Lake Worth Beach

Mobility Plan

DRAFT

Project Team

WGI

Acknowledgments

Special acknowledgment to the residents of Lake Worth Beach.

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I. Introduction

What is Mobility?

Simply put, mobility is the ability of people and goods to move from point A to point B. While this concept has traditionally been thought of as transportation, there has been a shift towards mobility to be more inclusive of non-motorized modes like walking, cycling, and the movement of disabled persons in wheelchairs or people with strollers. This emphasizes the diversity of ways for people to get around and the need for planning professionals to include them in municipal transportation networks.

What is a Mobility Plan?

MOBILITY PLAN

A mobility plan is a document that analyzes and plans for how people and goods move throughout a community through roads, sidewalks, trails, transit systems, freight routes, and other methods. The plan also identifies the needs, goals, and objectives for a community's future transportation and mobility network while identifying projects to implement the plan's vision.

SAFETY ACTION PLAN

A safety action plan prioritizes safety improvements and identifies the justification for each project. This allows municipalities and government organizations to better identify safety improvements and plan for their implementation. Safety action plans are a powerful tool to help inform the public why safety projects are needed and when they may be constructed.

The safety action plan will also help Lake Worth Beach implement its 2022 Vision Zero Resolution (Resolution 61-2022). This resolution aims to eventually eliminate traffic fatalities within the community. Vision Zero is driven by the belief that everyone has the right to move safely throughout their community and that system designers and policymakers share the responsibility to ensure safe systems for travel.

A safety action plan is required by the Federal Highway Administration to receive project funding through grants such as the Safe Streets and Roads for All (SS4A) Grant which was created under the Bipartisan Infrastructure Law in 2022 to reduce roadway deaths using a safe streets approach. Incorporating a safety action plan into the mobility plan allows the City to compete for federal grant money to implement projects. The Lake Worth Beach Mobility plan will function as a combined mobility plan and a safety action plan.

PROJECT PRIORITIZATION

A primary element of the safety action plan is identifying potential mobility safety improvements and prioritizing them as short-, mid-, and long-term projects. Project prioritization provides a realistic and achievable path to implement the vision, goals, and objectives of the mobility plan.

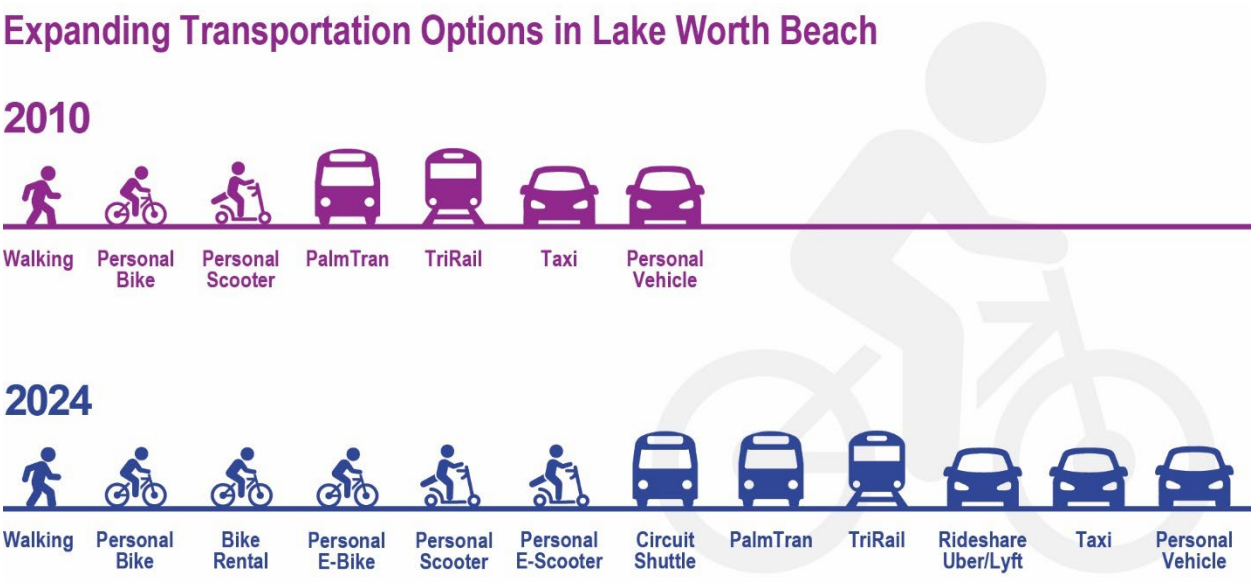
Why is it Needed?

The first reason is to address dangerous conditions in the existing mobility network. As stated in the City's 2022 Vision Zero Resolution, Florida is the most dangerous state for pedestrians, consistently ranking number 1 on the Pedestrian Danger Index by Smart Growth America. South

Florida consistently ranks as one of the most dangerous metropolitan areas in the country for pedestrians, cyclists, and drivers with 176 people in Palm Beach County and 3,189 people statewide dying annually on roadways. This predicament shows the urgent need to rethink how people move about the City safely and efficiently regardless of mode.

The second reason is because of the explosion of new transportation and mobility modes that have arisen in the last decade. Transportation plans traditionally analyzed vehicular traffic, mass transit, pedestrians, and bicycles. However, today's mobility plans need to consider several more modes to ensure efficient and safe travel for all people. Some of these new mobility modes include;

- bike and scooter shares,
- e-bikes and motorized scooters,
- ride shares (Uber/Lyft),
- paratransit services, and
- microtranist services (Circuit circulator shuttles)



Technology and mobility trends have changed how the public uses roadways, especially after the 2020 COVID-19 Pandemic. The growing share of electric vehicles requires charging infrastructure, the rise in food delivery services like Uber Eats and Grub Hub have increased the need for short-term parking, ride-shares like Uber and Lyft have increased the need for pick-up/drop-off space in busy commercial areas, and pay by phone parking apps have made it easier for cities to use dynamic pricing strategies. These emerging trends and technologies are impacting peak traffic times, vehicular circulation patterns, the demand for parking, and the need for designated loading and pick-up/drop-off sites.

Finally, the rise in outdoor dining and the desire for more public gathering space means that mobility networks will need to consider this relocation of space from vehicular travel and parking to pedestrian uses.

II. Existing Conditions

The following sections provide an overview of the existing conditions present within the City of Lake Worth Beach, including the City's involvement in regional plans.

Existing Plans

The City of Lake Worth Beach interfaces with three major regional transportation planning bodies.

- Palm Beach County (PBC)
- Palm Beach Transportation Agency (TPA)
- Florida Department of Transportation (FDOT)

The first, Palm Beach County, has jurisdiction and control over some of the City's roadways and traffic signals. The second, Palm Beach Transportation Planning Agency, (TPA), is the regional transportation planning agency for Palm Beach County and is the main source of transportation plans for the region. And third, the Florida Department of Transportation (FDOT), is the highest on the hierarchy of regional planning bodies and has control and jurisdiction over multiple roadways and intersections within the City. While FDOT does not publish regional plans, the department performs regional work in other capacities, such as local improvements to roadways as part of yearly improvement programs, facilitation and review of grants, PD&E studies, and in an advisory role to local organizations.

The following sections will highlight major guiding documents that both the TPA and the City have published. These plans were specifically reviewed due to their relevance to the overall purposes of this mobility plan.

LAKE WORTH BICYCLE NETWORK PLAN (2009)

The City of Lake Worth Beach and the Lake Worth Beach Community Redevelopment Agency (CRA) created the 2009 City of Lake Worth Bicycle Network Plan with the help of an outside transportation consultant. The plan's goal was to increase the City's multimodal capacity to reduce traffic congestion and enhance the City's overall transportation network. Additionally, the plan sought to increase the bicycle usage of City residents and visitors. For this mobility plan, the bicycle plan was utilized for its extensive public input component, analysis of existing conditions, and recommendations as shown below.

Public Input Key Points

- Bicycle racks should be located more conveniently and at key locations, including but not limited to, bus stops, on buses, and commercial hubs.
- Educational programs are needed, sponsored by the City, that can educate residents on safety and proper cycling habits.
- Conversion of existing infrastructure into bicycle only facilities or retrofit of existing infrastructure to include new bicycle facilities or striping.
- Greater intermodal connectivity.

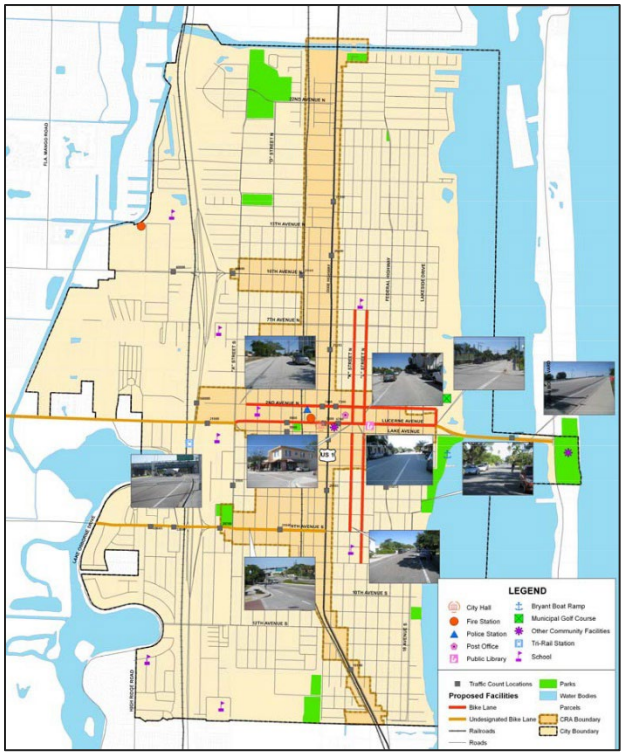
Existing Conditions

- The plan provided a map of existing bicycle facilities, which is shown in the figure below.
- The existing bicycle facilities were limited to the downtown and commercial areas of the City and the report noted a lack of residential bicycle facilities.
- Additionally, the plan noted the lack of bicycle facilities at key intermodal areas, such as bus stops.

Proposed Bicycle Facilities

The Bicycle Network Plan provided a map of the proposed bicycle network based on existing conditions and public input. The contents of this plan were reviewed and analyzed, but not necessarily relied upon due to the plan being 15-years old. Therefore, this mobility plan is proposing a low-stress bicycling network that will supersede the 2009 bike plan. The proposed low-stress bicycling network will be reviewed in greater detail in Chapter 6.

Existing Bicycle Infrastructure in 2009



Proposed Bicycle Network in the 2009 Plan

PBC MASTER COMPREHENSIVE BYCYCLE TRANSPORTATION PLAN (2011)

The Palm Beach TPA, formerly known as The Palm Beach MPO, published the Master Comprehensive Bicycle Transportation Plan in March of 2011 to guide future bicycle transportation planning decisions for both the long- and short-term planning horizons. The plan incorporated an ultimate visioning goal by 2035, coinciding with the Long-Range Transportation Plan (LRTP) that the TPA completed for the planning horizon year of 2035.

Note that the plan was for the entire County, not just the City of Lake Worth Beach. Nonetheless, this section summarizes the key supporting features of the plan.

Inventory of Existing Conditions

- Existing and current plans created by entities in the region are reviewed in the plan. This includes municipal plans and plans created collaboratively by a group of agencies, like the Northeast Everglades Natural Area Regional Plan (NENA).
- Identified and reviewed local laws, zoning, and land use ordinances that impact bicycle planning in the region.
- Current levels of bicycle use and review of bicycle crash patterns.
- Bicycle connectivity and supporting infrastructure at regional intermodal connections.
- Bicycle access to schools.
- Evaluation of existing bicycle infrastructure across the County.

Needs Assessment

The plan organized recommendations for improvements to existing roadways into four major categories. These were: Bicycle Level of Service Met, Roadway Restripe Candidate, Add Paved Shoulders, and Detailed Corridor Study Needed (DCSN).

- Bicycle Level of Service Met: 537 miles or 46% of the roadway network met the level of service needs and were not identified as "needs" for the plan.
- Roadway Restripe Candidate: 142 miles or 13% of the roadway network fell into the potential Restripe for Bicycle Lanes category.
- Add Paved Shoulders: 143 miles or 13% of the roadway network fell into the potential Add Paved Shoulders category.
- Detailed Corridor Study Needed (DCSN): 311 miles or 27% of the roadway network fell into the potential DCSN category.

The plan identifies six corridors to be studied further for specific recommendations related to bicycle infrastructure, safety, and performance. The Lake Worth Road / Lake Avenue / Lucerne Avenue Corridor, between Military Trail and Ocean Boulevard, was included as one of the six corridors. This corridor is roughly 4.6 miles long and featured around 45,000 vehicles per day at the source date of the plan (2010-2011).

- This corridor was identified by the plan as being a very challenging environment for bicycling. While a little more than half of this corridor is located outside the City of Lake Worth Beach, the findings were still reviewed for the purposes of this mobility plan.
- The recommendation for the portion of the corridor located within the City of Lake Worth Beach was to consider widening shoulders along the roadways to allow additional space for cyclists. For Lake Avenue, from A Street to the intercoastal bridge, the plan calls for shared lane markings for cyclists and a concrete insert for the shoulder along the Bridge. The plan found the existing facilities on Lucerne Avenue to be sufficient but noted that the current markings could be revamped.

Implementation and Evaluation

The plan separates projects and locations into a series of tiers, based on potential benefits relative to potential cost. There are five tiers in the plan, with Tier 1 having the most potential benefit relative to cost. For the purposes of this mobility plan, we have focused recommendations related to bicycle infrastructure to add to the TPA's Tier 1 and Tier 2 roadways wherever feasible. To this end, a

low-stress bicycle network was established by this plan to connect to roadways identified as being Tier 1 and Tier 2 implementation routes by the TPA. The proposed low-stress bicycle network is discussed in greater detail in Chapter 6.

PALM BEACH TPA 2045 LONG RANGE TRANSPORTATION PLAN (2019, UPDATED 2023)

The Palm Beach TPA publishes the Long Range Transportation Plan (LRTP) in rolling increments of five years, with each plan covering 20 years into the future. The Palm Beach TPA is required to maintain a LRTP to remain eligible for federal and state funding opportunities. Similar to a comprehensive plan, LRTPs are long-term visioning documents for regions, through the lens of transportation. The 2045 LRTP encompasses all of Palm Beach County, with a regional focus on the overall transportation system. For the purposes of this mobility plan, the LRTP was reviewed for specific analysis or plan components associated with the City of Lake Worth Beach.

Multimodal Connectivity

- The 2045 LRTP established multiple goals and objectives related to increasing and expanding multimodal operations for the region, especially the Lake Worth Road corridor and US-1.
- The City of Lake Worth Beach plays an important role in the TPA's multimodal vision for the region, as the City contains two park and ride lots that offer carpooling, bus, and Tri-Rail connections (only one of the two lots is connected to Tri-Rail).

Pedestrian and Bicycle Facilities

- The TPA found that 52% of existing roadways have sidewalks on both sides, 22% have a sidewalk along one side of the roadway, and 26% have no sidewalk at all. Within the City of Lake Worth Beach, the TPAs 2045 inventory showed that the majority of County and State roads within the City have sidewalks on both sides, with the exception of Lake Osborne Drive (sidewalk only on one side) and Boutwell Road (no sidewalk on either side for a segment of the northern portion.)
- For bicycle facilities, the TPA found that there were 267 miles of undesignated bicycle lanes, 200 miles of designated bicycles lanes, and 13 miles of buffered bicycle lanes. For the City of Lake Worth Beach, the TPA identified the presence of a non-continuous designated bicycle lane along Lake Worth Road, but the rest of the City did not have any bicycle facilities on the road.

Safety

- The TPA adopted a Vision Zero Action Plan that focuses on increasing safety and reducing all traffic related fatalities and serious injuries. As part of the Vision Zero Action Plan, the TPA identified High Crash Corridors for four major mode types. These were Motorcycles, Automobiles, Pedestrians, and Bicyclists.
- For the City of Lake Worth Beach, the TPA identified two of the major mode types having High Crash Corridors within the City. These were Bicycles and Automobiles.
- For the High Crash Bicycle Corridor, the TPA identified the following roadways within the City:
    - 6th Ave South, from east of I-95 to South Federal Highway.
    - South Federal Highway to Lucerne Ave.
    - Lake Worth Road from August Drive to the start of the Robert A Harris Bridge.
- For the High Crash Automobile Corridor, the TPA identified the portion of I-95 that intersects 10th Avenue. The ramps and highway itself were selected.

- The TPA did not identify any High Crash Pedestrian Corridors or any High Crash Motorcycle Corridors within the City of Lake Worth Beach.

PALM BEACH TRANSPORTATION PLANNING AGENCY VISION ZERO ACTION PLAN (2021)

Furthering their commitment to Vision Zero, the TPA published their Vision Zero Action Plan in 2021. The report identified a High Injury Network (HIN) in Palm Beach County by analyzing which roads and intersections had the most severe and highest frequency of crashes. The TPA found that 34% of all the County's traffic deaths occurred on only 5% of the County's streets. For the City of Lake Worth Beach, the plan's HIN included the following roadways:

- 6th Ave South
- 10th Avenue North
- South Olive Avenue
- South Dixie Highway
- Lake Worth Road

These findings align with this study's findings, which also identified these roadways as part of the HIN. Chapters 6 and 7 of this plan will discuss the results of the HIN in more detail.

To approach their commitment to zero traffic deaths, the TPA has adopted the following three key strategies for the Vision Zero Action Plan.

- **Policy:** Data driven approach to policy to encourage informed public collaboration.
- **Funding:** TPA administered funding simplifies the allocation of resources and helps all agencies get funding.
- **Culture:** Changing the narrative and building a strong coalition for positive change.

Demographic Analysis

Lake Worth Beach is the ninth largest city in Palm Beach County with a population of 43,637 residents and population density of 7,164 people per square mile. The city's population density is higher than nearby peer cities. Lake Worth Beach's population density is 1.7x greater than Delray Beach and 3.2x greater than West Palm Beach.

The City's growth rate of 2.7% is lower than the state average but comparable to Palm Beach County's rate. However, the demographic analysis and comparison table show that Lake Worth Beach has a younger and more ethnically diverse population than the County or State. Over a fifth of the population is under the age of 18 and the percent of the population that identifies as

Hispanic or Latino is double the County and State averages. People identifying as multi-racial is 8x higher than the County or State. Lake Worth Beach also has a much larger portion of its population that is foreign born with 41.5% of residents being born outside of the United States. This high foreign-born population correlates with the majority of residents speaking a language other than English in their homes.

As a working- and middle-class community, the median income in Lake Worth Beach is approximately $10,000 lower than the State of Florida and $19,500 lower than the County median. This is reflected in the City's rents and home prices which are lower than Palm Beach County or Florida. Poverty rates within Lake Worth Beach are higher than the County and State average.

DEMOGRAPHIC ANALYSIS AND COMPARISON

Statistic	Lake Worth Beach	Palm Beach County	State of Florida
POPULATION			
Population growth from 2020 to 2023	2.7%	2.8%	5.0%
Persons under the age of 5	5.5%	4.9%	5.0%
Persons under the age of 18	22.8%	18.6%	19.3%
Persons over the age of 65	14.2%	25.2%	21.6%
RACE & ETHNICITY			
White alone	46.3%	74.1%	76.8%
Black or African American	18.8%	20.1%	17.0%
American Indian and Alaska Native	1.3%	0.6%	0.5%
Asian alone	1.0%	3.1%	3.1%
Native Hawaiian and Pacific Islander	0.0%	0.1%	0.1%
Two or more races	16.5%	2.0%	2.4%
Hispanic or Latino	47.3%	24.2%	27.1%
White Non-Hispanic	30.6%	52.3%	52.3%
POPULATION CHARACTERISTICS			
Foreign born persons	41.5%	26.8%	21.1%
HOUSING			
Owner-occupied housing units	43.7%	69.5%	66.9%
Median home value	$290,600	$368,300	$292,200
Median gross rent	$1,346	$1,700	$1,444
FAMILIES & LIVING ARRANGEMENTS			
Language other than English spoken at home	57.3%	33.4%	29.9%
Persons with a disability under the age of 65	5.9%	7.0%	8.7%
INCOME & ECONOMY			
Median household income	$57,489	$76,066	$67,917
Poverty rate	21.1%	11.1%	12.7%

Source: US Census

Land Use

The applicability of different mobility modes is highly influenced by a community's land use. For example, land uses permitting suburban-style development encourage private vehicle use while more urbanized areas with a mix of land uses create built environments more easily accessible via walking, bikes, and transit.

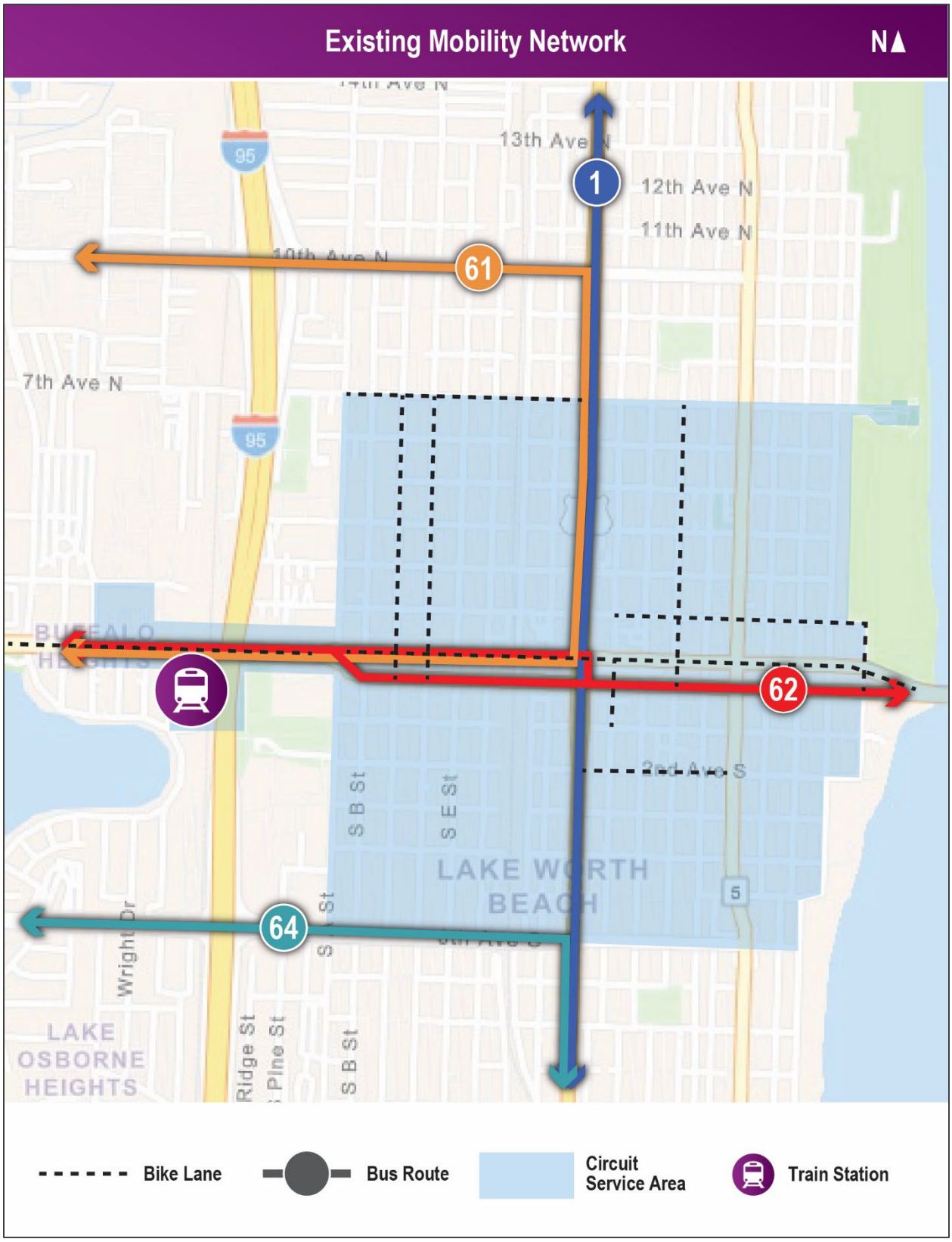
Single Family Residential (SFR) dominates the land use matrix of Lake Worth. This aligns with the historical development of the City as a planned coastal community formed in 1913. The grid layout of small, residential blocks, coupled with major north/south (Dixie and Federal) and east/west (Lake/Lucerne) routes are major influences on the land use assemblage for the City. The historic layout of the City pairs well with the fundamentals of mobility planning, as it creates opportunities for an overall enhancement of the existing urban form to create a safer and better-connected community. Based on review of the City's currently approved land use plan, the breakdown of land use categories by acreage is provided below.

CURRENT LAND USE

Land Use	Code	Total Acreage
Single Family Residential	SFR	1148.5
Medium Density Residential	MDR	347.7
Mixed Use - East	MU-E	304.3
Public Recreation and Open Space	PROS	294.0
Public	P	218.7
Industrial	I	215.9
Transit Oriented Development	TOD	124.1
Mixed Use - West	MU-W	99.1
Artisanal Mixed Use	AMU	70.8
High Density Residential	HDR	61.8
Downtown Mixed Use	DMU	57.7
Undesignated	-	29.7
Conservation	CON	21.2
Beach and Casino	BAC	19.9
TOTAL	**-**	**2665.7**

The Current State of Mobility

This section analyzes the existing mobility network of Lake Worth Beach. The analysis looks at vehicular access, bike infrastructure, bus service, train access, and the service area of the new Circuit shuttle. The following map illustrates the complete mobility network.

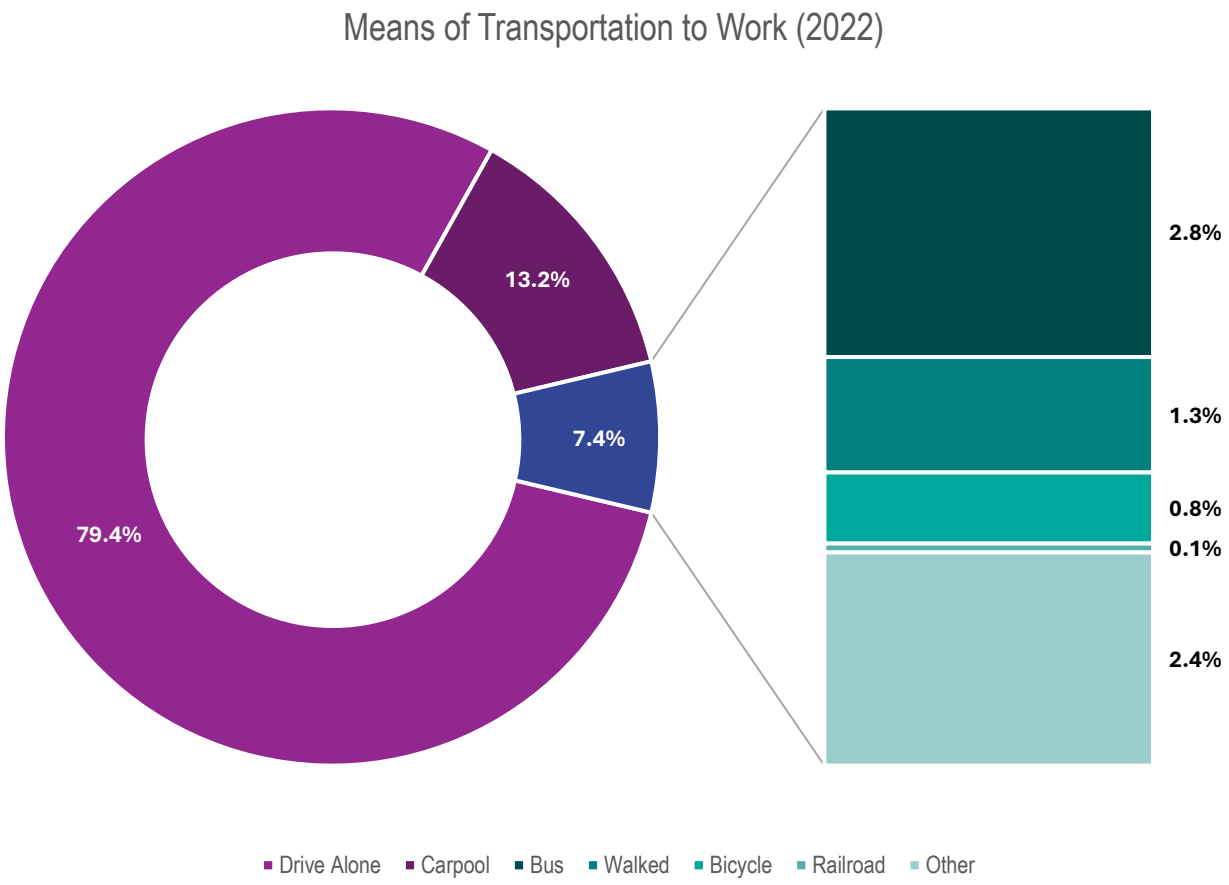

Existing Mobility Network
N
13th Ave N
12th Ave N
11th Ave N
10th Ave N
7th Ave N
95
95
1
61
62
64
2nd Ave S
S B St
S E St
LAKE WORTH BEACH
5
Wright Dr
Ridge St
Pine St
S B St
LAKE OSBORNE HEIGHTS
Bike Lane
Bus Route
Circuit Service Area
Train Station

TRAVEL MODES

Cars

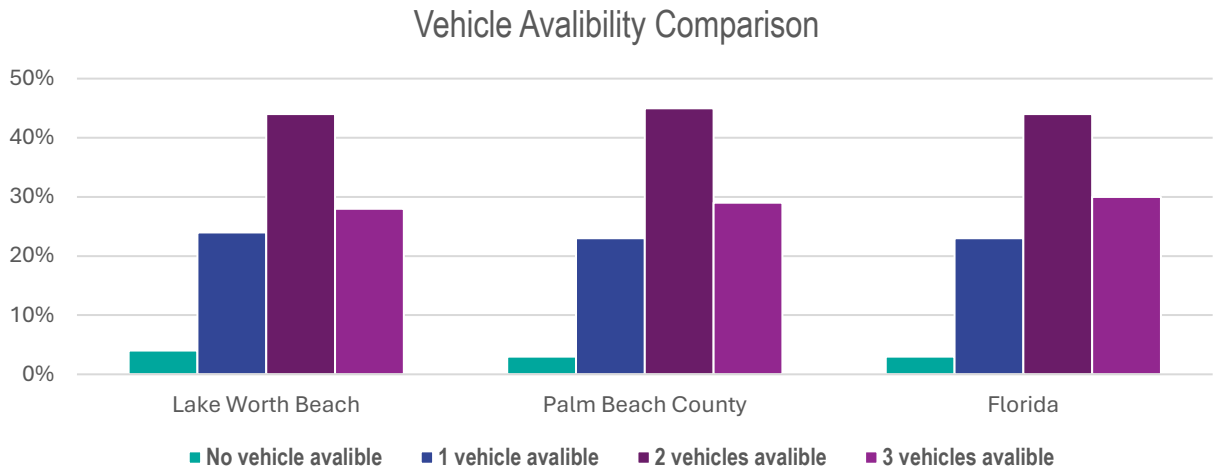
Lake Worth Beach residents primarily use their personal vehicles to navigate the City and surrounding areas. As shown in the figure below, over 92% of people got to work via car. Approximately 79.4% of people drove alone to work while another 13.2% carpooled. This statistic is reflected in the built environment by the large amount of on street parking that is common on most roadways throughout the City.

The modes of transportation in the City exhibit distinct patterns compared to broader regional and state averages. The majority of residents, 64.4%, drive alone, which is slightly lower than both county (70.3%) and state (69.7%) averages. This suggests Lake Worth Beach is a regional leader in achieving a balanced mode split. Notably, carpooling is significantly more prevalent in Lake Worth Beach at 23.0%, compared to only 9.2% in Palm Beach County and 9.0% across Florida. This indicates a strong community culture or perhaps economic incentives encouraging shared rides.



Vehicle availability in Lake Worth Beach closely mirrors the trends observed in Palm Beach County and Florida as a whole, with some slight variations. Among the 17,206 households in Lake Worth Beach, 4% do not have access to a vehicle, which is marginally higher than the 3% seen in both Palm Beach County and the State of Florida. This minor difference might reflect a slightly higher reliance on public transportation or alternative transportation methods within the city.

For households with vehicles, 24% in Lake Worth Beach have access to one vehicle, aligning closely with the 23% in both Palm Beach County and Florida. Similarly, 44% of households in Lake Worth Beach have two vehicles, which is almost identical to Palm Beach County's 45% and Florida's 44%. Households with three or more vehicles constitute 28% in Lake Worth Beach, slightly lower than Palm Beach County (29%) and the state average (30%). These figures suggest that while vehicle availability is relatively high across all areas, Lake Worth Beach exhibits a slightly higher diversity in transportation options, consistent with its higher rates of carpooling and public transportation use.



Bike

The City of Lake Worth Beach has approximately 5 miles of designated bike lanes on local and state roads. These are primarily found in close proximity to the downtown area. Several streets within the study area have sharrow markings indicating to drivers to share the road with bicyclists.

The 2045 Palm Beach TPA Long Range Transportation Plan analyzed the bike network on a county-wide scale and found that Lake Worth Road and 6th Avenue in Lake Worth Beach are high crash corridors for bicyclists.

Photo: Existing double bike lane on 7th Ave S (Left) and bike lanes on 2nd Ave S (Center) and N M St (Right)

Bus

Bus service in Lake Worth Beach is provided by Palm Tran, a public transit agency servicing all of Palm Beach County. Several bus routes service the City, including the heavily used Route 1 which travels along South Dixie Highway and accounts for almost 25% of total system users. Routes 61 and 62 travel east-west and connect downtown Lake Worth Beach to the TriRail Station. These two routes intersect Route 1 downtown, providing a popular transfer location. Route 64 travels along 6th Avenue, providing links between southern Lake Worth Beach and Lantana.

Palm Tran also provides door-to-door services under its Palm Tran Connection service. This provides transportation to disabled or elderly residents who are unable to use the standard bus system and helps them access healthcare, employment, education, shopping, and other needs.

Public transportation usage in Lake Worth Beach stands at 3.9%, considerably higher than both Palm Beach County and Florida's 1.2%. This higher utilization may reflect better public transit infrastructure or greater urban density. Walking and cycling are also slightly more common in Lake Worth Beach, with 1.6% of residents walking and 0.8% biking, compared to 1.2% walking and 0.5% biking in both Palm Beach County and the State. Interestingly, only 4.2% of Lake Worth Beach's population works from home, significantly lower than Palm Beach County's 15.1% and Florida's 16.4%, possibly indicating a local economy with more jobs requiring physical presence.

MEANS OF TRANSPORTATION COMPARISON

Mode	Lake Worth Beach	Palm Beach County	State of Florida
Drive Alone	64.4%	70.3%	69.7%
Carpool	23.0%	9.2%	9.0%
Public Transportation	3.9%	1.2%	1.2%
Walk	1.6%	1.2%	1.4%
Bicycle	0.8%	0.5%	0.5%
Taxicab, Motorcycle, or Other Means	2.1%	2.5%	1.9%
Worked From Home	4.2%	15.1%	16.4%

Train

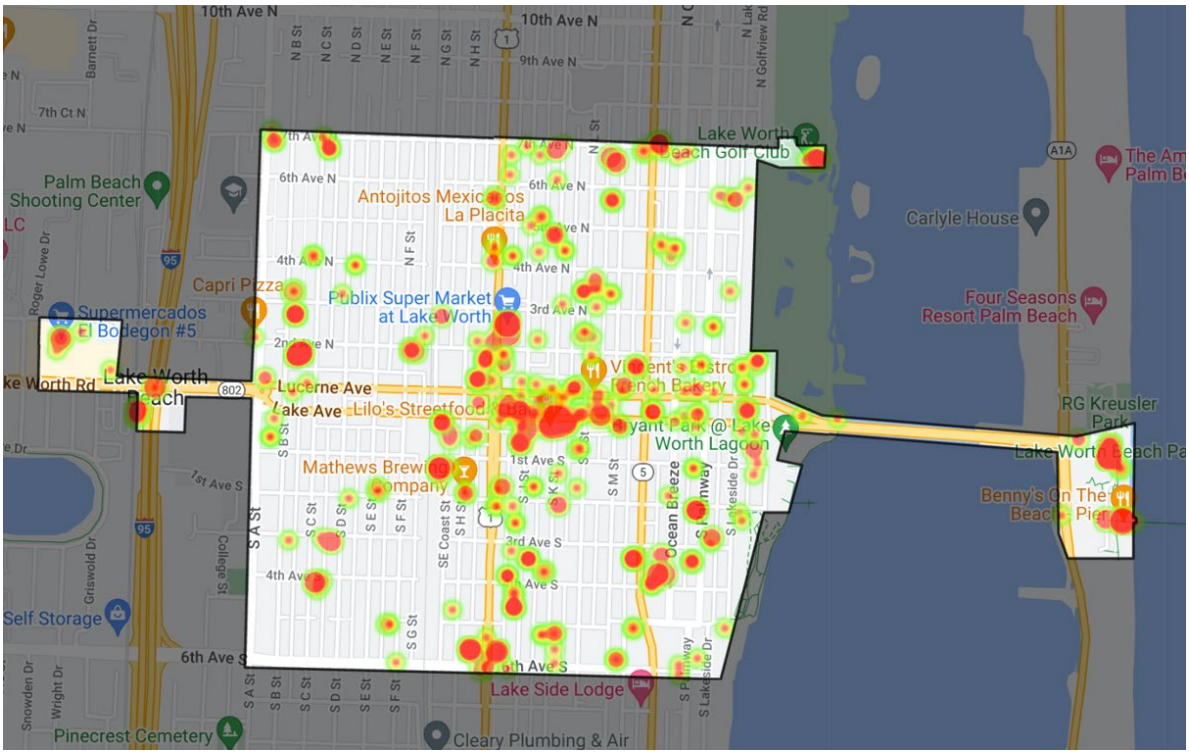
Lake Worth Beach has one commuter rail station. The TriRail station is located west of downtown along Lake Worth Road abutting Interstate I-95. The station provides rail access from Mangonia Park in the north to Miami in the south. The station serves approximately 856 riders daily or 25,673 people every month. The station is the third busiest in Palm Beach County behind Boca Raton and West Palm Beach.

Brightline began servicing South Florida as another passenger rail option in 2018. The closest station in West Palm Beach is approximately 6.5 miles north of downtown Lake Worth Beach.

Circulator

Lake Worth Beach launched their Circuit circulator in March of 2024. These microtransit, or flexible transit, services are growing in south Florida as a new type of privately-operated transit using small electric shuttles that seat 4-8 people. Riders can hail a ride through Circuit's mobile app; the company strives to keep wait times under 10 minutes. Rides may be combined, or pooled, to raise the efficiency of the service. Fares are $1.00 per ride plus $1.00 for every additional passenger and passengers may tip drivers.

The service area and ride heat map as of June 5, 2024 is shown below. The larger the orange circle, the more trips that originate or terminate in that spot. According to Circuit, ridership rose once the TriRail station was added to the service area.



