



City of Plantation

Multimodal Master Transportation Plan

N. University Dr.

Recommended Improvements

Agenda

1. Introductions
2. MMTP Background and Status
3. N. University Drive – Overview
4. Needs Assessment and Recommended Improvements
5. Next Steps

GOAL: Build Support for City's Vision for N. University Dr

- ✓ Continued collaboration with facility owner
- ✓ Brief review of Needs Assessment
- ✓ Share Recommended improvements
- ✓ Identify deviations
- ✓ FDOT Q&A



Introductions

- Broward MPO Staff
- City of Plantation Staff
- FDOT Staff

FDOT Collaboration

- 9/12/2022: TEAMS Mtg – University Dr Project
- 9/20/2022: University Dr Walking Audit #1 – Broward Bl to NW 5th St
- 9/21/2022: *University Dr Walking Audit #2 – Sunrise Bl to Cleary Bl (rain out)*
- 9/22/2022: University Dr Walking Audit #3 – Sunrise Bl to Cleary Bl



MMTP

Phases & Status

Phase 1: Short-term Improvements

- Themes: Safety, Traffic Calming, Midtown Connectivity
- Focused on eight city-owned roadways
- ✓ Report complete in Summer 2022

Phase 2: Mid/Long-term Improvements

- Themes: Connectivity and Strategic
- Focus on two corridors (Cleary Blvd and **University Dr**)

Plan Kick-Off

Aug. 21

High-Level Needs Assessment



Short-term Improvements



Technical Memo #1



Corridor Needs Assessment



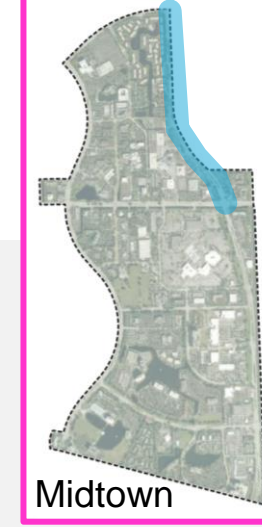
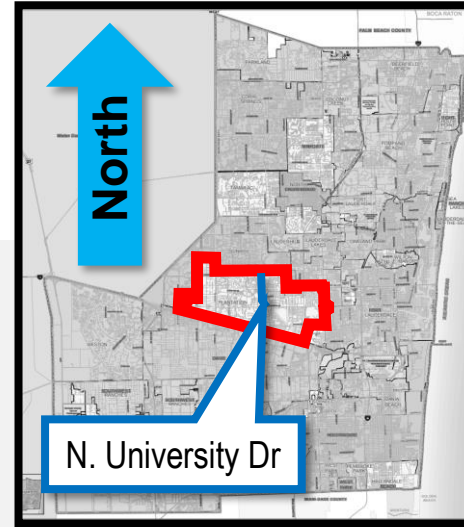
Here!!

Mid- and Long-term Improvements

Technical Memo #2

Why N. University Dr?

- ✓ Adjacent to Midtown Plantation (designated redevelopment area from Broward Blvd to Cleary Blvd)
- ✓ Adjacent to redevelopment around former Motorola site (Sunrise Blvd)
- ✓ Adjacent to regional destinations (Courthouse, Library, BC Govt Center)
- ✓ University Dr is one of the future premium transit corridors
- ✓ LOS C
- ✓ Roadway is acting like a “wall” - a major barrier to east / west pedestrian activity
- ✓ Roadway divides City (east vs west)



City's Vision for N. University Dr:

- ❖ Transform University Dr from multimodal barrier to multimodal connector
- ❖ Make it safer, convenient, and comfortable for pedestrians to cross University Dr



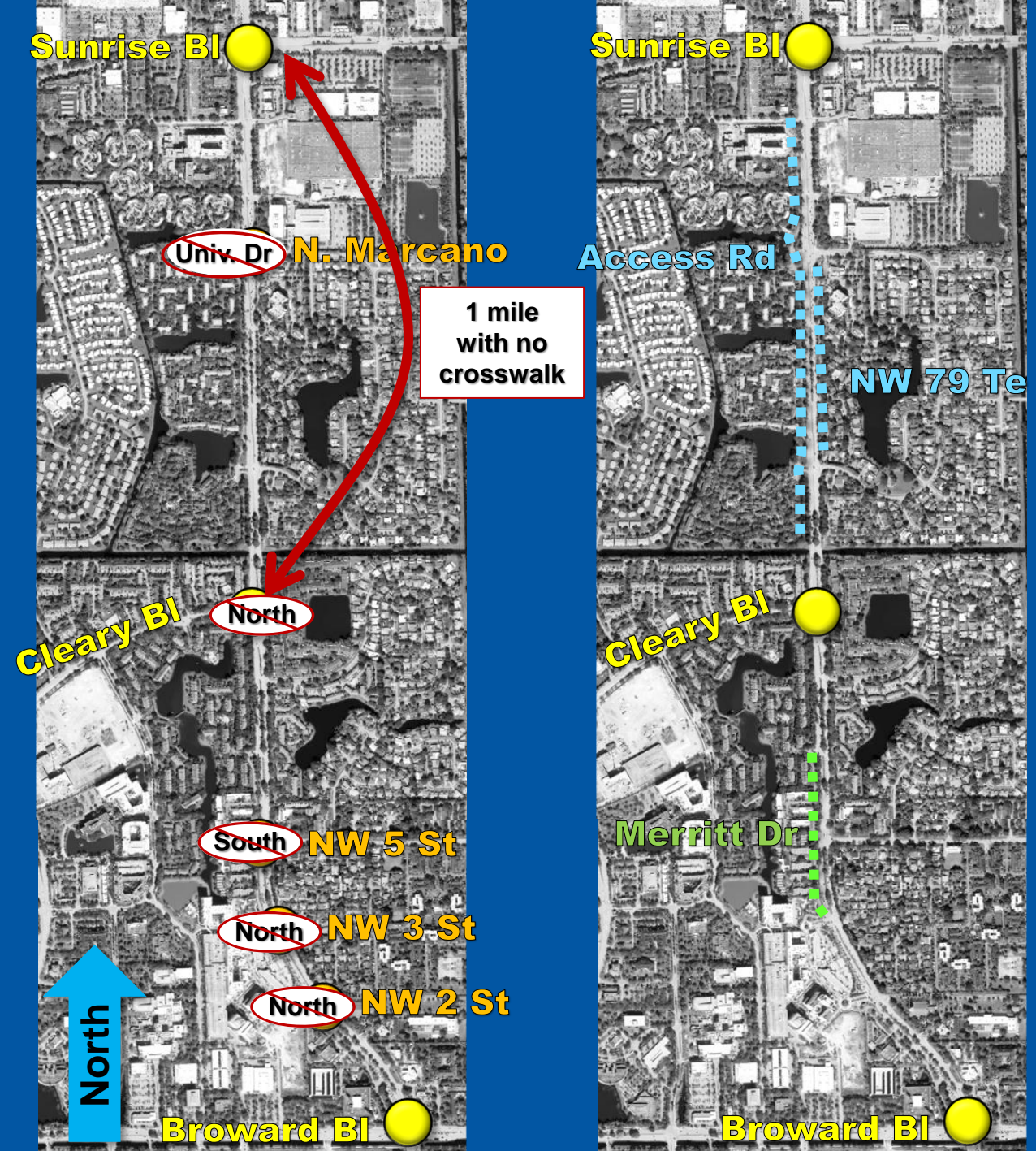
N. University Dr: Crosswalks & Sidewalks

Missing Crosswalks:

- 7 signalized intersections
- *Except for Sunrise Blvd and Broward Blvd, all signalized intersections are missing at least one crosswalk*
- There are no crosswalks between Sunrise Blvd and the southern leg of Cleary Blvd = approx. 1 mile.

Sidewalks are located within the adjacent “Access Road”, with no direct access from University Dr (approx. 40 ft from University Dr):

1. **Access Rd:** City-owned, from NW 17th Ct to C-12 Canal
2. **NW 79th Te:** City-owned ROW, from N. Marcano to S. Marcano
3. **Merritt Dr:** FDOT-owned ROW, NW 5th St to NW 3rd St



N. University Dr: Crash Maps

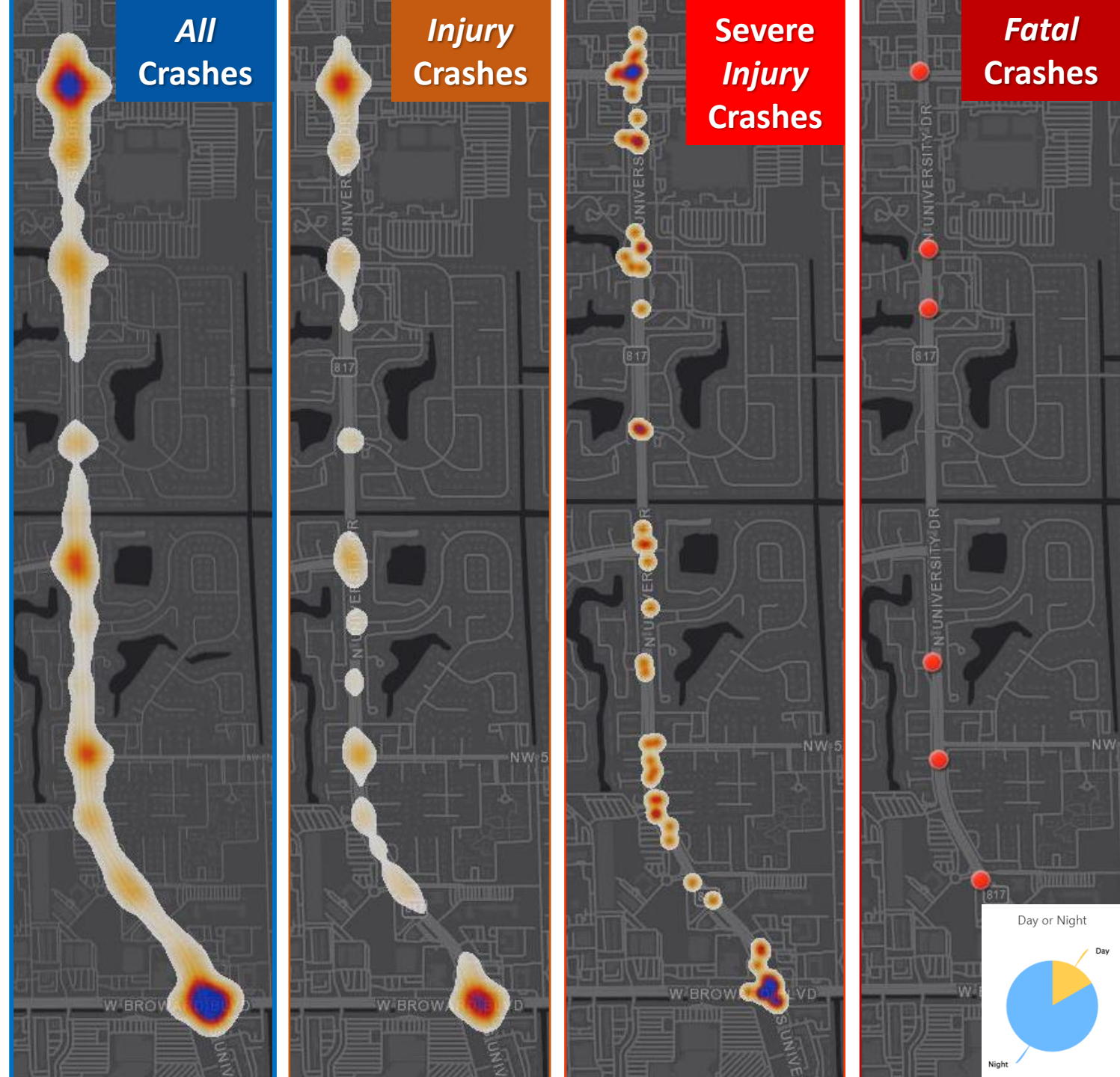
- 2015 to 2021
- 150 ft south of Broward Blvd to Northern City Limits

All Crashes: crashes are most predominant at intersections, particularly arterial intersections

Injury crashes: centered at intersections with Sunrise Blvd & Broward Blvd

Severe Injury & Fatal Crashes: dispersed throughout roadway

Fatal Crashes: more predominant at minor intersections

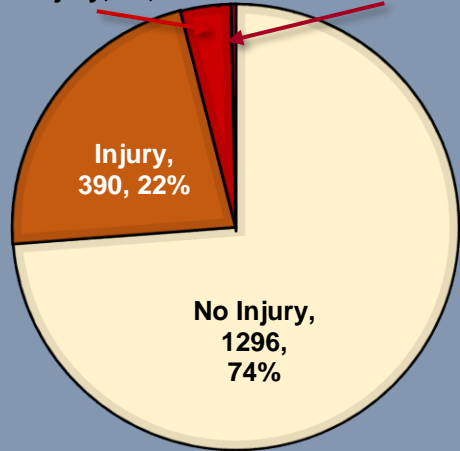


N. University Drive: Crash Stats & Trends (2015 – 2021)

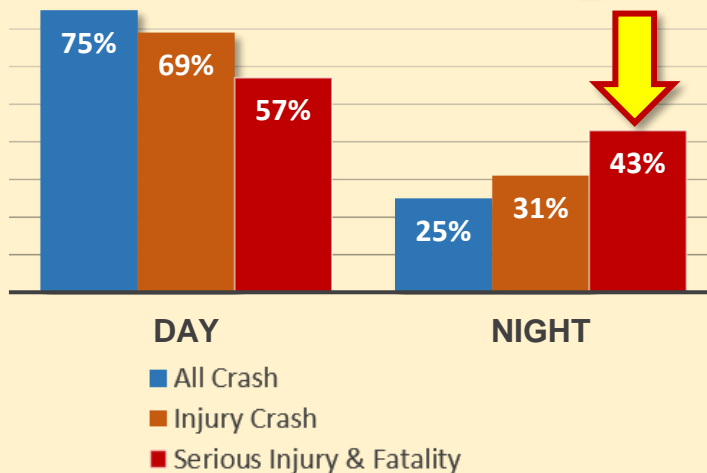
1,756 Total Crashes

CRASHES BY INJURY TYPE

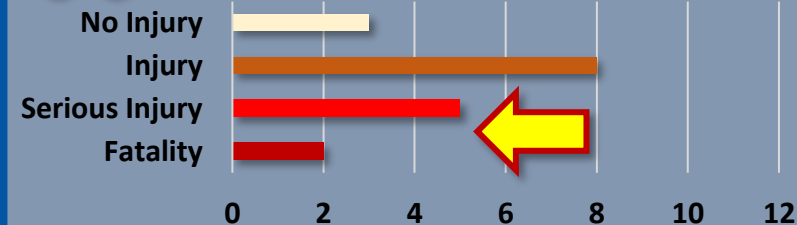
Serious Injury, 64, 4% Fatality, 6, 0%



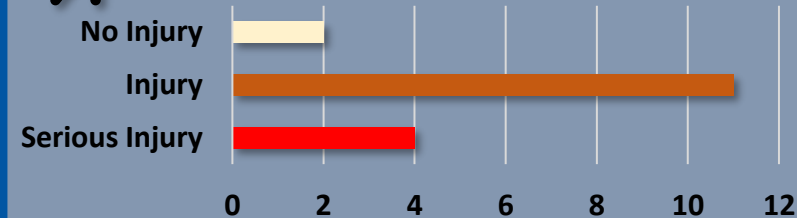
Day vs Night



Bike Crashes by Injury Type

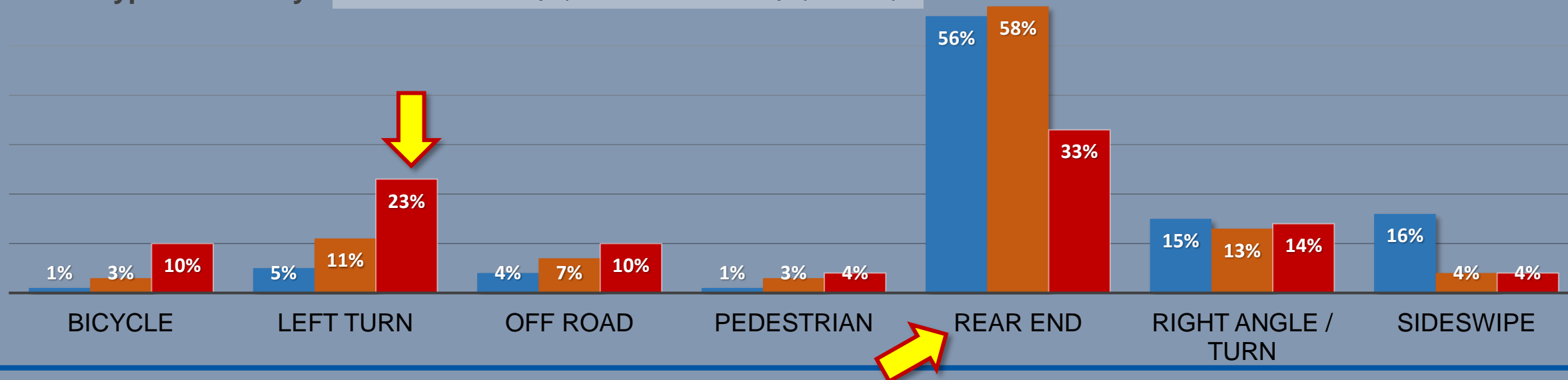


Ped Crashes by Injury Type



Crash Type & Severity

All Crashes Injury Crashes Serious Injury & Fatality



Needs Assessment & Recommendations

Intersections:

