



# SOUTHWEST ORLANDO BIKE AND PEDESTRIAN STUDY SUMMARY REPORT



# TABLE OF CONTENTS

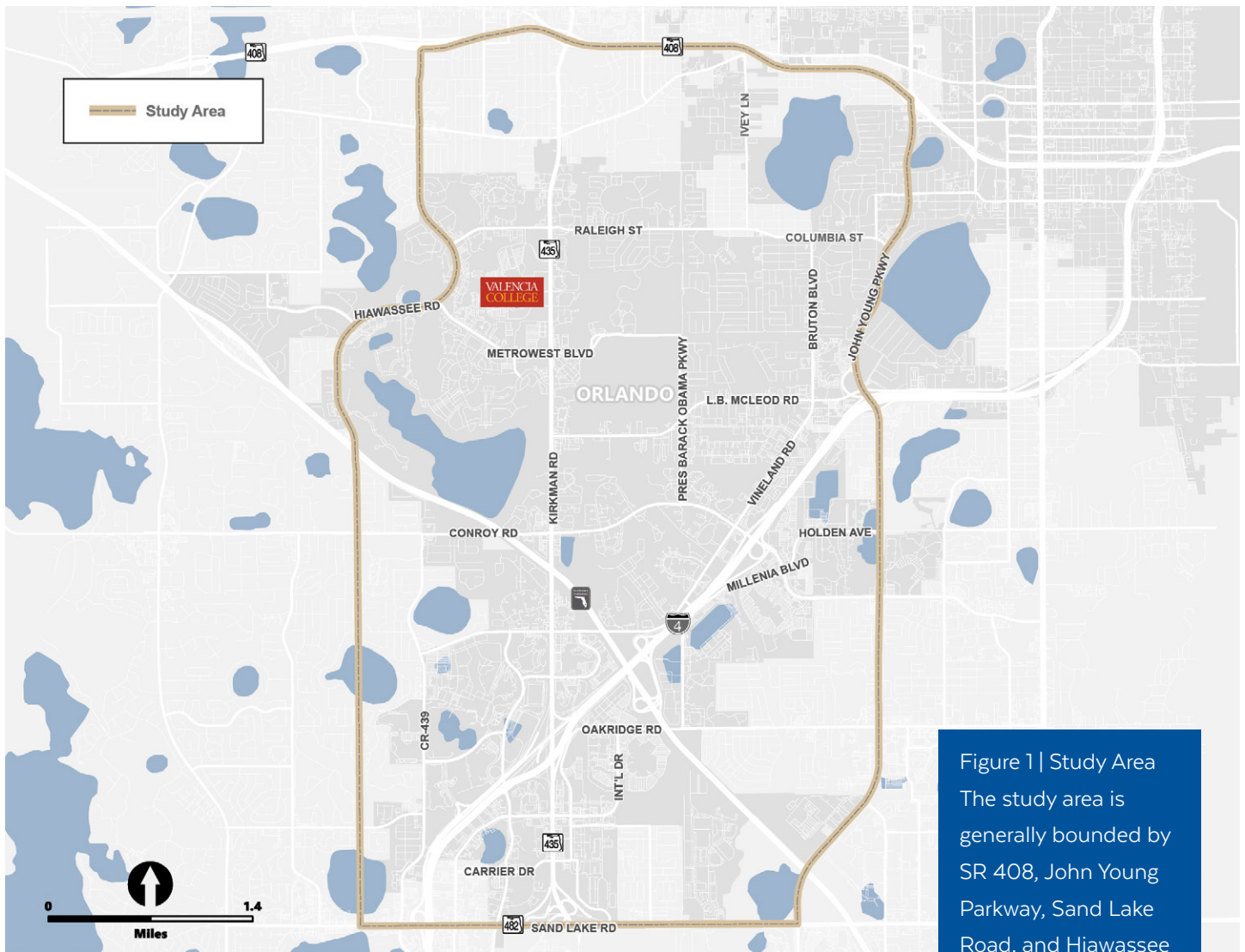
<b>1.0</b>	<b>INTRODUCTION</b>	<b>01</b>
<b>2.0</b>	<b>RECOMMENDATIONS SUMMARY</b>	<b>02</b>
2.1	STUDY AREA COMMUNITY SURVEY	03
<b>3.0</b>	<b>BIKE AND PEDESTRIAN SAFETY</b>	<b>04</b>
3.1	SUMMARY OF FINDINGS AND PROPOSED RECOMMENDATIONS	06
3.1.1	IVEY LANE/MALIBU STREET (GORE STREET TO DANTON AVENUE)	06
3.1.2	KIRKMAN ROAD (CONROY ROAD TO LB MCLEOD ROAD)	08
3.1.3	COLUMBIA STREET AT BRUTON BOULEVARD/HENTON LANE INTERSECTION	10
3.1.4	CONROY ROAD AT VINELAND ROAD INTERSECTION	11
3.2	BIKE AND PEDESTRIAN SAFETY IMPROVEMENTS COMMUNITY SURVEY	11
<b>4.0</b>	<b>VALENCIA COLLEGE WEST CAMPUS</b>	<b>13</b>
4.1	PROPOSED RECOMMENDATIONS	13
<b>5.0</b>	<b>OFF-STREET TRAILS CONCEPTS AND OVERPASS FEASIBILITY ANALYSIS</b>	<b>14</b>
5.1	OFF-STREET TRAILS CONCEPT	14
5.1.1	PROPOSED RECOMMENDATIONS	15
5.2	OVERPASS FEASIBILITY ANALYSIS	16
5.2.1	PROPOSED RECOMMENDATIONS	17
5.3	TRAILS AND OVERPASS FEASIBILITY RECOMMENDATIONS COMMUNITY SURVEY	19
<b>6.0</b>	<b>PEDESTRIAN WALKING CONDITIONS</b>	<b>20</b>
6.1	SUMMARY OF FINDINGS	20
6.1.1	PROPOSED RECOMMENDATIONS	21
6.2	PEDESTRIAN WALKING CONDITIONS RECOMMENDATIONS COMMUNITY SURVEY	23
<b>7.0</b>	<b>NEXT STEPS</b>	<b>24</b>



# FIGURES

Figure 1   Study Area	01
Figure 2   Summary of Recommendations	02
Figure 3   Vision Zero Bicycle and Pedestrian Focused High Injury Network.	05
Figure 4   Recommended Improvements for Valencia College West Campus	13
Figure 5   Selected Trail Corridor & Overpass Locations	14
Figure 6   Kirkman Road Trail at Pine Shadows Parkway Rendering	15
Figure 7   Kirkman Road Trail at Pine Shadows Parkway Concept Plan	16
Figure 8   Proposed Kirkman Road over Conroy Road Pedestrian and Bicycle Overpass	17
Figure 9   Proposed Conroy Road Overpass Rendering	18
Figure 10   Proposed Pedestrian Walking Conditions Improvements and Top Five Priorities	22





**Figure 1 | Study Area**  
 The study area is generally bounded by SR 408, John Young Parkway, Sand Lake Road, and Hiawassee Road.

# 1.0 INTRODUCTION

The purpose of the study is to identify and develop recommendations and concepts to improve conditions and the environment for people currently or desiring to walk or ride a bike safely and connect to key destinations in southwest Orlando. This study builds on recent planning efforts such as the City of Orlando Bike Plan and Vision Zero Action Plan. Southwest Orlando has a strong economic base containing Universal Studios and the International Drive Tourist District, which relies heavily on service and entertainment industry workers. This area also contains Valencia College West Campus and industrial parks that all utilize different aspects of the City’s transportation network. The transportation network within the study area is connected by large arterial roadways with limited transit service and an insufficient amount of bicycle and pedestrian infrastructure. These transportation challenges make apparent the need to analyze and implement safer and more efficient ways to connect people to destinations in the study area. The overall study combines five separate but interrelated tasks to analyze and recommend improvements that will connect people in the southwest Orlando community to jobs, schools, and entertainment.