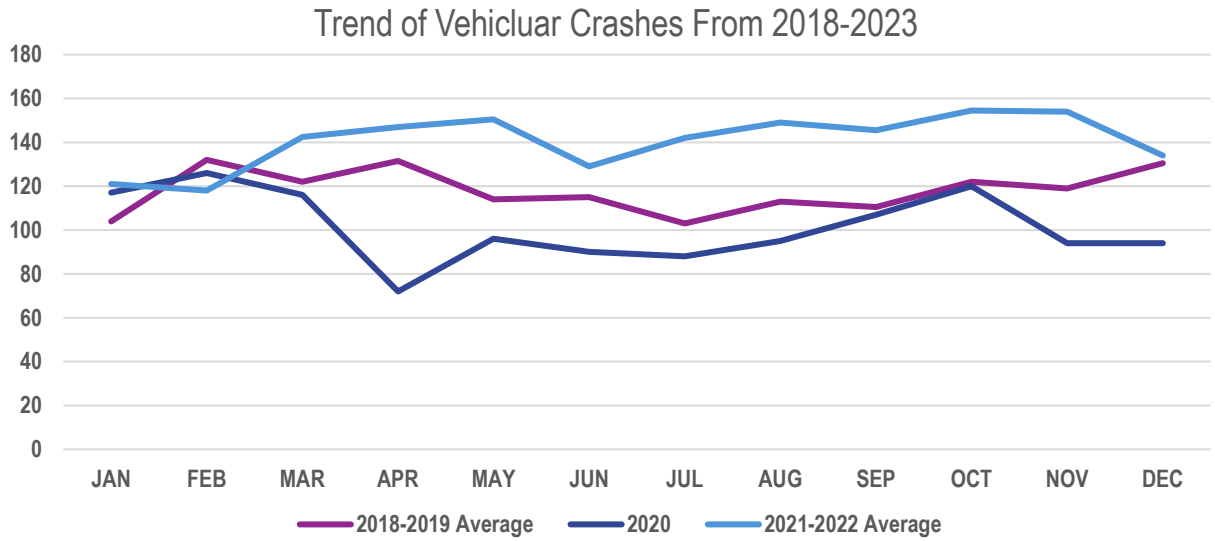
Source: Circuit

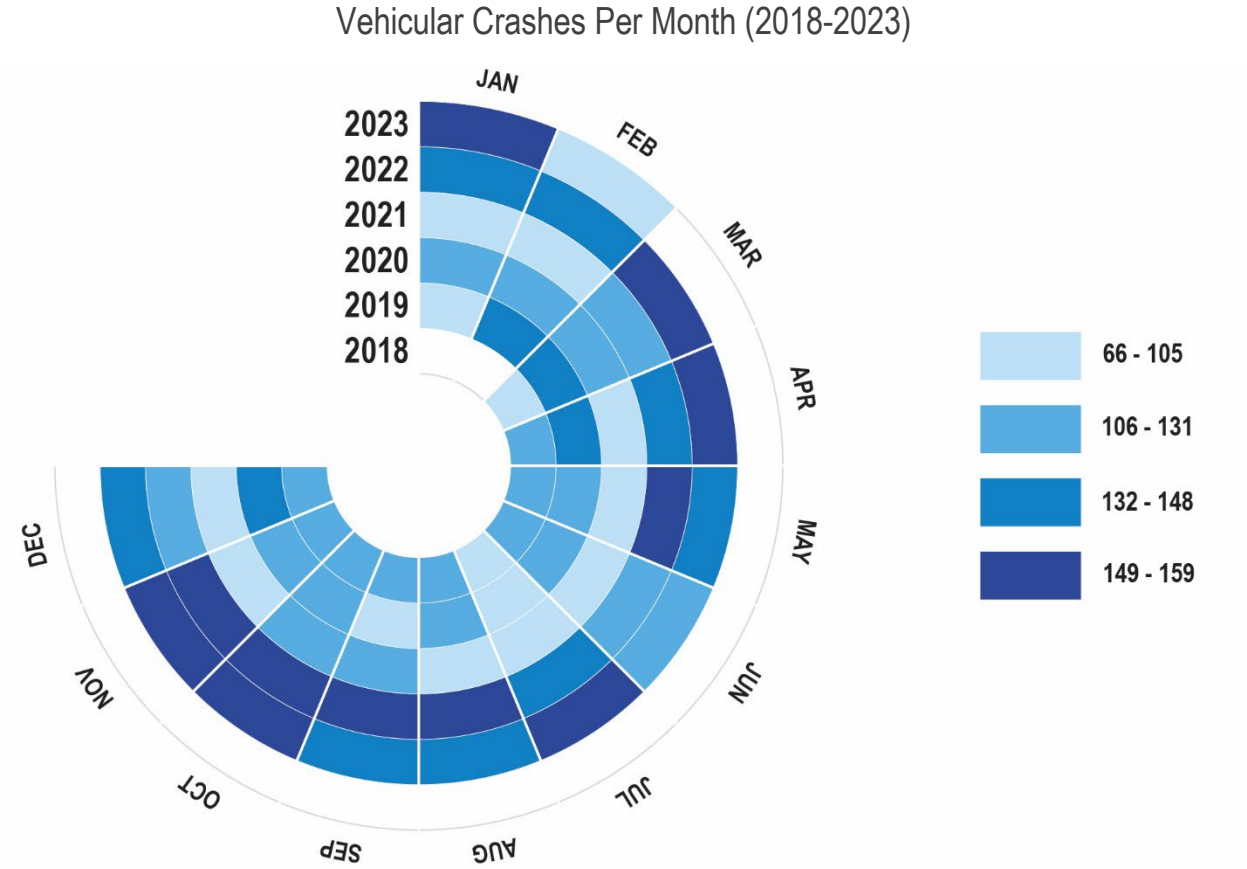
Moving forward, Lake Worth Beach is working with FDOT on securing an Innovation and Service Development grant to expand service. Recommendations for current and future operations and funding mechanisms are discussed in further detail in Chapter 7.

CRASH DATA

Pedestrian, bicycle, and vehicular crashes were analyzed for the years 2018 to 2023. All crash data was sourced from Signal4 Analytics, with access assistance from the Palm Beach TPA. The crash analysis was performed using Geospatial Information Systems (GIS), which allowed for a spatial understanding of crash frequency and severity.

Signal4 Analytics is a public research hub funded through the Traffic Records Coordinating Committee (TRCC) of Florida. Signal4 works hands on with the Florida Highway Safety and Motor Vehicles (DHSMV) to process long and short form law enforcement crash incident reports into GIS data. Signal4 is fully housed within the University of Florida and is part of the University's GeoPlan Center as part of the College of Design, Construction, and Planning. The figures below show the crash statistics for the last 5 years derived from this data.





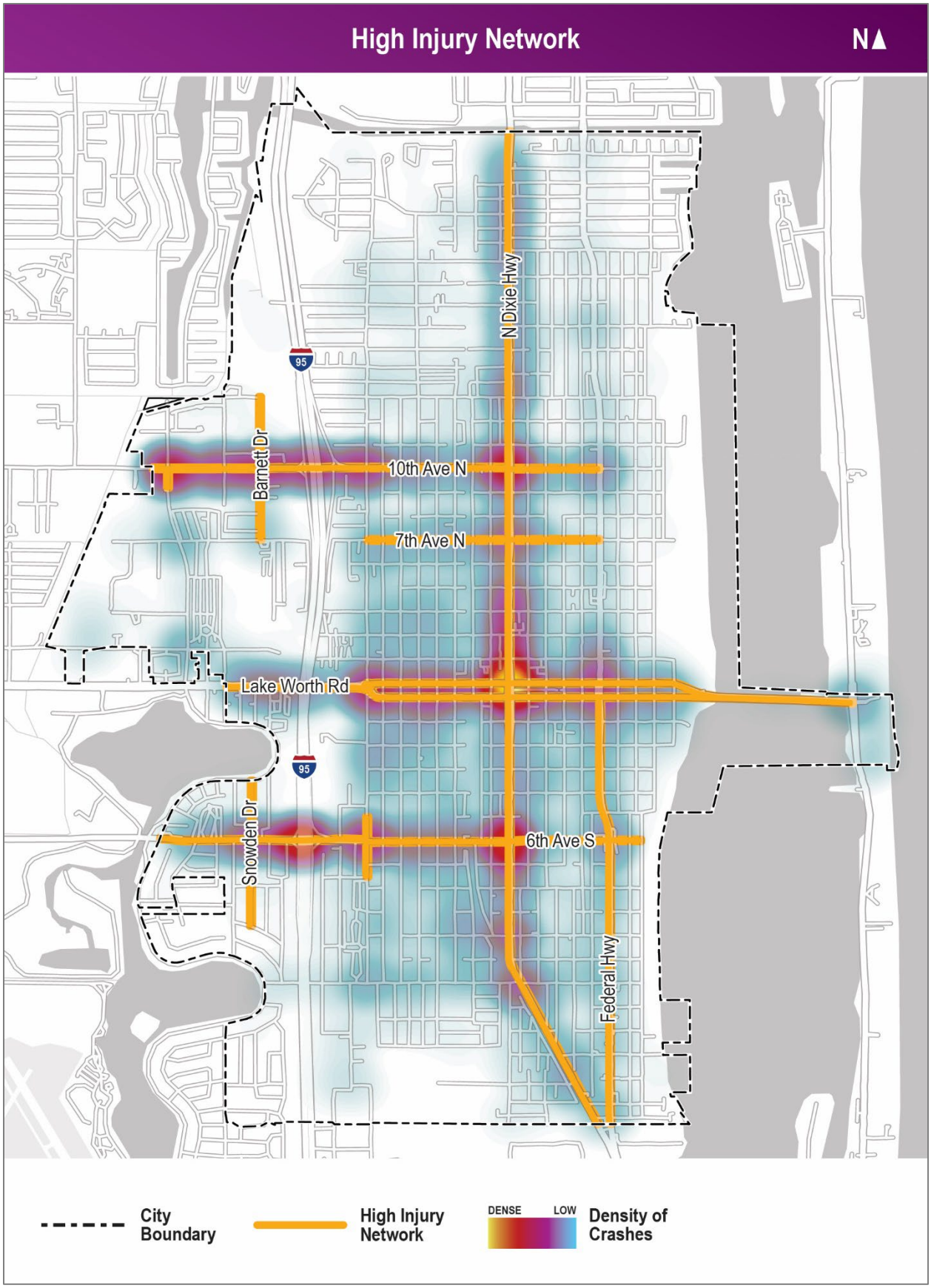
High Injury Network

As part of the planning process of identifying dangerous transportation locations within the City, the team modeled the City's High Injury Network (HIN). The HIN used GIS analysis to identify the roadways with the highest frequency and most severe crashes. This data will aid the City in understanding where the most severe crashes are happening the most for potential planning intervention. The methodology used to derive the HIN is illustrated in the figure below.

The HIN identified 14 roadways (including the roundabout which was identified as its own roadway) within the City. The following table breaks down the HIN network by roadway, with roadways split by jurisdiction, speed limit, and lanes. The HIN is shown in the following map.

ROADWAY HIN SCORING

Road Name	Jurisdiction	Speed Limit	Lanes	Crash Count	Average Severity	HIN Score
10th Ave N	COUNTY	40	2	136	1.50	269.62
10th Ave N	COUNTY	40	5	114	1.43	238.38
Boutwell Rd	COUNTY	35	2	41	1.46	218.36
10th Ave N	FDOT	40	5	94	1.46	212.84
Roundabout	FDOT	25	2	54	1.22	208.76
10th Ave N	MUN	35	4	331	1.55	189.80
6th Ave S	COUNTY	35	4	300	1.651	186.61
N Dixie Hwy	FDOT	35	4	814	1.77	181.48
S A St	MUN	35	2	100	1.41	166.39
S Dixie Hwy	FDOT	35	4	466	1.93	143.94
Lucerne Ave	FDOT	25	2	427	1.51	136.47
Lake Ave	FDOT	25	2	377	1.39	111.04
6th Ave S	COUNTY	45	4	118	1.72	98.97
10th Ave N	MUN	25	2	74	1.47	89.29
7th Ave N	MUN	25	2	156	1.61	80.38
Lake Worth Rd	FDOT	35	4	134	2.17	79.74
S Federal Hwy	FDOT	35	2	253	1.64	69.13
6th Ave S	MUN	25	4	53	1.70	66.72
Barnett Dr	MUN	25	2	90	1.45	64.87
Wright Dr	MUN	25	2	58	2.25	63.96
6th Ave S	MUN	25	2	39	0.64	59.46


High Injury Network
N
N Dixie Hwy
95
Barnett Dr
10th Ave N
7th Ave N
Lake Worth Rd
95
Snowden Dr
6th Ave S
Federal Hwy
City Boundary
High Injury Network
DENSE
LOW
Density of Crashes

The HIN used severity on a scale of 1-6, with a value of 6 being crashes involving fatalities and with 1 being crashes involving no injury. With severity being the most powerful factor in the HIN score, there are segments with relatively low overall crash counts located within the HIN. While these segments may have seemingly low amounts of crashes, they have higher overall frequency of severity that puts them beyond the standard deviation score.

INFRASTRUCTURE ANALYSIS

Pedestrian Connectivity

A walking shed analysis is used to understand a community's accessibility and connectivity by identifying areas within a walkable distance from key points of interest. In the City of Lake Worth Beach, this analysis involved gathering common points of interest and defining the area within a 1/4-mile radius of each point. The team chose a 1/4-mile radius because it represents a comfortable walking distance for most of the population, even in adverse weather conditions such as heat or rain. This distance typically takes about five minutes to walk, making it manageable for residents of various ages and physical abilities.

Key points of interest identified included adult care facilities, daycare centers, government buildings, grocery stores, rail stations, schools, medical care centers, and other essential community assets. The overlapping areas within the 1/4-mile radius of these points indicated zones where multiple types of community hubs are present, demonstrating the density and variety of accessible services. This overlapping shows how well-connected different parts of Lake Worth Beach are in terms of walkability and accessibility to critical infrastructure. The analysis highlights areas that are critical for mobility within the City, providing de facto focus areas used throughout the mobility analysis. By considering the ease of walking to important destinations, the City can better link its most walkable areas, encouraging multimodal connectivity.

Pavement Condition Assessment

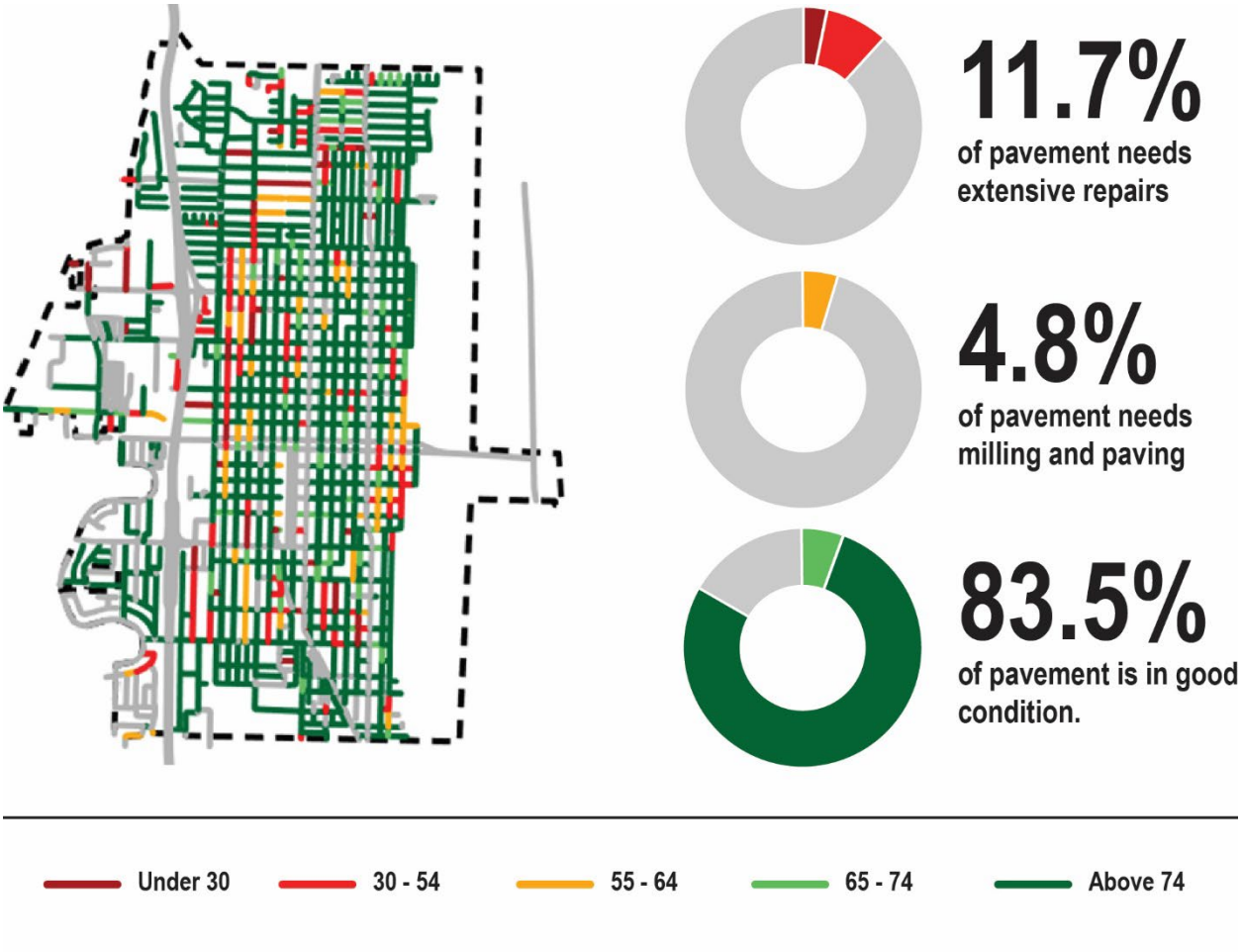
The pavement condition data for the City of Lake Worth Beach provides a comprehensive overview of the current state of the road infrastructure, helping to inform maintenance and repair decisions. Pavement condition is assessed through a systematic evaluation process that considers factors such as surface distress, ride quality, and structural integrity. This assessment results in a Pavement Condition Index (PCI) score, ranging from 0 to 100, which is used to prioritize maintenance needs. The data summarized in this section and used in the mobility plan was updated by WGI in 2020 and remains the most up-to-date data available on City pavement conditions.

In Lake Worth Beach, the city typically opts for milling and resurfacing for roadways with PCI scores between 55 and 64. This process involves removing the top layer of the asphalt and replacing it with a new layer, restoring a smooth surface and extending the roadway's life. Roads like South D Street, North Lakeside Drive, and small sections of many other corridors fall into this category, indicating they are due for standard maintenance to keep them in good condition.

For roadways with PCI scores below 55, more extensive repairs are necessary. These might include full-depth reclamation, patching, and other significant interventions to address deeper structural issues. Segments such as North B Street, sections of North D Street, and 3rd Avenue North have lower scores, indicating more intensive repair efforts.

This pavement condition data is essential for the city's infrastructure management, allowing for a strategic approach to roadway maintenance. By identifying and categorizing the condition of each segment, the city can allocate resources efficiently, ensuring that both minor and major roadway issues are addressed in a timely manner. This proactive maintenance strategy not only enhances road safety and driving comfort but also helps optimize the lifecycle of the city's road an bikeway network.

For the mobility plan, pavement condition was utilized to make appropriate recommendations based on the state of the infrastructure. The goal was to ensure that the recommendations took into account the current condition of the existing infrastructure, aiming to work with pavement in good condition and to consider more extensive improvements in areas where the pavement is likely to require work in the coming years.



III. Future Conditions

One hallmark of modern mobility plans is identifying the continuing evolution of transportation planning methods and technology that will affect mobility in a community. As such, it's important to scan the horizon for potentially impactful trends.

Population Projections

Population growth in South Florida surged during the COVID-19 Pandemic. Lake Worth Beach's population is reported as 43,637 according to the Bureau of Economic and Business Research, University of Florida (2022). BEBR also projects Palm Beach County, which currently has 1,518,152 residents, will have a population in 2030 that ranges from 1,503,700 (low scenario) to 1,783,100 (high scenario).

New Mobility Modes & Emerging Technology

Mobility is often associated with South Florida's affordability crisis as both a contributor and solution. Municipal governments, business development groups, and housing advocates emphasize the linkage of transportation and housing location. Focusing new residential development along the western fringes of the urbanized area will continue to exacerbate traffic concerns and increase transportation costs. In contrast, building affordable housing in established communities like Lake Worth Beach raises concerns about how new buildings add to existing traffic, congestion, and parking issues. This mobility plan complements the city's forward-looking land use plans for land use and street design that supports a system of multi-modal trips for daily excursions to mitigate these concerns.

A community's affordability is more than just affordable housing. Affordable mobility options need to exist for its residents. In 2022, transportation accounted for 16.8% of the average American household's annual expenditures, making it the second largest expense after housing. With transportation costs rising, one key aspect of the mobility plan is finding options to lower transportation costs to reduce a community's cost-of-living and remain affordable for lower-income residents.

The following section analyzes how emerging technologies and new modes of mobility are influencing how people get around in South Florida and their potential usage in Lake Worth Beach. This is so the plan can analyze how people will move around in the future to accurately plan and design the future mobility network.

AUTOMOBILES

The Palm Beach TPA, County, and state have several near to medium term investments slated in Capital Improvement Plans, the Transportation Improvement Program (TIP) and Long-Range Transportation Plan (LRTP). The TPA will also be extending I-95 tollways northward to Palm Beach County. This may impact travel decisions as drivers seek alternative routes such as Dixie Highway and Military Road to avoid tolls.

The TPA is also launching a countywide Transportation Demand Management (TDM) tool, which will augment services offered by FDOT's South Florida Commuter Services. This service will be aimed at customized planning, which is shown to be effective in helping commuters choose non-driving options for work travel.

Vehicle technology is changing consumers buying habits with respect to personal vehicles. Palm Beach County has higher electric vehicle usage as measured by electric vehicle miles traveled per 1,000 residents. As of early 2024, electric car sales have dropped. A bill that would have imposed a $200 annual license fee failed in the 2024 Florida legislative session, though lawmakers across all levels of government continue to seek ways to offset the loss of gas tax revenue from owners of electric vehicles. The future of electric vehicle use depends on prices, which are expected to fall over time as more vehicle manufacturers add electric automobiles to their fleet offerings.

Autonomous vehicles, once expected to hit American roads by 2023, have stalled. High profile crashes with both personal vehicles and robotaxis demonstrated the complexity in building systems that allow vehicles to fully drive themselves safely. To date most of the deployments in Florida involve shuttle services in discrete areas such as campuses and on private roadways. As such, this mobility plan does not include recommendations on planning for autonomous vehicles.

The biggest trend in auto ownership in South Florida is cost. Automobile insurance is the highest in the nation; the average annual cost for full insurance is $3,941. In early 2024, the average monthly payment for a new car hit $726 and for used cars $533.

FLEETS

Cites are using grant programs for fleet electrification for transit, service vehicles, and law enforcement. This includes smaller vehicles like those used for parking enforcement and police bicycle fleets. In addition, technology companies are increasing offerings for efficiency and predictive maintenance.

GOLF CARTS AND NEIGHBORHOOD ELECTRIC VEHICLES

Golf carts are a popular mode of transportation in South Florida. They can operate on city streets marked up to 35 miles per hour and do not require registration (unless the vehicles surpass minimum vehicle attributes). As has occurred in Delray Beach, as the popularity of golf carts rose, so too did the demand for special golf cart parking. Because of the smaller size, Delray Beach was able to convert regular size parking spaces to a larger number of cart spaces. Golf carts are still required to pay parking meter fees.

BIKING

Biking poses one of the most impactful modes to balance Lake Worth Beach's mobility system. This plan depicts the city's existing and low-stress network. Looking forward, there are several scenarios that would impact cycling and infrastructure design:

- **US-1 Road Diet:** Current designs call for lane reduction; the new space would be used to install bike lanes on US-1. This would likely increase cycling's share along the corridor.
- **Climate:** Forecasts include more intense storm activity and heat. Both impact cyclists more than drivers. On the other hand, riders of human-powered bicycles may switch to electric bikes due to the lower effort needed to power the bike.

- **Electric bike scenarios:** Sales of e-scooters and electric bicycles are rising in Florida; several cities have enacted partial bans following fatal crashes that involved students. Other cities, citing battery fires, have also banned or restricted use. On the other hand, cities around the country are offering e-bike purchase rebates and the popularity of electric bikes is rising among senior citizens.

Because the use of bikes and electric bikes is already rising and poses benefits to the system, the best course of action is to plan for and encourage increased e-bike usage while setting policies to reduce risk. These are covered in Chapter 5 and Chapter 6.

ELECTRIC SCOOTERS

Small electric scooters have a smaller profile and range than electric bikes, though are a common sight on roadways and rail stations. Lake Worth Beach does not allow shared electric scooters, which are supplied and managed by private companies. Shared scooters have caused concern in other cities over parking and safety as they mix on roadways and on sidewalks. However, as travelers are beginning to purchase their own e-scooters due to falling prices and the ability to fulfill short trips, the City needs to plan for the growth of personal e-scooters and identify how they will fit into the greater mobility network.

CIRCULATORS

Electric low speed circulators offer a new type of on-demand transit service for short trips in South Florida downtowns, including Lake Worth Beach. The first generation of this type of service in the early 2010s demonstrated mixed results as operators struggled with business models and the ability to accurately determine the number of vehicles within a workable service area needed to meet low wait times. Today's companies such as Circuit have deployed service with a mix of fares, partnerships, and marketing. Lake Worth Beach's service is still in the early stages, so the best approach is to work with Circuit to analyze data and adjust service as needed. Chapter 6 presents best practices for building local microtransit.

BUS TRANSIT

In Lake Worth Beach, the US-1 Multimodal corridor study is one of the more impactful projects given the current and projected use of Palm Tran along Route 1 as well as projected higher density development. For Lake Worth Beach, the most meaningful actions will be (1) zoning code support for developments near bus stops with high ridership (current, projected) and (2) first/last mile improvements for accessing bus stops.

Transit Signal Priority

Transit signal priority (TSP) would outfit buses with transponders that automatically activate a green light, allowing the bus to proceed and avoid waiting. This reduces the amount of time riders are waiting in traffic. The Palm Beach TPA has identified funding for TSP along US-1 and on Lake Worth Road, which is included in the latest List of Priority Projects listed as "Palm Tran finalizing procurement." The implications are that increased service would stimulate increased demand in the form of ridership and for transit-oriented development along US-1.

Community Feedback

In developing the transit development plan (TDP), Palm Tran surveyed riders who expressed two limitations that can be addressed by Lake Worth Beach: (1) difficulty getting to a bus stop, and (2) a lack of bus stops/service near where people are coming from and/or want to go. Note the US-1 study includes plans for an enhanced bus stop in Lake Worth Beach at 6th Avenue and US-1 as well as Downtown to replace the station adjacent to CVS between Lake and Lucerne Avenues.

RAIL TRANIST

TriRail ridership has climbed back to pre-COVID-19 levels. The South Florida Regional Transit Agency (SFRTA) Director, David Dech, notes the increase in onboard scooters and bikes, as well as increased airport traffic. The Lake Worth Beach station has both opportunities and challenges for rail transit-oriented development, which is described as occurring within the first ¼ - ½ mile of stations. I-95 and Lake Worth High School occupy much of the prime land yet pose little opportunity for ridership. To the west of the station, there are several potential sites for higher density development such as the TriRail parking lot and the retail center that currently houses a grocery store. The implication of this land use pattern is that feeding riders to the station entails access rather than proximity, which comes in the form of cycling and mobility lanes.

For the future, increasing use of e-bikes and e-scooters will increase access to the station. The average trip for shared e-scooters is approximately one mile, and the range of new models can be up to 40 miles. For cycling, the average trip is 6 miles. As such, increasing high quality bike infrastructure beyond one mile would attract additional transit users.

NEW TECHNOLOGIES

Mobility technologies extend beyond modes and vehicle technology. Two technologies are poised for widespread deployment:

Mobility-as-a-Service (MaaS)

The concept of MaaS is the ability for a traveler to have every aspect of trip planning, travel, and payment in one consolidated mobile phone application. To a certain extent, Google maps provides some of these services where directions for driving (with and without tolls), biking, transit options, and ridehailing are provided simultaneously. Additional services that would be helpful are microtransit information and parking availability and pricing, with the option to pay right within the app. This will require additional cooperation from parking providers to share information and integrate payment.

Variable Parking Direction Signage

As noted above, travelers benefit from information on parking before they start their journey so they can choose among modes when parking is in short supply or expensive. Integrating this information into an app requires a series of technologies for (1) outfitting all parking spaces with parking occupancy sensors, (2) transmitting that data to signs, and (3) linking that information to mobile apps. Some apps also allow users to reserve spaces, which would also need to be factored in.

IV. Engagement Summary

Engagement Plan

The engagement plan consisted of four in-person public engagement opportunities that were held in 2023 and 2024. An online survey was also made available to residents from October 2023 to January 2024.

KICK-OFF WORKSHOP (APRIL 15,2023)

A kickoff public outreach workshop was held to gather public input on mobility options for residents and visitors to Lake Worth Beach. The City of Lake Worth Beach advertised the workshop on its website. The website featured flyers detailing the workshop in English, Spanish, and Creole. Approximately 45-50 people attended the workshop, which began with a presentation from WGI's Vice President of New Mobility and Connected Communities, Lisa Nisenson, who gave an overview of the meaning of mobility and its relation to Downtown Lake Worth Beach and the mobility plan.

The presentation was followed by an open discussion in which participants asked questions and gave comments on the items highlighted in the presentation, discussed mobility and transportation in Lake Worth Beach, voiced what they would like to see in the mobility plan, explained their personal experiences with mobility in Lake Worth Beach, and asked questions regarding the plan. The workshop was live steamed and recorded for residents and interested stakeholders not in attendance.

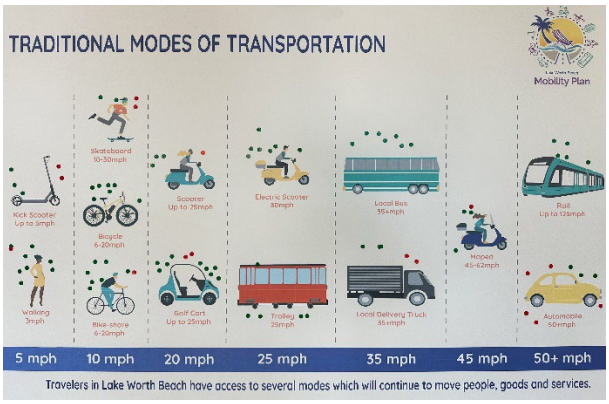
Stations were set up to allow participants to give their perspective on different mobility aspects and speak with organizers and local officials. Each of the stations had an organizer on hand to collect any additional feedback through conversation. Following the station activities, key information from the speech bubbles, mobility boards, and the map were gathered and summarized for final discussion.

Photo: Project presentation (left) and speech bubble wall (right).

Participants were invited to use speech bubbles to record their questions, concerns, and ideas regarding mobility. The speech bubbles were collected and taped to the wall for further discussion which occurred while participants visited the individual stations.

At one station, a 6' x 8' map depicting downtown Lake Worth Beach allowed participants to use stickers to identify key locations they felt should be focused on in the plan. Locations ranged from areas with high traffic and congestion to areas that present safety concerns for both pedestrians and drivers.

Interactive boards that featured traditional and emerging mobility types gave participants the chance to rate these with green (good) or red (bad) stickers.



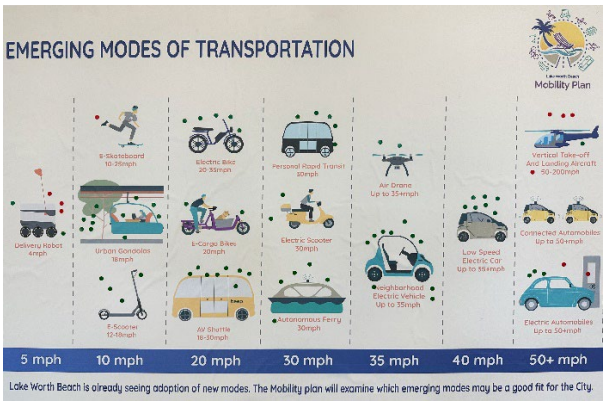


Photo: Voting results of traditions mobility modes (left) and emerging mobility modes (right).

WALKSHOP (SEPTEMBER 8, 2023)

On September 8, 2023, WGI and select representatives from Lake Worth Beach conducted a safety audit at eight key locations. These intersections were chosen due to documented hazards and importance along key mobility networks. The objective of the "walkshop" was to gain insights on safety challenges, contributing factors, and other relevant information needed to identify and prioritize projects. WGI created a handout to be used for documenting walkshop participant's input.

LIST OF WALKSHOP ATTENDEES

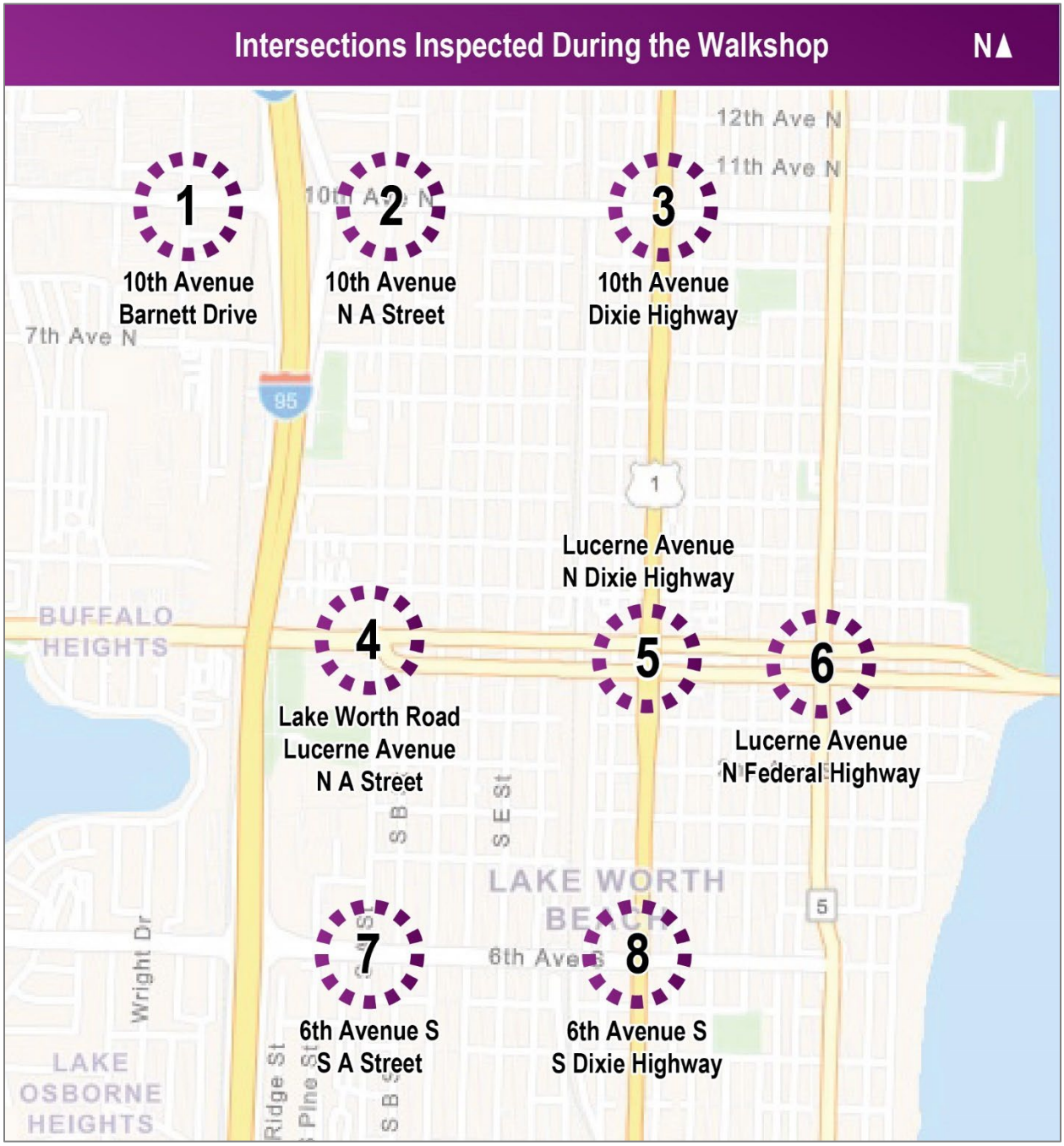
Attendee	Affiliation
Joan Olivia	CRA Director
Lauren Bennett	Lake Worth Beach
Vaughn Hayduk	Lake Worth Beach - Assistant Director, Water Utilities
Elizabeth Lenihan	Lake Worth Beach - City Attorney
Abraham Fogel	Lake Worth Beach - Community Planning & Zoning
William Waters	Lake Worth Beach - Community Sustainability
Erin Sita	Lake Worth Beach - Community Sustainability
Jakub Pajak	Lake Worth Beach - Electric Utility Dept
Sam Heady	Lake Worth Beach - Utility Director
Lt. Matthew J Lavigna	Sheriff's Office
Valentina Facuse	Palm Beach Transportation Planning Agency
Debra Robert	Local Accessibility Advocate
Kent Walia	Florida Department of Transportation (FDOT)
Lisa Nisenson	WGI
Angela Biagi	WGI
Tyler Tornese	WGI



Photo: Students walking home (left), mobility team inspecting an intersection (center) and a pedestrian crossing an I-95 exit ramp (right).

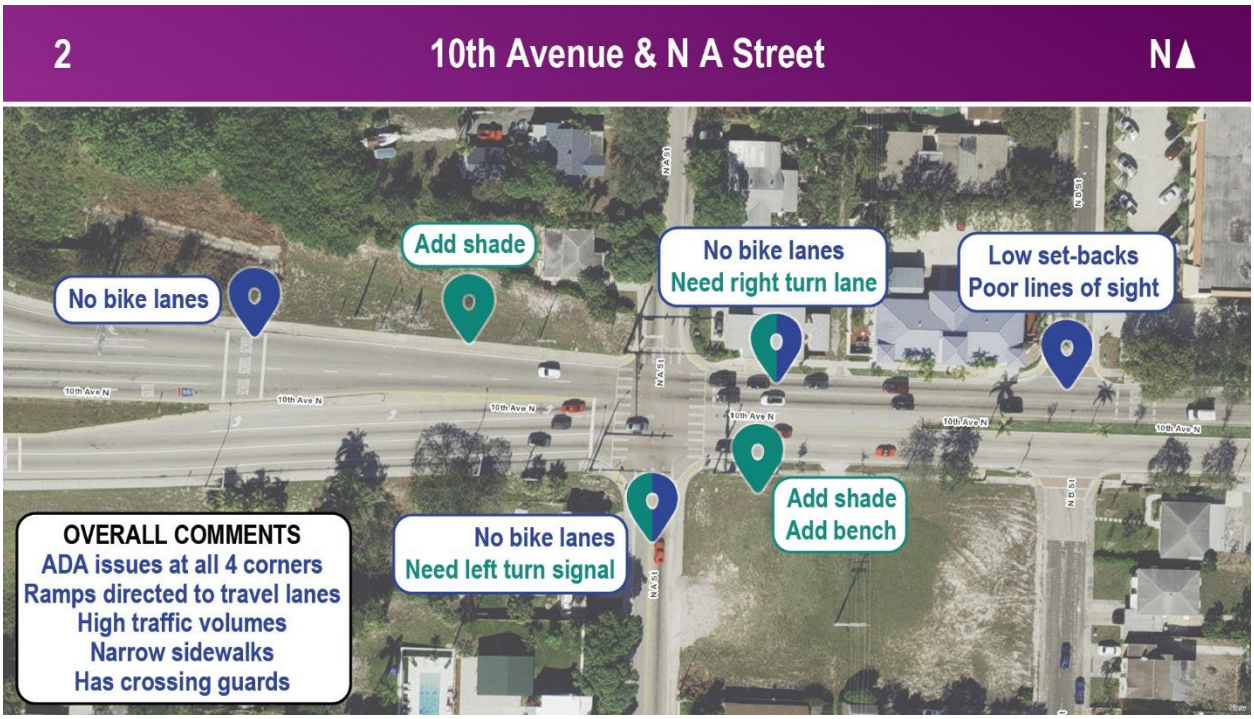
Walkshop Locations

Lake Worth Beach supplied vans to visit the target intersections depicted on the map below.

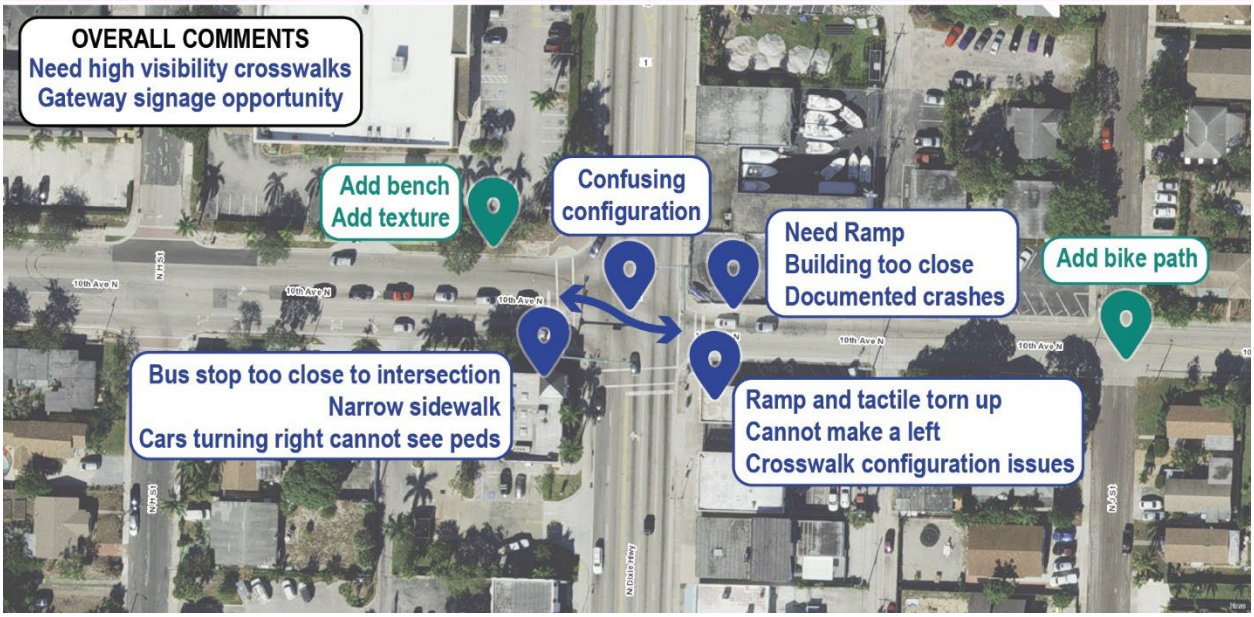


Community Feedback

The following figures showcase the compiled comments from the walkshop. Comments in **blue** are issues and comments in **teal** are opportunities.

