BROWARD COUNTY
FLORIDA

Transportation Element Support Document

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Airport facility – An area of land or water improved, maintained or operated by a governmental agency for the landing and takeoff of aircraft, or privately owned paved runways of 4,000 or more feet in length, and any appurtenant area which is used for airport buildings, or other airport facilities or rights-of-way.

Arterial road – A roadway providing service which is relatively continuous and of relatively high traffic volume, long trip length, and high operating speed. In addition, every United States numbered highway is an arterial road.

Bicycle and pedestrian ways – Any road, path or way which is open to bicycle travel and traffic afoot and from which motor vehicles are excluded.

Bicycle lane – A portion of a roadway which has been designed by striping, signage, and pavement markings for the preferential or exclusive use of bicyclists (American Standards of State Highway and Transportation Officials (AAHSTO)).

Bike path – A bikeway physically separated from motorized vehicular traffic by an open space or barrier and located either within the highway right-of-way or within an independent right-of-way (AASHTO).

Blueway – A waterway which has been designated for conservation, recreation, or both and which may be connected with greenway hubs, sites, and linkages.

Broward County Trafficways Plan – The plan promulgated by the Broward County Planning Council which depicts a network of trafficways for Broward County (Land Development Code). The Broward County Trafficways Plan is a roadway right-of-way preservation plan. To accommodate the impacts of new development, right-of-way is required of developing parcels to provide for an adequate regional roadway network.

Carpool and vanpool – Carpool is an arrangement where two or more people share the use and cost of privately owned automobiles in traveling to and from pre-arranged destinations together, and vanpool is an arrangement which a group of passengers share the use and cost of a van in traveling to and from pre-arranged destinations together (U.S Department of Transportation (DOT)).

Capacity – The maximum sustainable flow rate at which vehicles or persons reasonably can be expected to traverse a point or uniform segment of a lane or roadway during a specified time period under given roadway, geometric, traffic, environmental, and control conditions; usually expressed as vehicles per hour, passenger cars per hour, or persons per hour. (Transportation Research Board).

Container– A large standard sized metal box into which cargo is packed for shipment; containers are designed to be moved with common handling equipment, functioning as the transfer unit between modes rather than the cargo itself (Intermodal Association of North America).

Farebox recovery ratio – The ratio of fare revenue to operating expenses (Federal Transit Administration (FTA)).

Greenway – A corridor of protected open space established for conservation, recreation or both. (Florida Department of Environmental Protection).

Intelligent Transportation System (ITS) – Electronic communications, or information processing used singly or in combination to improve the efficiency or safety of a surface transportation system (DOT).

Intermodal facility– An intermodal facility is a single or closely related transportation facility used by two or more modes of transportation. Intermodal system is one providing connections between different modes, such as adequate highways to ports or bus feeder services to rail transit; individual modes working together to provide the user with the best choices of services (Florida Department of Transportation (FDOT)).

Level of Service – A quantitative stratification of quality of service into six letter grades. LOS provides a generalize and conceptual planning measure that assesses multimodal service inside the roadway environment (essentially inside the right-of-way) (FDOT).

Local road – A roadway providing service which is of relatively low traffic volume, short average trip length or minimal through traffic movements, and high-volume land access for abutting property.

Long Range Transportation Plan – A document resulting from regional or statewide collaboration and consensus on a region or state's transportation system, and serving as the defining vision for the region's or state's transportation systems and services. In metropolitan areas, the plan indicates all of the transportation improvements scheduled for funding over the next 20 years.

Modal split – The proportion of total person trips that use each of various specified modes of transportation (DOT).

Multimodal system – A transportation system consists of more than one mode of travel to serve transportation needs in a given area (FDOT).

Minor arterial– A roadway interconnects with and augments the urban principal arterial system.

Neighborhood Transit Center – Means a facility needed to provide service to 2-3 mainline Broward County Transit(BCT) routes and one local circulator with total daily ridership of 1,000 to 2,000 passengers.

Paratransit – Transit services which are characterized by their nonscheduled, non-fixed route nature such as ride sharing, car or van pools, demand responsive buses, and other public transit services.

Planning analysis hour factors (K_{100}) – The ratio of a highway section's volume in the year's 100th highest volume hour to its annual average traffic volume. In developed areas the year's 100th highest volume hour represents a typical weekday peak traffic hour during the area's peak travel season, i.e., that area's peak season rush hour, usually in the late afternoon. The K100 factor refers to a demand volume, not necessarily a measured volume.

Right-of-way– Land in which the state, a county, or a municipality owns the fee simple title or has an easement dedicated or required for a transportation or utility use.

Runway Protection Zone (RPZ) – An area off the runway end used to enhance the protection of people and property on the ground (FAA).

Strategic Intermodal System (SIS) – The Florida transportation system composed of transportation corridors and facilities of statewide and interregional significance that play an important role in the movement of people and goods (FDOT).

Terminal – Any location where passenger or freight either originates, terminates, or is handled in the transportation process; or where commercial motor carriers maintain operating facilities (DOT).

Traffic Review and Impact Planning System, (TRIPS) Model – A computer model maintained in the Broward County Development Management Division which accounts for the traffic from approved but not built development. See Committed Trip (Land Development Code, Broward County).

Transit-oriented development (TOD) – or Transit Node is the land area around a major transit/rail stop. TOD or Transit nodes can include neighborhood transit centers, park-and-ride lots, Tri-Rail stations, BCT terminals and transit facilities.

Transportation Concurrency Management Area (TCMA) – A compact geographic area with existing or proposed multiple, viable alternative travel paths or modes for common trips. The purpose of this optional alternative transportation concurrency approach is to promote infill development or redevelopment within selected portions of urban areas in a manner that supports the provision of more efficient mobility alternatives, including public transit.

Transportation corridors – Major routes used for moving people and goods by one or more transportation options

Transportation Demand Management (TDM) – Transportation demand management (TDM) refers to a set of strategies aimed at reducing the demand for roadway travel, particularly in single occupancy vehicles. These strategies address a wide range of externalities associated with driving, including congestion, poor air quality, less livable communities, reduced public health, dependence on oil, reduced environmental health, and climate change and GHG emissions. Some TDM strategies are designed to reduce total travel demand, while others are designed to reduce peak period demand, which may disproportionately contribute to these externalities.

Transportation disadvantaged – those persons who because of physical or mental disability, income status, or age are unable to transport themselves or to purchase transportation and are, therefore, dependent upon others to obtain access to health care, employment, education, shopping, social activities, or other life-sustaining activities, or children who are handicapped or high-risk or at-risk as defined in s. 411.202 Florida Statutes.

Transportation System Management (TSM) – Means improving roads, intersections, and other related facilities to make the existing transportation system operate more efficiently. Transportation system management techniques include demand management strategies, incident management strategies, and other actions that increase the operating efficiency of the existing system.

LIST OF ABBREVIATIONS

ADA	Americans with Disabilities Act
ATMS	Advance Traffic Management Systems
BCT	Broward County Transit
CPTED	Crime Prevention through Environmental Design
CSX	Coastal Seaboard Railroad
DMS	Dynamic Message Signs
DRI	Development of Regional Impact
EV	Electric Vehicle
FEC	Florida East Coast Railroad
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
FDOT	Florida Department of Transportation
FIHS	Florida Intrastate Highway System
HOT	High Occupancy Toll
ICM	Integrated Corridor Management
ITS	Intelligent Transportation System
LOS	Level of Service
LRTP	Long Range Transportation Plan
MPO	Metropolitan Planning Organization
MTP	Metropolitan Transportation Plan
MUTCD	Manual on Uniform Traffic Control Devices for streets & highways
PTC	Positive Train Control
RTP	Regional Transit Plan
SFRTA	South Florida Regional Transportation Authority

SHS	State Highway System
SIS	Strategic Intermodal System
SSPP	Safety System Program Plan
TCMA	Transportation Concurrency Management Area
TDM	Transportation Demand Management
TDP	Transit Development Plan
TIP	Transportation Improvement Programs
TOD	Transit Oriented Development
TNC	Transportation Network Companies
TSM	Transportation System Management
TSM&O	Transportation System Management & Operations

Support Document

Transportation

The Transportation support document provides the data and analysis used as the basis for the goals, objectives, and policies presented in the transportation element of the comprehensive plan. The transportation element sets a core vision for transportation within Broward County and defines the path to realizing the vision.

The body of the Support Document is developed in four parts:

- Data Requirements and Analysis
- Projected Growth and Travel Patterns
- Plans to Meet Transportation Network Needs
- Implementation

B-Cycle Station in Downtown Hollywood

New River Greenway

INTRODUCTION

A. General

The Transportation Element of the Comprehensive Plan is intended to set the core vision for mobility while recognizing the connection between development patterns and transportation systems. The goals, objectives, and policies are intended to clearly lay out this vision. The Transportation Support Document contains the data and analysis to substantiate the goals, objectives, and policies outlined in the Transportation Element. As described in the Transportation Element, Broward County is shifting from its traffic and auto-centric policies to policies that prioritize context sensitive implementation of multimodal and regional transportation. The organization of this support document will be reflective of these priorities.

B. Service Area

The Transportation Element service areas are different for the various transportation system features. Roadway systems are countywide and include roadways classified as collectors and above that are maintained by the State, Broward County, and municipalities; the transit system consists of multiple operators including Broward County Transit (BCT), South Florida Regional Transportation Authority (SFRTA), Brightline, and municipal community shuttle programs; bikeways and pedestrian ways that are limited in this Element to roadways classified as collectors and above; greenways and blueways, as designed on the Broward County Greenways System Master Plan; waterways including both navigable waterways and Port Everglades which is confined to the Port Jurisdiction Area (PJA); aviation including both the Fort Lauderdale/Hollywood International Airport (FLL) and the North Perry Airport (HWO); the countywide railway system; county recreational roadways; and a countywide intermodal system. The FLL, HWO, and PJA are the general aviation and air carrier airports and port that are owned and operated by the County and addressed in this Element. There are two municipal general aviation airports, Pompano Airpark and the Fort Lauderdale Executive Airport that are not owned by Broward County.

C. Planning Horizon

The Transportation Element planning horizon spans from 2023 to 2045. This span for the Element is variable to allow Broward County to meet and identify short term priorities while also identifying more aspirational policies to be worked towards in the longer term. The year 2045 is consistent with the timeframe for the upcoming update of the Broward Metropolitan Planning Organization (MPO) Metropolitan Transportation Plan (formerly, Long Range Transportation Plan).

DATA REQUIREMENTS & ANALYSIS

Chapter 163.3177 (required and optional elements of comprehensive plan; studies and surveys) provides data and analysis requirements for all mandatory and optional elements of the comprehensive plan. Section 6(b) outlines requirements specific to the transportation element, and consist of the following:

1. The existing transportation system levels of service and system needs and the availability of transportation facilities and services.
2. The growth trends and travel patterns and interactions between land use and transportation.
3. Existing and projected intermodal deficiencies and needs.
4. The projected transportation system levels of service and system needs based upon the future land use map and the projected integrated transportation system.
5. How the local government will correct existing facility deficiencies, meet the identified needs of the projected transportation system, and advance the purpose of this paragraph and the other elements of the comprehensive plan.
6. All alternative modes of travel, such as public transportation, pedestrian, and bicycle travel.
7. Aviation, rail, seaport facilities, access to those facilities, and intermodal terminals.
8. The capability to evacuate the coastal population before an impending natural disaster.
9. Airports, projected airport and aviation development, and land use compatibility around airports.
10. An identification of land use densities, building intensities, and transportation management programs to promote public transportation systems in designed public transportation corridors so as to encourage the population densities sufficient to support such systems.
11. The provision of efficient public transit services based upon existing and proposed major trip generators and attractors, safe and convenient public transit terminals, land uses, and accommodation of the special needs of the transportation disadvantaged.
12. Plans for port, aviation, and related facilities coordinated with the Transportation Element.
13. Plan for the circulation of recreational traffic, including bicycle facilities, exercise trails, riding facilities, and such other matters as may be related to the improvement and safety of movement of all types of recreational traffic.

This Support Document will provide details, data, and analysis on each of these topics respectively.

A. The Existing Transportation System

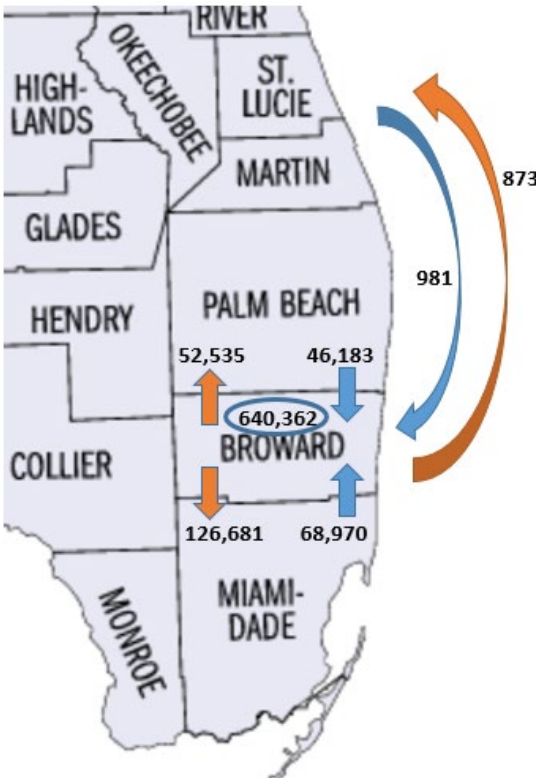


Figure T-1: Southeast Florida Commuting Patterns, US Census Bureau, 2009-2013 American Community Survey Commuting Flows.

To understand the transportation needs of Broward County, it is useful to start by looking at Broward in the context of the Southeast Florida region. Each day, 640,362 Broward County residents are traveling, but staying within, the County for work. However, within the region (Miami-Dade north to Indian River County), another 180,089 Broward County residents are commuting to other counties within the region, particularly Miami-Dade (126,681) and Palm Beach (52,535). In addition to this commuting pattern, another 116,134 residents of other Southeast Florida counties are commuting into Broward County for work. Looking at these figures, Broward County is a "donor" County, meaning more people are leaving the County for work than people who are coming into Broward County for work. These patterns are intertwined with housing and land use patterns, and highlight the importance of looking at transportation regionally. Simultaneously, Broward County must also address the transportation needs of the 640K+ people who commute within the County.

This section of the Support Document will inventory and address the existing transportation system components, plans, and challenges that set the stage for the goals, objectives, and policies identified in the Transportation Element.

1. Strategic Intermodal System (SIS)

Florida's Strategic Intermodal System (SIS) comprises Florida's statewide network of high priority transportation facilities, including the state's largest and most significant airports, spaceports, deepwater seaports, freight rail terminals, interregional rail and bus terminals, rail corridors, urban fixed guideway transit corridors, waterways, and highways. SIS facilities are the primary means for moving people and freight between Florida's diverse regions, as well as between Florida and other states and nations. The SIS is Florida's highest statewide priority for transportation capacity improvements. There are three types of designated facilities:

- Transportation hubs (ports and terminals) moving people or goods;
- Interregional corridors (highways, rail lines, waterways and urban fixed guideway transit

facilities) connecting major origin/destination markets; and

- Intermodal connectors (highways, rail lines, or waterways and other exclusive use facilities) linking hub-to-corridor; hub-to-hub; or strategic military installation-to-corridor.

Additional information on the SIS network can be found at http://www.dot.state.fl.us/planning/sis/.

2. Florida Highway System

The Florida Highway System (FHS) is one of the key components of the Strategic Intermodal System. These high capacity corridors are essential highways for the movement of people and freight through the region. Table T-1 lists the FHS corridor and is followed by a description of each thoroughfare.

Table T-1: Florida Highway System (FHS) of the Strategic Intermodal System

SIS/FIHS ROADWAYS	ROADWAY SEGMENTS	CENTERLINE MILES
Florida Turnpike	Broward - Miami-Dade County line to Broward - Palm Beach County line	25.9
Turnpike Extension	Broward - Miami-Dade County line to Turnpike	7.7
Interstate 95	Broward - Miami-Dade County line to Broward - Palm Beach County line	25.3
Interstate 595	I -75 to US 1	12.9
Sawgrass Expressway	I -75 to Florida's Turnpike	21.8
Interstate 75	Broward - Miami-Dade County line to US 27.	18.7
Interstate 75	US 27 to Broward - Collier County Line	26.7
US 27/SR 25	Broward - Miami-Dade County line to I – 75	3.0
US 27/SR 25	I – 75 to Broward - Palm Beach County line	14.7
Total		166.7

Source: Broward County Federal Functional Classification, FDOT, District 4, 2010

Interstate 95

Interstate 95 (I-95) travels through eastern Broward County, a few miles inland and just west of the downtown urban hubs of coastal Broward County. The corridor is parallel to the CSX corridor, located just to the west, and the FEC rail corridor, located to the east.