- 1**

Safety analysis
- 2**

Valencia College West Campus bicycle and pedestrian study
- 3**

Bicycle and pedestrian overpass locations feasibility analysis
- 4**

Off-street trail concepts and connectivity study
- 5**

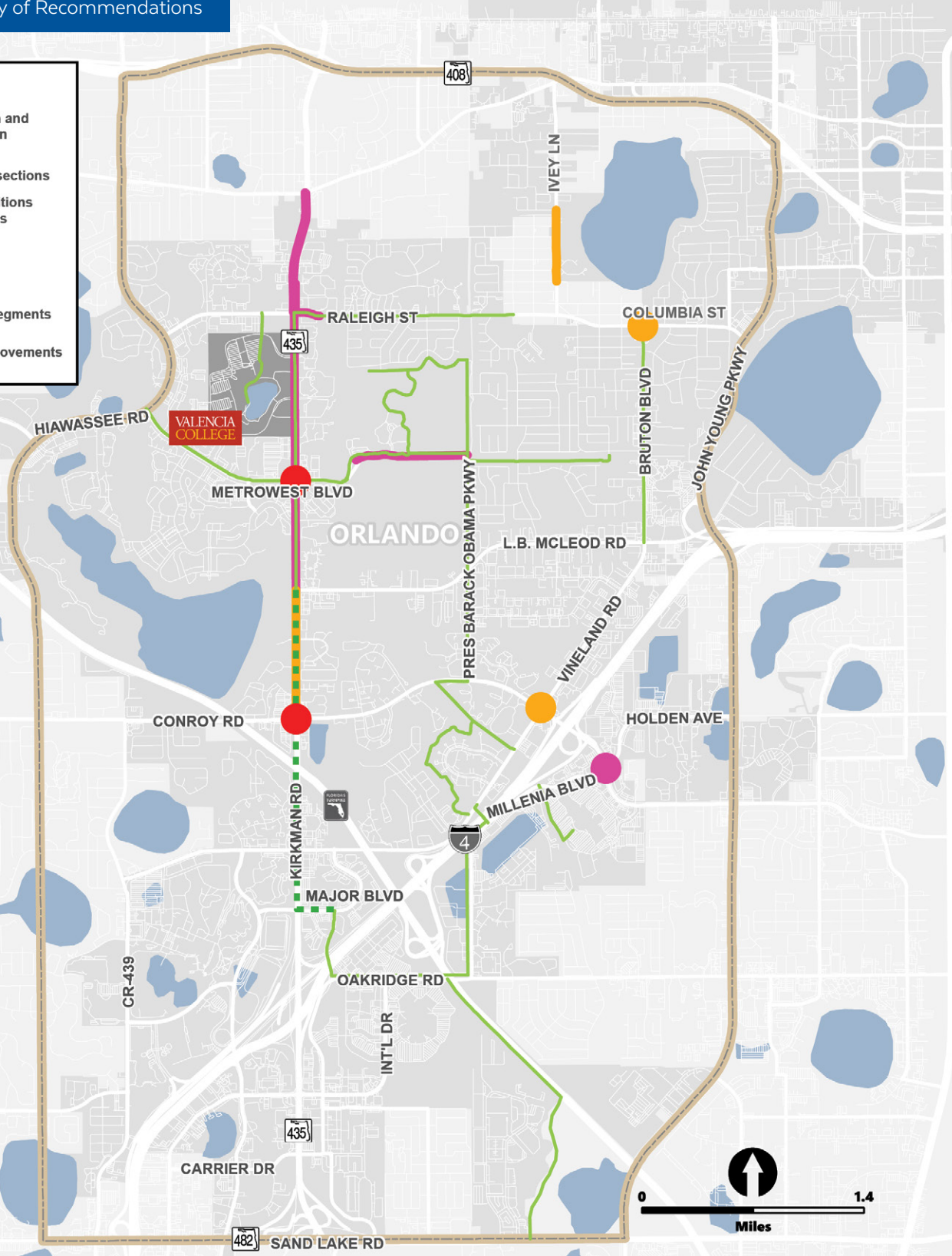
Pedestrian walking conditions analysis

# 2.0 RECOMMENDATIONS SUMMARY

Recommendations to improve conditions for pedestrians and bicyclists in the southwest Orlando community include: bike and pedestrian safety network improvements, new pedestrian and bicycle overpass locations, intersection and roadway segment improvements, and a trail extension as shown in Figure 2.

Figure 2 | Summary of Recommendations

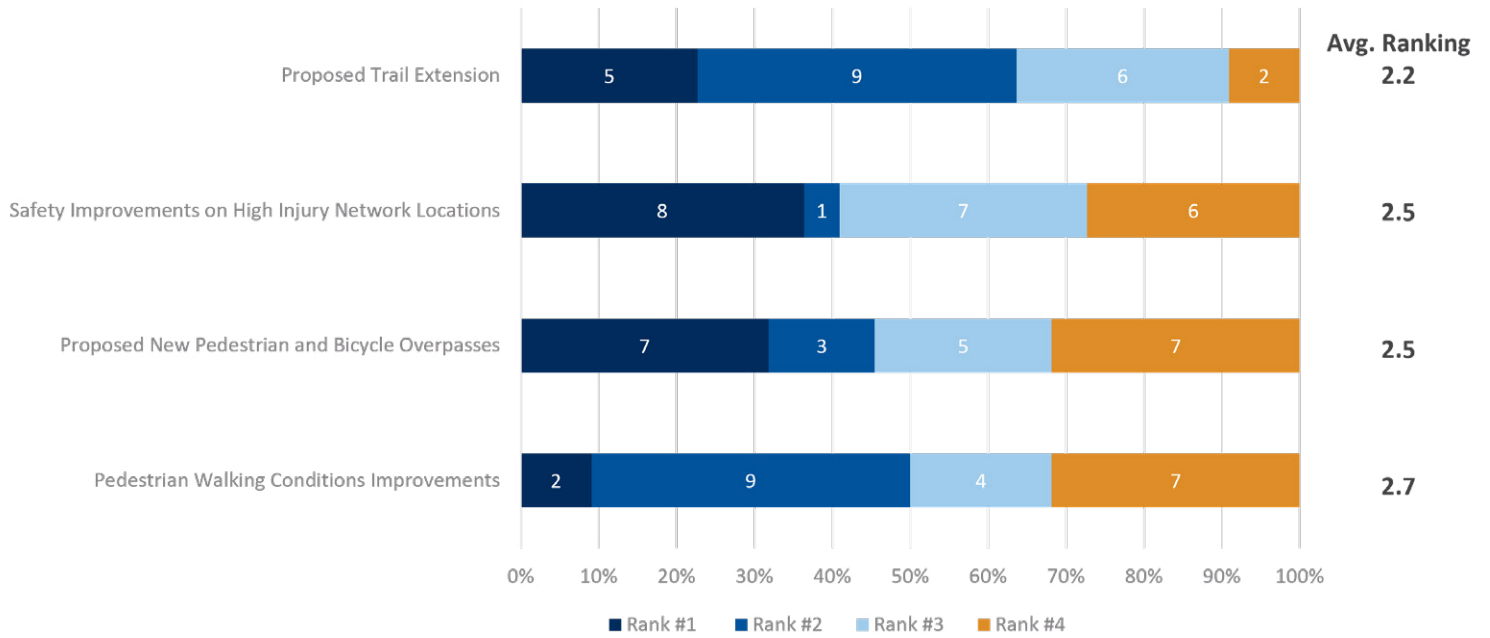
- Recommendations**
- Proposed New Pedestrian and Bicycle Overpass Location
- Safety Improvements on High Injury Network Intersections
- Pedestrian Walking Conditions Intersection Improvements
- Existing Trail
- - - Proposed Trail Extension
- Safety Improvements on High Injury Network Segments
- Pedestrian Walking Conditions Segment Improvements



## 2.1 STUDY AREA COMMUNITY SURVEY

Community engagement was a key factor in guiding recommendations and targeting needed improvements. Feedback was solicited through in person activities such as the walking audits and community meetings, digital outlets, and the online StoryMap with an embedded survey. The graph below shows the results from the survey regarding the priorities for the overall improvement categories identified for the southwest Orlando area.

How would you rank the priority of the following categories



## 3.0 BIKE AND PEDESTRIAN SAFETY

The bike and pedestrian safety component of this study builds on the City’s Vision Zero Plan Action and the identified bicycle and pedestrian focused locations in the High Injury Network (HIN) to identify potential improvements aimed at establishing a more comfortable environment for bicyclists and pedestrians in the southwest Orlando area. Based on an initial screening of data including crashes and fatalities, traffic volumes, proximity to schools, and traditionally under served and vulnerable user populations, two high priority roadway segments and two high priority intersections from the HIN were selected for safety audits, as shown in Figure 3. The two selected roadway segments were Kirkman Road (SR 435) from LB McLeod Road to Conroy Road, and Ivey Lane/Malibu Street from Danton Avenue to Gore Street. The two selected intersections were Columbia Street at Bruton Boulevard and Conroy Road at Vineland Road.

The safety audits were completed to incorporate firsthand observations about challenges for bicyclists and pedestrians and help identify location-specific countermeasures and treatments. To prepare for the audits, further analysis was completed to understand intersection and roadway segment characteristics, as well as factors such as crash location, crash severity, crash type, alcohol involvement, weather and lighting conditions, and bicyclist direction and position. This analysis provided the basis for identification of trends and potential areas of improvement, and ultimately the recommendation of potential safety treatment solutions. Treatments recommended for application at specific high priority locations should also be considered proactively at other locations across the city with similar context environments and physical configurations. The safety audits were conducted over the course of two days in January 2022 by a team with representatives from a broad group of stakeholders including: City of Orlando, Orlando Police Department, LYNX, Florida Department of Transportation (FDOT), MetroPlan Orlando, Orlando Utilities Commission (OUC), area citizens, and the project team.



Safety audit team members meeting prior conducting the safety audit of Ivey Lane.

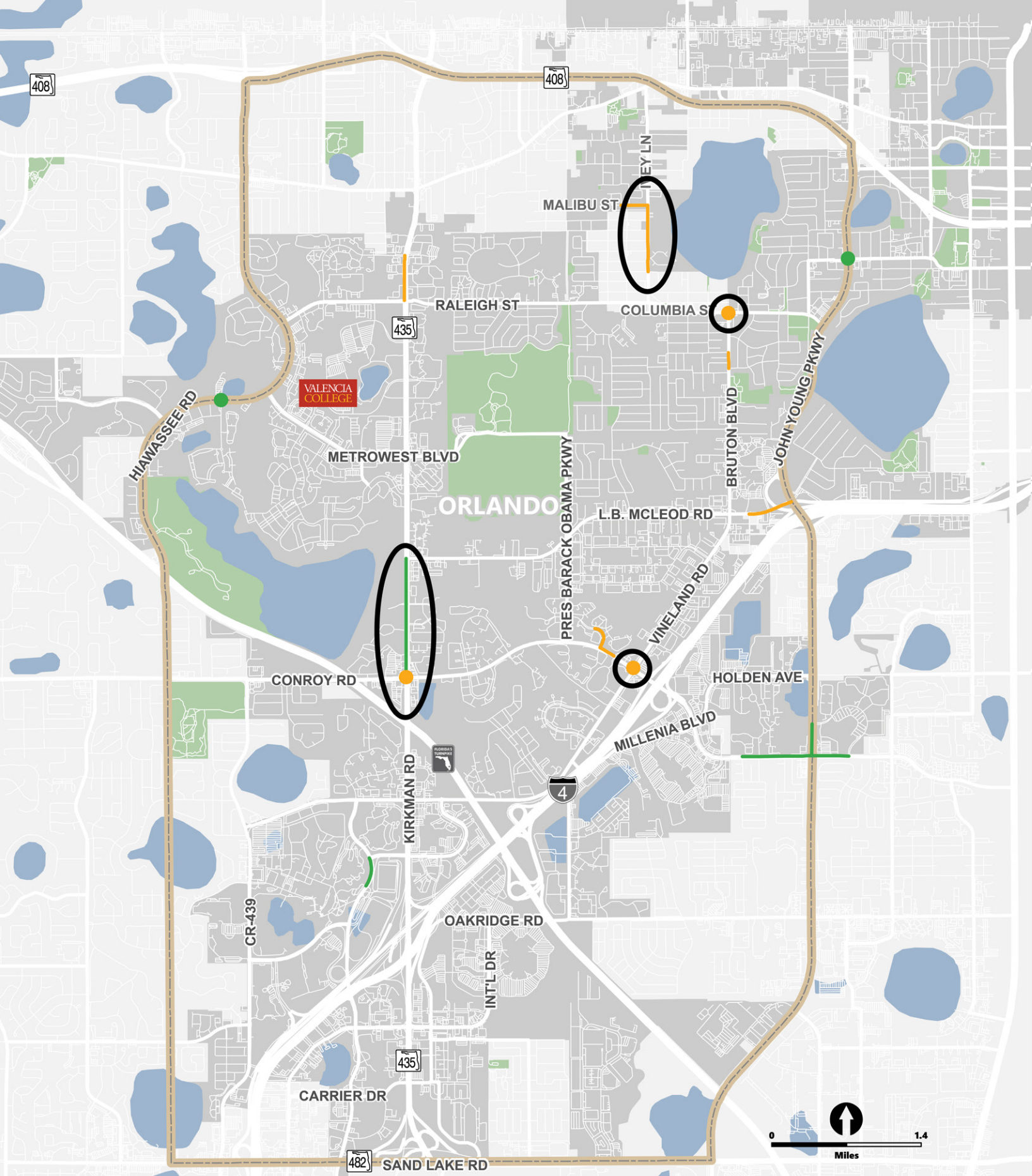
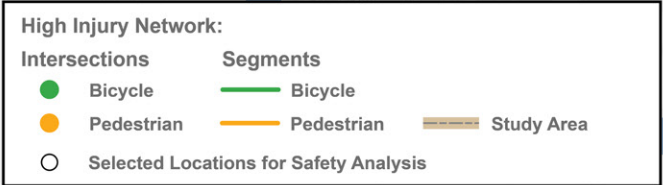


