US-1 Multimodal Corridor Study

CONNECTING COMMUNITIES

In Palm Beach County

Lake Worth Beach

June 1, 2021

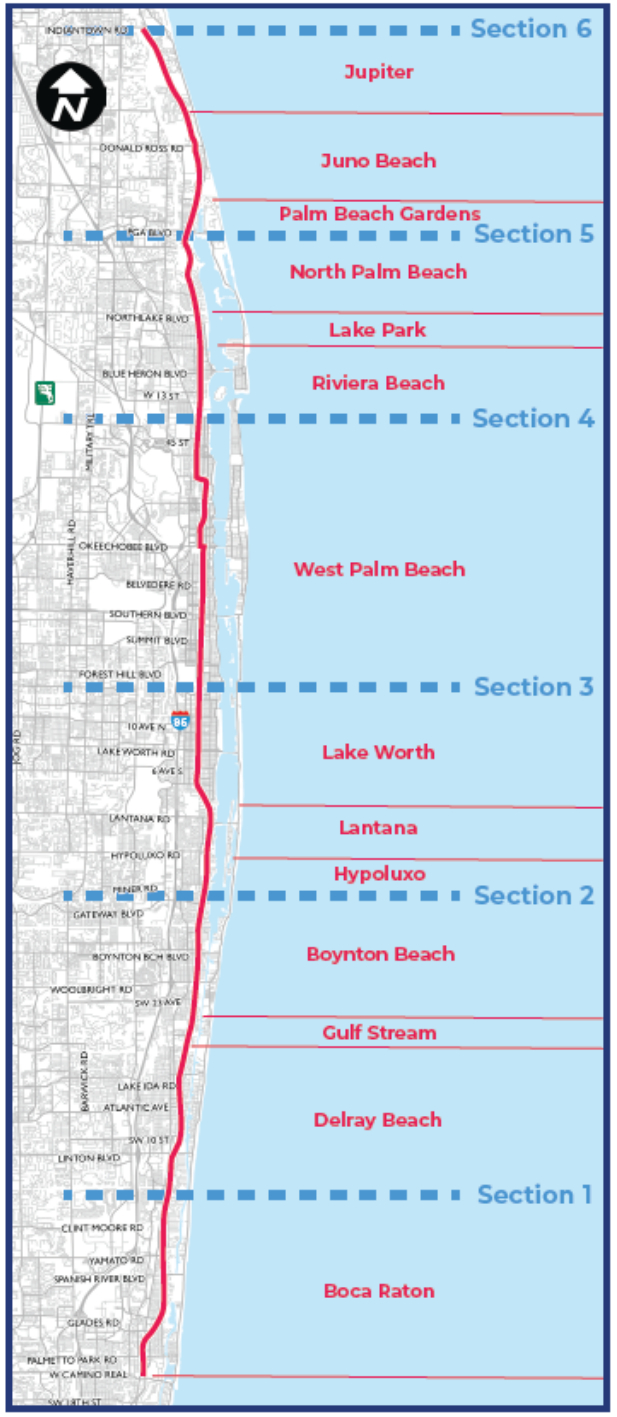
PALM BEACH
Transportation
Planning Agency

MISSION

To collaboratively plan, prioritize, and fund transportation

VISION

A safe, efficient, and connected multimodal transportation system



US-1 Corridor Study

- 2017-2018
- 42 miles from Boca Raton to Jupiter
- Enhanced transit service & connected multimodal facilities that increase safety and access for all roadway users
- TPA Priority Project

