



Active Transportation Network Study



September 2023

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I. Plan Purpose

This plan has been compiled for City of Apopka staff to guide active transportation planning in the city in 2023 and beyond. The plan and accompanying maps have been developed to be used as a communication and planning tool for use by city staff, residents, and developers. Plan objectives are described below.

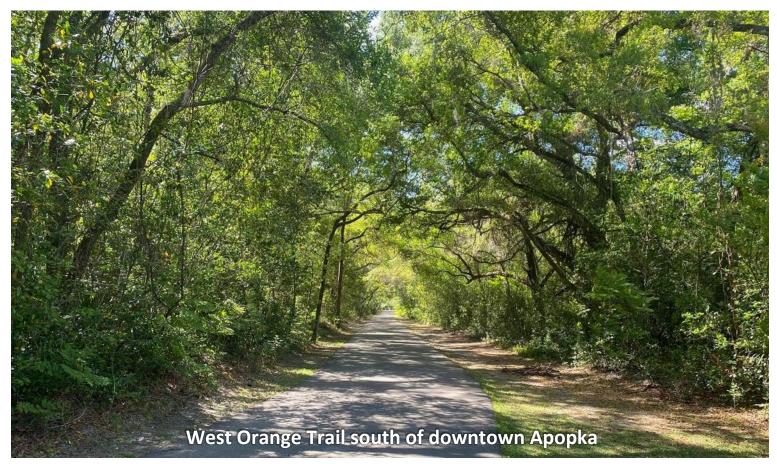
Guide Future Trail Development Along Prioritized Corridors Identify Signature Trail Corridors for Integration into the Regional Network



Use Trail Infrastructure as a Catalyst for Economic Development

Identify Safety Countermeasures to Enhance the Biking Network Develop Trail Standards and Policies for Use by Developers and Planners

> Identify Comfort Countermeasures to Encourage Increase in Walking and Biking



II. Existing Conditions

Planning Process

The planning team started the existing conditions process with map layers developed by xGeographic for the MetroPlan Orlando Active Transportation Plan. The map layers were quality assured via an on-the-ground review in July 2023 to ensure that all of the latest construction was included in the map layers.

The status of proposed trails were also validated with City of Apopka staff. Trail plans from surrounding municipalities have also been quality assured and incorporated into the maps.

Mapped Infrastructure

The following bike facilities are included in the existing conditions inventory.

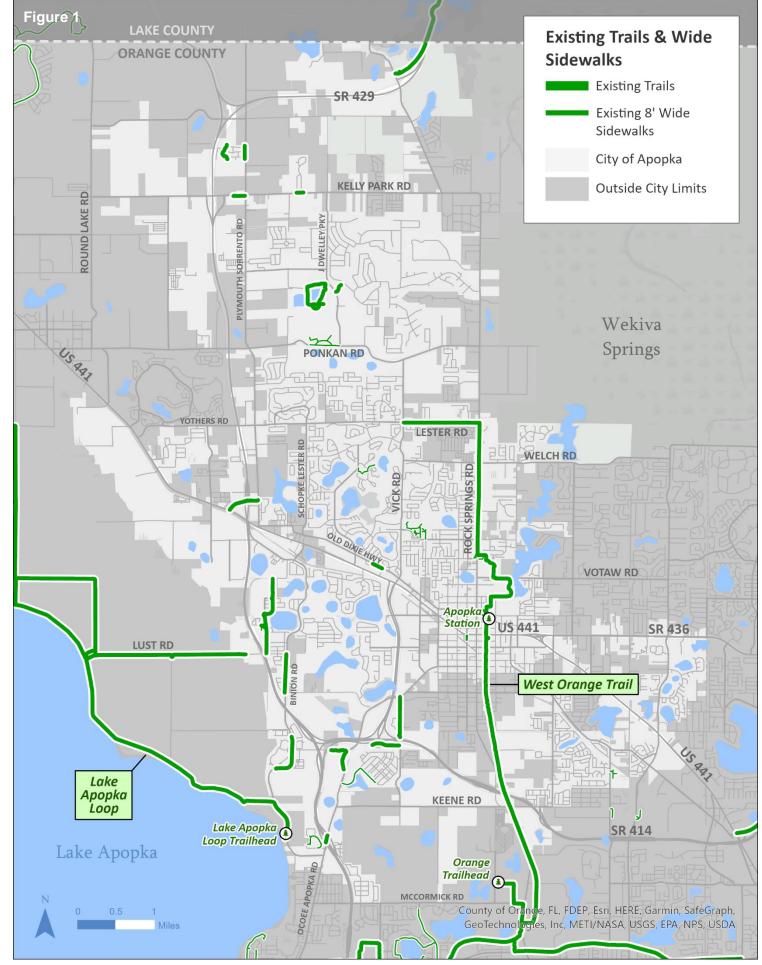
- Trails & Side Paths (10 ft. +) referred to as trails in this report
- Wide Sidewalks (8 ft. +)
- On-Street Bike Lanes (4 ft. +)
- Paved Shoulders (4 ft. +)
- Trailheads

Status of Infrastructure

The existing conditions assessment includes an inventory of the existing and funded trail network in addition to trail corridors previously identified by the City and Orange County. Trail status categories include existing and previously proposed.

Sidewalk Gap Locations

This plan identifies areas where sidewalks are not present on both sides of the road and posted speeds exceed 30 miles per hour. Section III (Network Analysis) and Section VI (Proposed Network) of this report include further analysis of critical sidewalk gaps throughout the city.



Previous Trail Proposals

This Active Transportation Network Study analyzes and builds on previous trail proposals in the City of Apopka and surrounding areas. Figure 2 on this page and Figures 3 and 4 on the following two pages show these proposed corridors.

Previous City of Apopka Trail Plan

The city previously created a trail master plan, and numerous trail segments have been built along the corridors identified in the study. Segments shown in orange in Figure 2 were included in the previous trail master plan and have not been built as of July 2023. These corridors will be further assessed for feasibility in this report.

West Orange Phase 4 Trail Extension & Spurs

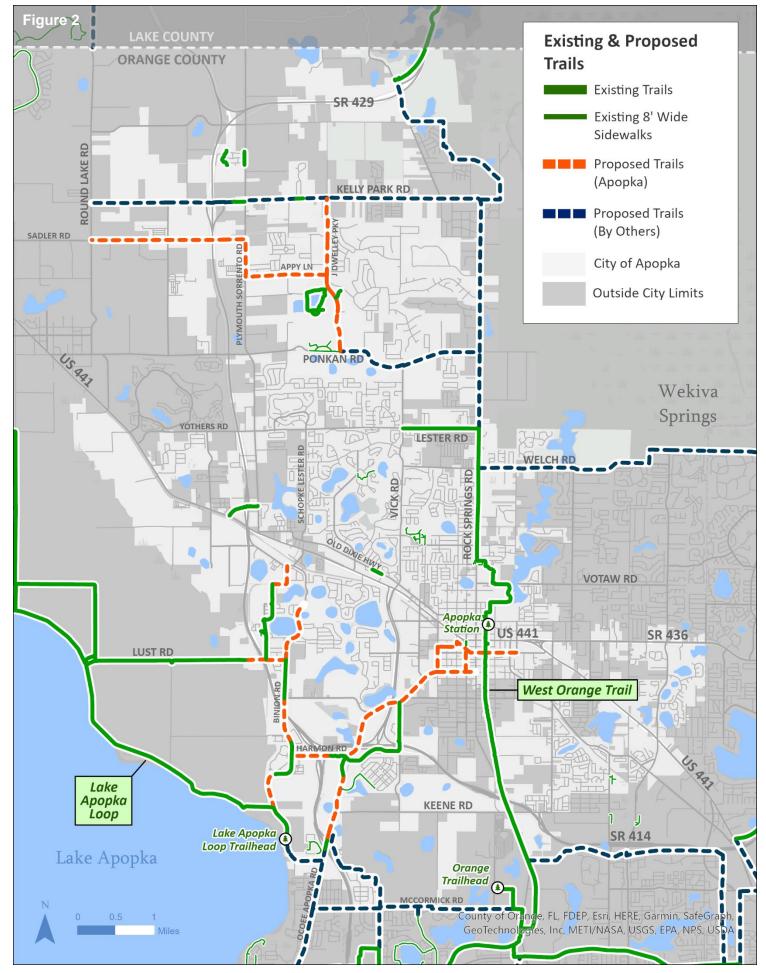
Two trail spurs and a trail extension have been proposed along the West Orange Trail by Orange County and were recently studied by MetroPlan Orlando as part of the West Orange Trail Extension Study. Designs have been completed for these trail segments. Projects include:

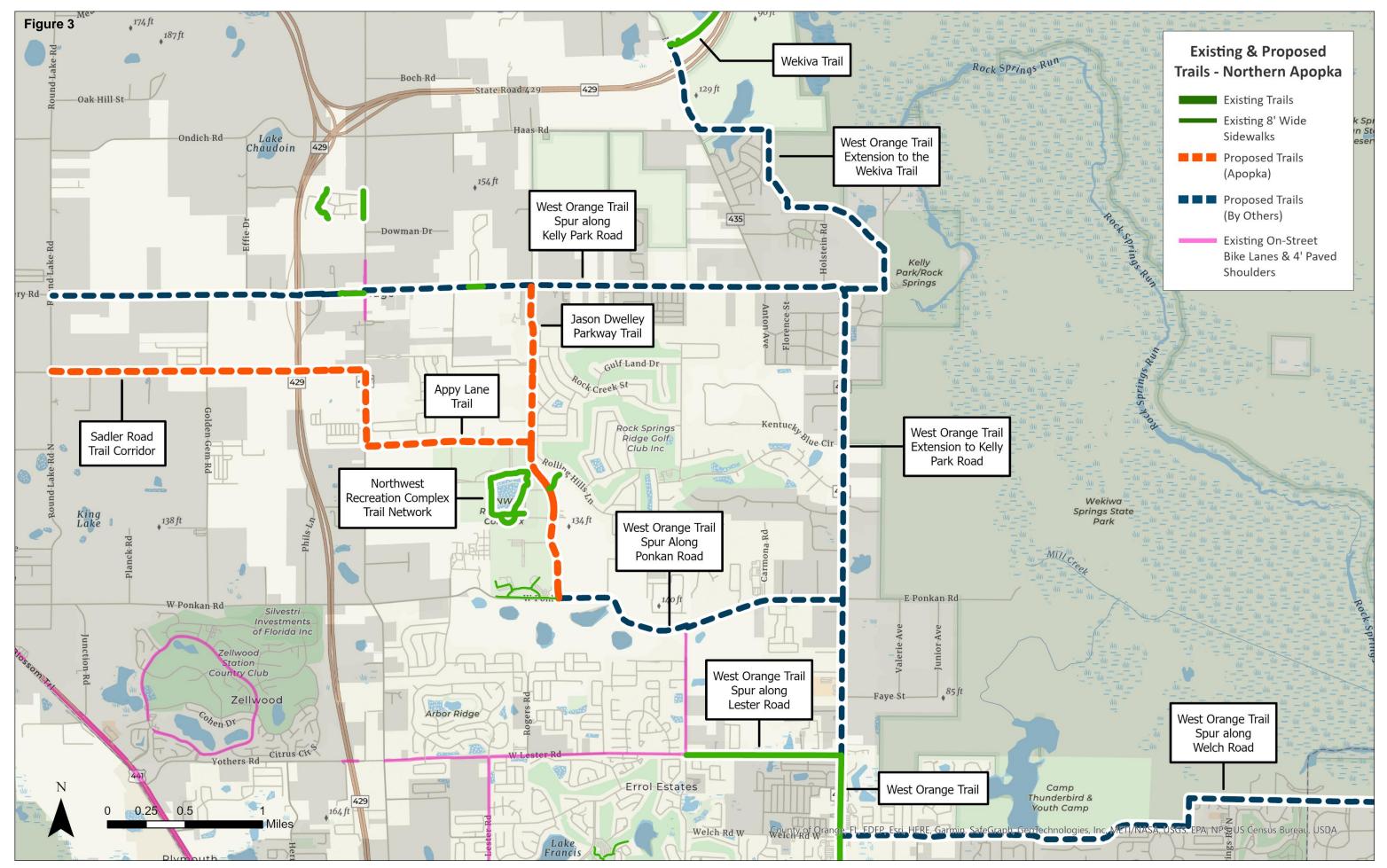
- Welch Road Spur to Wekiva Springs
- Ponkan Road Spur to Northwest Recreation Complex
- West Orange Trail Extension to Kelly Park Road and the Wekiva Trail

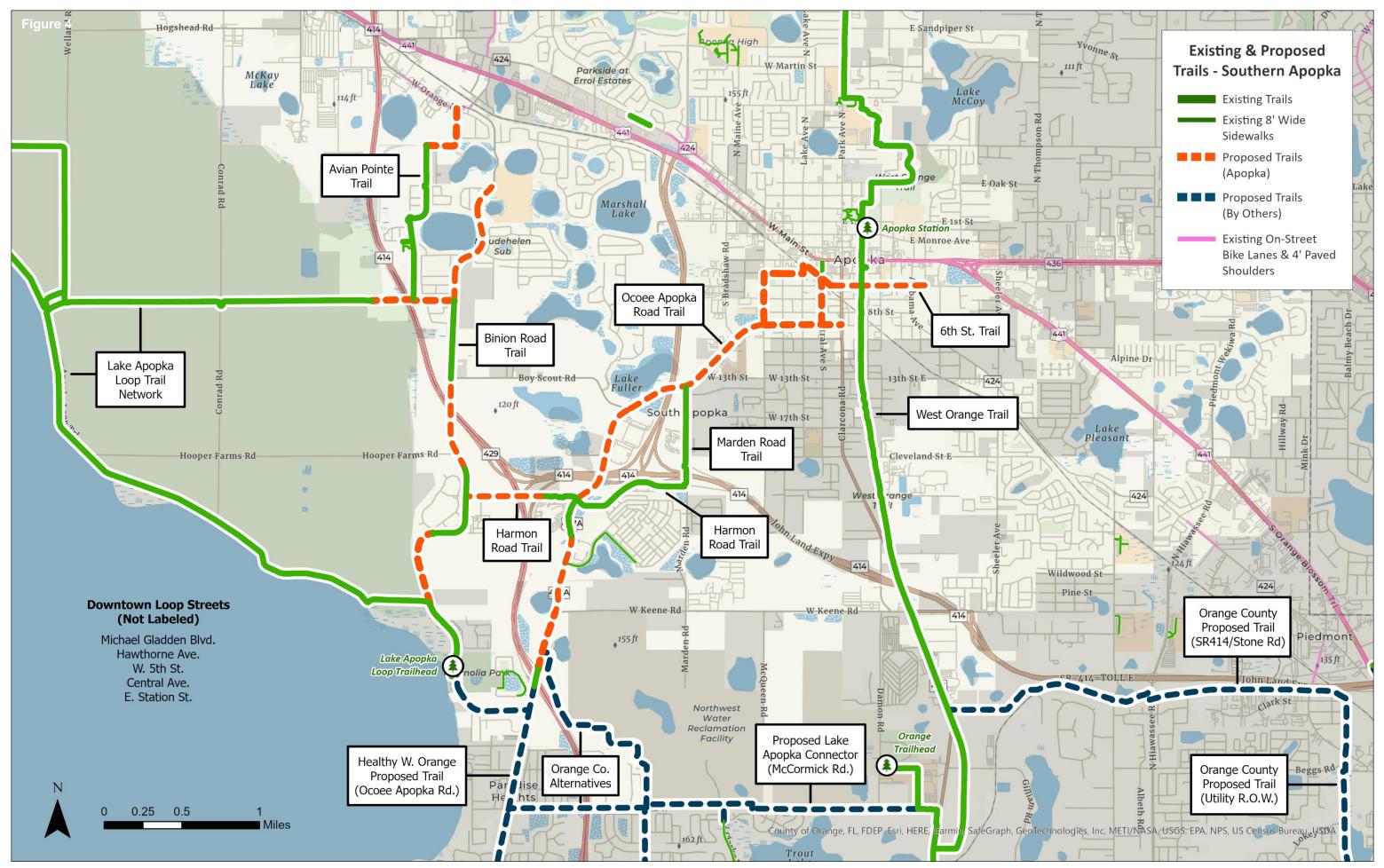
In addition to these projects, the MetroPlan Orlando Cost Feasible Plan includes a trail segment from the West Orange Trail extension to State Road 429 along Kelly Park Road.

Other Trail Proposals

In the southern portion of Apopka, numerous trail segments have been proposed. The Orange County Trails Master Plan includes segments that connect to planned Apopka segments at Ocoee Apopka Road near Magnolia Park. The Healthy West Orange Trails Connection has also proposed segments in concert with the City of Ocoee in the Paradise Heights and Clarcona areas. These segments are shown in dark blue to the south of the City of Apopka in Figure 2.







State and Regional Trail Connections

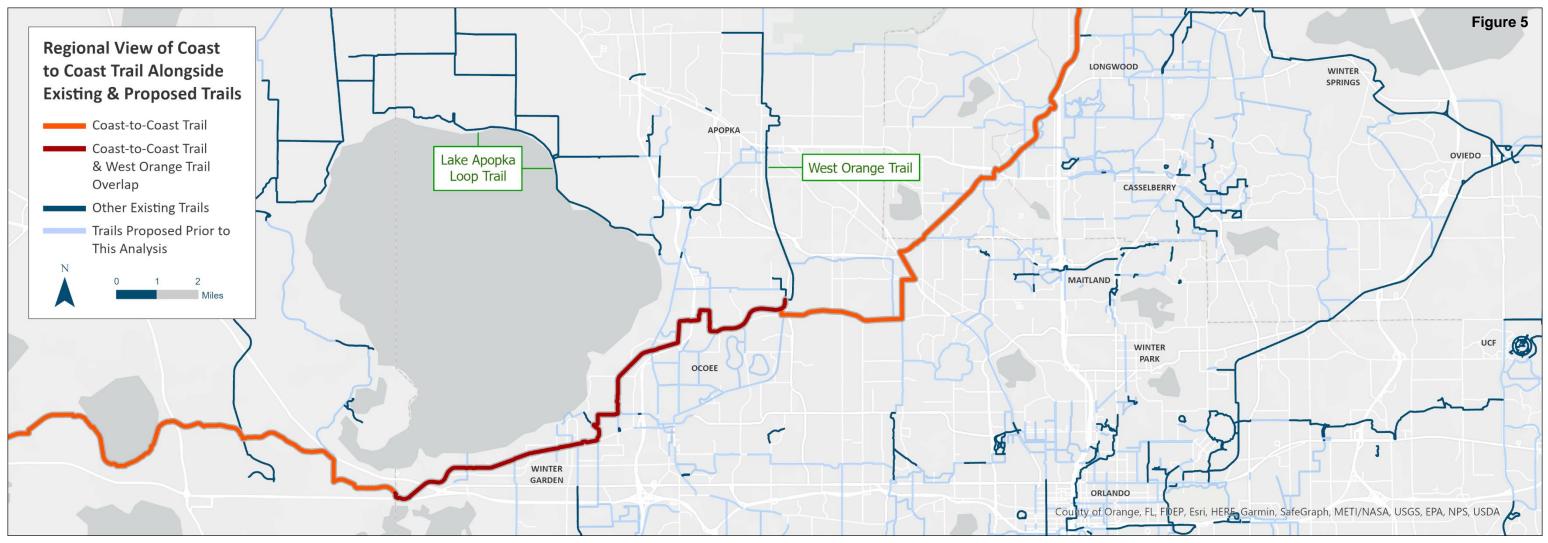
The Importance of the West Orange Trail

The West Orange Trail serves and will continue to serve as the primary trail traversing through Apopka and connecting the city to the rest of the Orlando region and the state of Florida. As part of this plan, the West Orange Trail will be utilized as a central component of the citywide trail network, but equally importantly as a connector to additional region and statewide trail corridors.

Connecting to the Coast-to-Coast Trail

The Coast-to-Coast Trail is Florida's first trail spanning the entirety of the state from east to west, with portions of the trail under development. The statewide trail system overlaps with the West Orange Trail in Winter Garden and Ocoee, so the Apopka trail network will seamlessly connect to the statewide system. Stakeholder Idea #1 Create a loop network that easily integrates into the Coastto-Coast Trail corridor.

Stakeholder Idea #2 Create themed signage that differentiates the Apopka trail network from others



Stakeholder Idea #3 Market the Lake Apopka Wildlife Area and Wekiva Springs to Coast-to-Coast riders.

Stakeholder Idea #4 Create a signature trail network that is differentiated from secondary connector trails.

III. Network Analysis

An Analysis of the Existing, Funded & Previously Proposed Trail Network through the Lens of Transportation Infrastructure



ROAD CHARACTERISTIC ANALYSIS

LEVEL OF SHADING ANALYSIS

BIKE/PED CRASH HOT SPOT ANALYSIS

Land Use Analysis

Existing & Planned Connections to Environmental Areas

Existing and planned environmental connections are numbered below and in Figure 6. Additional connections will be identified as part of this plan.

- Lake Apopka Wildlife Area (1) Planned Connection
- Rock Springs Run (2) Planned Connection
- Wekiva Springs State Park (3) Planned Connection

Existing & Planned Connections to Recreational Areas

Existing and planned recreational connections are numbered below and in Figure 6. Additional connections will be identified as part of this plan.

- Alonzo Williams Park (4) Planned Connection
- Camp Wewa (5) Planned Connection
- * Kit Land Nelson Park (6) Existing Connection (West Orange Trail)
- Magnolia Park (7) Existing Connection (Lake Apopka Loop Trail)
- Northwest Recreation Complex (8) Planned Connection

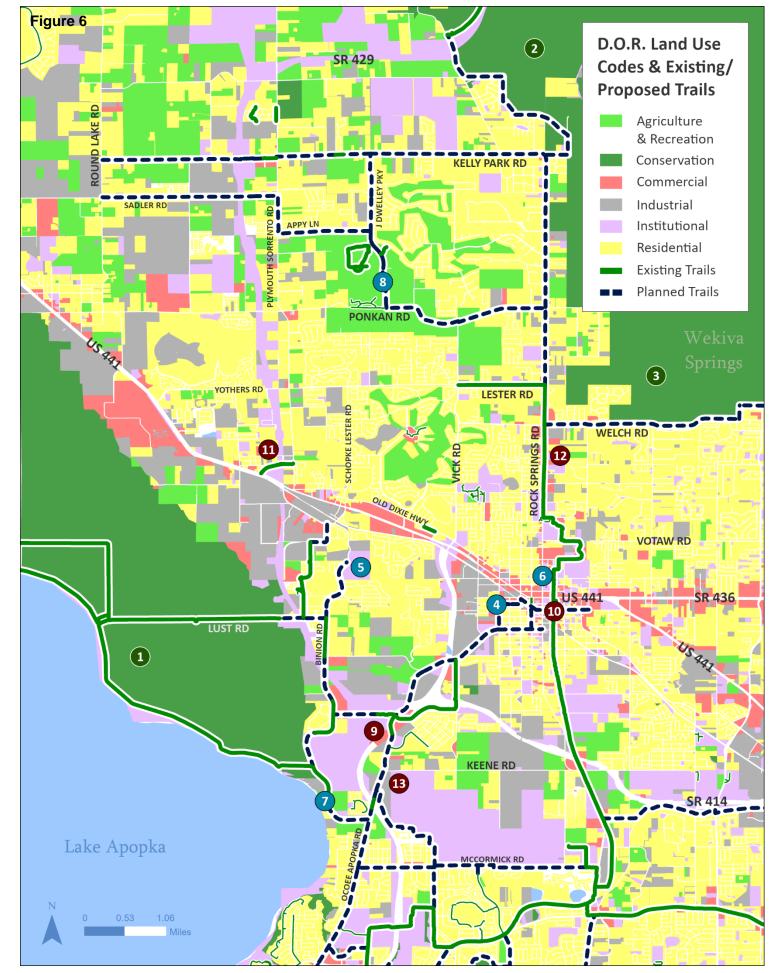
Existing & Planned Connections to Commercial Centers

Existing and planned economic center connections are numbered below and in Figure 6. Additional connections will be identified as part of this plan.

- AdventHealth Apopka (9) Planned Connection with Existing Trail Segment
- Downtown Apopka (10) Existing Connection (West Orange Trail)
- * Floridian Town Center (11) Planned Connection with Existing Trail Segment
- Rock Springs Road Commercial (12) Existing Connection (West Orange Trail)
- Shoppes at East Shore (13) Planned Connection

Existing & Planned Connections to Residential Areas

Residential area connections are generally limited in the existing and planned network. Connecting to residential areas will be a primary goal of the proposed network developed as part of this plan.



Roadway Characteristic Map Series

Map Listing & Analysis

Five primary road characteristics are mapped as part of the network analysis for the purpose of analyzing previously proposed trail alignments and to identify areas to avoid for additional trail placement. A brief synopsis of each map is included below.

Speed Limits

Numerous existing and planned trail segments are located adjacent to highspeed roadways. It is highly recommended that all future trails are separated from the roadway with a 5-foot landscaped buffer. It is also recommended that speed limits be reduced, if possible, in areas where trails are built.

Daily Traffic

The Federal Highway Administration (FHWA) Bikeway Selection Guide recommends off-road bicycling facilities in areas where daily traffic volumes exceed 7,000 and speeds exceed 25 miles per hour. These guidelines will be followed as part of this plan. Additionally, trail proposals will be limited to roadways with traffic counts less than 20,000.

Total Lanes and Turn Lanes

The West Orange Trail segment located adjacent to Rock Springs Road is the highest-risk area in terms of total number of lanes and turn lanes. This area has been assessed for safety as part of work completed by MetroPlan Orlando.

Sidewalk Coverage

Sidewalk coverage is primarily an important factor along roadways with highspeed limits, high lane counts and high traffic volumes. In the context of trails, marked crosswalks are vital in areas where sidewalk gaps exist because they connect pedestrians to existing sidewalks in a controlled manner.

Median Types

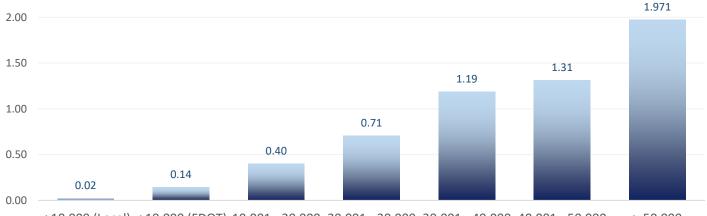
Medians are important element when acting as refuge areas for bicyclists and pedestrians crossing the street. The median presence map will be analyzed as the project team prioritizes additional trail corridors as part of this report.

Regionwide Bike/Ped Crash Statistics by Roadway Attribute

Analysis includes Orange, Osceola and Seminole County, Florida

Figure 7 **Bike/Ped Crashes Per Mile by Daily Traffic Count Ranges**

Source: Signal Four Analytics (2016-2020), *Per Centerline Mile



< 10,000 (Local) < 10,000 (FDOT) 10,001 - 20,000 20,001 - 30,000 30,001 - 40,000 40,001 - 50,000 > 50,000

Bike/Ped Crashes Per Mile by Lane Count

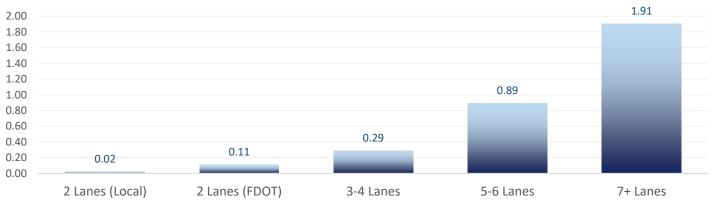


Figure 9 **Bike/Ped Crashes Per Mile by Turn Lane Presence**

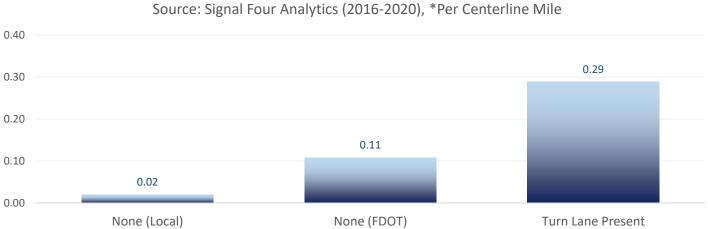
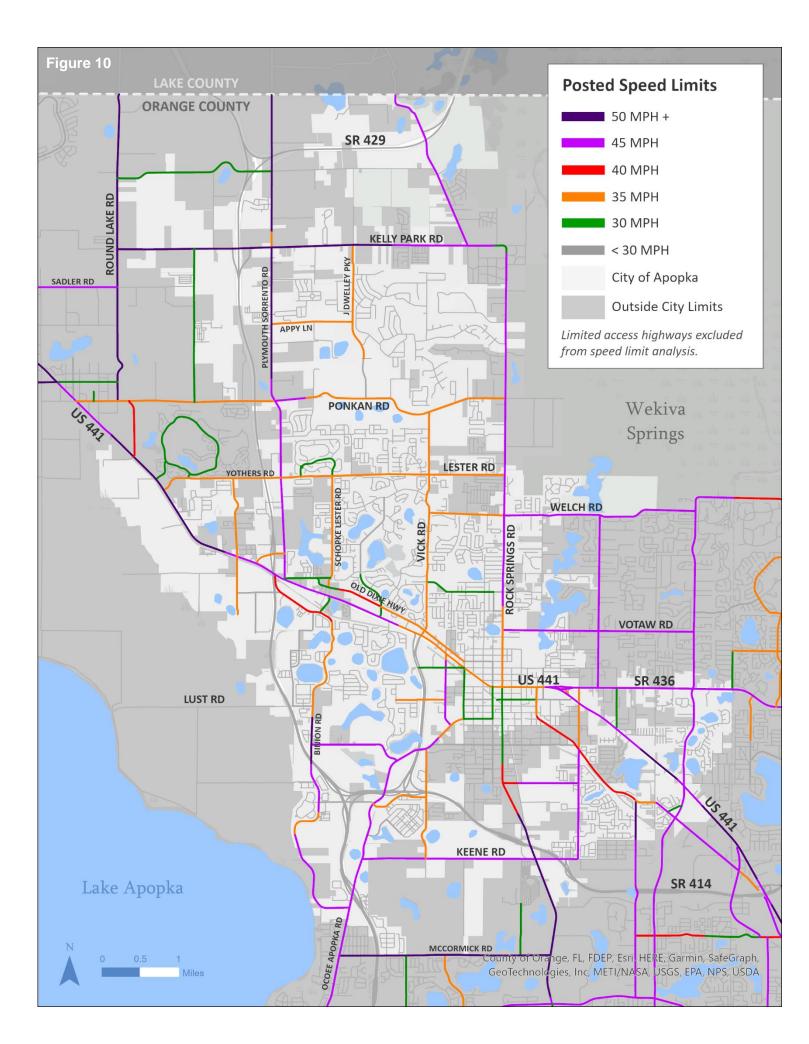
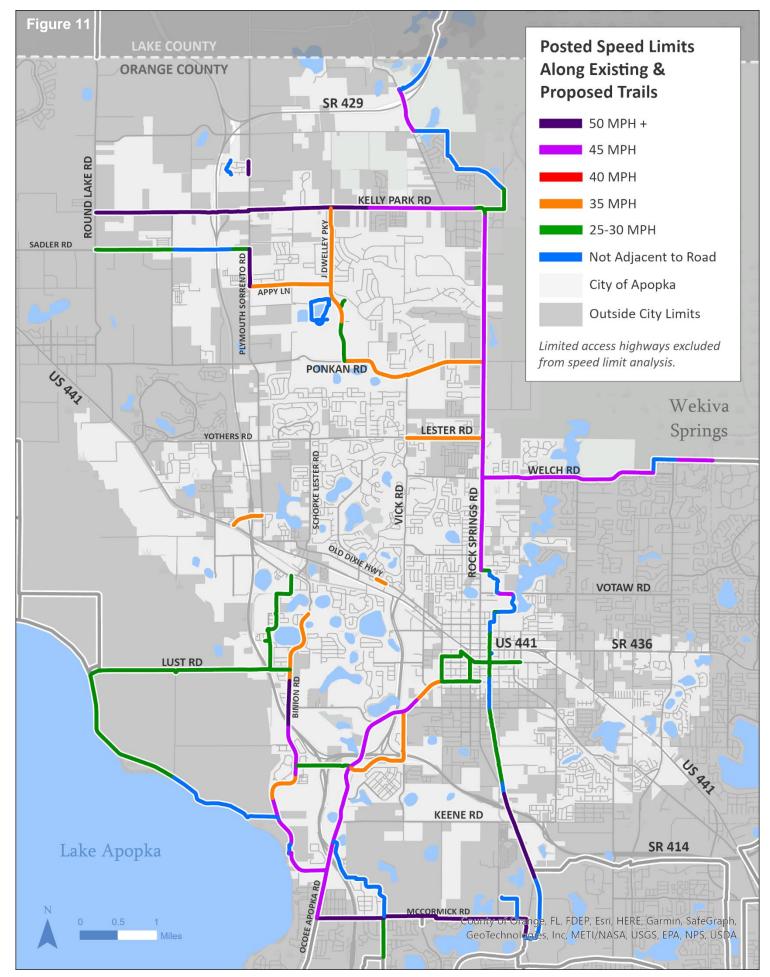
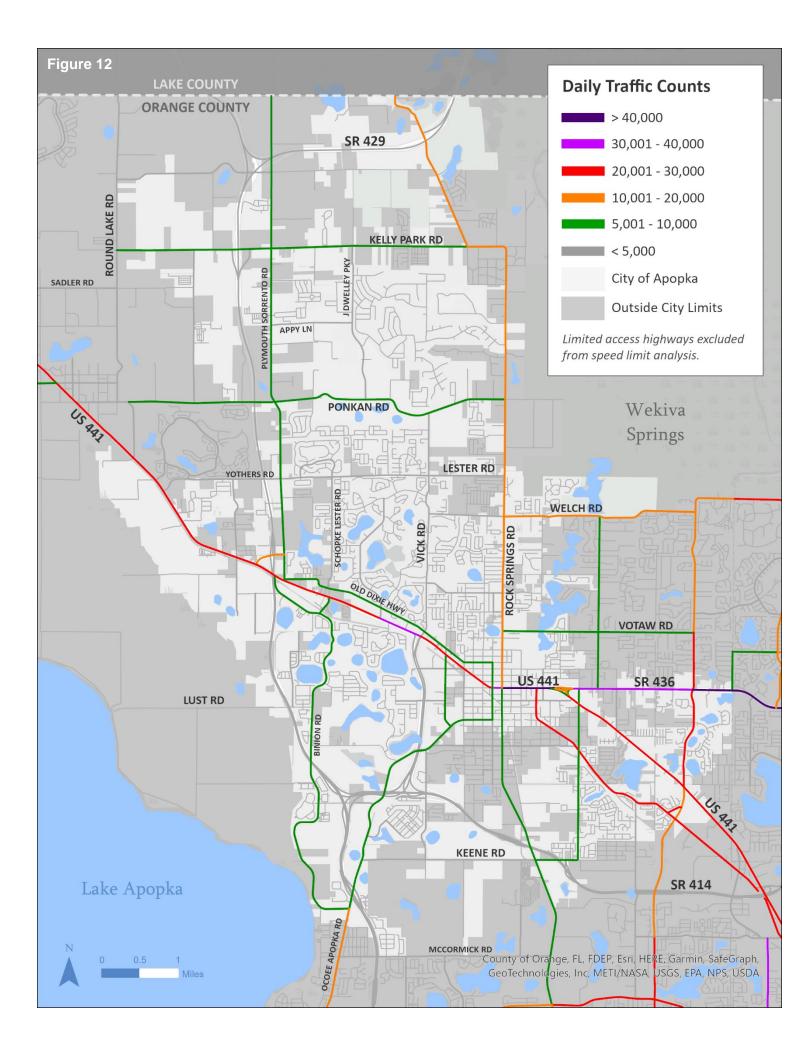