Figure 3 | Vision Zero Bicycle and Pedestrian Focused High Injury Network.





## 3.1 SUMMARY OF FINDINGS AND PROPOSED RECOMMENDATIONS

### 3.1.1 IVEY LANE/MALIBU STREET (GORE STREET TO DANTON AVENUE)

Ivey Lane's five-lane configuration and general operating characteristics (straight, wide, low signal density, and abundant roadway capacity) are conducive to creating an environment in which motorists drive well above the posted speed limit of 35 mph. Combined with abundant walking and bicycling activity and limited controlled crossing opportunities, this context creates a setting consistent with the observed high crash frequency.

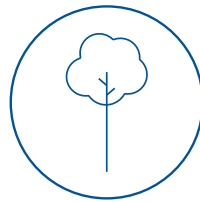
The following treatments are recommended for consideration to address crash and safety issues along the corridor.

#### Lane Repurposing

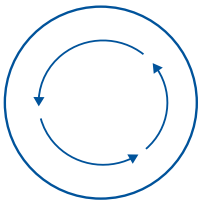
Based on existing traffic volumes, low density of traffic signals, nominal side street traffic, and concerns about vehicle speeds and safety, Ivey Lane is a strong candidate for lane repurposing, which involves a redistribution of the existing space on a roadway to better meet the needs of a community. It is recommended that the City conduct a design project for the corridor to reduce the number of through lanes to one in each direction with center turn lane/median. While neither community opposition nor roadway operational issues are anticipated with such a modification, the design phase should incorporate community engagement and capacity analysis as early components of the project. With the opportunity for reallocating the existing pavement space, the following components should be considered during the design:



Install a raised median that provides a pedestrian crossing refuge



Add trees in the new median or along the roadside to provide shade, create a sense of enclosure that slows traffic speeds, and a more aesthetically pleasing environment



Install curb extensions, mini-traffic circles, or roundabouts at select intersections to calm traffic



Create wider buffered or separated bike lanes that offer additional separation from motor vehicle traffic

#### Enhanced Crossings

Implement additional enhanced crossings with traffic control on Ivey Lane using either Rectangular Rapid Flashing Beacons (RRFBs) or Pedestrian Hybrid Beacons (PHBs). The City of Orlando has already identified two locations along Ivey Lane for installation of RRFBs and developed design plans that also include raised pedestrian refuge islands: south of Gore Street (just outside the audit study limits) and south of College Drive. The City should move forward with these installations and consider additional locations for similar treatments.



## Lighting

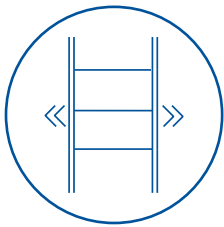
Install new LED light fixtures, poles, and cables along Ivey Lane between Gore Street and Huppel Avenue, including at every intersection, to make pedestrians more visible to drivers as well as to light the way for pedestrians.

## Cypress Street Intersection Improvements

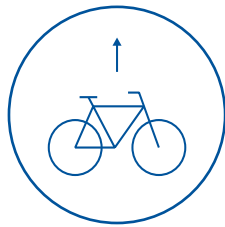
Short-term improvements to this signalized intersection that would enhance conditions for non motorized users include:

- Improve pedestrian push button locations, sign orientation, pedestrian phase activation, and bicycle detection
- Install raised intersection to calm traffic and create a safer, slower-speed environment for those crossing
- Consider relocating the signal to a different side street (such as Carter Street or Malibu Street) that has a higher traffic volume, avoids the apartment complex driveway, and would be more evenly spaced between the next signals to the north and south

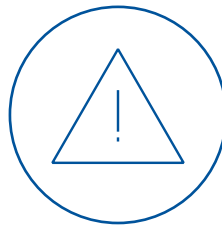
## Miscellaneous Recommendations



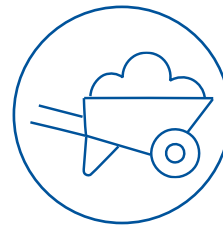
Widen sidewalks



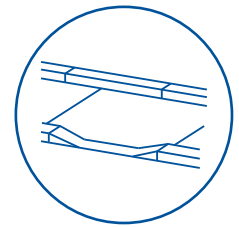
Refresh pavement markings, particularly bike lane symbols



Add green pavement in bike lanes at key motorist-bicyclist conflict points



Trim overgrown vegetation and repair broken sidewalks



Install curb ramps at the Malibu Street intersections with Danton Avenue and Fanfair Avenue



Raised intersection example

### 3.1.2 KIRKMAN ROAD (CONROY ROAD TO LB MCLEOD ROAD)

This segment of Kirkman Road is the most heavily traveled road in the southwest Orlando area. While basic pedestrian and bicycle facility accommodation is provided in the form of sidewalks and recently striped buffered bike lanes, the volume and speed of motor vehicles create an uncomfortable environment for bicyclists and pedestrians. The recommendations below are intended to help achieve a better modal equity and to enhance the experience of those traveling by bike or on foot.

#### Shared-use Path Extension

In 2020, a 10-foot-wide shared use path was constructed along the east side of Kirkman Road immediately north of this segment, extending approximately 1.6 miles from LB McLeod Road to Raleigh Street and connecting to the Shingle Creek Trail network. Extending the shared-use path to the south would enhance the experience of users that may not feel comfortable biking in the existing bike lanes along Kirkman Road.



Existing Kirkman Road shared-use path

#### Signalization Study

People are frequently crossing midblock or at unmarked, uncontrolled intersections along this section of Kirkman Road, and several crashes have occurred associated with these movements. With most pedestrian crossing activity related to adjacent multi-family residential development, the most beneficial additional controlled crossing points would be located at driveways to those developments. However, since PHBs are not appropriate at driveways, a full traffic signal would be the best option. The preferred location for a new signal would be at the four-leg intersection of Kirkman Road with Pine Shadows Parkway/Hidden Lake.

Although it would not be expected to meet traditional signal warrants based on traffic volumes, the potential safety benefits suggest that a signalization study should be performed for the following reasons:

- This intersection has the greatest number of observed crossing-related pedestrian and bicycle crashes along the corridor
- The location is near the midpoint between the existing signals at Conroy Road and LB McLeod Road
- It would have the potential to mitigate significant observed motor vehicle crashes

## Transit Stop Amenities

As part of recent roadway improvements, bus stop amenities along this Kirkman Road segment were removed. Previously existing amenities should be restored, and additional amenities should be considered (e.g., new shelters, bike racks, and system information signing).



Existing transit stop with limited stop amenities on Kirkman Road

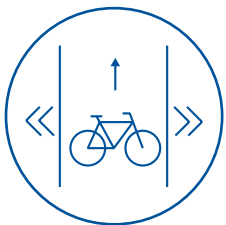
## Conroy Road Intersection Improvements

- Tighten turning radii at all four intersection corners to discourage high-speed right turns and shorten crossing distances, which could be achieved using mountable truck aprons on the corners
- Explore opportunities to shorten the overall signal cycle length and maximize the WALK interval so pedestrian clearance intervals coincide with vehicular phasing, and to avoid exceedingly long delays for pedestrians and encourage pedestrian signal compliance
- Relocate the “Turning Vehicles Yield to Pedestrians” sign at the southwest corner for improved visibility, which is located directly behind a utility pole
- Upgrade lighting on all four intersection corners (OUC scheduled to complete)

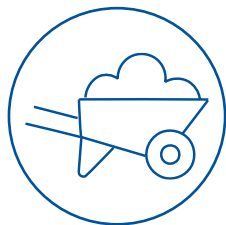


Existing “Turning Vehicles Yield to Pedestrians” sign

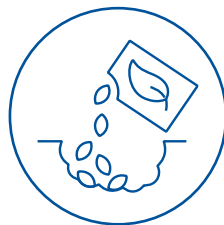
## Miscellaneous Recommendations



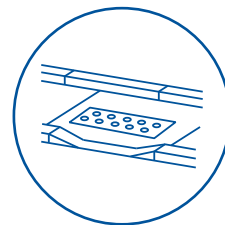
Widen bike lanes by narrowing travel lane/ adding pavement



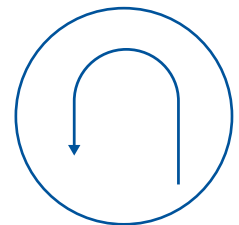
Trim overgrown vegetation



Add vegetation/ bioswale to provide visual and physical separation between roadway and the sidewalk



Reconfigure detectable warnings oriented diagonally to appropriately direct vision-impaired pedestrians



Add signing for U-turns to yield to right turns at LB McLeod intersection

### 3.1.3 COLUMBIA STREET AT BRUTON BOULEVARD/HENTON LANE INTERSECTION

This location is an important community point at the intersection of the Richmond Heights, Washington Shores, and Johnson Village neighborhoods. Recommended improvements include:



Curb extension example

Construct a curb extension in the southwest quadrant to remove the outside southbound receiving lane. This would slow right turn speeds and shorten the crossing distance, thereby reducing pedestrian exposure and shortening the necessary pedestrian clearance interval.



