ORANGE COUNTY

TRAILS MASTER PLAN

July 2022

ORANGE COUNTY PARKS & RECREATION

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Orange County Fire Rescue
Orange County Public Schools (OCPS)
Orange County Public Works
Orange County Sheriff's Office
Orange County Utilities Department
City of Apopka, Recreation Department
City of Ocoee, Parks & Recreation Department
City of Orlando Department of Families, Parks and Recreation
City of Winter Garden, Parks & Recreation Department
City of Winter Park, Parks & Recreation Department
Town of Oakland
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Florida Department of Environmental Protection (FDEP)
Florida Department of Transportation (FDOT)
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United States Fish & Wildlife Service (USFWS)
St Johns River Water Management District
South Florida Water Management District
LYNX
MetroPlan Orlando
Bike/Walk Central Florida
Friends of Lake Apopka
West Orange Trail Bikes and Blades
Wheel Works
Orlando Utilities Commission (OUC)

1.0 Executive Summary

1.1 Executive Summary

"Imagine a system of nearly 170 miles of wide, paved, multipurpose trails throughout Orange County, connecting residents and visitors to neighborhoods, parks, schools, offices, shopping, natural areas and attractions. Imagine families and individuals of all ages and abilities walking, running, bicycling and skating for both recreation and alternative means of transportation, just as they do today on Orange County's West Orange Trail and Little Econ Greenway Trail. And imagine new opportunities for economic development, social interaction and environmental protection and enhancement along the Trail corridors." Those were the main ideas guiding Orange County's 2012 Trails Master Plan.

In the nine years since the 2012 Trails Master Plan, Orange County has focused on expanding and improving its trail network to provide active transportation and recreation options to enhance the quality of life of its residents and visitors and support economic development.

As required by the Orange County Comprehensive Plan, this update builds on the 2012 Trails Master Plan and is necessary to provide an analysis of projects that have been completed, as well as to serve the needs of our changing and diverse population.

This Master Plan focuses on the County's mainline trails, a network of wide, paved, multi-purpose trails that form the primary network of the County's bikeways and trails system. This Plan provides the vision for how these trails will connect throughout the County and with trails in other jurisdictions. Other projects, such as roadway projects or smaller trail spurs to connect local destinations, or sidewalks, bike lanes, hiking trails or similar projects can enhance the connectivity of the mainline trail system, but are not included in the Plan, as they are generally being constructed throughout the County. These types of projects provide the facilities that can help to complete the bicycle/pedestrian network. The mainline trails evaluated in the Master Plan update are more focused on countywide connectivity to major destinations and regional trail networks.

This Plan update reviews the existing conditions and changes to the trail network and previously proposed trails since the 2012 Plan, as well as design guidelines for new trails. It also provides conceptual plans for eight (8) mainline trails:

1. Apopka Vineland Trail
2. Azalea Park Trail
3. Clarcona-Ocoee Connector Trail
4. East Orange Trail
5. East Orange Spur
6. Lake Apopka Connector Trail
7. Little Econ Greenway
8. Wekiva Trail

Further feasibility analyses were conducted for the following five (5) trails to provide a more detailed overview of potential opportunities and constraints for the proposed alignments:

1. Horizon West Trail (Phase 2)
2. Innovation Way Trail – North (Phase 1B)
3. Pine Hills Trail (Phase 2B)
4. Shingle Creek Trail (Phase 4)
5. West Orange Trail (Phase 4)

During the planning process, community outreach was a critical component to understanding how people use the trail system and what people felt would improve the trail systems, including potential connections to be considered and types of amenities.

In addition to the public outreach, the project team held meetings with 26 stakeholder organizations, including local municipalities, local bicycle and environmental organizations, transit providers and utility companies to discuss needs, opportunities, potential connections and alignments options.

This Plan incorporates the ideas and comments from this outreach and aims to build upon the County's stated vision for its trails system.

2.0 Planning Process

2.1 Project Description

Orange County envisions a safe, scenic, and user-friendly system of trails providing equitable access to outdoor recreation and active transportation that contributes to the health, economic vitality, and quality of life of all Orange County residents and local communities. The Trails Master Plan provides framework analysis and planning assessment to assist County leaders and project managers in making informed decisions in order to implement this vision.

Maintaining and enhancing the County's network of trails is essential to the quality of life for a growing population. The County's Comprehensive Plan requires updates to the Trails Master Plan every seven years to accommodate for the needs of this diverse and changing population.

The 2021 Trails Master Plan update summarizes the previous master plan, examines the current conditions of the existing trail system, and identifies proposed new trail projects. The master plan update provides alignment concepts for proposed new trail corridors and evaluates the feasibility of specific future trail corridors identified as priorities. The plan update also provides design guidelines for the trail system improvements, including construction details, amenities along the trail, trailhead design, and crossings to enhance the safety and comfort of trail users.

2.2 Public Outreach

The first public outreach event began in August 2020 to gather feedback on the existing trail system, as well as suggestions for future trails. An interactive virtual workshop room was open to the public from August 20, 2020 through September 10, 2020. In addition, a project website, www.ocfltrailsplan.com, was created and will remain open and accessible through the planning process. The website received over 4,500 site visits and remained open throughout the planning process. Over the course of the entire planning effort, over 6,200 unique users visited the project website oer the course of 7,482 online sessions.

The interactive Virtual Meeting Room contained information on the existing Trails Master Plan (completed in 2012), maps of the existing mainline trails in the County, survey and comment forms and an interactive map for ease of use and commenting. The Virtual Meeting Room attracted approximately 1,500 visitors, who completed over 900 surveys and over 500 written comments.

The second virtual public outreach was held from May 12, 2021 through May 26, 2026. The second interactive virtual public outreach gathered feedback on the trail master plan, existing and proposed future trail corridor evaluations, priorities, and proposed design guidelines. Over 400 online visitors attended the Virtual Meeting Room.

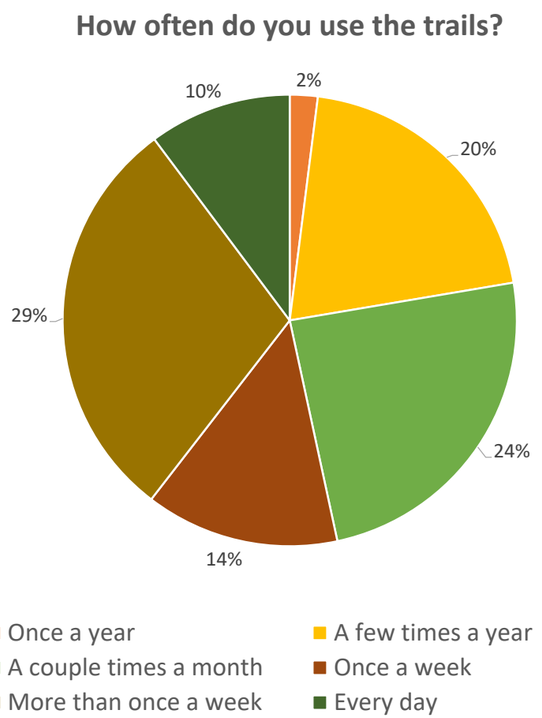
The master plan includes recommendations and input from over 20 stakeholder municipalities, organizations, and agencies. Stakeholders provided valuable comments on the existing mainline trail network and potential improvement recommendations, and suggestions to expand on the mainline trail network for improved interconnections.

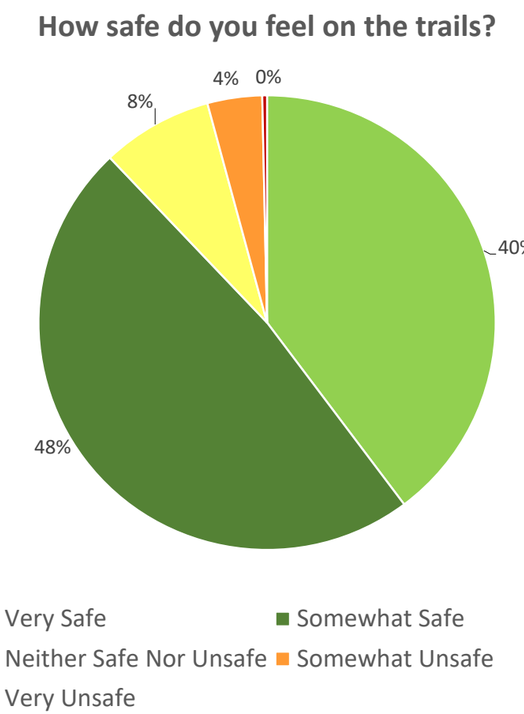
The following are key conclusions from the public outreach processes, including an analysis of the survey responses, public outreach comments, stakeholder meetings, and additional comments received by the Project Team.

Online Survey Existing Use of Trail Network

The most common used trails include the West Orange Trail (28% of respondents), Cady Way Trail (24%), Little Econ Greenway (15%) and Lake Apopka Loop Trail (10%).

- 77% of respondents use Orange County trails more than once a month.
- 83% of respondents used the trails for biking, 52% for walking and 31% for running.
- Only 1% of respondents primarily use the trails for commuting.
- The top five preferred services and amenities along trails include the following:
    - Public Restroom/Water
    - Parking
    - Food and Dining Options
    - Gazebo and Picnic Tables
    - Bike Shop
- Factors that prevent respondents from using trails were evenly split between 'difficulty getting to the trail', 'safety concerns' and 'not enough destinations.
- 88% of respondents felt "very safe" or "somewhat safe."
- 89% of respondents rated the maintenance of the trails as good or excellent.





Public Comments

The written comments primarily focused on the following topics:

- Connectivity
    - o There is a desire for improved connectivity.
    - o Potential trails mentioned included: a connection to UCF; Dr. Phillips; southeast Orange County/Lake Nona; a Shingle Creek Trail extension; a connection to the Florida National Scenic Trail System; and, other connections to the regional system, such connecting to the Seminole County Trails and finishing the Lake Apopka Loop.
- Safety
    - o There were concerns regarding trails that cross high traffic volume roadways and suggestions to identify strategies to promote safe crossings and alert drivers of the crossing.
        - Stop signs along trails (for trail users) at driveways was noted as a point of concern and confusion.
    - o Requests to add emergency call boxes or cameras, as cellphone reception is limited on some trails.
    - o Consider updated maintenance schedules for trails to regularly clear debris and trash, as well as long-term maintenance such as repaving trails to make sure they are safe and clearing vegetation from overgrowth.
- Wayfinding and Signage
    - o Respondents identified the preference for updated trail mile designations for visibility, orientation, and for emergency use.
    - o There was a desire for improved wayfinding signage, including larger and/or easier to read signage, and more signs pointing to key trail and area destinations (downtowns, parks, schools, restaurants, trailheads, parking lots, etc.).
        - Generally, signage for parking at trail locations is not clear. The location of parking lots for those arriving to the trail is not easily discernible, especially for new users.
    - o The creation of a coordinated website map identifying all trail connections, from a regional perspective, including Orange, Osceola, Seminole and Lake Counties was identified as a project to benefit trail users.
- Design and Amenities
    - o There was a preference for trails to include more shaded sections.
    - o Amenities identified to improve the trail system include more water fountains, including water sources for horses at appropriate locations, water bottle fill stations, bike repair stations, and restrooms.

The meeting summaries for Public Outreach #1 and the Stakeholder Meetings can be found within the Existing Conditions Technical Memorandum in Appendix A. The meeting summary for Public Outreach #2 can be found in Appendix B.

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3.0 Existing Conditions

3.1 Previous Trails Plans

3.1.1. 2012 Orange County Trails Master Plan

This Plan updates the 2012 Orange County Trails Master Plan. The 2012 Orange County Trails Master Plan provided detailed descriptions of each mainline trail in the County, including existing trail length, trail connections, and a description of the surrounding trail communities. The 2012 Plan also provided conceptual plans and cost estimates for the following twelve (12) trails, which are also identified on Figure 2.

1. Avalon Trail
2. Azalea Park Trail
3. Clarcona-Ocoee Connector Trail
4. East Orange Trail
5. Horizon West Trail
6. Innovation Way/UCF Trail North and South Trails
7. Lake Apopka Connector Trail
8. Little Econ Greenway Trail
9. Meadow Woods Trail
10. Pine Hills Trail
11. Shingle Creek Trail
12. West Orange Trail

3.1.2. 2015 Horizon West Trails Study

The 2015 Horizon West Trails Study focused on ways to efficiently identify and maintain the trails within Horizon West to provide a system that links all the Villages within Horizon West and the County's mainline trail network. Since the trails within Horizon West are owned and/or maintained by Orange County as well as various Homeowners Associations (HOAs), the 2015 Horizon West Trail Study also "details the process Orange County used to classify the ownership and maintenance responsibilities of the Horizon West trails and how they intend to continue to track and manage future trails."

The Horizon West Trails Study examined existing procedures undertaken by the County on the arterial and collector trail systems, summarized as follows:

- The intent of the arterial trail network is to connect the Horizon West Villages and Town Center together. Future arterial trails should be located predominately along County Functionally Classified Roadways.
- The collector trails connect the residential areas to schools, parks, public facilities, and commercial areas. The location of these trails will be determined by the Horizon West development requirements (Chapter 38PD, Article VIII. Division 8.0 – Village Planned Development Code and Division 8.5 – Town Center Planned Development Code). The policies specify that Collector trails will connect Village amenities such as schools and parks to the residential areas as well as connect to the Arterial network, but the final location of these trails will be determined by the developer. In the existing Villages, many collector trails are either constructed or have approved design plans. For the Villages that have yet to be developed, proposed collector trails are shown along the main roadways anticipated within the Village.

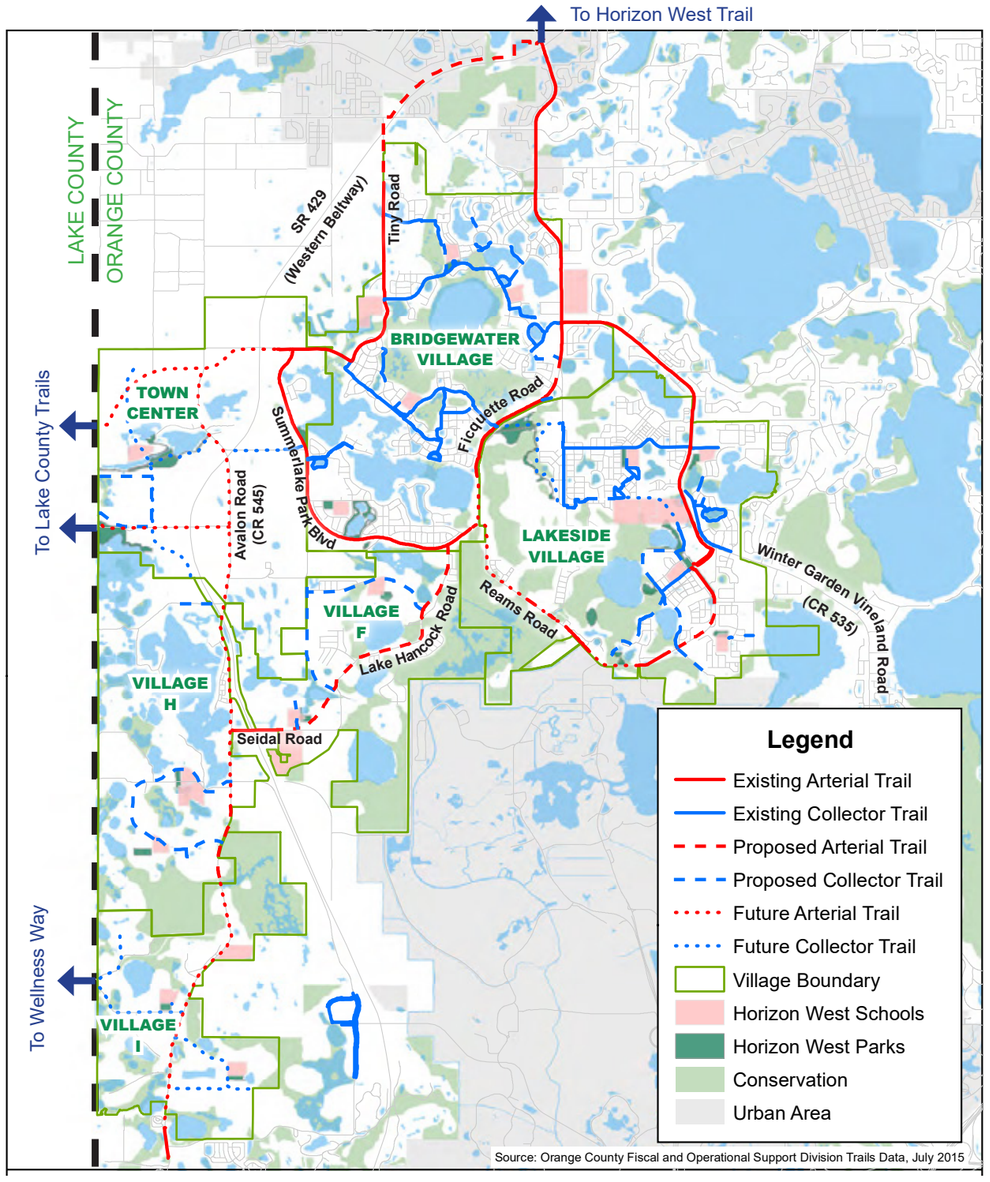


Figure 1: Horizon West Tails Network

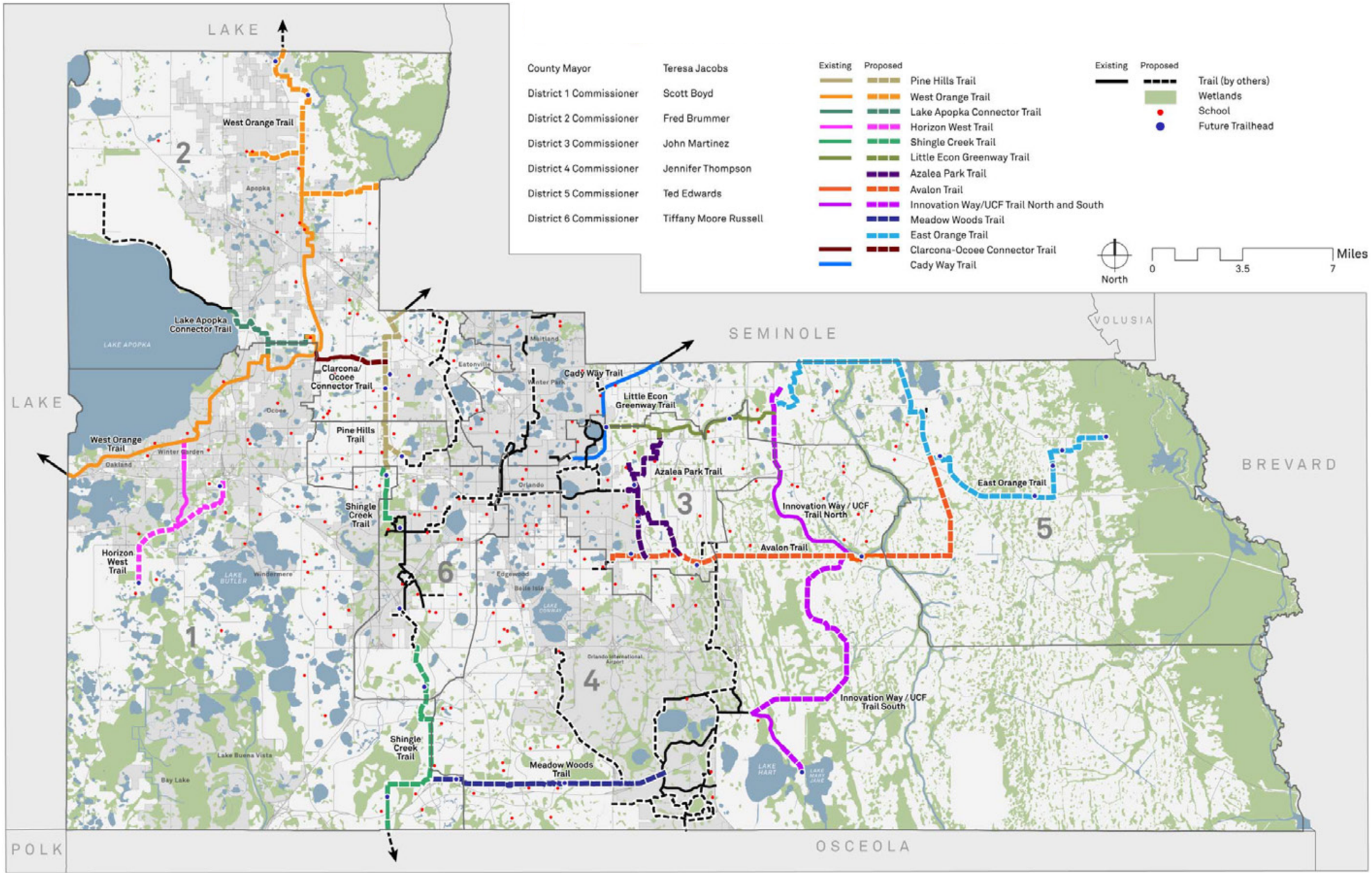


Figure 2: Orange County Trails Overview (2012 Orange County Trails Master Plan)

3.2 Existing Conditions

3.2.1. Existing Trail System

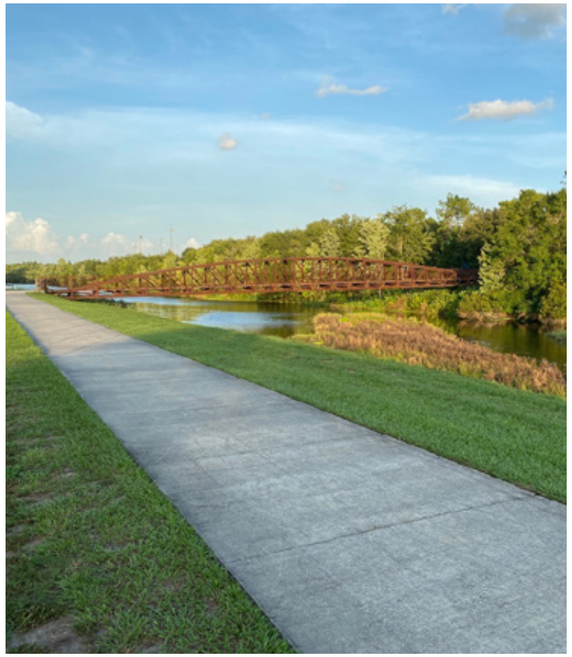
The Orange County trail system includes ten (10) mainline trails that provide access to destinations, such as parks, around the County and connections to a regional trail system. The existing mainline trails are depicted in Figure 3 and include:

1. Avalon Trail
2. Cady Way Trail
3. Clarcona-Ocoee Connector Trail
4. Horizon West Trail
5. Innovation Way North and South Trails
6. Lake Apopka Loop Trail
7. Little Econ Greenway
8. Pine Hills Trail
9. Shingle Creek Trail
10. West Orange Trail (including Wekiva Trail)

These ten mainline trails combine to provide more than seventy (70) miles of trails for residents and visitors to run, walk, and bike, and are maintained by seven (7) different agencies. The Orange County Parks and Recreation Department maintains approximately 53.9 miles of the system. Other agencies responsible for maintenance include:

1. Avalon Park Homeowners Association
2. City of Orlando
3. City of Winter Garden
4. City of Winter Park
5. Florida Department of Transportation
6. Orange County
7. St. Johns River Water Management District

For additional information and mapping of the existing trail system, please see the Existing Conditions Technical Memorandum found in Appendix A.



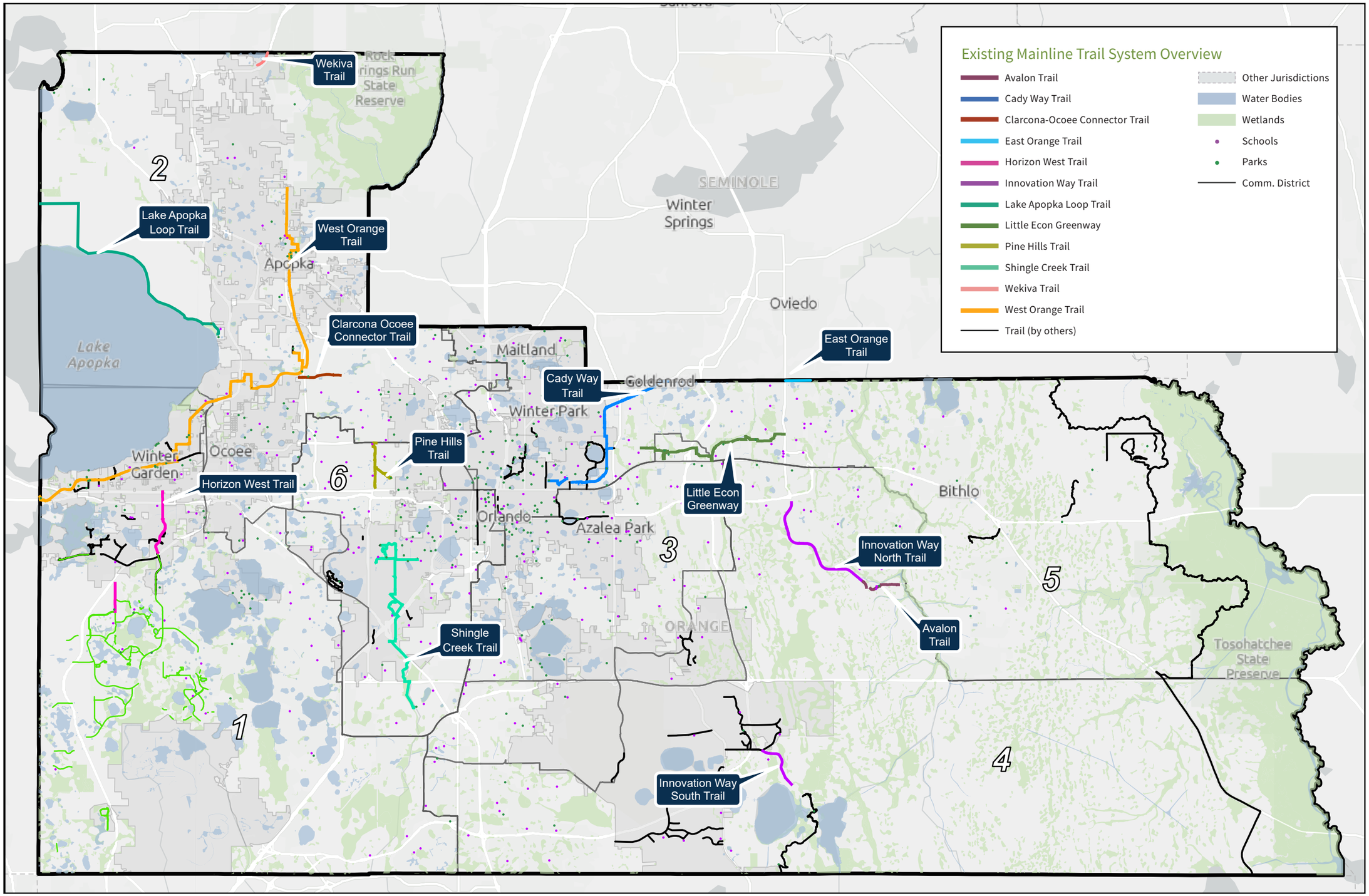


Figure 3: Orange County Existing Mainline Trails

3.2.2. Impacts of Changing Conditions on Previously Recommended Trail Corridors

Since 2012, various segments of the trails proposed in the 2012 Trails Master Plan have been constructed, or are currently in the process of being studied or designed. Table 1 below identifies these projects from the 2012 Trails Master Plan that have been completed or are in progress:

1. Clarcona-Ocoee Connector Trail
2. East Orange Trail
3. Horizon West Trail
4. Innovation Way North Trail
5. Lake Apopka Connector Trail
6. Little Econ Greenway
7. Pine Hills Trail
8. Shingle Creek Trail
9. Wekiva Trail

Table 1: Projects from the 2012 Trails Master Plan

Project Phase	Trail(s)
Feasibility	Little Econ Greenway (Phase 3A)
Planning and Design	Clarcona-Ocoee Connector Trail Extension Horizon West Trail (Phase 1) Innovation Way North Trail (Phase 1A) Lake Apopka Connector Trail Pine Hills Trail (Phase 3) Shingle Creek Trail (Phase 1B and 3) Wekiva Trail (Phase 4B)
Construction	Pine Hills Trail (Phase 2A) Shingle Creek Trail (Phase 1C and 2)
Completed	Pine Hills Trail (Phase 1) Shingle Creek Trail (Phase 1A) Wekiva Trail (Phase 4A)

In addition to the projects listed in Table 1, a Project Development and Environment (PD&E) Study has previously been completed for Phase 4B of the Wekiva Trail.

3.2.3. Impacts of Changing Conditions on Previously Recommended Trail Corridors

The 2021 Trails Master Plan recognizes the changing social and development conditions of Orange County. For example, due to new roadway construction or property ownership constraints some of the previously considered trail corridors are no longer viable. Coordination with Orlando Utilities Commission (OUC) was conducted to determine the feasibility of locating trails within OUC's utility corridors. It has been determined that at this time, it is not feasible to construct trails within these utility corridors. Therefore, the following corridors have been analyzed and removed from further consideration:

1. Avalon Trail Extension
2. Meadow Woods Trail

In addition, the previously proposed Azalea Park Trail has been revised. The revised alignment is depicted in Chapter 4 on this Plan.

4.0 Proposed Trail Network

4.1 Priority Ranking

Five trail segments are included in MetroPlan Orlando's Prioritized Projects List (PPL) for funding. As these trails have been identified for funding, they have been further analyzed for a Tier 2 feasibility study as shown in Section 4.3. These trails are identified below.

Table 2: Feasibility Study Trails

Feasibility Study Trails
Horizon West Trail (Phase 2)
Innovation Way Trail - North (Phase 1B)
Pine Hills Trail (Phase 2B)
Shingle Creek Trail (Phase 4)
West Orange Trail (Phase 4)

For the remaining trails that are not identified for feasibility studies, or are in the planning, design, or construction phase as identified in Section 3.2.2, a priority trail ranking matrix was developed to assist the County in planning for the prioritization and future implementation of the proposed trail system improvements. The trail ranking matrix includes additional components and revised scoring based on the current existing conditions.

The criteria reviewed and scored in the prioritization matrix include:

- **Population Density Served:** This metric quantifies the extent to which the corridor serves areas forecasted to have higher 2045 population densities. Corridors that provide trail access to higher-density areas are prioritized in this criterion.
- **Public Ownership Percentage:** This criterion is a measure of the portion of the corridor that falls within public right of way or within parcels owned by government agencies. It quantifies the extent to which the proposed trail impacts private property owners and is an indicator for ease of implementation.
- **Scenic/Aesthetic Value:** This measure scores each corridor using a subjective assessment of the corridor's scenic and aesthetic merits.
- **Transportation Value:** This evaluation is based on the density of key destinations per mile of trail and provides insight into the role the trail plays in connecting residents to critical services, recreational opportunities, and community institutions.
- **Catalyst Potential for Economic Development:** Residential and commercial land uses have been found to benefit economically from access to trail facilities. This metric quantifies the percentage of the trail that is surrounded by residential and commercial land uses in order to evaluate the economic development potential.
- **Promotes Potential for Urban Infill:** This metric quantifies the percentage of the corridor that falls within the Urban Service Area. As investment in transportation infrastructure is generally followed by private investment in land development, it is a goal of the County to prioritize transportation investments within developed areas.
- **Lack of Other Bicycle/Pedestrian Facilities:** This metric evaluates the presence of existing bicycle and pedestrian facilities that serve as an alternative to the proposed trail. In the absence of such alternatives, the County is prioritizing the trial to provide needed connections.
- **Connectivity with Other Trail Corridors:** Creating connections between trail facilities is important to provide trail users with access to destinations and begin to form a network of interconnected trail facilities. This criterion evaluates the critical linkages the proposed trails provide to the overall network.
- **Facility Type:** The density of vehicle conflict zones and separation from moving traffic directly influence the perception of safety and comfort for trail users. Generally, independent trail facilities have a limited number of crossings are not adjacent to moving traffic, providing a high degree of trail user comfort. Side paths are trails located adjacent to moving traffic. Sidepaths with frequent driveway crossings provide the least comfortable trail facility.
- **Environmental Justice:** This criterion is based on whether the corridor's MetroPlan Orlando Environmental Justice (EJ) is at, below, or above average. Factors used to assign EJ scores include zero car households, limited English proficiency, population below poverty, and population below 18 and over 65.
- **Community Health:** Health risk factors are heavily influenced by a community's built and social environment. This score is based on whether adjacent populations are anticipated to be at, below, or above-average risk for diabetes, asthma, or obesity based on The Healthy Mobility Model. The Healthy Mobility model is a GIS-based tool that correlates land use, urban design, and transportation data in assessing the built environment's impact on public health.

The prioritization matrix can be found within Appendix C. Based on the above, the remaining proposed trails were ranked and are shown in Table 3 below.

Table 3: Concept Plan Trails

Concept Plan Trails
Azalea Park Trail (59 Points)
Apopka Vineland Trail (49 Points)
East Orange Trail Spur (39 Points)
East Orange Trail (29 Points)

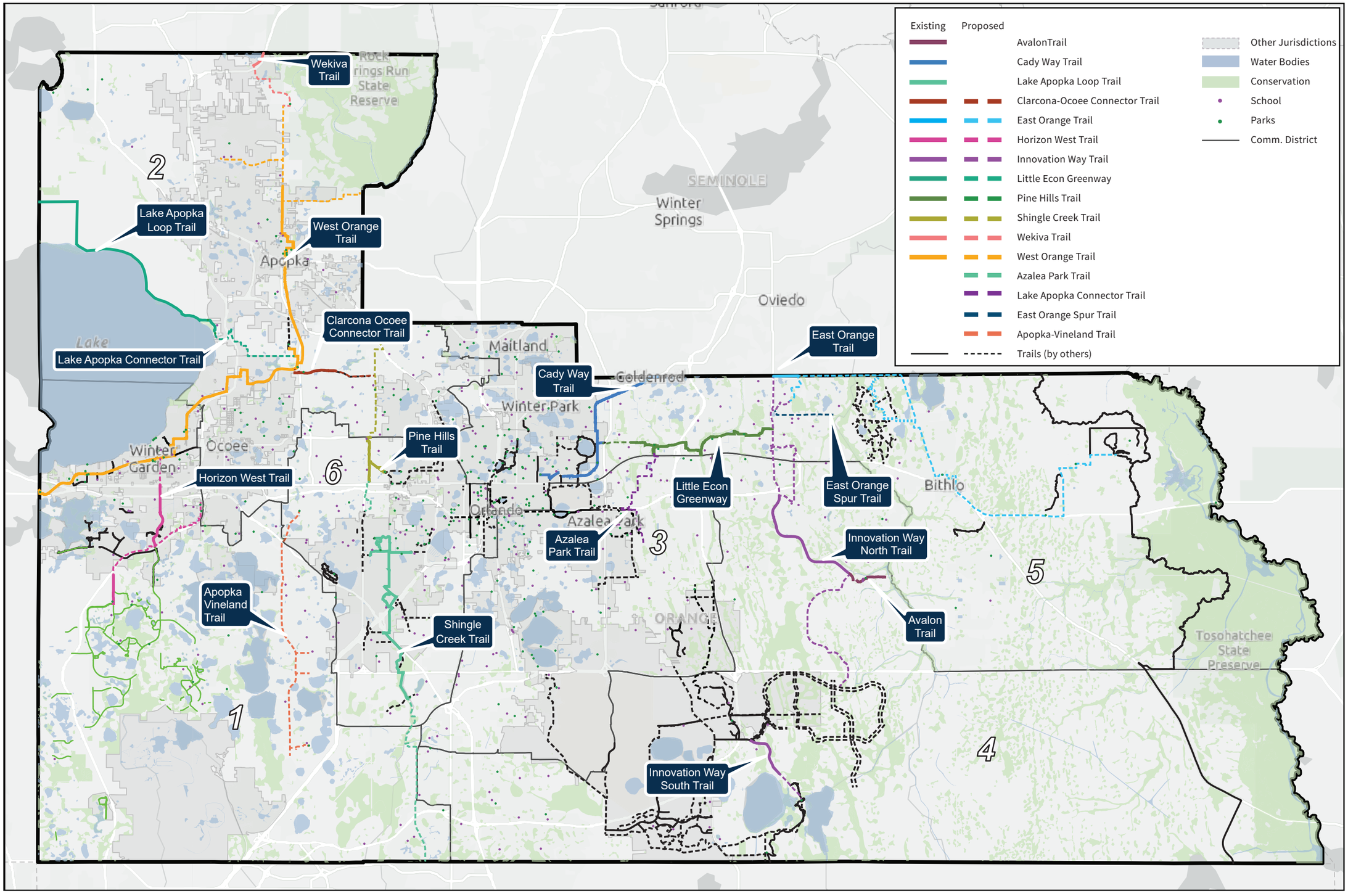


Figure 4: Proposed Trails Master Plan

Evaluation Criteria		Azalea Park Trail	East Orange Trail (Phase 1A-F)	East Orange Trail Spur (Additional Route)	Apopka Vineland Trail
Population Density Served	**Points**				
Average 2045 population density > 2,440 persons/mi	10	10			10
Average 2045 population density 1,032 and 2,440 persons/mi	6			6	
Average 2045 population density < 1,032 persons/mi	2		2		
Subtotal		10	2	6	10
Public Ownership	**Points**				
At least 75% of the corridor is in public ownership	5	5	5		5
At least 50% of the corridor is in public ownership	3			3	
At least 25% of the corridor is in public ownership	1				
Subtotal		5	5	3	5
Scenic/Aesthetic Value	**Points**				
At least 75% of the corridor has scenic/aesthetic value	5				
At least 50% of the corridor has scenic/aesthetic value	3	3	3		
At least 25% of the corridor has scenic/aesthetic value	1			1	1
Subtotal		3	3	1	1
Transportation Value	**Points**				
The corridor has a high concentration of destinations, including parks, trails, schools, employment centers, etc.	10				10
The corridor has a moderate concentration of destinations, including parks, trails, schools, employment centers, etc.	6	6		6	
The corridor has a low concentration of destinations, including parks, trails, schools, employment centers, etc.	2		2		
Subtotal		6	2	6	10
Catalyst for Economic Development	**Points**				
Trail corridor is adjacent to commercially or residentially zoned properties, is expected to stimulate significant economic development	5	5			5
Trail corridor is adjacent to commercially or residentially zoned properties, is expected to stimulate moderate economic development	3				
Trail corridor is adjacent to commercially or residentially zoned properties, is expected to stimulate minimal economic development	1		1	1	
Subtotal		5	1	1	5
Promotes Urban Infill	**Points**				
At least 75% of the corridor is located within Urban Services Boundary	5	5		5	5
At least 50% of the corridor is located within Urban Services Boundary	3				
At least 25% of the corridor is located within Urban Services Boundary	1		1		
Subtotal		5	1	5	5
Lack of Other Bicycle/ Pedestrian Facilities	**Points**				
Few or no other bicycle/pedestrian connections (such as sidewalks and bike lanes) are available in the majority of communities surrounding the corridor	5		5	5	
Several other bicycle/pedestrian connections are available in the majority of communities surrounding the corridor	3	3			3
Numerous other bicycle/pedestrian connections are available in the majority of communities surrounding the corridor	1				
Subtotal		3	5	5	3
Connected to Other Trail Corridors	**Points**				
The corridor connects to more than 2 other trails	10				
The corridor connects to 2 other trails	6				
The corridor connects to 1 other trail	2	2	2	2	2
Subtotal		2	2	2	2
Facility Type	**Points**				
Independent trail facility (not adjacent to roadway, limited number of roadway crossings)	5	5		5	5
Sidepath (adjacent to roadway facility) with infrequent driveway crossings	3		3		
Sidepath (adjacent to roadway facility) with frequent driveway crossings	1				
Subtotal		5	3	5	5
Environmental Justice	**Points**				
MetroPlan EJ score for corridor is above average	10	10			
MetroPlan EJ score for corridor is average	6				
MetroPlan EJ score for corridor is below average	2		2	2	2
Subtotal		10	2	2	2
Community Health	**Points**				
Communities adjacent to corridor are at above average risk for diabetes, asthma, or obesity	5	5			
Communities adjacent to corridor are at moderate risk for diabetes, asthma, or obesity	3		3	3	
Communities adjacent to corridor are at below average risk for diabetes, asthma, or obesity	1				1
Subtotal		5	3	3	1
Total Score	**85 possible**	59	29	39	49
Ranking		**1**	**4**	**3**	**2**

Note: Trails included in MetroPlan Orlando's Prioritized Project List (PPL) or trails already in the planning, design or construction phases, have already been prioritized for funding and are not included in this matrix.