As of the 2017 update of the Roadway Capacity and Level of Service published by the MPO, I-95 is operating at LOS F and will continue to operate at LOS F in the future. Express Lane projects that incorporate public transit have been constructed and are currently being expanded in northern Broward County. Express lane improvements will provide additional

options for commuters utilizing the I-95 corridor. Additionally, Tri-Rail, operated by South Florida Regional Transportation Authority, runs daily service that parallels the corridor.

Due to I-95's proximity to the urban core of many of Broward County's coastal municipalities, the roadway can function as a barrier, by reducing east-west connectivity to bicyclists and pedestrians. Broward County supports complete streets projects to lessen the impact of I-95 and other highways on residential and commercial development near the corridor.

Interstate 595

I-595 is a 12.9-mile east-west highway through central Broward County that connects Interstate 75 in the west with Florida's Turnpike, Interstate 95, Fort Lauderdale-Hollywood International Airport, and US 1, before terminating at Port Everglades in the east. The eastern terminus serves as the major access point to the Port for freight traffic, particularly vehicles carrying cargo to and from Southport and well as providing direct connectivity via US 1 to downtown Fort Lauderdale and Fort Lauderdale-Hollywood International Airport.

Through a 35-year Public-Private Partnership (P3), a $1.2 billion design and construction of the I-595 Express Corridor was completed in 2014. The improvement included three (3) reversible express toll lanes from I -75 to Florida's Turnpike, continuous connection of SR 84 frontage road between Davie Road and SR 7, auxiliary lanes with combined ramps, cross-road bypasses, and grade separated entrance and exit ramps, construction of the New River Greenway, 13 sound barriers, implementation of Express Bus service, and provision of a transit envelope within the corridor to accommodate potential future transit options. The project was designed to alleviate traffic congestion, reduce merge, weaving, and diverging movements, and to provide transit options along the corridor.

Additional information on I-595 Express can be accessed here.

Interstate 75

Interstate-75, primarily serves southwest Broward County, provides access to the municipalities of Weston, Davie, Southwest Ranches, Sunrise, Pembroke Pines, and Miramar. From the south, the I-75 corridor enters the county in Miramar, then winds North before curving west at the I-595 and Florida 869 (Sawgrass Expressway) interchange. In an east-west trajectory I-75 then stretches across the Florida Everglades, where it exits the county and continues westward towards Naples.

A $485 million project is near completion along I-75 that will expand the managed lane network. The project includes two express lanes in each direction with direct connection to 595-Express, Palmetto Express, and Homestead Extension of the Florida's Turnpike (HEFT), integrated Intelligent Transportation System, sound barrier walls, and emergency access for

first responders. The project will improve mobility, relieve congestion, and provide additional travel options along the existing I-75 corridor.

Additional information on I-75 Express can be accessed here.

Sawgrass Expressway (State Road 869)

Sawgrass Expressway is a 21.2 mile limited access highway that was constructed in the late 1980s to accommodate the future growth of Broward County's suburbs. The limited access highway portion of the corridor from Florida's Turnpike to I-595 is a six (6) lane toll facility that operates as a western bypass to the Fort Lauderdale urban core. From the south, the Sawgrass Expressway begins at a junction of Interstate 75 and Interstate 595 in Sunrise, and extends north before turning eastward in northern Broward County. The expressway ends at Exit 17, Florida's Turnpike, but the state road continues eastward as a surface street known as SW 10th St. that connects with I-95.

The Sawgrass Expressway is currently being studied as part of a Project Development and Environmental (PD&E) study. Potential enhancements include the expansion of the Florida managed lane network, new intersection and ramps including diverging diamond design, and new exits to serve the Sawgrass Corporate Park and BB&T Center. Additionally, Broward MPO recently completed a study that aims to extend Sawgrass Expressway to its originally planned terminus at Interstate 95. Recommendations for moving forward a concept that was acceptable to neighborhoods along the route are in the contained in the SW 10th Street Consensus Report. FDOT is currently conducting the SW 10th Street Connector PD&E to thoroughly examine potential designs for the corridor.

Florida Turnpike & Homestead Extension of the Turnpike

Florida's Turnpike (State Road 91) is a major north-south corridor traveling north-south through central Broward County west of the I-95 and east of Sawgrass Expressway/I-75. The Florida's Turnpike includes the "Mainline" which travels from Golden Glades (Miami) to Central Florida, as well as; the Homestead Extension (HEFT), which diverges westward along the Broward – Miami-Dade county line before turning southward to Florida City in Miami-Dade County.

Several improvements are currently under PD&E, design, or construction along Florida's Turnpike in Broward County. One improvement travelers will notice shortly will be the conversion off all electronic tolling as well as improvements to key interchanges, such as Sunrise Blvd, that will reduce congestion and provide a more direct connection with the Turnpike.

US Highway 27

US 27 is Broward County's only rural highway. Located in the western periphery of the urbanized area, US 27 is a heavily utilized route for freight as well as a bypass to the urban

core. As large-scale developments come online in Miami-Dade County it is expected that US 27 will become more heavily utilized by commuters seeking an alternative to I-75 or Homestead Extension of Florida's Turnpike. The entire Broward County segment contains 4 lanes, two (2) in each direction. In 2013 FDOT completed the US 27 Transportation Alternatives Study that evaluated several options for enhancing the corridor. Any future improvement to the corridor will need to be context sensitive to the location and balance between commuter, freight, and safety needs.

3. Rail Corridors

Broward County is served by two (2) parallel rail corridors. The Florida East Coast (FEC) rail, which operates closest to the urban core of the County and CSX Transportation Rail, which operates parallel to Interstate-95. Both rails are vital to distribution of freight that comes into the metropolitan region as well as regional passenger services.

Florida East Coast Rail Corridor

The Florida East Coast (FEC) Railway, whose railroad was constructed by Henry M. Flagler, began operations in Broward County in 1896. The FEC Railway track runs 351 miles north-south between Jacksonville and Miami. Its path along Florida's east coast provides direct access to South Florida's Ports, allowing for efficient freight transportation. Throughout Broward County, the FEC railway corridor generally runs parallel to and east of Dixie Highway. The railway right-of-way corridor is approximately 100 feet wide. A single-track spur line, approximately 1.5 miles long, connects it to the South Florida Rail Corridor at NW 3th Street in Pompano Beach just west of the Pompano Beach Airport. Another 1.5-mile spur line serves Port Everglades and runs from the FEC north of Fort Lauderdale-Hollywood International Airport to the Port. With daily train departures of both intermodal shipments and traditional cargo products, the FEC corridor is still primarily used for connecting consumers with commerce via the FEC Railway.

Historically the FEC was heavily utilized for freight and passenger service and is credited with the development of South Florida, however, passenger services ceased on the rail in 1968. In 2018, Brightline began passenger rail service on the FEC. Brightline runs from West Palm Beach to Miami with a stop in Fort Lauderdale and is the first privately owned and operated passenger rail system in the United States in nearly 50 years. Brightline plans to expand passenger service northward to Orlando. Additionally, there has been extensive planning on utilization of the FEC rail as an eastern compliment to Tri-Rail commuter service along the CSX line. The first portion of the project will be implemented when Tri-Rail trains utilize the Brightline Station in downtown Miami via a switch in Miami-Dade County.

Additional information on FEC Railway can be accessed here.

Additional information on Brightline can be accessed here.

CSX Corridor

The CSX Transportation rail corridor is freight and passenger rail corridor that operates parallel to Dixie Highway and/or I-95 through most of Broward County. The corridor is essential for freight and passenger movements through the region.

The South Florida Regional Transportation Authority (SFRTA) operates a seventy-two (72) mile commuter rail system (Tri-Rail), as well as a shuttle bus system. The SFRTA service area spans three counties, Palm Beach, Broward, and Miami-Dade. The system, which began service in 1989, consists of eighteen (18) stations between Mangonia Park to Miami International Airport. The line, which was originally a single track with extensive sidings, was double tracked under a Full Funding Grant Agreement (FFGA) from the Federal Transit Administration (FTA). The Double Track Corridor Improvement Program included reconstruction along 72 miles of the South Florida Rail Corridor and a second mainline track parallel to the existing track that was completed in 2006. In 2015, through agreements and coordination with CSX and FDOT, SFRTA gained control of rail corridor dispatch and maintenance which improved service reliability and system performance.

Tri-Rail service operates at 20 to 30-minute headways during rush hour on weekdays, and has hourly service during off-peak hours on weekdays and weekends.

Table T-2: Tri-Rail Operation Schedule

DAY OF TRAVEL	OPERATING TIMES	PEAK FREQUENCY
Southbound Weekday	4:00AM – 10:35PM	20 minutes
Northbound Weekday	4:15AM – 11:35PM	20 minutes
Southbound Weekend/Holiday	5:50AM – 11:00PM	60 minutes
Northbound Weekend/Holiday	5:17AM – 11:45PM	60 minutes

Source: SFRTA Transit Development Plan, FY 2018-2027

Tri-Rail ridership has increased significantly since 2010. In 2015, ridership was up by 19 percent over 2010 ridership figures. While ridership dropped slightly in 2017 from 2015 levels, ridership had exceeded 2010 levels by 18 percent. The data suggests that rail ridership is more resilient than bus ridership which has declined in recent years. Table T-3 includes Tri-Rail ridership statistics.

Table T-3: Tri-Rail Ridership

FISCAL YEAR	RIDERSHIP	% CHANGE FROM FY 2010
2010	3,604,526	-
2015	4,292,380	19.1%
2017	4,251,777	18.0%

Source: SFRTA Transit Development Plan, 2018-2027

Amtrak passenger rail also operates along the CSX corridor. Amtrak serves three (3) Broward County stations along the CSX corridor located in Hollywood, Fort Lauderdale, and Deerfield Beach. Amtrak provides rail service across the country, providing regional and national transportation services to Broward County residents.

Table T-4: Amtrak Service

Line	Service	Start	End
Silver Meteor	Daily	New York, NY	Miami, FL
Silver Star	Daily	New York, NY	Miami, FL

Source: Amtrak System Timetable - Updated January, 2018

4. Bus Transit Service

Broward County has one primary operator of fixed route bus transportation, Broward County Transit (BCT). A secondary system of local circulators, commuter rail shuttles, and community shuttles are also operated in partnership with municipalities, FDOT, BCT, and SFRTA.

Broward County Transit (BCT)

BCT operates fixed route bus service, community shuttle service as well as paratransit across the County. BCT's primary service area is Broward County; however, BCT operates six (6) express bus, three (3) Breeze (limited stop), and six (6) local routes with connections into Palm Beach and Miami-Dade counties. In 2010, BCT and FDOT partnered to begin the commuter express service to Miami via I-95 Express Lanes. Today, the system, which is funded through toll revenue collections from express lanes and fares, has expanded to six (6) routes. Ridership on the express buses is often limited by the number of available parking spaces. To accommodate demand, FDOT and BCT are currently planning to expand park and lot sites. Additional express bus routes along I-75 are expected to become operational in 2019.

Table T-5 highlights key facts about BCT service:

Table T-5: BCT Service Overview

TRANSIT FLEET	Fixed Route Buses: 352
	Community Shuttles: 51
	Paratransit Vehicles: 206
ROUTES	Weekdays: 44 routes
	Saturdays: 31 routes
	Sundays: 29 routes
BUS STOPS	4,575
BUS SHELTERS	1,076
ANNUAL SERVICE MILEAGE	15.1 million miles
DAILY RIDERSHIP	95,235 daily passenger trips
ANNUAL RIDERSHIP	29.0 million passenger trips
COMMUNITY SHUTTLES SERVICE LOCATIONS	Coconut Creek
	Coral Springs
	Dania Beach
	Davie
	Deerfield Beach
	Fort Lauderdale
	Hallandale Beach
	Hillsboro Beach
	Hollywood
	Lauderdale-By-The-Sea
	Lauderdale Lakes
	Lauderhill
	Lighthouse Point
	Margate
	Miramar
	Pembroke Pines
	Pompano Beach
	Tamarac
	West Park

Source: Broward County Transit Website

Tri-Rail Shuttles

SFRTA, operator for Tri-Rail also operates a free shuttle service that provides connections to and from the rail stations. The services typically operate the same span as the commuter rail and routes are timed appropriately to facilitate seamless transfers between the shuttles and the rail. Shuttle

routes are typically funded in partnership with local municipalities, transportation management associations, and/or FDOT.

Community Shuttle

Community shuttle routes provide service to local scale retail, recreation, and employment centers. These services are typically operated as a partnership between a municipality or transportation management association and Broward County Transit. Currently, 19 municipalities partner with BCT; however, some municipalities, such as City of Sunrise, operate community shuttle services independently. Community shuttle services also provide a critical first and last mile links to BCT bus routes. Most services are provided without a fare; however, municipalities are not prohibited from requiring fares. Data from BCT has shown that many community shuttle routes have highly elastic ridership, meaning that small adjustments in fares can have a significant impact on ridership.

5. Water Taxi Service

The Intracoastal Waterway between the Florida mainland and barrier islands provides an excellent route for local water taxi services. Currently most water taxis are operated by private vendors that cater specifically to tourists; however, the Fort Lauderdale Transportation Management Association has created a partnership to provide frequent water taxi service to areas around downtown Fort Lauderdale.

6. Broward County Airports

Fort Lauderdale-Hollywood International Airport (FLL) and North Perry Airport (HWO), are owned and operated by Broward County. These airports form a diverse and dynamic airport system that serves the needs of 29.2 million passengers and the general aviation community throughout South Florida.

Fort Lauderdale-Hollywood International Airport (FLL)

FLL is located in the heart of eastern Broward County and shares land area within the City of Fort Lauderdale and City of Hollywood. The airport has two active runways, the longest of which is 9,000 feet. Facilities at the airport can support a full range of commercial and general aviation aircraft. With over 11.7 million enplaning commercial passengers annually, FLL is ranked 21st in the U.S. in total passenger traffic and 13th in domestic origin and destination passengers. FLL offers nonstop service to 140 U.S. cities and flights to Canada, Bahamas, Caribbean, Mexico, Latin America, and Europe. FLL averages 640 commercial flights per day on 26 airlines. There are also 100 private flights. Each day an average of 80,000 travelers pass through the four terminals at FLL. The airport has recently completed significant improvements as part of the FLL Airport Improvements and

Renovations Program (FLLAIR). Construction projects involved in FLLAIR include the South Runway Expansion Project, which expanded the airport's south runway to 8,000 feet, and Terminal 4 Redevelopment and Expansion, which increased the number of gates from 10 to 14, and increased concession choices for passengers.

The predominant future land uses adjacent to FLL are light industrial with an intermixing of residential, recreational, and commercial uses, to the north; Port Everglades seaport to the northeast; vacant parcels zoned for industrial uses, a rental car facility, manufacturing facilities and wetlands, to the east; residential neighborhoods, to the south; and industrial properties in the Port 95 Commerce Park, to the west.

North Perry Airport (HWO)

In Pembroke Pines, North Perry Airport serves many types of general aviation activities, primarily; flight training, recreational aviation activities, and blimp advertising. The airport has two sets of parallel, intersecting runways, the longest of which is 3,350 feet and can accommodate smaller multi-engine general aviation aircraft. North Perry also has 160 T-Hangars for aircraft storage.

The predominant land uses adjacent to North Perry Airport are community facilities and residential. Most residential uses are one-story, single family. There are some commercial developments on the north side. Broward Community College abuts the airport on the northeast, and Florida State Hospital is located to the west. While it is preferable that developments surrounding an airport be low density and intensity, it is not feasible to promote redevelopment of the existing properties adjacent to North Perry.

Municipal Airports

Other airports within the county include Pompano Airpark and the Fort Lauderdale Executive Airport which function as two municipal general aviation airports, and are not owned or operated by the county. Broward County Aviation Department coordinates with the cities of Fort Lauderdale and Pompano Beach to ensure consistency and safety of all airports facilities located within Broward County.

7. Regionally Significant Parking Facilities

Significant public and private parking facilities are defined as facilities with greater than 500 parking spaces. Significant parking facilities in Broward County and their durational limits are listed in table T-6. The amount of parking available in most Broward County municipalities meets or exceeds demand. One area where additional parking need has been identified is at transit park and lots for

express bus service. This shortage of parking is currently being addressed by BCT and FDOT. Existing parking facilities are being expanded and new lots are being sited to ensure adequate parking for growing passenger demand.