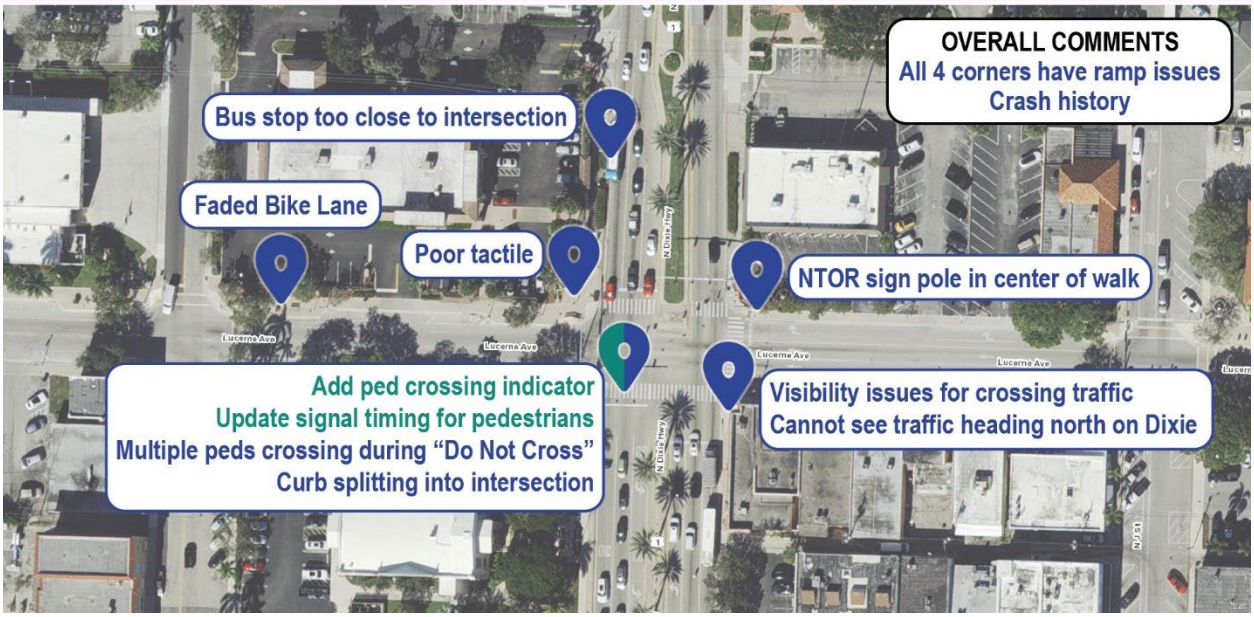


3 10th Avenue & Dixie Highway N



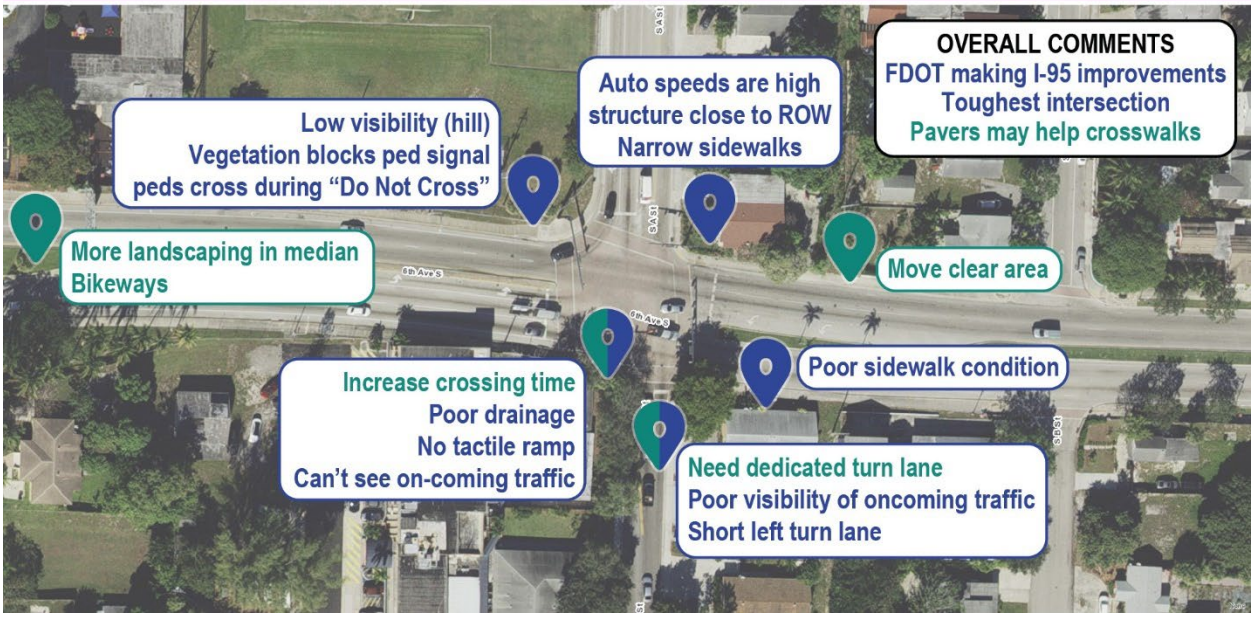
4 Lake Worth Road/Lucerne Avenue & N A Street N

5 Lucerne Avenue & N Dixie Highway



6 Lucerne Avenue & N Federal Highway

7 6th Avenue S & S A Street N



8 6th Ave S & S Dixie Highway N

DÍA DE LOS MUERTOS CELEBRATION (OCTOBER 28, 2023)

WGI team members Tyler Tornese, Lisa Nisenson and Claridia Moro participated in the Lake Worth Beach Día de los Muertos. Team members attended the event with the goal of boosting the number of residents taking the survey. Claridia served as the Spanish translator. There were more visitors to the booth and tent than originally expected, with team members speaking with over 200 local residents over six hours. Approximately 80 participants completed the survey. The full survey that was available on the city's website was distributed at the event for participants to fill out. Surveys were available in English, Spanish and Creole. A QR code for digital access to the survey was also displayed. Blank comment cards were used to gather input from participants about general mobility comments and safety concerns. Ultimately, team members found it more efficient to ask the participants questions and record their responses on the comment cards.

Activities included a map of Lake Worth Beach with high injury network areas located on the map. Participants were asked to use sharpies to indicate where they had experienced trouble either as a pedestrian, in their automobile, on their bicycle or had experienced or witnessed difficulties for people with disabilities. Each of the four areas were marked with different colors.

Photo: Resident filling out a survey (left) and the mobility team discussing the dangers of the City's high injury network with a resident (right).

WGI used a colorful spinning wheel depicting different mobility modes to attract participants to the booth. Young children were attracted by the spinning wheel, which resulted in the opportunity to have their parents either complete the survey, comment cards or provided the opportunity to ask them questions and record their answers. Prizes were given away related to the mobility trivia used at the spinning wheel.

STREET PAINTING FESTIVAL (FEBRUARY 24, 2024)

WGI participated in the Street Painting Festival held in Lake Worth Beach. Isabella Enriquez, Ravali Kosaraju and Tyler Tornese attended the event with the goal of reaching more children and young people in Lake Worth Beach by participating in this particular event.

The main activity at the booth was a map game created to demonstrate proven countermeasures and where they should be placed throughout the community to make streets and intersections safer for pedestrians. Unfortunately, it was rather windy the day of the event and the game became an exhibit used as a conversation starter to elicit responses from the 88 participants who stopped by the booth over a three-hour period.

The team conducted an abbreviated survey in English, Spanish and Creole and supplied comment cards for participants who didn't want to complete a full survey.

Photo: Residents filling out a survey (top left), the mobility team discussing mobility barriers with a resident (top right), the mobility team's booth at the event (bottom left), and the mapping exercise (bottom right).

Our Guiding Principles

Many comments were received at the public engagement activities and the online survey. Below is a list of the comments heard most often.

- Prioritize Downtown area to make it ADA accessible
- Need to plan for delivery trucks
- Visibility is poor when crossing streets because of parking
- Mini roundabouts
- Analyze the potential of 12th Ave S. be a complete street
- Need shade trees and contiguous sidewalks in all neighborhoods to increase walkability
- Vision zero for safety
- Reduce traffic congestion
- Dedicated bus lanes and/or bus stops
- Traffic calming
- Trolley, golf cart or small electric vehicle shuttle transportation between Downtown, Palm Beach State College, and the beach
- Additional bike lanes needed
- Safety is a concern for cyclists, walkers and people using newer mobility devices

Community Survey Results

This section illustrates the results of the online survey conducted during a four-month period as part of the engagement process as well as results received from the four public engagement events.

OVERVIEW

Of the 131 number of respondents that took the survey, the results are summarized below.

Demographics

- Respondents trended older with the majority being over the age of 50.
- Approximately 2/3 of respondents work full-time.
- The majority of respondents worked outside of the study area.
- Most people lived within the study area with 36% of respondents living in Area 4.

Commutes

- Most respondents (56%) have a daily commute of less than 30 minutes with another 28% working or studying from home. Less than 16% had commutes over 30 minutes.

Access to school/daycare

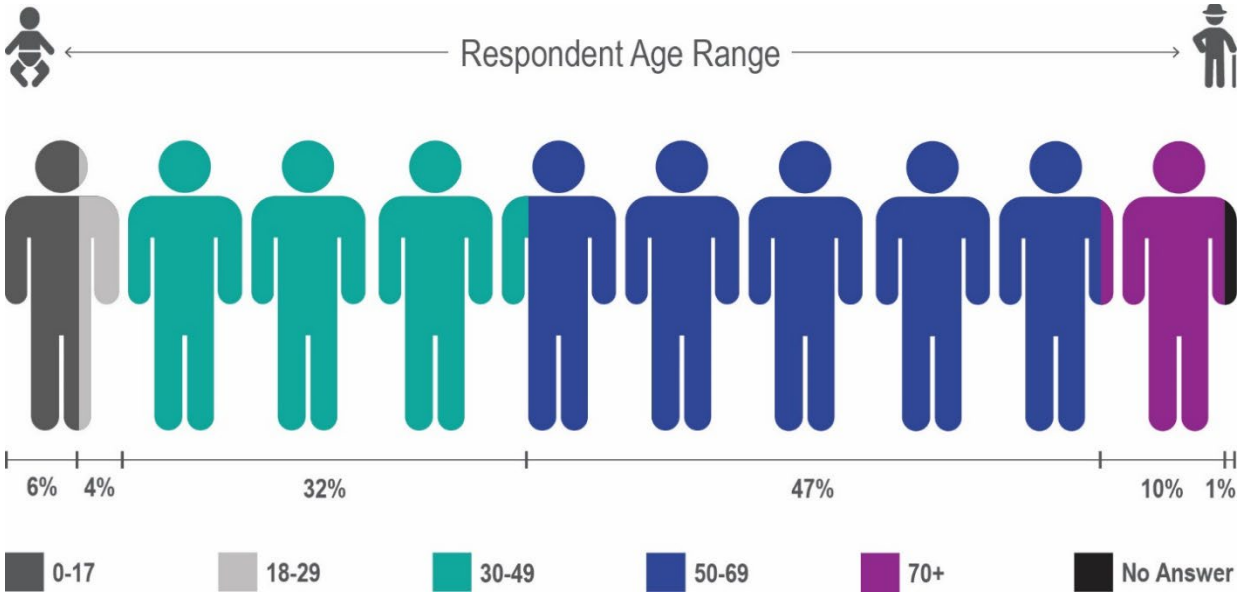
- Of the respondents that have children or grandchildren who attend school or daycare in Lake Worth Beach, all use their private vehicle for transportation. However, all respondents would like to use mobility modes other than their car. Respondents cited safety, infrastructure, and comfort as primary reasons they have to use a car.
- Approximately 11% of respondents believe their children or grandchildren can safely walk to school or daycare.

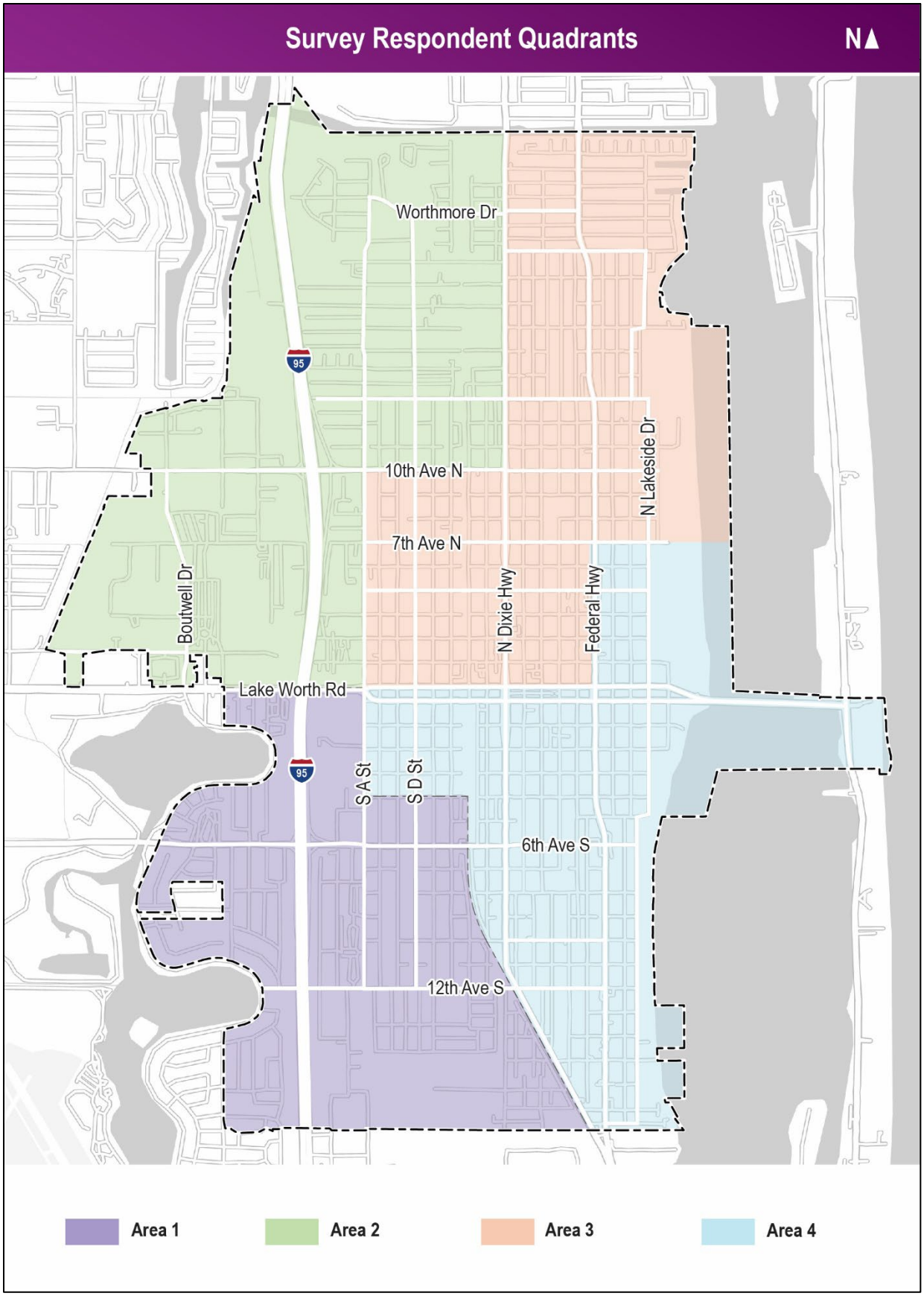
Daily transportation needs

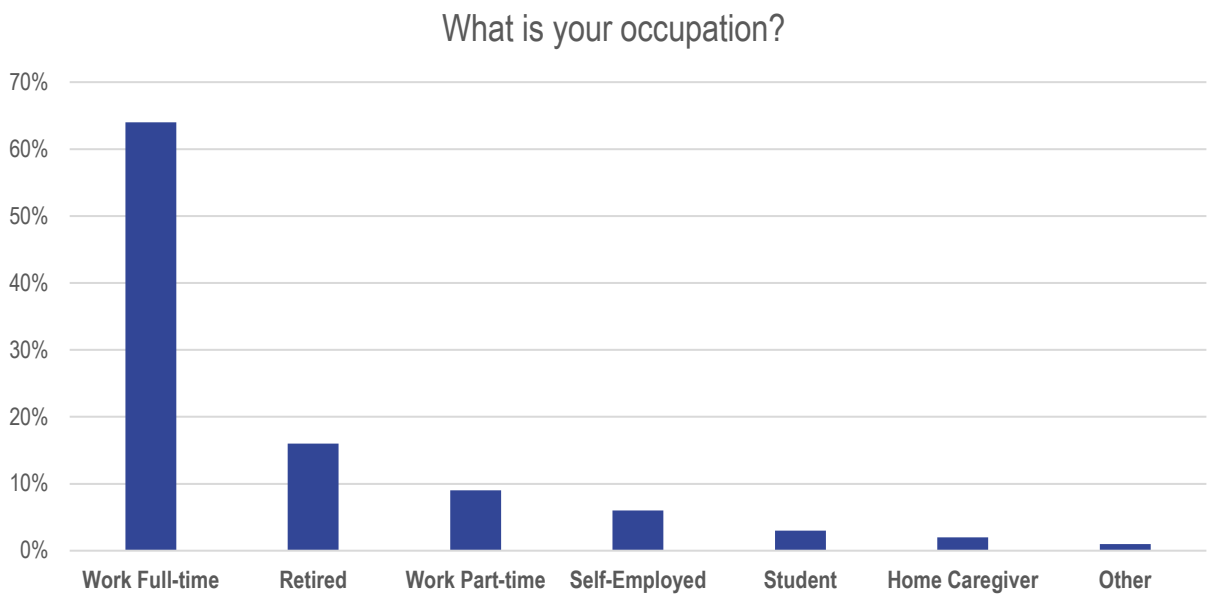
- The majority of people currently use their cars as their primary mode of transportation. However, the top modes people would like to use are bicycling (34%), walking (20%) and using the train (26%)
- The top enhancements that would encourage people to get around without a car include more shade along sidewalks (62%), installing protected bike lanes (55%), and wider sidewalks (33%).
- The top locations people want to access without needing a car include downtown Lake Worth Beach (83%), Lake Worth Beach Park (58%), local parks (52%), and the local TriRail Station (42%).
- Nearly 80% of respondents would be interested in using a shuttle to access the beach from downtown.
- Half of respondents believe that crashes and unsafe road conditions result from drivers making poor decisions.

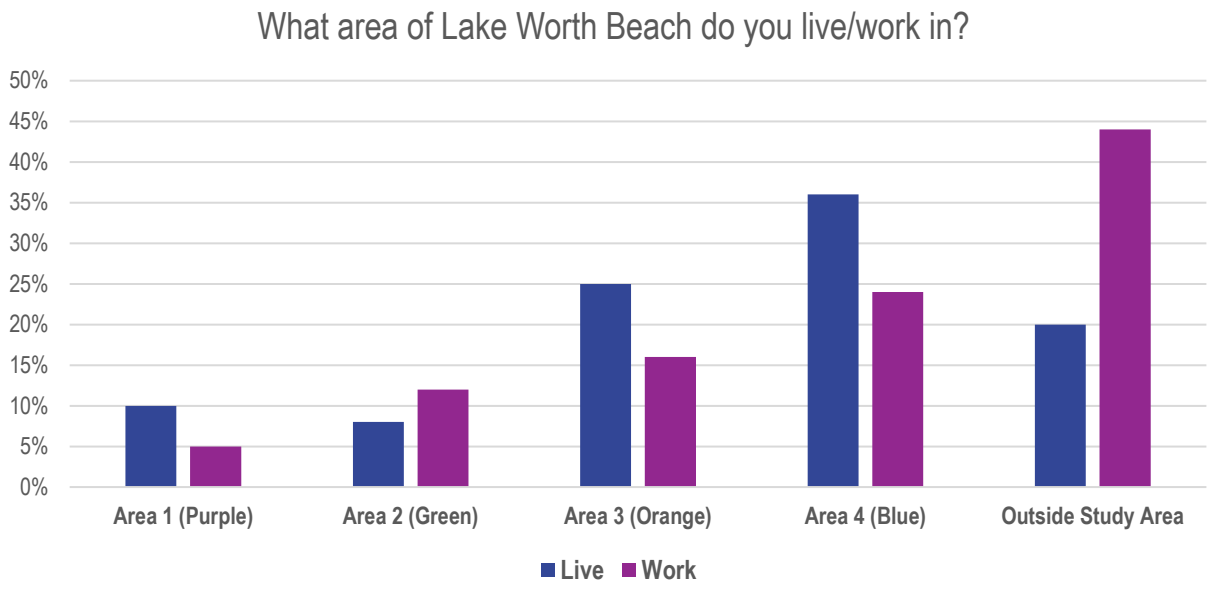
DEMOGRAPHICS

Survey respondents were asked to identify their age, occupations, and what areas within the City of Lake Worth Beach they lived or worked. This data allowed the team to compare and contrast the demographic makeup of the survey respondents to the City's general population. The survey respondents trended older than the general population of the City with nearly half (46%) being between the ages of 50-69. The vast majority (64%) of respondents indicated that they worked full-time. Approximately 44% of respondents worked outside of the study area. However, most respondents who lived or worked in one of the four study areas indicated that they either lived or worked in Area 4.




Survey Respondent Quadrants
N
Worthmore Dr
95
10th Ave N
7th Ave N
N Lakeside Dr
Boutwell Dr
N Dixie Hwy
Federal Hwy
Lake Worth Rd
95
S A St
S D St
6th Ave S
12th Ave S
Area 1
Area 2
Area 3
Area 4



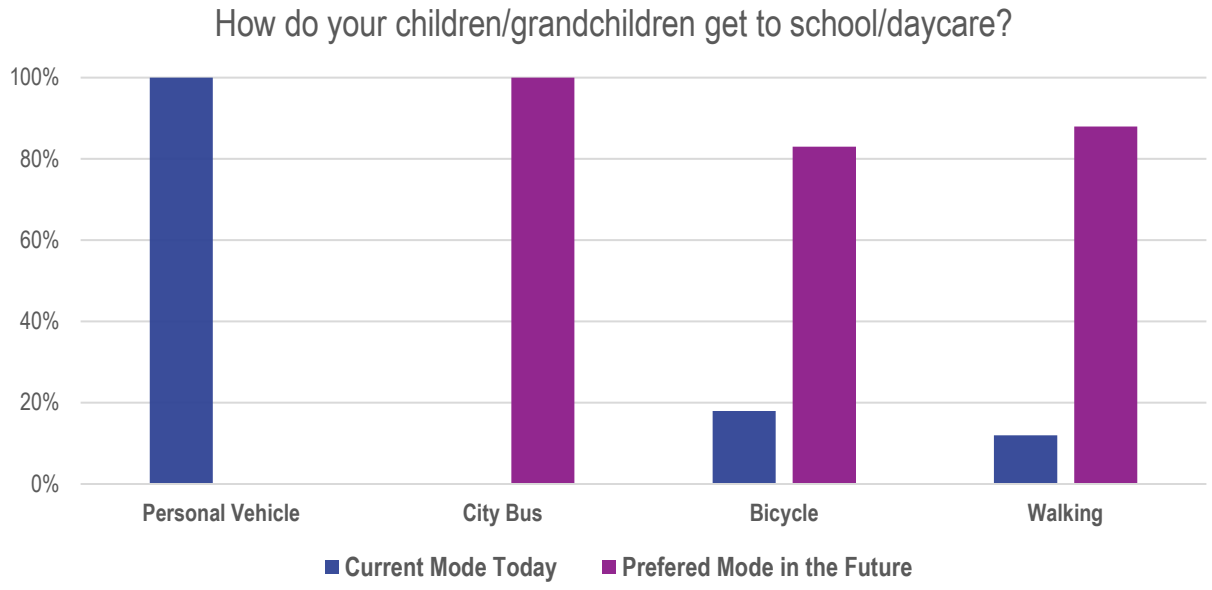


COMMUTES

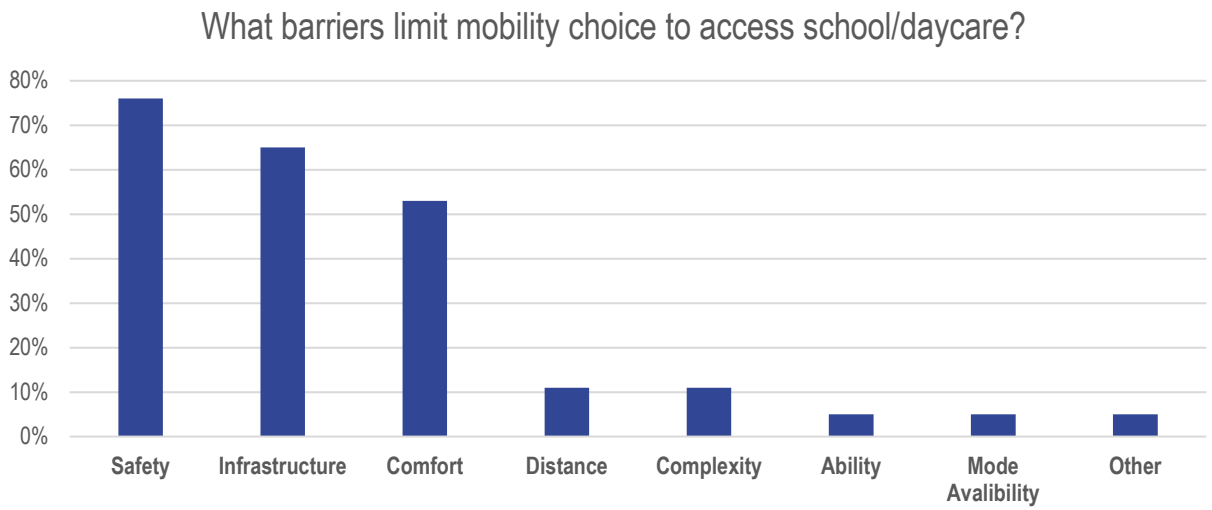
Respondents were asked to identify how long their commute was to either work or school. Respondents that worked from home, were retired, didn't work, or were not in school were classified under "No Commute". As seen in the chart, approximately 28% of respondents did not have a daily commute and a majority (56%) had a commute of less than 30 minutes.

SCHOOL AND DAYCARE

Respondents were asked if they had children or grandchildren who attended daycare or school in Lake Worth Beach. The vast majority (85%) of respondents did not. Of the 15% of respondents that did have children or grandchildren in daycare or school, the survey asked how they got to the facility. The chart below showcases how children get to daycare or school today (blue) and how the parents would like them to be able to get there in the future (purple). Currently, all respondents use personal vehicles to transport their children or grandchildren to school/daycare with biking and walking being utilized rarely. However, respondents would prefer that access to the school or daycare can be achieved by bus transit, biking, or walking. No respondent identified personal vehicles as a preferred mode of transportation. This shows the desire of Lake Worth Beach parents to be able to access these services in ways beyond their personal car.



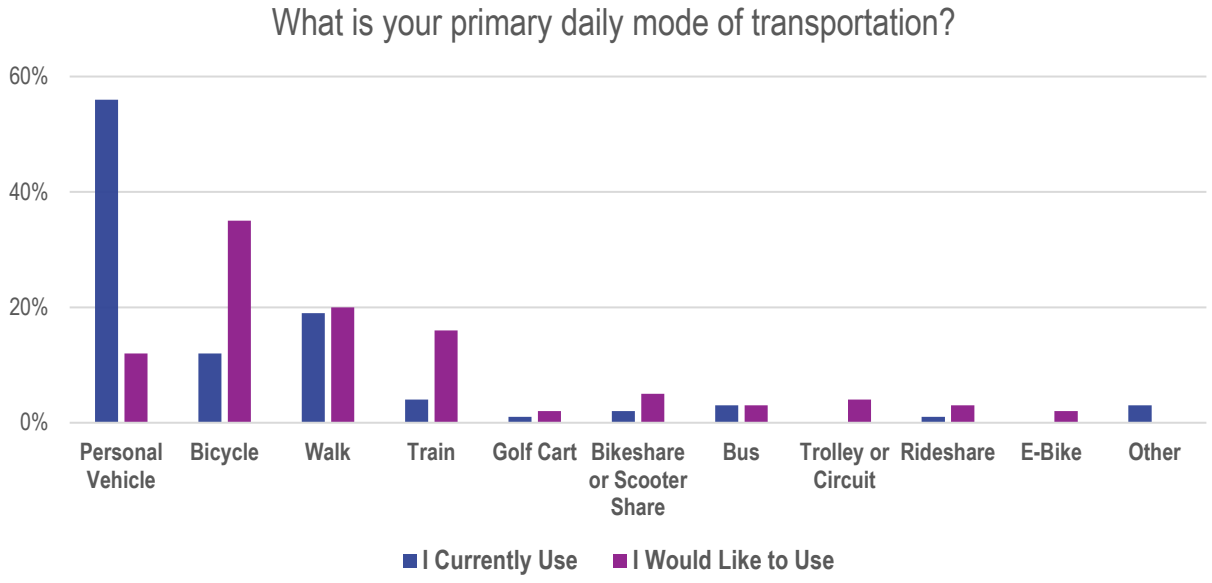
Respondents were also asked what barriers existed that prevented them from using these preferred modes of mobility. As seen below, the top issues were safety, lack of infrastructure, and comfort.



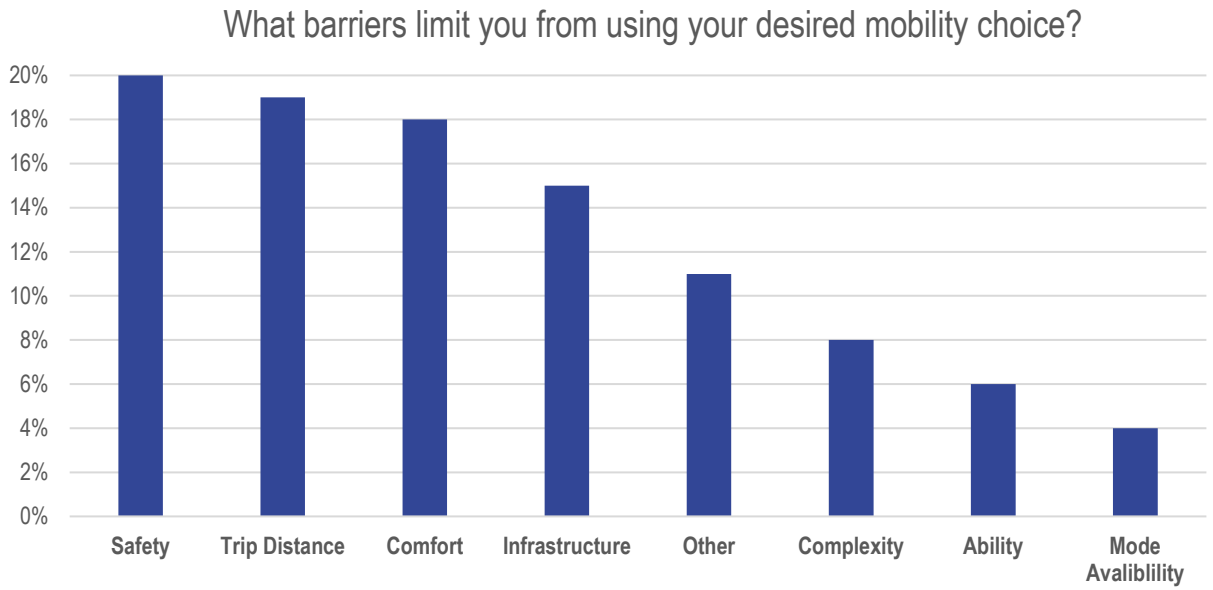
Finally, respondents were asked if they felt like they lived in a neighborhood where their children or grandchildren can safely walk to school/daycare. Only 11% of respondents agreed with the statement.

DAILY TRANSPORTATION NEEDS

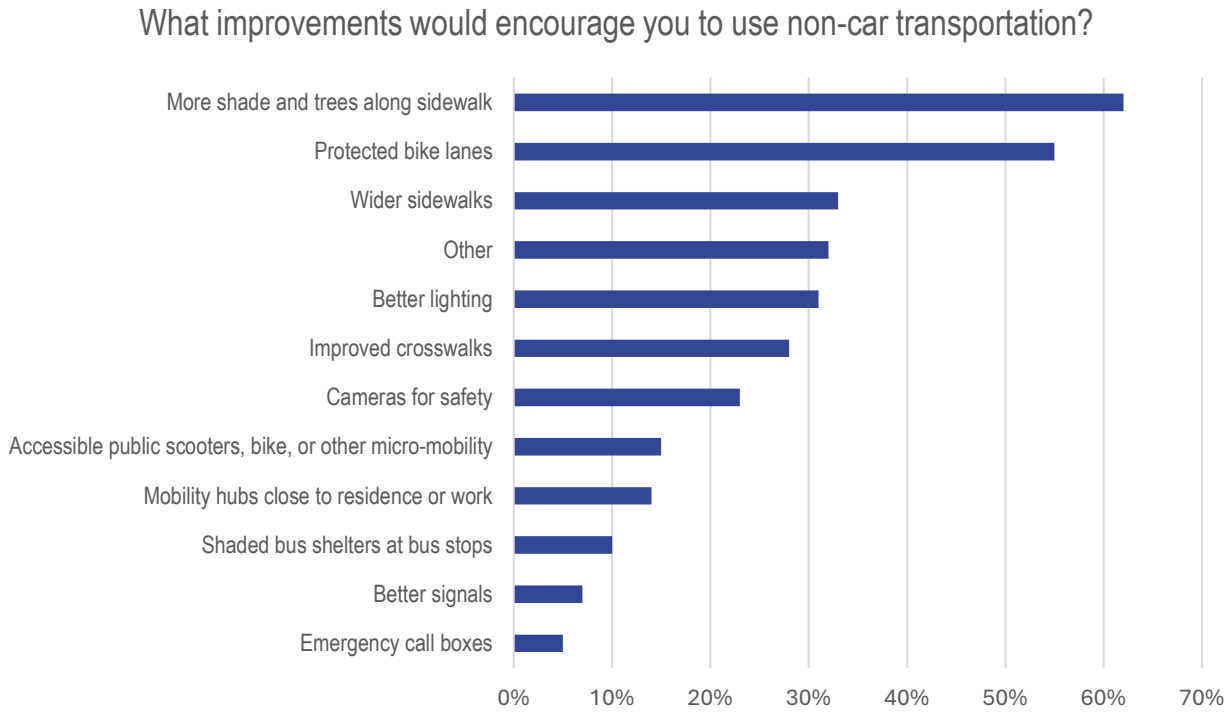
Questions in this section of the survey were focused on primary modes of daily transportation. Respondents were asked to choose their primary mode of transportation for daily activities. The chart below shows the results of what mode of transportation is currently used (blue) and what mode respondents desire to use (purple). The majority of people currently use their personal vehicle as their primary mode. However, there is a strong desire to use biking and walking as a primary mode to get around Lake Worth Beach.



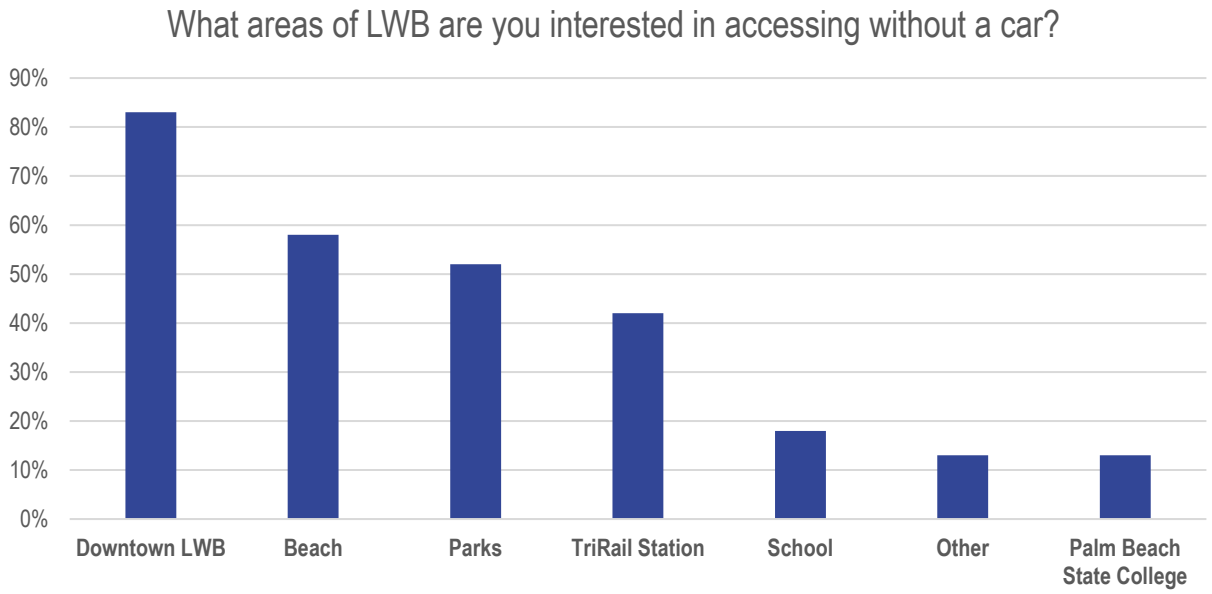
When respondents were asked what barriers were preventing them from using their preferred mode, the top issue was safety (20%). Other barriers identified were trip distance (19%), comfort (18%), and lack of appropriate infrastructure (15%).



The survey inquired what physical infrastructure improvements or enhancements would encourage them to use other mobility modes besides their car. The top improvement requested with over 60% of the vote was adding more street trees and shade to the sidewalks. Protected bike lanes were also requested by a majority of respondents with wider sidewalks rounding out the top three at 33%.



Respondents were asked what locations around the City they would be interested in accessing without needing a car. The chart below shows that the vast majority of respondents (83%) want to access downtown Lake Worth Beach. Other popular locations included the Lake Worth Beach Park (58%), nearby parks (52%), and the local TriRail station (42%).



The survey concluded by asking questions to gauge the support of instituting a people mover mobility option within Lake Worth Beach to get from Downtown to the oceanfront. Nearly 80% of respondents would like to see that type of option used in the future.

Community Priorities

Community priorities are evident in the survey results as well as in the questions and comments gathered from the public engagement activities. These priorities focus on safety and walkability, traffic management, and embracing new mobility options. Respondents cited safety concerns in downtown Lake Worth Beach due to parking, inaccessibility, and crosswalk concerns. Respondents would welcome a people mover or shuttle to travel between downtown and the beach area.

Over 75% of the respondents were between the ages of 30-70 with over half of those respondents between the ages of 50-69. Considering this, it is not surprising that only 15% of respondents had children or grandchildren who attended daycare or school in Lake Worth Beach. Reaching the younger demographic in Lake Worth Beach proved challenging even with the team attempting to reach this demographic by distributing surveys in the local schools. Attendance at the Street Painting Festival was crucial in hearing the concerns of the younger demographic.

V. Best Practices in Policy and Design

This section introduces and analyzes best practices in multimodal policy and design. These best practices were foundational to developing the projects and recommendations in Chapters 6 and 7.

Complete Streets

Lake Worth Beach has been making progress with Complete Streets across the city, adding new sidewalks and bikeways through street retrofits and restriping. In addition, the city and transportation partners have been making ADA upgrades to intersections and areas around transit stops. In redesigning roadways for Complete Streets, Lake Worth Beach faces several challenges:

- Older streets in downtown have narrow rights-of-way.
- Main roadways, mostly on the city's western edge, were designed for automobile throughput that pose pedestrian and cyclist hazards, particularly at intersections.
- There are multiple competing uses vying for sidewalk, curb, and roadway space.
- Roadway ownership is fractured among the city, county and state.

The following are some of the best practices for expanding Complete Streets given these challenges.

Slower Local Streets: At lower speeds, bicycles and automobiles can co-exist on shared streets. Most of Lake Worth Beach's downtown streets form a grid. In December 2021, the city finalized a Traffic Calming Policy with procedures for reporting hazards and reviewing candidate projects for funding. Where there is little room for additional infrastructure, cities need to "find" multimodal space within existing rights-of-way.

Use of Quick Build: Transportation agencies at all levels are supporting Complete Streets projects that incorporate low-cost, flexible materials such as paint and bollards. The research shows positive results, especially combinations of both vertical and horizontal elements. However, the lighter materials are also subject to more damage from vehicles and storms. As such, quick build programs need to include contingencies for periodic inspections, repair, and/or replacement.

The example image shows an installation of horizontal and vertical elements in downtown Miami that is subject to considerable damage. Demonstration projects are a variation of quick build for projects intended to last short periods of time to test ideas. Cities have found success in using demonstrations (or pilot projects) to get community buy-in.

Photo: Quick-build project in Miami

Programming: With the increasing number and types of uses within rights-of-way, cities are turning to streets that change throughout the day to serve different uses and users. This is not a new concept since cities like Lake Worth Beach close streets for parades, markets, and events like the Street Painting Festival. With a new generation of modular infrastructure, cities can transform sidewalks, curbs, and street space easily.