Figure 5: Prioritization Matrix

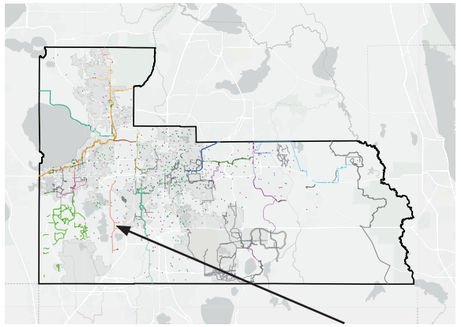
4.2 Concept Plans

Concept plans were developed for the trails identified in Table 3 which did not receive the more detailed feasibility studies. To provide an overview of the regional trail network, this section also includes concept plans for the trails that are currently in planning, design, or construction phases. These trails include:

1. Apopka Vineland Trail
2. Azalea Park Trail
3. Clarcona-Ocoee Connector Trail
4. East Orange Trail
5. East Orange Spur
6. Lake Apopka Connector Trail
7. Little Econ Greenway
8. Wekiva Trail

The following concept plans include:

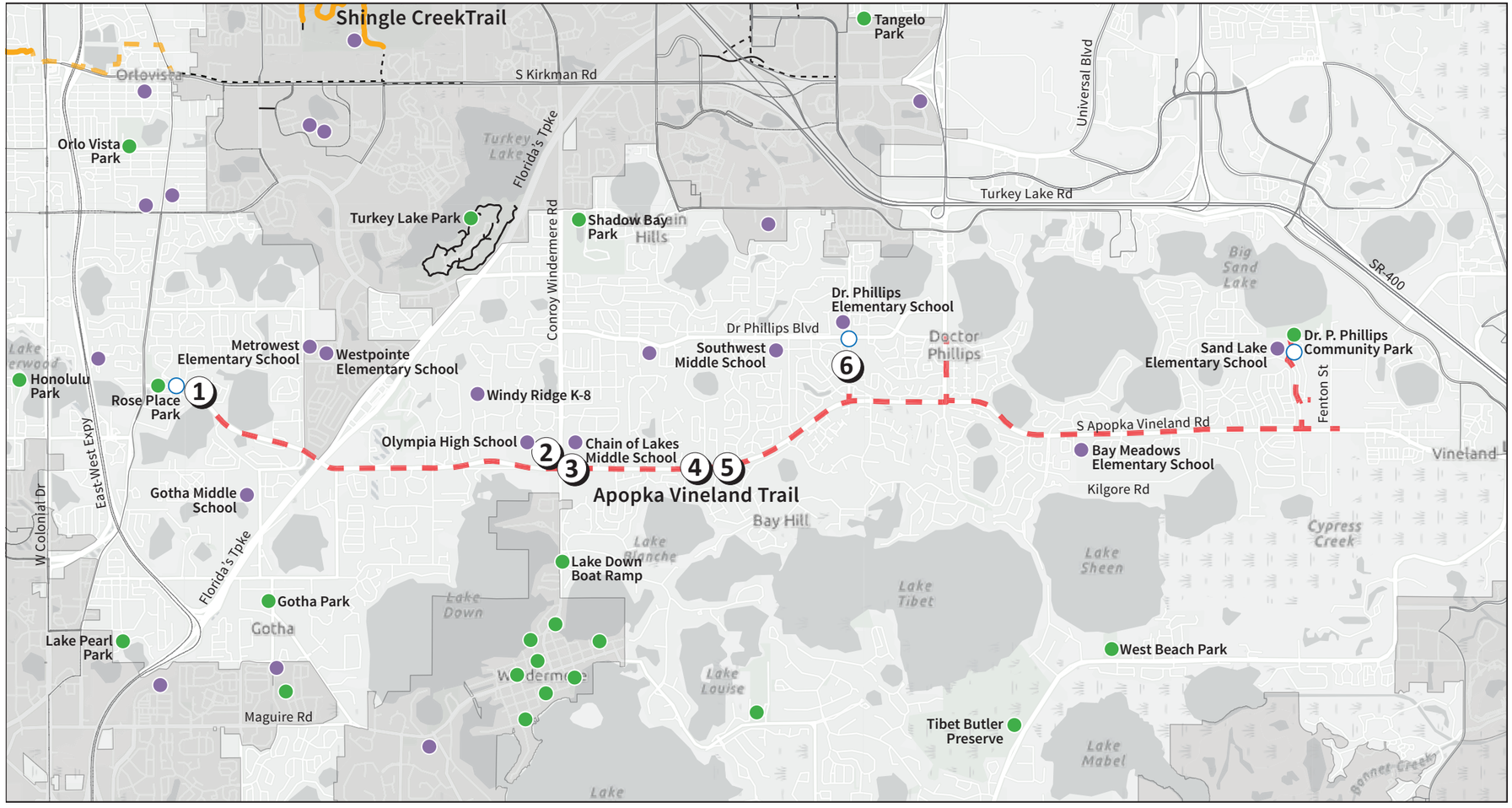
- Corridor description
- Pictures of the corridor
- Design, right-of-way, and construction cost estimates per mile for trails that are not in the planning, design or construction phases (detailed estimates provided in Appendix D)
- Potential funding Sources
- Graphic of proposed trail corridor



1. Apopka Vineland Trail

The Apopka Vineland Trail is approximately 11.4 miles long from Rose Place Park at Old Winter Garden Road (SR 526) south along Apopka Vineland Road to connecting to destinations at various endpoints, including the Dr. P. Phillips Community Park and Dr. Phillips Elementary School., and the extensive shopping hubs along Sand Lake Road.

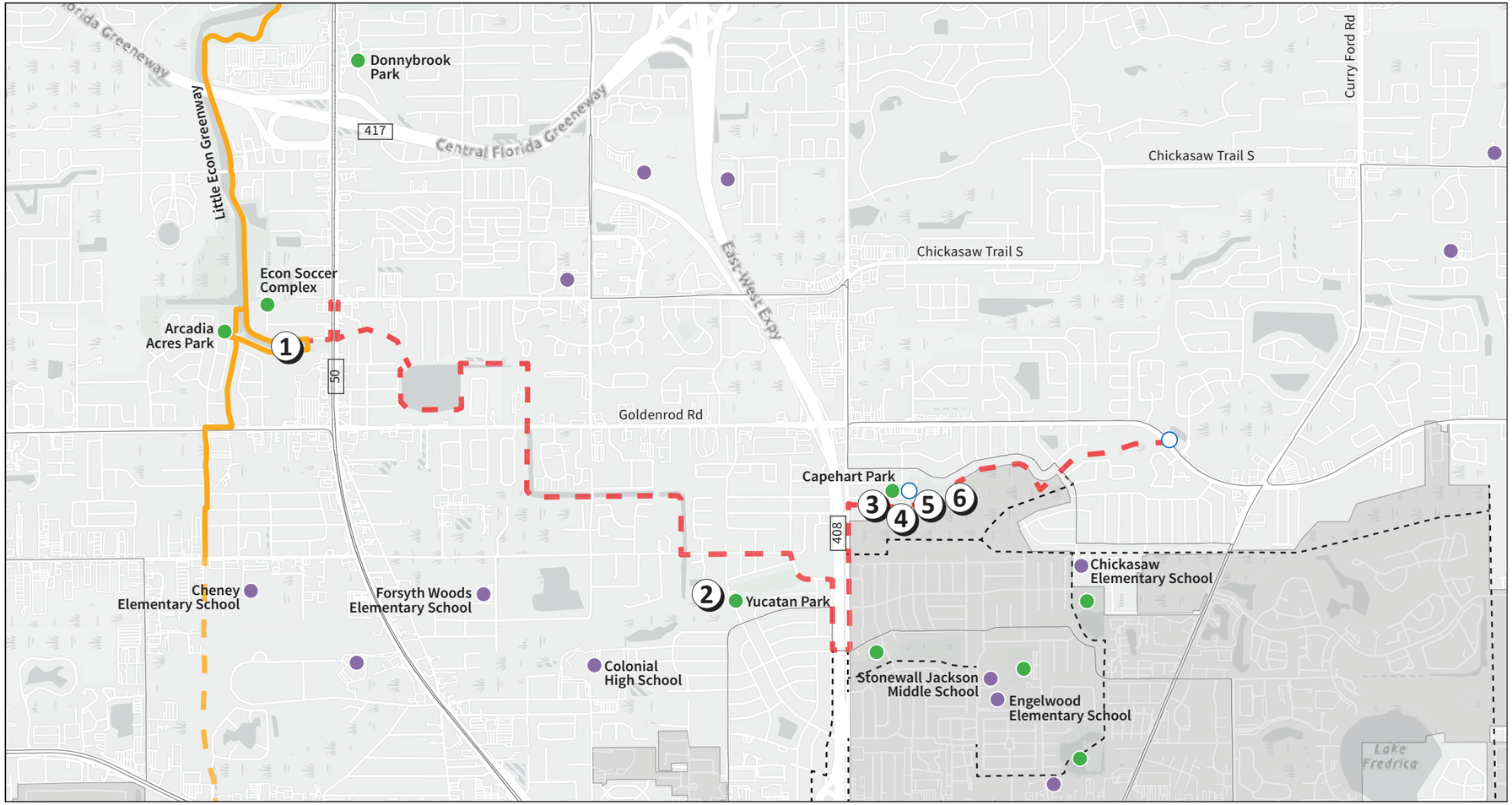
Several schools are directly accessible within ¼ mile of the proposed Apopka Vineland Trail, including Olympia High School, Chain of Lakes Middle School, Dr. Phillips Elementary School, and Bay Meadows Elementary School. Southwest Middle, Windy Ridge K-8, and Palm Lake Elementary schools are also within a short distance of the proposed alignment. Link 54 of the LYNX transit system is available at the north end of the corridor, along Old Winter Garden Road, north of Rose Place Park.

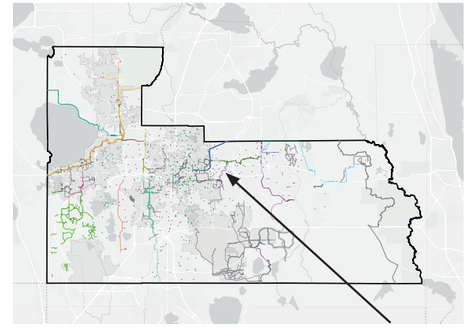


0 .5 1 Mile

Legend

- Apopka Vineland Trail
- Existing Orange County Trail
- Proposed Orange County Trail
- Existing Trail (not maintained by Orange County)
- Proposed Trail (not maintained by Orange County)
- LYNX Transit Routes
- Schools
- Parks
- Potential Trailhead



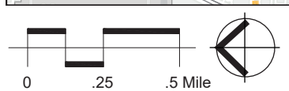


2. Azalea Park Trail

The Azalea Park Trail is approximately 6 miles long and connects Goldenrod Road (SR 551) to the Little Econ Greenway/Econ Soccer Complex. The alignment utilizes a road combination of street rights-of-way and Orange County drainage banks. South of SR 408, the trail utilizes an Orange County drainage way corridor. The portion of the proposed trail north of SR 408 that primarily runs along Forsyth Road, Cocos Drive and Bamboo Drive providing connections to Yucatan Park. This proposed corridor has been realigned from the 2012 Plan based on discussion with OUC and determination that it is not currently feasible to use OUC utility corridors for trails.

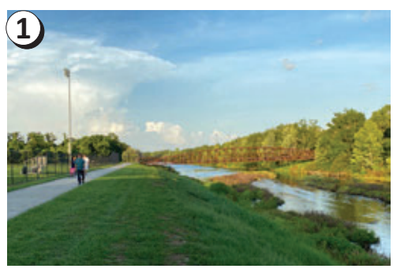
The trail corridor is an important part of the Orange County trail system because it is one of the eastern alignments through the County, which enables a north south connection to the regional system. Colonial High School is accessible via the proposed trail, and Chickasaw Elementary School, Stonewall Jackson Middle School and Edgewater Elementary School are accessible via a connection to proposed City of Orlando facilities. Multiple residential communities and several commercial centers are present, and two County Parks, Capehart Park and Yucatan Park, are accessible via the trail.

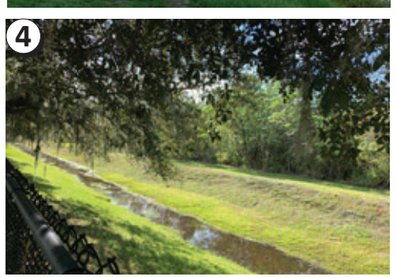
Links 15, 28 and 104 provide transit service to the areas and destinations adjacent to the proposed corridor.

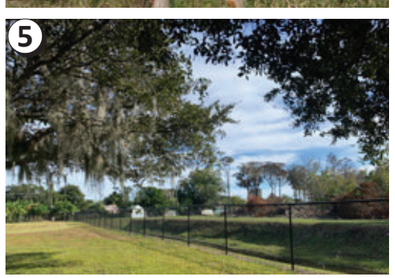


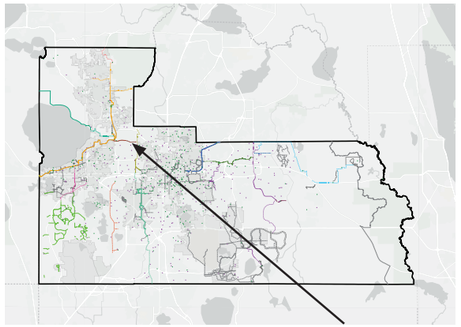
Legend

- Azalea Park Trail
- Existing Orange County Trail
- Proposed Orange County Trail
- Proposed Trail (not maintained by Orange County)
- LYNX Transit Routes
- Schools
- Parks
- Potential Trailhead









Location Map Clarcona-Ocoee Connector Trail

3. Clarcona-Ocoee Connector Trail

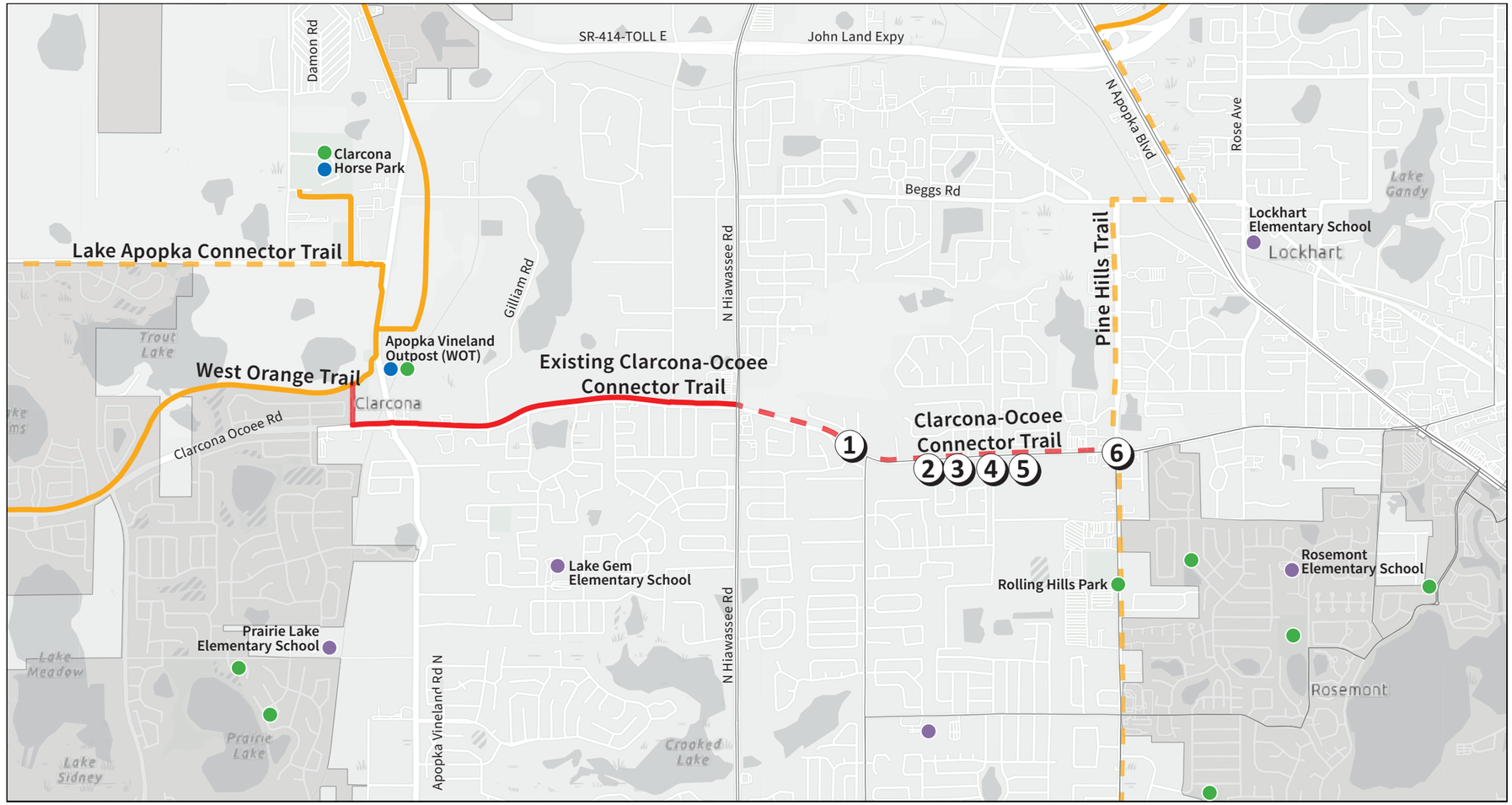
The Clarcona-Ocoee Connector Trail is approximately 3.3 miles long (including an existing 1.7-mile section) and connects the Pine Hills Trail to the West Orange Trail via Clarcona-Ocoee Road. An existing 5' sidewalk is already present from the Pine Hills Trail, west to Hiawassee Road. To the west, a new rconnection to the West Orange Trail was recently completed as part of the FDOT Coast to Coast Trail project, linking it to the larger cross-peninsula network of trails spanning from the Gulf of Mexico at St. Petersburg in Pinellas County to the Atlantic Ocean at Titusville in Brevard. The proposed Clarcona-Ocoee Connector represents a portion of the Coast to Coast Orange County Gap that has been analyzed by FDOT.

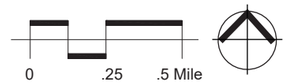
The Clarcona-Ocoee Connector does not have any key destinations, such as schools, or parks along its proposed alignment; however, residents along Clarcona-Ocoee Road will be served by the development of this connector trail, and at a larger scale, the proposed trail will help to the regional trail system and create a connected network. Connections to the Pine Hills Trail and the West Orange Trail will complete direct connections to Seminole County, Lake County, and further south, Osceola County via the Shingle Creek Trail. Via these connections, users can access destinations, such as the Clarcona Horse Park, Rolling Hills Park, and the Apopka Vineland Outpost along the West Orange Trail.

Portions of the Clarcona-Ocoee Connectors are already in the Design and Construction phases of development.

Links 44, 49, and 443 provide transit service to the areas and destinations adjacent to the proposed corridor.

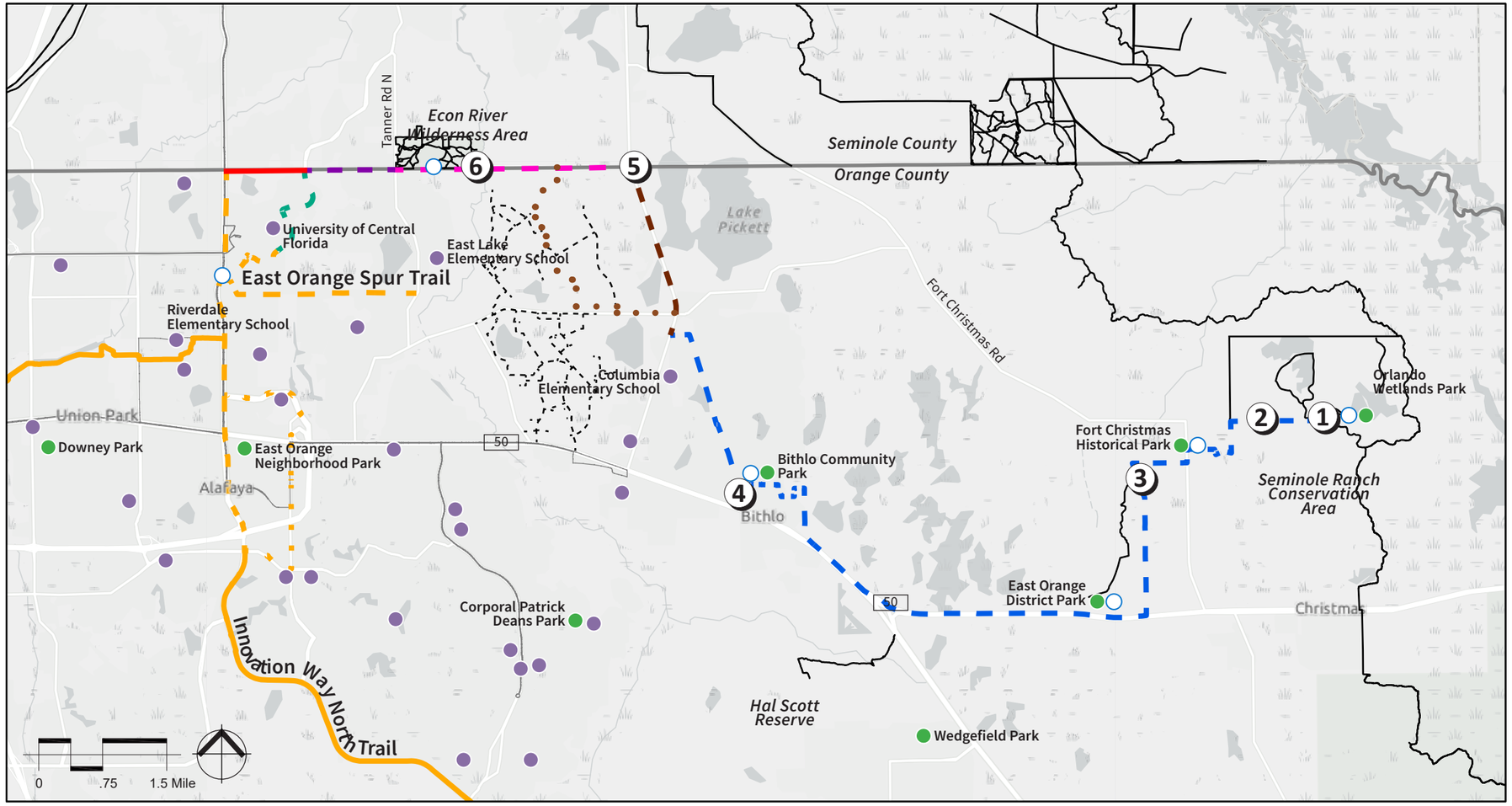
Phase 2A is currently in design.

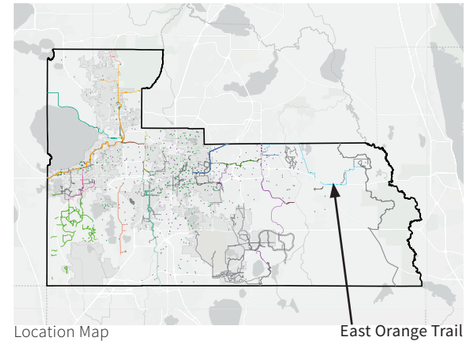




Legend

- Existing Clarcona-Ocoee Connector Trail
- Clarcona-Ocoee Connector Trail - Phase 2A (Design)
- Existing Orange County Trail
- Proposed Orange County Trail
- LYNX Transit Routes
- Schools
- Parks
- Existing Trailhead





4. East Orange Trail

The East Orange Trail is approximately 22.1 miles long and uses a combination of publicly owned lands/parks and ROW, drainage banks, dedicated easements, powerline easements and the University of Central Florida's roadway network.

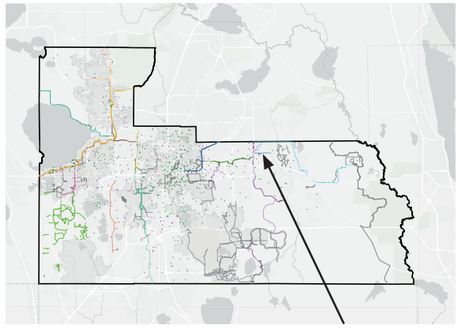
The trail begins at the east end of Orange County near the St. Johns River at Orlando Wetlands Park and terminates at the University of Central Florida's campus and the Innovation Way/UCF Trail. Proceeding west from the Orlando Wetlands Park, the trail enters Fort Christmas Park and travels west and then south to Orange County's Savage/Christmas Creek Preserve and then along the eastern edge of the preserve to SR 50. At SR 50, the trail will turn to the west and utilize roadway SR 50/East Colonial Drive ROW until it reaches Bithlo and transitions onto Old Cheney Highway. After a few hundred yards on Old Cheney, the trail heads towards Bithlo Community Park along Orange County drainage banks. Just west of Bithlo Community Park, the East Orange Trail then turns north as it proceeds through a residential community on a dedicated corridor in abandoned SR 13 ROW to Chuluota Road. The Chuluota Road Roadway Conceptual Analysis (RCA) includes a trail whioch is intended to connect to the East Orange Trail. At Chuluota Road, the trail continues north then turns west toward McCulloch Road and the University of Central Florida's campus, connecting to the proposed Innovation Way Trail. The McCulloch RCA includes a multi-purpose path on south side of the roadway that will connect with the East Orange Trail in the UCF area. A potential alternative route for the trail would traverse south from the Seminole County line through the proposed Sustany development and connect to Lake Pickett Road, where it would continue east to connect to the proposed alignment.

The character of the corridor is predominantly rural and has no schools adjacent to the proposed corridor. The proposed corridor does provide new connectivity from the countywide trail system to multiple parks, including the Orlando Wetlands Park, Orange County's Fort Christmas Park, Bithlo Community Park and Seminole County's Econ River Wilderness Area.

Links 13, 104, and 434 provide transit service to the western terminus of the corridor. Most of the proposed trail is not served by transit.

Legend

- East Orange Trail - Phase 1A (Complete)
- East Orange Trail - Phase 1B
- East Orange Trail - Phase 1C
- East Orange Trail - Phase 1D
- East Orange Trail - Phase 1E
- East Orange Trail - Phase 1F
- East Orange Trail Potential Alternative Route
- Existing Orange County Trail
- Proposed Orange County Trail
- Potential Alternative Route
- Existing Trail (not maintained by Orange County)
- Proposed Trail (not maintained by Orange County)
- LYNX Transit Routes
- Schools
- Parks
- Potential Trailhead



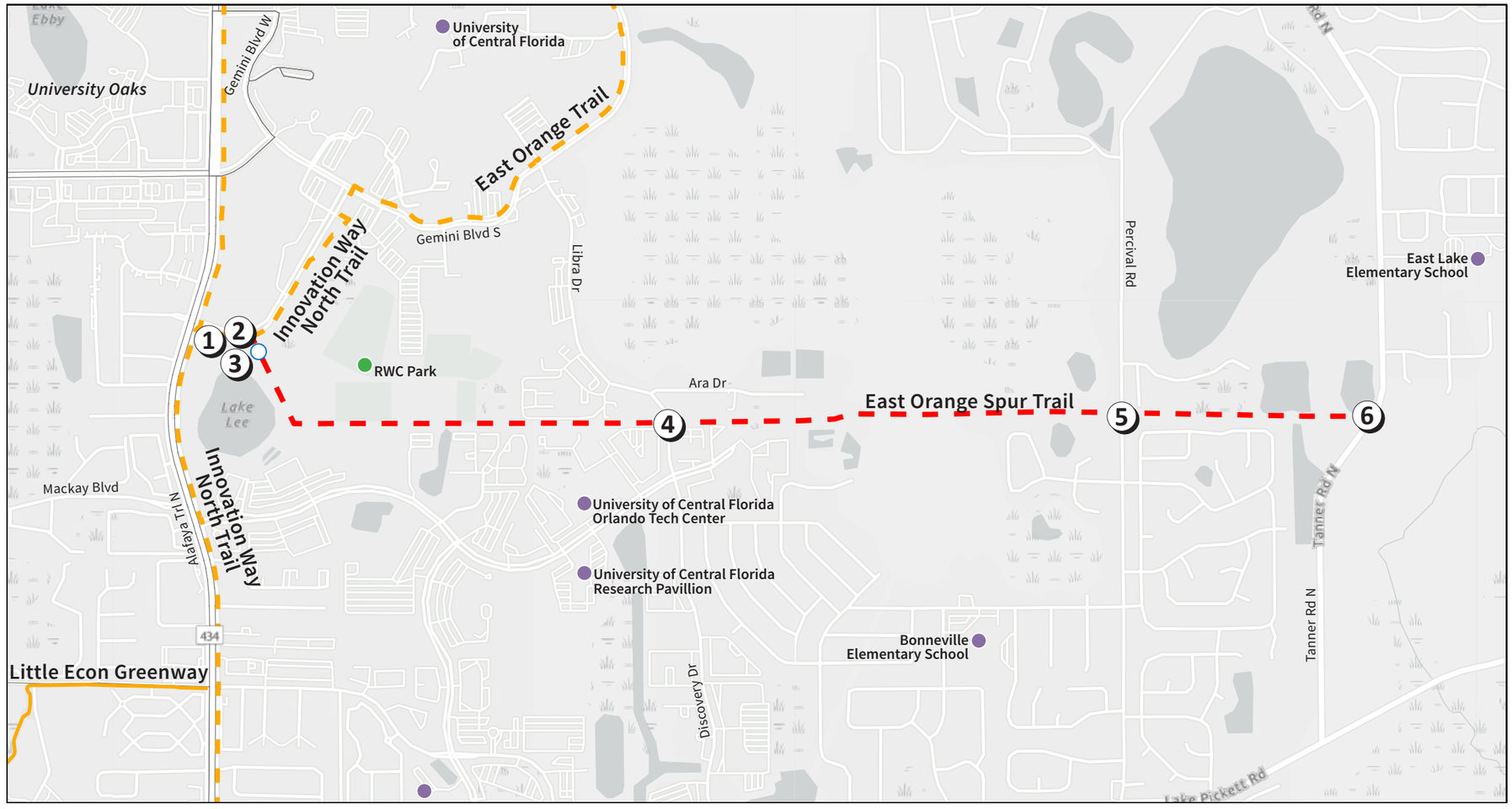
Location Map

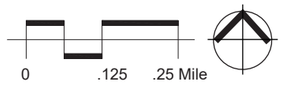
5. East Orange Spur Trail

The proposed East Orange Spur is approximately 3.45 miles long and connects to the Innovation Way North and East Orange Trails at Central Florida Boulevard. From Central Florida Boulevard east of Lake Lee, the trail extends southeast along the western edge of RWC Park, then turns east and runs through the Central Florida Research Park before ending at Tanner Road. Crossings occur at Libra Drive and Percival Road.

The trail connects the UCF campus, the Central Florida Research Park and several residential neighborhoods. East Lake Elementary is approximately 0.35 miles north of the trail's eastern terminus at Tanner Road.

Links 13, 104, and 434 provide transit service to the western terminus of the corridor.





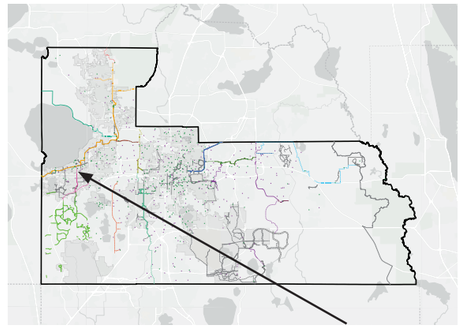
Legend

- East Orange Spur Trail
- Existing Orange County Trail
- Proposed Orange County Trail
- LYNX Transit Routes
- Schools
- Parks
- Potential Trailhead

0 .25 .5 Mile

Legend

- Lake Apopka Connector Trail (Design)
- Existing Orange County Trail
- Proposed Orange County Trail
- Lake Apopka Loop Trail (maintained by SJRWMD)
- Schools
- Parks
- Existing Trailhead

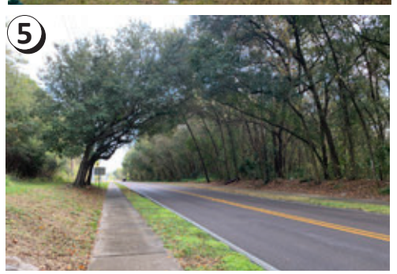


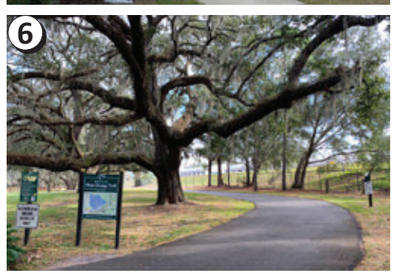
6. Lake Apopka Connector Trail

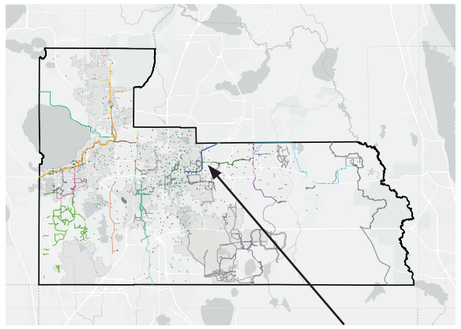
The proposed Lake Apopka Connector Trail is 4.3 miles long. The proposed Trail connects to the existing Lake Apopka Loop Trail at Magnolia Park. The Trail then generally follows S Binion Road until reaching Ocoee Apopka Road. The proposed trail continues north, crosses under SR 429 and then heads south and east through new planned developments in the City of Apopka.

It then passes through the western part of Orange County Northwest Water Reclamation Facility to McCormick Road. The trail corridor then follows McCormick Road east until connecting to the existing West Orange Trail at the Clarcona Horse Park. There is no transit service along the proposed corridor.

This trail is currently in design.







Location Map

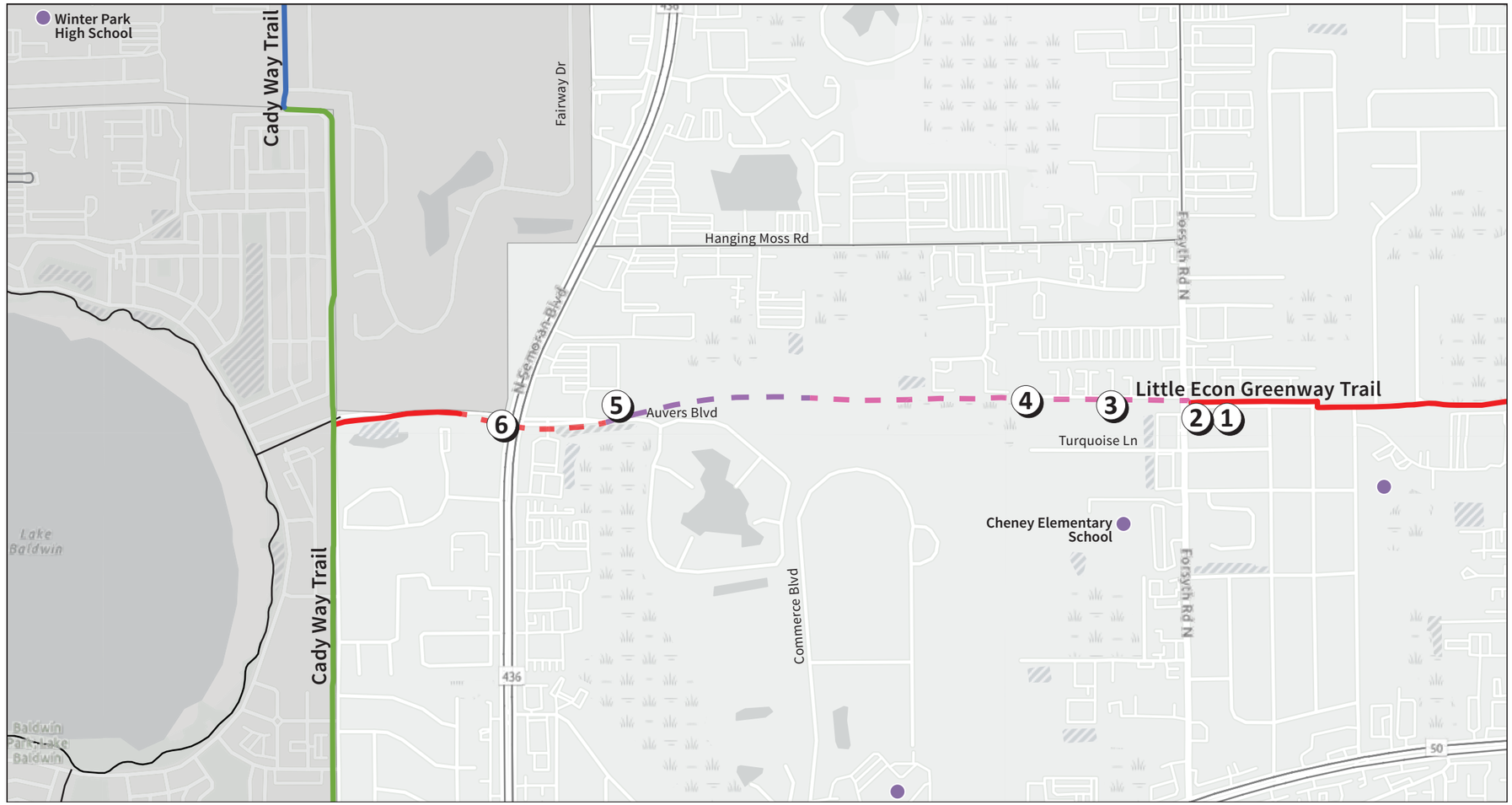
7. Little Econ Greenway Trail

The proposed Little Econ Greenway extension is approximately 1.1 miles long. The proposed extension runs along Partridge Ln from the West end of the existing trail westward, eventually connecting to the Cady Way Trail.

There are not many key destinations, such as schools or parks, along the proposed extension; however, this is a critical connection for the overall network, providing a safe crossing from the Cady Way Trail to the existing Little Econ Greenway with destinations including segment of the Little Econ Greenway from Yates Road to Alafaya Trail provides access to the Econ Soccer Complex, Blanchard Park, and the Blanchard Park YMCA Family Center.

Links 29 and 4362 provide LYNX transit service to the proposed trail at SR 436.

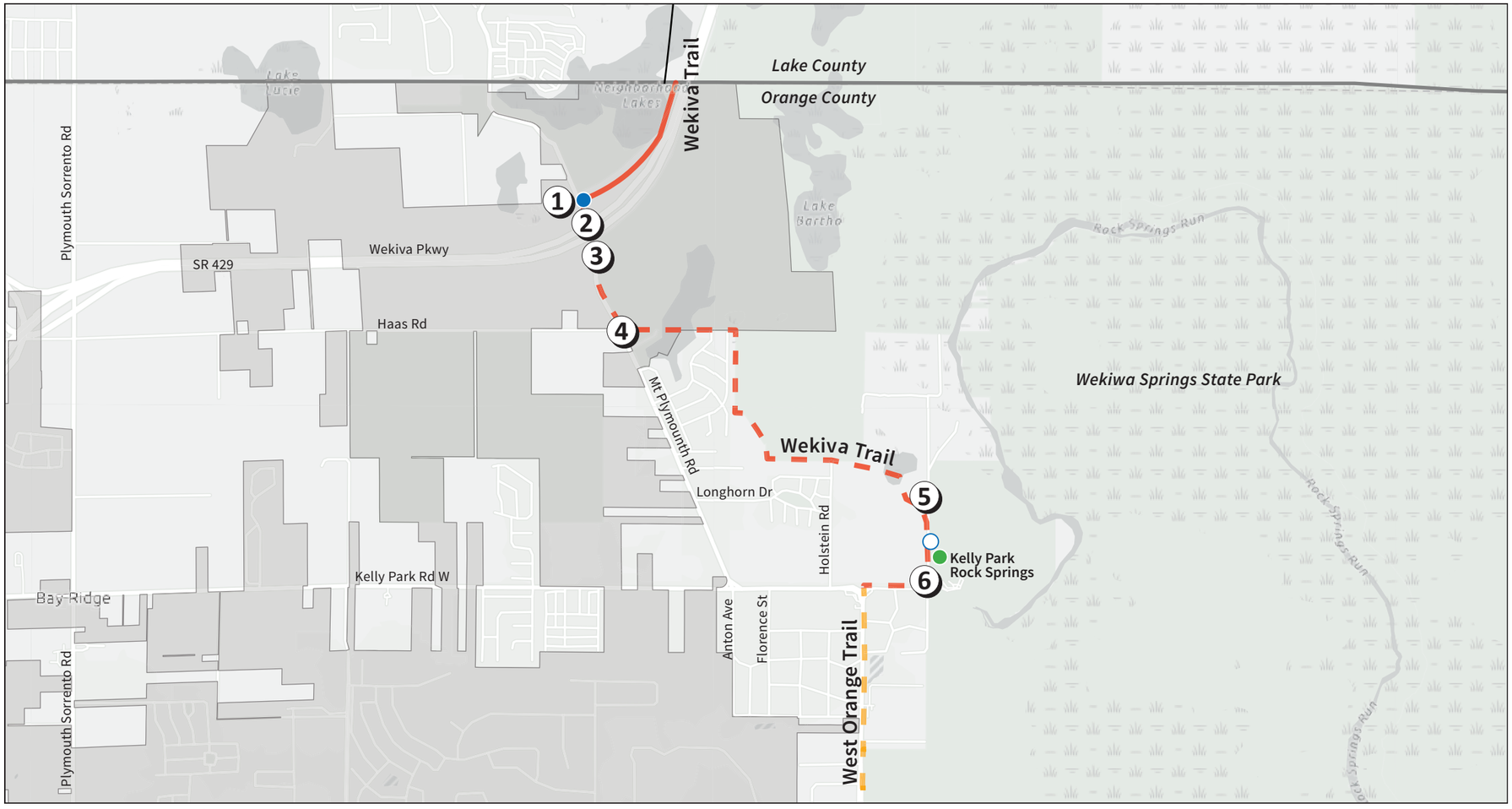
The County has recently completed a feasibility study for Phase 3A is currently moving towards design. Phase 3B is in the design phase and being completed by Orange County Public Works as part of the Richard Crotty Parkway.

