CITY OF BELLE ISLE, FLORIDA
TRANSPORTATION MASTER PLAN

DRAFT

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EXECUTIVE SUMMARY

Belle Isle is a bucolic community set among the Lake Conway chain of lakes in the Orlando region. The City was first developed in the mid-1920s in order to protect the Lake Conway chain of lakes in resistance to Orange County's plan, at the time, to drain the lakes for farming. Although the City was annexed back into the County in the late 1920s, it was reconstituted in the mid-1950s as a part of another effort to save the Lake Conway chain of lakes. With a charter recognized by the state in 1972, the City has flourished ever since as a residential oasis in the flurry of metropolitan Orlando.

The lakes themselves, while providing a beautiful natural setting for the City, also create some barriers for getting around Belle Isle. East-west connectivity is limited to the Hoffner Avenue, Nela Avenue/Seminole Road, and McCoy Road corridors. North-south connectivity is further limited by residential development, pushing most north-south movements along the edge of, or beyond the city limits. The contrast of the beautiful natural setting and quiet residential streets with the limited east-west and north-south connectivity provides a challenging setting for Belle Isle residents to retain the bucolic environment they enjoy, while allowing the mobility and growth that the City needs to advance.

Overall, Belle Isle's transportation network presents several key challenges focused around the limitations presented by existing constraints and city limit boundaries. Particular challenges include:

- Limited connectivity in both the east-west and north-south directions minimizes redundancy in the network and makes some trips indirect. This limits low-stress routes for bicyclists, increases pedestrian travel distances, and constrains route choice for drivers including flexibility to adjust to network disruptions or changes in circulation patterns.
- Limited access and egress points to a number of communities.
- Natural and built environments limit opportunities to increase access across and within many communities.

- Limitations of the existing right-of-way available for transportation infrastructure expansion.

Continued success of the City requires the management and appropriate accommodation of regional travel demands while retaining local access within the City for its residents. As a part of this, Belle Isle must have a well-integrated multimodal transportation plan for the city. With only a handful of streets that provide continuous connectivity through the City and to destinations beyond, the City is challenged in providing an equally high level of accommodation for all the modes and demands that can fit within the right-of-way.

Multimodal refers to the availability of multiple transportation options within a system or corridor.
Mode refers to the different means of travel such as automobile, bicycle, transit or walking.

The plan ensures that, to the extent feasible, most streets are safe for all users and that, taken as a whole, the City provides attractive and efficient travel corridors for each mode. In this way, the City is able to provide streets for everyone and a network for all. The plan is comprised of separate modal networks for pedestrians, bicycle travel, and principal vehicle corridors. When reassembled into a composite system, the multimodal network identifies modal emphasis on some corridors in order to provide a quality system for each mode of travel and complete streets for every mode.

Within Belle Isle there are four corridors of citywide or regional significance: Hoffner Avenue, Nela Avenue/Seminole Drive, Daetwyler Drive/Judge Road, and McCoy Road. While there are many details to the corridor recommendations, at a high level, each corridor should provide for safe and continuous pedestrian travel while some corridors are recommended to provide enhanced accommodation for certain modes:

- Hoffner Avenue is a principal vehicular corridor that must efficiently provide for private autos, local bicycle and pedestrian traffic. The key objective is a smooth flow of vehicles through metering (managing the volume of vehicles entering the corridor) and speed management. Pedestrians will be accommodated at safe crossings and an enhanced multi-use path is designed to accommodate pedestrians as well as bicyclists.
- Nela Avenue/Seminole Drive are neighborhood streets that, together, provide the only east/west connectivity through the City between Hoffner Avenue and McCoy Road. Vehicular traffic should be smooth and even, but maintained at lower speeds within the City. Strategically added curb extensions manage traffic speeds, improve safe operations, and enhance street character.
- Daetwyler Drive/Judge Road provide a principal vehicular corridor on the east side of the City. The plan will emphasize pedestrian and bicycle use providing enhanced bicycle and pedestrian facilities in the form of a multi-use path. Additionally, right-of-way newly acquired by the City will allow for the extension of turn lanes at the Judge Road/Conway Road intersection for improved traffic flows.
- McCoy Road is also a principal vehicular corridor providing bicycle and transit connections and high capacity vehicle flow along the southern edge of the City. While regional traffic flow will continue to be accommodated along McCoy Road, improvements to the pedestrian and bicycle facilities will allow for safer

connectivity for non-auto modes along the corridor within the City. Additionally, continued coordination with FDOT for improved signal timings will allow for more regular traffic flows.

This plan proposes a complete, connected network for pedestrians, low stress/"family-friendly" travel corridors, commuter bicycle networks, transit, and vehicles. Together, these networks provide a composite multimodal network plan while supporting the goals of the plan itself, as follows:

- *Transportation is safe for all residents and visitors whether driving, walking, or bicycling*
- *Residents can drive between destinations with minimal traffic congestion*
- *Residents can comfortably walk and bicycle to parks, schools, transit, and shopping areas.*
- *Belle Isle's streets are attractive and contribute to the beauty of the community.*

Many actions that will improve transportation in Belle Isle result from changes in policies and management rather than from capital improvement projects. The following recommendations will help guide predictable and sustainable growth and development in Belle Isle:

- **Adopt a Complete Streets Policy** – Every street within Belle Isle must safely accommodate all users. While this does not mean that every street will have a bicycle lane or sidewalks on both sides of the street, it does mean that every

street project – whether significant maintenance, retrofit, or new construction – must consider and provide for the needs of all users. Adequate accommodation ensures users may access and travel on the street, regardless of age or ability, with a reasonable assumption of safety and protection. The policy provides a clear process for seeking and documenting any necessary exceptions.

- **Establish Sidewalk and Pedestrian Accessibility Policies** – Walking is the most fundamental mode of transportation and the basis for nearly all others. In general, pedestrians are only safe to mix with motor vehicle traffic when streets are explicitly designed and/or actively managed with this intent. In all other cases, pedestrians, and especially vulnerable pedestrians such as children, seniors, and persons with disabilities, require and deserve the protection and accessibility provided by a complete sidewalk network and associated curb ramps and crosswalks. New streets, regardless of volume, should provide continuous, connected sidewalks on both sides of the street. For existing streets, sidewalks should be considered on at least one side for streets carrying daily vehicle volumes below 5,000. On moderate volume streets (5,000 to 10,000 vehicles per day), sidewalks are recommended on both sides of the street whenever possible and required on high volume streets – those with daily vehicle volumes in excess of 10,000 vehicles per day. Sidewalks should be provided with any significant street maintenance, rehabilitation, or reconstruction project and may be constructed independent of a street project.
- **Adopt Bicycle Supportive Policies and Services** – A number of different factors support bicycling as a viable mode choice: adequate provision of bicycle parking, bike share, bicycle facilities, and building amenities for bicyclists. Transportation demand management policies further support bicycle mode share. It is recommended that Belle Isle support bicycling through the adoption of the proposed complete streets policy, expanded bicycle education, improved bicycle facilities, and increased awareness of the bicycle network. In addition, the City will continue to consider the addition of more bicycle accommodations into the Zoning code to include secure bicycle parking, repair facilities, and user amenities (i.e., showers and lockers) in nonresidential uses.
- **Regional Coordination of Multimodal Facilities** – Providing connectivity to regional transportation facilities requires coordination with other government entities. Potential coordination opportunities include sidewalk connections to the SunRail station and other destinations outside the city limits on Orange Avenue and coordination with other jurisdictions on trail and bicycle planning including the Orlando Bicycle Plan update occurring in 2019 and any future updates of the Orange County Trails Master Plan. Regular participation and cooperation with MetroPlan Orlando, Orange County, FDOT, the Cities of Orlando and Edgewater, and other nearby governmental entities can further the visibility of Belle Isle's priorities.