Table T-6: Significant Parking Facilities

Facility	Location	Spaces	Duration
Ft Lauderdale Central Parking Garage	SE 1st Ave./SE 1st St.	2,156	Long & short-term
Pompano Beach Pier Garage	3460 NE 3rd ST. Pompano Beach	663	Long & short-term
Hollywood Beach Garage	359 Harrison, ST. Hollywood Beach	800	Long & short-term
West Regional Courthouse/Library	Broward Blvd./Pine Island Rd.	989	Short-term
Broward County Governmental Center	Broward Blvd./ SW 1st Ave	1,550	Short-term
Broward County Public Safety Complex	Broward Blvd./ NW 27th Ave	785	Short-term
Broward Center for Performing Arts	SW 2nd St. /SW 5th Ave.	953	Short-term
Ft. Lauderdale/Hollywood International Airport	100 Terminal Dr. Fort Lauderdale	15,240	Long & short-term
Port Everglades/Convention Center Parking Garage	SE 20th St./Eisenhower Blvd. Fort Lauderdale	2,500	Long & short -term
Midport Parking Garage	Eller Drive/ Midport	1,000	Long & short-term
BB&T Center	1 Panther Parkway, Sunrise	7,523	Short-term
Westfield Broward Mall	8000 W Broward Blvd., Plantation	4,775	Short-term
Hollywood Hard Rock Hotel and Casino	1 Seminole Way, Hollywood	12,000	Short-term
Pembroke Lakes Mall	11401 Pines Blvd., Pembroke Pines	1,668	Short -term
Galleria Mall	2414 E Sunrise Blvd. Fort Lauderdale	4,699	Short-term
Sawgrass Mills Mall	12801 W Sunrise Blvd, Sunrise	14,000	Short-term
Gulfstream Park Racetrack	901 S Federal Hwy, Hallandale Beach	5,097	Short-term
Racetrack at Pompano Park	777 Isle of Capri Circle, Pompano Beach	3,100	Short-term
Seminole Coconut Creek Casino	5550 NW 40th ST, Coconut Creek	4,500	Short-term
Broward College	North, Central and South Campus	10,376	Short-term

Note: Number of parking spaces is approximate. Source: Planning and Development Management Division

8. Roadway Jurisdiction and Classification

Roadways in Broward County are under the jurisdiction of either the State, Broward County, or a local jurisdiction (municipality or BMSD). In addition to the jurisdiction, roadways are classified as arterials, collectors or local roads.

The roadway network includes: roadway segments or links, intersections, bridges, rights-of-way, signalization, signage, roadway amenities, significant parking facilities and safety.

Segments

A roadway segment or link is a portion of a roadway defined for the purpose of traffic analysis. The segment origination and termination points are typically signalized intersections or the point where the number of lanes on a roadway change. Segments can be classified by lanes and functions.

Functional classification of roadway refers to the FHWA approved designation that divides roadways into a hierarchy of types ranging from arterials to locals. This hierarchy based on traffic mobility and land access. Table T-7 depicts the federal functional classification system for roadways. A road located within the urban area as defined by the census is classified as urban, while those outside the urban area are classified as rural.

Arterial Roadways

Arterial roadways are classified, per FHWA, as either principal or minor. A roadway serving only one of the arterial road purposes is classified as a minor arterial, while one serving more than a single purpose is classified as a principal arterial road. All limited access highways and roads which connect urbanized areas are considered to serve several trip purposes, and thus are classified as principal arterial roads.

Collector Roads

Collector roads are classified as either major or minor. A minor collector road's significant purpose is providing access to diffuse land use areas; all other rural collector roads are classified as major. The Federal Highway Administration has developed a federal functional classification for Broward County's roadways.

When evaluating the function of a road, the U.S. Department of Transportation considers a road's trip purposes in relation to the total public roadway network. A road is classified based upon its most significant trip purpose; however, a road may serve more than one significant trip purpose. The federal functional classification system recognizes twelve (12) significant trip purposes.

Table T-7: Functional Classification by Trip Purpose

FUNCTIONAL CLASSIFICATION	TRIP PURPOSE
Arterial	Travel to and through urbanized areas

Arterial	Travel to and through small urban areas
Arterial	National defense
Arterial	Interstate and regional commerce
Arterial	Access to airports, seaports, and major rail terminals or intermodal facilities
Arterial	Access to major public facilities
Arterial	Access to minor public facilities
Collector	Interconnection of major thoroughfares
Collector	Interconnection of minor thoroughfares
Collector	Access to concentrated land use areas
Collector	Access to diffused land use areas
Local	Travel between home, work, entertainment, and shopping destinations and nearest road on the primary network composed of arterial and collector roads

Source: Highway Functional Classification Concepts, Criteria and Procedures, Federal Highway Administration

Broward County Road Jurisdiction and Classification

Map T-1 of the Comprehensive Plan Map Series identifies jurisdiction of roadways across Broward County. This maps also identifies the classification of each roadway. Table T-8 lists roadways that, in full or part, are Broward County facilities.

Table T-8: Broward County Jurisdictional Roadways

East-West Corridors	
Atlantic Boulevard	Baily Road
Broward Boulevard	Coconut Creek Parkway
Griffin Road	Lakeview Drive
Loxahatchee Road	McNab Road
Miramar Parkway	Miramar Parkway
NW 26th Street	Nova Drive
NW 15th Street	NW 19th Street
NW 62nd Avenue	NW 57th Street
Oakland Park Boulevard	NW 6th Street
Prospect Road	Peters Road
Sample Road	Rock Island Road
Sunrise Boulevard	Stirling Road
Wiles Road	
North-South Corridors	
Andrews Avenue	Blount Road
Coral Ridge Road	Davie Road
Douglas Road	Flamingo Road
Hiatus Road	Lyons Road
North 21st Avenue	NW 6th Avenue
Nob Hill Road	NW 21st Avenue
NW 31st Avenue	NW 7th Avenue
Palm Avenue	Pine Island Road
Riverside Drive	Rock Island Road
SW 31st Avenue	SW 4th Avenue

Note: All roads within the Broward Municipal Services District are Broward County Jurisdictional Roadways. Some roads listed above have multiple jurisdictional owners, see map T-1 for details. Source: Broward County Public Works Department

9. High Occupancy Vehicle Lanes and High Occupancy Toll Lanes

High Occupancy Vehicle (HOV) lanes, are facilities designated for exclusive use by High Occupancy Vehicles (HOVs): specified vehicles with 2 passengers or more. These lanes were positioned next to the median divider of I-95 running 28.7 centerline miles through all of Broward County. Preferential treatment of HOVs is intended to encourage the driving public to shift from low to high occupancy vehicles such as: buses, vanpools and carpools. HOV lanes aimed to reduce congestion, optimize person-moving capabilities along a corridor, and provide sufficient capacity to meet future transportation demands. However, HOV lanes, as well as general lanes, along the I-95 corridor were consistently not meeting LOS.

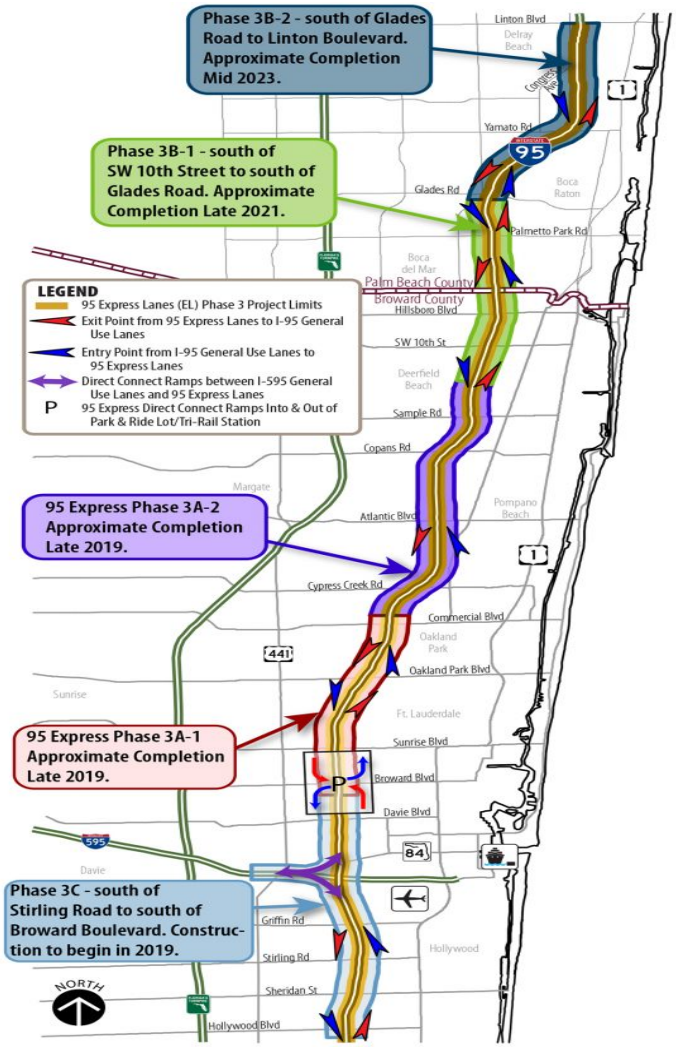
In 2009, FDOT began to implement a Managed Lane Network. The first phase of the project was located on I-95 and included the conversion of HOV lanes into two (2) High Occupancy Toll (HOT) lanes to provide enhanced carpooling and commuting options for motorists. HOT lanes manage congestion using dynamic tolling, access, and eligibility. The toll for express lanes increases as demand increases, discouraging congestion. The 95-express also manages congestion by allowing HOVs (3 + passengers) to use the express lane toll-free, including; registered carpools, registered South Florida vanpools, registered over-the-road motor coach vehicles, Miami-Dade and Broward County Express Buses, and regular transit. Other toll exempt vehicles include motorcycles and registered hybrid vehicles. Trucks with three or more axles are not allowed on 95 Express unless they are designated as emergency vehicles.

With the opening of the express lanes, drivers are experiencing improved speeds above 40 MPH in the general lanes and 50 MPH in the express lanes in the northbound and southbound directions during rush hour periods. Data from the initial segment has led FDOT and Florida Turnpike Enterprise to make substantial investments in managed lanes. The goal is to create an interconnected regional network of managed lanes that will permit users to have more reliable options for commuting along the busiest thoroughfares.

I-95 Express

Since its inception, the 95 Express has undergone several structural enhancements to better serve the South Florida community. Now in Phase III, the 95 express lanes are under construction and are pending future developments to further; improve mobility, relieve congestion, provide additional travel options, enhance transit services, enhance emergency evacuation, accommodate future growth and development in the region, and improve system connectivity between key limited access facilities in South Florida (See Figure T-2).

Figure T-2: I-95 Express Phase III



Source: FDOT 95 Express Phase 3

I-595 Express

In March 2014, FDOT opened three tolled, reversible lanes on Interstate 595. The reversible lanes switch direction to optimize east-west commuter travel to and from Fort Lauderdale. The express lane system runs approximately 9.5 miles long and is located in the median of I-595. A permanent concrete barrier wall separates the express lane from the general traffic. These lanes are open for use to all motor vehicles including trucks and motorcycles. BCT provides an Express Bus service for the 595 Express from the BB&T Center Park & Ride in Sunrise and the Davie Park & Ride. Figure T-3 illustrates the entry and exit points of the express lane along the 595 as well as the hours the lane is open for use. A future project will extend 595 express lanes eastward to offer direct connections with I-95 express.

Figure T-3: I-595 Express Lane Entry and Exit Locations

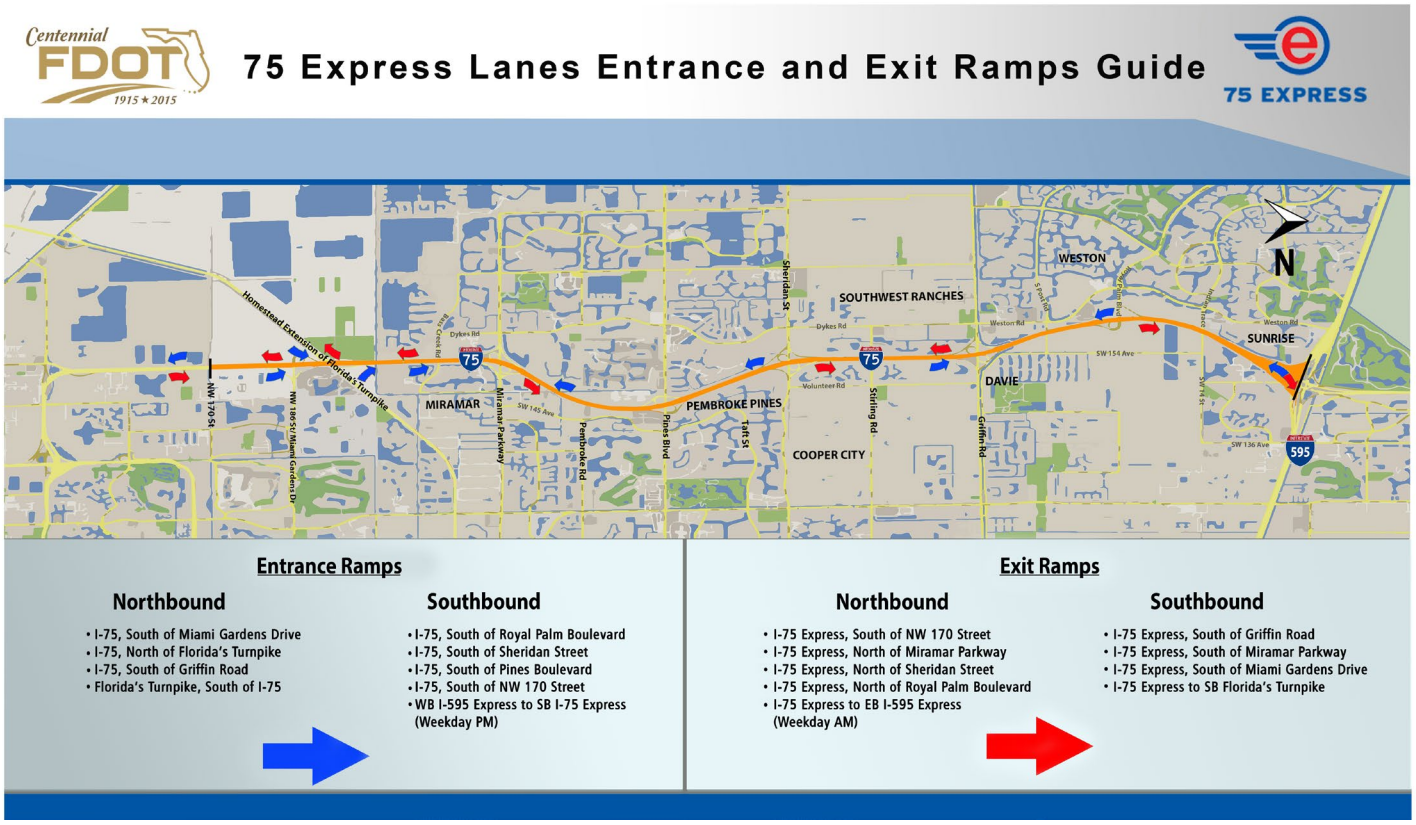
Source: FDOT, 595 Express Operations

I-75 Express

FDOT's I-75 Express Lanes Project will create 28 miles of express lanes along the I-75 and SR 826 (Palmetto Expressway) corridors, from just south of the SR 836 (Dolphin Expressway), in Miami-Dade County, to I-595 in Broward County. The project began construction in 2014 and opened to traffic in 2018. The project is a part of the South Florida managed lanes network initiative and will improve mobility, relieve congestion, provide additional travel options, and accommodate future growth in the area. Figure T-4 illustrates the entrance and exit points of the of the express lane along the I-75. Commuter express transit services to Miami-Dade County are planned as part of I-75 Express implementation.

Additional information can be accessed on the I-75 Express Lanes Project website..

Figure T-4: I-75 Express Lane Entry and Exit Locations



Source: FDOT, I-75 Express Lanes Project

B. SAFETY AND SECURITY

Reports such as Smart Growth America's Dangerous By Design have highlighted the fact that metropolitan regions across the State consistently rank as the among the worst the country for injuries and deaths for pedestrians and bicyclists. In fact, 9 of the top 11 regions with the worst "Pedestrian Danger Index" were located in the State of Florida. The Miami-Fort Lauderdale-West Palm Beach Metro was ranked 11th worst in the nation. Broward County recognizes that the transportation system of tomorrow must provide for the safety of all users regardless of mode choice, age, or ability. The tables and statistics in this section will focus safety and security of transportation in Broward County.

Data provided in this section focus on the of number vehicular crashes, injuries, deaths that occurred in 2005, 2010, and 2012-2016. While the data shows a significant increase in crashes as a percentage from 2005, effective 7/1/2012 Florida Statute 316.066 was amended by the Florida Legislature to require law enforcement agencies to report additional crashes to the Department of Highway Safety and Motor Vehicles which the agencies were not previously required to submit. The statutory change

resulted in more crash reports being received at the state level for inclusion in the statistics below. Regardless, an upward trend in the number of crashes in Broward County between 2012 and 2016 continue to challenge planners and law enforcement. The statistics suggest that despite investment in Complete Streets that typically result in a reduction of crashes, additional focus and investment in safety is necessary to see impact of projects on a countywide scale.