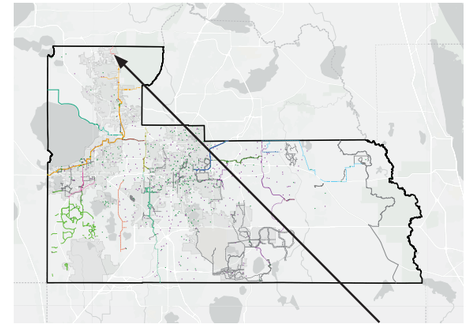


0 500 1000 Feet

Legend

- Little Econ Greenway
- Little Econ Greenway Trail - Phase 3A (Study)
- Little Econ Greenway Trail - Phase 3B (Design)
- Little Econ Greenway Trail - Phase 3C
- Cady Way Trail (maintained by CIty of Orlando)
- Cady Way Trail (maintained by City of Winter Park)
- LYNX Transit Routes
- Schools





8. Wekiva Trail

The Wekiva Trail connects the proposed Phase 4 of the West Orange Trail to the Wekiva Trail in Lake County. Along with the Phase 4 of the West Orange Trail, the proposed Wekiva Trail provides regional connectivity to the 22.3-mile West Orange Trail and the 43.5-mile Wekiva Trail in Lake County. The proposed Wekiva Trail is approximately 3.4 miles and runs from Rock Springs Kelly Park along the Wekiwa Springs State Park until the Apopka City limits, then turns west to connect with Mt Plymouth Road. From there is follows Mt Plymouth Road to the north side of SR 429, which it then follows to the Lake County line.

The proposed trail provides connection to Wekiwa Springs State Park, Kelly Park Rock Springs, and the destinations accessible via the existing West Orange Trail and Wekiva Trail in Lake County. There are no transit routes that serve the proposed trail corridor.

Phase 4A recently finished construction. Phase 4B previously had a Project Development and Environment (PD&E) Study.

Legend

- Wekiva Trail
- Wekiva Trail - Phase 4B (Study)
- Proposed Orange County Trail
- Existing Trail (not maintained by Orange County)
- LYNX Transit Routes
- Schools
- Parks
- Existing Trailhead
- Potential Trailhead

4.3 Feasibility Studies

In order to assist the study and design of proposed trail corridors that have been determined to be priorities for implementation based on their status on the MetroPlan Orlando Prioritized Project List (PPL) for future funding. A further evaluation of potential issues and opportunities was conducted for each of the Tier 2 trails.

In addition to the information provided in the concept plans, each Tier 2 trail has also been analyzed for:

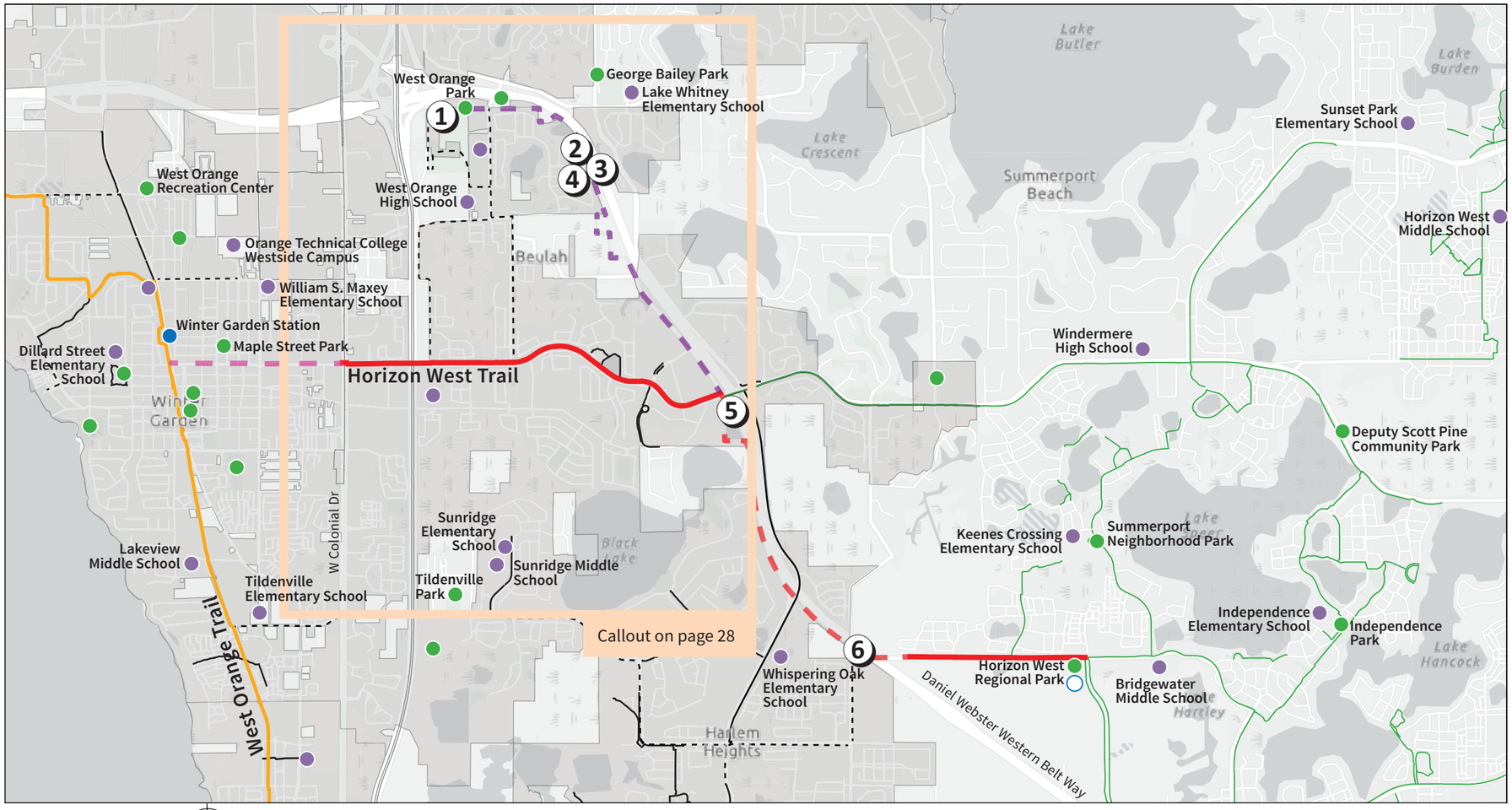
- Potential Phasing
- Trail Alignments
- Potential Issues, Constraints, and Opportunities
- Environmental Screening

This level of analysis is intended to assist and expedite the initial study phases for these trails to help move the projects forward.

1. Horizon West Trail (Phase 2)
2. Innovation Way Trail – North (Phase 1B)
3. Pine Hills Trail – (Phase 2B)
4. Shingle Creek Trail (Phase 4)
5. West Orange Trail (Phase 4)

Each of these corridor's identified above were reviewed in the field to identify potential engineering and environmental constraints along the route. Engineering constraints such as right of way needs, alignment issues and opportunities, utility and lighting relocations, structural or drainage impacts, construction feasibility were all assessed and documented.

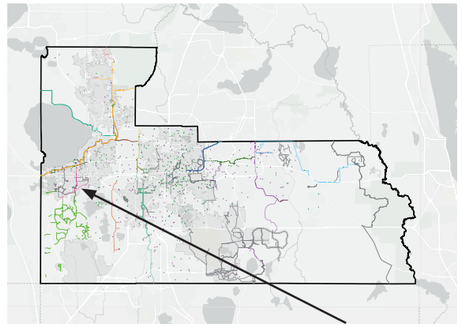
Environmental challenges including threatened & endangered species, wetlands, and contamination were all reviewed as part of the Tier 2 analysis. The review utilized available data provide in the Florida Geographic Data Library (FGDL) to conduct the analysis. The analysis utilizes a 300-foot buffer around the alignment to cover any potential alignment changes in future and identify any potential issues associated with the study area. The analysis also provides greater detail about the potential impacts on or directly adjacent to the current alignment.



0 2000 4000 Feet

Legend

- Horizon West Trail
- Horizon West Trail - Phase 1
- Horizon West Trail - Phase 2
- Horizon West Trail - CIty of Winter Garden Project
- Existing Orange County Trail
- Existing Trail (not maintained by Orange County)
- Proposed Trail (not maintained by Orange County)
- Horizon West Trail Network (multiple ownerships)
- LYNX Transit Routes
- Schools
- Parks
- Existing Trailhead
- Potential Trailhead



Location Map

1. Horizon West Trail

The undeveloped portion of the Horizon West Trail is approximately 4.4 miles long along its primary route and includes a 3-mile connection, extending to the northeast from Daniels Road/CR 535, in a dedicated SR 419 trail corridor, to West Orange Park. The southern limit of the trail is Orange County's Horizon West Regional Park, where it will connect with the Horizon West trail system, a network that is owned and maintained by multiple agencies and organizations, not solely by Orange County. Phase 1 is being completed by Orange County.

The trail also will connect to the West Orange Trail in Downtown Winter Garden via the existing trail and the identified Winter Garden Project. This portion of the trail travels north along Tiny Road to Tilden Road where it joins the SR 419 ROW easement north to Daniels Road/CR 535. At CR 535, private development and roadway widening within the City of Winter Garden have enabled the trail to be completed to Colonial Drive/SR 50. North of SR 50, the corridor continues to Plant Street where the Horizon West Trail connects to the West Orange Trail and the Winter Garden Station trailhead. Whispering Oak Elementary School and West Orange High School are located along the Horizon West Trail Corridor.

The proposed trail provides access to residential communities, commercial centers and Downtown Winter Garden, allowing both businesses and residents to benefit from further development of the trail. Completion of this trail will tie the County trail system and into the regional trail network as well.

The Tiny Road Roadway Conceptual Analysis (RCA) includes a multi-purpose path on east side of roadway that will connect to the Horizon West Trail.

Horizon West Trail Feasibility Study

The Horizon West Trail Phase 2 includes the portion of the trail along the north side of Stoneybrook Parkway (westbound) from Winter Garden Vineland Road to Reaves Road. After crossing Reaves Road, the proposed trail continues east along the northern edges of the SR 429 stormwater facilities connecting to the south end of Windermere Road. The proposed trail segment continues north along the west side of Windermere Road to West Orange Park. The Horizon West Trail Study conducted by Orange County in August 2015 defined the trail as 10 feet concrete trail. The entire route of Horizon West Trail Phase 2 is within available right of way and would require no acquisition. The opportunity for a trailhead should be considered at West Orange Park.

In the segment along Stoneybrook Parkway, the existing sidewalk is generally separated from the roadway with four feet of sodded area and utility ten feet from back of sidewalk (shown in picture 1). In locations where right turn lanes are provided, the sodded separation area is not present. Orange County currently owns approximately 38-foot wide property between the Stoneybrook Parkway right of way and the Winter Garden Village property. Any construction within this county-owned property (shown in picture 2) will require grade and drainage modifications. Consideration should be made to remove the existing acceleration lane for the west Winter Garden Village driveway to provide space for the trail without the need to re-route through the drainage area to avoid the existing utility (shown in picture 3). At the two Winter Garden Village driveways, crosswalks are present with existing trail constructed in the driveway median (shown in picture 4). Advanced warning signage should be placed at the two driveways, particularly for vehicles exiting. No right of way or environmental impacts are anticipated in this section of the trail.

The crossing at the intersection of Stoneybrook Parkway and Reaves Road will need consideration to tie into the existing sidewalk coming in from the east and the grade change from the trail corridor north (shown in picture 5). After crossing Reaves Road, the trail would continue along the 40-foot-wide County-owned corridor along the northern edge of the SR 429 stormwater facilities connecting to the southern end of Windermere Road (shown in picture 6). Coordination with CFX to determine the maintenance needs to make sure the trail doesn't interfere with these operations. Several portions of the County-owned corridor reside within existing wetlands. It is estimated the proposed route through the County-owned corridor may impact approximately 79,000 square feet (1.81 acres) of wetlands. This estimate is based on the Land Use and Cover dataset published by St. Johns River Water Management District in 2014. Further analysis of the wetlands would be needed to determine the official location and quality of the wetland before mitigation can be assessed. This wetland impact may affect the Core Foraging Area for Wood Storks depending on the types of wetlands impacted.

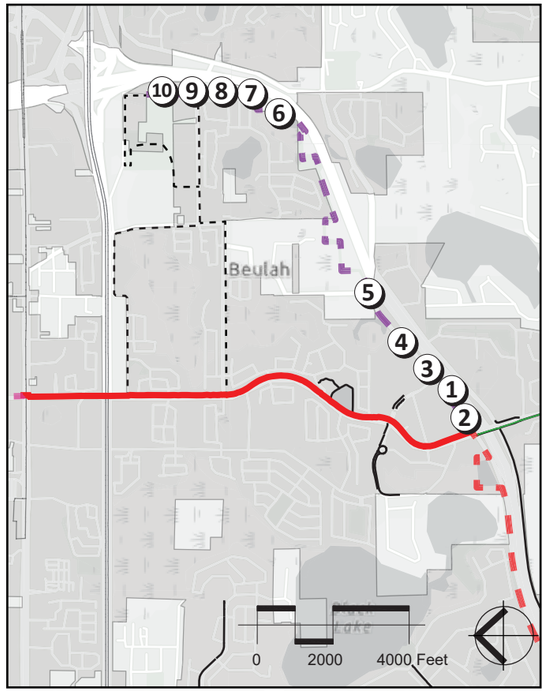
Sidewalk is present along the west side of Windermere Road. South of Warrior Road, the width between the right of way and edge of pavement varies between 16 to 18 feet (shown in picture 7). Brick fencing bordering the edge of the Westfield Lakes residential community limits the potential for right of way acquisition in this segment. Underground utilities in this segment are present between the existing sidewalk and roadway edge of pavement. Approaching the Windstone Street intersection, Windermere Road widens to provide a 10-foot gore striped median, limiting the space between the right of way and edge of pavement to generally 7 to 14 feet. Modifications to the roadway configuration could be considered to reduce the striped median width to provide more room for the trail and separation from the roadway edge of pavement. Additionally, shifting the trail further east should be considered at the Windstone Street intersection crossing (shown in picture 8) to avoid impact to Windstone Street landscaped median and aid in trail user visibility. No right of way or environmental impacts are anticipated in this section. Enhanced crossing improvements should be made at the Warrior Road intersection (shown in picture 9). North of Warrior Road (shown in picture 10), 21 feet of right of way is available to roadway edge of pavement consistently to West Orange Park. Utility is present between the existing sidewalk and roadway edge of pavement, including underground water and one aerial utility pole connecting to 228 Windermere Road. Utility pole would likely need to be relocated. Right of way and environment impacts are not anticipated north of Warrior Road.

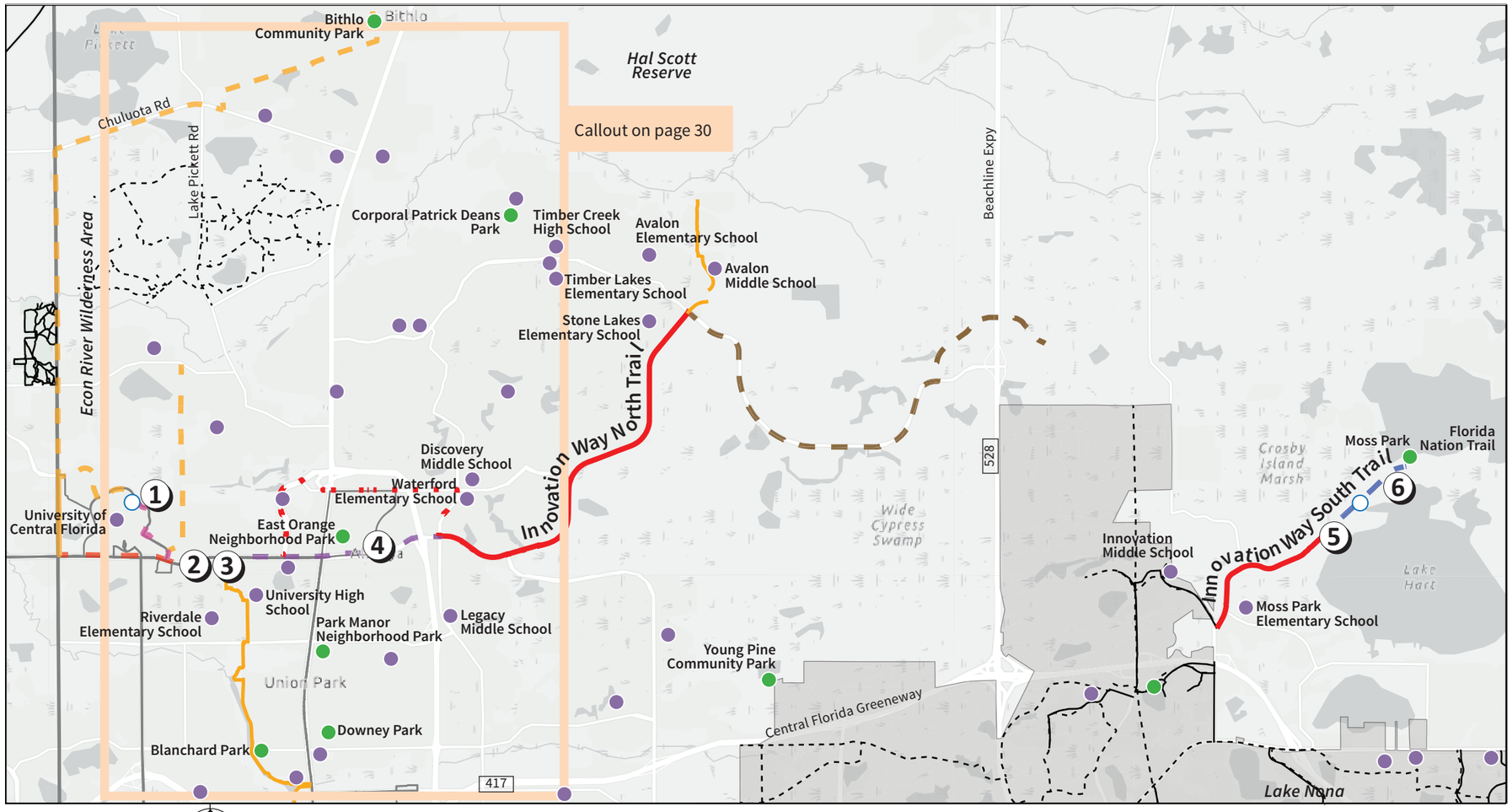
Preliminary review of the following environmental aspects within a 300 feet buffer of the potential trail corridor is summarized as:

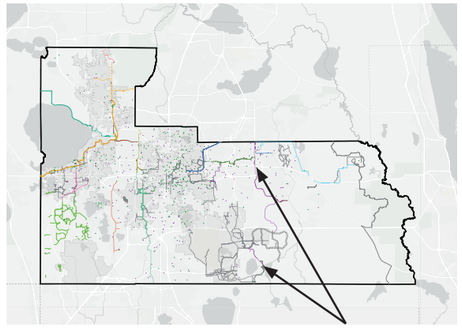
- Threatened & Endangered Species: The study area is located within the designated Core Foraging Area (CFA) for wood storks (Mycteria americana), a Federally Threatened species, and the sandhill crane (Grus canadensis pratensis), therefore, impacts to wetlands and surface waters that exceed 0.5 acre may affect this species and mitigation will be required. The study area is also within consultation area for Sand Skink (Neoseps reynoldsi), a Federally Threatened species. However, based on Land use, available soil data and elevation data. Sand Skink Surveys are not anticipated for this.

- Wetlands and Other Surface Waters: Wetlands are present within the study area. Detailed field reviews are necessary to determine the actual wetland limits, the quality of the wetland, whether direct or secondary impacts are anticipated, and the extent of mitigation required if impacted. Permitted stormwater ponds are also present within the Study Area. Impacts to these systems do not require compensatory mitigation however, the capacity of these systems will be replaced and no net loss in capacity will occur.

- Contamination: The study area contains one (1) biomedical waste facility associated with CVS Pharmacy and two (2) hazardous waste facilities consisting of Target and Lowes; four (4) NPDES sites with three (3) being active; two (2) open storage tank contamination monitoring sites; and five (5) U.S. EPA Resource Conservation and Recovery Act regulated facilities. Studies verifying if contamination exists will be included in future feasibility and design phases.







2. Innovation Way North and South

The existing Innovation Way North Trail is approximately 4.9 miles long and located along Alafaya Trail south of Lake Underhill Road. The proposed trail is approximately 5.5 miles in length, and ties into the existing trail at Lake Underhill Road and connects to the Little Econ Greenway and proposed East Orange Trail and Spur. The proposed extensions will also run along Alafaya Trail from Lake Underhill Rd to the Seminole County Line at McCulloch Road. Multiple schools are accessible via the proposed trail. Phase 1A is currently in the design phase. Links 13, 104, 210, 211, and 434 provide LYNX transit service to the Innovation Way North Trail.

Proposed Phase 1A of Innovation Way Trail South begins at the southern terminus of the existing Innovation Way Trail and extends approximately 6.2 miles south along Innovation Way and turns left onto Monument Parkway to cross under SR 528. Phase 1A of the Innovation Way North is being design by FDOT.

Further south, at Moss Park Road, east of SR 417, the existing Innovation Way South Trail is approximately 1.87 miles long. The proposed extension (Phase 1B) is approximately 1.3 miles long and continues the existing trail along Moss Park Road. The proposed extension terminates in Moss Park. The Innovation Way South extension will close a gap and connect the Florida National Scenic Trail to Lake Nona. There are no transit routes that serve the Innovation Way South Trail.

The Woodbury Road RCA includes a proposed multi-purpose path on the east side of Woodbury Road that may be considered as an alterantive alignment.

0 .75 1.5 Mile

Legend

- Innovation Way North and South Trail
- Innovation Way North Trail - Phase 1A (Design)
- Innovation Way North Trail - Phase 1B
- Innovation Way North Trail - UCF Project
- Innovation Way South Trail - Phase 1A
- Innovation Way South Trail - Phase 1B
- Potential Innovation Way Trail North Phase 1B Alignment
- Existing Orange County Trail
- Proposed Orange County Trail
- Existing Trail (not maintained by Orange County)
- Proposed Trail (not maintained by Orange County)
- LYNX Transit Routes
- Schools
- Parks
- Potential Trailhead

Innovation Way North Trail Feasibility Study

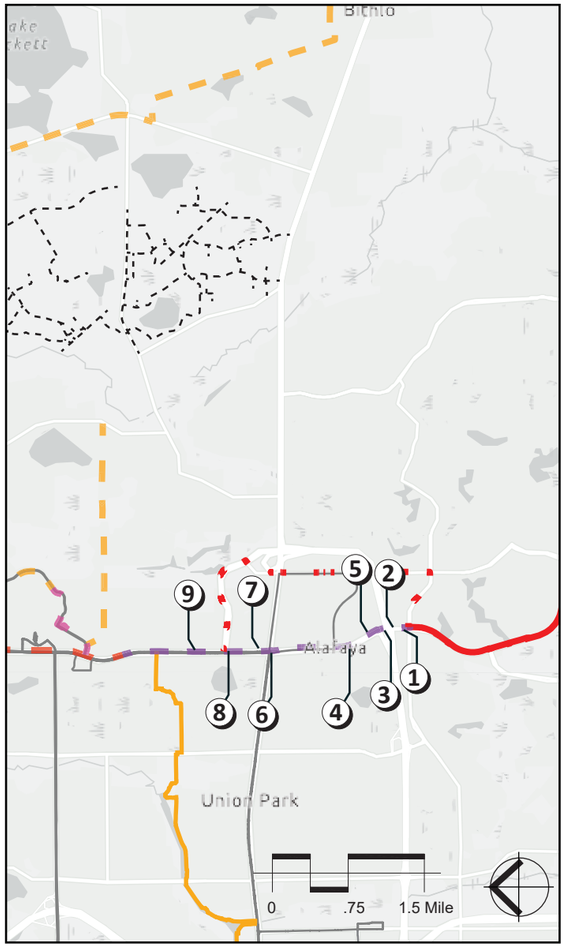
The extension of Innovation Way runs along N Alafaya Trail between Lake Underhill Road and Research Parkway. An alternative route using Challenger Parkway and Woodbury Road may be considered in future feasibility and design phases to address some of the following constraints. From Lake Underhill Road to the 408 overpass the right of way on the east side is sufficient to fit a trail. However, some drainage analysis and modification to the open system would be needed to repurpose this area for the trail (shown in picture 1). Lighting is located between the roadside and the sidewalk up to the bridge; proper offset from the trail would be needed to minimize accidents. Utility and signal polls are located on either side of the existing sidewalk. Either proper offset is needed, or the utility poles will need to be relocated. Between the Waterford Park Shopping Plaza and the SR 408 bridge is a retention pond that may need to be modified to accommodate the trail. Drainage analysis and modifications will be needed to ensure the capacity of the pond is not changed. An ITS camera pole 9 (shown in picture 2) may need to be relocated to provide sufficient width and offsets for a trail. Additional right of way needs or environmental impacts in this section are not anticipated.

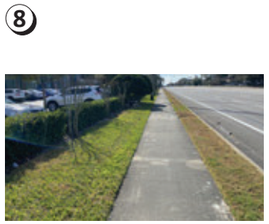
Under the bridge (shown in picture 3) there is sixteen feet of clearance between the bridge wall and the curb. Either trail size or separation from the road will need to be reduced in order to utilize this area for a trail. North of the bridge, right of way is sufficient on the east side up to just north of Ashton Manor Way (shown in picture 4). The drainage system will need to be analyzed and modified to make sure adding the trail will not impact the system. There are 2 light poles just north of the SR 408 bridge that would require relocation (shown in picture 5). Additional right of way needs or environmental impacts in this section are not anticipated.

North of Ashton Manor Way to Research Pkwy, the right of way is very constrained and located near the back of sidewalk. Room to add a trail in existing right of way is not provided along this entire segment (shown in picture 6). Acquiring right of way is needed along this section from a mixture of institutional, commercial, and residential properties. The roadway could be repurposed north of Colonial Drive (SR 50) to utilize the existing bike lane (shown in picture 7) to provide more room for the trail but coordination would be needed with FDOT. Utility poles and lighting are against the edge of the sidewalk (shown in picture 8 & 9) on the east side for the entire section and would need to be relocated once right of way is acquired. Retaining walls may be needed in areas to provide proper vertical tie in without requiring additional right of way. This section will require approximately 2.4 acres of right of way in order to properly install the trail adjacent to the roadway. No wetland impacts are anticipated from these right of way needs. From Iroquois Trail to SR 50, right of way impacts are anticipated for two (2) hazardous waste facilities associated with Tire Kingdom and 7-Eleven. From Shady Spring Road to Challenger Parkway is one (1) hazardous waste facility associated with Midas, and one (1) open storage tank contamination monitoring site associated with RaceTrac. From just south of Science Drive to Research Parkway is one (1) open and one (1) closed storage contamination monitoring site, both associated with Fairwinds Credit Union, and one (1) biomedical waste facility associated with Dr. Law's Medical Group. Further analysis will be needed to determine where the contamination is on property to determine if it impacted and the level of contamination, if any, associated with it. Given there are no impacts to wetlands and this trail is located in a high urban density impacts to threatened & Endangered species are not anticipated.

The following environmental aspects within a 300 feet buffer of the potential trail corridor is summarized as:

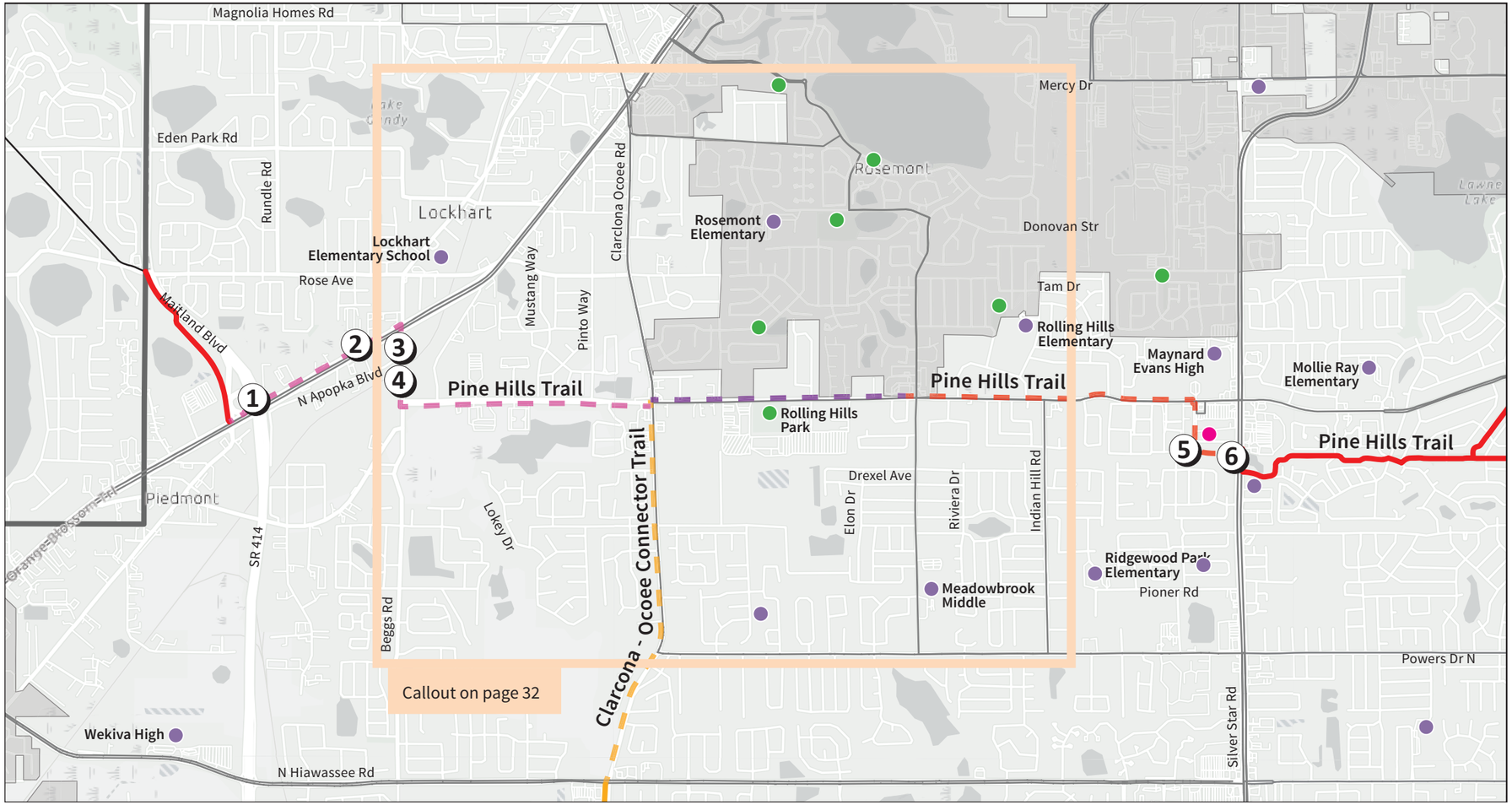
- Threatened & Endangered Species: The study area is located within the designated Core Foraging Area (CFA) for wood storks (Mycteria americana), a Federally Threatened species, and the sandhill crane (Grus canadensis pratensis), therefore, impacts to wetlands and surface waters that exceed 0.5 acre may affect this species and mitigation will be required. The study area is wholly within the consultation area for the crested caracara and southern tip of the study area is within the consultation area for the red cockaded woodpecker. Given the high urban density of the area, these species are not anticipated, and further consultation is not required

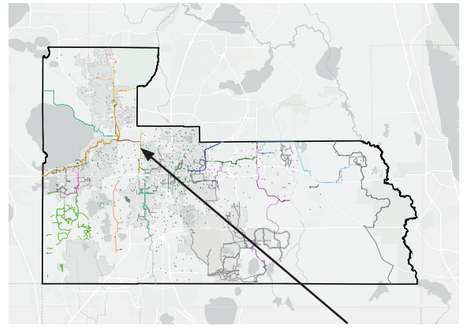




- Wetlands and Other Surface Waters: Wetlands are present within the study area. However, no wetlands along the current alignment are anticipated to be impacted. Detailed field reviews are necessary to determine the actual wetland limits, the quality of the wetland, whether direct or secondary impacts are anticipated, and the extent of mitigation required if impacted.

- Contamination: The study area contains 23 biomedical waste facilities and eight (8) hazardous waste facilities; 17 sites, three (3) currently active, two (2) facilities being monitored for petroleum contamination with work underway on one (1) site and no cleanup required on the other; eight (8) storage tank contamination monitoring sites, four (4) being open; and seven (7) U.S. EPA Resource Conservation and Recovery Act regulated facilities.





3. Pine Hills Trail

The proposed Pine Hills Trail extension is approximately 4.6 miles long. The proposed phases of the Pine Hills Trail run along Pine Hills Road from the north end of the existing trail and Silver Star Rd northward to Orange Blossom Trail and S Apopka Boulevard. The proposed trail terminates just north of SR 414. The northern portion of the Pine Hills Trail, after it connects with the Clarcona-Ocoee Connector Trail, is a section of the Coast to Coast Connector trail, linking it to the larger cross-peninsula network of trails spanning from the Gulf of Mexico at St. Petersburg in Pinellas County to the Atlantic Ocean at Titusville in Brevard. The proposed trail also closes a gap in the countywide trail network and provides access to Rolling Hills Park.

Links 9, 17, 49, 125, 301, 302, 443 provide LYNX transit service to the proposed trail. In addition, LYNX is planning a LYNX Superstop where the proposed trail cross north of Silver Star Boulevard, enhancing the access to regional transit for trail users.

Phase 2A is in design, moving to the construction phase, and is being completed by Orange County Public Works. Phase 3 is currently in the design phase and being completed as part of the Coast 2 Coast Trail.

0 .25 .5 Mile

Legend

- Pine Hills Trail
- Pine Hills Trail - Phase 2A (Design)
- Pine Hills Trail - Phase 2B
- Pine Hills Trail - Phase 3 (Design)
- Existing Orange County Trail
- Proposed Orange County Trail
- Existing Trails (not maintained by Orange County)
- Proposed Trails (no maintained by Orange County)
- LYNX Transit Routes
- Schools
- Parks
- Planned LYNX Superstop

Pine Hills Trail Feasibility Study

The proposed extension for the Pine Hills Trail runs along the east side of Pine Hills Road between North Lane and Clarcona-Ocoee Road. From North Lane, the right of way between the Rosemont Village Shoppes shopping center and roadway is sufficient for a trail (shown in picture 1), with exception of that area adjacent to the right turn into the Rosemont Village Shoppes Shopping Center (shown in picture 2). To accommodate the trail, additional right of way (approximately 0.05 acres) may be required from the Walgreens north of North Lane, which is classified as a biomedical waste facility. Impacts to this biomedical waste facility is not anticipated but further review is needed..

North of the Rosemont Village Shoppes shopping center to Liming Avenue, the right of way width is constrained and will possibly need some small areas of acquisition (approximately 0.25 acres) to properly accommodate a trail (shown in picture 3). Just south of Liming Avenue, approximately 600 square feet of right of way may be needed from an adjacent parcel containing surface water. The surface waters will likely not be impactedThe properties adjacent to this segment are primarily residential and institutional. Overhead utility relocates are likely along this segment to accommodate the trail and its clearances. There are some vertical grade challenges along this segment just north of Rosemont Village Shoppes that will require wall and regrading of driveways and side street approaches to accommodate the trail.

North of Liming Avenue to just south of Clarion Drive, the right of way is approximately 16 feet from the curb of the roadway. To provide proper offset and clearances, additional right of way (approximately 0.5 acres) would need to be acquired or repurposing of the roadway would be needed to provide more room for the trail. The properties adjacent to this segment include residential and commercial. There is a capped land fill – classified as a hazardous waste facility – located in this segment (shown in picture 4) that is owned by Orange County. This right of way could be utilized to accommodate a trail if it is outside the environmental hazard associated with the landfill further analysis would be needed to determine if mitigation is needed. Overhead utilities are located behind the sidewalk and lighting is at the back of the sidewalk (shown in picture 5) in this segment and will need to be relocated to accommodate a trail.

From just south of Clarion Drive to Clarcona Ocoee Road, the right of way is not sufficient to accommodate a trail (shown in picture 6). Right of way acquisition (approximately 0.05 acres) of the 7-Eleven, a hazardous waste facility, is needed to provide proper trail widths and clearances. Further analysis would be required to determine if there are issues associated with the facility. Overhead utility and a fire hydrant will need to be relocated to accommodate the trail.

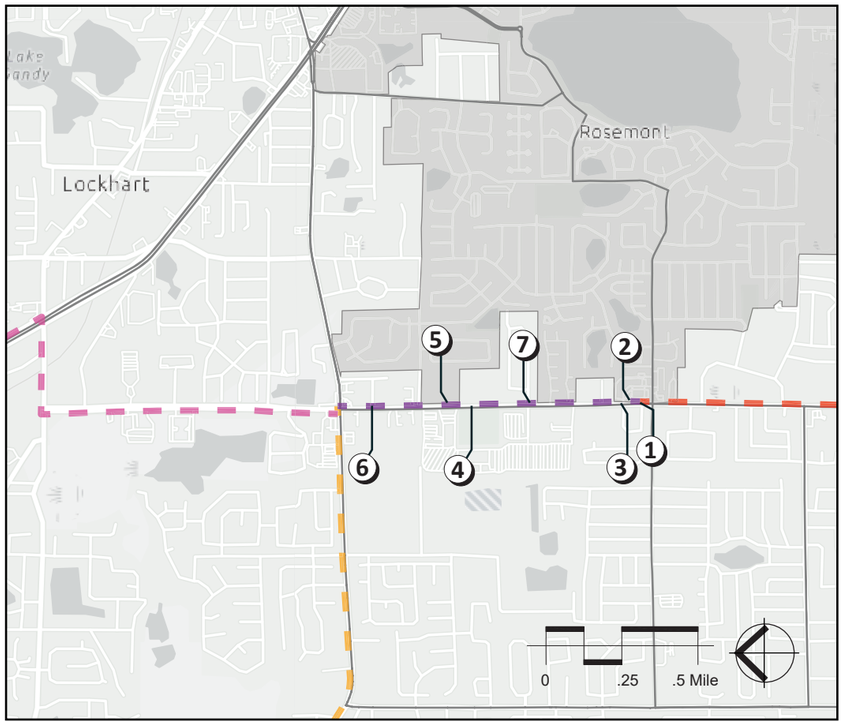
Another option for the trail alignment is to utilize the west side of the roadway. This alignment would stay on the east of Pine Hills Road for approximately 700 feet north of North lane. The existing midblock crosswalk (shown in picture 2) would be recommended to shift north by approximately 400 feet, transferring the trail to the west side of the roadway. From the proposed new midblock crosswalk to Clarcona Ocoee Road, this section provides more right of way (approximately 0.25 acres vs 0.85 acres to accommodate the trail (shown in picture 7) and there are less driveways along this stretch creating a safer trail experience. Some lighting and utilities relocations are still required on this side.