1. Sunrise Blvd
2. N. Marcano Blvd
3. S. Marcano Blvd
4. Cleary Blvd
5. NW 5th St, NW 3rd St, & NW 2nd St
6. Broward Blvd

- ✓ Overview / Observations
- ✓ Crash Trends (2015 to 2021)
- ✓ Recommendations



Sunrise Blvd - Overview

Observations

1. 2 LT, 3 Through, 1 Through / RT lane
2. U-turns prohibited on Sunrise Blvd
3. High visibility markings on all crosswalks
4. BCT stops set approx. 175 to 275 ft from intersection ←
5. Jaywalking in adjacency to BCT Stops ←
6. Jaywalking within crosswalks, but not during Ped Phase (probably due to length of cycle time) ←
7. Many bicyclists riding on sidewalks ←
8. RT movements during Ped Walk Signal ←
9. High School students and Senior Citizens observed
10. NW corner – restricted visibility for EB to SB RT due to above-ground utility. RT vehicles waiting in crosswalk. ←

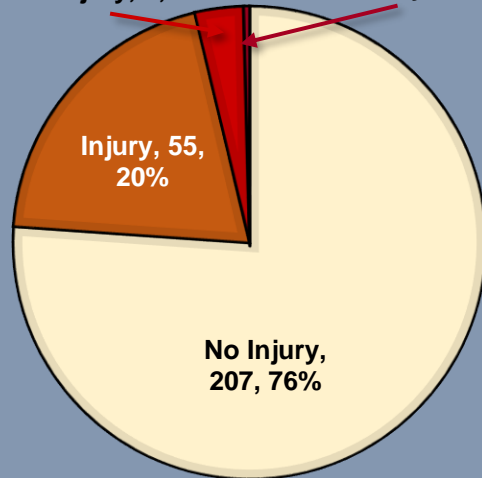


Sunrise Blvd - Crashes

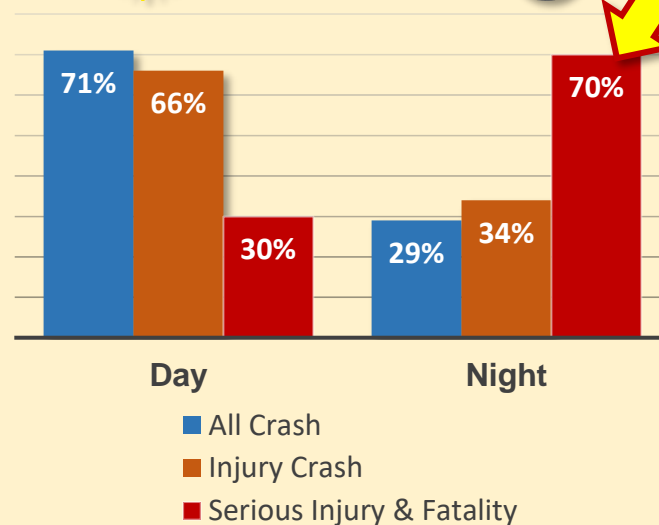
272 Total Crashes

CRASHES BY INJURY TYPE

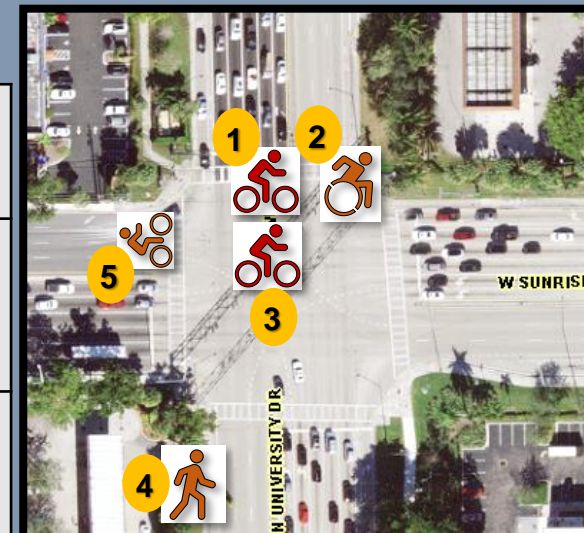
Serious Injury, 9, 3% Fatality, 1, 1%



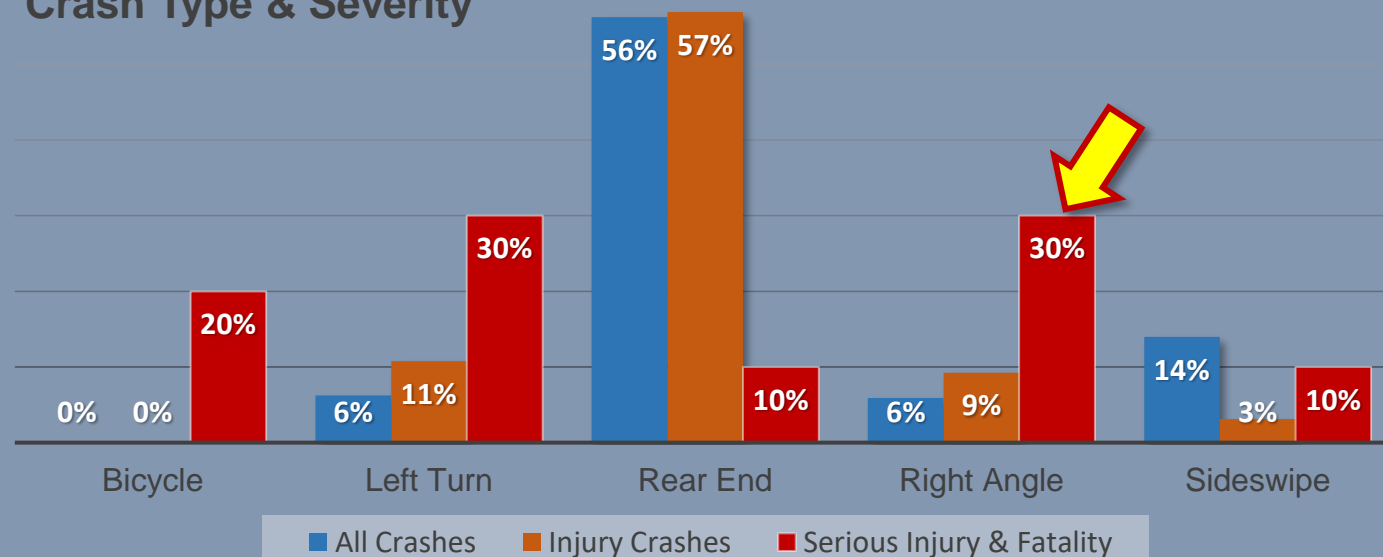
Day vs Night



1	Serious Injury • Jan 2016 • 11 am • Bike Fault: In crosswalk, rode on green
2	Injury • Motorized Wheelchair • July 2018 • 3pm • Unknown Fault • In crosswalk • Struck by NB / RT vehicle
3	Fatality • May 2016 • 5 am • Unknown Fault: Bike riding in crosswalk was struck by SB vehicle
4	Injury • Jun 2019 • 9 pm • Ped fault: Jaywalking and struck by SB vehicle
5	Injury • Apr. 2021 • 3pm • Driver Fault: Bike riding in crosswalk was struck by LT Vehicle

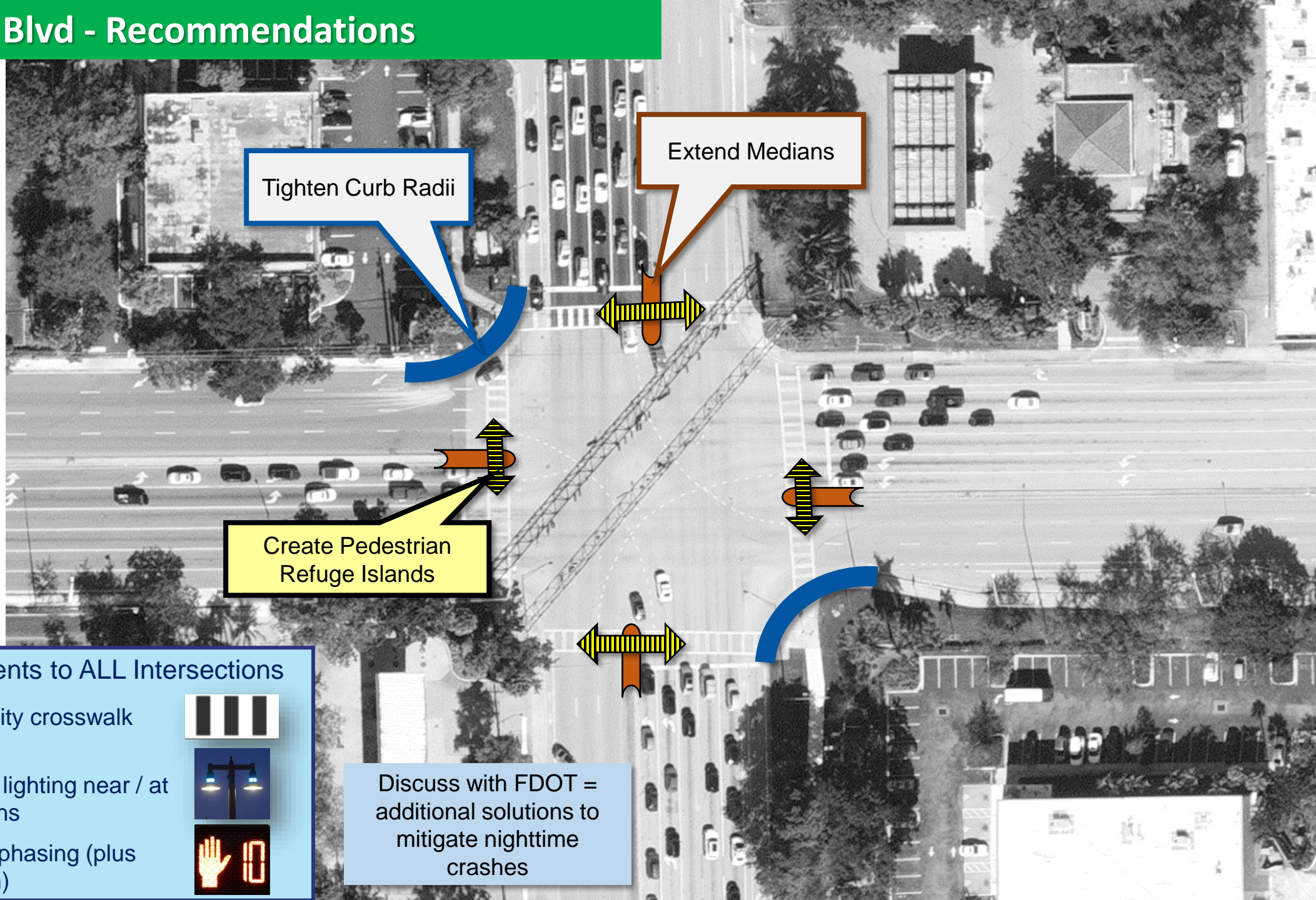


Crash Type & Severity



- Rear End
- Sideswipe
- Angle
- Left Turn
- Right Turn
- Off Road
- 🚲 Bicycle
- 🚶 Pedestrian
- Other

Sunrise Blvd - Recommendations



Tighten Curb Radii

Extend Medians

Create Pedestrian
Refuge Islands

Discuss with FDOT =
additional solutions to
mitigate nighttime
crashes




Improvements to ALL Intersections

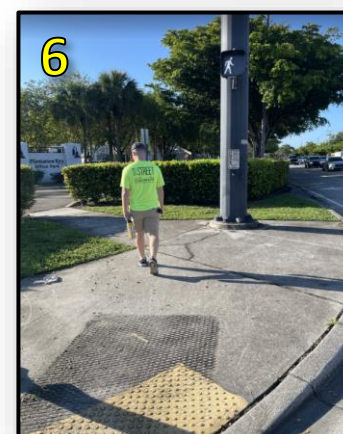
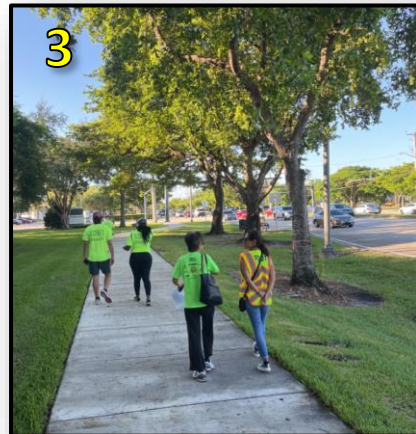
- High visibility crosswalk markings
- Ped-Scale lighting near / at intersections
- LPI signal phasing (plus countdown)



N. Marcano Blvd - Overview

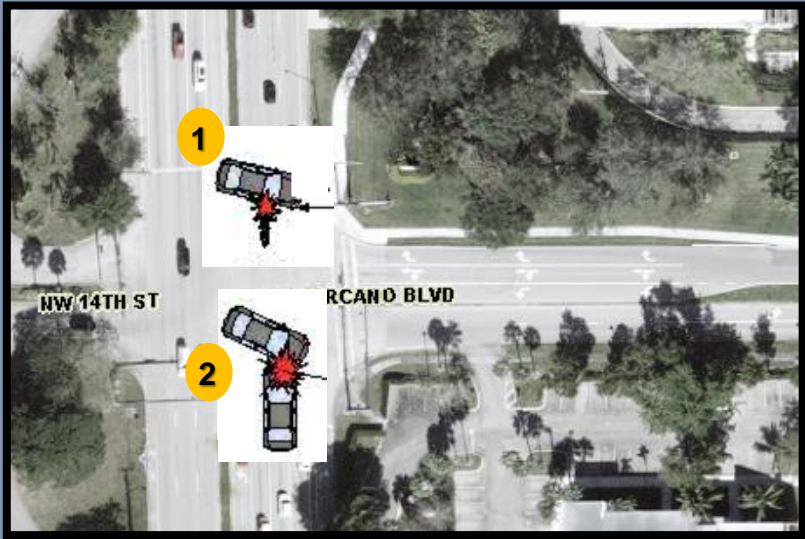
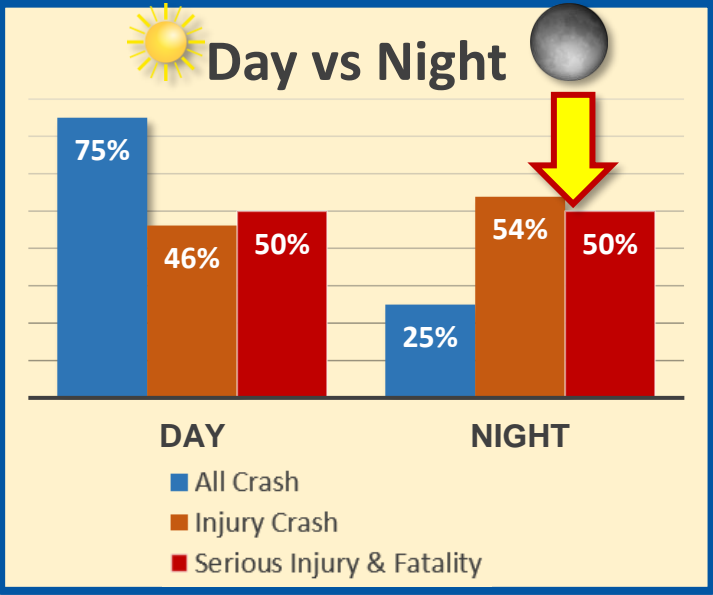
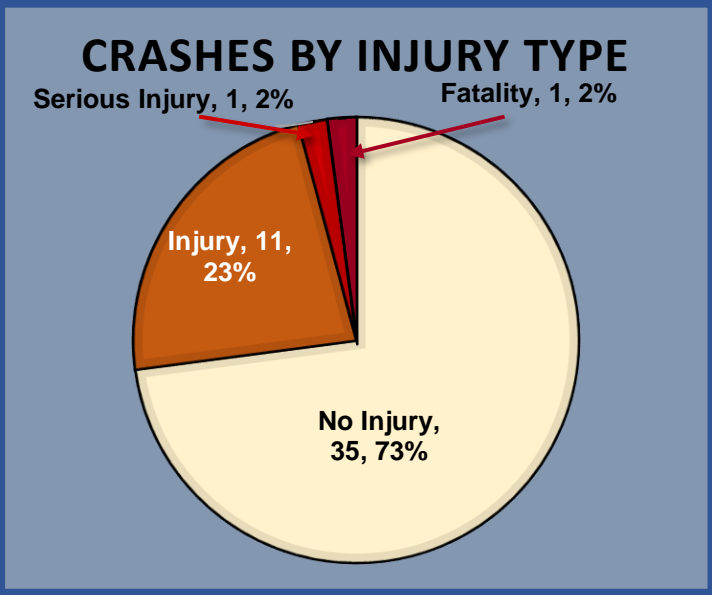
Observations

1. **No crosswalks over University Dr** 
 - Nearest crosswalk to north is 1,850 ft
 - Nearest crosswalk to south is 3,300 ft
2. 1 crosswalk – over eastern leg
3. Redevelopment occurring within NE corner of intersection 
4. Except on NE side, **no sidewalks on University Dr.** 
 - All sidewalks located within adjacent city-owned ROW
5. No connectivity from western Access Rd
6. Sidewalk from SE corner has no connection to internal sidewalks along NW 79th Te
7. 1 BCT stop in general location (eastside of University Dr, 125 ft north of intersection)