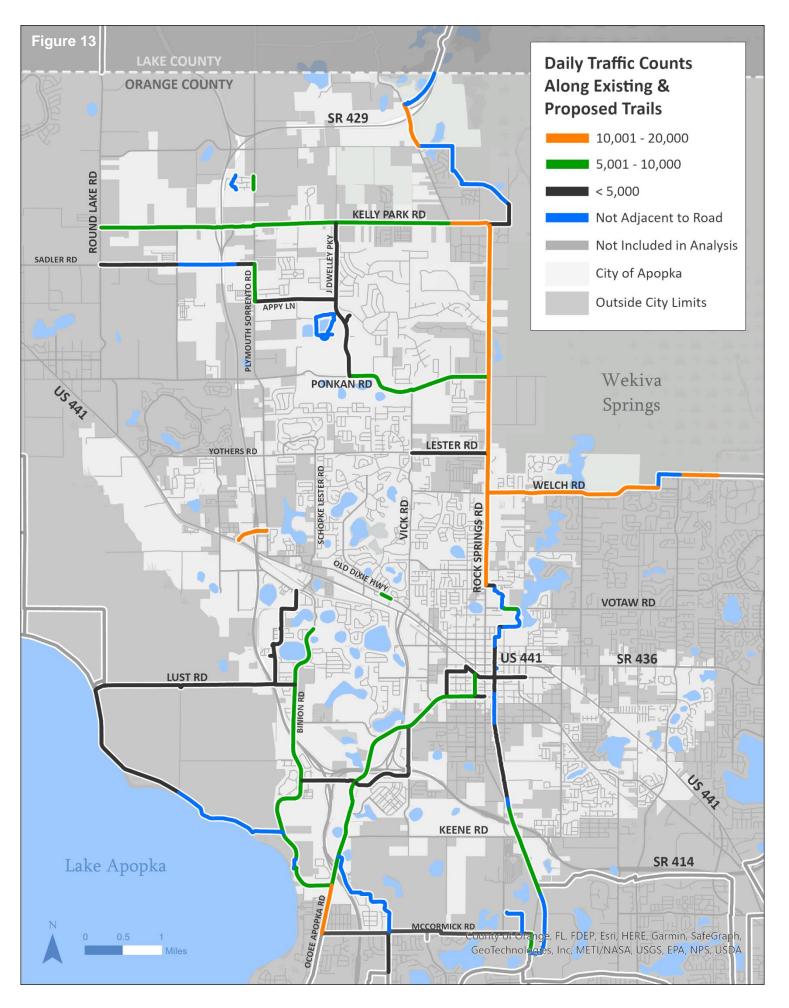
Figure 8

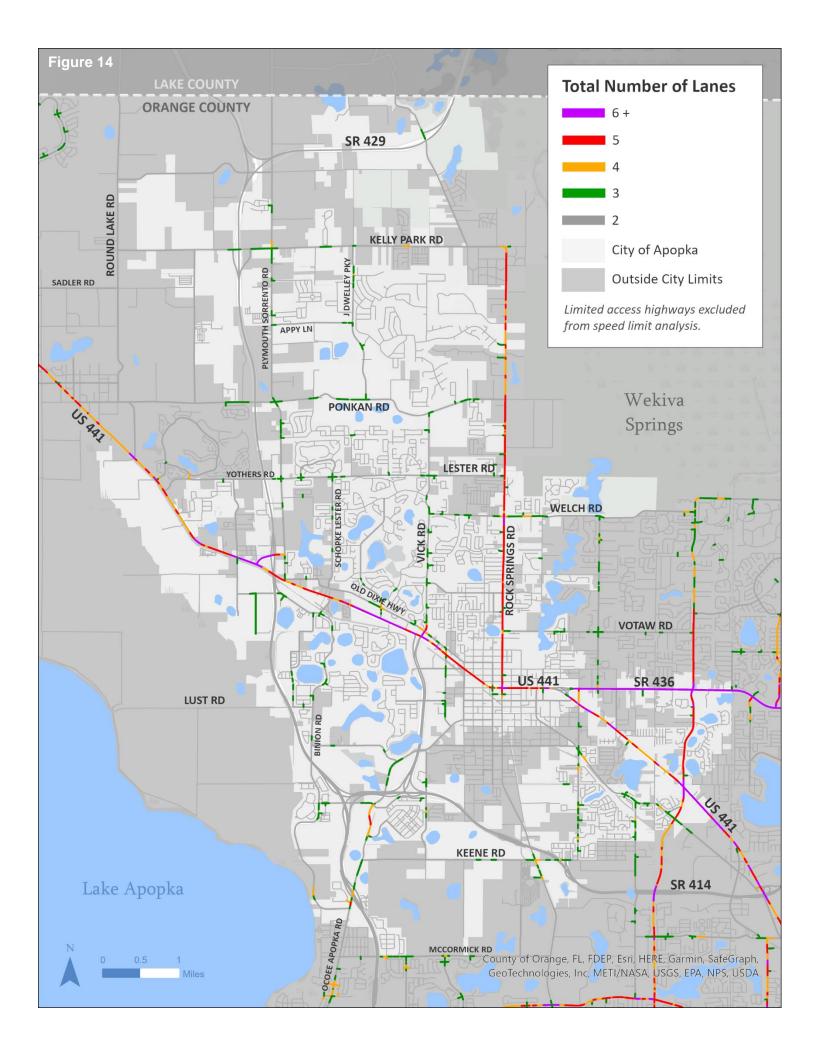
Source: Signal Four Analytics (2016-2020), *Per Centerline Mile

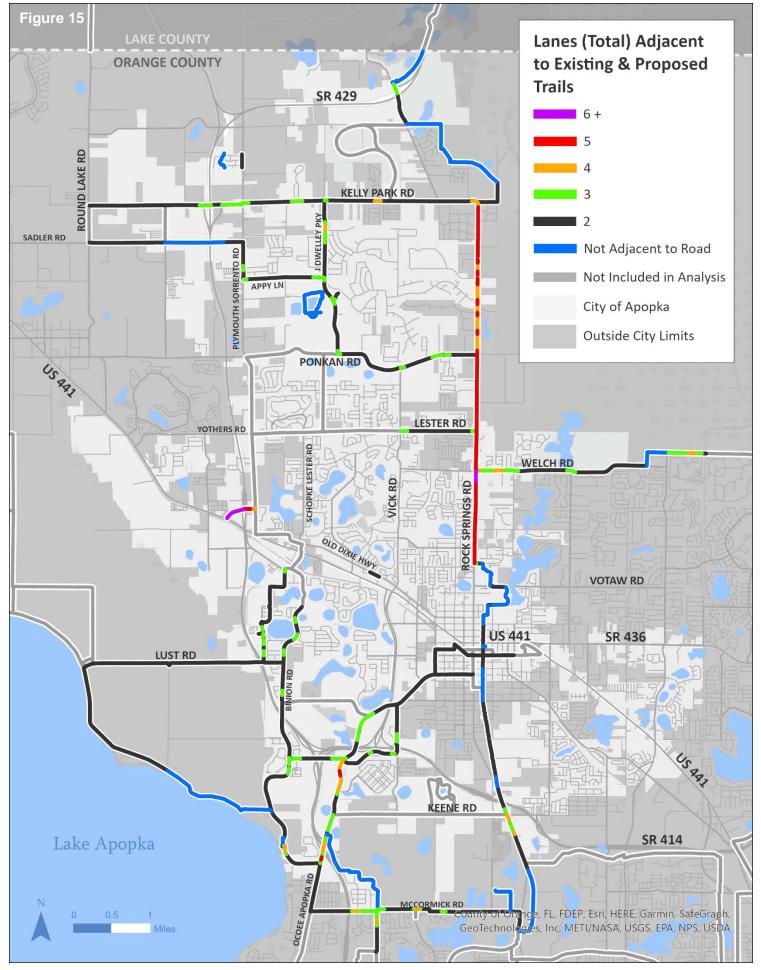


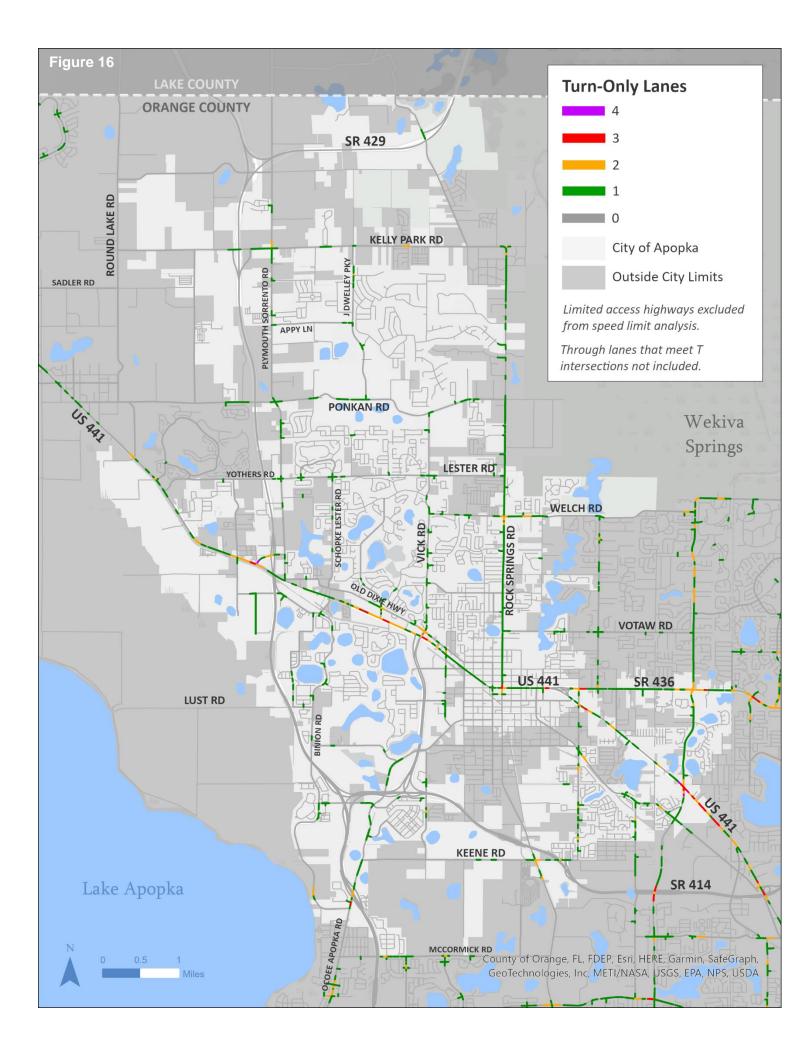


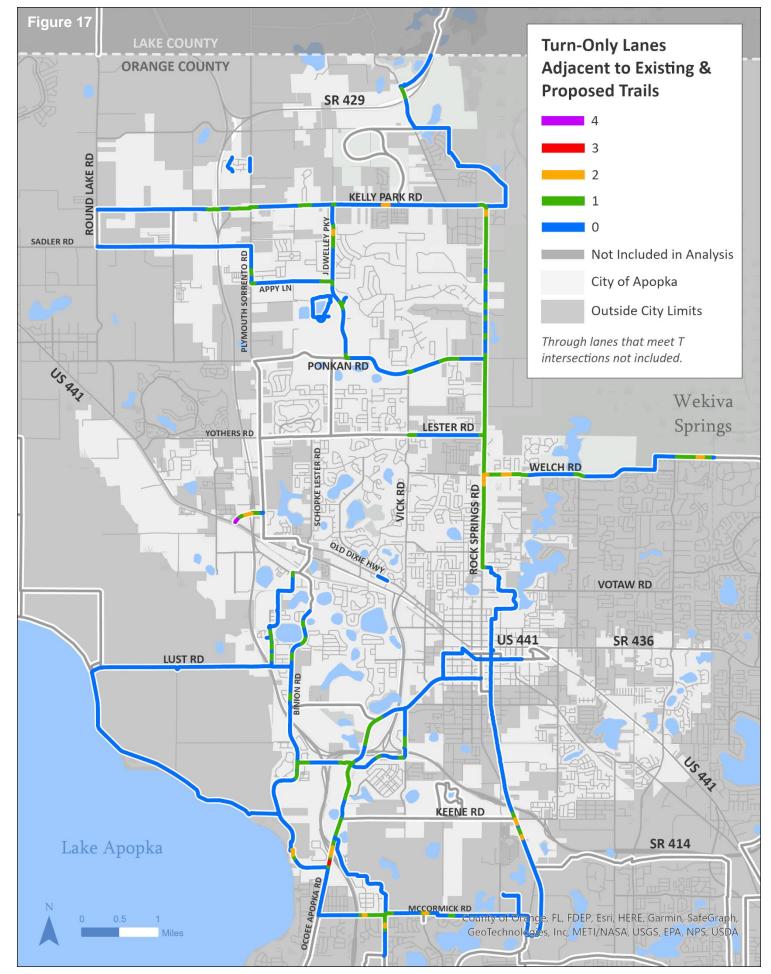


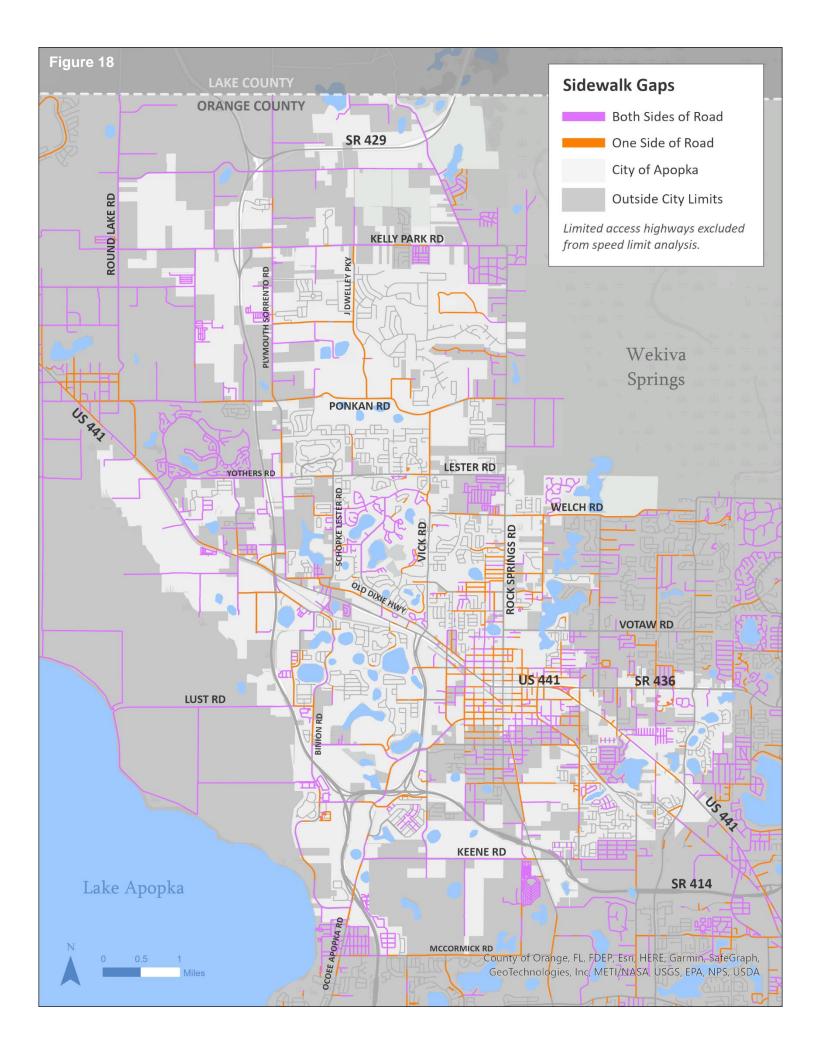


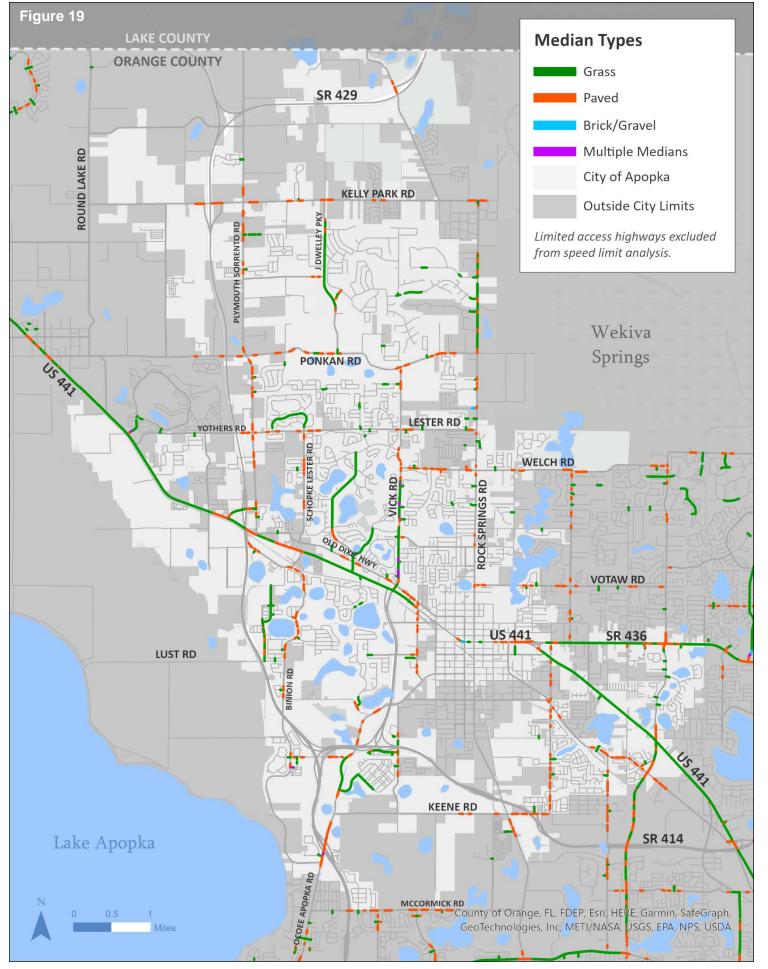












High Speed Sidewalk Gap Analysis

The project team analyzed sidewalk coverage throughout the City of Apopka and surrounding areas. Figure 22 depicts sidewalk gaps on roadways where posted speed limits exceed 30 miles per hour.

Citywide Sidewalk Gap Statistics

An analysis of sidewalk data resulted in the following summary statistics for the City of Apopka. Notes: 1) The City of Apopka does not maintain all of the roadways included in the analysis; 2) The map includes roadways not included in the analysis.

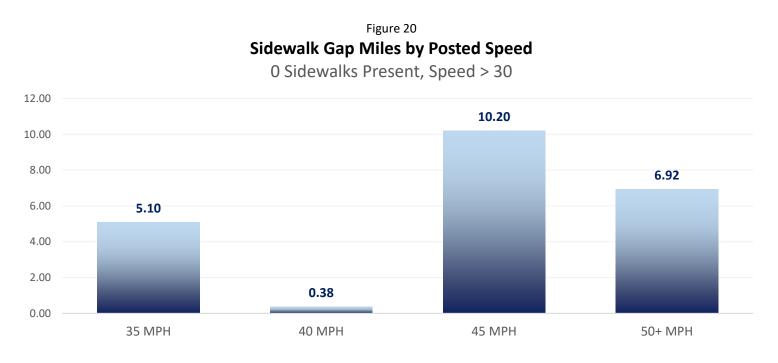
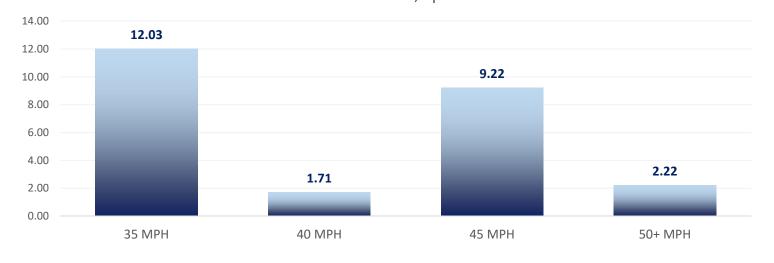
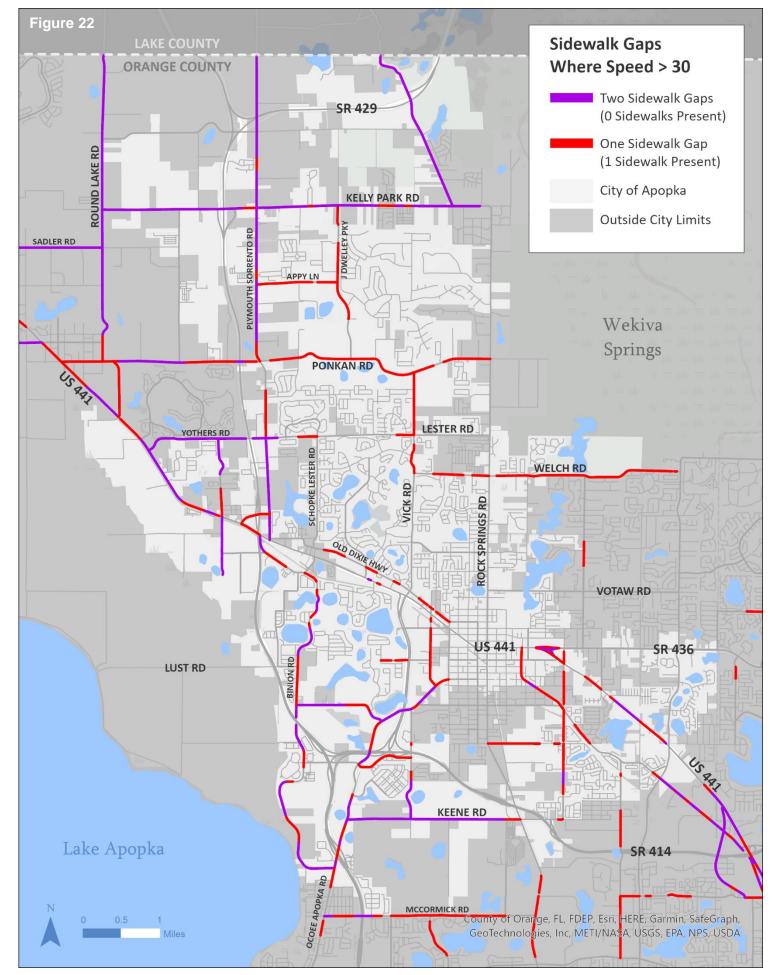


Figure 21 Sidewalk Gap Miles by Posted Speed 1 Sidewalk Present, Speed > 30





High Speed Sidewalk Gaps by Proximity

This analysis provides additional context to the high-speed sidewalk gaps analysis by further refining the sidewalk gap locations by proximity to community features. Community features analyzed include LYNX bus stops, public schools and parks.

High Speed Sidewalk Gaps Near LYNX Bus Stops

Numerous sidewalk gaps are present throughout the city in close proximity to LYNX bus stops. Transit riders have a higher likelihood of not owning a car and are thus forced to walk on roadway shoulders if sidewalks are not present and no route alternatives are available.

High Speed Sidewalk Gaps Near Schools

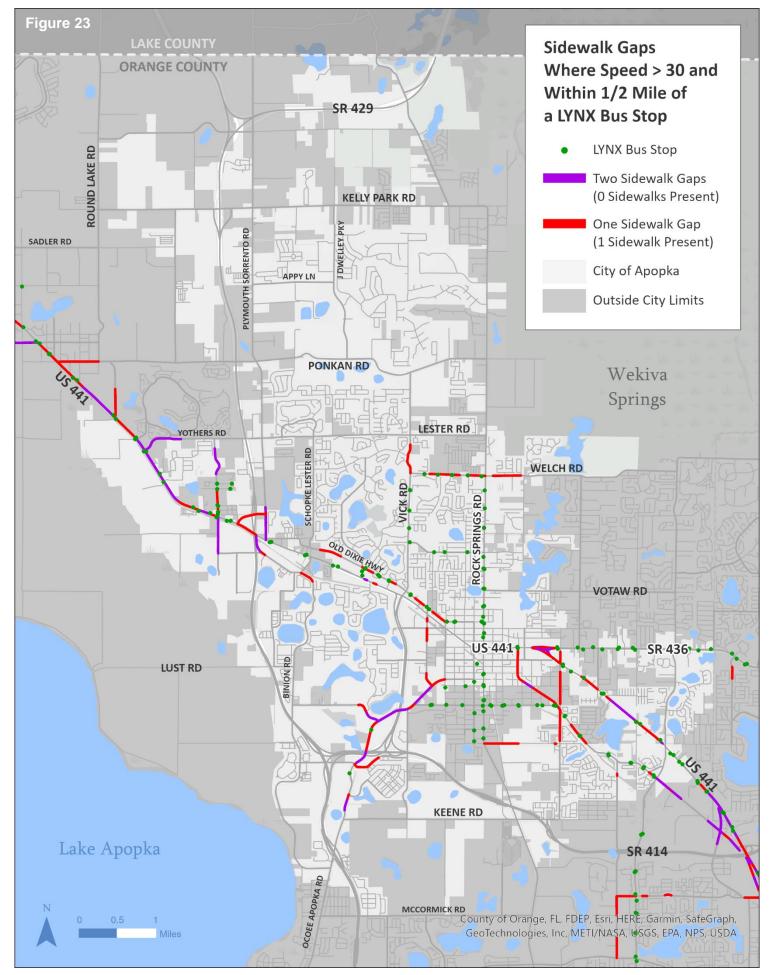
The following sidewalk gaps near public schools are notable within the city:

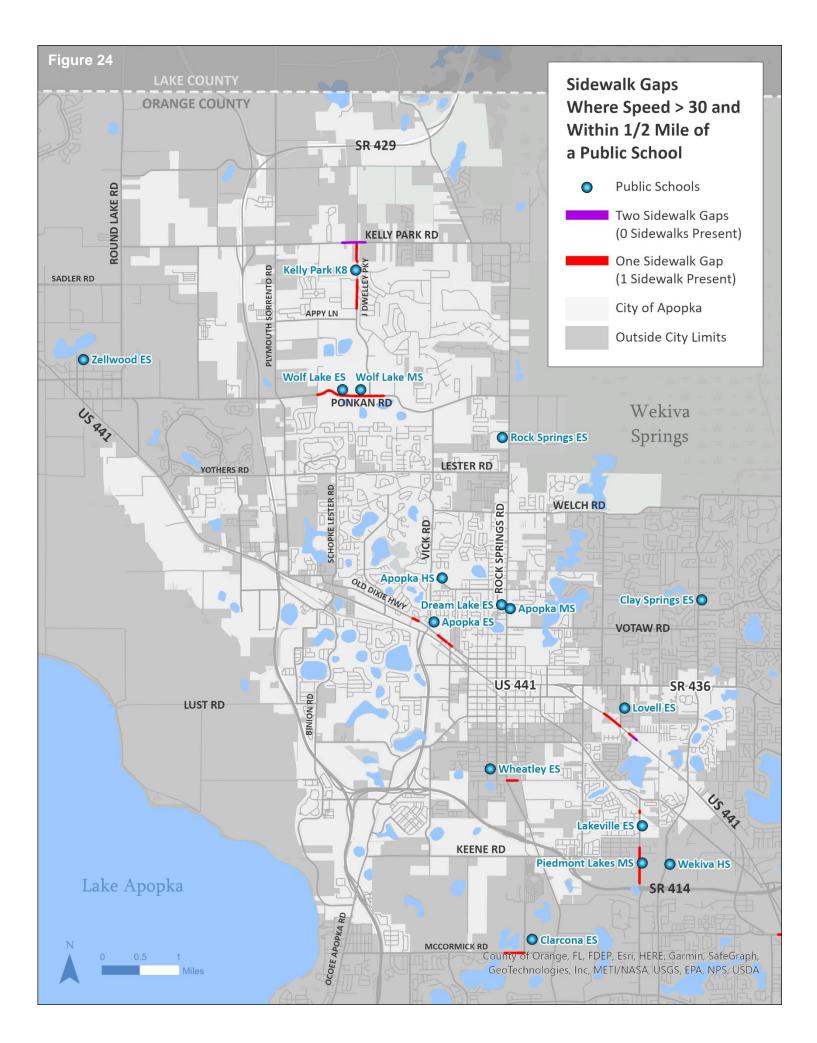
- Jason Dwelley Parkway and Kelly Park Road near the Kelly Park School. Sidewalks on the west side of the road to Kelly Park Road are recommended.
- Ponkan Road near Wolf Lake Elementary and Wolf Lake Middle. Students can use the sidewalk on the north side of the road to access the schools.
- Old Dixie Highway near Apopka Elementary. Sidewalks on the northeast side of the road can be used to access the school.
- U.S. 441 near Lovell Elementary. The city should review U.S. 441 crossing locations to ensure students can use the sidewalks on the east side of 441.
- Hiawassee Road near Lakeville Elementary and Piedmont Lakes Middle. Adding sidewalks to the west side of the road would improve connectivity.

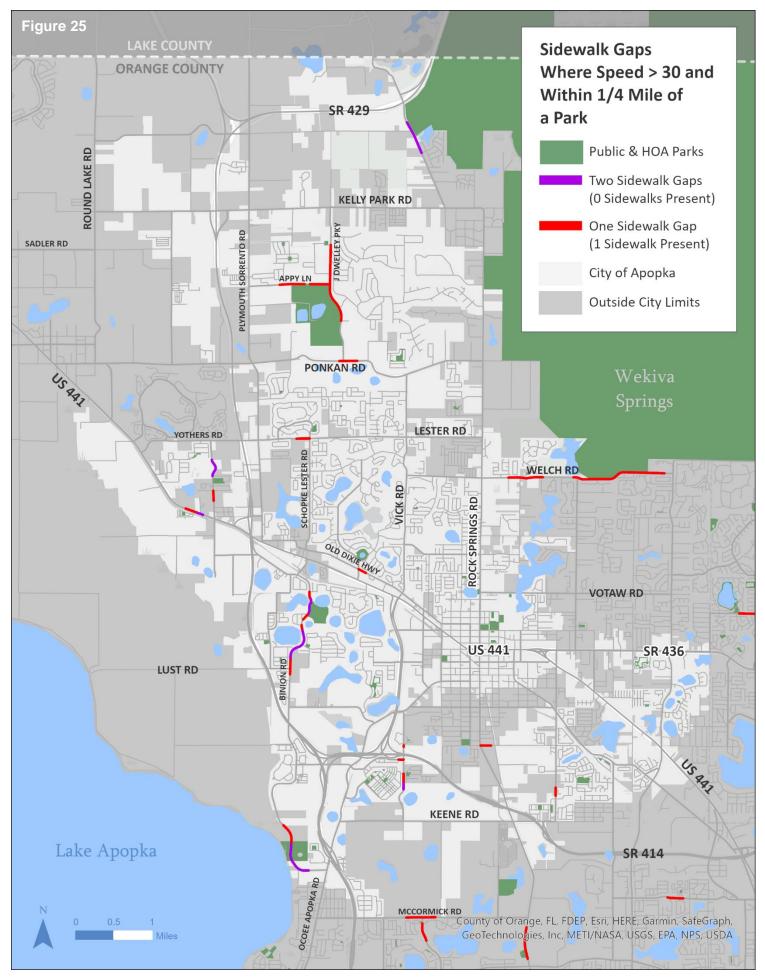
High Speed Sidewalk Gaps Near Parks

The following sidewalk gaps near parks are notable within the city:

- Appy Lane and Jason Dwelley Parkway the Northwest Recreation Complex.
- Welch Road near Wekiva Springs State Park.
- Binion Road near Camp Wewa, where the city plans to build a trail.
- Binion Road near Magnolia Park. Orange County plans to build a trail along Binion Road in this area to connect to the Lake Apopka Loop Trail.







Level of Traffic Stress (LTS)

Level of traffic stress measures the suitability of a roadway for bicyclists. MetroPlan Orlando has adopted two LTS metrics, the *Mixed Traffic Assessment LTS* and the *Bicycle Facility Present LTS*. These metrics are utilized as part of this Active Transportation Plan to measure bicycle infrastructure suitability.

LTS Score Descriptions

- **1** Comfortable for the general population; suitable for an 8-year-old.
- 2 Stress that most adults can tolerate, including those interested but concerned.
- **3** Multilane traffic comfortable for enthused and confident bike riders.
- 4 Uncomfortable for most bike riders; acceptable for trained and confident riders.

LTS – Mixed Traffic Assessment

The mixed traffic assessment methodology primarily measures the stress of using the street as a bicyclist and does not reflect biking conditions on trails that are separated from the roadway. Roads with higher speeds and more travel lanes are given a higher (less suitable) LTS-MTA score.