Leading pedestrian interval example

Install Leading Pedestrian Interval (LPI) to activate the WALK phase before the parallel green for motorized traffic, giving pedestrians a chance to cross before any turning movements occur.



Median nose extension example

Extend the median nose on the south leg to slow turning speeds.



No right turn on red blank-out sign example

Install No Right Turn on Red blank-out signs that illuminate when the pedestrian button is pushed to reduce conflicts with turning vehicles.

- Correct orientation signs for mislabeled pedestrian pushbuttons
- Install separate curb ramps and detectable warnings for each directional crossing
- Extend eastbound bike lane on Columbia Street
- Replace existing light fixtures with LED fixtures for all four intersection corners
- Install retroreflective signal backplates, which can improve safety for all users by reducing crashes caused by driver inattentiveness and lighting- or weather-related impacts on signal visibility

### 3.1.4 CONROY ROAD AT VINELAND ROAD INTERSECTION

While the immediately surrounding land uses at this intersection generate limited bicycle and pedestrian trips, non-motorized activity is still prevalent for longer trips.

Recommended improvements in priority order include :

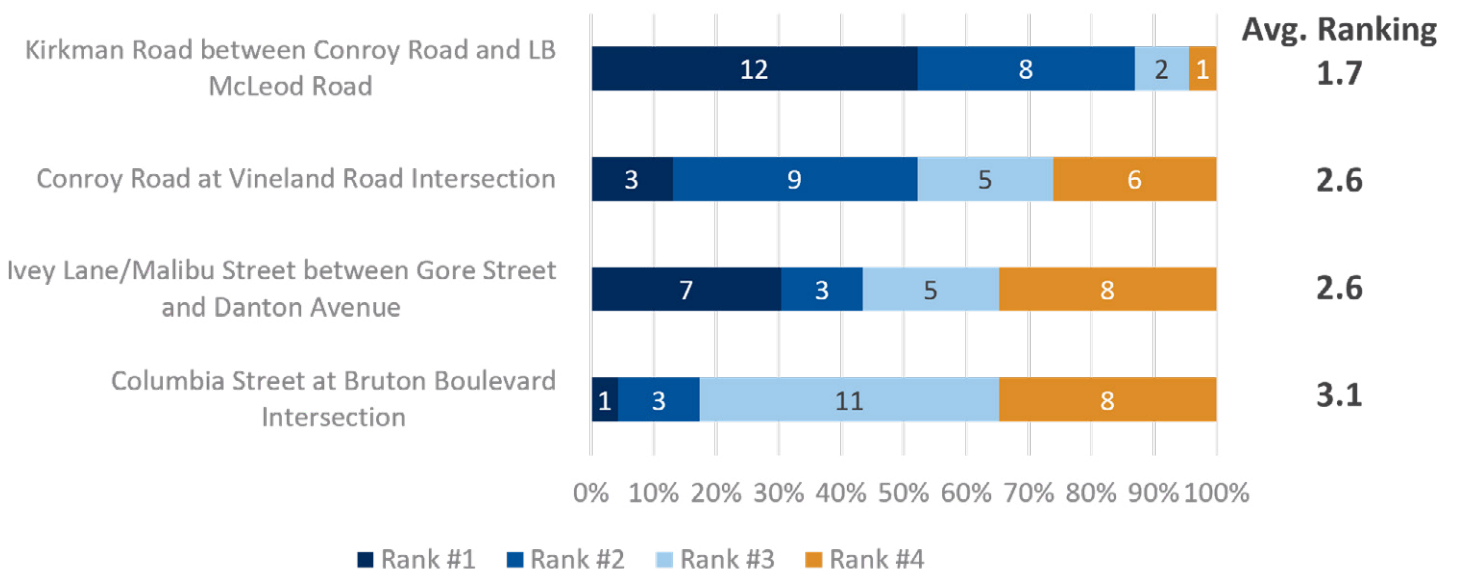
- Improve/correct pedestrian push button orientation signs
- Maximize pedestrian WALK intervals for all crossings
- Install retroreflective signal backplates to improve signal conspicuity which can improve safety for all users by reducing crashes caused by driver inattentiveness and lighting- or weather-related impacts on signal visibility
- Reduce the width of channelized right turn lanes at all four corners, or redesign to flatten the approach angles, to discourage high turning speeds
- Study the feasibility to eliminate the northbound free-flow right turn lane to eliminate conflicts among turning southbound left turning and northbound right turning motorists.
- Modify the existing bike lanes on Vineland Road to buffered or separated bike lanes and improve the intersection to incorporate protected intersection features including corner islands and recessed bike crossing areas

Consideration should be given to grouping the recommended improvements as a single project for advancement.

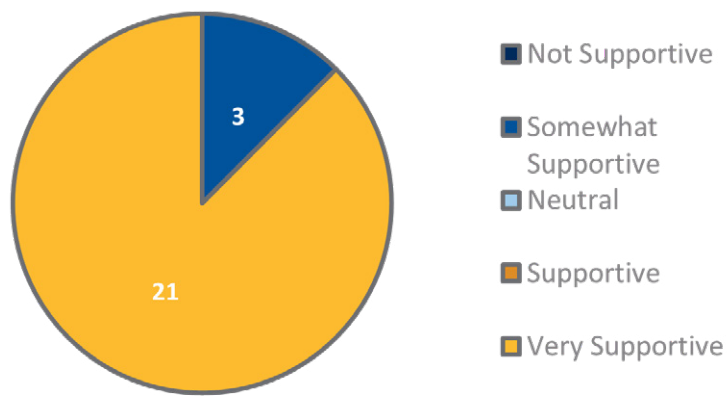
### 3.2 BIKE AND PEDESTRIAN SAFETY IMPROVEMENTS COMMUNITY SURVEY

It is the City of Orlando’s goal to ensure that the community have multiple opportunities to learn about the project, ask questions, and provide feedback. Survey questions asked for community feedback about each of the topic areas covered by the study. The bike and pedestrian safety improvement recommendations survey results are summarized below.

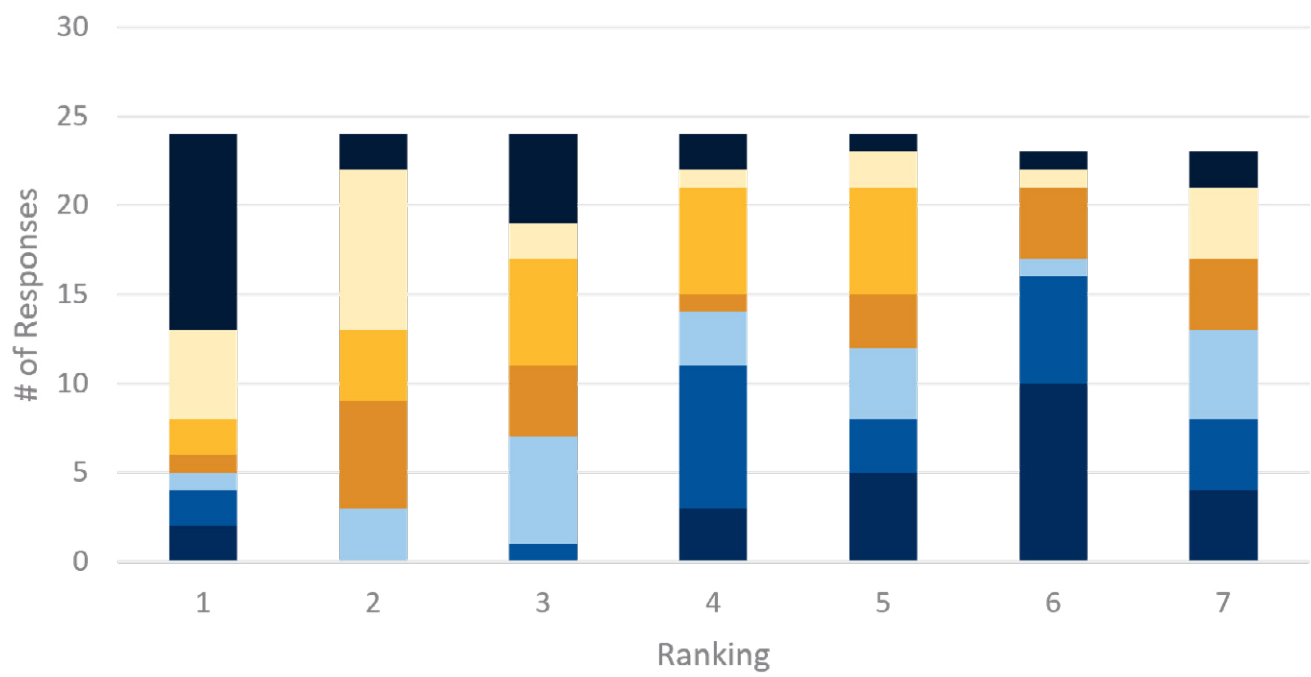
How would you rank the priority of safety improvements for these locations?



How supportive are you of the proposed bike and pedestrian safety improvements?



What is important to you regarding safety improvements for the southwest Orlando area?