Table T-9: Vehicular Crashes in Broward County and State of Florida: (2005-2016)

CALENDAR YEAR	BROWARD COUNTY		STATE OF FLORIDA	
	CRASHES	PERCENT CHANGE SINCE 2005	CRASHES	PERCENT CHANGE SINCE 2005
2005	27,399	---	268,605	---
2010	27,992	2.2%	235,461	-12.3%
2012	31,151	13.7%	281,340	4.7%
2013	32,595	19.0%	316,943	18.0%
2014	34,833	27.1%	344,170	28.1%
2015	38,409	40.2%	374,342	39.4%
2016	41,755	52.4%	395,785	47.4%

Source: Traffic Crash Facts, FDHSMV 2005, 2010, 2012-2016

Table T-10 identifies the total number of individuals injured in accidents, including motorists, bicyclist, pedestrians and other transportation system users. Although injuries declined in Broward County during the economic recession, the more recent trend shows an upward trajectory in the number of injuries.

Table T-10: Injuries in Broward County and State of Florida: (2005-2016)

CALENDAR YEAR	BROWARD COUNTY		STATE OF FLORIDA	
	INJURIES	PERCENT CHANGE SINCE 2005	INJURIES	PERCENT CHANGE
2005	22,880	---	233,930	---
2010	20,635	-9.80%	195,104	-16.60%
2012	21,348	-6.70%	198,032	-15.30%
2013	21,580	-5.70%	210,887	-9.90%
2014	22,154	-3.20%	225,608	-3.60%
2015	23,473	2.60%	243,316	4.00%
2016	25,361	10.80%	254,155	8.60%

Source: Traffic Crash Facts, FDHSMV 2005, 2010, 2012-2016

Table T-11 identifies the number of fatalities, including motorists, bicyclists, pedestrians and other transportation system users. Using 2005 as a baseline, both Broward County and Florida have maintained a reduction in fatalities. However, between 2010 and 2016 the number of fatalities have increased in Broward and the State.

Table T-11: Fatalities in Broward County and State of Florida: (2005-2016)

CALENDAR YEAR	BROWARD COUNTY		STATE OF FLORIDA	
	FATALITIES	PERCENT CHANGE SINCE 2005	FATALITIES	PERCENT CHANGE SINCE 2005
2005	263	---	3,533	---
2010	179	-32.00%	2,444	-30.80%
2012	182	-30.80%	2,430	-31.2
2013	180	-31.60%	2,402	-32
2014	173	-34.20%	2,494	-29.4
2015	221	-16.00%	2,939	-16.8
2016	245	-6.80%	3,176	-10.10%

Source: Traffic Crash Facts, FDHSMV 2005, 2010, 2012-2016

Table T-12 identifies the number of crashes, injuries, and fatalities amongst vulnerable road users including; pedestrians, bicyclists, and motorcyclists in Broward County, between 2005 and 2016. Vulnerable road users are of particular interest to the Broward County. Pedestrian and bicycle crashes, injuries, and fatalities will be consistently monitored. Per Broward MPO and FDOT adopted FHWA standards, Broward County seeks to have zero (0) pedestrian and bicycle injuries or deaths.

Table T-12: Vulnerable Road User Crash and Injury Report, Broward County (2005-2016)

	2005	2010	2012	2013	2014	2015	2016	% CHANGE 2005 - 2016
Pedestrian Crashes	-	1012	1035	990	1061	1098	1040	n/a
Pedestrian Injuries	956	917	889	894	950	980	929	-2.8%
Pedestrian Fatalities	41	53	58	50	60	59	64	56.1%
Bicyclist Crashes	-	569	822	845	855	816	759	n/a
Bicyclist Injuries	530	540	770	808	829	767	709	33.7%
Bicyclists Fatalities	8	5	15	13	12	14	13	62.5%
Motorcyclists Crashes	-	621	719	724	742	818	823	n/a
Motorcyclists Injuries	593	571	630	629	628	634	660	11.3%
Motorcyclists Fatalities	41	24	41	36	42	41	35	-14.6%

Note: 2005 crash data is unavailable. Source: Traffic Crash Facts, FDHSMV 2005, 2010, 2012-2016

The League of American Bicyclists; Pedestrian and Bicycle Information Center has recognized Broward County's efforts in creating a more bicycle friendly community by meeting requirements as a bronze-ranked Walk and Bicycle Friendly Community (See Figure T-5).

Figure T-5: Florida's Walk and Bicycle Friendly Communities

Alert Today Alive Tomorrow Campaign

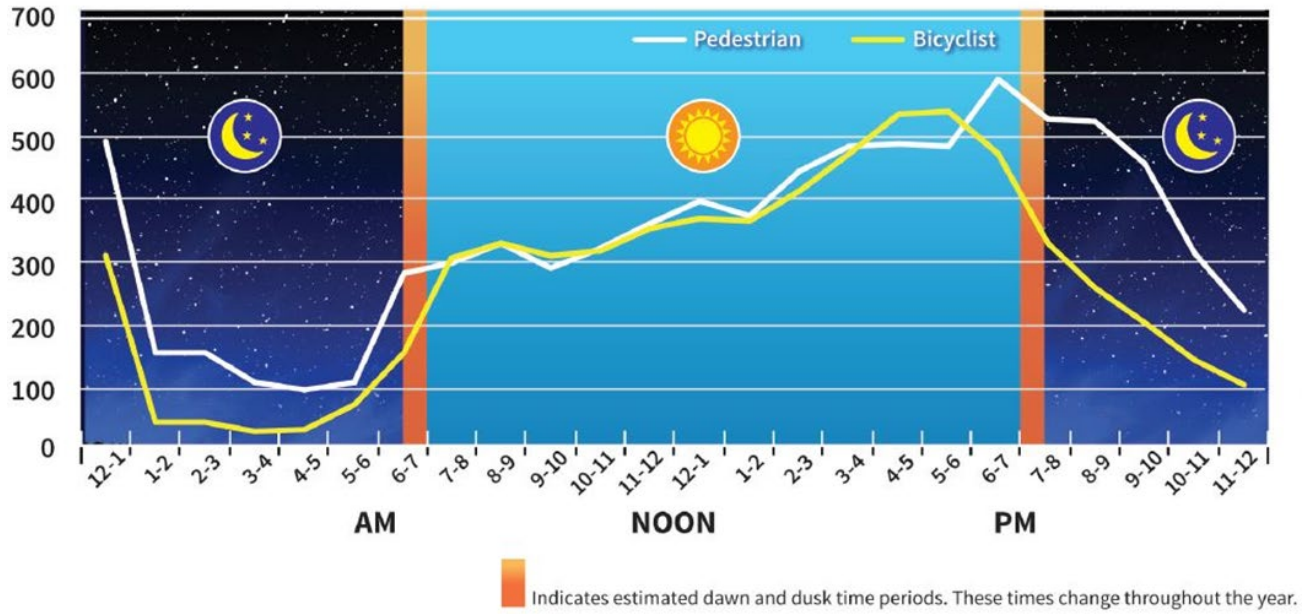
Broward County supports FDOT's Alert Today Alive Tomorrow campaign. The campaign was launched in 2013 and designed to increase the safety of vulnerable road users such as pedestrians and bicyclists by encouraging all road users to pay attention, avoid distracted driving, and to follow the road rules. The campaign focuses on engineering, education, and enforcement to save lives. FDOT has utilized various media channels and on a range of social media platforms with the message that "safety doesn't happen by accident" to remind all roadway users to pay attention and follow the rules of the road. Counties identified as priority areas for this campaign are shown in Figure T-8. The entire Miami metropolitan area is included in the priority area. As part of the campaign's initiative, road users can make a pledge to be a safe pedestrian, bicyclist and motorist. The focal projects of this campaign include:

1. Alert Tonight Alive Tomorrow

In Florida 75% of pedestrian fatalities occur at night. This special campaign aims to spread awareness of this issue through coordination with law enforcement, public outreach, and on social media with the #AlertTonightFlorida and #CanYouSeeMeNow, encouraging road users to be visible and predictable especially at night.

In Florida, bicycle and pedestrian crashes by time-of day follow a similar trend as depicted in Figure T-6 which also illustrates that the majority of pedestrian and bicyclist crashes occur in the day (between dawn and dusk) increasing steadily and peaking shortly before dusk. In contrast, pedestrian and bicycle fatalities in Florida by time-of-day do not follow the same trend. While a high proportion of pedestrian fatalities occur during periods of darkness, bicyclist fatalities are comparatively more evenly distributed across hours of daylight and darkness. Also, bicyclist fatalities reach its minimum during the AM period before dawn, while pedestrian fatalities maintain its minimum for a longer period during daylight hours. There are two major peaks in pedestrian fatality by hour of day. The main peak or highest peak occurs between 8:00 and 9:00 PM following dusk, and the second peak occurs at dawn. Bicyclist fatalities reaches its highest point of more than 10 persons, at 9:00-10:00 pm, however there are several other peaks. Changes in bicyclist fatality by time of day are more gradual, while average fatality number's changes sharply throughout the 24 period. Both pedestrian and bicyclist fatalities decline at dawn, then plateau throughout the day with some fluctuation and begin to increase nearing dusk.

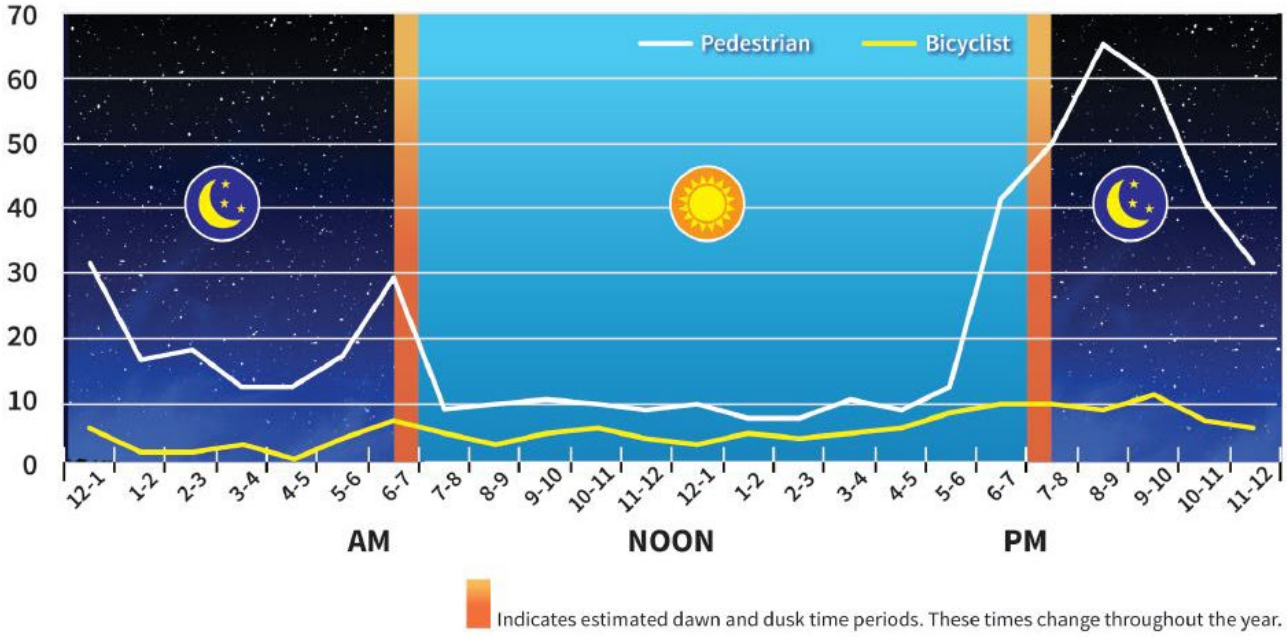
Figure T-6: Average Number of Pedestrian and Bicyclist Crashes in Florida by Time-of-day, 2011-2015



Source: FDOT's Florida Pedestrian and Bicycle Strategic Safety Plan, 2017 update.

Figure T-7: Average Number of Pedestrian and Bicyclist Fatalities in Florida by Time-of-day, 2011-2015

Source: FDOT's Florida Pedestrian and Bicycle Strategic Safety Plan, 2017 update.



2. Every Life Counts

The 'every life counts' slogan is part of the Discover Your Role Campaign. This campaign urges motorists to understand and accept the role they play in ensuring the safety of pedestrians and bicyclists. The campaign emphasizes that each person motorists come in contact with during their daily commute, is a daughter, son, wife, husband, father or mother, and each life is invaluable. In Florida, from 2011 to 2016, bicyclist fatalities have increased by 16.6% and pedestrian fatalities have increased by 29.7% (See Tables T-13, and T-14).

Table T-13: Pedestrian Fatalities in Florida 2011-2016

YEAR	PEDESTRIAN FATALITIES	% CHANGE SINCE 2011
2011	498	-
2012	480	-3.6%
2013	498	0.0%
2014	607	21.9%
2015	632	26.9%
2016	646	29.7%

Source: FDOT's Florida Pedestrian and Bicycle Strategic Safety Plan, 2017 update.

Table T-14: Bicyclist Fatalities in Florida 2011-2016

YEAR	BICYCLIST FATALITIES	% CHANGE SINCE 2011
2011	120	-
2012	117	-2.5%
2013	135	12.5%
2014	135	12.5%
2015	154	28.3%
2016	140	16.6%

Source: FDOT's Florida Pedestrian and Bicycle Strategic Safety Plan, 2017 update.

One Foolish Act

This campaign launched in 2013 urges motorists not to drive while impaired, as this could be the difference between life and death especially for vulnerable road users. Bringing life to its catchphrase 'One foolish act can ruin a thousand great ones', the campaign creates the image of the life pedestrians and bicyclists could have had, had they not been killed by an impaired driver. Tables T-15 and T-16 show the number of crash fatalities attributed to drugs and/or alcohol. In the three-year period from 2014-2016, alcohol related crash fatalities declined while drug related crash fatalities increased.

Table T-15: Drug and Alcohol Crash Fatalities in Florida 2013-2016

	2013	2014	2015	2016	%CHANGE
Alcohol Confirmed Fatalities	474	459	508	461	-2.74
Drug Confirmed Fatalities	232	219	281	322	38.79
Drug & Alcohol Confirmed Fatalities	257	221	269	299	16.34

Source: Traffic Crash Facts, FDHSMV, 2013-2016 (Access here)

Table T-16: Drug and Alcohol Crash Fatalities in Broward County 2014-2016

	2014	2015	2016	%CHANGE
Alcohol Confirmed Fatalities	20	24	15	-25.0%
Drug Confirmed Fatalities	3	7	4	33.3%
Drug & Alcohol Confirmed Fatalities	9	19	11	22.2%

Source: Traffic Crash Facts, FDHSMV, 2013-2016

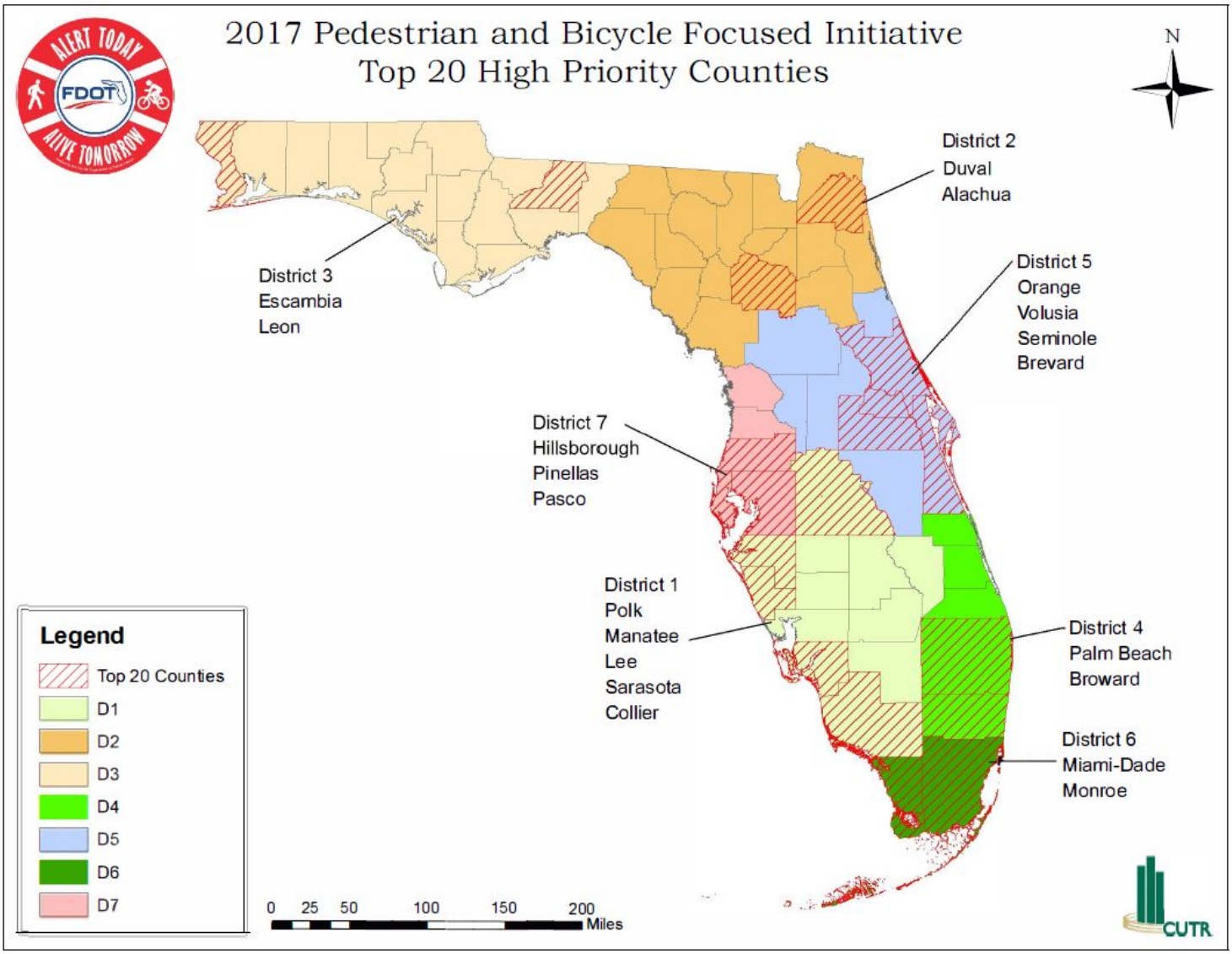
3. Stop on Red

This campaign aims to increase road safety by urging motorists to stop on red, and encouraging pedestrians to observe the pedestrian signal when crossing. Alert Today Florida partnered with the National Coalition for Safer Roads, and Florida's Safe Mobility for Life Coalition to promote the 2017 National Stop on Red Campaign with Stop on Red Week (August 6th -August 12th.)

