5 / US 1 / Overseas Highway	Summerland Rd	Morris Ave	90060000	900001	2	106.5	6.0	24,800	E	28,100	E	30,900	F

1. Reference: 2020 FDOT QUALITY/LEVEL OF SERVICE HANDBOOK

2. Counts obtained as part of the Monroe County Freight Study (MCFS)

Segment LOS C or better and did not warrant a proposed improvement.

The LOS results in **Table 6-6** informs these summary observations:

- ◆ The 2045 No Growth LOS deficiencies will be identical to the 2021 existing results by definition.
- ◆ The Moderate Growth scenario yields LOS values which worsen incrementally compared to the No Growth scenario, given the associated growth in traffic:
 - ◇ 8 segments degrade from LOS C to LOS D or worse. This change means that the total mileage of segments with deficient LOS increases.
 - ◇ 9 segments degrade from LOS D to LOS E or F.
 - ◇ 1 segment degrades from LOS E to LOS F.
 - ◇ At total of 18 segments experience a lower LOS.
- ◆ The High Growth scenario yields LOS values which worsen incrementally compared to the Moderate Growth scenario, given the associated growth in traffic:
 - ◇ 17 segments degrade from LOS C to LOS D or worse. This change means that the total mileage of segments with deficient LOS increases.
 - ◇ 12 segments degrade from LOS D to LOS E or F.
 - ◇ 1 segment degrades from LOS E to LOS F.
 - ◇ At total of 30 segments experience a lower LOS.
- ◆ As noted, before, these results demonstrate the sensitivity of LOS results to small increases in traffic volumes under the Moderate Growth and High Growth scenarios.

The following section compares the LOS results of this study, the *US 1 Transportation Master Plan*, and the 2023 ATTDs, adding further context to the sensitivity of the US 1 LOS values to increases in traffic, which affects both the volume-to-capacity ratio and the travel speed metrics used to gauge traffic service. Cost estimate information is found in **Appendix B**.

Intersection Improvement Recommendations

Based on the LOS results of the 2021 existing conditions and the three 2045 growth scenarios, recommended improvements were evaluated for each intersection. The types of improvements evaluated for the intersections included signal timing improvements, turn lane extensions or additions for US 1, and turn lane additions for the side streets. The LOS resulting from the recommended intersection improvements is shown in **Table 6-7**. The recommended intersection improvements are summarized in **Table 6-8**.

The effect of recommended intersection improvements is summarized as follows:

- ◆ Signal timing adjustments are proposed to reduce side street delays.
- ◆ New turn lanes on side streets are proposed to reduce side street delays.
- ◆ Improvements proposed for the short-term conditions are sufficient for the long-term.
 - ◇ The exception is at Location 8 – US 1 at the Ocean Bay Drive/Atlantic Avenue intersection.
 - ◇ An added southbound left turn lane is needed for Moderate and High Growth scenarios.
- ◆ The resulting LOS for the 2045 Build conditions are good except for the High-Growth scenario, which is much less likely to occur given growth management regulations.

Table 6-7 Intersection LOS with Recommended Improvements

Signalized Intersection	US 1 Orientation	2045 Build, No Growth Traffic Intersection LOS		2045 Build, Moderate Growth Traffic Intersection LOS		2045 Build, High Growth Traffic Intersection LOS	
		AM	PM	AM	PM	AM	PM
US 1 at Cross Street	EB/WB	B	B	B	B	C	B
US 1 at MacDonald Avenue	EB/WB	B	B	B	B	B	B
US 1 at Crane Boulevard	EB/WB	B	B	B	B	C	B
US 1 at Key Deer Boulevard	EB/WB	B	B	B	B	C	B
US 1 at 107th Street	EB/WB	A	B	A	B	A	B
US 1 at 109th Street	EB/WB	B	B	B	B	B	B
US 1 at Bessie Drive/Sunshine Avenue	NB/SB	C	B	C	B	C	C
US 1 at Ocean Bay Drive/Atlantic Avenue	NB/SB	C	D	C	D	C	E
US 1 at Tarpon Basin Drive	NB/SB	B	B	B	C	B	C
US 1 at Key Largo School Exit (as signalized intersection)	NB/SB	B	A	B	A	B	A

The estimated 2023 costs for the identified intersection improvement actions presented in **Table 6-8** are common to all scenarios and are summarized as follows:

- ◆ No Growth Scenario: \$420,820
- ◆ Moderate Growth Scenario: \$750,220
- ◆ High Growth Scenario: \$750,220

The US 1 at Ocean Bay Drive/Atlantic Avenue intersection has an additional recommendation for the Moderate and High Growth Scenarios to account for the cost differences.

Table 6-8 Intersection Recommended Improvements (Moderate-High Growth Scenarios)

ID No.	Signalized Intersection	Peak	Intersection Volume (Existing)	Higher-Direction US 1 Truck %	2021/2045 Improvements Additional Improvement		Additional Improvement	Cost
					Traffic Signal Improvement	Capacity Improvement		
1	US 1 at Cross St	AM	2,929	8%	Increased green time on northbound (Cross St) (taken from mainline).	Exclusive 300'-storage northbound (Cross St) left-turn lane desired, but feasibility issues exist.	US 1 Transp. Master Plan mentions widening to 6 lanes.	\$29,652.94
		PM	3,380	3%				
2	US 1 at MacDonald Ave	AM	2,583	8%	Increased green time on northbound (MacDonald Ave) (taken from mainline).	No changes.	US 1 Transp. Master Plan mentions widening to 6 lanes.	-
		PM	2,939	3%				
3	US 1 at Crane Blvd	AM	1,290	14%	No changes.	No changes.		-
		PM	1,467	4%				
4	US 1 at Key Deer Blvd	AM	1,598	11%	Increased green time on southbound left (Key Deer Blvd) (taken from northbound, Key Deer Blvd).	No changes.		-
		PM	1,580	7%				
5	US 1 at 107th St	AM	2,185	9%	Increased green time on southbound (107th St) (taken from mainline).	Added 100' SBL (minor street) lane.		\$33,062.39
		PM	2,027	6%				
6	US 1 at 109th St	AM	2,061	9%	Increased green time on northbound (109th St) and southbound (109th St) (taken from mainline).	Added 150' SBL (minor street) lane.		\$39,566.65
		PM	1,966	7%				
7	US 1 at Bessie Dr/Sunshine Ave	AM	2,163	10%	Increased green time on northbound left (US 1) and southbound left (US 1) (taken from mainline thru).	No changes.		-
		PM	2,126	6%				
8	US 1 at Ocean Bay Dr/Atlantic Ave	AM	2,516	9%	Increased green time on southbound left (US 1), decreased green time on northbound left (US 1), increased green time on southbound thru (US 1) and northbound thru (US 1).	Lengthened existing SBLT lane from 230' storage to 400' in no growth scenario. Added second 400' SBLT lane in moderate and high growth scenarios.		\$40,768.92
		PM	2,896	8%				\$329,398.64
9	US 1 at Tarpon Basin Dr/Publix Entrance	AM	2,552	8%	Increased green time on eastbound (Tarpon Basin Dr), westbound (Publix), and southbound left (US 1) (taken from mainline thru).	No changes.		-
		PM	2,876	7%				
10	US 1 at Pompano Ave/ Key Largo School	AM	2,383	7%	Signalize this intersection with nearby pedestrian signal timings as basis.	No changes.	Provide police control during peak school times if unsignalized.	\$277,770.00
		PM	2,493	4%				

Segment Improvement Recommendations

Based on the LOS results of the 2021 existing conditions and the three 2045 growth scenarios, recommended improvements were identified and evaluated for the segments. The types of improvements evaluated for the segments using the LOS analysis methodology included new left turn or right turn lanes on US 1, or access management strategies on US 1, such as consolidation of driveways or new frontage roads. For the turn lane improvements, the capacity of the segment was increased to reflect the increased capacity that the turn lanes will provide to the segment. For the access management strategies, it was assumed that the speed on US 1 would be increased by 5 mph and the resulting increase in capacity was applied to the entire segment.

For consistency with Monroe County's growth management regulations, no new through travel lanes on US 1 were proposed. The approach utilized was to reduce interruptions to uniform travel speeds along US 1 by removing turns from through lanes and managing other points of friction. Examples of potential improvement actions are shown in **Figure 6-2**.

No segment improvements were recommended for the Key West segments due to restrictions in right-of-way (ROW). The recommended improvements for the segments north of Key West are generalized and do not provide the specific location of the turn-lanes or access management strategies cannot be specified, pending further analysis. The effect on capacity for each recommended improvement is applied to the entire segment. The recommended segment improvements are summarized in **Table 6-9**. The LOS results with the recommended segment improvements are shown in **Table 6-10** below.

Figure 6-2 Potential Improvement Actions



Source: Google Maps.

Table 6-9 Segment Recommendations

ID NO.	FACILITY	FROM STREET	TO STREET	ROADWAY	Lanes (2-way)	Segment Length (mi)	2021 AADT	2021 Heavy Vehicle %	Proposed Improvements ¹			ROW Impact ²	Proposed Lane Lengths (ft)			Total Cost ³
									2021/2045 No Growth Traffic	2045 Moderate Growth Traffic	2045 High Growth Traffic		Total Full-Width Distance (Left-Turn Lanes)	Total Full-Width Distance (Right-Turn Lanes)		
1	SR 5 / US 1 / Overseas Highway	College Rd	Midpoint of Cross St and MacDonald Ave	90010000	4	0.3	41,300	4.2%	Access Management - South Side of US 1 - Issues include high driveway density, on-street parking, wide-open driveways, and multiple US 1 access points for single property. Suncrest Rd could function as a sort of access road should access to US 1 be limited.			Continuous EB right-turn lane (appx 1,500' of full width) could be feasible as ROW appears to be adequate. No left turns needed as there is a median currently restricting left turns.		1,500		\$367,081
2	SR 5 / US 1 / Overseas Highway	West of Coppitt Rd	Boca Chica Rd	90020000	2	0.9	25,600	9.1%	Access Management - North Side of US 1 - Issues include high driveway density and multiple US 1 access points for single property. Unnamed access road is present but not for entire length of area.			Continuous WB right-turn lane (appx 4,100' of full width) could be feasible as ROW appears to be adequate. Potential interference with sidewalks. No other left turn lanes necessary as there are already exclusive left-turn lanes for most driveways in this section.		4,100		\$979,489
3	SR 5 / US 1 / Overseas Highway	East of Dobie St	East of E Shore Dr	90020000	2	1.2	13,200	30.0%	Access Management - South Side of US 1 - Issues include high driveway density, wide-open driveways, and multiple access points for single businesses.			Continuous EB right-turn lane (appx 4,200' of full width) could be feasible as ROW appears to be adequate. No additional left turn lanes needed as there is already one, along with exclusive left-turn lanes, for most of the segment.		4,200		\$1,003,043
4	SR 5 / US 1 / Overseas Highway	Begin of the Bridge/ West of Ships Way	Palmetto Ave	90020000	2	0.5	18,500	8.9%	Access Management - North Side of US 1/South Side of US 1 - Issues include high driveway density, wide-open driveways, and multiple access points for single property.			Continuous EB and WB right-turn lanes (appx 1,900' of full width each way) could be feasible as ROW appears to be adequate. Potential interference with sidewalks. No additional left turns treatment needed as there is already a TWLTL.		3,800		\$908,827
5	SR 5 / US 1 / Overseas Highway	Loma Ln	East of Chapman St	90020000	3	0.4	18,500	8.9%			Access Management - North Side of US 1/South Side of US 1 - Issues include high driveway density, wide-open driveways, and multiple access points for single property.	Continuous EB and WB right-turn lanes (appx 1,200' of full width each way) could be feasible as ROW appears to be adequate. Potential interference with sidewalks and bus stops. No additional left turns treatment needed as there is already a TWLTL.		2,400		\$579,069
6	SR 5 / US 1 / Overseas Highway	East of Chapman St	Cunningham Ln	90020000	2	0.2	18,500	8.9%	Access Management - North Side of US 1/South Side of US 1 - Issues include high driveway density and multiple access points for single property. No center left turn lanes affecting through traffic.			Continuous EB and WB right-turn lanes (approx.. 1,300' of full width each way) could be feasible as ROW appears to be adequate. Potential interference with sidewalks. Install raised median with left turn lanes from WB left-turn lane WB Key Deer Blvd. to Big Pine Storage (approx. 1,000').	1,000	2,600		\$1,002,000
7	SR 5 / US 1 / Overseas Highway	Sands Rd	2nd St	90030000	2	0.2	12,200	14.6%			Continuous WB right-turn lane (appx 700' full width) between 1st St and Sands Rd, appx 200' EB right-turn lane at Industrial Rd.	Apparent sufficient ROW exists for these turn lanes. Potential interference with bus stop.		900		\$225,757
8	SR 5 / US 1 / Overseas Highway	Palm Island Ave	26 Street	90040000	4	0.4	19,400	15.7%	Access Management - North Side of US 1/South Side of US 1 - Issues include high driveway density, on-street parking, wide-open driveways, and multiple US 1 access points for single property.			Install raised median with left turn lanes (approx.. 2,300' full width).	2,300			\$869,400

ID NO.	FACILITY	FROM STREET	TO STREET	ROADWAY	Lanes (2-way)	Segment Length (mi)	2021 AADT	2021 Heavy Vehicle %	Proposed Improvements¹			ROW Impact²	Proposed Lane Lengths (ft)			Total Cost³
									2021/2045 No Growth Traffic	2045 Moderate Growth Traffic	2045 High Growth Traffic		Total Full-Width Distance (Left-Turn Lanes)	Total Full-Width Distance (Right-Turn Lanes)		
9	SR 5 / US 1 / Overseas Highway	26 Street	30 Street (Marathon)	90040000	4	0.2	19,400	15.7%	Access Management - North Side of US 1/South Side of US 1 - Issues include high driveway density, wide-open driveways, and multiple access points for single property.			Install raised median with left turn lanes (approx.. 1,100' full width).	1,100			\$415,800
10	SR 5 / US 1 / Overseas Highway	30 Street (Marathon)	City Marina Ent	90040000	4	0.4	19,400	15.7%	EB and WB right-turn lanes at 33rd St signal (appx 200' full width each).			Apparent sufficient ROW exists for these turn lanes. Potential interference with sidewalks.		400		\$107,986
11	SR 5 / US 1 / Overseas Highway	Sombrero Beach Rd	Lime Ln	90040000	4	1.8	25,100	11.5%			Access Management - North Side of US 1/South Side of US 1 - Issues include high driveway density, wide-open driveways, and multiple access points for single property.	Continuous EB and WB right-turn lanes (appx 3,700' of full width on the north side and appx 1.83 mi of full width on the south side. Work within ROW is potentially feasible. Potential interference with sidewalks and utility poles. No further TWLTLs are needed here since there is already a TWLTL for much of it, as well as grass medians and left-turn lanes.		13,400		\$3,170,024
12	SR 5 / US 1 / Overseas Highway	West of Kyle Ave	West of Blue Isle Blvd	90040000	2	2.3	15,000	13.0%			Acc. Mgmt. (N Side of US 1 - Grassy Key RV Park to Keys Cable Park, S Side of US 1 - Entire Segment).	Continuous EB and WB right-turn lanes (appx 3,800' of full width on the north side and appx 4,900' of full width on the south side. Sufficient ROW appears to be available. No further left turn lane treatment needed.		8,700		\$2,062,980
13	SR 5 / US 1 / Overseas Highway	West of Blue Isle Blvd	Midpoint of Blue Isle Blvd and Fishing Area Parking	90050000	2	0.2	18,100	22.8%	Continuous WB right-turn lane (approx.. 900' full width) for residential area.			Apparent sufficient ROW exists for this turn lane.		900		\$225,757
14	SR 5 / US 1 / Overseas Highway	West of N Conch Ave	East of N Conch Ave	90050000	2	0.2	18,100	22.8%	EB and WB Right-Turn Lanes at N Conch Ave (approx.. 200' full width each).			Apparent sufficient ROW exists for these turn lanes.		400		\$107,986
15	SR 5 / US 1 / Overseas Highway	East of Long Key State Park Ent	Annes Beach Area Ent	90050000	2	6.1	18,100	22.8%	Install raised median with left turn lanes (Long Key Lake Dr to Layton Dr) (approx. 1,800' full width) and Left-Turn Lane (appx 200' full width) at Fiesta Key Marina			Install raised median with left turn lanes (approx.. 2,000' full width).	2,000			\$756,000
16	SR 5 / US 1 / Overseas Highway	East of Sandy Cove Ave	West of Leserra Ln	90060000	2	1.4	14,700	17.9%		Install raised median with left turn lanes (appx 1.42 mi full width).		Install raised median with left turn lanes (approx.. 7,500' full width).	7,500			\$2,835,000
17	S0R 5 / US 1 / Overseas Highway	79901 Overseas Hwy/End of the Bridge	Old State Hwy 4a	90060000	2	0.7	14,700	17.9%	Continuous EB right-turn lane (400' full width) between La Siesta Resort and Old Hwy.			Apparent sufficient ROW exists for this turn lane.		400		\$107,986
18	SR 5 / US 1 / Overseas Highway	Old State Hwy 4a	Begin of the Bridge of Whale Harbor Channel/East of Park Rd	90060000	2	3.4	20,000	12.2%	Access Management (North Side of US 1/South Side of US 1) - Issues include high driveway density, on-street parking, wide-open driveways, and multiple US 1 access points for single property. Suncrest Rd could function as a sort of access road should access to US 1 be limited.			Continuous EB and WB right-turn lanes (appx 2.95 mi of full width on each side). Sufficient ROW appears to be available. No further left turn lane treatment needed.		31,200		\$7,362,662

ID NO.	FACILITY	FROM STREET	TO STREET	ROADWAY	Lanes (2-way)	Segment Length (mi)	2021 AADT	2021 Heavy Vehicle %	Proposed Improvements¹			ROW Impact²	Proposed Lane Lengths (ft)		Total Cost³
									2021/2045 No Growth Traffic	2045 Moderate Growth Traffic	2045 High Growth Traffic		Total Full-Width Distance (Left-Turn Lanes)	Total Full-Width Distance (Right-Turn Lanes)	
19	SR 5 / US 1 / Overseas Highway	East of Old Hwy	Frontage Rd Ent	90060000	2	0.5	20,000	12.2%	EB and WB left-turn and right-turn lanes at the three Frontage Rd intersections (200' full width each).			Apparent sufficient ROW exists for these turn lanes.	600	600	\$284,483
20	SR 5 / US 1 / Overseas Highway	West of Venetian Blvd/End of the Bridge of Snake Creek Channel	East of Venetian Blvd	90060000	2	0.3	20,000	12.2%	Access Management - North Side of US 1 - Issues include wide-open driveways and multiple entrances to a single business.			ROW sufficient to provide a single SB RT Lane for access to businesses north of US 1, restricting access to a single entrance. (200 ft full width).		200	\$60,878
21	SR 5 / US 1 / Overseas Highway	West of Weigh Station Exit	Orange Ln	90060000	2	1.5	20,000	12.2%	Access Management - North Side of US 1 (AmeriGas to Suburban Propane) - Issues include wide- open driveways and multiple entrances to a single business.			Sufficient ROW is available to provide a continuous SB RT lane from Suburban Propane to AmeriGas (1,125 ft full width).		1,125	\$278,754
22	SR 5 / US 1 / Overseas Highway	Orange Ln	Royal Poinciana Blvd	90060000	2	2.4	28,300	14.7%	Access Management - South Side of US 1 (Orange Ln to Coral Rd) - Issues include high driveway density, on-street parking, wide-open driveways, and multiple US 1 access points for single property. Suncrest Rd could function as a sort of access road should access to US 1 be limited.			Sufficient ROW is available for a NB RT lane (4,900 ft full width). TWLTL already present for most of the segment.		4,900	\$1,167,922
23	SR 5 / US 1 / Overseas Highway	Atlantic Blvd/Ocean Bay Dr	Buttonwood Bay Club Ent	90060001	4	3.0	19,700	9.8%		Access Management - North Side of US 1 - Issues include a high driveway density for southbound US 1. Multiple access points provided for some businesses.		Sufficient ROW available for continuous RT and LT lanes in the US 1 SB direction from Ocean Bay Dr extending approximately 1.73 miles south. Start and end locations of turn lanes require further assessment including turning movement counts.	9,150	9,150	\$3,936,897
24	SR 5 / US 1 / Overseas Highway	Buttonwood Bay Club Ent	Atlantic Blvd/Ocean Bay Dr	90060000	4	3.1	31,100	9.8%	Access Management - South Side of US 1 - Issues include a high driveway density for northbound US 1. Multiple access points provided for some businesses.			Sufficient ROW available for continuous RT and LT lanes in the US 1 NB direction from Ocean Drive extending approximately 2 miles north. Start and end locations of turn lanes require further assessment including turning movement counts.	10,600	10,600	\$4,556,312
25	SR 5 / US 1 / Overseas Highway	Bonefish Ave	Andros Rd	90060000	4	2.8	31,100	25.2%		Access Management - North Side of US 1/South Side of US 1 - Issues include potentially excessive number of median openings on southbound US 1 and a high driveway density on southbound US 1.		Restrict median openings in the southbound direction along US 1 requiring drivers to U-turn at set locations. Sufficient ROW to provide continuous NB RT lane 200ft prior to the Humane Animal Care Coalition to Keys Lake Villas on northbound US 1 (1,500 ft full width). Sufficient ROW for SB RT lane from Andros Rd to Sexton Cove Dr (2,000 ft full width) and remove duplicate business entrances.		3,500	\$838,164
26	SR 5 / US 1 / Overseas Highway	Turn Ln to CR 905	Summerland Rd	90060000	2	0.2	33,400	9.1%	Access Management - North Side of US 1/South Side of US 1 - Multiple access points exist on the south side of US 1 for gas stations.			Remove entrances to gas station on the south side of US 1, requiring drivers to use the intersection at CR 905 to access these businesses. Apparent sufficient ROW is available to install a continuous right turn lane north of US 1 for side street access extending from Summerland Rd for approximately 675 ft.		675	\$172,760

1. Costs are provided under the assumption that turn lanes will be needed for the entire length specified in the "Proposed Improvements" and "Right of Way Impacts" columns (worst-case scenario). However, start and end locations of turn lanes require further assessment including turning movement counts. Additionally, there may be non-ROW feasibility issues, such as conflicts with sidewalks, utilities, etc. at some of these locations.