**Avg. Ranking**

- 2.6** ■ Creating bike lanes that are physically separated from vehicle lanes
- 3.2** ■ Connecting already existing trails
- 3.4** ■ Enhancing pedestrian crossings
- 4.2** ■ Re-purposing roadway lanes to better use existing space on a roadway
- 4.3** ■ Installing more/better/new lighting for sidewalks and intersections
- 4.8** ■ Improving bus stops
- 5.3** ■ Adding technology and signs for safer intersections

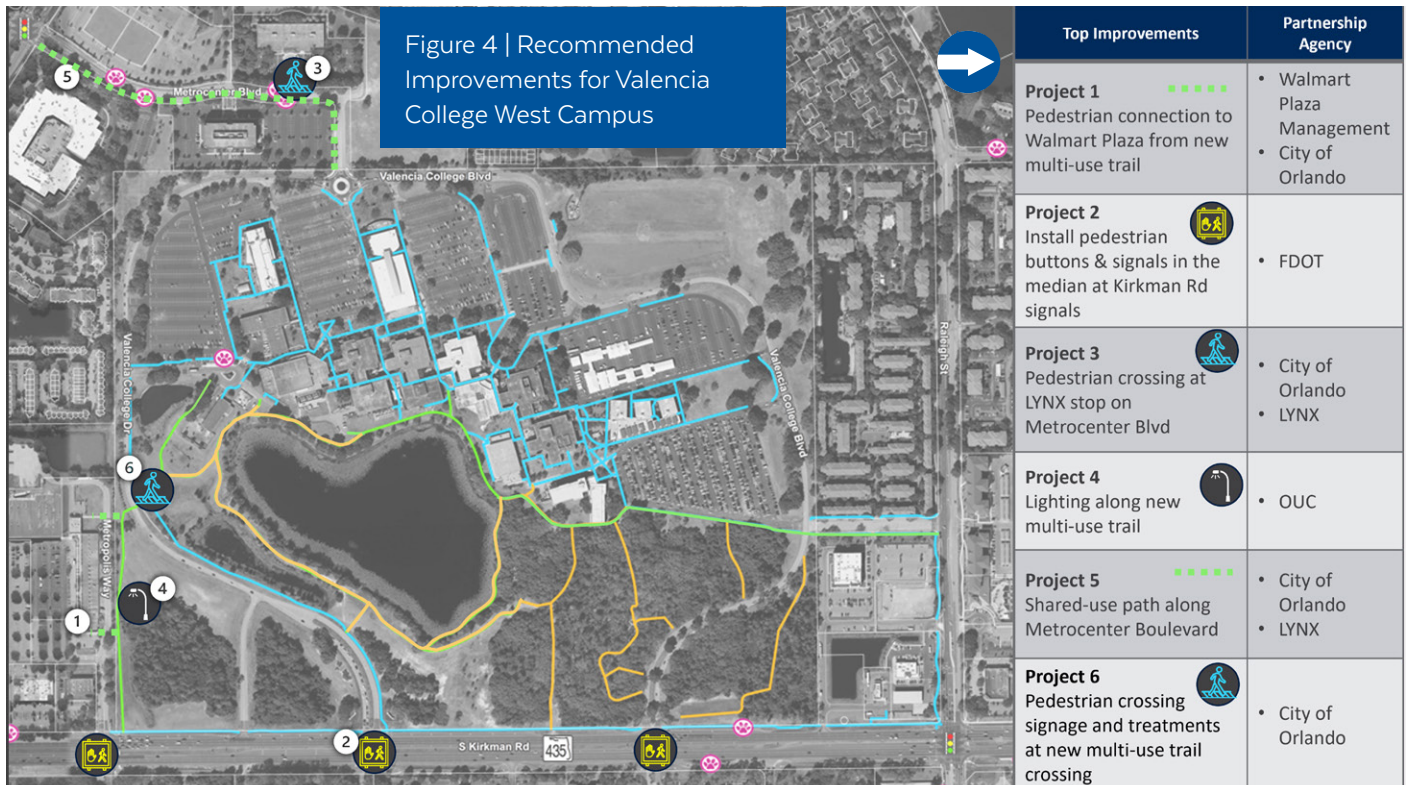
# 4.0 VALENCIA COLLEGE WEST CAMPUS

Valencia College is one of the larger campuses in Central Florida encompassing a total of 180 acres which includes school buildings, a trail network, pedestrian circulation system, and five roadway connections to the surrounding transportation network. The college is mainly a commuter school but there is a growing need to better address internal and external safety and connectivity with the transportation network for pedestrians and bicyclists.

The Valencia College West Campus bicycle and pedestrian analysis involved identifying improvements to enhance connectivity, safety, and the environment for access to and within the campus for students, faculty, staff, and visitors that choose to walk, bike, or take transit. The study builds upon previous campus planning work, including the West Campus Circulation Plan, and recent and current infrastructure improvements.

## 4.1 PROPOSED RECOMMENDATIONS

Coordination on potential improvements at and adjacent to Valencia College West Campus was facilitated through interaction with a Project Advisory Group (PAG) comprised of representatives from the City of Orlando, and Valencia students, faculty, and staff. Specific PAG activities included a kickoff meeting in August 2021, a campus walking audit and workshop in November 2021, a follow-up meeting to present the draft proposed improvements to the PAG in February 2022, and a meeting to present the recommendations to representatives of Valencia College in April 2023. Potential improvements identified at the walking audit and workshop were prioritized based on results from an interactive survey conducted during the workshop to identify the highest priority types and locations for improvements around and adjacent to campus. The six highest ranking projects are shown in Figure 4. Valencia College would be responsible for implementing projects located on-campus (including projects #4 and 6) with support or review from the partnership agencies shown in Figure 4. For off-campus projects, Valencia College would coordinate with the listed partnership agencies, who would lead the implementation of those projects.





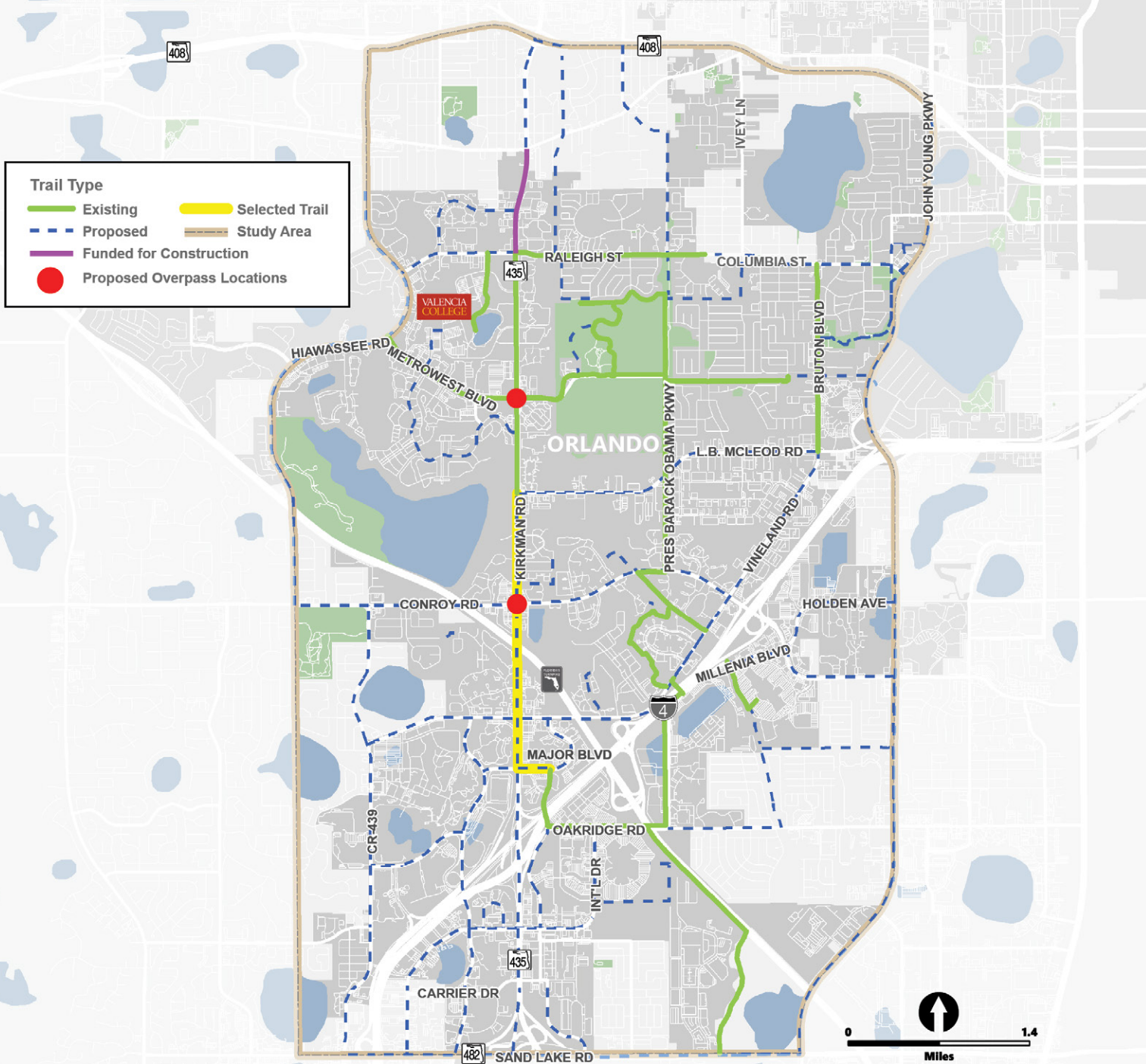


Figure 5 | Selected Trail Corridor & Overpass Locations

# 5.0 OFF-STREET TRAILS CONCEPTS AND OVERPASS FEASIBILITY ANALYSIS

## 5.1 OFF-STREET TRAILS CONCEPT

Having a network of connected and high-quality trails supports residents that use active modes of transportation, increases access to recreational opportunities, and can lead to the improvement of the health of residents in the area. This component of the project included a review of the proposed trail network within the study area, and development of conceptual trail plans for two miles of high priority trails. The trail network review was based on the existing trail network plus the proposed trail network in the City of Orlando Bicycle Plan Update 2020, with proposed new trails screened based on a combination of comfort, connectivity, equity, and safety goals.

### 5.1.1 PROPOSED RECOMMENDATIONS

Based on the proposed trail network review and feedback from the community, several potential trail corridors were considered for advancing forward for trail concept plan development. However, to best address the community preferences and provide connections to existing trails on both ends, the selected trail corridor is along Kirkman Road, from LB McLeod Road on the north to Major Boulevard on the south, then continuing east on Major Boulevard from Kirkman Road to Grand National Drive. This corridor includes a portion of the most selected trail corridor by the community (Kirkman Road from Sand Lake Road to Conroy Road), connects to the southern terminus of the existing Kirkman Road Trail at LB McLeod Road, and connects to the existing shared use path on Grand National Drive that continues south to Oak Ridge Road. The selected trail corridor also connects to the existing pedestrian overpass at Major Boulevard over Kirkman Road that provides a connection into the Universal Orlando Resort. Perhaps most importantly, this trail will provide connections to a much larger network of regional and statewide trail corridors. To the north, the City of Orlando and Orange County have funding in place to complete the existing gap along Kirkman Road between Raleigh Street and the Pine Hills Trail, which provides a direct link to Florida’s nearly complete Coast to Coast Trail. Similarly, the project provides additional connectivity south via the Shingle Creek Trail, with remaining segments in various phases of planning, design, and construction that will eventually connect this area to Kissimmee through Orange and Osceola Counties.