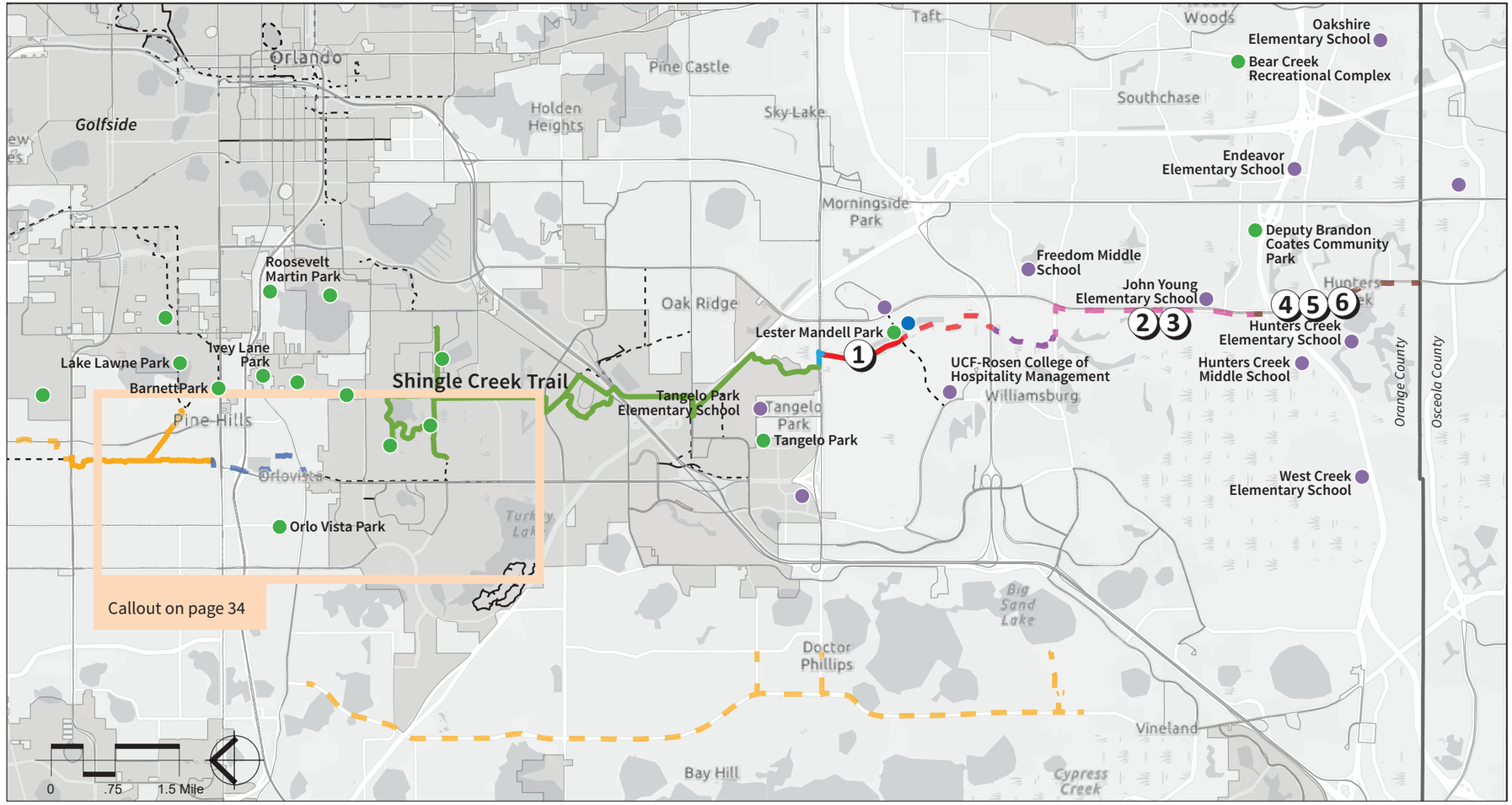
The following environmental aspects within a 300 feet buffer of the potential trail corridor is summarized as:

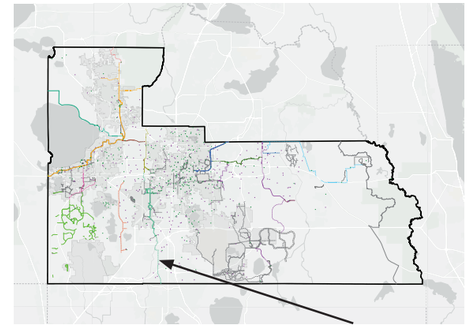
- Threatened & Endangered Species: The study area is located within the designated Core Foraging Area (CFA) for wood storks (Mycteria americana), a Federally Threatened species, and the sandhill crane (Grus canadensis pratensis), therefore, impacts to wetlands and surface waters that exceed 0.5 acre may affect this species and mitigation will be required. The study area is also within consultation area for Sand Skink (Neoseps reynoldsi), a Federally Threatened species. Based on land use data, available soil data, and elevation data, Sand Skink surveys are not anticipated for this corridor.

- Wetlands and Other Surface Waters: Wetlands are present within the study area. Detailed field reviews are necessary to determine the actual wetland limits, the quality of the wetland, whether direct or secondary impacts are anticipated, and the extent of mitigation required if impacted. Permitted stormwater ponds are also present within the Study Area. Impacts to these systems do not require compensatory mitigation however, the capacity of these systems will be replaced and no net less in capacity will occur.

- Contamination: The study area contains one (1) biomedical waste facility associated with Walgreens and five (5) hazardous waste facilities consisting of a construction company, drycleaner, landfill, and a gas station; four (4) facilities being monitored for petroleum contamination with two (2) open and two closed facilities; eight (8) storage tank contamination monitoring sites, four (4) are currently open; and five (5) U.S. EPA Resource Conservation and Recovery Act regulated facilities.







4. Shingle Creek Trail

The proposed extension will add approximately 8.7 miles of to the existing 11.6-mile Shingle Creek Trail, for a total of 20.3 miles. The existing trail provides access to Universal Boulevard and International Drive tourist corridors, and the various destinations in that area, including the Rosen College of Hospitality Management, hotels and restaurants. FDOT and the City of Orlando also maintain portions of the Shingle Creek Trail. The trail provides additional connections to Eagle's Nest Elementary School, Sand Lake Trailhead, Pine Island East Loop Trail, Lake Fran Bike Trail, and the Kissimmee Trail.

Phase 1B through Phase 3 extends the existing trail from Destination Parkway, under SR 528, and south to the Osceola County line. At SR 528/the Beachline Expressway, another planned roadway improvement provides for an underpass. After crossing the Central Florida Parkway at the Taft Vineland Road, the proposed corridor continues east for a short distance to John Young Parkway, where it turns south, travelling through Hunters Creek and terminating at the Osceola County line. The southern portion of the proposed trail corridor provides access to John Young Elementary School, Hunters Creek Elementary and Middle Schools, and Lester Mandell Park. Phases 1B through 3 are currently in the design phase.Phase 4 connects to the south terminus of the Pine Hills Trail and runs approximately 1.65 miles south along Pine Hills Road to Old Winter Garden Road, where it is proposed to connect to an extension of the Shingle Creek Trail within the City of Orlando.

The Shingle Creek Trail corridor is well served by transit with 25 LYNX routes providing service to neighborhoods adjacent to the trail.

Phases 1B, 1C, and 3 are currently in the design phase. Phase 2 is currently in construction.

Legend

- Shingle Creek Trail (Orange County)
- Shingle Creek Trail (City of Orlando)
- Shingle Creek Trail (FDOT)
- Shingle Creek Trail - Phase 1B (Design)
- Shingle Creek Trail - Phase 1C (Design)
- Shingle Creek Trail - Phase 2 (Construction)
- Shingle Creek Trail - Phase 3 (Design)
- Shingle Creek Trail - Phase 4
- Existing Orange County Trail
- Proposed Orange County Trail
- Existing Trail (not maintained by Orange County)
- Proposed Trail (not maintained by Orange County)
- LYNX Transit Routes
- Schools
- Parks
- Potential Trailhead

Shingle Creek Trail Feasibility Study

The Shingle Creek Trail Phase 4 includes the portion of the trail along the south side of Old Winter Garden Road from Kirkman Road to approximately 275 feet east of McKinley Avenue where the trail is proposed to cross over Old Winter Garden Road and proceed north through utility easement to Lake Venus. The proposed trail continues northwest along the western edge of Lake Venus connecting to the Kirkman Road and SR 408 eastbound on ramp intersection. The proposed trail segment continues north along the east side of Kirman Road/Governors Avenue to Alhambra Drive. The trail is then routed east along the south side of Alhambra Drive for approximately 500 feet before crossing Alhambra Drive to connect with the existing Shingle Creek Trail. The opportunity for a trailhead should be considered at the connection point with the existing trail on Alhambra Drive.

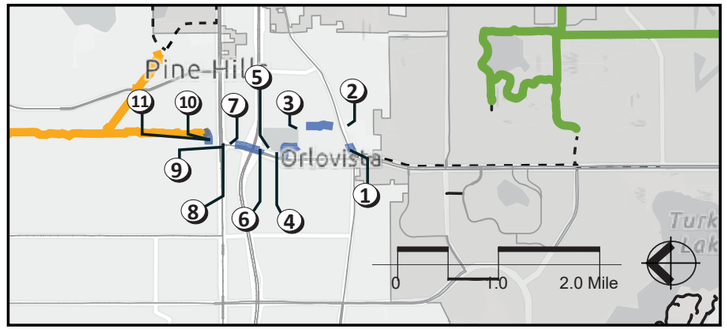
In the segment along Old Winter Garden Road (shown in picture 1) between 19 and 30 feet is available between the curb and right of way. Lighting relocation will be required for two poles present at the back of sidewalk near the Kirkman Road intersection. The proposed trail crossing over Old Winter Garden Road (shown in picture 2) is approximately 63 feet long and crosses five lanes of travel. It is recommended to install a pedestrian hybrid beacon to protect the trail crossing when needed. North of the crossing, right of way acquisition would be required from Clear Channel, approximately 0.4 acres, to connect with the county property to the north. The Clear Channel property is classified as a hazardous waste facility, storage tank contamination monitoring site, and US EPA Resource Conservation and Recovery Act site. Early coordination with Clear Channel is recommended to determine if an alternate route is necessary.

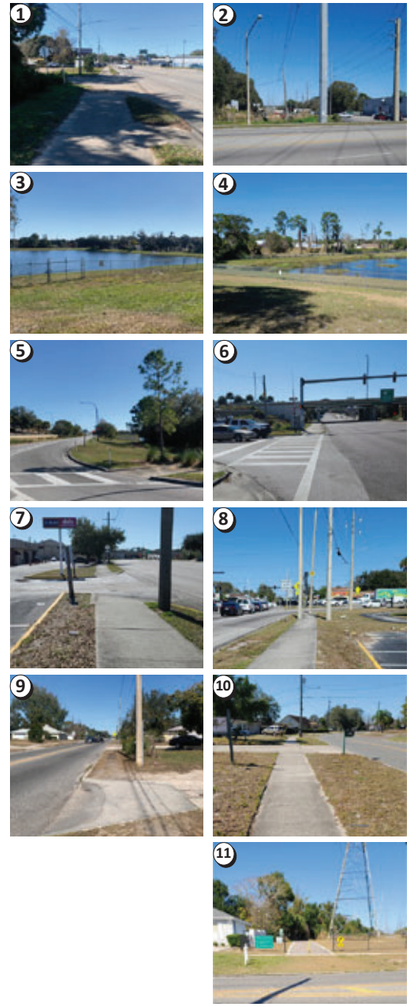
Within the Orange County property, the proposed trail routes north along the utility easement and along the northwest edge of Lake Venus. Early coordination with the utility company is recommended to uphold maintenance access needs. The Westside Manor Pump Station, a storage tank contamination monitoring site, is located in the southern portion of the Orange County property. Along Lake Venus (shown in picture 3 and 4), sufficient room is available and may require fence or railing for trail separation from lake. Early internal coordination with Orange County maintenance is recommended to determine needs for maintaining a berm. Potential for a boardwalk can be considered if the northwest edge of Lake Venus is not suitable for the trail. For the proposed routing along Lake Venus, no impacts are anticipated for the water body or the nearby wetlands to the south. An eagle's nest was documented approximately 900 feet northeast of the segment's initial turn off of the utility segment. The nest should be surveyed and GPS to determine USFWS review

Northwest of Lake Venus, the proposed trail connects to Kirkman Road at the SR 408 eastbound on ramp intersection (shown in picture 5). Ample space is available for the trail under the SR 408 overpass (shown in figure 6). Crossing enhancements should be considered at the two signalized SR 408 intersections to avoid conflict with right turning vehicles.

North of SR 408, there is approximately 9 to 11 feet along the east side of Kirkman Road between the back of curb and right of way line (shown in picture 7). Existing overhead utility is present between the roadway and sidewalk. Right of way acquisition would be required to construct the trail potentially impacting three parcels, along with business parking and drive-thru path, for an estimated total of 0.1 acres needed. Additionally, vertical tie downs may require a wall to minimize right of way footprint. Coordination with Central Florida Expressway Authority should be held to discuss use of the stormwater property immediately north of the SR 408 westbound offramp intersection. Crossing enhancements should be considered at the Kirkman Road at SR 50 intersection to avoid conflict with existing free-flow northbound right turn lane (shown in picture 8). No wetland or contamination impacts are anticipated for this segment.

North of SR 50, Governors Avenue provides consistently 14 feet from curb to right of way line to Alhambra Drive. Approximately 0.01 acres of right of way would be required from the retail parcel in the northeast corner of the SR





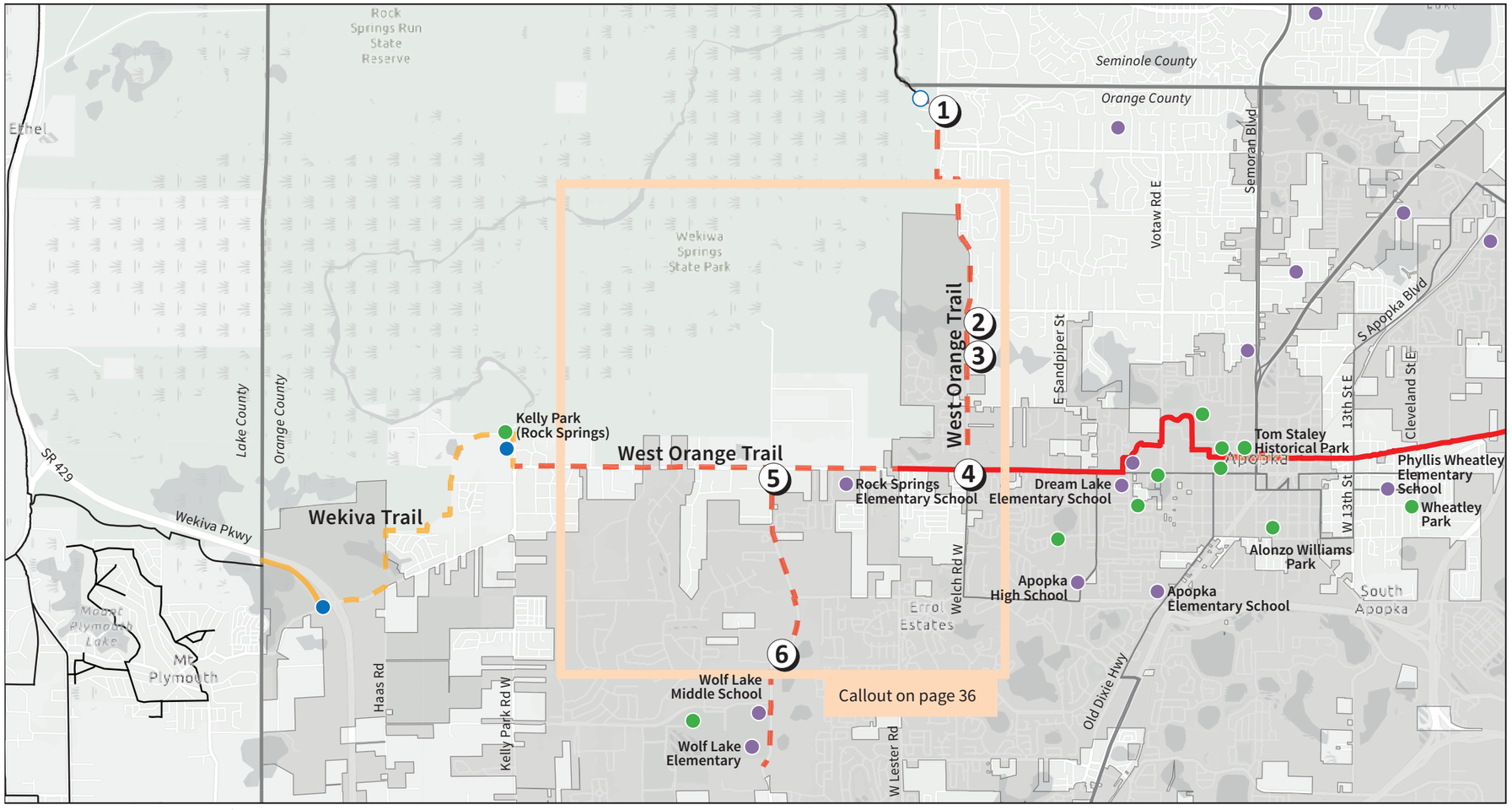
50 and Governors Avenue/Kirkman Road intersection and potential impacts to the existing business sign. Overhead utility is present and would require relocation (shown in picture 9). Along the south side of Alhambra Road, there is between 19 to 30 feet between the curb and right of way line (shown in picture 10). Overhead utility is present and would require relocation. The midblock crossing over Alhambra Road (shown in picture 11) to connect to the existing Shingle Creek Trail is approximately 27 feet long and crosses two lanes of travel. Due to the low volume, a standard midblock crossing is recommended for the midblock crossing. No wetland or contamination impacts are anticipated for this segment.

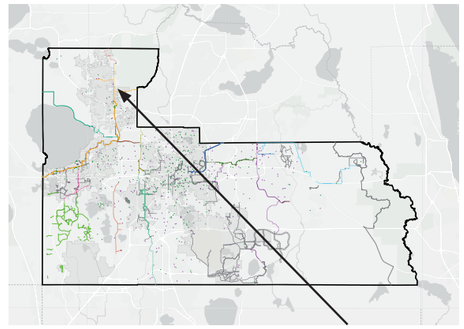
Preliminary review of the following environmental aspects within a 300 feet buffer of the potential trail corridor is summarized as:

- Threatened & Endangered Species: The study area is located within the designated Core Foraging Area (CFA) for wood storks (Mycteria americana), a Federally Threatened species, and the sandhill crane (Grus canadensis pratensis), therefore, impacts to wetlands and surface waters that exceed 0.5 acre may affect this species and mitigation will be required. An eagle's nest is documented within 900 feet however, a FWC disclaimer indicates that nests may be inaccurate up to 528 feet therefore, the nest should be surveyed and GPS to determine USFWS review.

- Wetlands and Other Surface Waters: Wetlands are present within the study area. Detailed field reviews are necessary to determine the actual wetland limits, the quality of the wetland, whether direct or secondary impacts are anticipated, and the extent of mitigation required if impacted. Permitted stormwater ponds are also present within the Study Area. Impacts to these systems do not require compensatory mitigation; however, the capacity of these systems will be replaced and no net loss in capacity will occur.

- Contamination: The study area contains seven (7) biomedical waste facilities, six (6) are associated with medical practices and one (1) medical institute; 11 hazardous waste facilities including eight (8) associated with automotive, one digital advertising, one drycleaner, and a machine shop; four (4) NPDES sites with two (2) being active; six (6) facilities being monitored for petroleum contamination with one (1) open and one (1) abandoned facility; nine (9) storage tank contamination monitoring sites with three (3) currently open and one (1) abandoned; and 11 U.S. EPA Resource Conservation and Recovery Act regulated facilities. A small portion of the study area is within the Deeds Orlando Expanded brownfield area whereas redevelopment may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.

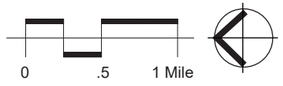




5. West Orange Trail

Phase 4 of the West Orange Trail is approximately 8.67 miles in total length. It connects the existing West Orange Trail to the proposed Wekiva Trail, which in turn connects to the 43.5-mile Wekiva Trail in Lake County, helping to provide enhanced regional trail connectivity. Phase 4 of the West Orange Trail is proposed to run along Rock Springs Rd from the north end of the existing trail and Welch Road to Kelly Park Rock Springs, where it connects to the proposed Wekiva Trail. A section of the proposed corridor runs east along It runs east along Welch Road and Wekiva Springs Road to the Seminole County line, connecting to the Seminole County Wekiva River Blueway. Another portion of the proposed corridor run west on County Line and north along W Ponkan Road and connects to the Wolf Lake Elementary and Middle Schools, as well as the City of Apopka's Northwest Recreation Complex.

Although the southern portions of the West Orange Trail are served by transit, there are no transit routes that serve the proposed trail corridor.



Legend

- West Orange Trail
- West Orange Trail - Phase 4
- Existing Orange County Trail
- Proposed Orange County Trail
- Existing Trails (not maintained by Orange County)
- LYNX Transit Routes
- Schools
- Parks
- Existing Trailhead
- Potential Trailhead

West Orange Trail Feasibility Study

West Orange Trail's Phase 4 includes a segment extending the current trail end from E Lester Road to E Kelly Park Road. There is sufficient right of way from the current trail end to Faye Street to accommodate a trail, but this segment would require lighting and overhead utility relocation (shown in Picture 1). North of Faye Street, drainage along the sidewalk (shown in picture 2) would need to be analyzed and modified to provide sufficient room for the trail within the existing right of way. Retaining walls may also be needed to provide vertical tie down without impacting right of way. Past Ponkan Road to the north, right of way is limited with existing retaining walls (shown in Picture 3 & 4) along sections of the sidewalk and utility polls that would need to be moved. Right of way would need to be acquired for this section of the project to accommodate the trail. Approximately 30 parcels would be impacted for a total estimated right of way take of 2.2 acres. Property types included in the 30 parcels are state park forest, residential, agricultural, and business. The segments from Kentucky Blue Circle to Earls Lane and from Holly Street to Kelly Park Road include soil types and elevations suitable for sand skink habitat. A field review is necessary to determine if sand skinks are present in these areas. There is one (1) storage tank contamination monitoring (SCTM) at E Lewis Avenue associated with Deroose Plants, the trail is not anticipated to impact these storage tanks.

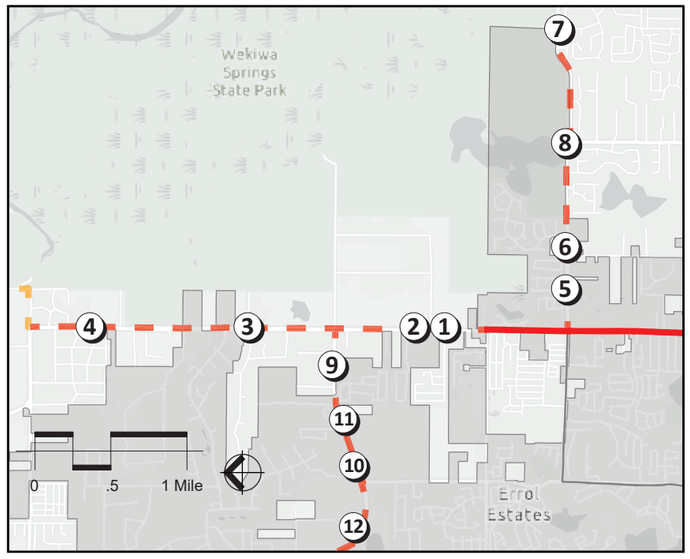
A segment running along E Welch Road and N Wekiwa Springs Road is also included in Phase 4. From Rock Springs Road to Parkglen Circle, there is sufficient right of way for a trail, obstructions include utility poles and drainage on the north side of E Welch Road (shown in Picture 5). The drainage will need to be analyzed and modified to accommodate a trail in this section. Heading east towards Citrus Avenue the right of way decreases and is constrained on the north side by a stone wall bordering several back yards (shown in Picture 6). To accommodate the trail, right of way from approximately four residential properties would be needed for a total estimated right of way take of 0.09 acres, impacting both the stone wall and matured landscape along Welch Road. The State Park borders the northern side of the roadway east of Cedar Glen Drive with large overhead transmission poles set against the fence (shown in picture 7) and limited right of way between the roadside and State Park. Approximately 3 acres of right of way would be required from the three State Park parcels. There are a few small areas of wetland impacts from just west of Crown Isle Circle to just east of North Thompson Road totally 0.1 acres of wetland impact. Additionally, the segments from Parkglen Circle to 1,500 feet east of Parkglen Circle and from Litchem Road to Northfield Drive include soil types and elevation suitable for sand skinks; these segments will likely need surveys to determine if sand skinks are impacted. West of Falcon Hill Drive, coordination would be needed to bring the trail off the road and into the State Park. A small segment of the trail behind the Park Village Place neighborhood includes soil types and elevation suitable for sand skink habitat and would require a field review. By the park entrance there is sufficient right of way (18') from the roadway (shown in Picture 8) to the utility poles on the state park border. Coordination with Wekiwa Springs State Park is critical early on for this segment to determine if park property can be utilized to minimize the right of way impacts along Welch and Wekiva Springs Road.

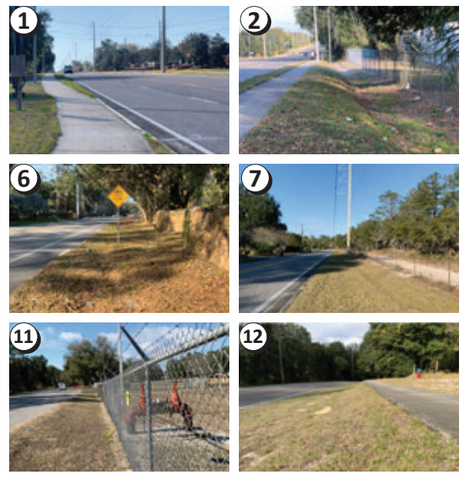
Phase 4 has a segment along W Ponkan Road connecting Wolf Lake Elementary and Middle Schools to the overarching trail network. From Rock Springs Road heading west to Raeth Road, the right of way is not sufficient to provide a trail along the north or south side. Approximately eight parcels would be impacted for an estimated total right of way need of 0.1 acres. The eight parcels include residential and incorporated. One (1) USEPA RCA site at Evelyn Scott Street falls within the right of way needed for the trail, further analysis of the site is needed to determine impact. North side of the roadway may provide more room for a trail but right of way will need to be acquired (shown in Picture 9). Approaching Vick Road on the south side of Ponkan Road would require impact to four parcels for an estimated total of 0.2 acres of right of way needed, including residential and agricultural parcels. Approaching Vick Road on the north side of Ponkan Road there is not sufficient right of way (shown in Picture 10) including the Duke Energy's Property directly abut to the roadway edge of pavement and containing an above ground utility pipe approximately 10' from the roadway (shown in picture 11). Some overhead utility relocation is needed in this area. The segments from Rock Springs Road to Vick Road include suitable soils and elevation for sand skinks and will require a survey to determine if sand skinks are impacted. Past Vick Road to the west, the steep grade on the north side would require regrading or a retaining wall but provides adequate right of way (shown in Picture 12). Drainage would need to be analyzed and modified in this section to accommodate a trail. The following environmental aspects within a 300 feet buffer of the potential trail corridor is summarized as:

- Threatened & Endangered Species: The study area is located within the designated Core Foraging Area (CFA) for wood storks (Mycteria americana), a Federally Threatened species, and the sandhill crane (Grus canadensis pratensis), therefore, impacts to wetlands and surface waters that exceed 0.5 acre may affect this species and mitigation will be required. However, based on the current alignment wetland impacts will be below 0.5 acres. The study area also falls within the USFWS consultation area for the Everglades snail kite (Rostrhamus sociabilis plumbeus) and the Florida scrub-jay (Aphelocoma coerulescens) and USFWS consultation will likely be required. The study area is also within consultation area for Sand Skink (Neoseps reynoldsi), a Federally Threatened species. Further analysis of the soil types and elevations will be required to determine if additional surveys are required.

- Wetlands and Other Surface Waters: Wetlands are present within the study area. Detailed field reviews are necessary to determine the actual wetland limits, the quality of the wetland, whether direct or secondary impacts are anticipated, and the extent of mitigation required if impacted. Permitted stormwater ponds are also present within the Study Area. Impacts to these systems do not require compensatory mitigation however, the capacity of these systems will be replaced and no net loss in capacity will occur.

- Contamination: The study area contains potential hazard and risk sites which includes five (5) biomedical waste facilities associated with medical practices and two (2) hazardous waste facilities consisting of agricultural nurseries; two (2) facilities being monitored for petroleum contamination with one (1) open facility and another closed with no cleanup required; five (5) storage tank contamination monitoring sites, three (3) currently open; and seven (7) U.S. EPA Resource Conservation and Recovery Act regulated facilities which include the generation, transportation, treatment, storage and/or the disposal of hazardous waste.





5.0 Design Guidelines

5.1 Purpose of Design Guidelines

Establishing design guidelines for future trail corridors and improvements are a priority for the Orange County Trails Master Plan. Such design standards provide continuity of design and ongoing maintenance of trails throughout the County's trail network. The guidelines will guide the development of a safe, comfortable, and convenient trail system and promote healthy outdoor recreation and transportation options for all Orange County residents and visitors.

The design guidelines described in this section will ensure users of the Orange County Trails System are well served today and in future, providing for bicycling, walking, running, exercising, and commuting using trails.

Beyond the guidelines in this section, future trail corridors and improvements are to adhere to applicable Land Development Code policies and permitting. The following documents and standards are referenced for additional details and guidance for trail planning and improvements:

- Bicycle Facilities Planning and Design Handbook, Florida Department of Transportation
- Trail Intersection Design Guide, Florida Department of Transportation
- Florida Pedestrian Facilities Planning and Design Handbook, Florida Department of Transportation.
- Guide for the Development of Bicycle Facilities, AASHTO
- Manual on Uniform Traffic Control Devices (MUTCD), Federal Highway Administration
- Reference and Resource Guide, Florida Department of Environmental Protection – Office of Greenways and Trails

The following section describes design guidelines for new trail projects for the County's mainline trail system. These are intended to provide guidance and may be modified based on specific conditions identified during the study, design, and construction phases of the trail development.

5.2 Typical Sections

The typical sections to be used as the standard for the County mainline trail system shall provide for a 14-foot wide trail constructed of concrete, or asphalt, including 12-inch concrete ribbon curbs on each edge. The typical sections also include guidance on the standard clearing and grubbing limits (22' to 35'), as well as standards for sections with handrails and divider islands at crossings. Detailed typical cross sections exhibits can be found in Appendix E. These sections are consistent with the design of recent trails in the County and are intended to provide for a safe, comfortable trail while providing for enhanced longevity and reduced long-term maintenance costs.

When a trail is replacing an existing sidewalk or located directly adjacent to a roadway, the County may choose to use concrete as an alternative to asphalt paving.

5.3 Trail Crossings

Proper intersection and crossing design are vital to a safe trails system. This was reflected in the input received from the public outreach comments, survey results, and stakeholder meetings. In some instances, these conflict points may be the reason a potential user feels uncomfortable and avoids using the trail altogether.

The appropriate measures to use of crossings depend on various conditions to be determined at the time of design. Such factors include, but are not limited to, the volume of trail users, the volume of traffic, speed limits, sight distances, and road width.

All Traffic Control device design and installation shall follow the guidelines provided in the Manual on Uniform Traffic Control Devices (MUTCD), FDOT Traffic Engineering Manual (TEM), FDOT Florida Design Manual (FDM), Florida Greenbook and A Policy on Geometric Design of Highways and Streets (AASHTO Green Book) most recent editions. Traffic Engineering must approve the installation of Traffic Control devices in the ROW.

5.4 Trailheads

Because of their regional use, the Orange County Trails System provides trailheads and rest areas in service of the regional network. Specifically, the facilities supporting the use of trails include signage, wayfinding, parking, restrooms and other recreational amenities. The location of potential trailheads are identified on the Concept Plans in Section 4.2 and 4.3. These locations will be further analyzed for feasibility of a trailhead at the time of trail design.

Trailheads are the public places used to enter and exit a trail facility, and often include signage, informational kiosks with trail maps, shade structures, seating, bike parking, and trash receptacles. Trailheads may also include parking or be non-parking access points to the trails system. The amount of parking offered at trailheads should be dependent on past and expected trail usage and available space. The design and construction of these additional amenities should seek to improve the user experience for all common uses of the trails system. If feasible, the following elements should be available at relevant trailheads:

1. **Signage**: Rules and regulations should be posted at all trailheads, to include trail etiquette, warnings about potential safety hazards, and permitted trail uses. A trail map identifying the trail the trailhead serves and with major destinations, trailheads, or stations, should be located at each trailhead.
2. **Trash/Recycling Receptacles**: Trash receptacles should be located at all County maintained trailheads, and may be located at rest areas and shelters. Recycling receptacles should be located at every trailhead.
3. **Seating**: Seating should be located near trailhead signage to provide for additional recreational opportunities and provide rest for trail users.
4. **Shade Structures**: In addition to seating, where possible, shade structures should be located at heavily utilized trailheads to offer protection from the sun and shelter from inclement weather.

5. **Restrooms**: Where possible, restrooms shall be present at heavily utilized trailheads. Alternatively, potential trailhead locations should consider locating trailheads at or near destinations with existing public restrooms.
6. **Bicycle Racks and Repair Stations**: Racks and other bicycle facilities such as public repair stations should be located at trailheads.
7. **Playgrounds and Other Recreational Facilities**: Additional recreational facilities should be considered in support of trail facilities, including playgrounds for children and exercise equipment. A playground may not be constructed at the trailhead, but potential trailhead locations should consider locating at or near parks and playgrounds served by the trail.
8. **Parking**: Paved parking should be provided at heavily utilized trailheads. Overflow turf parking on permeable surfaces should be considered for periods of heavy use or for trailheads that might not otherwise provide parking spaces. The amount of parking offered at trailheads should be dependent on past and expected trail usage and available space.

Trailheads should generally be located where a large concentration of trail users is expected, such as trail termini, or major parks that already have parking facilities along the trail. Trailheads may not be located at every park along the trail network. The final location, design, amenities appropriate and feasible to each potential trailhead will be determined during the planning and design and new trails.

5.5 Rest Areas

The trail system should also provide users the opportunity to rest along trails. These rest areas should be at unique locations, such as scenic lookouts, or near amenities, such as commercial districts, picnic areas, and other recreational areas. Rest stops typically allow trail users can pull off the trail and not block traffic. A rest stop may include a bench, a shade structure, and trash and recycling receptacles. If possible, based on water availability, a water fountain may also be provided. Animal watering facilities and hitching posts for horses, may be appropriate depending on the trail.

Based on the location, some rest areas, such as those at scenic lookouts or highly trafficked trails, may consider picnic tables and bathroom facilities as additional amenities. Other amenities and safety features that may be considered include informational and directional signage.

The final location, design, and amenities appropriate and feasible to rest areas will be determined during the planning and design and new trails.

In addition, along trails and in areas without appropriate or feasible locations for rest areas, benches may be provided to offer a sitting area for trail users.

5.6 Signage

5.6.1. Wayfinding

Wayfinding and signage were identified as a key theme of the public outreach responses. The goal of wayfinding is to provide cohesive visual cues to direct the movement of vehicles, bicycles, and pedestrians through the trails system. Wayfinding should improve the user experience and make it simpler for both new and experienced users of the trails system to use the system as it was designed. Additionally, wayfinding can be used to orient users, identify the visual brand for the overall trail system, and provide information on directions and distances to destinations and points of interest. At a minimum, users should simply be able to know which trail they are using, where they are in the context of the larger system and understand what key landmarks and destinations may be nearby.

In addition to physical wayfinding, digital wayfinding is becoming increasingly important. The County should include information on ways to access the County's website to provide digital access to rail data for trail users.

5.6.2. Mile Markers and Emergency Information

The frequent presence of markers makes it easier to track distance travelled, and aids in quickly and accurately determining a location in case of an emergency. When trail users can easily locate them themselves on the trail and communicate this information, the overall safety of trail users improves. Public comments indicated that many users prefer these amenities.

It is recommended that surface markers are installed every one-tenth (1/10) mile and include the following information:

- Orange County trail identification
- Name of the trail
- Mile Marker
- GPS coordinates

The locations of the mile markers can be incorporated into the County's GIS database to further coordinate and improve the ability to respond to emergencies.

The frequency of providing this location information every one-tenth mile, trail users will be able to easily determine their location in case of emergency.

In addition to the surface markers with location information, it is recommended that new trails include pavement markings every one mile to provide users an easily visible identification of the distance from the trail beginning/end and help users determine the distance they have traveled.

Additional safety considerations are discussed in the following section.

5.6.3. Regulatory and Warning Signs

In addition to wayfinding and mile marker/emergency location markers, regulatory and warning signs should be considered in order to improve safety.

Examples of regulatory signs include Yield, Stop, and Do Not Enter signs. Regulatory signs should be designed to conform to the standard colors and shapes used for roadways; however, due to the pedestrian scale of trails, regulatory signs along a trail are intended for trail users and should be smaller than those intended for drivers.

Warning signs can be either yellow or fluorescent yellow-green and diamond-shaped. These signs may include:

1. Trail crossings, as described above
2. Wildlife crossings
3. Slope of more than six percent
4. Sharp curves in the trail (less than 95-foot horizontal curvature radius)
5. Other unusual or unexpected situations on the trail

It is critical that these signs are highly visible and easy to read. Regulatory and warning signs should be placed three (3) feet off of the trail pavement, with the text four (4) to five (5) feet above the ground. The text on the signs should be between three (3) and six (6) inches in height

5.7 Safety

One of the most important considerations in maintaining usable, comfortable trails is keeping users safe. With trails like the West Orange Trail, seeing over one million users a year, promoting the health and safety of users is vital.

5.7.1. Crime Prevention Through Environmental Design

Crime Prevention Through Environmental Design (CPTED) is the process of preventing crime through the proper design and maintenance of the physical environment. CPTED is rooted in the belief that environmental factors affect the perceptions of all trail users and proper design reduces the incidence of crime and changes the perceptions of the possibility of criminal activity. The following are valuable principles of CPTED that should be implemented in trail design throughout the County:

1. Natural Surveillance: Keeping the physical environment maintained so that users can be easily seen by other users, staff, and anyone passing the trail on an adjacent street.
2. Natural Access Control: Design road crossings and trailheads should make it clear when the trail is not appropriate for motorized and other unauthorized vehicles do not travel onto the trail. The incorporation of pedestrian features, gateway signing, bollards, or landscaping are options for reinforcing when the corridor is not appropriate for motorized vehicles.

5.7.2. Maintenance

Regular maintenance will foster the perception that the trail is safe to use. As a guideline consistent with CPTED principles, regular maintenance not only corrects potentially unsafe conditions, it also provides to the perception that there is greater monitoring of the trail than if an area appears neglected.

Regular maintenance practices will also inform the County of emergent maintenance issues and provide human activity on less-utilized facilities. When trails are well-maintained, users feel safe and are encouraged to visit the facility, which in turn discourages illegitimate use of the facility. These design guidelines are

intended to help reduce the need for maintenance and provide for the longevity of the trails and amenities. Providing mile marker/location information along the trail, will assist in addressing maintenance concerns that are relayed by trail users.

5.7.3. Trash / Recycling Receptacles

To prevent litter along the trail, creating safety, aesthetic, and comfort concerns, trash and recycling receptacles should be located at all County maintained trailheads and appropriate rest areas.

5.8 Other Multimodal Considerations

The Orange County Trails System serves more than just pedestrians and bicyclists. Today, equestrian and other recreational uses are common along some of the County's trails. As the system matures, additional innovations in transportation may introduce other demands that should be considered for and will potentially be appropriate for trail use.

5.8.1. Americans with Disabilities Act (ADA) Compliance

Orange County abides by Section 504 of the 1973 Rehabilitation Act (Public Law 93-112), which prohibits discrimination on the basis of disability in Federally assisted programs. Section 504 requirements for USDOT administrations are covered under 49 CFR Part 27 (USDOT). Orange County Trails will be in compliance with the Department of Justice published revised regulations for Titles II and III of the Americans with Disabilities Act of 1990 "ADA" in the Federal Register on September 15, 2010. These regulations adopted revised, enforceable accessibility standards called the 2010 ADA Standards for Accessible Design "2010 Standards" or "Standards". In addition, the Plan is in compliance with Florida Accessibility Code (FACBC) and seeks accessibility design guidance from the Florida Department of Transportation (FDOT) and Federal Highway Administration, including the publication 'Designing Sidewalks and Trails for Access'."

5.8.2. Equestrian Uses

In determining appropriateness of accommodating equestrian use, each trail should first evaluate equestrian demand. In addition to the standard design guidelines for shared-use trails, when equestrian accommodations are incorporated into a trail, additional consideration must be given to the signage, vertical and horizontal clearances, surface type, interaction between trail users, trailheads, and parking areas.

A separate path provides the greatest level of service for equestrian use, as well as greater comfort for both the pedestrian/cyclists and riders and their horses. Where feasible, equestrian uses should be accommodated on a path parallel with a paved trail, or on a separate equestrian path.

Trail length for equestrian uses is recommended to be a minimum of five (5) miles.

Equestrian trails adjacent to or part of a shared-use trail require a minimum width of eight (8) feet of clear area with at least four (4) feet of tread width. A minimum of twelve (12) feet in vertical clearance is required. The surface of an equestrian trail should be compacted earth.

Each trail should be clearly posted as open or not open to equestrian use.

For trailheads serving equestrian trails, additional amenities are required. Parking for horse trailers need to be accommodated. These parking spaces need to be a minimum of 50 feet by 28 feet. Additional facilities for equestrian trails/trailheads include animal watering facilities, hitching posts, and manure disposal sites.

Trail maintenance for equestrian facilities should be considered a high priority. Paved surfaces will require higher frequency cleaning to clear the trail surface of waste. The surface of the equestrian path will require maintenance, especially at times of high precipitation.

5.8.3. Electric and Motorized Vehicles

Electric bicycles and scooters were a topic of concern in the public outreach comments. Respondents were concerned over potential conflicts with trail users and questioned whether these types of vehicles should be allowed on the trails. As these types of micro-mobility options are becoming more popular and more available, it is necessary to define what uses are allowed on the trails.

The State of Florida (Section 316.003, F.S.) defines an electric bicycle as:

> A bicycle or tricycle equipped with fully operable pedals, a seat or saddle for the use of the rider, and an electric motor of less than 750 watts which meets the requirements of one of the following three classifications:
>
> 1. “Class 1 electric bicycle” means an electric bicycle equipped with a motor that provides assistance only when the rider is pedaling and that ceases to provide assistance when the electric bicycle reaches the speed of 20 miles per hour.
>
> 2. “Class 2 electric bicycle” means an electric bicycle equipped with a motor that may be used exclusively to propel the electric bicycle and that ceases to provide assistance when the electric bicycle reaches the speed of 20 miles per hour.
>
> 3. “Class 3 electric bicycle” means an electric bicycle equipped with a motor that provides assistance only when the rider is pedaling and that ceases to provide assistance when the electric bicycle reaches the speed of 28 miles per hour.