Current Conditions

Physical-Related Issues for US-1 Corridor Residents

90%

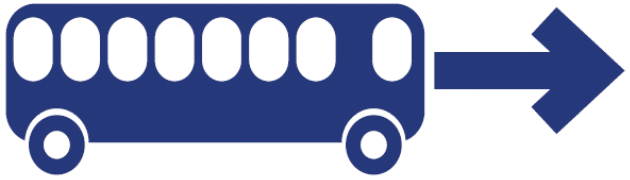
of Route 1 riders WALK to their Stop

50%

ARE Transit Dependent

Highest Ridership Route in the County

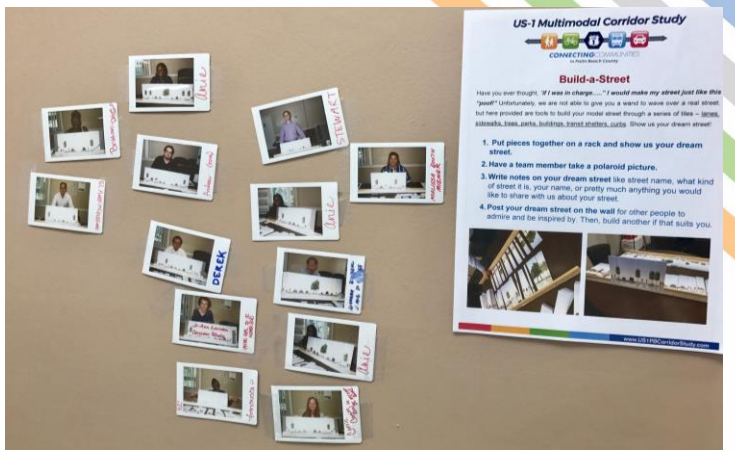
65%



of Route 1 riders do NOT transfer buses

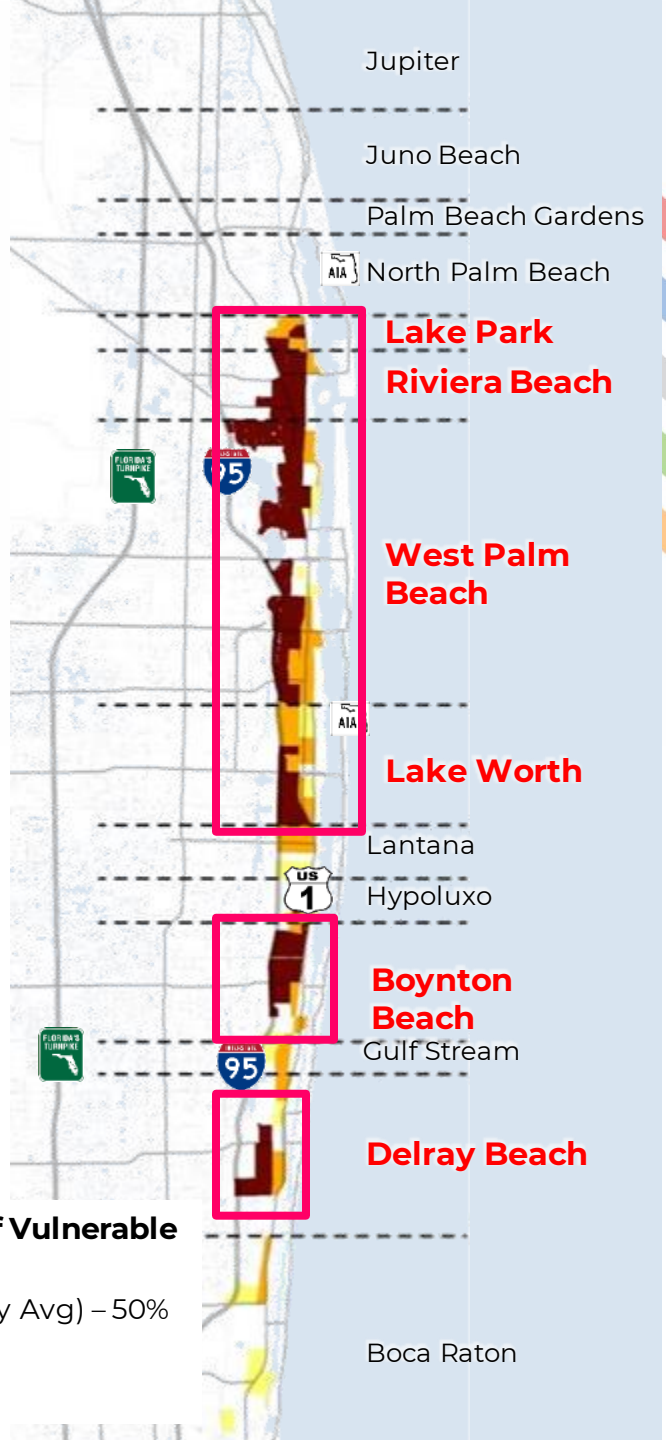
Overview of Study

- **Health Impact Assessment**
- **Transit Assessment**
- **Roadway Assessment**

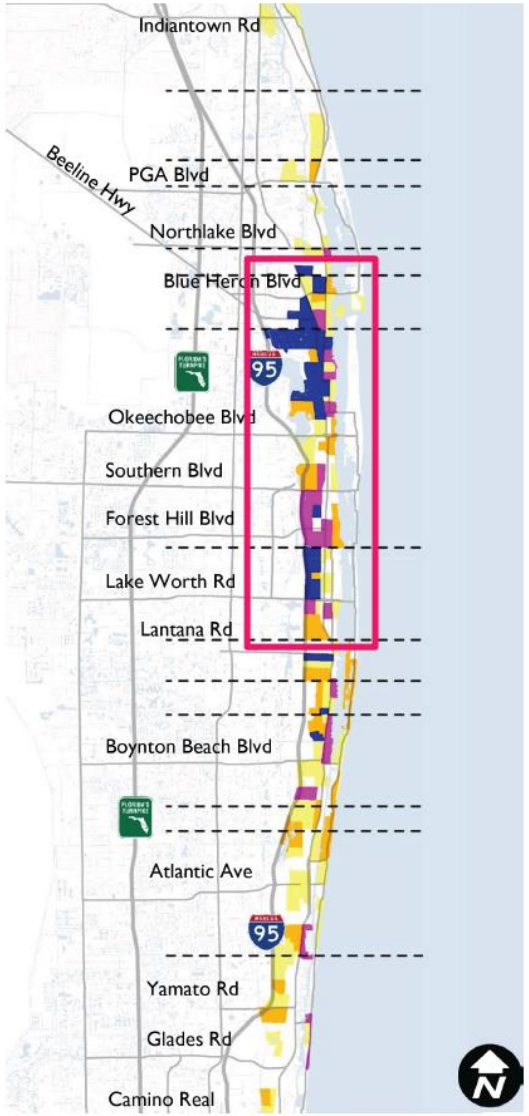


Vulnerable Populations

- **Boynton Beach**
  - High percentage of racial & ethnic minorities population
  - Food desert
  - Hypertension rate (45.5%)
- **Lake Worth**
  - Depression rate (18.7%)
  - Obesity rate (31.1%)
  - Bicycle/Ped Incident/Mile (3.8)
- **West Palm Beach**
  - High transit-dependent households
  - Bicycle/Ped Incident/Mile (3.1)
  - Multimodal Split: 10.0%
- **Riviera Beach**
  - Hypertension (45.6%)
  - Obesity: 34.1%
  - Asthma: 9.7%
- **Lake Park**
  - Obesity: 33.0%
  - Multimodal Split: 9.4%
  - Asthma: 9.3%



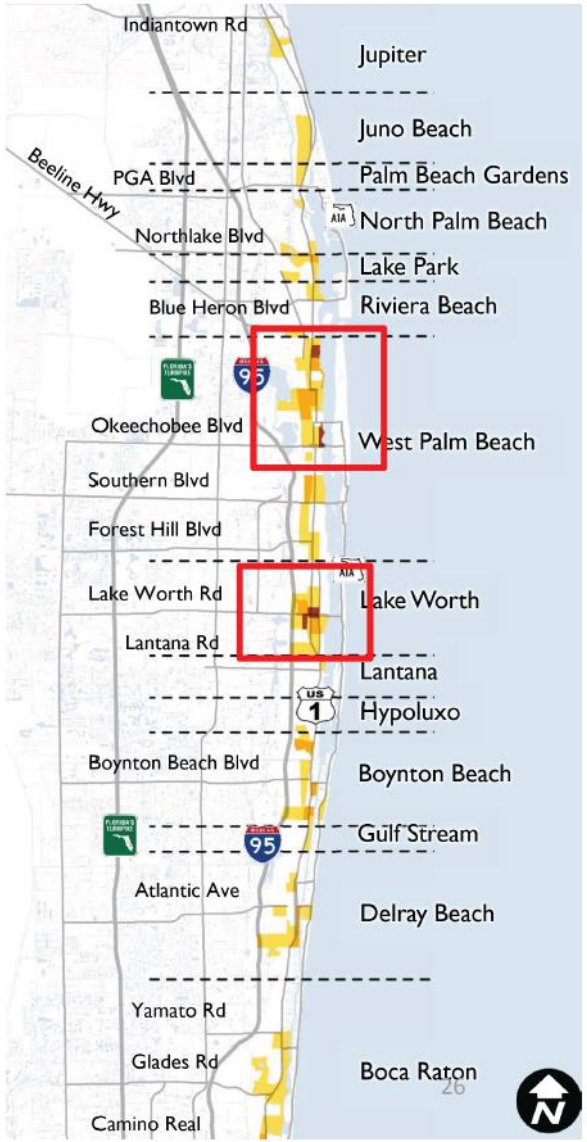
Median Household Income



Median Household Income

- $0 - $ 26,945 (50% AMI)
- $26,946 - $32,333 (60% AMI)
- $32,334 - $43,111 (80% AMI)
- $43,112 - $58,970 (100% AMI)

Households without Access to a Vehicle



Households Without Access to a Vehicle

- 0.29 (County Avg) – 1 / Acre
- 1.01 – 1.5 / Acre
- 1.6 – 10.5 / Acre

Pedestrian and Bicycling Facilities

Walking and Bicycling Facilities

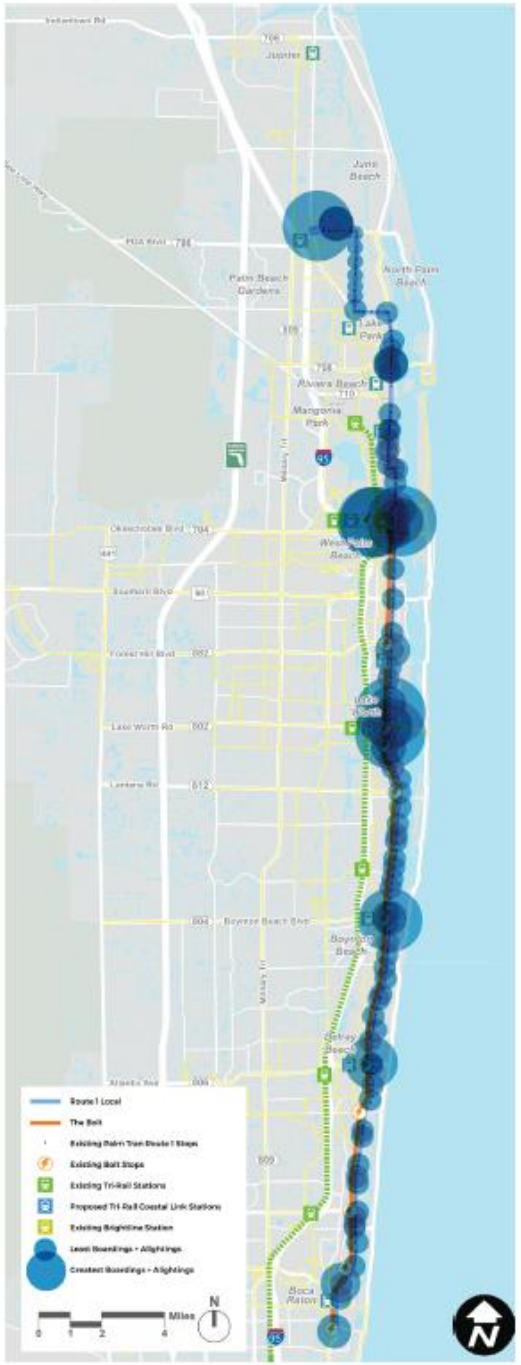
- Bicycle Facility Gap
- Sidewalk Gap

Pedestrian and Bicycle Crashes

Ped / Bike Crashes

- Least
- Greatest
- Fatality
- Crash Hot Spot
- High Crash Corridor

Existing Transit Conditions



90%

of Route 1 riders WALK to their Stop[2]