The concept for the proposed trail matches many of the details and general alignment of the existing Kirkman Road Trail between Raleigh Street and LB McLeod Road, which was previously completed as part of a FDOT resurfacing project on Kirkman Road. The new section of trail is proposed to be 10-foot-wide, replacing existing sidewalk on the east side of Kirkman Road from LB McLeod Road to Major Boulevard. Continuing east on Major Boulevard, the 10-foot-wide trail is proposed to be placed on the south side of the road, also replacing existing sidewalk, and connecting to the existing shared use path on the west side of Grand National Drive.

Other key features of the concept design include the following:

- Requires the removal of the eastbound bike lane on Major Boulevard to maintain the landscape buffer
- Requires the removal of the northbound bike lane and reallocation of space on the bridge over the Florida Turnpike to provide a barrier separated path
- Implementation of right-in/right-out raised median refuge islands
- Addition of landscaping
- Right-of-way (ROW) acquisition (2,150 square feet) at the northeast corner of Kirkman Road at Major Boulevard to construct the trail adjacent to but outside the existing pedestrian and bicycle overpass



Figure 6 | Kirkman Road Trail at Pine Shadows Parkway Rendering

Figure 7 | Kirkman Road Trail at Pine Shadows Parkway Concept Plan



## 5.2 OVERPASS FEASIBILITY ANALYSIS

The purpose of a pedestrian and bicycle bridge is to help improve both safety and connectivity for all users in a community. A well located and designed bridge is more convenient and therefore more attractive for users than crossing at street level. This component of the project includes screening of potential pedestrian and bicycle overpass locations within the study area, then completion of secondary feasibility reviews of two selected high priority candidate overpass locations.

Screening criteria was based on several factors including: locations within the Vision Zero HIN, number of lanes that must be crossed, posted speed on the roadway, traffic volumes, relative levels of bicycle demand taken from the City of Orlando Bicycle Plan Update 2020, transit ridership at nearby bus stops, and distance to the nearest signalized intersection. The results of the screening analysis were overlaid on the existing and proposed trail network to determine the highest priority candidate overpass locations.



Existing Major Boulevard over Kirkman Road pedestrian overpass

## 5.2.1 PROPOSED RECOMMENDATIONS

Based on the overpass location identification screening analysis, and feedback from the community, several potential overpasses were considered for advancing to concept development. Ultimately, the two selected overpass locations are on Kirkman Road at the Conroy Road and Metrowest Boulevard intersections. It should also be noted that while a separate overpass structure is not proposed on Kirkman Road at the Florida Turnpike, the existing bridge is proposed to be reconfigured to allow for a trail on the east side as described in Section 5.1.1.

A feasibility study was conducted to evaluate potential costs, right-of-way impacts, utility impacts, and constructibility. The recommended superstructure at both locations consists of a prefabricated steel truss supported by bridge columns and piers. The ramps will utilize cast-in-place flat slabs followed by 5-foot landings. Stairways will be provided at each bridge end to avoid having pedestrians walking to the beginning of the ramps. While the overpasses will provide enhanced safety for people traveling along the route of the overpass ramps, at-grade crossing treatments should be maintained at these intersections to provide an alternative for pedestrians in lieu of out-of-way travel via the overpass.

### Conroy Road Overpass

The Conroy Road location is located along the proposed extension of the Kirkman Road Trail from LB McLeod Road to Major Boulevard as described in 5.1.1 and would cross over Conroy Road along the east side of Kirkman Road. This facility would provide a major community connection point that improves safety, recreation, and active transportation for the southwest Orlando residents.

Key features of the proposed Conroy Road Overpass include the following:

- Proposed bridge consists of a single-span prefabricated steel truss with a six-inch concrete deck, 165-foot structure length, and 12-foot clear walkway width
- Straight longitudinal ramp to be used at the northern end of the bridge, while switchback ramps will be used at the southern end of the bridge to avoid conflicts at the adjacent driveway
- Minor ROW acquisition (1,100 square feet) will be required on the southeast corner of Kirkman Road at Conroy Road to accommodate the construction of the ramps and stairs
- Estimated construction cost of \$5.077 million

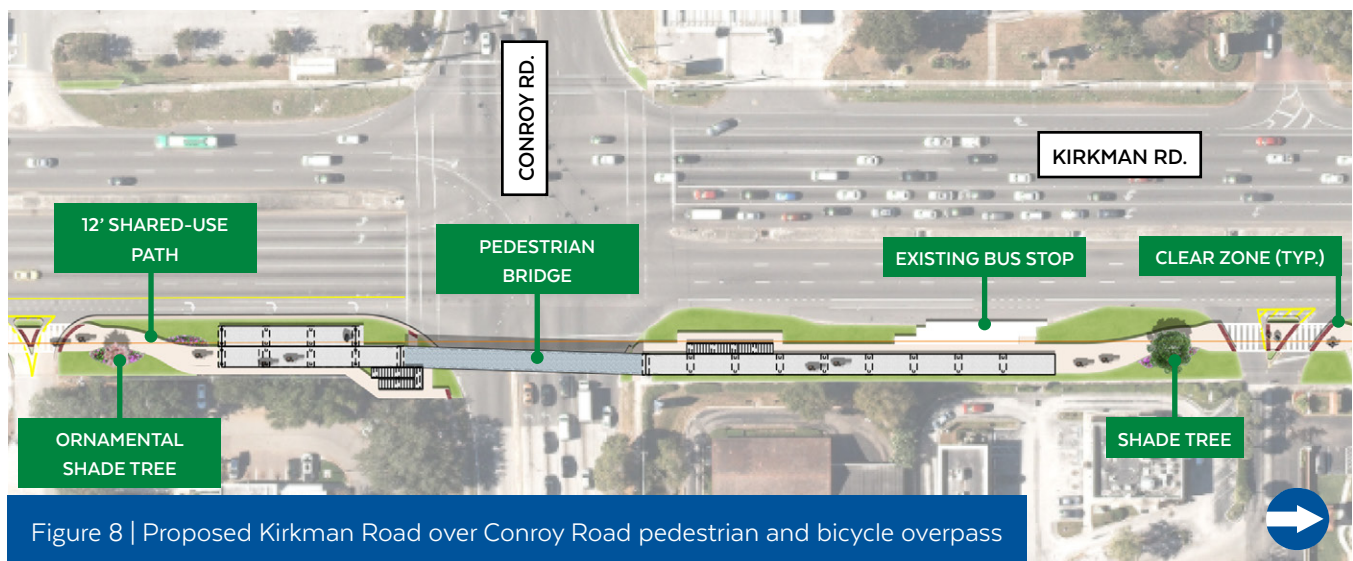


Figure 8 | Proposed Kirkman Road over Conroy Road pedestrian and bicycle overpass