2. Segment LOS was C or better and did not warrant a proposed improvement.

3. Costs estimated based on values obtained as part of the Monroe County Freight Study (MCFS).

Table 6-10 Segment LOS with Recommended Improvement Comparison

FACILITY	FROM STREET	TO STREET	ROADWAY	Count Station ID	Lanes (2-way)	Begin Mile Post (mi)	Segment Length (mi)	2045 No Growth Traffic		2045 Moderate Growth Traffic		2045 High Growth Traffic	
								Base LOS¹	Build LOS¹	Base LOS¹	Build LOS¹	Base LOS¹	Build LOS¹
SR 5 / US 1 / Whitehead St	Fleming St	Truman Ave	90010000	905013	2	0.0	0.4	D	D	D	D	E	E
SR 5 / US 1 / Truman Ave	Whitehead St	Windsor Ln	90010000	905011	2	0.4	0.4	F	F	F	F	F	F
SR 5 / US 1 / Truman Ave	Windsor Ln	White St	90010000	905008	2	0.8	0.3	F	F	F	F	F	F
SR 5 / US 1 / Truman Ave	White St	Jose Marti Dr	90010000	905004	2	1.1	0.2	F	F	F	F	F	F
SR 5 / US 1 / N Roosevelt Blvd	Jose Mariti Dr	1714 Blk N Roosevelt Blvd Ent	90010000		3	1.3	0.2	F	F	F	F	F	F
SR 5 / US 1 / N Roosevelt Blvd	1714 Blk N Roosevelt Blvd Ent	Palm Ave/1st St	90010000		4	1.5	0.1	F	F	F	F	F	F
SR 5 / US 1 / N Roosevelt Blvd	Palm Ave/1st St	1910 Blk N Roosevelt Blvd Ent / Bay St	90010000	905034	4	1.6	0.1	F	F	F	F	F	F
SR 5 / US 1 / N Roosevelt Blvd	1910 Blk N Roosevelt Blvd Ent / Bay St	Sigsbee Rd	90010000		4	1.7	1.0	F	F	F	F	F	F
SR 5 / US 1 / N Roosevelt Blvd	Sigsbee Rd	S Roosevelt Ave/A1A	90010000	900105	4	2.7	1.2	F	F	F	F	F	F
SR 5 / US 1 / Overseas Highway	S Roosevelt Ave/A1A	College Rd	90010000	900201	4	3.9	0.3	F	F	F	F	F	F
SR 5 / US 1 / Overseas Highway	College Rd	Midpoint of Cross St and MacDonald Ave	90010000	900165	4	4.2	0.3	F	F	F	F	F	F
SR 5 / US 1 / Overseas Highway	Midpoint of Cross St and MacDonald Ave	Saratoga Ave	90020000	MCFS²	4	4.5	3.5	C	C	C	C	C	C
SR 5 / US 1 / Overseas Highway	Saratoga Ave	Rockland Dr	90020000	900010	4	8.1	1.1	C	C	C	C	C	C
SR 5 / US 1 / Overseas Highway	Rockland Dr	East of Calle Uno	90020000		2	9.2	0.3	F	F	F	F	F	F
SR 5 / US 1 / Overseas Highway	East of Calle Uno	West of Coppitt Rd	90020000		2	9.5	0.3	E	E	F	F	F	F
SR 5 / US 1 / Overseas Highway	West of Coppitt Rd	Boca Chica Rd	90020000		2	9.8	0.9	E	E	E	E	F	F
SR 5 / US 1 / Overseas Highway	Boca Chica Rd	West Boat Ramp/East of Jade Dr	90020000	MCFS²	2	10.7	0.2	D	D	D	D	E	E
SR 5 / US 1 / Overseas Highway	West Boat Ramp/East of Jade Dr	East Boat Ramp/West of Cannon Royal Dr	90020000		2	10.9	0.2	D	D	D	D	E	E
SR 5 / US 1 / Overseas Highway	East Boat Ramp/West of Cannon Royal Dr	East of Cannon Royal Dr	90020000		2	11.1	0.2	C	C	D	D	D	D
SR 5 / US 1 / Overseas Highway	East of Cannon Royal Dr	West of Blue Water Dr	90020000		2	11.3	3.0	D	D	D	D	D	D
SR 5 / US 1 / Overseas Highway	West of Blue Water Dr	East of Park Dr/Begin of the Bridge	90020000		2	14.3	0.2	C	C	D	D	D	D
SR 5 / US 1 / Overseas Highway	East of Park Dr/Begin of the Bridge	West of W Circle Dr/ End of the Bridge	90020000		2	14.5	0.2	D	D	D	D	D	D
SR 5 / US 1 / Overseas Highway	West of W Circle Dr/ End of the Bridge	Midpoint of E Circle Dr and Begin of the Bridge	90020000		2	14.7	0.4	C	C	D	D	D	D
SR 5 / US 1 / Overseas Highway	Midpoint of E Circle Dr and Begin of the Bridge	West of South Side of US 1 Point Dr/End of the Bridge	90020000		2	15.1	1.5	D	D	D	D	D	D
SR 5 / US 1 / Overseas Highway	West of South Side of US 1 Point Dr/End of the Bridge	Mosher Dr	90020000		2	16.6	0.6	D	D	D	D	E	E
SR 5 / US 1 / Overseas Highway	Mosher Dr	West of Crane Blvd	90020000		2	17.1	2.1	D	D	D	D	E	E
SR 5 / US 1 / Overseas Highway	West of Crane Blvd	East of Crane Blvd	90020000		2	19.2	0.2	D	D	D	D	E	E
SR 5 / US 1 / Overseas Highway	East of Crane Blvd	SR 939B	90020000		2	19.5	0.5	D	D	D	D	E	E
SR 5 / US 1 / Overseas Highway	SR 939B	Erie Dr	90020000		2	20.0	0.8	D	D	D	D	E	E
SR 5 / US 1 / Overseas Highway	Erie Dr	East of Spanish Main Dr	90020000		2	20.7	2.4	D	D	D	D	D	D
SR 5 / US 1 / Overseas Highway	East of Spanish Main Dr	West of Henry St/ Parking Area	90020000		2	23.1	0.7	D	D	D	D	E	E
SR 5 / US 1 / Overseas Highway	West of Henry St/ Parking Area	Midpoint of Henry St and Dobie St	90020000	MCFS²	2	23.8	0.2	D	D	D	D	D	D
SR 5 / US 1 / Overseas Highway	Midpoint of Henry St and Dobie St	East of Dobie St	90020000		2	24.0	0.1	D	D	D	D	E	E
SR 5 / US 1 / Overseas Highway	East of Dobie St	East of E Shore Dr	90020000		2	24.1	1.2	D	C	D	D	D	D
SR 5 / US 1 / Overseas Highway	East of E Shore Dr	Indies Rd	90020000		2	25.3	1.9	D	D	D	D	D	D
SR 5 / US 1 / Overseas Highway	Indies Rd	East of W Indies Dr/ Begin of the Bridge	90020000		2	27.2	0.3	D	D	D	D	D	D
SR 5 / US 1 / Overseas Highway	East of W Indies Dr/ Begin of the Bridge	West of Middle Torch Rd/ End of the Bridge	90020000		2	27.5	0.3	D	D	D	D	E	E

FACILITY	FROM STREET	TO STREET	ROADWAY	Count Station ID	Lanes (2-way)	Begin Mile Post (mi)	Segment Length (mi)	2045 No Growth Traffic		2045 Moderate Growth Traffic		2045 High Growth Traffic	
								Base LOS¹	Build LOS¹	Base LOS¹	Build LOS¹	Base LOS¹	Build LOS¹
SR 5 / US 1 / Overseas Highway	West of Middle Torch Rd/ End of the Bridge	Midpoint of SR-4A and Middle Torch Rd	90020000	900109	2	27.8	0.3	F	F	F	F	F	F
SR 5 / US 1 / Overseas Highway	Midpoint of SR-4A and Middle Torch Rd	East of Barry Ave/Begin of the Bridge	90020000		2	28.1	0.6	F	F	F	F	F	F
SR 5 / US 1 / Overseas Highway	East of Barry Ave/Begin of the Bridge	Midpoint of North Side of US 1 Pine Channel	90020000		2	28.6	0.9	F	F	F	F	F	F
SR 5 / US 1 / Overseas Highway	Midpoint of North Side of US 1 Pine Channel	Begin of the Bridge/ West of Ships Way	90020000	900227	2	29.5	0.1	F	F	F	F	F	F
SR 5 / US 1 / Overseas Highway	Begin of the Bridge/ West of Ships Way	Palmetto Ave	90020000		2	29.6	0.5	F	F	F	F	F	F
SR 5 / US 1 / Overseas Highway	Palmetto Ave	Loma Ln	90020000		2	30.1	0.1	F	F	F	F	F	F
SR 5 / US 1 / Overseas Highway	Loma Ln	East of Chapman St	90020000		3	30.2	0.4	C	C	C	C	F	C
SR 5 / US 1 / Overseas Highway	East of Chapman St	Cunningham Ln	90020000		2	30.6	0.2	F	F	F	F	F	F
SR 5 / US 1 / Overseas Highway	Cunningham Ln	Sands Rd	90020000		2	30.8	0.2	F	F	F	F	F	F
SR 5 / US 1 / Overseas Highway	Sands Rd	2nd St	90030000	MCF5²	2	31.1	0.2	C	C	C	C	D	D
SR 5 / US 1 / Overseas Highway	2nd St	West of Long Beach Rd	90030000		2	31.2	1.5	C	C	D	D	D	D
SR 5 / US 1 / Overseas Highway	West of Long Beach Rd	East of Long Beach Rd/Begin of the Bridge	90030000		2	32.8	0.3	C	C	C	C	D	D
SR 5 / US 1 / Overseas Highway	East of Long Beach Rd/Begin of the Bridge	Spanish Harbor Key Beach Ent	90030000		2	33.1	1.9	C	C	D	D	D	D
SR 5 / US 1 / Overseas Highway	Spanish Harbor Key Beach Ent	East of Spanish Harbor Key/Begin of the Bridge	90030000		3	35.0	0.3	B	B	B	B	B	B
SR 5 / US 1 / Overseas Highway	East of Spanish Harbor Key/Begin of the Bridge	East of Bahia Honda Park Ent	90030000		4	35.3	1.8	B	B	B	B	B	B
SR 5 / US 1 / Overseas Highway	East of Bahia Honda Park Ent	Converging Point of US-1 S and US-1 N	90030000	900066	2	37.1	0.0	C	C	C	C	D	D
SR 5 / US 1 / Overseas Highway	Converging Point of US-1 S and US-1 N	Begin of Ohio Key	90030000		2	37.1	1.4	C	C	C	C	D	D
SR 5 / US 1 / Overseas Highway	Begin of Ohio Key	Midpoint of Ohio Key	90030000		2	38.6	0.2	C	C	C	C	D	D
SR 5 / US 1 / Overseas Highway	Midpoint of Ohio Key	Palm Island Ave	90030000		2	38.8	9.2	C	C	C	C	C	C
SR 5 / US 1 / Overseas Highway	Palm Island Ave	26 Street	90040000	900642	4	48.0	0.4	D	C	D	C	F	C
SR 5 / US 1 / Overseas Highway	26 Street	30 Street (Marathon)	90040000		4	48.4	0.2	D	C	D	C	D	C
SR 5 / US 1 / Overseas Highway	30 Street (Marathon)	City Marina Ent	90040000		4	48.6	0.4	D	D	D	D	D	D
SR 5 / US 1 / Overseas Highway	City Marina Ent	Sombrero Beach Rd	90040000		4	49.0	1.0	C	C	C	C	C	C
SR 5 / US 1 / Overseas Highway	Sombrero Beach Rd	Lime Ln	90040000	MCF5²	4	50.0	1.8	C	C	C	C	D	C
SR 5 / US 1 / Overseas Highway	Lime Ln	Sadowski Cswy	90040000	MCF5²	4	51.8	1.7	C	C	C	C	C	C
SR 5 / US 1 / Overseas Highway	Sadowski Cswy	East of Coco Plum Dr/ Point of US-1 S and US-1 N	90040000	905040	4	53.6	0.8	C	C	C	C	C	C
SR 5 / US 1 / Overseas Highway	East of Coco Plum Dr/ Point of US-1 S and US-1 N	West of Mm 56.1 Burn Pt/Curry Hammock State Park	90040000		2	54.4	1.7	C	C	C	C	D	D
SR 5 / US 1 / Overseas Highway	West of Mm 56.1 Burn Point/Curry Hammock State Park Ent	Midpoint of Curry Hammock State Park Ent and Banana Blvd	90040000		2	56.1	0.3	C	C	C	C	D	D
SR 5 / US 1 / Overseas Highway	Midpoint of Curry Hammock State Park Ent and Banana Blvd	West of Kyle Ave	90040000		2	56.4	1.0	C	C	C	C	D	D
SR 5 / US 1 / Overseas Highway	West of Kyle Ave	West of Blue Isle Blvd	90040000		2	57.4	2.3	C	C	C	C	D	C
SR 5 / US 1 / Overseas Highway	West of Blue Isle Blvd	Midpoint of Blue Isle Blvd and Fishing Area Parking	90050000	MCF5²	2	59.7	0.2	D	D	D	D	E	E
SR 5 / US 1 / Overseas Highway	Midpoint of Blue Isle Blvd and Fishing Area Parking	West of Duck Key Dr	90050000		2	59.9	1.0	D	D	E	E	E	E
SR 5 / US 1 / Overseas Highway	West of Duck Key Dr	E of Duck Key Dr/Converging Point of US-1 S/ US-1 N	90050000		2	60.9	0.4	D	D	D	D	E	E
SR 5 / US 1 / Overseas Highway	E of Duck Key Dr/Converging Point of US-1 S/ US-1 N	West of N Conch Ave	90050000		2	61.3	1.4	D	D	D	D	E	E
SR 5 / US 1 / Overseas Highway	West of N Conch Ave	East of N Conch Ave	90050000		2	62.8	0.2	D	D	D	D	E	D
SR 5 / US 1 / Overseas Highway	East of N Conch Ave	End of Long Key Channel/ East of Parking Area	90050000		2	62.9	2.8	D	D	D	D	E	E
SR 5 / US 1 / Overseas Highway	End of Long Key Channel/ East of Parking Area	65821 Overseas Hwy Ent	90050000		2	65.7	0.2	D	D	D	D	D	D
SR 5 / US 1 / Overseas Highway	65821 Overseas Hwy Ent	West of Long Key State Park Ent	90050000		2	65.9	1.4	D	D	D	D	E	E

FACILITY	FROM STREET	TO STREET	ROADWAY	Count Station ID	Lanes (2-way)	Begin Mile Post (mi)	Segment Length (mi)	2045 No Growth Traffic		2045 Moderate Growth Traffic		2045 High Growth Traffic	
								Base LOS ¹	Build LOS ¹	Base LOS ¹	Build LOS ¹	Base LOS ¹	Build LOS ¹
SR 5 / US 1 / Overseas Highway	West of Long Key State Park Ent	East of Long Key State Park Ent	90050000		2	67.3	0.3	D	D	D	D	E	E
SR 5 / US 1 / Overseas Highway	East of Long Key State Park Ent	Annes Beach Area Ent	90050000		2	67.6	6.1	D	D	D	D	E	D
SR 5 / US 1 / Overseas Highway	Annes Beach Area Ent	Caloosa Cove Blvd/Caloosa Cove Ent	90050000		2	73.6	0.1	D	D	D	D	E	E
SR 5 / US 1 / Overseas Highway	Caloosa Cove Blvd/Caloosa Cove Ent	Frontage Rd Entrance/East of Gulfview Dr	90060000	900623	2	73.7	0.7	C	C	C	C	D	D
SR 5 / US 1 / Overseas Highway	Frontage Rd Entrance/East of Gulfview Dr	West of Sandy Cove Ave	90060000		2	74.5	0.2	C	C	D	D	D	D
SR 5 / US 1 / Overseas Highway	West of Sandy Cove Ave	East of Sandy Cove Ave	90060000		2	74.6	0.3	C	C	C	C	D	D
SR 5 / US 1 / Overseas Highway	East of Sandy Cove Ave	West of Leserra Ln	90060000		2	74.9	1.4	C	C	D	C	D	D
SR 5 / US 1 / Overseas Highway	West of Leserra Ln	Midpoint of Columbus Dr Ext and Paloma Dr	90060000		2	76.3	0.3	C	C	C	C	D	D
SR 5 / US 1 / Overseas Highway	Midpoint of Columbus Dr Ext and Paloma Dr	Tiki Ln	90060000		2	76.6	0.6	C	C	D	D	D	D
SR 5 / US 1 / Overseas Highway	Tiki Ln	77522 Overseas Hwy/ Begin of the Bridge	90060000		2	77.2	0.3	C	C	C	C	D	D
SR 5 / US 1 / Overseas Highway	77522 Overseas Hwy/ Begin of the Bridge	79901 Overseas Hwy/End of the Bridge	90060000		2	77.5	2.2	C	C	C	C	D	D
SR 5 / US 1 / Overseas Highway	79901 Overseas Hwy/End of the Bridge	Old State Hwy 4a	90060000		2	79.7	0.7	D	D	D	D	D	D
SR 5 / US 1 / Overseas Highway	Old State Hwy 4a	Begin Bridge of Whale Harbor Channel/East of Park Rd	90060000		2	80.4	3.4	D	D	D	D	E	E
SR 5 / US 1 / Overseas Highway	Begin Bridge of Whale Harbor Channel/E of Park Rd	End Bridge of Whale Harbor Channel/West of Old Hwy	90060000		2	83.8	0.1	D	D	E	E	E	E
SR 5 / US 1 / Overseas Highway	End Bridge of Whale Harbor Channel/W of Old Hwy	East of Old Hwy	90060000		2	84.0	0.6	D	D	D	D	E	E
SR 5 / US 1 / Overseas Highway	East of Old Hwy	Frontage Rd Ent	90060000	MCFS ²	2	84.6	0.5	D	D	E	E	E	E
SR 5 / US 1 / Overseas Highway	Frontage Rd Ent	East of Smugglers Cove Ent/Begin of the Bridge of Snake Creek Channel	90060000		2	85.0	0.5	D	D	E	E	E	E
SR 5 / US 1 / Overseas Highway	East of Smugglers Cove Ent/Begin of the Bridge of Snake Creek Channel	West of Venetian Blvd/End of the Bridge of Snake Creek Channel	90060000		2	85.5	0.2	D	D	E	E	E	E
SR 5 / US 1 / Overseas Highway	West of Venetian Blvd/End of the Bridge of Snake Creek Channel	East of Venetian Blvd	90060000		2	85.7	0.3	D	D	E	D	E	E
SR 5 / US 1 / Overseas Highway	East of Venetian Blvd	West of Weigh Station Exit	90060000		2	86.0	0.2	D	D	E	E	E	E
SR 5 / US 1 / Overseas Highway	West of Weigh Station Exit	Orange Ln	90060000		2	86.2	1.5	D	D	E	D	E	E
SR 5 / US 1 / Overseas Highway	Orange Ln	Royal Poinciana Blvd	90060000		2	87.7	2.4	E	E	F	F	F	F
SR 5 / US 1 / Overseas Highway	Royal Poinciana Blvd	Harbor View Dr	90060000		4	90.1	2.1	B	B	C	B	C	C
SR 5 / US 1 / Overseas Highway	Harbor View Dr	West of Tree Ln	90060000	900062	4	92.2	0.8	B	B	B	B	B	B
SR 5 / US 1 / Overseas Highway	West of Tree Ln	Harbor View Dr	90060002	905043	4	91.5	0.8	B	B	B	B	C	C
SR 5 / US 1 / Overseas Highway	West of Tree Ln	Buttonwood Bay Clb Ent	90060000	905041	4	93.0	3.3	B	B	C	C	C	C
SR 5 / US 1 / Overseas Highway	Atlantic Blvd/Ocean Bay Dr	Buttonwood Bay Clb Ent	90060001	905042	4	96.4	3.0	D	C	F	C	F	F
SR 5 / US 1 / Overseas Highway	Buttonwood Bay Clb Ent	Atlantic Blvd/Ocean Bay Dr	90060000	MCFS ²	4	96.4	3.1	D	D	D	D	E	D
SR 5 / US 1 / Overseas Highway	Atlantic Blvd/Ocean Bay Dr	99600 Overseas Hwy/East of Atlantic Blvd	90060000		4	99.5	0.0	C	C	C	C	C	C
SR 5 / US 1 / Overseas Highway	99600 Overseas Hwy/East of Atlantic Blvd	Sunset Blvd	90060000		4	99.5	0.4	C	C	C	C	C	C
SR 5 / US 1 / Overseas Highway	Sunset Blvd	Bonefish Ave	90060000		4	99.8	3.5	C	C	C	C	C	C
SR 5 / US 1 / Overseas Highway	Bonefish Ave	Andros Rd	90060000		4	103.3	2.8	C	C	D	C	D	D
SR 5 / US 1 / Overseas Highway	Andros Rd	Trn Ln to CR 905	90060000	900200	4	106.1	0.2	C	C	C	C	D	D
SR 5 / US 1 / Overseas Highway	Trn Ln to CR 905	Summerland Rd	90060000		2	106.3	0.2	F	F	F	F	F	F
SR 5 / US 1 / Overseas Highway	Summerland Rd	Morris Ave	90060000	900001	2	106.5	6.0	E	E	E	E	F	F

1. Reference: 2020 FDOT QUALITY/LEVEL OF SERVICE HANDBOOK

2. Counts obtained as part of the Monroe County Freight Study (MCFS)

Segment LOS was C or better and did not warrant a proposed improvement

The proposed segment improvements per **Table 6-9** are summarized as follows:

Treatment	Number of Segments
Extended Left Turn Lanes	5 segments for all growth scenarios
Right Turn Lanes	2 intersections for all growth scenarios 1 intersection for Moderate Growth and High Growth scenarios
Extended Right Turn Lane	12 segments for all growth scenarios 2 more segments for Moderate Growth scenario 4 more segments for High Growth scenario

Build actions improve LOS, but not always enough to change the LOS letter grade. With the proposed improvements, these results were observed as tabulated in **Table 6-11**:

- ◆ % Deficient (LOS D-F) Mileage
 - ◇ 4-5 miles fewer miles per Build scenario.
 - ◇ 3-4% fewer miles per Build scenario.
- ◆ % Deficient (LOS E-F) Mileage
 - ◇ 4-5 miles fewer per Build scenario.
 - ◇ 4-5% miles fewer per Build scenario.
- ◆ With increasing traffic through the scenarios:
 - ◇ Number of segments with LOS B/C decline while LOS E/F segments increase.
 - ◇ Number of segments with LOS D decline somewhat.