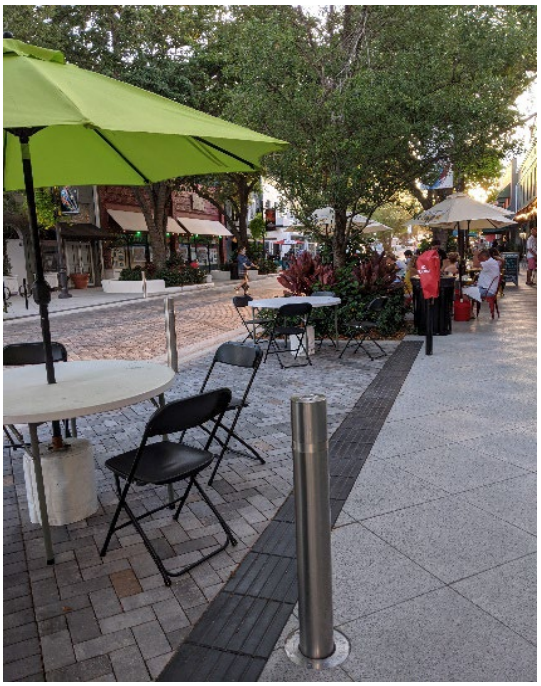


Photo: Clematis Street in West Palm Beach

Retractable bollards, like those shown in the image, allow a city to switch roadway roles among vehicle travel ways, parking, loading, and space for people. This concept requires a team responsible for scheduling activities, deploying infrastructure, and communications. Programming is most appropriate in areas where there is high demand for multiple uses or where loading zones are needed like Lucerne and Lake Avenues. In South Florida, mobile parking app companies are offering new services that reserve spaces for various uses. For example, delivery companies can be assigned a special code that allows them to park between certain hours. A driver will get an alert when they try to pay that the curb is not available. Lake Worth Beach currently uses Pay By Phone at Lake Worth Beach Park. If the City moves to expand paid parking to other areas this could be a service to consider to help facilitate parking demand.

Prioritization: There is usually not enough funding to implement every project a city wants. Therefore, cities must determine how to achieve the "biggest bang for the buck" by prioritizing projects. This mobility plan focuses on funding sources and associated criteria in several categories to help with prioritization in regard to funding availability:

- ***Safety:*** With the Bipartisan Infrastructure Law (BIL), USDOT recommends several approaches to making streets safer for multimodal transportation: (1) quick build projects that can be installed quickly, (2) bundling projects to install a series or collection of safer streets, and (3) proven countermeasures that are backed by research.
- ***Access:*** Grants are also paying closer attention to linking common points of interest (POI) such as schools, transit stations, parks, and job centers. Traditionally, access has been defined as a 10-minute walk, or one-half mile. With the growing use of micromobility, that access-shed can be considered to one-mile or beyond. This study highlights these POI and access via walking or a low-stress bicycle/micromobility network.
- ***Resilience:*** Multimodal transportation is often regarded as a strong climate mitigation tool, with lower carbon emissions and redundant transportation networks for non-motorized travel that work in post-disaster situations. However, pedestrians, cyclists and people taking transit have higher exposure to climate risks such as heat and more intense storms. As such, projects funded by resilience grants need to consider methods for increasing the comfort of those walking and biking

New standards: The American Association of State Highway and Transportation Officials (AASHTO) publishes the "Policy on Geometric Design of Highways and Streets" manual, or Green Book, that directs the design of most streets in the United States. The Green Book is currently undergoing updates that are expected to make it easier for cities to incorporate Complete Street designs, particularly on county and state roadways. The BIL includes a provision allowing cities to use recognized design standards like the AASHTO Green Book when implementing federally funded projects on city-owned streets. In other words, the city's engineering department can have a choice in which standards are used.

The National Association of City Transportation Officials' (NACTO) Design Guides for Urban Streets and Bikeways provide state-of-the-art designs that cities can be used as an alternative to the AASHTO Green Book standards by adopting an ordinance.

Networks: The first generation of Complete Streets projects were individual projects to install bikeway and sidewalk segments. While helpful, cyclists and pedestrians need uninterrupted travel ways linking key destinations. Cities with a compact street grid like Lake Worth Beach have a well-established network. Cities have also been exploring the use of alleyways for walking and micromobility. However, a primary concern with this strategy is alleyways are typically used by trucks for deliveries, utilities, and trash collection. They can also be discontinuous and of varying conditions.

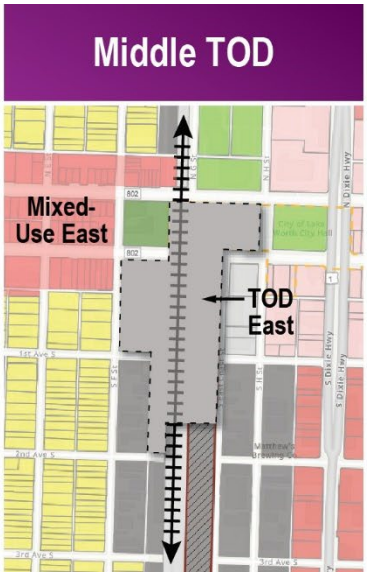
Transit Oriented Design

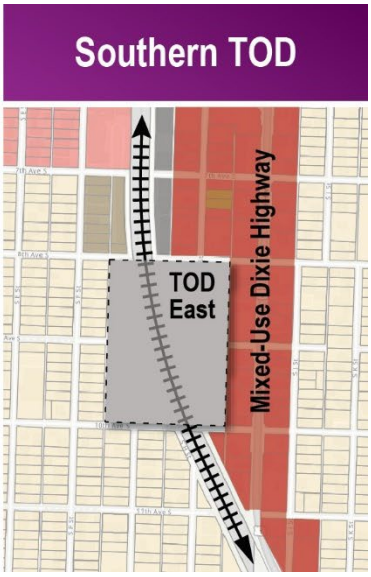
Transit oriented development (TOD) is a strategy of creating compact, mixed-use communities near transit. Lake Worth Beach has addressed transit oriented development in the past with a 2008 CRA TOD Master Plan and the 2019 Envision effort to showcase incentives for three TOD project areas. These plans have adopted many of the traditional best practices for TOD for density, density tapering, and mix of uses.

Photo: 3D Model of build out potential of the downtown TOD District (Envision Lake Worth Beach)

In addition, TOD around TriRail is included in zoning (establishing TOD-East and TOD-West; Transit Oriented Mixed-Use areas and along the F.E.C. railway) and the city's Comprehensive Plan (Future Land Use Element, Housing and Neighborhoods Element). The zoning map below shows the TOD and Mixed-Use zoning surrounding the TriRail System. This configuration of placing the highest density closest to the station and a ring of medium density development within ½- one mile is a best practice.

There are three clusters of TODs zoned TOD-E as shown in the maps below. These TODs anticipate future rail operating on the FEC tracks.



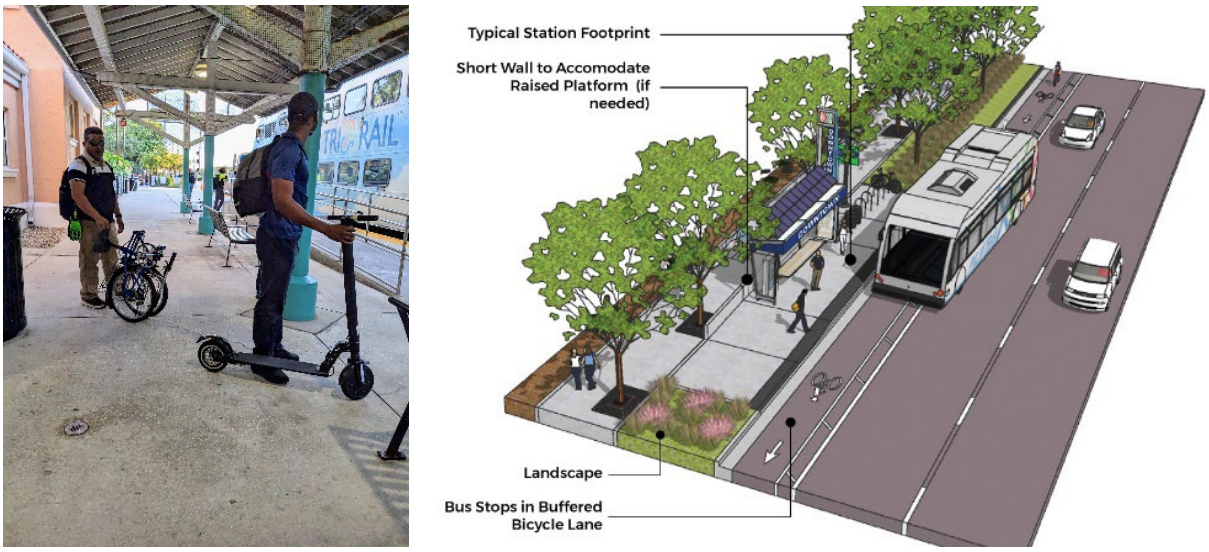


TOD is not just focused on rail stops but can be focused on many types of mobility including along bus lines. Cities like Cleveland, Atlanta, and Austin have found success utilizing TOD development along high frequency bus lines. Palm Tran Route 1 is the highest ridership route in the system and Lake Worth Beach has the second and third highest ridership stops at Dixie Highway and Lucerne Avenue and North 2nd Avenue.

With Dixie Highway already attracting higher density, mixed use development in Lake Worth Beach and other communities in the region, development interest will likely rise with Palm Trans' proposed new express service, Palm Tran Express (PTX). Palm Beach TPA's US-1 Transit Assessment lists three opportunity areas along Dixie Highway: at North 10th Street, at Lake/Lucerne Avenues, and at South 6th Avenue.

While Lake Worth Beach has been proactive by zoning parcels along the east and west sides of Dixie Highway as Mixed-Use Dixie Highway (MU-DH), the following are some TOD best practices that could help refine the City's TOD program.

Beyond first-last mile: Micromobility is reshaping travel in south Florida for both short trips and access to transit. The increasing range of both e-scooters (15-45 miles) and e-bikes (20-75 miles) are expanding the access-shed to transit beyond one mile. However, a lack of infrastructure can discourage using these new modes. Infrastructure gaps and high stress links exist along Dixie Highway to the TriRail station.



Photos: Person boarding TriRail with an e-scooter (left) and elements of a bus station mobility hub (right).

Mobility Hubs - PTX Station Module: Transit stations are the most sophisticated form of mobility hubs that feature intermodal connections and pick up-drop off accommodations. Smaller bus stops can also serve as multimodal hubs. This is illustrated in Palm Trans' graphics for premier bus stops located on Dixie at North 10th Avenue, Lucerne/Lake, and South 6th Avenue.

Equitable TOD – Transit Oriented Communities: Attention to equity has increased recently as it relates to investments in TOD. The three main focal areas are (1) displacement as older housing is replaced with higher density mixed use development, (2) equitable investment in underserved areas along transit lines, and (3) more attention to the surrounding neighborhoods, not just the station area. This heightened attention to equity and neighborhoods has been framed as Transit Oriented Communities or TOC. TOD developments tend to generate fewer car trips so cities can concentrate development and add walkability for all residents and workers, not just those who take transit. This aspect of TOD is called "TOD without the T." Transit can reduce the cost burden of owning a car (or a second car). The best design factors entail (1) satisfying housing demand within TOD/TOCs, (2) providing a rich mix of everyday and convenience uses within short walking distance of stations, (3) increasing access to transit through Complete Streets and circulators like Circuit, and (4) right sizing parking to reduce the costs of TOD/TOC.

Right Size Parking: Right sizing parking refers to choosing parking requirements that reflect the mobility profile of future development rather than depending on outdated zoning codes. Research on the "lessons learned" for TOD is the role parking plays in meeting mobility goals. Excessive parking lots placed directly adjacent to stations can negatively impact walkability. Also, excess parking increases the cost of TOD development. Therefore, there is an opportunity for the City to reevaluate its TOD parking requirements based on this best practice.

Mobility Hubs

Mobility hubs are facilities or areas where multiple modes of transportation converge and are available. Coined in 2003 by Michael Glotz-Richter, the Manager of Sustainable Mobility for Bremen, Germany. The idea was to combine multiple mobility modes in one location to make transfers between modes more seamless and simpler for the user. The concept was introduced to North America in 2005 when Toronto included the concept in its regional transportation plan. Today, many cities, counties, and regions in the United States utilize mobility hubs in their transportation master plans and mobility strategies with some of the most successful project implementations coming out of Boston, San Diego, Pittsburgh, and Minneapolis. The continued growth and interest in mobility hubs is driven by the trend of more and more people combining multiple modes of transportation in a single trip.

The City of Boston's GoHubs! program utilizes best practices, design elements, and implementation strategies that could be applied by Lake Worth Beach. One of the major parts of the program was the development of a kit of parts to allow planners to mix and match different mobility elements. This allows each mobility hub to be tailored to its unique mobility needs and constraints of the built environment. Kit components include the following elements:

- Bikeshare
- Ridehail pick-up & drop-off
- Parklets, public art, and placemaking
- Car share
- Electric vehicle parking
- Bike parking
- Transit
- Branding
- Information

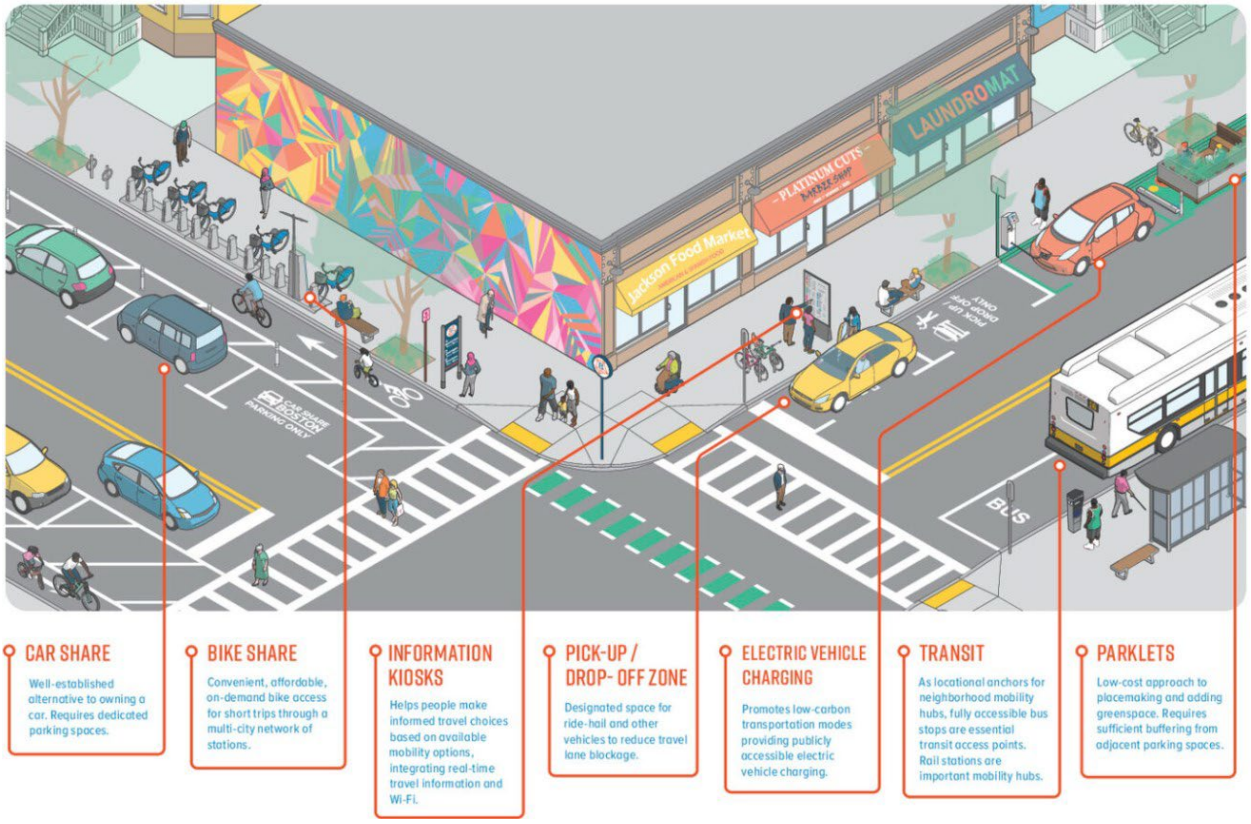


Image: Boston Mobility Hub Elements (Source: City of Boston, GoHubs! Mobility Hubs Guidebook)

Mobility access, ease, and safety can be greatly improved by including and fostering mobility hubs into the greater Lake Worth Beach mobility network. As multimodal trips become more common for residents and visitors, mobility hubs can be utilized to make getting around easier and more efficient. Mobility hubs should be in areas where different mobility modes intersect one another so transfers between the modes can happen more efficiently. Opportunities within Lake Worth Beach include areas that can facilitate transfers between the TriRail station, the Circuit shuttle, Palm Tran buses, and areas with bike and pedestrian infrastructure. A hub can be as simple as placing bike racks near bus shelters or a more complex buildout for intermodal facilities such as the TriRail station with intentional design for bus and Circuit transfers. Some of the more important factors are (1) reducing conflict points as travelers make connections at the station platforms and within parking lots, (2) good signage to direct riders to connections, and (3) safe bicycle and scooter parking. There is also an opportunity to pair the mobility related infrastructure with public gathering areas to foster community building and economic development.

Circulators

Circuit's circulator service launched in March 2024 and has been popular with riders. As a concept, microtransit is relatively new in the United States. Until recently, the financial viability of microtransit was limited due to the small number of riders using smaller transit vehicles. However, by combining technology and carefully crafted service areas, entrepreneurs are finding ways to achieve profitable service.

One of the hallmarks of microtransit is continuous monitoring and testing of routes, stops, technologies, vehicle types, pricing, and policy. Another is the pressure to expand service areas. As opposed to public transit where service parameters rarely change, the city should treat microtransit as a service that is subject to continuous improvement.

The following are some best practices for operating, refining, and expanding circulator services.

Update Goals: Renewing a contract with a circulator service is a good time to establish or update service goals. Common goals include increased mobility for all, access, economic development, tourism, and quality of life.

Establishing Metrics or Targets: Cities can work with operators to establish metrics related to (1) goals and (2) service delivery. The table below illustrates how metrics and targets can be set.

CIRCULATOR BEST PRACTICE METRICS

Topic	Goals	Metric or Target
Access to Destinations	Ensure residents in the service area are connected to key destinations	1) Trips starting/ending at the beach 2) Trips starting/ending at grocery stores 3) Trips starting/ending at high schools and colleges 4) Number of riders who do not own a car
Multimodal Transportation	Develop a multimodal transportation system	1) Trips starting/ending at TriRail 2) Percent of mode shift from cars to Circuit 3) Number or percent of pooled rides
Safety	Increase transportation safety	1) Percent of riders who report feeling safe on Circuit 2) Number or percent of late-night trips originating near bars and restaurants 3) Percent wait times under 10 minutes on nights and weekends
Economic Activity	Spur economic activity by increasing the number of people in activity centers	1) Number of vehicles leased to commercial businesses 2) Number or percent of riders from out of town 3) Increase in ridership during events

Rider Surveys and Satisfaction: Like any transit service, it's important to track success from the rider's point of view. Make sure to include surveys and results in contracts. Make sure to include questions on demographics, hometown, car ownership, and mode displacement (i.e. what mode would the rider have used if microtransit were not available).

Leased Vehicles: In addition to the vehicles that serve the general public, most microtransit operators offer dedicated shuttles for a fee. For example, a hotel would pay to dedicate a vehicle to their guests. The leased shuttles have the effect of improving service because the public competes for pickups with fewer people.

Sustainable Funding Streams: Cities and CRAs have recognized the value of microtransit service by providing funds for the initial year. However, these entities need to determine a sustainable mix of funding that can include grants, ad revenue, fares, and leases for dedicated shuttles. In addition, some cities are creating public-private partnerships with large employers that allocate funding for mobility services.

Fares are an essential part of service, not only to reduce costs, but also to manage service. Circuit went from free fares in West Palm Beach to paid fares to lower cancellation rates. They also instituted a $4 fare to the beach after discovering misuse by college students that was impacting service in the larger zone. When considering rates, operators often consider a potential rider's comparative costs with driving or taking Uber/Lyft. Where affordability is a goal, fares should be kept low as part of an affordable option for all.

Marketing: Micromobility services like Circuit rely on local support for marketing the service. This comes in the form of videos, alliances (e.g. tourism, Chambers of Commerce, human services organizations), local businesses, and newsletters. Interviews with riders are effective, as are instructional videos for first-time riders.

For the future, microtransit is likely to further innovate on several fronts:

- **Park and Rides:** Circuit is seeing increased interest in park and ride service, linking underutilized public lots and travelers to destinations such as job centers and beaches.
- **Vehicles:** Currently, Circuit and other vendors use the Gem6 6-passenger vehicles that cost approximately $90,000. Other van and shuttle makers are likely to expand electric options, though air conditioning is a factor for electric transit vehicles.

The German vehicle maker Holon and the city of Jacksonville are making plans for a U.S.-based manufacturing plant for their shuttle which can be operated autonomously or with an on-board operator. These vehicles have several advantages such as one-step boarding and double door opening that facilitate fast off-loading and boarding. They are also ADA compliant. These vehicles are currently $400,000, though because they will be manufactured in the United States, they qualify for USDOT funding.

VI. The Plan

Plan Alignment

The mobility plan is being developed in parallel with other plans affecting mobility. The table below lists plans undertaken by Lake Worth Beach city departments, regional agencies, and related state initiatives.

MOBILITY PLAN ALIGNMENT

Organization	Plan Name	Relationship to the Mobility Plan	Adoption
LWB Planning	Parking Plan	Changes to the parking program (e.g., pricing, time limits) could affect driver decisions and mode choice.	
LWB	Capital Improvements Plan	Includes projects for FY 2024/2025	October 2024
LWB	Open Space & Recreation Master Plan	Access to Parks	Underway as of Summer 2024
LWB	Carbon Neutral Initiative	Creating a Carbon Neutral element within the Comprehensive Plan that would include GHG reductions from transportation	January 2024
LWB / CRA	Envision Lake Worth Beach	Brochure with three alternative TOD projects and the Sustainability Bonus Incentive program	2019
LWB / CRA	Arts & Culture Master Plan	References to mobility: walking/jogging/cycling tours; consider cycling festival; build the downtown loop	Complete 2018
CRA	Bicycle Network Plan	Develop list of adopted recommendations and compare 2009 map to low-stress network	Adopted 2009; Adopted 2010
CRA	Wiener Museum of Decorative Arts P3	Potential parking structure to replace surface lot at 19 S K St	Fall 2024 agreement
CRA	Master Comp. Bicycle Transportation Plan	Recommendations for Lake Worth Rd from Military Trl to Ocean Blvd (note, the striping on Lake and Lucerne + Boutwell is underway; also, improvements along Lake Osbourne). Recommendation to add racks	March 2011
Palm Tran	Transit Development Plan (Accelerate 2031)	Palm Tran undertaking study of all bus stops, transit signal priority, 561 plan, TOD	2022-2031
Palm Beach TPA	US-1 Multimodal Corridor Study	Increased transit service	Approved May 2018
Palm Beach TPA	561 Plan	Includes Lake Worth Rd	On-going
Palm Beach TPA	Unified Work Plan (FY 2025/2026)	Includes targets for working with municipalities on grants, project prioritization, and outreach	Adopted May 16, 2024, in effect July 1

Palm Beach TPA	Transportation Improvement Plan (5-year TIP)	Included in the List of Priority Projects (LOPP), 1. Design funding for lane repurposing project in Lake Worth Beach (priority #17-1g US-1: Dixie/Federal Junction to Gregory Rd) 2. Transit Signal Prioritization on Lake Worth Rd 3. Lake Worth Rd from Erie St to A St – Roundabout 4. Lake Ave/Lucerne resurfacing project	Approved 2024 1. Application Underway (FDOT) 2. Process is On-going 3. Construction Underway 4. Construction Underway
Palm Beach TPA	Local Initiatives	Call for Projects	July -Oct 2024
Palm Beach TPA	LRTP	Vision 2050 will include project for the 20-year time horizon	Estimated adoption in Dec. 2024
Treasure Coast Regional Planning Council	Placemaking	Proposed projects for the I-95 Underpass on Lake Worth Rd that would serve as improved E-W link	TBA
South Florida Regional Transportation Authority (SFRTA)	Parking Lot Sale	SFRTA is considering selling its second parking lot on Lake Worth Rd. This could open land for TOD	TBA
Florida Department of Transportation	Lake Ave/Lucerne resurfacing project	Included in the List of Priority Projects (LOPP), 1. Design funding for lane repurposing project in Lake Worth Beach (priority #17-1g US-1: Dixie/Federal Junction to Gregory Rd) 2. Transit Signal Prioritization on Lake Worth Rd 3. Lake Worth Rd from Erie St to A St – Roundabout 4. Lake Ave/Lucerne resurfacing project	Construction Underway
Florida Department of Transportation	Dixie Highway lane repurposing	Included in the List of Priority Projects (LOPP), 1. Design funding for lane repurposing project in Lake Worth Beach (priority #17-1g US-1: Dixie/Federal Junction to Gregory Rd) 2. Transit Signal Prioritization on Lake Worth Rd 3. Lake Worth Rd from Erie St to A St – Roundabout 4. Lake Ave/Lucerne resurfacing project	Application Underway (FDOT)
Florida Department of Transportation	Lake Osbourne Drive	Pedestrian improvements	Complete
Coastal Resilience Partnership	Multi-Jurisdictional Climate Change Vulnerability Assessment	Mobility-related recommendations: shade, safe biking, and walking connections in socially vulnerable areas; integrating compact development, sustainable transport, blue and green infrastructure, and equity; Identify grant opportunities to fund adaptation strategies	July 2021

Equity

The goal of transportation equity is to provide the same access to affordable and reliable transportation for everyone. This can be achieved through transportation systems that support multimodal options that are affordable, sustainable, reliable, efficient, safe, and easy to use. Investments should be allocated fairly based on an open public engagement process to determine needs, options, and implementation. In reviewing need, communities need to evaluate past decisions' impacts on underserved neighborhoods and vulnerable populations.

Lake Worth Beach has a diverse population of both longtime residents and newcomers. It remains one of the more affordable locations in South Florida. Affordability, however, is waning as South Florida's post-pandemic influx of population has put pressure on housing prices. Similarly, property and automobile insurance rates are among the highest in the nation. As such, the ability to minimize transportation-related expenses, often the second-highest household expense, is an equity issue. According to the American Automobile Association (AAA), decreasing ownership of one automobile can save roughly $12,000 a year based on 2024 interest and insurance rates.

The approach for addressing equity in this plan is two-fold:

1. The plan is built on five pillars: Safety, Access, Funding, Equity, and Sustainability. Equity is one of the pillars, though it should be noted that the other four contribute to a reliable transportation system that works for all.
2. An equity lens was used for identifying strategies and project location

Future of Mobility in Lake Worth Beach

ROADWAY & INTERSECTIONS

Roadways and intersections play a crucial role in the safety of vulnerable road users (VRUs). To enhance this safety, community and stakeholder input, High Injury Network (HIN) data, and contributing factors were utilized to determine targeted countermeasures. The HIN provided critical data, including crash rate, and crash severity, allowing the establishment of an HIN score for all streets within the city. This ensures that locations with serious and fatal crashes with highest frequency were given the highest priority when evaluating roadway and intersection risk factors.

Implementing intersection and roadway improvements based on this approach serves multiple road users. Examples include pedestrian refuge islands, enhanced crosswalk visibility, leading pedestrian intervals at signalized intersections (allowing pedestrians to enter the intersection a few seconds before vehicles), dedicated left and right turn lanes, and adequate lighting. These measures collectively improve safety and reduce the risk of crashes involving VRUs.

PEDESTRIAN

Lake Worth Beach features a walkable downtown and less walkable locations to the western city boundary. The main feature of future pedestrian travel lies in this study's emphasis on safety and improving intersections and sidewalks to improve safety and the pedestrian experience.

A thriving mobility network is also safe, accessible and equitable. These are the pillars that formed the basis for choosing the pedestrian enhancements at intersections and along the corridors within the City. A combination of the HIN, transit ridership data, community hubs, feedback from the

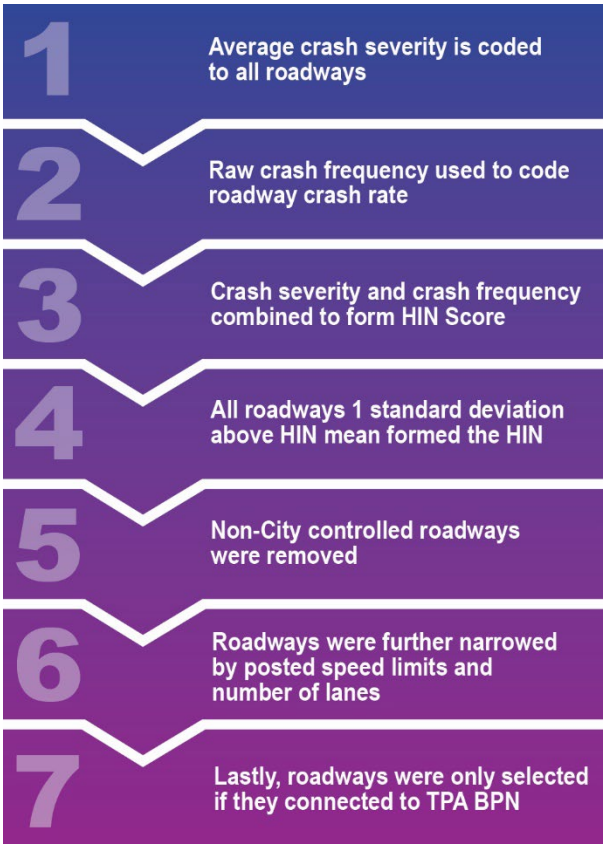
community, key stakeholders and FHWA guidelines, the team identified pedestrian improvements ranging from leading pedestrian intervals (LPI) at signalized intersections to crosswalk visibility enhancements and pedestrian hybrid beacons. These improvements provide the safety, comfort, and accessibility to connect pedestrians with transit, community hubs such as schools, and libraries, making walking a seamless mode choice.

Looking forward, urban heat is becoming a design element to ensure pedestrian comfort. Within the planning process, assessing tree canopy and continuous shade over walkways and bikeways will drive mobility and landscape planning.

BICYCLE

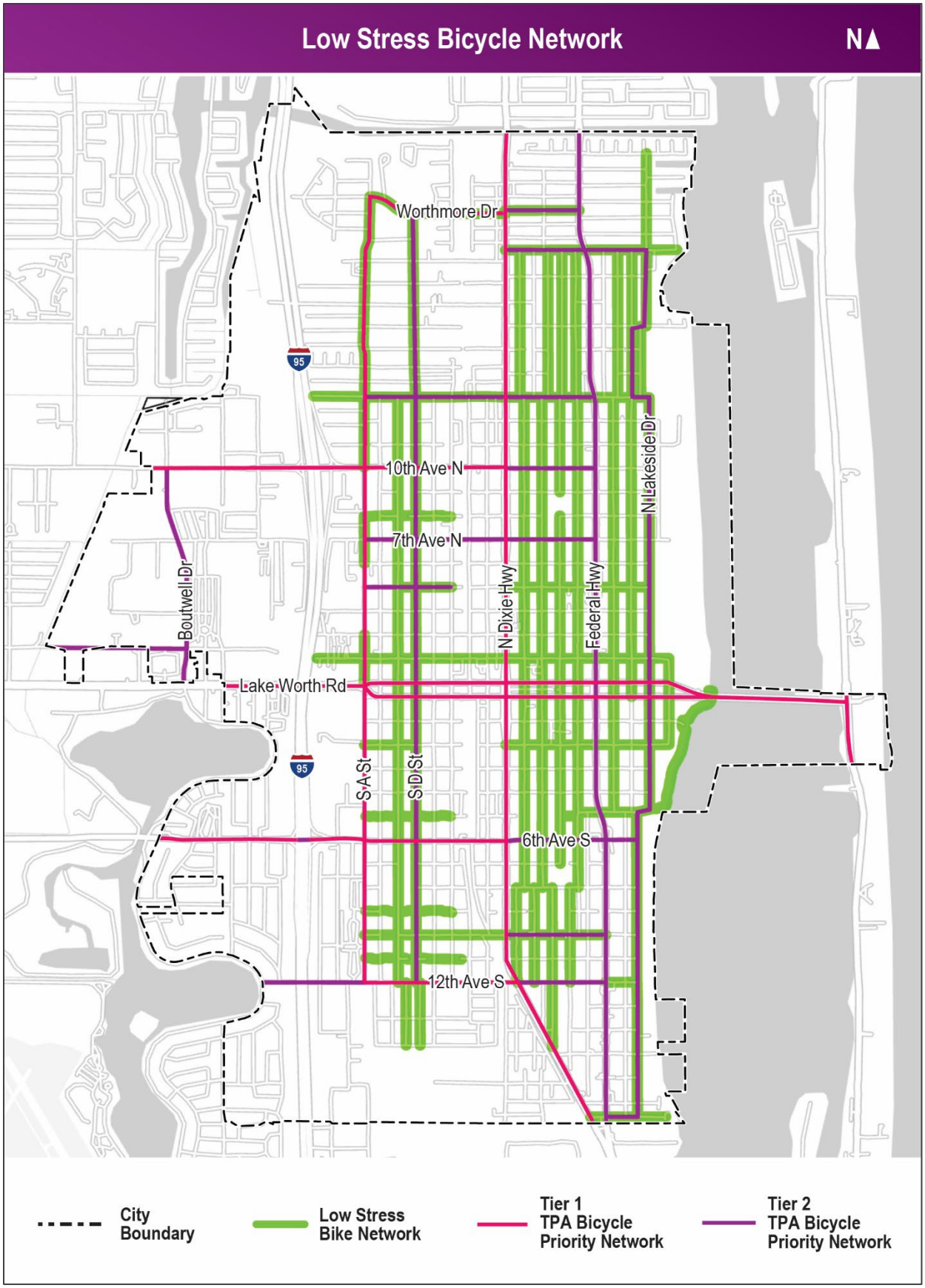
Low-Stress Bicycle Network (LSBN)

As previously stated, the HIN was utilized as a broad measure of roadway safety for the City. Conveniently, the methodology for the HIN creates the opportunity for inverse GIS analysis to identify roadways with the least amount and least severe crashes. For the purposes of the mobility plan, the team utilized the inverse HIN analysis to identify roadway candidates for the Low-Stress Bicycle Network.



Methodology: LSBN's typically identify roadways where bicyclists will experience the least amount of stress related to the transportation environment. Stress is often enumerated in this sense by traffic, especially average annual daily traffic (AADT). However, AADT's were not available for every roadway within the City. Therefore, alternative measures of stress had to be utilized. To this end, Posted Speed Limit and Number of Lanes were used. Roadways with posted speeds less than or equal to 25 Miles Per Hour and less than or equal to 2 lanes were isolated from the inverse HIN roadway analysis. At this point in the analysis workflow, all roadways not under ownership by the City were removed from the dataset. This was done to identify roadways that the City could plan for with greater autonomy. Last, from the remaining roadways that connected to Tier 1 and Tier 2 of the TPA's Bicycle Priority Network (BPN) were selected. This is to ensure that the City's LSBN will have future connectivity to the County's BPN.

The results of the LSBN analysis identified 37 roadways within the City. To review, all 37 roadways are under control of the City and connect to the TPAs BPN. Additionally, these are all roadways that have 2 or less lanes and have posted speed limits of 25 or less. The network includes off-roadway network connectivity to the Bryant Park Loop, and the 5th, 8th, 9th, and 11th Avenue footpaths.


Low Stress Bicycle Network
N
Worthmore Dr
95
10th Ave N
7th Ave N
Boutwell Dr
N Dixie Hwy
Federal Hwy
N Lakeside Dr
Lake Worth Rd
95
S A St
S D St
6th Ave S
12th Ave S
City Boundary
Low Stress Bike Network
Tier 1 TPA Bicycle Priority Network
Tier 2 TPA Bicycle Priority Network

E-Bicycles

To date, most planning guidance concerning e-bikes relates to increased demand for standard bicycle infrastructure no matter the source of power. The main planning issues regarding e-bikes are their higher speeds, ability to travel longer distances, and parking needs.

Methodology: This plan recommends encouraging the use of electric bicycles as an affordable mode for commuting and everyday trips. While e-bikes can use the low-stress network lanes, there are special considerations.

- Begin to build an e-bike network with east-west links connecting residential areas to downtown. As shown in the LSBN map, the TPA lists an east-west connector on 10th Street and Lake Worth Road that extend to the city limits. On Lake Worth Road, consider working with the County and TPA to extend an electric bikeway concept west to Palm Beach State college.
- This configuration also establishes a "first-last mile" to transit recognizing the longer range for TriRail and bus access. This concept can also apply to e-scooters and transit riders.
- Because an e-bike network concept is unique and meets the funding criteria for federal grants, Lake Work Beach and the County would be well positioned for funding.
- The bikeway can follow FDOT's new "urban side path" design to elevate and combine walking and cycling lanes. While there are concerns about the speed differential among e-bikes, bicycles, and pedestrians, new studies show that e-bike riders tend to move at slower speed in mixed mode traffic.
- Consider more durable parking pods at the TriRail station and other locales to deter theft and provide protection for electronic bicycle parts.

TRANSIT

The future of transit is unfolding as TriRail and Palm Tran plan new and expanded services. Ridership on both Brightline and TriRail is growing, spurring more interest in rail in the region. Furthermore, the microtransit service (Circuit) introduces a new form of circulator for short rides. Palm Tran is investing in technology for traffic signal pre-emption and mobile apps for trip planning.

Increasing transit ridership is a regional goal, supported by several entities: the City of Lake Worth Beach, the TPA, and FDOT's South Florida Commuter Services.

The biggest opportunity area in planning for transit relates to transit oriented development at the TriRail Station and along Dixie Highway. South Florida Rail Transit Authority is planning to sell its TriRail commuter parking lot which will open up land for redevelopment. However, the station area includes affordable housing and commercial activities that would be displaced with parcel consolidation and development. The city currently has design concepts for TOD through the Lake Worth Transit-Oriented Development: The Citizens' Master Plan, though these are now 25 years old. Due to the radically different market conditions and regional growth, it's worth revisiting the plan and its recommendations.

EMERGING MOBILITY TECHNOLOGIES

Over the past 10 years, technologies that were identified as "emerging technologies" are now commonplace – ridehail, microtransit, and micromobility. The next generation of emerging mobility technologies includes the following.

Autonomous shuttles: Florida is home to several projects involving autonomous shuttles such as Jacksonville's Ultimate Urban Circulator (U2C) and Lake Nona's driverless transit service. West Palm Beach is currently exploring a fixed-route AV shuttle for its downtown. The technology has not advanced as quickly as first imagined, so a full-scale service is still years away. In planning routes, there are questions about whether the shuttles would operate more smoothly if they had their own dedicated lane. Whether buses and shuttles have a driver or not, dedicated lanes lead to better service and lower wait times.

EVTOLS or Advanced Air Mobility: Electric vertical takeoff and landing (eVTOL) vehicles are also being piloted across the country. As a result of their vertical takeoff similar to helicopters, they do not need runways for taking off and landing. In May, UrbanLink Air Mobility announced plans to launch an air taxi service in Miami by the summer of 2026. The current range is 100 miles. There are two types of landing pads: One is to use existing aviation facilities such as heliports or nearby airports such as Palm Beach County Park in Lantana. The second is vertiports or landing pads on top of buildings. Some of the near-term applications are short regional flights and emergency response.

Augmented Reality: The use of augmented reality for wayfinding is an emerging practice that can be used to better navigate trips made by walking and transit.

VII. Proposed Improvements

Implementation Framework

A city like Lake Worth Beach with dynamic and evolving needs requires a dynamic framework for implementation. To capture the essence of this future vision and considering best practices, five pillars were chosen to guide the project selection process: Safety, Access, Equity, Sustainability and Funding.

- **Safety** targets facilities with most crashes, preventing accidents and injuries and increasing user comfort.
- **Access** promotes inclusivity by providing equal opportunities for reaching essential services and common destinations.
- **Equity** aims to ensure fairness in access to transportation resources for all communities using data from federal agencies that identify vulnerabilities by census tract.
- **Sustainability** focuses on eco-friendly transportation and resource conservation for long-term viability.
- **Funding** is essential for building, maintaining, and improving the transportation network and ensures that locations align with essential criteria for grants.

These five pillars were each assigned equal prioritization weighting based on the role they play in defining the future of the City for ALL modes and users. This approach also ensures that the VRUs and the underrepresented residents within the City are at the forefront of the future of the City.

A total of 25 prioritization measures were selected to quantitatively assign scoring for locations across the City. These include but are not limited to USDOT Justice 40 classification, distance to schools, distance to bus stops, percent of population over 65 or under 18, percent minority, low transit ridership, air quality.

Target Areas & Corridors

TOP 25 INTERSECTIONS

A total of 916 intersections within the City limits were assigned a rank based on the prioritization measures chosen. Due to the nature of the data available, intersections tend to be hotspots for activity such as crash history, anecdotal feedback etc. As such, intersections were chosen to be evaluated. This resulted in identification of the City's top 25 intersections.