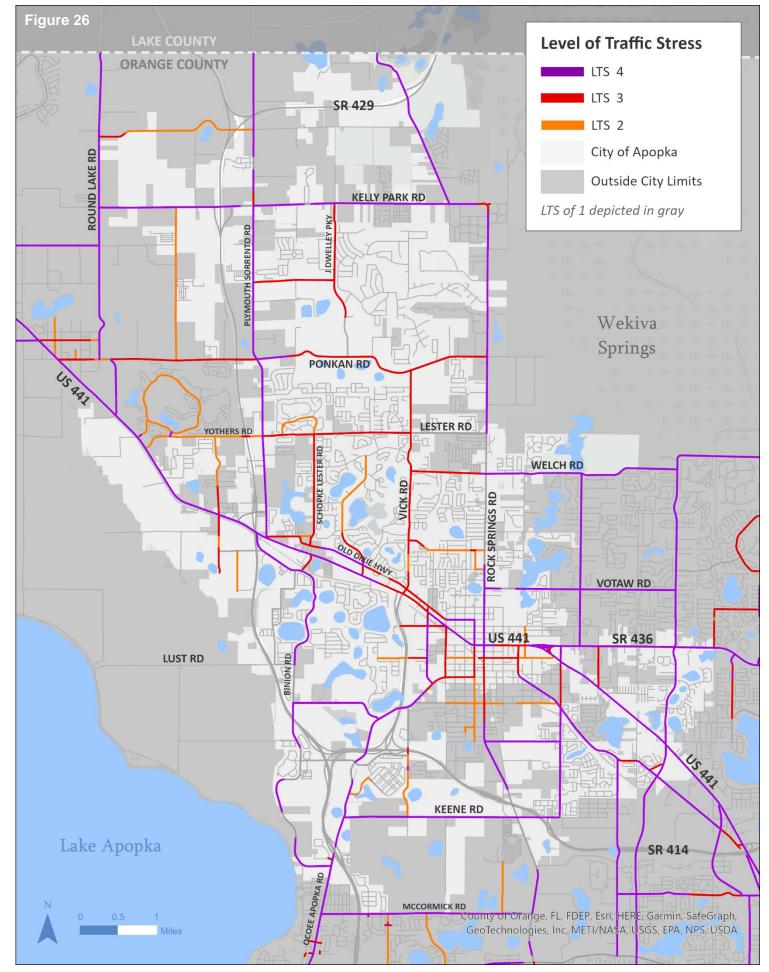
Roadways with on-street bike lanes and wide off-street paths do not use the mixed traffic assessment method. Instead, these segments use the "bicycle facility present" method, which is described below.

LTS – Bicycle Facility Present Assessment

The second LTS variant is calculated in areas where a trail or on-street bicycle lane is present. Separated trails are scored '1'. The score for on-street bike lanes and 4-foot-wide paved shoulders depends on the speed, daily traffic, and lane counts of the roadway. As part of this plan, bike lanes are not recommended on roadways where the speed limit exceeds 30 due to stress levels, usability and safety concerns.

Using LTS for this Plan

LTS scores are used in this plan to assess corridors prior to trail placement and to identify areas for on-street bike lanes. It is important to note that off-street trails reduce the LTS of roadway segments to '1'.



Bike/Ped Crash Hot Spots

Figure 27 shows bicycle and pedestrian crash hot spots involving an automobile from 2013 through 2022. With the exception of the existing West Orange Trail segment located adjacent to Rock Springs Road, the existing and previously proposed trail network is located away from locations where bicycle and pedestrian crashes have been known to occur. These maps will guide the project team in identifying future trail corridors.

Higher-Risk Roadways with Existing & Proposed Trails

West Orange Trail Adjacent to Rock Springs Road

This corridor is pictured below. Numerous safety countermeasures have been incorporated into this stretch of trail, including crossing signage.



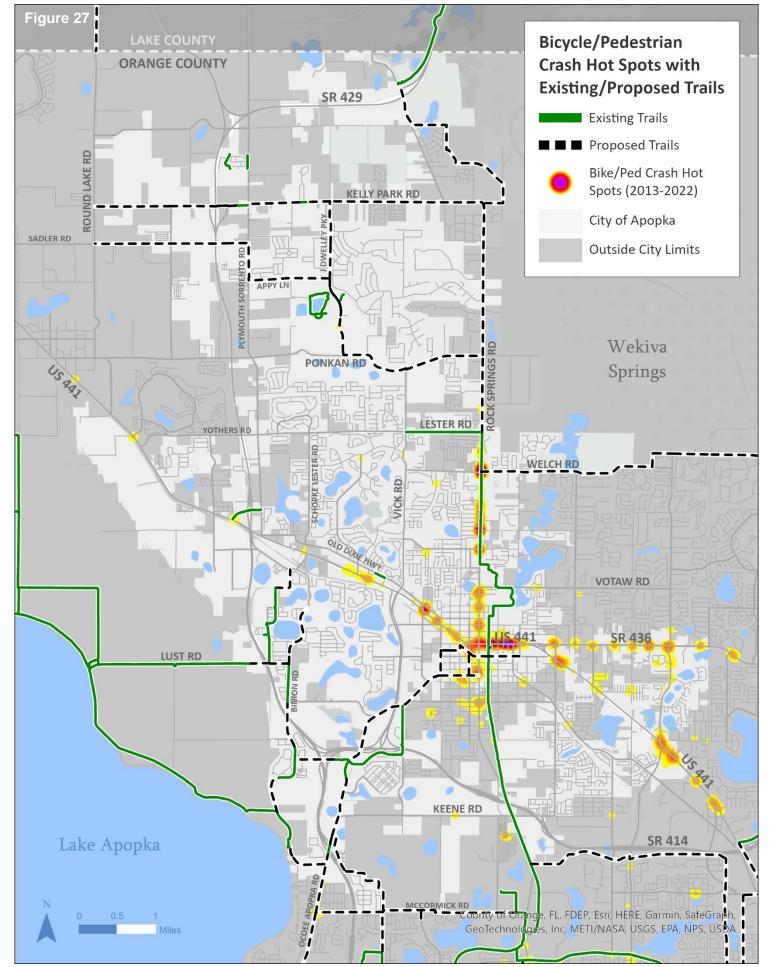
Higher-Risk Intersections with Existing & Proposed Trail Crossings

Additional critical intersections are identified and analyzed in Section IX of this report.

Rock Springs Road & Welch Road *

* Reconstruction and safety enhancements are planned at this intersection.

- Rock Springs Road & E. Sandpiper Street
- Rock Springs Road & Martin Street



Level of Shading

Along Existing, Funded & Previously Proposed Trails

Tree shading increases comfort for cyclists and ensuring the presence of shade trees is integral to the trail planning process. Figure 28 depicts current tree coverage along existing and previously-proposed trail segments located in close proximity to the city.

Existing Trail Segments with Low Levels of Shading

The following existing trail segments have been identified to have low levels of shading. These areas are revisited later in the report as part of the tree shading plan.

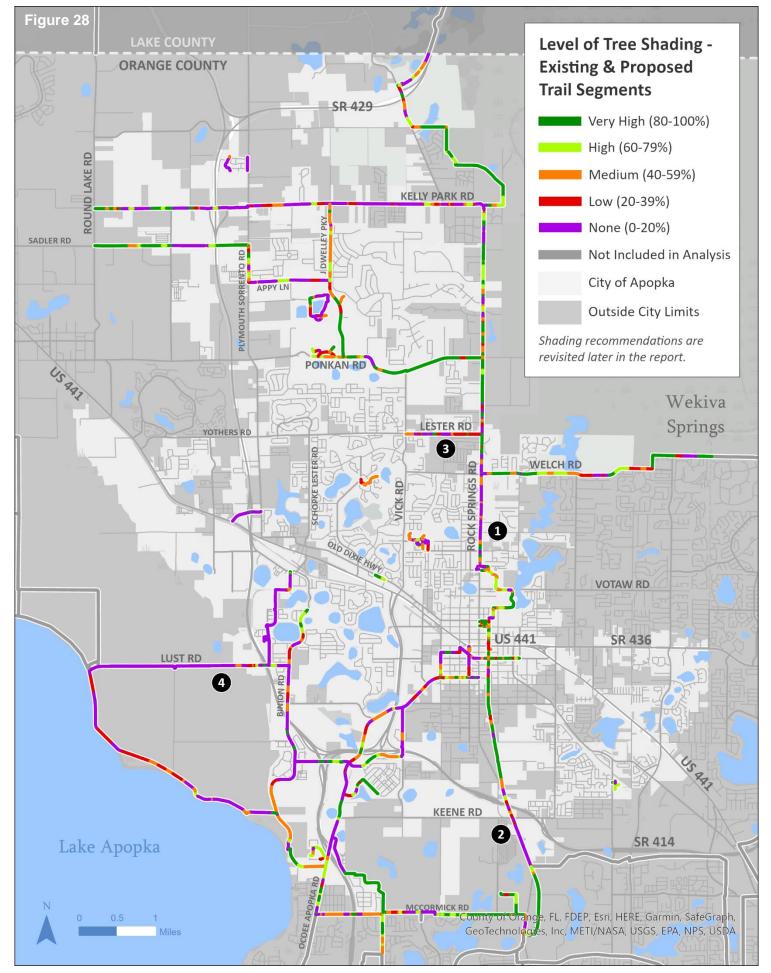
- West Orange Trail Summit Street to Welch Road (1)
- West Orange Trail Stone Road to Keene Road (2)
- West Orange Trail Spur on Lester Road (3)
- Lake Apopka Loop Trail on Lust Road (4)











Trail Profiles

Existing & Previously-Proposed Trails

Profile Types

Figure 29 depicts the profile of trails located within and in close proximity to the city. On-network trails are located adjacent to the road and are broken down into two categories – separated from road and no road separation. A short segment of the West Orange Trail at Martin Street is the only non-separated trail segment. Other profile types include the trail overpass over U.S. 441 (Main Street) and trails located off of the roadway network.

Trail Design & Placement Standards

The following trail standards are recommended on roadway-adjacent trails citywide. Section IX of this report includes a Trail Standard Guide with more detailed guidance on trail design and placement.

Facility Width

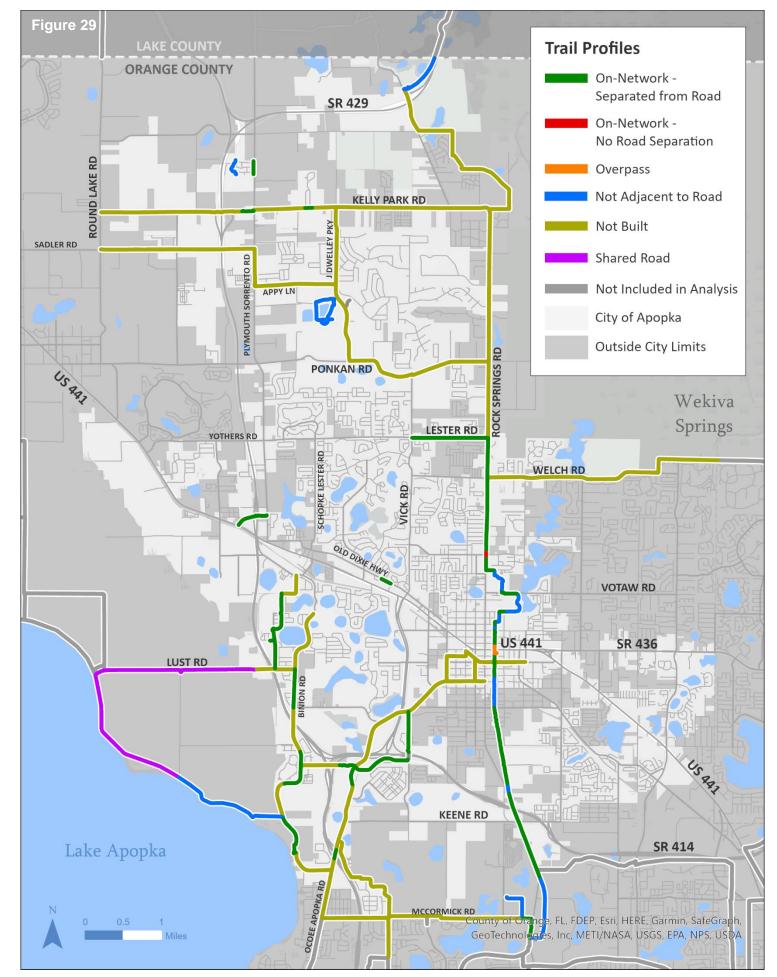
- 10 to 14 feet in width if right-of-way is available.
- 8 feet in width (minimum) if right-of-way is constrained.

Roadway Separation

- Separated from the roadway by at least 10 feet if right-of-way is plentiful to allow for shade tree placement in the buffer area.
- Separated from roadway by at least 5 feet if right-of-way is constrained.

Street Crossings

- Trail crossings over roadways with high traffic counts should employ high visibility crosswalks in addition to MUTCD W11-15 and/or W11-15a signage.
- Crossings over multilane roadways with speed limits less than 40 miles per hour and daily traffic counts not exceeding 12,000 are candidates for Rectangular Rapid Flashing Beacons, according to the U.S. Bureau of Transportation Statistics.



Future Roadway Construction Projects with Proposed Trails

Binion Road

Binion Road will be redesigned from Lust Road to Harmon Road, with roundabouts located at Lust Road, Boy Scout Road, Hooper Farms Road and Harmon Road. A trail will be placed on the west side of the road.

Ocoee-Apopka Road

Ocoee-Apopka Road will be widened to four lanes between Keene Road and Michael Gladden Boulevard. A trail will be built on the wide side of the road.

Kelly Park Road

Kelly Park Road will be altered from Rock Springs Road to State Road 429. The scope of this project has not yet been finalized.

Sadler Road

Sadler Road will be extended from Plymouth Sorrento Road to Round Lake Road as part of the Kelly Park Interchange development.

Corridors Not Suitable for Future Trail Placement

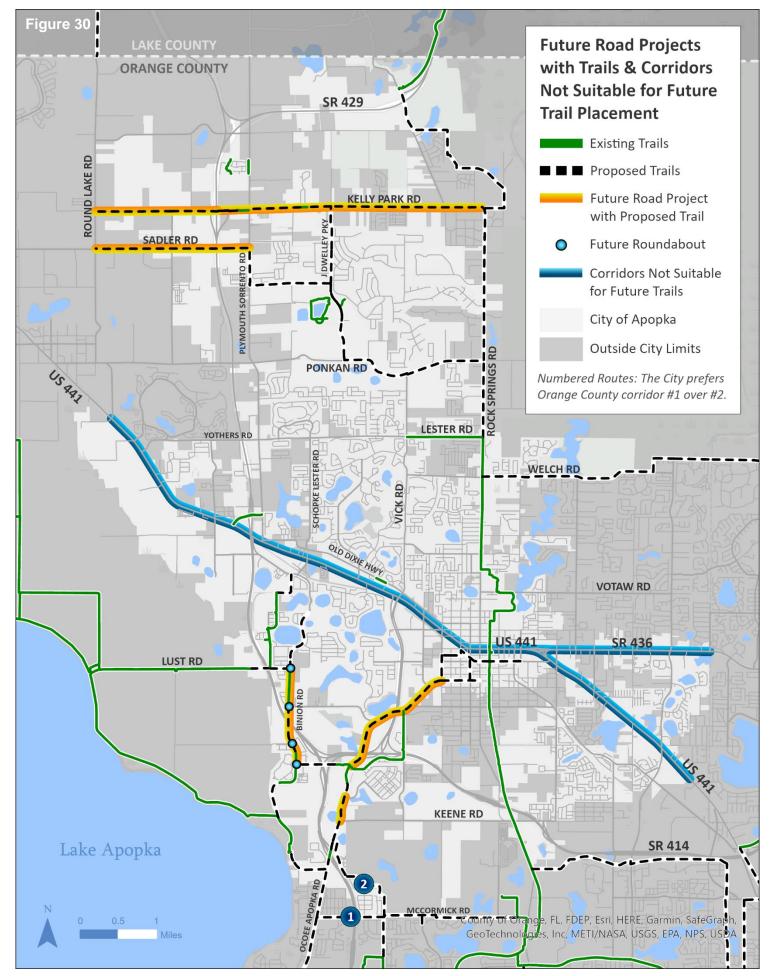
U.S. 441 (Main Street) and State Road 436

These roadways are high-traffic, high-speed corridors with numerous driveways that create vehicle turning movements. Future trail crossings across U.S. 441 and S.R. 436 should be limited due to high costs and traffic stress concerns.

Analysis of Previously Proposed Corridors

Following a review of the maps included in this section of the report, the project team will utilize all of the previously-identified proposed trail corridors identified in previous analyses with the exception of the Central Avenue segment from Michael Gladden Boulevard to Station Street in downtown Apopka. This segment will shift east to Park Avenue, as described later in this plan. Future trail corridors will aim to enhance citywide connectivity using these routes as a starting point.

Orange County will be constructing the segment labeled with #2 in Figure 30, however segment #1 will remain in this plan as a potential direct connection to Ocoee Apopka Road. Segment #1 will not be prioritized in this plan.



IV. Gaps & Opportunities

For Identifying Future Bicycle and Pedestrian Connections

Connecting to Activity Centers

Economic Development through Active Transportation

This active transportation plan is a tool for the City of Apopka to use to enhance bicycle and pedestrian connections to economic centers. If successful, transporting itself will become more immersive in the city, and riders will be able to experience all the city has to offer on a more personal level.

To achieve success in this regard, biking routes must be comfortable and, perhaps more importantly, must connect to the right places in order for non-automobile trips to be worthwhile. A primary objective of this plan is to identify those right places and to connect them seamlessly and comfortably for bicyclists and pedestrians. This section of the report identifies these economic hubs.

A second measure of success will be improving economic activity at major commercial centers, and making those commercial centers stand out from alternatives throughout the region. While connecting to the correct economic centers is important, having critical infrastructure such as bike racks and public spaces near the economic centers will ensure that they are both *a place that people want to go and a place that people want to stay.*

Big-Picture Idea #1 Create comfortable routes that connect to the right places, making them worthwhile for people to use. **Big-Picture Idea #2** Improve economic activity at major hubs by improving public spaces and offering biking amenities.



Enhancing Eco-Tourism through Active Transportation

The City of Apopka is in a perfect position to leverage eco-tourism opportunities through active transportation, as the city is flanked by large recreational and ecological areas that attract visitors from around the country.

To the west, Lake Apopka and the Lake Apopka Wildlife Management Area offer outstanding bird watching and other activities, while Wekiva Springs State Park and Rock Springs Run State Reserve offer camping, water activities, and pristine springs that are among the best in the world. It is critical that the city build a trail network that connects these amenities in a direct manner that places downtown Apopka as a central hub between the two areas.

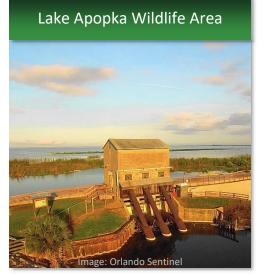
The city's existing and future park network will also be critical in identifying future trail routes. The Lake Apopka Wildlife Area and Wekiva Springs are five miles apart, so reducing riding exhaustion and allowing for leisure areas in between will be best accomplished using parks. As part of this plan, all of the city's parks are identified and will guide the development of future trail corridors. Additionally, city-owned sites for potential future park development are identified.

Big-Picture Idea #1 Connect the Lake Apopka and Wekiva Springs areas, using downtown Apopka as a central hub.

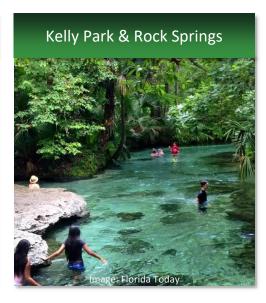
Big-Picture Idea #2 Connect to parks and recreation between large ecological areas to allow for rest and leisure.

Critical Natural & Recreational Area Connections

The following natural and recreational areas have been identified as critical to the city's active transportation network. Additional parks are shown in Figure 31.



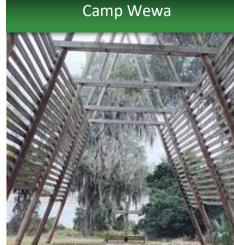




Hagnolia Park

Flying Club & Old Landfill





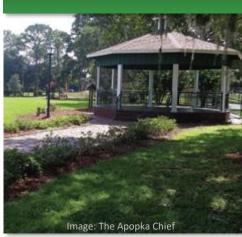
Alonzo Williams Park

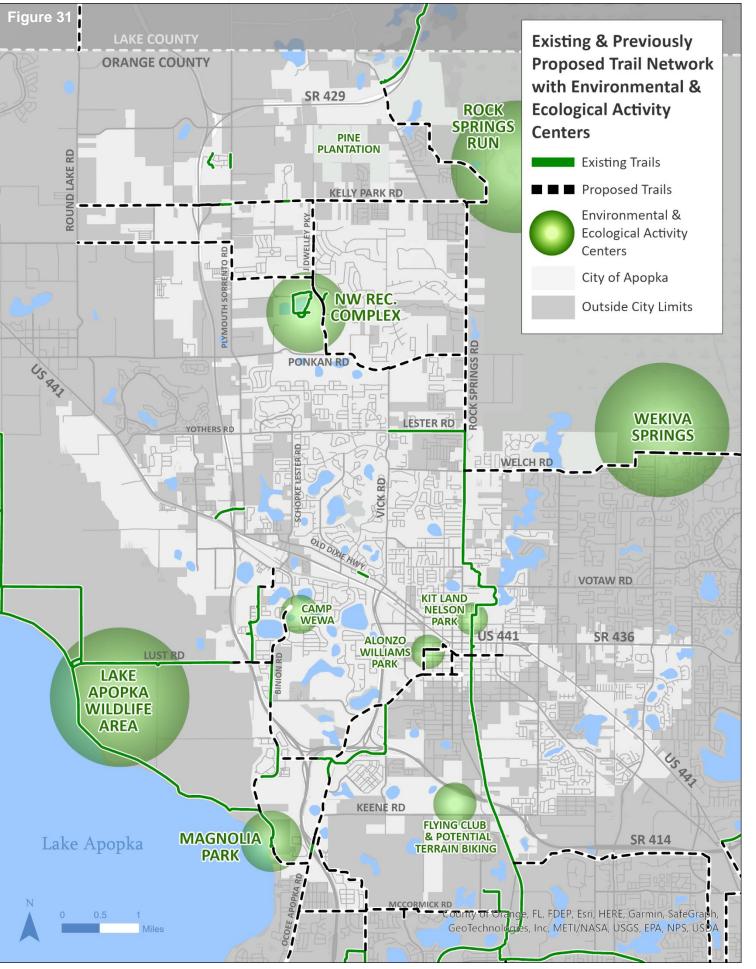


Northwest Recreation Complex



Kit Land Nelson Park

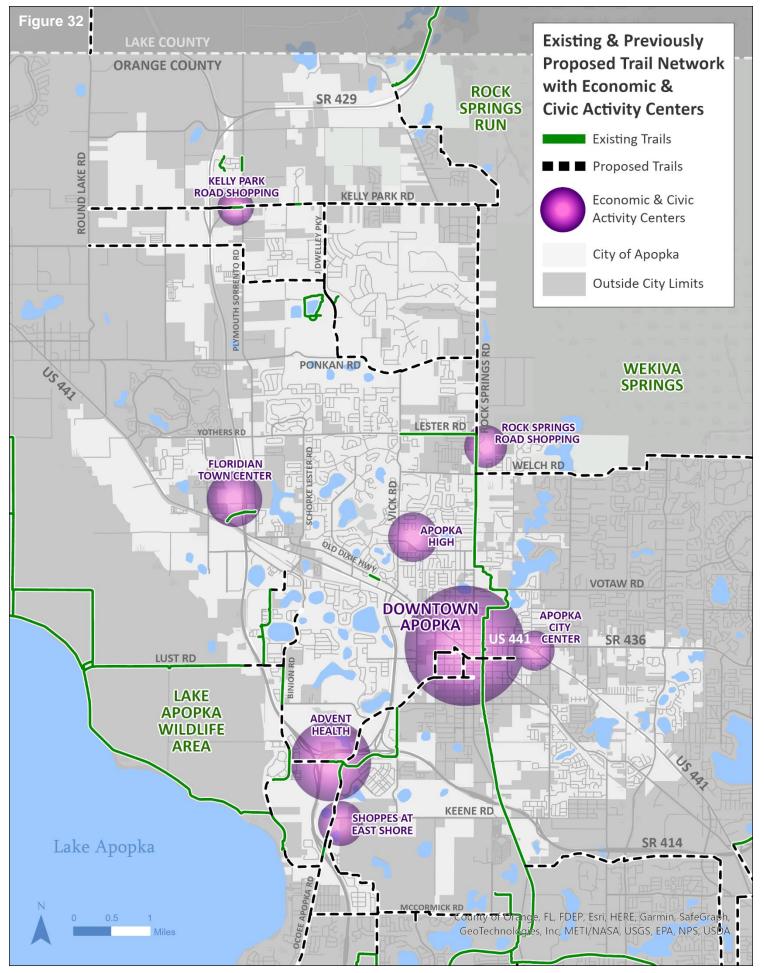




Critical Economic & Civic Area Connections

The following economic and civic areas have been identified as critical to the city's active transportation network. Other large hubs are also shown in Figure 32.





Economic Point of Interest Analysis

This section of the report provides an analysis of proximity to economic point of interest types in order to 1) identify activity near the existing and previously planned trail network, and 2) identify connectivity gaps to economic centers. The text narrative below describes connectivity gaps and potential connections.

Grocery Stores

- Gaps in Trail Coverage: All grocery stores in the vicinity of the city are located adjacent to the existing and planned trail network with the exception of grocery stores located off of U.S. 441 and S.R. 436. The latter grocery stores are connected with on-street bike lanes.
- Potential Connections: A north/south connection to the new Publix on Kelly Park Road would connect numerous neighborhoods in north central Apopka, including Rock Springs, Wekiva Run and Arbor Ridge.

Markets & Convenience Stores

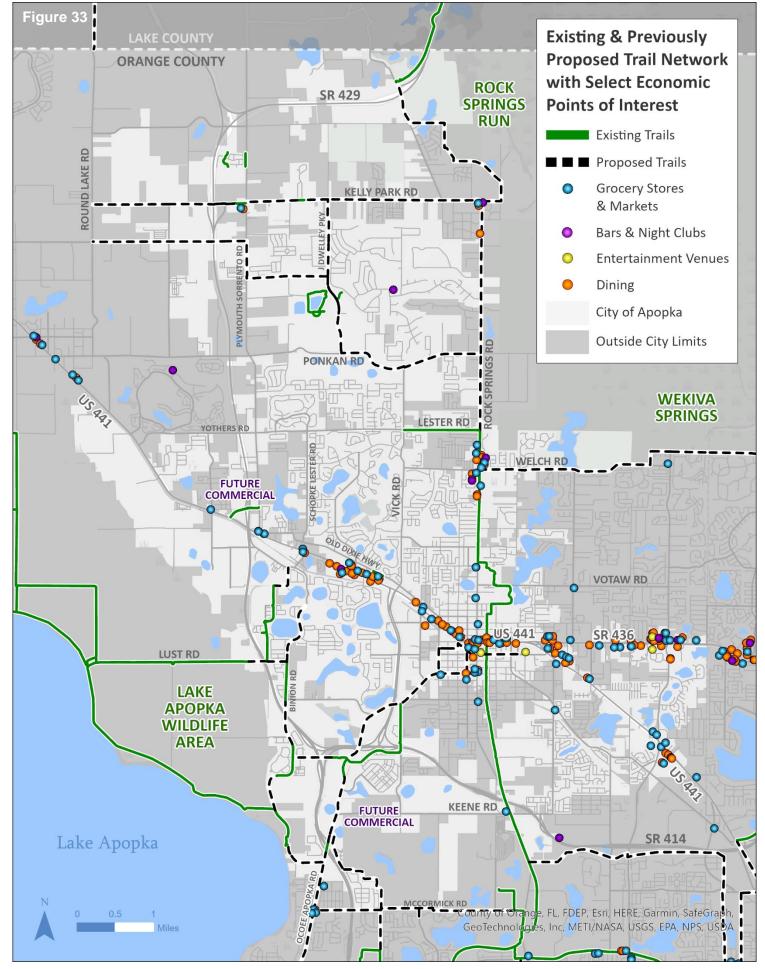
- Gaps in Trail Coverage: Similar to grocery stores, markets and convenience stores located off of S.R. 436 and U.S. 441 are connected via existing onstreet bike lanes.
- Potential Connections: A Binion Road or Grand Avian Parkway trail connection to U.S. 441 would enhance connectivity to numerous markets.

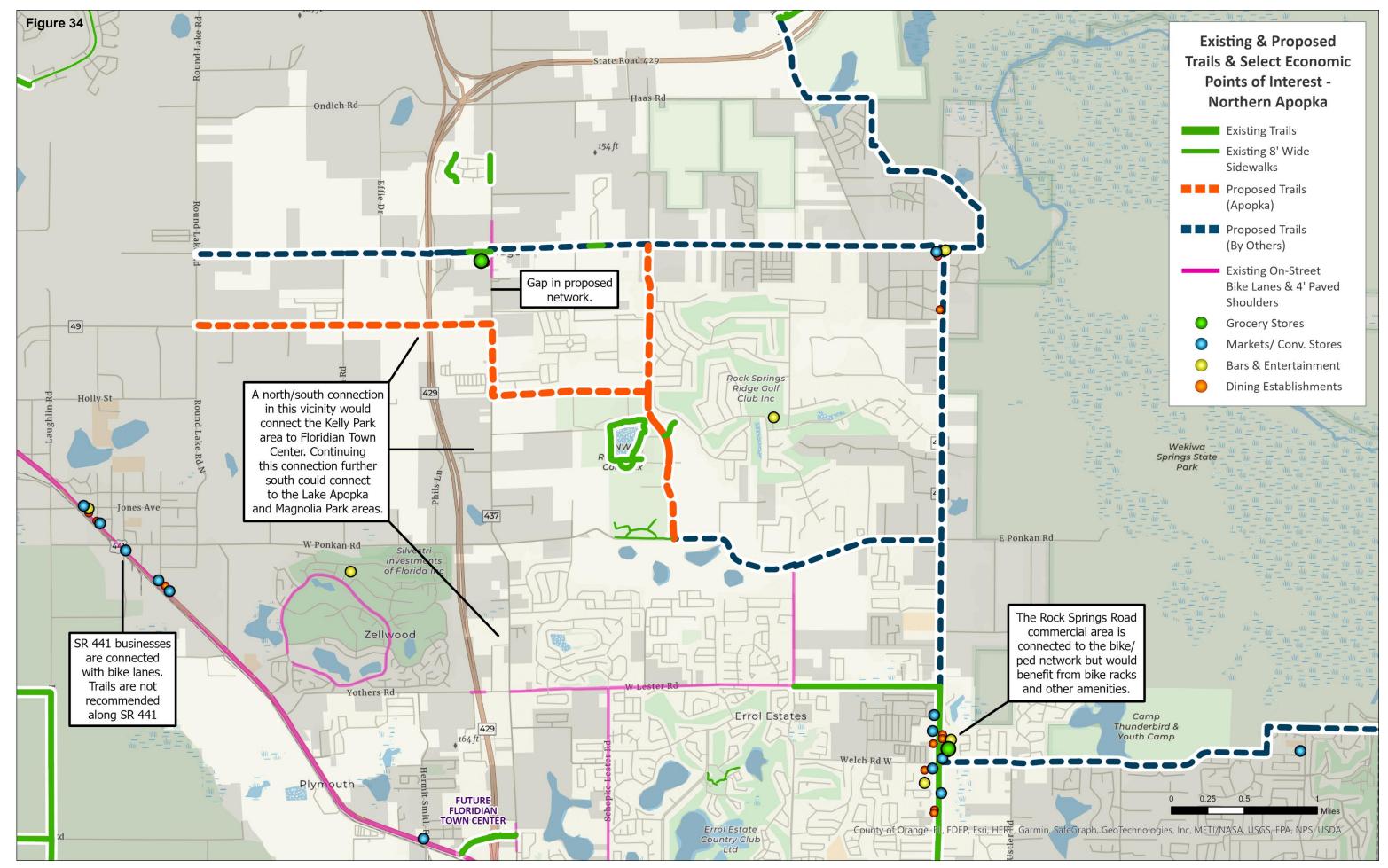
Dining Establishments

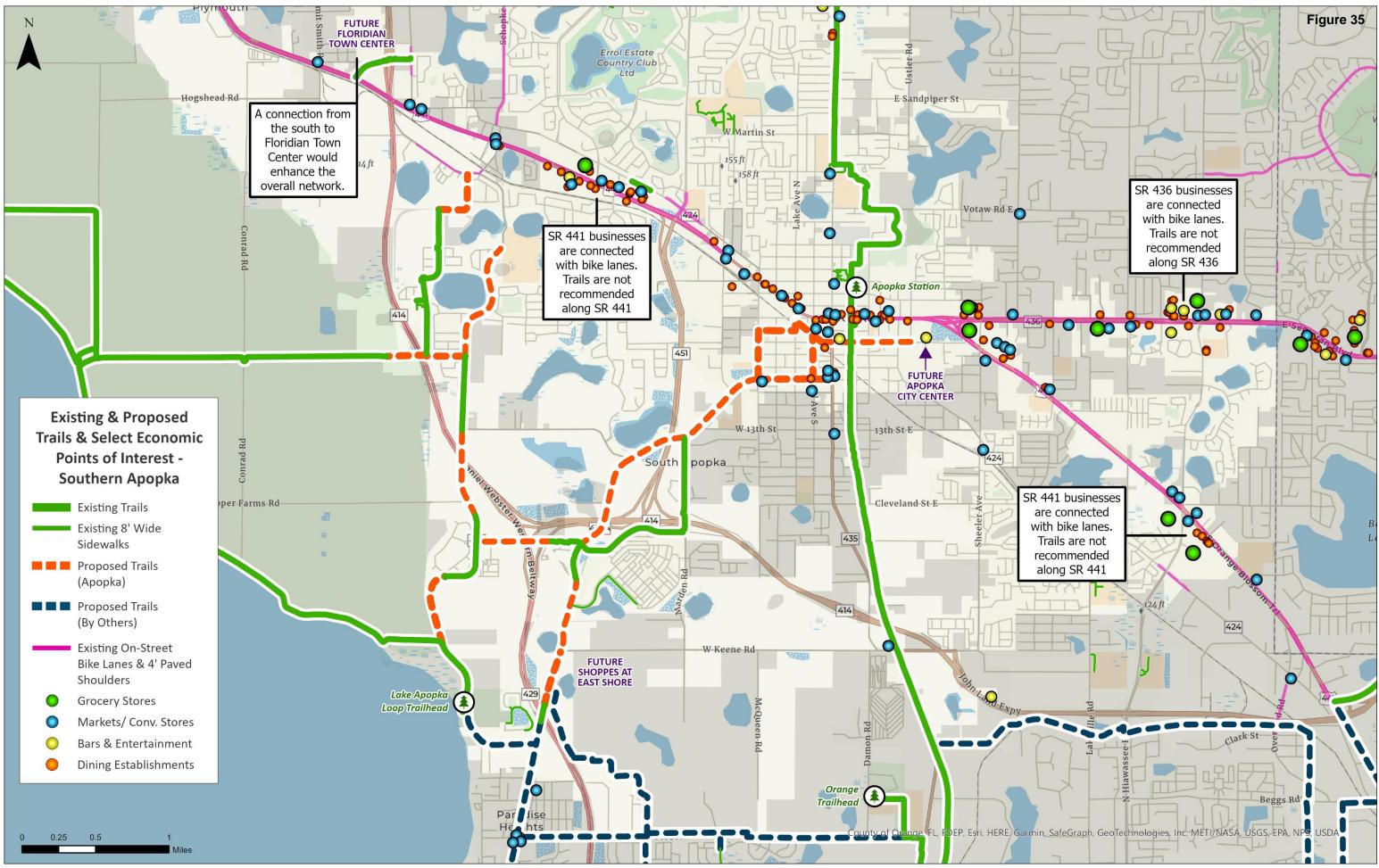
- Gaps in Trail Coverage: Most dining establishments are located adjacent to U.S. 441, S.R. 436 and Rock Springs Road and have existing bike connections.
- Potential Connections: Current connections to dining are sufficient. Alternative areas for mixed use development and trail connections in the downtown area could include 2nd Street, 5th Street and 6th Street.