Table 6-11 Mileage for Each LOS and Scenario - No-Build and Build Comparison

Scenario	LOS B	LOS C	LOS D	LOS E	LOS F	Miles of LOS D to F	% LOS D to F	% LOS E to F
2045 No Growth	9	47	43	10	8	60	52%	15%
2045 No Growth Build	9	49	41	10	8	58	50%	15%
2045 Moderate Growth	4	46	43	10	13	67	57%	20%
2045 Moderate Growth Build	6	50	42	9	10	60	52%	16%
2045 High Growth	3	27	35	30	21	86	74%	44%
2045 High Growth Build	3	33	40	21	20	81	69%	35%

Note that there are rounding differences in the above table.

From **Table 6-11**, these conclusions can be drawn regarding LOS results:

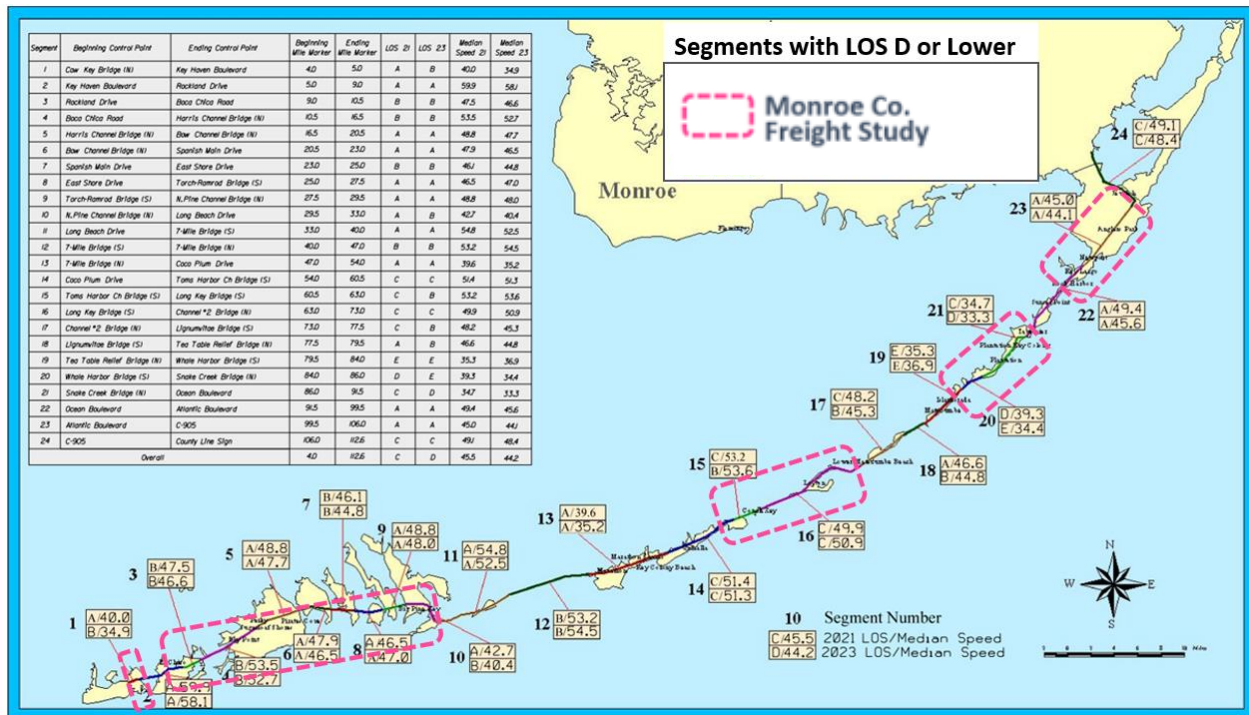
- ◆ For the 2045 No Growth scenario with the Build condition, LOS D miles are reduced by 2 miles and LOS C miles increase by 2 miles. Thus, there is a reduction in the miles of LOS D to F segments of 2 miles. There is greater operational benefit of the improvements, but the traffic service changes did not trigger more changes in LOS letter grades.
- ◆ For the 2045 Moderate Growth scenario with the Build condition, LOS F miles are reduced by 3 miles, LOS E miles are reduced by 1 mile, and LOS D miles are reduced by 1 mile. These reductions result in an increase in LOS C miles increase by 4 miles. Therefore, there is a reduction in the miles of LOS D to F segments of 7 miles. There is greater operational benefit of the improvements, but the traffic service changes did not trigger more changes in LOS letter grades.
- ◆ For the 2045 High Growth scenario with the Build condition, LOS F miles are reduced by 1 mile, LOS E miles are reduced by 9 miles, and LOS D miles are increased by 5 miles. These reductions result in an increase in LOS C by 6 miles. Therefore, there is a reduction in the miles of LOS D to F segments of 5 miles. There is greater operational benefit of the improvements, but the traffic service changes did not trigger more changes in LOS letter grades.

Based on the LOS analysis in this study, the deficient segments under the No Growth scenario with LOS D, E or F are summarized below and as shown in **Figure 6-3**:

- | | |
|---|--------------------|
| ◆ MM 0 to 4.5 – Key West/Stock Island | LOS F |
| ◆ MM 9.2 to 10.7 – Big Coppitt Key | LOS E and F |
| ◆ MM 10.7 to 27.8 – Shark to Ramrod Keys | LOS D |
| ◆ MM 27.8 to 31.1 – Torch and Big Pine Key | LOS F |
| ◆ MM 48.0 to 49.0 – Marathon | LOS D |
| ◆ MM 59.7 to 73.7 – Duck, Conch, Long, Fiesta, and Craig Keys | LOS D |
| ◆ MM 79.7 to 87.7 – Upper Matecumbe and Windley Keys | LOS D |
| ◆ MM 96.4 to 99.5 – Key Largo near Atlantic Blvd. | LOS D |
| ◆ MM 106.3 to 112.5 – Key Largo and Cross Key | LOS E and F |

These results suggest that LOS conditions on US 1 in Monroe County across all the segments collectively are in the vicinity of the LOS C threshold for acceptable traffic service. This is borne out by the results of the 2023 ATTDS and prior iterations which show the overall travel speed for the corridor hovering near the 45 mph LOS C traffic service standard.

Figure 6-3 Segments with LOS D or Lower



Source: 2023 ATTDS Page 18.

The estimated costs in 2023 for the identified segment improvement actions presented in **Table 6-9** are summarized as follows:

- ◆ No Growth Scenario: \$22,028,005
- ◆ Moderate Growth Scenario: \$28,738,937
- ◆ High Growth Scenario: \$34,776,767

6.3 Relation to Other Analyses for Segment LOS

This section of the report compares the traffic service results of this *Monroe County Freight Improvement Study* to the:

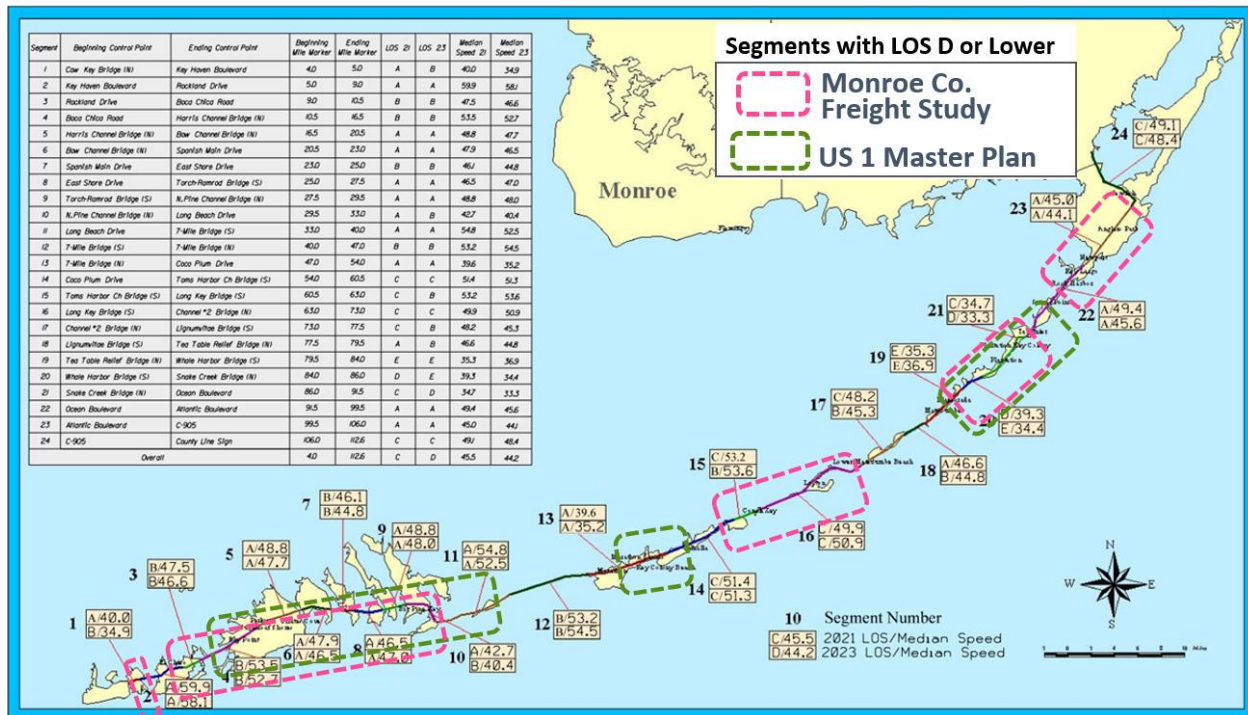
- ◆ *US 1 Transportation Master Plan* (TMP) (2018)
- ◆ *2023 US 1 Arterial Travel Time and Delay Study* (ATTDS)

From the two analyses for 2045, the mileages at LOS D or lower are:

- ◆ *Monroe County Freight Improvement Plan (No Growth)* 75 miles – 64%
- ◆ *US 1 Transportation Master Plan* 65 miles – 57%

These results are shown graphically in **Figure 6-4**. As noted in the discussion, there are areas of similarity and differences in the traffic service deficiency coverages.

Figure 6-4 Segments with LOS D or Lower – 2018 TMP and 2023 MCFP



Source: [2023 ATTDS Page 18](#).

The tables below provide a summary of the miles for each level of service compared to the *US 1 Transportation Master Plan* as well as the no-build and build scenarios.

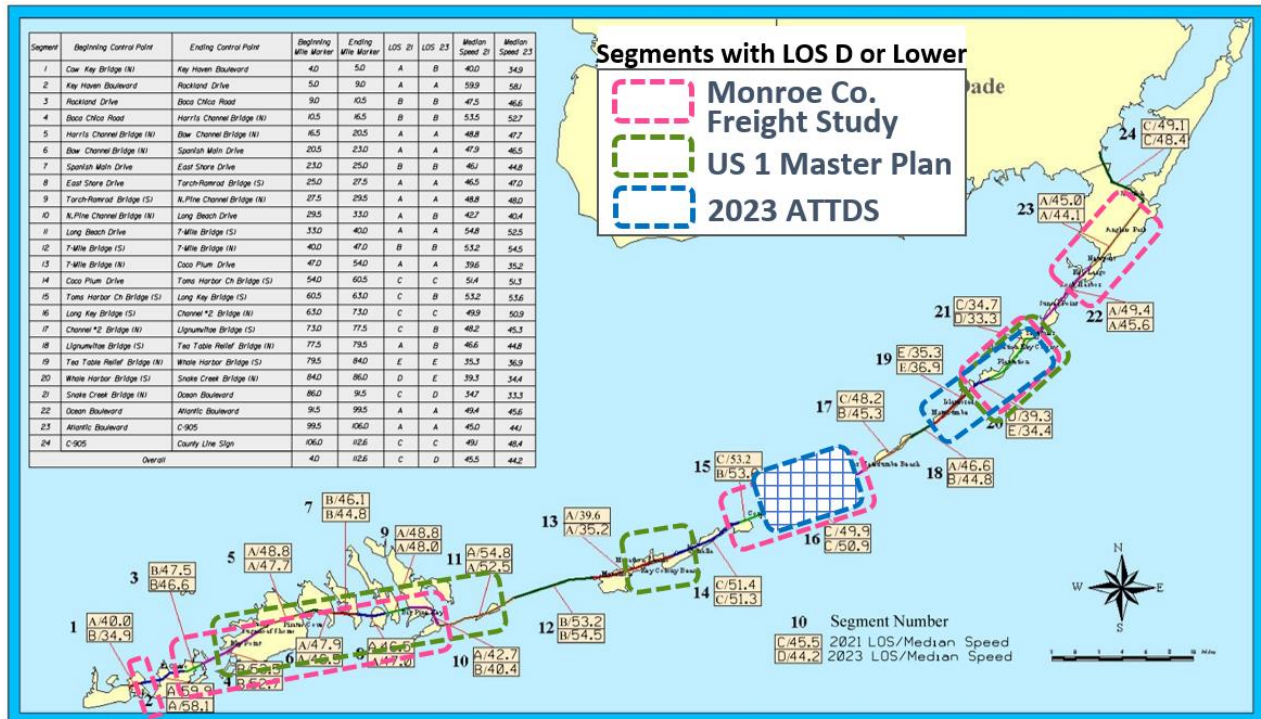
Table 6-12 Miles for Each Level of Service – No-Build

Scenario	LOS B	LOS C	LOS D	LOS E	LOS F	Miles D-F	% D-F	% E-F
2019 US 1 Master Plan	9	55	22	20	10	52	45%	26%
2021	9	47	43	10	8	60	52%	15%
2045 No Growth	9	47	43	10	8	60	52%	15%
2045 Moderate Growth	4	46	43	10	13	67	57%	20%
2045 High Growth	3	27	35	30	21	86	74%	44%
2040 High Growth from US 1 MP	4	46	27	25	14	66	57%	34%

Table 6-13 Miles for Each LOS - No-Build and Build Comparison

Scenario	LOS B	LOS C	LOS D	LOS E	LOS F	Miles of LOS D to F	% LOS D to F	% LOS E to F
2045 No Growth	9	47	43	10	8	60	52%	15%
2045 No Growth Build	9	49	41	10	8	58	50%	15%
2045 Moderate Growth	4	46	43	10	13	67	57%	20%
2045 Moderate Growth Build	6	50	42	9	10	60	52%	16%
2045 High Growth	3	27	35	30	21	86	74%	44%
2045 High Growth Build	3	33	40	21	20	81	69%	35%

Figure 6-5 Segments with LOS D or Lower – All Three Reports



Source: [2023 ATTDs Page 18](#).

These results are presented graphically in **Figure 6-6** which shows in terms of segment mileage the distribution of LOS grades for each growth scenario, for existing conditions, and for the 2019 *US 1 Transportation Master Plan*. It is seen that with increasing traffic through the three scenarios, the number of LOS E and F segments increases, and the number of LOS D/E/F segments (all deficient) increases. Relative to the Existing Conditions, the 2045 No Growth scenario is by definition the same. The results of the *US 1 Transportation Master Plan* (2019) show, in comparison to the No Growth and Moderate Growth scenarios, more LOS E and F segments and significantly fewer LOS D segments, and more acceptable LOS B and C segments. These differences are considered to be the result of methodological differences and the proximity of many segments to the LOS C threshold regardless of the specific metrics employed. **Figure 6-7** depicts the deficiencies in terms of the number of segments.

