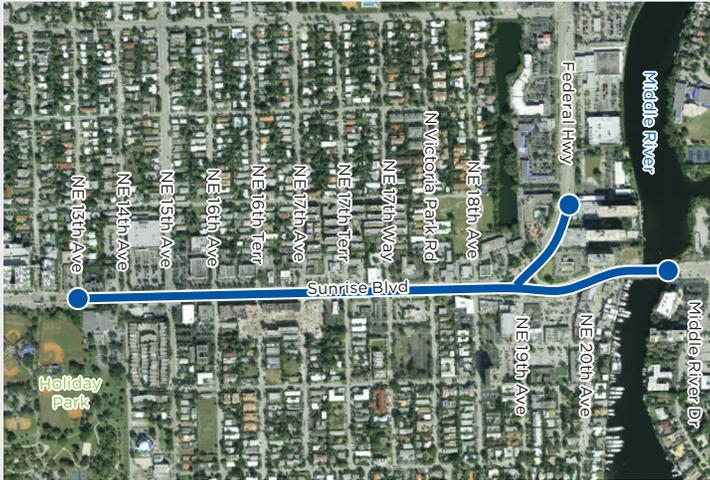


SUNRISE BOULEVARD CORRIDOR SUMMARY

Fort Lauderdale, FL

Maintaining Agency: FDOT

FROM NE 13TH AVENUE TO MIDDLE RIVER | 1 Mile



CRASH DATA

26 Pedestrian

19 Bicycle

3 Fatal

41 Injury

1 Property Damage Only

47%
Occurred in Non-Daylight
Lighting Conditions

44% Occurred in
April, June, or
October

51% Occurred on
Tuesday, Friday,
or Saturday

Peak Crash Time Periods



11%
Involved Alcohol
and/or Drugs

CALENDAR						
S	M	T	W	T	F	S
		X			X	X
		X			X	X
		X			X	X
		X			X	X

ROADWAY CHARACTERISTICS

Looking West



The corridor has a three lanes in each direction. It has intermittent right- and left-turn lanes. It also has median with intermittent landscaping, cobra style vehicular lighting, and dynamic message signs. The corridor has 5' - 7' sidewalks and no marked bike lanes. The posted speed is 35 MPH. The land uses are redeveloping; new buildings front the street while older buildings and shopping centers are set behind large surface parking lots.

FIELD REVIEW OBSERVATIONS

- No Bike Lanes
- Bicyclists Riding on Sidewalks
- Objects Blocking Sidewalks
- Narrow Sidewalks
- ADA Noncompliant Sidewalks and Ramps
- Missing Crosswalks
- Lack of Crossing Opportunities
- Illegal Mid-Block Crossings
- Frequent Driveways
- Poorly Marked Driveway Crossings
- Inattentive Drivers (Especially at Driveways and Intersections)
- Vehicles Blocking Crosswalks
- Lack of Shade/Shelter
- Lack of Bicycle Markings at Conflict Areas
- Poor Drainage
- Too Much/Poor Signage
- Long Signal Times



Objects Blocking the Sidewalk



Flooding Blocking Crossing



Bicyclists in sidewalks



Missing Pedestrian Crosswalks



Vehicle in Crosswalk



Pedestrians Crossing Outside of Crosswalk

SUNRISE BOULEVARD DEMONSTRATION CORRIDOR REVIEW

From NW 13th Avenue to Middle River | Fort Lauderdale



Overview

Sunrise Boulevard from NW 14th Avenue to Middle River was chosen as a demonstration study site for the Broward MPO Bicycle and Pedestrian Safety Action Plan (BPSAP) based on a review of its pedestrian and bicycle crash history; land uses; propensity for active transportation; transit activity; and the decisions of the BPSAP Advocacy Team. It is generally a six-lane divided arterial with intermittent right- and left-turn lanes. It has intermittent right- and left-turn lanes. It also has median with intermittent landscaping, cobra style vehicular lighting, and dynamic message signs. The corridor has 5' - 7' sidewalks and no marked bike lanes. The posted speed is 35 MPH. This corridor is in the process of being resurfaced and new pedestrian crossings are being painted. The land uses are redeveloping; new buildings front the street while older buildings and shopping centers are set behind large surface parking lots.

The following review describes the results of the corridor safety review and general observations of the corridor. A field review was conducted on Tuesday, July 12th, 2016 from 9:00 AM to 12:00 PM and a night time field review was completed on Tuesday, July 12th, 2016 from 8:30 to 9:30 PM.