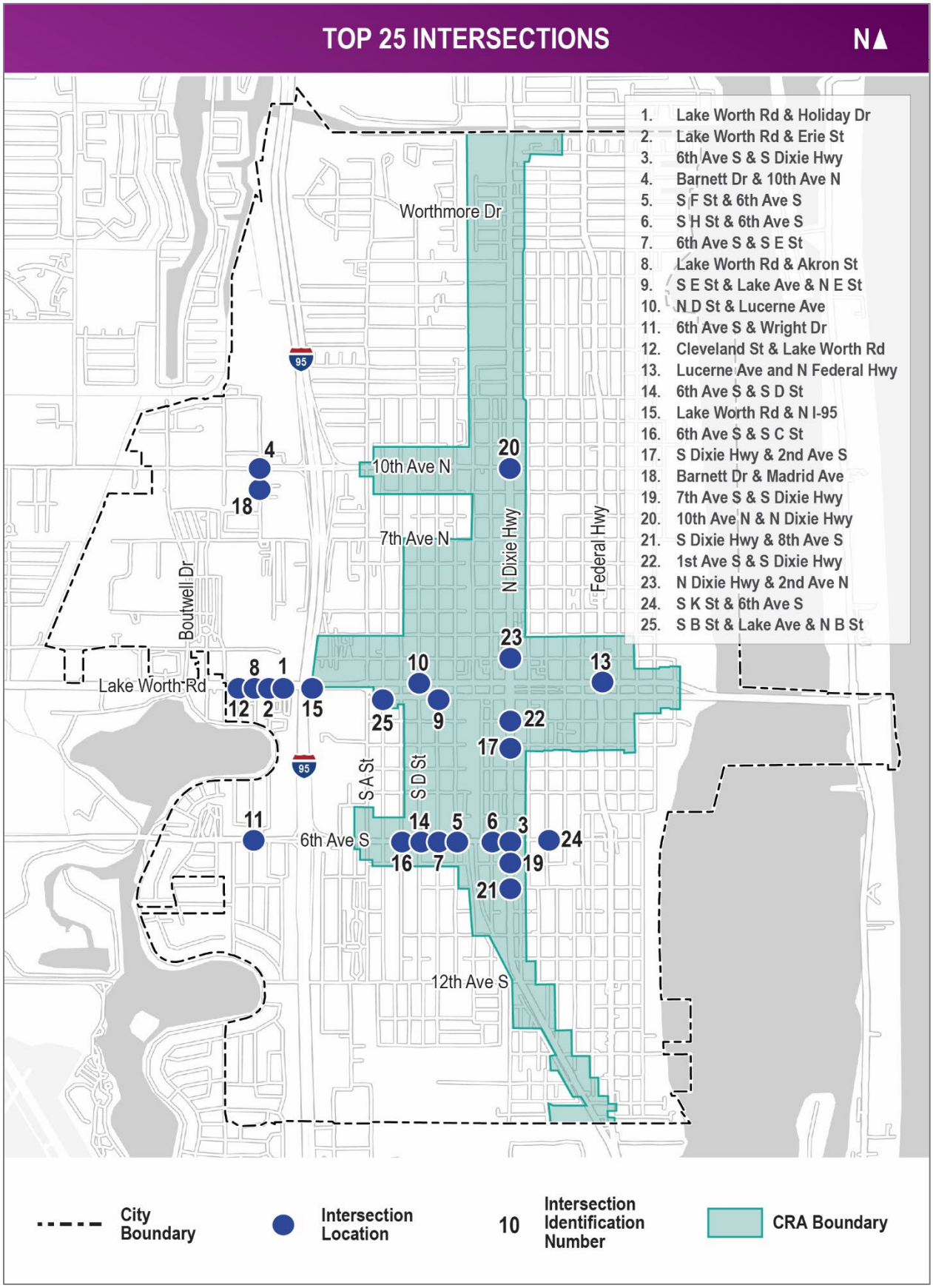
Intersection profiles identifying crash patterns, crash frequency, and crash severity were also created for these top 25 intersections. A crash studio style workshop was conducted internally to determine the most effective improvements at these locations from FHWA's list of proven safety countermeasures to address safety at these locations.

USDOT recognized in recent years that addressing safety inherently addresses mobility and access. For example, at the intersection of Lake Worth Road and Holiday Drive, installing a Pedestrian Hybrid Beacon (PHB) or Rectangular Rapid Flashing Beacons (RRFB) enhances safety. It also promotes north-south pedestrian connectivity across Lake Worth Road between residential and commercial land uses.

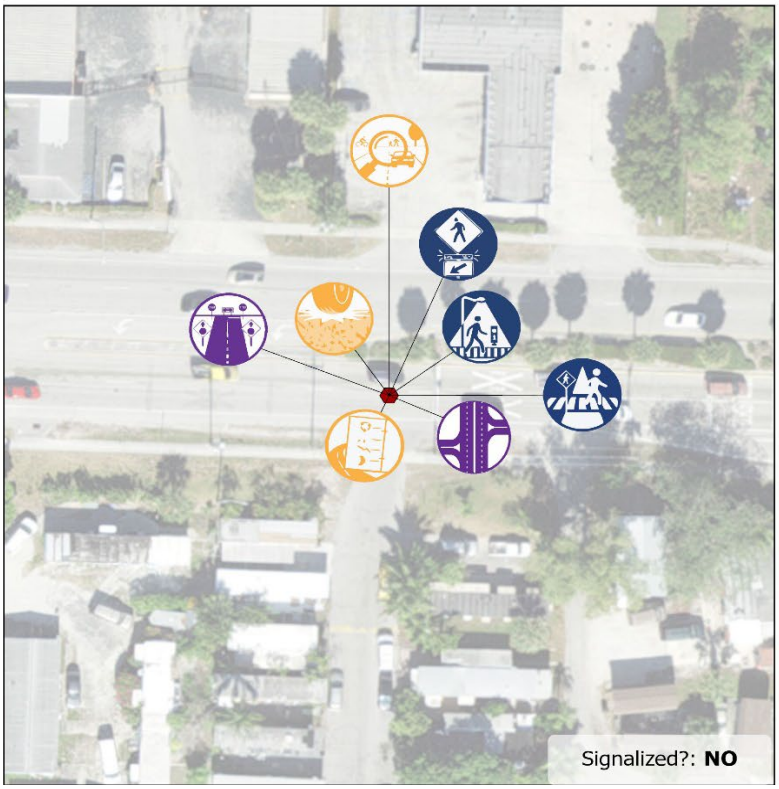
Below is a table summarizing which countermeasures are proposed for which intersection. The following pages contain a location map of all 25 intersections and illustrations of the intersection profiles along with the proven safety countermeasures for each location.

PROJECT OVERVIEW: TOP 25 INTERSECTIONS

#	Intersection	Speed Safety Cameras	Bicycle Lanes	Crosswalk Visibility Enhancements	Leading Pedestrian Interval	Medians and Pedestrian Refuge Islands	Pedestrian Hybrid Beacons	Road Diets (Roadway Reconfiguration)	Walkways	Longitudinal Rumble Strips and Stripes	Median Barriers	Backplates with Retroreflective Borders	Corridor Access Management	Dedicated Left- and Right-Turn Lanes at	Reduced Left-Turn Conflict Intersections	Systemic Application of Multiple Low-Cost	Yellow Change Intervals	Lighting	Local Road Safety Plans	Pavement Friction Management	Road Safety Audit
		3	3	14	7	11	7	0	5	2	2	5	21	3	8	6	3	17	15	1	7
1	Lake Worth Rd & Holiday Dr			X		X	X						X			X			X	X	X
2	Lake Worth Rd & Erie St					X							X		X	X			X		X
3	6th Ave S & S Dixie Hwy		X	X	X	X						X		X			X	X	X		X
4	Barnett Dr & 10th Ave N	X	X	X	X	X			X	X			X						X		X
5	S F St & 6th Ave S			X		X	X				X		X		X	X		X	X		
6	S H St & 6th Ave S			X		X	X		X		X		X		X	X		X	X		
7	6th Ave S & S E St												X					X			X
8	Lake Worth Rd & Akron St			X	X	X						X	X					X			
9	S E St & Lake Ave & N E St			X			X		X				X			X		X	X		
10	N D St & Lucerne Ave			X			X		X				X			X		X	X		
11	6th Ave S & Wright Dr												X		X				X		
12	Cleveland St & Lake Worth Rd												X					X			
13	Lucerne Ave and N Federal Hwy		X		X								X				X	X	X		
14	6th Ave S & S D St												X		X			X	X		X
15	Lake Worth Rd & N I-95	X		X	X							X					X	X			
16	6th Ave S & S C St					X							X		X			X	X		X
17	S Dixie Hwy & 2nd Ave S			X									X								
18	Barnett Dr & Madrid Ave					X				X											
19	7th Ave S & S Dixie Hwy												X	X				X			
20	10th Ave N & N Dixie Hwy			X	X							X	X		X						
21	S Dixie Hwy & 8th Ave S	X				X							X	X	X			X	X		
22	1st Ave S & S Dixie Hwy					X	X		X				X					X			
23	N Dixie Hwy & 2nd Ave N			X	X							X	X								
24	S K St & 6th Ave S			X														X	X		
25	S B St & Lake Ave & N B St			X			X						X					X	X		


TOP 25 INTERSECTIONS
N
1. Lake Worth Rd & Holiday Dr
2. Lake Worth Rd & Erie St
3. 6th Ave S & S Dixie Hwy
4. Barnett Dr & 10th Ave N
5. S F St & 6th Ave S
6. S H St & 6th Ave S
7. 6th Ave S & S E St
8. Lake Worth Rd & Akron St
9. S E St & Lake Ave & N E St
10. N D St & Lucerne Ave
11. 6th Ave S & Wright Dr
12. Cleveland St & Lake Worth Rd
13. Lucerne Ave and N Federal Hwy
14. 6th Ave S & S D St
15. Lake Worth Rd & N I-95
16. 6th Ave S & S C St
17. S Dixie Hwy & 2nd Ave S
18. Barnett Dr & Madrid Ave
19. 7th Ave S & S Dixie Hwy
20. 10th Ave N & N Dixie Hwy
21. S Dixie Hwy & 8th Ave S
22. 1st Ave S & S Dixie Hwy
23. N Dixie Hwy & 2nd Ave N
24. S K St & 6th Ave S
25. S B St & Lake Ave & N B St
Worthmore Dr
10th Ave N
7th Ave N
N Dixie Hwy
Federal Hwy
Boutwell Dr
Lake Worth Rd
6th Ave S
12th Ave S
S A St
S D St
95
City Boundary
Intersection Location
10 Intersection Identification Number
CRA Boundary

Proven Countermeasures for Lake Worth Rd & Holiday Dr (#1)



PEDESTRIAN / BICYCLIST

- Crosswalk Visibility Enhancements
- Rectangular Rapid Flashing or Pedestrian Hybrid Beacons (RRFB/ PHP)
- Medians and Pedestrian Refuge Islands

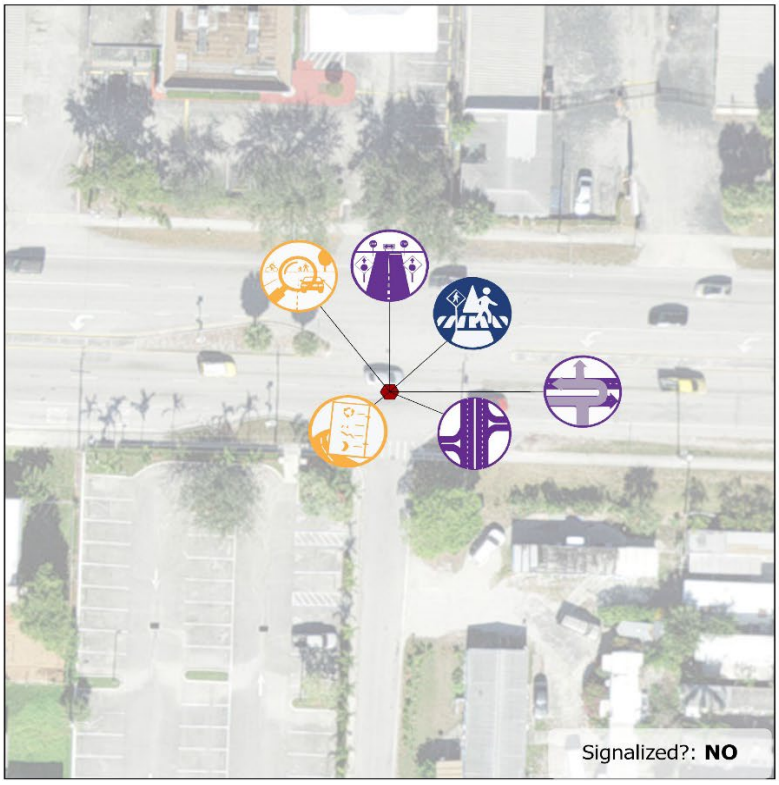
INTERSECTIONS

- Systemic Application of Multiple Low-Cost Countermeasures
- Corridor Access Management

CROSSCUTTING

- Road Safety Audit
- Pavement Friction Management
- Local Road Safety Plans

Proven Countermeasures for Lake Worth Rd & Erie St (#2)



PEDESTRIAN / BICYCLIST

- Medians and Pedestrian Refuge Islands

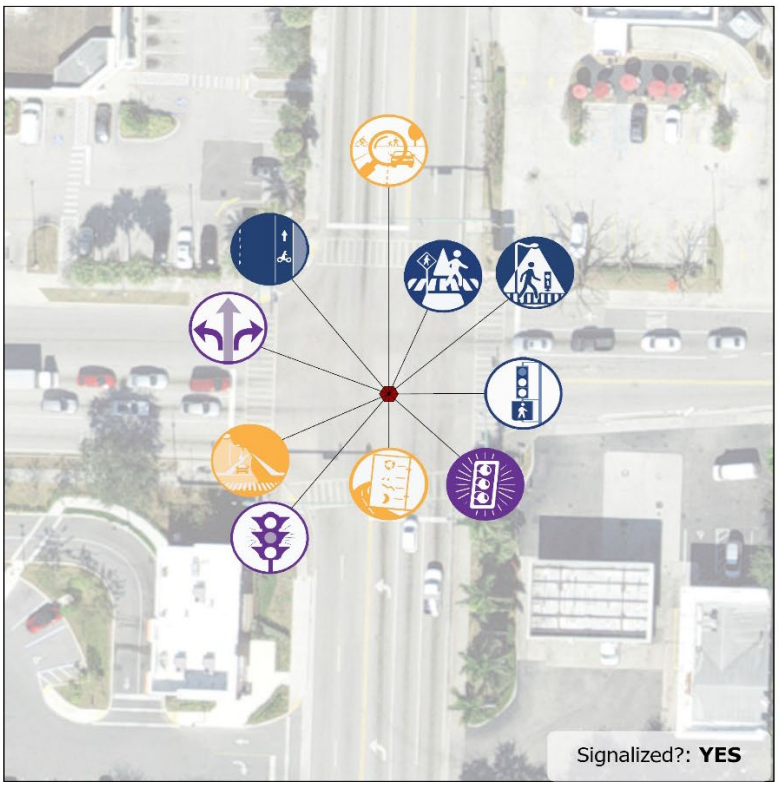
INTERSECTIONS

- Systemic Application of Multiple Low-Cost Countermeasures
- Reduced Left-Turn Conflict Intersections
- Corridor Access Management

CROSSCUTTING

- Road Safety Audit
- Local Road Safety Plans

Proven Countermeasures for 6th Ave S & S Dixie Hwy (#3)



PEDESTRIAN / BICYCLIST

- Crosswalk Visibility Enhancements
- Medians and Pedestrian Refuge Islands
- Leading Pedestrian Interval
- Bicycle Lanes

INTERSECTIONS

- Yellow Change Intervals
- Dedicated Left- and Right-Turn Lanes at Intersections
- Backplates with Retroreflective Borders

CROSSCUTTING

- Road Safety Audit
- Lighting
- Local Road Safety Plans

Proven Countermeasures for Barnett Dr & 10th Ave N (#4)

SPEED MANAGEMENT

- Speed Safety Cameras

PEDESTRIAN / BICYCLIST

- Crosswalk Visibility Enhancements
- Walkways
- Medians and Pedestrian Refuge Islands
- Leading Pedestrian Interval
- Bicycle Lanes

ROADWAY DEPARTURE

- Longitudinal Rumble Strips and Stripes on Two-Lane Roads

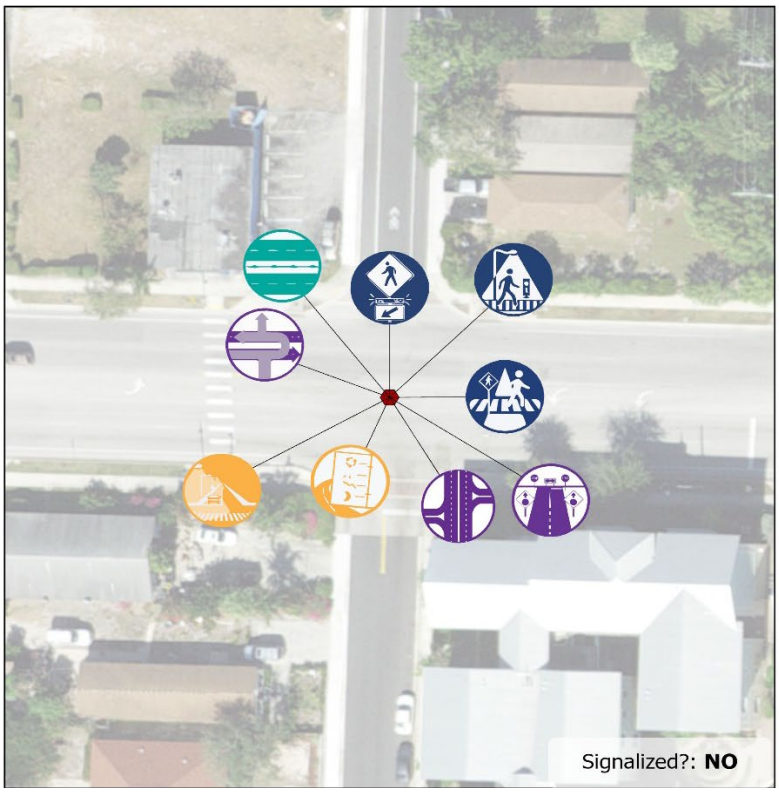
INTERSECTIONS

- Corridor Access Management

CROSSCUTTING

- Road Safety Audit
- Local Road Safety Plans

Proven Countermeasures for S F St & 6th Ave S (#5)



PEDESTRIAN / BICYCLIST

- Crosswalk Visibility Enhancements
- Rectangular Rapid Flashing or Pedestrian Hybrid Beacons (RRFB/ PHP)
- Medians and Pedestrian Refuge Islands

ROADWAY DEPARTURE

- Median Barriers

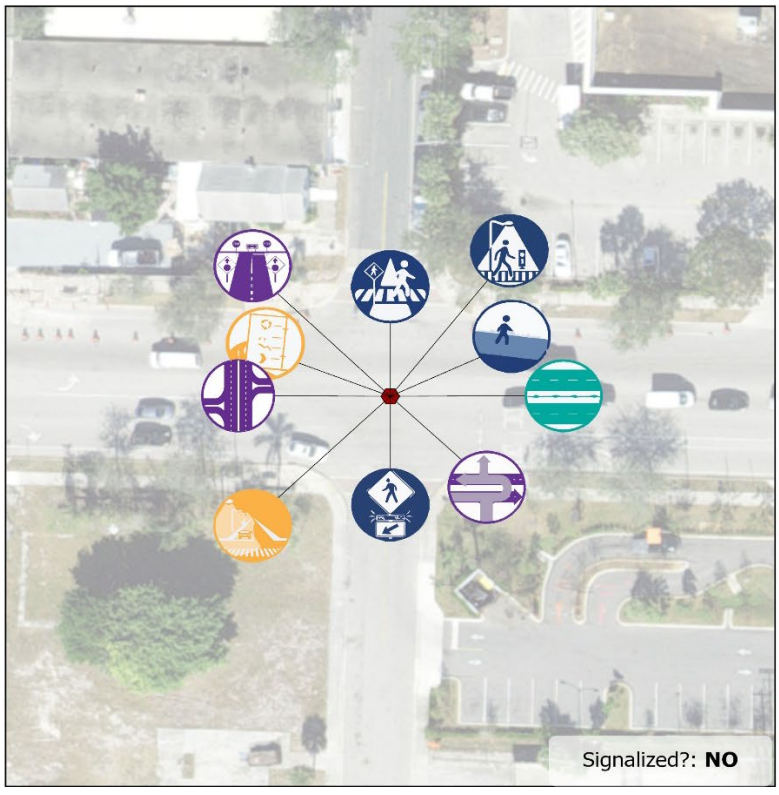
INTERSECTIONS

- Systemic Application of Multiple Low-Cost Countermeasures
- Reduced Left-Turn Conflict Intersections
- Corridor Access Management

CROSSCUTTING

- Lighting
- Local Road Safety Plans

Proven Countermeasures for S H St & 6th Ave S (#6)



PEDESTRIAN / BICYCLIST

- Crosswalk Visibility Enhancements
- Walkways
- Rectangular Rapid Flashing or Pedestrian Hybrid Beacons (RRFB/ PHP)
- Medians and Pedestrian Refuge Islands

ROADWAY DEPARTURE

- Median Barriers

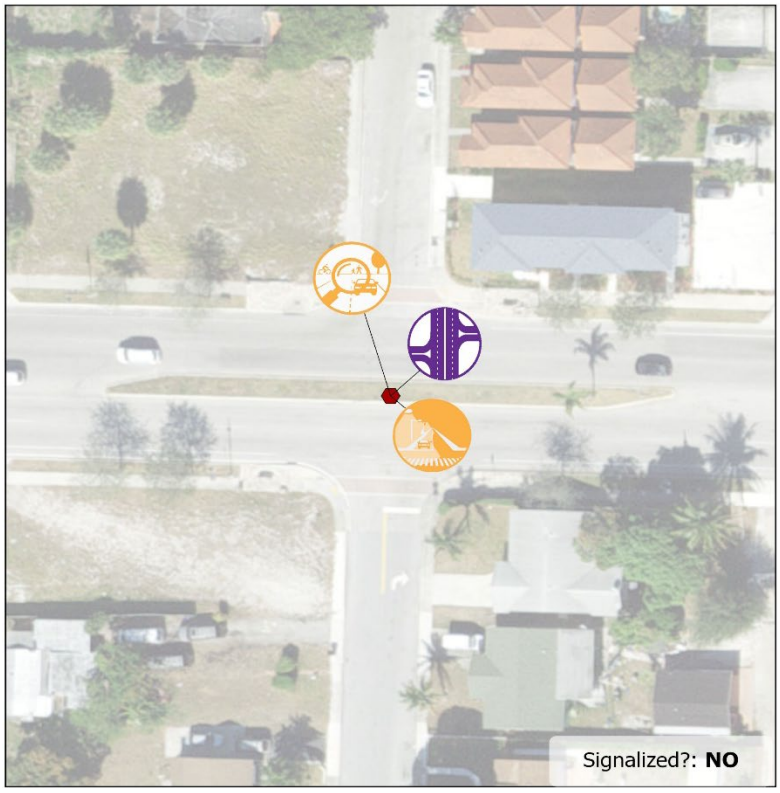
INTERSECTIONS

- Systemic Application of Multiple Low-Cost Countermeasures
- Reduced Left-Turn Conflict Intersections
- Corridor Access Management

CROSSCUTTING

- Lighting
- Local Road Safety Plans

Proven Countermeasures for 6th Ave S & S E St (#7)



INTERSECTIONS

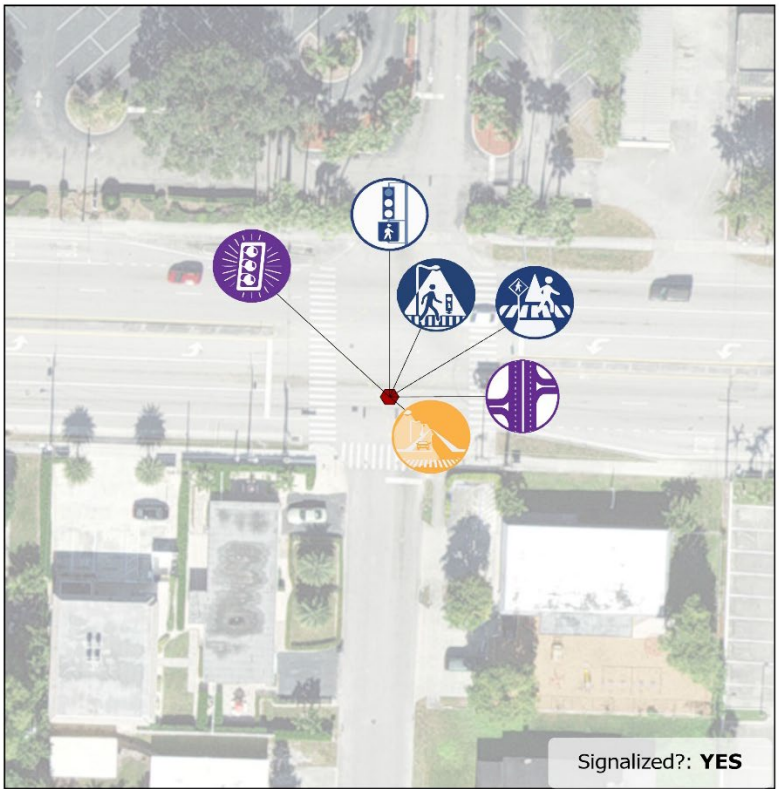
Corridor Access Management

CROSSCUTTING

Road Safety Audit

Lighting

Proven Countermeasures for Lake Worth Rd & Akron St (#8)



PEDESTRIAN / BICYCLIST

Crosswalk Visibility Enhancements

Medians and Pedestrian Refuge Islands

Leading Pedestrian Interval

INTERSECTIONS

Corridor Access Management

Backplates with Retroreflective Borders

CROSSCUTTING

Lighting

Proven Countermeasures for S E St & Lake Ave & N E St (#9)

PEDESTRIAN / BICYCLIST

- Crosswalk Visibility Enhancements
- Walkways
- Rectangular Rapid Flashing or Pedestrian Hybrid Beacons (RRFB/ PHP)

INTERSECTIONS

- Systemic Application of Multiple Low-Cost Countermeasures
- Corridor Access Management

CROSSCUTTING

- Lighting
- Local Road Safety Plans

Proven Countermeasures for N D St & Lucerne Ave (#10)

PEDESTRIAN / BICYCLIST

- Crosswalk Visibility Enhancements
- Walkways
- Rectangular Rapid Flashing or Pedestrian Hybrid Beacons (RRFB/ PHP)

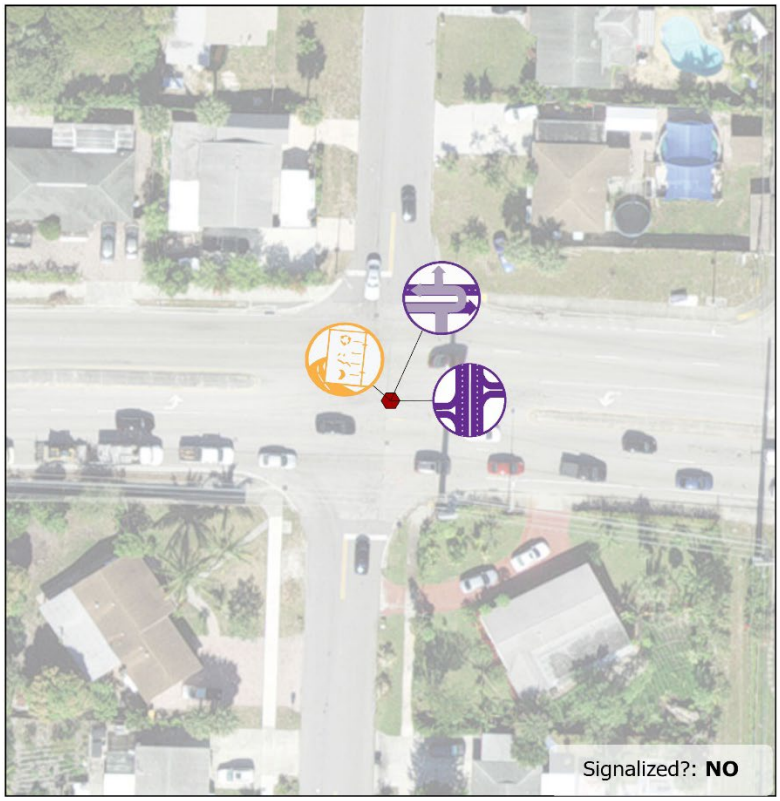
INTERSECTIONS

- Systemic Application of Multiple Low-Cost Countermeasures
- Corridor Access Management

CROSSCUTTING

- Lighting
- Local Road Safety Plans

Proven Countermeasures for 6th Ave S & Wright Dr (#11)



INTERSECTIONS

Reduced Left-Turn Conflict Intersections

Corridor Access Management

CROSSCUTTING

Local Road Safety Plans

Proven Countermeasures for Cleveland St & Lake Worth Rd (#12)

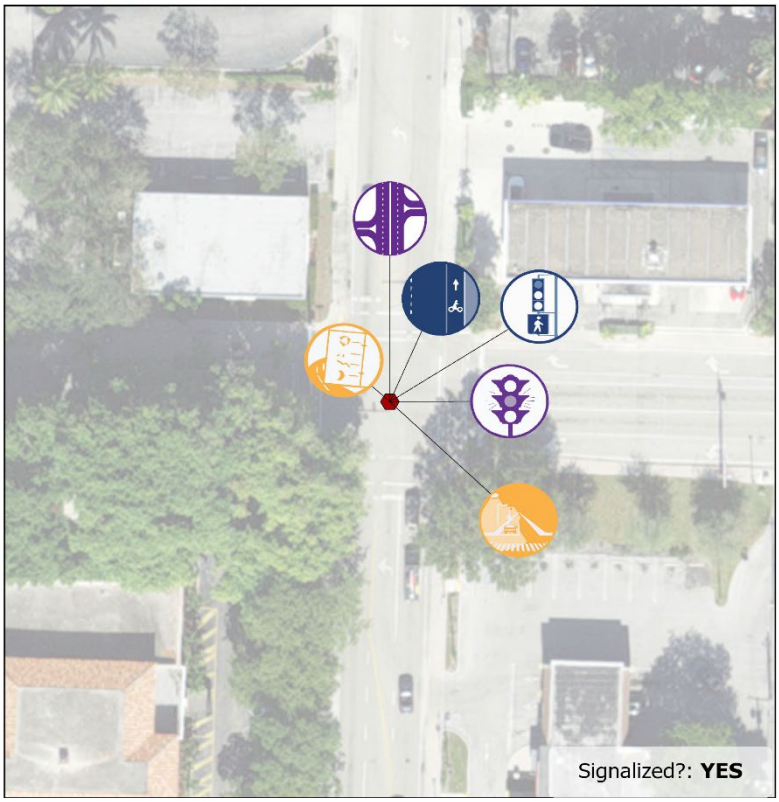
INTERSECTIONS

Corridor Access Management

CROSSCUTTING

Lighting

Proven Countermeasures for Lucerne Ave & N Federal Hwy (#13)



PEDESTRIAN / BICYCLIST

- Leading Pedestrian Interval
- Bicycle Lanes

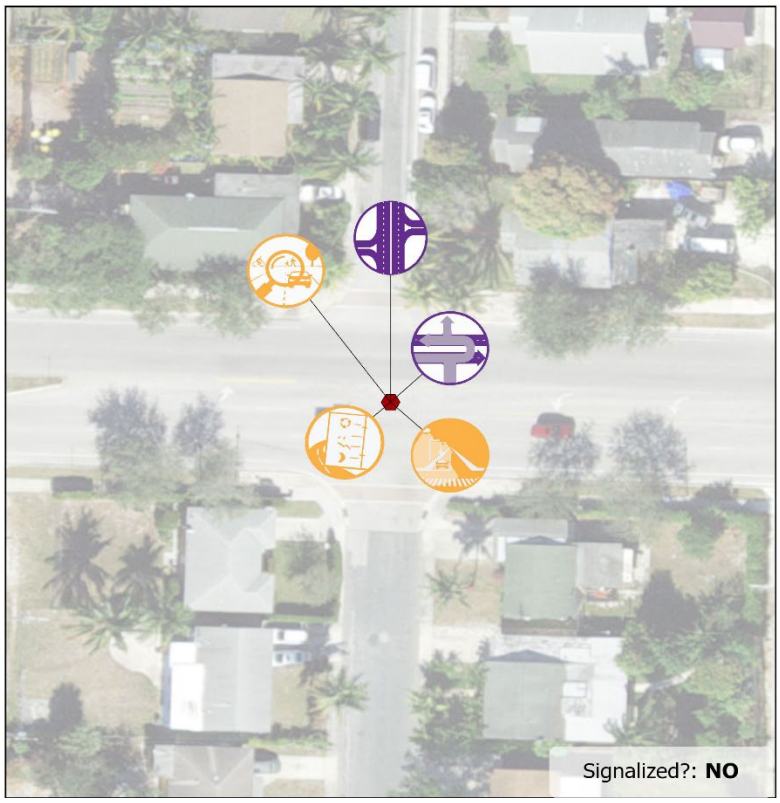
INTERSECTIONS

- Yellow Change Intervals
- Corridor Access Management

CROSSCUTTING

- Lighting
- Local Road Safety Plans

Proven Countermeasures for 6th Ave S & S D St (#14)



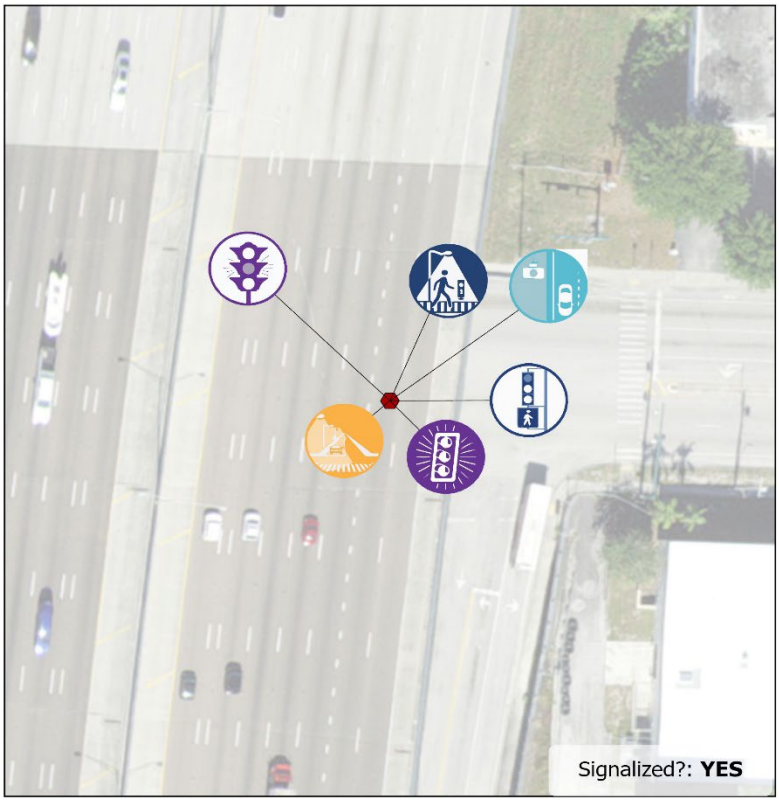
INTERSECTIONS

- Reduced Left-Turn Conflict Intersections
- Corridor Access Management

CROSSCUTTING

- Road Safety Audit
- Lighting
- Local Road Safety Plans

Proven Countermeasures for Lake Worth Rd & N I-95 (#15)



SPEED MANAGEMENT

Speed Safety Cameras

PEDESTRIAN / BICYCLIST

Crosswalk Visibility Enhancements

Leading Pedestrian Interval

INTERSECTIONS

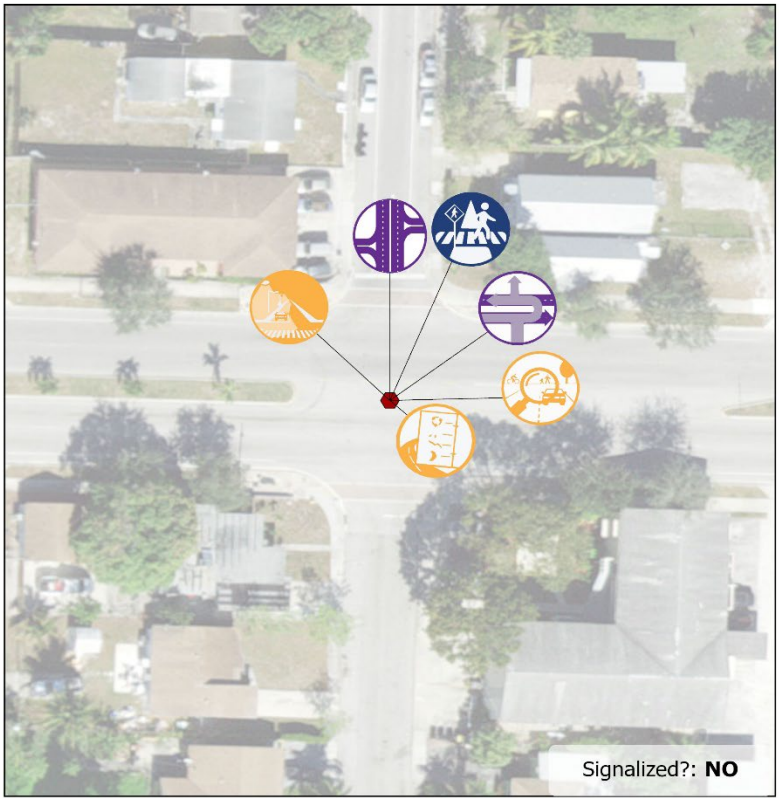
Yellow Change Intervals

Backplates with Retroreflective Borders

CROSSCUTTING

Lighting

Proven Countermeasures for 6th Ave S & S C St (#16)



PEDESTRIAN / BICYCLIST

Medians and Pedestrian Refuge Islands

INTERSECTIONS

Reduced Left-Turn Conflict Intersections

Corridor Access Management

CROSSCUTTING

Road Safety Audit

Lighting

Local Road Safety Plans

Proven Countermeasures for S Dixie Hwy & 2nd Ave S (#17)

PEDESTRIAN / BICYCLIST

Crosswalk Visibility Enhancements

INTERSECTIONS

Corridor Access Management

Proven Countermeasures for Barnett Dr & Madrid Ave (#18)

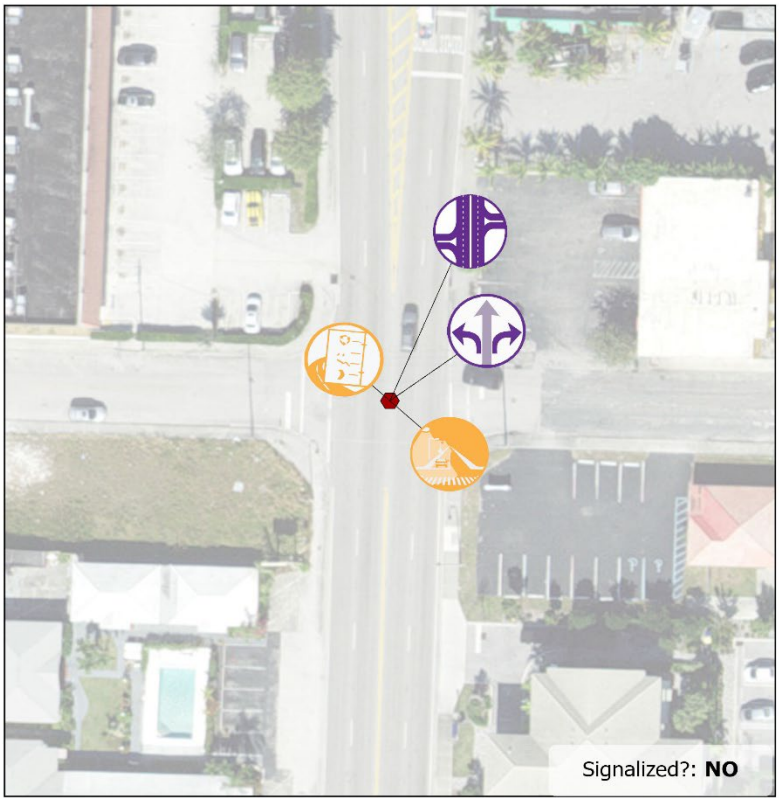
PEDESTRIAN / BICYCLIST

Medians and Pedestrian Refuge Islands

ROADWAY DEPARTURE

Longitudinal Rumble Strips and Stripes on Two-Lane Roads

Proven Countermeasures for 7th Ave S & S Dixie Hwy (#19)