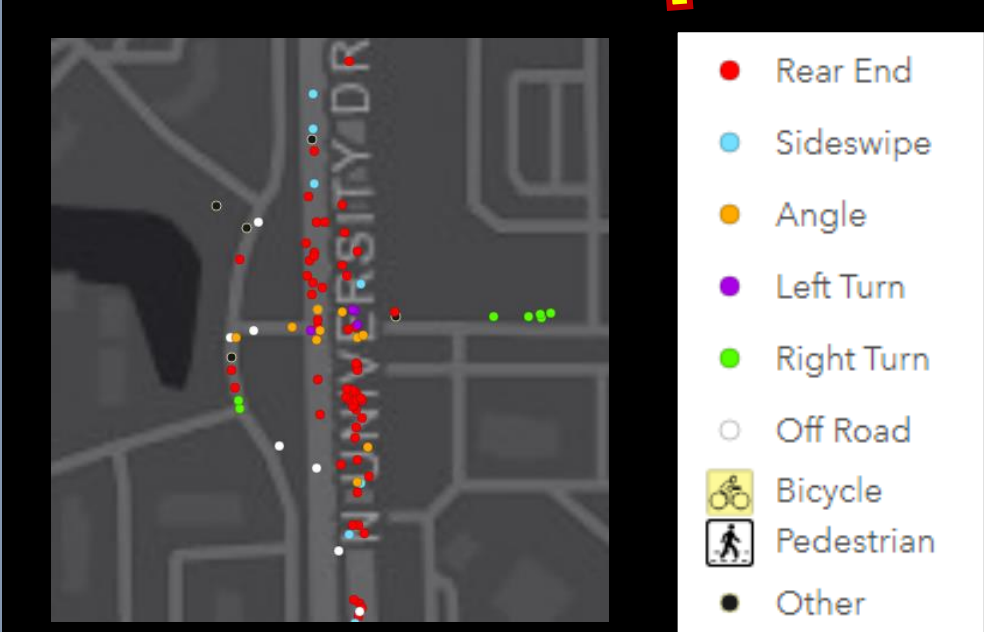
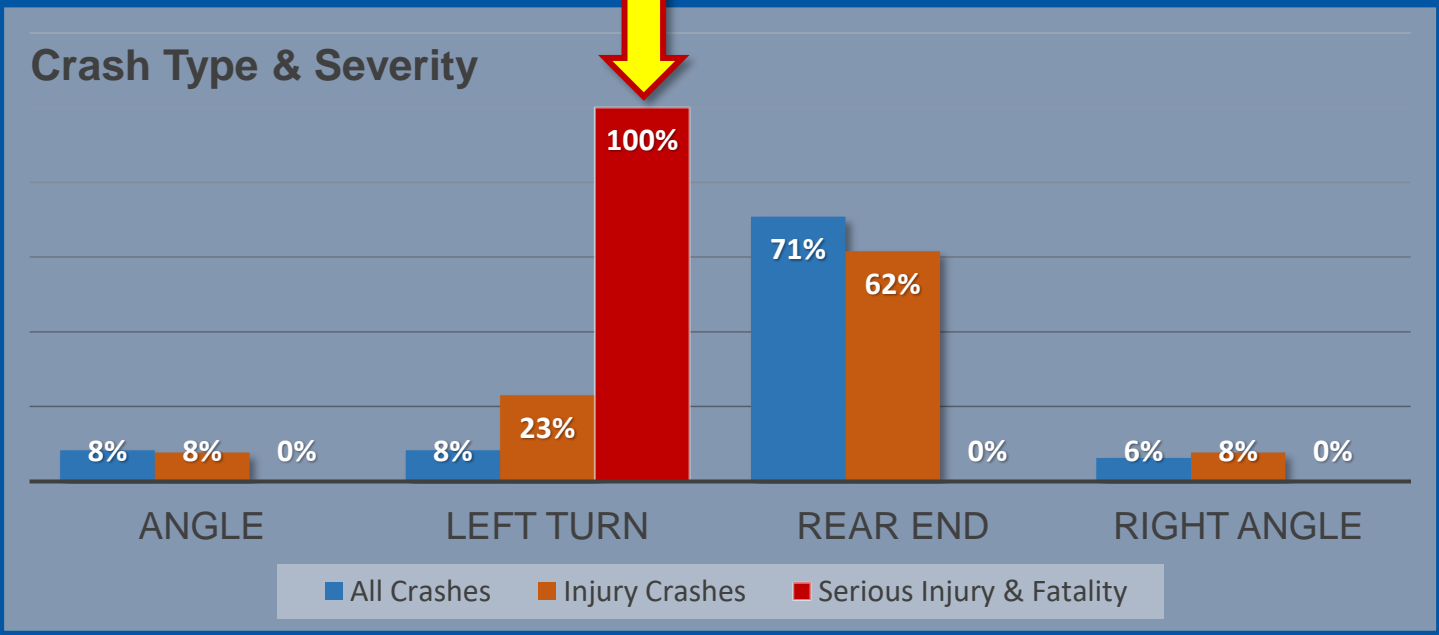


N. Marcano BI - Crashes

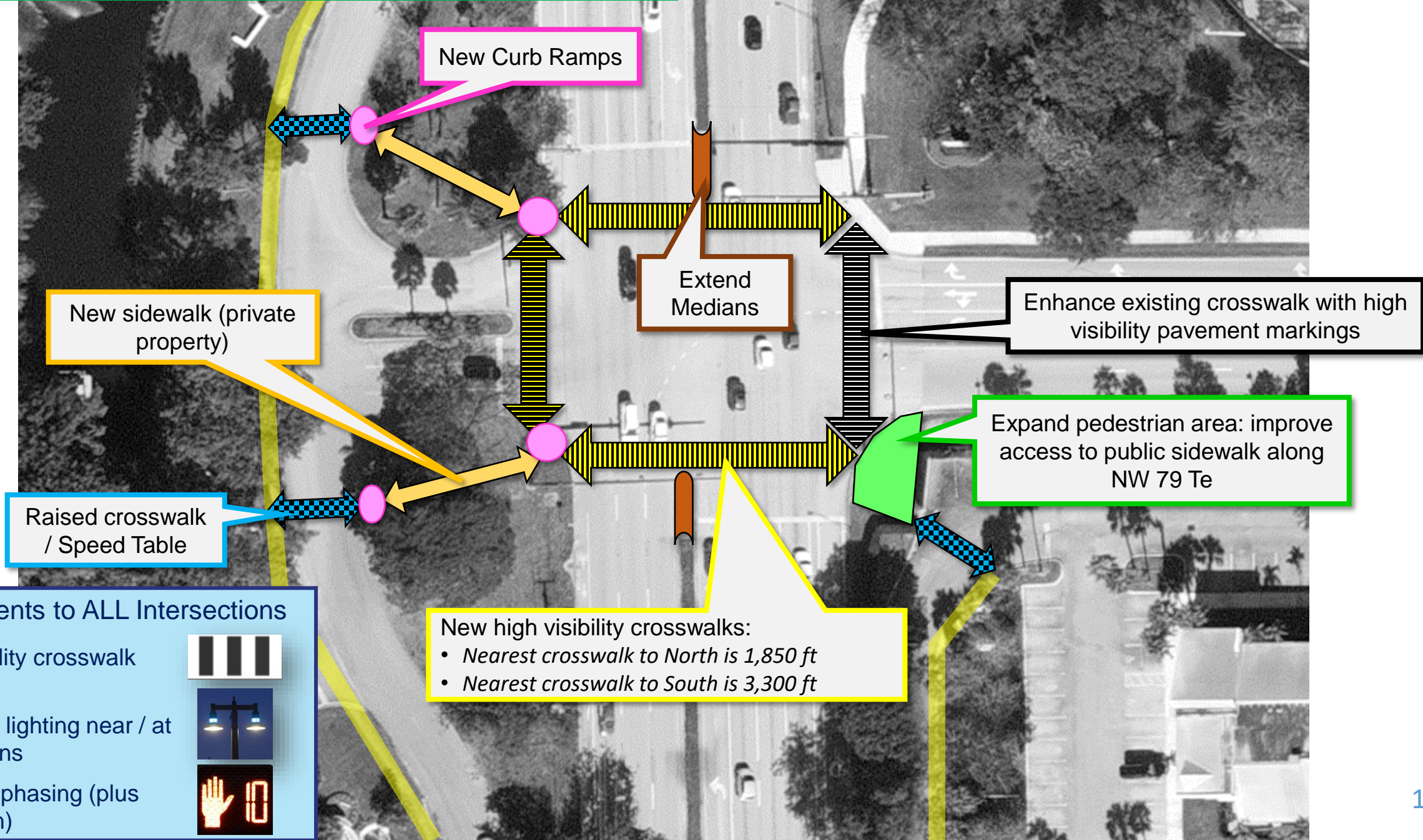
48 Total Crashes



- 1 **Fatality** • Motorcyclist • Jan. 2018 • 12 am • Motorcyclist was excessive speeding • Struck by **SB / LT vehicle**
- 2 **Serious Injury** • Nov. 2018 • 8:30 am • **SB / LT vehicle** turned on yield only light • Struck by NB vehicle



N. Marcano Blvd - Recommendations



Improvements to ALL Intersections

- High visibility crosswalk markings
- Ped-Scale lighting near / at intersections
- LPI signal phasing (plus countdown)


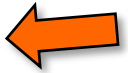


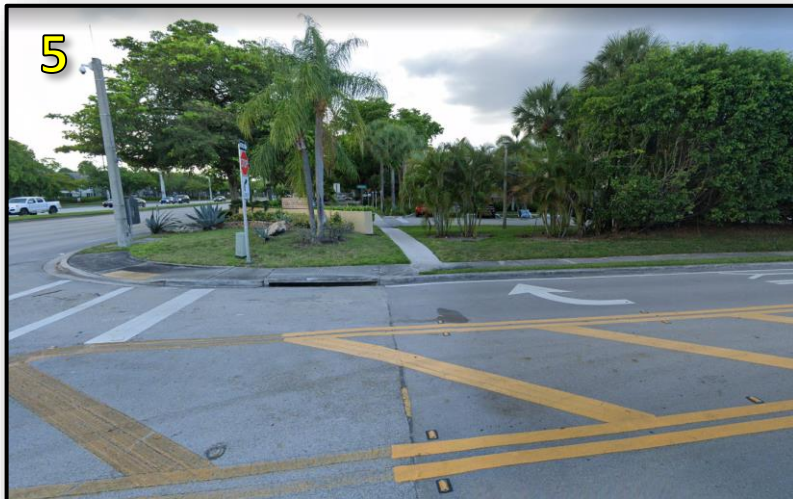
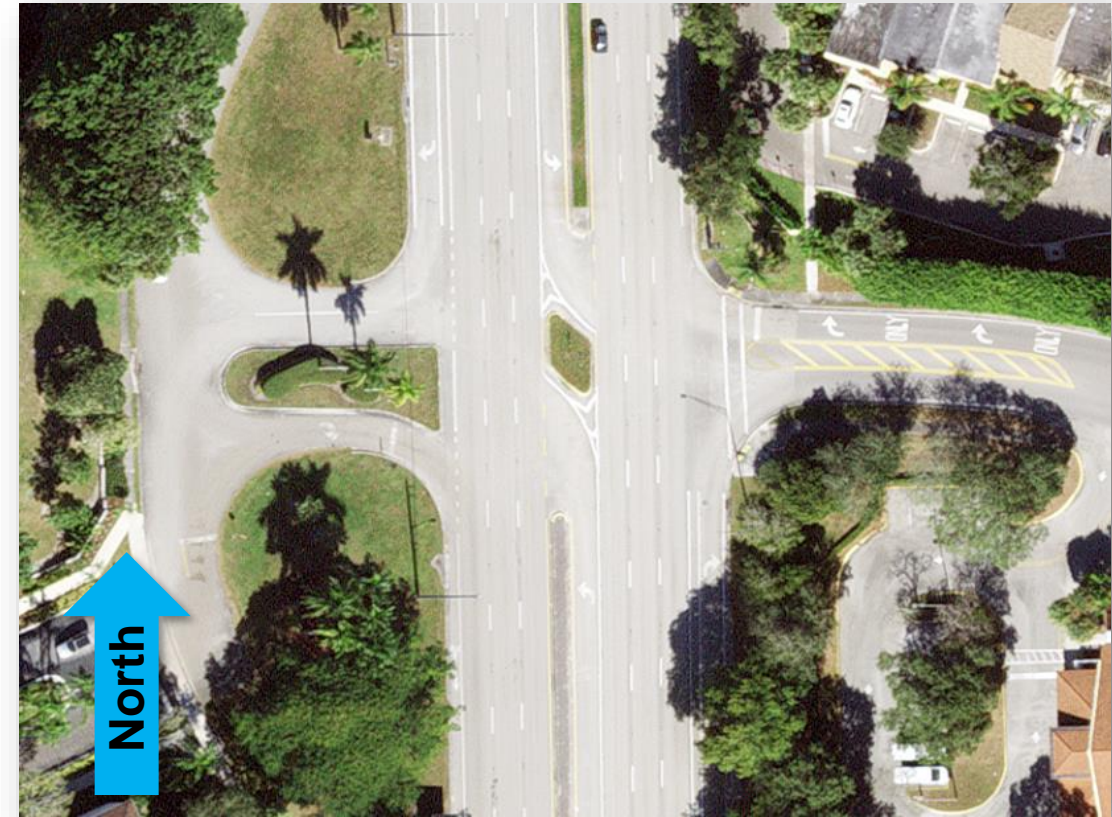
New high visibility crosswalks:

- Nearest crosswalk to North is 1,850 ft
- Nearest crosswalk to South is 3,300 ft

S. Marcano Blvd - Overview

Observations

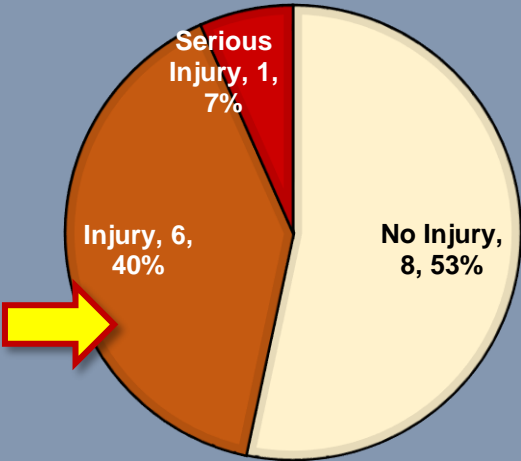
1. Not signalized / Directional median prohibits left-turn out
2. No crosswalks over University Dr 
 - Nearest crosswalk to north is 3,900 ft
 - Nearest crosswalk to south is 1,300 ft
3. 1 crosswalk – over eastern leg
4. Except on SE side, **no sidewalks on University Dr.** 
 - All sidewalks located within adjacent city-owned ROW
5. Low visibility to public sidewalk on NW 79th Te
6. No connectivity from western Access Rd
7. 2 BCT stops approx. 175 ft south of intersection – both are covered



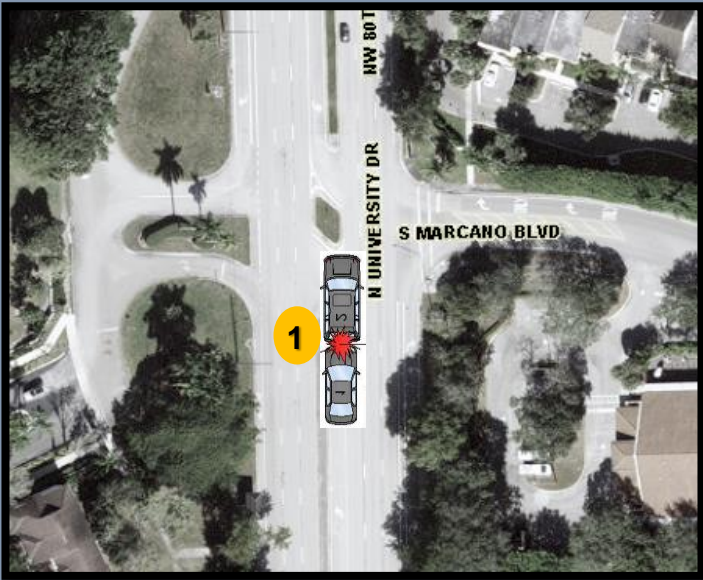
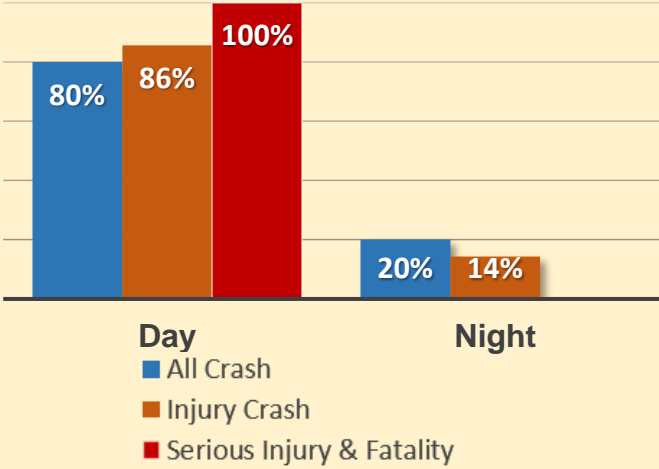
S. Marcano BI - Crashes