Crash Summary

Over the six-year period from 2010 through 2015, 45 pedestrian or bicyclist crashes occurred along the Sunrise Boulevard study corridor. Of those crashes, 26 (58 percent) involved a pedestrian and 19 (42 percent) involved a bicyclist. The highest concentration of crashes occurred at NE 15th Avenue (14 Crashes).

Three of the crashes resulted in a fatality (7 percent) and 41 resulted in injury (91 percent). Only one crash did not result in an injury or fatality. Most crashes occurred in dry conditions (42 crashes, 93 percent). However, about half of the crashes (47 percent) occurred in non-daylight lighting conditions. One crash occurred in an area that was dark without street lighting. All three of the fatal crashes occurred in dark with street light conditions. Five crashes involved alcohol or drugs (11 percent).

Nearly one quarter of all pedestrians or cyclists involved in the crashes were 25-29 years old (11 crashes, 24 percent). Almost two thirds of the pedestrian crashes occurred during an illegal mid-block crossing (16 of 26 crashes, 62 percent). Two pedestrian crashes occurred at an intersection but on a side without a crosswalk.

FIGURE 1 | Study Area Crashes

Legend

● 1 Segment Crash

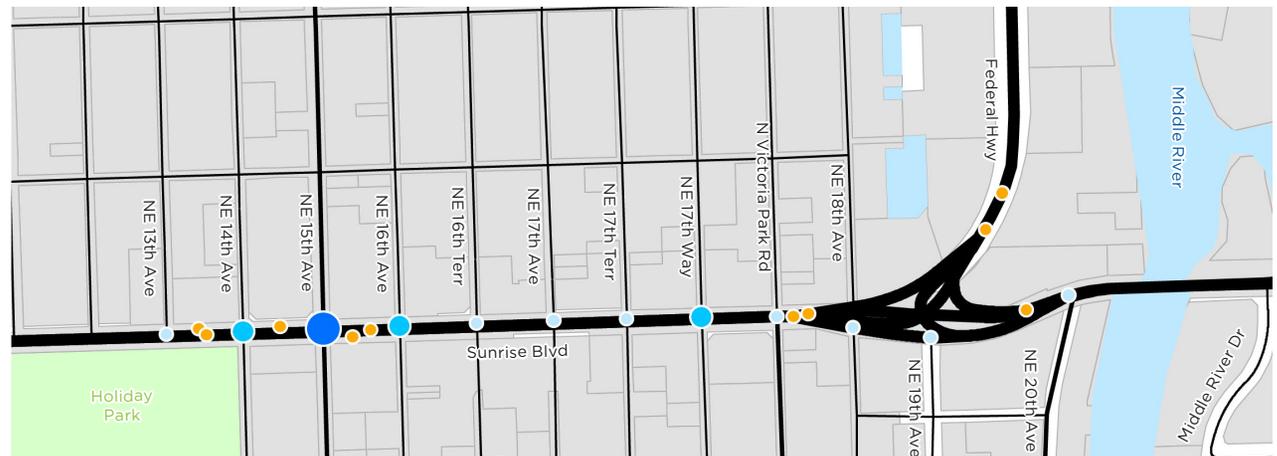
Intersection Crash

● 1 - 5

● 6 - 10

● 11 - 15

Source: CARS 2010-2014 crash data; Signal Four Analytics 2010-2016 crash data



42

Transit Ridership & Land Use

Transit ridership is moderate in the Sunrise Boulevard study area. Ridership did not exceed 250 riders per day at any point along the study corridor, although it is relatively consistent throughout with between 101-250 daily riders at each stop. Transit facilities are generally missing bus shelters, although people were regularly observed waiting at the stops during the field review.

The land uses along the corridor, as noted previously, are transitioning. Traditional development follows an auto oriented pattern with separated land uses and buildings set back from the road behind parking lots. Redevelopment is occurring along the corridor with mixed used, mid-rise buildings that front the street and provide higher quality pedestrian amenities such as street trees and wide sidewalks. These developments include street level retail that can help to activate the street. The historic Gateway Theater is also located at the eastern end of the corridor. Along with the adjacent shopping destinations, the Gateway area attracts visitors from around Fort Lauderdale. According to demographic data, residents in the study area also have a high propensity for traveling on foot, by bike, or on transit in comparison to the rest of the county.