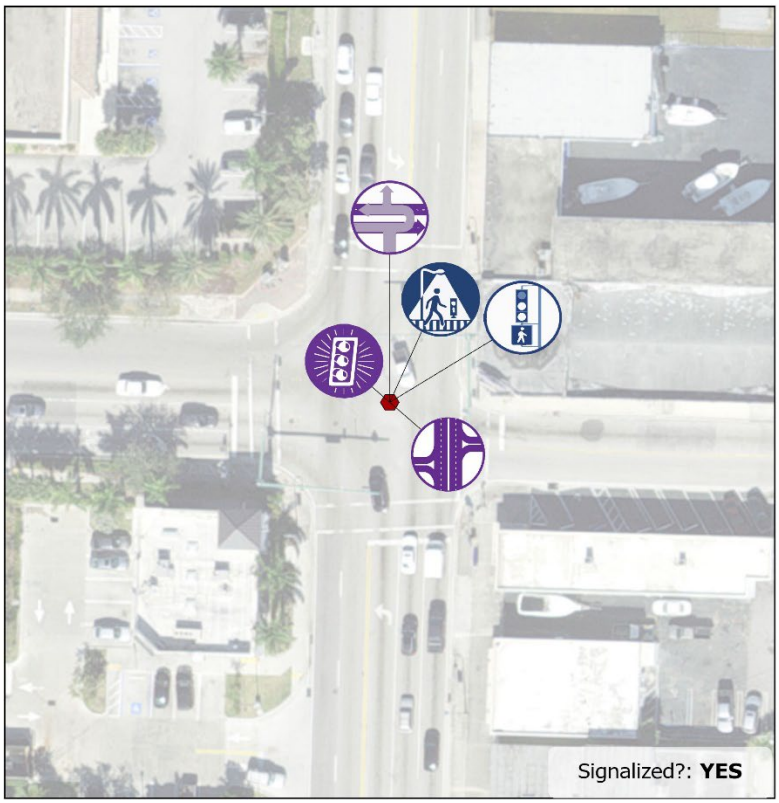
INTERSECTIONS

- Dedicated Left- and Right-Turn Lanes at Intersections
- Corridor Access Management

CROSSCUTTING

- Lighting
- Local Road Safety Plans

Proven Countermeasures for 10th Ave N & N Dixie Hwy (#20)



PEDESTRIAN / BICYCLIST

- Crosswalk Visibility Enhancements
- Leading Pedestrian Interval

INTERSECTIONS

- Reduced Left-Turn Conflict Intersections
- Corridor Access Management
- Backplates with Retroreflective Borders

Proven Countermeasures for S Dixie Hwy & 8th Ave S (#21)

SPEED MANAGEMENT

Speed Safety Cameras

PEDESTRIAN / BICYCLIST

Medians and Pedestrian Refuge Islands

INTERSECTIONS

Reduced Left-Turn Conflict Intersections

Dedicated Left- and Right-Turn Lanes at Intersections

Corridor Access Management

CROSSCUTTING

Lighting

Proven Countermeasures for 1st Ave S & S Dixie Hwy (#22)

PEDESTRIAN / BICYCLIST

Walkways

Rectangular Rapid Flashing or Pedestrian Hybrid Beacons (RRFB/ PHP)

Medians and Pedestrian Refuge Islands

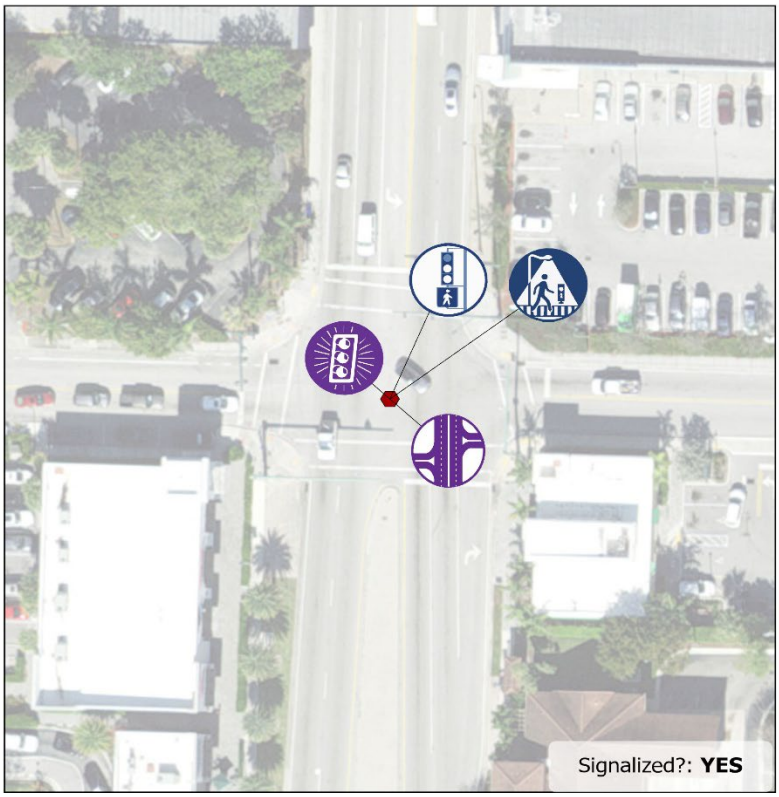
INTERSECTIONS

Corridor Access Management

CROSSCUTTING

Lighting

Proven Countermeasures for N Dixie Hwy & 2nd Ave N (#23)



PEDESTRIAN / BICYCLIST

Crosswalk Visibility Enhancements

Leading Pedestrian Interval

INTERSECTIONS

Corridor Access Management

Backplates with Retroreflective Borders

Proven Countermeasures for S K St & 6th Ave S (#24)

PEDESTRIAN / BICYCLIST

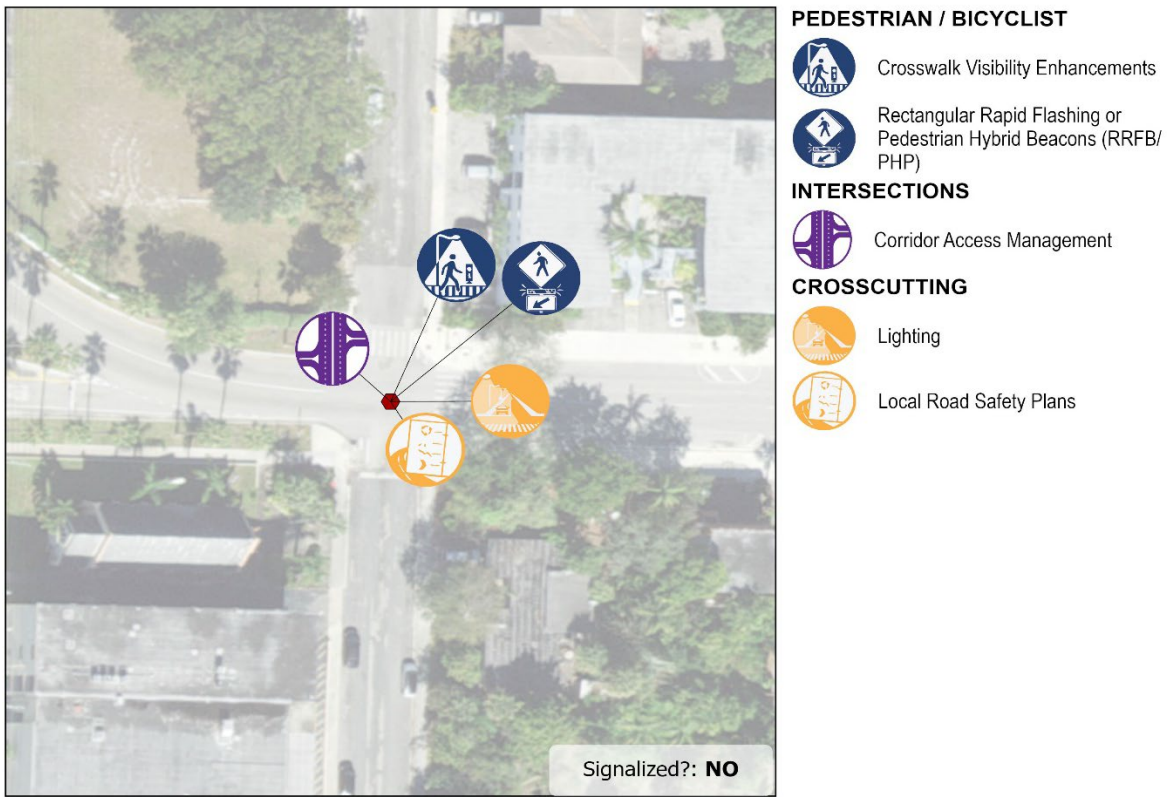
Crosswalk Visibility Enhancements

CROSSCUTTING

Lighting

Local Road Safety Plans

Proven Countermeasures for S B St & Lake Ave & N B St (#25)

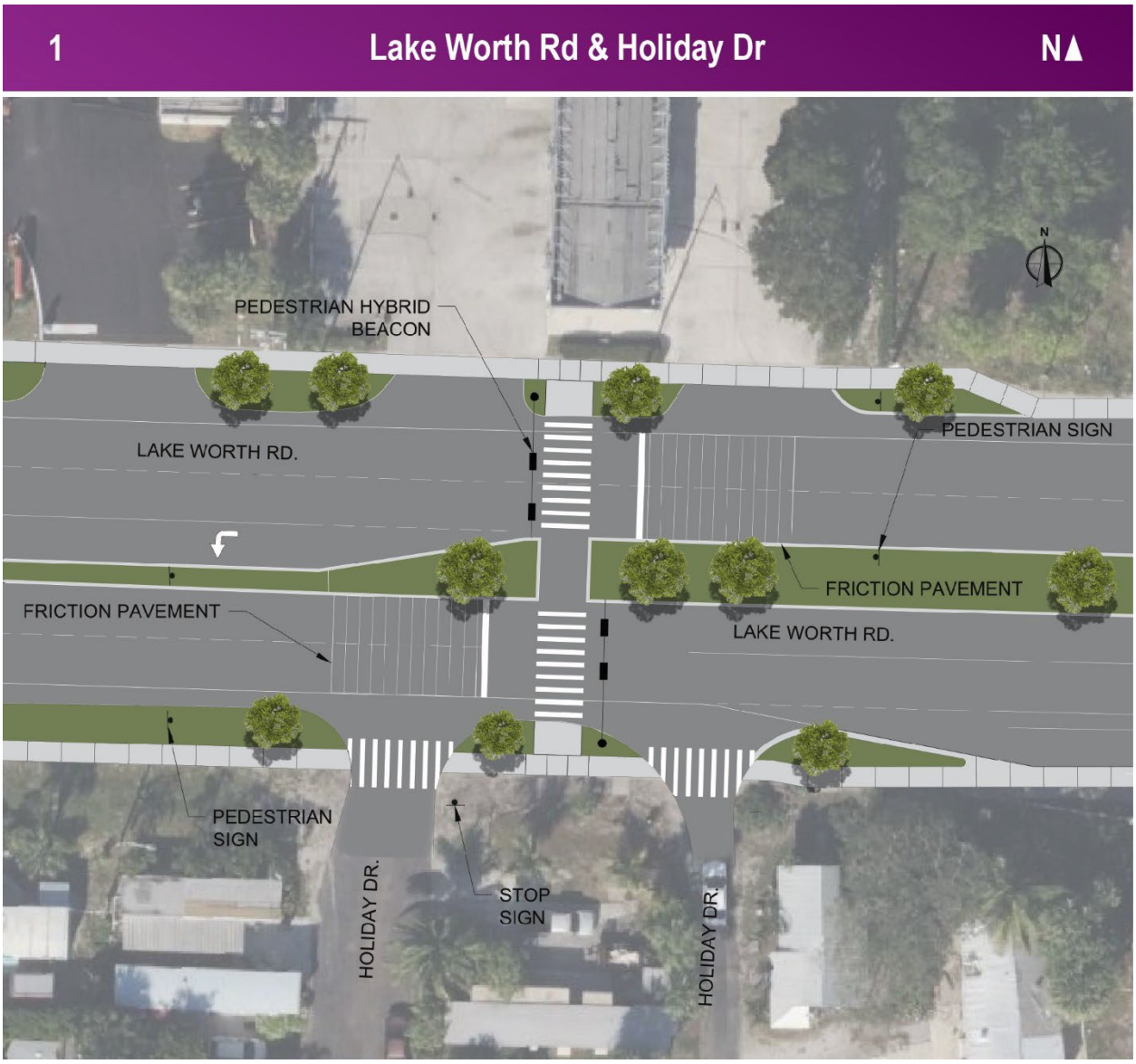


Proposed Redesign

Three intersections were chosen to showcase what they would look and function like once the countermeasures were applied. The three intersections include

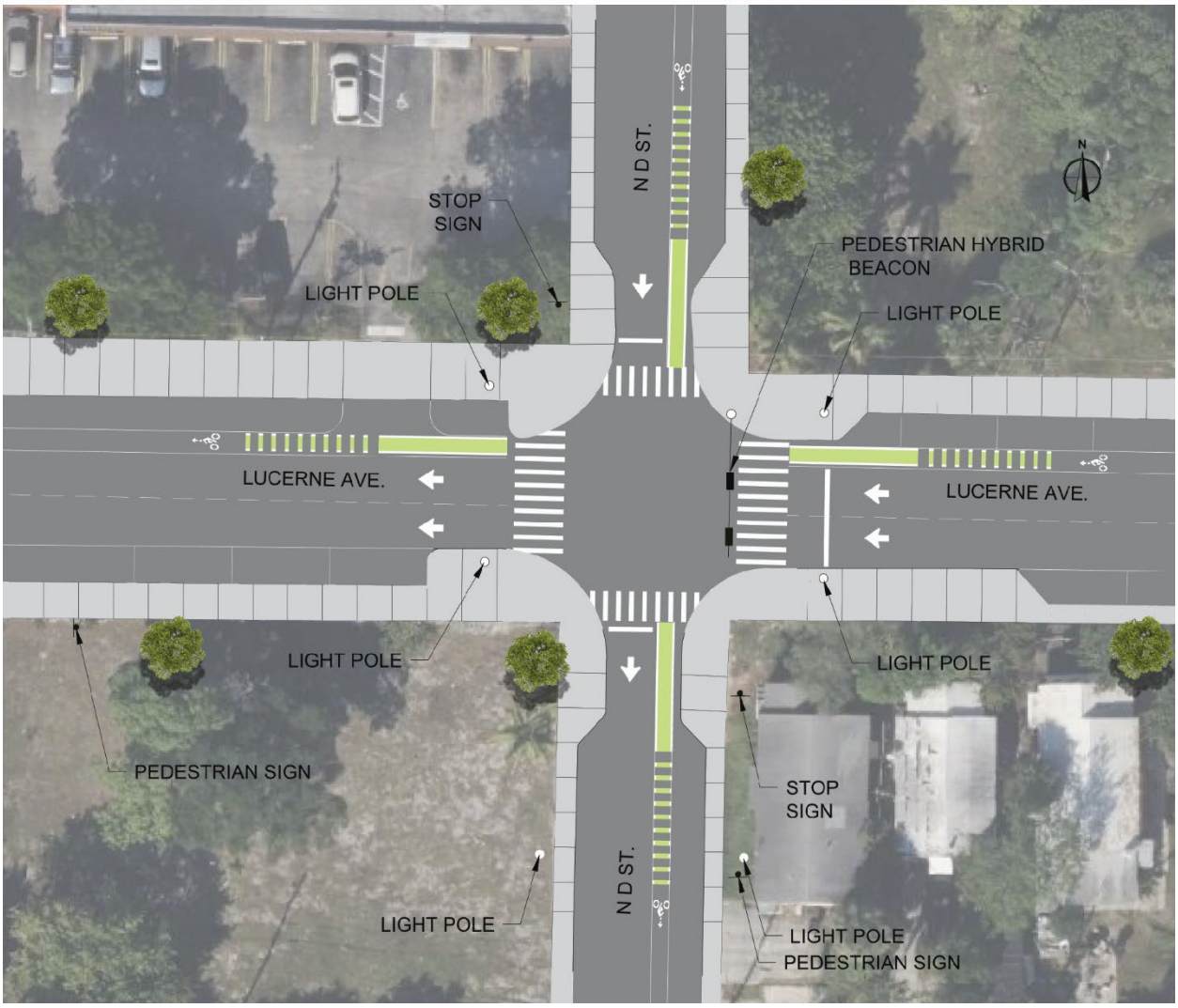
- Lake Worth Rd and Holiday Dr
- Lucerne Ave and N D St
- S H St and 6th Ave S

These are shown on the following three pages.



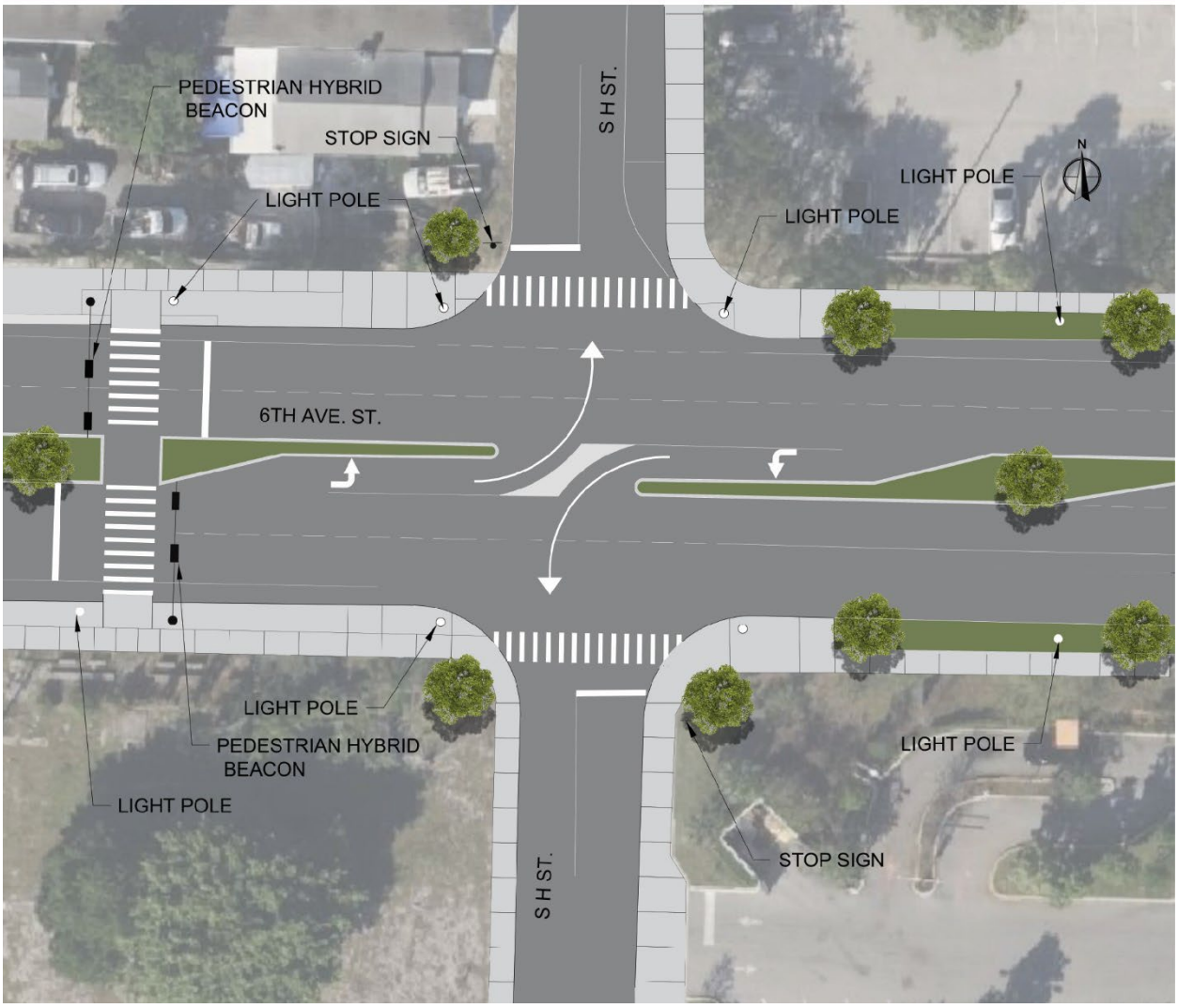
This site plan shows what the Lake Worth Road and Holiday Drive intersection would look like if the identified countermeasures were implemented. The plan shows improved, high-visibility crosswalks for pedestrians crossing Lake Worth Road or Holiday Drive. The crosswalk across Lake Worth Road is further enhanced with pedestrian hybrid beacon lights warning oncoming traffic that pedestrians are crossing. The median has been reconfigured to include a protected mid-block pedestrian refuge. Finally, friction pavement has been applied to warn drivers approaching the crosswalk that they need to slow down.

10 Lucerne Ave & N D St



This site plan shows improvements to the intersection of Lucerne Ave and N D St. Pedestrian improvements include a new sidewalk along N D Street south of the intersection, new high-visibility crosswalks, and upgraded lighting. A new pedestrian beacon light has been installed to further improve pedestrian safety when crossing Lucerne Ave. New green paint has been added to the bike lanes to heighten their awareness to drivers turning at the intersection.

6 S H ST & 6th Ave S



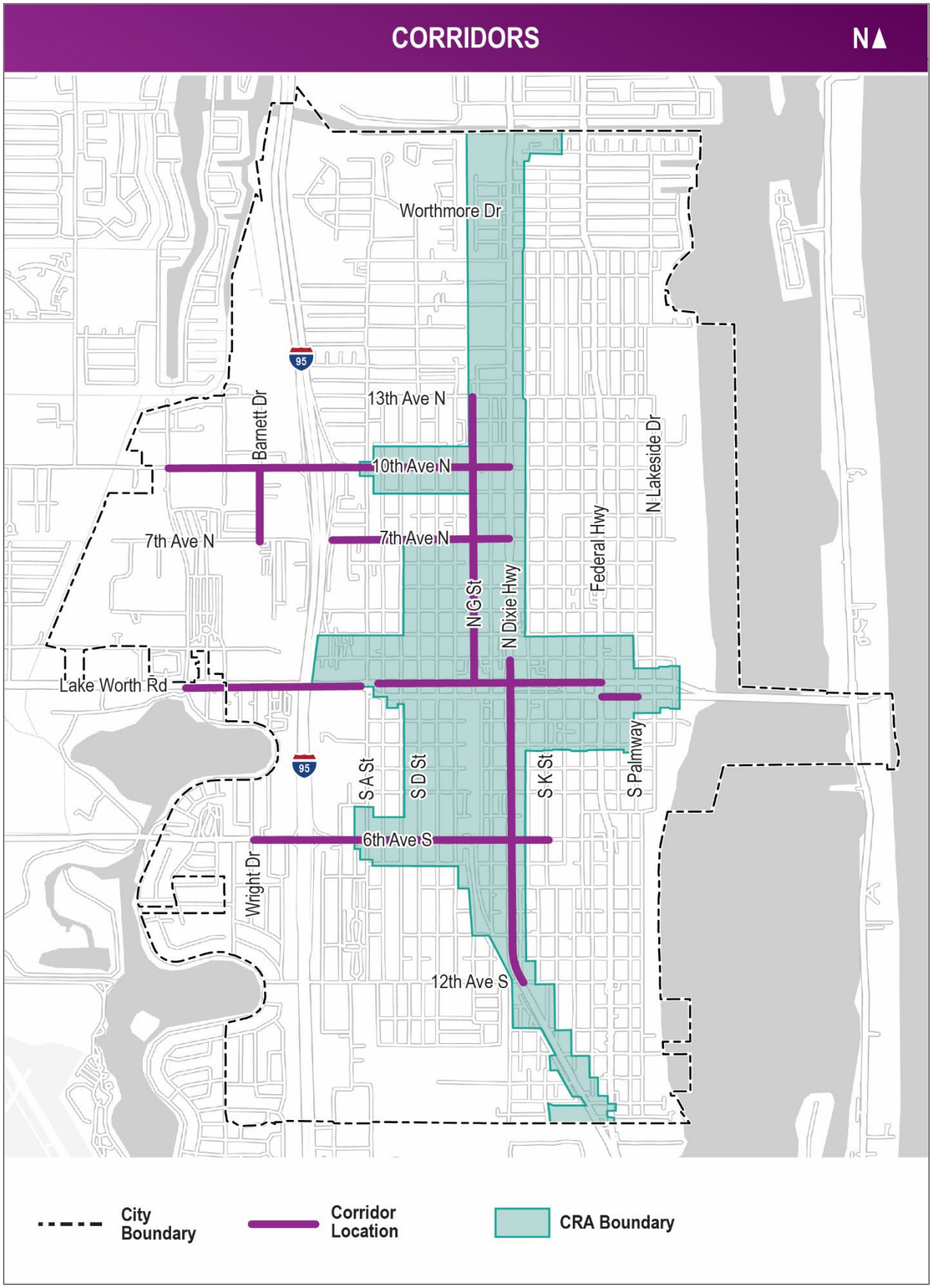
Improvements shown in this site plan include the addition of a median. The median provides additional greenery, prevents straight through traffic, and creates a place for a pedestrian refuge island. Other improvements include upgraded lighting, new high-visibility crosswalks, and a pedestrian beacon light.

CORRIDORS

Ten corridors were identified in the plan for improvements. When two or more adjacent intersections on a corridor warranted improvements, the corresponding corridor was identified as a potential candidate for a project. The table below shows which projects were identified for each corridor and the map showcases each corridor's location within the City.

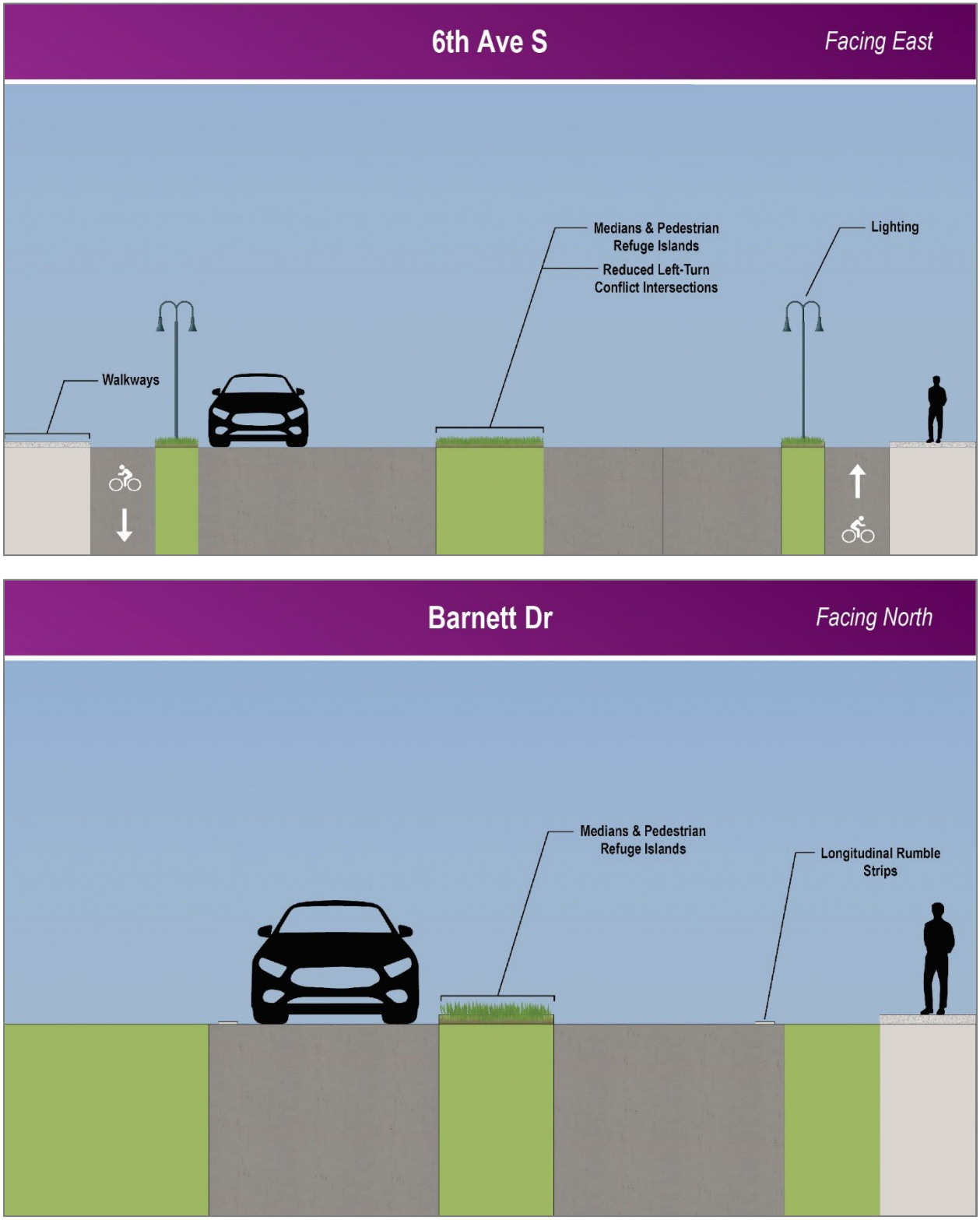
PROJECT OVERVIEW: CORRIDORS

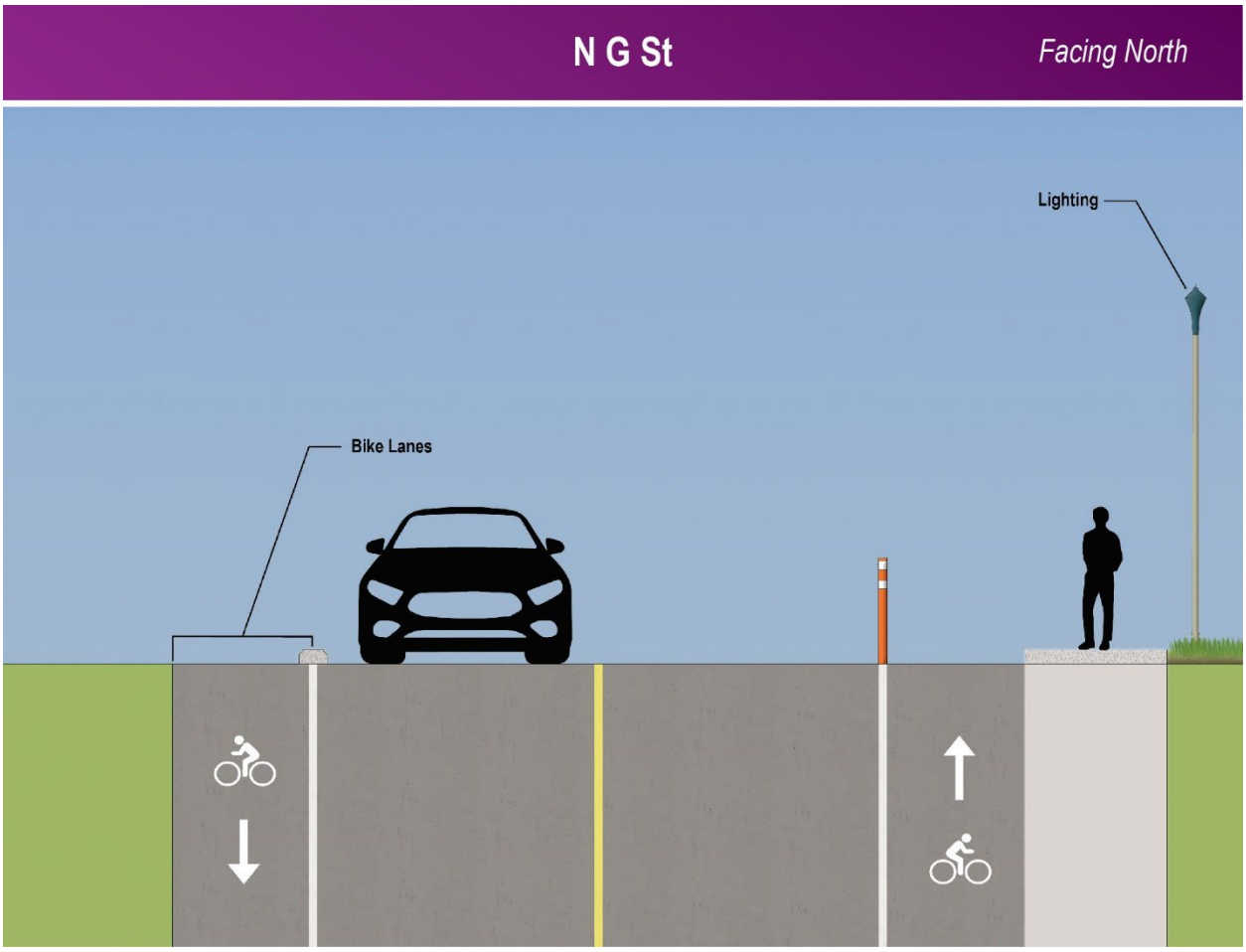
Corridor	Speed Safety Cameras	Bicycle Lanes	Crosswalk Visibility Enhancements	Leading Pedestrian Interval	Medians and Pedestrian Refuge Islands	Pedestrian Hybrid Beacons	Road Diets (Roadway Reconfiguration)	Walkways	Longitudinal Rumble Strips and Stripes	Median Barriers	Backplates with Retroreflective Borders	Corridor Access Management	Dedicated Left- and Right-Turn Lanes at	Reduced Left-Turn Conflict Intersections	Systemic Application of Multiple Low-Cost	Yellow Change Intervals	Lighting	Local Road Safety Plans	Pavement Friction Management	Road Safety Audit
	0	1	0	0	0	0	2	4	1	1	0	0	0	0	0	0	5	10	0	10
Dixie Highway (2nd Ave N - 12th Ave S)										X							X	X		X
6th Ave S (Wright Dr - S K St)							X	X									X	X		X
Lucerne Ave (S A St Roundabout - N Federal Hwy)								X									X	X		X
10th Ave N (Boutwell Rd - N Dixie Hwy)								X										X		X
Lake Worth Rd (Lake Osborne Dr - I-95)							X										X	X		X
Barnett Dr (7th Ave N - 10th Ave N)								X	X									X		X
Lake Ave (S Federal Hwy - S Palmway)																	X	X		X
N G St (Lake Ave - 13th Ave N)		X																X		X
7th Ave N (N A St - N Dixie Hwy)																		X		X
Lake Worth Rd (I-95 to S A St Roundabout																		X		X


CORRIDORS
N
Worthmore Dr
95
13th Ave N
Barnett Dr
10th Ave N
7th Ave N
7th Ave N
N G St
N Dixie Hwy
Federal Hwy
N Lakeside Dr
Lake Worth Rd
95
S A St
S D St
S K St
S Palmway
6th Ave S
Wright Dr
12th Ave S
City Boundary
Corridor Location
CRA Boundary

Proposed Redesign

The following cross sections illustrate the improvements recommended for each corridor.




N G St
Facing North
Lighting
Bike Lanes

Phasing & Implementation

This section outlines the general timeline for implementing and prioritizing the recommended countermeasures. Each of the countermeasures is given an implementation timeframe to provide more flexibility for implementation. These timeframes will guide the City through the future capital improvement program budgeting process.

- Quick Build: < 1 year
- Near Term: 6 months – 18 months
- Mid Term: 18 months – 3 years
- Long Term: 3+ years

The table below summarizes the countermeasures, associated benefits, implementation timeline and funding opportunities.

Safety Countermeasure	Associated Benefit	Phasing	Funding Opportunities
Appropriate Speed Limits for all Road Users	Reduces risk of serious and fatal crashes when combined with speed management strategies	Near Term	SS4A, TPA TA,
Speed Safety Cameras	Effective and reliable technology to supplement more traditional methods of enforcement, engineering and education.	Near to Mid	SS4A (I)
Bicycle Lanes	Align with Safe System Approach principle of separating VRUs and enhance safety and comfort for cyclists.	Quick Build / Near Term	SS4A (D). AIITP, FDOT Restriping, TPA LI*, TPA TA, Non-Profit
Crosswalk Visibility Enhancements	Provide guidance to VRUs on deciding where to cross. Advance signage and pavement markings sets driver and pedestrian expectations minimizing the surprise element.	Mid to Long	SS4A (I & D), RAISE, AIITP, TPA LI*, TPA TA,
Leading Pedestrian Interval	Provides increased visibility of crossing pedestrians, reduces conflict between pedestrians and vehicles.	Quick Build	SS4A (I & D), FDOT Safety Subgrant, TPA TA, Non-Profit
Medians and Pedestrian Refuge Islands in Urban and Suburban Areas	Allows pedestrians to cross one direction of traffic at a time and reduces dilemma zones while crossing multi-lane roadways.	Near to Mid	SS4A (I & D), FDOT Safety Subgrant, TPA TA**
Pedestrian Hybrid Beacons	Effective at locations where there are not sufficient gaps in traffic, ≥ 3 lanes, > 9,000 AADT or speed limits > 35 mph	Mid Term	SS4A (I & D), RAISE, TPA TA,
Rectangular Rapid Flashing Beacons (RRFB)	Enhance pedestrian visibility, increase driver awareness at uncontrolled marked crossings	Near Term	SS4A (I & D), FDOT Safety Subgrant, TPA TA,

Road Diets (Roadway Reconfiguration)	Provide better mobility and access for all road users, improve safety, provide traffic calming	Near Term	SS4A (I & D), FDOT Safety Subgrant, TPA TA,
Walkways	Direct and connected network of walking routes to community hubs thus promoting walking as an equitable, accessible and a safe mode choice.	Mid to Long	SS4A (I & D), RAISE, FDOT Safety Subgrant
Median Barriers	To reduce cross-median crashes and to limit turning movements	Ongoing	SS4A (I & D), TPA TA, Non-Profit
Backplates with Retroreflective Borders	Enhance visibility of traffic signal head both during daytime and at night.	Quick Build	SS4A (I & D), RAISE, TPA TA,
Corridor Access Management	Strategic corridor access management balances mobility and safety by balancing land use management and driveway consolidation, closure.	Near to Mid	SS4A (I & D), TPA TA,
Dedicated Left- and Right-Turn Lanes at Intersections	Dedicated turn lanes reduce the risk of serious and fatal injury crashes especially with left turn lanes	Mid to Long	
Reduced Left-Turn Conflict Intersections	Displace left turns reducing higher severity crash types such as head-on and angle.	Near to Mid	SS4A (I & D), RAISE
Roundabouts	Efficient at moving people, slow speeds reduce risk of severe crashes considerably, provide a more suitable environment for walking and cycling	Mid to Long	SS4A (I & D)
Systemic Application of Multiple Low-Cost Countermeasures at Stop-Controlled Intersections	Advanced signage and enhanced pavement markings, removal of obstructions result in increased driver awareness and recognition of potential conflicts with sufficient time to react.	Long Term	SS4A (I), RAISE, TPA TA,
Yellow Change Intervals	Reduced red-light running which often leads to severe crashes.	Quick Build	SS4A (I & D), FDOT Restriping, FDOT Safety Subgrant, TPA TA,
Lighting	Provide personal security and the obvious benefit of visibility for all road users, especially for those that are disadvantaged.	Near to Mid	TPA TA**
Pavement Friction Management	Reduces risk of friction related crashes.	Mid to Long	SS4A (I), TPA TA,

*Projects on Tier 1 Bikeways
**TPA priority in Vision Zero Plan
*** On State Roads

Costs

The tables below show project locations with associated costs for intersections and corridors.

COST ESTIMATES: INTERSECTIONS

#	Name	CRA	# of Projects	Rough Cost Estimate
1	Lake Worth Rd & Holiday Dr	Outside	8	$200,760 - $363,227
2	Lake Worth Rd & Erie St	Outside	6	$1,768,500
3	6th Ave S & S Dixie Hwy	Inside	10	$779,900
4	Barnett Dr & 10th Ave N	Outside	10	$46,134 - $47,886
5	S F St & 6th Ave S	Inside	9	1,870,760 - $2,033,227
6	S H St & 6th Ave S	Inside	10	$1,870,760 - $2,033,227
7	6th Ave S & S E St	Inside	3	$0
8	Lake Worth Rd & Akron St	Outside	6	$29,900
9	S E St & Lake Ave & N E St	Inside	7	$117,260 - $279,727
10	N D St & Lucerne Ave	Inside	7	$117,260 - $279,727
11	6th Ave S & Wright Dr	Outside	3	$1,740,000
12	Cleveland St & Lake Worth Rd	Outside	2	$0
13	Lucerne Ave and N Federal Hwy	Inside	6	$0
14	6th Ave S & S D St	Inside	5	$1,740,000
15	Lake Worth Rd & N I-95	Inside	6	$30,219 - $31,971
16	6th Ave S & S C St	Inside	6	$1,753,500
17	S Dixie Hwy & 2nd Ave S	Inside	2	$16,400
18	Barnett Dr & Madrid Ave	Outside	2	$15,915
19	7th Ave S & S Dixie Hwy	Inside	4	$750,000
20	10th Ave N & N Dixie Hwy	Inside	5	$1,756,400
21	S Dixie Hwy & 8th Ave S	Inside	6	$2,517,319 - $2,519,071
22	1st Ave S & S Dixie Hwy	Inside	5	$99,360 - $261,827
23	N Dixie Hwy & 2nd Ave N	Inside	4	$16,400
24	S K St & 6th Ave S	Outside	3	$16,400
25	S B St & Lake Ave & N B St	Inside	5	$102,260 - $264,727

COST ESTIMATES: CORRIDORS

Roadway	Boundary	CRA	# of Projects	Rough Cost Estimate
Dixie Highway	2nd Ave N - 12th Ave S	Inside	4	$1,923,802 - $2,283,821
6th Ave S	Wright Dr - S K St	Partial	5	$1,381,514 - $1,960,997
Lucerne Ave	Roundabout – N Federal Hwy	Inside	4	$755,736 - $1,141,626
10th Ave N	Boutwell Rd - N Dixie Hwy	Partial	3	$432,476 - $648,714
Lake Worth Rd	Lake Osborne Dr - I-95	Outside	4	$403,057 - $560,080
Barnett Dr	7th Ave N - 10th Ave N	Outside	4	$95,126 - $142,386
Lake Ave	S Federal Hwy - S Palmway	Inside	3	$73,938 - $112,179
N G St	Lake Ave - 13th Ave N	Inside	3	$8,407 - $20,425
7th Ave N	N A St - N Dixie Hwy	Partial	2	$0
Lake Worth Rd	I-95 to S A St Roundabout	Inside	2	$0

Funding

There is a vast array of Federal, State, regional, and local opportunities and various ways they can be applied to implement this mobility plan. This section is a summary of funding opportunities from Federal, State, regional, and local sources. A full write-up for each program is presented in Appendix A.