1 BACKGROUND OVERVIEW

RELEVANT STUDIES AND PLANS

Current transportation planning efforts in Belle Isle exist within a broader planning context that has evolved over time. This chapter reviews seven planning documents that provide regional context and impact transportation planning efforts in and around Belle Isle:

1. City of Belle Isle Comprehensive Plan
2. Orange County Multimodal Corridor Plan
3. Orange Avenue Corridor Study
4. Orange Avenue Corridor Study: Preliminary Engineering Concept
5. Orange County Infill Master Plan
6. Orange County Pine Castle Urban Center
7. Sand Lake Road SunRail Station Area Bicycle & Pedestrian Connectivity Study

Key Findings

Plans & Studies Review

The following are the key themes from the review of previous plans and studies:

- **Multimodal Networks.** Orange County is developing several projects and initiatives to create a more complete multimodal transportation network. The most relevant of these projects to Belle Isle stakeholders include the Orange Avenue Corridor Study and the Hoffner Avenue (SR-15) roadway widening project just east of the municipal border. The Hoffner Avenue road widening will add bike lanes and sidewalks to the multimodal network and is under construction as of the date of this Master Plan. Orange Avenue is undergoing redesign, between Sand Lake Road and Hoffner Avenue, from a primarily suburban, auto-oriented roadway to a more urban multimodal arterial that meets the needs of people walking and biking.
- **Safety for People Walking and Biking.** Walking and biking in the areas immediately surrounding Belle Isle are generally perceived as inconvenient and unsafe, and a more complete network of safe walking and biking routes is desired surrounding the City. There is strong stakeholder interest in traffic calming and streetscape improvements on Orange Avenue between Lancaster Road and Hoffner Avenue, where commercial development is more prominent. The Orange Avenue redesign project is expected to remedy key barriers to

multimodal mobility in the area, such as improved sidewalks, traffic calming, on-street bike lanes, and safer pedestrian crossings. These improvements are expected to have significant impacts to residents of Belle Isle, particularly should the City opt to annex property in this area.

- **Transit-oriented Development.** Should the City annex the area around the Sand Lake Road SunRail station, significant real estate value for the City of Belle Isle could be created along with associated property tax revenue. However, land values near the station have underperformed in the past decade. This is partly due to restrictive nearby County zoning codes that limit the density of development, and partly due to poor pedestrian and bike access to the station. To overcome these barriers to development, Orange County has proposed changes in the development approach to the Orange Avenue corridor with higher-intensity development near Sand Lake Road SunRail station as part of Pine Castle Urban Center enabled by updated future land use and zoning.
- **Connections to SunRail.** The Sand Lake Road SunRail station has limited connectivity with the surrounding street network and features low population/employment density and land use diversity. As a result, few destinations are accessible within walking distance of the station, and first/last-mile gaps between the station and user's origins/destinations are a major barrier to transit ridership.

PLANS & STUDIES REVIEW

This section describes the findings from eight planning documents that have implications for multimodal transportation in and around Belle Isle. These documents include a mix of plans from Orange County, Florida Department of Transportation (FDOT), and the City of Belle Isle. Each plan relates to different components of the overall transportation network, in different planning jurisdictions, and in different planning horizon timeframes. Collectively, the backgrounds and key findings from these plans create the regional and local context of transportation in Belle Isle. Included below are descriptions of each study's purpose, a brief summary, and key recommendations.

City of Belle Isle Comprehensive Plan

The City of Belle Isle published their Comprehensive Plan in 2010, succeeding the 1991 Comprehensive Plan, and is due for review. The Transportation Element of the Comprehensive Plan was intended to establish guidelines, policies, and performance metrics for the transportation system in Belle Isle. One aim of components within the Element was to integrate land use and transportation planning processes in a coordinated manner.

The Comprehensive Plan used the Level of Service (LOS) metric to ensure that land use and transportation policies are coordinated. The document advised against approving any development that would cause roadways to function with greater vehicle delay than the LOS standards the City set for them. Objective 1.3 of the Comprehensive Plan established a minimum standard of operations for all City streets at LOS "C." County and State roads must operate at LOS "E" or better. McCoy Road was an exception, noting that it must operate at traffic volumes of less than 3,530 vehicles per peak hour.

The Comprehensive Plan called for improvements to infrastructure for people walking, biking, and taking transit. In Objective 1.4, the City required all new developments to include sidewalks and all new roads to include on-street bike facilities. Bus pullouts were also required on major arterials to prevent traffic congestion from bus stop activity.

Orange County Multimodal Corridor Plan: Phase I

Orange County developed the Orange County Multimodal Corridor Plan: Phase I and adopted the plan in 2014. The document has an overall focus on the County's current and future multimodal network needs from land use, transportation, and capital planning perspectives. The Multimodal Corridor Plan builds on initiatives such as the interconnected regional trail network and SunRail commuter rail line, with the goal of creating a transportation network for Orange County consistent with the MetroPlan Orlando 2040 Long Range Transportation Plan.

The nearest major project to Belle Isle is the FDOT-funded reconstruction of Hoffner Avenue/SR 15, east of Conway Road, which is currently under construction. According to FDOT, the project involves "widening and reconstruction of SR 15 (Hoffner Avenue) from a two-lane roadway to a four-lane divided roadway. The project will create a curb and gutter roadway with two 11-foot travel lanes, a 4-foot bike lane, a 5-foot sidewalk in each direction separated by a 22-foot grassed median."

Recommendations

- Some recommendations focused on developing policies that make streets accommodate more users, such as potential adoption of an Orange County Complete Streets Policy and further studying existing on-street parking system and implementation measures in County roadways (e.g. traffic calming).
- Evaluate municipal zoning ordinances to recommend sidewalk widths and pedestrian connectivity improvements
- Consider re-evaluating posted speed limits on County roadways with posted speeds above 45 miles per hour, based on crash data analysis
- Compile and collect data to assist pedestrian and bicycle planning. For example, install pedestrian counters in key locations, create GIS layers of available current pedestrian and bicycle counts and turning movement counts and compile GIS inventory of multi-purpose paths to identify further path connections

- Review recommendations of MetroPlan Orlando's Bike Sharing Working Group for potential bike share and car share programs

Orange Avenue Corridor Study

The Orange Avenue Corridor Study (2014) was developed for FDOT and focused on identifying a range of multi-modal solutions to improve walkability, safety, quality of life, and mobility. The study also sought to advance the long-term vision for the Orange Avenue corridor and encourage outcomes supportive of long-term transit-oriented development plans because the corridor is the primary access route to the Sand Lake Road SunRail station. The study focused on two segments of Orange Avenue: Sand Lake Road to Lancaster Road and Lancaster Avenue to Hofner Avenue.