General Observations:

Throughout the corridor, pedestrians tend to cross outside of marked crossings. Many of the bus stops are not located near a convenient crosswalk to get to destinations on the opposite side of Sunrise Boulevard. The distance between signalized crossings is also long in some places, and the signals are long, causing long wait times for pedestrians when they do reach signals. There are destinations along both sides of the street that attract pedestrians. As a result, pedestrians cross mid-block throughout the corridor. Additionally, distracted pedestrians were observed crossing streets while looking at their phones rather than their surroundings. Drivers also tend to pull through crosswalks at red lights and stop signs without looking for pedestrians.

The sidewalks are also narrow in many places and do not offer any buffer between the sidewalk and the street. There is very little shade. Many of the facilities do not meet ADA requirements, and there are faded crosswalks. Because there are no bike lanes in the corridor, bicyclists ride on the narrow sidewalks and causes conflicts with pedestrians. Bicyclists were also observed riding on the sidewalk in the opposite direction of vehicles.

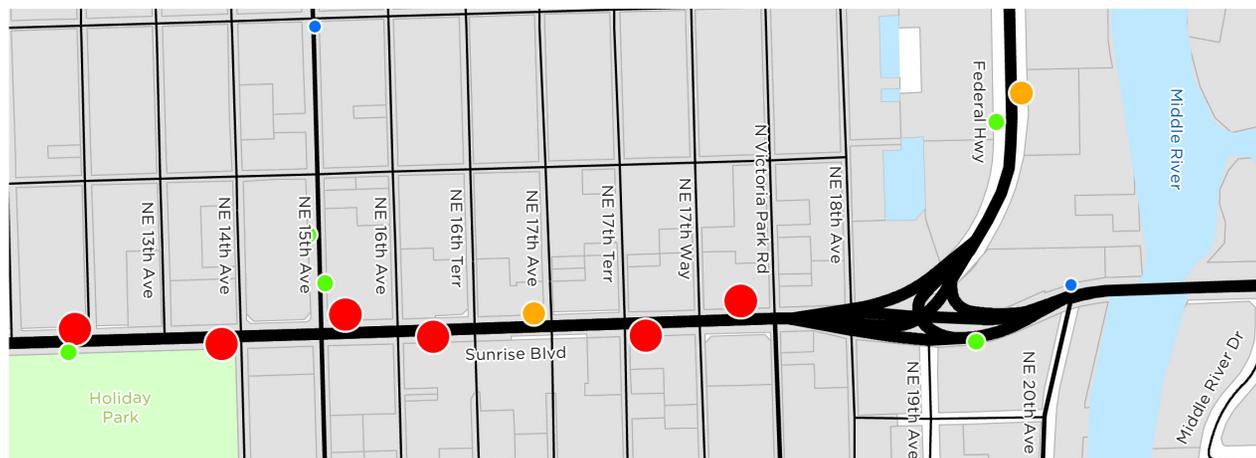


FIGURE 2 | Study Area Transit Ridership

Legend

Daily Boardings + Alightings

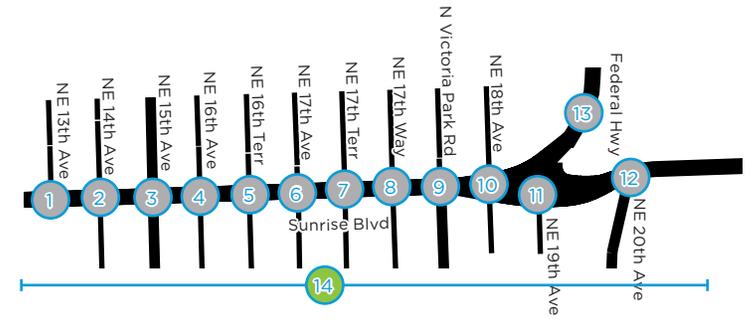
- 1 - 25
- 26 - 50
- 51 - 100
- 101 - 250

Source: Broward County Transit, 2015



Issue: No Bike Lanes

Location: 14 (Corridor Wide)



General Observations:

- There are no bike lanes in the corridor.
- Bicyclists ride on the narrow sidewalks, creating conflicts between bicyclists and pedestrians.
- Bicyclists were also observed riding on the sidewalk in the opposite direction of vehicles.
- These conditions create safety issues for bicyclists, especially at intersection and driveway crossings.