Top Ten Route 1 Stops

	HIGHEST RIDERSHIP STOPS	AVERAGE WEEKDAY BOARDINGS
1	West Palm Beach Intermodal Transfer Center	885
2	Downtown Lake Worth *(Dixie Hwy @ Lucerne Ave)*	236
3	Downtown Lake Worth *(Dixie Hwy @ 2nd Avenue N)*	219
4	Downtown Boynton Beach *(Federal Hwy @ Boynton Beach Blvd)*	173
5	Downtown West Palm Beach *(Quadrille Blvd @ Evernia St)*	163
6	Downtown Boca Raton *(Dixie Hwy @ E Camino Real)*	151
7	The Gardens Mall	137
8	Riviera Beach @ Blue Heron	126
9	Downtown West Palm Beach *(Quadrille Blvd @ Banyan Blvd)*	98
10	Downtown Delray Beach *(Federal Hwy @ SE 1st St)*	91

Vulnerable Populations

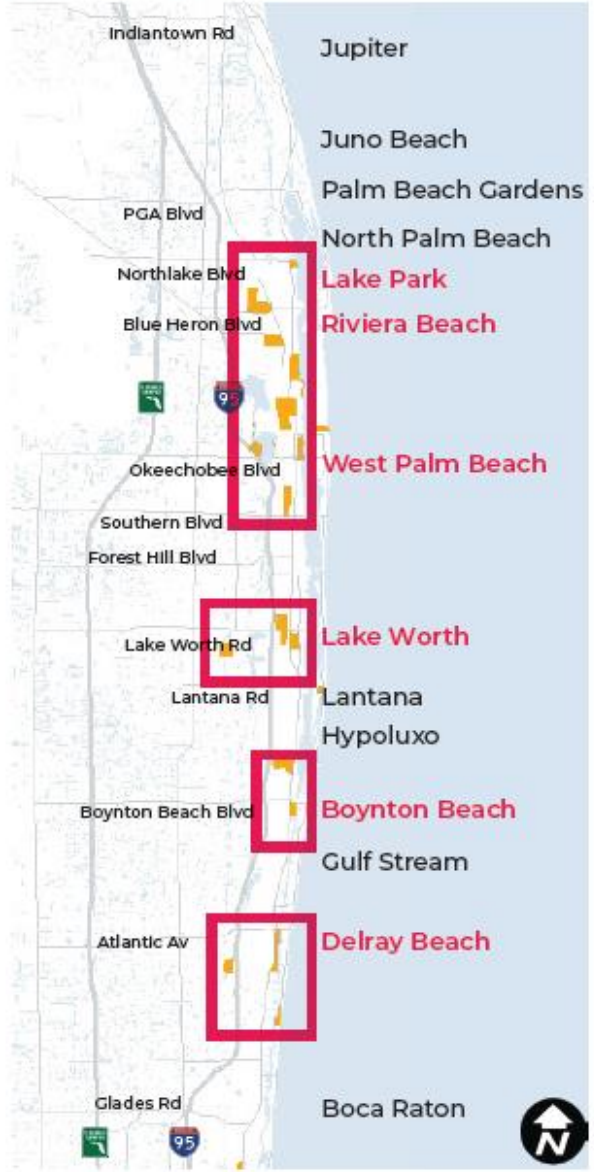
This overall lack of multimodal options isolate many disadvantaged residents within a community from jobs and educational opportunities. The increased distances between housing and jobs, as well as educational opportunities, has created barriers for those disadvantaged groups. As defined in Appendix A, US-1 Multimodal Corridor Health Impact Assessment Study, those disadvantaged groups were clarified as vulnerable populations defined as those who:

- **Live in Households without Access to Automobiles**
- **Are in Poverty**
- **Are Age 65 or Older**
- **Are Disabled**

Many physically and economically **disadvantaged** people **depend on public transportation** to **access medical services** and to **obtain healthy**, affordable **food**.

*Vulnerable populations are **far more dependent** on transit services and **far more affected** by the lack of pedestrian and bicycle connectivity, the spacing of stops or stations, and the overall availability and reliability of a transit service*

Vulnerable Populations



US-1 Crashes (N Federal Hwy to Gregory Rd ~3.7 Miles)

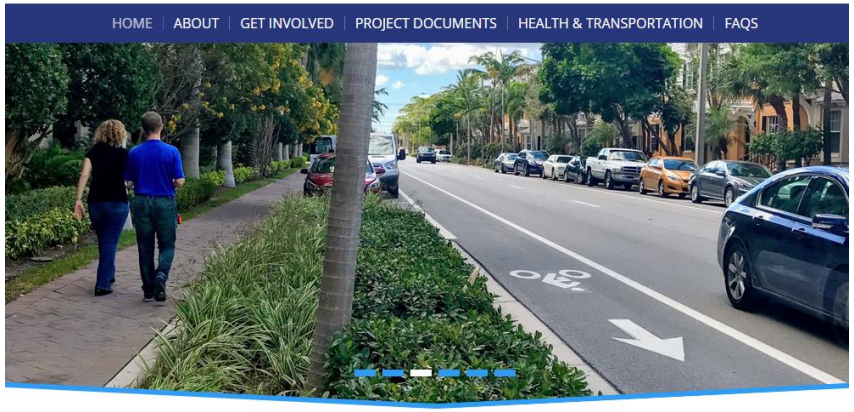
2015-2019 – Florida Signal Four Analytics Data

38 total pedestrian crashes, and 24 total bicycle crashes

# ped fatalities	8
# ped serious injuries	7
# ped total crashes	38
# bike fatalities	1
# bike serious injuries	3
# bike total crashes	24
# of car crashes	1,476
# of car rear end crashes	423

US-1 Multimodal Corridor Study

CONNECTINGCOMMUNITIES
In Palm Beach County

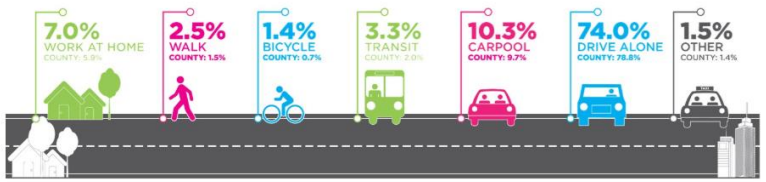


US-1 MULTIMODAL CORRIDOR STUDY

In early 2017 the Palm Beach TPA kicked off a US-1 Multimodal Corridor Study to examine the potential for new express bus service as well as facilities to improve pedestrian and bicycle safety and connectivity along the corridor. The study encompassed the US-1 corridor in Palm Beach County from Camino Real in the City of Boca Raton to Indiantown Road in the Town of Jupiter. The project corridor is approximately 42 miles in length and runs north-south across 14 local municipalities. This effort included a kickoff outreach event and 6 months of public workshops and charrettes. The project also included a Health Impact Assessment (HIA) and HIA working group with local health partners to help inform the study's recommendations and potential impacts to community health. This project is included in the Palm Beach TPA's Priority Projects List for the Transportation Improvement Program (TIP).