Section 316.20655, F.S., grants “an electric bicycle or an operator of an electric bicycle shall be afforded all the rights and privileges, and be subject to all of the duties, of a bicycle or the operator of a bicycle.” The section continues to state that local governments may adopt an ordinance governing the operations of electric bicycles or to restrict or limit the operation of electric bicycles on bicycle paths or trails.

It is recommended the County consider a limitation to prohibit Class 3 electric bicycles along its trail system. Class 1 and 2 electric bicycles, as well as similar other vehicles, such as electric-powered scooters or skateboards, continue to be allowed on the trail system.

The above does not apply to motorcycles, mopeds, or other motorized vehicles that are capable of exceeding 28 mph or are powered an internal combustion engine. It is not recommended these types of vehicles be allowed on the County trail system.

As mobility types evolve, it is imperative the County remain flexible and adapt to the changing technologies and mobility options to continue providing a safe, comfortable trail system that promotes community health and encourages active recreation.

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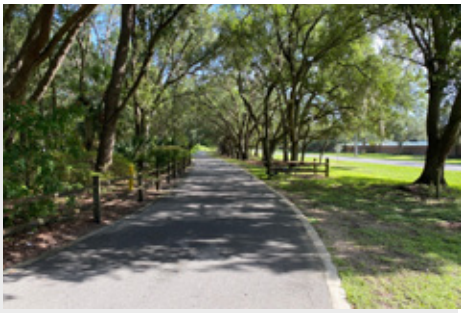
6.0 Appendices

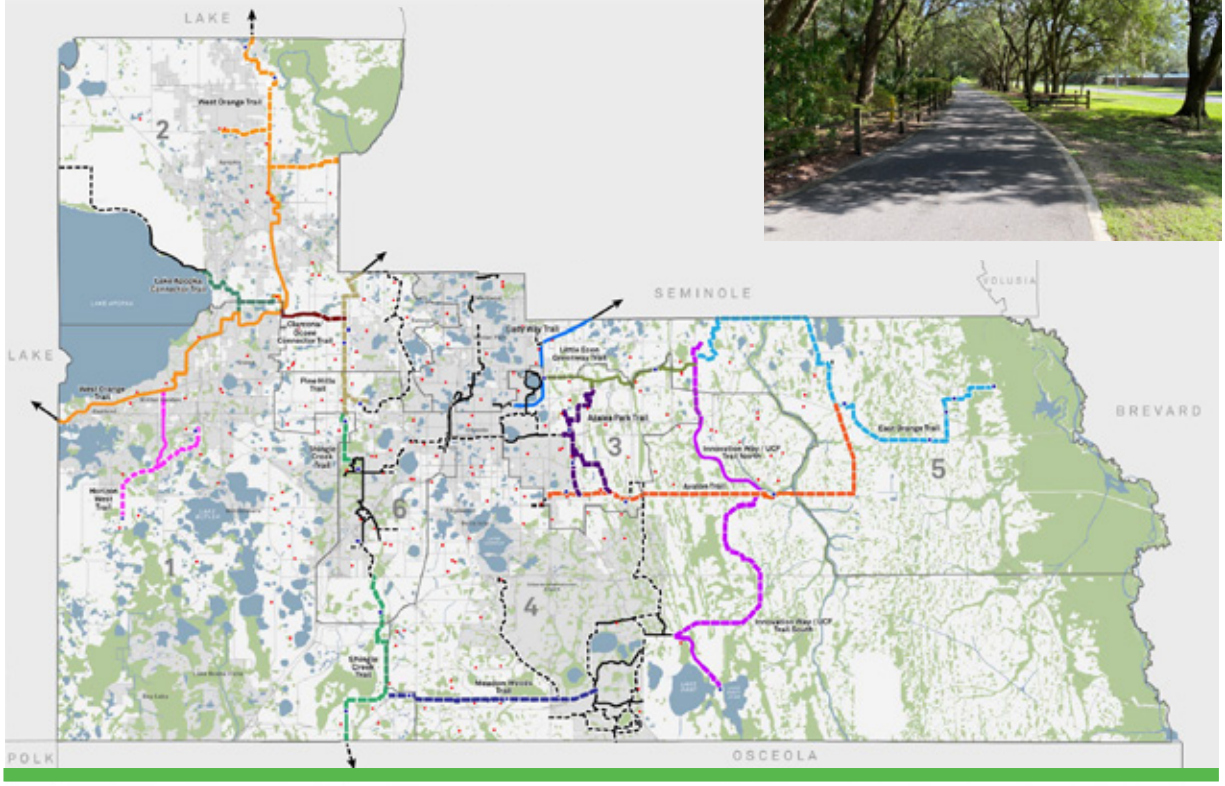
6.1 Appendix A: Existing Conditions Technical Memorandum

ORANGE COUNTY PARKS & RECREATION

Orange County Trails Master Plan Update

Existing Conditions Technical Memorandum





November 2020

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1 Introduction

1.1 Project Description

The Orange County Trails Master Plan is the implementation document of the County's vision for a safe, scenic, and visitor-friendly system of trails that support outdoor recreation and active transportation and contributes to the health, economic vitality, and quality of life of Orange County residents and local communities. The trails master plan was last updated in 2012.

This update complies with the administrative requirements stipulated by Orange County Comprehensive Plan for the Trails Master Plan to be updated every seven years to accommodate the needs of the diverse and changing County population (Policy R1.1.6.1).

This update will include the current status of the existing trail system, assess the feasibility of proposed future trail corridors, and provide design guidelines for the trail system.

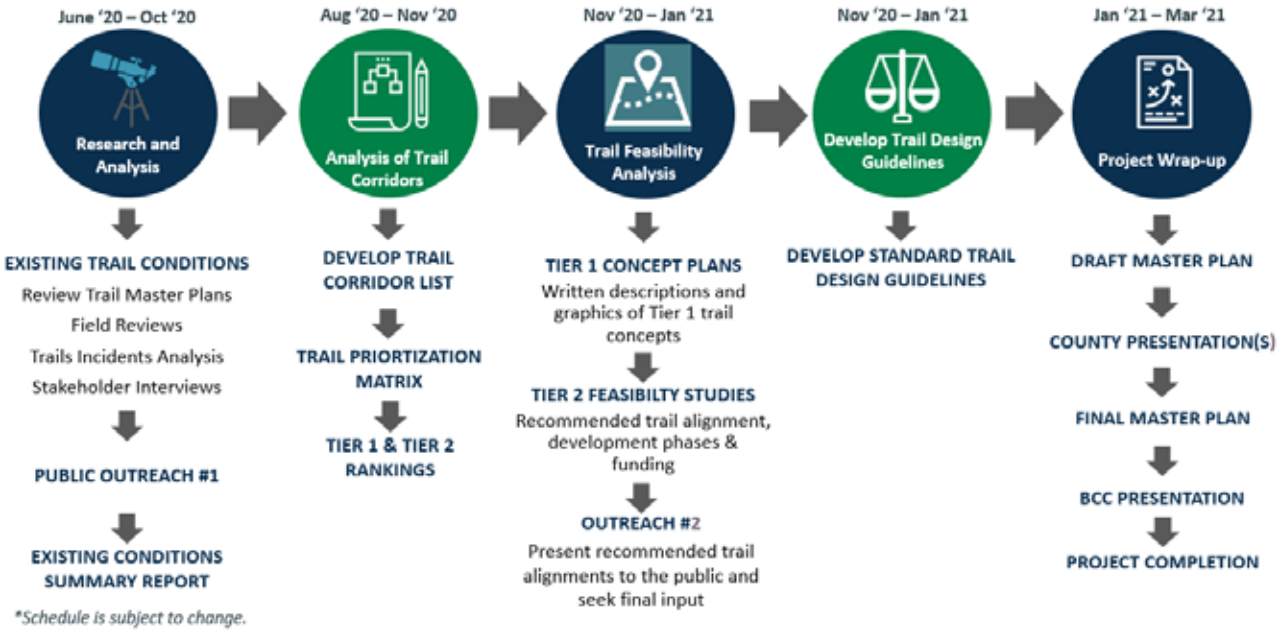
1.2 Study Process

The project approach and schedule are illustrated in Figure 1 .

The first of two public outreach periods was held in August and September 2020 to gather public feedback on the existing trail system, as well as suggestions for future trails. The virtual workshop room was available from August 20, 2020 through September 10, 2020. In addition, a project website, www.ocfltrailsplan.com, was created and will remain open and accessible through the planning process.

The second public outreach period will include an overview of the proposed new trails to be added to the system and an assessment of each trail option. That outreach event is expected to take place in January 2021. The project is scheduled for completion by March 2021.

Figure 1: Study Approach / Schedule



2 Data Collection

2.1 Existing Studies and Plans

The following section summarizes the previous studies related to the Orange County trail network, and provides an overview of the existing trails system.

2.1.1. Previous Studies

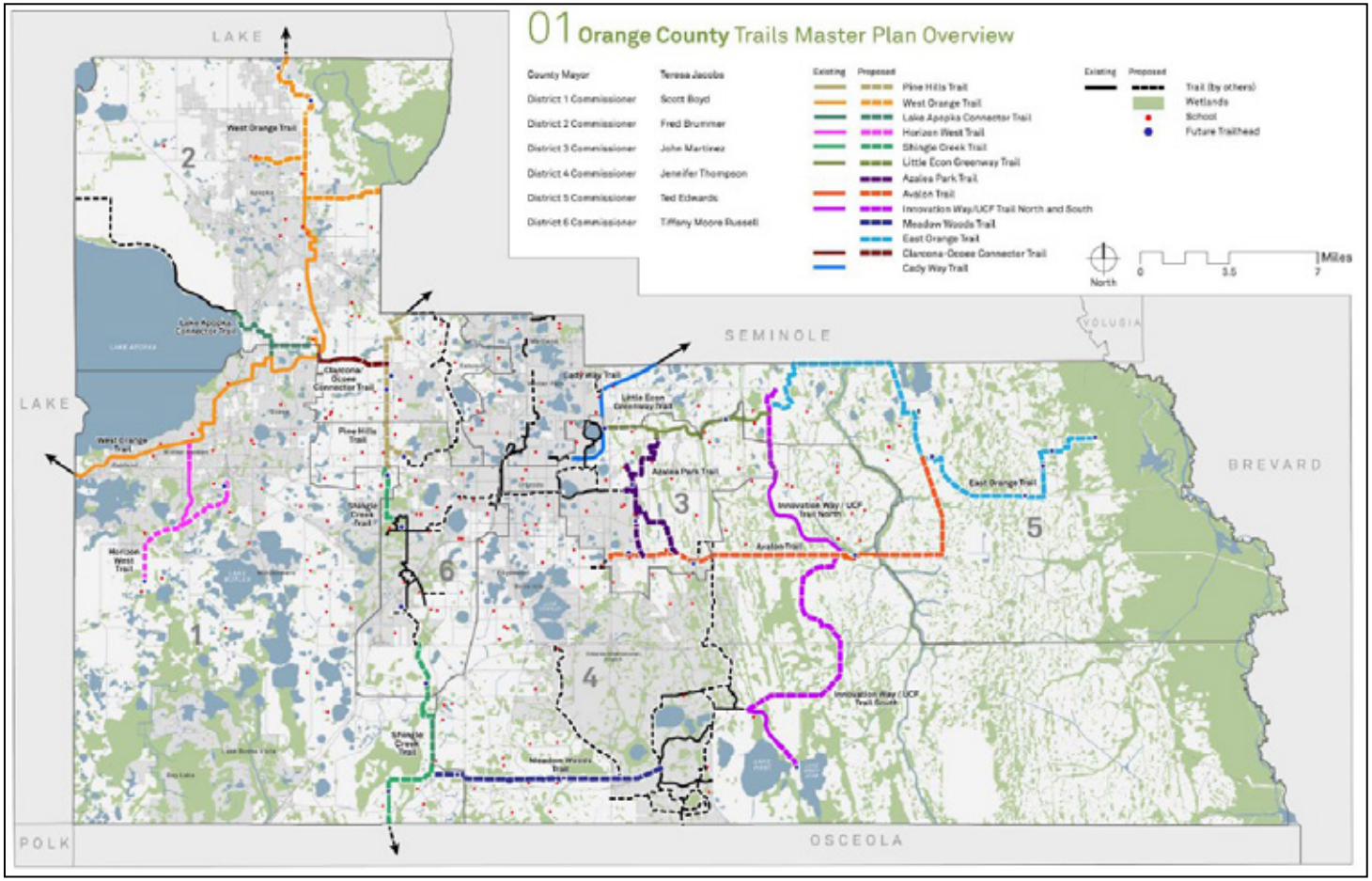
2012 Orange County Trails Master Plan

The 2012 Orange County Trails Master Plan includes detailed descriptions of each mainline trail in the County, including existing trail length, trail connections, and a description of the surrounding trail communities. Proposed extensions for the trails were also identified and presented on maps. The map of all trails, including the proposed trails, can be seen in Figure 2.

There are 10 existing mainline trails in the County, including the following:

1. Avalon Trail
2. Cady Way Trail
3. Clarcona-Ocoee Connector Trail
4. Horizon West Trail
5. Innovation Way North and South Trails
6. Lake Apopka Loop Trail
7. Little Econ Greenway
8. Pine Hills Trail
9. Shingle Creek Trail
10. West Orange Trail

Figure 2: **Orange County Trails Overview (2012 Orange County Trails Master Plan)**



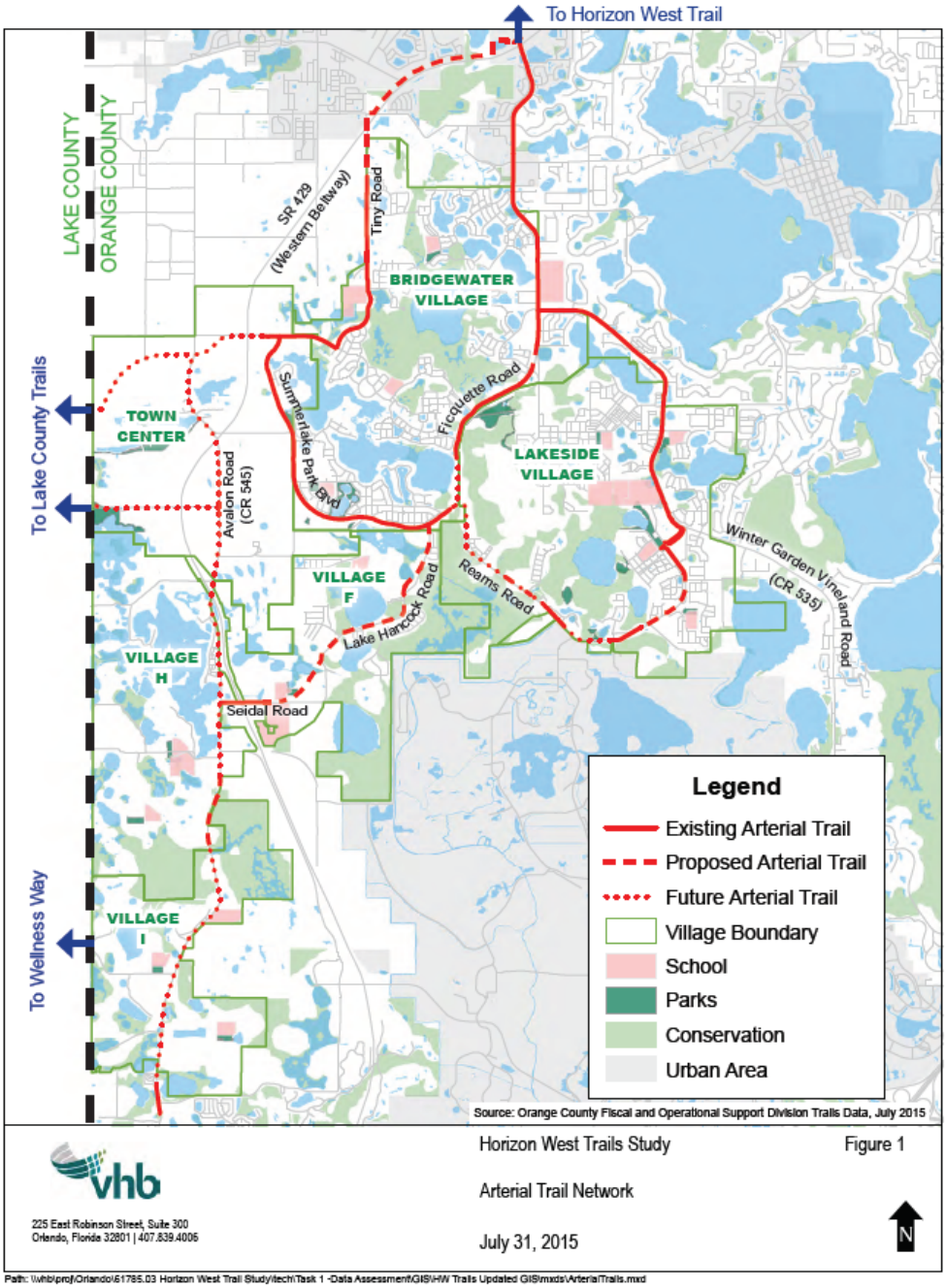
2015 Horizon West Trails Study

The 2015 Horizon West Trails Study focuses on ways to efficiently identify and maintain the trails within Horizon West to provide a system that links all of the Villages, not only within Horizon West, but to the County's mainline trail network. Since the trails within Horizon West are owned and/or maintained by Orange County as well as various Homeowners Associations (HOAs), the 2015 Horizon West Trail Study also "details the process Orange County used to classify the ownership and maintenance responsibilities of the Horizon West trails and how they intend to continue to track and manage future trails." Figure 3 illustrates the trail network in 2015.

This study examined existing procedures undertaken by the county on the arterial and collector trail systems, summarized as follows:

- The intent of the arterial trail network is to connect the Horizon West Villages and Town Center together. Future arterial trails should be located predominately along County Functionally Classified Roadways.
- The collector trails connect the residential areas to schools, parks, public facilities, and commercial areas. The location of these trails will be determined by the Horizon West development requirements (Chapter 38PD, Article VIII. Division 8.0 – Village Planned Development Code and Division 8.5 – Town Center Planned Development Code). The policies specify that Collector trails will connect Village amenities such as schools and parks to the residential areas as well as connect to the Arterial network, but the final location of these trails will be determined by the developer. In the existing Villages, many collector trails are either constructed or have approved design plans. For the Villages that have yet to be developed, proposed collector trails are shown along the main roadways anticipated within the Village.

Figure 3: Horizon West Trails Network (2015 Horizon West Trail Study)



2.2 Existing Study Area Characteristics

The following section includes an overview of the existing mainline trails.

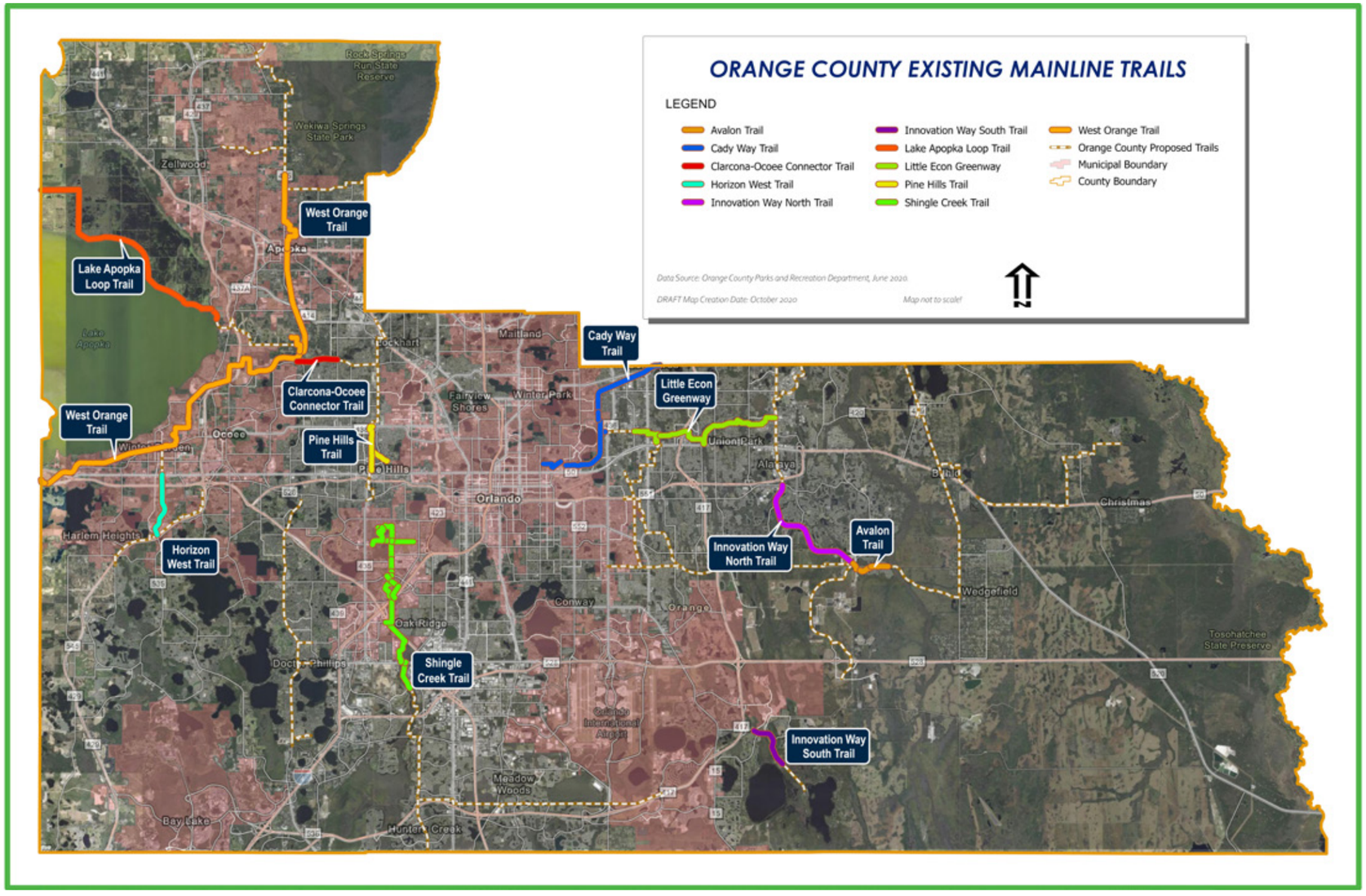
2.2.1. Trail Name, Length, and Maintaining Agencies

Figure 4 below illustrates the existing mainline trails in Orange County.

As noted earlier, there are 10 existing mainline trails in the County, including the following:

1. Avalon Trail
2. Cady Way Trail
3. Clarcona-Ocoee Connector Trail
4. Horizon West Trail
5. Innovation Way North and South Trails
6. Lake Apopka Loop Trail
7. Little Econ Greenway
8. Pine Hills Trail
9. Shingle Creek Trail
10. West Orange Trail

Figure 4: Orange County Existing Mainline Trails



Avalon Trail

The Avalon Trail is made up three segments totaling 1.39 miles in length (Table 1). The segments are maintained by two separate agencies, including Orange County and the Avalon Park Homeowners Association (HOA).

Table 1: Avalon Trail

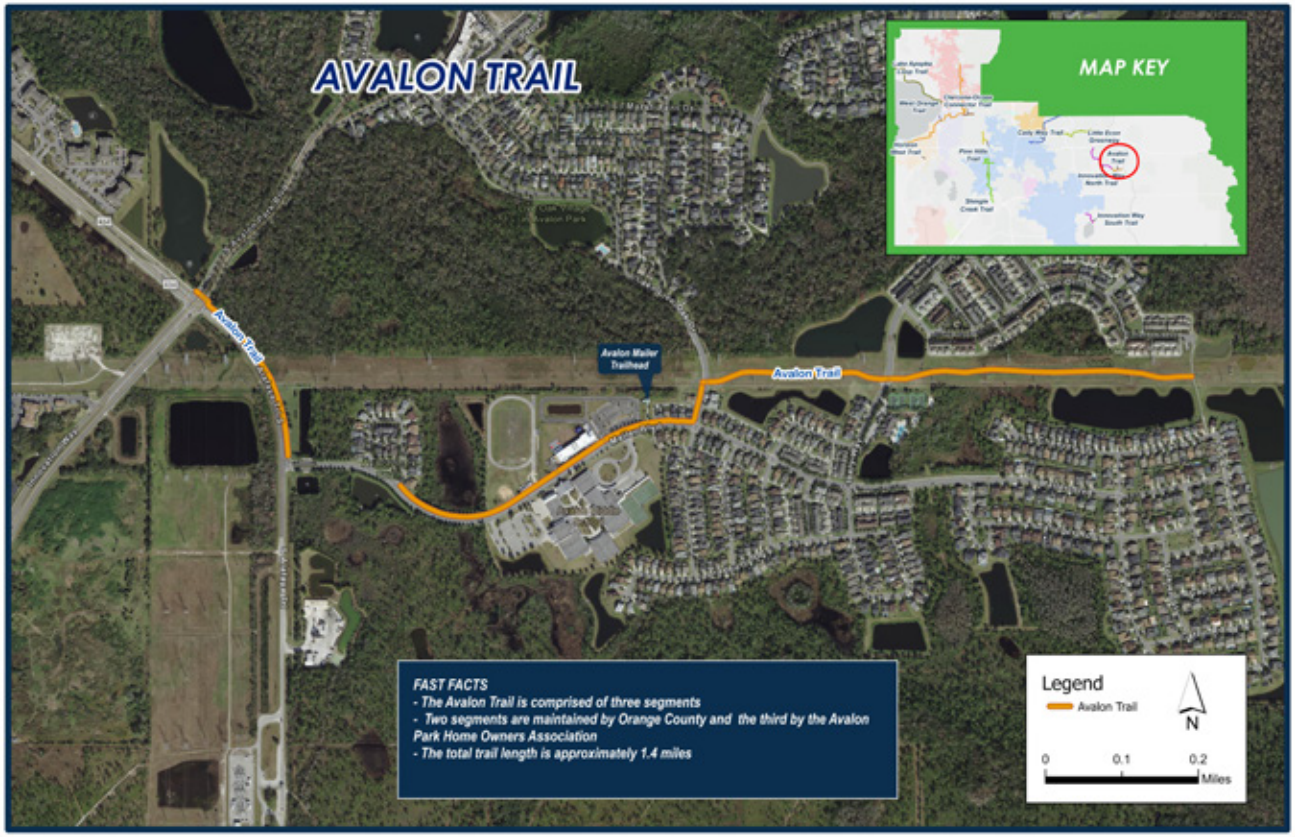
Trail Name	***Length (Miles)***	***Maintaining Agency***
Avalon Trail (from Innovation Way to Mailer Boulevard)	0.26	Orange County
Avalon Trail (from Avalon Park South to Lake Live Oak Drive)	0.48	Orange County
Avalon Trail (from Lake Live Oak Drive to Clarkson Drive)	0.65	Avalon Park HOA
Total	*1.39*	

As depicted in Figure 5, the portion of the Avalon Trail maintained by Orange County from Innovation Way to Lake Live Oak Drive connects the Avalon Park community to the Innovation Way Trail. These segments also provide connections to the Avalon Middle School and the Avalon Mailer Trailhead.

The remaining segment passes through the Avalon Park neighborhood and terminates near Clarkson Drive at the eastern portion of the trail.

No trail count data exists for the Avalon Trail at the time of this report.

Figure 5: Avalon Trail Map



Cady Way Trail

The Cady Way Trail is made up of five segments totaling 7.79 miles in length (Table 2). The segments are maintained by three separate agencies: Orange County, the City of Orlando, and the City of Winter Park.

Table 2: Cady Way Trail

Trail Name	***Length (Miles)***	***Maintaining Agency***
Cady Way Trail (from Coy Drive to McCullough Avenue)	0.86	City of Orlando
Cady Way Trail (from McCullough Avenue to Golfside Drive	2.84	City of Orlando
Cady Way Trail (from Golfside Drive to Summerfield Road)	0.28	City of Winter Park
Cady Way Trail (from Summerfield Road to Hall Road)	3.62	Orange County
Cady Way Trail (from Truman Road to North Semoran Boulevard)	0.19	Orange County
Total	*7.79*	

As depicted in Figure 6 the first two segments of the Cady Way Trail are maintained by the City of Orlando and passes on the outside edge of the Baldwin Park neighborhood. The trail begins at Coy Drive just south of Druid Lake and ends at McCullough Avenue at the Fashion Square Mall. The trail picks up on the east side of the Mall and continues east and then north to Golfside Road in Winter Park.

The segment maintained by Winter Park begins at Golfside Road and ends at Summerfield Road near the northern end of the Winter Park Golf Club.

The Orange County maintained segment continues north from Summerfield Road to Hall Road near Goldenrod Park and the Orange/Seminole County Line. This segment connects to the Cross Seminole Trail/Purple Heart Trail in Seminole County.

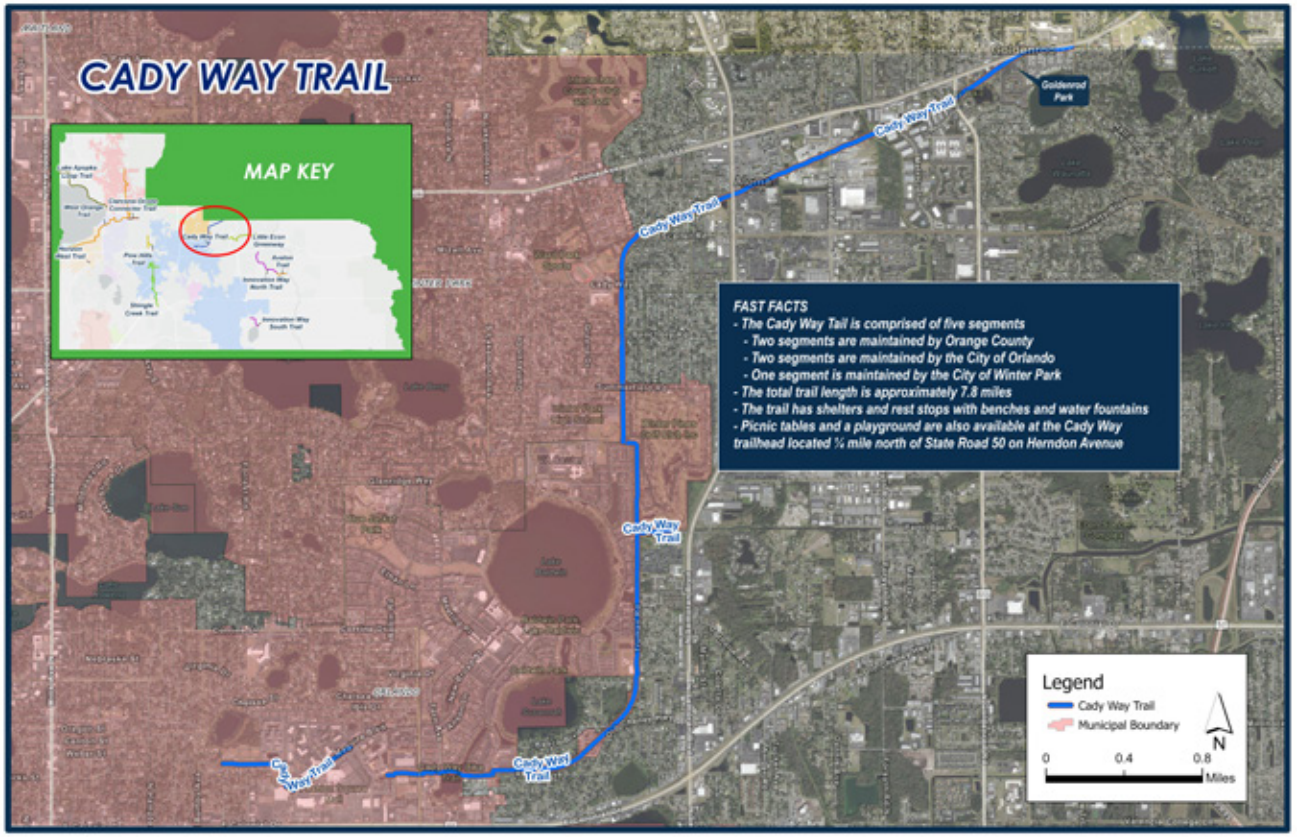
The remaining Orange County segment spurs off the main trail at Baldwin Park Street and terminates west of Semoran Boulevard.

Trail Count Data

Data on trail activity for the Cady Way Trail was provided by the City of Orlando for the period from April 1,2020 through September 30, 2020. During that period, the total trail traffic was approximately 99,000 users, with a daily average of 541 users. Fifty-four percent (54%) of the trail traffic traveled in the northbound direction and the remaining 46% in the southbound direction.

Based on Orange County count data from October 2015 through May 2020, the average monthly trail use was approximately 45,200 users, with an average annual count (January through December) of approximately 574,000 users.

Figure 6: Cady Way Trail Map



Clarcona-Ocoee Connector Trail

The Clarcona-Ocoee Connector Trail is made up of one continuous segment approximately 1.52 miles in length. This trail is maintained by Orange County and begins just west of Apopka Vineland Road at the recently completed Orange County Gap Segment 1 and ends at Hiawassee Road.

The Orange County Gap Segment 1 serves as a connector between the Clarcona-Ocoee Road and the West Orange Trail/West Orange Trail Apopka Vineland Outpost.

Table 3: Clarcona-Ocoee Connector Trail

Trail Name	***Length (Miles)***	***Maintaining Agency***
Clarcona-Ocoee Connector Trail (from Canyon Trail Lane to North Hiawassee Road)	1.52	Orange County

As depicted in Figure 7, the Clarcona-Ocoee Connector Trail provides a connection between Clarcona-Ocoee Road and the West Orange Trail, as well as the West Orange Trail Apopka Vineland Outpost.

No trail count data exists for the Clarcona-Ocoee Connector Trail at the time of this report.

Figure 7: Clarcona-Ocoee Connector Trail Map

Horizon West Trail

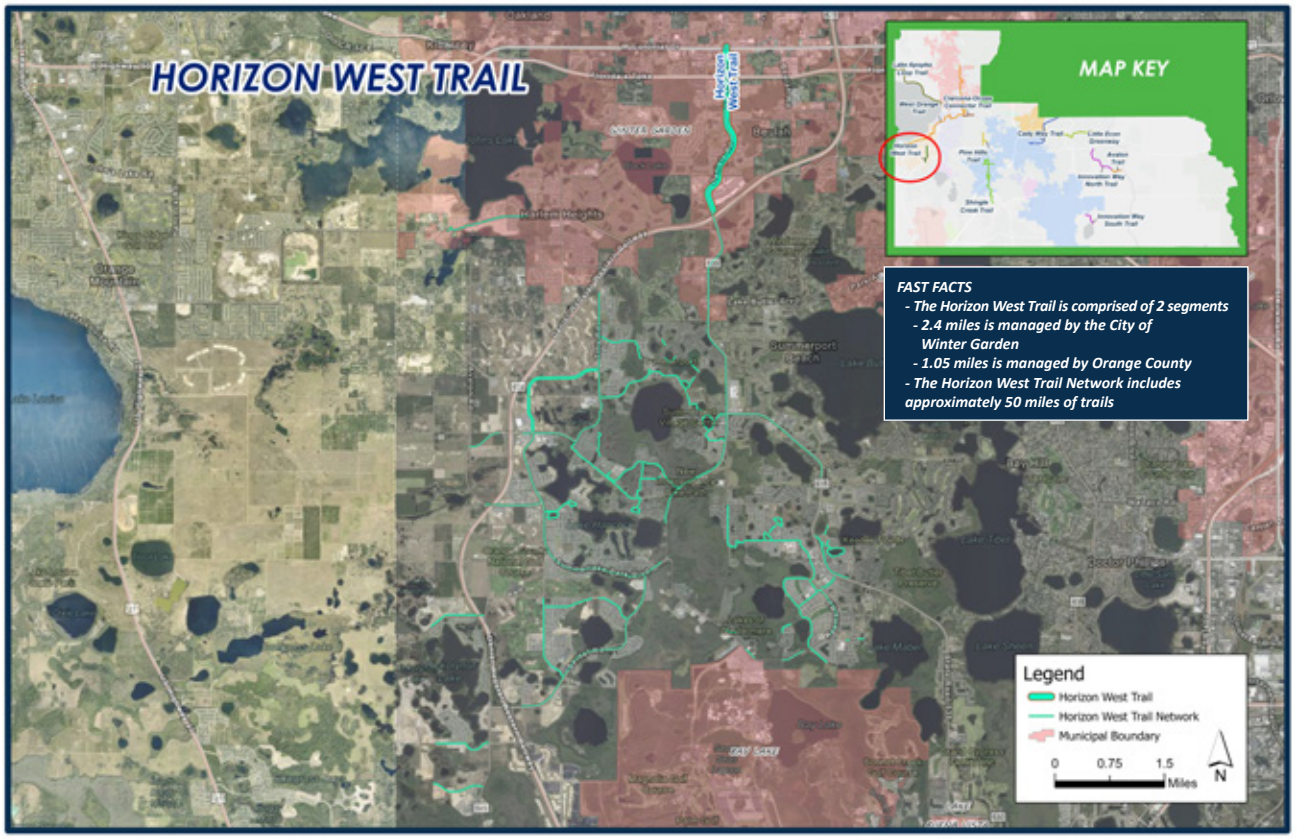
The Horizon West Trail is made up of one segment of 2.4 miles and one segment of 1.05 miles. (Table 4). The City of Winter Garden maintains the trail from Stoneybrook West Parkway to West Colonial Drive and Orange County maintains the trail from just south of SR 429 to Hamlin Groves Tr.

Table 4: Horizons West Trail

Trail Name	***Length (Miles)***	***Maintaining Agency***
Horizons West Trail (from Stoneybrook West Parkway to West Colonial Drive)	2.4	City of Winter Garden
Horizons West Trail (Just south of SR 429 to Hamlin Groves Tr)	1.05	Orange County
Total	3.45	

As depicted in Figure 8 the Horizon West Trail (mainline) ties into the existing Horizons West neighborhood trail network to the south, which includes over 50-miles of internal trails.

No trail count data exists for the Horizon West Trail at the time of this report.


HORIZON WEST TRAIL
MAP KEY
FAST FACTS
- The Horizon West Trail is comprised of 2 segments
- 2.4 miles is managed by the City of Winter Garden
- 1.05 miles is managed by Orange County
- The Horizon West Trail Network includes approximately 50 miles of trails
Legend
Horizon West Trail
Horizon West Trail Network
Municipal Boundary
0 0.75 1.5
Miles
N

Innovation Way North Trail

The Innovation Way North Trail is made up of two segments totaling 4.87 miles in length (Table 5). Orange County maintains the Innovation Way North Trail, which generally follows the Alafaya Trail corridor from Innovation Way to Lake Underhill Road.

Table 5: Innovation Way North Trail

Trail Name	***Length (Miles)***	***Maintaining Agency***
Innovation Way North Trail (from Innovation Way to Mark Twain Boulevard)	3.60	Orange County
Innovation Way North Trail (from Mark Twain Boulevard to Lake Underhill Road)	1.27	Orange County
Total	*4.87*	

As depicted in Figure 9, the Innovation Way North Trail directly connects to the Avalon Trail to the south and is accessible via the Avalon Park and Eastwood neighborhoods to the east.

Innovation Way South Trail

The Innovation Way South Trail is made up of one segment totaling 1.87 miles in length (Table 6). Orange County maintains the Innovation Way South Trail which begins at Wittenburg Way along Moss Park Road and ends at Storey Park Boulevard just east of SR 417.