Figure 6-6 LOS Results Comparison by Mileage

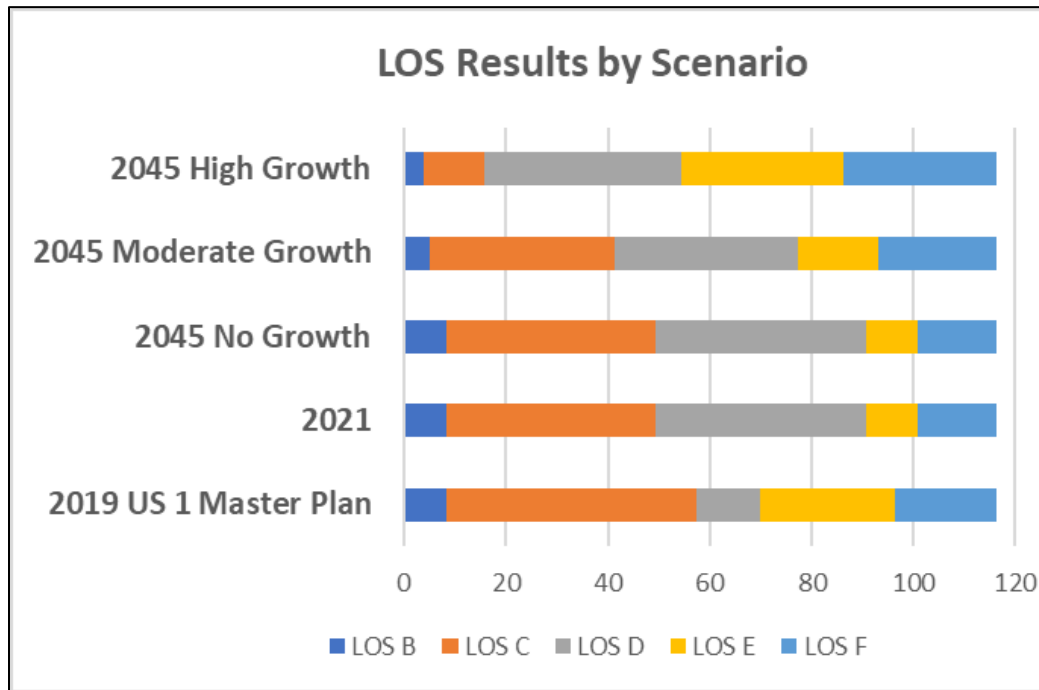
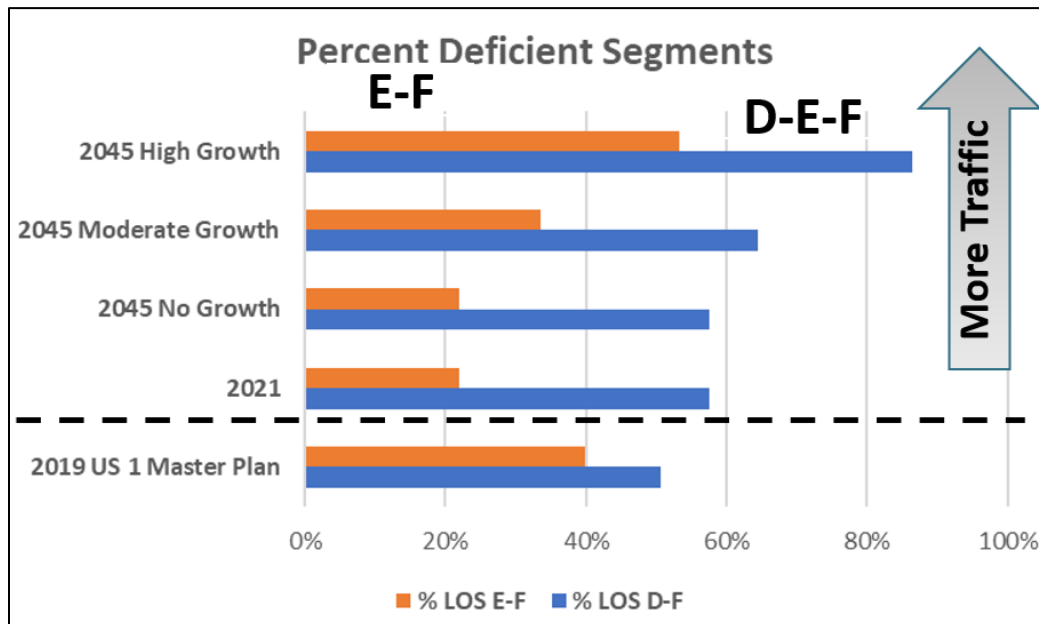


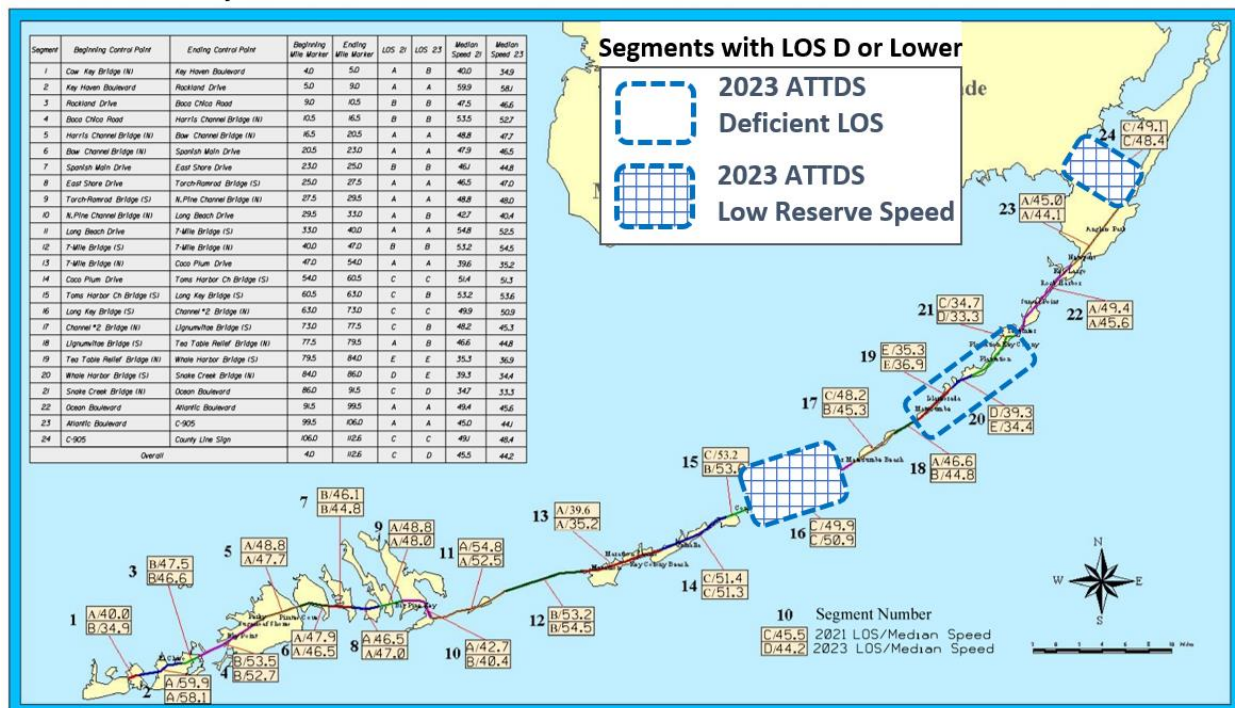
Figure 6-7 LOS Results Comparison by Number of Segments



The 2023 ATADS report identified, using its definition of 24 segments, three segments with LOS at D or below and two additional segments where the reserve speed as calculated by its methodology was below the target margin of 3 mph. These segments are listed below, shown in **Figure 6-8**, and listed in **Table 6-14**, which provides the 2023 ATADS level of service and reserve capacity table developed for the latest Monroe County traffic concurrency analysis.

- ◆ Segment 16 – Long Key
 - ◇ MM 63-73 LOS C, but reserve speed is less than 3 mph
- ◆ Segment 19 – Upper Matecumbe Key
 - ◇ MM 79.5-84 LOS E
- ◆ Segment 20 – Windley Key
 - ◇ MM 84-86 LOS E
- ◆ Segment 21 – Plantation Key
 - ◇ MM 86-91.5 LOS D
- ◆ Segment 24 – Key Largo/Cross Key
 - ◇ MM 106-112.5 LOS C, but reserve speed is less than 3 mph

Figure 6-8 2023 ATADS Deficient Segments



Source: [2023 ATADS Page 18](#).

The improvement findings of this study were compared to the recommendations of the *US 1 Transportation Master Plan* which had a total of 186 multimodal recommendations. Of those, 43 were identified as relating to roadway, bridge, safety or traffic operations actions. Those actions which were identified as Primary Priority Recommendations were flagged in the table with a "1"

code and those identified as Secondary Priority Recommendations were flagged in the table with a "2" code. There were 12 Primary Priority Recommendations and 24 Secondary Priority Recommendations, for a total of 36, gleaned from the entire set of recommendations in the *US 1 Transportation Master Plan* (TMP) (see **Appendix C**). There were five Primary Priority Recommendations and 8 Secondary Priority Recommendations for a total of 13; other recommendations in that study did not relate to roadway capacity or operational elements directly. The comparison is presented in **Table 6-15**, and yields these observations:

- ◆ For the identified 43 *US 1 Transportation Master Plan* recommendations relating directly to the US 1 roadway, the comparative breakdown is as follows:
 - ◇ No specific freight study recommendation was made, either because the item was not considered, or no data was available to consider:
 - 21 TMP recommendations
 - ◇ US 1 widening not considered by the freight study due to County policy on not widening US 1:
 - 4 TMP recommendations
 - ◇ Recommendations were generally consistent between the two studies:
 - 13 TMP recommendations
 - ◇ Recommendations were similar but different between the two studies: 5 TMP recommendations
- ◆ Of the five identified TMP Primary Priority Recommendations in Table 6-15:
 - ◇ No specific freight study recommendation was made, either because the item was not considered, or no data was available to consider:
 - 2 TMP recommendations
 - ◇ Recommendations were generally consistent between the two studies:
 - 3 TMP recommendations
- ◆ Of the eight identified TMP Primary Priority Recommendations in Table 6-15:
 - ◇ No specific freight study recommendation was made, either because the item was not considered, or no data was available to consider:
 - 4 TMP recommendations
 - ◇ US 1 widening not considered by the freight study due to County policy on not widening US 1:
 - 1 TMP recommendation
 - ◇ Recommendations were generally consistent between the two studies:
 - 2 TMP recommendations
 - ◇ Recommendations were similar but different between the two studies: 1 TMP recommendation

Those TMP recommendations which were consistent or "similar but different" between the two studies are shaded in the right-most column of **Table 6-15**. Of the 13 TMP Priority Recommendations, the freight study in its recommendations was consistent, similar but different, or did not consider. **No recommendations of this freight improvement study were found to be inherently inconsistent with the TMP Primary or Secondary Priority Recommendations.**

Table 6-14 2023 ATDS Level of Service and Reserve Capacity

SEGMENT	LENGTH (miles)	FACILITY TYPE	POSTED SPEED		ADJ. FOR SIGNAL (mph)	ADJUSTED LOS C CRITERIA (mph)	MEDIAN TRAVEL SPEED (mph)	LOS	RESERVE SPEED (mph)	2023		2021
			Limits (mph)	Average (mph)						MAXIMUM RESERVE VOLUME	5% ALLOCATION BELOW LOS C	MAXIMUM RESERVE VOLUME
										(trips)	(trips)	(trips)
1 Stock Island (4.0 - 5.0)	1.10	4-L/D	30/35/45	40.1	N/A	22.0	34.9	B	12.9	2,350	2,544	3,279
2 Boca Chica (5.0- 9.0)	3.9	4-L/D	45/55	54.7	N/A	50.2	58.1	A	7.9	5,102	6,714	6,265
3 Big Coppitt (9.0- 10.5)	1.5	2-L/U	45/55	46.3	N/A	41.8	46.6	B	4.7	1,167	1,691	1,391
4 Saddlebunch (10.5- 16.5)	5.8	2-L/U	45/55	53.6	N/A	49.1	52.7	B	3.5	3,362	5,747	4,130
5 Sugarloaf (16.5- 20.5)	3.9	2-L/U	45	45.0	6.4	34.1	47.7	A	13.6	8,783	9,866	9,752
6 Cudjoe (20.5- 23.0)	2.5	2-L/U	45	45.0	N/A	40.5	46.5	A	6.0	2,484	3,337	3,064
7 Summerland (23.0- 25.0)	2.2	2-L/U	45	45.0	N/A	40.5	44.8	B	4.3	1,567	2,311	2,040
8 Ramrod (25.0- 27.5)	2.3	2-L/U	45	45.0	N/A	40.5	47.0	A	6.5	2,476	3,261	2,285
9 Torch (27.5- 29.5)	2.1	2-L/U	45	45.0	N/A	40.5	48.0	A	7.5	2,608	3,310	2,886
10 Big Pine (29.5- 33.0)	3.4	2-L/U	45	45.0	5.3	35.2	40.4	B	5.2	2,928	3,935	4,561
11 Bahia Honda (33.0- 40.0)	7.0	2-L/U (70%) 4-L/D (30%)	45/50/55	50.9	N/A	46.4	52.5	A	6.1	7,071	9,804	7,998
12 7-Mile Bridge (40.0- 47.0)	6.8	2-L/U	35/45/50/55	54.4	N/A	49.9	54.5	B	4.6	5,180	7,971	3,716
13 Marathon (47.0- 54.0)	7.3	2-L/U (13%) 4-L/D (87%)	35/45	42.3	N/A	22.0	35.2	A	13.2	15,957	17,240	21,276
14 Grassy (54.0- 60.5)	6.4	2-L/U	45/55	54.6	2.1	48.0	51.3	C	3.3	3,497	6,010	3,603
15 Duck (60.5- 63.0)	2.7	2-L/U	55	55.0	N/A	50.5	53.6	B	3.1	1,386	2,499	1,207
16 Long (63.0- 73.0)	9.9	2-L/U	45/50/55	53.4	N/A	48.9	50.9	C	2.0	3,279	7,207	1,639
17 L Matecumbe (73.0- 77.5)	4.5	2-L/U	45/50	45.9	N/A	41.4	45.3	B	4.0	2,981	4,509	149
18 Tea Table (77.5- 79.5)	2.2	2-L/U	45	45.0	N/A	40.5	44.8	B	4.3	1,567	2,315	2,222
19 U Matecumbe (79.5- 84.0)	4.1	2-L/U	45	45.0	N/A	40.5	36.9	E	-3.6	(2,444)	(1,091)	(3,531)
20 Windley (84.0- 86.0)	1.9	2-L/U	45	45.0	N/A	40.5	34.4	E	-6.1	(1,919)	(1,296)	(378)
21 Plantation (86.0- 91.5)	5.8	2-L/U	45	45.0	5.4	35.1	33.3	D	-1.8	(1,729)	(14)	1,921
22 Tavernier (91.5- 99.5)	8.0	4-L/D	45/50	47.2	5.7	37.0	45.6	A	8.6	11,393	13,832	12,983
23 Key Largo (99.5- 106.0)	6.8	4-L/D	45	45.0	5.2	35.3	44.1	A	8.8	9,910	11,865	11,148
24 Cross (106.0- 112.5)	6.2	2-L/U	45/55	51.4	N/A	46.9	48.4	C	1.5	1,540	3,900	2,259
Overall	108.3					45.0	44.2	D	-0.8	N/A		

Source: 2023 AATDS Report.

Table 6-15 Priority Project List Comparison

Old Reference #	Reference Number	Goals-Objective	Key Number	Project Description	Schedule Timing	Implementation Schedule	Improvement Category	FKTCC PRIORITY PROJECT	Additional Comments/Information	Comparison to Monroe County Freight Study (MCFS) Recommendations
178	3	2-2	01-Key West	Conduct a signal retiming study to optimize signal timing in Key West.	2-Mid-term	Mid-term	Operations	2		N/A - no improvements were recommended for Key West
103	8	2-2	01-Key West	Feasibility study to reconfigure the intersection of US-1 and Roosevelt Boulevard.	2-Mid-term	Mid-term	Operations	1	Potential right-of-way impacts. Requires coordination with stakeholders and public acceptance.	N/A - no improvements were recommended for Key West
9	16	2-3	01-Key West	FDOT Traffic Operations Office is evaluating a request for NB/SB left-turn lanes at the intersection of US 1/Truman Avenue and White Street.	4-FDOT is Currently Evaluating	FDOT is Currently Evaluating	Operations	2		N/A - no improvements were recommended for Key West
190	19	2-1	01-Key West	FDOT Traffic Operations Office is evaluating a request for reduced speed limit (25 to 20 mph) in the vicinity of the Roosevelt Boulevard and Fleming Street intersection.	4-FDOT is Currently Evaluating	FDOT is Currently Evaluating	Operations			N/A - no improvements were recommended for Key West
182	20	2-2	02-Stock Island	Modify signal timing (offsets) along US 1 between Roosevelt Boulevard and MacDonald Avenue to help improve traffic flow.	1-Short-term	Short-term	Operations	1	Requires Coordination with FDOT Traffic Operations Office.	MCFS recommends signal timing improvements for the side streets at these two intersections. However, there was not enough data to evaluate offset improvement in this corridor. (Intersection improvement.)
71	23	2-2, 2-3	02-Stock Island	Conduct a corridor study to evaluate the feasibility of widening US-1 to 6 lanes and/or intersection improvements between Roosevelt Boulevard and College Road North.	3-Long-term	Long-term	Roadway		Requires modifications to the Monroe County Comp Plan Policies and widening/reconstruction of the bridge between Key West and Stock Island.	N/A - MCFS did not consider this to be a feasible improvement due to current MC policies.
122	25	2-2	02-Stock Island	FDOT Traffic Operations Office conducted a Signal Warrant study at the intersection of US-1 and College Road North and will be installing a traffic signal at this location.	4-FDOT is Currently Evaluating	FDOT is Currently Evaluating	Operations			N/A - no data was available to evaluate this specific improvement in the MCFS.
49	26	2-3	03-Rockland Key	Conduct a study to evaluate the feasibility of installing an acceleration lane in the southbound direction at the intersection of US-1 and Calle Uno.	2-Mid-term	Mid-term	Operations			N/A - no data was available to evaluate this specific improvement in the MCFS.
70	27	1-5, 2-3	03-Rockland Key	Conduct a study to evaluate the feasibility of relocating the merge area from the current location on the curve near Rockland Drive to a straight segment of US 1.	2-Mid-term	Mid-term	Operations		Potential R/W impacts; may require modifications to the Monroe County Comp Plan Policies.	N/A - no data was available to evaluate this specific improvement in the MCFS.
107	28	2-3	03-Rockland Key	Conduct an access management study to evaluate the need for turn lanes and/or frontage road improvements along US-1 from Coppitt Road to Boca Chica Road	2-Mid-term	Mid-term	Operations		Potential access impacts; requires public involvement.	MCFS recommends the same improvement. (Segment improvement.)
109	29	2-2, 2-3	03-Rockland Key	Feasibility study for possible intersection improvements along US 1 between Saratoga Avenue to Rockland Drive	3-Long-term	Mid-term	Roadway		May require modifications to the Monroe County Comp Plan Policies; potential R/W impacts.	N/A - no data was available to evaluate this specific improvement in the MCFS.
105	30	1-5, 2-2	03-Rockland Key	Conduct a study to determine the need for and feasibility of widening US-1 to 4 lanes from Rockland Drive to Boca Chica Road.	3-Long-term	Long-term	Roadway		Requires modifications to the Monroe County Comp Plan Policies; potential R/W impacts and bridge widening.	N/A - MCFS did not consider this to be a feasible improvement due to current MC policies.

Old Reference #	Reference Number	Goals-Objective	Key Number	Project Description	Schedule Timing	Implementation Schedule	Improvement Category	FKTCC PRIORITY PROJECT	Additional Comments/Information	Comparison to Monroe County Freight Study (MCFS) Recommendations
	36	2-3	04-Big Coppitt Key	Conduct a Signal Warrant study at the intersection of US-1 at 4th Street.	2-Mid-term	Mid-term	Operations		This location is only 0.75mi from Boca Chica Road where a Signal is also requested. Consider conducting a corridor study so that potential impacts of having both of these signals can be determined.	N/A - no data was available to evaluate this specific improvement in the MCFS.
153	37	2-3	04-Big Coppitt Key	Conduct a Signal Warrant study at the intersection of US-1 at Boca Chica Road.	2-Mid-term	Mid-term	Operations		This location is only 0.75mi from 4th Street where a Signal is also requested. Consider conducting a corridor study so that potential impacts of having both of these signals can be determined.	N/A - no data was available to evaluate this specific improvement in the MCFS.
197	43	2-2	05-Lower Sugarloaf Key	Conduct a feasibility study to determine potential intersection improvements at US 1 and Sugarloaf Road.	2-Mid-term	Mid-term	Operations			N/A - no data was available to evaluate this specific improvement in the MCFS.
193	58	2-3	09-Ramrod Key	FDOT Traffic Operations Office is evaluating a request for an eastbound left-turn lane at US-1 and Coral Avenue.	4-FDOT is Currently Evaluating	FDOT is Currently Evaluating	Operations			N/A - no data was available to evaluate this specific improvement in the MCFS.
	62	2-3	11-Big Pine Key	Conduct a feasibility study for an acceleration lane in the southbound direction on US 1 at Ships Way.	2-Mid-term	Mid-term	Roadway	2	Potential environmental impacts.	MCFS recommends Access Management (i.e., continuous right-turn lanes) in this area. (Segment improvement.) However, no data was available to evaluate this specific improvement in the MCFS.
175	63	2-2, 2-3	11-Big Pine Key	Conduct a feasibility study for roadway widening to 4 lanes along US 1 from North Pine Channel Bridge to 1st Street	3-Long-term	Long-term	Roadway		Requires modifications to the Monroe County Comp Plan Policies.	N/A - MCFS did not consider this to be a feasible improvement due to current MC policies.
112	64	2-3	11-Big Pine Key	Conduct a feasibility study to extend Frontage Road (Avenue A) from Ships Way to Cunningham Lane	3-Long-term	Long-term	Roadway		May require modifications to the Monroe County Comp Plan Policies. The extension of this frontage road could serve adjacent properties and remove traffic from US 1.	MCFS recommends Access Management (i.e., continuous right-turn lanes) in this area. (Segment improvement.) However, no data was available to evaluate this specific improvement in the MCFS.
36	74	2-2	11-Big Pine Key	FDOT Traffic Operations Office is evaluating a request for signal timing enhancements and vehicle detection at US-1 and Chapman Street.	4-FDOT is Currently Evaluating	FDOT is Currently Evaluating	Operations			MCFS recommends signal timing improvements for the side street (Key Deer Blvd). (Intersection improvement.)
	78	2-2, 2-3	13-Marathon	Conduct a turn lane warrant study at the intersection of US-1 and 33rd Street.	1-Short-term	Short-term	Operations		Potential R/W and access impacts.	MCFS recommends the same improvement. (Segment improvement.)
76	80	3-1, 3-3	13-Marathon	Conduct a feasibility study to restrict traffic to a "RIGHT TURN ONLY" at the intersection of US-1 and Aviation Boulevard/72nd Street.	1-Short-term	Short-term	Safety	1		MCFS recommends Access Management (i.e., continuous right-turn lanes) in this area. (Segment improvement.) However, no data was available to evaluate this specific improvement in the MCFS.
181	83	2-3	13-Marathon	Conduct an Access Management study along US 1 from 15th Street S. to Aviation Boulevard.	2-Mid-term	Mid-term	Operations		Potential access impacts; requires public involvement.	MCFS recommends Access Management (i.e., continuous right-turn lanes) in this area. (Segment improvement.) However, no data was available to evaluate this specific improvement in the MCFS.