Recommendations:

- Evaluate the addition of bike lanes throughout the corridor. Ensure that the bike lanes are designed to have sufficient width to safely separate bikes from the high-speed and high-volume vehicular traffic along Sunrise Boulevard, in order to promote use of the bike lanes rather than the sidewalks. The high volumes and speeds suggest the need for protected or separated bike lanes to accommodate the needs of riders.
- Provide additional visual separation of bike lanes through buffers.
- Use green paint at intersections, driveways, or other conflict points to highlight to drivers that bicyclists may be crossing.
- Create an outreach campaign to alert bicyclists of the dangers of riding on the sidewalks and to alert drivers of the need to look for bicyclists when turning in to and out of driveways.
- Create a progressive enforcement campaign where officers educate, warn, and finally ticket drivers who drive in bike lanes and bike riders who cross the street against the signal.



Bicyclists ride in the sidewalk, causing potential conflict between pedestrians and bicyclists.



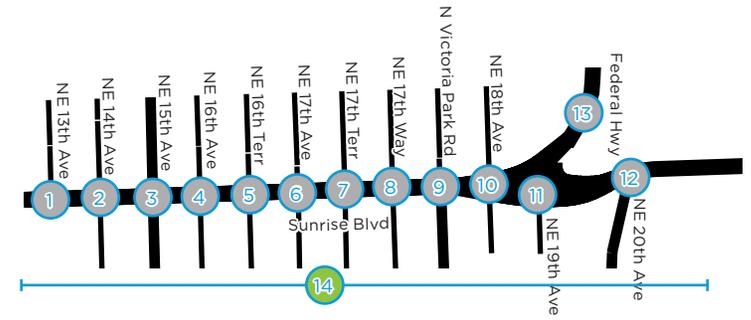
Bicyclist riding in the sidewalk.



Bicyclist riding in the sidewalk.

Issue: Narrow Sidewalks and Obstructions

Location: 14 (Corridor Wide)



General Observations:

- Utility poles, signal poles, fire hydrants, and bus stop benches are mounted within the sidewalks throughout the corridor.
- Sidewalks are less than 6 feet.
- Sidewalks are directly adjacent to travel lanes without any separation from vehicles.
- Some adjacent sidewalks do not align with each other.

Recommendations:

- Widen sidewalks to meet or exceed ADA standard minimum width (6 feet if at back of curb) or add landscaped buffer between sidewalk and street.
- Relocate fixed objects off of sidewalks or provide additional sidewalk width to bypass. There should be a minimum of 4-foot clearance around fixed objects in accordance with forthcoming Public Right of Way Accessibility Guidelines.



Poles are frequently placed in the sidewalk.



Objects in sidewalk on the SE corner of the NE 15th Avenue intersection.



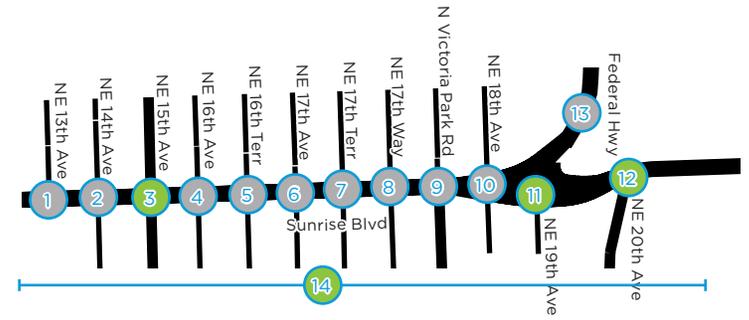
Bench placed in the sidewalk; some sidewalks are wide but still do not offer separation from the street.



Some of the newer sidewalks are designed with buffers and shade trees.

Issue: Noncompliant ADA Sidewalks and Ramps

Location: 3, 14 (Corridor Wide)



General Observations:

- Fixed objects are mounted within the sidewalks,
- Sidewalk ramps do not comply with ADA requirements at every intersection along the corridor.
- In general, the truncated domes are missing, worn, or misaligned.
- In several areas, accessible sidewalk connections are not present between the sidewalk and driveways or private parking lots.
- The drainage inlet on the northwest corner of NE 15th Avenue blocks the ramp.

Recommendations:

- Update all ADA ramps along corridor to meet requirements.
- Expand sidewalk network to connect sidewalks with safe driveway crossings.
- Move the drainage inlet on the northwest corner of NE 15th Avenue away from ramp.