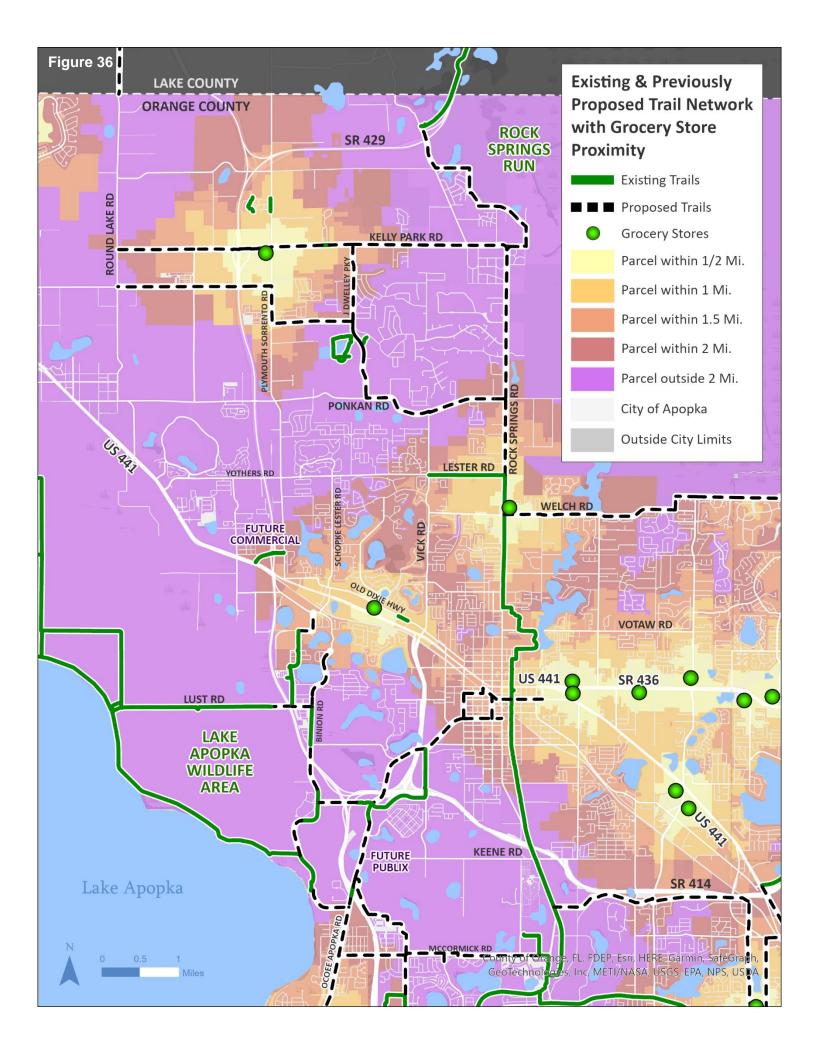
Entertainment & Bars

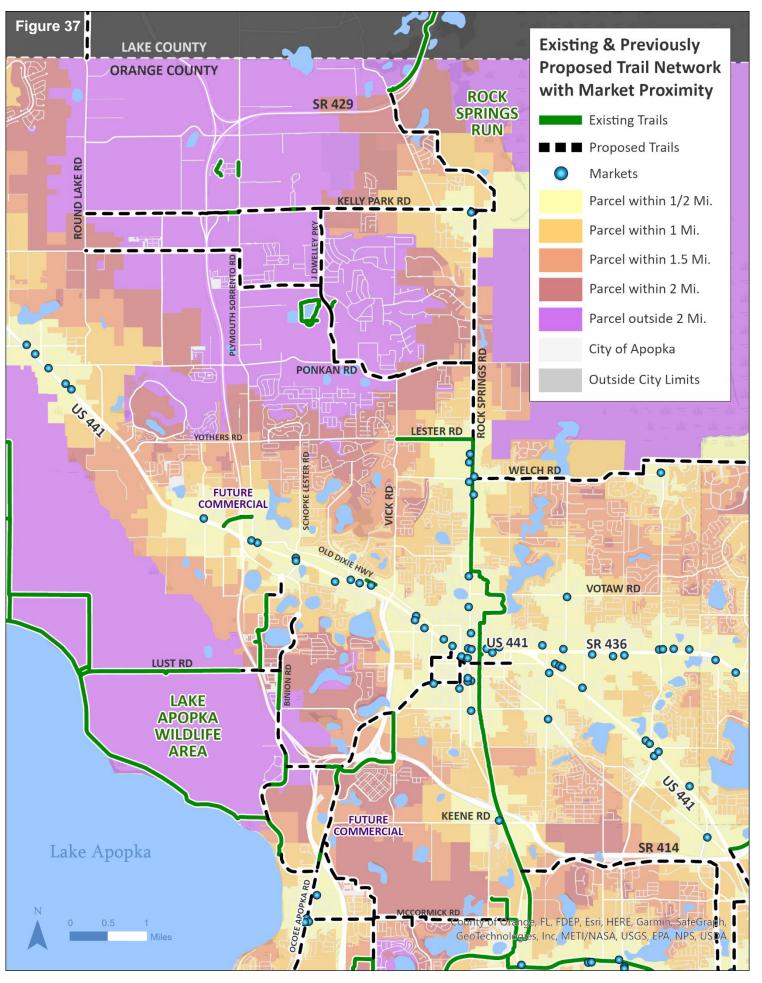
- Gaps in Trail Coverage: Two golf course clubhouse bars are not connected to the bike/ped network. Constructing trails in these established neighborhoods would be difficult but will be addressed in public meetings.
- Potential Connections: See potential dining connections note above.

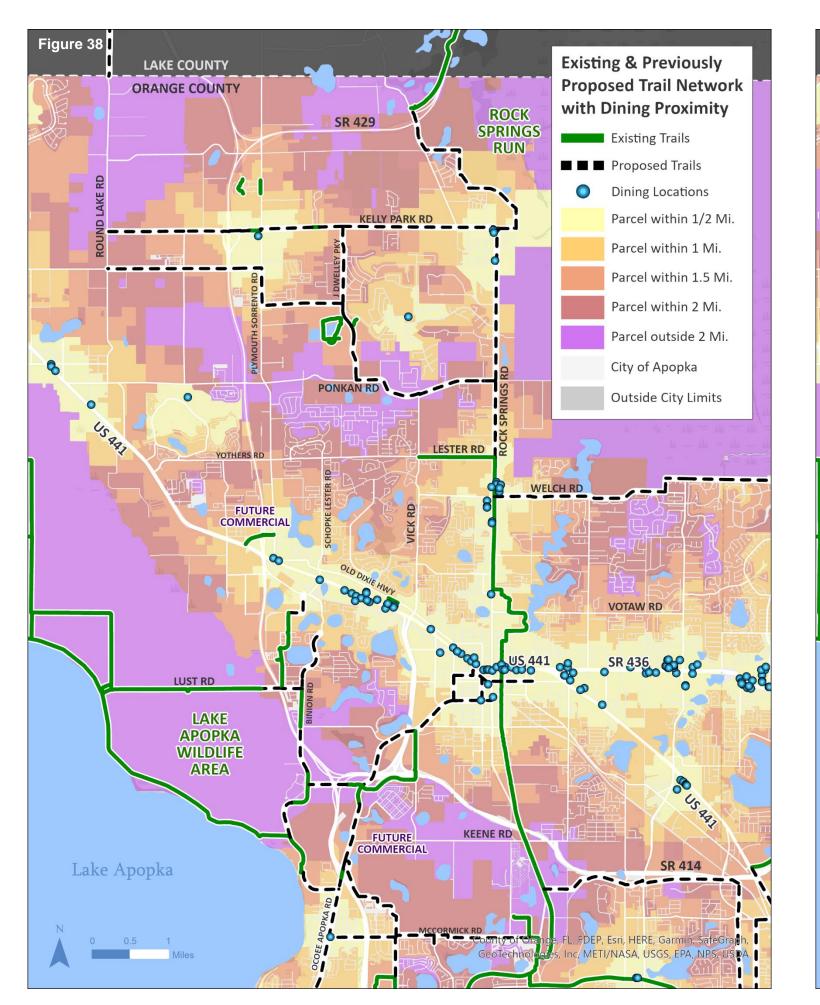


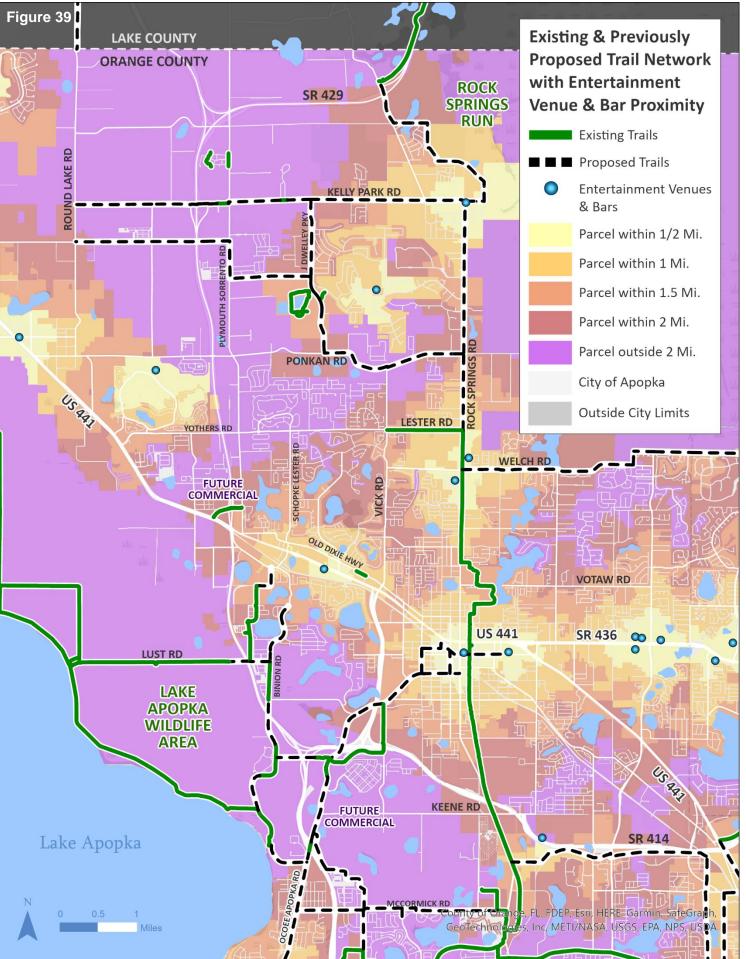












Cultural Point of Interest Analysis

This section of the report provides an analysis of proximity to cultural point of interest types in order to 1) identify activity near the existing and previously planned trail network, and 2) identify connectivity gaps to economic centers. The text narrative below describes connectivity gaps and potential connections.

Public Schools

Gaps in Trail Connections: Most public schools in the city are located adjacent to or in close proximity to the existing and previously proposed trail network. However, 3,000-student Apopka High School is a large school that is located approximately 0.8 miles (walking and biking distance) from the West Orange Trail. A spur connection or signed bike route to the high school could yield increased student cycling rates.

Community Centers

Gaps in Trail Connections: All three community centers in the city are located adjacent to or within a two-minute walk of the existing and previously proposed trail network.

Libraries

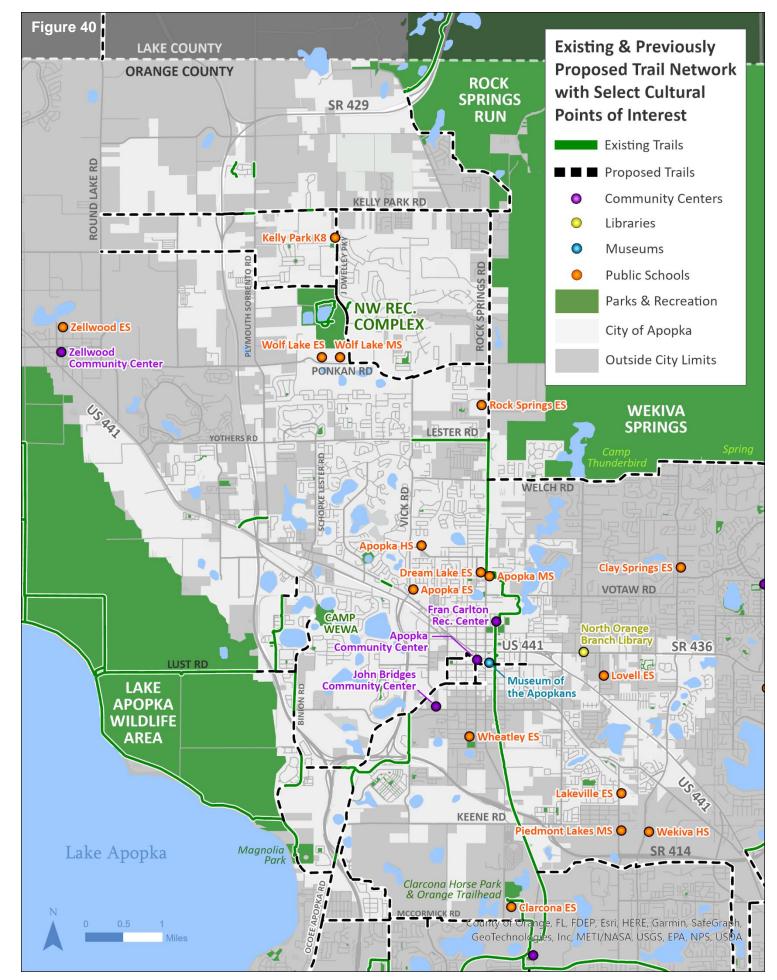
Gaps in Trail Connections: The North Orange Branch Library is located adjacent to S.R. 436 and is accessible from the trail network via on-street bike lanes.

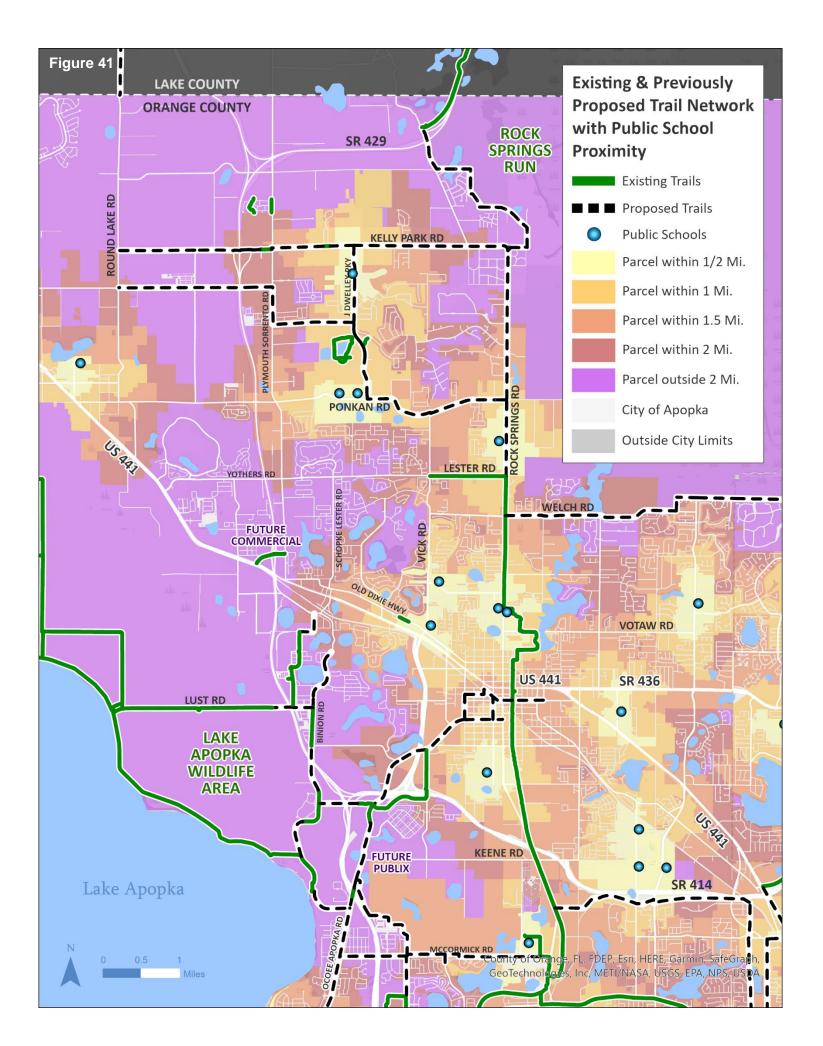
Museums

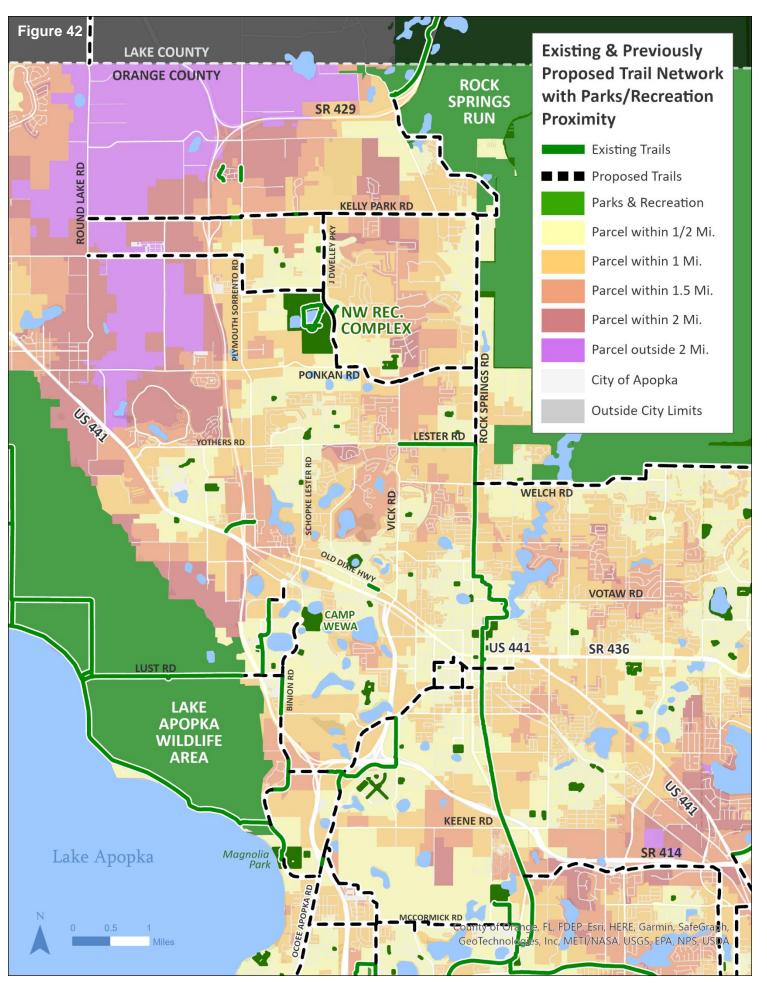
Gaps in Trail Connections: The Museum of the Apopkans is located adjacent to the West Orange Trail. Apopka City Hall contains historic information and is also located within a 2-minute walk of the West Orange Trail.

Public Parks

Gaps in Trail Connections: The existing and previously planned trail corridors connect to all of the major parks in the city. Directionally, a trail gap exists from the Northwest Recreation Complex in the north to the Lake Apopka Wildlife Area and Magnolia Park to the south. A north-south connection in this area would complete a loop system connecting all of the city's major parks.







Synopsis of Network Gaps

Trail Tiers

As part of this plan, two tiers of biking trail networks will be developed – *signature trails* and *connector trails*. Signature trails are intended to connect to major trail systems including the Wekiva Trail to the north, the Lake Apopka Loop Trail, and the West Orange Trail/ Coast-to-Coast Trail corridor. Connector trails are intended to act as intermediary connections to the signature trail system that expand trail access to the entire community. The gap analysis in Figure 43 identifies gaps in the current trail network.

Trail Gap Analysis

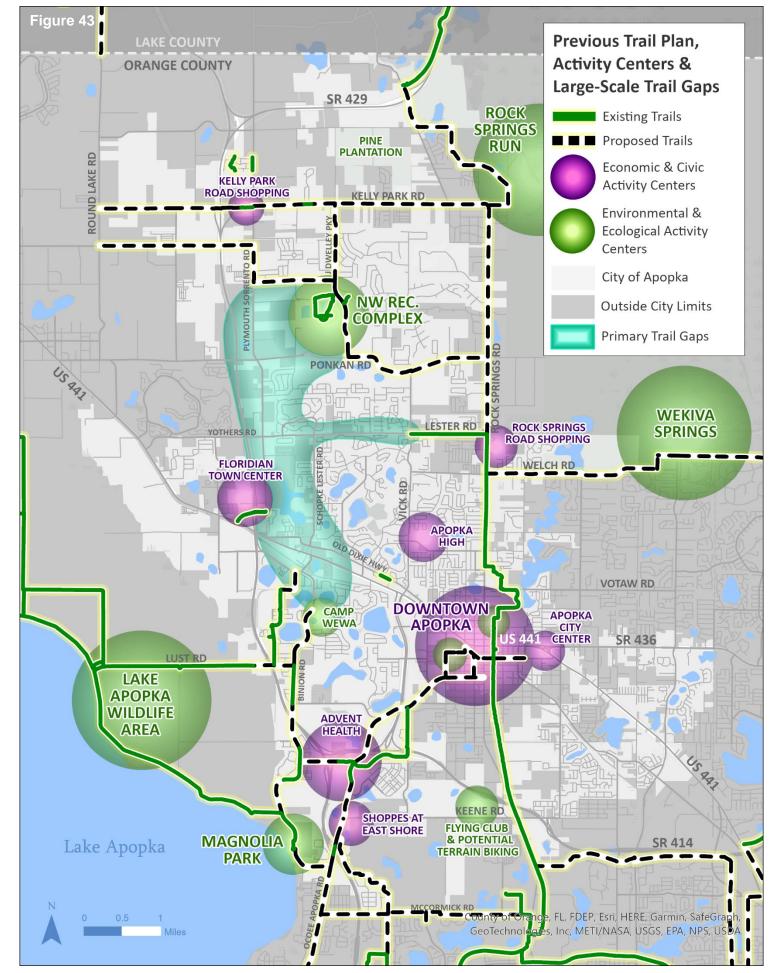
The main gap in the city's existing and currently-proposed trail network spans the west side of the city from the Camp Wewa area to the newly-built commercial area at Kelly Park Road near State Road 429. While the West Orange Trail and planned spurs service much of the eastern side of the city, such a network does not allow for north-south movement on the west side of the city. There is no direct connection to the Lake Apopka Wildlife Area or Magnolia Park from northern Apopka.

Secondary Trail Connections

The project team will identify signature trail corridors, analyze publicly-owned property and right-of-way availability, and collect input from city residents prior to identifying connector trail locations.

Tertiary Connections

- On-Street Bike Lanes: Following the identification of final trail corridors, the project team will propose an expanded on-street bike lane system to work as a secondary source of bike/ped connectors.
- Bike Boulevards/ Sharrows: Sharrows, which are shared streets with bicycle pavement markings, are placed on low stress local roadways and serve as designated bike routes to connect to the bike lane and trail system. Potential sharrow locations will be identified as part of this report.



Opportunity Analysis

Utilizing Publicly-Owned Property

The publicly-owned parcels in Figure 44 were analyzed by the project team for potential use in supporting the active transportation network.

Uses of Publicly-Owned Property

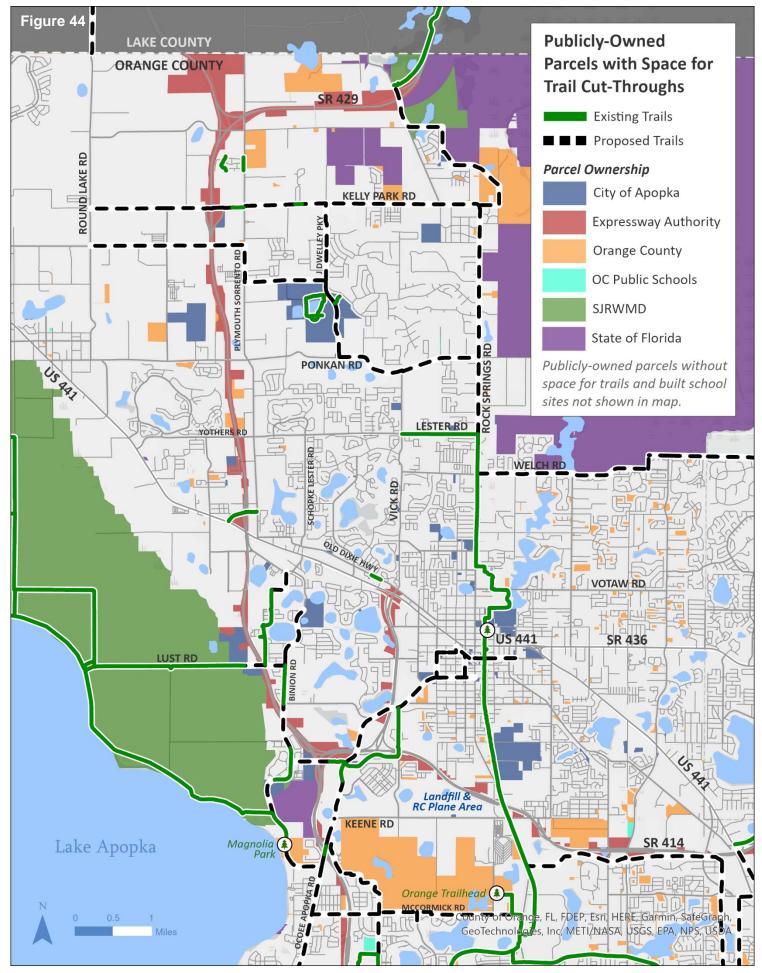
Two primary uses were identified for publicly-owned property:

- Trailheads: Trailheads offer resting areas, recreational activities, and shopping activities in some circumstances. While parks and mixed-use developments will serve as proposed trailheads as part of this plan, four city-owned properties have been identified as candidate trailhead properties and are shown on the next page.
- Trail Cut-Throughs: Publicly-owned parcels can be used for trail cut-throughs that deviate from the roadway network. No parcels were identified for cut-throughs as part of this analysis.

Pictured: Magnolia Park

Magnolia Park serves as a trailhead for the Lake Apopka Loop Trail. It features numerous recreation options and serves as an example for future trailheads.





Candidate Trailhead Locations

Numerous parks are connected to the existing and previously proposed trail network, including Wekiva Springs, Rock Springs, the Northwest Recreation Complex, and Camp Wewa. These parks will serve as future trailheads and are analyzed later in this report as such. Additionally, the Floridian Town Center and Apopka City Center are rational trailhead locations where retail will be present in the future.

In addition to these locations, three city-owned properties and one County-owned property have been identified as potential trailheads. They are pictured below.

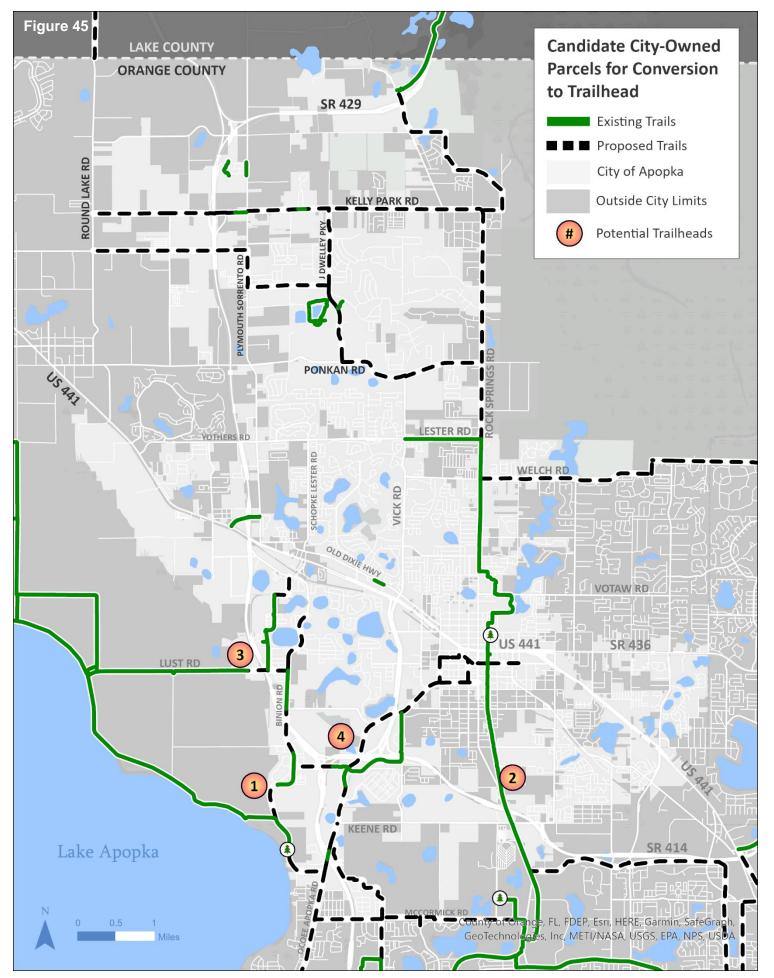


3080 Snowden Road (City-Owned)









Opportunity Analysis Utilizing Public Right-of-Way

Road-Adjacent Right-of-Way

Figure 46 depicts constrained corridors in the city, highlighting the number of sides of the road where the available right-of-way does not exceed 12 feet (measured from the curb/ edge of the road to the nearest parcel boundary). The project team has reviewed this dataset for each side of the road in order to develop a short list of potential future trail corridors.

North-south roads in the vicinity of the identified trail gap area on the west side of the city generally have more than 12 feet of right-of-way available on both sides of the road. Portions of Plymouth Sorrento Road and Schopke-Lester Road have limited right-of-way that require review by the project team.

Two roadway projects with planed trails currently show limited right-of-way, including Kelly Park Road and Ocoee-Apopka Road. As part of these roadway projects, right-of-way will be acquired to make way for new travel lanes and trails.



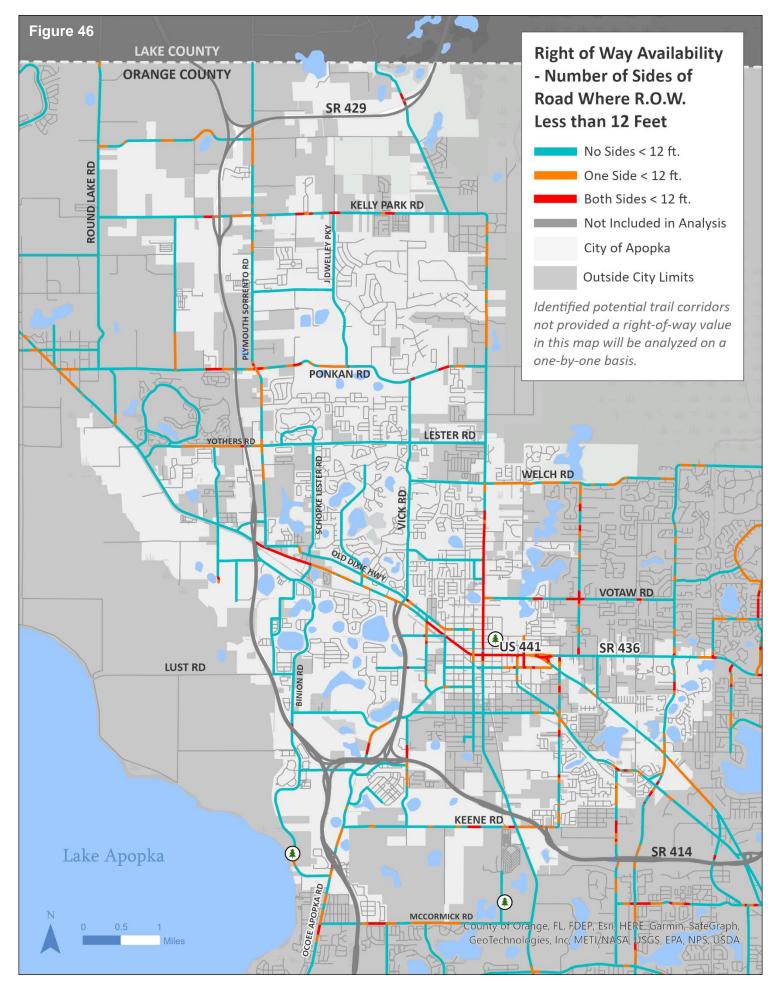
Powerline & Utility Right-of-Way

A review of powerline and utility right-of-way in the city did not reveal any opportunities for trail placement.



Railroad Right-of-Way

A review of railroads in the city did not reveal any opportunities for trail placement. The Florida Central Railroad is an active corridor that is highly regulated.