The study noted the following transportation challenges and plans for the corridor:

- There were gaps in multimodal network along Orange Avenue and connecting streets with missing sidewalks, overgrown vegetation on paved shoulders, bus stops without shelters and not setback from the sidewalk, and a lack of bike facilities.
- The most common crash locations on the corridor were Orange Avenue/Sand Lake Road, Orange Avenue/Lancaster Road, and Hansel Avenue/Hoffner Avenue. The segment between Sand Lake Road and the SunRail station entrance driveway had a particularly high crash frequency.
- Orange Avenue is one of LYNX's (transit agency) priority corridors, putting it in the running for transit signal priority and queue jumps along the corridor to strengthen bus service and the connection between bus and rail (San Lake Road SunRail Station).
- Walking and biking in the area were generally perceived as inconvenient and unsafe. A more complete network of safe walking and biking routes was desired. There was strong stakeholder interest in traffic calming and streetscape improvements along the northern segment of Orange Avenue between Lancaster Road and Hoffner Avenue, in an area known as Pine Castle's "Main Street."
- This area was also home to several educational institutions like CCA, Pine Castle Christian Academy, and Pine Castle Elementary School, which generated higher levels of walking and biking.

Multimodal improvements the study recommended include:

- Pedestrian connectivity with the installation of more crosswalks at places such as Office Court & Orange Avenue to improve pedestrian crossing at Sand Lake Road SunRail station.
- Add pedestrian bulb-bouts, "green lanes" for bikes, raised medians, and sidewalk enhancements along Orange Avenue/Hansel Avenue north of Lancaster Road
- Remove right-turn channelization at Orange Avenue & Sand Lake Road to reduce pedestrian crossing distances
- Add raised median, east side sidewalks, and on-street bike lanes between Lancaster Road and Sand Lake Road to provide safer spaces for people biking and walking
- Refine bus stop locations so they provide better access to entrances of major destinations and provide enhanced bus stop amenities like seating, shelters

Orange Avenue Preliminary Engineering Concept Plan

The Orange Avenue Preliminary Engineering Concept Plan was published in 2015. The focus of this study was to develop a preliminary engineering concept plan for the segment of the corridor from Parkline Boulevard to Lancaster Road, based on urban cross-sections in the FDOT Orange Avenue Corridor Study. The preliminary engineering concept was intended to transform Orange Avenue from a more rural, auto-oriented arterial to a more urban multimodal arterial. The concept also prepared the project for the funding of the next phases of the project, design and construction. The design incorporated Transportation Design for Livable Communities (TDLC) standards.

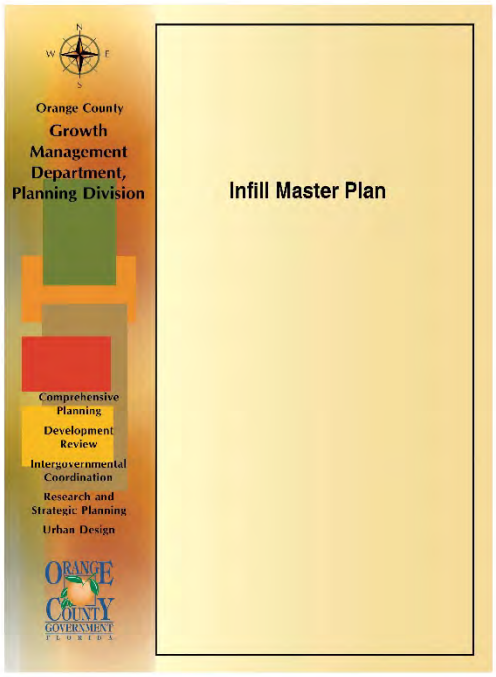
Orange Avenue runs parallel to the SunRail line and is the primary arterial in the area. The corridor services large trucks and high-volume traffic, making its transition to a walkable, bike-friendly corridor challenging. The challenges for people walking and biking along the corridor include:

- limited places to cross the corridor
- incomplete sidewalk network
- bus stops at midblock.

The engineering concept contained the design recommendations along the Orange Avenue corridor to make walking and biking along Orange Avenue safer, more

comfortable and more convenient by adding bike lanes and making shorter pedestrians crossings (among other recommendations). The plan also suggested creating landscaped pedestrian plazas at each corner of Sand Lake Road/Orange Avenue to transform this intersection into a "gateway" to the communities of Belle Isle and Pine Castle.

Orange County Infill Master Plan



The Infill Master Plan (2008) by Orange County made recommendations to update the County's Comprehensive Policy Plan and local zoning ordinances to facilitate infill development. Orange County recognizes infill development as a potential strategy to make more efficient use of existing public infrastructure, accommodate growth in population and employment, provide affordable housing, facilitate safe walking and biking conditions, and mitigate traffic congestion.

The County proposed infill development on various underutilized sites and corridors based on their location within designated urbanized areas and within ¼ mile of major streets and LYNX bus routes. One of the County's five priority corridors for infill development was in Pine Castle, around a section of Orange Avenue, denoting properties in and around the intersections of Sand Lake Road/Orange Avenue and Orange Avenue/Lancaster Road. The Orange Avenue corridor received high scores for its infill potential due to its proximity to the Sand Lake Road SunRail station, which could promote transit-oriented development. The corridor received poor scores for the quality of existing pedestrian infrastructure and its ability to serve non-driving trips. Some of the recommendations the County made include:

- Prioritize infill based on the age, capacity of existing infrastructure (e.g. roadways)
- Adopt infill development guidelines – increased density, reduced parking ratios, pedestrian-oriented frontages
- Administer a survey of business owners of underutilized parcels
- Amend Comprehensive Policy Plan and zoning ordinances to incentivize infill
- Create infill incentives and certification programs – e.g. tax credits, reduced impact fees, brownfield development program, density bonuses, workforce housing tax credits/density bonuses.

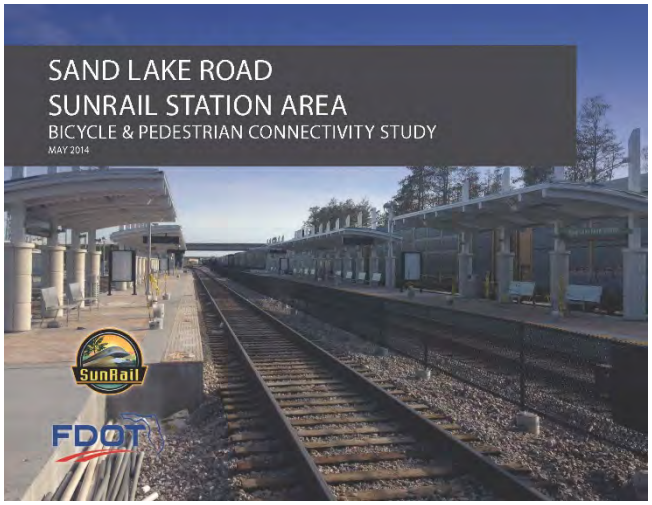
Orange County Pine Castle Urban Center

In 2017, Orange County transmitted updates to the Orange County comprehensive plan that would promote transit-oriented development near the Sand Lake Road SunRail

station. The new land use are Urban Core, Urban Center Place Type, which allowed for transit-oriented development within ½ mile of a transit station (new or existing).