15 Total Crashes

CRASHES BY INJURY TYPE

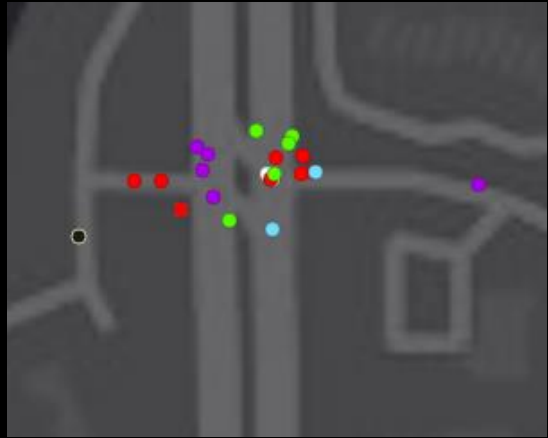
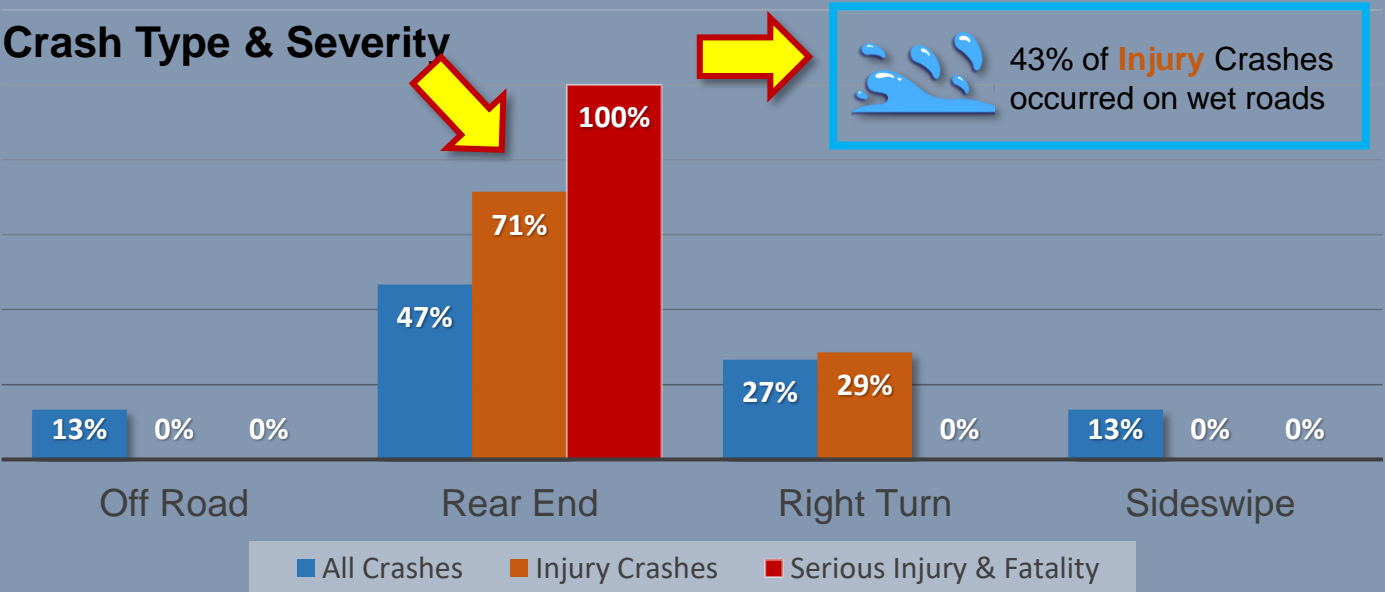


Day vs Night



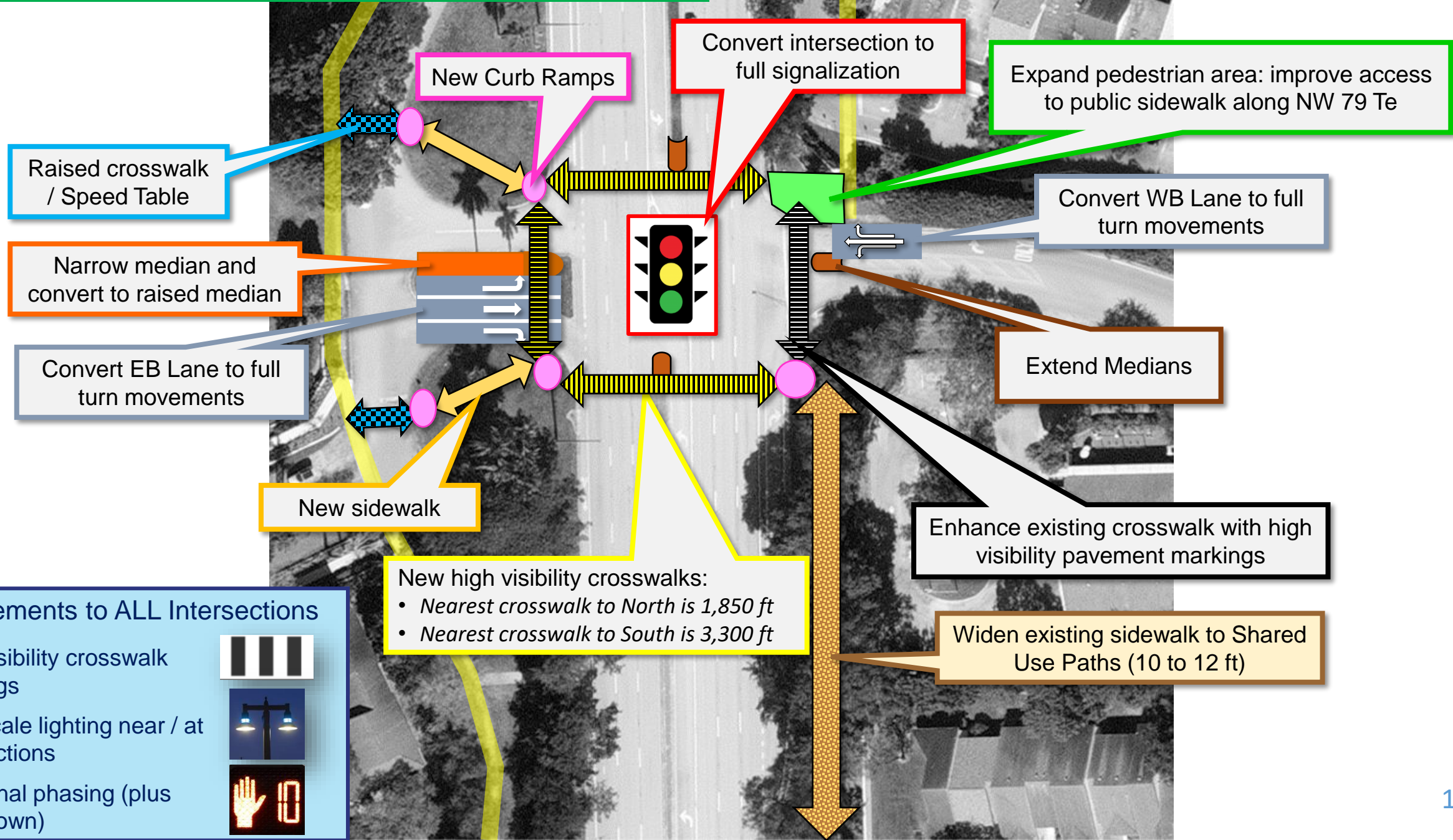
1 **Serious Injury** • Oct 2016 • 10 am • Rear End Collision in WB / LT Lane

Crash Type & Severity



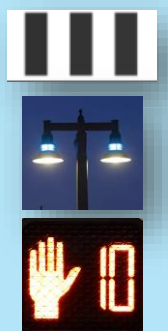
- Rear End
- Sideswipe
- Angle
- Left Turn
- Right Turn
- Off Road
- 🚲 Bicycle
- 🚶 Pedestrian
- Other

S. Marcano Blvd - Recommendations

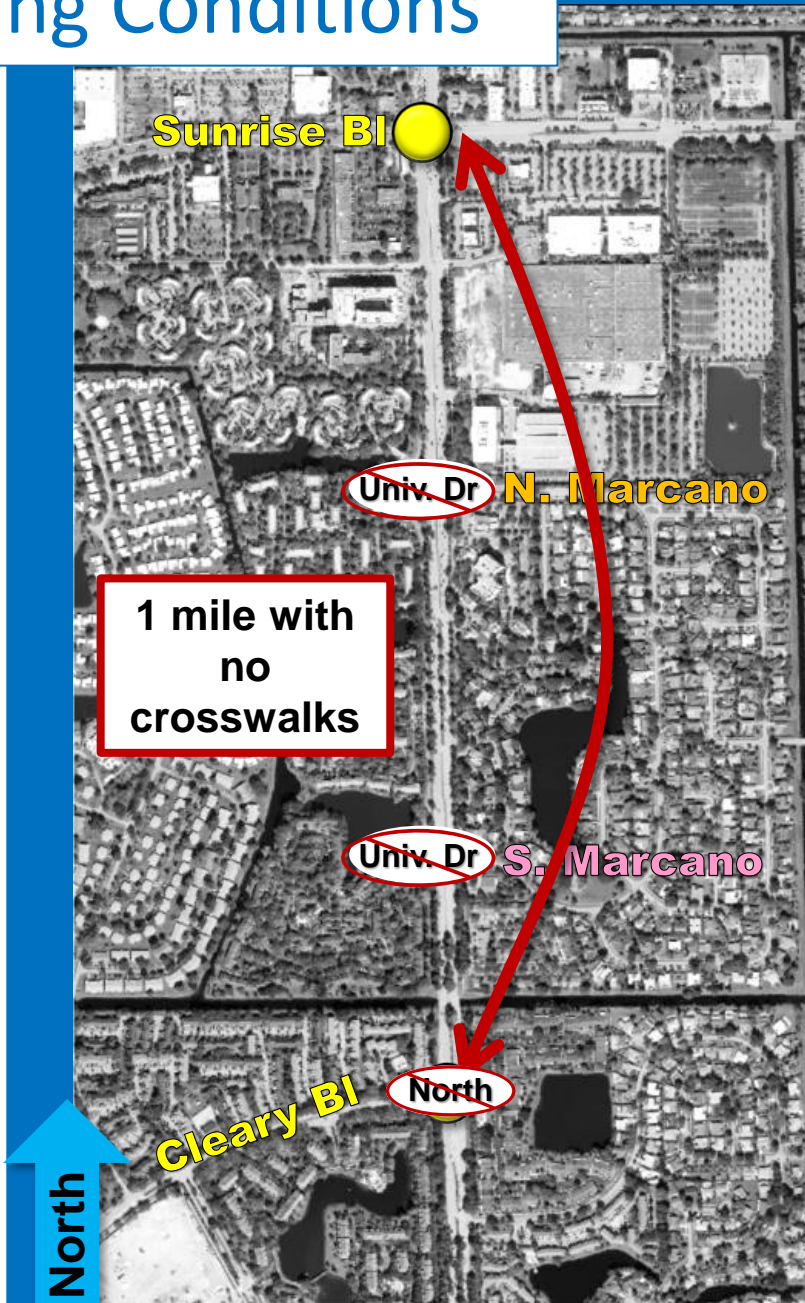


Improvements to ALL Intersections

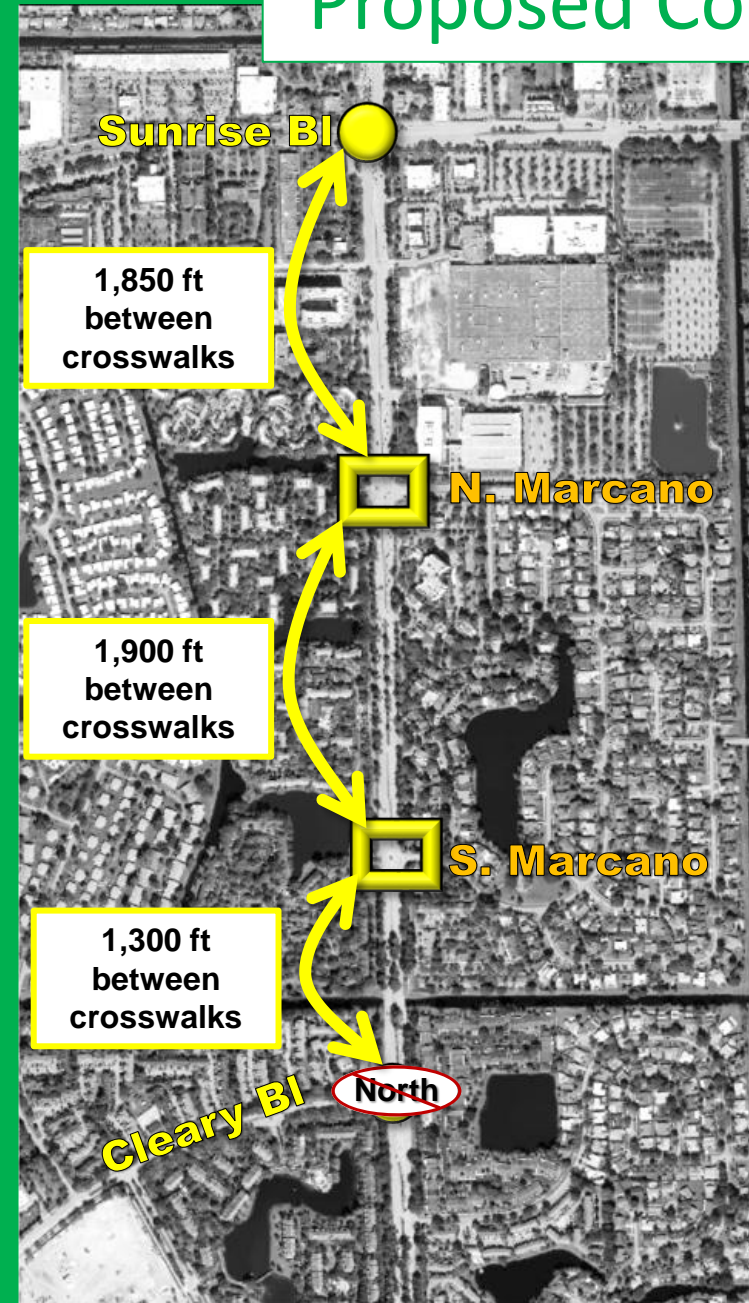
- High visibility crosswalk markings
- Ped-Scale lighting near / at intersections
- LPI signal phasing (plus countdown)



Existing Conditions






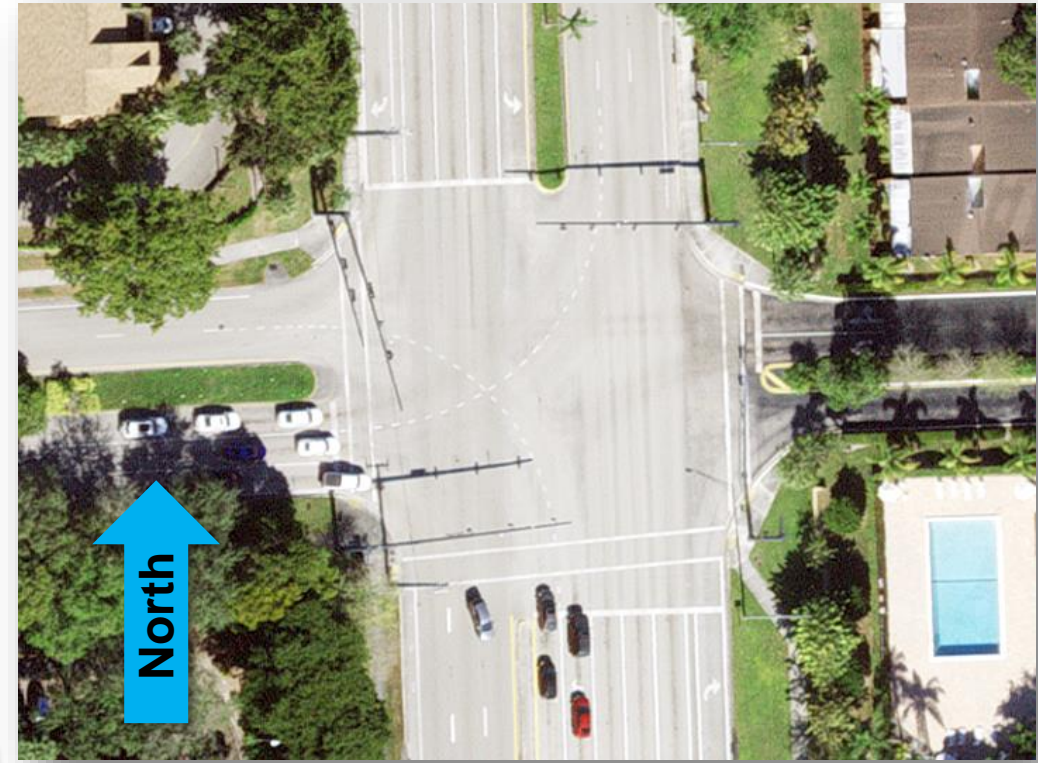
Proposed Conditions



Cleary Blvd - Overview

Observations

1. No crosswalk on northern leg
 - Steep slope on northern leg may prohibit new crosswalk
2. The crosswalk on southern leg is the 1st crosswalk south of Sunrise Blvd (approx. 1 mile) 
3. Sidewalks north of intersection are located directly at curb
 - City owns 40 ft ROW on NW, NE, and SE corners
 - Deep stormwater ditch in NE city swale
4. Bicyclists riding on sidewalk
5. Exercising pedestrians observed
6. Intersection leads to Midtown Plantation, including Plantation Walk and Midtown Square 
7. Cleary Blvd is also identified for long-term improvements in the MMTP 
8. 2 BCT stops within 100 ft of Intersection