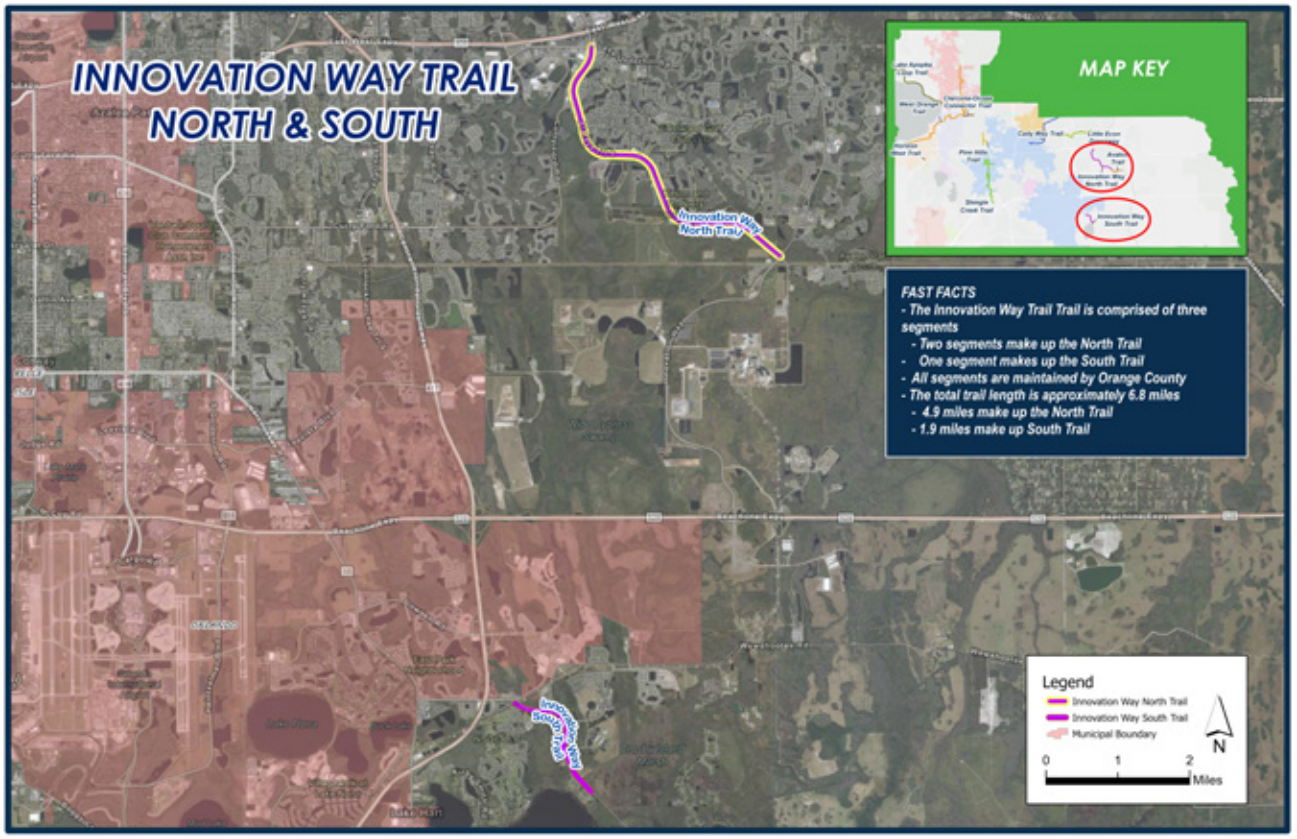
Table 6: Innovation Way South Trail

Trail Name	***Length (Miles)***	***Maintaining Agency***
Innovation Way South Trail (from Wittenburg Way to Storey Park Boulevard)	1.87	Orange County

As depicted in Figure 9, the Innovation Way South Trail terminates just north of Moss Park and the Florida National Scenic Trail at Crosby Island Marsh Preserve and Split Oak Forest.

No trail count data exists for the Innovation Way North and South Trails at the time of this report.

Figure 9: Innovation Way North and South Trails



Lake Apopka Loop Trail

The Lake Apopka Loop Trail is made up of two segments totaling 9.87 miles in length (Table 7). The segments are maintained by two separate agencies, including Orange County and the St. Johns River Water Management District (SJRWMD).

Table 7: Lake Apopka Loop Trail

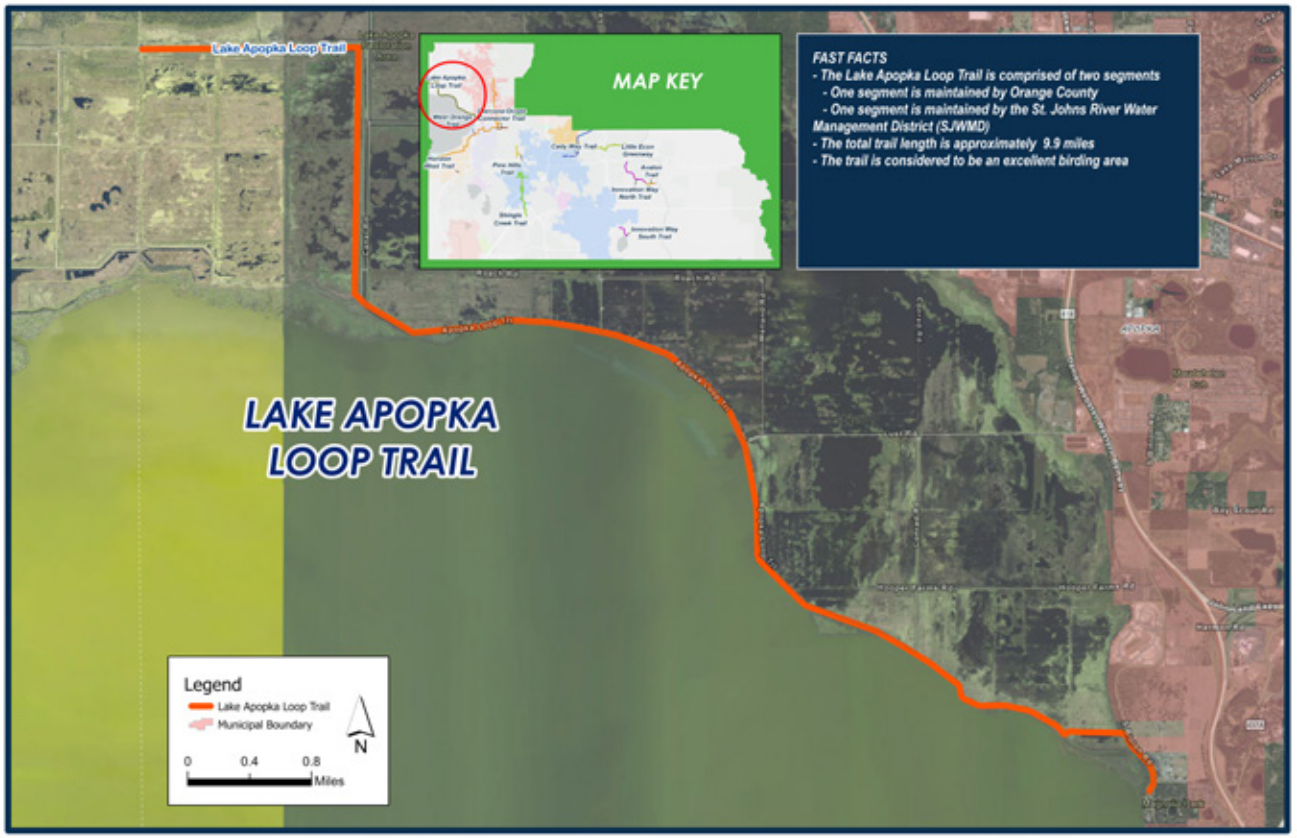
Trail Name	***Length (Miles)***	***Maintaining Agency***
Lake Apopka Loop Trail (Sheaf Road to Harmon Road)	0.49	Orange County
Lake Apopka Loop Trail (South Binion Road to Chase Road)	9.38	SJRWMD
Total	*9.87*	

As depicted in Figure 10, the portion of the trail maintained by Orange County begins at Sheaf Road and ends near Harmon Road. This segment generally follows S Binion Road and provides access to the Lake Apopka Loop Trailhead, Magnolia Park and the UF/IFAS Mid-Florida Research and Education Center.

The portion of the trail maintained by SJRWMD begins at South Binion Road and terminates near Chase Road, bordering Lake County. This segment provides access to restrooms near the Lake Apopka Historical Pump House. This trail segment also provides access to the Lake Apopka Wildlife Drive by way of Lust Road. This trail has potential to connect into Lake County and with the West Orange Trail create a loop trail around the entirety of Lake Apopka.

No trail count data exists for the Lake Apopka Loop Trail at the time of this report.

Figure 10: Lake Apopka Loop Trail



Little Econ Greenway

The Little Econ Greenway is made up of two segments totaling 7.41 miles in length. Both trail segments are maintained by Orange County, as summarized in Table 8.

Table 8: Little Econ Greenway Trail

Trail Name	***Length (Miles)***	***Maintaining Agency***
Little Econ Greenway (Forsyth Road North to Lady Frances Way)	1.81	Orange County
Little Econ Greenway (Yates Road to Alafaya Trail North)	5.60	Orange County
Total	*7.41*	

As depicted in Figure 11, the segment of the Little Econ Greenway from Forsyth Road North to Lady Frances way provides connections to the Conrad Academy and Centro Internacional de la Familia church, both located on the west side of Goldenrod Road.

The segment of the Little Econ Greenway from Yates Road to Alafaya Trail provides access to the Econ Soccer Complex, the Chapel Hill and Dignity Cemeteries north of the Little Econ River (via a Harrell Road pedestrian bridge), Union Park Middle School, the Greenway Picnic Shelter and Blanchard Park (near Dean Road), the Jay Blanchard Trail, and the Blanchard Park YMCA Family Center.

The western end of the Segment 2 (from Rouse Road to Alafaya Trail) provides access to Hickory Cove Park and passes by University High School. Water fountain access is found at the intersection of Little Econ Greenway Trail and Lokonatosa Trail.

Trail Count Data

Based on Orange County count data from January 2016 through May 2020, the average monthly trail use was approximately 28,400 users, with an average annual count (January through December) of approximately 331,000 users. This accounts for approximately 900 daily users.

Figure 11: Little Econ Greenway Trail Map

Pine Hills Trail

The Pine Hills Trail is made up of two segments totaling 2.55 miles in length. Orange County maintains both segments of the Pine Hills Trail as summarized in Table 9.

Table 9: Pine Hills Trail

Trail Name	*Length (Miles)*	*Maintaining Agency*
Pine Hills Trail (Alhambra Drive to Silver Star Road)	1.82	Orange County
Pine Hills Trail (Ferndell Road to Dolores Drive)	0.73	Orange County
Total	*2.55*	

As depicted in Figure 12, the segment of the Pine Hills Trail from Alhambra Drive to Silver Star Road is a neighborhood trail, running alongside several single-family neighborhoods. This segment of the trail passes by the Buddhist Tzu Chi Foundation, Orange County Fire Station 42, and the UCP Pine Hills Elementary School Campus.

The segment of Pine Hills Trail from Ferndell Road to Dolores Drive runs diagonally alongside several single-family neighborhoods as well. This trail segment provides direct access to Barnett Park and the numerous park amenities.

No trail count data exists for the Pine Hills Trail at the time of this report.

Figure 12: Pine Hills Trail Map

Shingle Creek Trail

The Shingle Creek Trail is made up of 16 segments totaling 11.56 miles in length, summarized in Table 10. The segments are maintained by three separate agencies, including Orange County, the City of Orlando and FDOT.

Table 10: Shingle Creek Trail

Trail Name	***Length (Miles)***	***Maintaining Agency***
Shingle Creek Trail (Destination Parkway to West Sand Lake Road)	1.01	Orange County
Shingle Creek Trail (Kingspointe Parkway to South John Young Parkway)	0.25	FDOT
Shingle Creek Trail (West Sand Lake Road to West Oak Ridge Road)	1.97	City of Orlando
Shingle Creek Trail (International Drive to Millenia Boulevard)	1.17	City of Orlando
Shingle Creek Trail (Millenia Boulevard to Holly Branch Drive)	0.55	City of Orlando
Shingle Creek Trail (Southgate Drive to Vineland Road)	0.30	City of Orlando
Shingle Creek Trail (Southgate Drive to Conroy Road)	0.31	City of Orlando
Shingle Creek Trail (Middlebrook Road to President Barack Obama Parkway)	0.17	City of Orlando
Shingle Creek Trail (Conroy Road to Cason Cove Drive)	0.15	City of Orlando
Shingle Creek Trail (Cason Cove Drive to LB McLeod Road)	0.45	City of Orlando
Shingle Creek Trail (L B McLeod Road to Metrowest Boulevard)	0.70	City of Orlando
Shingle Creek Trail (Eagle Nest Park to Poppy Avenue)	1.49	City of Orlando
Shingle Creek Trail (Vargas Street to Kirkland Boulevard)	0.04	City of Orlando
Shingle Creek Trail (President Barack Obama Parkway to Mantilla Avenue)	0.81	City of Orlando
Shingle Creek Trail (South Kirkman Road to Poppy Park)	1.25	City of Orlando
Shingle Creek Trail (Vineland Road to Southgate Drive)	0.94	City of Orlando
Total	*11.56*	

As depicted in Figure 13, the segment of the trail maintained by Orange County from Destination Parkway to West Sand Lake Road follows Shingle Creek. This segment provides access to/from Universal Boulevard and International Drive tourist corridors, and the various attractors in that area, including the Rosen College of Hospitality Management, numerous hotels and restaurants, and theme park attractions.

The segment of the trail maintained by FDOT from Kingspointe Parkway to South John Young Parkway connects the Orange County segment to the City of Orlando segments north of Sand Lake Road.

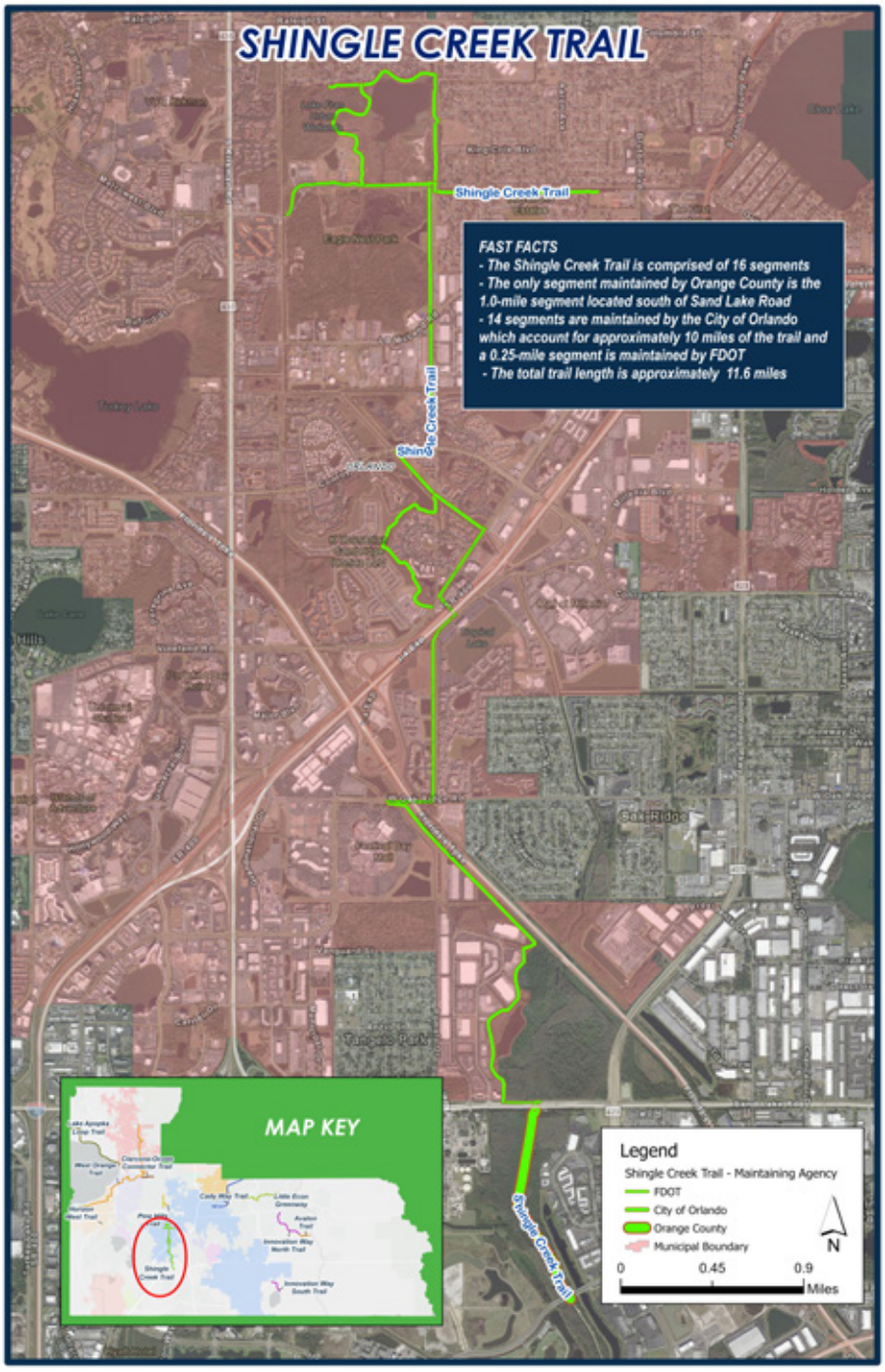
The City of Orlando trail segments account for approximately 10.3-miles of the entire Shingle Creek Trail length. The Orlando segments begin at Sand Lake Road and end near the Carver Shores neighborhood, with the northern most point at Poppy Park. The trail passes by major destinations including the Festival Bay Mall and Orlando International Premium Outlets along Oak Ridge Road and International Drive, the residences and offices along Millenia Boulevard, the Millenia Mall and Eagle Nest Park.

The trail provides additional connections to Eagle's Nest Elementary School, Sand Lake Trailhead, Pine Island East Loop Trail, Lake Fran Bike Trail, and the Kissimmee Trail.

Trail Count Data

Data on trail activity for the Shingle Creek Trail was provided by the City of Orlando for the period from April 1, 2020 through September 30, 2020. During that period, the total trail traffic was approximately 64,800 users, with a daily average of 377 users. Forty-five percent (45%) of the trail traffic traveled in the northbound direction and the remaining 55% in the southbound direction.

Figure 13: Shingle Creek Trail Map



West Orange Trail

The West Orange Trail is made up of four segments totaling 22.27 miles in length (Table 11). Orange County maintains the West Orange Trail.

Table 11: West Orange Trail

Trail Name	***Length (Miles)***	***Maintaining Agency***
West Orange Trail (West Orange Trail, Killarney Station to Lake Boulevard)	0.25	Orange County
West Orange Trail (West Colonial Drive to East Semoran Boulevard)	17.72	Orange County
West Orange Trail (East Semoran Boulevard to Errol Estates)	3.45	Orange County
West Orange Trail (Lake Bream to Clarcona Horse Park)	0.85	Orange County
Total	*22.27*	

As depicted in Figure 14, the West Orange Trail crosses through four municipalities (Town of Oakland, Cities of Winter Garden, Ocoee and Apopka), and ties into the Lake County trail network.

The trail provides access to various parks and amenities in west Orange County, including the following:

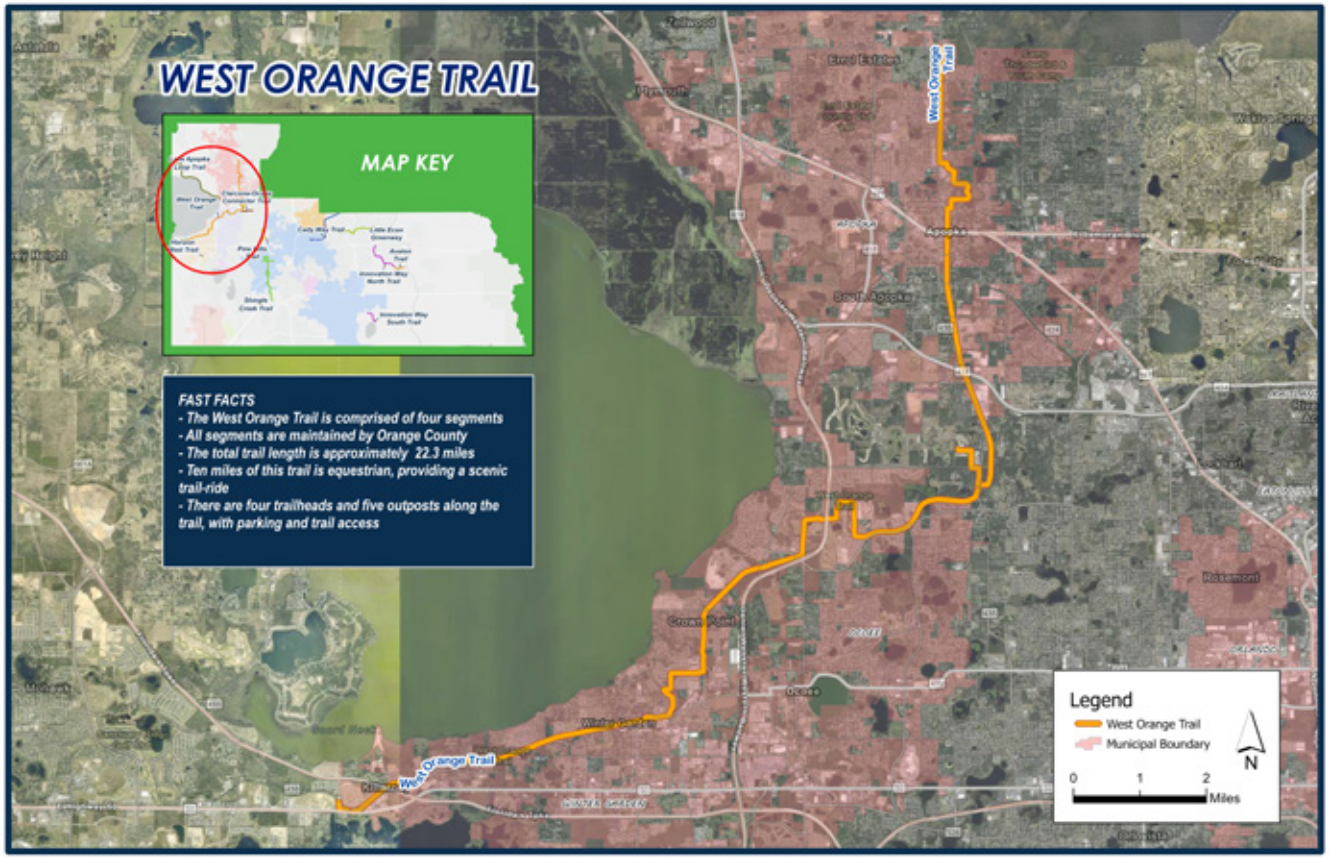
- Town of Oakland – West Orange Trail Killarney Station, Oakland Nature Preserve, and VanderLey Park
- Winter Garden – Downtown Winter Garden, Chapin Station, West Orange Recreation Center
- Ocoee – Chapin Station
- Apopka – Kit Nelson Park, Fran Carlton Recreation Center, Dream Lake Park
- Orange County – segment from Lake Bream to Clarcona Horse Park provides access to Clarcona Elementary School and Clarcona Horse Park

The trail terminates near W Lester Road, south of Kelly Park.

Trail Count Data

Based on Orange County count data from October 2015 through May 2020, the average monthly trail use was approximately 267,000 users, with an average annual count (October through September) of approximately 2.9 million users.

Figure 14: West Orange Trail Map



2.3 Stakeholder Outreach

A major portion of the existing conditions assessment includes outreach and feedback from the general public and numerous local agencies and businesses, including the following:

- Orange County Environmental Protection Department (EPD)
- Orange County Public Works
- Orange County Utilities Department
- Orange County Public Schools (OCPS)
- Orange County Fire Rescue
- Orange County Sheriff's Office
- Florida Department of Transportation (FDOT)
- LYNX
- City of Orlando Department of Families, Parks and Recreation
- City of Winter Park, Parks & Recreation Department
- City of Apopka, Recreation Department
- City of Ocoee, Parks & Recreation Department
- City of Winter Garden, Parks & Recreation Department
- Town of Oakland
- MetroPlan Orlando
- Friends of Lake Apopka
- Bike/Walk Central Florida
- West Orange Trail Bikes and Blades
- Wheel Works
- United States Fish & Wildlife Service (USFWS)
- Army Corps of Engineers, (ACOE)
- Florida Department of Environmental Protection (FDEP)
- Florida Fish & Wildlife Conservation Commission (FFWCC)
- St Johns River Water Management District
- South Florida Water Management District
- Duke Energy

Following is a summary of the outreach efforts. It should be noted that all of the above agencies were contacted for feedback; however, some agencies were not able to be reached during the outreach period for assessing existing conditions. Those agencies will have additional opportunities to provide feedback during the next phase of the project and second public outreach period.

2.3.1. Public Outreach Period #1

The first public outreach period included a virtual meeting room, that was open for the public from August 20, 2020 through September 10, 2020. The Public Outreach #1 Summary Memorandum is included in the attached Appendix for reference.

The interactive Virtual Meeting Room contained information on the existing Trails Master Plan (completed in 2012), maps of the existing mainline trails in the County, survey and comment forms and an interactive map to obtain public feedback. The Virtual Meeting Room also included a link to the Trail Master Plan project website (http://www.ocfltrailsplan.com/). The website had over 4,500 site visits and will remain open throughout the planning process.

The Virtual Meeting Room had approximately 1,500 visitors, who completed over 900 surveys and over 500 written comments. A summary of the responses is included in the attached Appendix. Key takeaways are summarized below.

Online Survey

- General results from all respondents:
  - The most common used trails include the West Orange Trail (28%), Cady Way Trail (24%), Little Econ Greenway (15%) and Lake Apopka Loop Trail (10%).
  - 77% of respondents use Orange County trails more than once a month.
  - 65% of respondents use the trail on both weekdays and weekends.
  - Nearly half (49%) of respondents generally use the trails in the morning, with only 9% and 10% using the trails during midday and the evenings respectively.
  - 83% of respondents used the trails for biking, 52% for walking and 31% for running
  - 68% of respondents consider health and fitness to be their main use of the trails, and 30% use the trails for recreation.
  - Only 1% of respondents (10) primarily use the trails for commuting.
- The top five preferred services and amenities along trails include the following:
  - Public Restroom/Water
  - Parking
  - Food and Dining Options
  - Gazebo and Picnic Tables
  - Bike Shop
- Factors that prevent respondents from using trails were evenly split between 'difficulty getting to the trail', 'safety concerns', 'not enough destinations' and giving their own response.
  - 88% of respondents felt "very safe" or "somewhat safe" and 4% felt "somewhat unsafe"
- 89% of respondents rated the maintenance of the trails as good or excellent, 10% answered fair and only 1% gave an answer of poor.

Written Comment

The written comments primarily focused on the following:

- Improve trail connectivity.
- Consider safety, related to traffic along major roadway crossings.
- Add emergency call boxes or cameras, as cellphone reception is limited on some trails.
- Update trail mile makers as amenity for users and in case of emergencies.
- Design of trails to include more shaded sections, improved wayfinding signage and more unpaved trail segments.
- Add amenities such as more water fountains, water bottle fill stations, bike repair stations, and restrooms.

- Consider updated maintenance schedules for trails to regularly clear debris and trash, as well as long-term maintenance such as repaving trails to make sure they are safe and clearing vegetation from overgrowth.
- Consider new trails including Horizon West; Meadow Woods, east Orange County with a connection to UCF, Dr. Phillips, southeast Orange County/Lake Nona, a Shingle Creek Trail extension, and other connections to the regional system, such connecting to the Seminole County Trails and finishing the Lake Apopka Loop.

2.3.2. Stakeholder Outreach Meetings

As noted earlier, over 20 agencies were contacted for feedback on the existing mainline trail network and potential improvement recommendations, as well as ways to expand on the mainline trail network. The key take-aways are summarized below. Meeting summaries are included in the attached Appendix for reference.

General Comments

General comments regarding the planning, design and maintenance of trails include the following:

- Improved wayfinding along the existing trails was a common request.
    - The wayfinding could include new and/or improved signage along trails, including larger and/or easier to read signage, and more signs pointing to key trail and area destinations (downtowns, parks, schools, restaurants, trailheads, parking lots, etc.).
    - Consider 911/emergency information related to mileposts to make it easier for users to locate their position along a trail in the case of an emergency.
    - Would like to see more visible mile markers on trails similar to those used on Seminole County trails. Could incorporate GPS coordinates with mile markers.
    - Generally, signage for parking at trail locations is not clear. The location of parking lots for those arriving to the trail is not easily discernible, especially for new users.
- There were concerns regarding trails that cross high traffic volume roadways. Identify strategies to promote safe crossings and alert drivers of the crossing.
- It would be useful to have a coordinated website map identifying to the public all trail connections, from a regional perspective, into the wider Tri-County area and beyond.
- Consider incorporating trail safety into future trail corridors and design guidelines, especially related to shared-use paths that replace sidewalks adjacent to a road.
- Consider special emphasis markings at crossing locations versus the use of elephant tracks.
- Stop signs along trails (for trail users) at driveways is discouraged, as they should only be at midblock crosswalk locations.
- Consider additional water sources for the trails used by horses, such as the West Orange Trail.
- Consider tying into adjacent counties' trails.
    - There is interest in seeing the Lake Apopka Loop Trail continue around the Lake Apopka. This requires coordination with Lake County.

- Consider tying into Florida National Scenic Trail system especially in eastern Orange County via an extension of Innovation Way North Trail and Avalon Trail, leading into Deseret Ranch.

Adjacent Trail Information & Trail Opportunities

- The City of Ocoee, in partnership with the West Orange Healthcare Care District (WOHD), is preparing the Healthy West Orange Trails Master Plan (HWOTMP).
  - Other participating municipalities include the Town of Oakland, and the Cities of Winter Garden, Windermere, Gotha, and Apopka.
  - The intent of the project is to gather data and identify potential "activation" points (parks, sport fields, exercise equipment, etc.) to program and facilitate healthy lifestyle opportunities and encourage trail use.
- The City of Apopka has been in discussion with Orange County regarding extending the West Orange Trail to the north from W Lester Road to Kelly Park, as well as a new trail connection to the NW Recreation Complex.
- MetroPlan suggested a potential trail could include a connection between the S Orlando Avenue/Maitland Overpass and the West Orange Trail. The trail could cross over the SunRail railroad corridor, continue west of I-4 via the redesigned I-4 Pedestrian Bridge south of Maitland Boulevard, connect to Lake Lotus Park and eventually into the West Orange Trail.
- The Town of Oakland is planning a Historic Loop trail that ties into the West Orange Trail. The Trail would pass through the Oakland Preserve development, then by the Historic African American Cemetery, Oakland-Tildenville Cemetery, and the Oakland Cemetery and then link to the Healthy West Orange Art & Heritage Center/Speer Park area.
  - A second trail is being planned that connects the West Orange Trail to the Oakland Avenue Charter School. This is an existing path that would be replaced by a formal trail.
  - The Town is requesting that the County look into a potential connection from the 4th Street Overpass to Tucker Ranch. The trail could potentially connect the residential area and a proposed mixed-use development for the area just north of the Turnpike overpass, to the Tucker Ranch area in Winter Garden, south of the Florida Turnpike.
- The City of Orlando identified a desire to expand the trail network into north Orange County, within an existing easement along Wekiva Springs Park.
- The City of Orlando is updating their Parks Master Plan and will include an evaluation of the "10-Minute Walk" initiative to identify opportunities for accessibility to parks for residents within half-mile.
- Orange County Design Guidelines in the Master Plan have evolved to address long term maintenance goals and wayfinding.
- FDOT prioritizes projects that expand on or connect to the Coast to Coast Trail network, and that interface with State Roads.
- LYNX is currently working with Orange County on a shared use path in Pine Hills area on the east side of Denning Drive.
- LYNX does not keep data for bicycles on buses, but it is something that they are exploring.

- Tavistock Development has been coordinating with the Office of Greenways and Trails (Dale Allen) regarding an extension of the Innovation Way South Trail that would tie into the Florida Scenic Trail Network at Moss Park.
    - The trail extension would be part of a larger network of internal trails in the Lake Nona area.
- There are several natural areas in the Bithlo neighborhood, including the Hal Scott Regional Preserve and Park. They should be considered when planning future trails, especially along the S.R. 13 corridor.
    - Orange County EPD does not prefer paved trails through the Hal Scott
- Commissioner VanderLey is interested in a park and/or trail in the Dr. Philips area.
- OCPS noted that schools are planned as standalone secure facilities.

3 Next Steps

3.1 Next Steps

As the trails master plan update continues, the Project Team will complete the following next steps:

- Prioritization of Proposed Trail Corridors. The Team has developed an evaluation matrix to assist the prioritization of potential trail corridors identified through the public outreach period and stakeholder meetings. This prioritization will assist the Team in determining which trails will be evaluated in the Concept Plan and Feasibility Analysis phases of the process.

- Concept Plans. For the proposed trails the Project Team will provide a description of the corridor, preliminary conceptual design and cost estimates, potential funding sources, and produce a conceptual plan, including points of interest and possible trailhead locations.

- Feasibility Studies. In addition to the Tier 1 concept plan, some proposed trail corridors will also include a feasibility study. Beyond the concept plans, this level of analysis will include potential phasing of the project, a recommended trail alignment, a discussion of issues, constraints, and opportunities, and an environmental screening, to evaluate potential wetlands, surface waters, land use, habitats, contaminated sites, and wildlife.

- Design Guidelines. The Project Team will develop a set of design guidelines will be provided, using national best practices and existing standards. These design guidelines may address width, paving, depth and material, trail crossings, clearances, signalization, site furnishings, lighting, wayfinding, trailhead design guidelines.

- Public Outreach. After the draft concept plans, feasibility studies, and design guidelines are complete, Orange County will host the second public outreach period, anticipated for January 2021 to gather input and feedback to the draft plans and guidelines prior to finalizing the Trails Master Plan.

- Boards and Hearings. After the second public outreach period, the Project Team will finalize the draft Trails Master Plan and present to the County Administration, the Parks Advisory Board and the Board of County Commissioners.

Attachment A

Public Outreach #1 Summary

Memorandum

To: Regina Ramos
Project Manager, Planning & Development
Orange County Parks & Recreation Division

Date: October 6, 2020

Project #: 62876.15

From: Tyler K. Johnson, AICP

Re: Orange County Trails Master Plan Update: Public Outreach #1

Introduction

On August 20. 2020. Orange County open the first Public Outreach Period for the Orange County Trails Master Plan update. The project's Virtual Workshop Room was open for public response for three weeks, through September 10. The website, www.ocfltrailsplan.com, will remain open and accessible through the planning process.

Through the public outreach period, the Virtual Meeting Room had approximately 1500 online visits. The website, which includes a survey continues to stay accessible. Through October 2, 2020, the project website had over 4,500 users. Sixty percent (60%) of these users accessed the site through their mobile phone. Friday, August 28th had the single highest number of daily visits, 1,461 users.

The referenced Virtual Workshop Room and project website contained the project's purpose and intent, the project's anticipated schedule, information on existing conditions and previous trail plans, and public input options. This memorandum summarizes the input gathered from the Virtual Meeting Room and Project Website, including a survey, mapping exercise, and open comments.

Orange County Trails Survey

The survey for the Orange County Trails Master Plan Update was completed by 915 respondents between August 19th and October 2, 2020. Responses came from across 70 unique zip codes. The most common zip codes of respondents were 34787 (Winter Garden/West Orange County), 32792 (Winter Park/Casselberry/Aloma), 32803 (Orlando) and 34786 (Windermere). Respondents came from a wide range of age groups: ages 26-35 and 36-45 each made up 23% of respondents, ages 46-55 making up 18%, and ages 56-65 with 20%. Those aged 65 or older made up 12% of respondents and those aged 25 and younger made up 4%.

When asked what trails they generally used, the most common response was the West Orange Trail (28%), followed by the Cady Way Trail (24%), Little Econ Greenway (15%) and Lake Apopka Loop Trail (10%). Altogether, 77% of respondents use

225 E. Robinson Street, Suite 300
Landmark Center Two
Orlando, FL 32801-4326
P 407.839.4006

Memorandum

Orange County trails more than once a month.

The survey asked when respondents typically use the trails. Sixty-five percent (65%) of respondents replied that they use the trail on both weekdays and weekends. Nearly half (49%) of respondents generally use the trails in the morning, with only 9% and 10% using the trails during midday and the evenings respectively.

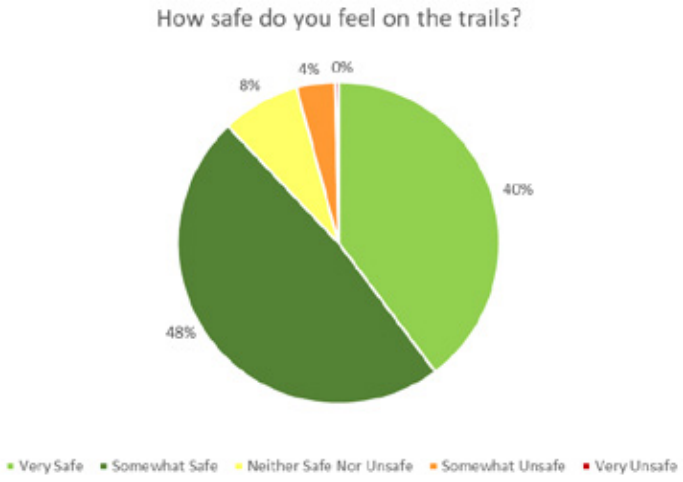
In terms of modes of transportation, the highest number respondents reported that they used the trails for biking (83%), while walking (52%) and running (31%) making up the 2nd and 3rd of the most common activities. Sixty-eight percent (68%) of respondents consider health and fitness to be their main use of the trails, with 30% answering recreation. Only 1% (10 respondents) primarily use the trails for commuting.

Users gave varied answers for the number of average miles on trails per visit, ranging from less than 1 mile to more than one hundred miles. Seventy percent (70%) of users, gave answers between 3 and 20 miles. Users also reported spending a wide variety of time spent on trails per visit, but 80% gave answers between 1 and 2 hours. To get to trails, 46% of users reported that they typically drive, with 33% biking and 19% arriving on foot.

When asked for the types of services and amenities preferred along trails, the top five answers given were:

1. Public Restroom/Water
2. Parking
3. Food and Dining Options
4. Gazebo and Picnic Tables
5. Bike Shop

When asked about factors that prevent them from using trails, respondents were evenly split between 'difficulty getting to the trail', 'safety concerns', 'not enough destinations' and giving their own response.



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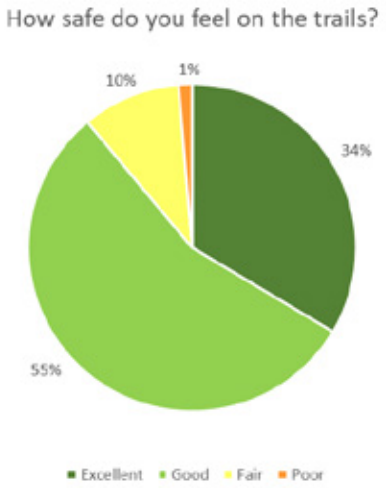
Memorandum

Eighty-nine percent (89%) of respondents rated the maintenance of the trails as good or excellent. Ten percent (10%) answered fair and only 1% gave an answer of poor. When asked about safety, 88% of respondents said they feel very safe or somewhat safe on the trails. Eight percent (8%) of participants responded that they feel neither safe nor unsafe, while 4% felt somewhat or very unsafe on the trails.



Written Comment Summary

In addition to the open comment field at the end of the survey, the project team also solicited input through the Virtual Meeting Room and a virtual mapping exercise. More than 500 written comments were received through these three avenues and have been summarized below.

Connectivity

Connectivity was mentioned more than any other topic in the written feedback received. Respondents expressed their desire for trails to connect to each other, to connect with more robust bicycle and pedestrian infrastructure in general, and to destinations, such as downtown areas. Specifically, the connection between the Cady Way Trail and Little Econ Greenway was mentioned most frequently. Other connections, including east-west connectors and various connections to Hal Scott Preserve were also frequently mentioned. Residents using trails for commuting and recreation agreed that a more continuous trail system would draw more users. Some respondents even mentioned driving past other trails to the West Orange Trail because of its length. Others mentioned going to Seminole County to use trails because they considered Seminole County trails to be more continuous.

Furthermore, multiple respondents noted that equity should be a consideration in trail connectivity, specifically in addressing communities that may have a greater percentage of population that rely on the trail system for daily trips.

Safety

Safety was another frequently cited concern. Relating to connectivity, many respondents said were less likely to use trails that required the use of larger roadways to connect portions of the trail. Roadway crossings were of particular concern, with many residents feeling that vehicles did not travel safely through these crossings. Additionally, some participants

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Memorandum

noted there can be confusion regarding the stop signs and who has the right of way at roads and driveways along the trail.

In addition to safety in continuity, certain portions of different trails were mentioned as being good candidates for call boxes and cameras. Some respondents mentioned that it is often difficult to communicate from a trail in case of an emergency. Another concern expressed was the feeling of being unsafe when large groups, or fast cyclists pass too close. Respondents felt this is dangerous behavior and potentially could be addressed by signage, education, or design considerations.

Design

This category includes comments primarily related to the design guidelines portion of the Trails Master Plan, and incorporates comments regarding trail design, wayfinding, and signage. Additionally, one very specific design characteristic mentioned often, was shade. Particularly valuable in warm summer months, some respondents expressed concerns over new developments adjacent to parks that have cleared trees and negatively influencing the trail environment.

Regarding specific locations, participants expressed the desire for improved wayfinding, along the trail and to destinations, and other signage about trail etiquette. Many respondents noted that they were unaware of a good way to find trail locations and amenities, as well as to stay informed about the latest news regarding them.

Additionally, some residents expressed the desire for more unpaved trails, noting that the maintenance burden would potentially be lower, and it would provide a more natural experience for those wanting to mountain bike and trail run.

Conflicts between bikers and walkers was mentioned again in this category. There were differing opinions on whether electric bikes and scooters should be allowed on the trails.

Amenities

While many respondents expressed their happiness with the trails system overall, they also often mentioned the addition of amenities such as more water fountains, water bottle fill stations, bike repair stations, and restrooms. Other more robust amenities such as dog parks and disc golf courses and connections to downtowns areas, or food and beverage establishments were specified.