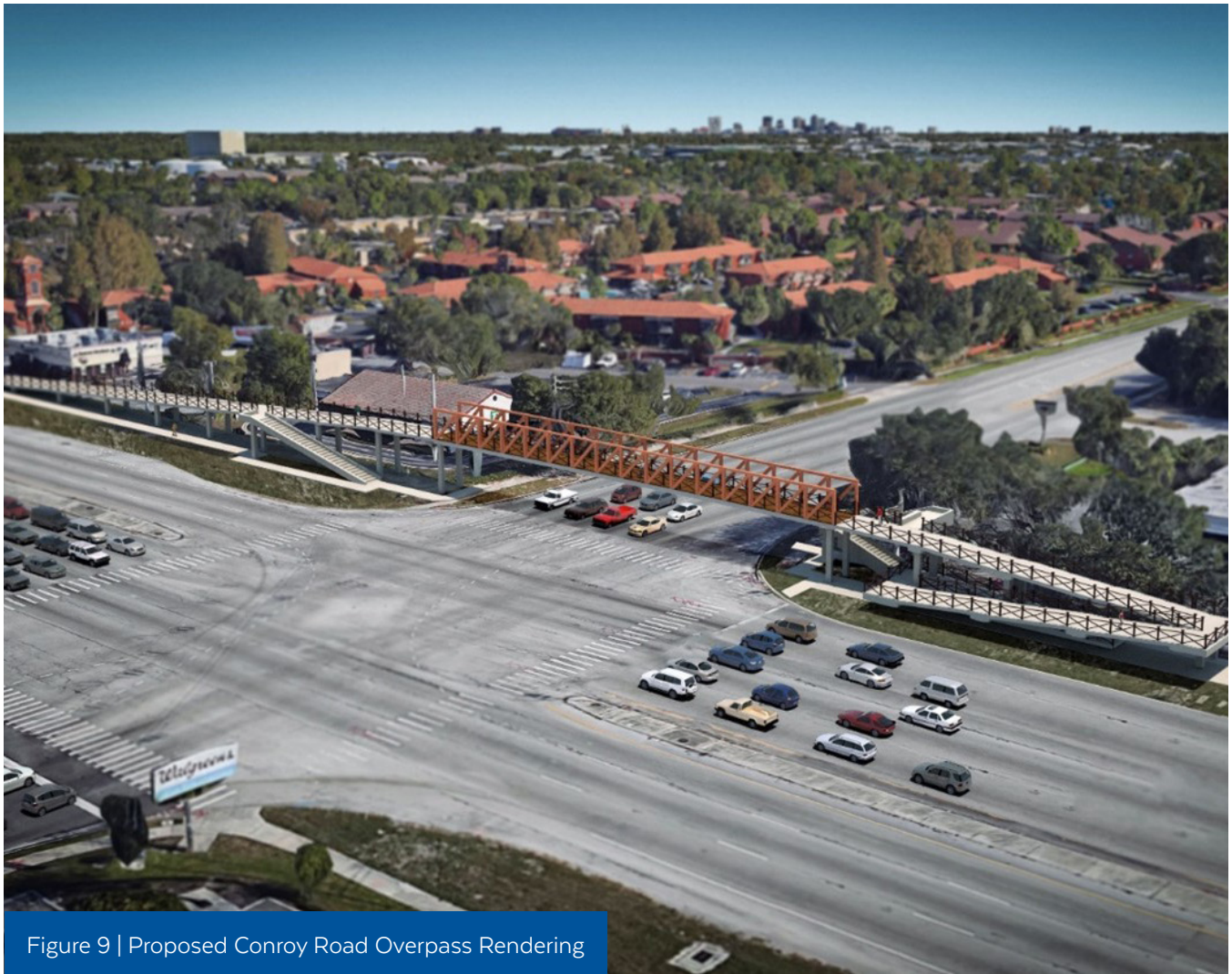


Figure 9 | Proposed Conroy Road Overpass Rendering

### Metrowest Boulevard Overpass

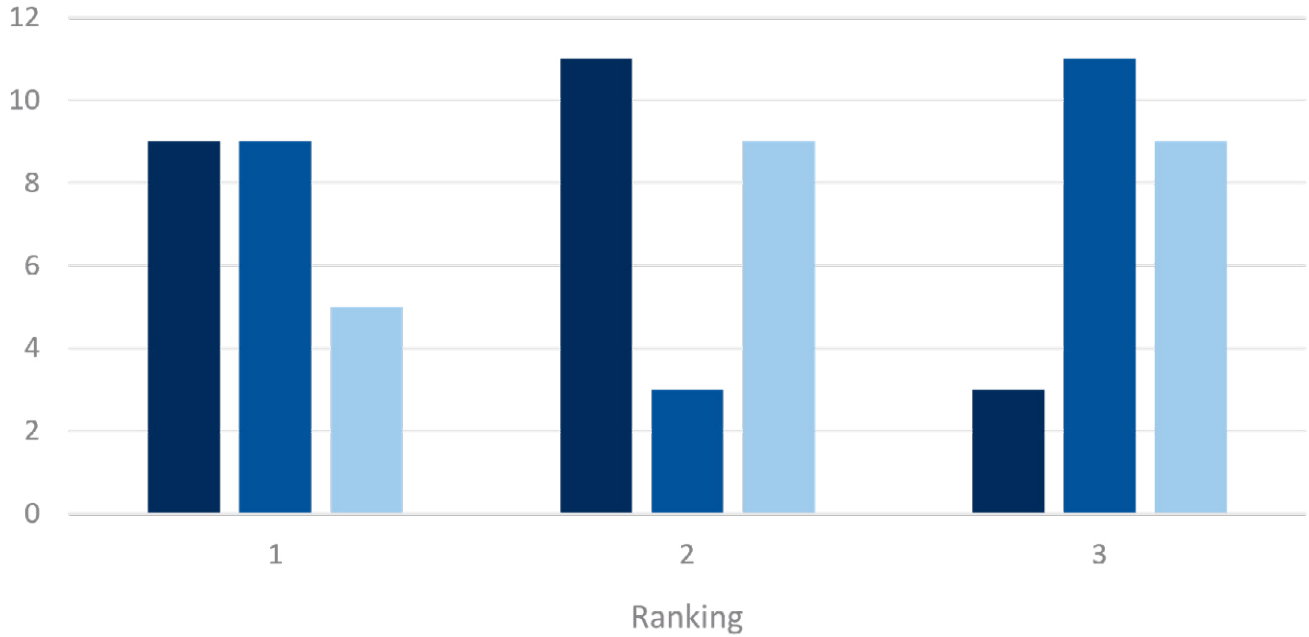
The Metrowest Boulevard location is at the junction of the existing Kirkman Road Trail and the existing Shingle Creek Trail Spur on the south side of Metrowest Boulevard east of Kirkman Road. The proposed overpass at this location would span east/west over Kirkman Road on the south leg of the intersection providing connectivity between the residential developments located on the east side along Kirkman Road and Metrowest Boulevard, and the activity centers located to the west including the Walmart Plaza and Valencia College West Campus. Key features of the proposed Metrowest Boulevard Overpass include the following:

- Proposed bridge consists of a single-span prefabricated steel truss bridge with a six-inch concrete deck, 175-foot structure length, and 12-foot clear walkway width
- Straight longitudinal ramp to be used at both east and west ends of the bridge , extending along Kirkman Road
- ROW acquisition (6,220 square feet) required along the west side of Kirkman Road to accommodate the construction of ramps, stairs, and sidewalk
- ROW impacts should be coordinated with property owner including potential use of an easement
- Opportunity for a gateway feature for the Metrowest area
- Estimated construction cost of \$4.957 million

## 5.3 TRAILS AND OVERPASS FEASIBILITY RECOMMENDATIONS COMMUNITY SURVEY

Survey feedback on the off-street trail concepts and pedestrian and bicycle overpass locations are summarized below.

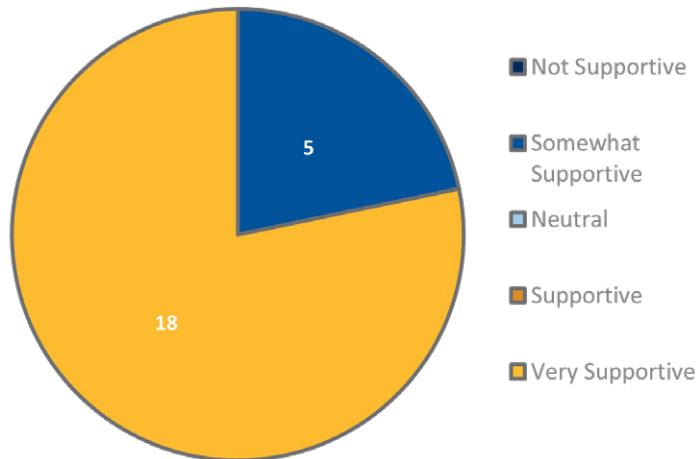
How would you rank the priority of safety improvements for these locations?



### Avg. Ranking

- 1.7** ■ Kirkman Road and Conroy Road Pedestrian and Bicycle Overpass
- 2.1** ■ Kirkman Road Trail Extension from Major Boulevard to LB McLeod Road
- 2.2** ■ Kirkman Road and Metrowest Boulevard Pedestrian and Bicycle Overpass

How supportive are you of the proposed trails and pedestrian overpasses improvements?



# 6.0 PEDESTRIAN WALKING CONDITIONS

The purpose of the assessment of pedestrian walking conditions within the southwest Orlando area was to identify cost-effective improvements to address safety, connectivity, and comfort. The assessment was focused on pedestrian safety and access to transit in the immediate areas around high ridership stops, locations with poor Pedestrian Level of Service (PLOS), and sidewalk gaps.

## 6.1 SUMMARY OF FINDINGS

### Transit Access

Transit relies on pedestrian networks that are safe and comfortable, allowing people to walk to their destinations. Transit stop areas with high ridership activity were prioritized for the walking conditions assessment. Locations with high transit activity were further prioritized based on the incidence of pedestrian and bicycle crashes, locations in proximity of communities of concern, and locations within the HIN. Within and around a transit stop area (1/8 mile), an assessment to identify safety issues regarding pedestrian access to transit was completed. The table below lists the five selected locations for the transit access assessment that were selected in collaboration with the City of Orlando.

Rank	Transit Stop Area	LYNX Annual Ridership *
1	International Dr at Kirkman Rd	239,921
2	Raleigh St at Kirkman Rd	82,358
3	Metrowest Blvd at Kirkman Rd	51,626
4	Conroy Rd at Millenia Blvd	44,318
5	Oakridge Rd at Millenia Blvd	84,848

\*Total annual ridership for LYNX stops within the analysis area

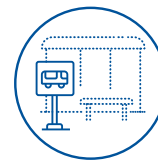
Key concerns identified for transit stops include:



High incidence of midblock crossings at non-designated crossing locations



Inadequate sidewalk connections to transit stops



Absence of transit stop amenities



Pedestrian crossing midblock at non-designated crossing location, near bus stop

## Pedestrian Level of Service (PLOS)

Pedestrian Level of Service (PLOS) is a measure which quantifies comfort and safety levels of existing walkways, allowing objective evaluation of pedestrians' perceptions and responses to the roadway environment. The PLOS evaluation is based on a variety of roadway traffic and geometric characteristics, focusing on the degree of separation between roadway traffic and the walking environment.

An areawide PLOS analysis was completed for arterial and collector roadways within the southwest Orlando study area. The results indicate a distance-weighted average PLOS score of 3.47 translating to a grade of C for the study network, which compares favorably to other Florida metropolitan areas. Walking conditions in southwest Orlando are aided by the presence of a robust sidewalk network, with sidewalks provided on 87 percent of the arterial and collector system. However, there are still a high number of segments with poor PLOS scores due to a combination of heavy traffic volumes, high speeds, and close proximity of the sidewalk to vehicular traffic. The number of locations with poor scores indicates significant opportunities for improvement. With traffic volumes unlikely to decline, the greatest opportunity to improve walking conditions will be through filling remaining sidewalk gaps and providing additional separation from traffic through wider sidewalks and buffer areas.

## Sidewalk Gaps

Gaps in the pedestrian network and other substandard conditions force pedestrians to walk unsafely and severely limit the comfort of the walking environment. Critical sidewalk gaps were identified based on a set of screening criteria combining demographic statistics and geographic proximities to trip generating facilities for each of the sidewalk gaps, with aggregate weighted prioritization scores ranked to determine criticality.

### 6.1.1 PROPOSED RECOMMENDATIONS




Based on existing deficiencies, a list of potential improvements was developed. A scoring methodology was identified to evaluate and prioritize these proposed improvements based on presence of high-ridership transit stops, current PLOS and new PLOS with improvements, sidewalk gaps, location within the HIN, changes in pedestrian crossing experience with improvement, cost-effectiveness, and ROW availability.