The US-1 Multimodal Corridor Study draft documents are availabe under the "Project Documents" tab and at: www.PalmBeachTPA.org/US1

PROJECT STATS



Source: U.S. Census Bureau 2011-2015 5-Year Estimates; Robert Woods Johnson Foundation County Health Rankings

PROJECT TIMELINE

450+ attendees at Workshops and Open Studio Charrettes/Open Streets Event

18 Open Studio Charrette Days

6 Workshops

1 Open Streets Event

100+ interactive Priority Pyramid Responses

9 comments to info@US1PBCorridorStudy.com

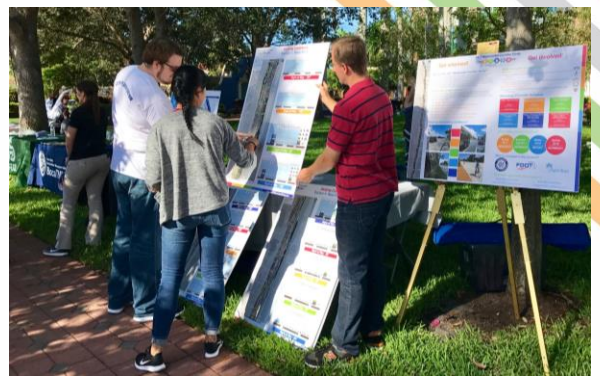
260+ likes and **130+** comments on online Comment Map

100+ Stakeholder Interviews

100+ survey responses

16+ personal interviews

Social Media included Project Facebook Page and Instagram



Lake Worth – Section 3

Key Recommendations

Advance premium transit on US-1 by funding capital and operational costs for the service

Implement Complete Street Solutions for the US-1 Corridor

Access to Jobs and Education

Access to Health and Community Services

Economic Development

Bicycle and Pedestrian Safety

Transit Recommendations

PTX Yellow + PTX Blue + PTX Green

(City of Boca Raton to Town of Jupiter)

Compared to "The Bolt" limited stop service:

229,000

Additional Riders per Year

138%

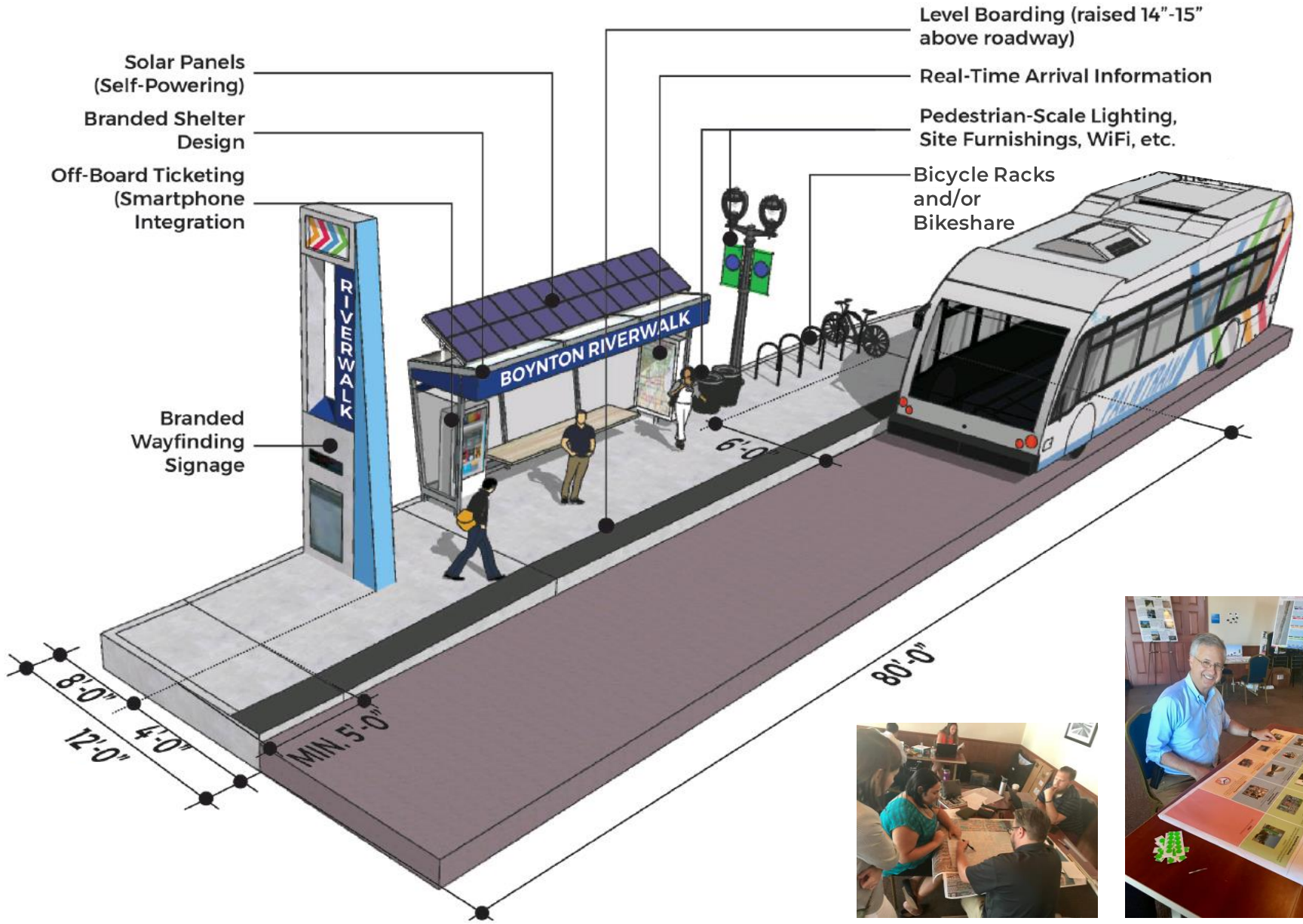
Increase in Households and Jobs Locations that have access to Transit

Within a 10-Minute Walk

45 **Schools**

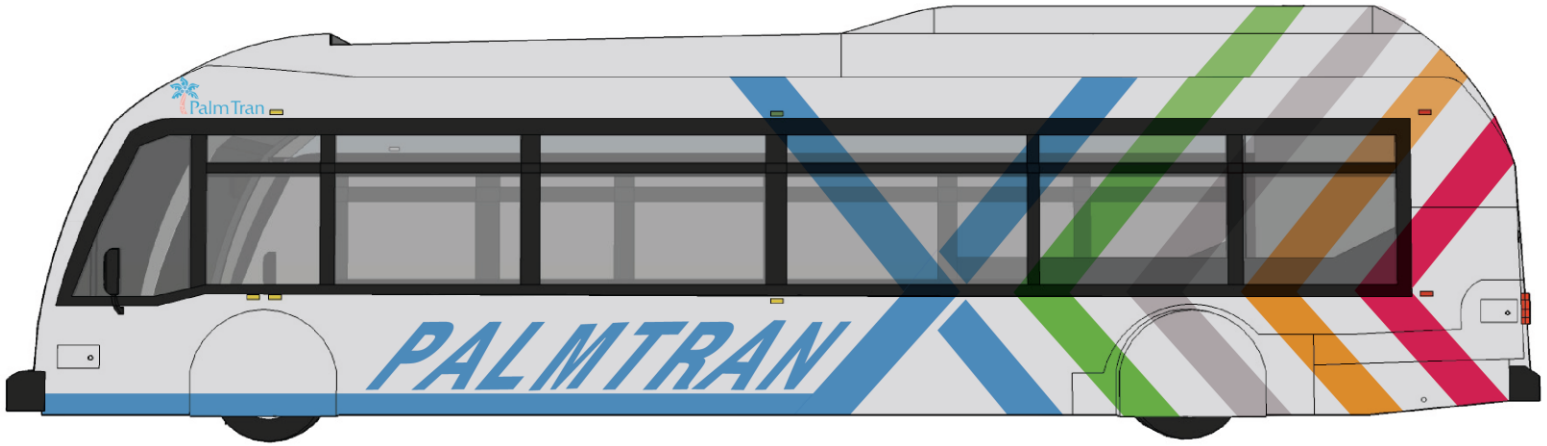
217 **Healthcare Facilities**

Transit Station Design



Proposed Transit

- Electric Buses
- Enhanced Transit Shelters
- Frequent Service
- Limited Stops



CITY OF LAKE WORTH

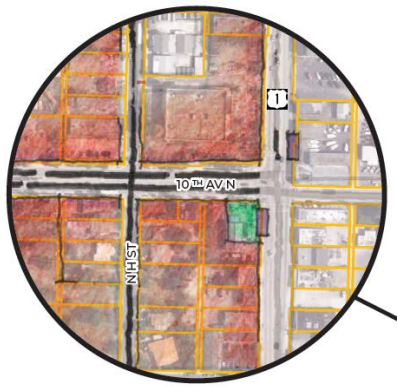
CONCEPTUAL OPPORTUNITY AREAS AT A GLANCE:

10TH AVENUE NORTH

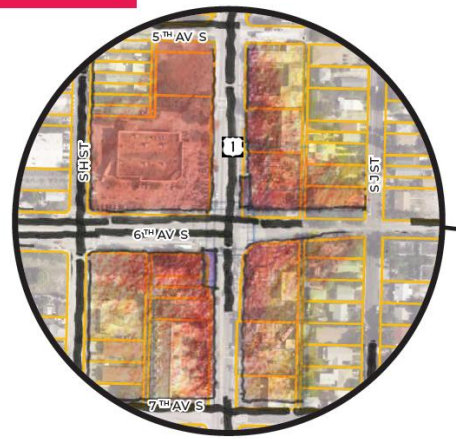
- Enhance pedestrian crossings at 10th Avenue North
- Create park space adjacent to southbound PTX station
- Maintain existing street network

6TH AVENUE SOUTH

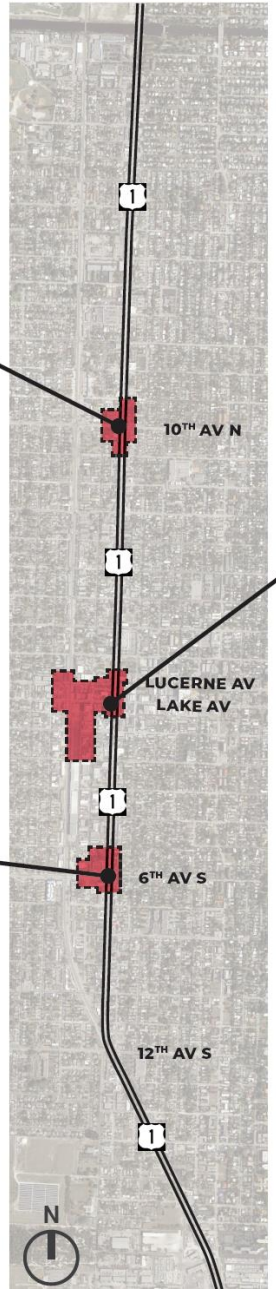
- Enhance pedestrian crossings at 6th Avenue South
- Maintain existing street network
- Focus any new redevelopment towards PTX station areas