V. Community Outreach

Engaging the public, stakeholders and elected officials.

Public Workshop

A public workshop was held at the Apopka Community Center to gather feedback from the community on previous trail proposals and to identify opportunities for new bicycling infrastructure within the City. As part of this meeting, opportunity areas and problem areas were identified by residents. Feedback is summarized below and mapped in Figure 47.

Identified Opportunity Areas

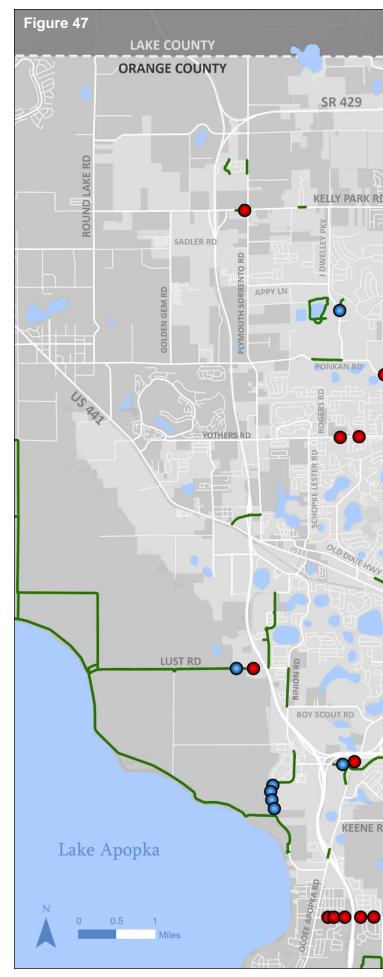
- Connecting to Rock Springs, Kelly Park and the Wekiva Trail
- Trails along Binion Road
- Improved trail amenities in the downtown area
- Completing the Lake Apopka Loop Trail
- Connecting to the Northwest Recreation Complex
- Connecting to AdventHealth Apopka

Identified Problem Areas

- Sidewalk coverage in the southeast portion of the City
- Keene Road, McCormick Road and U.S. 441
- Lester Road trail abruptly ends at Vick Road

Survey Results

A public survey was offered to residents to gauge interest in trail amenities and to gather general information on where people like to ride their bike in the City. The results of the survey are located in Appendix I of this report.



Public Input Summary Existing Trails Areas where residents ride their bike to or would like to ride their bike to in the future Areas where residents would like to ride their bike but it is currently difficult to City of Apopka Outside City Limits WELCH R **VOTAW RD** SR 436 ounty of (FL, FDEP, Esri, HERE, Garmin, SafeGraph USGS EPA NPS USDA GeoTechr

Stakeholder Meetings

Stakeholder meetings with numerous groups allowed the project team to identify partnership opportunities and gather up-to-date information on funding for trail projects in and around the City. Feedback is summarized below.

Pine Plantation Opportunity

Pine Plantation is an area north of Kelly Park Road in north Apopka with parcels owned by the Trustees of the Internal Improvement Trust Fund (State of Florida TIITF) and Orange County. The land is managed by the Florida Department of Environmental Protection and has been identified as a partnership opportunity for the City to add nature trails. These trails will be included as "Third Party Concepts" in the trail prioritization portion of this report. The site is shown in Figure 48.

Old Keene Road Landfill Opportunity

The old landfill located at 255 West Keene Road has been identified as a second partnership opportunity for the City. The site is envisioned as a mountain biking location and is listed as a "Third Party Concept" in the trail prioritization portion of this report. The site is shown in Figure 49.

Orange County Trail Construction

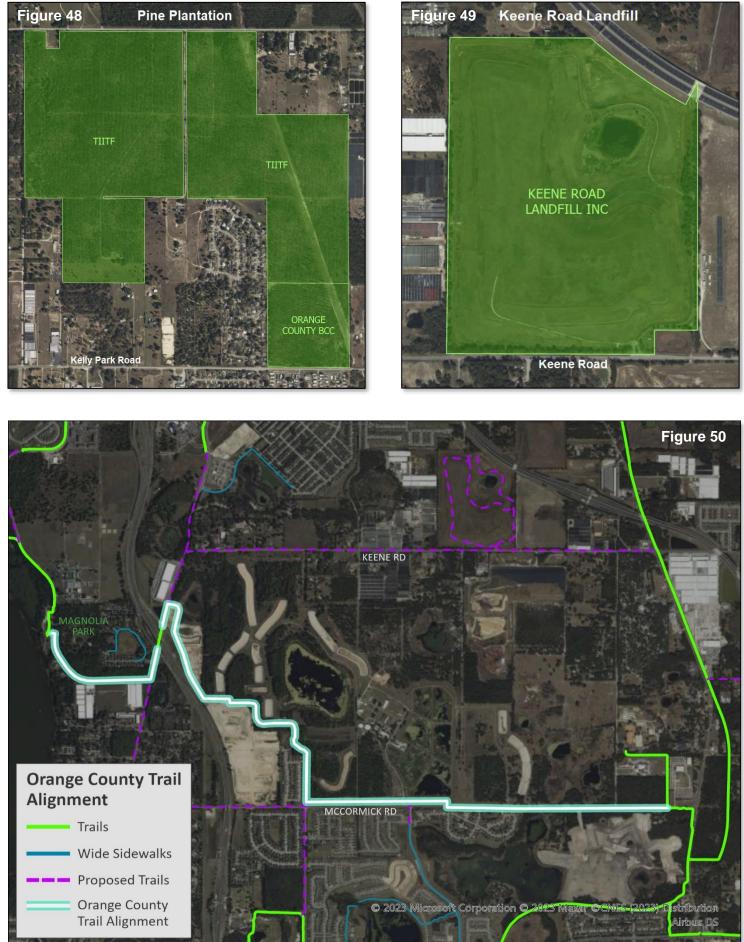
Orange County will begin construction in the 2023-to-2024-time frame to complete the McCormick Road connection from the West Orange Trail to Magnolia Park. The trail alignment is highlighted in Figure 50.

State Funding of Wekiva Trail Construction

The State of Florida has provided partial funding for the West Orange Trail northern extension to connect to the Wekiva Trail north of the City. This trail will travel along Rock Springs Road to Kelly Park Road, and then traverses off of the roadway network before meeting up with the Wekiva Trail along Mount Plymouth Road. This trail is listed in the trail prioritization portion of this report as "Funded by Others".

Kelly Park Road Improvements

The MetroPlan Orlando Priority Project Listing (PPL) includes widening and improvements to Kelly Park Road. This project will include a trail and is included as a trail priority as part of this report.





VI. Proposed Network

Trail, bike lane, bike route, and sidewalk gap projects to enhance the City's active transportation network.

Analysis of Previously-Proposed Trails

Following public and stakeholder outreach and a review of the Existing Conditions portion of this study, the project team finalized the route prioritization process. This included a review of all previously proposed trails by the City. The information below summarizes the major outcomes of this analysis.

Orange County Connection to Magnolia Park

The soon-to-be-constructed Orange County trail along McCormick Road to Magnolia Park completes a much-needed east-west connection from the West Orange Trail to the west side of the City. This new connection increases the feasibility of future trail connections along Binion Road and Ocoee Apopka Road and places those corridors in the Priority 1 category for trail placement.

Healthy West Orange Trail Connection Proposals

Healthy West Orange Trail Connection proposals are located outside of the City and will not be prioritized as part of the City's trail plan, but were used to inform the location of high priority trail routes. These trail alignments will be mapped alongside the newly proposed trail network for full context.

Other Previously-Proposed Routes

All trail alignments proposed in the previous Apopka trail master plan will be included in this plan with the exception of the South Central Avenue alignment from Michael Gladden Boulevard to Station Street. This proposed trail will be shifted east to Park Avenue in order to create a gateway into the downtown area and to allow for easier access the West Orange Trail.



Trail Route Selection Criteria

Low Traffic Counts

Trail proposals are located on roadways with daily traffic counts below 20,000. This ensures that levels of stress along the trail network and at crossings are low.

Regional Connectivity

Connecting to the West Orange Trail, Wekiva Trail and the Lake Apopka Loop is critical. This will enable Apopka residents to travel around the region and for visitors to connect to Apopka.

Right-of-Way Availability

Trail proposals have been analyzed and screened for rightof-way availability and countermeasures are identified in areas where right-of-way is constrained.

Local Directness

Proposed routes are direct and do not involve numerous turning movements in order to maximize navigability and to reduce the need for comprehensive signage along the route.

Proposed Trail Network

The newly-developed trail proposals are grouped into priority and partnership buckets and are shown in Figure 51 to the right. Priority 1 trails are the top priority trails, to be built in the near term, while Priority 2 trails are longer term projects that can be built as property is developed or funding becomes available. County Partnership trails are to be built in coordination with Orange County.

The maps on the following pages provide more information associated with each route, including side-of-road and labeled segment ID's.

Priority 1 Trails

Priority 1 Trails are shown in red and are the highest-priority trail proposals in this plan. These trails have a shorter-term time frame than the other trails included in this plan and can be built alongside new development or with new funding.

Priority 2 Trails

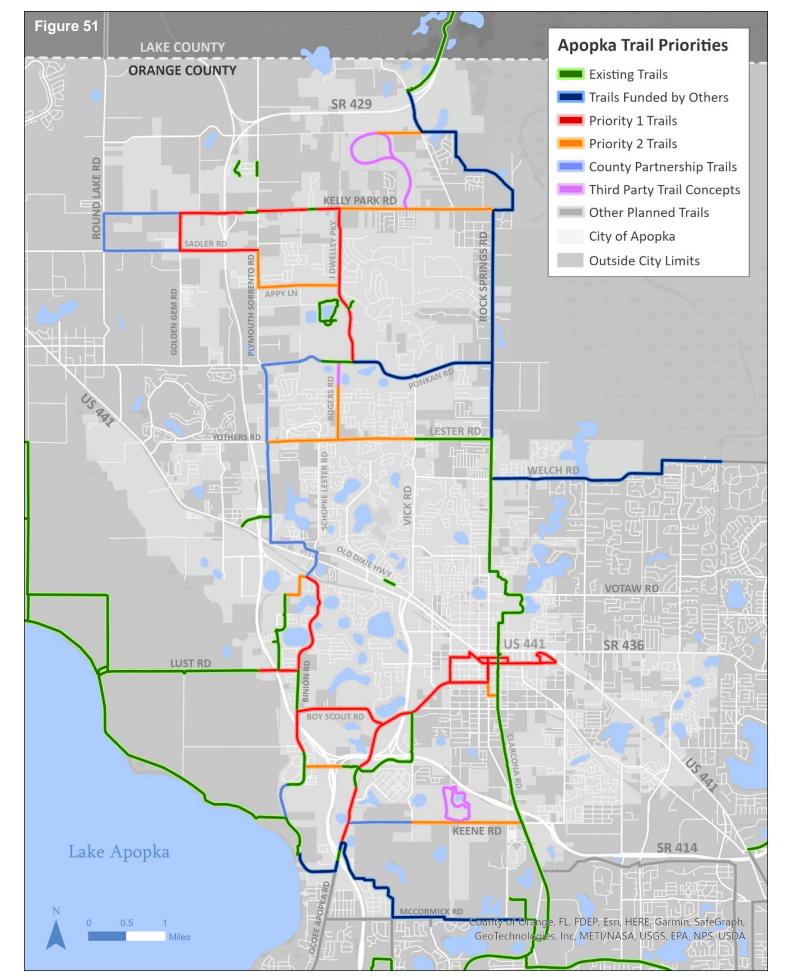
Priority 2 Trails are shown in orange and are the second priority of routes in this plan. These trails have an intermediate time frame for implementation and can be developed alongside new development or when funding becomes available.

Orange County Partnership Trails

County Partnership Trails are shown in light blue and require coordinated work between the City and Orange County. The Binion Road and Avian Pointe to Northwest Recreation Complex trails are high priority.

Third Party Trail Concepts

Third Party Trail Concepts are shown in pink and require coordinated work with third parties. These trail alignments are conceptual and were identified through coordination with project stakeholders.



Signature Trail Network

The signature trail network represents a vision to create a primary, named trail network that connects to the West Orange Trail. Two priority 1 trails (segments 1A and 1B) and two partnership trails (segments P1 and P2) are included in this network. These segments connect with trails funded by others (shown in dark blue) to complete a loop network through the City. It is recommended that the City name this network and develop themed signage along the route. Potential names for this trail network include the Apopka Trail, the Ahapopka Trail, or another local name.

Priority 1 Trails | Segment ID's

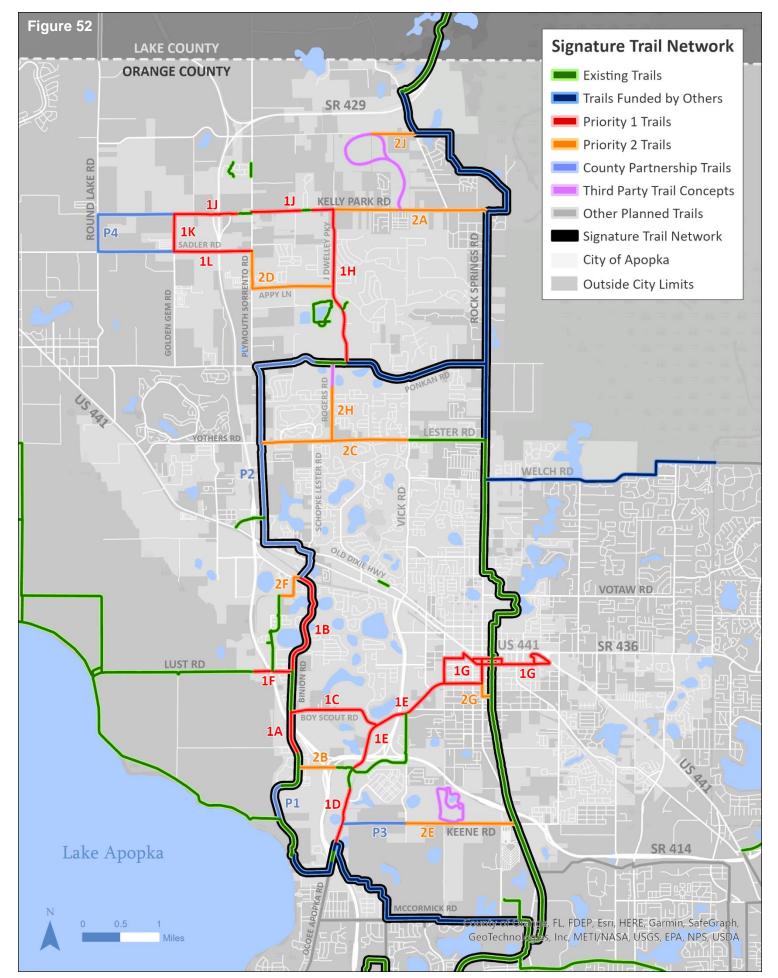
- Segment 1A: Binion Road, south of Hooper Farms Road to Boy Scout Road (signature)
- Segment 1B: Binion Road, Lust Road to Orange Avenue (signature)
- Segment 1C: Boy Scout Road, Binion Road to Ocoee Apopka Road
- Segment 1D: Ocoee Apopka Road, south of Keene Road to AdventHealth
- Segment 1E: Ocoee Apopka Road, Harmon Road to Michael Gladden Boulevard
- Segment 1F: Lust Road, Binion Road to Lake Apopka Loop Trail
- Segment 1G: Downtown Network, multiple streets
- Segment 1H: Jason Dwelley Parkway, Kelly Park Road to Ponkan Road
- Segment 1J: Kelly Park Road, Jason Dwelley Parkway to Golden Gem Road
- Segment 1K: Golden Gem Road, Kelly Park Road to Sadler Road
- Segment 1L: Sadler Road Extension, Plymouth Sorrento Road to Golden Gem Road

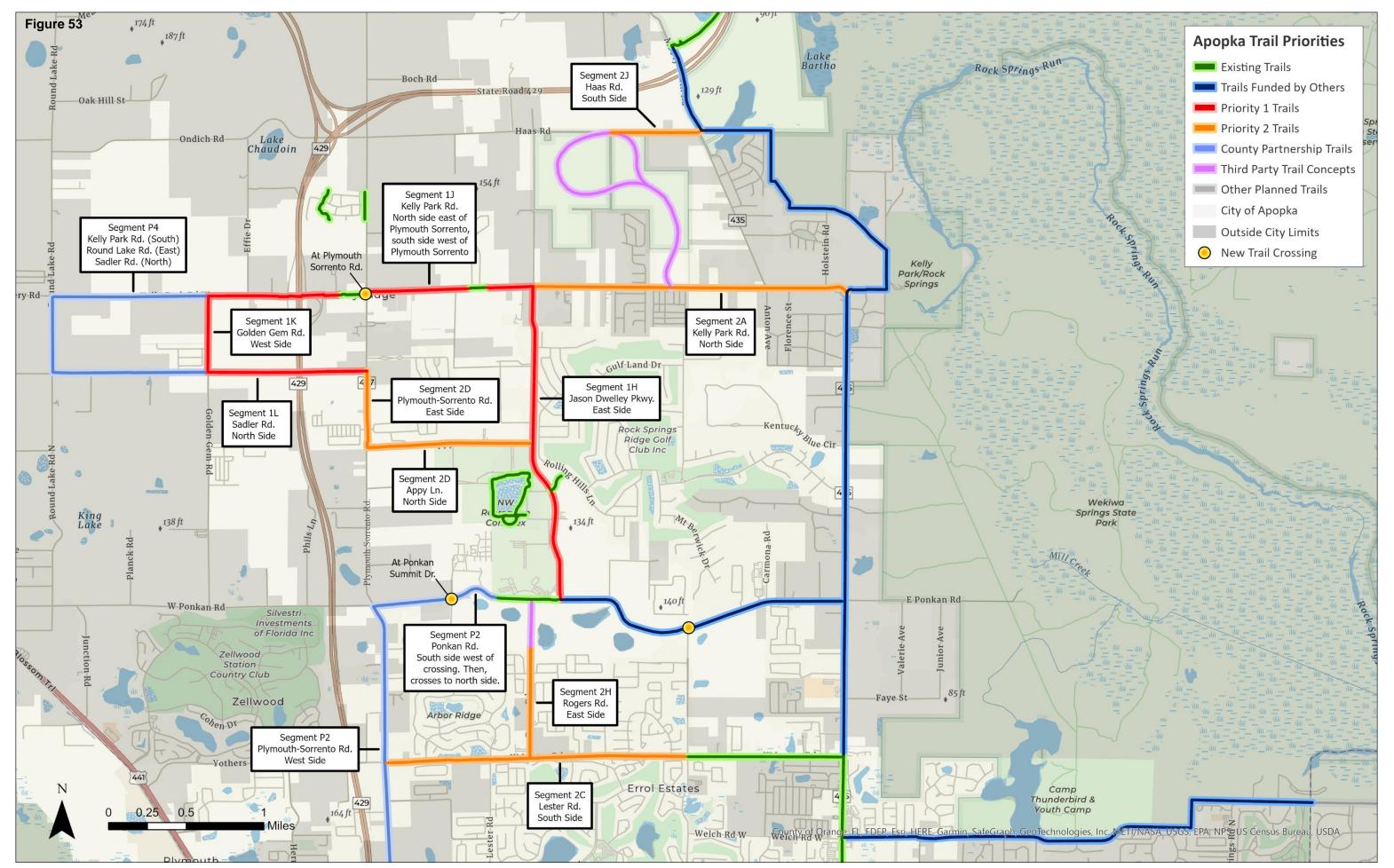
Priority 2 Trails | Segment ID's

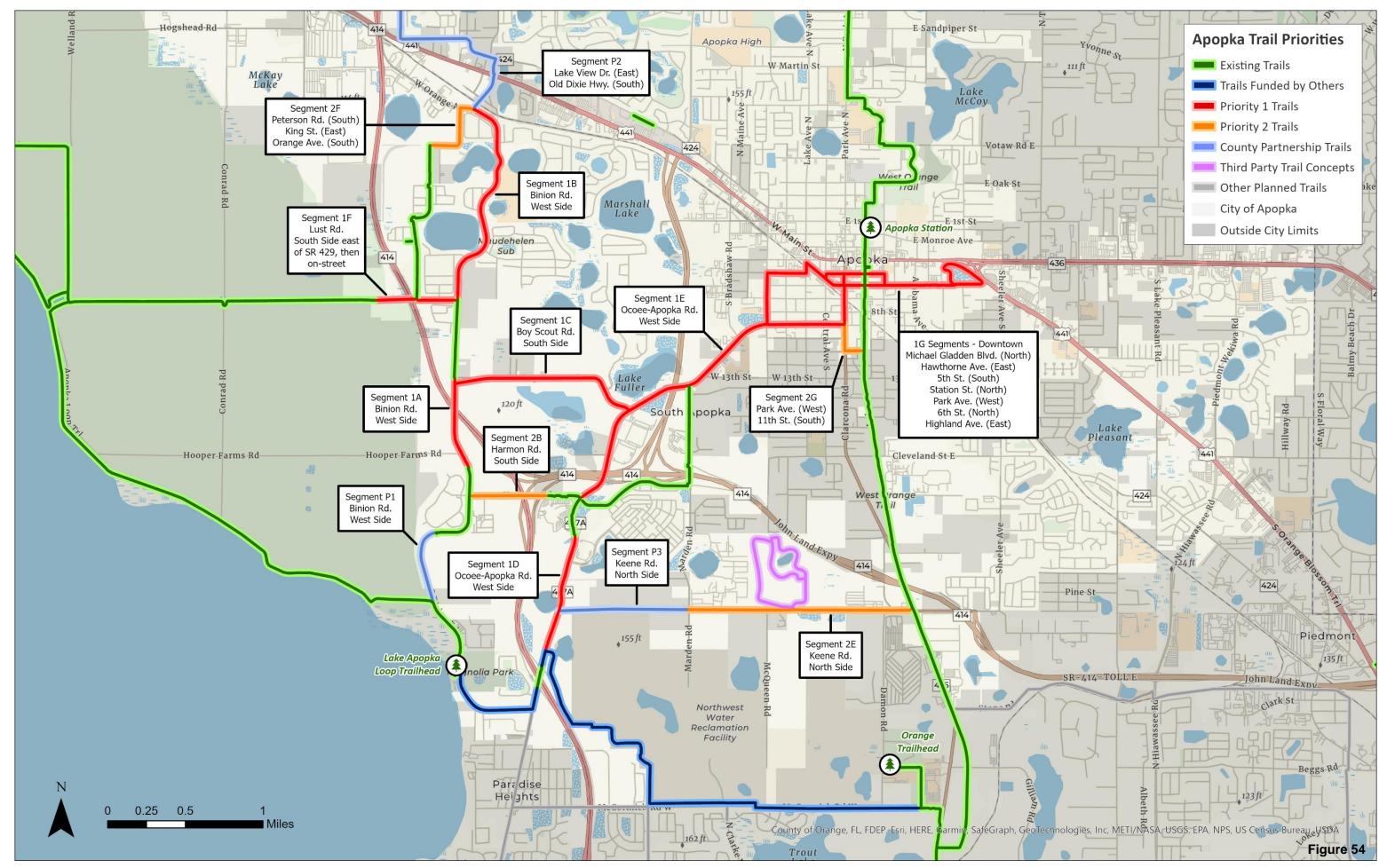
- Segment 2A: Kelly Park Road, Rock Springs Road to Jason Dwelley Parkway
- Segment 2B: Harmon Road, Binion Road to AdventHealth
- Segment 2C: Lester Road, Plymouth Sorrento Road to Vick Road
- Segment 2D: Appy Lane and Plymouth Sorrento Road, Jason Dwelley Pkwy. to Sadler Road
- Segment 2E: Keene Road, Marden Road to West Orange Trail at Clarcona Road
- Segment 2F: King Street and Orange Avenue, Peterson Road to Lake View Drive
- Segment 2G: Park Avenue and East 11th Street, East 9th Street to West Orange Trail
- Segment 2H: Rogers Road, Lester Road to end of public right-of-way
- Segment 2J: Haas Road, Mt. Plymouth Road to Pine Plantation Right-of-Way

County Partnership Trails | Segment ID's

- Segment P1: Binion Road, Lake Apopka Loop to south of Harmon Road (signature)
- Segment P2: Avian Pointe to Northwest Rec. Complex, multiple streets (signature)
- Segment P3: Keene Road, Marden Road to Binion Road
- Segment P4: Kelly Park Interchange Loop, multiple streets







Constrained Right-of-Way Analysis

An analysis was undertaken to measure the available right-of-way from the roadway edge (curb) to adjacent parcel boundaries along all proposed trail corridors. This analysis identified areas where roadway redesign or limited property acquisition may be required. Using this information, countermeasures along proposed trail segments where available right-of-way is less than 10 feet are examined.

This analysis excludes areas where new roadway projects will be undertaken by the City and areas where Orange County and the State of Florida are responsible for trail construction. Figure 55 shows the areas where right-of-way is constrained.

Segment #1: Kelly Park Road (east of Plymouth Sorrento Road)

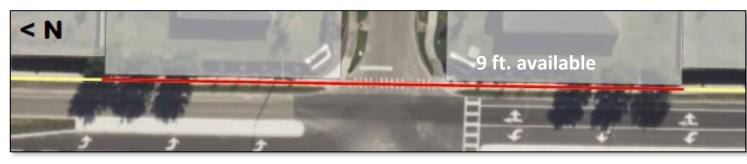
Countermeasure: Reduce trail width to 8 feet or utilize paved shoulder area.

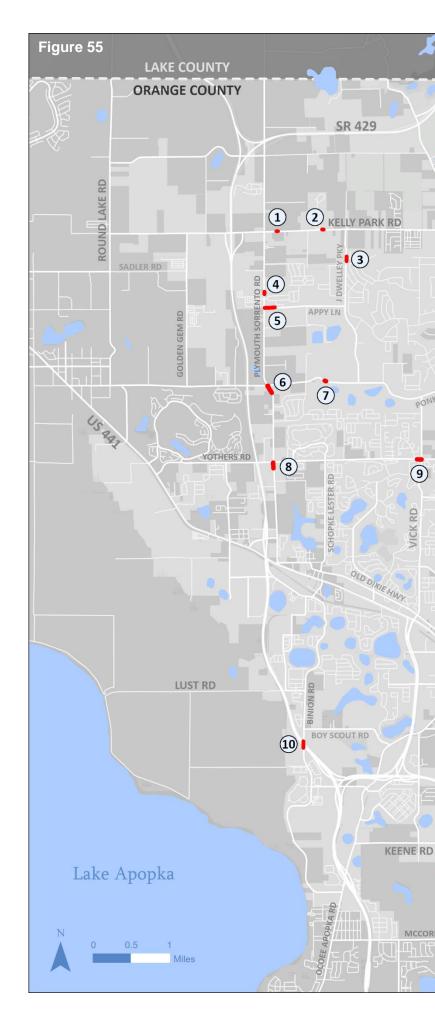


Segment #2: Kelly Park Road (west of Jason Dwelley Parkway) Countermeasure: Acquire right of way.



Segment #3: Jason Dwelley Parkway (at Spinfisher Drive) Countermeasure: Reduce trail width to 9 feet and remove grass buffer.





Right-of-Way Constraints along Proposed Trails

- R.O.W. < 10 Feet
 - City of Apopka

STER RD

US 441

(12)

(11)

(13)

MCCORMICK RI

(9)

Outside City Limits

New roadway projects (Sadler Road extension), road widening projects (Ocoee-Apopka Road) and other funded trail projects are excluded from this analysis.

VOTAW RD

SR 436

SR 414

County of Orange, FL, FDEP, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA

Segment #4: Plymouth Sorrento Road (north of Sand Oak Loop)

Countermeasure: Reduce trail width to 9 feet and remove grass buffer.



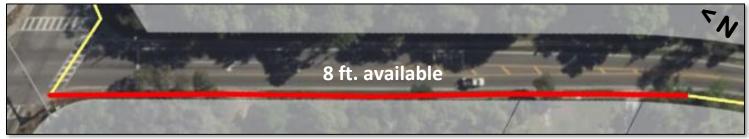
Segment #5: Appy Lane (east of Plymouth Sorrento Road)

Countermeasure: Acquire limited right-of-way or combine trail with bike lane and re-curb.



Segment #6: Plymouth Sorrento Road (south of Ponkan Road)

Countermeasure: Reduce trail width to 8 feet and build with no separation from the roadway.



Segment #7: Ponkan Road (just west of Northwest Rec. Complex)

Countermeasure: Reduce trail width to 9 feet and build with no separation from the roadway.



Segment #8: Plymouth Sorrento Road (south of Lester Road)

Countermeasure: Reduce trail width to 8 feet and build with no separation from the roadway.

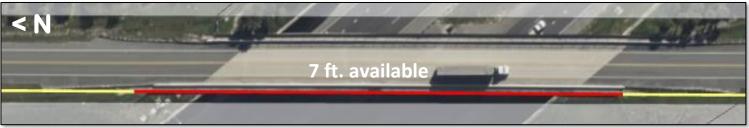


Segment #9: Lester Road (west of Vick Road)

Countermeasure: Reduce trail width to 9 feet and remove grass buffer, or combine with bike lane and re-curb.



Segment #10: Binion Road (SR 429 Overpass) Countermeasure: None. Add signage to inform trail riders of narrowing riding conditions.

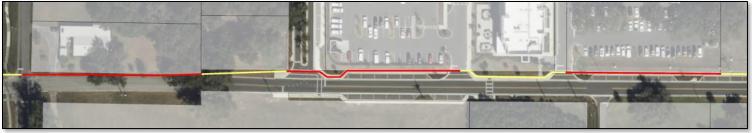


Segment #11: E. Station Street (at Apopka Community Center)

Countermeasure: Repave sidewalk to 8 or 9-foot width from current 7-foot width.



Segment #12: E. 6th Street (east of Alabama Avenue) Countermeasure: Acquire right-of-way along all three segments.



Segment #13: Keene Road (east of McQueen Road) Countermeasure: Reduce lane widths and built 8-foot trail (west). Reduce trail width to 9 feet (east)



Secondary Network: Bike Lanes

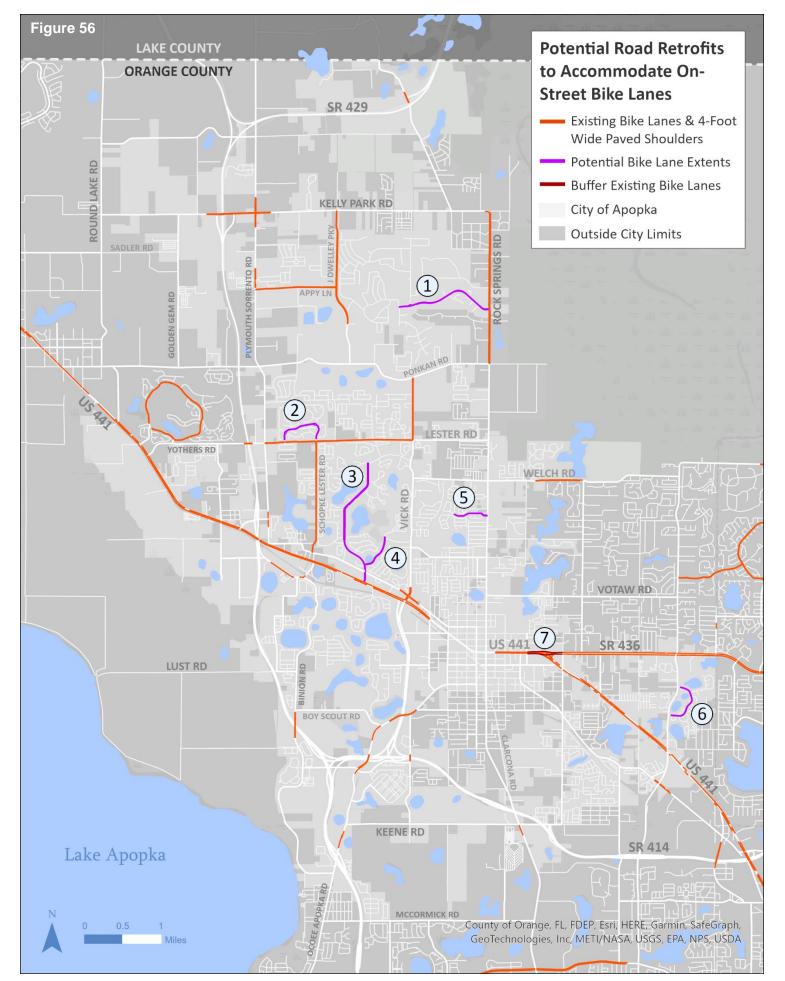
In addition to identifying future trail corridors, this active transportation network study also identifies new on-street bike lane opportunities in the City. The analysis is limited to roadways with speeds not exceeding 30 miles per hour. Two criteria were used to filter roadways for potential bike lane enhancements, including:

- 1) **Restriping Opportunities**: The project team measured the width of all roadways in the City and identified roadways where restriping could allow for new 5-foot bike lanes while accommodating 10-foot travel lanes. This included two-lane roads with widths greater than or equal to 30 feet, or two-lane roads with medians where lane widths exceeded 14 feet.
- 2) Lane Removal Candidates: Using Florida Department of Transportation (FDOT) guidance for lane removals, the project team identified roadways with daily traffic counts less than 20,000 with 4 or more lanes. None of the identified roadway segments were used in the analysis due to high speeds and limited overall feasibility.

Identified On-Street Bike Lane Opportunities

The routes listed below have been identified as potential future bike lane routes using the restriping strategy. Should the City wish to explore these potential opportunities, additional coordination with neighborhood groups would be needed in order to ensure that local residents are included in the planning process for these specific projects. The numbers in parenthesis correspond to the map and are not a priority ranking. Unlike projects 1 through 6, project 7 buffers existing bike lanes.

- (1) Rock Ridge Boulevard | Restriping project
- (2) Devon Oak Parkway | Restriping project
- (3) Errol Parkway | Restriping project
- (4) Lexington Parkway | Restriping project
- (5) Wekiva Pines Parkway | Restriping project
- (6) Piedmont Lakes Boulevard | Restriping project
- (7) State Road 436 | Buffer existing bike lanes from Sheeler Ave. to McGee Ave.



Tertiary Network: Signed Bike Routes

The next step in developing the active transportation network is identifying designated bike routes within the City. These routes would include bike route signage and on-street "sharrow" markings. These routes are intended to be low-stress routes with low lane counts, low speed limits, and low traffic volumes where bicyclists share the roadway with motorists.