The Urban Center future land use is further divided into subdistrict. Areas along the Orange Avenue Corridor fall into the "Core" transect, allowing residential densities between 21 and 150 dwelling units per acre, depending on the site's proximity to the Sand Lake Road SunRail station. The previous future land use for the Orange Avenue corridor was the Low-Medium Density Residential (LMDR) zoning designation, permitting up to 10 dwelling units per acre. The Urban Center Place Type overlay is accompanied by proposed form-based code standards divided into "transects" or zones of varying density. Orange County staff recommended the adoption of the revised form-based code for the Pine Castle area, and in particular the designation of the Orange Avenue corridor as an Urban Center.

Sand Lake Road SunRail Station Area Bicycle & Pedestrian Connectivity Study



The Sand Lake Road SunRail Station Area Bicycle & Pedestrian Connectivity Study (2014) was developed for FDOT and SunRail. FDOT initiated this study to coordinate efforts to improve bike and pedestrian connectivity to SunRail stations. The study's focus was on short-term improvements that could be advanced through FDOT as well as municipal/local capital improvements programs. The study evaluated bike and pedestrian infrastructure needs and identified key projects for implementation through planning and concept development. Findings from previous studies and audits were considered of transit, bike, and pedestrian accessibility as well.

General objectives of these projects included:

- Filling crucial first/last-mile gaps between SunRail stations and area employers, schools, and other destinations;
- Addressing pedestrian and bike safety issues (e.g. lighting, accessibility issues, or crossing distances);
- Other low-cost, high-value improvements such as signal re-timing, bus stop relocation, or lane striping.

The study assessed each SunRail station area's transportation and land use characteristics according to metrics such as street connectivity, residential and employment density, and land use diversity. The Sand Lake Road SunRail station scored poorest of all 12 stations in the system on all metrics except employment and land use diversity, for which only two other stations performed worse.

Recommendations

The study identified several high-priority bike and pedestrian improvements to enhance access to Sand Lake Road SunRail station, including:

- Fill in gaps of the sidewalk network along Orange and Nela Avenues and Office Court. Also, create bike and pedestrian connections along Sand Lake Road on the bridge over the SunRail tracks by installing dedicated space for people to walk or bike over the bridge or constructing a bike/ped bridge over the tracks).
- Improve pedestrian safety at intersections. In interim, add signage "Turning Vehicles Yield to Pedestrian" and yield line markings. Install detectable warning surfaces on all corners of the intersection of Orange Avenue/Nela Avenue to comply with ADA requirements.
- Support bike riding along local, low-speed roads intended as bike boulevards, such as Nela Avenue, Perkins Road, and Gondola Drive.

OTHER MISCELLANEOUS PLANS & STUDIES

Orange County District 3 Future Roadway Projects

The Orange County Future Roadway Map, updated July 2018, shows the progress of several pending roadway redesigns in and around Belle Isle. The Orange Avenue redesign is scheduled to begin construction in October 2018 between Pineloch Avenue and Grant Street, north of the City. The segments between Pineloch Avenue and Hoffner Avenue, as well as Hoffner Avenue and Parkline Drive, are shown as having completed the planning stages. However, no date of construction for these segments has been scheduled.

FDOT Hoffner Widening Plan at Conway

Hoffner Avenue (SR-15) has been recently widened from Conway Road to Mauna Loa Lane, from a two-lane collector to a five-lane arterial with two lanes in each direction and a center turning lane. The design also includes accommodations for an on-street bike lane in each direction. The project area lies immediately to the east of Belle Isle's jurisdictional border.

SandLake Station Development Plans

A local developer, Sandlake Station Partners LLC, has proposed a mixed-use development at 7803 Orange Avenue, including 38,000 square of commercial space and 196 rental units. If approved by the Orange County Development Review Committee, the project would constitute the most significant transit-oriented development in the area, just ¼ mile from the Sand Lake Road SunRail station.

2 GETTING AROUND BELLE ISLE TODAY

Belle Isle is a bucolic community set among the Lake Conway chain of lakes in the suburban ring of metropolitan Orlando. The City was first developed in the mid-1920s in order to protect the Lake Conway chain of lakes in resistance to Orange County's plan, at the time, to drain the lakes for farming. Although the City was annexed back into the County in the late 1920s, it was reconstituted in the mid-1950s as a part of another effort to save the Lake Conway chain of lakes. With a charter recognized by the state in 1972, the City has flourished ever since as a residential oasis in the flurry of metropolitan Orlando.

Belle Isle is bordered by the City of Orlando and the unincorporated community of Conway on the east, the City of Edgewood and the unincorporated community of Pine Castle on the west, and unincorporated areas of Orange County in the North and South.

The lakes themselves, while providing a beautiful natural setting for the City, also create some barriers for getting around Belle Isle. East-west connectivity is limited to the Hoffner Avenue, Nela Avenue/Seminole Road, and McCoy Road corridors while north-south connectivity is further limited by residential development, pushing most north-south movements along the edge of, or beyond the city limits. The lakes themselves also provide an additional mode of transportation for those that own private boats, however, the privatized nature of the lakeshores restricts much of the ability for those living off of the lakes to use this as a mode of transportation without using a privately owned dock. The contrast of the beautiful natural setting and

quiet residential streets with the limited east-west and north-south connectivity provides a challenging setting for Belle Isle residents to retain the bucolic environment they enjoy, while allowing the mobility and growth that the City needs to advance.

Overall, Belle Isle's transportation network presents several key challenges:

- Limited connectivity in both the east-west and north-south directions minimizes redundancy in the network, constraining travel choice in terms of routes available, and flexibility to adjust to network disruptions or changes in circulation patterns.
- Limited access and egress points to a number of communities.
- Natural and built environments limit opportunities to increase access across and within many communities.
- Limitations of the existing right-of-way available for transportation infrastructure expansion.

In order to assess the challenges faced in traveling around Belle Isle, the Transportation Master Plan is informed by an understanding of local population and the existing transportation setting. The following sections define Belle Isle's demographics, roadways, and transit and multimodal networks serving local residents, employees, and visitors.

DEMOGRAPHICS

The demographics of Belle Isle paint a picture of the suburban community that it is, as noted below on Figure 1. Incomes are over 60% higher than Orange County on average, which is reflected in not only lower rates of residents below the poverty line and without insurance, but also in higher number of residents with two or more vehicles available. Single occupant vehicle commuting patterns, however, are similar to those noted on average in Orange County.

Commute Patterns

Approximately one-third of residents of Belle Isle work in Orlando, with the most prominent commute travel flows to the southwest Orlando tourist areas and Downtown Orlando, as shown on Figure 3. As most residents are employed outside of the City of Belle Isle itself, few residents commute within the City.

Annexation Plan

The City has conducted a study around possible annexing certain parcels of land directly adjacent to its current borders. As shown on Figure 4, the three different areas lay on the east and southwestern borders, the southeastern corner, and a section along the northeastern border. Most notable among these annexation areas is the SunRail station located at the corner of Orange Avenue and Sand Lake Road, and section of Orange Avenue due north. Both the station and corridor are prime candidates and have been studies for transit-oriented development and multi-modal improvements.