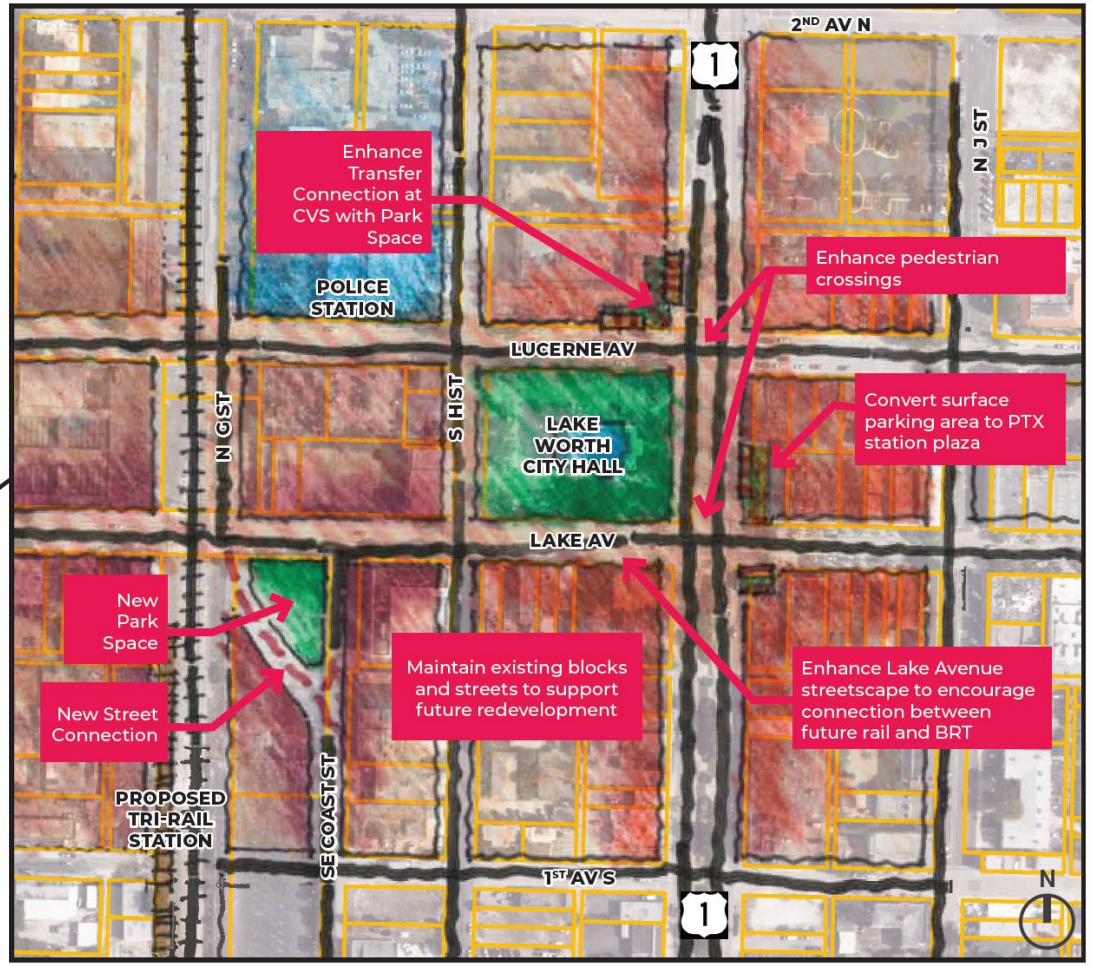


10TH AVENUE NORTH



6TH AVENUE SOUTH





DOWNTOWN LAKE WORTH

LEGEND

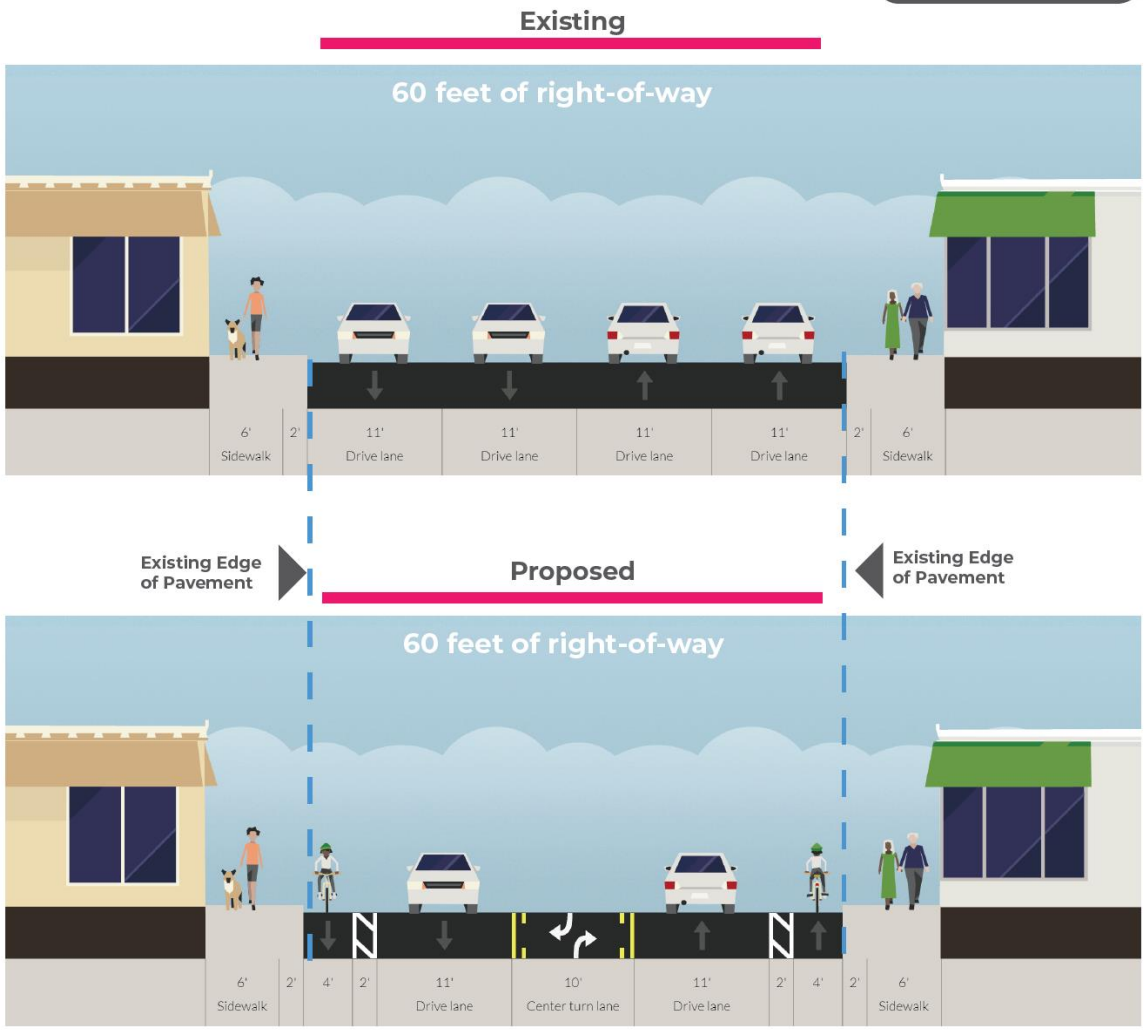
- New Street
- Proposed PTX Location
- New Park Space
- New Mixed-Use
- New Residential

Roadway

- Typical Sections

2nd Avenue North to Gregory Road

Roll Plot No. 32-35



FDOT Context Classification: C4-Urban General

Existing Speed Limit: 35 mph

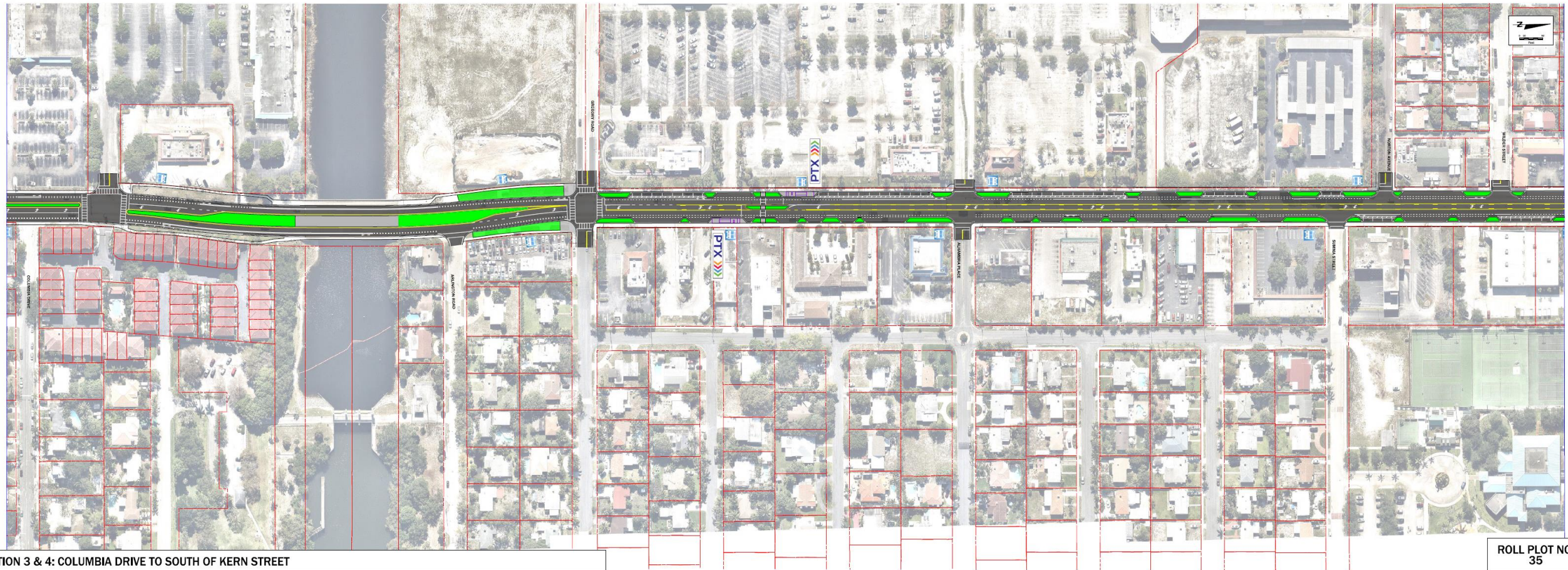
Length: 2.0 miles

Projected 2040 Max Peak Hour Traffic Volume: 1,300-1,400 vphpd

Proposed Recommendations: Resurfacing and lane repurposing from 4L to 3L; add buffered bicycle lanes

Roadway

- Continuous Plan View

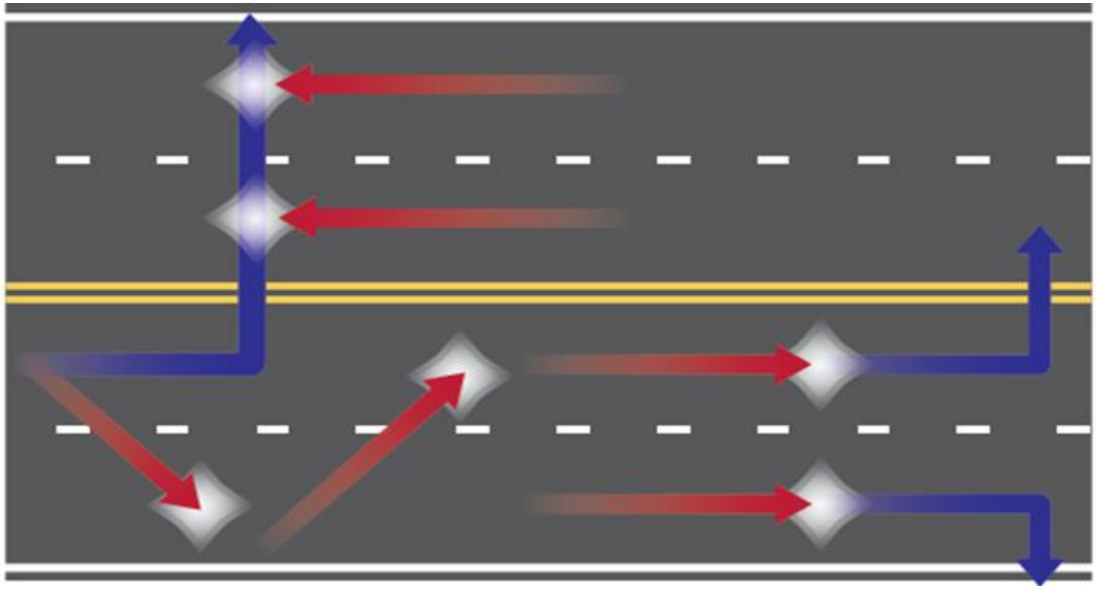


US-1 @ Lake Ave
Existing

US-1 @ Lake Ave
Proposed

Why Repurpose?