New Trails

In addition to specifying the need for connectivity, some respondents provided input on where they would prefer new trails. There were some areas throughout the County that were specifically identified by participants, including Horizon West; Meadow Woods, east Orange County with a connection to UCF, Dr. Phillips, southeast Orange County/Lake Nona,

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Memorandum

a Shingle Creek Trail extension, and other connections to the regional system, such connecting to the Seminole County Trails, or finishing the Lake Apopka Loop

Maintenance

Maintenance, especially long-term maintenance, was another key theme throughout the comments. Some respondents expressed the opinion that trails should be more regularly cleared of debris and trash, especially after storms. Others were concerned with longer term maintenance, such as repaving trails to make sure they are safe and clearing vegetation from overgrowth. The wooden bridge on the Cady Way Trail, damaged by fire, was an immediate concern expressed by multiple participants.

Other

Many respondents commented that the Orange County Trails Master Plan engagement process helped them to learn about the existence of new trails and felt that additional ongoing marketing efforts would help boost usage along the trails. Others wanted ways to track the progress of ongoing trail projects. This feedback may provide the opportunity to provide a more robust interactive trails map or dashboard.

All comments are provided in the associated spreadsheet. Please note the blank or offensive comments have been removed from the comment summary.

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Attachment B

Stakeholder Meeting Summaries

Meeting Summary

Date:	September 17, 2020	**Notes Prepared By:**	Rohan Sadhai
Via Skype:	WebEx Meeting		
VHB Project No.:	62876.15	**Project Name:**	Orange County Trails Master Plan City of Apopka Meeting

Attendees:

Orange County

- Regina Ramos – Orange County Project Manager
- Cedric Moffet

City of Apopka

- Pam Richmond
- Brian Forman
- James Hitt

Tyler Johnson – VHB

Rohan Sadhai – Asha Planning

Tyler Johnson began the meeting with a brief overview of the project, including activities completed to date, initial results of the public outreach effort and the overall project schedule. The overview was followed up by a discussion on the existing Orange County mainline trails and the relationship to the City of Apopka trail system.

Topics Discussed:

Key discussion points include the following:

- The City is not actively participating in the West Orange Healthcare District (WOHD) West Orange Trail Master Plan, as only a small portion of the City is located within the WOHD.
- There was discussion between the City and Orange County regarding a proposed extension of the West Orange Trail from W Lester Road to Kelly Park, as well as trail connection to the NW Recreation Complex.
- Another trail extension could include the connection along McCormick Road, extending west to the Apopka Loop Trail.
    - There is the potential to create a loop around the Northwest Water Reclamation Facility from this extension.
    - There may not be sufficient right-of-way for a 10-12-foot trail near the Oak Point development north of McCormick Road between the development and the City boundary near S.R. 429.
    - The Oak Point segment of the proposed extension is within Orange County and would belong to the County.

Meeting Summary

- There was some concern about the trail potentially crossing at Ocoee-Apopka Road due to the high volume of traffic.
    - The City opposes a crossing at this location.
    - Would be interested in pedestrian crossing hardware such as RRFBs or PHBs.

Action Items:

1. As proposed trails are identified and evaluated, the County will continue coordination with the City.
2. The City will forward contact information with their consultant (RS&H) to ensure future coordination.

Meeting Summary

Date:	September 16, 2020	**Summary Prepared By:**	Rohan Sadhai
Via Skype:	WebEx Meeting		
VHB Project No.:	62876.15	**Project Name:**	Orange County Trails Master Plan BikeWalk CFL Meeting

Action items Attendees:

Emily Hanna – BikeWalk Central FL
Regina Ramos – Orange County Project Manager
Cedric Moffet – Orange County
Tyler Johnson – VHB
Rohan Sadhai – Asha Planning

Tyler Johnson began the meeting began with a brief overview of the project, including activities completed to date, initial results of the public outreach effort and the overall project schedule. The overview was followed up by a discussion on the existing Orange County mainline trails.

Topics Discussed:

Key discussion points are as follows:

- Emily was able to ride her bicycle on two trails prior to this meeting: Cady Way Trail and the Little Econ Greenway Trail. Key takeaways include the following:
    - There is a need for new or improved signage along trails, along with wayfinding for trail users pointing to key destinations (Downtowns, parks, schools, restaurants, trailheads, parking lots, etc.).
    - Would like to see more visible mile markers on trails similar to those used on Seminole County trails. Could incorporate GPS coordinates with mile markers.
    - Consider incentivizing wayfinding signage with new construction.
- Other discussion topics include the following:
    - Generally, signage for parking is not clear. The location of parking lots for those arriving to the trail is not easily discernible, especially for new users.
    - Consider tying into adjacent counties' trails. This could include completing the loop around Lake Apopka and coordination with Lake County.
    - Consider additional water sources for the trails used by horses, such as the West Orange Trail.
    - When planning future trails, consider tying into Florida National Scenic Trail system especially eastern Orange County via an extension of Innovation Way North Trail and Avalon Trail, leading into Deseret Ranch.

Meeting Summary

- The Best Foot Forward Yield Rate Program provides information on driver yield rates at trail crossings.

Action Items:

- Continued coordination with BikeWalk Central Florida over the course of the study.

Meeting Summary

Date:	September 16, 2020	**Summary Prepared By:**	Rohan Sadhai
Via Skype:	WebEx Meeting		
VHB Project No.:	62876.15	**Project Name:**	Orange County Trails Master Plan FDOT D5 Stakeholder Meeting

Attendees:

FDOT

- Stephanie Moss
- Julia Holtzhausen
- Chad Lingenfelter

Consultant Team

- Tyler Johnson, VHB Project Manager
- Rohan Sadhai, Asha Planning

After introductions, Tyler Johnson began the meeting with a brief overview of the project, including activities completed to date, initial results of the public outreach effort and the overall project schedule. The overview was followed up by a discussion on the existing Orange County mainline trails and related FDOT trail projects.

Topics Discussed:

Key discussion points are as follows:

- Shared-Use Nonmotorized (SUN) Trail
  - The SUN Trail network includes a combination of existing, planned and conceptual multiple-use trails.
  - The Pine Hills Trail Phase 2 from Silver Star Road to Clarcona-Ocoee Road is on hold.
  - Orange County Gap Segment 2 from Hiawassee Road to North of SR 414 is currently under design.
  - Shingle Creek Phase 2 along John Young Parkway from Town Loop Boulevard to Taft Vineland is under construction as a LAP.
- FDOT Priorities
  - FDOT is prioritizing projects that expand on or connect to the Coast to Coast Trail network, and that interface with State Roads.
- Design Standards
  - FDOT prefers special emphasis markings at crossing locations versus the use of elephant tracks
  - Do not adopt Seminole County Standards which are not MUTCD compliant
  - Stop signs at driveways is discouraged...they should only be at midblock crosswalk locations.

Meeting Summary

- Include contrast markings on concrete surfaces
- Consider 911/emergency information related to mileposts to make it easier for users to be located along a trail in the case of emergency.

Action Items:

- Continue coordination with FDOT on the Orange County design standards.

Meeting Summary

Date:	October 9, 2020	**Notes Prepared By:**	Rohan Sadhai
Via Skype:	WebEx Meeting		
VHB Project No.:	62876.15	**Project Name:**	Orange County Trails Master Plan Friends of Lake of Apopka Meeting

Attendees:

Joe Kilsheimer – Friends of Lake Apopka (FoLA)

Tyler Johnson – VHB

Rohan Sadhai – Asha Planning

Tyler Johnson began the meeting with a brief overview of the project, including activities completed to date, initial results of the public outreach effort and the overall project schedule. The overview was followed up by a discussion on the existing Orange County mainline trails and feedback from the FoLA.

Topics Discussed:

Key discussion points include the following:

- Would like to see the following local trails:
  - A trail along 6th Street – two blocks south of 441.
    - The trail would travel west to the Apopka Museum, connect to the Apopka City Center project, and travel along the 6th Street promenade.
    - Could aid with Economic Development.
  - A trail along Vick Road from Ponkan Road to the Apopka recreation area.
    - Inter-community connector trail.
  - A trail along Welch road that connects to the Wekiva State Park.
- Would like to see the following regional trails:
  - Extend West Orange Trail to connect to the Lake-Seminole Trail to tie into the Coast to Coast Trail.
  - A paved trail around Lake Apopka.
- Enhance tree canopy along portions of West Orange Trail
- Potential to expand on eco-tourism in the area.
  - Provide another reason for people to come to Florida
    - Tie into attractions such as Boggy Creek Air Boat Rides and North Shore of Lake Apopka (bird watching area).

Meeting Summary

Date:	September 22, 2020	**Summary Prepared By:**	Rohan Sadhai
Via Skype:	WebEx Meeting		
VHB Project No.:	62876.15	**Project Name:**	Orange County Trails Master Plan LYNX Stakeholder Meeting

Attendees:

Orange County

- Regina Ramos (Orange County Project Manager)
- Cedric Moffett

LYNX

- Myles O'Keefe
- Jeff Reine
- Jennifer Hall
- Jane Tkach

Consultant Team

- Tyler Johnson, VHB Project Manager
- Rohan Sadhai, Asha Planning

After introductions, Tyler Johnson began the meeting with a brief overview of the project, including activities completed to date, initial results of the public outreach effort and the overall project schedule. The overview was followed up by a discussion on the existing Orange County mainline trails and relationship to LYNX.

Topics Discussed:

Key discussion points are as follows:

- LYNX does not consider trails or trail locations when planning for route improvements or new routes. Their focus is on activities along major roads and general population demographics.
- LYNX is currently working with Orange County on a shared use path in Pine Hills area on the east side of Denning Drive.
- The Pine Hills Trail extension is no longer being planned.
- LYNX does not keep data on bicycles on buses, but is something that they are exploring.

Action Items:

- Jeff to forward information on Pine Hills shared use path.
- LYNX to forward Neighbor Link Routes.
    - Asha to verify if data is available to download via the LYNX GIS/GTFS portal.

Meeting Summary

Date:	September 11, 2020	**Summary Prepared By:**	Rohan Sadhai
Via Skype:	WebEx Meeting		
VHB Project No.:	62876.15	**Project Name:**	Orange County Trails Master Plan MetroPlan Meeting

Attendees:

Mighk Wilson – MetroPlan
Cedric Moffet – Orange County
Tyler Johnson – VHB
Rohan Sadhai – Asha Planning

Tyler Johnson began the meeting began with a brief overview of the project, including activities completed to date, initial results of the public outreach effort and the overall project schedule. The overview was followed up by a discussion on the existing Orange County mainline trails and the relationship to the existing 2040 Long Range Plan. Mighk Wilson mentioned that the draft 2045 LRTP was presented to the MetroPlan Board just this week. The 2045 LRTP identifies proposed trail locations at a high planning level.

One potential future trail could include a connection between the S Orlando Avenue/Maitland Overpass and the West Orange Trail – the trail could cross over the SunRail railroad corridor, continue west of I-4 via the redesigned I-4 Pedestrian Bridge south of Maitland Boulevard, connect to Lake Lotus Park and eventually to the West Orange Trail.

Mighk also suggested that the County incorporate trail safety into future trail corridors and design guidelines, especially related to shared-use paths that replace sidewalks adjacent to a road. Due to the driveway and intersection conflicts along sidewalks, a wider path tends to have higher travelling cyclist speeds who also travel contra-flow to traffic, which generally results in five times more pedestrian/bicycle crashes.

Action Items:

- Mighk Wilson will forward the following items:
  - Draft 2045 LRTP for our review
  - Copy of the Trails safety presentation
  - Any available GIS data related to trails
- VHB/Asha will review draft 2045 LRTP to identify potential future trail connections

Meeting Summary

Date:	September 23, 2020	**Summary Prepared By:**	Rohan Sadhai
Via Skype:	WebEx Meeting		
VHB Project No.:	62876.15	**Project Name:**	Orange County Trails Master Plan Town of Oakland Stakeholder Meeting

Attendees:

Orange County

- Regina Ramos (Orange County Project Manager)
- Cedric Moffett

Town of Oakland

- Stephen Koontz
- Jay Mauder

Consultant Team

- Tyler Johnson, VHB Project Manager
- Rohan Sadhai, Asha Planning

After introductions, Tyler Johnson began the meeting with a brief overview of the project, including activities completed to date, initial results of the public outreach effort and the overall project schedule. The overview was followed up by a discussion on the existing Orange County mainline trails and relationship to the Town of Oakland trail system.

Topics Discussed:

Key discussion points are as follows:

- The Town does not have a separate Trails Master Plan. Trails are planned via the Town's Mobility Plan, which considers all modes of travel.
- Historic Loop
    - The Town is planning a new trail that tie into the West Orange Trail. The Trail would pass through the Oakland Preserve development, then by the Historic African American Cemetery, Oakland-Tilenville Cemetery, and the Oakland Cemetery and then link to the Healthy West Orange Art & Heritage Center/Speer Park area.
- A second trail is being planned that connects the West Orange Trail to the Oakland Avenue Charter School. This is an existing path that would be replaced by a formal trail.
- The Town owns a park in the Hull Island subdivision on the west side of town. The park connects to the Oakland Nature Preserve.
- It was clarified that Machete Trail is an unpaved trail.

Meeting Summary

- The unincorporated area NE of the Oakland Nature Preserve has the potential for linking to the West Orange Trail via a spur along Jefferson Street. Could include activities along Lake Apopka related to kayaking or a boat launch.
- Interested in seeing the Lake Apopka Loop Trail continue around the Lake Apopka. Would require coordination with Lake County.
- 4th Street Overpass
    - This overpass connects to Tucker Ranch area in Winter Garden, south of the Florida Turnpike.
    - Town is requesting that the County look into a potential connection from the overpass to Tucker Ranch.
    - There is a mixed-use development being proposed for the unincorporated area just north of the Turnpike.
        - Opportunity to tie the development to the trail. This could strengthen the chances of the completing the 4th Street connection.
- The area west of the Florida Turnpike and S.R. 50 interchange includes a proposed connection to link the residential areas to the south with area West Orange Trail to the north.

Action Items:

- Jeff Richardson to forward GIS files for planned trails.
- Town requested future coordination regarding the County's Design Guidelines.
- Jay to forward Regional Planning Study with details on trail stop signs.

Meeting Summary

Date:	September 10, 2020	**Summary Prepared By:**	Chris Brown/ Rohan Sadhai
Via Skype:	WebEx Meeting		
VHB Project No.:	62876.15	**Project Name:**	Orange County Trails Master Plan Ocoee Meeting

Attendees:

Orange County Parks and Recreation

- Regina Ramos, Project Manager
- Matt Suedmeyer, Division Manager
- Cedric Moffett, Principal Planner

City of Ocoee

- Mark Johnson, Director, Parks & Recreation
- Ginger Corless, Deputy Development Services Director

Consultant Team

- Tyler Johnson, VHB Project Manager
- Chris Brown, VHB
- Rohan Sadhai, Asha Planning

On Thursday, September 10, 2020, Orange County Parks and Recreation hosted a Webex meeting with the City of Ocoee to coordinate activities and available trail data for West Orange County. Following is a summary of the meeting.

The project team began the meeting with a brief overview of the Orange County Trails Master Plan update. Currently the project is in the Research and Analysis phase, which includes an assessment of existing trail conditions, stakeholder outreach and a Public Outreach Meeting. Public Outreach Meeting #1 was held as a virtual meeting on 8/30/2020. The project virtual meeting room will be available for public access and comment through 9/10/2020. To date, the site has received over 1,500 visits, 870 comment responses, and 220 emails contacts. In addition, the public can provide comments through the dedicated project website at www.ocfltrailsplan.com.

Ginger Corliss noted that the City of Ocoee, in partnership with the West Orange Healthcare Care District (WOHD), is helping to prepare the Healthy West Orange Trails Master Plan. Other participating municipalities include the Town of Oakland, and Cities of Winter Garden, Windermere, Gotha, and Apopka. The intent of the project is to gather data and identify potential "activation" points (parks, sport fields, exercise equipment, etc.) to program and facilitate healthy lifestyle opportunities and encourage trail use.

The City is collecting data and mapping of existing trails in West Orange from the various municipalities. This information will be a potential resource for Orange County to build on, and avoid the duplication of efforts.

Meeting Summary

Ginger will provide the project team the WOHD mission statement, collected trails data (GIS shape files and Photoshop layers), and schedule of the Healthy West Orange Trails Master Plan. When available, the draft plan will be provided for coordination of information.

Orange County clarified the broad scope of the Orange County Trails Master Plan which is to identify potential connections to the existing mainline trails.

The City noted that the most common request from their recreation and multi-modal trail users in West Orange so far, is for wayfinding signage along the trails.

Action Items

- City of Ocoee (Ginger Corliss) to provide the WOHD mission statement, trail data (master plans from local agencies and GIS shapefiles), Healthy West Orange Trails Master Plan scope and schedule
- Project team to provide relevant West Orange data from Public Outreach #1 to the City once complete and continue coordination throughout the Orange County Master Plan update

Meeting Summary

Date:	September 17, 2020	**Summary Prepared By:**	Rohan Sadhai
Via Skype:	WebEx Meeting		
VHB Project No.:	62876.15	**Project Name:**	Orange County Trails Master Plan Orange County Stakeholder Meeting

Attendees:

Orange County Parks and Recreation

- Regina Ramos, Project Manager
- Matt Suedmeyer
- Cedric Moffett

Orange County EPD

- David Jones
- Mark Ikeler
- Beth Jackson
- Liz Johnson

OCPS – Chris Mills

Consultant Team

- Tyler Johnson, VHB Project Manager
- Rohan Sadhai, Asha Planning

On Thursday, September 17, 2020, Orange County Parks and Recreation hosted a Webex meeting with Orange County Environmental Protection Department (EPD) and Orange County Public Schools (OCPS) to coordinate future trail activities in the County. Tyler Johnson began the meeting began with a brief overview of the project, including activities completed to date, initial results of the public outreach effort and the overall project schedule. The overview was followed up by a discussion on the existing Orange County mainline trails.

Topics Discussed:

Key discussion points are as follows:

- Innovation Way South Trail extension
    - Tavistock Development has been coordinating with the Office of Greenways and Trails (Dale Allen) regarding an extension of the Innovation Way South Trail that would tie into the Florida Scenic Trail Network at Moss Park
    - The trail extension would be part of a larger network of internal trails in the Lake Nona area
- Bithlo area
    - There are several natural areas along the corridor to consider, including the Hal Scott Regional Preserve and Park. They should be considered when planning future trails, especially along the S.R. 13 corridor.

Meeting Summary

- West Orange Trail extension
    - It was requested that the planning team, try and not deviate from the proposed trail alignments as depicted on the Mainlaine Trail Map.
- Use of utility corridors
    - The use of a utility corridor for a park or a trail would require coordination with the utility provider (Duke Energy and/or OUC).
    - Historically, neither agency has been cooperative in allowing the use of their corridors as a trail.
- Dr. Philips Area
    - Commissioner VanderLey is interested in a park and/or trail in the Dr. Philips area.
- The spur West Orange Trail connection in south Apopka travels along McCormick Road. Consider looping around the NW Water Reclamation facility before tying back into West Orange Trail extension.
- EPD does not prefer paved trails thorough the Hal Scott area.
- OCPS noted that schools are planned as standalone secure facilities.

Action Items:

- Beth to provide updated maps of proposed trail connections for Orange-Osceola Gap.
- Continue coordination with Orange EPD and OCPS.
- Set up a separate call with Fire and Sherriff Departments as neither attended this call.

Meeting Summary

Date:	September 16, 2020	**Summary Prepared By:**	Chris Brown/ Rohan Sadhai
Via Skype:	WebEx Meeting		
VHB Project No.:	62876.15	**Project Name:**	Orange County Trails Master Plan City of Orlando Stakeholder Meeting

Attendees:

Orange County Parks and Recreation

- Regina Ramos, Project Manager
- Cedric Moffett, Principal Planner

City of Orlando

- John Perrone, Parks Division Manager
- Beth Gruber, Landscape Architect, FPR
- Ken Pelham, Landscape Architect, FPR
- Ian Sikonia, Transportation Planner
- Denise Riccio, FPR Planner and Grants Mgr.
- Howard Elkin, Streets Assistant Division Mgr.

Consultant Team

- Tyler Johnson, VHB Project Manager
- Chris Brown, VHB
- Rohan Sadhai, Asha Planning

On Wednesday, September 16, 2020, Orange County Parks and Recreation hosted a Webex meeting with the City of Orlando to coordinate activities and available trail data for West Orange County. Following is a summary of the meeting.

Introduction:

The project team began the meeting with a brief overview of the Orange County Trails Master Plan update. Currently the project is in the Research and Analysis phase, which includes an assessment of existing trail conditions, stakeholder outreach and a Public Outreach Meeting. The overview was followed up by a discussion on the existing Orange County mainline trails and the relationship to the Orlando trails system.

Topics Discussed:

The discussion focused on the City's trail connections to the County's mainline trails in the following key locations:

1. Northeast Orlando: served by the Cady Way Trail
2. Southeast Orlando/Lake Nona area: served by the Innovation Way South Trail
3. Southwest Orlando: served by the Shingle Creek Trail

Meeting Summary

Key discussion points are as follows:

- Denise Riccio explained that the City is in the process of updating the Orlando Parks Master Plan.
    - The first phase was completed pre-COVID;
    - The City is in the Public Outreach portion of the second phase of the Master Plan update.
    - The Parks Master Plan will include the evaluation of the "10-Minute Walk" initiative to identify opportunities for accessibility to parks for residents within half-mile.
        - The priority is to identify programs and facilities for areas with less than average coverage of parks.
        - In southeast Orlando the objective is for a quarter-mile sector for 60% of the population, and half-mile accessibility to parks for the remainder.
        - The "10-Minute Walk" park accessibility study has not been started.
- Ian Sikonia is currently working on mapping the trail connections within the Parks Master Plan.
    - The plan is to identify existing trails, proposed trails, and visionary network of trails.
    - The Master Plan is nearing completion.
    - The mapping information will be provided (via SharePoint) for the County and project team to download files.
- Wayfinding signs are standard and not custom in the City due to cost savings and ease of replacement.
- The City's trails website is being revamped to be ADA compliant.
- Ken Pelham recommends developing a coordinated website map for the public to complete trail connections from a regional perspective into the wider Tri-County area and beyond.
- The Lake Nona growth area is a City focus on requiring development to add trails.
- The City is to provide the project team the available trail network use data from 12 collections points located on Shingle Creek, Cady Way, Urban Trail, Lake Underhill and in the Southeast area. Volusia County has a good trail map example.
- Ken Pelham pointed out an opportunity to extend the trail in north Orange County, within an existing easement along Wekiva Springs Park.
- Regina clarified that the Design Guidelines in the Master Plan have evolved to address long term maintenance goals and wayfinding. This includes detail cross-sections that apply to the standards for planning and operation of new trails. This includes concrete ribbon curb, wayfinding, emergency markers, and site furnishings (benches, water fountains).
- Maintenance program for existing trails includes milling and repaving (or seal coat) every 15 to 20 years (pending available budget). The most needed areas along highly used trails are tacked on as an as needed basis.
- The County is to provide the City a detail of the ribbon curb cross-section (estimated $1.1M/mile cost).

Meeting Summary

Action Items:

- Denise Riccio is to provide the Orlando Parks Master Plan to the project team when available
- Ian Sikonia is to provide a SharePoint link to download the Orlando Trails GIS data when complete
- Ian Sikonia is to provide collected trail use data to the project team
- Regina Ramos is to provide standard cross-section detail of the trail ribbon-curb to the City

6.2 Public Outreach #2 Meeting Summary

Memorandum

To: Regina Ramos
Project Manager, Planning & Development
Orange County Parks & Recreation Division

Date: June 22, 2021

Project #: 62876.15

From: Tyler K. Johnson, AICP

Re: Orange County Trails Master Plan Update: Public Outreach #2

Introduction

On May 10. 2021, Orange County open the second Public Outreach Period for the Orange County Trails Master Plan update. The project's Virtual Workshop Room was open for public response through May 26, 2021. The website, www.ocfltrailsplan.com, has remained open and since the first public outreach in August 2020.

Through the public outreach period, the Virtual Meeting Room had approximately 400 online visits. The website, which includes a survey, continues to stay accessible. Through June 18, 2021, the project website had over 6,232 unique users over 7,482 sessions users. Over 57% of these users accessed the site through their mobile phone. Friday, August 28th, 2020, had the single highest number of daily visits, with 1,461, followed by Wednesday September 2, 2020 and Wednesday May 12, 2021, which corresponded with the beginning of the second outreach period.

The Virtual Workshop Room and project website contained the project's purpose and intent, the project's anticipated schedule, information on existing conditions and the first public outreach responses. The Virtual Workshop Room also provided public input options, including a survey, a mapping exercise and an open comment station. This memorandum summarizes the input gathered during the second Public Outreach period. The most popular activities in the Virtual Room included reviewing the draft Plan, and the mapping exercise.

Public Input Summary

The second survey for the Orange County Trails Master Plan Update was completed by 232 respondents. Responses came from across 48 unique zip codes. The most common zip codes of respondents were 34787 (Winter Garden/West Orange County), 32828 (Alafaya/Avalon Park), 32817 (Union Park/Goldenrod). Respondents came from a wide range of age groups: ages 36-45, 46 – 55, and 56 – 65 each made up about one-quarter of respondents. The remaining 25% was split between respondents aged 65 or older made up 12% of respondents and those between the ages of 26 and 35. Only two respondents indicated they were younger 25 years of age or younger.

The majority of respondents indicated they use the trails more than once per week, with 45, or 19%, answering that they use the trails every day. Nearly all respondents indicated they use the trails for recreation or fitness, with walking and biking being the most popular activities. Only 17 respondents, or 7% saying they use the trails to commute.

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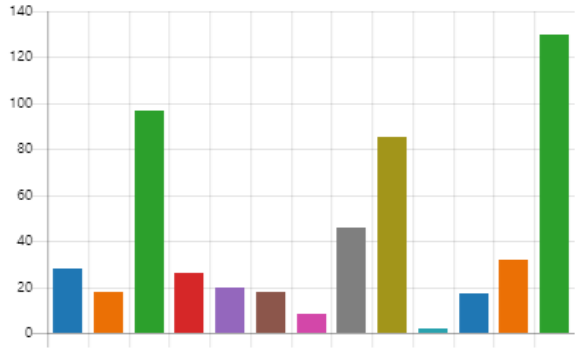
Memorandum

The most popular choice for respondents' favorite trails was the West Orange Trail (130 of 232 respondents), followed by the Cady Way Trail (97) and the Little Econ Greenway (84). Proximity and access were by far the most popular reasons these trails were selected. Maintenance, safety, shade, and natural surroundings were other popular answers.

3. What are your favorite Orange County Trails? (Select all that apply)

More Details

Avalon Trail	28
Clarcona-Ocoee Connector Trail	18
Cady Way Trail	97
East Orange Trail	26
Horizon West Trail	20
Innovation Way North Trail	18
Innovation Way South Trail	8
Lake Apopka Loop Trail	46
Little Econ Greenway Trail	85
Pine Hills Trail	2
Single Creek Trail	17
Wekiva Trail	32
West Orange Trail	130



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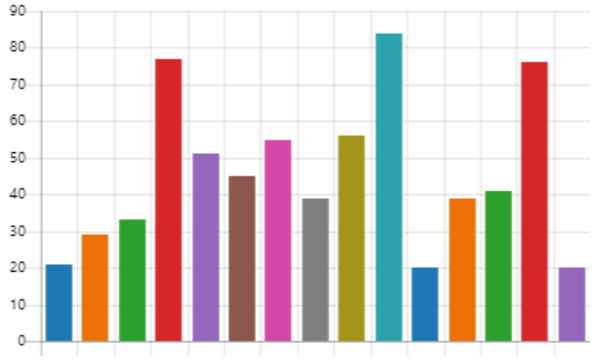
Memorandum

When asked which trail projects they would support, responses were generally varied. The most common responses were the Little Econ Greenway (84 responses), East Orange Trail (77), and West Orange Trail (76).

8. If you are in favor of new trails, what specific trail project would you most support? (Select all that apply)

More Details

Apopka Vineland Trail	21
Azalea Park Trail	29
Clarcona-Ocoee Connector Trail	33
East Orange Trail	77
East Orange Spur Trail	51
Horizon West Trail	45
Innovation Way North Trail	55
Innovation Way South Trail	39
Lake Apopka Connector Trail	56
Little Econ Greenway Trail	84
Pine Hills Trail	20
Shingle Creek Trail	39
Wekiva Trail	41
West Orange Trail	76
Other	20



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Memorandum

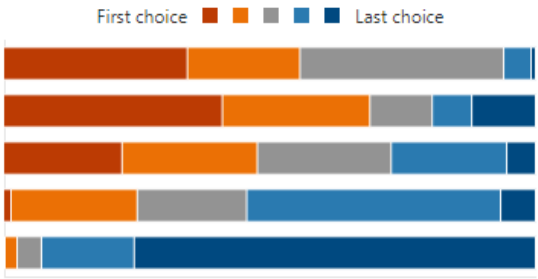
In terms of modes of transportation, the highest number respondents reported that they used the trails for biking (83%), while walking (52%) and running (31%) making up the 2nd and 3rd of the most common activities. Sixty-eight percent (68%) of respondents consider health and fitness to be their main use of the trails, with 30% answering recreation. Only 1% (10 respondents) primarily use the trails for commuting.

In general, the majority of respondents indicated they are with satisfied (53%) or very satisfied (23%) with the existing trails system. Ten percent answered that they were either dissatisfied or very dissatisfied. Maintaining and connecting existing trails were the most popular responses for options to improve outdoor recreations.

9. Please rank the following options to improve outdoor recreation. (Number 1 is the highest priority)

More Details

Rank	Options
1	Maintain existing trails
2	Connect existing trails
3	Construct more regional trails
4	Maintain existing facilities
5	Provide more education and o...



Open responses to this question were generally focused on three main areas:

1) Safety – This topic was typically concerned with road crossings, trails in isolated areas, and unsafe bicycle speeds.
2) Amenities – Suggestions included trash cans, water stops, bike repair stations, shade trees, detailed maps for information, and even programming events on the trails.
3) Connections – Regional connectivity and connecting to other trails was noted as it would provide for longer distances as well as connect to areas where trail users could stop and rest, shop, or dine.

The written comments provided in the Virtual Room were similarly grouped around these main themes.

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6.3 Prioritization Matrix

Evaluation Criteria		Azalea Park Trail	East Orange Trail (Phase 1A-F)	East Orange Trail Spur (Additional Route)	Apopka Vineland Trail
Population Density Served	**Points**				
Average 2045 population density > 2,440 persons/mi	10	10			10
Average 2045 population density 1,032 and 2,440 persons/mi	6			6	
Average 2045 population density < 1,032 persons/mi	2		2		
Subtotal		10	2	6	10
Public Ownership	**Points**				
At least 75% of the corridor is in public ownership	5	5	5		5
At least 50% of the corridor is in public ownership	3			3	
At least 25% of the corridor is in public ownership	1				
Subtotal		5	5	3	5
Scenic/Aesthetic Value	**Points**				
At least 75% of the corridor has scenic/aesthetic value	5				
At least 50% of the corridor has scenic/aesthetic value	3	3	3		
At least 25% of the corridor has scenic/aesthetic value	1			1	1
Subtotal		3	3	1	1
Transportation Value	**Points**				
The corridor has a high concentration of destinations, including parks, trails, schools, employment centers, etc.	10				10
The corridor has a moderate concentration of destinations, including parks, trails, schools, employment centers, etc.	6	6		6	
The corridor has a low concentration of destinations, including parks, trails, schools, employment centers, etc.	2		2		
Subtotal		6	2	6	10
Catalyst for Economic Development	**Points**				
Trail corridor is adjacent to commercially or residentially zoned properties, is expected to stimulate significant economic development	5	5			5
Trail corridor is adjacent to commercially or residentially zoned properties, is expected to stimulate moderate economic development	3				
Trail corridor is adjacent to commercially or residentially zoned properties, is expected to stimulate minimal economic development	1		1	1	
Subtotal		5	1	1	5
Promotes Urban Infill	**Points**				
At least 75% of the corridor is located within Urban Services Boundary	5	5		5	5
At least 50% of the corridor is located within Urban Services Boundary	3				
At least 25% of the corridor is located within Urban Services Boundary	1		1		
Subtotal		5	1	5	5
Lack of Other Bicycle/ Pedestrian Facilities	**Points**				
Few or no other bicycle/pedestrian connections (such as sidewalks and bike lanes) are available in the majority of communities surrounding the corridor	5		5	5	
Several other bicycle/pedestrian connections are available in the majority of communities surrounding the corridor	3	3			3
Numerous other bicycle/pedestrian connections are available in the majority of communities surrounding the corridor	1				
Subtotal		3	5	5	3
Connected to Other Trail Corridors	**Points**				
The corridor connects to more than 2 other trails	10				
The corridor connects to 2 other trails	6				
The corridor connects to 1 other trail	2	2	2	2	2
Subtotal		2	2	2	2
Facility Type	**Points**				
Independent trail facility (not adjacent to roadway, limited number of roadway crossings)	5	5		5	5
Side path (adjacent to roadway facility) with infrequent driveway crossings	3		3		
Side path (adjacent to roadway facility) with frequent driveway crossings	1				
Subtotal		5	3	5	5
Environmental Justice	**Points**				
MetroPlan EJ score for corridor is above average	10	10			
MetroPlan EJ score for corridor is average	6				
MetroPlan EJ score for corridor is below average	2		2	2	2
Subtotal		10	2	2	2
Community Health	**Points**				
Communities adjacent to corridor are at above average risk for diabetes, asthma, or obesity	5	5			
Communities adjacent to corridor are at moderate risk for diabetes, asthma, or obesity	3		3	3	
Communities adjacent to corridor are at below average risk for diabetes, asthma, or obesity	1				1
Subtotal		5	3	3	1
Total Score	**85 possible**	59	29	39	49
Ranking		**1**	**4**	**3**	**2**

Note

Trails included in MetroPlan Orland's Prioritized Project List (PPL) or trails already in the planning, design or construction phases, have already been prioritized for funding and are not included in this matrix.

6.4 Appendix D: Cost Estimate Details

Apopka Vineland Trail Wednesday, April 21, 2021

PROJECT COST ESTIMATE

Trail asphalt length	*0*	*LF*
Trail concrete length	*60238*	*LF*
Total Length	**60238**	**LF**

LINE NO.	ITEM	UNIT	PROJECT QUANTITY	UNIT COST*	ESTIMATED COST
1	Clearing and Grubbing (includes removal of existing trees)	AC	30	$ 29,663.56	$ 902,462.00
2	Removal of Existing Concrete	SY	33466	$ 20.90	$ 699,431.00
3	Sediment Barrier (Silt Fence)	LF	120526	$ 1.62	$ 195,253.00
4	Excavation, Embankment & Grading	CY	71393	$ 15.54	$ 1,109,451.00
5	Type B Stabilization	SY	107090	$ 7.06	$ 756,054.00
6	Optional Base, Base Group 01	SY	0	$ 19.30	$ -
7	Superpave Asphaltic Concrete, Traffic A	TN	0	$ 122.02	$ -
8	Concrete Sidewalk and Driveways, 4"	SY	80317	$ 40.77	$ 3,274,538.00
9	Sign Panel, F&I up to 12 sf (trail regulatory)	EA	60	$ 169.30	$ 10,199.00
10	Concrete Class NS, Gravity Wall	CY	265	$ 588.34	$ 155,938.00
11	Ped/Bicycle Railing, Alum, 42"	LF	1205	$ 87.53	$ 105,453.00
12	Major Trailhead	LS	2	$ 1,229,930.00	$ 2,459,860.00
13	Minor Trailhead	LS	1	$ 506,675.00	$ 506,675.00
	Roadway Crossings				
14	*Fenton Street (sidestreet crossing)*	LS	1	$ 5,492.01	$ 5,493.00
15	*Buenavista Woods Boulevard (sidestreet crossing)*	LS	1	$ 11,920.68	$ 11,921.00
16	*Buena Vista Woods (existing signal)*	LS	1	$ 8,706.35	$ 8,707.00
17	*Darlene Drive (existing signal)*	LS	1	$ 6,563.46	$ 6,564.00
18	*Sand Lake Shores Drive (sidestreet crossing)*	LS	1	$ 10,849.24	$ 10,850.00
19	*Bay Vista Estates Boulevard (sidestreet crossing)*	LS	1	$ 9,777.79	$ 9,778.00
20	*Philips Landing Boulevard (existing signal)*	LS	1	$ 12,992.12	$ 12,993.00
21	*Promenade Drive (sidestreet crossing)*	LS	1	$ 10,849.24	$ 10,850.00
22	*Sand Lake Road (existing signal)*	LS	1	$ 12,992.12	$ 12,993.00
23	*Bay Hill Boulevard (existing signal)*	LS	1	$ 6,563.46	$ 6,564.00
24	*Bay Springs Drive (existing signal)*	LS	1	$ 6,563.46	$ 6,564.00
25	*Emergency Signal (existing signal)*	LS	1	$ 7,634.90	$ 7,635.00
26	*Park Drive (sidestreet crossing)*	LS	1	$ 9,777.79	$ 9,778.00
27	*Tarawood Drive (sidestreet crossing)*	LS	1	$ 10,849.24	$ 10,850.00
28	*Bay Boulevard (sidestreet crossing)*	LS	1	$ 8,706.35	$ 8,707.00
29	*Bay Side Drive (existing signal)*	LS	1	$ 11,920.68	$ 11,921.00
30	*Woodbreeze Boulevard (existing signal)*	LS	1	$ 11,920.68	$ 11,921.00
31	*Horizon Circle (existing signal)*	LS	1	$ 9,777.79	$ 9,778.00
32	*The Grove (sidestreet crossing)*	LS	1	$ 10,849.24	$ 10,850.00
33	*Conroy Windermere Road (existing sidewalk)*	LS	1	$ 18,349.35	$ 18,350.00
34	*Harbor Isle Drive (sidestreet crossing)*	LS	1	$ 11,920.68	$ 11,921.00
35	*Windy Ridge Road (existing signal)*	LS	1	$ 8,706.35	$ 8,707.00
36	*Pinnacle Circle (sidestreet crossing)*	LS	1	$ 6,563.46	$ 6,564.00
37	*Balmoral Mews Square (sidestreet crossing)*	LS	1	$ 5,492.01	$ 5,493.00
38	*Westover Roberts Road (existing signal)*	LS	1	$ 7,634.90	$ 7,635.00
39	*Wilkening Farm Road south (existing signal)*	LS	1	$ 8,706.35	$ 8,707.00
40	*Palm Cove Drive (sidestreet crossing)*	LS	1	$ 7,634.90	$ 7,635.00
41	*Wilkening Farm Road north (sidestreet crossing)*	LS	1	$ 8,706.35	$ 8,707.00
42	*Apopka Vineland Road (enhanced midblock crossing)*	LS	1	$ 36,458.36	$ 36,459.00
43	*Wheatstone Drive (sidestreet crossing)*	LS	1	$ 6,563.46	$ 6,564.00
	Buenavista Woods Boulevard				
44	*Bissell Street (sidestreet crossing)*	LS	1	$ 9,777.79	$ 9,778.00
	Sand Lake Road				
45	*The Explanade (existing signal)*	LS	1	$ 11,920.68	$ 11,921.00
	Wallace Road				
46	*Valerian Boulevard (sidestreet crossing)*	LS	1	$ 11,920.68	$ 11,921.00
47	*Teasel Drive (sidestreet crossing)*	LS	1	$ 7,634.90	$ 7,635.00
48	Driveway Crossings	LS	21	$ 4,420.57	$ 92,832.00

Subtotal (Excludes Mobilization and MOT)	$ 10,620,900.00
Mobilization and MOT (20% of construction cost)	$ 2,124,200.00
Estimated Construction Cost	$ 12,745,100.00
Contingency (20%)	$ 2,549,100.00
Total Estimated Construction Costs	**$ 15,294,200.00**
Design Costs (20%)	$ 2,294,200.00
Design Contigency (20%)	$ 458,900.00
Total Estimated Design Costs	**$ 2,753,100.00**
Project Cost Per Mile	$ 1,581,900.00
Total Project Costs	**$ 18,047,300.00**

* Unit Cost are provided by FDOT's Current 12 Month Moving Market Area 8 Average Cost (Obtained 2/12/2021)

Note: Cost estimates are based on 2021 estimates and do not include inflation as future cost increases in the above estimates.