Upcoming Cleary Blvd RSA

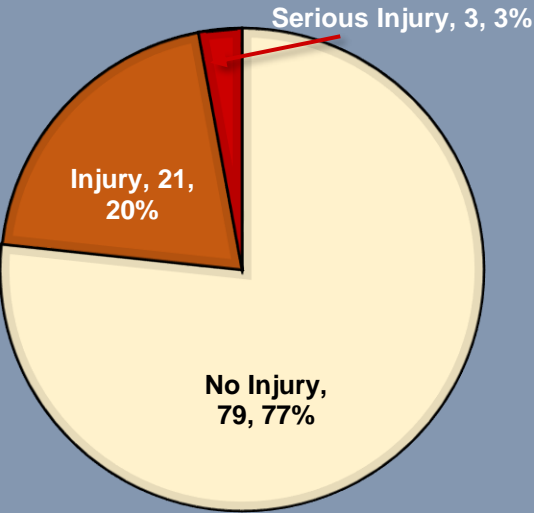
- In 2023 Broward MPO will conduct a Roadway Safety Audit of Cleary Blvd (University Dr to Hiatus Rd)
 - *Project kick-off is expected in Jan. 2023*
- The RSA will analyze specific traffic safety issues along Cleary Blvd, develop design solutions, and identify strategies for funding
- The RSA will compliment the Plantation MMTP



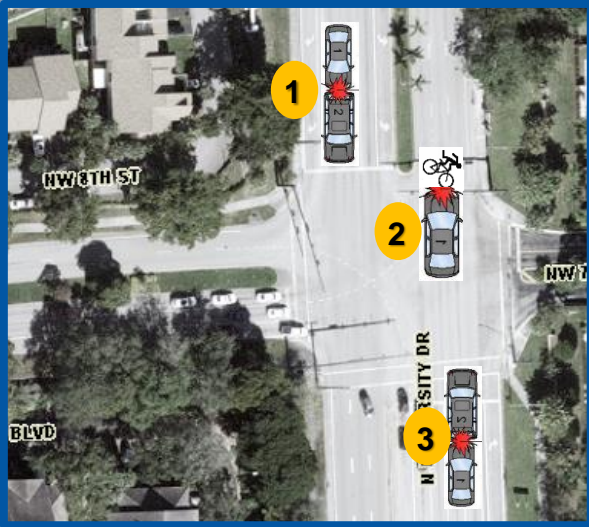
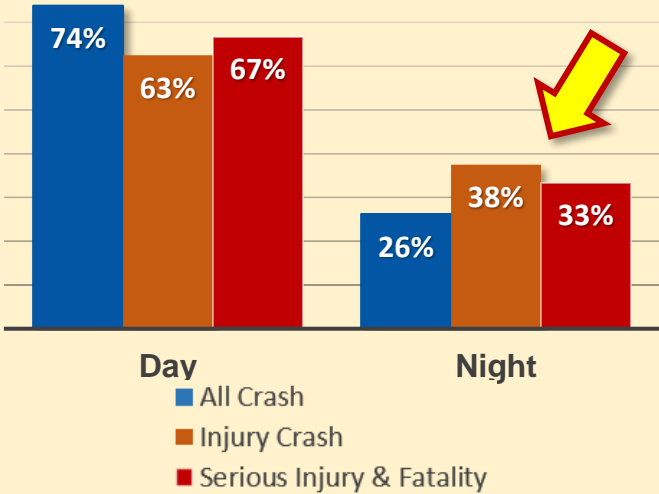
Cleary BI - Crashes

103 Total Crashes

CRASHES BY INJURY TYPE

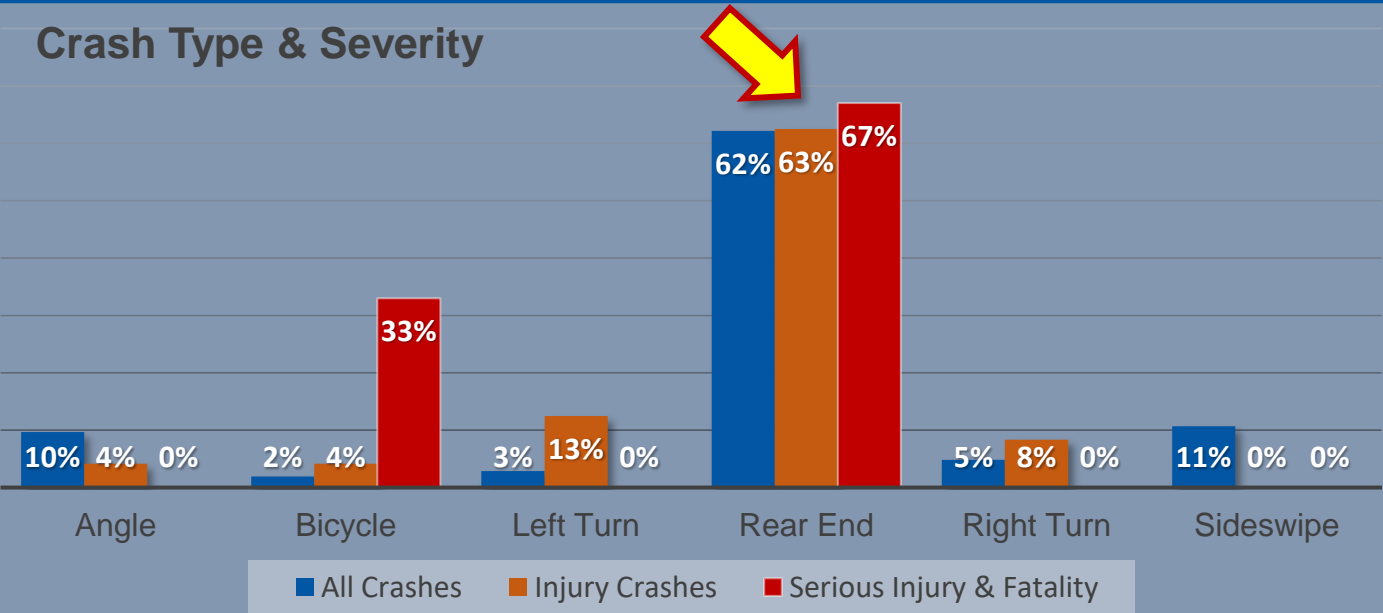


Day vs Night



1	Serious Injury • Mar 2018 • 1 pm • Rear End Collision in SB Lane
2	Serious Injury • July 2018 • 8:30 pm • Bicyclist Fault: Bike riding across intersection (no crosswalk) • NB traffic had green light
3	Serious Injury • Aug. 2016 • 4 pm • Rear End Collision in NB Lane

Crash Type & Severity



- Rear End
- Sideswipe
- Angle
- Left Turn
- Right Turn
- Off Road
- 🚲 Bicycle
- 🚶 Pedestrian
- Other

Cleary Blvd - Recommendations

Install wayfinding signage to direct ped crossings to southern crosswalk

Widen existing sidewalks to Shared Use Paths (10 to 12 ft)

Expand pedestrian area to improve access to and visibility of Shared Use Path within southern ROW

Enhance existing crosswalk with high visibility pavement markings

Improvements to ALL Intersections

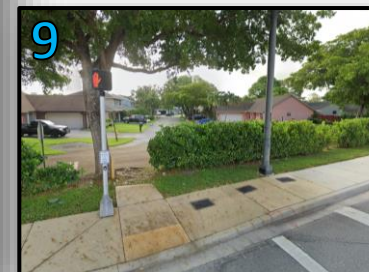
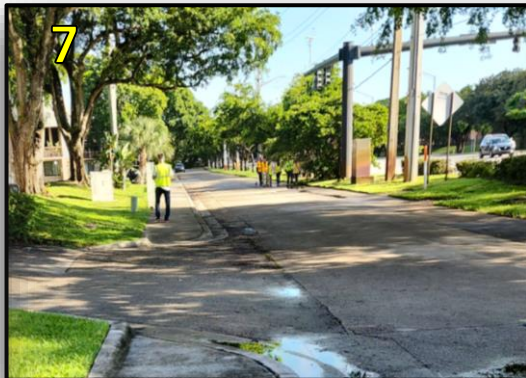
- High visibility crosswalk markings
- Ped-Scale lighting near / at intersections
- LPI signal phasing (plus countdown)



NW 5th, NW 3rd, NW 2nd St - Overview

Observations

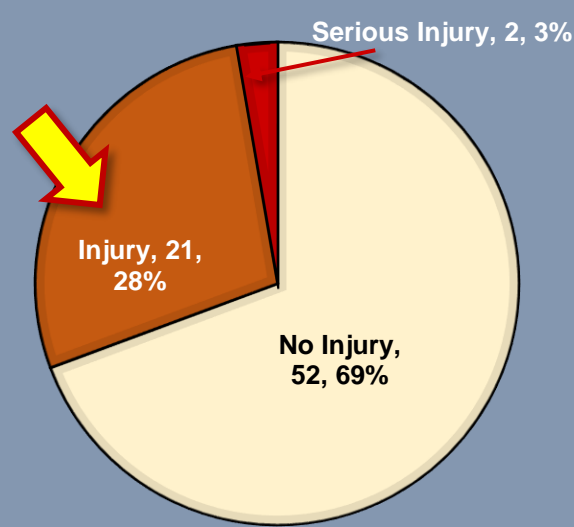
1. With upcoming completion of Plantation Walk, intersections will have a significant increase in activity (ped and auto) ←
2. NW 3rd and NW 2nd St both lead to Plantation Walk; The parcel has been vacant / unutilized for years (former site of Plantation Fashion Mall) ←
3. NW 5th and NW 3rd St are T-intersections
4. All crosswalks are low-visibility
5. NW 5th St missing southern crosswalk
6. NW 3rd and NW 2nd St missing northern crosswalk
7. NW 5th St – Western sidewalk is located on abutting ROW (Merritt Dr) but no connection to sidewalk. ←
8. All other sidewalks are located directly at curb ←
9. No or sub-standard access to abutting ROW (Merritt Rd, Green Tree Lane)
10. Bicyclists almost exclusively observed riding on sidewalks
11. No ped-scale lighting
12. Jaywalking observed at NW 3rd and NW 2nd Streets



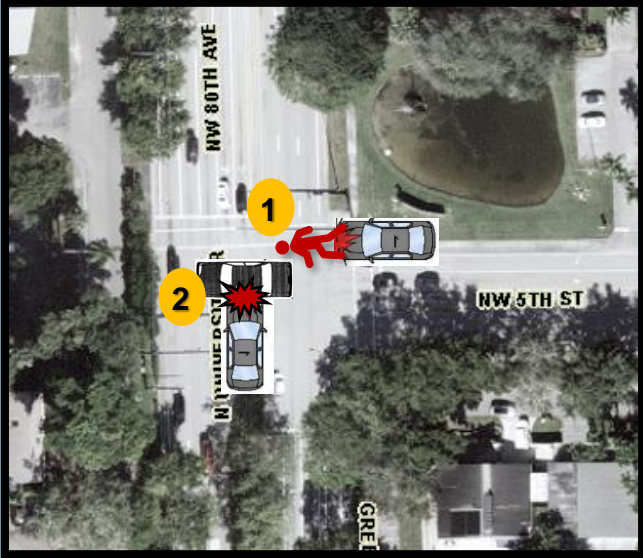
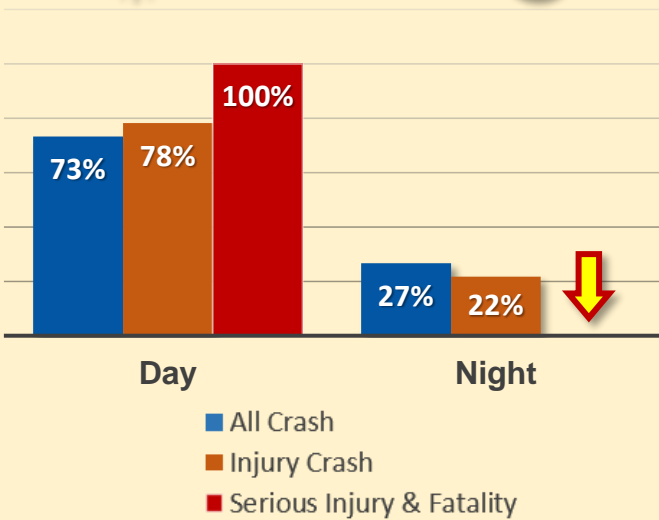
NW 5th St - Crashes

78 Total Crashes

CRASHES BY INJURY TYPE



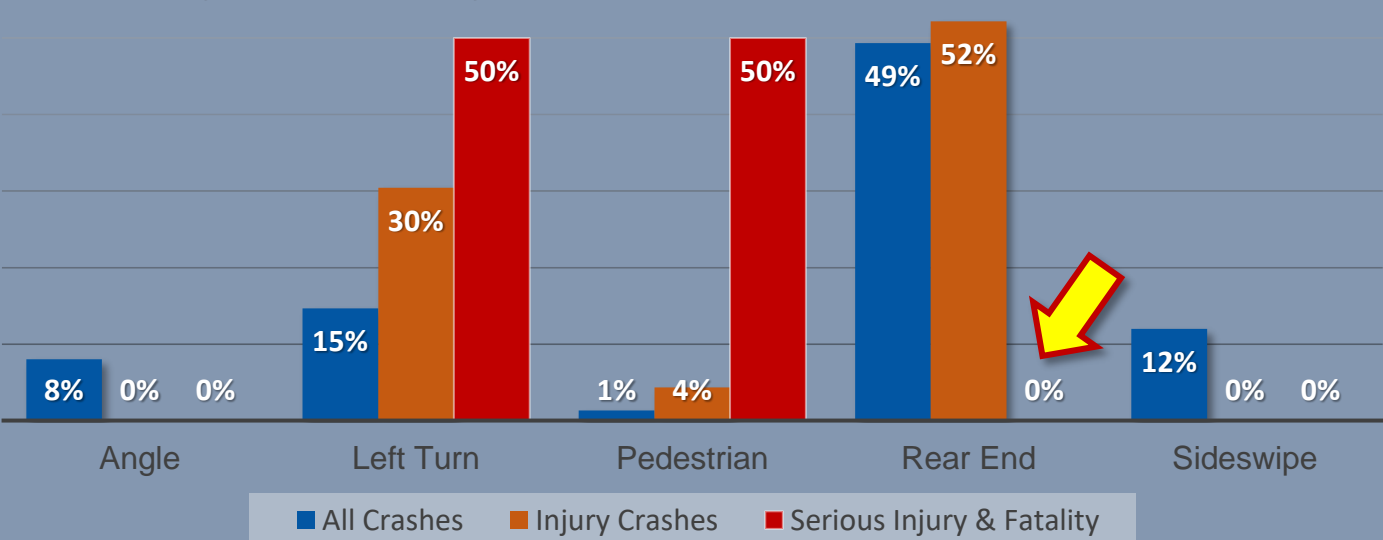
Day vs Night



30% of Injury Crashes occurred on wet roads

- 1 Serious Injury • Ped • June 2019 • 2 pm • Driver Fault: Ped was walking SB in eastside crosswalk • RT vehicle failed to yield on red light
- 2 Serious Injury • June 2016 • 1 pm • SB LT vehicle struck by NB vehicle

Crash Type & Severity

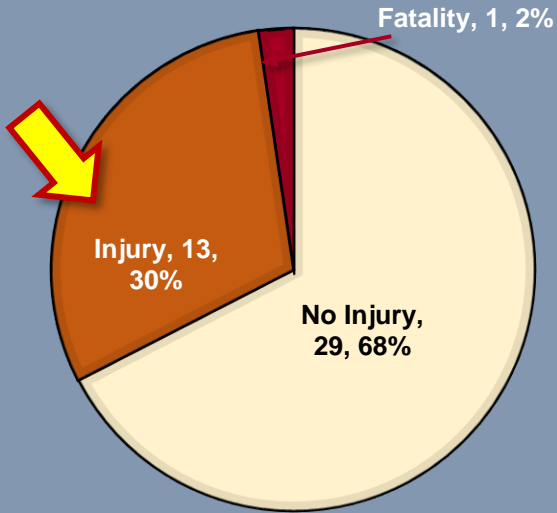


- Rear End
- Sideswipe
- Angle
- Left Turn
- Right Turn
- Off Road
- Bicycle
- Pedestrian
- Other