Old Reference #	Reference Number	Goals-Objective	Key Number	Project Description	Schedule Timing	Implementation Schedule	Improvement Category	FKTCC PRIORITY PROJECT	Additional Comments/Information	Comparison to Monroe County Freight Study (MCFS) Recommendations
114	84	1-2, 2-2	13-Marathon	Conduct a study to determine the location and need for a traffic signal or pedestrian crossing on the south end of Marathon.	2-Mid-term	Mid-term	Operations	2		N/A - no data was available to evaluate this specific improvement in the MCFS.
194	87	2-3	13-Marathon	Conduct a feasibility study to widen US 1 from 11th Street Ocean to 15th Street.	3-Long-term	Long-term	Roadway	2	Requires modifications to Monroe County Comp Policies; potential access impacts; requires public involvement.	N/A - MCFS did not consider this to be a feasible improvement due to current MC policies.
64	95	2-3	13-Marathon	FDOT Traffic Operations Office is evaluating a request to change the northbound left-turn lane to a two-way left-turn lane at US-1 and Guava Avenue.	4-FDOT is Currently Evaluating	FDOT is Currently Evaluating	Operations			MCFS recommends Access Management (i.e., continuous right-turn lanes) in this area. (Segment improvement.) However, no data was available to evaluate this specific improvement in the MCFS.
192	104	2-3	15-Islamorada	Conduct an Access Management Study along US 1 between MM 77 and 83 to determine the need for turn lanes and/or other access management improvements. Also, review the possibility of improvements to the Old Highway to better serve as a frontage road.	2-Mid-term	Mid-term	Operations	1		MCFS recommends Access Management (i.e., continuous right-turn lanes) in this area. (Segment improvement.)
169	107	2-2, 2-3, 2-4	15-Islamorada	Conduct a feasibility study to identify potential improvements for SR 4A in Plantation Key, so it can be used as an alternate route during peak hours, incidents, or during lane closures. Also, identify improvements at critical intersections to provide access to/from US 1.	3-Long-term	Long-term	Roadway		Potential right-of-way impacts. Requires coordination with stakeholders and public acceptance.	MCFS recommends Access Management (i.e., continuous right-turn lanes) in this area. (Segment improvement.)
10	116	2-2	15-Plantation Key	Conduct an intersection study to evaluate the feasibility of improving the transition area (2 to 4 lane transition) near the intersection of US 1 and Royal Poinciana Boulevard.	2-Mid-term	Mid-term	Operations	2		MCFS recommends Access Management (i.e., continuous right-turn lanes) in this area. (Segment improvement.) However, no data was available to evaluate this specific improvement in the MCFS.
168	117	1-1	15-Plantation Key	Conduct a study to determine the feasibility for installing bike lanes along the Old Highway in Islamorada.	2-Mid-term	Mid-term	Safety	2		N/A - no data was available to evaluate this specific improvement in the MCFS.
186	118	2-3	15-Plantation Key	Conduct a study to determine appropriate intersection improvements at the US 1/Seminole Boulevard intersection.	2-Mid-term	Mid-term	Operations			MCFS recommends Access Management (i.e., continuous right-turn lanes) in this area. (Segment improvement.) However, no data was available to evaluate this specific improvement in the MCFS.
126	182	2-2	15-Upper Matecumbe	Conduct a planning study to determine the need for and feasibility of a bypass bridge between the Snake Creek Bridge and Tea Table.	3-Long-term	Long-term	Bridge		Environmental, right-of-way, and community impacts will require extensive research and/or coordination.	N/A - this level of evaluation was out of the scope of work for the MCFS.
20	120	2-3	16-Tavernier	Conduct a study to determine appropriate intersection improvements at the US 1/Sunshine Boulevard intersection.	2-Mid-term	Mid-term	Operations			MCFS recommends signal timing improvements for the US 1 left-turns. (Intersection improvement.)

Old Reference #	Reference Number	Goals-Objective	Key Number	Project Description	Schedule Timing	Implementation Schedule	Improvement Category	FKTCC PRIORITY PROJECT	Additional Comments/Information	Comparison to Monroe County Freight Study (MCFS) Recommendations
80	125	1-1	17-Key Largo	Review and identify potential pedestrian/bicycle signing and pavement marking improvements along US 1 in the vicinity of the Ocean Bay Drive/Atlantic Avenue, Laguna Avenue, Holiday Boulevard and Magnolia Street intersections in Key Largo.	1-Short-term	Short-term	Safety	1		N/A - no data was available to evaluate this specific improvement in the MCFS.
179	126	2-2, 3-1	17-Key Largo	Conduct a feasibility study to reconfigure the intersection of US-1 at Ocean Bay Drive/Atlantic Avenue.	2-Mid-term	Mid-term	Operations		Potential right-of-way impacts; requires coordination with stakeholders and public acceptance.	MCFS recommends signal timing improvements and US 1 SB LT lane improvements (lengthen existing and add new) at this intersection. (Intersection improvement.)
88	128	3-1	17-Key Largo	Conduct a study for intersection improvements at US-1 and Tarpon Basin Drive.	2-Mid-term	Mid-term	Safety			MCFS recommends signal timing improvements at this intersection. (Intersection improvement.)
94	129	2-3	17-Key Largo	Conduct an access management study along US-1 from Andros Road to Summerland Road.	2-Mid-term	Mid-term	Operations		Potential access management impacts; requires public acceptance.	MCFS recommends Access Management in the vicinity of CR 905 (i.e., remove driveways and add continuous right-turn lanes) in this area. (Segment improvement.)
94	130	1-1, 2-2	17-Key Largo	Conduct a study to determine potential intersection improvements at US-1 and CR 905, including bike lane continuity through the intersection.	2-Mid-term	Mid-term	Operations		Requires coordination with stakeholders and public involvement. Potential right-of-way impacts.	MCFS recommends Access Management in the vicinity of CR 905 (i.e., remove driveways and add continuous right-turn lanes) in this area. (Segment improvement.)
117	132	2-2	17-Key Largo	Conduct a feasibility study for signal modifications at the intersection of US-1 and Woods Avenue.	2-Mid-term	Mid-term	Operations		Coordinate with FDOT regarding previous studies/findings at this location.	N/A - no data was available to evaluate this specific improvement in the MCFS.
119	133	1-2, 2-3	17-Key Largo	Conduct a corridor study to determine the need for a traffic signal along US 1 between Avenue B and Avenue A.	2-Mid-term	Mid-term	Operations			N/A - no data was available to evaluate this specific improvement in the MCFS.
150	134	2-2	17-Key Largo	Conduct a feasibility study for signal modifications at the pedestrian signal south of the Key Largo Elementary School.	2-Mid-term	Mid-term	Operations	2		MCFS recommends adding a traffic signal, with appropriate phasing for pedestrians, at this intersection. (Intersection improvement.)
3	143	2-3	17-Key Largo	FDOT Traffic Operations Office is conducting a study to evaluate the need for a deceleration lane at Leg 001 in Key Largo.	4-FDOT is Currently Evaluating	FDOT is Currently Evaluating	Operations			N/A - location of this improvement is not known.
160	137	2-2	17-Key Largo	Install a new traffic signal at the intersection of US-1 at Burton Drive.	5-In FDOT 5-year Work Program	In FDOT 5-year Work Program	Operations		FDOT Programmed Project.	N/A - no data was available to evaluate this specific improvement in the MCFS.
142	171	2-2	19-Multiple	Conduct a feasibility study to provide a new bridge between Stock Island and Key West (two potential options: 5th Avenue to Douglas Circle or Projected 13th Avenue to Thompson Island).	3-Long-term	Long-term	Bridge		Right-of-way, Environmental and Community Impacts will require extensive research and/or coordination.	N/A - this level of evaluation was out of the scope of work for the MCFS.

7.0 Other Improvement Actions

7.1 TSM&O and COAST

7.1.1 TSM&O

The FDOT District Six Transportation Systems Management and Operations (TSM&O) office oversees the traffic signals through its Advanced Traffic Management System (ATMS) software. ATMS is a primary subfield within the Intelligent Transportation System (ITS) domain in the United States. The ATMS view is a top-down management perspective that integrates technology primarily to improve the flow of vehicle traffic and improve safety. Real-time traffic data from cameras, speed sensors, etc. flows into a Transportation Management Center (TMC) where it is integrated and processed (e.g., for incident detection), and may result in actions taken (e.g., traffic routing, dynamic message signs (DMS) messaging) with the goal of improving traffic flow. The National ITS Architecture defines the following primary goals and metrics for ITS applications like ATMS:

- ◆ Increase transportation system efficiency,
- ◆ Enhance mobility,
- ◆ Improve safety,
- ◆ Reduce fuel consumption and environmental cost,
- ◆ Increase economic productivity, and
- ◆ Promote an integrated ITS operating environment.

7.1.2 Keys COAST Project

The Florida Keys Connecting Overseas to Advance Safe Travel (Keys COAST) will be the first of its kind connected and automated vehicle (CAV) project being led by FDOT District 6. The project will be located on the US 1 in Monroe County from MM 0.0 to MM 112.5. The project will establish connectivity between various modes (cars, trucks, buses, pedestrians, bicyclists, and emergency vehicles) and a connected vehicle traffic signal system (CVTSS) along with other systems such as mid-block pedestrian crossings, weigh-in-motion (WIM), drawbridge, and emergency signals. The project concept includes roadside units (RSUs) capable of Dedicated Short-Range Communications (DSRC) and cellular communications, a cloud-based information dissemination platform, customized software applications, a real-time traffic signal performance monitoring system, on-board units (OBUs), smartphone on-board units, and bike-ped safety applications. Automated Traffic Signal Performance Measures (ATSPM) will be established to determine the effectiveness of the project and to allow for real-time performance monitoring.

The COAST project is being deployed as a design-build project which has been awarded. After the design phase is completed, field construction will follow. The project has an evaluation component, including data collection and analysis as part of a “before-and-after” assessment of the multiple applications to be deployed. It was noted that this evaluation will cover traffic safety as well as operational conditions.

The project includes a freight and transit traffic signal priority pilot project. This application will use roadside wireless detection devices. The plan includes up to 250 vehicles to have corresponding onboard units. Business rules will be defined for signal priority activation. Trucking participants will be identified along with transit services provided by Miami-Dade County and City of Key West. Depending on the results of the pilot program, the long-term goal would be for all subject vehicles to be “connected”.

The US 1 corridor is a good candidate for this trial application because FDOT is under agreement to operate and maintain the traffic signals in Monroe County since local agencies opted out of this responsibility and US 1 is a relatively simple corridor, linear with no parallel routes and periodic cross-street signals. **Figure 7-1** shows the general deployment plan for the COAST project,

Figure 7-1 COAST Project Deployment Elements



Source: [FDOT US 1 Keys Coast Project Fact Sheet and Map Locations](#).

7.2 FDOT Five Year (Fiscal Year 24-28) Transportation Improvement Program – Monroe County

FDOT has identified a variety of multimodal projects in its Five Year (Fiscal Year 24-28) Transportation Improvement Program for Monroe County. These projects are listed in the table found in **Appendix D**. Highlights of the recent approved program include the following.

- ◆ Bridge replacements:
 - ◆ Five bridge replacements off of US 1.
- ◆ US 1 bridge repair/rehabilitation projects.
 - ◆ 13 bridge maintenance projects include one for the Seven Mile Bridge.
- ◆ Resurfacing projects.
 - ◆ 12 projects, mostly on US 1.
- ◆ Monroe County Coastal Storm Risk Study
- ◆ US 1 at North College Road – Traffic signal improvements.
- ◆ Keys COAST project (described in Section 7.1)
- ◆ Traffic operations improvements.
 - ◆ US 1 – MM 70-80
 - ◆ SR A1A - La Brisa to Key West of the Sea (near airport)
- ◆ Bridge replacement:
 - ◆ Long Key Bridge – Construction programmed for FY 27.
 - ◆ Seven Mile Bridge – No capital funding in this program. PD&E Study begun.

Bridges such as the Long Key Bridge and Seven Mile Bridge were opened in the early 1980's and are experiencing increasing maintenance requirements. Life cycle cost analyses for both have shown replacement to be the cost-effective action. However, that work is dependent on identifying additional funding for these costly projects. Other resurfacing and bridge rehabilitation projects are necessary state-of-good-repair projects as part of ongoing maintenance. Other projects relate to bicycle/pedestrian, aviation, and transit modes, as well as landscaping and other transportation planning and support efforts. Conventional US 1 capacity projects that directly add through travel lanes to US 1 are absent since adding capacity is not permitted by the County growth management ordinance. The planning work under this study has considered the programmed transportation projects in the five-year program.

8.0 Truck Parking Analysis

The truck parking analysis conducted as part of this study consisted of the following: an overview of truck delivery conditions, and a high-level assessment of needs for enroute, overnight truck parking needs. This work was conducted based on review of available truck travel pattern and weigh station data, field reviews, and an assessment of issues and needs.

8.1 Introduction

Freight generating land uses, including commercial, industrial, and institutional uses, are spread across the Florida Keys, mostly in five clusters as shown in **Figure 8-1** with the note that commercial properties are scattered along much of the length of US 1. These uses further include:

- ◆ Retail and businesses
- ◆ Lodging and resorts
- ◆ Construction and equipment
- ◆ Marine industry
- ◆ Fishing industry
- ◆ Naval Air Station Key West

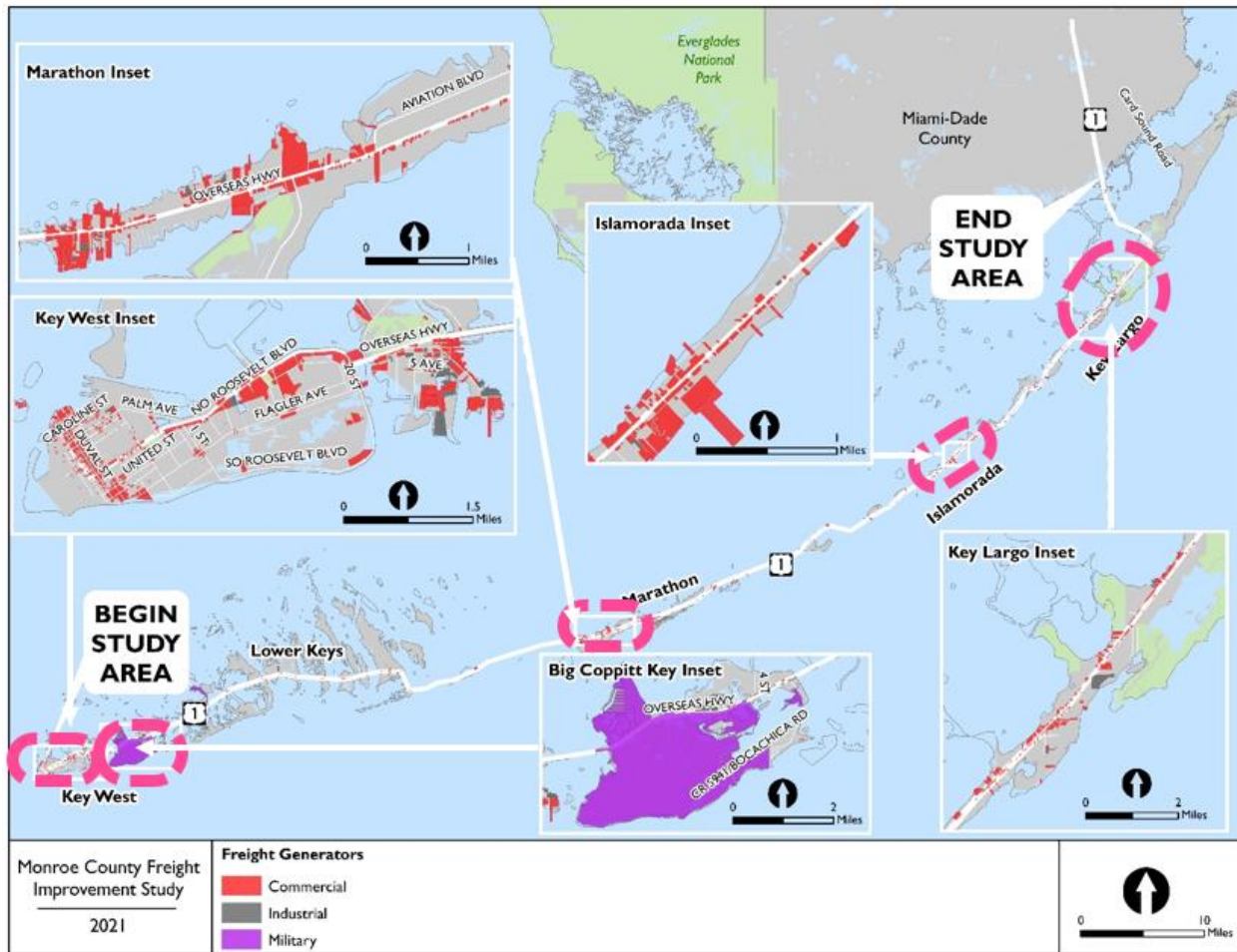
These types of land uses generally follow “roof tops and pillows”. There are no real concentrations of warehousing and distribution facilities in the corridor as is prevalent in Miami-Dade County, due to the cost of land, the dominance of higher and greater land uses, and the lack of a critical population mass necessitating a more aggregated distribution strategy for goods and commodities. Businesses tend to manage their own supply of products, supplies and inventory onsite with these resources being delivered by trucks or package delivery services via truck. The Port of Key West sees cruise ships on a port-of-call basis, but no reprovisioning or fueling of these ships occurs at this port.

8.2 Truck Deliveries

8.2.1 Truck Deliveries Along the US 1 Corridor

Along the US 1 corridor for larger retailers and shopping centers, trucks primarily provide goods delivery through access points at the rear of the buildings. For freestanding businesses or jobsites, deliveries are primarily performed on the roadway shoulder or border, the front of the business in driveway aisles, or in an adjacent parking lot/side lot. Examples of these various truck delivery configurations along the US 1 corridor are shown in **Figure 8-2**. As seen in the figure, roadside deliveries along US 1, in constrained conditions often and in the road right-of-way in some cases, can be unsafe for the delivery operation, and can temporarily restrict sight distance for vehicles accessing adjacent driveways, or can block parking spaces during the delivery.

Figure 8-1 Freight Generators



Data source: FGDL, lu_gen_2019 shapefile, 2019.

Figure 8-2 Truck Parking Along the US 1 Corridor



Data source: Google maps and streetview.

8.2.2 Truck Deliveries in Key West

Overview

Many truck deliveries in central Key West are mostly performed on-street with shorter “straight” trucks. However, semi-trailer deliveries occur as well, as many suppliers make multiple deliveries along US 1 from mainland warehouses in Miami-Dade County, and for operational efficiency by using the larger delivery trucks. Deliveries with this vehicle type can be difficult if drivers are not familiar with the narrow street system, workable intersection turns, and designated loading zone locations. Anecdotally, it was noted during the study process that more than one delivery truck has needed police assistance from a “no way forward” situation. **Figure 8-3** shows several representative truck delivery situations in central Key West. The City has designated truck loading zones in the historic commercial district with a time window of 6 am to 2 pm. After 2 pm these zones are used as vehicle “pay to park” spaces. Therefore, deliveries with large trucks may be problematic after 2 pm.

Figure 8-3 Typical Truck Deliveries in Key West



Data source: Google maps and streetview.

During the study process, it was noted that delivery trucks on occasion have been found to park in travel lanes, double-park, and park in other unauthorized locations. Some park in a street travel lane temporarily to make deliveries, or pick-ups. Truck deliveries after 2 pm time limit for designated curb parking are made in some fashion, risking citations as a necessary cost of doing business.

The delivery issues encountered in Key West are not unlike other popular tourist destinations in Florida: St. Augustine, Miami Beach, Cedar Key, Clearwater Beach, Tarpon Springs, Destin, in addition to Savannah, Charleston, or many other small historic coastal communities. The difference is that Key West is located nearly 130 miles from the nearest mainland retail, warehouse, and distribution centers in Homestead, or 150 miles or more to locations in central Miami-Dade County. Those distances often make truck deliveries a long-distance proposition, affecting scheduling and dispatch of critical time-sensitive delivery items (frozen and refrigerated foods; flowers; meats and seafood; medicines). Deadhead return trips with no cargo exacerbate the transport economics of the long distances involved. The economic vitality of the thriving Key West business district is thoroughly dependent on the trucking logistics industry and must be served to support continued economic viability.

St. Augustine as a Comparison City

The City of St. Augustine historic/tourism district was examined as a comparison community to Key West in terms of central district truck deliveries. St. Augustine is situated on a long, narrow peninsula between the Matanzas and San Sebastian Rivers, with US 1 as the one major north-south thoroughfare. The central business district is a lively tourist destination revolving around the historic district and the old Spanish fort Castillo de San Marcos. The grid of narrow streets is prohibitive for large truck access although the same retail, business, service, and household delivery needs exist as in Key West. St. Augustine has worked to solve some of the tourist personal auto and tour bus traffic with a major multimodal transportation parking facility on the north side of the central business district. This area serves as a hub for tours, trams, trolleys, and tour buses, which have the benefit of removing from the streets much of the associated traffic searching for parking. This area is also the home of the Flagler College campus with all the parking on campus dedicated to faculty, students, staff who also use on-street parking. Truck parking for all purposes has remained an issue.