Lack of detectable warning surfaces and broken sidewalk.



Lack of detectable warning surfaces.



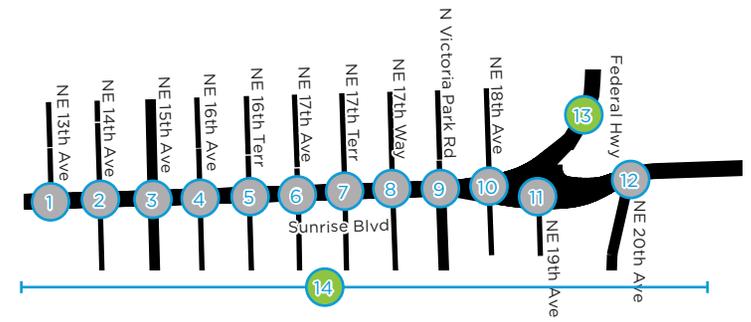
Lack of detectable warning surfaces.



The drainage inlet on the northwest corner of NE 15th Avenue blocks the ramp.

Issue: Driveway Frequency & Design

Location: 14 (Corridor Wide)



General Observations:

- There are a number of driveways between intersections along the corridor. Many of these driveways have poorly marked crosswalks.
- Many driveways along the corridor are very wide and allow drivers to turn in and out without slowing down.
- Many drivers were observed turning out of driveways without looking for or yielding to pedestrians.
- In section 13, almost every development has a right turn lane. These prevent new pedestrian crossings from being created and allow drivers to turn quickly in to driveways.

Recommendations:

- Refresh pavement markings to emphasize crosswalks across driveways.
- Create an outreach campaign to alert bicyclists of the dangers of riding on the sidewalks and to alert drivers of the need to look for bicyclists when turning in to and out of driveways.
- Encourage cross access agreements between developments to limit the number of driveways approved along the corridor.
- Consider narrowing driveways where possible and ensure that driveway width is considered in development review for new developments.
- Consider whether right turn lanes are needed at every development. If not, consider where they might be able to be removed.



Wide driveways at a gas station on Sunrise Boulevard.

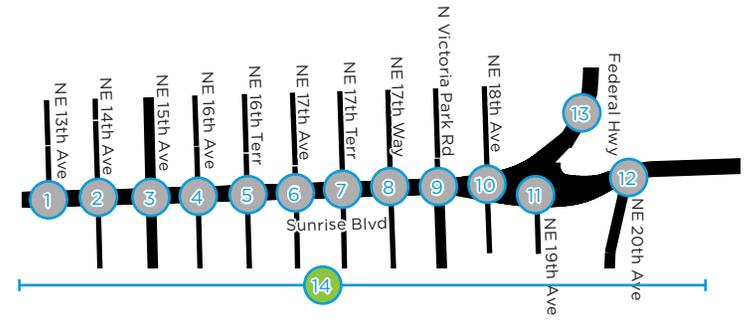


Frequent left and right turn lanes on Federal Highway.



Frequent driveways on Sunrise Boulevard.

Issue: Driver Behavior
Location: 14 (Corridor Wide)



General Observations:

- Drivers turning right on red do not always look for pedestrians in crosswalks before turning.
- During field observations, several drivers almost hit pedestrians or bicyclists in the crosswalks and at driveways.
- Drivers exiting driveways do not always yield or look for pedestrians or bicyclists.
- Drivers stop in the crosswalk and block access to the sidewalks. This is sometimes due vehicles pulling through the stop bars in order to see oncoming traffic because the stop bar is set back.

Recommendations:

- Install warning signs at intersections and driveways, such as “Stop Here on Red”.
- Consider implementing “No Right Turn on Red.”
- Educate drivers on safe driving behavior through programs such as best foot forward, alert today, alive tomorrow and by working with Google and Waze.
- Create a progressive enforcement campaign where officers educate, warn, and finally ticket drivers who block crosswalks.
- Consider redesigning the location of the stop bar and crosswalk.



Vehicle waiting to turn left in the crosswalk.