Route Selection Criteria

- Connectivity to trails
- Connectivity to bike lanes
- Connectivity to public schools
- Low traffic counts (5,000 maximum)
- Low lane counts (2 maximum)
- Low speed limits (30 maximum)
- Low truck and commercial usage
- High level of network completion



Speed Limit Reduction Recommendations

Two of the proposed signed bike routes are located on roadways where speed limits currently exceed 30 miles per hour. These routes are listed below.

Cleveland Street, Clarcona Road to Sheeler Avenue

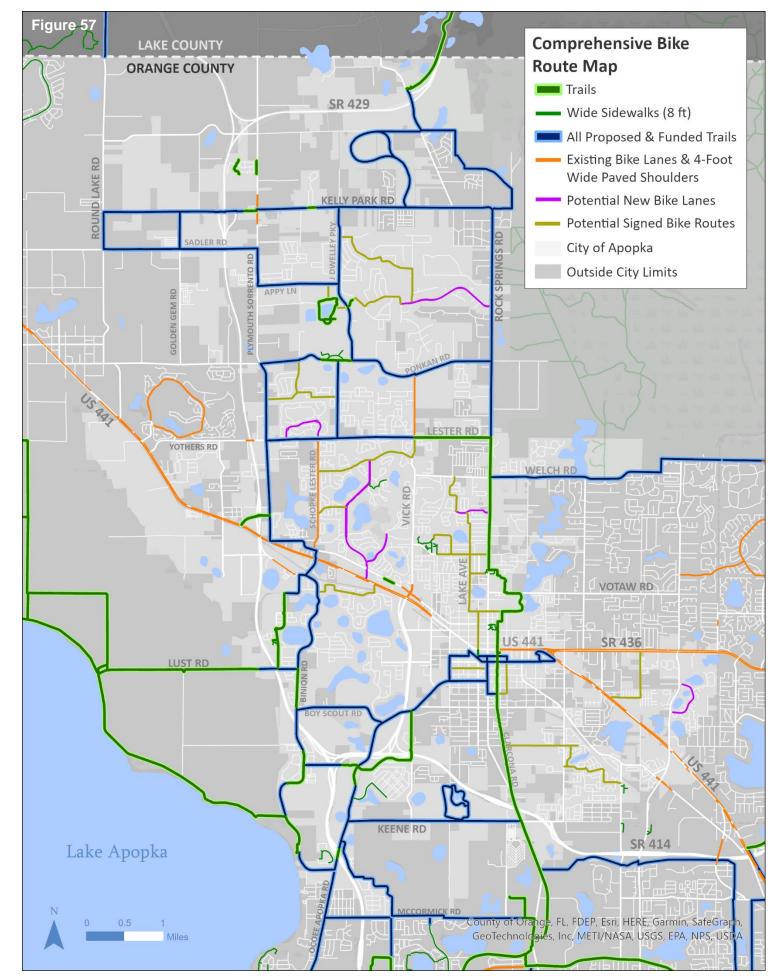
- $\circ~$ Reduce speed limit to 30 miles per hour to allow for the bike route
- $\circ~$ Place bike route signage at each end of the reduced speed area

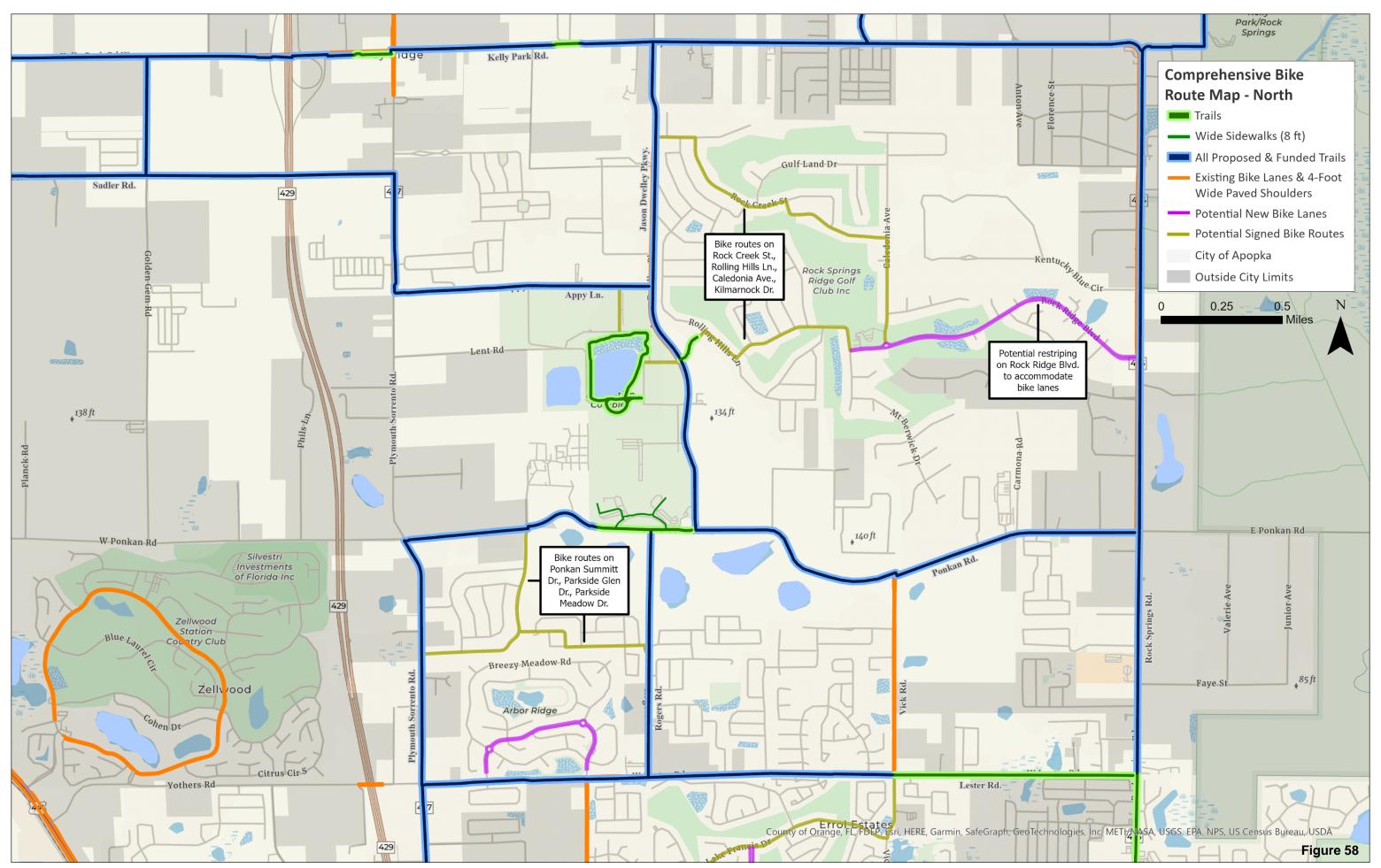
Vick Road, Lake Francis Drive to Lester Road

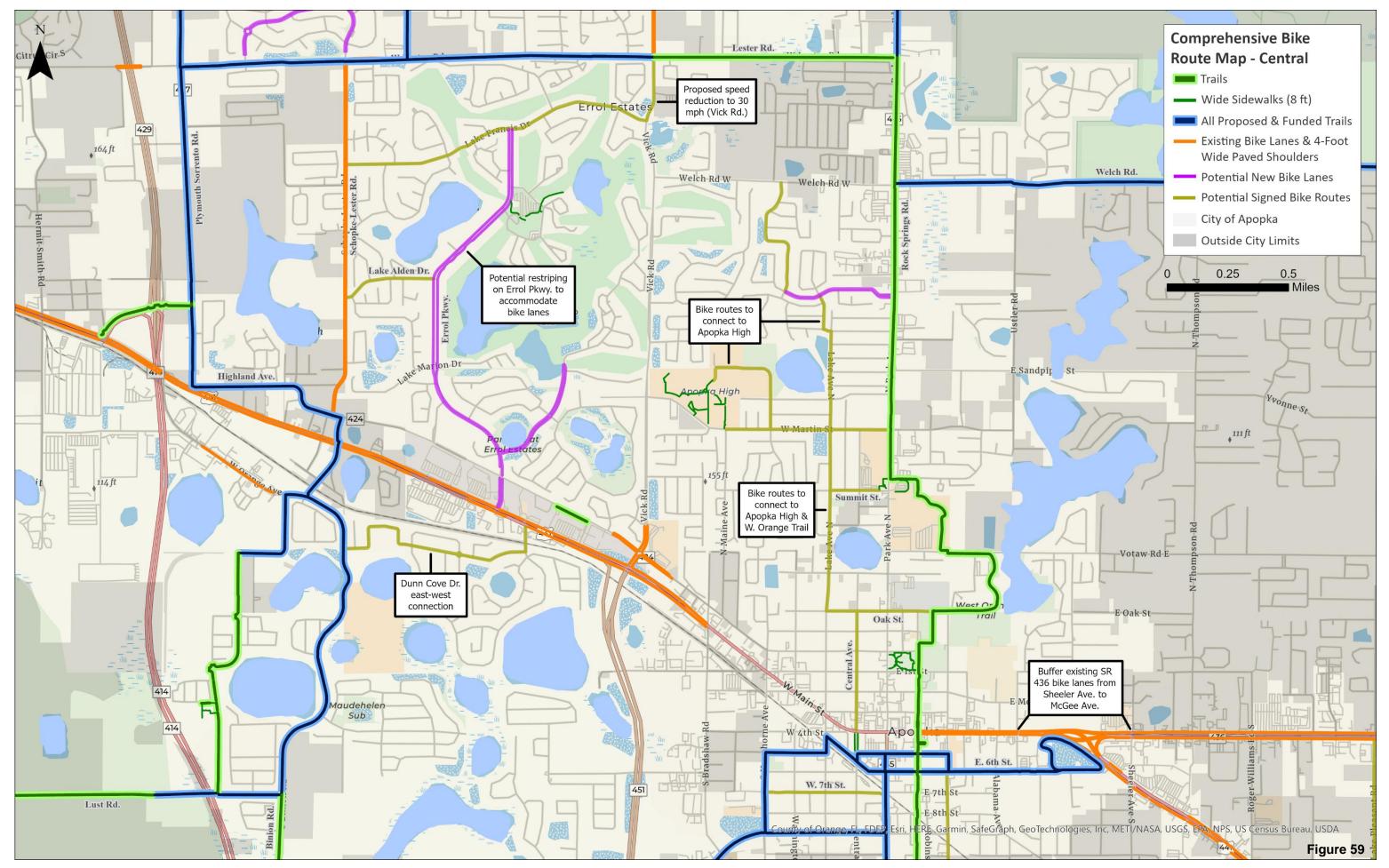
- $\circ~$ Reduce speed limit to 30 miles per hour to allow for the bike route
- $\circ~$ Place bike route signage at each end of the reduced speed area

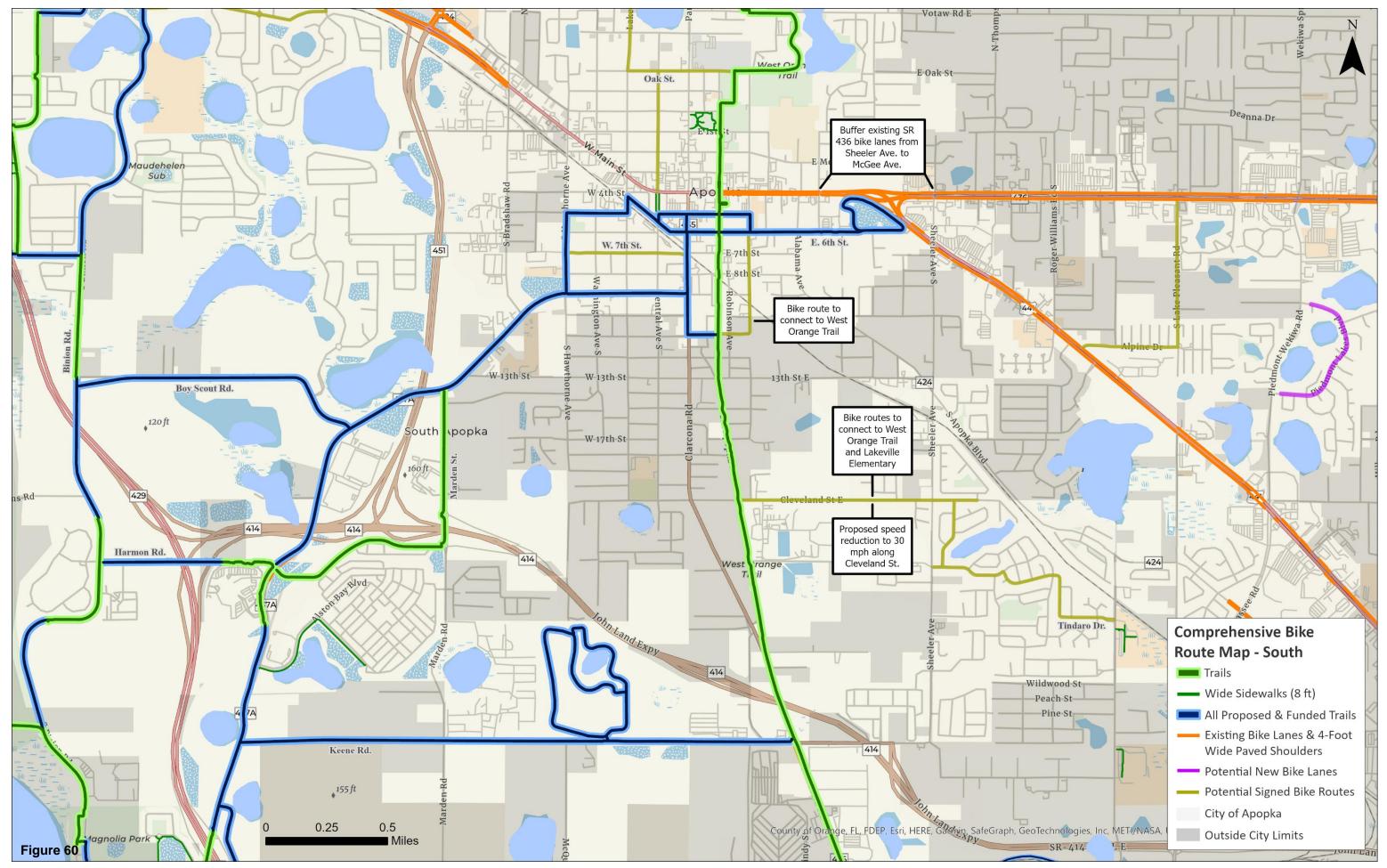
Detailed Maps

The maps on the following three pages depict all existing and proposed trails, onstreet bike lanes and signed bike routes.









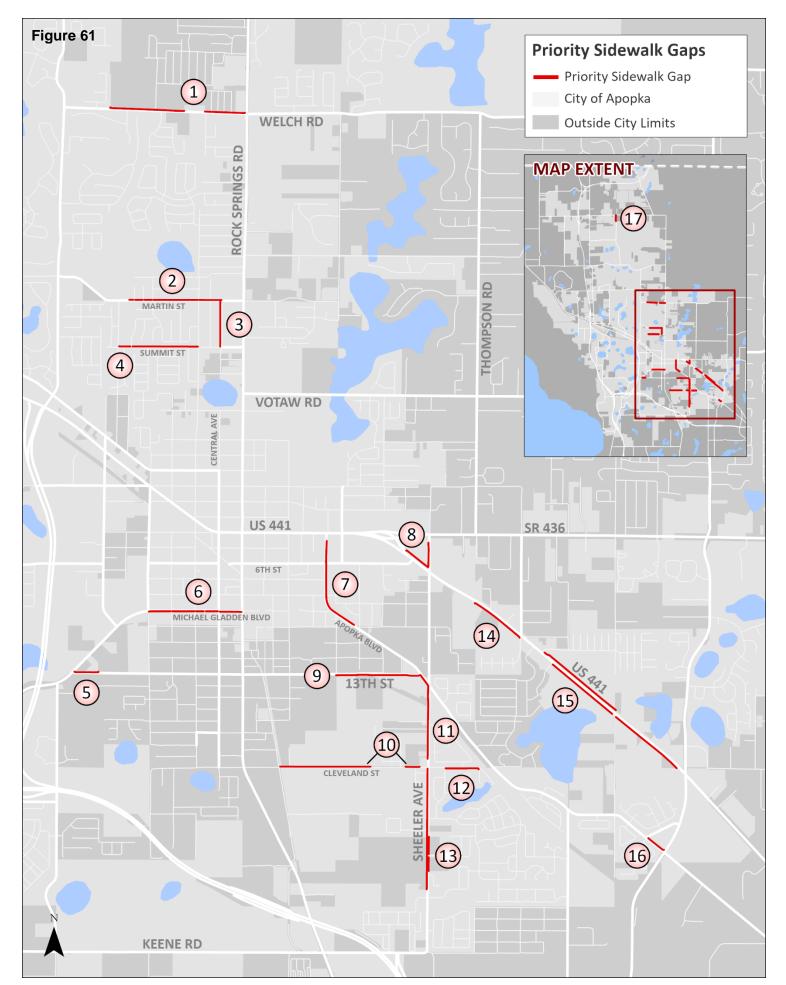
Tertiary Network: Sidewalk Gap Projects

Priority sidewalk projects have been identified throughout the City as a way to enhance walkability and improve safety for pedestrians as funding becomes available. The project team focused on identifying sidewalk gaps along high-speed roads, roads with high levels of connectivity to the overall network, and roads in close proximity to schools. The gap areas are listed below and depicted in Figure 61.

- (1) Welch Rd. | North side, east of Rocky Point Rd. to Rock Springs Rd. (2 segments)
- (2) Martin St. | West of Oleary Ct. to Central Ave.
- (3) Central Ave. | West side, Martin St. to Summit St.
- (4) Summit St. | North side, Maine Ave. to Lake Ave.
- (5) 13th St. | North side, Ocoee-Apopka Rd. to existing sidewalk
- (6) Michael Gladden Blvd. | South side, Hawthorne Ave. to Park Ave.
- (7) Alabama Ave. / Apopka Blvd. | East side, south of Main St. to E. 10th St.
- (8) U.S. 441 & Sheeler Ave. | North and west sides, 441/436 Interchange to SR 436
- (9) 13th St. | South side, east of Georgia Ave. to Apopka Blvd. and Sheeler Ave. intersection
- (10) Cleveland St. | North side, Old Apopka Rd. to Sheeler Ave. (2 segments)
- (11) Sheeler Ave. | West side, 13th St. to north of Cleveland St.
- (12) Cleveland St. | South side, Grand Oak Dr. to Callie Ct.
- (13) Sheeler Ave. | West side, Cleveland St. to Perlite Pl. Both sides near Dunbridge St.
- (14) U.S. 441 | West side, east of Oakville Ln. to Roger Williams Rd.
- (15) U.S. 441 | Both sides, Alpine Dr. to Lake Pleasant Rd., then west side to Hiawassee Rd.
- (16) Apopka Blvd. | East side, Piedmont Wekiva Rd. to Hiawassee Rd.
- (17) Jason Dwelley Pkwy. | West side, Kelly Park School to Kelly Park Rd.

Notes

Projects 8 is included in the MetroPlan Orlando Priority Project List, named Sidewalk Bundle #7. Projects 14, 15, and 16 are included in the MetroPlan Orlando Priority Project List, named Sidewalk Bundle #17.



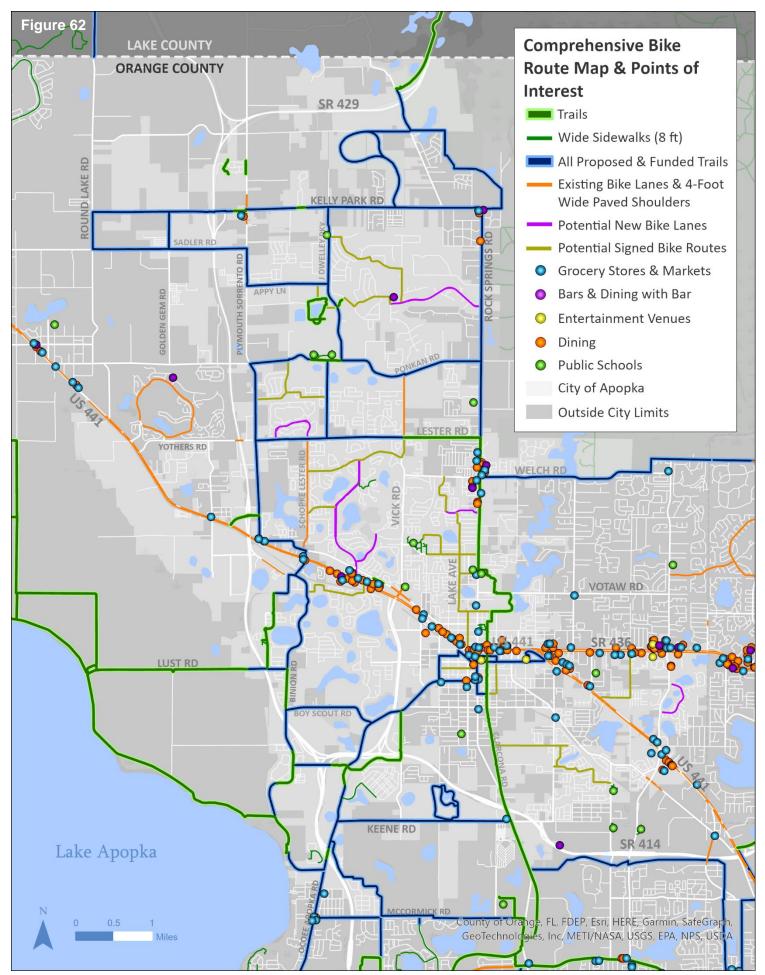
VII. Network Analysis

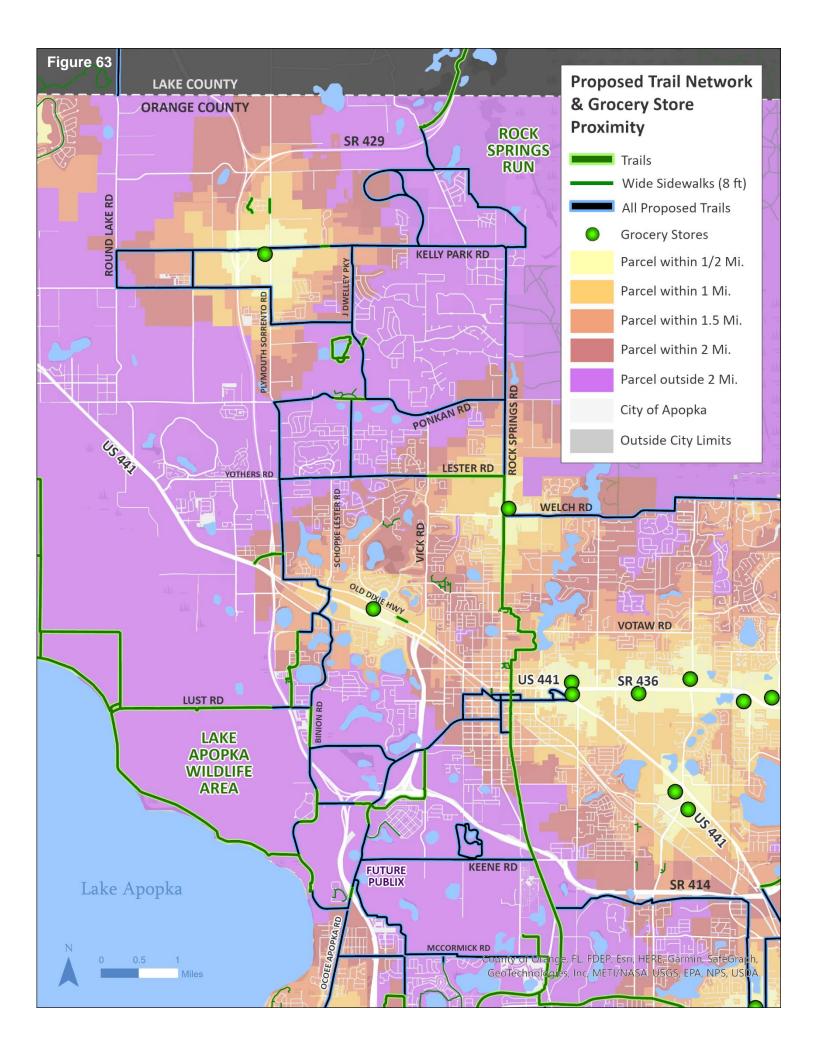
An analysis of roadway and community features along the proposed active transportation network.

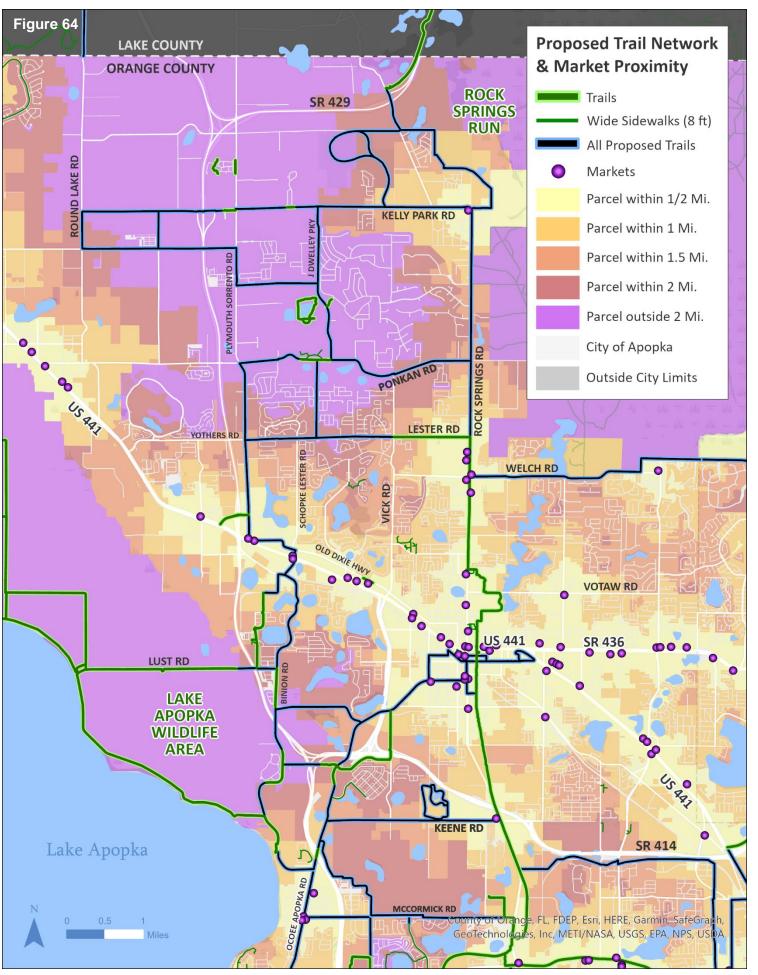
Community Feature Proximity Maps

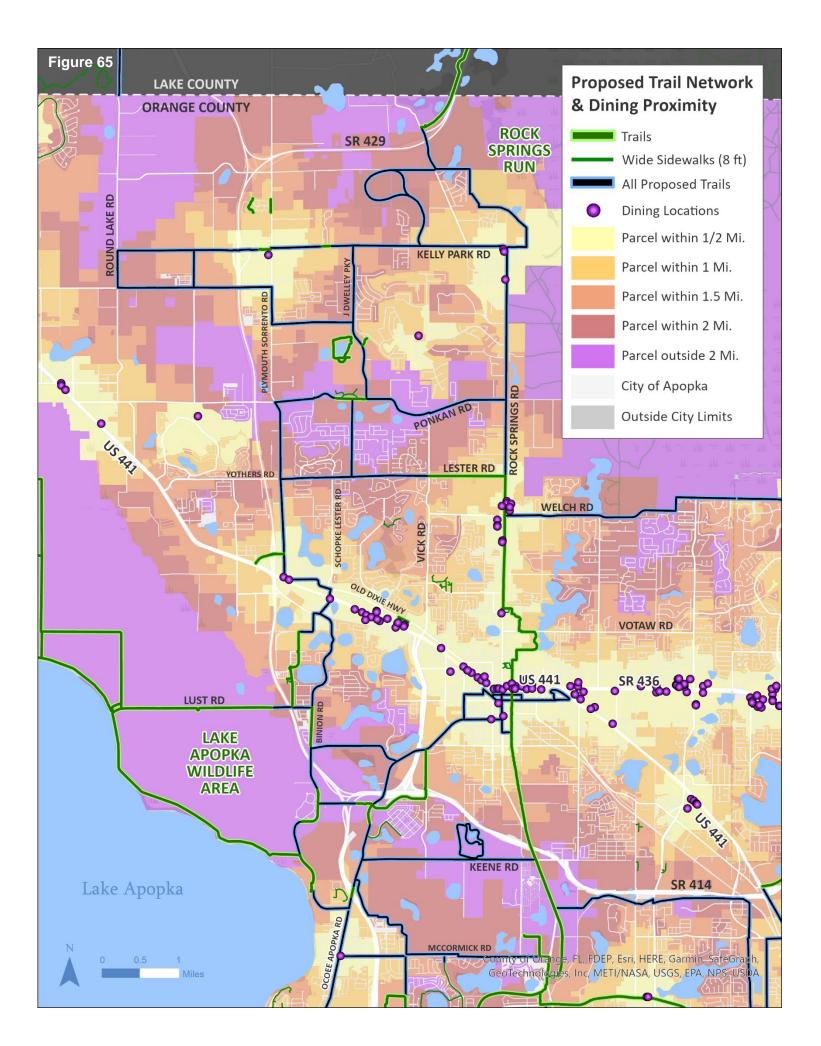
This section of the report shows the proposed trail network in the context of proximity to community features. This analysis will guide recommendations for accessory structures and amenities near the network