Azalea Park Trail

Wednesday, April 21, 2021

PROJECT COST ESTIMATE

Trail asphalt length	*21154*	*LF*
Trail concrete length	*9987*	*LF*
Total Length	**31142**	**LF**

LINE NO.	ITEM	UNIT	PROJECT QUANTITY	UNIT COST*	ESTIMATED COST
1	Clearing and Grubbing (includes removal of existing trees)	AC	16	$ 29,663.56	$ 466,553.00
2	Removal of Existing Concrete	SY	5549	$ 20.90	$ 115,966.00
3	Sediment Barrier (Silt Fence)	LF	62333	$ 1.62	$ 100,981.00
4	Excavation, Embankment & Grading	CY	36909	$ 15.54	$ 573,562.00
5	Type B Stabilization	SY	55363	$ 7.06	$ 390,864.00
6	Optional Base, Base Group 01	SY	28206	$ 19.30	$ 544,370.00
7	Superpave Asphaltic Concrete, Traffic A	TN	2327	$ 122.02	$ 283,937.00
8	Concrete Sidewalk and Driveways, 4"	SY	13317	$ 40.77	$ 542,919.00
9	Sign Panel, F&I up to 12 sf (trail regulatory)	EA	31	$ 169.30	$ 5,273.00
10	Concrete Class NS, Gravity Wall	CY	137	$ 588.34	$ 80,617.00
11	Ped/Bicycle Railing, Alum, 42"	LF	623	$ 87.53	$ 54,517.00
12	Major Trailhead	LS	1	$ 1,229,930.00	$ 1,229,930.00
13	Minor Trailhead	LS	2	$ 506,675.00	$ 1,013,350.00
	Roadway Crossings				
14	*Autumnvale Drive (midblock crossing)*	LS	1	$ 5,492.01	$ 5,493.00
	Lake Underhill Road				
15	*Cocos Drive (sidestreet crossing)*	LS	1	$ 5,492.01	$ 5,493.00
16	*Alder Avenue (sidestreet crossing)*	LS	1	$ 5,492.01	$ 5,493.00
	Oxalis Avenue				
17	*Lake Underhill Road (existing signal)*	LS	1	$ 8,706.35	$ 8,707.00
18	*Bamboo Drive (midblock crossing)*	LS	1	$ 5,492.01	$ 5,493.00
	Forsyth Road				
19	*Peony Lane (sidestreet crossing)*	LS	1	$ 5,492.01	$ 5,493.00
20	*Loquat Lane (sidestreet crossing)*	LS	1	$ 5,492.01	$ 5,493.00
21	*Yucatan Drive (4-way stop intersection crossing)*	LS	1	$ 5,492.01	$ 5,493.00
22	*Forsyth Oak Court (sidestreet crossing)*	LS	1	$ 6,563.46	$ 6,564.00
23	*Forsyth Road (enhanced midblock crossing)*	LS	1	$ 36,458.36	$ 36,459.00
24	*Goldenrod Road (signalized midblock crossing)*	LS	1	$ 159,278.87	$ 159,279.00
	E Colonial Drive				
25	*Chickasaw Trail (existing signal)*	LS	1	$ 18,349.35	$ 18,350.00
26	*Central Park Avenue (sidestreet crossing)*	LS	1	$ 7,634.90	$ 7,635.00
27	*LEG Trail Head (sidestreet crossing)*	LS	1	$ 7,634.90	$ 7,635.00
25	Driveway Crossings	LS	24	$ 4,420.57	$ 106,094.00
	Bridge Crossings (minor, at grade)				
26	Canal Crossings (4 x 100 ft each)	LF	400	$ 2,500.00	$ 1,000,000.00
	Subtotal (Excludes Mobilization and MOT)				$ 6,792,100.00
	Mobilization and MOT (20% of construction cost)				$ 1,358,500.00
	Estimated Construction Cost				$ 8,150,600.00
	Contingency (20%)				$ 1,630,200.00
	Total Estimated Construction Costs				**$ 9,780,800.00**
	Design Costs (15%)				$ 1,467,200.00
	Design Contigency (20%)				$ 293,500.00
	Total Estimated Design Costs				**$ 1,760,700.00**
	Project Cost Per Mile				$ 1,932,100.00
	Total Project Costs				**$ 11,541,500.00**

* Unit Cost are provided by FDOT's Current 12 Month Moving Market Area 8 Average Cost (Obtained 2/12/2021)

Note: Cost estimates are based on 2021 estimates and do not include inflation as future cost increases in the above estimates.

East Orange Trail

Wednesday, April 21, 2021

PROJECT COST ESTIMATE

Trail asphalt length	*86319*	*LF*
Trail concrete length	*17705*	*LF*
Total Length	**104024**	**LF**

LINE NO.	ITEM	UNIT	PROJECT QUANTITY	UNIT COST*	ESTIMATED COST
1	Clearing and Grubbing (includes removal of existing trees)	AC	53	$ 29,663.56	$ 1,558,439.00
2	Removal of Existing Concrete	SY	9836	$ 20.90	$ 205,571.00
3	Sediment Barrier (Silt Fence)	LF	208097	$ 1.62	$ 337,118.00
4	Excavation, Embankment & Grading	CY	123287	$ 15.54	$ 1,915,883.00
5	Type B Stabilization	SY	184931	$ 7.06	$ 1,305,611.00
6	Optional Base, Base Group 01	SY	115092	$ 19.30	$ 2,221,272.00
7	Superpave Asphaltic Concrete, Traffic A	TN	9495	$ 122.02	$ 1,158,589.00
8	Concrete Sidewalk and Driveways, 4"	SY	23606	$ 40.77	$ 962,427.00
9	Sign Panel, F&I up to 12 sf (trail regulatory)	EA	104	$ 169.30	$ 17,612.00
10	Concrete Class NS, Gravity Wall	CY	458	$ 588.34	$ 269,286.00
11	Ped/Bicycle Railing, Alum, 42"	LF	2080	$ 87.53	$ 182,104.00
12	Major Trailhead	LS	3	$ 1,229,930.00	$ 3,689,790.00
13	Minor Trailhead	LS	2	$ 506,675.00	$ 1,013,350.00
	Roadway Crossings				
	McCulloch Road				
14	*Lockwood Boulevard (existing signal)*	LS	1	$ 18,349.35	$ 18,350.00
15	*Keats Way (existing signal)*	LS	1	$ 10,849.24	$ 10,850.00
16	*Worchester Drive (sidestreet crossing)*	LS	1	$ 11,920.68	$ 11,921.00
17	*Tanner Road (existing signal)*	LS	1	$ 8,706.35	$ 8,707.00
18	*Native Dancer Lane (sidestreet crossing)*	LS	1	$ 10,849.24	$ 10,850.00
19	*CR 419 (enhanced midblock crossing)*	LS	1	$ 36,458.36	$ 36,459.00
	CR 419				
20	*Picketts Cove Road (sidestreet crossing)*	LS	1	$ 9,777.79	$ 9,778.00
21	*Lake Pickett Court (sidestreet crossing)*	LS	1	$ 6,563.46	$ 6,564.00
22	*Old Lake Pickett Road (sidestreet crossing)*	LS	1	$ 9,777.79	$ 9,778.00
23	*Lake Pickett Road (existing signal)*	LS	1	$ 10,849.24	$ 10,850.00
24	*Cypress Preserve Parkway (standard midblock crossing)*	LS	1	$ 6,563.46	$ 6,564.00
	CR 13				
25	*Belvedere Road (standard midblock crossing)*	LS	1	$ 6,563.46	$ 6,564.00
26	*6th Street (enhanced midblock crossing)*	LS	1	$ 36,458.36	$ 36,459.00
27	*Washington Avenue (standard midblock crossing)*	LS	1	$ 4,420.57	$ 4,421.00
28	*10th Street (standard midblock crossing)*	LS	1	$ 4,420.57	$ 4,421.00
29	*2nd Avenue (sidestreet crossing)*	LS	1	$ 5,492.01	$ 5,493.00
	Orion Boulevard				
30	*Gemini Boulevard north leg (existing signal)*	LS	1	$ 10,849.24	$ 10,850.00
31	*Gemini Boulevard west leg (existing signal)*	LS	1	$ 12,992.12	$ 12,993.00
32	*Scorpius Street north (existing signal)*	LS	1	$ 8,706.35	$ 8,707.00
33	*Scorpiys Street south (existing signal)*	LS	1	$ 8,706.35	$ 8,707.00
34	*Libra Drive (existing signal)*	LS	1	$ 7,634.90	$ 7,635.00
35	Driveway Crossings	LS	53	$ 4,420.57	$ 234,291.00
	Bridge Crossings				
36	Econ River Crossing	LF	400	$ 3,000.00	$ 1,200,000.00
37	Canal Crossing	LF	80	$ 2,500.00	$ 200,000.00
38	Canal Crossing	LF	80	$ 2,500.00	$ 200,000.00
39	Boardwalk across Wetlands	LF	5000	$ 700.00	$ 3,500,000.00
	Subtotal (Excludes Mobilization and MOT)				$ 20,418,300.00
	Mobilization and MOT (20% of construction cost)				$ 4,083,700.00
	Estimated Construction Cost				$ 24,502,000.00
	Contingency (20%)				$ 4,900,400.00
	Total Estimated Construction Costs				**$ 29,402,400.00**
	Design Costs (10%)				$ 2,940,300.00
	Design Contigency (20%)				$ 588,100.00
	Total Estimated Design Costs				**$ 3,528,400.00**
	Project Cost Per Mile				$ 1,586,700.00
	Total Project Costs				**$ 32,930,800.00**

* Unit Cost are provided by FDOT's Current 12 Month Moving Market Area 8 Average Cost (Obtained 2/12/2021)

East Orange Spur Trail

Wednesday, April 21, 2021

OPINION OF PROBABLE PROJECT COSTS

Trail asphalt length	*7166*	*LF*
Trail concrete length	*3009*	*LF*
Total Length	**10175**	**LF**

LINE NO.	ITEM	UNIT	PROJECT QUANTITY	UNIT COST*	ESTIMATED COST
1	Clearing and Grubbing (includes removal of existing trees)	AC	5	$ 29,663.56	$ 152,439.00
2	Removal of Existing Concrete	SY	1672	$ 20.90	$ 34,935.00
3	Sediment Barrier (Silt Fence)	LF	20400	$ 1.62	$ 33,049.00
4	Excavation, Embankment & Grading	CY	12059	$ 15.54	$ 187,402.00
5	Type B Stabilization	SY	18089	$ 7.06	$ 127,708.00
6	Optional Base, Base Group 01	SY	9555	$ 19.30	$ 184,414.00
7	Superpave Asphaltic Concrete, Traffic A	TN	788	$ 122.02	$ 96,188.00
8	Concrete Sidewalk and Driveways, 4"	SY	4012	$ 40.77	$ 163,555.00
9	Sign Panel, F&I up to 12 sf (trail regulatory)	EA	10	$ 169.30	$ 1,723.00
10	Concrete Class NS, Gravity Wall	CY	45	$ 588.34	$ 26,341.00
11	Ped/Bicycle Railing, Alum, 42"	LF	204	$ 87.53	$ 17,813.00
12	Minor Trailhead	LS	1	$ 506,675.00	$ 506,675.00
	Roadway Crossings				
13	Libra Drive (enhanced midblock crossing)	LS	1	$ 36,458.36	$ 36,459.00
14	Percival Road (enhanced midblock crossing)	LS	1	$ 36,458.36	$ 36,459.00
15	Driveway Crossings	LS	2	$ 4,420.57	$ 8,842.00
	Boardwalk wetland crossing	LF	500	$ 700.00	$ 350,000.00
	Subtotal (Excludes Mobilization and MOT)				$ 1,964,100.00
	Mobilization and MOT (20% of construction cost)				$ 392,900.00
	Estimated Construction Cost				$ 2,357,000.00
	Contingency (20%)				$ 471,400.00
	Total Estimated Construction Costs				**$ 2,828,400.00**
	Design Costs (20%)				$ 565,700.00
	Design Contigency (20%)				$ 113,200.00
	Total Estimated Design Costs				**$ 678,900.00**
	Project Cost Per Mile				$ 1,734,800.00
	Total Project Costs				**$ 3,507,300.00**

* Unit Cost are provided by FDOT's Current 12 Month Moving Market Area 8 Average Cost (Obtained 2/12/2021)

Horizon West Trail Phase 2

Wednesday, April 21, 2021

PROJECT COST ESTIMATE

Trail asphalt length	*8375*	*LF*
Trail concrete length	*7330*	*LF*
Total Length	**15706**	**LF**

LINE NO.	ITEM	UNIT	PROJECT QUANTITY	UNIT COST*	ESTIMATED COST
1	Clearing and Grubbing (includes removal of existing trees)	AC	7.9	$ 29,663.56	$ 235,295.00
2	Removal of Existing Concrete	SY	4072	$ 20.90	$ 85,114.00
3	Sediment Barrier (Silt Fence)	LF	31461	$ 1.62	$ 50,968.00
4	Excavation, Embankment & Grading	CY	18614	$ 15.54	$ 289,263.00
5	Type B Stabilization	SY	27921	$ 7.06	$ 197,123.00
6	Optional Base, Base Group 01	SY	11167	$ 19.30	$ 215,523.00
7	Superpave Asphaltic Concrete, Traffic A	TN	921	$ 122.02	$ 112,414.00
8	Concrete Sidewalk and Driveways, 4"	SY	9774	$ 40.77	$ 398,479.00
9	Sign Panel, F&I up to 12 sf (trail regulatory)	EA	16	$ 169.30	$ 2,659.00
10	Concrete Class NS, Gravity Wall	CY	69	$ 588.34	$ 40,658.00
11	Ped/Bicycle Railing, Alum, 42"	LF	314	$ 87.53	$ 27,495.00
12	Major Trailhead	LS	1	$ 1,229,930.00	$ 1,229,930.00
	Roadway Crossings				
	Stoneybrooke Parkway				
13	Winter Garden Village west (enhanced driveway crossing)	LS	1	$ 6,563.46	$ 6,564.00
14	Winter Garden Village east (enhanced driveway crossing)	LS	1	$ 6,563.46	$ 6,564.00
15	Reaves Road (sidestreet crossing)	LS	1	$ 7,634.90	$ 7,635.00
	Windermere Road				
16	Windstone Street (sidesteet crossing)	LS	1	$ 9,777.79	$ 9,778.00
17	Warrior Road (enhanced 4-way stop crossing)	LS	1	$ 7,634.90	$ 7,635.00
18	Driveway Crossings	LS	5	$ 4,420.57	$ 22,103.00
	Subtotal (Excludes Mobilization and MOT)				$ 2,945,200.00
	Mobilization and MOT (20% of construction cost)				$ 589,100.00
	Estimated Construction Cost				$ 3,534,300.00
	Contingency (20%)				$ 706,900.00
	Total Estimated Construction Costs				**$ 4,241,200.00**
	Design Costs (20%)				$ 848,300.00
	Design Contigency (20%)				$ 169,700.00
	Total Estimated Design Costs				**$ 1,018,000.00**
	Project Cost Per Mile				$ 1,768,100.00
	Total Project Costs				**$ 5,259,200.00**

* Unit Cost are provided by FDOT's Current 12 Month Moving Market Area 8 Average Cost (Obtained 2/12/2021)

Note: Cost estimates are based on 2021 estimates and do not include inflation as future cost increases in the above estimates.

Innovation Way Trail North Phase 1B

Wednesday, April 21, 2021

PROJECT COST ESTIMATE

Trail asphalt length	*0*	*LF*
Trail concrete length	*15473*	*LF*
Total Length	**15473**	**LF**

LINE NO.	ITEM	UNIT	PROJECT QUANTITY	UNIT COST*	ESTIMATED COST
1	Clearing and Grubbing (includes removal of existing trees)	AC	8	$ 29,663.56	$ 231,814.00
2	Removal of Existing Concrete	SY	8596	$ 20.90	$ 179,661.00
3	Sediment Barrier (Silt Fence)	LF	30996	$ 1.62	$ 50,215.00
4	Excavation, Embankment & Grading	CY	18339	$ 15.54	$ 284,982.00
5	Type B Stabilization	SY	27508	$ 7.06	$ 194,206.00
6	Optional Base, Base Group 01	SY	0	$ 19.30	$ -
7	Superpave Asphaltic Concrete, Traffic A	TN	0	$ 122.02	$ -
8	Concrete Sidewalk and Driveways, 4"	SY	20631	$ 40.77	$ 841,123.00
9	Sign Panel, F&I up to 12 sf (trail regulatory)	EA	15	$ 169.30	$ 2,620.00
10	Concrete Class NS, Gravity Wall	CY	68	$ 588.34	$ 40,056.00
11	Ped/Bicycle Railing, Alum, 42"	LF	309	$ 87.53	$ 27,088.00
	Roadway Crossings				
12	*Lake Underhill Road (existing signal)*	LS	1	$ 15,135.01	$ 15,136.00
13	*East West Expressway (existing signal)*	LS	1	$ 12,992.12	$ 12,993.00
14	*Waterford Lakes Town Center south (existing signal)*	LS	1	$ 12,992.12	$ 12,993.00
15	*Waterford Lakes Town Center north (sidestreet crossing)*	LS	1	$ 12,992.12	$ 12,993.00
16	*Waterford Lakes Parkway (existing signal)*	LS	1	$ 14,063.57	$ 14,064.00
17	*Lake Cypress Circle (sidestreet crossing)*	LS	1	$ 8,706.35	$ 8,707.00
18	*Ashton Manor Way (existing signal)*	LS	1	$ 9,777.79	$ 9,778.00
19	*Iroquois Trail (sidestreet crossing)*	LS	1	$ 6,563.46	$ 6,564.00
20	*SR 50 (existing signal)*	LS	1	$ 18,349.35	$ 18,350.00
21	*Orpington Street (sidestreet crossing)*	LS	1	$ 9,777.79	$ 9,778.00
22	*Challenger Parkway (existing signal)*	LS	1	$ 15,135.01	$ 15,136.00
23	*Huntsman Lane (sidestreet crossing)*	LS	1	$ 8,706.35	$ 8,707.00
24	*Coral Reef Drive (sidestreet crossing)*	LS	1	$ 9,777.79	$ 9,778.00
25	*Science Drive (existing signal)*	LS	1	$ 7,634.90	$ 7,635.00
26	*Alafaya Woods Court (sidestreet crossing)*	LS	1	$ 8,706.35	$ 8,707.00
27	*Boardwalk Drive (sidestreet crossing)*	LS	1	$ 7,634.90	$ 7,635.00
28	*Research Parkway (existing signal)*	LS	1	$ 15,135.01	$ 15,136.00
29	Driveway Crossings	LS	18	$ 4,420.57	$ 79,571.00
	Subtotal (Excludes Mobilization and MOT)				$ 2,125,500.00
	Mobilization and MOT (20% of construction cost)				$ 425,100.00
	Estimated Construction Cost				$ 2,550,600.00
	Contingency (20%)				$ 510,200.00
	Total Estimated Construction Costs				**$ 3,060,800.00**
	Design Costs (20%)				$ 612,200.00
	Design Contigency (20%)				$ 122,500.00
	Total Estimated Design Costs				**$ 734,700.00**
	Project Cost Per Mile				$ 1,295,200.00
	Total Project Costs				**$ 3,795,500.00**

* Unit Cost are provided by FDOT's Current 12 Month Moving Market Area 8 Average Cost (Obtained 2/12/2021)

Pine Hills Trail Phase 2B

Wednesday, April 21, 2021

PROJECT COST ESTIMATE

Trail asphalt length	*0*	*LF*
Trail concrete length	*5272*	*LF*
Total Length	**5272**	**LF**

LINE NO.	ITEM	UNIT	PROJECT QUANTITY	UNIT COST*	ESTIMATED COST
1	Clearing and Grubbing (includes removal of existing trees)	AC	3	$ 29,663.56	$ 78,978.00
2	Removal of Existing Concrete	SY	2929	$ 20.90	$ 61,210.00
3	Sediment Barrier (Silt Fence)	LF	10593	$ 1.62	$ 17,162.00
4	Excavation, Embankment & Grading	CY	6248	$ 15.54	$ 97,092.00
5	Type B Stabilization	SY	9372	$ 7.06	$ 66,165.00
6	Optional Base, Base Group 01	SY	0	$ 19.30	$ -
7	Superpave Asphaltic Concrete, Traffic A	TN	0	$ 122.02	$ -
8	Concrete Sidewalk and Driveways, 4"	SY	7029	$ 40.77	$ 286,565.00
9	Sign Panel, F&I up to 12 sf (trail regulatory)	EA	5	$ 169.30	$ 893.00
10	Concrete Class NS, Gravity Wall	CY	23	$ 588.34	$ 13,647.00
11	Ped/Bicycle Railing, Alum, 42"	LF	105	$ 87.53	$ 9,229.00
	Roadway Crossings				
12	Liming Avenue Crossing (sidestreet crossing)	LS	1	$ 7,634.90	$ 7,635.00
13	Clarion Drive Crossing (sidestreet crossing)	LS	1	$ 7,634.90	$ 7,635.00
14	Pine Cluster Lane (sidestreet crossing)	LS	1	$ 8,706.35	$ 8,707.00
15	Claracona Ocoee Road (existing signal)	LS	1	$ 11,920.68	$ 11,921.00
16	Driveway Crossings	LS	24	$ 4,420.57	$ 106,094.00
	Subtotal (Excludes Mobilization and MOT)				$ 773,000.00
	Mobilization and MOT (20% of construction cost)				$ 154,600.00
	Estimated Construction Cost				$ 927,600.00
	Contingency (20%)				$ 185,600.00
	Total Estimated Construction Costs				**$ 1,113,200.00**
	Design Costs (20%)				$ 222,700.00
	Design Contigency (20%)				$ 44,600.00
	Total Estimated Design Costs				**$ 267,300.00**
	Project Cost Per Mile				$ 1,382,700.00
	Total Project Costs				**$ 1,380,500.00**

* Unit Cost are provided by FDOT's Current 12 Month Moving Market Area 8 Average Cost (Obtained 2/12/2021)

Note: Cost estimates are based on 2021 estimates and do not include inflation as future cost increases in the above estimates.

Shingle Creek Trail Phase 4

Wednesday, April 21, 2021

PROJECT COST ESTIMATE

Trail asphalt length	*4863*	*LF*
Trail concrete length	*3785*	*LF*
Total Length	**8649**	**LF**

LINE NO.	ITEM	UNIT	PROJECT QUANTITY	UNIT COST*	ESTIMATED COST
1	Clearing and Grubbing (includes removal of existing trees)	AC	4	$ 29,663.56	$ 129,569.00
2	Removal of Existing Concrete	SY	2103	$ 20.90	$ 43,949.00
3	Sediment Barrier (Silt Fence)	LF	17347	$ 1.62	$ 28,103.00
4	Excavation, Embankment & Grading	CY	10250	$ 15.54	$ 159,287.00
5	Type B Stabilization	SY	15375	$ 7.06	$ 108,549.00
6	Optional Base, Base Group 01	SY	6485	$ 19.30	$ 125,154.00
7	Superpave Asphaltic Concrete, Traffic A	TN	535	$ 122.02	$ 65,279.00
8	Concrete Sidewalk and Driveways, 4"	SY	5047	$ 40.77	$ 205,756.00
9	Sign Panel, F&I up to 12 sf (trail regulatory)	EA	9	$ 169.30	$ 1,465.00
10	Concrete Class NS, Gravity Wall	CY	38	$ 588.34	$ 22,389.00
11	Ped/Bicycle Railing, Alum, 42"	LF	173	$ 87.53	$ 15,141.00
	Roadway Crossings				
12	McKinley Avenue (sidestreet crossing)	LS	1	$ 8,706.35	$ 8,707.00
13	Old Winter Garden Road (signalized midblock crossing)	LS	1	$ 159,278.87	$ 159,279.00
14	SR 408 EB On (existing signal)	LS	1	$ 9,777.79	$ 9,778.00
15	SR 408 WB Off (existing signal)	LS	1	$ 9,777.79	$ 9,778.00
16	Concord Avenue (sidestreet crossing)	LS	1	$ 7,634.90	$ 7,635.00
17	SR 50 (existing signal)	LS	1	$ 21,563.68	$ 21,564.00
18	Alhambra Drive (standard midblock crossing)	LS	1	$ 5,492.01	$ 5,493.00
19	Driveway Crossings	LS	19	$ 4,420.57	$ 83,991.00
20	Bridge Crossing (minor, Canal Crossing)	LF	65	$ 2,500.00	$ 162,500.00
	Subtotal (Excludes Mobilization and MOT)				$ 1,373,400.00
	Mobilization and MOT (20% of construction cost)				$ 274,700.00
	Estimated Construction Cost				$ 1,648,100.00
	Contingency (20%)				$ 329,700.00
	Total Estimated Construction Costs				**$ 1,977,800.00**
	Design Costs (20%)				$ 395,600.00
	Design Contigency (20%)				$ 79,200.00
	Total Estimated Design Costs				**$ 474,800.00**
	Project Cost Per Mile				$ 1,486,165.80
	Total Project Costs				**$ 2,452,600.00**

* Unit Cost are provided by FDOT's Current 12 Month Moving Market Area 8 Average Cost (Obtained 2/12/2021)

West Orange Trail Phase 4

Wednesday, April 21, 2021

PROJECT COST ESTIMATE

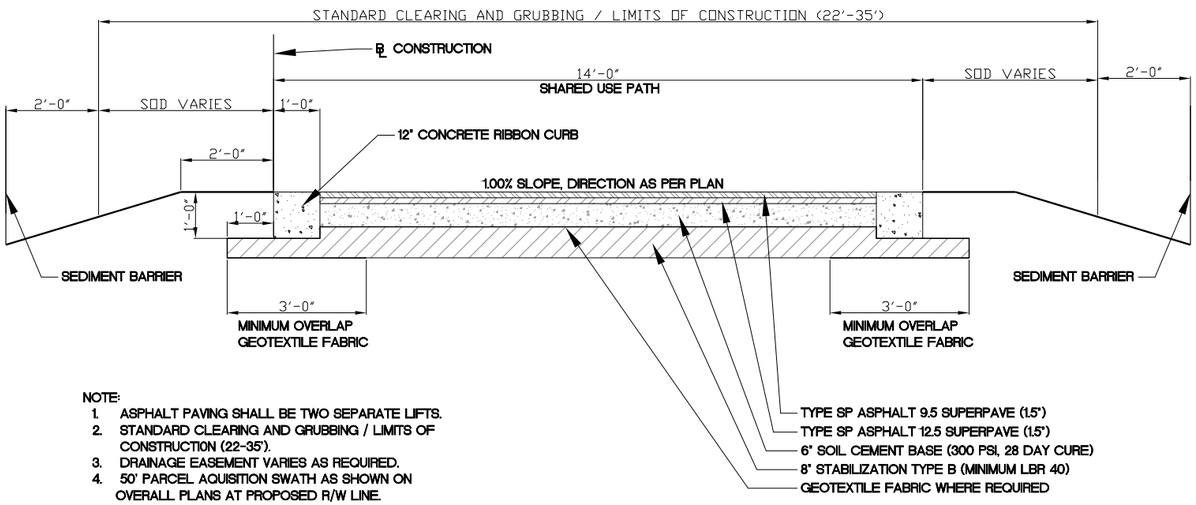
Trail asphalt length	*5100*	*LF*
Trail concrete length	*40695*	*LF*
Total Length	**45795**	**LF**

LINE NO.	ITEM	UNIT	PROJECT QUANTITY	UNIT COST*	ESTIMATED COST
1	Clearing and Grubbing (includes removal of existing trees)	AC	23	$ 29,663.56	$ 686,083.00
2	Removal of Existing Concrete	SY	22609	$ 20.90	$ 472,519.00
3	Sediment Barrier (Silt Fence)	LF	91640	$ 1.62	$ 148,457.00
4	Excavation, Embankment & Grading	CY	54276	$ 15.54	$ 843,443.00
5	Type B Stabilization	SY	81413	$ 7.06	$ 574,779.00
6	Optional Base, Base Group 01	SY	6800	$ 19.30	$ 131,232.00
7	Superpave Asphaltic Concrete, Traffic A	TN	561	$ 122.02	$ 68,449.00
8	Concrete Sidewalk and Driveways, 4"	SY	54261	$ 40.77	$ 2,212,201.00
9	Sign Panel, F&I up to 12 sf (trail regulatory)	EA	46	$ 169.30	$ 7,754.00
10	Concrete Class NS, Gravity Wall	CY	201	$ 588.34	$ 118,550.00
11	Ped/Bicycle Railing, Alum, 42"	LF	916	$ 87.53	$ 80,169.00
12	Major Trailhead	LS	1	$ 1,229,930.00	$ 1,229,930.00
	Roadway Crossings				
	Rock Springs Road				
13	*Faye Street (sidestreet crossing)*	LS	1	$ 6,563.46	$ 6,564.00
14	*Ponkan Road (existing signal)*	LS	1	$ 6,563.46	$ 6,564.00
15	*Trailer Haven Lane (sidestreet crossing)*	LS	1	$ 8,706.35	$ 8,707.00
16	*Pine Street (sidestreet crossing)*	LS	1	$ 8,706.35	$ 8,707.00
17	*Holly Street (sidestreet crossing)*	LS	1	$ 8,706.35	$ 8,707.00
	Welch Road				
18	*Creekline Lane (sidestreet crossing)*	LS	1	$ 9,777.79	$ 9,778.00
19	*Parkglen Circle (sidestreet crossing)*	LS	1	$ 5,492.01	$ 5,493.00
20	*Cedar Glen Drive west (sidestreet crossing)*	LS	1	$ 5,492.01	$ 5,493.00
21	*Cedar Glen Drive east (sidestreet crossing)*	LS	1	$ 12,992.12	$ 12,993.00
	Ponkan Road				
22	*Rock Springs Road (existing signal)*	LS	1	$ 11,920.68	$ 11,921.00
23	*Raeth Road (sidestreet crossing)*	LS	1	$ 8,706.35	$ 8,707.00
24	*Vick Road (existing signal)*	LS	1	$ 8,706.35	$ 8,707.00
25	*Ponkan Road (existing signal)*	LS	1	$ 7,634.90	$ 7,635.00
26	*Pittman Road (sidestreet crossing)*	LS	1	$ 6,563.46	$ 6,564.00
27	*Joason Dwelley Parkway (existing signal)*	LS	1	$ 11,920.68	$ 11,921.00
28	*Wolf Lake Middle School Entrance (sidestreet crossing)*	LS	1	$ 8,706.35	$ 8,707.00
29	*Wolf Lake Elementary School Entrance (sidestreet crossing)*	LS	1	$ 9,777.79	$ 9,778.00
30	Driveway Crossings	LS	68	$ 4,420.57	$ 300,599.00
	Subtotal (Excludes Mobilization and MOT)				$ 7,021,200.00
	Mobilization and MOT (20% of construction cost)				$ 1,404,300.00
	Estimated Construction Cost				$ 8,425,500.00
	Contingency (20%)				$ 1,685,100.00
	Total Estimated Construction Costs				**$ 10,110,600.00**
	Design Costs (15%)				$ 1,516,600.00
	Design Contigency (20%)				$ 303,400.00
	Total Estimated Design Costs				**$ 1,820,000.00**
	Project Cost Per Mile				$ 1,375,600.00
	Total Project Costs				**$ 11,930,600.00**

* Unit Cost are provided by FDOT's Current 12 Month Moving Market Area 8 Average Cost (Obtained 2/12/2021)

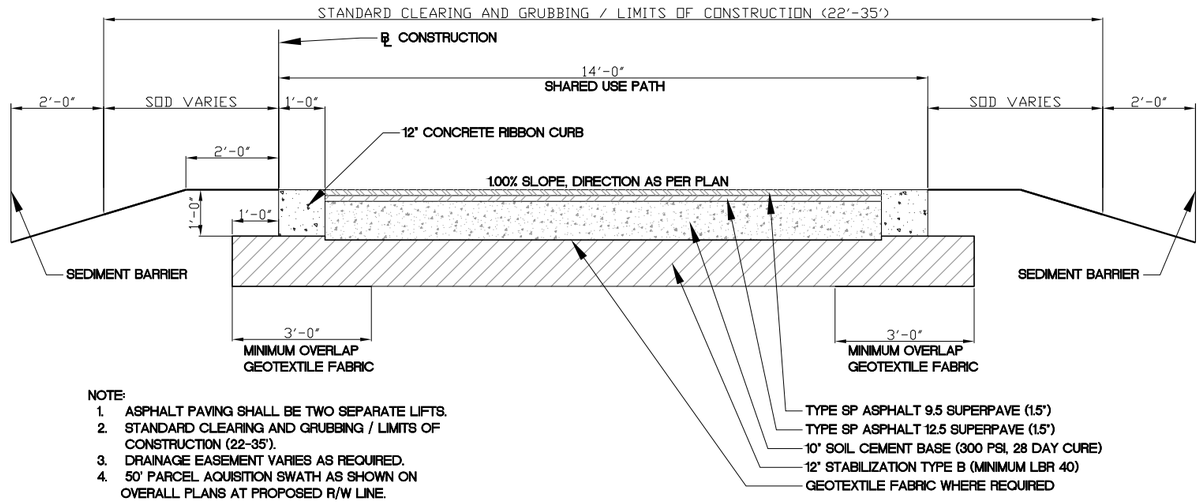
Note: Cost estimates are based on 2021 estimates and do not include inflation as future cost increases in the above estimates.

6.5 Appendix E: Typical Greenway and Trail Sections - Orange County Parks and Recreation



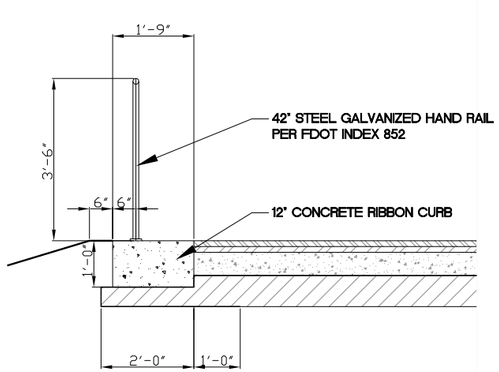
NOTE:
1. ASPHALT PAVING SHALL BE TWO SEPARATE LIFTS.
2. STANDARD CLEARING AND GRUBBING / LIMITS OF CONSTRUCTION (22-35').
3. DRAINAGE EASEMENT VARIES AS REQUIRED.
4. 50' PARCEL AQUISITION SWATH AS SHOWN ON OVERALL PLANS AT PROPOSED R/W LINE.

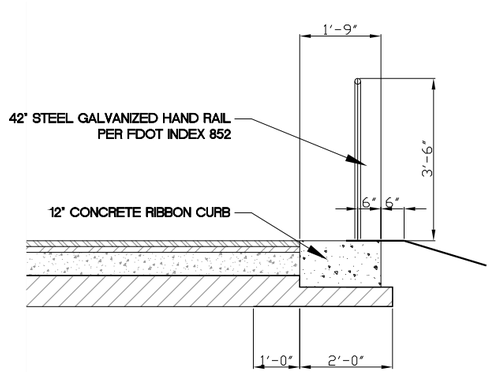
Typical Standard Trail Section



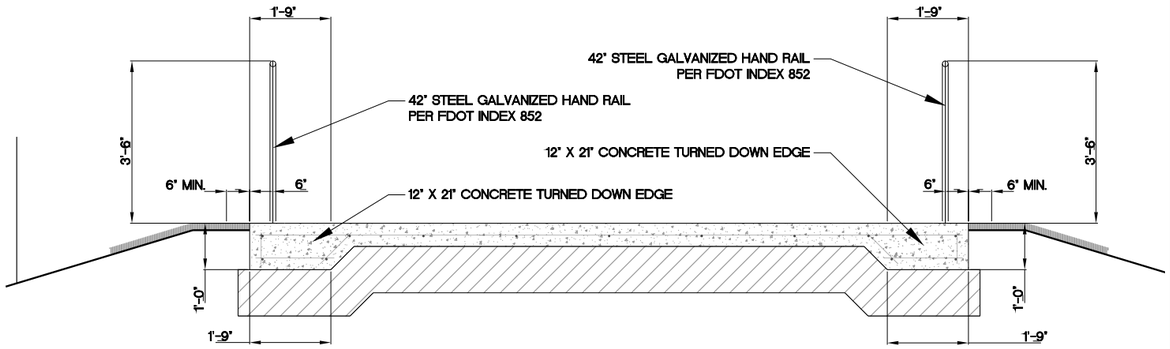
NOTE:
1. ASPHALT PAVING SHALL BE TWO SEPARATE LIFTS.
2. STANDARD CLEARING AND GRUBBING / LIMITS OF CONSTRUCTION (22-35').
3. DRAINAGE EASEMENT VARIES AS REQUIRED.
4. 50' PARCEL AQUISITION SWATH AS SHOWN ON OVERALL PLANS AT PROPOSED R/W LINE.

Typical Trail Utility Crossing Section

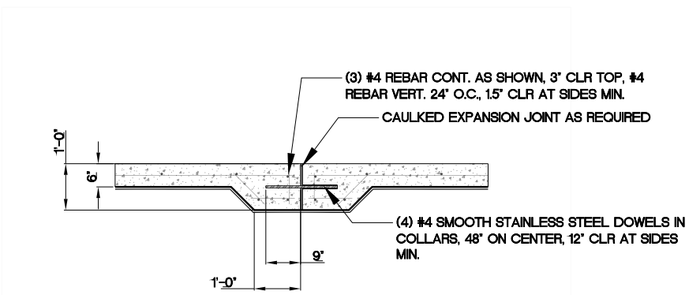




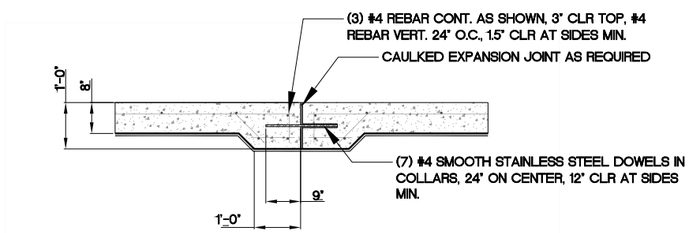
Handrail at Typical Section



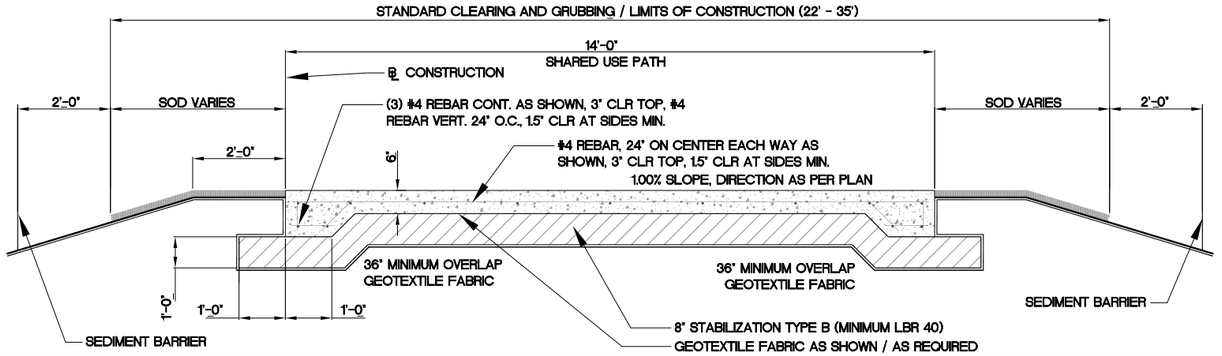
Handrail at Typical Section



Standard Expansion Joint Section

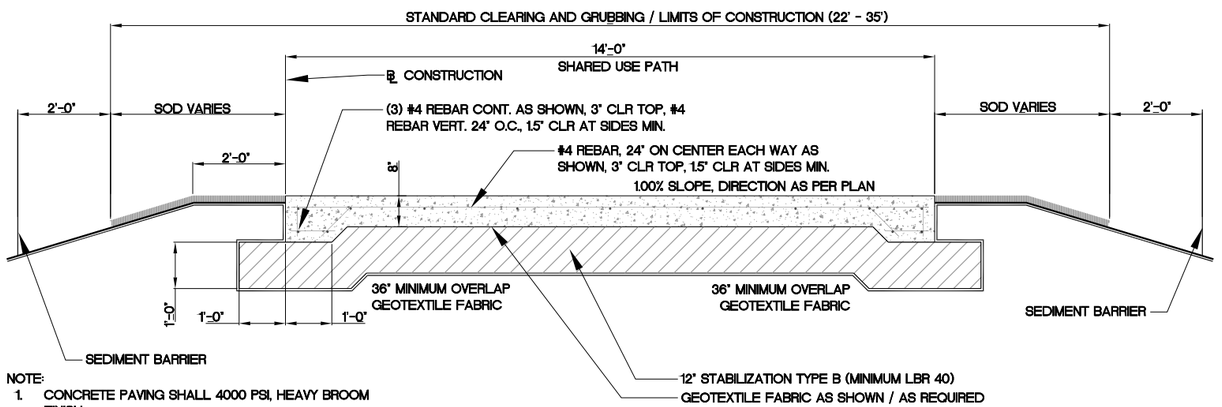


Utility Expansion Joint Section



NOTE:
1. CONCRETE PAVING SHALL 4000 PSI, HEAVY BROOM FINISH.
2. STANDARD CLEARING AND GRUBBING / LIMITS OF CONSTRUCTION (22-35').
3. DRAINAGE EASEMENT VARIES AS REQUIRED.
4. 50' PARCEL AQUISITION SWATH AS SHOWN ON OVERALL PLANS AT PROPOSED R/W LINE.

Typical Standard Trail Section



NOTE:
1. CONCRETE PAVING SHALL 4000 PSI, HEAVY BROOM FINISH.
2. STANDARD CLEARING AND GRUBBING / LIMITS OF CONSTRUCTION (22-35').
3. DRAINAGE EASEMENT VARIES AS REQUIRED.
4. 50' PARCEL AQUISITION SWATH AS SHOWN ON OVERALL PLANS AT PROPOSED R/W LINE.

Typical Trail Utility Crossing Section