For all grant resources, there are several common features to understand as a community. Those features include:

Eligible applicants: Check to see where local governments are listed as an eligible applicant.

Eligible activities: This list will describe the types of projects that are funded, and often fall under planning and construction grants. The construction grants will further list the project types, for example, Complete Streets, bridges, bike lanes, etc.

Selection criteria: It's important to know a funder's priorities and how they intend to score and rank applications. In some cases, funders prefer proposals that are submitted by multiple applicants or a partnership.

Match: In most cases a public sector funder will require a match. A match can be monetary or in-kind activities such as staffing, office space, and other resources.

Whether the grant is a formula grant or discretionary. Discretionary grants are those distributed by the agency (usually USDOT for mobility grants). Cities apply directly to USDOT to obtain funding. Formula grants are distributed to the state, which then disburses grants or suballocates to the regional metropolitan planning organization (MPO). In Lake Worth Beach's case, the MPO is the Palm Beach TPA. For formula grants, Lake Worth Beach would apply to the Palm Beach TPA. Because funds flow from USDOT, their selection criteria are typically included in FDOT and the Palm Beach TPA's selection criteria as well.

FEDERAL PROGRAMS & GRANT OPPORTUNITIES

The 2021 Bipartisan Infrastructure Law (BIL) represented a large infusion of funding for mobility, with wide ranging impacts on transportation, infrastructure, safety, and links to economic development. The BIL contains several well known mobility programs, including Complete Streets, Safe Routes to School, technology investments, transit-oriented development, and resilience.

In general, USDOT is emphasizing new selection criteria related to safety, climate, and equity among all programs. Given the sharp rise in deadly crashes, in particular for pedestrians and cyclists in Florida, there is a sense of urgency for safety. For Lake Worth Beach, positioning for Federal transportation grants requires the city to:

- Document the need for safety improvements
- Document the need for multimodal and transit mobility improvements
- Document the efficacy of proposed solutions

STATE OF FLORIDA GRANT OPPORTUNITIES

Florida has several programs related to Complete Streets and safety. Lake Worth Beach is already pursuing an Innovative Service Development grant to support the downtown circulator. For this mobility plan, the most promising state funding sources are the FDOT Resurfacing Program and the FDOT Safety Subgrant Program. Historically, the state has also sponsored Safe Routes to School programs, though the grant funding is currently on hold.

PALM BEACH COUNTY TPA GRANT OPPORTUNITIES

FDOT distributes funds from several federal funding programs, including the Surface Transportation Block Grant, the Transportation Alternatives Set-Aside, and the Highway Safety Improvement Program. The TPA's three main programs are (1) Local Initiatives, (2) Transportation Alternatives, and (3) State Road Modifications.

PALM BEACH COUNTY GRANT OPPORTUNITIES

The County's Palm Beach Five Year Road Program funds projects that lie outside of city limits though may impact Lake Worth Beach. Currently, County projects with the most potential to impact Lake Worth Beach are the Transit Signal Priority (TSP) system deployment on US Hwy 1 and the Sidewalk Program.

CITY & OTHER FUNDING OPPORTUNITIES

Lake Worth Beach funds local projects primarily through the Capital Improvement Plan.
A second method for funding safety projects is incorporating safety improvements into pavement resurfacing and repaving projects. Other funding opportunities originate from non-profits that fund community and mobility projects. People for Bikes and AARP are examples of organizations that disburse small grants for wayfinding and multimodal infrastructure.

Accelerating Project Implementation

There are several strategies and methods for accelerating project implementation. Appendix B dives deeper into how to best leverage the following strategies:

Strategy Category	Action or Project
Tactical Urbanism	• Create a list of demonstration, quick build and tactical urbanism projects
Identifying Funding	• Identify projects that meet multiple grant funding criteria
Project Alignment	• Align project list with Lake Worth Beach's traffic calming program
Comprehensive Plan Changes	• For safety and mobility, add new policies and adjust outdated policies
Mobility Management	• Promote Transportation Demand Management • Work with the Palm Beach TPA on developing projects for the TIP/LOPP • Establish metrics and monitoring for assessing mobility equity
Strategies for Vehicles	• Prepare for vehicle electrification • Install speed safety cameras around school zones • Integrate parking study and mobility study strategies
Strategies for Circulators	• Park and Ride lots for Circuit • Pick up and drop off locations for Circuit • Conduct rider surveys • Assess and adjust circulator services
Strategies for Pedestrians	• Create a citywide shade study and action plan • Leverage Safe Routes to Schools • Alleyway improvements
Strategies for Cyclist	• Adopt the low-stress bicycling network • E-bike route demonstration projects • E-bike incentives • Additional bike racks
Strategies for Transit	• Facilitate transit oriented development (TOD)

IX. Appendices

A. Funding

Funding is a barrier to the construction and completion of projects within a mobility plan. This chapter dives into the vast array of Federal, State, regional, and local opportunities and how they can be applied to implement this mobility plan.

BACKGROUND

One strategy of this mobility plan is to kick off plan development by researching funding opportunities and deadlines. In this manner, Lake Worth Beach can be better positioned to apply for grants with adequate lead time.

With the 5-year Bipartisan Infrastructure Bill (BIL) there are several more years of expanded funding. The BIL contains several programs related to mobility, including Complete Streets, Safe Routes to School, technology investments, transit-oriented development, and resilience.

In general, USDOT is emphasizing new selection criteria related to safety, climate, and equity among all programs. Given the sharp rise in deadly crashes, in particular for pedestrians and cyclists in Florida, there is a sense of urgency for safety. As such, positioning for grants requires:

- Documenting the need for safety improvements
- Documenting the need for multimodal and transit mobility improvements
- Documenting the efficacy of proposed solutions
- Looking for mobility project locations that address as many selection criteria as possible such as:
    - Underserved areas as defined within each grant program. For example, USDOT has created maps specific to the Safe Streets for All program
    - Areas affected by climate impacts (flooding, storm surge, heat)
    - Crash and safety hotspots, including high injury networks and “near misses”
    - Areas with a high level of vulnerable road users (e.g., seniors, children, zero car households)
    - Areas with a housing + transportation benefit through mobility investments (e.g., Transit Oriented Development, access to transit stations)

FEDERAL PROGRAMS

Federal funding is distributed to municipalities through two main channels: discretionary and formula funds. Eligible entities apply directly to USDOT for funding within USDOT’s discretionary (or competitive) grant programs. Each program lists its priorities, eligible project lists, selection criteria, and other details.

Formula funding is channeled from the USDOT to States under established formulas, typically based on population. From there, the state will suballocate funds to MPOs and municipalities based on formulas for urbanized and rural areas.

Understanding Selection Criteria

When selecting projects, it's important to understand the priorities, selection criteria, and scoring rubrics. The BIL established several new focus areas for funding, including climate and sustainability, innovation, and equity. Depending on the program, USDOT has established methods for determining disadvantage and equity.

To facilitate the application process, USDOT provides links to maps and calculators. The main equity screens include (1) Areas of Persistent Poverty & Historically Disadvantaged Communities by census tract, (2) the Equitable Transportation Community Explorer, (3) the White House's Justice40 initiative and (4) the Climate and Economic Justice Screening Tool. These screening tools are composed of multiple variables such as poverty, climate exposure, and transportation disadvantage. A table identifying how each census track in Lake Worth Beach ranked in these categories is found below.

MOBILITY PLAN ALIGNMENT

Census Tract PBC FL	HDC	AoPP	ETC Climate	ETC Environment Burden	ETC Health Vulnerability	ETC Social Vulnerability	ETC Transportation Safety	Justice 40
44.01	N	Y	Y - 92%	N	Y - 76%	Y - 75%	N - 58%	Y
44.02	N	Y	Y - 97%	Y - 85%	Y - 85%	Y - 100%	Y - 73%	Y
45	Y	Y	Y - 97%	N	Y - 77%	Y - 95%	Y - 92%	Y
50	Y	N	Y - 85%	N	Y - 91%	Y - 73%	N - 64%	N
51.01	N	Y	Y-100%	Y - 90%	Y - 71%	Y - 100%	Y - 81%	Y
51.02	Y	Y	Y-100%	Y - 77%	Y - 85%	Y - 96%	Y - 81%	Y
52.04	N	N	Y-100%	Y - 69%	Y - 67%	Y - 89%	Y - 95%	Y
52.03	N	N	Y-100%	Y - 83%	Y -70%	Y - 89%	Y - 73%	Y
52.02	Y	Y	Y-100%	Y - 77%	Y - 85%	Y - 96%	Y - 96%	Y
53	Y	N	Y - 79%	N	Y - 74%	N	N - 47%	N

HDC - Historically Disadvantaged Communities
AoPP - Areas of Persistent Poverty
ETC - Equitable Transportation Community Explorer – this Index is composed of the following components:
ETC Climate - Anticipated Change in Extreme Weather, Annualized Disaster Cost, Impervious Surface Cover
ETC Environmental Burden - 15 various sources of environmental pollutants and stressors
ETC Health Vulnerability - Prevalence of Asthma, Cancer, High Blood Pressure, Diabetes, and Low Mental Health
ETC Social Vulnerability - 200% Poverty Line, No HS Diploma, Unemployment, House Tenure, Housing Cost Burden, Uninsured, No Internet Access, Endemic inequality, 65 & older, Disability, Limited English Proficiency, and Mobile Homes
ETC Transportation Insecurity - Transportation Access, Transportation Cost Burden, Transportation Safety. In aggregate all Census Blocks were not rated as Disadvantaged, however, all ranked high for Transportation Safety burden
Justice40 - An Administrative initiative to invest 40 percent of all federal funds flow to disadvantaged communities

Understanding Matching Funds

Most programs require matching funds, commonly set at 20% of the total project cost. There are exceptions, particularly for projects located in disadvantaged areas. These are noted in the individual program writeups below.

Under USDOT guidance, a cost match for the non-federal portion of funding does not need to be monetary. Under the Code of Federal Regulations, a match is "*the value of third party in-kind contributions and the portion of the costs of a federally assisted project or program not borne by the Federal government*" [49 CFR 18.3]. In general, accepted contributions can be in the form of:

- State funds (except for State Departments of Transportation)
- Cash from non-Federal third parties
- The value of personnel, goods, services, space, and utilities provided by the grant recipient and partners that directly facilitate the grant may be categorized as direct or indirect costs (2 CFR Part 200.412, 413, and 415).
- Eligible costs incurred on a project applied to the non-Federal match requirement

Lake Worth Beach can calculate the value of staff who are involved in administering the grant, as well as space, as part of matching funds.

FEDERAL GRANT OPPORTUNITIES

Safe Routes to School (Federal)

Under the Bipartisan Infrastructure Bill (BIL), Safe Routes to School (SRTS) was codified into law, with established minimum levels of annual funding per state.

Strategy: Monitor how Safe Routes to School funds are allocated. Within the BIL, one of the main sources is through the MPO through the Transportation Alternatives Set-Aside program. If Lake Worth Beach decides to pursue projects near schools, the following strategies apply:

- Determine whether there are project proposals that qualify for SRTS funding (i.e. within one or two miles of a school)
- Check conditions around high schools since 2022 is the first time in the program's history that high schools are eligible for funding.
- Collect data around schools to "make the case" according to top criteria such as safety, infrastructure gaps, and reducing auto traffic.

Active Transportation Infrastructure Investment Program (ATIIP)

ATIIP is a new discretionary funding program for bicycle and pedestrian infrastructure that awards both planning & design and construction grants with an emphasis on active transportation networks and "spines." Spines are defined as facilities (sidewalks, bikeways, and multiuse trails) providing connections between communities and metropolitan regions. Cities are eligible recipients. The first grant solicitation was announced by USDOT on March 19, 2024.

Funding	Planning & Design	Construction
Cost Range	$100,000 - $2M	At least $15M
Match *	At least 20%	At least 20%

* Other eligible federal grants may be used for the match; no match is required if the majority of census tracts served by the projects have a poverty rate over 40%.

The following review factors are listed on the program's website:

- Whether the project provides additional opportunities for walking and bicycling through an active transportation network connecting destinations within or between communities (e.g. transit stops, schools, workplaces, residences, businesses, recreation areas, and other community areas) or whether the project creates a spine connecting two or more communities or regions.
- Whether the applicant demonstrates broad community support for the project
- Whether the applicant provides commitment to traffic safety, regulations, financial incentives, and/or community design policies that facilitate significant increases in walking and bicycling.
- The extent to which the applicant demonstrates that the grant will address existing disparities in bicyclist and pedestrian fatality rates based on race or income level or provide access to jobs and services.
- Whether the applicant demonstrates how investment in active transportation will advance (1) safety for pedestrians and cyclists, (2) accessibility to jobs and key destinations, (3) economic competitiveness, (4) environmental protection, and (5) quality of life.

Strategy: Choose projects that connect activity centers, then build community support for the project.

Safe Streets for All (SS4A)

SS4A is one of the broadest funding programs based on reviews of winning applications submitted for the first years of the program. For example, in 2022, Palm Beach County received $639K for developing a comprehensive safety action plan (action plan). Of that total, $134,232 (21%) is allocated to underserved communities. The City of West Palm Beach also received a grant for an action plan ($280K). In 2023, USDOT awarded here were 473 successful action planning grants and 37 successful implementation grants.

The program is divided into three parts and grants require a 20% match. In 2024, USDOT tweaked the program to add multiple deadlines for planning and demonstration grants:

1. **Planning Grants**: For communities that have not developed an action plan (due April 2, 2024, May 16, 2024, and August 29, 2024).
2. **Implementation Grants:** Funds to carry out and construct projects specifically listed in the action plan (due May 16, 2024)
3. **Demonstration Grants:** Planning and Demonstration Grants can fund supplemental planning and/or demonstration activities that inform the development of a new or existing action plan (due April 2, 2024, May 16, 2024, and August 29, 2024).

Projects applying for SS4A grants must satisfy the following project criteria to be eligible:

- Projects likely to significantly reduce or eliminate transportation-related fatalities and serious injuries among all modes
- Demonstrates stakeholder engagement
- Includes innovative technologies or promote safety
- Employs low-cost, high-impact safety strategies over a wide area

- Ensures equitable investment in underserved communities to prevent transportation-related fatalities and injuries
- Includes evidence-based projects or strategies, and
- Other

To satisfy the requirement for a safety action plan, it's important to note that USDOT will accept existing plans if they meet several criteria (note, this study is intended to fulfill the requirement for a safety action plan.) USDOT has developed a self-certification tool so cities can determine whether existing plans can serve as a qualified safety action plan Self-Certification Eligibility Worksheet.

- Goal setting and commitment
- Oversight and action committee
- Safety analysis
- Engagement and collaboration
- Equity analysis
- Policy and process change
- Strategy and projects
- Monitoring and reporting plan

Strategy: First, coordinate with Palm Beach County to see if any of their potential projects identified in their action plan are located in Lake Worth Beach. Next, obtain a copy of the County's successful SS4A grant applications to see how they framed improvements. Finally, determine how to adjust the mobility plan to serve as the action plan through the following steps.

- Assess what steps in the mobility plan development can also serve for the action plan
- If any large gaps are identified, apply for action plan grants.
- If not, use the mobility plan as the action plan and go directly to design or implementation grants
- Pre-position for an implementation grant (e.g., cost-benefit analysis construction drawings). See the Implementation Application Checklist at this link

Rebuilding American Infrastructure with Sustainability and Equity (RAISE)

In 2022, RAISE funded 166 projects in all 50 states. Minimum grant awards are $5M or more for an urbanized area such as Lake Worth Beach. RAISE grants are a traditional program for larger projects and would require support from the TPA since these projects need to be included in the 5-year TIP. The program requires a 20% match.

- Highway or bridge projects
- Public transportation projects
- Passenger rail or freight rail transportation
- Port infrastructure investment
- Surface transportation components of airports
- Surface transportation facility located on Tribal land
- Intermodal projects
- Stormwater runoff (e.g., culvert) to improve habitat
- Any other project necessary to advance the goals of the program
- Certain public road and non-motorized projects
- Transit-oriented development projects
- Mobility on demand projects

Project ranking and selection is conducted using the following merit criteria. For the 2022 awardees, urban project proposals typically addressed a majority of the criteria:

In addition, USDOT strongly encourages applicants to utilize planning coordination opportunities: integrate transportation planning, housing, employment opportunities, and economic development strategies, as well as addressing transportation-related disparities and climate change-related consequences.

Strategy: Brainstorm regional opportunities with the TPA such as Mobility on Demand projects that could apply to multiple cities who would all contribute to the 20% match. Examine future project lists to determine if there are larger projects that can be added to the action plan

PROTECT (Formula & Discretionary)

There are three categories of PROTECT grants that apply to Lake Worth Beach infrastructure projects as they apply to mitigating or responding to climate impacts. Note that projects must be identified in a local, MPO, or state resilience plan; construction projects must be accompanied by a benefit-cost analysis for resilience projects, but not for at-risk infrastructure. The list of FY 2022 and 2023 awardees is posted at this link. Among the winners from Florida were the Central Florida Transportation Authority, FDOT, and three counties (Orange, Osceola, and Sarasota).

Planning Grants: Planning grants can be used to develop or update a resilience plan and can be used for planning, feasibility, analysis, environmental review, PD&E, and construction.

Resilience Improvement Grants: This sub-category of PROTECT grants funds construction activities to improve the ability of an existing surface transportation asset to withstand weather events or increase the resilience of surface transportation. The main merit criteria for resilient and at-risk grants are (1) vulnerability and risk, (2) criticality to community, (3) design elements, (4) public engagement, (5) equity, (6) climate change and sustainability, (7) schedule and budget, and (8) innovation. Additional priority considerations are Justice40, workforce development, construction readiness and funding needs.

Eligible projects, which must be classified as highway projects eligible for assistance under Title 23, U.S.C., include:

- Hardening or realignment of a surface transportation facility,
- Incorporating natural infrastructure,
- Upgrading existing surface transportation facilities
- Floodproofing surface transportation,
- Improving drainage and managing vegetation
- Bridge retrofits

Community Resilience and Evacuation Route Grant

This sub-category of PROTECT grants is intended to strengthen and protect evacuation routes by funding:

- Restoring or replacing existing evacuation routes that are in poor condition
- Communications and intelligent transportation system equipment and infrastructure
- Counterflow measures
- Shoulders

The match is 20% unless Florida has developed a resilience improvement plan that includes the city's projects (match is 13%). The match is 17% if the state resilience plan is incorporated into Palm Beach County TPA's transportation plan.

Strategy: Check with the Palm Beach TPA and state to see if they have a resilience plan and if so, make sure Lake Worth Beach's eligible projects are on the list. Highlight projects that meet the eligibility criteria and undertake a benefit-cost analysis for construction projects to improve chances of selection.

Reconnecting Communities Pilot Program

This new pilot program studies the feasibility and impacts of removing an existing transportation facility (including limited access highway, viaduct, and other principal arterial facility) that "creates a barrier to community activity" including mobility, access, economic development, and design factors such as high speeds or grade separations. This is a good description of the I-95 overpass and its impact on Lake Worth Beach High School.

The Reconnecting Communities pilot program provides both planning and capital construction grants. Planning grants (up to $2 million) may be used to study the feasibility and impacts of removing, retrofitting, or mitigating an existing eligible facility. Capital construction grants may be used for projects for which all necessary studies and planning activities have been completed.

There is also a Reconnecting Communities Institute that supplies technical assistance to prospective grant recipients. This program was initiated to help smaller communities build the capacity needed to apply for and manage the grants and implementation process. Participation in technical assistance helps small communities such as Lake Worth Beach in the selection process.

In 2023, USDOT awarded 39 planning grants and six construction grants (see this link). Eligible projects include (1) removal, retrofit, or mitigation of an eligible facility; (2) replacement of an eligible facility that is context sensitive and provides reconnection.

Selection criteria include:

- the degree to which the project will improve mobility and access
- appropriateness based on current traffic patterns, safety, and access
- impacts on freight movement
- cost-benefit analysis results
- economic development opportunities
- context-sensitivity
- local hiring plans

Strategy: Work with the Treasure Coast Regional Planning Council on their proposal to develop the I-95 underpass between the TriRail station and Lake Worth High School. Next, monitor calendars for the next calls for technical assistance as a first step. While there is no money for technical assistance, it provides training for staff on how to manage federal contracts.

Neighborhood Access and Equity Grant Program State Programs

As a part of the Reconnecting Communities Program, the Neighborhood Access and Equity Grant Program (NAE) will provide up to $3.155 billion in grant awards to connect communities by supporting neighborhood equity, safety, and affordable transportation access as well as mitigating negative environmental impacts. The NAE program will emphasize assisting economically disadvantaged or underserved communities with planning and capacity building. NAE is funded through the Inflation Reduction Act rather than the BIL.

This program is intended to support teams who develop proposals for three funds: (1) Community Planning Grants, (2) Capital Construction Grants, and (3) Regional Partnerships Challenge Grants.

As noted above, locations where I-95 poses a barrier are prime funding candidates. Lake Worth Beach may want to apply for a planning grant to examine projects at each interchange with respect to reconnecting disadvantaged neighborhoods to activity centers and opportunity. Note the Reconnecting Communities Institute will address applications to the NAE as well as Reconnecting Communities funds.

On July 3, 2024, USDOT issued the Notice of Funding for fiscal year 2024. The Department is awarding all funding with this notice.

Strategy: Apply to the Reconnecting Communities Institute for technical assistance. In addition, the City should work with the Treasure Coast Regional Planning Council on whether funding can be used for the I-95 underpass project.

FEDERAL GRANT CRITERIA AND DEADLINES

Program	Criteria	Funding Cycle Deadlines
Safe Routes to School	Formula funding directed to the states, typically through MPOs	See Palm Beach TPA for Transportation Alternatives
Active Transportation Infrastructure Investment Program (ATIIP)	Walking and bicycling infrastructure connecting destinations, reducing disparities, and increasing safety	USDOT released a NOFO for the first time in 2024 in February **June 17, 2024:** Application deadline
Safe Streets for All (SS4A)	Projects to solve documented hazards. Must have eligible action plan to initiate construction projects	Applications typically released in February with September deadlines for both planning and construction grants **May 16, 2024:** deadline for Implementation Grants. **May 16, 2024:** second deadline for Planning and Demonstration Grants. **August 29, 2024:** third deadline for Deadline Planning and Demonstration Grants.
RAISE (Rebuilding American Infrastructure with Sustainability and Equity) **Minimum $5M project size*	Safety, resilience, quality of life, mobility & connectivity, state of good repair, economic competitiveness & opportunity, innovation, project readiness	**Feb:** Annually in February
PROTECT (Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation)	Make surface transportation more resilient to natural hazards through planning, resilience improvements, community resilience and evacuation routes, and at-risk coastal infrastructure	Must have a state/local resilience plan in place to qualify. **Apr:** Applications open **Aug:** Applications due
Reconnecting Communities and Neighborhoods Grant	Projects to remove, retrofit, or mitigate infrastructure-related barriers to mobility (Disadvantaged communities, access, restoring connectivity)	**Feb:** Applications open (capital construction, community planning. regional partnerships challenge). **Sept:** Applications due
Neighborhood Access and Equity Grant Program	Connect communities by supporting neighborhood equity, safety, and affordable transportation access as well as mitigating negative environmental impacts	(1) Community Planning Grants, (2) Capital Construction Grants, and (3) Regional Partnerships Challenge Grants

STATE OF FLORIDA GRANT OPPORTUNITIES

Safe Routes to School (Florida)

The Florida Safe Routes to School infrastructure program is 100% funded and managed through the Florida Department of Transportation on a cost-reimbursement basis. According to FDOT, they seek projects that will improve safety and reduce traffic, fuel consumption, and improve air quality in the vicinity of schools.

The state typically initiates the funding cycle with webinars for each FDOT district. The BIL expanded the amount of funding for SRTS programs. According to Thomas Miller of FDOT, in 2023 the state is revamping its program and funding, which will be ready in 2024. Applications are typically due in late January every year.

Strategy: Monitor announcements from Florida's Safe Routes to School program for updated guidance and application rules. Highlight projects around schools to build a project funding list for Safe Routes to School.

FDOT Resurfacing Program

FDOT recognizes the role of its resurfacing, rehabilitation and retrofit (3R) program for implementing Complete Streets on the roadways it maintains. In general, the Department sets screening to select projects based on context, need, and local input. The District will then follow guidelines set forth in the Florida Design Manual to design bikeways, sidewalks and transit stops.

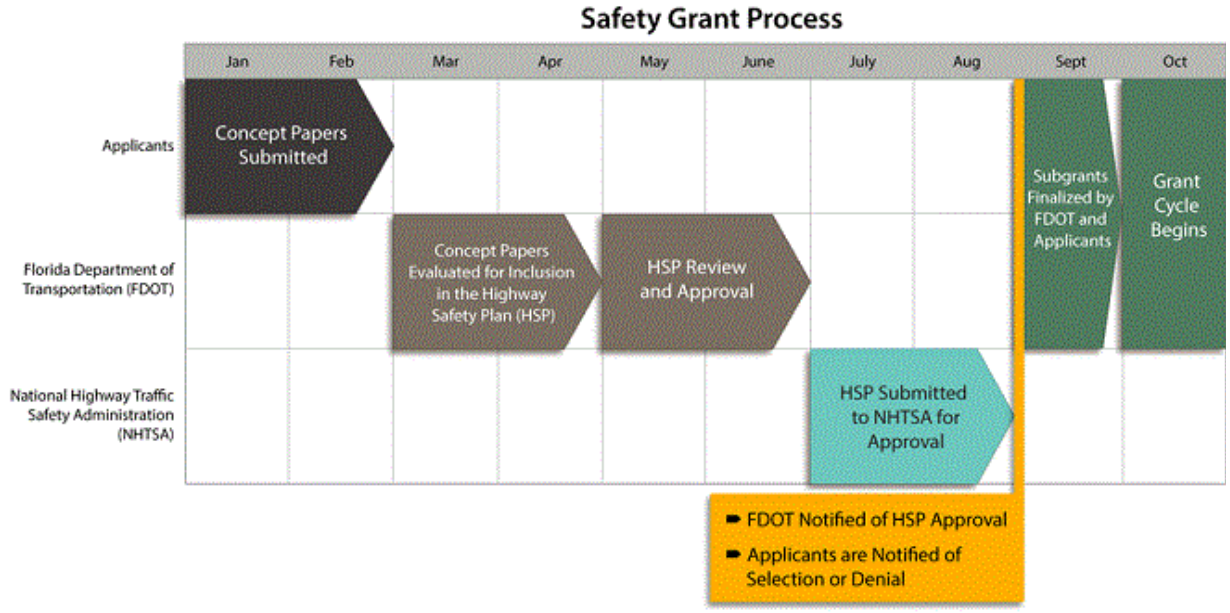
Another catalyst for action is a new rule for accessibility. The US Access Board issued the long-awaited final rule that provides minimum guidelines for the accessibility of pedestrian facilities in the public right-of-way, known as PROWAG. The Departments of Justice and Transportation still need to finalize the rules before they become enforceable. Once this occurs, however, there is likely to be increased attention to retrofitting intersections and sidewalks to meet the new rules.

FDOT Safety Subgrant Program

This program is the state's main source of local support for street retrofits with a focus on safety. Scoring criteria is based on the goals, objectives, and values of the Palm Beach TPA's adopted Currently, the TPA is the LRTP through a process called Vision 2050 with an anticipated adoption date of December 2024. Through this plan, the TPA expects to highlight resiliency, new technologies, and mobility options to support multi-modal transportation.

Among the safety topics within this program, bicycle/pedestrian safety and speed management are the most salient for this study. Lake Worth Beach ranks 10th in the state within FDOT's FY2024 Highway Safety Matrix - Ranking of Florida Cities. For speeding, Lake Worth Beach ranks as 39th.

To apply, cities submit concept papers from January to February of each year; FDOT provides extensive resources on how to apply.



Strategy: Accelerate development of a concept paper that identifies a specific traffic safety need identified by the FDOT State Safety Office.

STATE OF FLORIDA GRANT CRITERIA AND DEADLINES

Program	Criteria	Funding Cycle Deadlines
Safe Routes to School (state and federal programs)	Walking/biking construction projects to improve safety within 2 miles of schools.	PB TPA – See project schedules for Transportation Alternatives **Jan:** each year (STATE) **Oct:** each year (FEDERAL) *Note: Florida's Safe Routes to School program is suspended and expected to return in 2024.*
FDOT Resurfacing Program		
FDOT Safety Subgrant Program	How to Apply	**Jan-Feb:** 2024 Concept papers are submitted to FDOT each year. **Aug:** Awards are announced per NHSTA approval

PALM BEACH COUNTY TPA GRANT OPPORTUNITIES

The Palm Beach County TPA oversees projects that involve state, federal, and local dollars. Projects are selected through a tiered process that begins with the Agency's Long Range Transportation Plan. Projects must be aligned with the LRTP's goals.

The TPA, in consultation with cities, the county and FDOT, creates a five-year Transportation Improvement Program (TIP). The TIP is based on, and reflects, the FDOT Work Program for Palm Beach County. This staged program encompasses a five-year period consisting of all regionally significant transportation improvements to all modes of travel.

The TPA annually adopts a list of transportation system priority projects to share with FDOT for use in developing the next draft Five-Year Work Program and Transportation Improvement Program (TIP). The list is called the List of Priority Projects (LOPP). The latest LOPP list was adopted on July 21, 2022, and encompasses project development for fiscal years 2024-2028. The Priority Projects are divided into three programs: Local Initiatives, Transportation Alternatives, and State Road Modifications.

Formula funds and the TPA

DOT distributes funds from several federal funding programs, including the Surface Transportation Block Grant, the Transportation Alternatives Set-Aside, Highway Safety Improvement Program, and the Carbon Reduction Program. Most of these programs allow state DOTs to transfer funds among programs. Because the BIL increased funding among traditional and new programs, the additional dollars will be funneled to the TPA and associated grant programs.

Local Initiatives

The Local Initiative program is funded at approximately $26M per year. These funds are directed primarily to Complete Streets, transit capital, and freight efficiency for low cost, non-regionally significant transportation projects. Award amounts are funded at levels between $250K and $5M.

Current projects in the TPA's TIP include

- New and replaced transit shelters (project 4383921 and 4415711) for $1.4 million.
- Reconstruction of roadways to one-way pairs and a four feet wide bike lane (project 4483541) with construction of the $7,888,900 project. Construction slated for FY 2027.

Applications will be ranked using the scoring system based on the TPA's 2045 Long Range Transportation Plan (LRTP), adopted goals, and objectives. Highest points are given to the following categories:

Purpose

- Projects will result in positive environmental impacts
- Projects will improve failing infrastructure

Location

- Benefits accrue to underserved communities within 1 mile of project

Modes

- For vehicles, projects that are a combination of Transportation System Management (TSM) components, that reduce transit travel times, improve freight, and/or improve travel time reliability
- For bike/pedestrian facilities: 10-foot shared use path; improvements near interchange, bridge, or RR crossing; improves facilities in Tier 1 Ped Gap/Bicycle corridor
- For transit, projects that reduce transit travel times or improves service at transit hub

Strategy: Work from the TPA's map of underserved communities (See this link, Map 2). Look at criteria with highest points. Scan bike/ped improvements to find higher ranking projects.

Transportation Alternatives

The Transportation Alternatives funds, typically $5M per year for projects between $250K and $1.5M. Eligible projects include bike/pedestrian infrastructure and facilities including TOD, complete streets, lighting, SRTS, and projects to support main streets, sidewalks, trails, and traffic calming. Eligible activities include construction, planning and design of on and off-road facilities for bicyclists, pedestrians to provide safe routes for non-drivers including children, older adults, individuals with disabilities.

In addition, eligible activities include conversion and use of abandoned railroad corridors for non-motorized use, overlooks, control/removal of outdoor advertising, historic preservation of transportation facilities, vegetation management, archeological activities, environmental mitigation, and Safe Routes to School.

Current projects funded by the Transportation Alternatives program include:

- Updated ADA curb ramps and sidewalks (project 4483011) at a cost of $1,095,000. Construction is underway.
- Resurfacing of Lake Worth Road from Everett Court to A Street (project 449810). Design is slated for 2024 and construction of the $2,772,000 project is anticipated to begin in FY 2028.

Applications will be ranked using the scoring system based on the TPA's 2045 Long Range Transportation Plan (LRTP) adopted goals, objectives. Highest points are given to the following categories:

Purpose

- Projects will result in positive environmental impacts

Location

- Benefits accrue to underserved communities within 1 mile of project
- The project is located within the TPA' Vision Zero Plan and provide improvements in high crash bike/ped corridors
- The project improves dark/unlit crash location per TPA Vision Zero Action Plan
- Projects fill gaps in pedestrian facilities located in TPA's Tier 1 Ped Gap or bicycle facilities in Tier 1 Bicycle Corridor
- The city proposes pedestrian improvements within 1 mile of activity centers (or within 3 miles for bike facilities)
- The project is within 2 miles of a school and within its school attendance boundary
- The project improves facilities at an interchange, bridge, railroad crossing, or signalized intersection

Modes

- Bike/Pedestrian: 10-foot shared use path
- Transit: Ped facilities within 1 mile of transit hub (or within/ 3 miles for bike facilities)

Strategy: Same as Local Initiatives. Scan Lake Worth Beach's Vision Zero plan for areas requiring enhanced lighting. Scan activity centers and projects within 1-3 miles of transit. Document the environmental benefits of projects.

State Road Modifications

These funds are applied only to state rights-of-way for highway, transit, freight and additional projects on state roadways. There is approximately $20M per year for projects and Complete Streets, traffic calming, and intersection modifications are eligible. Current Lake Worth Beach, or geographically adjacent, projects include the following.

- Pedestrian enhancements and reconfiguration of the traffic circle along Lake Worth Road from Erie Street to A Street (project 4400461). The construction budget is $1.792,000.
- Lane repurposing and multi-modal facilities along US-1: Dixie from Federal Junction to Gregory Road (project number TBD). The application is now with FDOT and is expected to cost $5,674,000.
- Resurfacing along Lake Worth Road to add separated bicycle lanes, new mid-block crossings, enhanced crosswalks between Raulerson Dr to the Palm Beach State College entrance (project 4416321). The total budget is $8,628,000 and is under construction.
- Along US-1, new mast arms, lighting, technology, and ADA improvements (installation will continue to FY 2016) for a total of $11,067,000 (project 4481071).
- Modification of a resurfacing project to add stamped concrete crosswalks, replacement of sidewalk pavers, and improved stormwater drainage along Lake Avenue and Lucerne from east of A Street to Golfview Road. Construction is underway for a total of $5,207,000.

Applications will be ranked using the scoring system based on the TPA's 2045 Long Range Transportation Plan (LRTP) adopted goals, objectives. Highest points are given to the following categories:

Purpose

- Improves failing infrastructure
- Provides positive environmental impacts
- Project maximizes use of TPA funding by enhancing a programmed FDOT RRR project

Location

- Benefits to underserved community's within 1 mile of project
- Project improves lighting/pedestrian/bicycle facilities in High Crash Dark-Unlit/Ped/Bicycle Corridor per TPA Vision Zero Action Plan
- Project has a defined target speed appropriate for the context classification, has identified preliminary speed management tools, and has support for the speed from the local governing body.
- Project has identified safety countermeasures and has summarized the Crash Modification Factors (CMF) for each countermeasure.

Modes

- For vehicles: Combination of TSM components, reduced transit travel times, improves freight, and improves travel time reliability
- For bike/pedestrian: 10-foot shared use path; improves near interchange, bridge or RR crossing; improves facilities in Tier 1 Ped Gap/Bicycle corridor

Strategy: Same as Transportation Alternatives. Identify projects that qualify as speed management including projects listed on FHWA's List of Proven Countermeasures.

The strategy is to get projects adopted into the three main programs: State Road Modification, Local Initiatives, and Transportation Alternatives Projects with the highest possible scores since Lake Worth Beach will be competing with other jurisdictions. As such, the key is to score as high as possible within each category.

PALM BEACH TPA GRANT CRITERIA AND DEADLINES

Program	Criteria	Funding Cycle Deadlines
Local Initiatives, (TPA)	Based on Goals, Objectives and Values in the adopted Long Range Transportation Plan	**Nov:** Program Application Workshop & pre-application meetings (one-on-one required) **Feb:** Application deadline **Mar:** First e-mail to applicants **Apr:** Responses due, field visit, resolution from applicant **May:** Final requests due; FDOT vetting **Jul:** Final List approved (TPA & FDOT)
Transportation Alternatives (TPA)	Based on Goals, Objectives and Values in the adopted Long Range Transportation Plan	**Nov:** Program Application Workshop **Nov - Jan:** Pre-application meetings **Feb:** Application deadline **Mar:** First e-mail to applicants **Apr:** Responses due, filed visit, resolution from applicant **May:** Final requests due; FDOT vetting **Jul:** Final List approved (TPA & FDOT)
State Road Modifications (TPA)	Based on Goals, Objectives and Values in the adopted Long Range Transportation Plan	**Nov:** Program Application Workshop & pre-application meetings (one-on-one required) **Feb:** Application deadline **Mar:** First e-mail to applicants **Apr:** Responses due, field visit, resolution from applicant **May:** Final requests due; FDOT vetting **Jul:** Final List approved (TPA & FDOT)
5-Year TIP & Unified Planning Work Program (TPA)	Based on List of Priority Projects (LOPP) under the three preceding programs	UPWP based on fiscal year (usually May - July adoption)

PALM BEACH COUNTY GRANT OPPORTUNITIES

Palm Beach County 5 Year Road Program

To address safety, the County has programs that may impact Lake Worth Beach outside of city limits. The projects with the potential to impact Lake Worth Beach are:

- Transit Signal Priority (TSP) system deployment on US Hwy 1 (grant from TPA)
- Sidewalk Program
    - $1.5M in annual capital funding. Focuses on providing a system of safe pedestrian sidewalks within the County, especially safe access to schools and other community resources.

Strategy: Determine how to work better with the County to direct funds to Lake Worth Beach mobility and document safety needs and projects in and around schools.

PALM BEACH COUNTY GRANT CRITERIA AND DEADLINES

Program	Criteria	Funding Cycle Deadlines
PB County 5 Year Road Program	Established Performance Indicators (KPIs)	October 1st (Beginning of Fiscal Year)

CITY & OTHER FUNDING OPPORTUNITIES

Lake Worth Beach funds local projects primarily through the Capital Improvement Plan.

A second method for funding safety projects is incorporating safety improvements into pavement resurfacing and repaving projects. For example, cities often decrease the width of travel lanes in areas of excess speeding.

A third method is to identify non-government organizations that fund mobility safety improvements such as the following:

People for Bikes

PeopleForBikes' Bike Industry Community Grant Program supports bicycle infrastructure projects and targeted initiatives that make it easier and safer for people of all ages and abilities to bike. Grant amounts range from $5,000 to $10,000. The grant cycle typically opens in September of each year.

Sample projects include the following if they are, or lead to permanent facilities:

- Costs related to the development of trails, shared-use paths, bike parks, pump tracks, bicycle playgrounds, neighborhood greenways/bike boulevards, and protected bike lanes
- Costs related to "quick-build" or "demonstration projects," that lead to permanent infrastructure
- Land or easement acquisition costs for bike infrastructure
- Events or programs that support cultural acceptance and support of specific planned or recently constructed bike infrastructure projects. Such events or programs must show a connection between the event and organizing for permanent infrastructural improvements and must show a likelihood of permanence beyond the term of the grant.

Priority projects include:

- Funding that closes a financial gap that allows a project to move forward
- Funding that leverages additional funds
- Projects that address historical inequities in low-income communities and communities of color
- Projects that are part of a larger strategy to build a network of bikeways for people of all ages and abilities

AARP's Community Challenge

This program is broken into three grant opportunities.

Flagship Grants: These grants are to fund projects that create vibrant public places that improve open spaces, parks and access to other amenities as well as deliver a range of transportation and mobility options that increase connectivity, walkability, bikeability, and access to public and private transit.