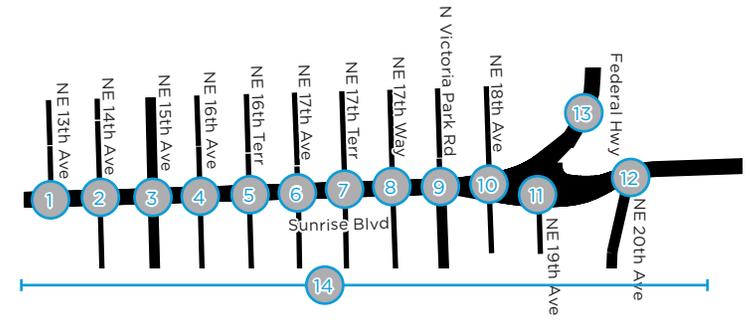


Vehicle parked in the crosswalk.



Vehicle parked in the crosswalk.

Issue: Lack of Shade & Shelter
Location: 14 (Corridor Wide)



General Observations:

- Throughout the corridor, there is little shade for pedestrians.
- The bus stops lack shelter from the sun and rain. At NE 17th Way, the bus stop does not provide seating for waiting riders.
- At US 1 and other major intersections, no shade is available for pedestrians waiting for the long cycle lengths before safely crossing the road.

Recommendations:

- Upgrade bus stops to provide seating and shelter for users.
- Evaluate options to provide shade and shelter at intersections to encourage pedestrians to use crosswalks.



Bus stop without shelter on Sunrise Boulevard.



Much of the corridor does not have shade along the sidewalks.



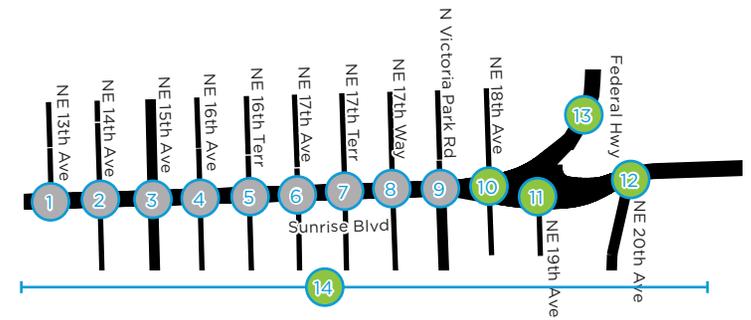
Bus stop without shelter on Sunrise Boulevard.



Some of the newer sidewalks are designed with buffers and shade trees.

Issue: Limited Crossing Opportunities

Location: 10, 11, 12, 13, 14 (Corridor Wide)



General Observations:

- The Gateway intersection offers limited crossing opportunities.
- There is no opportunity to cross from east to west on the north side of Sunrise Boulevard at Federal Highway.
- Corridor wide, frequent left and right turn lanes create limited opportunities for mid-block crossings.

Recommendations:

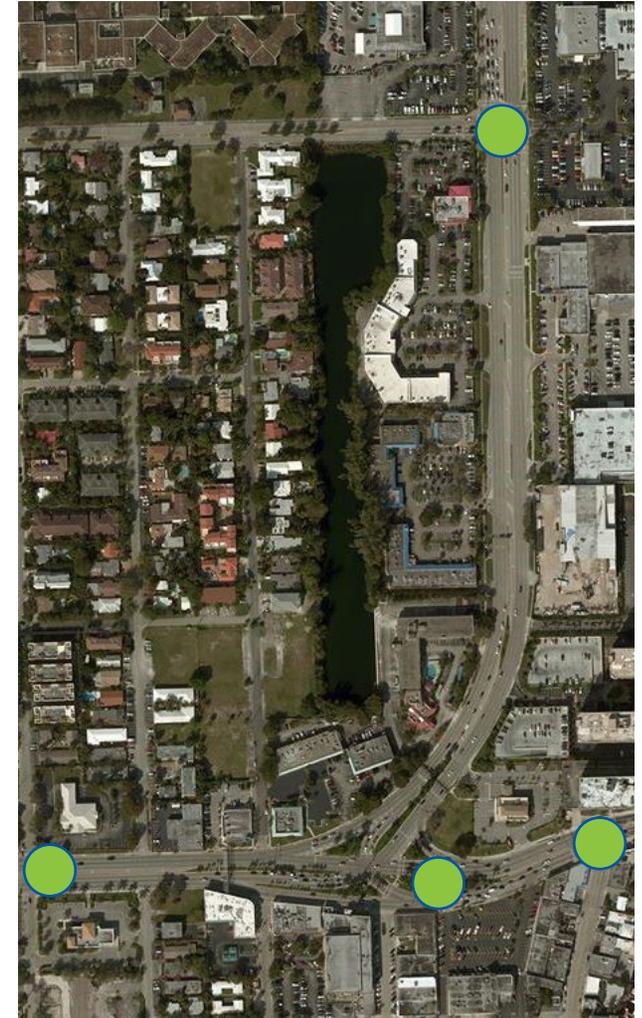
- Study realignment of the Gateway intersection to allow for an east/west crossing on the north leg.
- Explore locations for safe mid-block crossings and consider bi-directional median opening crosswalks and TWLTL median refuge islands such as on Federal Highway just north of Sunrise Boulevard.