4. White Cane Law

This campaign aims to increase road safety for visually impaired pedestrians by spreading awareness on Florida's White Cane Law.

Figure T-8: Top 20 High Priority Counties



Source: FDOT Alert Today Alive Tomorrow, 2017

Airport Safety

Broward County has adopted an Airport Zoning Ordinance that provides for protection of airspace in unincorporated Broward County. Tall structures, such as cellular towers, buildings and cranes can penetrate the airspace surrounding an airport and affect the operations of the airport. This Ordinance enables the County to control tall structure construction in unincorporated areas that would impact aviation capacity around County-owned airports. Chapter 333 Florida Statutes governs airspace in municipalities where no airport zoning ordinance has been adopted.

Natural Disasters and Evacuation

Another critical component of safety and security in Broward County is the ability to facilitate timely evacuations before and after natural disasters, such as hurricanes. Tables T-17A and T-17B identify hurricane evacuation routes in Broward County. These routes are also identified on Transportation Map T-1 in the Comprehensive Plan Map Series.

Table T-17A: Arterial Evacuation Routes

Evacuation Route	East Terminus	West Terminus	Roadway Jurisdiction	Barrier Island Access
Hillsboro Blvd.	A1A	I-95	FDOT	Yes
SW 10th Street	US 1	Sawgrass Expressway	FDOT / City of Deerfield Beach	No
Sample Road	US 1	I-95	FDOT	No
Copans Road	US 1	I-95	Broward County	No
NE 14th Street	A1A	US 1	FDOT	Yes
Atlantic Blvd.	A1A	I-95	City of Pompano Beach / FDOT	Yes
Cypress Creek Rd	US 1	I-95	Broward County	No
Commercial Blvd.	A1A	I-95	FDOT	Yes
Oakland Park Blvd.	A1A	I-95	FDOT	Yes
Sunrise Blvd.	A1A	I-95	FDOT	Yes
Broward Blvd.	US 1	I-95	FDOT	No
Las Olas Blvd.	A1A	US 1	FDOT / City of Fort Lauderdale	Yes
Davie Blvd	US 1	I-95	FDOT	No
SE 17th Street	Harbor Beach Pkwy	US 1	FDOT	Yes
SR 84	US 1	I-95	FDOT	No
Griffin Road	US 1	I-95	FDOT	No
Dania Beach Blvd.	A1A	US 1	FDOT	Yes
Stirling Road	US 1	I-95	FDOT	No
Sheridan Street	A1A	I-95	FDOT	Yes
Johnson Street	US 1	I-95	City of Hollywood	No
Hollywood Blvd.	A1A	I-95	FDOT / City of Hollywood	Yes
Pembroke Road	US 1	I-95	FDOT	No
Hallandale Beach. Blvd.	A1A	I-95	FDOT	Yes

Source: Broward County Planning and Development Management Division, 2018

Table T-17B: Highway Evacuation Routes

Evacuation Route	East Terminus	West Terminus	Roadway Jurisdiction	Barrier Island Access
Federal Highway (US 1)	North County Line	South County Line	FDOT	No
Interstate 95	North County Line	South County Line	FDOT	No
Florida's Turnpike	North County Line	South County Line	FDOT / Turnpike Enterprise	No
Homestead Extension of Florida's Turnpike	Florida's Turnpike	South County Line	FDOT / Turnpike Enterprise	No
Sawgrass Expressway	Waterways Blvd.	I-75	FDOT / Turnpike Enterprise	No
Interstate 75	West County Boundary	South County Boundary	FDOT	No
Interstate 595	Eller Drive	I-75	FDOT	No

Source: Broward County Planning and Development Management Division, 2018

Barrier island residents and business are particularly vulnerable to hurricane and storm surge flood impacts. Bridges which connect the island to the mainland are critical to hurricane evacuations. The bridge length and deck width are shown as well as the closed clearance above the Intracoastal Waterway. These bridges correspond to the evacuation routes identified in Table T- 18.

Table T-18: Bridges Critical to Hurricane Evacuation

Bridge Name	Length and Deck Width in Feet	Closed Clearance in Feet
Hillsboro Blvd. Bridge	423/57	21
NE 14th Street, Pompano Beach	351/71	15
Atlantic Blvd. Bridge	378/55	15
Commercial Blvd. Bridge	350/58	15
Oakland Park Blvd. Bridge	456/57	22
Sunrise Blvd. Bridge	362/54	16
Las Olas Bridge	1,095/62	31
17th Street Bridge	999/57	25
Dania Beach Blvd. Bridge	495/59	18
Sheridan Street Bridge	354/57	22
Hollywood Blvd. Bridge	1,284/68	25
Hallandale Beach Blvd. Bridge	436/57	22

Source: Broward County, 2006

C. COMMUTING PATTERNS AND TRAVEL TIMES

Commuting patterns in Broward County closely mirror those at the statewide level. The most common form of commuting is by single occupancy car, truck or van, with nearly 80% commuting this way. Another important commuting pattern to assess is the length of commute. Using this metric, Broward County is similar to statewide commuting times. Between 2009-2016, the mean travel time to work in Broward County increased from 26.9 minutes to 28.0 minutes. Similarly, the percentage of population with one-way commutes of 30 minutes or greater has increased from 43.3% to 44.5% over the same period. Population increase is expected to place additional strain on roadways that already exceed or will approach capacity. Managed lane, express bus, and ITS will offer relief for some Broward County residents; however, increasing mode split to public transit, carpools, walking, and bicycling is widely seen as the long-term solution to accommodate population growth while maintaining an acceptable level of service. Tables T-18 and T-19 compare Broward County and the State of Florida on key journey to work metrics.

Table T-19: Existing Commuting Patterns in Broward County and Florida: (2012-2016 Five Year Estimates)

COMMUTING METHOD	BROWARD COUNTY	STATE OF FLORIDA	DIFFERENCE
	PERCENT	PERCENT	
Car, Truck, Van (Alone)	79.4%	79.5%	-0.1%
Car, Truck, Van (Carpool)	9.4%	9.3%	+0.1%
Public Transit	3.0%	2.1%	+0.9%
Walk	1.3%	1.5%	-0.2%
Bicycle	0.6%	0.7%	-0.1%
Taxi/Motorcycle/Other	1.5%	1.5%	0.0%
Work at Home	4.9%	5.4%	-0.5%

Source: 2012-2016 5-Year American Community Survey; U.S Census Bureau, Table S0801

Table T-20: Commute Travel Time in Broward County and Florida: (2012-2016 Five Year Estimates)

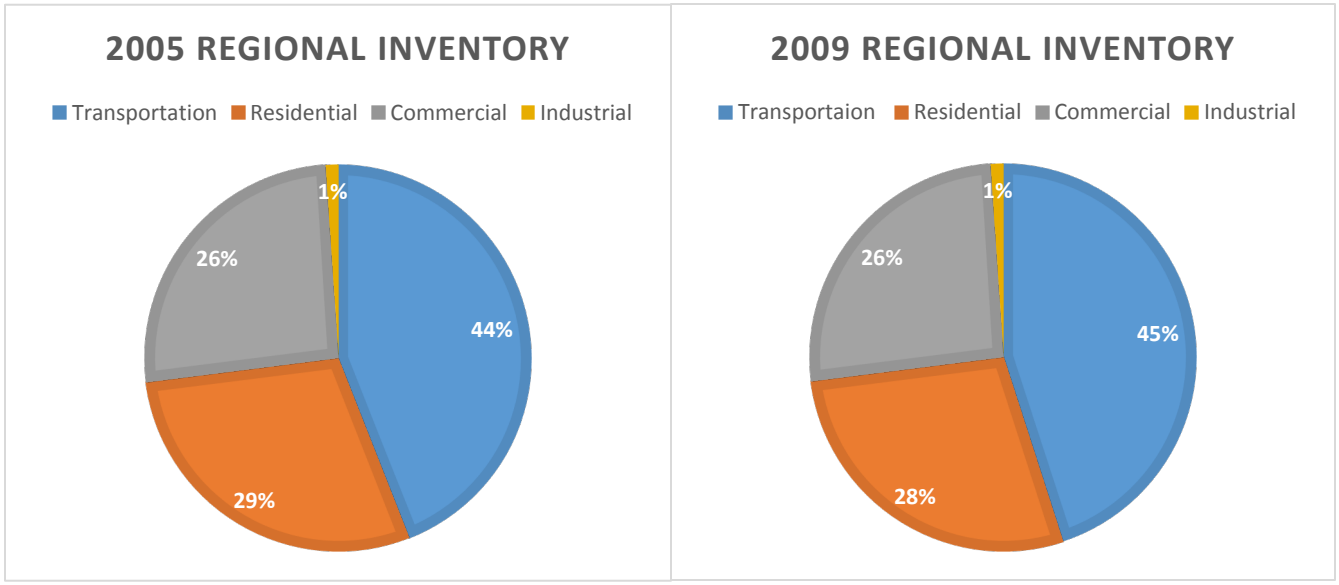
One-Way Commute Time	Broward County	State of Florida	Difference
	Percent	Percent	
Less than 5 minutes	1.5%	1.9%	-0.4%
5 to 9 minutes	6.1%	7.4%	-1.4%
10 to 14 minutes	10.7%	12.4%	-1.7%
15 to 19 minutes	14.1%	15.4%	-1.3%
20 to 24 minutes	16.1%	16.3%	-0.2%
25 to 29 minutes	7.0%	6.7%	0.2%
30 to 34 minutes	18.9%	16.6%	2.3%
35 to 39 minutes	3.3%	3.2%	0.1%
40 to 44 minutes	4.6%	4.1%	0.5%
45 to 59 minutes	9.5%	8.6%	0.9%
60 to 89 minutes	6.3%	5.4%	0.9%
90 or more minutes	2.1%	2.1%	0.0%

Source: 2012-2016 5-Year American Community Survey; U.S Census Bureau, Table B08012

D. ENVIRONMENTAL AND HEALTH IMPACTS

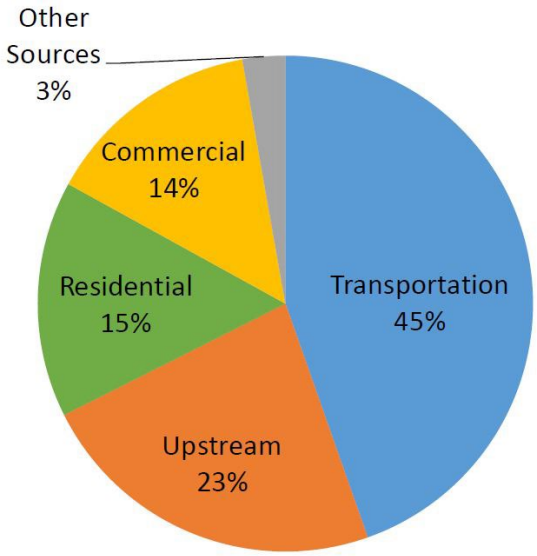
The transportation sector produces the largest share of greenhouse gas (GHG) emissions in Broward County and the Southeast Florida region. In 2005, carbon emissions produced from the transportation sector made up approximately 44% (≈ 28.8 million metric tons of CO_2) of total regional emissions. In 2009, the percentage share of transportation-related carbon emissions increased 1% (see Figure T-9). Between 2011 to 2014, GHG emissions produced by the transportation sector made up 45% of total emissions in Broward County, and 56% of County emissions when upstream energy was combined (see figures T-10 & T-11). Upstream energy includes the extraction of raw fossil fuels (mining and drilling) as well as the processing, refining, and transport of fossil fuels.

Figure T-9: Regional GHG Emissions by Sector 2005 vs. 2009



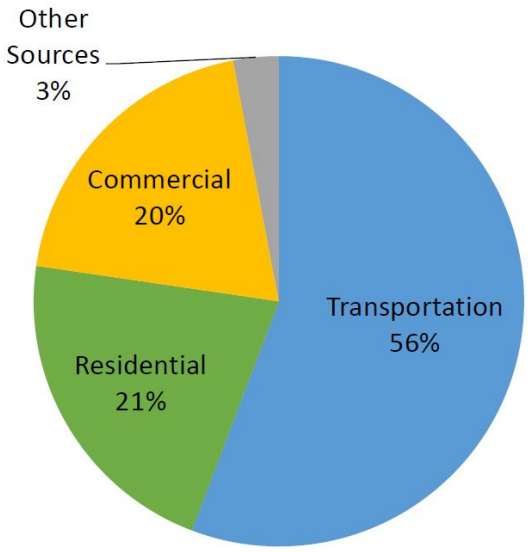
Source: Southeast Florida Regional Climate Compact, Regional Greenhouse Gas Emissions Inventory Baseline Period: 2005-2009

Figure T-10: Percentage GHG Emissions in Broward County by Sector 2011-2014, Upstream Energy Separated



Source: Broward County Communitywide Greenhouse Gas Emissions Inventory, 2011-2014

Figure T-11: Percentage GHG Emissions in Broward County by Sector 2011-2014, Upstream Energy Combined



Source: Broward County Communitywide Greenhouse Gas Emissions Inventory, 2011-2014

GHG emissions attributed to transportation within Southeast Florida, showed a general decline from 30.79 million metric tons CO_2e ($MMTCO_2e$) in 2005 to 28.78 $MMTCO_2e$ in 2014 (See Table T-21). There was a steady increase in GHGs emitted from the transportation sector within Broward County from 1102 $MTCO_2e$ in 2011,to 1157$MTCO_2e$ in 2014 (See Figure T-12).