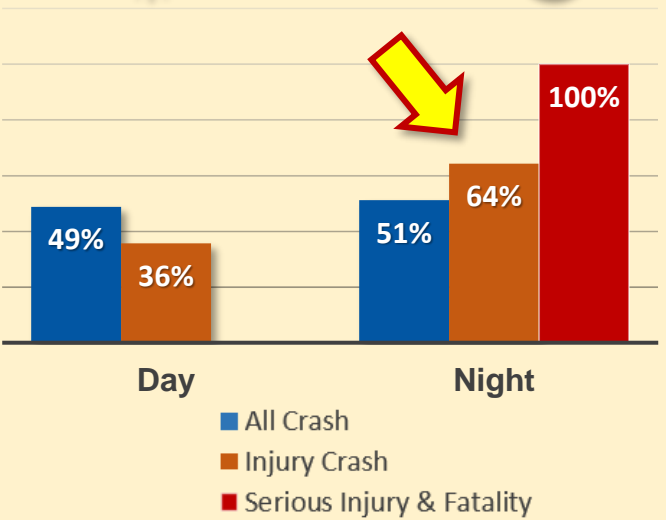
NW 2nd St - Crashes

43 Total Crashes

CRASHES BY INJURY TYPE



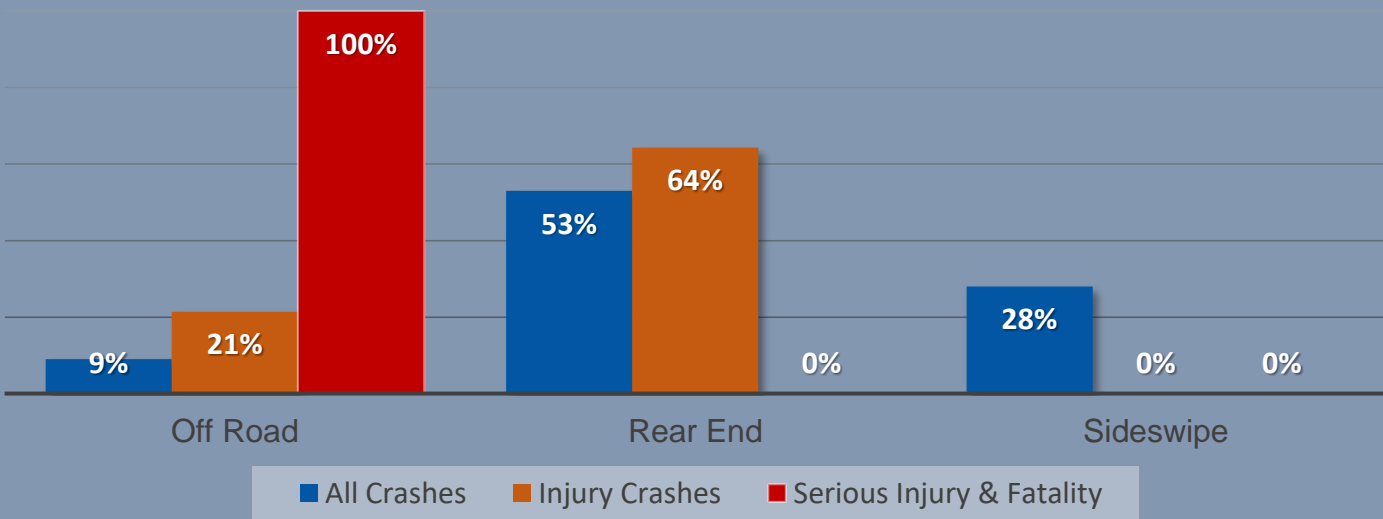
Day vs Night



29% of Injury Crashes occurred on wet roads



Crash Type & Severity





- Rear End
- Sideswipe
- Angle
- Left Turn
- Right Turn
- Off Road
- Bicycle
- Pedestrian
- Other

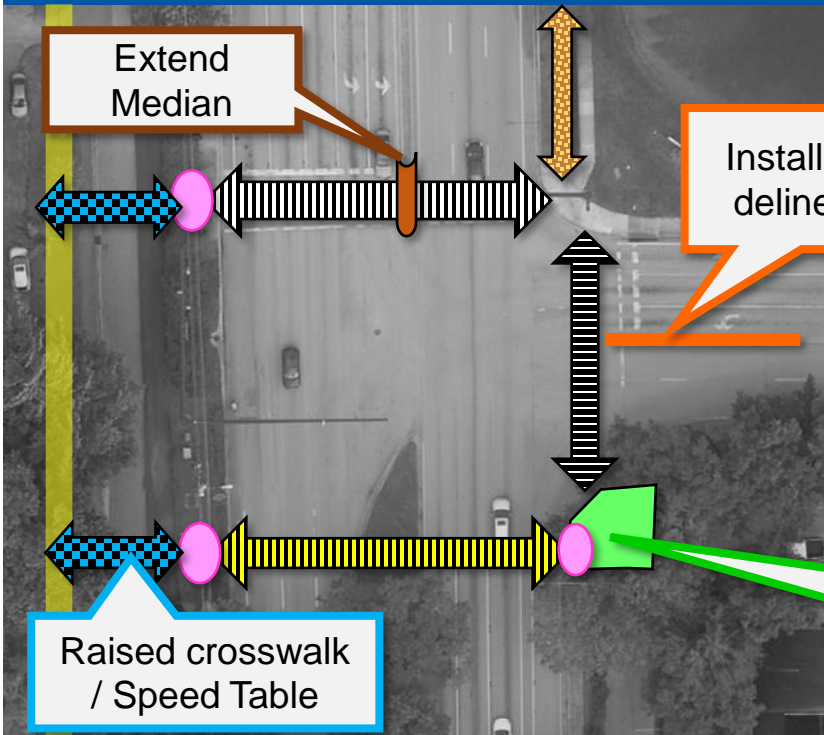
NW 5, NW 3, & NW 2 St - Recommendations

Improvements to ALL Intersections

- High visibility crosswalk markings
- Ped-Scale lighting near / at intersections
- LPI signal phasing (plus countdown)



University Drive & NW 5th St

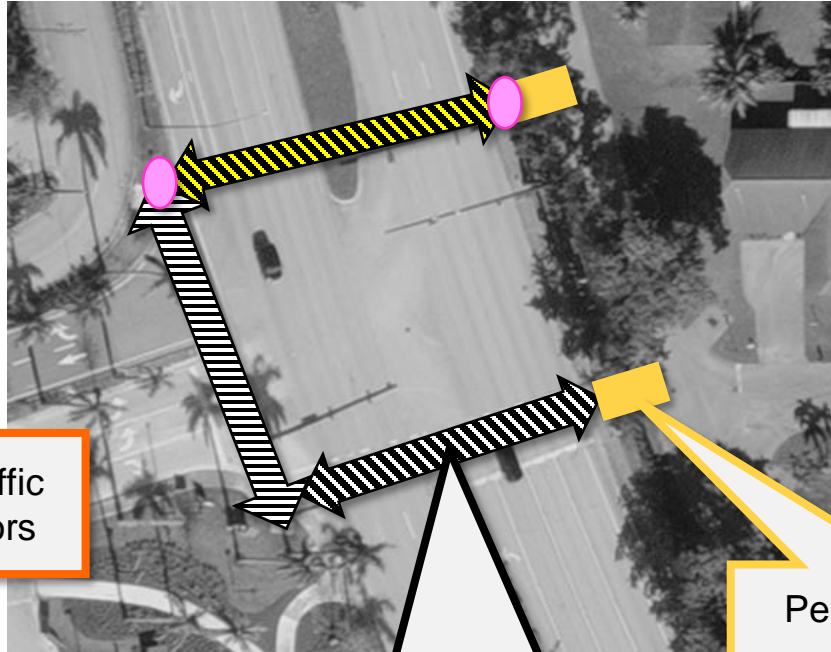


Extend Median

Install traffic delineators

Raised crosswalk / Speed Table

University Drive & NW 3rd St

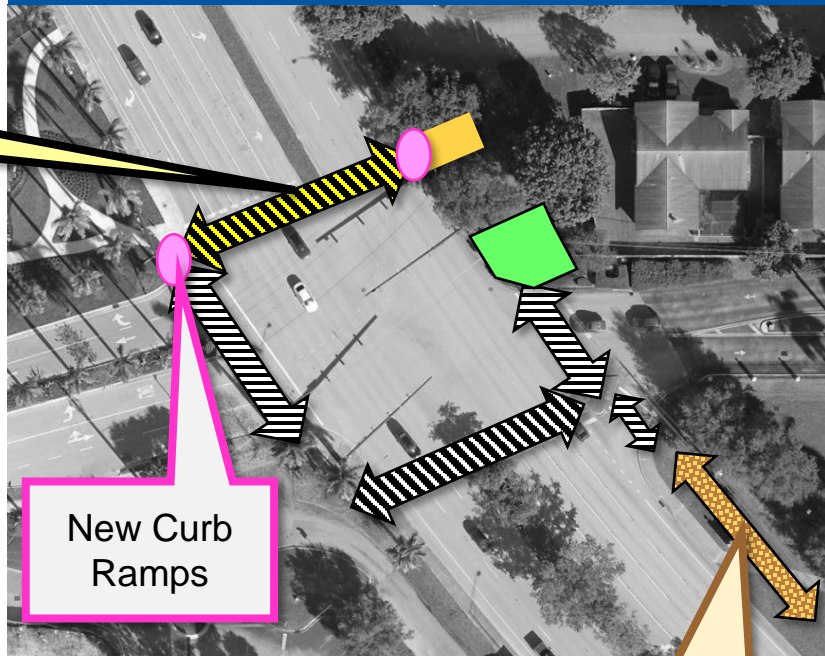


New high visibility crosswalk (with Ped Refuge if possible)

Enhance existing crosswalk with high visibility pavement markings

Expand pedestrian area to improve access to / visibility of public ROW / Green Tree Lane

University Drive & NW 2nd St



New Curb Ramps

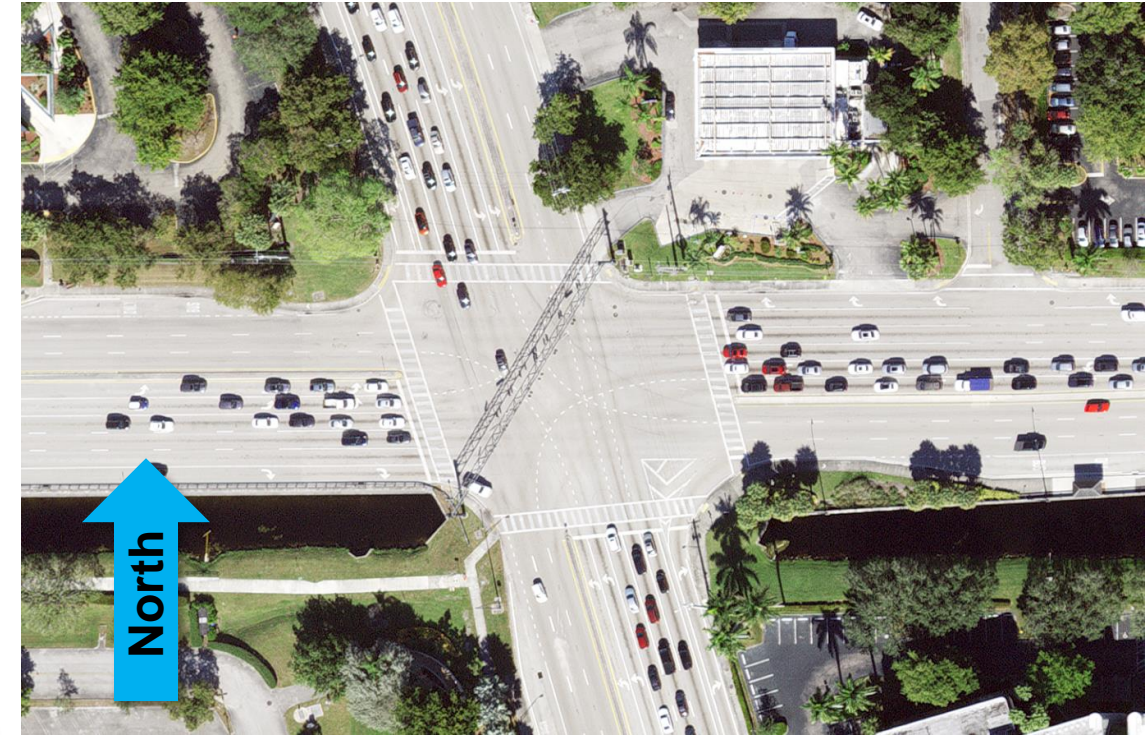
Pedestrian Path to Public ROW

Widen existing sidewalk to Shared Use Paths (10 to 12 ft)

Broward Blvd - Overview

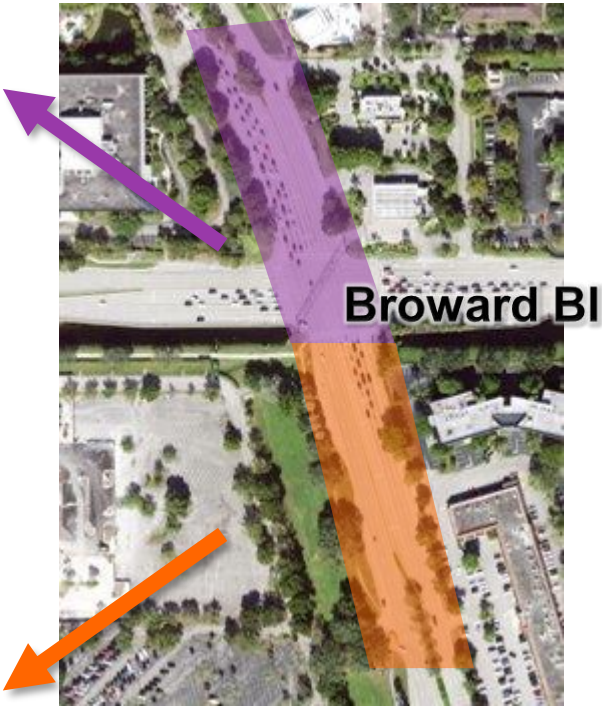
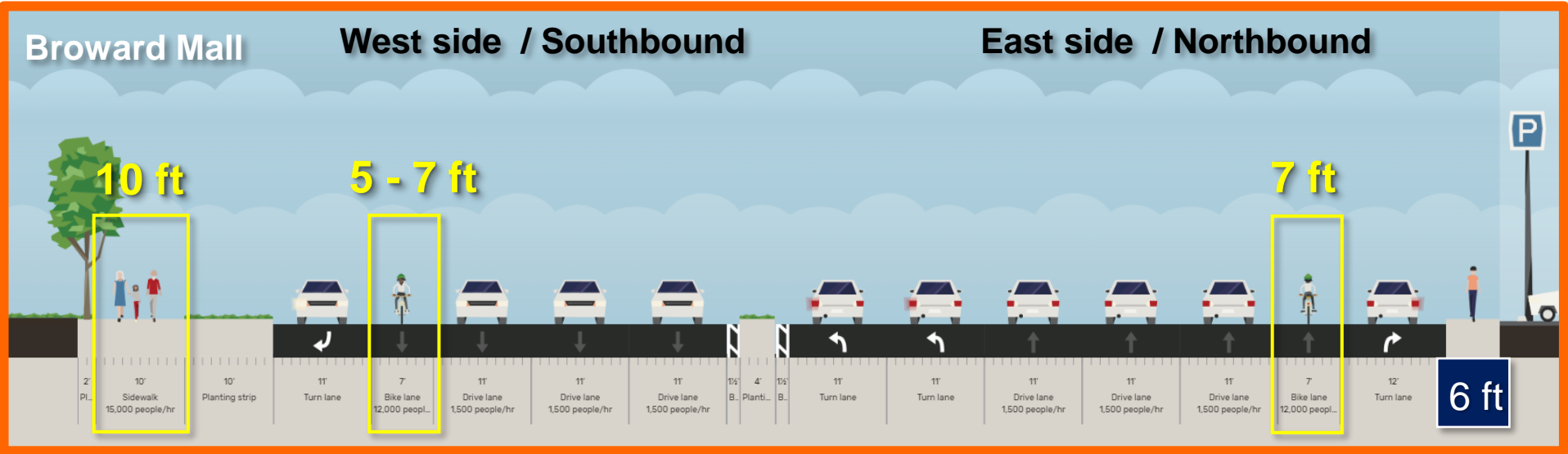
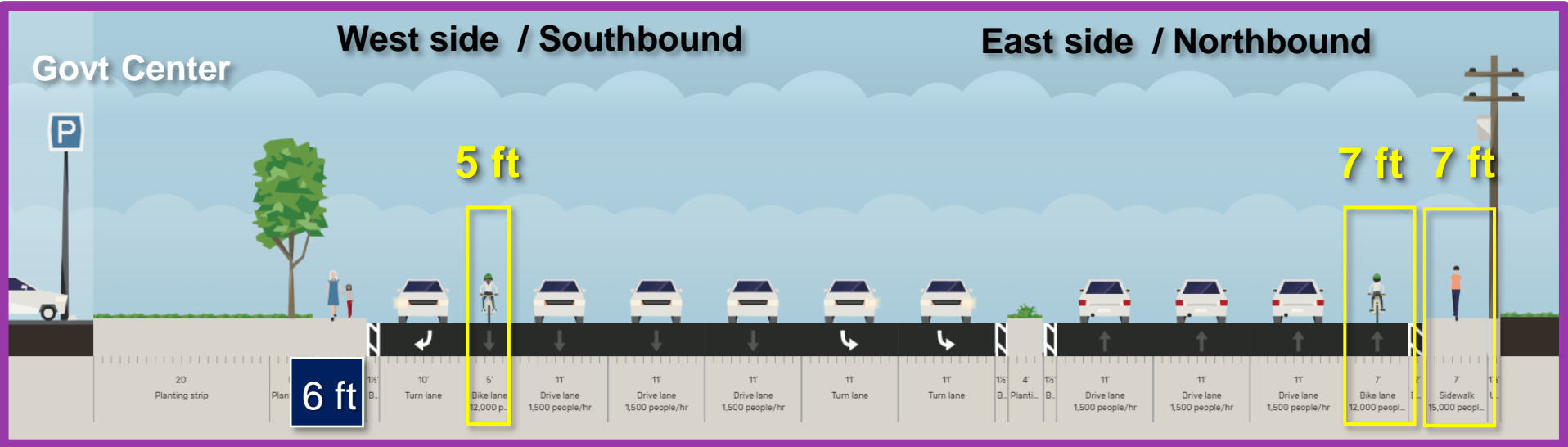
Observations

1. 2 LT, 3 Through, 1 Through / RT lane
2. High visibility markings on all crosswalks
3. BCT stops set approx. 175 to 275 ft from intersection
4. So much jaywalking! Esp with BCT riders
5. RT vehicles pulling into / waiting in crosswalk to make turn
6. Bicyclists riding on sidewalks
7. Almost all pedestrians observed in western crosswalk
8. Well-worn paths in swale areas / shortcuts at intersections
9. Adjacent to Midtown Plantation and anticipated redevelopment of Broward Mall
10. Construction underway for 432066-9-52-01, 02, and 03

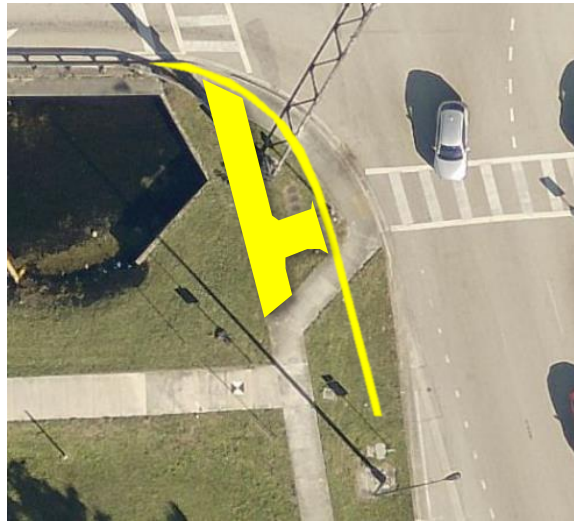


Broward Blvd – Overview cont.....