Figure 1 Belle Isle Demographics[1]

Demographic	Belle Isle	Orange County
Population	6,686 residents	1,290,216 residents
Households	2,750 units	517,631 units
Median Household Income	$84,145/year	$51,586/year
Median Age	49	35
Commuting		
Drive Alone	81%	79%
Carpool	5%	10%
Transit	0%	3%
Walk	1%	1%
Work from Home	10%	5%
Other Means	3%	2%
Auto Ownership		
No Vehicles	5%	6%
1 Vehicle	22%	39%
2 Vehicles	44%	40%
3+ Vehicles	29%	15%

[1] US Census Data

Figure 2 Belle Isle and Surrounding Communities

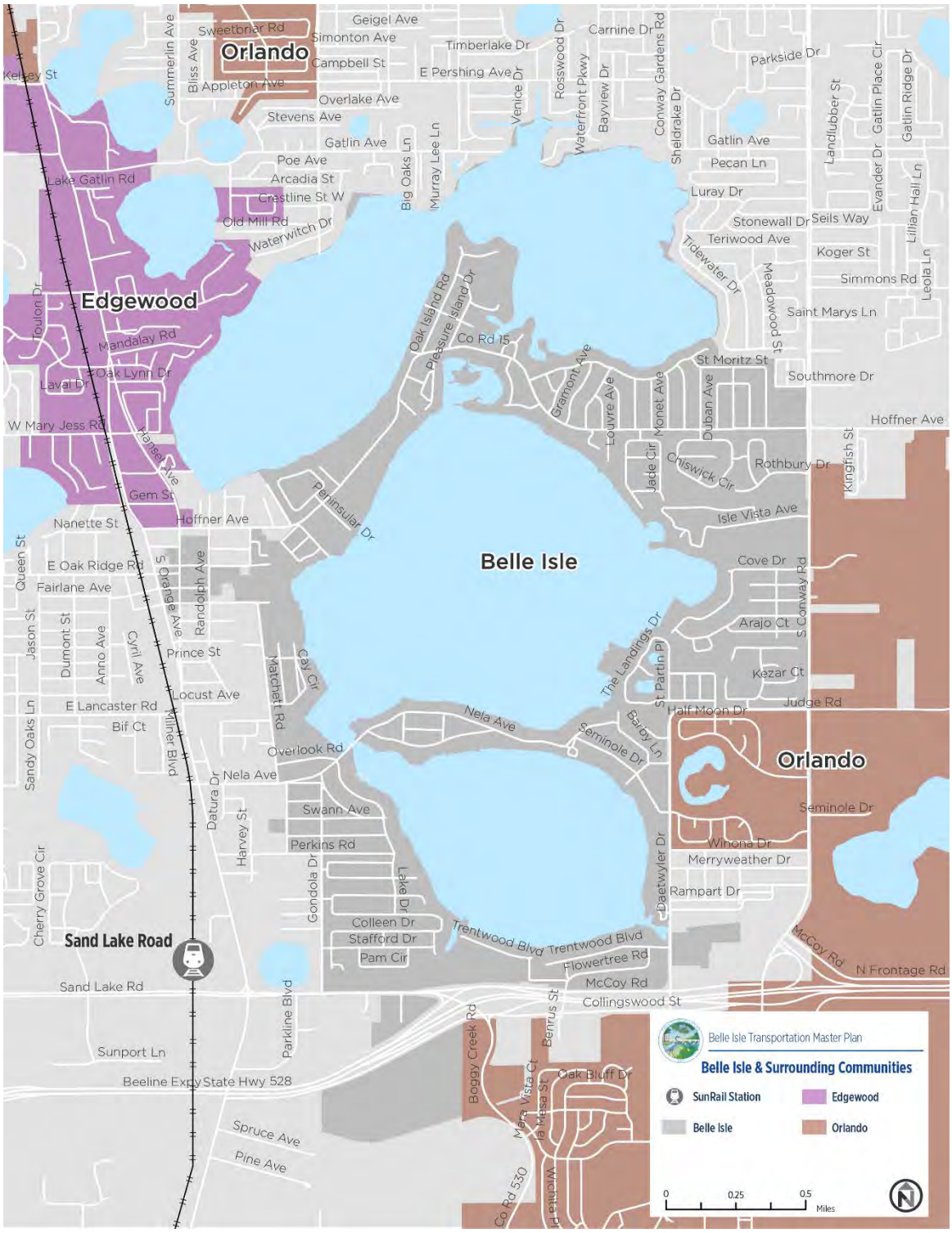


Figure 3 Belle Isle Commute Travel Flows

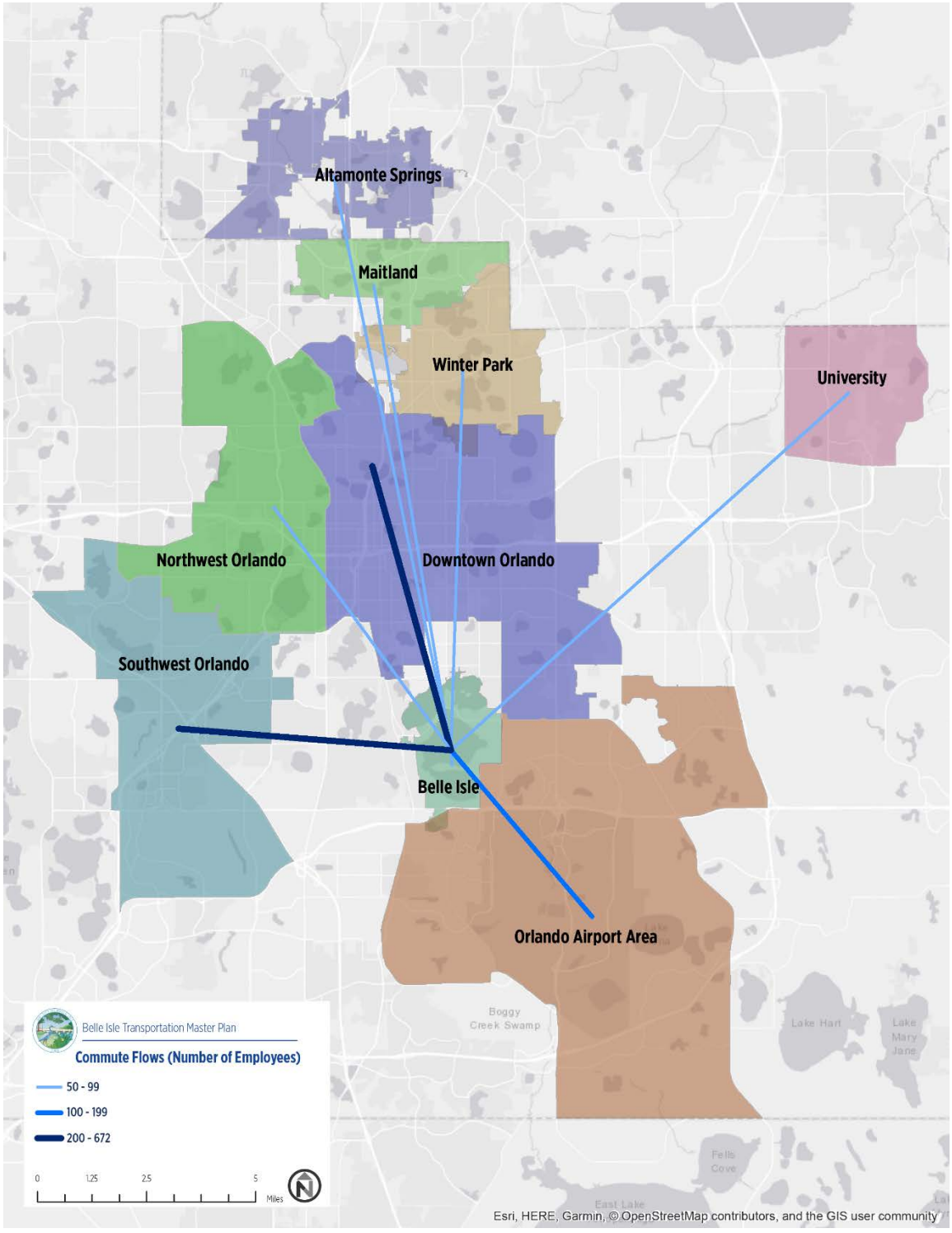
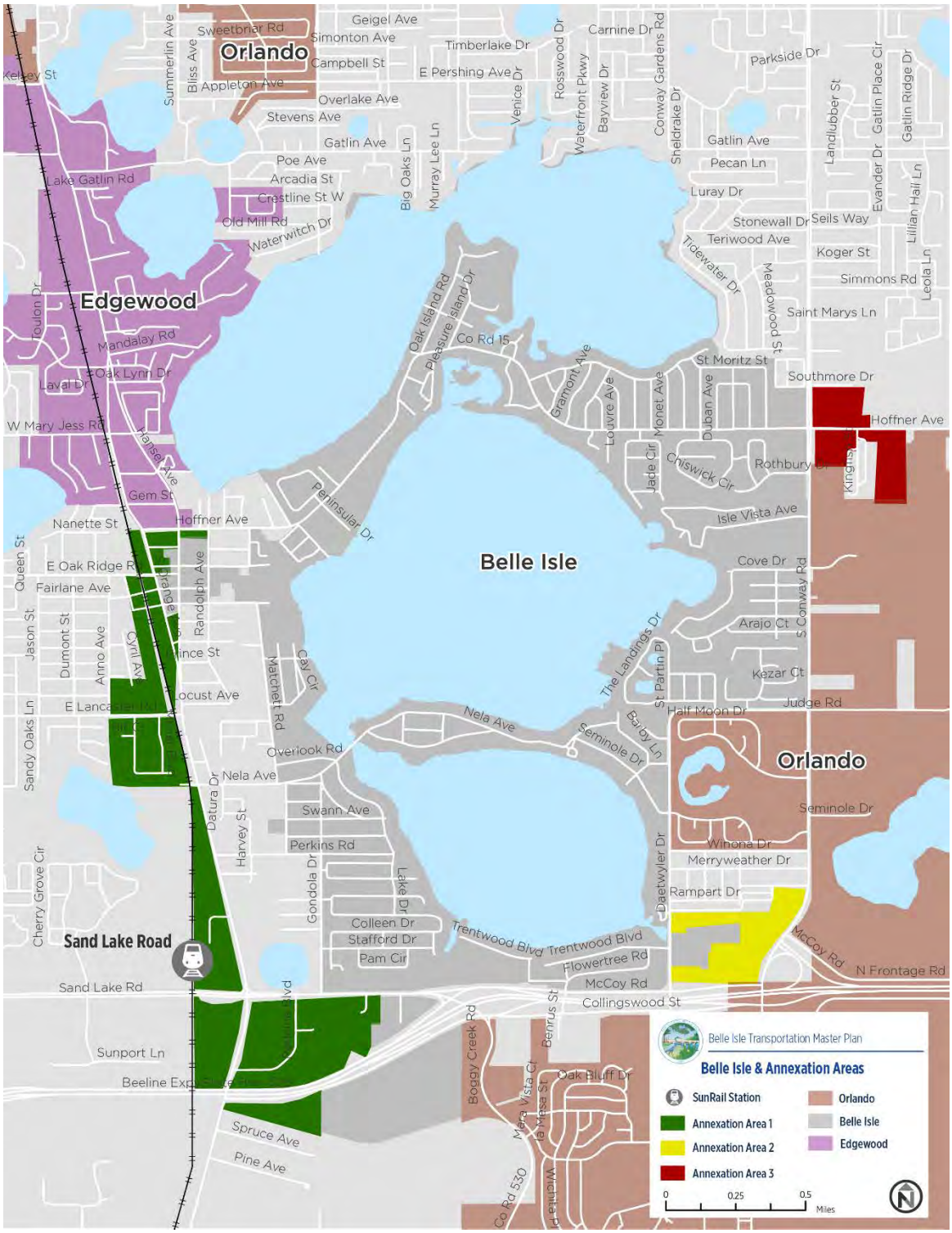


Figure 4 Belle Isle Proposed Annexations



ROADWAY NETWORK

While Belle Isle contains an intricate network of neighborhood streets, within Belle Isle there are four corridors of citywide or regional significance: Hoffner Avenue, Nela Avenue/Seminole Drive, Daetwyler Drive/Judge Road, and McCoy Road. Other streets within Belle Isle provide some additional connectivity within the City and Orange Avenue/Hansel Avenue and Conway Road provide north-south connectivity immediately adjacent to the western and eastern boundaries of the City, respectively. Below is a discussion of the four primary corridors within the City itself.

- **Hoffner Avenue** is classified by FDOT as a minor rural arterial, which as a principal vehicular corridor not only for local Belle Isle traffic, but also east-west traffic in the immediate vicinity. The paved width itself is owned and maintained by Orange County, however, the remaining right of way is owned and maintained by the City of Belle Isle. Average Daily Traffic (ADT) counts reflect this, with the corridor accommodating 16,959-18,008 vehicles per day[2] within 2.3 mile section of Hoffner Avenue within the City of Belle Isle (from Conway Road to LaBelle Street). The two-lane roadway (with some intermittent turn lanes) varies from 22 to 23 feet in paved width with sidewalks varying from 6 to 8 feet in width for