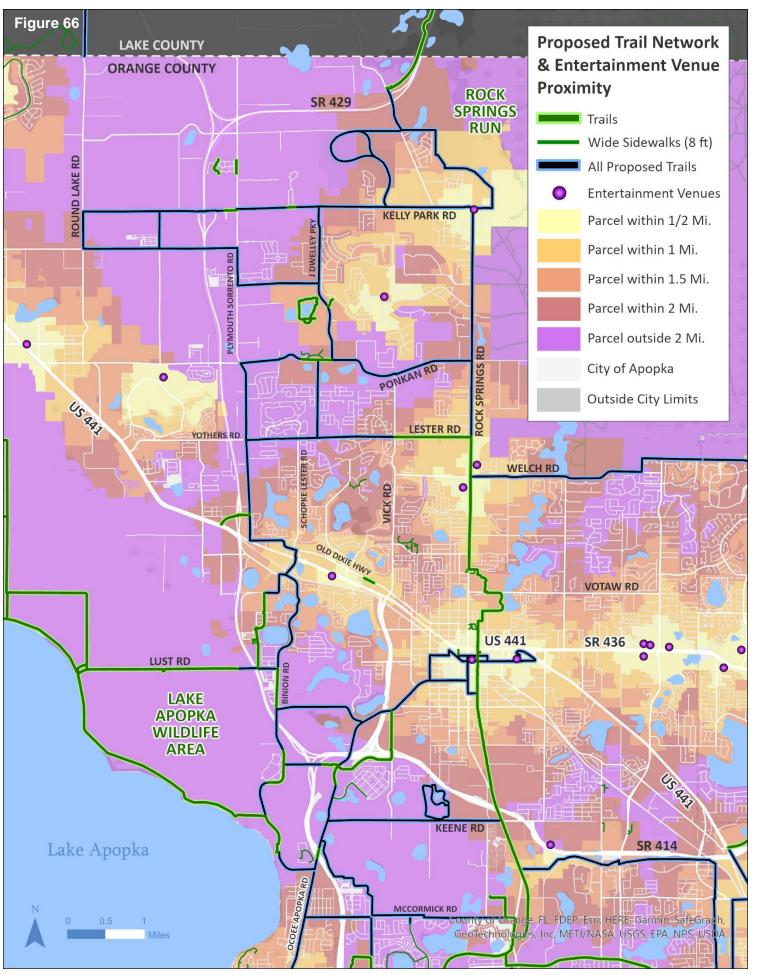


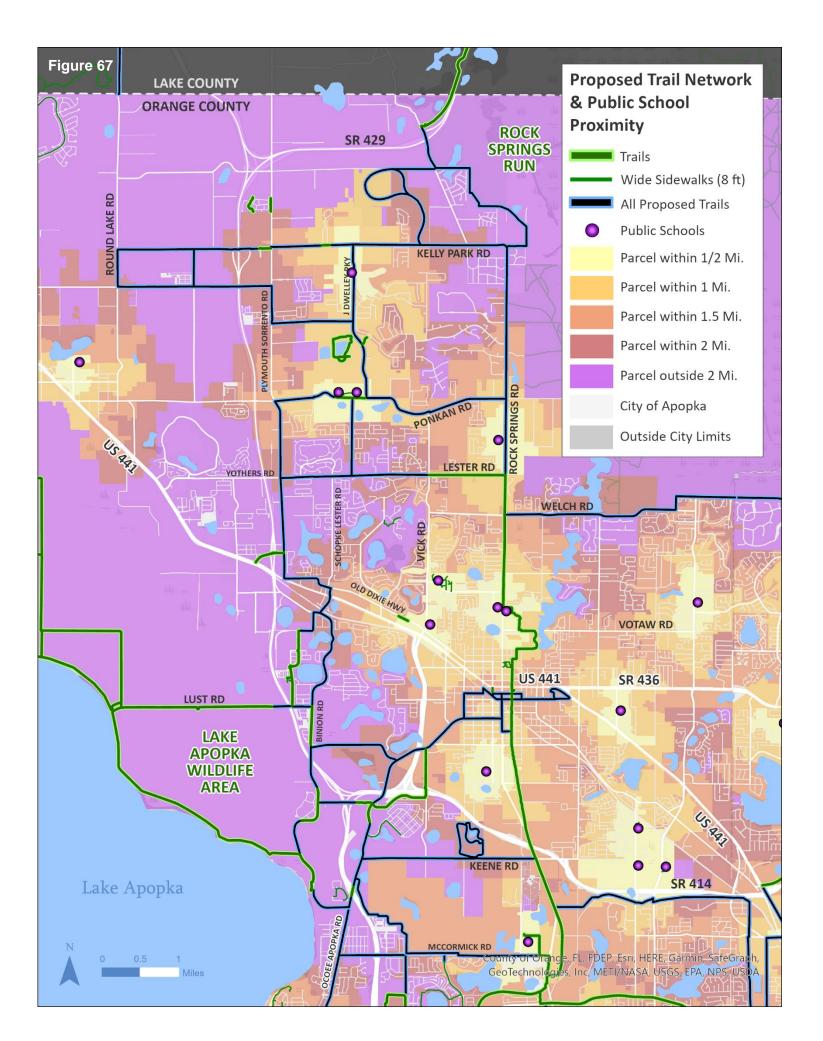


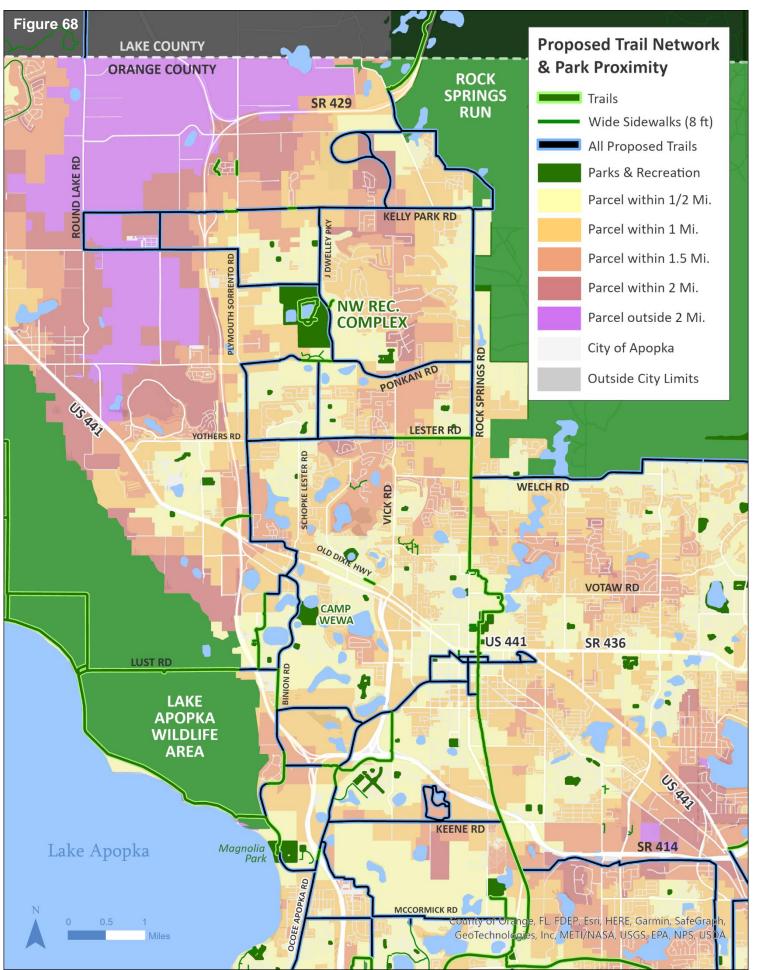












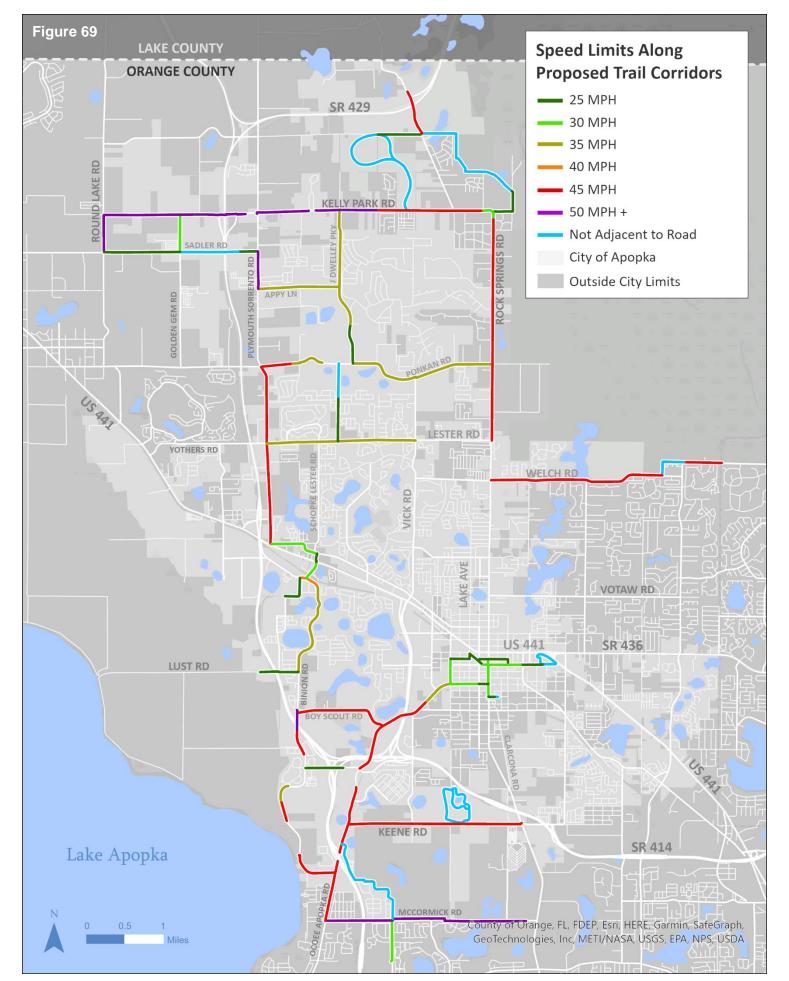
Speed Limits Along Final Trail Routes

It is recommended that the City separate trails from the roadway with a landscaped buffer in order to reduce the level of traffic stress felt by future trail riders. Additionally, it is important that the City review speed limits on roadways with planned future trails. This analysis provides context for the City to analyze its options for reducing speed limits while maintaining vehicle level of service.

Potential Target Speed Countermeasures

Figure 69 shows the speed limits along the final proposed trail network. The following target speed countermeasures are recommended along these corridors.

- Rock Springs Road: Right-of-way acquisition will be required to build the West Orange Trail extension along Rock Springs Road. It is recommended that the City maximize trail separation from the roadway through land acquisition.
- Welch Road: Similar to Rock Springs Road, right-of-way acquisition should be a tool for the City to reduce exposure to high speeds. The lack of driveways and turning movements in this corridor do not necessitate a speed limit change.
- Ponkan Road: It is recommended that the speed be reduced to 35 miles per hour from Plymouth Sorrento Road to the Northwest Recreation Complex. This will extend the current 35 mile per hour limit to the east of the park.
- Kelly Park Road: It is recommended that the City implement a 35 or 40 mile per hour speed limit in this corridor when redesigning the roadway.
- Round Lake Road: It is recommended that the City revisit speed limits near the Wekiva Parkway Interchange as new development occurs in the future.
- Plymouth Sorrento Road: A speed limit reduction to 35 miles per hour from Old Dixie Highway to Ponkan Road would reduce traffic stress, primarily in areas with no trail separation from the roadway.
- Boy Scout Road: A speed limit reduction to 35 miles per hour would reflect the changing nature of the corridor as development occurs and trails are built in the future.
- Binion Road: It is recommended that a 35 mile per hour speed limit be implemented south of Lust Road to Ocoee-Apopka Road. These trails will have ample road separation.
- Ocoee-Apopka Road: As new roadway designs are drafted, it is recommended that speeds not exceed 40 miles per hour. Truck traffic will necessitate trail separation from the road.
- Keene Road: It is recommended that the City reduce the speed limit to 35 miles per hour from Ocoee-Apopka Road to Clarcona Road.



VIII. Impact Analysis

An analysis of the reach of the existing and proposed trail networks to people, economic destinations and parks.

The impact analysis identifies the benefit that the proposed trail network will have on population access to trails, as well as trail connectivity to economic and recreational points of interest. This analysis does not include population in future developments.



Accessibility by Route Priority/Type

	Р	opulation Acce	SS	Dining	g Access	Grocery/M	larket Access	Entertainmen	t Venue Access	Park Access		
	Within 1/8 Mile	Within 1/4 Mile	Within 1/2 Mile	Within 300 Ft.	Within 1/8 Mile	Within 300 Ft.	Within 1/8 Mile	Within 300 Ft.	Within 1/8 Mile	Within 300 Ft.	Within 1/8 Mile	
	Approx. Population*	Approx. Population*	Approx. Population*	# Establishments								
Existing Trail Network	8,291	13,166	25,610	9	20	6	13	0	3	11	13	
State & County Funded	2,326	5,707	12,276	4	6	2	4	1	1	6	7	
# In addition to existing network	2,210	4,640	8,353	3	3	1	1	1	1	5	6	
Priority 1 Network	3,004	7,305	15,053	3	13	6	10	2	2	3	6	
# In addition to existing network	1,775	3,465	4,651	3	8	5	9	2	1	2	4	
Priority 2 Network	3,816	8,259	14,361	3	3	3	4	1	1	2	3	
# In addition to existing network	2,288	4,912	6,502	3	3	3	4	1	1	1	2	
Partnership Network	1,204	2,227	6,145	3	3	4	4	0	0	0	0	
# In addition to existing network	1,131	1,818	3,271	3	3	4	4	0	0	0	0	

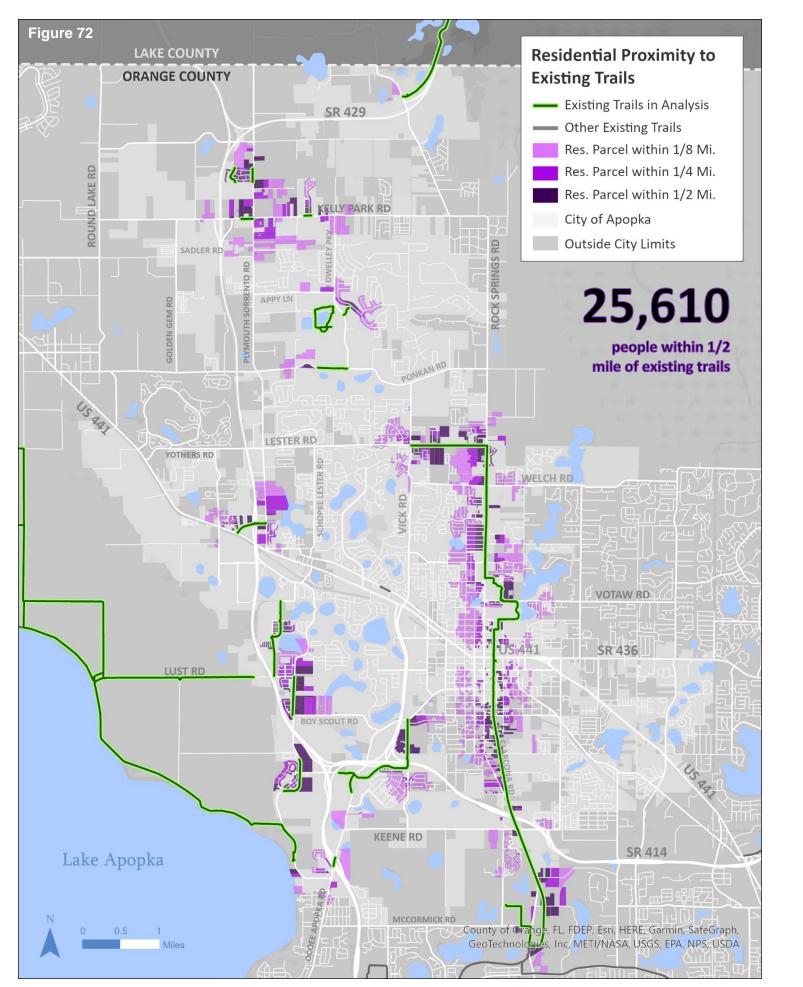
	Population Access			Dining	g Access	Grocery/M	arket Access	Entertainmen	t Venue Access	Park Access		
	Within 1/8 Mile	Within 1/4 Mile	Within 1/2 Mile	Within 300 Ft.	Within 1/8 Mile	Within 300 Ft.	Within 1/8 Mile	Within 300 Ft.	Within 1/8 Mile	Within 300 Ft.	Within 1/8 Mile	
	Approx. Pop.*	Approx. Pop.*	Approx. Pop.*	# Establishments								
Existing Trail Network	8,291	13,166	25,610	7	20	6	13	0	3	11	13	
Existing, Funded & Planned	15,269	26,149	46,090	17	34	17	27	3	5	18	24	
Increase in Access	+ 6,978	+ 12,983	+ 20,480	+ 10	+ 14	+ 11	+ 14	+ 3	+ 2	+ 7	+ 11	

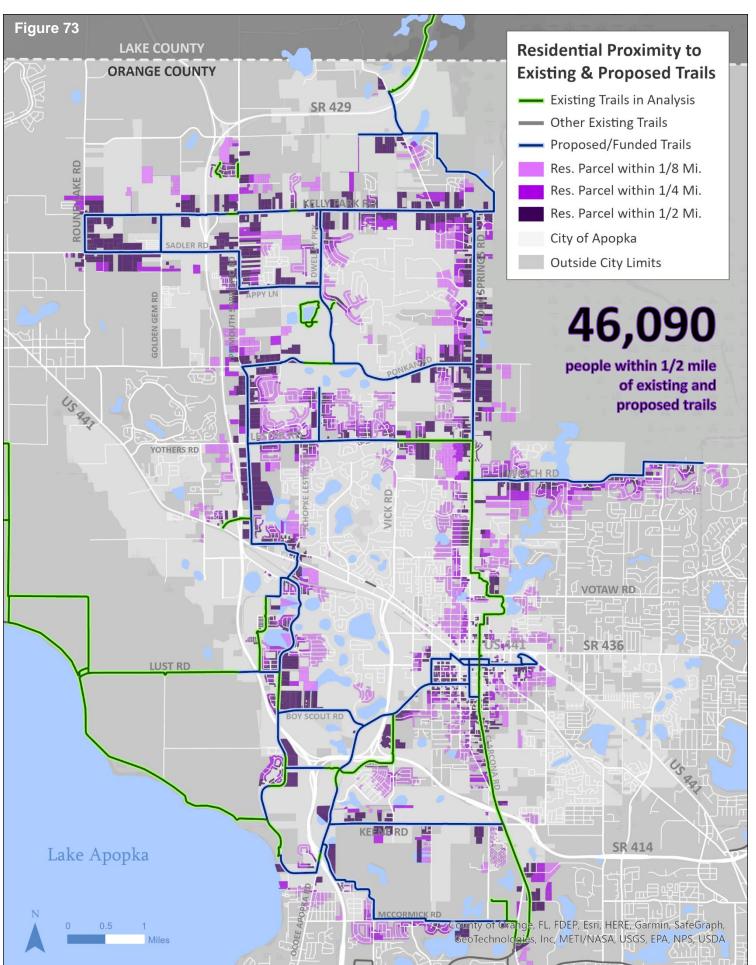
*Persons per household figures of 2.90 (Orange County) and 2.54 (Seminole County) are used to convert parcel unit counts to approximate population counts. Sources: Orange County Property Appraiser Parcels, Seminole County Property Appraiser Parcels, U.S. Census Bureau (2020), xGeographic Wave Access Simulation

Accessibility by Segment ID

	Population Access		Dining	g Access	Grocery/N	1arket Access	Entertainmer	nt Venue Access	Park Access		
	Within 1/8 Mile	Within 1/4 Mile	Within 300 Ft.	Within 1/8 Mile	Within 300 Ft.	Within 1/8 Mile	Within 300 Ft.	Within 1/8 Mile	Within 300 Ft.	Within 1/8 Mile	
Segment 1A	Approx. Population* 841	Approx. Population* 1,502	# Establishments								
Segment 1B	363	1,253	0	0	0	0	0	0	1	3	
	84	157	0	0	0	0	0	0	0	0	
Segment 1C	3	710									
Segment 1D			0	0	0	0	0	0	0	0	
Segment 1E	171	1,288	0	0	1	1	0	0	0	0	
Segment 1F	38	505	0	0	0	0	0	0	0	1	
Segment 1G	1,056	1,926	3	12	6	9	2	2	1	2	
Segment 1H	87	377	0	0	0	0	0	0	1	1	
Segment 1J	252	368	0	1	1	1	0	0	0	0	
Segment 1K	6	17	0	0	0	0	0	0	0	0	
Segment 1L	75	142	0	0	0	0	0	0	0	0	
Segment 2A	716	1,427	2	2	1	1	1	1	0	0	
Segment 2B	1,383	2,395	0	0	0	0	0	0	0	0	
Segment 2C	754	1,778	0	0	0	0	0	0	0	1	
Segment 2D	299	618	0	0	0	0	0	0	1	1	
Segment 2E	55	93	0	0	0	0	0	0	0	0	
Segment 2F	107	328	0	0	0	0	0	0	0	0	
Segment 2G	513	815	1	1	2	3	0	0	0	0	
Segment 2H	249	835	0	0	0	0	0	0	0	0	
Segment 2J	35	73	0	0	0	0	0	0	1	1	
Segment P1	67	223	0	0	0	0	0	0	0	0	
Segment P2	882	1,595	3	3	4	4	0	0	0	0	
Segment P3	46	55	0	0	0	0	0	0	0	0	
Segment P4	209	354	0	0	0	0	0	0	0	0	

*Persons per household figures of 2.90 (Orange County) and 2.54 (Seminole County) are used to convert parcel unit counts to approximate population counts. Sources: Orange County Property Appraiser Parcels, Seminole County Property Appraiser Parcels, U.S. Census Bureau (2020), xGeographic Wave Access Simulation





Economic & Recreational Points of Interest within 1/8 Mile of Existing/Proposed Trail Network (1/2)

Name	Туре	Existing Network	State/County Funded	Priority 1 Network	Priority 2 Network	Partnership Network	Segment 1B	Segment 1E	Segment 1F	Segment 1G	Segment 1H	Segment 1J	Segment 2A	Segment 2C	Segment 2D	Segment 2G	Segment 2J	Segment P2
7 Eleven	Market	300 Ft.	300 Ft.															
Al Mejor Sabor	Restaurant			1/8 Mi.						1/8 Mi.								
Alonzo Williams Park	Park			300 Ft.						300 Ft.								
Anthony's Pizza	Restaurant	1/8 Mi.	300 Ft.															
Antojitos La Mexicana	Restaurant		300 Ft.															
Apopka City Hall Park	Park	1/8 Mi.		1/8 Mi.						1/8 Mi.								
Arbor Ridge Private Park	Private Parks				1/8 Mi.									1/8 Mi.				
Aunt Gingibreads Bakery	Restaurant	1/8 Mi.		1/8 Mi.						1/8 Mi.								
Avian Pointe HOA Park	Private Parks	300 Ft.																
Back Yard BBQ	Restaurant					300 Ft.												300 Ft.
Beef O'Brady's	Restaurant & Bar	1/8 Mi.																
BP	Market	300 Ft.																
Camp Thunderbird	Park		300 Ft.															
Camp Wewa	Park			300 Ft.			300 Ft.											
Central Grocery	Market			1/8 Mi.						1/8 Mi.								
Chevron	Market					300 Ft.												300 Ft.
Chucks Wagon	Restaurant			1/8 Mi.						1/8 Mi.								
Chung Xiang	Restaurant	1/8 Mi.	1/8 Mi.															
Cieto Lindo Mexican Grill	Restaurant	300 Ft.																
Circle K	Market	1/8 Mi.																
Citgo	Market	300 Ft.																
Clarcona Horse Park	Park	300 Ft.																
Doctors Dog Park	Park	300 Ft.																
Dollar General (1712 Rock Springs)	Market	300 Ft.																
Dollar General (57 Michael Gladden)	Market			300 Ft.	300 Ft.					300 Ft.						300 Ft.		
Domino's	Restaurant			1/8 Mi.						1/8 Mi.								
Dunkin Donuts	Restaurant	1/8 Mi.		1/8 Mi.						1/8 Mi.								
Edwards Field	Park	300 Ft.																
El Brazero	Restaurant					300 Ft.												300 Ft.
Family Dollar	Market	300 Ft.																
Froggers Grill & Bar	Restaurant & Bar	1/8 Mi.																
Griffin's General Store	Market			300 Ft.				300 Ft.		300 Ft.								
Highland Manor	Entertainment			300 Ft.						300 Ft.								
Inspiration Point HOA Park	Private Parks			1/8 Mi.			1/8 Mi.		1/8 Mi.									
Jersey Mike's	Restaurant	1/8 Mi.		1/8 Mi.								1/8 Mi.						
Kelly Park	Park		300 Ft.									•						
Kit Land Nelson Park	Park	300 Ft.																
Krispy Krunchy Chicken	Restaurant					300 Ft.												300 Ft.
La Parada Mexican Deli Meat	Market					300 Ft.												300 Ft.
La Taxquena	Market			300 Ft.	300 Ft.					300 Ft.						300 Ft.		
Little Caesars	Restaurant	1/8 Mi.																
Los Primos Meat Market	Market	_, 5		300 Ft.						300 Ft.								
		300 Ft	300 Ft	50011.														
				1/8 Mi						1/8 Mi								
Magnolia Park Marathon	Park Market	300 Ft.	300 Ft.	1/8 Mi.						1/8 Mi.								

Trail segments with no points of interest within 1/8 mile not included in analysis

Economic & Recreational Points of Interest within 1/8 Mile of Existing/Proposed Trail Network (2/2)

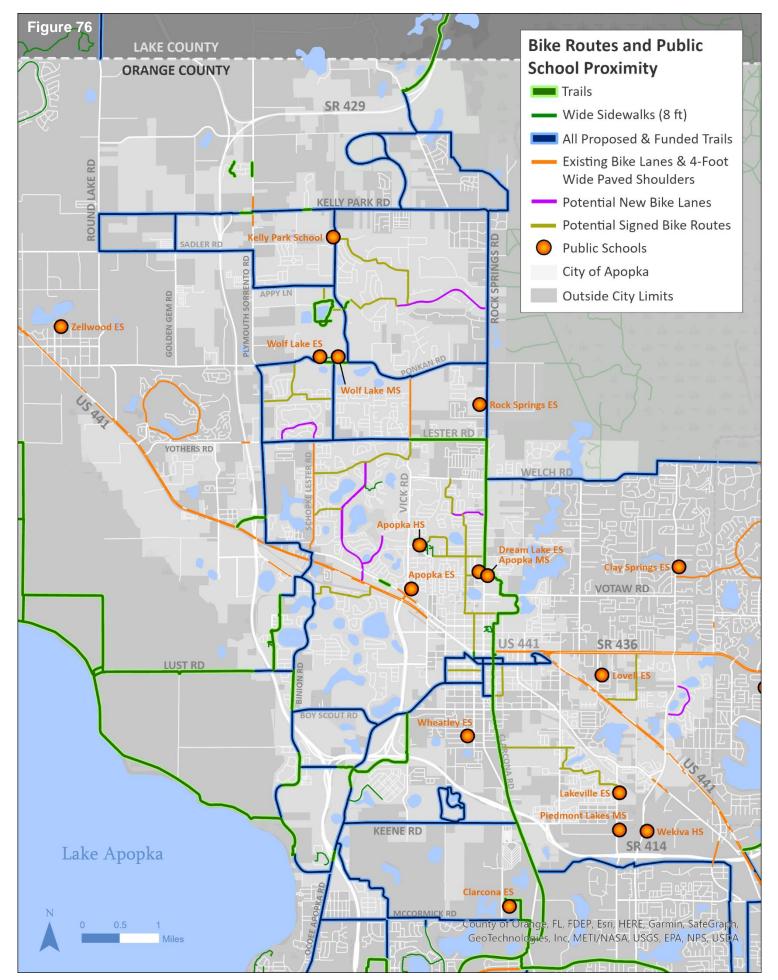
Name	Туре	Existing Network	State/County Funded	Priority 1 Network	Priority 2 Network	Partnership Network	Segment 1B	Segment 1E	Segment 1F	Segment 1G	Segment 1H	Segment 1J	Segment 2A	Segment 2C	Segment 2D	Segment 2G	Segment 2J	Segment P2
Marathon	Market			300 Ft.	1/8 Mi.					300 Ft.						1/8 Mi.		
Marco's Pizza	Restaurant	300 Ft.																
Marden Meadows Private Park	Private Parks	1/8 Mi.																
Maters & Taters	Market	1/8 Mi.																
Maudedehelen HOA Park	Private Parks			1/8 Mi.			1/8 Mi.											
Max & Me Jamaican Restaurant	Restaurant			300 Ft.						300 Ft.								
McCormick Reserve Private Park	Private Parks		1/8 Mi.															
McDonald's (1681 Rock Springs)	Restaurant	300 Ft.																
McDonald's (233 E. Main)	Restaurant	300 Ft.																
Museum of the Apopkans	Museum	1/8 Mi.		300 Ft.						300 Ft.								
Northwest Recreation Complex	Park	300 Ft.		300 Ft.	300 Ft.						300 Ft.				300 Ft.			
P&W Market	Market	1/8 Mi.																
Park at Fran Carlton Rec. Center	Park	300 Ft.																
Park at Apopka Station	Park	300 Ft.																
	Restaurant	300 Ft.																
Publix (1545 Rock Springs)	Grocery Store	1/8 Mi.	1/8 Mi.															
	Grocery Store	300 Ft.		1/8 Mi.								1/8 Mi.						
	Bars & Night Clubs		300 Ft.		300 Ft.								300 Ft.					
	Market					300 Ft.												300 Ft.
	Market		300 Ft.		300 Ft.								300 Ft.					
	Market			300 Ft.						300 Ft.								
	Restaurant	1/8 Mi.	1/8 Mi.															
	Restaurant			1/8 Mi.						1/8 Mi.								
	Restaurant		300 Ft.		300 Ft.								300 Ft.					
	Market					300 Ft.												300 Ft.
	Restaurant			1/8 Mi.						1/8 Mi.								
/	Restaurant	300 Ft.																
	Restaurant			300 Ft.	300 Ft.					300 Ft.						300 Ft.		
	Restaurant	1/8 Mi.																
	Restaurant			300 Ft.						300 Ft.								
	Restaurant	300 Ft.																
	Restaurant		300 Ft.		300 Ft.								300 Ft.					
	Market	1/8 Mi.																
	Market	-		1/8 Mi.						1/8 Mi.								
	Park	300 Ft.																
	Park	300 Ft.																
	Restaurant	1/8 Mi.		1/8 Mi.						1/8 Mi.								
	Market	1/8 Mi.	1/8 Mi.															
	Market	1/8 Mi.																
	Private Parks	,	300 Ft.															
	Park	<u> </u>	300 Ft.		300 Ft.												300 Ft.	
	Park		300 Ft.															
	Restaurant	1/8 Mi.		1/8 Mi.						1/8 Mi.								
	Restaurant	1/8 Mi.		1/0 1011.						1/0 IVII.								

Trail segments with no points of interest within 1/8 mile not included in analysis

Public School Accessibility

Figure 76 shows the existing and proposed bike routes juxtaposed with public elementary, middle and high schools, and Figure 77 summarizes the connections made to each school.

	C	onnections to Existing 8	& Planned Bike Rout	es
School	Existing Trails	Planned Trails	Bike Lanes	Signed Routes
Apopka Elementary	No	No	Connected	No
Apopka High	No	No	No	Planned
Apopka Middle	Connected	No	No	Planned
Clarcona Elementary	Connected	No	No	No
Clay Springs Elementary	No	No	Connected	No
Dream Lake Elementary	Connected	No	No	Planned
Kelly Park School	No	Planned	Connected	Planned
Lakeville Elementary	No	No	No	Planned
Lovell Elementary	No	No	No	No
Piedmont Lakes Middle	No	No	No	No
Rock Springs Elementary	No	Planned	No	No
Wekiva High	No	No	No	No
Wheatley Elementary	No	No	No	No
Wolf Lake Elementary	Connected	Planned	No	No
Wolf Lake Middle	Connected	Planned	No	No
Zellwood Elementary	No	No	No	No



Sidewalk Gap Projects Connecting to Schools

Dream Lake Elementary

- Sidewalk Project 2 along Martin Street
- Sidewalk Project 3 along Central Avenue
- Sidewalk Project 4 along Summit Street

Kelly Park School

Sidewalk Project 17 along Jason Dwelley Parkway

Apopka Population Access to Existing Trails (Including Short Segments)

Within 1/8 Mile

Within 1/4 Mile

Within 1/2 Mile

12.2% 18.4% 31.9%

Existing Network

Proposed Network

Apopka Population Access to Existing & Proposed Trails

Within 1/8 Mile

Within 1/4 Mile

Within 1/2 Mile

19.8% 32.2% 51.3%

Dining Establishments

Grocery & Markets

Parks & Recreation

Miles of Trails

36.5 89.4

Additional Points of Interest Within ¹/₂ Mile of Proposed Trail Network

14 14 11

66

Regional Integration Impact

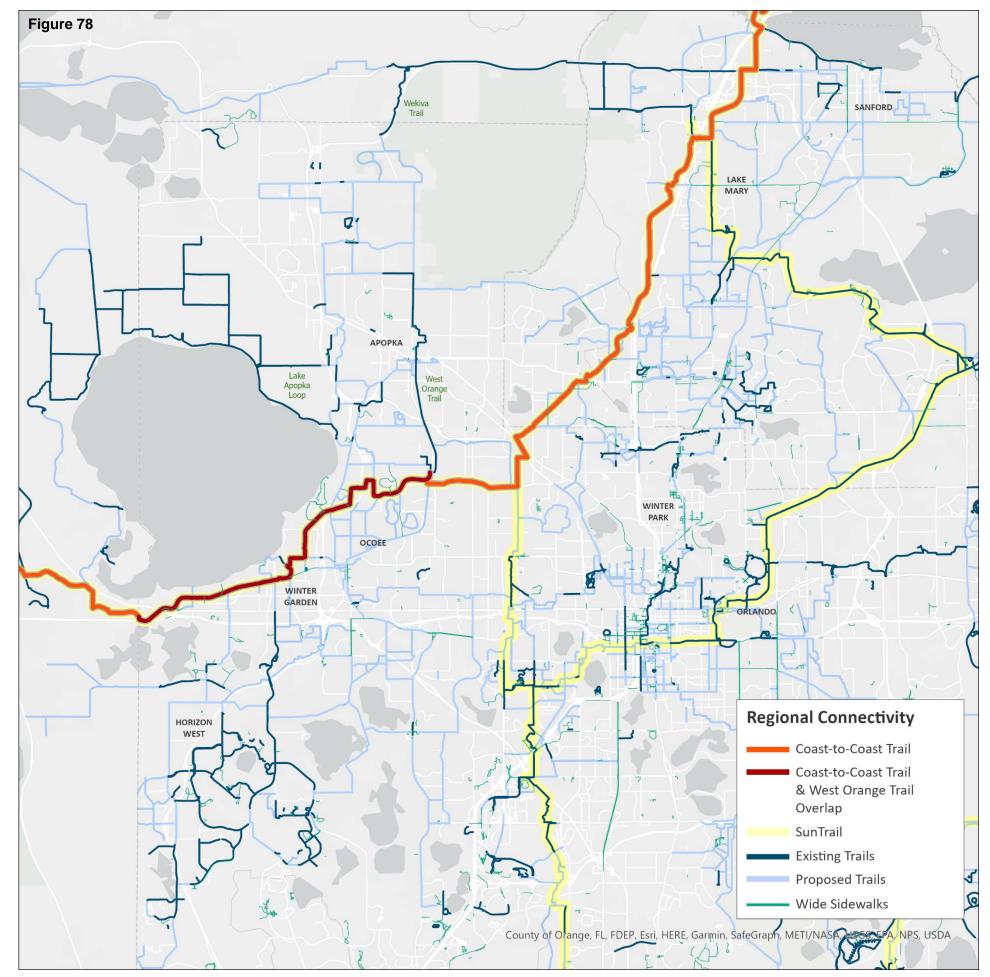
The proposed trail network was developed using trail plans

Connecting to the Statewide Trail Network

- Coast-to-Coast Trail: The existing and proposed trail networks connect to the Coast-to-Coast Trail via the West Orange Trail and the Orange County connector trail along McCormick Road. The extension of the West Orange Trail to the Wekiva Trail to the north of the City also connects the proposed network to the Coast-to-Coast trail in Seminole County.
- SunTrail Network: The SunTrail network and the Coastto-Coast Trail overlap along the West Orange Trail, which currently connects to the City.

Connecting to the Regional Trail Network

- Orlando Area: The Apopka network will connect to the City via the Coast-to-Coast Trail and future Pine Hills Trail extension.
- Ocoee & Winter Garden: These areas are currently connected via the West Orange Trail. Additional trails planned by the Healthy West Orange Trail Connection will also connect to these areas.
- Seminole County: The Coast-to-Coast Trail and the Wekiva Trail will connect the City to Seminole County.
 Building the West Orange Trail extension and the Clarcona-Ocoee Gap (Coast-to-Coast Trail) will complete this connection.
- Lake County: In addition to the existing West Orange Trail and Lake Apopka Loop Trail, numerous planned trails will connect the City to areas in Lake County. The Wekiva Trail extension (to the west) will connect to Mount Dora and Tavares.



IX. Accessory Plans

Plans that integrate into the Active Transportation Network Study to ensure long term success and usage of the network.

Plan Listing



Trailhead & Amenity Plan

Identification of trailheads and accessories to enhance the trail system.

Conceptual Land Design Plans

Two conceptual designs for proposed trailhead locations.

Tree Canopy Plan

Identification of areas where increased tree coverage would improve the network.

Crossing **Safety Plan**

A safety countermeasure plan at critical future trail crossings in the City.

Wayfinding **Strategy**

An introductory wayfinding signage strategy to guide trail users.

Trail Standards Guide

Design standards that will guide City staff and developers in building trails.

Trailhead & Amenity Plan

The trailhead and amenity plan identifies potential trails to anchor the trail network over the long term (15-20 years). Trail amenities are also identified to improve comfort and utility for trail users. Figure 79 shows proposed future trailhead locations.