- Northern Project limits are NW 1st St
- 10 ft wide Shared-Use Path to be installed within western ROW, *south* of Broward Blvd
- 5 to 7 ft wide bike lanes (no protection)

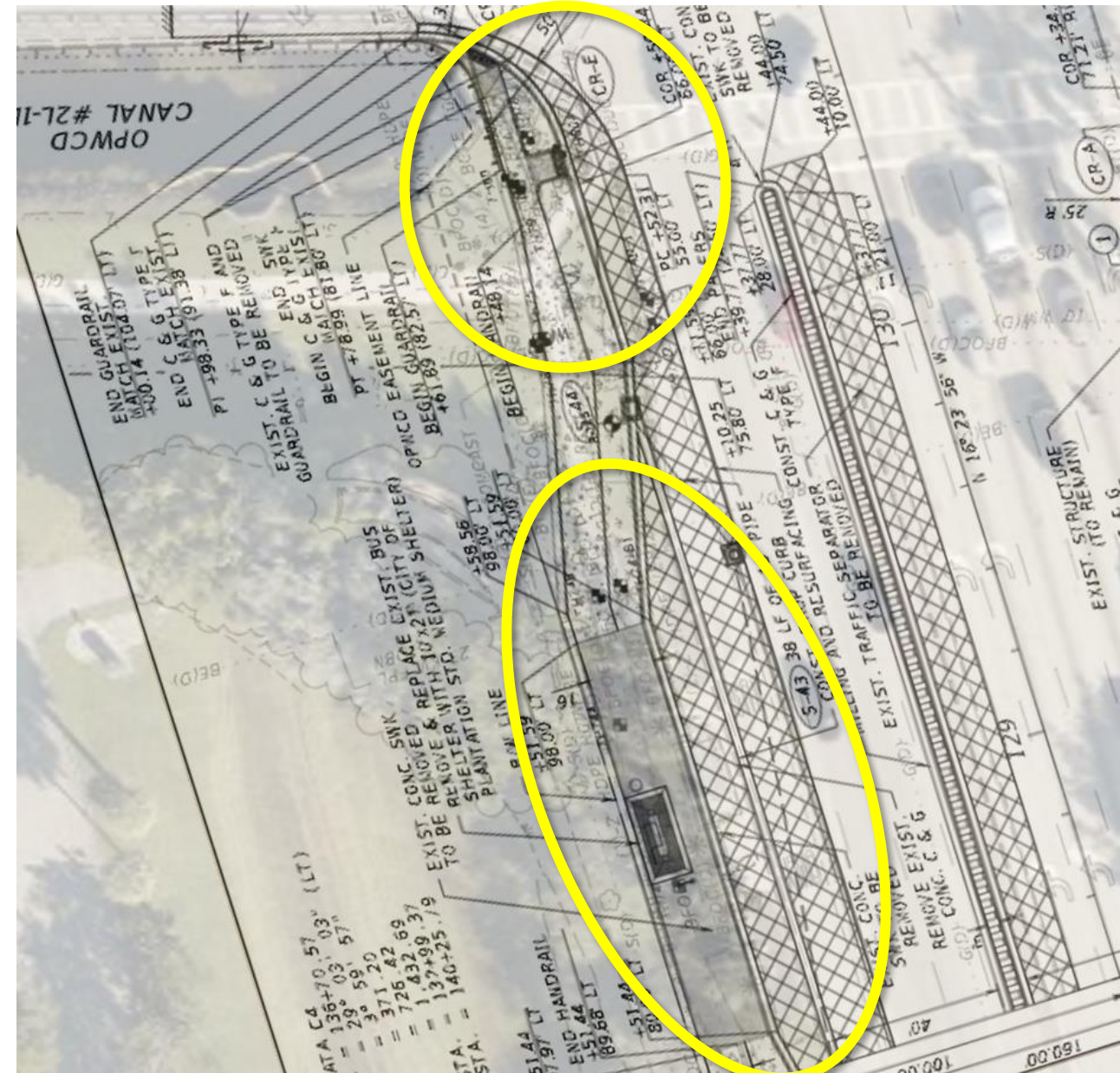


Broward Blvd – Overview cont.....



Most significant changes:

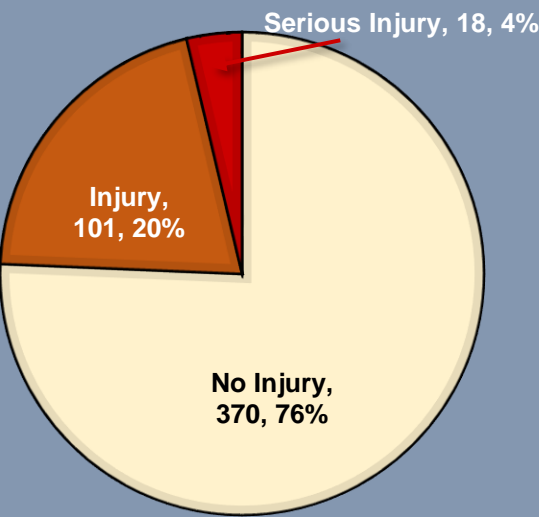
- Southwestern corner – curb realigned to widen intersection
- Raised median is shifting approx. 3 feet west
- N/S sidewalk extended north to NW corner curb
- Bus bay south of intersection shifts approx. 10 feet west
- Sidewalk expands to 10 ft wide



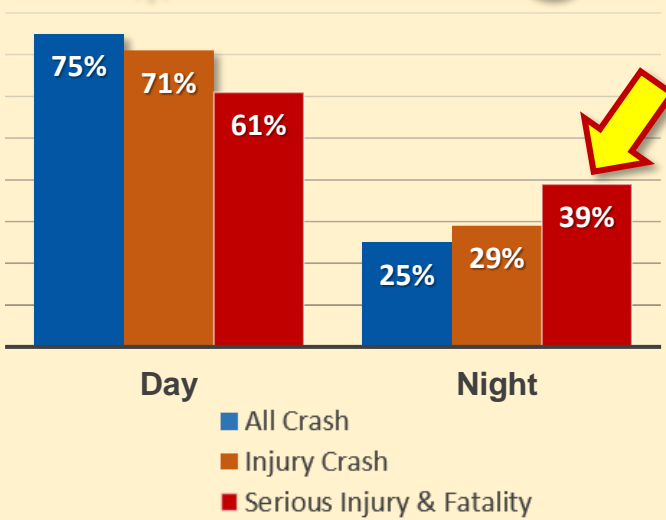
Broward Blvd - Crashes

489 Total Crashes

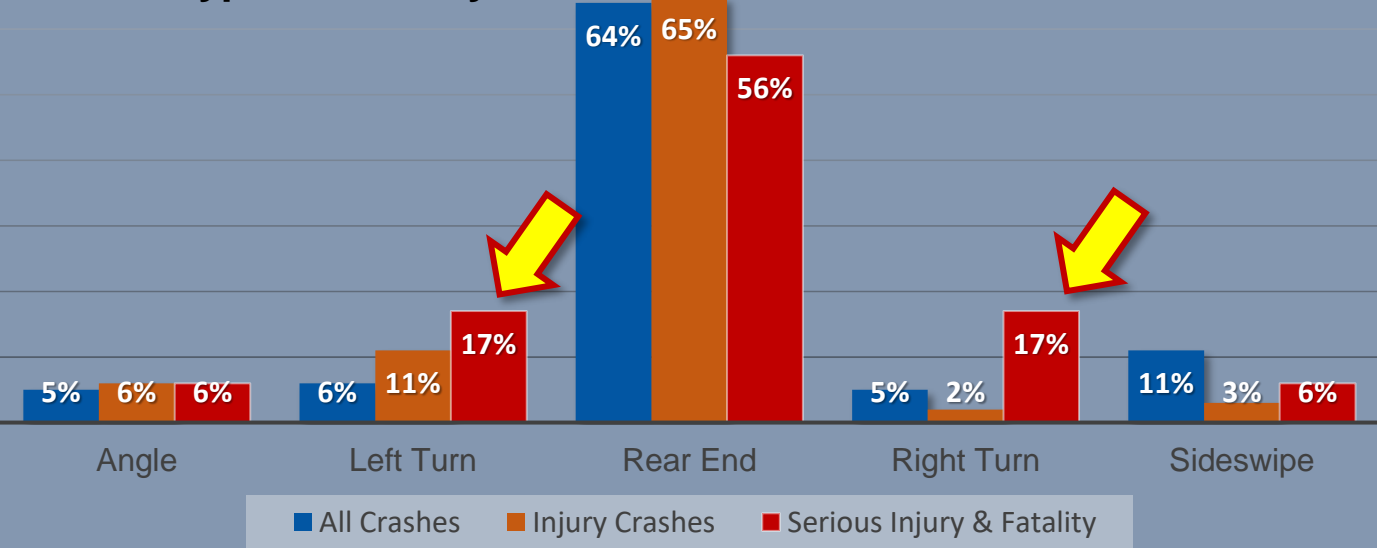
CRASHES BY INJURY TYPE



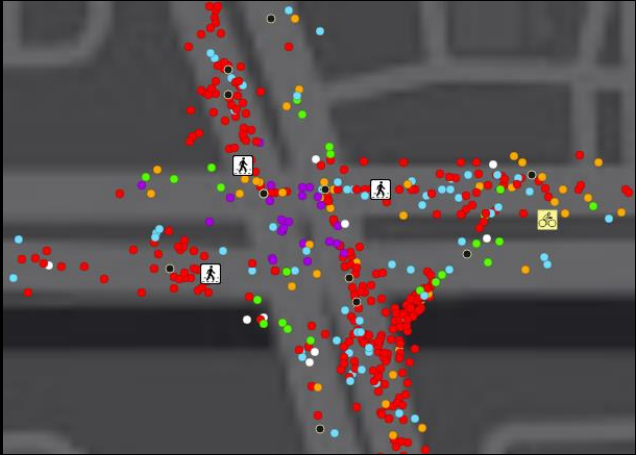
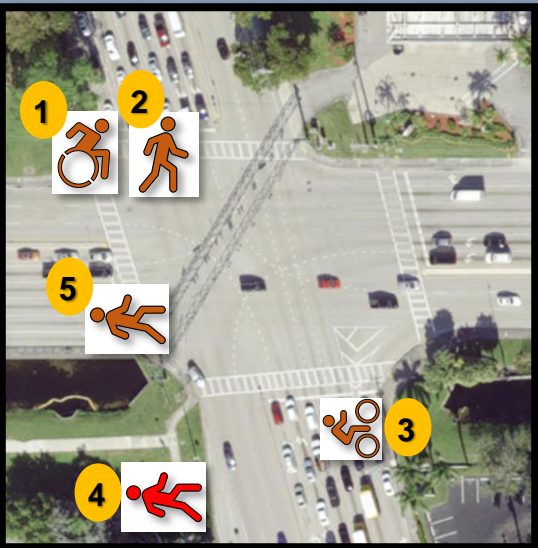
Day vs Night



Crash Type & Severity



1	Injury • Motorized Wheelchair • Dec 2016 • 1 pm • Driver fault • WB RT driver failed to yield at red light and struck wheelchair in crosswalk
2	Injury • June 2019 • 6 pm • In crosswalk • Unknown fault • WB RT driver struck pedestrian
3	No Injury • Jan 2016 • 11 pm • Bicyclist fault • Rode in bike lane through red light
4	Serious Injury • Ped @ BCT Stop • Aug 2020 • 1 pm • SB RT driver ran off road and struck BCT Shelter
5	Injury • Dec 2018 • 7:30 am • Driver fault • SB RT driver struck pedestrians in crosswalk



- Rear End
- Sideswipe
- Angle
- Left Turn
- Right Turn
- Off Road
- Bicycle
- Pedestrian
- Other

Broward Blvd - Recommendations

Widen NW sidewalk to 8 to 10 ft
(protect trees)

- Create pedestrian synergy area: "Midtown Entrance"
- Connect N/S Sidewalks to Bridge

Pedestrian Bridge

Enclose canal to create Linear Park - **Needed to accommodate Bridge landing**

Pedestrian Fence in median

Widen all crosswalks to 15 ft

Raised "pork chop" pedestrian refuge island / with raised crosswalk



Pedestrian Bridge: Colonial Drive Pedestrian Overpass, Orlando, FL



- 8 Travel lanes
- 115 ft curb to curb
- \$9.2 Million

<https://www.google.com/maps/@28.5532763,-81.3804052,3a,75y,261.33h,85.28t/data=!3m6!1e1!3m4!1sSviZ34J7w8RIZiUczn5u0A!2e0!7i16384!8i8192>

Broward Bl

- 9 Travel lanes
- 110 ft curb to curb
- ~210 ft from crosswalk to greenway sidewalk



- Stairs to/from SR-50
 - Providing direct access to SR-50 from the bridge
 - Increasing connectivity with SR-50 sidewalks
 - Discouraging pedestrian crossing at grade
- Railings:
 - Single handrail at each side of bridge span



Needs Assessment & Recommendations

Adjacent ROW:

1. Access Rd
2. NW 79th Te
3. Green Tree Ln
4. C-12 Canal Bridge

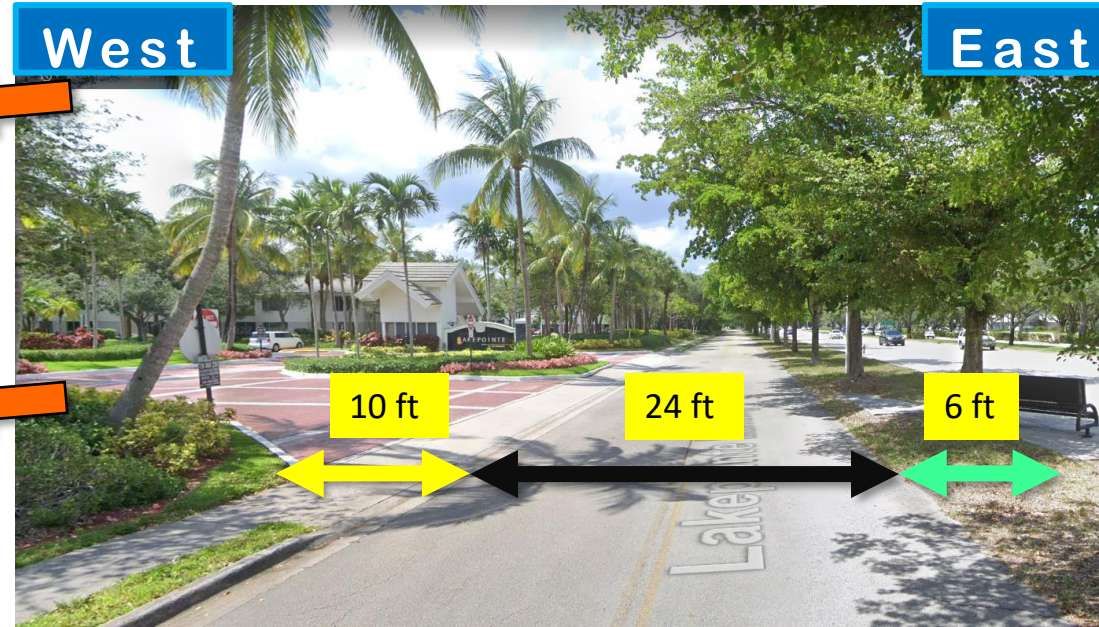
- ✓ Overview / Observations
- ✓ Recommendations