the length of the south side and portions of the north side of the roadway. While most of the sidewalks along Hoffner Avenue are within the public right of way, it is unclear whether the sidewalks along the central portion of the corridor (between Venetian Drive and Avocado Lane) are on private property with or without easements. There are no stop controlled or signalized intersections between Conway Road and Orange Avenue and there are marked crosswalks at two locations within the City of Belle Isle. The roadway's speed limit is primarily signed at 35 miles per hour (mph), with a signed short 25 mph segment as the roadway curves through the isthmus separating Lake Conway from Little Lake Conway. Rights of way are very wide for the eastern segment of Hoffner Avenue at approximately 100 feet in width, but narrow considerably along the western segment of Hoffner Avenue to the 22-23 foot width of pavement[3].
- **Daetwyler Drive/Judge Road** are together classified by FDOT as a major rural collector, providing a principal vehicular corridor on the east side of the City. While similarly classified by FDOT as Nela Avenue/Seminole Drive, these roadways provide a bit more connectivity for Belle Isle and surrounding residents, many times functioning as an alternate route for traffic travelling between Semoran Boulevard and points further east and McCoy Road. The paved width of the roadway has been recently acquired by the City of Belle Isle from Orange County, extending the City's boundary to the southern/eastern edge of pavement of the corridor. ADT counts reveal that the corridor accommodates 13,116-15,151 vehicles per day[4]. As two-lane roadways (with some intermittent turn lanes) that vary from 22 to 24 feet in paved width within 65 to 75 feet of right of way, both roadways have 5 to 6 foot wide sidewalks for most of the length of both sides of the roadway. However, only the sidewalks along the northern side of Judge Road and eastern side of Daetwyler Drive fall within the Belle Isle city limits.