The North Florida Transportation Planning Organization (NFTPO) in 2015 studied the truck parking and management issue in St. Augustine. The *St. Augustine Truck Parking and Management Study* gathered and analyzed data and provided findings and recommendations. The study collected data on traffic counts, truck parking use and occupancy, and truck routes, and surveyed business owners, residents, and delivery companies; it also mapped the parking inventory of spaces by type within the city and provided information from a number of truck parking case studies from a wide range of communities. The case studies compared parking permit costs, time limits, and parking enforcement ticket charges.

The study distinguished four types of trucks: delivery trucks under 20-feet long; medium trucks 20- to 30-feet long; and heavy trucks 30-feet or longer. An inventory of 41 parking areas determined there are 520 automobile spaces available and spaces for 2 delivery vehicles, 21 medium trucks, and 4 heavy trucks. The parking area data was mapped and categorized by “proposed delivery zones” with hours of operation.

A survey of 3,577 individual business addresses were sent post cards requesting the type, size, and hours of delivery to each address. Responses were divided by “delivery companies” (37 responses), or “local residents or businesses” (84 responses). A key finding is that 88 percent of respondents were unwilling to pay for parking.

A Purpose and Needs statement was identified in the plan document. The Purpose was identified:

- ◆ Develop a commercial vehicle management plan for the City of St. Augustine
 - ◇ Propose strategies to reconfiguring parking spaces to balance truck and automobile parking needs
 - ◇ Parking management plan
 - ◇ Policies and procedures

The Needs identified in the study included the following:

- ◆ Meet truck parking demand
 - ◇ Demand exceeds capacity today
 - ◇ Trucks circulate causing congestion
 - ◇ Unneeded wear on pavements
- ◆ Serve businesses
- ◆ Preserve historic resources
- ◆ Reduce congestion
- ◆ Enhance safety identified needs

Identified Truck Routes and Restrictions

The study also identified truck routes with specific regulatory criteria for each route (see **Figure 8-4**). The truck routes (identified in yellow highlight in this map) are the preferred truck routes into and through town. Restricted routes allowing no vehicles over 8-feet wide x 8-feet high x 24-feet long are allowed.

Figure 8-4 Identified Truck Routes and Restrictions in St. Augustine



The Study analyzed policy and design alternatives, rejecting three and considering eight further:

Considered but eliminated:

- ◆ Alternative 1 – Truck Waiting Areas
- ◆ Alternative 2 – Central Distribution Center
- ◆ Alternative 3 – Centralized Loading Zones for Extended Times

Recommended:

- ◆ Alternative 4 – Time Restrictions in Loading Zones (**per Figure 8-5**)
- ◆ Alternative 5 – Smart Parking Management Systems
- ◆ Alternative 6 – Redesign of Existing Lots
- ◆ Alternative 7 – Restructuring Permits, Fines and Fees
- ◆ Alternative 8 – Truck Routes

Time restrictions were also recommended:

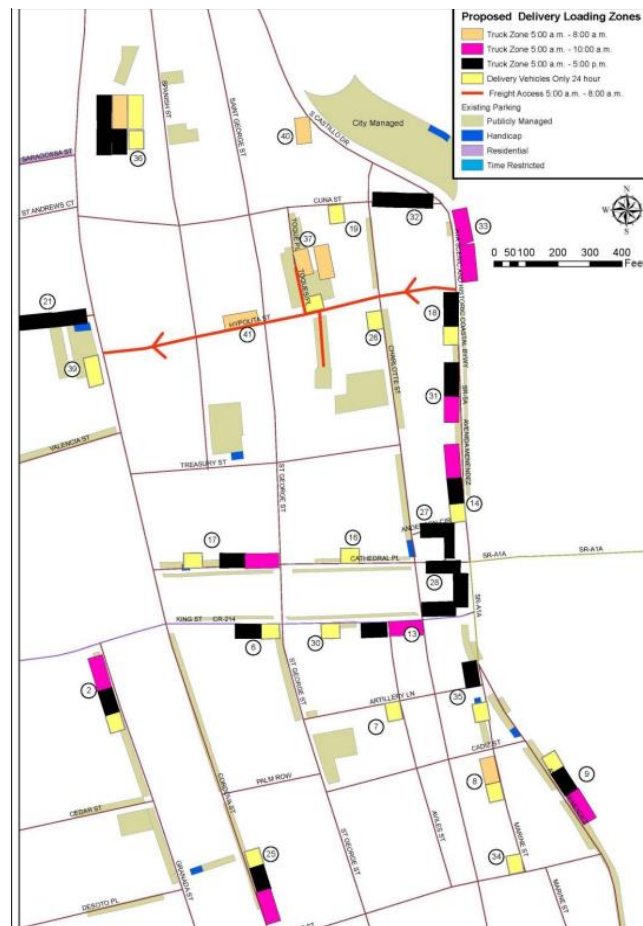
Small Delivery Trucks:

- ◆ 24-hour use

Larger Trucks:

- ◆ 5:00 a.m. to 8:00 a.m. near Old City
- ◆ 5:00 a.m. to 10:00 a.m. typical
- ◆ 5:00 a.m. to 5:00 p.m. remote lots for extended duration

Figure 8-5 Truck Zone Time Restrictions



Proposed permit fees and fines were analyzed and recommended per **Table 8-1**:

Table 8-1 Parking Permit Fees and Fines (St. Augustine)

Types of Permits	Payment Type	Annual Permit Fee	Meter Fee
Medium and Heavy Trucks			
Use of truck loading zones during permitted times (5:00 a.m. to 10:00 a.m. or 5:00 a.m. to 5:00 p.m. depending on the loading zone)	Annual fee	\$150	
Use of truck loading zones between 10:00 a.m. and 5:00 p.m.	Annual fee plus pay meter	\$275	\$5 per 30 minutes
Use of truck loading zones after 5:00 p.m.	Free		\$5 per 30 minutes
Hypolita Street (between 5:00 a.m. and 8:00 a.m. only)	Annual fee	\$275	
Toques Lot and Court (between 5:00 a.m. and 8:00 a.m. only)	Annual fee	\$275	
Cuna Street Unloading (between 5:00 a.m. and 8:00 a.m. only)	Annual fee	\$275	
Delivery Vehicles			
Use of delivery truck loading zones during permitted times (5:00 a.m. To 10:00 a.m.)	Annual fee	\$150	
Use of delivery loading zones between 10:00 a.m. and 5:00 p.m.	Annual fee plus pay meter fee	\$150	\$5 per 30 minutes
Use of delivery truck loading zones after 5:00 p.m.	Free	Free	
Historic District			
Permit for vehicles Artillery Lane, Aviles Street, Bravo Lane, Bridge Street, Cadiz Street Charlotte Street, Avenida Menendez, Cuna Street and Fort Lane (Ordinance 24-7)	Permit plus all other applicable fees	\$150	\$5 per 30 minutes
Violation Type		Fine	
Violation of truck route restrictions		\$300	
Blocking traffic		\$300	
Parking of car in loading zone		\$125	
Exceeding time limit of loading zone		\$125	
Parking in loading zone outside allowed time period without a permit		\$125	
Each additional offense add		\$50	

The analyses and findings of the St. Augustine study are included here to demonstrate the extent to which the issues and solutions can be identified and further studied. This sample is intended to suggest alternative policy options that can be considered by the City of Key West but are not the only options.

Although the City of St. Augustine is an analogous city in form and function, further study in Key West could tailor recommendations specific to the locational and access needs of Key West.

Source: <https://www.citystaug.com/DocumentCenter/View/639/December-2015-Truck-Parking-Management-Plan-PDF>

8.3 Overnight Truck Parking Needs Along US 1

8.3.1 Existing Conditions

This study scope did not inventory existing overnight or extended truck parking along the US 1 corridor. Where there are delivery schedule delays requiring an overnight stay, some drivers may arrange with the point of delivery to safely park overnight. Other drivers who made deliveries to the Lower Keys and were enroute back to the mainland may not have that option, in the event of a mechanical issue or an hours-of-service compliance issue.

Because of the regularity of truck deliveries to the Lower Keys by many businesses, it is anticipated that the frequency of truckers needing overnight truck parking is relatively low. During field visits, no significant circumstances of many trucks parked on shoulders, empty lots, or along frontage roads was observed. There are a number of recreational vehicles parks along US 1, but these typically do not cater to tractor trailers.

During field reviews, a few trucks were observed parked at service stations along the corridor as a solution. Other drivers in this situation may park on a wide shoulder area or on one of the frontage roads parallel to northbound US 1. An alternative option would be to provide a designated parking facility for trucks at a safe, convenient location for truckers forced to overnight with their vehicles. This section of the report explores that situation further.

8.3.2 Truck Parking Needs

According to data analysis throughout this report, there are an estimated 250 average daily round trip truck deliveries to the Key West area from the mainland and a total of 500 average daily round trip truck deliveries to all of the Keys from the mainland. Given the population and traffic forecasts, these figures are not expected to grow significantly. Based on traffic count variations over the year and tourism visitation patterns, it is expected that these average figures could vary by +/- 20% seasonally. Information suggests that there is very little truck travel to and from Key West and the Lower Keys involving overnight stays due to the operational costs of doing so. As a result, the common practice for firms or delivery services making freight deliveries to the Lower Keys opt to have drivers pull a full or long day as opposed to an overnight stay. Further, some long-distance truck movements with deliveries may require special arrangements, such as truck parking at the destination overnight, because of the delays or the nature of the delivery.

In terms of overnight truck parking needs in Monroe County, the greatest need was observed to be northbound in the Middle to Upper Keys which would be especially beneficial for those "caught" with hours of service limitations as they return northbound to the mainland after making deliveries in the Lower Keys. Deliveries to the Middle Keys destinations like Marathon are more easily accomplished within a normal working day and do not require overnight parking.

Truck driver hours of service rules are Federal regulations that limit the amount of time drivers can be on duty and driving, and require rest periods, to ensure safety. The main rules are:

- ♦ A driver must have 10 consecutive hours off-duty before beginning a shift.

- ◆ A driver can only be on-duty for 14 consecutive hours, which includes driving and other tasks.
- ◆ A driver can only drive for 11 hours within the 14-hour period.
- ◆ A driver cannot drive for more than 60 hours in 7 consecutive days or 70 hours in 8 consecutive days.
- ◆ A driver must use an electronic logging device to track duty status and driving hours.

While a driver can operate for up to 11 hours on any given day, considering the 7- and 8-day restriction yields an average over a week of about 8-1/2 hours a day of operating time. Therefore, a driver making a delivery from the central Miami-Dade County warehousing district to Key West would require from 2 hours, 40 minutes to perhaps 3 hours from Florida City southward to cover 120 miles, and perhaps another 40 minutes outside of peak hour traffic between Florida City and a warehouse in Medley, for a total of about 3-1/2 hours each way, or 7 hours driving time round trip.

However, it is possible that Miami traffic, US 1 traffic incidents, or heavy rainstorms somewhere along the trip could add an hour or more to the overall travel time, approaching the daily average limit. Depending on how the driver's weekly operating hours are scheduled, this may or may not be an issue. Alternatively, prudent freight dispatchers might reserve more time in the operator's schedule for the Key West run or book the trip earlier in the driver's weekly schedule when an 11-hour operating day could more readily be accommodated.

Additionally, depending on the number and average duration of delivery stops (or unexpected delivery delays) along with rest and meal breaks, the daily total on-duty limitation of 14 hours could also apply. While a quantitative estimate of potential truck parking demand cannot be derived mathematically from the preceding discussion, based on the available information, it is estimated that from 3% to 5% of the truck deliveries to the Lower Keys might have the periodic need for overnight truck parking.

This would yield a demand range in the off-season of 6-10 truck parking spaces, and a demand range of 9-15 truck parking spaces in the peak season. Expressed as a low-end to high-end need over the year, the low-end estimate would be 6-9 spaces and the high-end estimate would be 10-15 spaces.

8.3.3 Proposed Truck Parking Facility

In terms of location, it is assumed that truckers needing overnight parking would be outbound from the Lower Keys traveling northbound on US 1, and that a point north of Marathon, at least halfway back to Florida City would be more feasible. Locations along US 1 were reviewed for FDOT right-of-way conditions favorable to development of a truck parking site that would be suitably located and compatible with adjacent land uses, with enough room for 6-15 truck parking spaces. Few workable locations were identified. The most promising site that was found was the existing FDOT truck weigh station located at MM 86. This facility is situated on an 80-foot-wide strip of FDOT right-of-way (ROW) on the east side of US 1. This swath of land extends from the

85700 block of the Overseas Highway at Snake Creek to the south to the 86400 block to the north, a distance of about 4,200 feet. The weigh station's role historically has been to monitor the weight of trucks and loads for conformance with FDOT operating regulations (see **Appendix E** for weigh station data). In recent years, some of its functions have been automated, freeing many southbound trucks properly equipped to interface with the weigh station to have their weight checked by an in-pavement weigh-in-motion device north of the weigh station. Northbound trucks are also monitored, but most of these are longer-distance trucks traveling light as their loads have been delivered and they are making empty haul runs back to Miami-Dade County.

Since the weigh station is focused on truck movements, placing truck parking spaces there seemed like a logical alternative. **Figure 8-6** shows the existing weigh station location and associated ROW.

Figure 8-6 FDOT Weigh Station at Mile Marker 86



It is also noted that one of Monroe County's priority recommendations from the recent *US 1 Transportation Master Plan* is a modification to the weigh station, in part perhaps because its proximity to Snake Creek may be incompatible with a desired high-level fixed span bridge over Snake Creek. However, a review of proposed Snake Creek bridge replacement alternatives at the FDOT project website (<https://www.fdotmiamidade.com/snake-creek-bridge-sr-5us-1overseas-highway-mm-84-to-mm-87.html>) showed that three options would preserve the southerly access to the weight station, while a fourth option would relocate the weigh station into the median of US 1. These options are presented in **Figure 8-7**.

Figure 8-7 Snake Creek Bridge Replacement Alternatives

Option 1 – Modified the south weigh station access as a 4th leg of an intersection with Venetian Blvd. also serving a new looping frontage road.



Option 2 – Maintained the intersection with Venetian Blvd. but replaced the weigh station in the median of US 1.



Option 3 - Extended the bridge to the north over Venetian Blvd. with an at-grade roundabout for the south access to the weigh station (FDOT ROW along the prior weigh station site could still be used for truck parking.).



Option 4 - Converts south weigh station access to 4th leg of Venetian Blvd. intersection, also serving a 2-way access road.



Three options keep the weigh station footprint and south access intact. Option 2 relocates the weigh station in the median of US 1. These options are all subject refinement and/or revision in the planned PD&E Study and FDOT's decision on the weigh station's future.

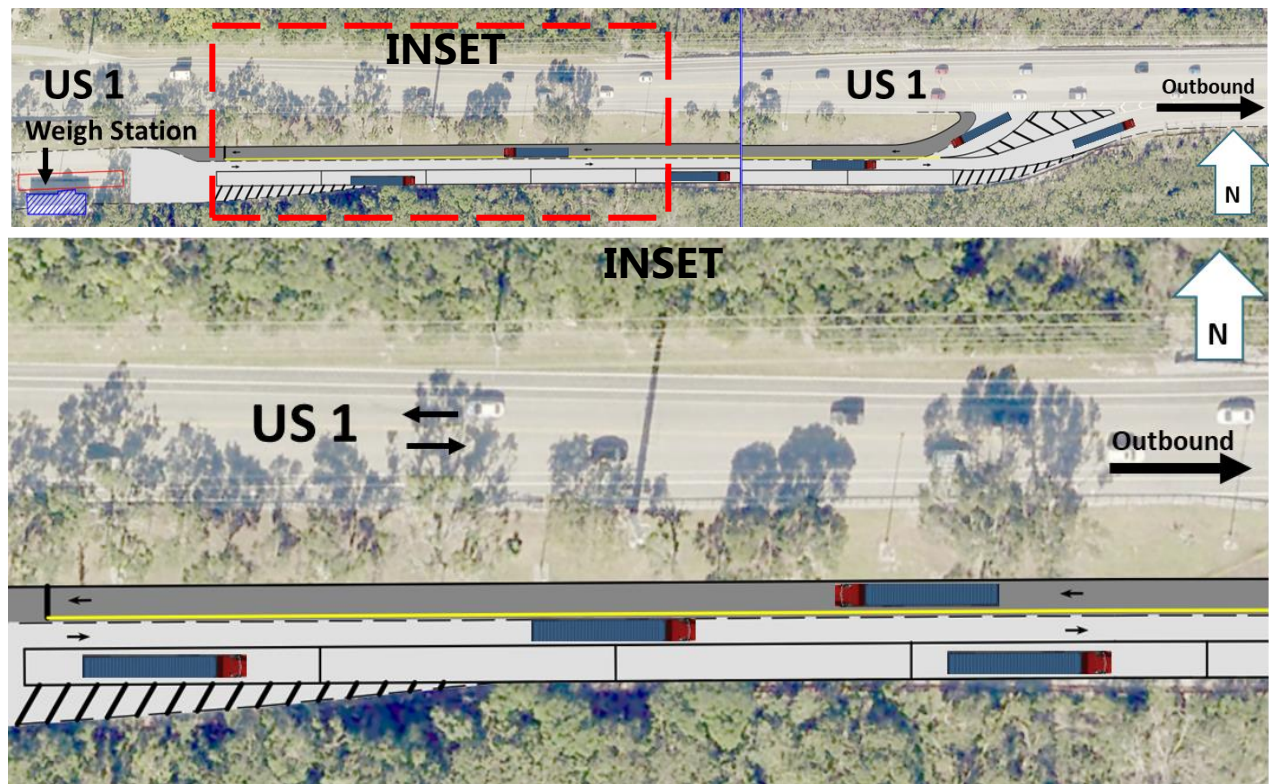
Source: FDOT

The feasibility study confirms except for Option 2 that the weigh station and its south access would remain functional. With this background addressed, three truck parking options at the FDOT weigh station site were identified as shown in **Figures 8-8 and 8-9**:

◆ **Option 1: Modify Existing Weigh Station Ramp:**

- ◇ Widen the roadway north of the weigh station on its west side and restripe the roadway to provide truck parking spaces on the existing northbound ramp lane.
- ◇ Provides seven truck parking spaces.
- ◇ Cost - \$340,000, or \$48,600 per space; no new ROW needed.

Figure 8-8 Option 1: Modify Existing Weigh Station Ramp



Source: Atkins

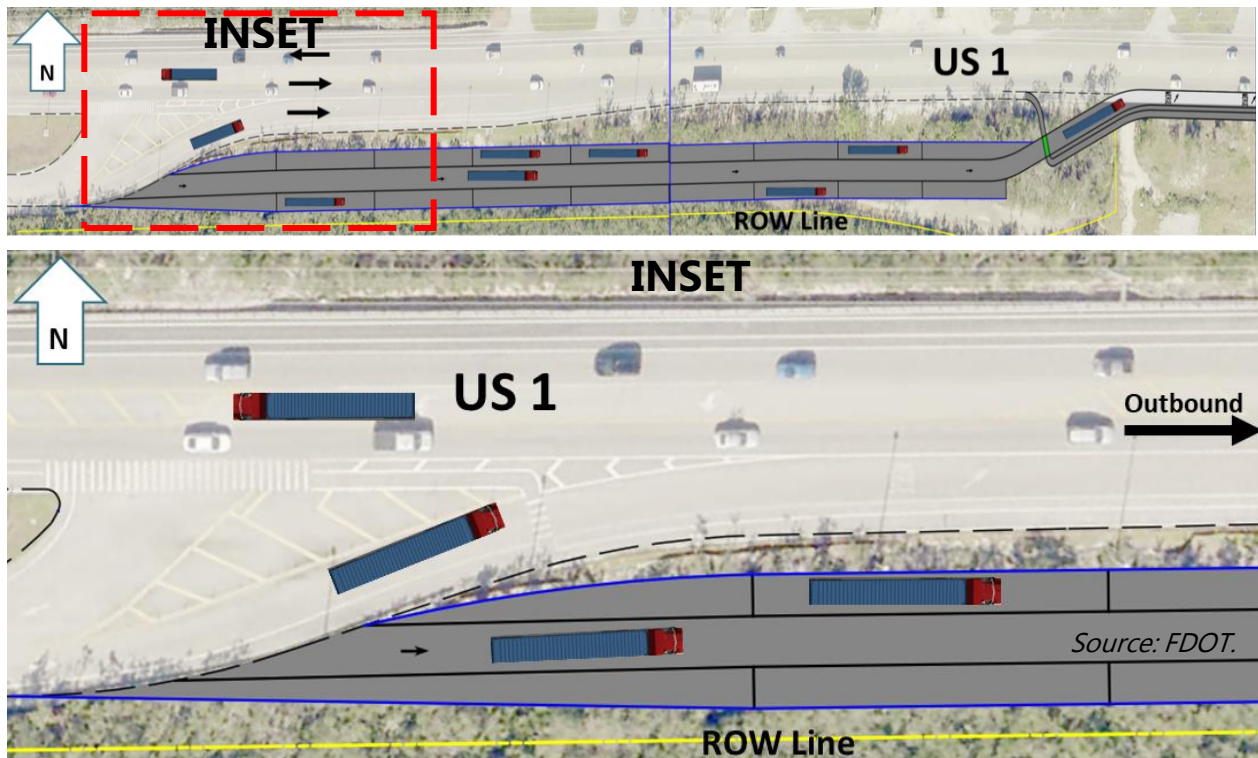
◆ **Option 2: Extend Weigh Station Ramp to the North:**

- ◇ Construct an extension to the north of the weigh station ramp connecting to US 1 to the north, with truck parking spaces on either side of the travel lane.
- ◇ Provides 16 truck parking spaces.
- ◇ Cost - \$1,012,000, or \$63,250 per space due to additional travel lane paving involved; no new ROW needed.