Table T-21: Regional Emissions by Sector (metric tons CO_2e)

SECTOR	2005	2006	2007	2008	2009	5-YEAR AVERAGE
Residential	19,963,638	19,989,441	18,685,833	18,186,887	18,237,990	19,012,758
Commercial	17,884,893	18,212,353	17,356,621	17,314,930	17,083,810	17,570,521
Industrial	1,075,980	1,103,572	961,884	888,112	811,017	968,113
Transportation	30,793,880	30,853,046	30,373,200	29,300,926	28,784,969	30,021,204
Totals	69,718,390	70,158,412	67,377,537	65,690,855	64,917,786	67,572,596

Source: Southeast Florida Regional Climate Compact, Regional Greenhouse Gas Emissions Inventory Baseline Period: 2005-2009

Figure T-12: Broward County GHG Emissions by Source 2011-2014

Source: Broward County Communitywide Greenhouse Gas Emissions Inventory, 2011-2014

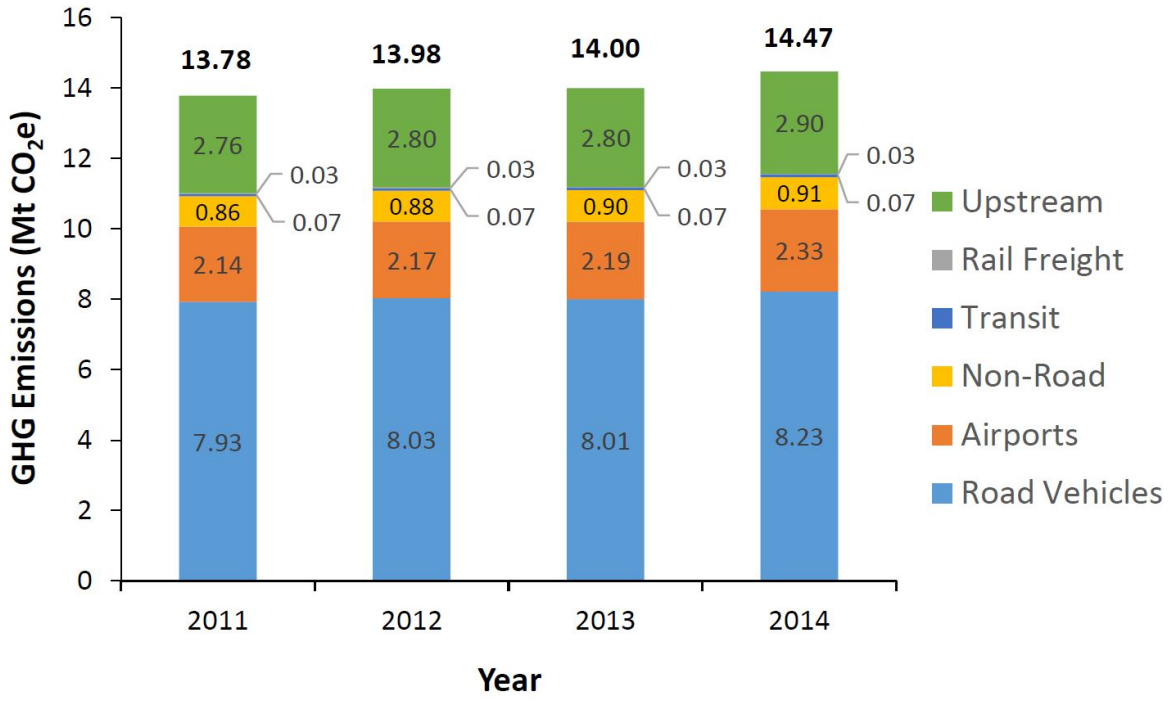
Table T-22 identifies categories within Broward County's Transportation Sector and their corresponding, GHG emission sources, and fuel sources. Among the categories within the transportation section, road vehicles consistently contributed significantly higher GHG emissions annually from 2011 to 2014, accounting for 57% of total transportation GHG emissions within the four-year period (See Figure 13 & 14). Upstream (20.0%), Airports (15.7%), and Non-road vehicles (6.3%) were also major GHG sources, while transit (0.5%) and rail freight (0.2%) did not contribute significantly to the total transportation GHG emissions.

Table T-22: Transportation Categories, Emission Sources, and Fuel Sources

CATEGORY	GHG EMISSION SOURCES	FUEL SOURCES
Airports	Airplanes, airport fleet vehicles, and ground support equipment operating at: FLL, FXE, HWO, PMP	Aviation Gasoline Biodiesel CNG Diesel Jet Fuel Motor Gasoline
Marine	Cruise ships, freight vessels, recreational vessels, and support equipment operating in Port Everglades (inventory in development)	Biodiesel Diesel Fuel Oil Motor Gasoline
Non-Road Vehicles and Equipment	Agricultural equipment Commercial equipment Construction equipment Industrial equipment Lawn and garden equipment Logging equipment Oil field equipment Railway maintenance equipment Recreational marine equipment Recreational vehicles	CNG Diesel Motor Gasoline LPG
Rail Freight	CSX Freight and Switchyard Locomotives FEC Freight and Switchyard Locomotives	Diesel
Road Vehicles	Passenger Cars Light Duty Trucks Heavy Duty Trucks	Diesel Motor Gasoline
Transit	Broward County Community ~~Buses~~ Shuttles Broward County Paratransit Buses Broward County Transit Buses SFRTA Tri-Rail Commuter Rail Locomotives SRTA Tri-Rail Connector Buses Amtrak Intercity Rail Locomotives	Biodiesel Diesel Motor Gasoline
Upstream Impacts	Extraction, processing, and delivery of transportation fuels	Aviation Gasoline CNG Diesel Jet Fuel Motor Gasoline

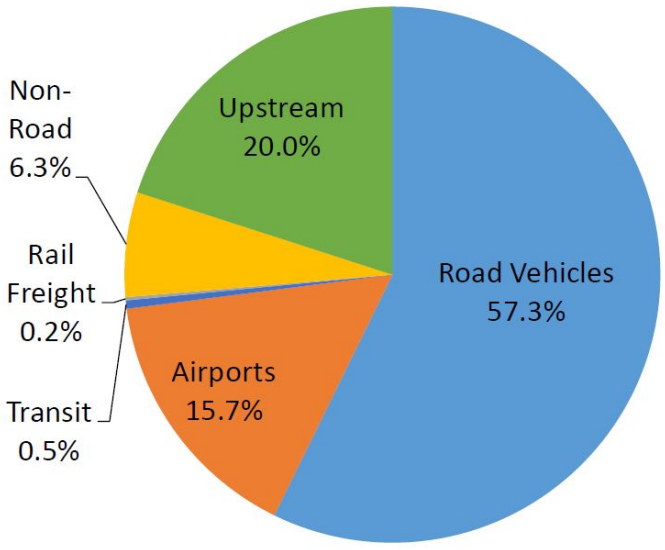
Source: Broward County Communitywide Greenhouse Gas Emissions Inventory, 2011-2014

Figure T-13: Broward County Transportation Sector GHG Emissions 2011-2014



Source: Broward County Communitywide Greenhouse Gas Emissions Inventory, 2011-2014

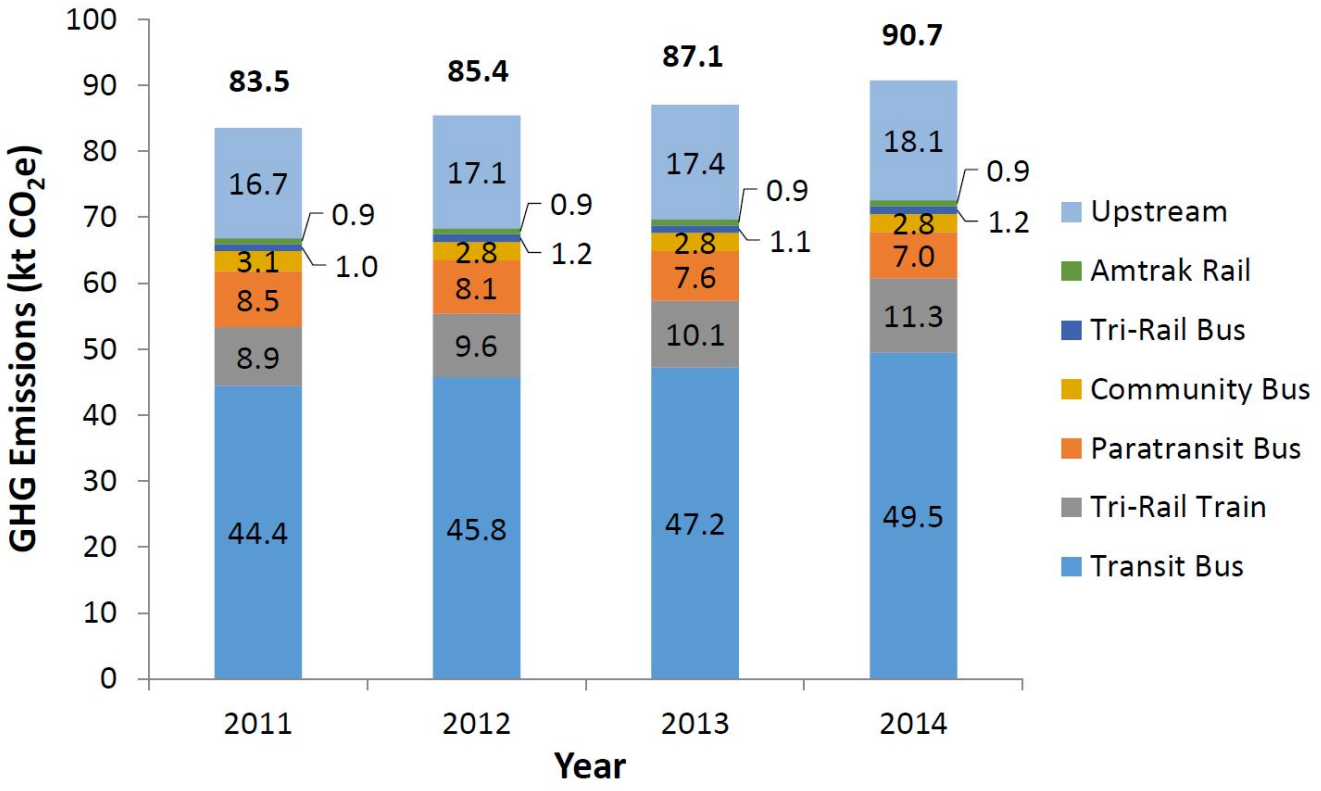
Figure T-14: Broward County Transportation Sector GHG Emissions 2011-2014



Source: Broward County Communitywide Greenhouse Gas Emissions Inventory 2011-2014

Among public transit services, the transit bus produced the most GHGs, steadily increasing from 44.4kTCO$_2$e in 2011 to 49.5 kTCO$_2$ein 2014 (See Figure T-15). This is attributed to an increase in BCT service during this period. Tri-Rail (commuter rail) and upstream sources experienced a steady increase in emissions. The transit system produced 8.6 percent higher GHG in 2014 compared to 2011. Tri-Rail services showed the largest percentage increase in GHG emissions between 2011 and 2014 (See Table T-23).

Figure T-15: Broward County Public Transit GHG Emissions (ktCO$_2$e) 2011-2014



Source: Broward County Communitywide Greenhouse Gas Emissions Inventory, 2011-2014

Table T-23: Broward County Public Transit GHG Emissions ($ktCO_2e$) Percentage Change 2011-2014

SERVICE	2011	2014	% CHANGE
Transit Bus	44.4	49.5	11.5
Tri-Rail Train	8.9	11.3	27.0
Paratransit Bus	8.5	7	-17.7
Community ~~Bus~~ Shuttle	3.1	2.8	-9.7
Tri-Rail Bus	1	1.2	20.0
Amtrak Rail	0.9	0.9	0.0
Upstream	16.7	18.1	8.4
Total	83.5	90.7	8.6

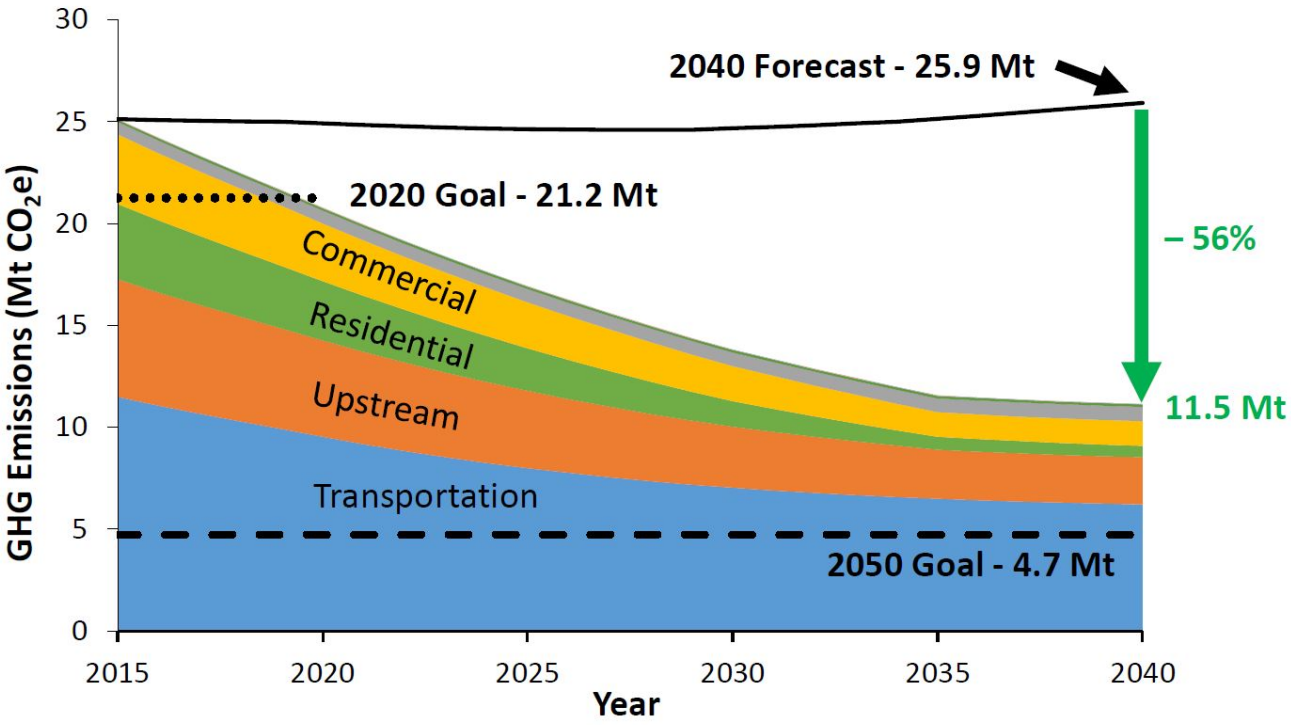
Source: Broward County Communitywide Greenhouse Gas Emissions Inventory, 2011-2014

Figure T-16 illustrates GHG emission levels of the various sectors following the aggressive and complete implementation of three transportation- and five building- related GHG reduction strategies. The transportation GHG reduction strategies are:

- Transition to Electric Vehicles – Electricity used to charge electric vehicles has a significantly lower carbon intensity than gasoline or diesel fuel.
- Improved Bicycle Infrastructure- To facilitate more bicycling: the most energy efficient transportation mode available, emitting no GHG's during use.
- Land Use Development Changes – More mixed-use communities with greater accessibility to destinations by walking, bicycling a transit instead of driving.

The forecast line illustrates the trajectory of total GHG emissions if no new measures are taken to reduce the County's carbon footprint (see Figure T-16)

Figure T-16: Broward County 2015-2040 Aggressive GHG Reduction Scenario



Source: Broward County Communitywide Greenhouse Gas Emissions Inventory, 2011-2014

Public Health and Equity

Broward County collaborates with and supports many programs which prioritize the equitable distribution of transportation services and facilities for the improvement of public health for County residents and visitors.

Table T-24 depicts the overwhelming evidence which supports that improved walkability, and increased transportation options (facilitated by urban investment in transportation infrastructure) enables and encourages improved public health. FDOT reports that one third of regular transit users met the minimum daily requirement for physical activity during their commute, and residents are 65% more likely to walk in a neighborhood with sidewalks (FDOT, 2015). A key strategy of improving public health is to increase mobility through convenient transportation options. Broward County and the Broward MPO has collaborated with the Broward Regional Health Planning Council and Florida Department of Health to create linkages between public health and transportation professionals.

One practice that shows promise as a way to bridge the gap and better convey projects impacts is to perform a Health Impact Assessment (HIA).Similar to cost-benefit analysis, an HIA uses quantitative and qualitative data to permit decision makers to make choices about alternatuives to prevent disease/injury and actively promote health and wellbeing across all sectors.

Table T-24: Health Impacts from Transportation Investments

CHANGES IN INFRASTRRUCTURE FOR DIFFERENT TRAVEL MODES	POSITIVE HEALTH IMPACTS	NEGATIVE HEALTH IMPACTS
More infrastructure facilitating walking (including general assessments of "walkability" of neighborhoods as well as presence of specific features e.g. pavements)	• Increased walking, cycling or active transport • Increased physical activity • Reduced BMI or obesity • Reduced air pollution-related effects • Improve reported health status • Reductions in specific health problems • Lower mortality /higher life expectancy	Less active transport
More infrastructure facilitating cycling	• Increased walking, cycling or active transport • Increased physical activity	
More infrastructure facilitating public transport use	• Increased walking, cycling or active transport • Increased physical activity • Reduced BMI or obesity • Reduced air pollution-related effects	Less walking, cycling or active transport
Less infrastructure facilitating car travel (including parking, motorways)	• Increased walking, cycling or active transport • Reduced BMI or obesity	

Source: World Health Organization: Health & Equity in a Green Economy, 2011

Transportation Disadvantaged (TD) Services

Persons who are unable to transport themselves or purchase transportation due to physical or mental disability, income status, or age are considered transportation disadvantaged. These members of the community are dependent on others to obtain access to health care, social services, shopping and other life sustaining activities. Florida's TD program aims to ensure the availability of efficient, cost-effective, and quality transportation services for the transportation disadvantaged. Under Florida's TD program, the Broward MPO, BCT and the Community Transportation Coordinator (CTC) work together to develop the Transportation Disadvantaged Service Plan. You can view the Broward County Transportation Disadvantaged Service Plan Update here.