- Support housing options that increase the availability of accessible and affordable choices
- Ensure a focus on diversity, equity and inclusion while improving the built and social environment of a community
- Increase digital connections by expanding high-speed internet and enhancing digital literacy skills of residents
- Support community resilience through investments that improve disaster management, preparedness and mitigation for residents
- Increase civic engagement with innovative and tangible projects that bring residents and local leaders together to address challenges and facilitate a greater sense of inclusion
- Improve community health and economic empowerment in support of financial well-being and improved health outcomes

LOCAL & OTHER FUNDING CRITERIA AND DEADLINES

Program	Criteria	Funding Cycle Deadlines
Capital Improvement Program	Local prioritization	FY 2025 begins October 1, 2024
People for Bikes	$5,000 to $10,000	**Sept:** Typical application open date **Mar:** Applications due **Jun:** Awards announced **Nov:** Project completion **Dec:** After-action report due
AARP's Community Challenge	Flagship Grants (between $500 & $50K)	**Jan:** Application window opens; **Mar:** Deadline

B. Strategies for Accelerating Project Implementation

This appendix dives into strategies for implementing projects in the following categories:

- Tactical urbanism
- Identifying funding
- Project alignment
- Comprehensive Plan changes
- Mobility management
- Strategies for vehicles
- Strategies for circulators
- Strategies for pedestrians
- Strategies for cycling
- Strategies for transit

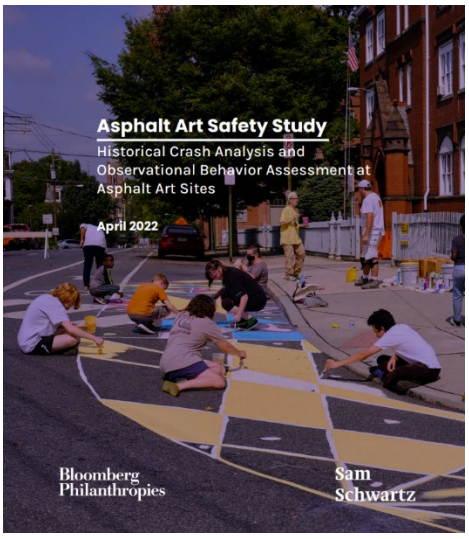
TACTICAL URBANISM

Create a list of demonstration, quick build and tactical urbanism projects

This list of projects can be designed and installed on a faster time frame than larger construction projects yet deliver short term safety and mobility benefits. For Lake Worth Beach, "asphalt art" or decorative crosswalks would be a good strategy on local streets. With the annual Street Painting Festival, the city can take advantage of arts-driven transportation projects. This list will:

- Identify specific mobility projects identified in this plan that do not require reconstructing roadways or sidewalks (i.e. paint, flexiposts)
- Position projects for Safe Streets for All Demonstration grants, a program with a substantial amount of money that is available until 2026
- Seek funding sources that target demonstration and quick build projects (Safe Streets for All, Private or Foundation grants)

Action Item: List of Demonstration and Quick Build Projects
Who: City of Lake Worth Beach, Mobility Study, Palm Beach Cultural Council
Programs: Arts (Lake Worth Arts, Palm Beach Arts Council), Traffic Calming Policy, Neighborhood Roads, Public Works
Timeframe: 2024 (Near Term)
Cost Factors: Staff Time, Grant writing, Grant administration (Low)
Pros: Fast track for safety projects
Cons: Will require fast mobilization for assembling application materials
Funding: SS4A, Non-profit



In 2021, New York City commissioned a "before and after" study of 17 decoratively painted crosswalks and bulb outs around the city to assess whether there were safety benefits associated with the installations. The findings showed substantial results:

- 50% decrease in the rate of crashes involving pedestrians or other vulnerable road users
- 37% decrease in the rate of crashes leading to injuries
- 17% decrease in the total crash rate
- 27% increase in frequency of drivers immediately yielding to pedestrians with the right-of-way

IDENTIFY FUNDING

Identify projects that meet multiple grant funding criteria

These projects are identified in this Mobility Plan and can be advanced since they meet multiple criteria. For federal programs, the Bipartisan Infrastructure Law included new criteria granting points for (1) equity, (2) climate, and (3) safety. The list will:

- Highlight projects to advance for funding under federal or state programs
- Position Lake Worth Beach to take advantage of funding programs that may not be renewed under the next five-year Transportation Bill due to budget negotiations or shifting priorities

Action Item: List of High Priority Grant Applications
Who: City of Lake Worth Beach, Mobility Study
Programs: TPA 5-Year TIP, TPA Long Range Transportation Plan
Timeframe: 2024 (Near Term)
Cost Factors: Staff time, Grant writing, Grant administration (Low)
Pros: Fast track for safety projects
Cons: Will require fast mobilization for assembling application materials
Funding: SS4A, RAISE (for projects > 5M), PROTECT (for projects on TPA TIP list), TPA LI, TPA TA

PROJECT ALIGNMENT

Align project list with Lake Worth Beach's traffic calming program

Lake Worth Beach's Traffic Calming policy has established a fund for projects requested by members of the community. The criteria for installations includes streets with documented collision patterns and significant through traffic. Information on crashes is covered in this document. This list will:

- Match citizen-identified hazard and cut-through hotspots with a local funding source
- Meet equity goals of filling infrastructure gaps, particularly in underserved neighborhoods, as the Traffic Calming policy weights points for projects in areas lacking sidewalks or traffic calming where none exists

Action Item: List of Local Traffic Calming Project Applications
Who: City of Lake Worth Beach, Citizens
Programs: Traffic Calming, Public Works
Timeframe: 2024 (Near Term)
Cost Factors: Staff time, Documenting cut through traffic (Low)
Pros: Fast track for safety projects; engages the public in infrastructure decisions
Cons: May need additional study
Funding: Lake Worth Beach

This approach is also true for the City's roadway rehabilitation program, as discussed in Chapter 2.

COMPREHENSIVE PLAN CHANGES

This Mobility Plan will be strengthened by adding and/or editing language in Lake Worth Beach's Comprehensive Plan. The current Comprehensive Plan does include objectives and policies that support the goals of this Mobility Plan for multimodal transportation. For example, the Comprehensive Plan contains references to walking and biking (multimodal transportation), intermodal hubs, supportive infrastructure, safe routes to school, right-size parking, and regional cooperation. There are also references to links among transportation, land use and infrastructure. The Capital Improvement section prioritizes safety in its funding criteria.

Plan language posing barriers & opportunities	Example language
Safety	
Policy wording that can result in unsafe conditions	Language that could direct street design for faster vehicle speeds such as wide vehicle lanes or high-speed turns
Policy wording that supports safer streets	Language that supports general strategies on safety & mobility; Complete Streets or traffic calming
Accessibility/Mobility	
Policy wording that can result in lack of access	Language that only refers to access management for vehicles; vague language on transportation demand management (TDM); rules that result in excess parking
Policy wording that supports access & mobility	Language in site plan review checklists that require multimodal improvements; Language referencing walkability, complete networks (bicycle, walking, automobile), links between land use and transportation, shared parking

In general, the comprehensive plan audit revealed where new policies are needed to address safety and new mobility, for example policies on Complete Streets and Vision Zero. Specifically, there are recommended changes to address parking and street design for multimodal transportation. Detailed recommendations are presented in Appendix C.

Action Item: Develop a slate of proposed Comprehensive Plan policy revisions or additions for inclusion in the next update to the Comprehensive Plan
Who: City of Lake Worth Beach
Programs: Community Sustainability (Planning & Zoning), Sustainable Site and Building Standards
Timeframe: 2025 (Near Term)
Cost Factors: Staff time (Low to Medium)
Pros: Effectuates regulatory frameworks for advancing safety and mobility
Cons: Must align with Comprehensive Plan update schedules
Funding: Lake Worth Beach

MOBILITY MANAGEMENT

Promote Transportation Demand Management (TDM)

Lake Worth Beach does not have a formal TDM program, however, the topic is addressed in the Transportation Element of the City's Comprehensive Plan to work with the Palm Beach TPA (Policy 2.1.5.2) and transit and bicycle improvements along 10th Avenue N (Policy 2.1.6.3). Because the Palm Beach TPA is creating an umbrella TDM program for its member cities, Lake Worth Beach can coordinate to take advantage of regional tools and incentives. Moreover, the South Florida Commuter Services provides services open to Lake Worth Beach employers and employees in the form of guaranteed rides home, carpool matching, and free transit passes to try bus and rail. This collaboration and associated activities will consist of:

- Participation in the TPA's TDM workshops and if necessary, appoint a TDM coordinator
- Developing a working group of TDM stakeholders (TPA, South Florida Commuter Services, residential and commercial owners and property managers)
- Targeting messaging and marketing to populations likely to shift from single occupancy vehicles
- Identifying any parking demand management strategies that belong in Lake Worth Beach's TDM toolbox

Action Item: Promote Transportation Demand Management
Who: City of Lake Worth Beach, Palm Beach TPA
Programs: South Florida Commuter Services
Timeframe: 2025(Near Term)
Cost Factors: Staff time (Low to Medium)
Pros: Reduce drive alone rates among commuters; reduced congestion
Cons: TDM programs require extensive outreach, education, and program management
Funding: Lake Worth Beach, TPA (Technical Assistance)

Work with the Palm Beach TPA on developing projects for the TIP/LOPP

For larger projects identified in this study, Lake Worth Beach should identify projects for inclusion in the Agency's Transportation Improvement Plan's (TIP) List of Preferred Projects (LOPP). This list will:

- Position projects within the 5-year TIP and federal and state grants
- Raise the visibility of high-profile projects in Lake Worth Beach. The visibility can highlight where Lake Worth Beach projects can be paired with other projects to increase the chances of funding. Many grant programs add points for multiple projects packaged into one application.

Action Item: Prepare a list of this study's projects to advance through the TIP process
Who: City of Lake Worth Beach, Palm Beach TPA
Programs: TPA 5-Year TIP, TPA Long Range Transportation Plan
Timeframe: 2025(Near Term)
Cost Factors: Staff time (Low to Medium)
Pros: Accelerates process for getting larger projects into the project approval pipeline
Cons: Depending on the funding source, there may be resources required to conduct additional studies (e.g., cost-benefit analysis); project lists can shift funding
Funding: Lake Worth Beach, TPA (Technical Assistance)

Establish metrics and monitoring for assessing mobility equity

One aspect of mobility equity is tracking performance over time. Several metrics for consideration are presented in the document and were featured in the ranking criteria for project selection in this plan. Tracking equity metrics will entail:

- Choosing a workable list of metrics that (1) reflect top equity concerns for vulnerable populations and (2) are measurable over time
- Identifying areas of disinvestment or underinvestment that focus of equity action areas
- Developing contingency plans in the event the city does not meet the metrics. For example, if crash metrics are not reduced, then the city is prepared to pursue additional countermeasures.

Action Item: Prepare a list of metrics and tracking plan
Who: City of Lake Worth Beach, Palm Beach TPA
Programs: Community Sustainability, Public Works
Timeframe: 2025-2026 (Near-Medium Term)
Cost Factors: Staff time (Low to Medium)
Pros: Adds transparency to how mobility and infrastructure are managed in a fair and consistent manner
Cons: Equity tracking is a relatively new and unknown process, which takes time to institute
Funding: Lake Worth Beach, TPA (Technical Assistance)

STRATEGIES FOR VEHICLES

Prepare for vehicle electrification

While the shift to electric cars has slowed, cities can expect growth in the amount of vehicle electrification that will occur including municipal and transit fleets. Some of the ramifications are an increase in charging stations for city fleets (e.g., law enforcement, emergency response, sanitation, street sweepers) and transit vehicles e.g., Palm Tran buses, microtransit). A local government's role includes:

- Gathering key stakeholders
- Identifying plan, policy, and regulatory resources and barriers
- Identifying changes needed to facilitate infrastructure
- Developing a roadmap to update plans, as well as a phased approach to rolling out electric capacity and charging stations
- Identifying grants for developing a readiness plan, city vehicles, charging station locations, and electricity infrastructure upgrades

Action Item: Initiating an Electric Vehicle Charging Program
Who: City of Lake Worth Beach, Palm Beach County, Electric providers (Blink, ChargeSmartEV, FPL Evolution, Lake Worth Beach Utilities)
Timeframe: 2025-2026 (Near-Medium Term)
Cost Factors: Staff time (Medium to High)
Pros: Advantages of electric vehicles (less maintenance, less pollution); the state and federal governments are investing heavily in expanding EV corridors
Cons: The time needed to navigate the numerous resources and plans for electrification.
Funding: Lake Worth Beach, Palm Beach County, TPA (Technical Assistance)

Install speed safety cameras around school zones

A new Florida law allows speed camera installations in school zones. Given the heightened concerns of speeding in school zones, cameras are proven countermeasure for effective traffic calming. A recent study of over 25,000 cars at Palm Beach County schools showed that the majority (>70 %) of drivers are speeding (over 20 mph) during morning drop off and afternoon pick up. Over 30 % of these speed limit violations exceeded 30 mph. Installing cameras requires several steps:

- Assemble a group of stakeholders including police, Palm Beach County Schools, and neighborhood representatives
- Research speed camera options in Florida and the bidding process. Interview peer cities (Boynton Beach) who have installed cameras or are going through the process.
- Document speeds in school zones (morning, afternoon) to justify installation
- Determine how fines would be distributed, and disputes handled
- Draft an ordinance approving speed cameras in school zones
- Develop a public awareness campaign

Action Item: Develop a school zone speed management plan
Who: City of Lake Worth Beach, Palm Beach County Schools, Palm Beach County Sheriff (County Roads), FDOT (state roads)
Programs: Safe Routes to School, Palm Beach County Sherrif's Office (PBSO)
Timeframe: 2025-2026 (Near-Medium Term). Note that this plan is recommending speed safety cameras at a few locations.
Cost Factors: Staff time; School zone speed studies; System costs (according to ITS, $67,000-$80,000 per intersection); how fines are distributed; public outreach; program costs (Medium to High)
Pros: Slower speeds in school zones, lower enforcement costs
Cons: Public opposition; on-going program costs

Integration of parking study and mobility study strategies

The City has a parking study underway to update data and financial assumptions from the 2018 parking study. The goal is to examine whether to institute parking pricing in areas of high demand. There is a parallel effort to seek new parking in proposed development projects downtown. This new supply, combined with parking demand management strategies like pricing, would serve to manage supply and demand for parking.

Whether the city takes the step to paid parking or not, as the downtown area grows with the addition of the Gulfstream Hotel and numerous multifamily development projects, the need to manage parking and curbsides will grow. As covered in this study, cities are turning to the field of parking planning to better manage existing parking and infrastructure assets. Cities are turning to a performance-based planning approach to balance supply and demand through policies, incentives, and pricing. In aligning the recommendations from both the parking study and this mobility study:

- Use the city's current enforcement data to analyze on-street parking occupancy and turnover. Document where and when parking exceeds 85% occupancy

- Use the results of the parking study to institute a new parking program and integrate findings into the comprehensive plan
  Integrate, if applicable, parking demand management strategies into the Transportation Demand Management program.

Action Item: Integrate recommendations from the parking and mobility studies
Who: City of Lake Worth Beach
Programs: Parking, CRA
Timeframe: 2025-2026 (Near-Medium Term)
Cost Factors: Staff time to monitor and analyze parking. Other items depend on findings in the Parking Plan update
Pros: Management measures are far less costly than adding new supply (lots or garages);
Cons: There is likely to be public and business pushback on new parking policies regarding pricing and/or other management measures
Funding: Lake Worth Beach

STRATEGIES FOR CIRCULATORS

Throughout South Florida, companies operating small electric shuttles are changing mobility by offering free or low-cost rides in and around downtowns and tourist destinations. Because the system is so new, the City will need to work with its vender (currently Circuit) to study travel patterns, ridership, and service challenges. Based on the experience of peer cities with on-going service, the following strategies are recommended.

Park and Ride lots for Circuit

One of the successful use cases for the shuttles is linking periphery parking and destinations with a shortage of parking, like the beach or entertainment districts. Examples include Palm Beach's new park and ride for employees who park in lots in West Palm Beach and Boca Raton's investigation of using Government Center parking on nights and weekends. Initiating a park and ride involves:

- Identifying underused parking (mostly public) that can serve as parking
- Determining the need for employee or after-hours parking
- Estimating costs and who pays
- Launching a campaign to potential users
- Integrating the park and ride into TDM programs
- Integrate, if applicable, parking demand management strategies into the Transportation Demand Management program

Action Item: Creating Park and Ride lots for Circuit service
Who: City of Lake Worth Beach, Circuit, Employers
Programs: CRA, Public Works
Timeframe: 2025-2026 (Near-Medium Term)
Cost Factors: Cost of service, potential revenue; hours of service
Pros: Eases parking constraints; reduces parking costs for employees
Cons: Could pose extra costs; requires an awareness program for target riders
Funding: Lake Worth Beach

Pick up and drop off locations for Circuit

When ride-hail companies (e.g., Lyft, Uber) initiated on-demand service, cities faced chaotic traffic patterns as drivers made abrupt stops along curbs and in travel lanes. Since then, cities and companies offering door-to-door service have sought measures to reduce traffic congestion related to drivers who are discharging or picking up customers. One method is designated pick up and drop off points. The steps for creating pick up and drop off points include:

- Determining the extent and location of problems associated with passenger pick up and drop off
- Determining where to locate pick up and drop off out of travel lanes (e.g., on-street parking, side streets)
- Working with Circuit to identify pilot locations for "smart stops" and coding those into the company's routing software
- Notifying ride-hail companies to alert them to these new points

Action Item: Creating pick up and drop off points for Circuit and other ride-hail services.
Who: City of Lake Worth Beach, Circuit, ride-hail companies
Programs: Public Works, Parking, Sustainable Bonus Incentive Program
Timeframe: 2025-2026 (Near-Medium Term)
Cost Factors: Staff time, signage
Pros: Reduces safety and congestion due to stopped vehicles; efficiencies related to designated pick up and drop off points.
Cons: Reduction of on-street parking spaces; pushback from passengers who expect door-to-door service
Funding: Lake Worth Beach

Conduct rider surveys

Passenger experience is key to formulating successful transit systems, including microtransit. Passenger input reveals where services are lacking or ideas on how to improve transit. By conducting the surveys at the nine-month mark, the service is established enough to work through initial service challenges with time to incorporate feedback into next year's contract. The survey should be designed to:

- Provide information that is pertinent to understanding microtransit services, passenger types, trip purpose, passenger sentiment, modes displaced, ease of use, service shortcomings, and other information that is difficult to gauge from ridership reports
- Coordinate surveys with Circuit to see if passengers can take the survey through the mobile app
- Conduct intercept surveys on board or as passengers wait for pick up

Action Item: Conduct a survey of Circuit passengers
Who: City of Lake Worth Beach, Circuit
Programs: CRA
Timeframe: 2024 (Near Term)
Cost Factors: Staff time, survey development; survey deployment, analysis of results

Pros: The city gains firsthand insights from the key audience (passengers); ideas on service improvements from a customer's point of view
Cons: Survey costs
Funding: Lake Worth Beach, Circuit

Assessing and adjusting circulator services

As a new type of transit service, on-demand circulators tend to monitor and adjust services over time. The first six months to one year of service reveals ridership patterns and costs that require changes to routes, pricing, service boundaries, scheduling, and the number of vehicles needed. In reviewing the first year of service, Lake Worth Beach should review and adjust the following program features:

- Updated service goals (e.g., access, economic development, tourism)
- Performance metrics (rides starting/ending at TriRail; Rides starting/ending in target neighborhoods; number or percent of pooled rides, and modes displaced by a circulator ride (e.g. a circulator trip that would have been a car trip).
- Equity tracking
- Number of vehicles leased by private entities such as hotels and resorts.
- Marketing

Action Item: Assess and adjust circulator service
Who: City of Lake Worth Beach, Circuit
Programs: CRA
Timeframe: 2024 (Near Term)
Cost Factors: Staff time, resources to update contract and service agreements
Pros: Ability to guide continuous improvement of circulator service.
Cons: None
Funding: Lake Worth Beach, Circuit or another vendor

STRATEGIES FOR PEDESTRIANS

Create a citywide shade study and action plan

The topic of tree canopy and shade appears in multiple Lake Worth Beach plans and studies, as well as public comments for this study. In response to the survey question "What improvements would encourage you to use non-car transportation?" sixty percent of respondents chose "more shade and trees along sidewalks." Attention to canopy is growing as climate change-related heat and storms pose higher risks. These risks extend to the mobility system, especially for those walking, cycling, and taking transit. New mapping tools are available to map the extent of contiguous shade along sidewalks and bikeways, helping to identify locations for tree planting or shade structures. The steps for creating a shaded mobility system include:

- Convene the range of public, private, and non-profit stakeholders with an interest in tree canopy and shade (e.g., County officials, climate and resiliency, health, parks, schools, transit, outdoor workers)
- Determine the scope of work for documenting a tree and shade inventory, as well as urban heat mapping
- Establish goals and priorities for adding shade with a focus on highly used sidewalks, first-last mile to transit stops and schools.

- Refer to shade funding programs namely the Florida Urban and Community Forestry.

Action Item: Create a citywide shade action plan
Who: City of Lake Worth Beach, mobility + heat stakeholders
Programs: Coastal Resilience Partnership of Southeast Palm Beach County, Carbon Neutral Initiative
Timeframe: Early 2025 (Near Term)
Cost Factors: Staff time, resources to carry out a shade and canopy study, resources for convening stakeholders, resources for grant applications
Pros: Responds to one of the top concerns expressed by the community; increased comfort for travelers walking, cycling, and taking transit; reduced health risks; addresses several community goals at once
Cons: Funding needed to carry out and implement a shade/urban cooling plan; tree plantings can be controversial (e.g., blocking views, hurricane hazards, maintenance costs).
Funding: PROTECT, AIITP, TPA LI, TPA TA

Leverage Safe Routes to Schools

Under the Bipartisan Infrastructure Bill (BIL), Safe Routes to School (SRTS) was codified into law, with established minimum levels of annual funding per state. Florida's funding program is currently on pause, though there are several federal funding streams. The Surface Transportation Program (Block Grants) and the Highway Safety Improvement Program both fund SRTS projects. These funds are suballocated to the state and Palm Beach TPA.

Secondly, there is regional interest in constructing a cycling and pedestrian bridge over I-95 on 10th Street. This intersection links students living east of I-95 with Lake Worth Middle school. The highway on and off ramps exhibit high speeds and crash rates, forcing children to cross high hazard intersections. Leveraging Safe Routes to School would entail:

- Combining school-related projects in this study as a package for funding to advance to the Palm Beach TPA
- Considering the list of eligible projects under these grant programs: planning, design, and construction of infrastructure-related projects including (1) sidewalk improvements, (2) traffic calming and speed reduction, (3) pedestrian and bicycle crossings, (4) on- and off-street bicycle and pedestrian facilities, (5) secure bicycle parking facilities, and (6) traffic diversion.
- Continuing to work with regional and state transportation agencies on moving a pedestrian bridge forward.

Action Item: Identify and package Safe Routes to School safety projects
Who: City of Lake Worth Beach, Palm Beach County, possibly FDOT
Timeframe: 2025/2026 (Near-Medium Term)
Cost Factors: Staff time, resources to apply for Palm Beach TPA grants
Pros: Addresses top safety concerns in and around schools, packaging projects can make the application gain points
Cons: Should the City adopt speed cameras, this calming could justify limiting funding to other safety projects not in a school zone; some grant programs now prohibit purchases of speed cameras that use license plate readers.
Funding: SS4A, Florida Safety Subgrants TPA LI, TPA TA

Alleyway improvements

The city has been interested in using its mid-city alleyways as part of the transportation system. The biggest constraints in adopting alleyways into the network are (1) the alley network is discontinuous in places, (2) they are in varying states of repair and maintenance, (3) they are used for utilitarian purposes that could cause conflicts, and (4) lighting can be poor. In field visits and views on Google Earth, pedestrians currently make use of the alleyways, so they are an informal part of the city's mobility network. A formal inventory and assessment of the alleyways is recommended in the future. The city can take steps for integrating alleys into a mobility network:

- Create an alleyway map that shows (1) the network, (2) pavement condition (paved versus unpaved, pavement condition, poor drainage), (3) current uses (trash collection, parking, utility corridor), (4) lighting, and (5) connectivity (connected or disconnected).
- Denote which alley segments are suitable for cycling, micromobility, walking, or no mobility improvements. Limit improvements where there are safety concerns over lighting, conflicts with vehicles, poor condition, or lack of connectivity
- Highlight any segments that are candidates for Quick Build improvements (wayfinding, lighting, paving, landscaping, fencing)

Action Item: Create an alleyway network map
Who: City of Lake Worth Beach
Programs: Public Works, CRA
Timeframe: 2025/2026 (Near-Medium Term)
Cost Factors: Staff time, resources to map the network, resources for alleyway improvements
Pros: Improves connectivity for walking and bicycling
Cons: The cost of improving alleyways would be substantial; paving unpaved segments would change drainage and add to street maintenance costs; homeowners may object to increased activity and lighting on alleyways
Funding: PROTECT, FDOT resurfacing, SS4A, TPA LI, TPA TA, Lake Worth Beach

STRATEGIES FOR CYCLING

Adopt the low-stress bicycling network

The current bikeway system plans were conducted in 2009 and 2011. Many of the recommended improvements are now in place or underway on Boutwell Drive, Osbourne Street, Lake Avenue, and Lucerne Avenue. Since those studies were issued, low-stress bicycle network mapping has become a standard method for assessing and assigning bike routes. Mapping bicycle level of stress considers factors such as vehicle speeds that make cycling uncomfortable and hazardous. This study's low-stress bicycle map closely aligns with previous mapping. Steps in adopting the map include:

- Finalize and publish the map on websites and in related sites and materials
- Combine, if needed, with other bikeway suggestions (see e-bike pilot below)
- Consider sharrows on roadways that are part of the network (streets posted 25 mph or below per NACTO guidance)

Action Item: Formally adopt the low-stress bicycling network as the City's Bike Routes
Who: City of Lake Worth Beach, Palm Beach TPA
Programs: Community Sustainability, Neighborhood Roads

Timeframe: 2025/2026 (Near-Medium Term)
Cost Factors: Staff time, resources to update city materials on bikeways
Pros: Improves connectivity and safety for bicycling; can attract more bicycle riders.
Cons: Level of stress may not match with bicycling commute patterns on high stress roadways where protected infrastructure is needed.
Funding: AIITP, FDOT Restriping, TPA LI, TP TA, Lake Worth Beach

E-bike route demonstration projects

E-bicycles are an increasingly popular means of transportation given the lower effort, higher speed, and longer range compared to regular cycling. Moreover, trips on an e-bike route can be shorter and faster than using transit. They are also an affordable option to replace car trips, car payments, and the parking costs. Even with this appeal, there are few examples of formalizing electric bikes into mobility networks and plans. This type of planning is vital to minimize conflicts between e-bikes, cars, and regular bicycles while maximizing connections between destinations.

This study was not structured to provide a robust assessment of electric bikes and routing. However, the city would be well positioned to pilot a route along 10th Street or Lake Worth Road. These two roads are recognized as major east-west corridors by the Palm Beach TPA.

Lake Worth Road has the advantage of not having a junction with I-95 exits and entry ramps. There are also existing five-foot wide shoulder bike lanes and a five feet wide footpath on both sides. There are also links to large trip generators such as Palm Beach State College, John Prince Park, the TriRail station, and links to downtown Lake Worth Beach. The 10th Street option does have the interchange traffic and would link the middle school to residential areas east of I-95. There are five feet wide sidewalks on either side though lacking on-street bicycle lanes. Steps toward this pilot project application include:

- Meet with Palm Beach TPA on their plans for Lake Worth Beach Road. Meet with Palm Beach County on the feasibility of such a plan and roadwork
- Assemble, if feasible, stakeholders who would be part of a grant submission
- Map current and potential cyclists (housing, employment density)
- Target appropriate funding sources and match requirements
- Develop the internal capacity for grants management
- Apply for grants

Action Item: Create a pilot project application to test the first segment of an electric bike network
Who: City of Lake Worth Beach, Palm Beach County, Palm Beach TPA, FDOT, Palm Beach State College, TriRail
Programs: Community Sustainability, Palm Beach County 5 year workplan, TPA TIP
Timeframe: 2025/2026 (Near-Medium Term)
Cost Factors: Staff time, resources to research and develop a pilot project on e-bikes; resources to develop a project application including a cost-benefit analysis, matching funds for a pilot and infrastructure upgrades.
Pros: Provide proof of concept for facilities targeting e-bike riders; Lake Worth Beach Road is on the TPA's 561 corridor plans; a project like this would secure funding for roadway work; the projects would raise the profile of e-bikes as part of the mobility system.

Cons: There are network gaps on Lake Worth Road, particularly near the High School and poor bicycle facilities on 10th Street; there would be up to a 20% match; this would be a novel project and grant application, hence there are few go-bys. There would need to be a rigorous safety campaign for middle and high school students on both suggested routes.
Funding: SS4A, AIITP, RAISE (if >$5M), TPA TA, Palm Beach County

E-bike incentives

Cities across the nation are offering electric bike rebates, vouchers or tax credits to spur adoption of cycling. Vouchers are the most popular. Vouchers can range from $200 to $1,000 for the general population and higher rebates for qualifying low income recipients according to BikePedRVA'vs E-bike incentives website. In Florida, Tampa has the state's only e-bike voucher program to date. Vouchers are $1,000 for residents, and $2,000 to $3,000 vouchers for qualifying low-income residents. Support for the program came through a partnership between the City's Parking Division and the Sustainability and Resiliency Office. Steps for creating an e-bike incentive system are as follows:

- Contact Vik Bhide, Director of Tampa's Mobility Department to get details on their program
- Research funding sources. Common mechanisms are foundations, climate and clean air programs, energy programs, local sources (general fund, parking fees), electric utility companies, private companies, and bicycle advocacy groups.
- Assemble stakeholders and partners to design a program. Most program details include incentive type (mail-in rebate, voucher, tax credit), incentive value and tiers (e.g., low income), qualified bicycle types, qualified dealers, application materials, schedules, administration, and reporting.

Action Item: Create an e-bike incentive program
Who: City of Lake Worth Beach, Palm Beach TPA, FDOT, CareerSource Palm Beach
Timeframe: 2025/2026 (Near-Medium Term)
Cost Factors: Staff time, resources to research and develop a pilot project on e-bike incentives; resources to fund the program; resources to stand up and administer an e-bike incentive program.
Pros: Based on the experience of other cities, cycling increases; research shows 60% of e-bike trips replace car trips; e-bikes can be part of Lake Worth Beach's affordability strategy; additional health and economic benefits.
Cons: Incentive programs can be complicated and require resources to administer the program; Florida lacks a state level funding program similar to California and Colorado.

Additional bike racks

Like earlier studies, Lake Worth Beach residents asked for additional places to park bikes. With the increase in cycling overall and interest in e-bikes, the city will need to add racks downtown. Cities also are installing bike corrals by replacing vehicle parking spaces with racks that hold up to 12 bicycles. While merchants often hesitate at the thought of removing parking spaces, studies show cyclists provide a boost to the local economy. This is, in part, because a single parking space can accommodate many more customers. On Atlantic Avenue, Delray Beach converted an on-street parking space to bicycle and moped parking. The space was in front of a coffee shop with high turnover. The spaces are also used by food delivery companies who are picking up orders from restaurants. The city can explore the following strategies:

- Replace current bike racks that only fit two bikes to larger rack where feasible
- Crowdsource ideas from downtown visitors on the best locations for new bike racks
- Convene downtown stakeholders to discuss new locations
- Convert parking spaces in municipal lots to bike corrals
- Turn to some of the smaller placemaking grant programs to install more racks
- Include bike cages for TriRail and Lake Worth Beach High School as part of the E-Bike strategy

Action Item: Install additional bike racks
Who: City of Lake Worth Beach
Timeframe: 2025/2026 (Near-Medium Term)
Cost Factors: Cost of replacing existing racks with larger ones; cost of new bicycle cages; cost to restripe a parking space and associated signage.
Pros: Satisfies constituents' request for additional bicycle racks; additional racks will meet demand; increased cyclist convenience.
Cons: Public space for racks is already constrained; racks need to be placed in visible locations for safety and to deter theft; the business community may oppose reallocating parking spaces for bicycle corrals.
Funding: AIITP, TPA LI, TPA TA, Lake Worth Beach, Non-profits

STRATEGIES FOR TRANSIT

Facilitate Transit oriented development (TOD) (or transit oriented communities)

Lake Worth Beach has several TOD plans dating back to 2008 for the TriRail station and additional future stations. Many of the concepts still apply. Changes in the economy, market dynamics, technology, and enhanced transit service in South Florida merit a review and update. Housing prices have also risen remarkably, a phenomenon affecting all areas with transit service. The term Transit Oriented Communities (TOC) was developed to signal a more deliberate approach to addressing affordability, displacement, and community development around stations. One such project is under development by the Treasure Coast Regional Planning Council to transform the I-95 underpass next to the TriRail station. TOD is not just confined to rail stations: premium bus service on Dixie Highway or the designation of Lake Worth Road on Palm Beach TPA's 561 corridor plan. These and other activities point to the following steps on TOD:

- Conduct Station Area Plan updates (Lake Worth Transit-Oriented Development: The Citizens' Master Plan) that include consideration for displacement.
- Work with Treasure Coast Regional Planning Council on I-95 underpass project
- Work with TriRail and Palm Tran to fund station area upgrades such as bicycle lockers, better signage, and shelters.
- Consider first-last mile access to transit that encompasses neighborhoods north on Boutwell to the west and north on N. A Street to the east . These two streets have traffic calming features and high-density residential neighborhoods.

Funding: AAITP, Reconnecting Communities (RC/NAE), Pilot Program for Transit-Oriented Development Planning, RAISE, TPA LI, TPA TA,

C. Comprehensive Plan Recommendations

This Mobility Plan will be strengthened by adding and/or editing language in Lake Worth Beach's Comprehensive Plan. The current plan does include objectives and policies that support the goals of this Mobility Plan for multimodal transportation. The Comprehensive Plan contains references to walking and biking (multimodal transportation), intermodal hubs, supportive infrastructure, safe routes to school, right-size parking, and regional cooperation. There are also references to links among transportation, land use and infrastructure. The Capital Improvement section prioritizes safety in its criteria.

The following sections include sample language for (1) new policies, and (2) edits to exiting policies.

TRANSPORTATION ELEMENT (ADDITIONS)

The following are recommended new policies to the Transportation Element.

Policy 2.1.1.19: The City shall promote the concept of "Vision Zero" to eliminate traffic-related fatalities and serious injuries through safety campaigns, traffic calming, and use of proven safety countermeasures.

Rationale: Strengthens the tie between the Vision Zero ordinance and the Comprehensive Plan.

Policy 2.1.1.20: The City shall continue to examine best practices and methods for the safe and context sensitive implementation of shared mobility and micromobility solutions, such as microtransit, dockless bicycle share, dockless scooters, and e-bikes. The City shall seek agreements for sharing data for monitoring and improving service (for reference, see Fort Lauderdale Florida Comprehensive Plan Infrastructure Element and City of Dunedin Florida Strive for 2035).

Rationale: This policy supports the city's ability to improve infrastructure and services for emerging and evolving modes of transportation.

Policy 2.1.1.21. The City shall use the best and latest design standards available when evaluating potential designs for the development of Complete Streets and Networks. Possible sources of design guidance could be obtained from, but are not limited to, the following: the American Association of State Highway Officials (AASHTO), FDOT, the Institute of Transportation Engineers (ITE), the National Association of City Transportation Officials (NACTO), ADA, the Public Right-of-Way Accessibility Guidelines (PROWAG) (for reference, see Boca Raton's Comprehensive Plan Transportation Element)

Rationale: This policy allows the City to use design standards that are recognized for multimodal street design.

Policy 2.1.1.22. The City shall consider, where appropriate, the development of Quick Build, "pop-up design," or tactical implementation approaches in order to test multimodal transportation proposals prior to final design and accelerate implementation with low cost, flexible infrastructure.

Rationale: This policy formalizes use of lower cost, flexible installations

Policy 2.1.3.7: The City shall adopt a "Complete Network" framework for improving multimodal transportation to connect the downtown mixed use area, major attractions (such as Lake Worth Beach), and mass transit access points. The network will include safe, comfortable, and convenient access by way of streets, sidewalks, trails, and alleys.

Rationale: Complete Networks is a new concept to emphasize connectivity instead of unsystematic construction of isolated, multimodal segments

Policy 2.1.3.8: The City shall promote the development of "Complete Streets" that are designed, built, and maintained in a context-sensitive manner that accommodates motorized and non-motorized modes of travel for people walking, bicycling, riding micromobility devices, microtransit and transit vehicles, and driving motor vehicles. (for reference, see City of Oviedo, Florida Comprehensive Plan 2045).

Rationale: Calling out Complete Streets better positions Lake Worth Beach for policy and funding opportunities.

TRANSPORTATION ELEMENT (EDITS)

The following are recommended edits to existing policies the Transportation Element. Strikethroughs and underlines are used to identify the proposed revisions.

Policy 2.1.1.3: The City shall coordinate traffic improvement planning with Palm Beach County, the Palm Beach Transportation Planning Agency and the Florida Department of Transportation in order to accomplish **safe and** efficient traffic flow on County and FDOT roadways

Rationale: "Efficient traffic flow" can be construed as fast, posing safety hazards, particularly during turning movements.

Policy 2.1.1.9: All components of microtransit and the public transit system, PalmTran, and TriRail, shall coordinate to serve the Community Redevelopment Area and LWPOC Urban Redevelopment Area.

Rationale: Adding microtransit recognizes the new forms of private transit services that have a stated goal of connecting to transit.

Policy 2.1.2.2: The City shall acquire where possible the needed right-of-way at constrained

intersections for construction of necessary turning lanes and any safety enhancements.

Rationale: As stated above improved lanes can encourage speeding. With the language, there is a safety component to new turn lanes.

Policy 2.1.2.3: Where ~~exclusive~~ public transit corridors exist within the City or where such corridors are planned, the LDRs shall ensure that land uses along and in proximity to these corridors are designed to maximize use of, and accessibility to, the transit facilities and services.

Rationale: The directions on LDRs should occur in all transit corridors, not only where separated (exclusive) corridors exist.

Policy 2.1.4.2: The City shall prepare policy guidelines to be used to evaluate the traffic impact of regional transportation improvements on the City's existing and proposed residential and commercial development. Such guidelines may include alternates for enhancing multimodal traffic movements ~~efficiency~~ and mitigating negative traffic impacts, such as traffic calming, one-way street designation, provision of public parking facilities, or other similar mechanisms.

Rationale: See above referenced comments on efficiency

Policy 2.1.4.5: The City shall support the provision of safe vehicular and bicycle parking to support new land development. Public parking shall continue to be provided to serve the downtown mixed-use area, major attractions (such as Lake Worth Beach) and mass transit access points. The City shall develop a Parking Master Plan to identify short- and long-range parking strategies, including a reassessment of parking demand for mixed-use and infill developments, and including the implementation of demand-responsive parking programming ~~incentives~~.

Rationale: Allows Lake Worth Beach to respond to higher bike mode share and address public comments on the need for increased bike parking. Including demand-responsive parking programming allows the city to implement pricing and policy to manage parking demand.

Policy 2.1.6.2: The City shall cooperate with Palm Beach County to initiate a program to capture roadway impact fees generated from development/redevelopment within the LWPOC TCEA. This funding shall be used for upgrading or implementing new transit programs or instituting roadway improvements directly benefiting the LWPOC, such as intersection right-of-way acquisitions, adding turn lanes and ~~improved turning radii~~ safety enhancements.

Rationale: This language extends safety programming to the LWPOC. Improved turning radii are often regarded as adding slip lanes, which can encourage speeding.

CAPITAL IMPROVEMENTS ELEMENT (EDITS)

The following is a recommended edit to an existing policy the Capital Improvements Element. An underline is used to identify the proposed addition.

Objective 9.1.1: The City shall use the Capital Improvement Element as a means to assess the City's public facility deficiencies, including safety, or arrange for others to provide capital improvements necessary to correct deficiencies in existing public facilities, to serve projected future growth and to replace obsolete and worn-out facilities, in accordance with an adopted Capital Improvement Schedule (CIS).

Rationale: The references to safety are limited to public safety

ECONOMIC DEVELOPMENT ELEMENT (ADDITIONS)

The following are recommended new policies to the Economic Development Element

Policy 11.1.1.4: The City shall coordinate, where appropriate, City investment in utilities, broadband, mobility, and related public investments that align with business, employment and economic development opportunities. (for references, Fort Lauderdale Economic Development Element).
Rationale: Provides support for mobility investments by recognizing the value of mobility

MOVING FORWARD

Below is a summary of the actions needed to incorporate the comprehensive plan changes.

Action Item: Prepare a list of preferred zoning and code changes. Determine the next cycle for code and plan updates
Who: City of Lake Worth Beach
Timeframe: 2025 (Near Term)
Cost Factors: Staff Time (Low to Medium)
Pros: Effectuates regulatory frameworks for advancing safety and mobility
Cons: Must align with code and plan update schedules
Funding: Lake Worth Beach