New Trailhead Locations (Existing Park)

- Alonzo Williams Park (1)
- Camp Wewa (2)
- Lake Apopka Wildlife Area (3)
- Northwest Recreation Complex (4)
- Kelly Park / Rock Springs Run (5)
- Wekiva Springs State Park (6)

New Trailhead Locations

- 2511 Binion Road (7)
- * 2923 Lust Road (8)
- ✤ 30 West Station Street (9)
- * 3080 Snowden Road (10)
- Apopka City Center / Highland Manor (11)
- Floridian Town Center (12)
- Old Keene Road Landfill (13)
- Pine Plantation (14)

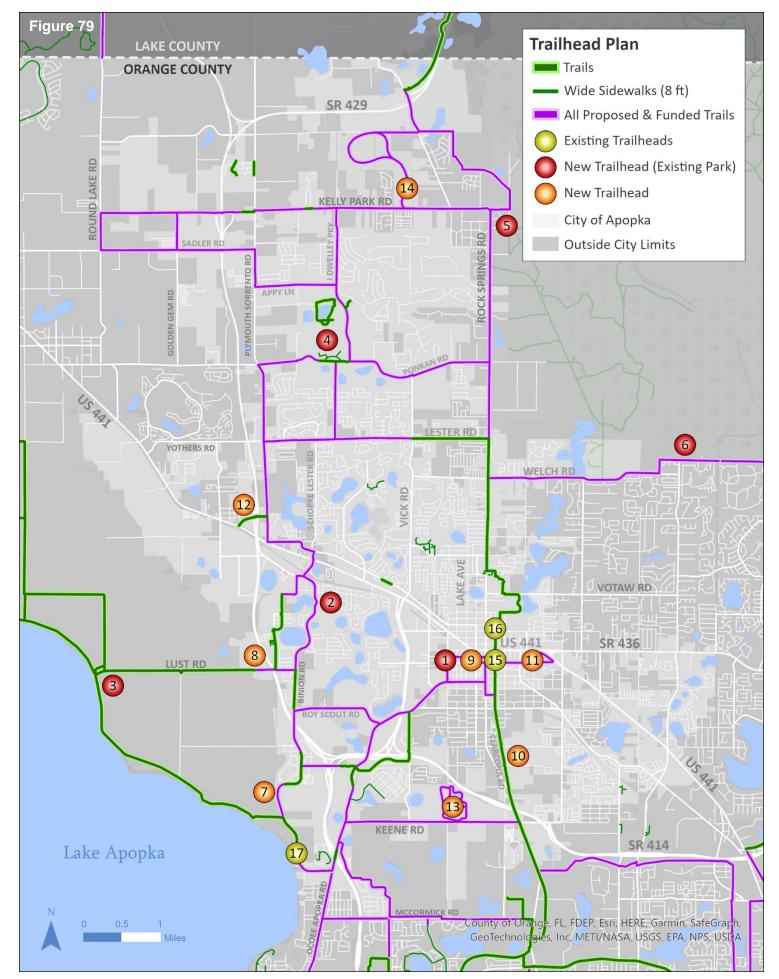
Existing Trailhead Enhancements

Downtown Apopka (15)

- Mixed use development on 2nd, 5th, and 6th Street.
- $\circ~$ Bike racks on the north side of the Main Street overpass.
- * Kit Land Nelson Park (Apopka Station) (16)
 - Drink vending machine; Snack vending machine.

Magnolia Park (17)

- Additional bike racks.
- o Drink vending machine; Snack vending machine.



Trail Amenities | Best Practices

The project team has identified trail amenities that can be used as best practices for new trailhead locations and shopping areas adjacent to the trail network. These amenities are pictured on this page and were voted on for importance in the resident survey. See Appendix I to view the survey results.



Bicycle Racks



Benches



Covered Pavilions



Bike Repair Stations



Water Stations



Trash Receptacles



Lighting



Bathrooms





Conceptual Land Design Plans

The following concepts would improve two of the sites proposed as trailheads.

2511 Binion Road

Alternative route (Segment P1) taking the trail through the existing wooded area.



Highland Manor Greenspace

The eastern end of Segment 1G travels through Highland Manor.



Tree Canopy Plan

Tree canopy coverage helps to improve comfort for trail riders by reducing temperatures. This can assist in increasing trip lengths and overall use of the trail network. The maps on the following two pages show current shading levels and tree canopy priorities along the existing and proposed trail network.

Tree Type Recommendations

The following tree types are native to Florida and provide plentiful amounts of shading.

Southern Live Oak



Magnolia

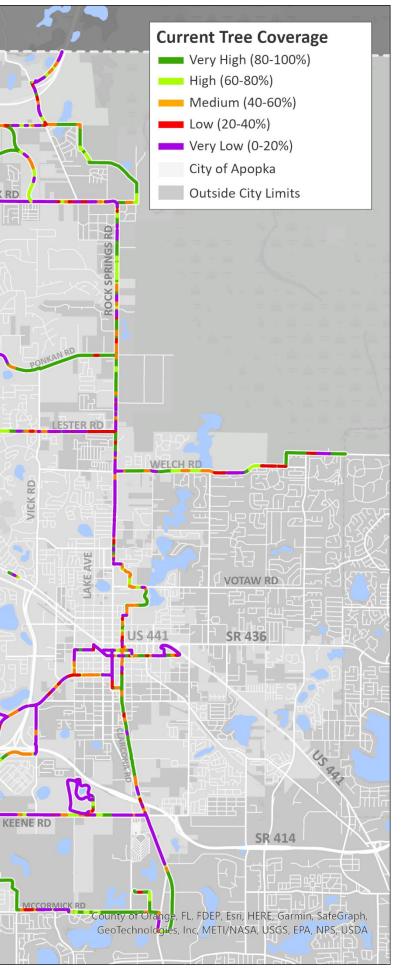


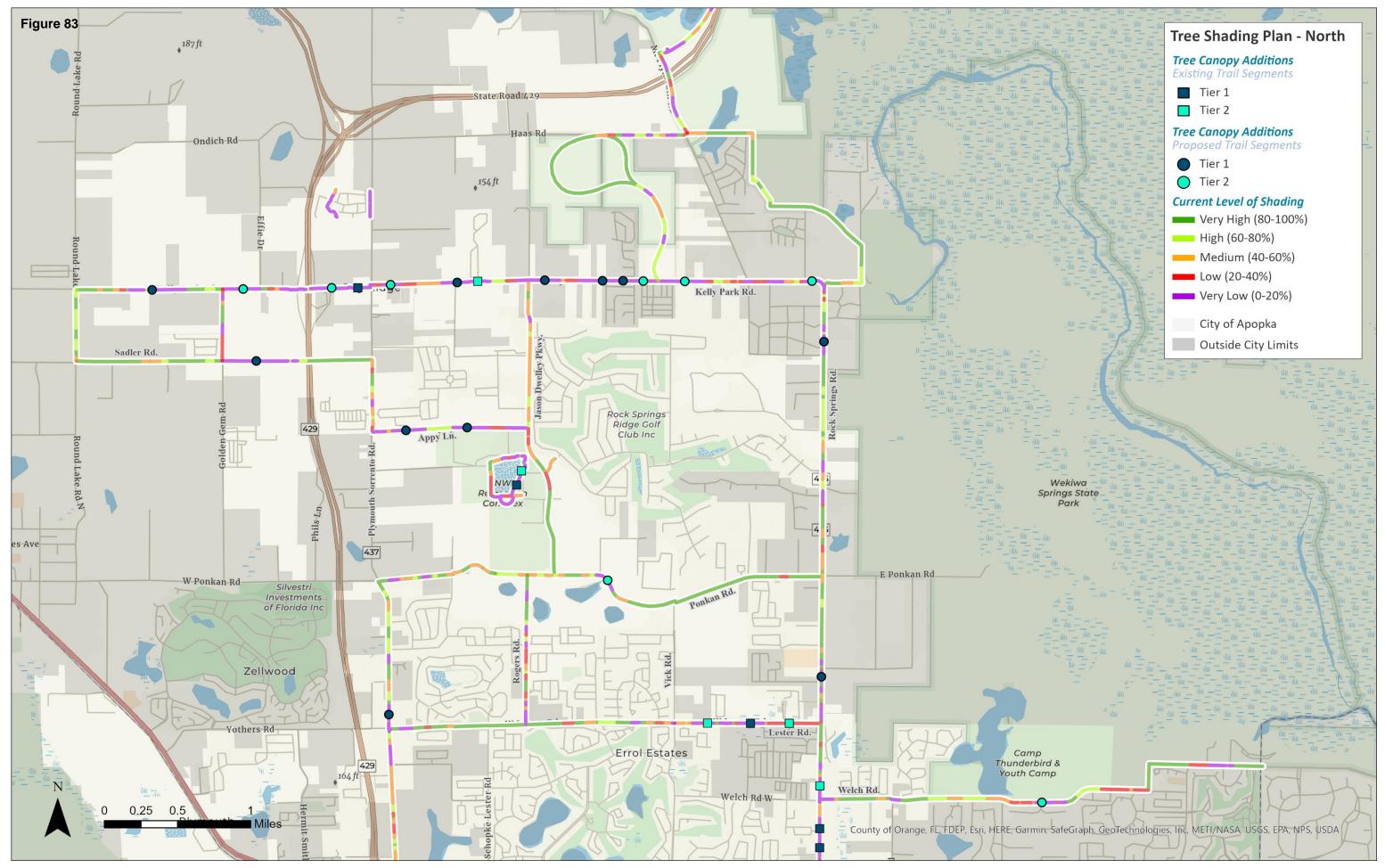
Laurel Oak

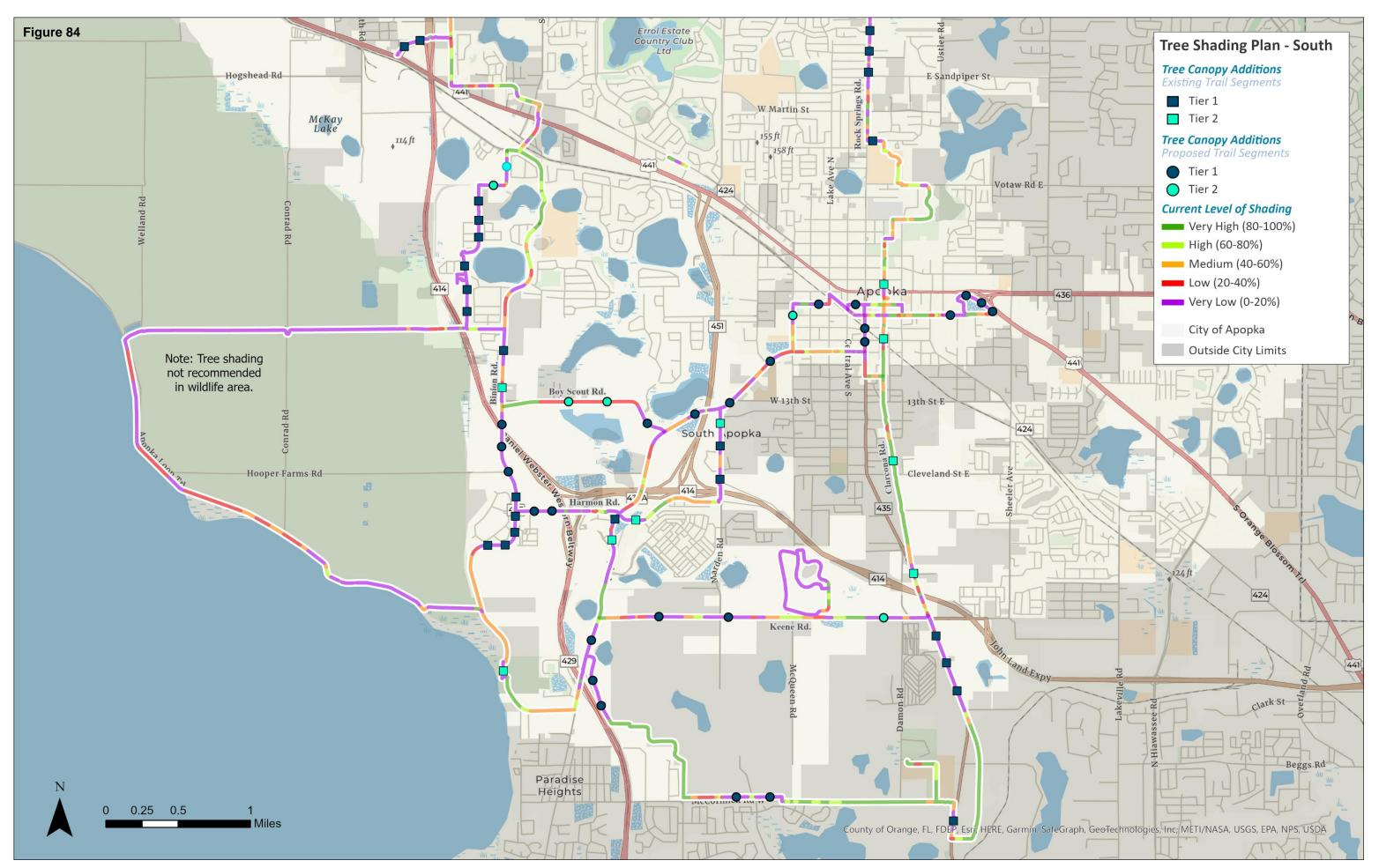




Figure 82 LAKE COUNTY **ORANGE COUNTY** SR 429 **KELLY PARK RD** YOTHERS RD LUST RD Lake Apopka 0.5 1







Intersection & Crossing Safety Plan

The Priority 1, Priority 2, and Partnership trail networks included in this plan have been analyzed for safety to ensure that residents and visitors can seamlessly ride, walk and roll through the City. Future trail corridors funded or planned by the County and State have not been analyzed as part of this plan, as that work is being done by other parties.

Countermeasure Types

Four countermeasure types have been identified for implementation as the trail network is built out. These include 1) a new proposed overpass in one location, 2) new rectangular rapid flashing beacons (RRFB's), 3) new painted trail crossings and 4) trail crossing signs (MUTCD sign W11-15a).

Trail Overpass at Lake View Drive & U.S. 441

As discussed previously, crossings over U.S. 441 are limited to just one location in this plan in addition to the existing above-grade crossing in downtown Apopka. At this crossing, located at Lake View Drive, it is recommended that the City build an above-grade facility in order to avoid the high speeds and high traffic volumes along U.S. 441. Right-of-way along the east side of Lake View Drive is fairly unconstrained, which increases the feasibility of such a facility being built. It is recommended that the City pursue a Reconnecting Communities Grant or another grant in order to cover a portion of the cost of the newly proposed facility.

Flashing Beacon Locations

Rectangular rapid flashing beacons (RRFB's) are critical at non-controlled crosswalks, as they allow a bicyclist or pedestrian to cross the street with the push of a button. In areas where flashing beacons are recommended, an alternative countermeasure would be to signalize the intersection or convert the intersection into a four-way stop.

Wide, Painted Trail Crosswalk

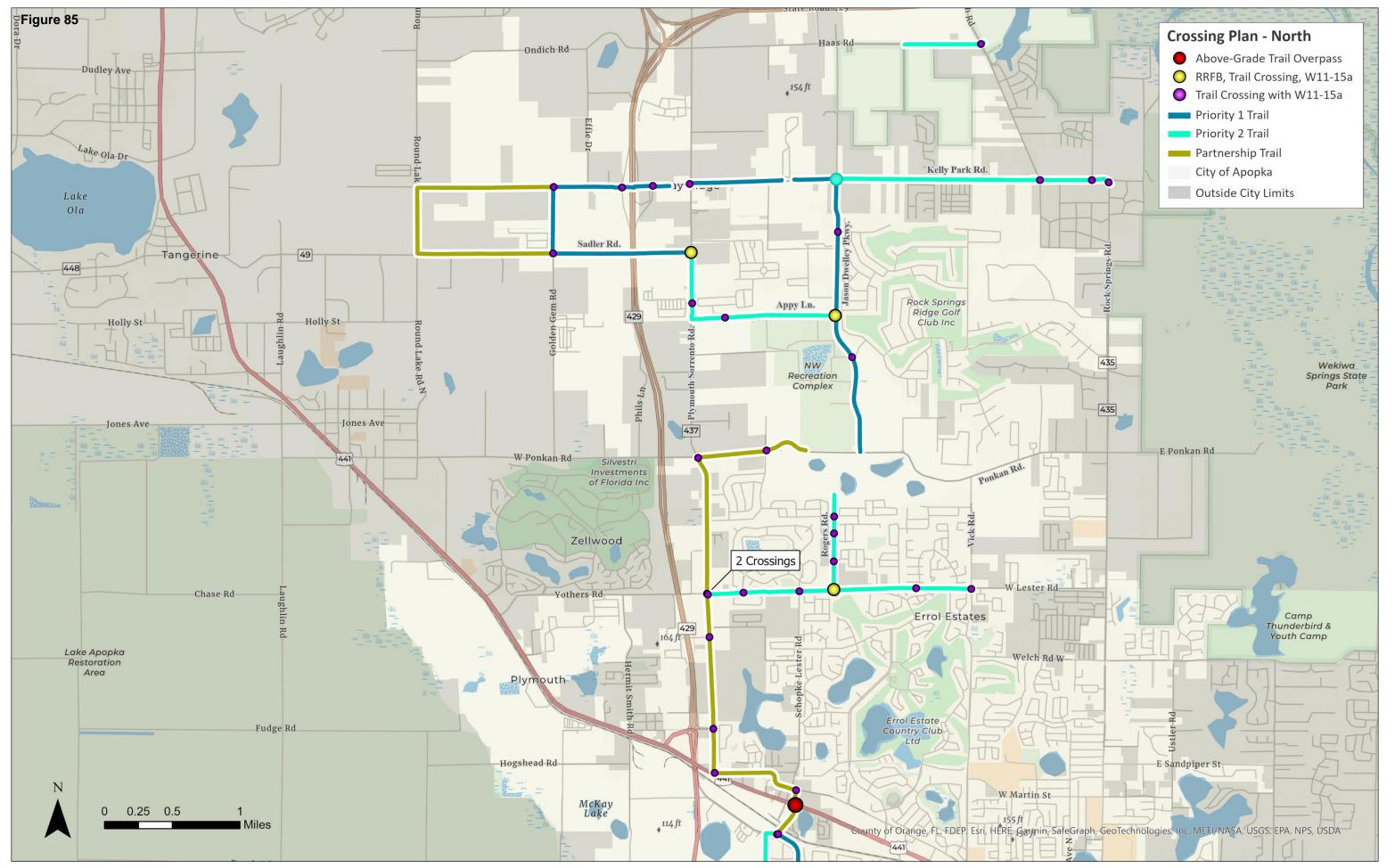


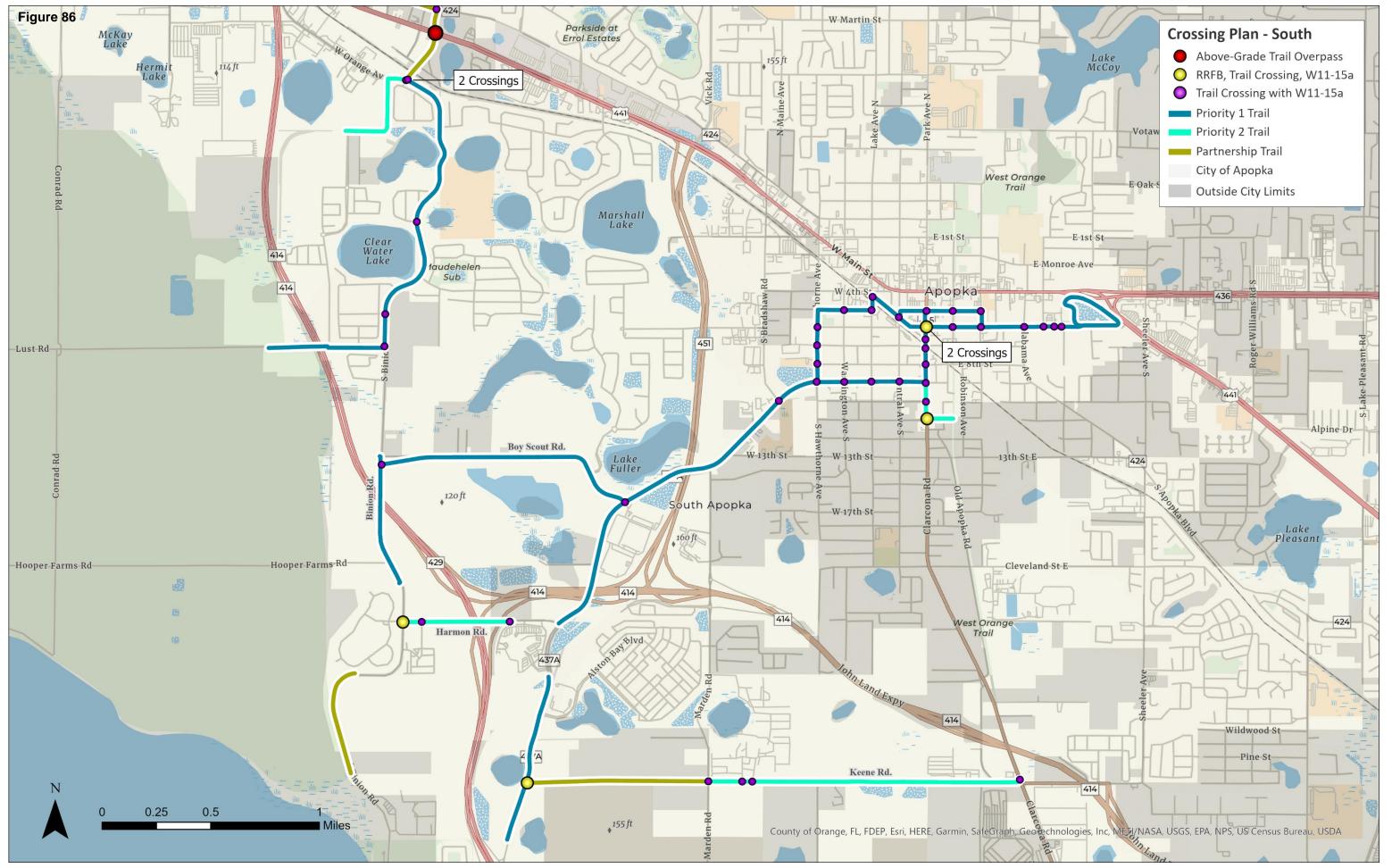
Rectangular Rapid Flashing Beacon



MUTCD Sign W11-15a Optional Addition: W11-15p







Wayfinding Strategy

It is recommended that the City complete a Wayfinding Signage Study to complement this plan as funding becomes available. A comprehensive signage study would enhance navigability along the trail network while promoting Apopka's business, environmental, recreational and cultural hubs. The following strategies could be further investigated as part of a Wayfinding Signage Study:

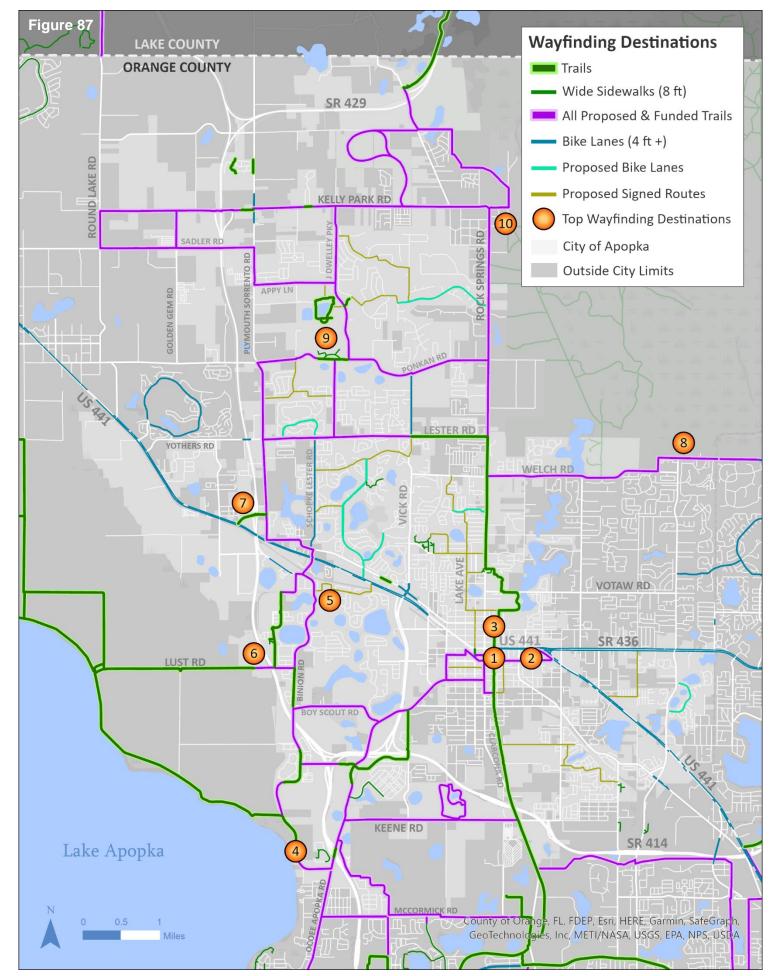
Signage Types

- o On-Route Trail Network Maps
- Distance-to-Destination Signs
- Trail Navigation (Directional) Signs
- o Bike Route Signs
- MUTCD Signage (Safety)
- Signage Placement Locations
- Signage Destinations
- Signage Design and Theming

Top Wayfinding Destinations (Preliminary)

The following ten locations have been identified as primary signage destinations for the City's wayfinding plan. Additional destinations should be identified as new trailheads and developments are built in the future.

- Downtown Apopka (1)
- Apopka City Center (2)
- Apopka Station (3)
- Magnolia Park (4)
- Camp Wewa (5)
- Lake Apopka Wildlife Area (6)
- Floridian Town Center (7)
- Wekiva Springs (8)
- Northwest Recreation Center (9)
- Kelly Park, Rock Springs (10)



Trail Standards Guide

This plan briefly outlined trail design and placement standards as part of Section III: Network Analysis. These standards have been expanded upon using the Orange County trail standards as a point of guidance.

The images on this page are products of the Orange County Parks and Recreation Department and represent the best-case scenario of a 14-footwide asphalt trail section.

- Facility Width
 - 10 to 14 feet in width if right-of-way is available.
 - 8 feet in width (minimum) if right-of-way is constrained.

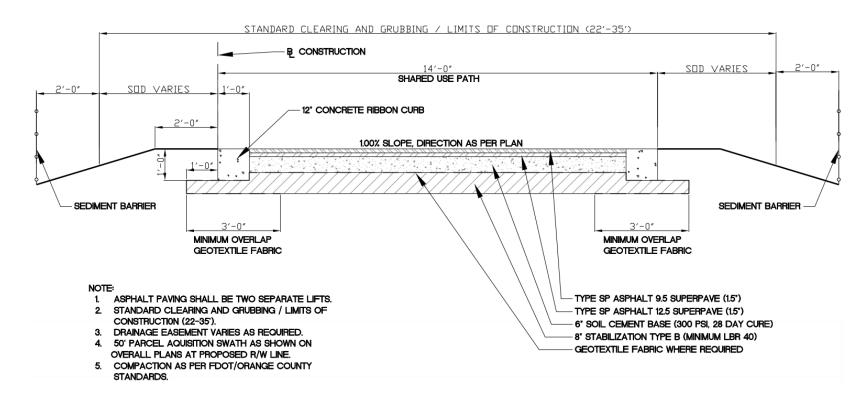
Roadway Separation

- Separated from the roadway by at least 10 feet if right-of-way is plentiful to allow for shade tree placement in the buffer area.
- Separated from the roadway by at least 5 feet if right-of-way is constrained, but available.
- No roadway separation only in the previously-identified rightof-way countermeasure areas.

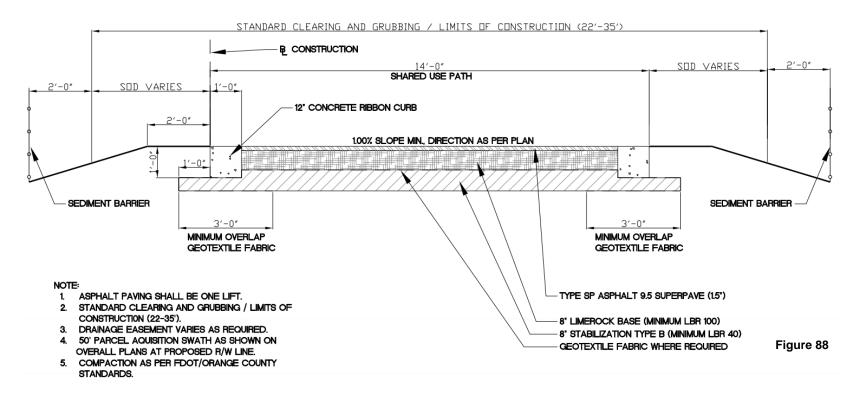
Other Considerations

- Concrete or asphalt are recommended. Concrete trails require less maintenance than asphalt trails.
- If asphalt is used with a high water table, then two lofts of asphalt are recommended in order to reduce cracking.

TYPICAL SOIL CEMENT TRAIL SECTION



TYPICAL LIMEROCK BASE TRAIL SECTION



SCALE: 1/-0"

SCALE: 1/3" = 1'-0"

Appendix 1: Survey Results



Distributed 750 postcards to over 30 businesses in the City of Apopka

15+ people attended the Community Workshop on May 18, 2023

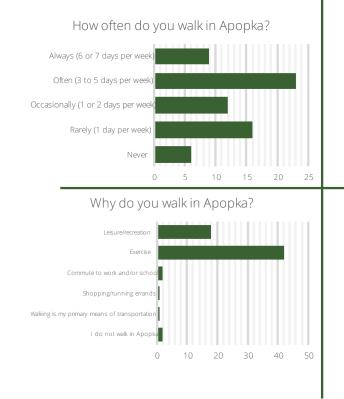
Survey Results

- 2nd round of postcard distribution to City facilities and at Bike/Walk community outreach events
- Inclusion in City and Bike/Walk weekly email campaigns
- 66 total responses



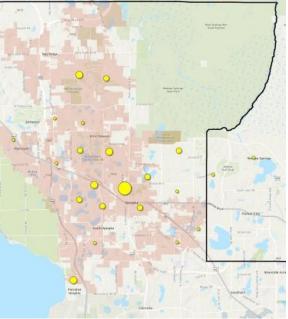
Walking in Apopka

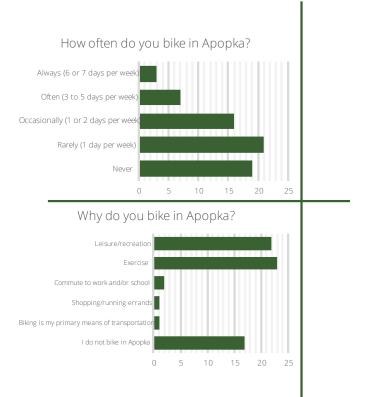
 People are walking very often – most likely for leisure, recreation, or exercise



Biking in Apopka

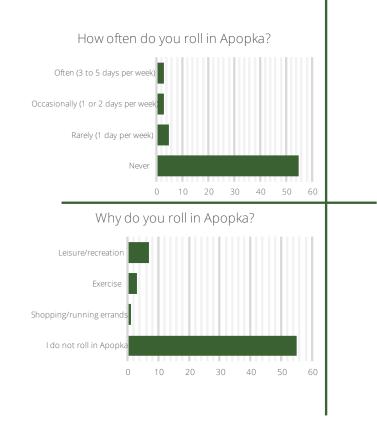
 People are biking a little – most likely for leisure, recreation, or exercise



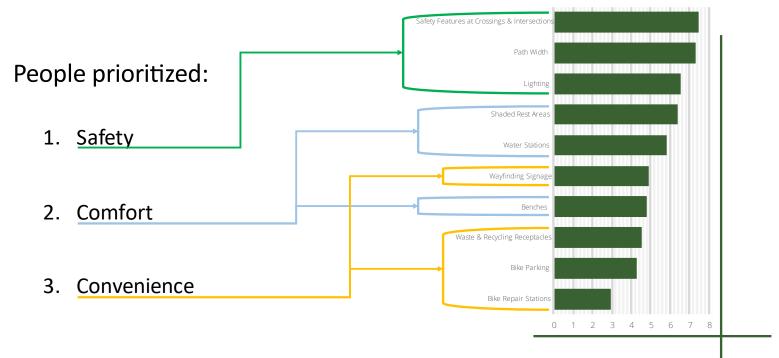


Rolling in Apopka

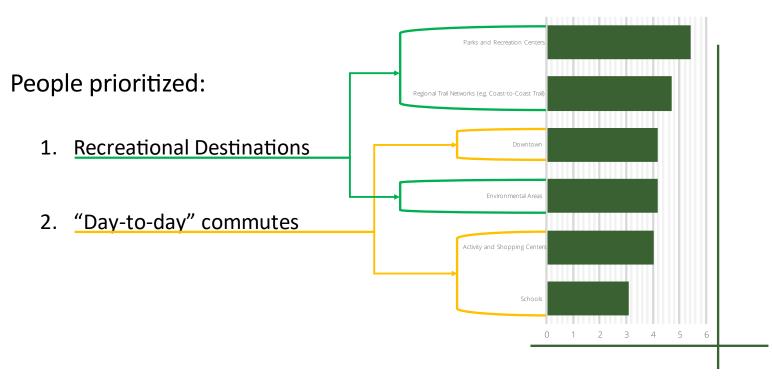
 People are aren't rolling much – when they do, it is likely for leisure, recreation, or exercise



Trail Amenity & Feature Priorities



Trail Connection Priorities



Appendix 2: Project Team

City of Apopka Pamela Richmond

Bike/Walk Central Florida Emily Hanna, AICP Patrick Panza, AICP

xGeographic

PJ Smith, AICP

xGeographic

100

Bike/Walk

Central

Florida

Steering Committee

Brian Sanders | Orange County Cate Manley | Apopka Chamber of Commerce Cedric Moffett | Orange County Donnie Rowland | Sorba Orlando Eric Mock | Realtor, Apopka Resident Joshua Sheldon | East Central Florida Regional Planning Council Libertad Acosta Anderson, PE | Florida Dept. of Transportation Mike Suver | City of Apopka Poorna Bhattacharya, AICP, LEED-AP | Asha Planning Radley Williams | City of Apopka Rogers Beckett | Beckwood Manegement Group. Apopka Resident Sue Vandernum | Sorba Orlando Taylor Laurent, PE, AICP | MetroPlan Orlando

Apopka City Council

Bryan Nelson | Mayor Alexander Smith | Commissioner, Seat 1 Diane Velazquez | Commissioner, Seat 2 Kyle Becker | Commissioner, Seat 3 Nick Nesta | Commissioner, Seat 4