Broward County's TOPS program provides door-to-door paratransit service to transportation disadvantaged individuals in accordance with the Americans with Disabilities Act of 1990 (ADA), and

the Commission for the Transportation Disadvantaged (TD) guidelines. Table T-25 identifies the percentage change in paratransit ridership between 2011 and 2017. BCT's paratransit ridership increased by 13.39% from 2011 to 2017.

Table T-25: BCT Paratransit Ridership 2011-2017

FISCAL YEAR	RIDERSHIP	% CHANGE SINCE 2011
2011	167,764	-
2012	170,675	1.72%
2013	167,769	0.00%
2014	162,545	-3.11%
2015	151,655	-9.60%
2016	179,686	7.10%
2017	190,229	13.39%

Source: BCT December Ridership Report, 2011-2017

Table T-26 illustrates the total answered calls for BCT's Paratransit as a performance measure, between 2015 and 2017. BCT recorded a substantial increase in calls for paratransit service between 2015 and 2017 (43.3 percent increase). As the Baby Boomer generation ages it is expected that there will be increased demand for Paratransit services in Broward County.

Table T-26: Answered Calls for Paratransit 2015-2017

FISCAL YEAR	ANSWERED CALLS	% CHANGE SINCE 2015
2015	329,005	-
2016	384,493	16.9%
2017	471,310	43.3%

Source: BCT Transit Development Plan, 2015-2017 updates

Additional information on Broward County's TOPS program can be accessed here.

Partnerships Transforming Our Community's Health (TOUCH) Initiative

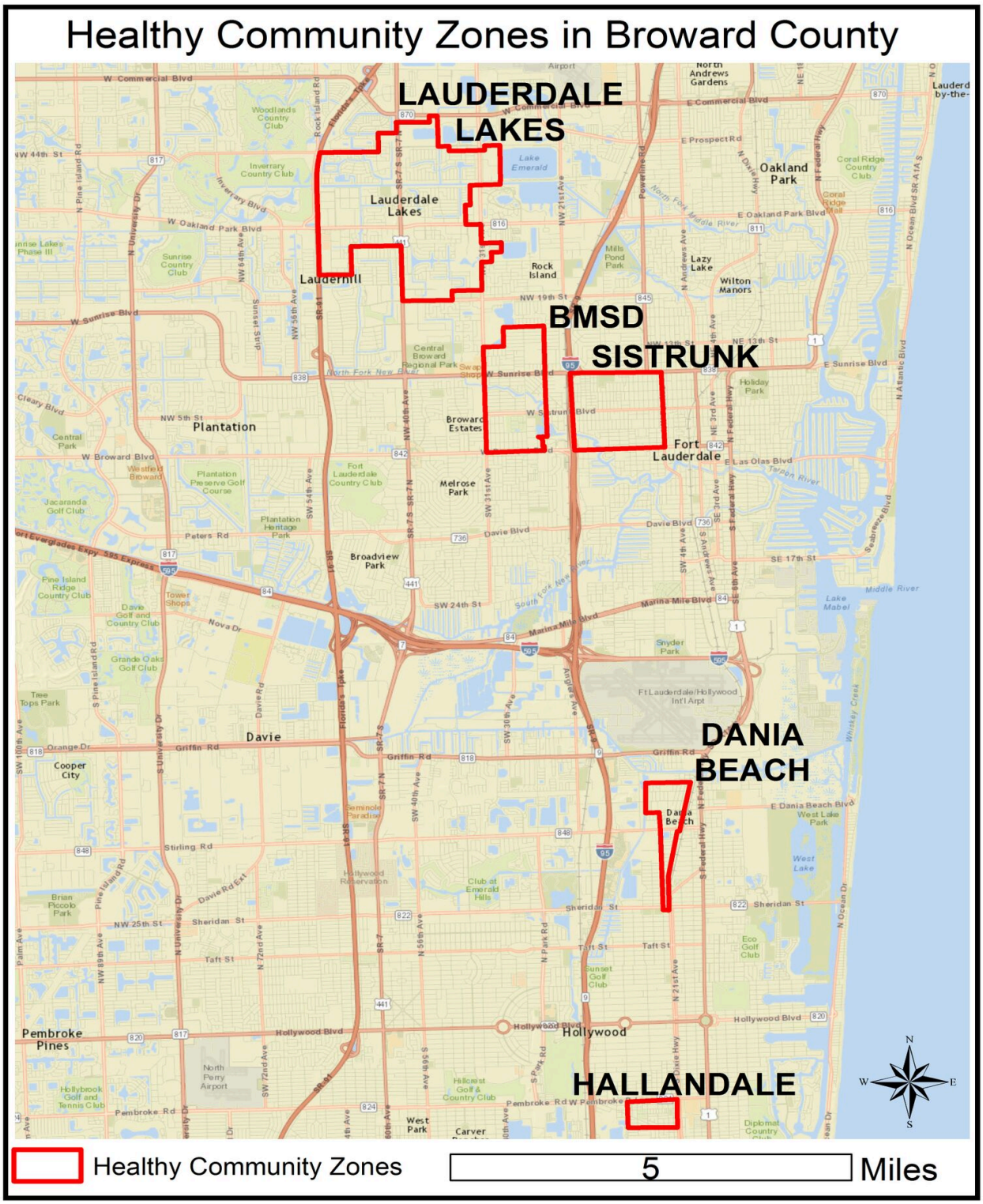
The Miami-Fort Lauderdale-West Palm Beach metropolitan area was ranked 4th worst in the country on the Pedestrian Danger Index with cars injuring over 1,500 pedestrians and bicyclists. The TOUCH Initiative was launched by Broward Regional Health Planning Council's (BRHPC) to tackle this among several other critical health issues (such as food deserts) facing Broward County. TOUCH partners work together to implement policy and capital projects to improve the health of Broward County residents. Projects include implementing roadway and neighborhood designs that make it easier and safer for Broward Residents to travel using all modes of transportation including walking, biking, driving, and public transit. TOUCH Initiative's built environment goal aims to create healthy and safe places for Broward residents, especially those that are supportive of an active lifestyle, by establishing "Complete Streets" community design standards to make streets safe for all users.

Healthy Community Zones Initiative

As part of the TOUCH initiative, Healthy Community Zones (HCZ) were established in several Broward County neighborhoods, including one in the Broward Municipal Services District. HCZs were selected by TOUCH and an independent panel to form partnerships with existing organizations, resources, and local residents in order to develop a shared vision of health, economic development, and education for their neighborhoods. The initiative encourages the development and enhancement of community efforts to improve the well-being and health of the residents in each HCZ. Figure T-17 identifies designated HCZ zones in Broward County.

The BMSD Healthy Community Zone initiative is managed by the BMSD Community Liaison and is largely supported by the BMSD Neighborhood Parks. Together, the BMSD liaison and Parks staff collaborate to maintain relationships with faith-based, health and wellness, family strengthening, self-sufficiency, capacity building community partners and stakeholders to offer diverse programs and services to the community. Additionally, partnerships with non-profit organizations in support of the BMSD Healthy Community Zone delivered new community assets that include a fully-equipped outdoor gym and bike-fix-it stations to promote physical activity and bicycling. Another HCZ project included forming a "walking school bus" for help children have a safe route to walk to school. These projects demonstrate the value of leveraging community partnerships and breaking down silos to deliver innovative programs to improve community health and wellbeing.

Figure T- 17: Healthy Community Zones in Broward County designated by TOUCH



Source: Partnerships Transforming Our Community's Health

PROJECTED GROWTH AND TRAVEL PATTERNS

A. Population Growth

In order to identify our transportation needs in the future, it is critical to analyze technological trends (driverless vehicles, Uber, etc.), shifting land use patterns and development densities, and project population growth. According to 2015 BEBR estimates Broward County was home to approximately 1.8 million people. The 2017 Broward County Land Use Plan predicts the addition of approximately 273,000 new residents by the year 2040; however, more recent update from BEBR suggests more aggressive growth of 373,000 by 2045. Table T-27 identifies the projected population growth within Broward County.

Table T-27: Projected Population Growth 2015-2045

Year	Population	Increase from Base Year	% from Base Year
2015	1,827,367	-	-
2020	1,914,498	87,131	4.8%
2025	1,989,753	162,386	8.9%
2030	2,052,432	225,065	12.3%
2035	2,111,652	284,285	15.6%
2040	2,158,080	330,713	18.1%
2045	2,200,492	373,125	20.4%

Source: Broward County BBTN Traffic Analysis Zones & Municipal Forecasts Update, 2017

B. Transit Growth Projections

Meeting the changing transportation demands shaped by a growing population and socioeconomic factors is especially essential for transit. The passage of the Transportation Surtax by the Broward County electorate in November 2018, will permit BCT to implement its TDP Vision Plan service plan. The latest major ridership forecasts prepared by BCT in 2018 predicted that by 2048 the transit system network total would have undergone a 78% growth in annual weekday ridership from 2019. Local Service and new Rapid Service are expected to be the largest contributors to ridership growth by 2048 while Express Service and Community Shuttles are also predicted to grow in ridership. "Breeze" routes are expected to decline as they are converted into Rapid Service routes (see Table T-28).

Table T-28: Projected Growth in Weekday Ridership 2019-2048

Service Type	Annual Weekday Ridership (2019)	Annual Weekday Ridership (2028)	Annual Weekday Ridership (2048)	Growth Rate (2019-2048)
Fixed Route Local	19,094,342	24,298,219	33,052,536	73.1%
Express	498,598	578,280	702,000	40.8%
Breeze	1,807,707	832,987	621,074	-65.6%
Rapid	-	1,607,110	3,872,195	N/A
Community Shuttle	2,161,751	2,643,429	3,700,315	71.2%
System Total	23,562,398	29,960,025	41,948,120	78.0%

Source: BCT Transit Development Plan 2019-2048, TBEST Results Appendix M

Following the projected trend, ridership for the Express service layer has increased by 160,506 between July 2012 and June 2016. Although express route ridership increased each year between 2012 and 2016, there is a leveling of ridership growth rate over time (See Table T-29). Express Bus is the newest mode for BCT and is expected to continue to play an important role for mobility of Broward residents that commute to Miami, Civic Center, and Brickell.

Table T-29: Express Routes Ridership Totals 2012-2016

YEAR	RIDERSHIP TOTALS	% CHANGE SINCE 2012
July 2012-June 2013	458,347	-
July 2013-June 2014	560,577	22.30%
July 2014-June 2015	602,841	32.52%
July 2015-June 2016	618853	35.02%

Source: BCT Transit Development Plan, 2013 -2017 annual updates

BCT developed an updated Transit Development Plan in 2018 that outlined new ridership and service projections. It is notable that despite success in the Express Route program, overall ridership has recently declined. FY 17 average weekday ridership for fixed route was 20 percent less than 2014 average weekday ridership. Further analysis is needed to determine the cause of the ridership decline, which is not unique to Broward County. Possible reasons for recent ridership decline include improving economy, stable gasoline prices, ridershare services, and emerging technology.

C. Emerging Technologies

Transportation trends in the U.S are shifting in response to emerging technologies, and this is particularly evident in urban areas. In recent years rideshare has emerged as a competitive mode of transportation in Broward County, with newly developed technologies by companies such as Lyft, Uber, Zipcar, Hop Stop, ZabCab, and more. The accessibility, user-friendly interface, and often reduced cost are only a few reasons for the growing popularity of rideshare applications, and their likelihood to influence a decline in taxi ridership in years to come.

New micromobility transportation solutions aimed to make short ships convenient such as bike share, e-bikes, e-scooters is quickly becoming more prevalent in our communities. Broward County Transportation Department took the first step by implementing with Broward County's first bike sharing system. Since its inception in 2012, BCT's bike sharing program dubbed "B-Cycle" has experienced significant growth in ridership with protentional for expansion of the bicycle system and number of stations. The program allows people to check out bicycles from various bikeshare locations located within the County and provides an additional mobility choice as well as connections to BCT, Tri-Rail, water taxi and Community shuttle routes. In 2016, B-Cycle maintained its status as a popular mobility option in Broward county with a 275-bicycle system, 25 stations, and over 45,830 trips taken, a 5.9% increase over 2015, and 20.2% increase over 2014 (See Table T-30). Broward County expects increasing competition in the bike share and micromobility markets as new dockless technologies make implementation easier and less costly. As these technologies expand, Broward County will need to ensure that ADA accessibility is not hindered by the bicycles, scooters, or other vehicles.

Table T-30: B-Cycle Trips 2012-2017

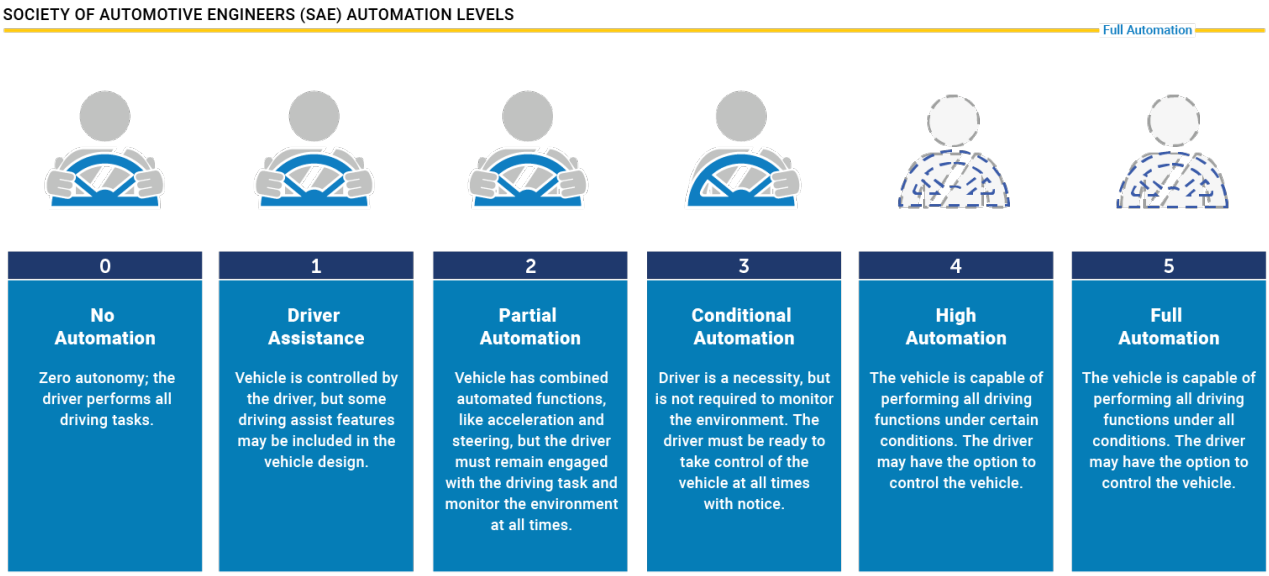
YEAR	NUMBER OF TRIPS	% CHANGE SINCE 2012
2012	24,190	-
2013	30,124	24.53%
2014	41,665	72.24%
2015	45,520	88.18%
2016	42,073	73.93%
2017	42,421	75.37%

Source: Broward B-cycle December Report 2017

As regions around the country push to invest more in alternative transportation systems that include bus rapid transit, personal rapid transit, streetcars, light rail and high-speed rail, the automobile and tech industries are quickly advancing autonomous vehicle technology. The Florida Automated Vehicles (FAV) program, led by the Florida Department of Transportation (FDOT), collaborates with auto

manufacturers to pilot research initiatives to further the understanding of driverless and connected vehicles and their capabilities to improve road safety and potentially reduce traffic congestion. The Society of Automotive Engineers and National Highway Traffic Safety Administration recognize five (5) level of vehicle automation (Figure T-18). Today, manufactures already sell vehicles that come equipped with technology that has reached level two (2) and are piloting vehicles with level three (3) capability. Further research and development is needed in this sector to assess the impact of autonomous technology on long term transportation/land use planning and capital project development.

Figure T-18: Vehicle Automation Levels



Source: National Highway Traffic Safety Administration, 2018

PLANS TO MEET TRANSPORTATION NETWORK NEEDS

Broward County has developed a number of transportation plans and implementation mechanisms to meet future transportation needs. While the County's Transportation Element of the Comprehensive Plan serves as a foundation for policy and implementation, there are also a number of transportation-related plans in place. Below is a highlight of major transportation plans guiding future investments and strategies.

BCT Transit Development Plan (TDP)

BCT Connected, the 2019–2028 Transit Development Plan (TDP), serves as the strategic guide for public transportation in Broward County for the next 10 to 30 years. This document

serves as a major update to TDP, which was adopted in December 2018. The plan provides a comprehensive documentation of BCT's capital and operating needs for the next ten years. In addition, the update identifies achievements (2018), future plans and services, and provides recommendations. The Broward County Comprehensive Plan includes policies and implementation steps to implement BCT's vision and support local and regional transit options for residents and visitors.

Annual and major updates to the plan, including the associated data and analysis to support it, can be found here.