- **Safety**: Separate, Simplify and Slow
- **Mobility**: provide facilities and access for all ages & abilities
- **Beautification**: Quality of Life, Economic Development



In addition to making East Boulevard in Charlotte, N.C., more attractive, a road diet reduced travel speeds, bicycle and pedestrian injury rates and the number of rear-end and left-turn collisions. Photo courtesy city of Charlotte

Four-lane undivided highways have comparatively high crash rates due to the numerous potential conflicts between higher speed through traffic and turning vehicles.

Why Repurpose?

FHWA Proven Safety Countermeasure

Many agencies implement to:

- Reduce crashes
- Rebalance the service among travel modes
- Support economic enhancement goals
- Support community goals to improve quality and health

Road Diets
(Roadway Reconfiguration)

A "Road Diet," or roadway reconfiguration, can improve safety, calm traffic, provide better mobility and access for all road users, and enhance overall quality of life.

SAFETY BENEFIT:

4-Lane → 3-Lane

Road Diet Conversions

19-47%

Reduction in total crashes

Source: *Evaluation of Lane Reduction "Road Diet" Measures on Crashes*, FHWA-HRT-10-053.

U.S. Department of Transportation
Federal Highway Administration

FHWA-SA-17-066

Before and after photos of a Road Diet project.

Source: City of Orlando, Florida

A Road Diet typically involves converting an existing four-lane undivided roadway to a three-lane roadway consisting of two through lanes and a center two-way left-turn lane (TWLTL).


Road Diet project in Honolulu, Hawaii.

Source: Leidos

Benefits of Road Diet installations may include:

- An overall crash reduction of 19 to 47 percent.
- Reduction of rear-end and left-turn crashes due to the dedicated left-turn lane.
- Reduced right-angle crashes as side street motorists cross three versus four travel lanes.
- Fewer lanes for pedestrians to cross.
- Opportunity to install pedestrian refuge islands, bicycle lanes, on-street parking, or transit stops.
- Traffic calming and more consistent speeds.
- A more community-focused, "Complete Streets" environment that better accommodates the needs of all road users.

A Road Diet can be a low-cost safety solution when planned in conjunction with a simple pavement overlay, and the reconfiguration can be accomplished at no additional cost.