[2] 2017 Annual Count Report, Orange County Traffic Engineering Department

[3] It is unclear whether sidewalks in the segment between Venetian Drive and just south of Avocado Lane are within the public right of way or located on private property.

[4] 2017 Annual Count Report, Orange County Traffic Engineering Department

The roadway's speed limit is signed at 35 mph with no stop controlled intersections between Conway Road and McCoy Road.

- **Nela Avenue/Seminole Drive** are together classified by FDOT as a major rural collector. Functionally, these are neighborhood streets that, together, provide the only east/west connectivity through the City between Hoffner Avenue and McCoy Road. ADT counts reveal that the corridor accommodates 2,731-2,799 vehicles per day[5]. As two-lane roadways that vary from 18 to 20 feet in paved width in 35 feet of right of way, both roadways have 5 foot wide sidewalks for most of the length of the south side and small segments of sidewalk on the north side of the roadway. The roadway's speed limit is signed at 25 mph and features stopped controlled intersections throughout its length. Intersection treatments are present at Lake Drive/Overlook Road, which is designed as a hybrid roundabout, and at the western Homewood Drive intersection, which has raised pavement diverters in place. Additionally, Nela Avenue crosses a historic bridge over Lake Conway that provides limited pavement width and a narrow sidewalk. Finally, speed humps are installed along Nela Avenue in three locations between the eastern and western Homewood Drive intersections.

Figure 5 Nela Avenue/Homewood Drive Intersection Treatment

Figure 6 Nela Avenue/Overlook Road/Lake Drive Intersection Treatment

[5] 2017 Annual Count Report, Orange County Traffic Engineering Department

- **McCoy Road** is classified as a major rural collector east of Boggy Creek Road and a minor rural arterial west of Boggy Creek Road, providing a principal vehicular corridor with high capacity vehicle flow along the southern edge of the City. Between Conway Road and via Flora, McCoy Road is an Orange County roadway, functioning similar to an access roadway for the Beachline Expressway and providing two-way traffic in a three lane, approximately 36 foot paved width cross section with sidewalks along most of the northern side of the road. Between Via Flora and Boggy Creek Road, McCoy Road is an FDOT roadway, becoming one-way westbound as a ramp from the westbound Beachline Expressway merges into it and providing one westbound vehicular lane and bicycle lane within approximately 22 feet of paved width and no sidewalks. West of Boggy Creek Road, McCoy Road continues as an FDOT roadway, becoming a two-way roadway again and providing two vehicular lanes and bicycle lanes in either direction with a center turn lane within approximately 66 feet of paved width and sidewalks on either side of the roadway. McCoy Road is signed with a speed limit of 35 mph between Conway Road and Via Flora, 40 mph between Via Flora and Boggy Creek Road, 35 mph between Boggy Creek Road and Lindos Drive, and 45 mph between Lindos Drive and Orange Avenue.

Other roadways within and abutting the City that provide key circulation include Gondola Drive, Perkins Road, and Matchett Road, all of which are not classified by FDOT, but function as neighborhood streets that accommodate vehicular circulation for both Belle Isle residents as well as those bypassing congestion on more regional roadways such as Orange Avenue and McCoy Road. These roadways are all two-way, two lane, approximately 20 foot wide streets that include stop controlled intersections and sidewalks on one or both sides, and are controlled by either the City or Orange County.

Regional north-south corridors such as Orange Avenue/Hansel Avenue and Conway Road provide connectivity along the periphery of the City on roadways controlled by FDOT and Orange County, respectively.

Safety

Understanding where high concentrations of vehicular crashes have historically occurred can help target infrastructure improvements to make these roads and intersections safer going forward. As noted on Figure 8, very few crashes occur on the local and neighborhood streets within the City of Belle Isle itself, but intersections of major roads, and Orange Avenue on the City's eastern border, McCoy Road to the south, and Conway Road to the northeast note safety concerns along the periphery of the City.