No east/west crossing for Federal Highway on the north leg of the Gateway intersection.



Frequent left and right turn lanes on Federal Highway.



Crossing opportunities around the Gateway intersection.

Issue: Drainage / Flooding

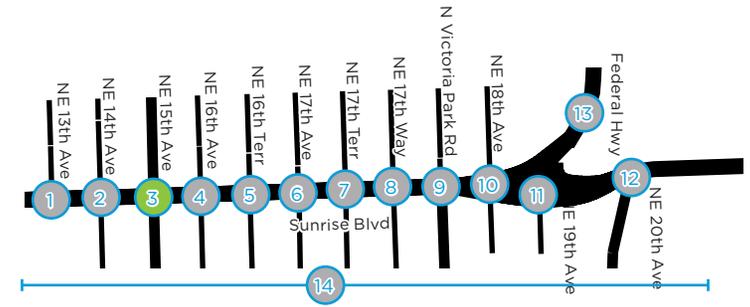
Location: 3

General Observations:

- Drainage is poor throughout the study area, but especially at the intersection of NE 15th Avenue. Flooding at this intersection blocks the sidewalk ramp.

Recommendations:

- Update drainage system throughout corridor. Complete a study to determine specific locations where drainage issues are occurring. Consider options such as elevation modifications and improving draining through landscaping and other opportunities.



Flooding on the SE corner of the NE 15th Ave intersection.



Flooding on the SE corner of the NE 15th Ave intersection.

Issue: Poor Lighting

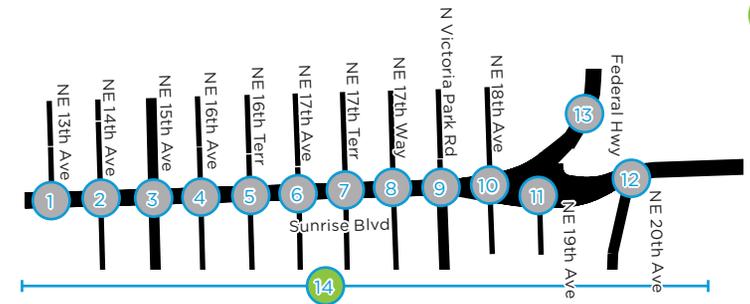
Location: 14 (Corridor Wide)

General Observations:

- Almost half of the crashes occurred at night.
- Lighting focuses on street and there is no pedestrian lighting.
- Lighting does not meet new illumination standards as noted in FDOT's Plans Preparation Manual.

Recommendations:

- Complete a lighting study with a focus on pedestrian lighting.
- Create an outreach campaign to alert pedestrians and bicyclists of the need to wear bright clothing at night and to use lighting.



Typical auto-oriented cobra head lighting on Sunrise Boulevard.

Issue: Crosswalk Deficiencies

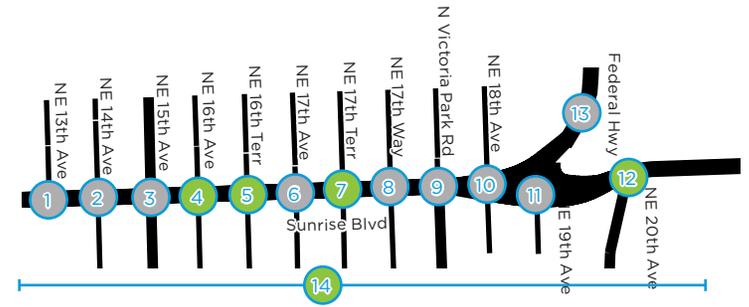
Location: 14 (Corridor Wide)

General Observations:

- Many of the crosswalks are faded, worn, or uneven.
- Crosswalks are not present across the west leg the intersection at NE 20th Ave even though there is a bus stop on that leg.
- Crosswalks are not marked across the south leg of NE 16th Avenue, NE 16th Terrace, or NE 17th Avenue.