Existing Kirkman Road trail and bus stop near Metrowest Boulevard



**Proposed Pedestrian Walking Conditions Improvements**

-  Intersections
-  Segments
-  Study Area
- # 1** Priority Project Number

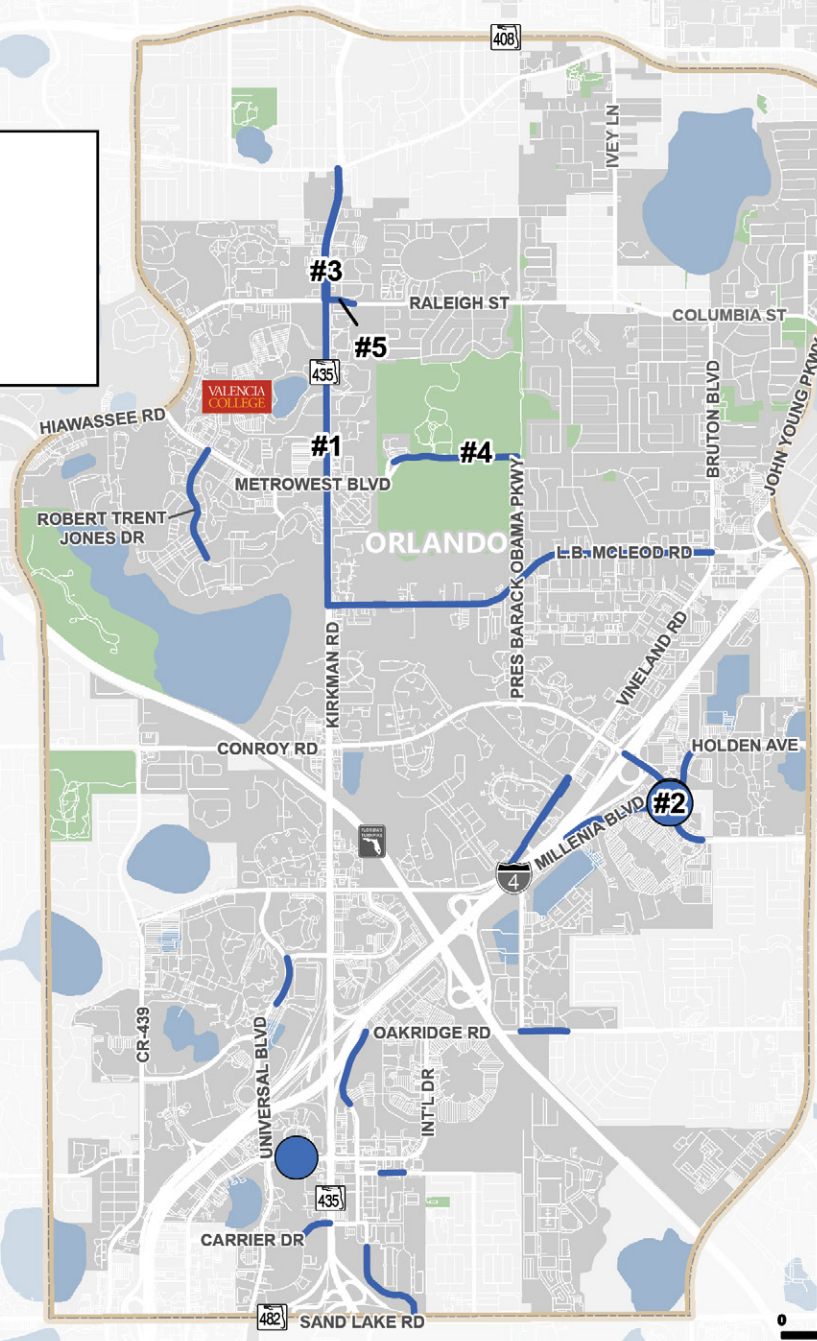


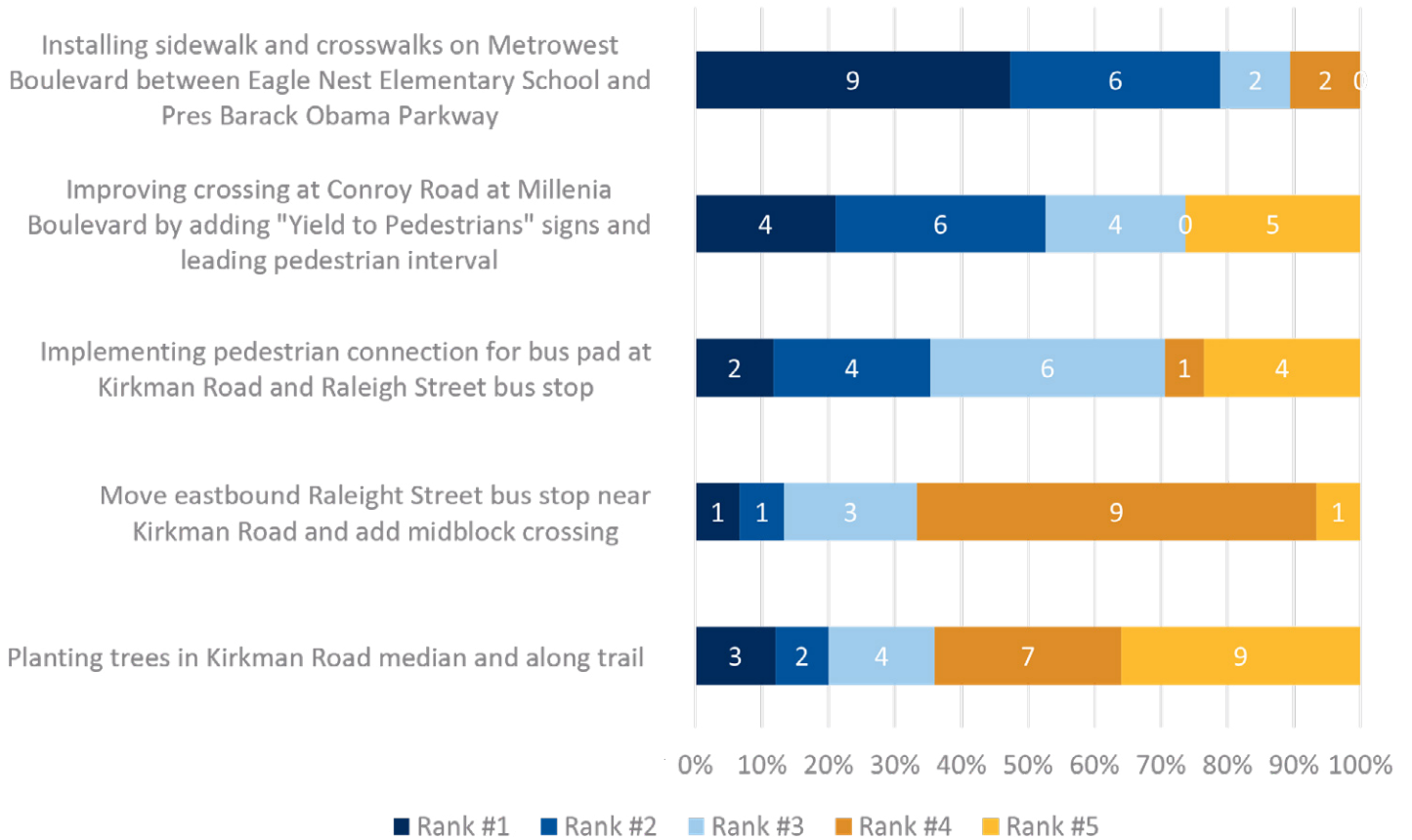
Figure 10 | Proposed Pedestrian Walking Conditions Improvements and Top Five Priorities

Priority	Project	Description
1	Kirkman Rd median & buffer trees	Add trees to median and trail buffer between Old Winter Garden Rd and LB McLeod Rd.
2	Conroy Rd at Millenia Blvd crossing improvements	Add “Yield to Peds” signage and LPI.
3	Kirkman Rd at Raleigh St bus stop connection	Construct sidewalk connection for northbound bus stop.
4	Metrowest Blvd sidewalk	Install sidewalk on south side with appropriate crosswalks between the Eagle Nest Elementary School and Pres Barack Obama Pkwy.
5	Raleigh St midblock crossing	Move eastbound Raleigh St at Kirkman Rd bus stop to the east align line with westbound stop, and add midblock crossing.

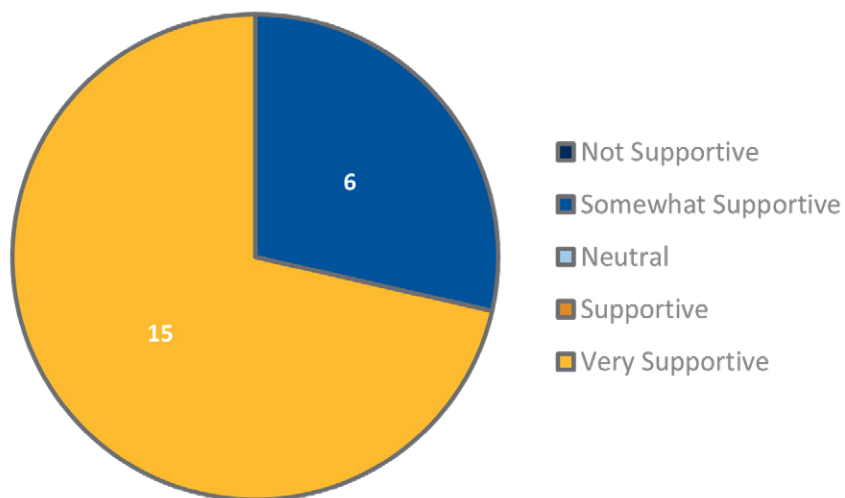
## 6.2 PEDESTRIAN WALKING CONDITIONS RECOMMENDATIONS COMMUNITY SURVEY

The pedestrian walking conditions improvement recommendations survey results are summarized below.

### How would you rank the priority of these safety improvements



### How supportive are you of the proposed pedestrian walking conditions improvements?



## 7.0 NEXT STEPS

Additional details of the proposed recommendations can be found in the following technical memorandums:

- Bike and Pedestrian Safety Recommendations Technical Memorandum
- Valencia College West Campus Technical Memorandum
- Off-Streets Trails Concepts and Overpass Feasibility Analysis Technical Memorandum
- Pedestrian Walking Conditions Technical Memorandum

The City should continue to coordinate with project partners including Orange County, FDOT, Metro West, OUC, and Valencia College to identify funding and implementation opportunities.



Bike District 6 outreach event



# **SOUTHWEST ORLANDO BIKE AND PEDESTRIAN STUDY**

## **SUMMARY REPORT**