SFRTA Transit Development Plan (TDP)

The South Florida Regional Transportation Authority Transit Development Plan documents the agency's vision, goals and strategies over a ten-year planning horizon, and contains achievements for the State Fiscal Year. Every five years a major update to the TDP is published documenting the investments that SFRTA is committed to making over the next five years as well as priorities and improvements over a ten-year horizon. The plan provides an opportunity to addresses the mobility needs of a growing and dynamic region, and to continue building partnerships to advance transportation projects in the South Florida region and beyond. Annual reports as well as major 5-year updates of the SFRTA Transit Development Plan can be found here.

Broward MPO Long Range Transportation Plan (LRTP)

The Broward MPO is a critical transportation agency partner to realize the transportation goals. The MPO's current LRTP, Commitment 2040, is an investment plan for the Miami Urbanized Area within Broward County (the MPO's planning area). The plan allocates Federal, state and local funds to both maintain the existing system and develop needed improvements to meet the population and employment growth needs. Under Federal law, the plan must be "financially feasible," meaning only revenues that can be reasonably expected can be considered in funding the recommendations documented within Commitment 2040. Broward MPO is currently working on the 2045 LRTP, now referred to as the Metropolitan Transportation Plan, that will be adopted in 2019.

The plan, including the associated data and analysis to support it, can be found here.

Southeast Florida Transportation Council (SEFTC) Regional LRTP

In addition to the Broward MPO's LRTP, Southeast Florida regional transportation investments are guided by SEFTC's 2040 Regional LRTP. The plan identifies the most significant transportation investments needed to meet travel demand needs throughout the Southeast Florida region (Broward, Miami-Dade, Palm Beach Counties). The horizon year of 2040 is chosen to provide time for agencies to assemble funds and complete the technical work required to design and construct the selected

improvements and is consistent which each of the County-level MPO's LRTPs. Major components of the plan include:

- Projected growth in the region through 2040, including population and employment;
- Prioritizing how to accommodate/meet the needs of the project growth;
- Creating a vision for a seamless regional transit system and also improving the safety and access of the bicycle and pedestrian system
- Actively engaging the public
- Prioritizing projects that best meet the goals for the plan
- Financial plan that identifies funding sources and mechanisms to implement strategies
- A Plan that matches investments to where we are growing

The 2040 Regional LRTP, including the associated data and analysis to support it, can be found here.

Transportation Surtax Plan

On November 6, 2018, the Broward County electorate approved a one-cent Charter County and Regional Transportation System Surtax "Transportation Surtax" for a period of 30 years. Estimated to raise over $15 billion to funding transportation projects, the overarching goals of the Transportation Surtax projects are: to create connectivity; to relieve traffic congestion; to improve transit service, and to expand the availability of multimodal transportation. A minimum of 10 percent of the Transportation Surtax annual revenues is reserved to fund municipal projects as prioritized by the Broward MPO. The Broward County Transportation Surtax Ordinance located in Article V, Section 31½-75 will guide the implementation of the Transportation Surtax, including the formation of an independent Oversight Board. Transportation Surtax projects will be added to the FY2020 budget and CIP.

The plan, projected budgets, and state audit on the Transportation Surtax, can be found here.

South Florida Express Lanes Network Project

The 95 Express, 595 Express, 75 Express, and Palmetto Express are part of a larger network of existing and planned congestion-priced managed lanes in southeast Florida. The proposed improvements for the express lane developments are needed to address existing congestion, enhance transit services, accommodate future regional growth and development, enhance hurricane and other emergency evacuation, and improve system connectivity between key Southeast Florida limited access facilities. A map of the Express Lane Network Project can be viewed here.

Port Everglades 20-Year Master/Vision Plan

The cruise business at Port Everglades is forecasted to reach 5.6 million passenger moves in 2033. Port Everglades is expected to continue as Florida's leading containerized cargo port, reaching 1.7 million TEUs (the industry standard measurement of 20-foot equivalent units) in 2033. The Port

Everglades 20-Year Master Vision Plan provides a roadmap for the port's future development and capital investments to meet its growing needs as it continues to expand towards the year 2033. The plan addresses future transportation development needs and projects within and around the Port Everglades jurisdictional area, including but (not limited to); infrastructure improvements, enhancement of multimodal capacity, increased freight mobility and network connectivity, reduced congestion, seaport-airport connectivity and more. The plan identifies conducting traffic studies for projects in the 10-year timeframe. An overview of the Port Everglades 20-year Master/Vision plan can be found here.

Fort Lauderdale-Hollywood International Airport Master Plan

Broward County Aviation Department is currently updating a master plan for Fort Lauderdale-Hollywood International Airport to meet the future needs of the county through to 2040. You can find an overview and the goals of the plan here.

Florida Department of Transportation Florida Transportation (FTP) Plan/Strategic Intermodal System (SIS) Plan

The Strategic Intermodal System (SIS) Policy Plan establishes the policy framework for planning and managing Florida's Strategic Intermodal System, the high priority network of transportation facilities important to the state's economic competitiveness. The SIS Policy Plan is a primary emphasis of FTP implementation and aligns with the current FTP Policy Element. The SIS Policy Plan includes three objectives to guide future SIS plans and investments. You can find the 2016 FTP/SIS Plan here.

Broward County Greenways Master Plan

In 1999, the Broward County Board of County Commissioners identified the need for a county-wide system of greenways and trails, for the improvement of the quality of life in the urban environment. By 2002, the Broward County Commission approved an amendment to the Broward County Comprehensive Plan to incorporate the conceptual greenways system plan. Today, planning is in progress to achieve the vision of a fully funded, countywide network of safe, clean, bicycle and equestrian paths, nature trails and waterways.

You can view a map showing the Potential Greenways System in Broward County here.

Florida Department of Transportation Complete Streets Guidelines

September 2014, the Florida Department of Transportation (FDOT) adopted the Statewide Complete Streets Policy (Topic No. 000-625-017-a). Complete Streets serve the transportation needs of transportation system users of all ages and abilities, including pedestrians, bicyclists, transit riders, motorists, and freight handlers. A transportation system based on Complete Streets principles can help to promote safety, quality of life, and economic development.

All FDOT Complete Streets resources can be found here.

Broward Complete Streets Initiative

Broward County's efforts to promote and implement Complete Streets began in earnest when County staff presented the concept of Complete Streets to the Broward County Board of County Commissioners in 2009. Since that time, a number of County agencies, the Broward MPO, municipalities and other partners have worked to develop Complete Streets design guidelines, to update codes and the Comprehensive Plan, and to identify and allocate funding and ultimately construct projects. In July 2012, Broward Complete Streets Guidelines were approved by the MPO Board. A Complete Streets Team was developed and has been working with its partners to continue the implementation of Complete Streets projects. Most recently, on June 10, 2014, the Broward County Board of County Commissioners adopted Complete Streets policies into the Broward County Comprehensive Plan. A number of municipalities have adopted resolutions in support of the concept and are working toward adopting policies into their comprehensive plans.

Broward Complete Streets Guidelines

The Broward Complete Streets Guidelines manual is based on complete streets principles that aim to design streets for people of all ages and physical abilities and accommodate all travel modes. The Broward Complete Streets Guidelines manual offers another way to design streets and provides guidance for those municipalities that decide to adopt these principles. The result will be more livable neighborhoods with healthier residents due to opportunities for increasing social capital (by interacting more regularly with neighbors) and for active transportation (walking, bicycling, and accessing public transportation).

You can find Broward Complete Streets Guidelines here.

Broward MPO Bicycle and Pedestrian Safety Action Plan

The Broward Metropolitan Planning Organization's (MPO) Bicycle and Pedestrian Safety Action Plan aims to create a safer walking and bicycling environment in Broward County. The plan aims to do this by identifying "Calls for Action" that focus on areas where institutional changes should be explored. Beyond the "Calls for Action" the plan also includes preliminary strategies and ideas for how change can be accomplished. The Action Plan identifies key action items, partner organizations, and time frames to guide the work of the MPO and its partners in improving walking and bicycling safety. The Action Plan serves as a foundation to improve safety for all roadway users in Broward County by shifting the transportation focus from moving cars to moving people utilizing four calls to action outline in Figure T-19. You can find the Bicycle and Pedestrian Safety Action Plan here.

Figure T-19: Bicycle and Pedestrian Safety Action Plan Calls to Action

Source: Broward MPO Bicycle and Pedestrian Safety Action Plan

IMPLEMENTATION

Transportation planning and implementation in Broward County is the joint responsibility of several state, county, and municipal agencies. Table T-31 lists these agencies and their responsibilities concerning all phases of transportation planning and improvements.

Planning for the County jurisdictional roadway network is the responsibility of the Broward County in partnership with the Broward MPO. The MPO is a policy board of local, elected officials, established under the federal requirements of 23 U.S.C. 34 for the utilization of federal transportation funds in the urbanized area of Broward County. The duties of the BMPO include the development of a comprehensive transportation plan which includes consideration of long range goals and transportation system management measures, an annual unified planning work program, and an annually updated, five-year transportation improvement program pursuant to Section 339.175 Florida Statutes. The State recognizes the MPO as the forum for cooperative decision making in these matters.

The Planning and Development Management Division provides administrative support to the Bicycling and Pedestrian Advisory Committee (BPAC) which was created in 1981 by resolution of the Broward County Board of County Commissioners. The purpose of the BPAC is to study and advise the Broward County Board of County Commissioners on all matters related to bikeways including: review Broward County road construction projects at their planning and design stages for the possible inclusion and/or placement of bikeway systems; recommend prospective locations of future bikeways; study, pursue, solicit, and encourage public and private funding for bikeway projects; compile and provide educational and informational

material; seek public input to determine community desires and priorities regarding bikeways; develop programs to encourage the increased use of bicycles throughout Broward County; and submit to the County Commission an annual report and proposed budget.

Table T-31: Transportation Planning Legislation & Responsible Local Agencies

Agency	Enabling Legislation	Responsibility
Broward County Aviation Department	Broward County Administrative Code, Ch. 7.2 Ch. 333, F.S	Planning, construction, operation, and maintenance of buildings, hangars, runways, and other county-owned facilities located upon and used in connection with FLL and North Perry Airports.
Broward County Transit Division	Broward County Administrative Code, Ch 15.11	Administering the Transit Program; coordinate the administration, management, operation, and maintenance of a countywide transit and paratransit system.
Broward Metropolitan Planning Organization (MPO)	F.S. Ch. 163, 49 U.S.C 5303(k), 23 U.S.C. 34	Administration and coordination of transportation planning and improvement programs in the Broward County Urbanized Area.
South Florida Regional Transportation Authority	Florida Statutes, Chapter 343	Operates the commuter rail system in Dade, Broward, and Palm Beach County
Port Everglades Department	Broward County Administrative Code Chapters 16.2	Plans, develops, operates, and maintains Port Everglades as one unit of Broward County Government
Planning and Development Management Division	Broward County Administrative Code, Ch. 8.27 Broward County Land Development Code, Ch. 5	Issuance of development permits and concurrency certificates in Broward County
Traffic Engineering Division	Broward County Administrative Code, Ch. 6.58	Design, install, and maintain signals, signs, and pavement markings
Highway Construction and Engineering Division	Broward County Administrative Code, Ch. 6.48	Primarily responsible for the engineering design and construction of County jurisdictional roads
Highway and Bridge Maintenance Division	Broward County Administrative Code, Ch. 6.53	Primarily response for the maintenance of and cleaning of county jurisdictional roads and bridges.

Appendix A:

Existing Roadway Capacity and Level of Service

Broward MPO is responsible for regularly updating Level of Service for roads classified as collector and above. The most recent Roadway Capacity and Level of Service Analysis was updated in 2017. Additional traffic data is available at http://www.browardmpo.org/index.php/data .

Appendix B:

Transportation Concurrency Management Area Level of Service Comparison Matrix

TCMA	New LOS Standard	Old LOS Standard	FY 19 Status	Funded	Notes
Overall	Increase Ridership 10%	Ridership standard varied by TCMA	Deficient	Yes	Overall ridership goal is aligned to TDP and CIP which accounts for ridership increase Countywide.
	Provide 14 million annual fixed-route revenue service hours	New	Deficient	Yes	New LOS aligned to TDP service plan
	Construct bus shelters at 1/3 of stop locations	Increase number of bus shelters 25% from FY 2009 to FY2013	Deficient	Yes	New LOS is aligned with TDP and CIP
	Expand network of Adaptive Traffic Signal Control Technology	Reduce traffic signal communication failures by 50%	Deficient	Yes	New LOS is aligned with Traffic Engineering Division goals and CIP
	Maximum vehicular traffic volume 75% above LOS standard	Maximum vehicular traffic volume 75% above LOS standard	Maintenance	Yes	No Change
	Ensure adequate transit maintenance infrastructure to accommodate fleet demand	New	Deficient	Yes	New LOS that aligned with TDP and CIP to ensure adequate vehicle capacity for service expansion
	Study and develop two additional intermodal transit centers	New	Deficient	Yes	New LOS goal is aligned with the TDP to support service expansion

TCMA	New LOS Standard	Old LOS Standard	FY 19 Status	Funded	Notes
Overall	Increase fixed-route fleet by up to 15 vehicles to support new and expanded service	New	Deficient	Yes	New LOS goal is aligned with the TDP to support service expansion
	Procure up to 40 vehicles to support Community Shuttle operations	Increase or maintain community shuttle routes. Varied by TCMA.	Deficient	Yes	Overall community shuttle capital equipment LOS to support overall operations, increase capacity, and reduce mechanical breakdowns
Northeast	30 minute peak hour headways on 70% of bus routes	30 minute headways on 90% of bus routes	Deficient	Yes	Updated LOS is aligned with TDP and CIP and based on peak headway
	Maintain and enhance Northeast Transit Center	Establish one of more neighborhood transit centers	Maintenance	Yes	Updated to reflect completion of the Northeast Transit Center
North Central	30 minute peak hour headways on 70% of bus routes	30 minute headways on 90% of bus routes	Deficient	Yes	Updated LOS is aligned with TDP and CIP and based on peak headway
Central	30 minute peak hour service on 60% of bus routes	30 minute headways on 80% of bus routes	Maintenance	Yes	Updated LOS is aligned with TDP and CIP and based on peak headway
	Maintain and enhance Lauderhill Transit Center and West Regional Terminal	New	Maintenance	Yes	New LOS to support capacity enhancements at Lauderhill Transit Center and West Regional Terminal. Aligned with TDP and CIP
TCMA	New LOS Standard	Old LOS Standard	FY 19 Status	Funded	Notes

Port/Airport	Maintain at least one fixed-route with direct service to FLL	New	Maintenance	Yes	New LOS is aligned with TDP and CIP and ensures direct service to FLL
	Continue studies to examine intermodal connections between Port Everglades, FLL, and Broward County Convention Center	Study options for the direct movement of freight and passengers between Port Everglades and FLL.	Maintenance	Yes	Updated LOS acknowledges existing studies that have taken place since the creation of the goal
Eastern Core	30 minute peak hour headways on 60% of bus routes	30 minute headways on 90% of bus routes and 20 minute headway on 40% of routes	Maintenance	Yes	Updated LOS is aligned with TDP and CIP and based on peak headway
	Maintain and enhance Broward Central Terminal	Establish and maintain service at one of more neighborhood transit centers	Maintenance	Yes	Updated LOS acknowledges Broward Central Terminal as the primary facility in this TCMA and would support facility modernization. Aligned with TDP/CIP
Sawgrass	30 minute peak hour headways on 70% of bus routes	20 minute headways on 80% of bus routes	Maintenance	Yes	Updated LOS is aligned with TDP and CIP and based on peak headway
	Maintain operations at BB&T Center Park and Ride Lot	Establish and maintain service at one of more neighborhood transit centers	Maintenance	Yes	Updated LOS acknowledges BB&T Center as the primary facility in this TCMA and would support facility modernization. Aligned with TDP/CIP
TCMA	New LOS Standard	Old LOS Standard	FY 19 Status	Funded	Notes

Southeast	30 minute peak hour headways on 60% of bus routes	30 minute headways on 80% of bus routes	Maintenance	Yes	Updated LOS is aligned with TDP and CIP and based on peak headway
	Enhance transfer facility at Young Circle	Establish and maintain service at one of more neighborhood transit centers	Deficient	Yes	Updated LOS acknowledges Young Circle as the primary facility in this TCMA and would support facility modernization and capacity enhancement. Aligned with TDP/CIP and US-1 Transit Study
South Central	30 minute peak hour headways on 60% of bus routes	30 minute headways on 80% of bus routes	Maintenance	Yes	Updated LOS is aligned with TDP and CIP and based on peak headway
	Implement new I-75 Express Bus service	New	Deficient	Yes	New LOS to require implementation of I-75 Express to reduce peak hour commute trips on the SIS
	Maintain operations at new park and ride lots	Establish and maintain service at one of more neighborhood transit centers	Maintenance	Yes	Updated LOS acknowledges that Miramar Transit Center and associated express eservice park and ride lots are primary facilities in this TCMA. Aligned with TDP/CIP

Source: Planning and Development Management Division, 2018