Recommendations:

- Due to the high pedestrian volumes along the corridor, add crosswalks across all intersection legs.



Missing crosswalk in driveway.



Missing crosswalk at NE 20th Ave.

Issue: Median Design

Location: 14 (Corridor Wide); NE 15th Ave to NW 17th Terr

General Observations:

- Most of the medians are concrete curbs, which do not discourage pedestrians from making mid-block crossings.

Recommendations:

- Use lush landscaping to close off the medians to prevent pedestrians from making illegal mid-block crossings.



Median with vegetation that allows pedestrians to pass through.



Frequent turn lanes limit space, allowing only for concrete curb medians.

Issue: Bus Stop Locations

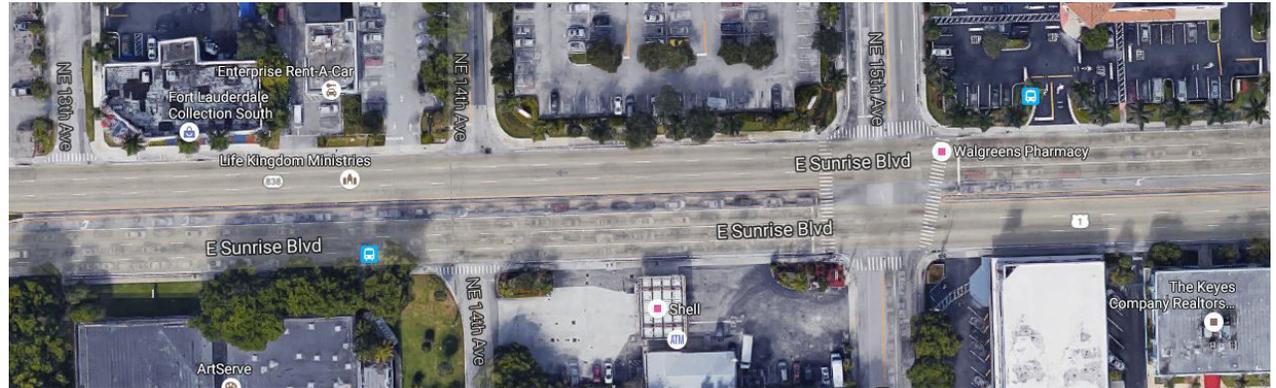
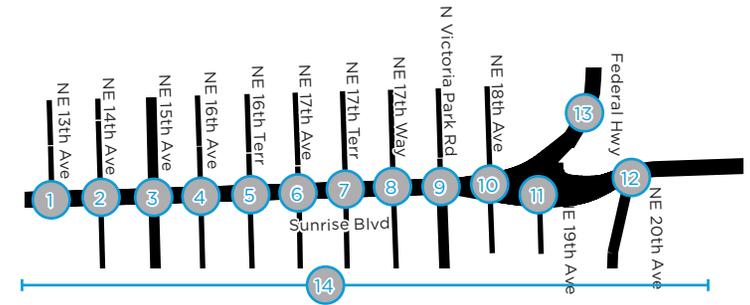
Location: 14 (Corridor Wide)

General Observations:

- Mid-block pedestrian crossing is a critical safety concern throughout the corridor. Many, but not all, of the observed illegal mid-block crossings result from bus stops that are not conveniently located near existing crosswalks. Alternatively, crosswalks are not conveniently located near the bus stops.

Recommendations:

- Evaluate the bus stop locations and potential mid-block crosswalk locations.
- Design mid-block crosswalks with enhanced visibility features, such as Rectangular Rapid Flash Beacons (RRFBs), to encourage use and to improve safety.



The bus stop located west of NE 14th Avenue is not close to a crossing of Sunrise Boulevard.

Issue: Signal Timing

Location: 13 (Corridor Wide)

General Observations:

- Signal times are long, which causes long wait times for pedestrians when crossing the street at intersections.
- It was observed that pedestrians cross the street against the signal even in crosswalks instead of waiting for the Walk signals.

Recommendations:

- Consider retiming signals with a focus on pedestrian and bicycle mobility.



The signal on the south leg of NE 16th Terrace rarely changes to allow pedestrians to cross.



Pedestrians crossing outside of the mid block crosswalk.