◆ **Options 1 and 2 Combined:**

- ◇ Provides 23 truck parking spaces.
- ◇ Cost - \$1,352,000, or \$58,800 per space; no new ROW needed.

Figure 8-9 Option 2: Extend Weigh Station Ramp to the North



Source: Atkins

Based on the estimated potential truck parking demand and the tradeoffs between the options, the following observations are provided:

- ◆ Option 1 is relatively low in cost and should be considered as the first step should the decision to provide truck parking at this location be pursued.
- ◆ Option 2 could be considered as incremental next step in providing truck parking, in the event that the utilization of the constructed Option 1 spaces is significant.
- ◆ A variation of Option 2 would be to construct the travel lane and one lane of truck parking spaces, providing an increment of eight more spaces over Option 1, for a total of 15 truck parking spaces, for a cost of \$708,000, or \$88,500 per space. The last increment of eight more spaces could be added later at a cost of \$304,000, or \$38,000 per space.

Breakdown of the costs for Options 1 and 2 are provided in **Tables 8-2 and 8-3**.

Table 8-2 Option 1 Cost Estimate

Weigh Station Truck Parking Option 1					
	Item Description	Unit	Quantity	Unit Cost	Total Cost
110-1-1	Clearing & Grubbing	AC	0.30	\$ 22,508.69	\$ 6,701.45
285-709	Optional Base Group 09	SY	1441.00	\$ 49.75	\$ 71,689.75
334-1-13	Superpave Asphalt Conc, Traffic C	TN	118.83	\$ 205.84	\$ 24,459.97
337-7-82	Asphalt Concrete FC, Traffic C, FC-9.5, PG 76-22	TN	451.77	\$ 235.79	\$ 106,522.85
570-1-2	Performance Turf, Sod	SY	212.78	\$ 6.60	\$ 1,404.33
711-16-101	Thermoplastic, Std-other surfaces, White, Solid 6"	GM	0.61	\$ 5,395.80	\$ 3,284.49
711-16-201	Thermoplastic, Std-other surfaces, yellow, Solid 6"	GM	0.31	\$ 1,725.00	\$ 533.51
711-11-125	Thermoplastic, Standard, White, Solid 18"	LF	450.00	\$ 7.19	\$ 3,235.50
711-11-141	Thermoplastic, Standard, White, Solid 24"	LF	12.00	\$ 7.19	\$ 86.28
711-11-170	Thermoplastic, Standard, White, Arrow	EA	6.00	\$ 148.65	\$ 891.90
700-1-11	Single Post Sign, F&I GM, <12	EA	4.00	\$ 499.10	\$ 1,996.40
Subtotal					\$ 220,806.43
Design (20%)					\$ 44,161.29
Geotech (15% of Design)					\$ 6,624.19
Survey (15% of Design)					\$ 6,624.19
CEI (10%)					\$ 22,080.64
Mobilization (10%)					\$ 22,080.64
MOT (8%)					\$ 17,664.51
Grand Total					\$ 340,041.90

Source: Atkins

Table 8-3 Option 2 Cost Estimate

Weigh Station Truck Parking Option 2					
	Item Description	Unit	Quantity	Unit Cost	Total Cost
110-1-1	Clearing & Grubbing	AC	1.91	\$ 22,508.69	\$ 42,968.04
285-709	Optional Base Group 09	SY	6609.56	\$ 49.75	\$ 328,825.39
334-1-13	Superpave Asphalt Conc, Traffic C	TN	545.28	\$ 205.84	\$ 112,240.44
337-7-82	Asphalt Concrete FC, Traffic C, FC-9.5, PG 76-22	TN	636.44	\$ 235.79	\$ 150,066.19
570-1-2	Performance Turf, Sod	SY	3764.00	\$ 6.60	\$ 24,842.40
711-16-101	Thermoplastic, Std-other surfaces, White, Solid 6"	GM	1.00	\$ 5,395.80	\$ 5,398.87
711-11-160	Thermoplastic, Standard, White, Message	EA	3.00	\$ 177.73	\$ 533.19
711-11-170	Thermoplastic, Standard, White, Arrow	EA	9.00	\$ 148.65	\$ 1,337.85
700-1-11	Single Post Sign, F&I GM, <12	EA	4.00	\$ 499.10	\$ 1,996.40
Subtotal					\$ 668,208.75
Design (20%)					\$ 133,641.75
Geotech (15% of Design)					\$ 20,046.26
Survey (15% of Design)					\$ 3,006.94
CEI (10%)					\$ 66,820.88
Mobilization (10%)					\$ 66,820.88
MOT (8%)					\$ 53,456.70
Grand Total					\$ 1,012,002.16

Source: Atkins

This discussion has characterized the level of potential truck parking need northbound along US 1 and developed options that could be implemented at the existing FDOT weigh station site at MM 86. However, implementation of a selected concept is dependent on FDOT's determination of the preferred Snake Creek bridge replacement concept which has to be validated and refined through a pending PD&E Study. Truck parking implementation is also somewhat dependent upon FDOT's approach to how the weigh station functions will be executed in the future, which has not yet been determined. Based on these two contingencies, it is considered that implementation of truck parking at the weigh station site should be deferred until further information is available about the bridge replacement and the weigh station's future.

9.0 Stakeholder Outreach and Feedback

The primary point of contact for coordinating this study with Monroe County was the Florida Keys Transportation Coordination Committee (FKTCC), comprising staff and officials from jurisdictions along US 1 in the Keys. This body generally meets quarterly to discuss and consider matters relating to mobility and the quality of multimodal transportation options across the length of US 1 in the Florida Keys. The assigned Monroe County Staff Lead coordinating the efforts of the FKTCC was the primary point of contact for study requests, discussing technical matters, arranging periodic study updates, and exchanging other information.

Updates on the status and progress of this plan were presented virtually using videoconferencing, at the study onset, two intermediate points, and at the study conclusion. Copies of the presentations are provided in **Appendix F**. Membership of the FKTCC covered all jurisdictions in the US 1 corridor and included the following:

- ◆ Key West
 - ◆ Commissioner Mary Lou Hoover: mlhoover@cityofkeywest-fl.gov
 - ◆ Alternate: Commissioner/Vice Mayor Sam Kaufman: skaufman@cityofkeywest-fl.gov
 - ◆ Director of Transportation Rod Delostrinos rdelostrinos@cityofkeywest-fl.gov (did attend at least one of the meetings).
- ◆ Islamorada
 - ◆ Vice Mayor Pete Bacheler: pete.bacheler@islamorada.fl.us
 - ◆ Alternate: Councilman Mark Gregg: mark.gregg@islamorada.fl.us
 - ◆ Acting Director of Planning Hank Flores hank.flores@islamorada.fl.us
 - ◆ (Include: Clerk Kelly Toth in communications: Clerk@islamorada.fl.us)
- ◆ Layton
 - ◆ Mayor Bruce Halle: brucehalle@aol.com
 - ◆ Alternate: Greg Lewis: mfd354@aol.com
 - ◆ Mimi Young: City Clerk/Assistant to the Building Official/Public Information Officer/Asst. to the Emergency Manager myoung@cityoflayton.com
- ◆ Marathon
 - ◆ Council Member Daniel Zieg: ziegd@ci.marathon.fl.us
 - ◆ Alternate: Planning Director Brain Shea: Sheab@ci.marathon.fl.us
- ◆ Key Colony Beach
 - ◆ (Ms.) Kimmeron Lisle: kcbllisle@gmail.com, cell: 917-523-0791
 - ◆ Alternate: Gerard Roussin, Building Official: building2@keycolonybeach.net, PH: 305.434.0804

In addition, communications occurred with other stakeholders and information sources. These included:

- ◆ Monroe County - Mayor Michelle Coldiron
 - ◆ Briefing on the study scope and objectives.

- ◆ Naval Air Base Key West
 - ◇ Wallace R. Moore, Jr - CIV USN NAVFAC SE JAX FL (USA)
 - ◇ Information regarding freight needs of the base.
- ◆ City of Key West
 - ◇ Commissioner Mary Lou Hoover – District 5
 - ◇ Coordination on naval base contact and discussion of general freight issues.
- ◆ FDOT Office of Maintenance – Motor Carrier Size and Weight (Central Office)
 - ◇ Statewide Scale Operations Manager - Paul Clark
 - ◇ Data for the US 1 weigh station at MM 86.
- ◆ AECOM
 - ◇ Vivek Reddy, PE
 - ◇ Coordination on the growth management traffic analysis.
 - ◇ Coordination on the US Transportation Master Plan.

These coordination efforts provided opportunities to share the approach and status of this study as well as to receive input and technical guidance which was incorporated into study analyses and findings.

A final presentation to the Monroe County Commission is planned to provide an overview of the study findings and recommendations for further coordination between FDOT and County technical staff.

10.0 Recommendations

10.1 Prioritization of Proposed Improvement Actions

This section of the report presents the proposed improvement recommendations within the study area that would enhance freight mobility and the mobility of general traffic, since they operate together in mixed flow. This study has identified a variety of transportation improvements that, if implemented, would incrementally contribute to reduced traffic friction and improved traffic conditions.

The recommendations are categorized into three implementation phases based on the results of the intersection and segment traffic service analyses performed in Section 6 of the report. Those phases are:

- ◆ Priority 1: Short-Term Improvements 2023-2030
- ◆ Priority 2: Intermediate-Term Improvements 2031-2040
- ◆ Priority 3: Long-Term Improvements 2041 and beyond

There is also a set of Other Project Recommendations focusing on planning and policy efforts that can be taken.

10.1.1 Proposed Intersection Improvements

Considerations in prioritizing intersections improvements, shown in **Figure 10-1**, were as follows:

- ◆ Location 3 (US 1 at Crane Blvd.) has no signal timing or capacity improvement recommendation and is not prioritized.
- ◆ Four locations (2, 4, 7 and 9) have signal timing recommendations only and were given a Priority 1 rating.
- ◆ Three locations (1, 5, and 6) has signal timing recommendations and minor turn lane improvements and were given a Priority 1 rating.
- ◆ Location 8 (US 1 at Ocean Bay Drive/Atlantic Ave.) has:
 - ◇ Signal timing recommendation and a turn lane improvement that applies under the No Growth Scenario; this package was assigned a Priority 1 rating.
 - ◇ Moderate and High Growth Scenario recommendation calling for a more costly additional turn lane; this element was assigned a Priority 3 rating, given the need is dependent on higher traffic growth that would occur over a longer period of time.
- ◆ Location 10 (US 1 at Pompano Ave./Key Largo Elementary School Exit Drive) is proposed for a traffic signal due to queuing issues on the school exit drive. It was considered that since this location was one of the US 1 Transportation Master Plan Priority recommendations, it should be assigned a Priority 1 rating.

Based on the above, all proposed intersection improvements are rated as Priority 1 in **Table 10-1**, except for the Priority 3 element for intersection Location 8.

10.1.2 Proposed Segment Improvements

Considerations in prioritizing segment improvements, shown in **Figure 10-2**, were as follows:

- ◆ Segment improvements (8) that aligned with the *US 1 Transportation Master Plan* and/or the 2023 ATTDs were assigned a **Priority 1** rating and where LOS per this freight study was below LOS C. These segments have high traffic volume and high truck percentage. These locations are:
 - ◇ Locations 15-22
- ◆ Isolated improvements (3) where right turn lanes would address delays on segments which have high traffic volume and high truck percentage and with LOS D were assigned **Priority 1** ratings. These locations include:
 - ◇ Locations 10, 13, and 14
- ◆ Several isolated improvements (8) located on segments with LOS below C and/or the action yielded improvement in the LOS letter grade, with some segments having high traffic volume and/or high truck percentage, were assigned **Priority 2**. These locations include:
 - ◇ Locations 1, 2, 4, 6, 8, 9, 23 and 26
- ◆ Several isolated improvements (7) located on segments with LOS below C and/or the action did not yield an improvement in the LOS letter grade were assigned **Priority 3**. These locations:
 - ◇ Locations 3, 5, 7, 11, 12, 24 and 25

Based on the above, proposed intersection improvements are prioritized into three groups with a similar number of projects and similar estimated costs, as shown in **Tables 10-2 through 10-4**.

10.2 Prioritized Improvement Actions

Tables 10-1 through 10-4 display the prioritized intersection improvements and segment improvements. In addition, both intersection and segment improvement projects with their priority rating are presented in **Figure 10-1** for the Lower Keys and in **Figure 10-2** for the Middle and Upper Keys.

Table 10-1 Priority Intersection Improvements

ID No.	Signalized Intersection	Peak	Intersection Volume (Existing)	Higher-Direction US 1 Truck %	2021/2045 Improvements		Additional Improvement	Cost	PRIORITY
					Additional Improvement				
					Traffic Signal Improvement	Capacity Improvement			
1	US 1 at Cross St	AM	2,929	8%	Increased green time on northbound (Cross St) (taken from mainline).	Exclusive 300'-storage northbound (Cross St) left-turn lane desired, but feasibility issues exist.	US 1 Transp. Master Plan mentions widening to 6 lanes.	\$29,652.94	1
		PM	3,380	3%					
2	US 1 at MacDonald Ave	AM	2,583	8%	Increased green time on northbound (MacDonald Ave) (taken from mainline).	No changes.	US 1 Transp. Master Plan mentions widening to 6 lanes.	-	1
		PM	2,939	3%					
3	US 1 at Crane Blvd	AM	1,290	14%	No changes.	No changes.		-	--
		PM	1,467	4%					
4	US 1 at Key Deer Blvd	AM	1,598	11%	Increased green time on southbound left (Key Deer Blvd) (taken from northbound, Key Deer Blvd).	No changes.		-	1
		PM	1,580	7%					
5	US 1 at 107th St	AM	2,185	9%	Increased green time on southbound (107th St) (taken from mainline).	Added 100' SBL (minor street) lane.		\$33,062.39	1
		PM	2,027	6%					
6	US 1 at 109th St	AM	2,061	9%	Increased green time on northbound (109th St) and southbound (109th St) (taken from mainline).	Added 150' SBL (minor street) lane.		\$39,566.65	1
		PM	1,966	7%					
7	US 1 at Bessie Dr/Sunshine Ave	AM	2,163	10%	Increased green time on northbound left (US 1) and southbound left (US 1) (taken from mainline through movement).	No changes.		-	1
		PM	2,126	6%					
8	US 1 at Ocean Bay Dr/Atlantic Ave	AM	2,516	9%	Increased green time on southbound left (US 1), decreased green time on northbound left (US 1), increased green time on southbound thru (US 1) and northbound through (US 1).	Lengthened existing SBLT lane from 230' storage to 400' in no growth scenario. Added second 400' SBLT lane in moderate and high growth scenarios.		\$40,768.92	1
		PM	2,896	8%				\$329,398.64	3
9	US 1 at Tarpon Basin Dr/Publix Entrance	AM	2,552	8%	Increased green time on eastbound (Tarpon Basin Dr), westbound (Publix), and southbound left (US 1) (taken from mainline through).	No changes.		-	1
		PM	2,876	7%					
10	US 1 at Pompano Ave/ Key Largo School	AM	2,383	7%	Signalize this intersection with nearby pedestrian signal timings as basis.	No changes.	Provide police during peak school times if unsignalized.	\$277,770.00	1
		PM	2,493	4%					

Table 10-2 Priority 1 Road Segments

ID No.	FACILITY	FROM STREET	TO STREET	ROADWAY	Lanes (2-way)	Segment Length (mi)	Mile Markers	2021 AADT	2021 Heavy Vehicle %	ROW Impact ²	Proposed Lane Lengths (ft)		Total Cost ³	PRIORITY
											Total Full- Width Distance (Left-Turn Lanes)	Total Full- Width Distance (Right-Turn Lanes)		
10	SR 5 / US 1 / Overseas Highway	30 Street (Marathon)	City Marina Ent	90040000	4	0.4	48.6-49.0	19,400	15.70%	Apparent sufficient ROW exists for these turn lanes. Potential interference with sidewalks.		400	\$107,986	1
13	SR 5 / US 1 / Overseas Highway	West of Blue Isle Blvd	Midpoint of Blue Isle Blvd and Fishing Area Parking	90050000	2	0.2	59.7-59.9	18,100	22.80%	Apparent sufficient ROW exists for this turn lane.		900	\$225,757	1
14	SR 5 / US 1 / Overseas Highway	West of N Conch Ave	East of N Conch Ave	90050000	2	0.2	62.8-62.9	18,100	22.80%	Apparent sufficient ROW exists for these turn lanes.		400	\$107,986	1
15	SR 5 / US 1 / Overseas Highway	East of Long Key State Park Ent	Annes Beach Area Ent	90050000	2	6.1	67.6-73.6	18,100	22.80%	Apparent sufficient ROW exists for the median left turn lane.	2,000		\$756,000	1
16	SR 5 / US 1 / Overseas Highway	East of Sandy Cove Ave	West of Leserra Ln	90060000	2	1.4	74.6-74.9	14,700	17.90%	Apparent sufficient ROW exists for the median left turn lane.	7,500		\$2,835,000	1
17	SR 5 / US 1 / Overseas Highway	79901 Overseas Hwy/End of the Bridge	Old State Hwy 4a	90060000	2	0.7	79.7-80.4	14,700	17.90%	Apparent sufficient ROW exists for this turn lane.		400	\$107,986	1
18	SR 5 / US 1 / Overseas Highway	Old State Hwy 4a	begin of the Bridge of Whale Harbor Channel/End of the Bridge	90060000	2	3.4	80.4-83.8	20,000	12.20%	Continuous EB and WB right-turn lanes (appx 2.95 mi of full width on each side). Sufficient ROW appears to be available. No further TWLTL needed.		31,200	\$7,362,662	1
19	SR 5 / US 1 / Overseas Highway	East of Old Hwy	Frontage Rd Ent	90060000	2	0.5	84.6-85.0	20,000	12.20%	Apparent sufficient ROW exists for these turn lanes.	600	600	\$284,483	1
20	SR 5 / US 1 / Overseas Highway	West of Venetian Blvd/End of the Bridge of Snake Creek Channel	East of Venetian Blvd	90060000	2	0.3	85.7-86.0	20,000	12.20%	ROW sufficient to provide a single SB RT Lane for access to businesses north of US 1, restricting access to a single entrance. (200 ft full width).		200	\$60,878	1
21	SR 5 / US 1 / Overseas Highway	West of Weigh Station Exit	Orange Ln	90060000	2	1.5	86.2-87.7	20,000	12.20%	Sufficient ROW is available to provide a continuous SB RT lane from Suburban Propane to AmeriGas (1,125 ft full width).		1,125	\$278,754	1
22	SR 5 / US 1 / Overseas Highway	Orange Ln	Royal Poinciana Blvd	90060000	2	2.4	87.7-90.1	28,300	14.70%	Sufficient ROW is available for a NB RT lane (4,900 ft full width). TWLTL already present for most of the segment.		4,900	\$1,167,922	1

Table 10-3 Priority 2 Intersection and Road Segments

ID No.	FACILITY	FROM STREET	TO STREET	ROADWAY	Lanes (2-way)	Segment Length (mi)	Mile Markers	2021 AADT	2021 Heavy Vehicle %	ROW Impact ²	Proposed Lane Lengths (ft)		Total Cost ³	PRIORITY
											Total Full-Width Distance (Left-Turn Lanes)	Total Full-Width Distance (Right-Turn Lanes)		
1	SR 5 / US 1 / Overseas Highway	College Rd	Midpoint of Cross St and MacDonald Ave	90010000	4	0.3	4.2-4.5	41,300	4.20%	Continuous EB right-turn lane (appx 1,500' of full width) could be feasible as ROW appears to be adequate. No TWLTL desired as there is a median currently restricting left turns.		1,500	\$367,081	2
2	SR 5 / US 1 / Overseas Highway	West of Coppitt Rd	Boca Chica Rd	90020000	2	0.9	9.8-10.7	25,600	9.10%	Continuous WB right-turn lane (appx 4,100' of full width) could be feasible as ROW appears to be adequate. Potential interference with sidewalks. No TWLTL necessary as there are already exclusive left-turn lanes for most driveways in this section.		4,100	\$979,489	2
4	SR 5 / US 1 / Overseas Highway	Begin of the Bridge/ West of Ships Way	Palmetto Ave	90020000	2	0.5	29.6-30.1	18,500	8.90%	Continuous EB and WB right-turn lanes (appx 1,900' of full width each way) could be feasible as ROW appears to be adequate. Potential interference with sidewalks. No additional TWLTL as there is already one.		3,800	\$908,827	2
6	SR 5 / US 1 / Overseas Highway	East of Chapman St	Cunningham Ln	90020000	2	0.2	30.6-30.8	18,500	8.90%	Continuous EB and WB right-turn lanes (appx 1,300' of full width each way) could be feasible as ROW appears to be adequate. Potential interference with sidewalks. ROW also adequate for median left turn lane treatment extending east of Key Deer intersection (approx. 1,000').	1,000	2,600	\$1,002,000	2
8	SR 5 / US 1 / Overseas Highway	Palm Island Ave	26 Street	90040000	4	0.4	48.0-48.4	19,400	15.70%	Proposed median left turn lane treatment fits within existing ROW (approx. 2,300' full width).	2,300		\$869,400	2
9	SR 5 / US 1 / Overseas Highway	26 Street	30 Street (Marathon)	90040000	4	0.2	48.4-48.6	19,400	15.70%	Install center raised median with left turn lanes. ROW is adequate for this action (appx 1,100' full width).	1,100		\$415,800	2
23	SR 5 / US 1 / Overseas Highway	Atlantic Blvd/Ocean Bay Dr	Buttonwood Bay Club Ent	90060001	4	3	96.4-99.5	19,700	9.80%	Sufficient ROW available for continuous RT and LT lanes in the US 1 SB direction from Ocean Bay Dr extending approximately 1.73 miles south. Start and end locations of turn lanes require further assessment including turning movement counts.	9,150	9,150	\$3,936,897	2
26	SR 5 / US 1 / Overseas Highway	Turn Ln to CR 905	Summerland Rd	90060000	2	0.2	106.3-106.5	33,400	9.10%	Remove entrances to gas station on the south side of US 1, requiring drivers to use the intersection at CR 905 to access these businesses. Apparent sufficient ROW is available to install a continuous right turn lane north of US 1 for side street access extending from Summerland Rd for approx. 675 ft.		675	\$172,760	2