Access Rd - Overview

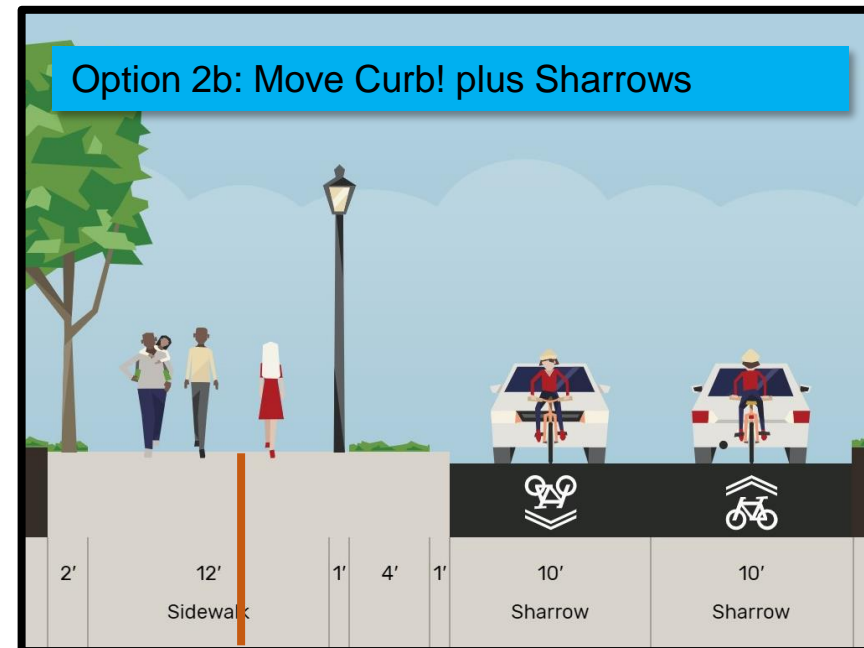
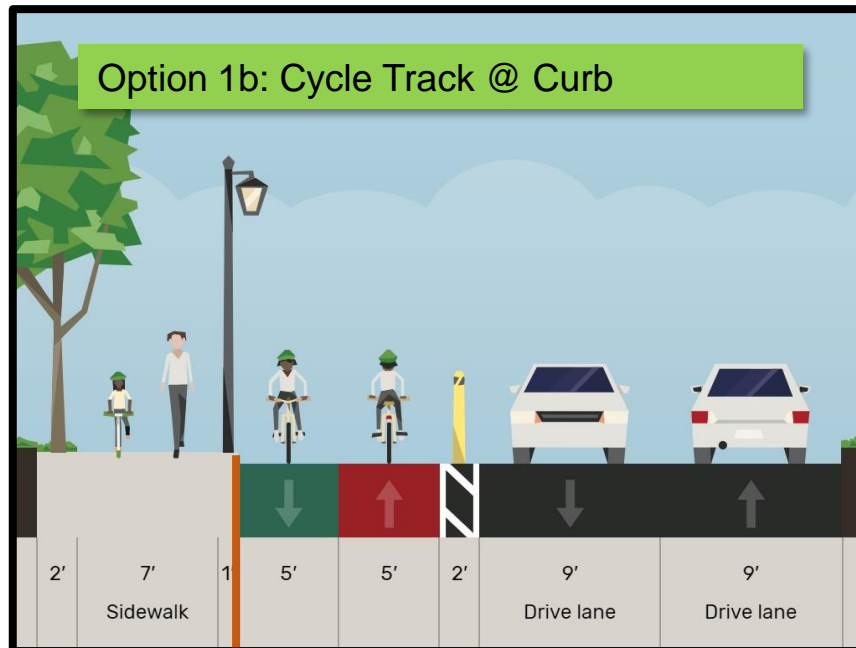
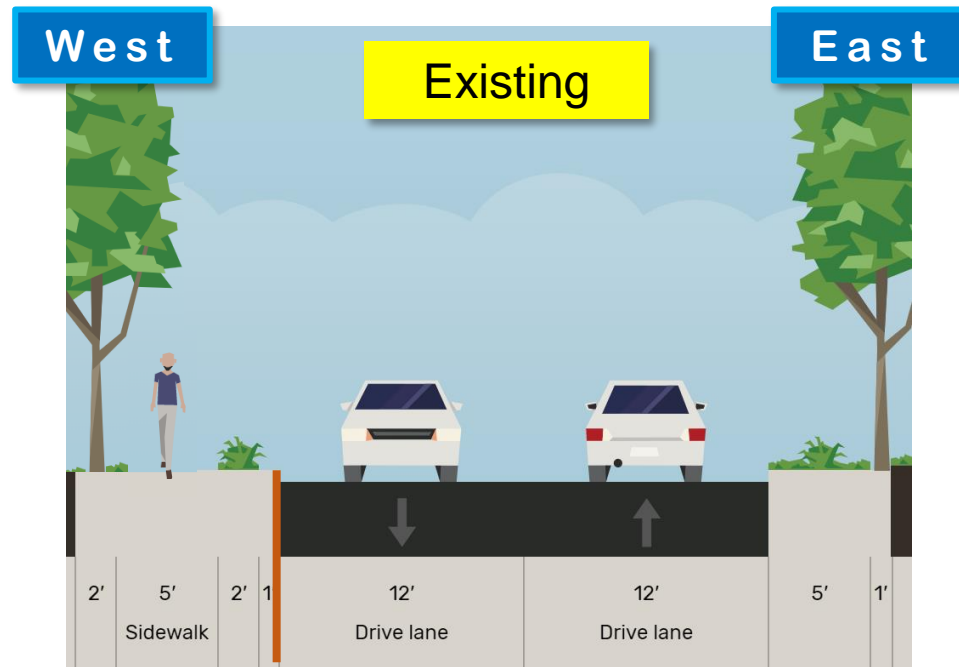
Observations

1. The only sidewalk for west side of University Dr from NW 17th Ct to C-12 canal
2. 40 ft dedicated by Plat to City; City ownership boundary appears to be at tree line
3. No lighting of Access Rd
4. Trees growing into University Dr streetlights and powerlines
5. No connectivity to BCT stops
6. No bicycle facilities
7. No curb ramps / connectivity at driveways
8. No connectivity to intersections



Access Rd - Recommendations

- Stay within City ROW
- **Remove trees**
- Ped-Scale Lighting along Access Rd
- Raised Crosswalks near intersections



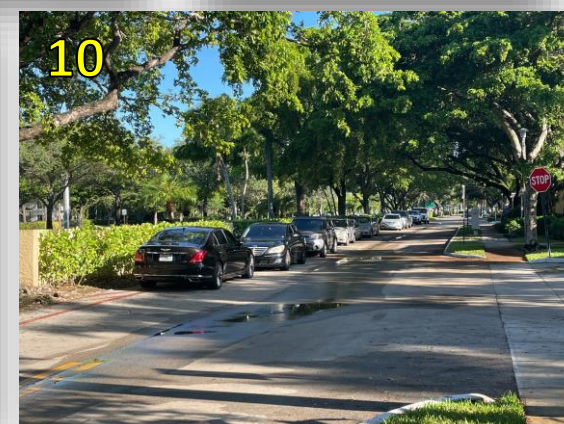
NW 79 Te – Overview + Recommendations

Observations

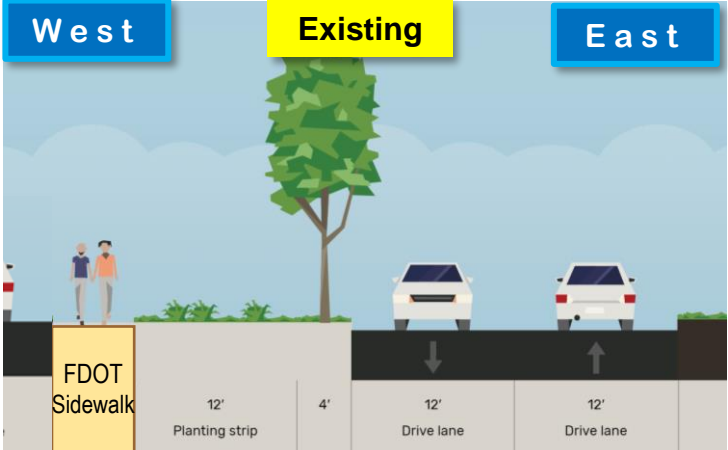
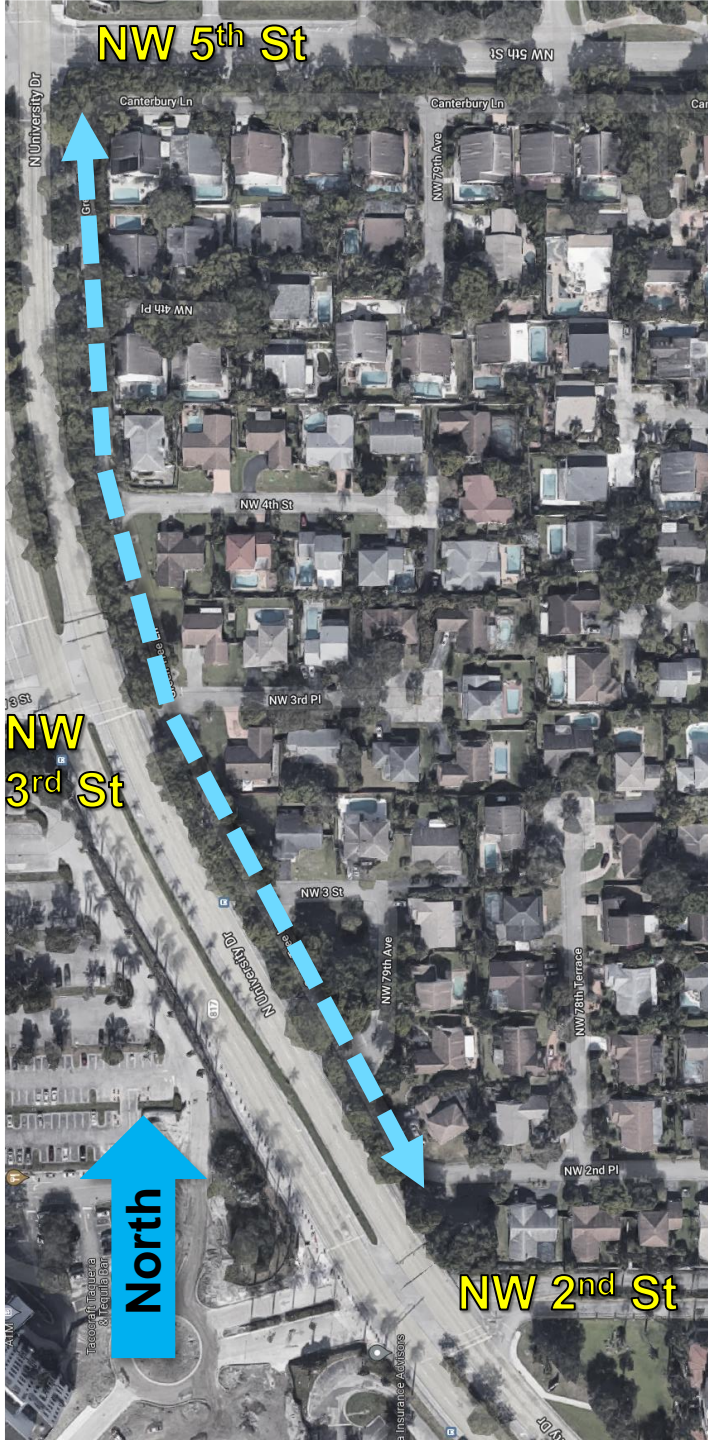
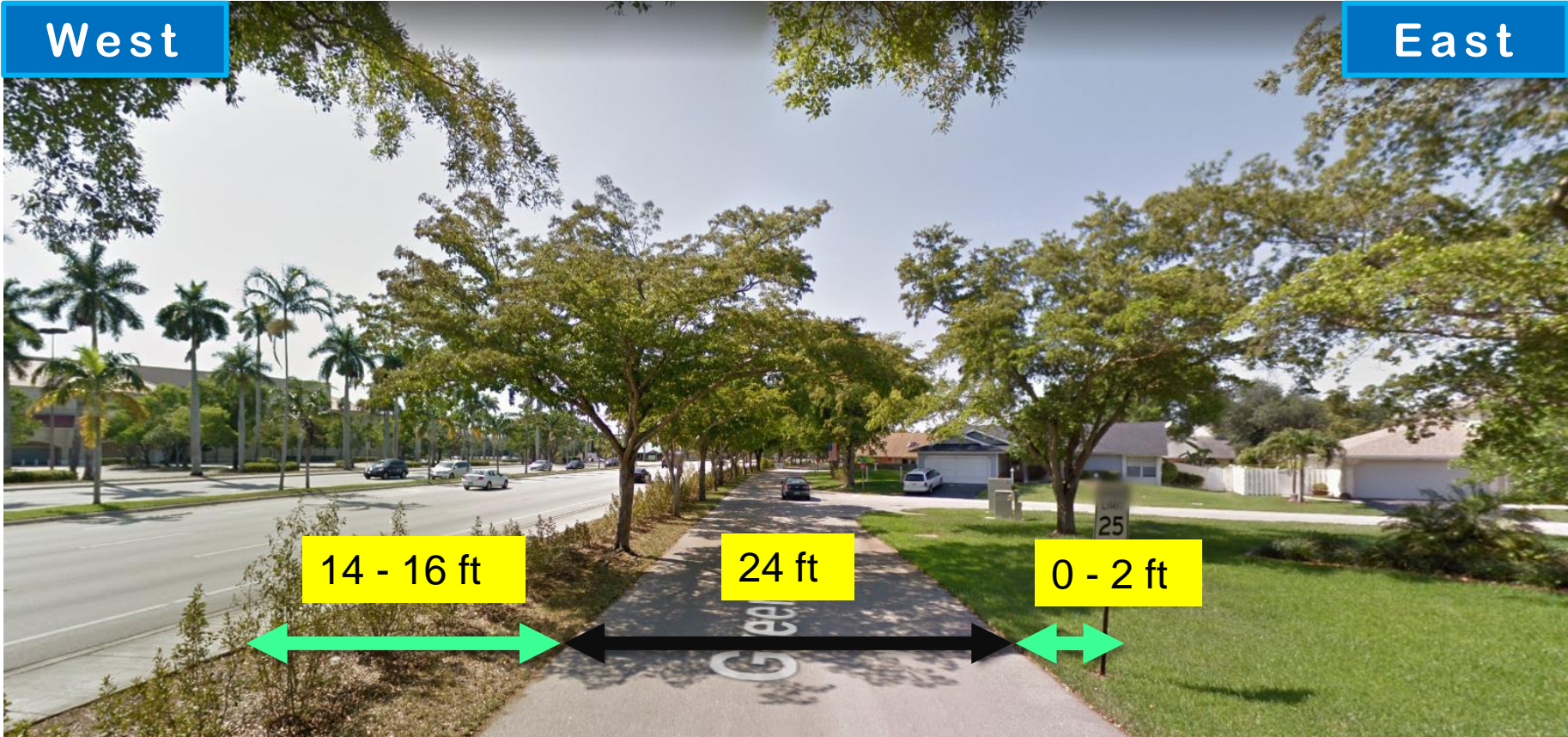
1. The only sidewalk for east side of University Dr from N. Marcano to S. Marcano Blvd
2. 40 ft dedicated by Plat to City; City ownership boundary appears to end at westside of hedges
3. Access at NW 11th Pl includes very sharp U-turn
4. No lighting
5. Trees growing into University Dr streetlights
6. No connectivity to BCT stops
7. No bicycle facilities
8. No curb ramps / connectivity at driveways
9. No crosswalks at University Dr vehicular accessways
10. Vehicles parked in roadway

Recommendations

1. Sharrows
2. Narrow Lanes to 9 ft
3. Widen sidewalks & fill in sidewalk gaps
4. Add missing curb ramps & crosswalks,
5. Ped-scale lighting
6. Convert NW 11th Place to right-out only (no access from University Dr)



Green Tree Lane – Overview + Recommendations



C-12 Canal Bridge – Overview + Recommendations

Observations

1. Bicyclists riding on sidewalk
2. North of bridge, both sidewalks are setback ←
3. The bridge's western sidewalk is the 1st sidewalk along University Dr south of NW 17th Ct
4. City owns 40 ft ROW east / west of bridge both north and south of bridge ←
5. Canal is owned by Old Plantation Water Control District
6. No protection of sidewalk from drive lanes ←
7. Observed speeding
8. No ped-scale lights



1



6



Recommendation

1. Parallel Ped-Only Bridges (example NW 21st Av)
2. Setback southern sidewalks to join bridge landing



Next Steps

Meeting with Broward County: Cleary BI Recommended Improvements	Dec 21st
City Staff Working Group Meeting: Final Recommendations	Jan
Public Engagement for Long-term Recommendations	Feb - Apr
Planning Concept SOW and Cost Estimates	Feb
Submit for MTP 2050 Call For Projects	March
Final Plan Report	April





City of Plantation

Multimodal Master Transportation Plan

N. University Dr.

Recommended Improvements