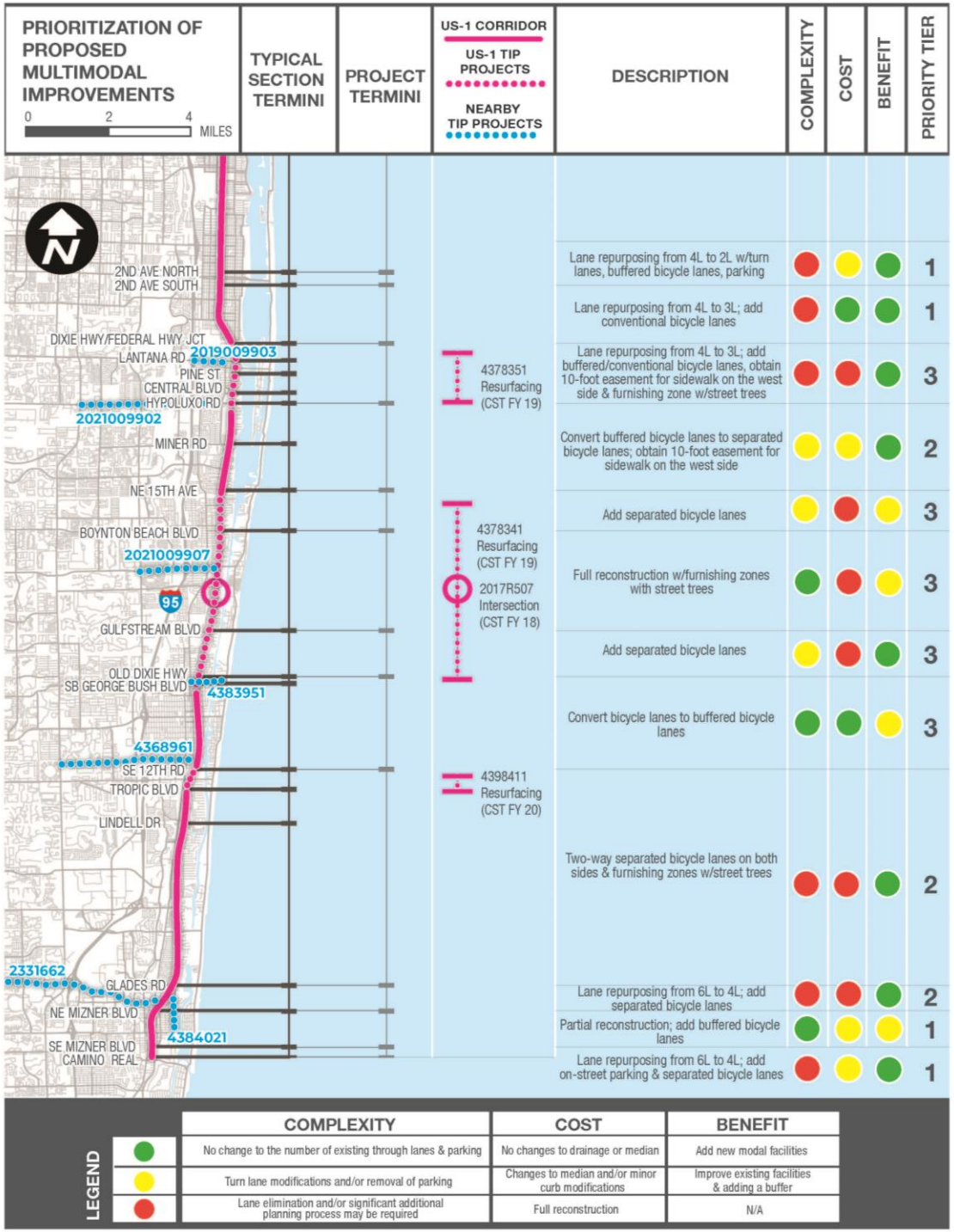
Florida Examples

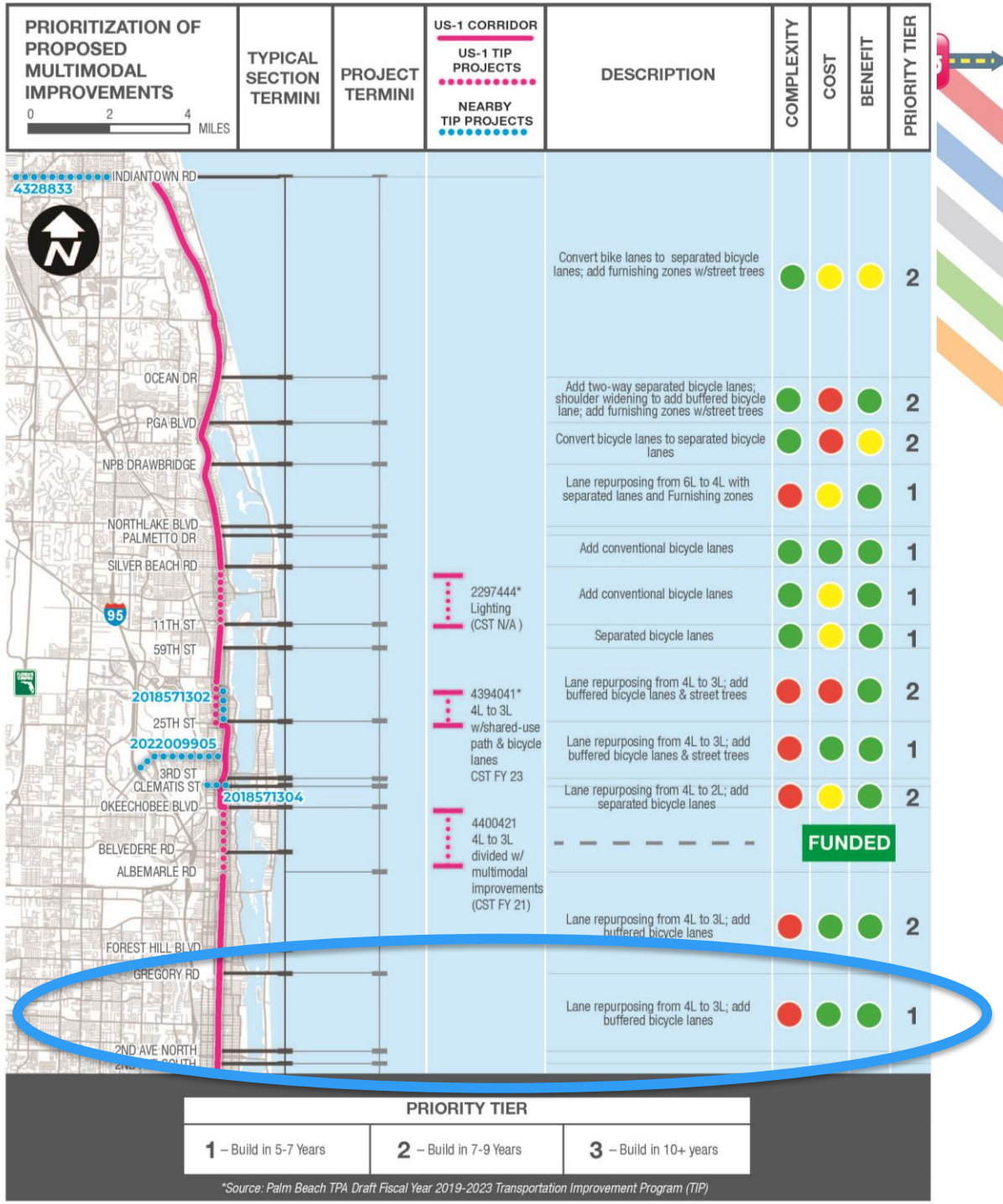
13th Street in Fort Lauderdale

Before

After

Edgewater Dr. (Orlando)


PRIORITIZATION OF PROPOSED MULTIMODAL IMPROVEMENTS
0 2 4 MILES
TYPICAL SECTION TERMINI
PROJECT TERMINI
US-1 CORRIDOR
US-1 TIP PROJECTS
NEARBY TIP PROJECTS
DESCRIPTION
COMPLEXITY
COST
BENEFIT
PRIORITY TIER
2ND AVE NORTH
2ND AVE SOUTH
DIXIE HWY/FEDERAL HWY JCT
LANTANA RD
2019009903
PINE ST
CENTRAL BLVD
HYPOLUXO RD
2021009902
MINER RD
NE 15TH AVE
BOYNTON BEACH BLVD
2021009907
95
GULFSTREAM BLVD
OLD DIXIE HWY
SB GEORGE BUSH BLVD
4383951
4368961
SE 12TH RD
TROPIC BLVD
LINDELL DR
2331662
GLADES RD
NE MIZNER BLVD
4384021
SE MIZNER BLVD
CAMINO REAL
4378351 Resurfacing (CST FY 19)
4378341 Resurfacing (CST FY 19)
2017R507 Intersection (CST FY 18)
4398411 Resurfacing (CST FY 20)
Lane repurposing from 4L to 2L w/turn lanes, buffered bicycle lanes, parking 1
Lane repurposing from 4L to 3L; add conventional bicycle lanes 1
Lane repurposing from 4L to 3L; add buffered/conventional bicycle lanes, obtain 10-foot easement for sidewalk on the west side & furnishing zone w/street trees 3
Convert buffered bicycle lanes to separated bicycle lanes; obtain 10-foot easement for sidewalk on the west side 2
Add separated bicycle lanes 3
Full reconstruction w/furnishing zones with street trees 3
Add separated bicycle lanes 3
Convert bicycle lanes to buffered bicycle lanes 3
Two-way separated bicycle lanes on both sides & furnishing zones w/street trees 2
Lane repurposing from 6L to 4L; add separated bicycle lanes 2
Partial reconstruction; add buffered bicycle lanes 1
Lane repurposing from 6L to 4L; add on-street parking & separated bicycle lanes 1
LEGEND
COMPLEXITY
No change to the number of existing through lanes & parking
Turn lane modifications and/or removal of parking
Lane elimination and/or significant additional planning process may be required
COST
No changes to drainage or median
Changes to median and/or minor curb modifications
Full reconstruction
BENEFIT
Add new modal facilities
Improve existing facilities & adding a buffer
N/A


PRIORITIZATION OF PROPOSED MULTIMODAL IMPROVEMENTS
0 2 4 MILES
TYPICAL SECTION TERMINI
PROJECT TERMINI
US-1 CORRIDOR
US-1 TIP PROJECTS
NEARBY TIP PROJECTS
DESCRIPTION
COMPLEXITY
COST
BENEFIT
PRIORITY TIER
INDIANTOWN RD
4328833
OCEAN DR
PGA BLVD
NPB DRAWBRIDGE
NORTHLAKE BLVD
PALMETTO DR
SILVER BEACH RD
95
11TH ST
59TH ST
2018571302
25TH ST
2022009905
3RD ST
CLEMATIS ST
2018571304
OKEECHOBEE BLVD
BELVEDERE RD
ALBEMARLE RD
FOREST HILL BLVD
GREGORY RD
2ND AVE NORTH
2297444* Lighting (CST N/A)
4394041* 4L to 3L w/shared-use path & bicycle lanes CST FY 23
4400421 4L to 3L divided w/ multimodal improvements (CST FY 21)
Convert bike lanes to separated bicycle lanes; add furnishing zones w/street trees 2
Add two-way separated bicycle lanes; shoulder widening to add buffered bicycle lane; add furnishing zones w/street trees 2
Convert bicycle lanes to separated bicycle lanes 2
Lane repurposing from 6L to 4L with separated lanes and Furnishing zones 1
Add conventional bicycle lanes 1
Add conventional bicycle lanes 1
Separated bicycle lanes 1
Lane repurposing from 4L to 3L; add buffered bicycle lanes & street trees 2
Lane repurposing from 4L to 3L; add buffered bicycle lanes & street trees 1
Lane repurposing from 4L to 2L; add separated bicycle lanes 2
FUNDED
Lane repurposing from 4L to 3L; add buffered bicycle lanes 2
Lane repurposing from 4L to 3L; add buffered bicycle lanes 1
PRIORITY TIER
1 – Build in 5-7 Years
2 – Build in 7-9 Years
3 – Build in 10+ years
*Source: Palm Beach TPA Draft Fiscal Year 2019-2023 Transportation Improvement Program (TIP)

Next Steps for City

- **Lane Repurposing Application to FDOT**
  - Documented public outreach
  - FDOT-approved traffic study
  - Local government resolution of endorsement

- **TPA works with FDOT to Prioritize Funds** for design, feasibility, & construction in 5 Year Work Program

www.PalmBeachTPA.org/US1

Questions?

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www.palmbeachtpa.org/us1