Table 10-4 Priority 3 Intersection and Road Segments

ID No.	FACILITY	FROM STREET	TO STREET	ROADWAY	Lanes (2-way)	Segment Length (mi)	Mile Markers	2021 AADT	2021 Heavy Vehicle %	ROW Impact ²	Proposed Lane Lengths (ft)		Total Cost ³	PRIORITY
											Total Full-Width Distance (Left-Turn Lanes)	Total Full-Width Distance (Right-Turn Lanes)		
3	SR 5 / US 1 / Overseas Highway	East of Dobie St	East of E Shore Dr	90020000	2	1.2	24.1-25.3	13,200	30.00%	Continuous EB right-turn lane (appx 4,200' of full width) could be feasible as ROW appears to be adequate. No additional TWLTL desired as there is already one, along with exclusive left-turn lanes, for most of the segment.		4,200	\$1,003,043	3
5	SR 5 / US 1 / Overseas Highway	Loma Ln	East of Chapman St	90020000	3	0.4	30.2-30.6	18,500	8.90%	Continuous EB and WB right-turn lanes (appx 1,200' of full width each way) could be feasible as ROW appears to be adequate. Potential interference with sidewalks and bus stops. No additional TWLTL desired as there is already one.		2,400	\$579,069	3
7	SR 5 / US 1 / Overseas Highway	Sands Rd	2nd St	90030000	2	0.2	31.1-31.2	12,200	14.60%	Apparent sufficient ROW exists for these turn lanes. Potential interference with bus stop.		900	\$225,757	3
11	SR 5 / US 1 / Overseas Highway	Sombrero Beach Rd	Lime Ln	90040000	4	1.8	50.0-51.8	25,100	11.50%	Continuous EB and WB right-turn lanes (appx 3,700' of full width on the north side and appx 1.83 mi of full width on the south side. Work within ROW is potentially feasible. Potential interference with sidewalks and utility poles. No further TWLTLs are needed here since there is already a TWLTL for much of it, as well as grass medians and left-turn lanes.		13,400	\$3,170,024	3
12	SR 5 / US 1 / Overseas Highway	West of Kyle Ave	West of Blue Isle Blvd	90040000	2	2.3	57.4-59.7	15,000	13.00%	Continuous EB and WB right-turn lanes (appx 3,800' of full width on the north side and appx 4,900' of full width on the south side. Sufficient ROW appears to be available. No further TWLTL needed.		8,700	\$2,062,980	3
24	SR 5 / US 1 / Overseas Highway	Buttonwood Bay Club Ent	Atlantic Blvd/Ocean Bay Dr	90060000	4	3.1	96.4-99.5	31,100	9.80%	Sufficient ROW available for continuous RT and LT lanes in the US 1 NB direction from Ocean Drive extending approximately 2 miles north. Start and end locations of turn lanes require further assessment including turning movement counts.	10,600	10,600	\$4,556,312	3
25	SR 5 / US 1 / Overseas Highway	Bonefish Ave	Andros Rd	90060000	4	2.8	103.3-106.1	31,100	25.20%	Restrict median openings in the southbound direction along US 1 requiring drivers to U-turn at set locations. Sufficient ROW to provide continuous NB RT lane 200ft prior to the Humane Animal Care Coalition to Keys Lake Villas on northbound US 1 (1,500 ft full width). Sufficient ROW for SB RT lane from Andros Rd to Sexton Cove Dr (2,000 ft full width) and remove duplicate business entrances.		3,500	\$838,164	3
1. Costs are provided under the assumption that turn lanes will be needed for the entire length specified in the "Proposed Improvements" and "Right of Way Impacts" columns (worst-case scenario). However, start and end locations														
of turn lanes require further assessment including turning movement counts. Additionally, there may be non-ROW feasibility issues, such as conflicts with sidewalks, utilities, etc. at some of these locations.														
2. Segment LOS was C or better and did not warrant a proposed improvement.														
3. Costs estimated based on values obtained as part of the Monroe County Freight Improvement Study (MCFS).														

Figure 10-1 Intersection and Segment Priorities – Lower Keys

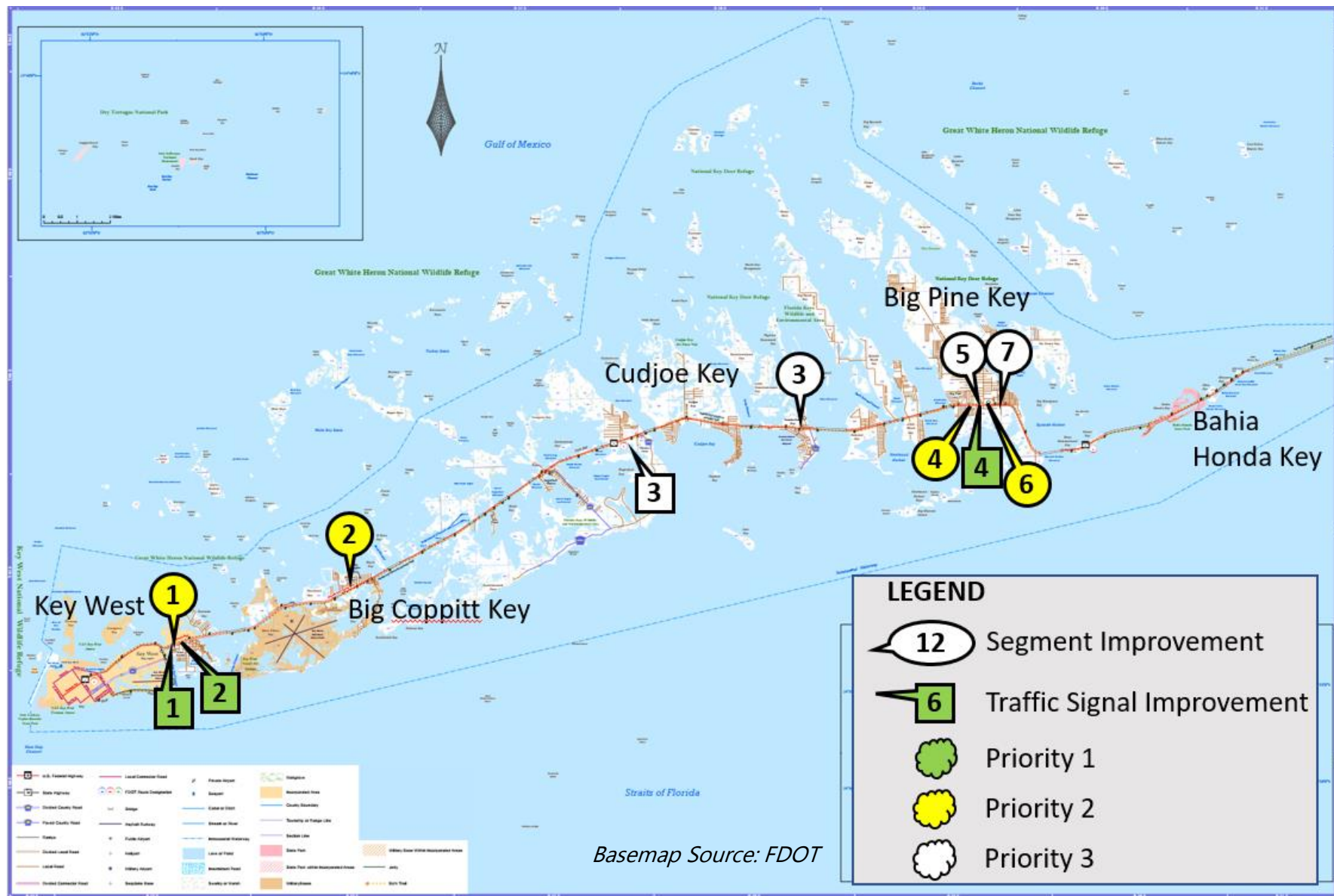
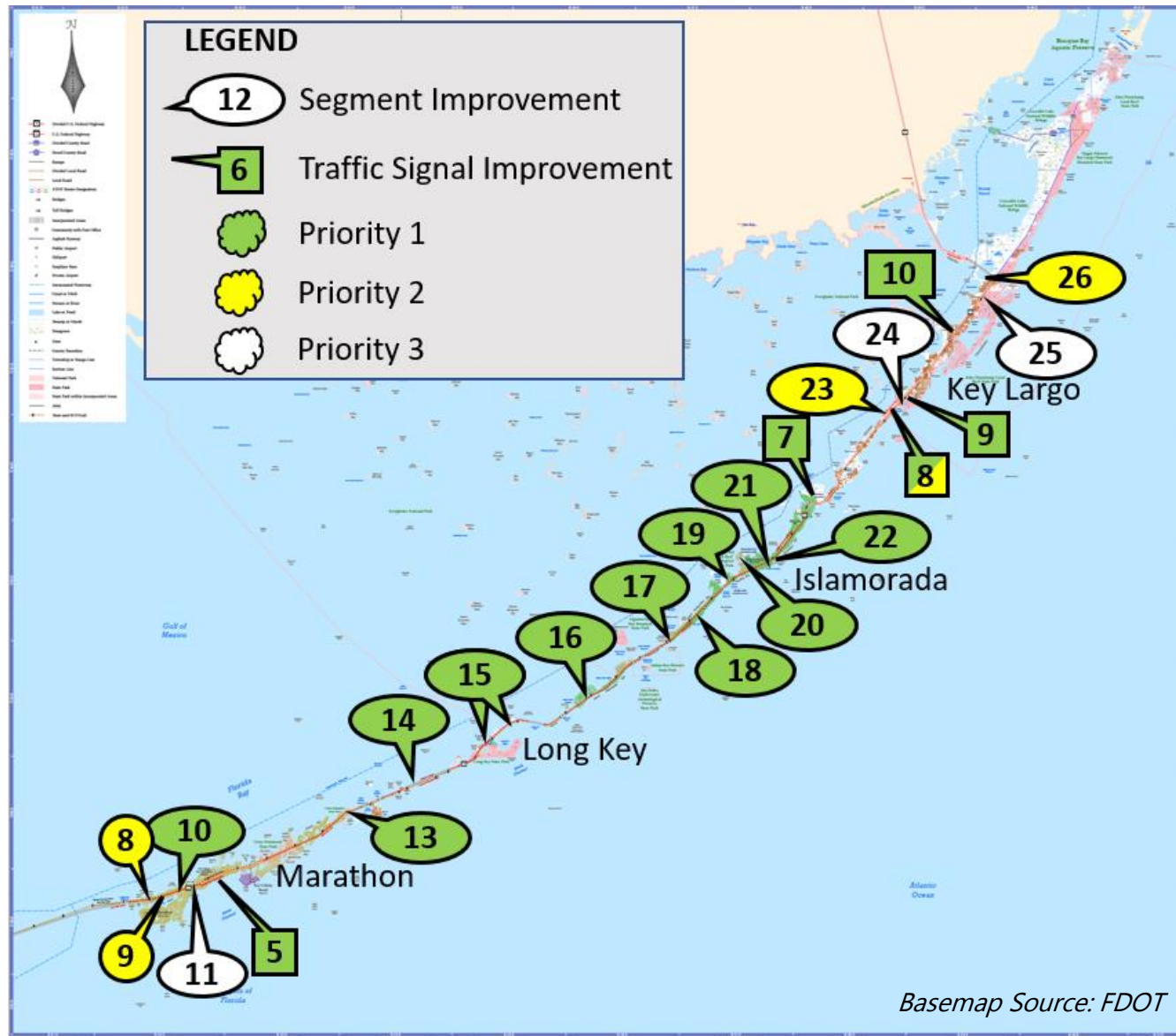


Figure 10-2 Intersection and Road Segment Priorities – Middle and Upper Keys



Conceptual cost estimates were developed for proposed improvements, both segment-related and intersection-related. For intersections, improvement actions for lane modifications and additions, as well as traffic signal control actions, were quantified and estimated for each location. For segments, improvement actions consisted of new or extended left and right turn lanes, including tapers as applicable. These were estimated for the taper and lane configurations based on assumed lengths, allowing adjustment to the actual lengths as proposed for each location. Current FDOT unit prices and pay items were utilized, and included additives for design, survey, geotechnical, mobilization, and maintenance of traffic components. Cost estimate information is provided in Appendix B.

The proposed project costs are summarized as follows:

◆ Priority 1: Short-Term Improvements	2024-2030
◇ Intersections	\$ 420,820
◇ <u>Segments</u>	<u>\$ 13,295,414</u>
◇ Subtotal	\$ 13,716,234
◆ Priority 2: Intermediate-Term Improvements	2031-2040
◇ Intersections	\$ 329,400
◇ <u>Segments</u>	<u>\$ 8,652,254</u>
◇ Subtotal	\$ 8,981,654
◆ Priority 3: Long-Term Improvements	2041 and beyond
◇ Intersections	\$ 0
◇ <u>Segments</u>	<u>\$12,435,349</u>
◇ Subtotal	\$12,435,349
◆ TOTAL of All Phases	
◇ Intersections	\$ 750,220
◇ <u>Segments</u>	<u>\$34,383,017</u>
◇ Subtotal	\$35,133,237

10.3 Truck Deliveries and Parking

This study reviewed truck parking conditions across Monroe County. These were the key observations:

- ◆ Deliveries and shipment to and from Florida Keys businesses along US 1 and in the urban clusters in the corridor are the lifeline of these businesses, since trucking is the only mode of freight.
- ◆ At larger commercial areas, there are often designated truck delivery zones off-street on the side or rear of the buildings. At small and freestanding businesses along the corridor, truck loading zones are largely absent and truck deliveries were observed occurring in parking aisles or along the US 1 roadway, often temporarily blocking traffic and visibility temporarily.
- ◆ In the central Key West historic/tourism district, designated loading zones were observed with 2 pm end times, at which the space reverted to automobile parking for pay. A case study of a truck parking analysis in St. Augustine was recapped should the City of Key West consider the need for further analysis of truck parking conditions and issues to be necessary.
- ◆ The need for overnight truck parking for truck deliveries travelling to the Lower Keys was considered. It was noted that there was no significant need or demand in the southbound direction. In the northbound direction, there could be instances of regular delivery routes or special deliveries where truck operators might encounter federal hours-of-service or other operating constraints that would require them to park overnight. This was judged to be more problematic in the Upper Keys as truckers were departing after completed deliveries. The potential for truck parking spaces at the existing FDOT Weight Station at MM 86 was identified and developed. It was estimated that the daily range of overnight truck parking demand in the off-season was 6-10 truck parking spaces and was 9-15 truck parking spaces in the peak season. Expressed as a low-end to high-end need over the year, the low-end estimate would be 6-9 spaces and the high-end estimate would be 10-15 spaces. Two truck parking options providing seven and 15 spaces each with costs of \$340,000 and \$1,012,000, respectively, were identified.

However, this potential truck parking project is presently affected by two conditions. The first is that FDOT is refining its longer term strategy for truck weight enforcement statewide and at the MM 86 weigh station, where weigh-in-motion technology has already been implemented in the southbound for qualifying truckers. However, further weigh station management options are not fully defined. Secondly, FDOT is evaluating replacement options for the Snake Creek Bridge just to the south of the MM 86 weigh station. The initial options presented in Section 8.0 preserve the southern access point to the weigh station except for one option which places it in the median of US 1 just west of its present locations. A preferred bridge replacement option is subject to the results of a Project Development and Environmental Study yet to be conducted. For these two reasons, it is considered that the implementation of the potential truck parking options be deferred until further decisions affecting the MM 86 weigh station are made.

10.4 Other Recommendations

An important part of the study findings is the identification of other additional actions, including ongoing and follow-up activities relating to the advancement of freight mobility across the study area. The ownership of conducting these actions is across the hierarchy of agencies and entities with responsibility for transportation facilities and/or a governance role. These actions include:

- ◆ Continue to coordinate findings of this study with the County's regular *Arterial Travel Time and Delay Study*, and with implementation of the Monroe County US 1 Transportation Master Plan.
- ◆ Coordinate the results of this study with the next cycle of the Monroe County Long Range Transportation Plan.
- ◆ Monitor the interface between this study's traffic signal timing recommendations with the ongoing FDOT COAST project and with FDOT's management role for traffic signals along US 1 in Monroe County.
- ◆ Coordinate FDOT's Target Zero traffic safety initiative in the implementation of study recommendations which should provide traffic safety mitigation.
- ◆ Monitor truck delivery operations along the US 1 corridor for unsafe conditions. Monroe County should consider truck loading zone requirements for retail businesses dealing in goods and commodities, although retrofitting older properties is a challenge.

10.5 Potential Funding Sources

This freight subarea study examined freight mobility needs of the unique US 1 corridor traversing the Florida Keys in Monroe County, as well as several municipalities and unincorporated development. Recommendations are focused on maintaining and enhancing traffic operations on US 1 for the benefit of both freight and general traffic movements, as they both share this single link between Key Largo and Key West over a distance of 112.6 miles in Monroe County.

The roadway system can be categorized by governmental jurisdiction. On-system roads refer to those maintained by FDOT, and off-system refers to roads maintained by Monroe County or municipalities. This study made only on-system improvement recommendations, for both intersections and roadway segments. FDOT is primarily focused on on-system roadway projects and applies various State and Federal funds to its on-system projects. Considering the funding resources and programs of FDOT and the Federal Highway Administration, including the National Highway Freight Program (NHFP) and federal traffic safety programs, there are a variety of potential funding sources for proposed projects. Depending on the jurisdictional responsibilities for a given project, municipal and county funds could also be involved.

For on-system projects where FDOT would be the lead agency, projects would need to be recognized in the current FDOT's Monroe County Five-Year Transportation Improvement Program. In general, however, FDOT on-system projects would first be presented to and accepted by the FDOT District Six Scoping Committee for eventual inclusion on the FDOT Five Year Work Program.

In addition, FDOT coordinates with Monroe County on the preparation of a Long Range Transportation Plan to the TPO's 2050 LRTP in progress, Miami-Dade County has embarked on its own Transportation Plan. The findings of this study should be communicated to and coordinated with Monroe County and affected municipalities, as is FDOT's standard practice in consideration in their infrastructure planning efforts, and towards funding of worthy projects.

10.6 Conclusions

The US 1 corridor study area in Monroe County possesses a diverse and extensive freight and logistics presence. It supports the inputs and outputs of the seafood and agricultural industry, business and commercial sites, construction projects and material suppliers, institutional, military and governmental facilities, the tourism industry, and, of course, the consumer-based goods and foodstuff distribution chain. This freight and logistics presence is not as visible and dominant as the multimodal freight-centric districts of neighboring Miami-Dade County, but it is just as vital to the Monroe County economy on a proportional basis. The Monroe County freight and logistics network is reliant solely on trucking for the movement of goods and commodities and is further solely dependent upon US 1 as its lifeline to support a population base of 80,000 persons which nearly doubles during the peak tourism season. In addition, the US 1 Overseas Highway is known as one of the most scenic drives in the country, connecting tourists to a myriad of tropical vistas and attractions known worldwide.

As freight and logistics providers and users evolve in how they plan for efficiency in their distribution of goods, materials, and food stuffs, there is one constant – the need for reliable travel times along the US 1 corridor under the traffic concurrency requirements embodied in the County's growth management regulations. The implementation of the intersection and road segment improvements identified by the network analysis in this study will contribute to addressing areas of traffic friction affecting operational speeds, helping to maintain the LOS C standard generally experienced today. Pursuit of the study recommendations will further complement the advancement of freight mobility and general community mobility along the US 1 corridor in the Florida Keys into the future.