Figure 7 Average Daily Traffic Volumes

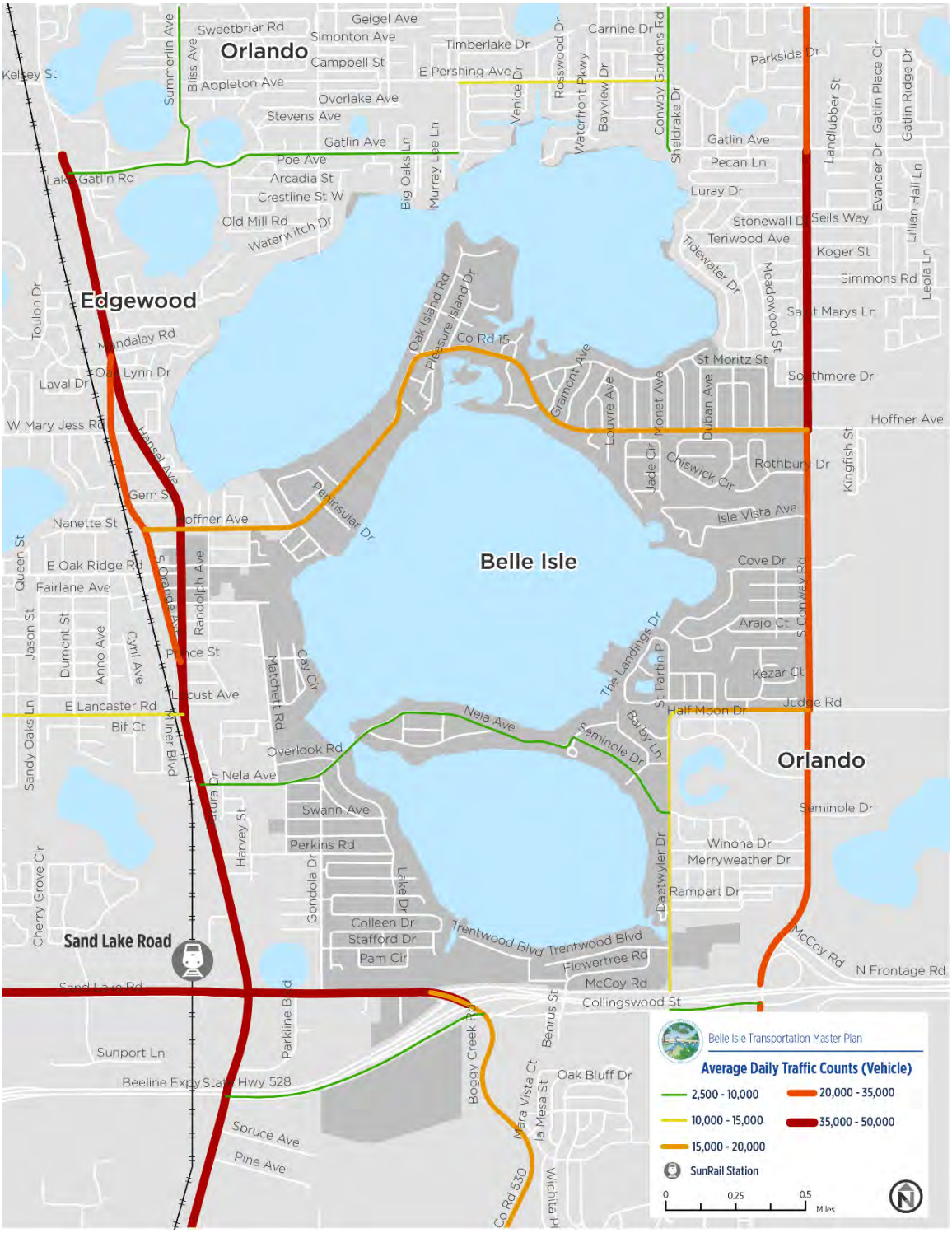
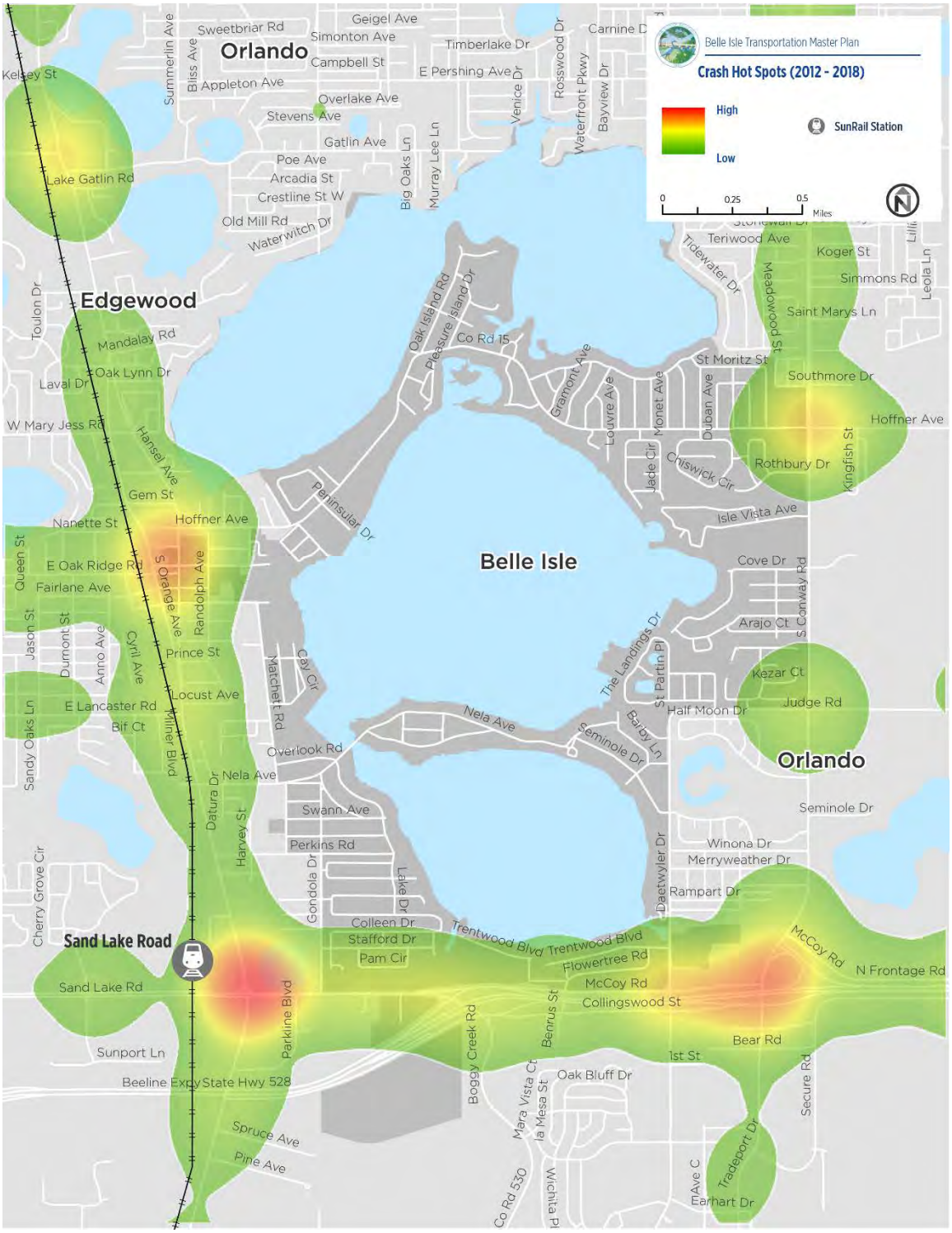


Figure 8 Vehicular Crash Concentrations



WALKING AND BIKING

Pedestrian Infrastructure

Sidewalks are present on one or both sides of most streets within the City of Belle Isle, as shown on Figure 9. Those that are provided are typically 5 to 6 feet in width and in most locations, include a grass buffer between the sidewalk and the edge of the adjacent traveled roadway.

While the presence of sidewalks on one side of the street, or even the absence of sidewalks, is acceptable for many neighborhood streets, higher traveled roadways such as Hoffner Avenue and McCoy Road present areas where pedestrian accessibility is difficult. For instance, restricted right-of-way along Hoffner Avenue presents challenges to providing a complete sidewalk infrastructure in areas where sidewalks are present only along one side of the street.

Some crosswalks are present, most notably in areas adjacent to schools, City Hall, and some parks, as well along select portions of Hoffner Avenue and at signalized intersections within the portions of McCoy Road that are in the city limits. However, some critical crosswalks near Cornerstone Charter Academy are missing, particularly in locations such as at the Randolph Avenue/Fairlane Avenue intersection as well as along long stretches of Hoffner Avenue that do not provide safe locations for pedestrians to cross.

Bicycle Infrastructure

The City of Belle Isle currently does not have designated bicycle infrastructure, however almost all roads within the City have speed limits of 35 miles per hour or less, and all neighborhood roads have speed limits of 25 miles per hour. Low-speed roads, such as those that are signed for 25 miles per hour speed limits or less, are good potential candidates for cycling because cyclists feel more comfortable traveling near vehicles traveling at lower speeds and these roads are safer to cycle on than high-speed roads. However, Hoffner Avenue can prove to be discouraging to some lesser experienced cyclists given the lack of nearby or on-street east-west bicycle infrastructure and the existing narrow sidewalk. Studies in other parts of the country have noted that 60 percent of potential cyclists are interested in cycling, but concerned, preferring complete separation from motor vehicle traffic, or routes with very low traffic volumes and speeds.[6]

While no bike lanes or off-road paths exist within the City, Belle Isle is surrounded by existing or propose bicycle infrastructure in all directions (as shown on Figure 10), creating a potential to link into the existing regional network. However, conventional bicycle lanes that exist along roadways such as Conway Road, McCoy Road, and Orange Avenue/Hansel Avenue, can provide for daunting experiences for cyclists along these routes, putting them in close proximity to high speed, high volume motor vehicle traffic.

[6] https://www.portlandoregon.gov/transportation/article/264746

Figure 9 Belle Isle Pedestrian Infrastructure

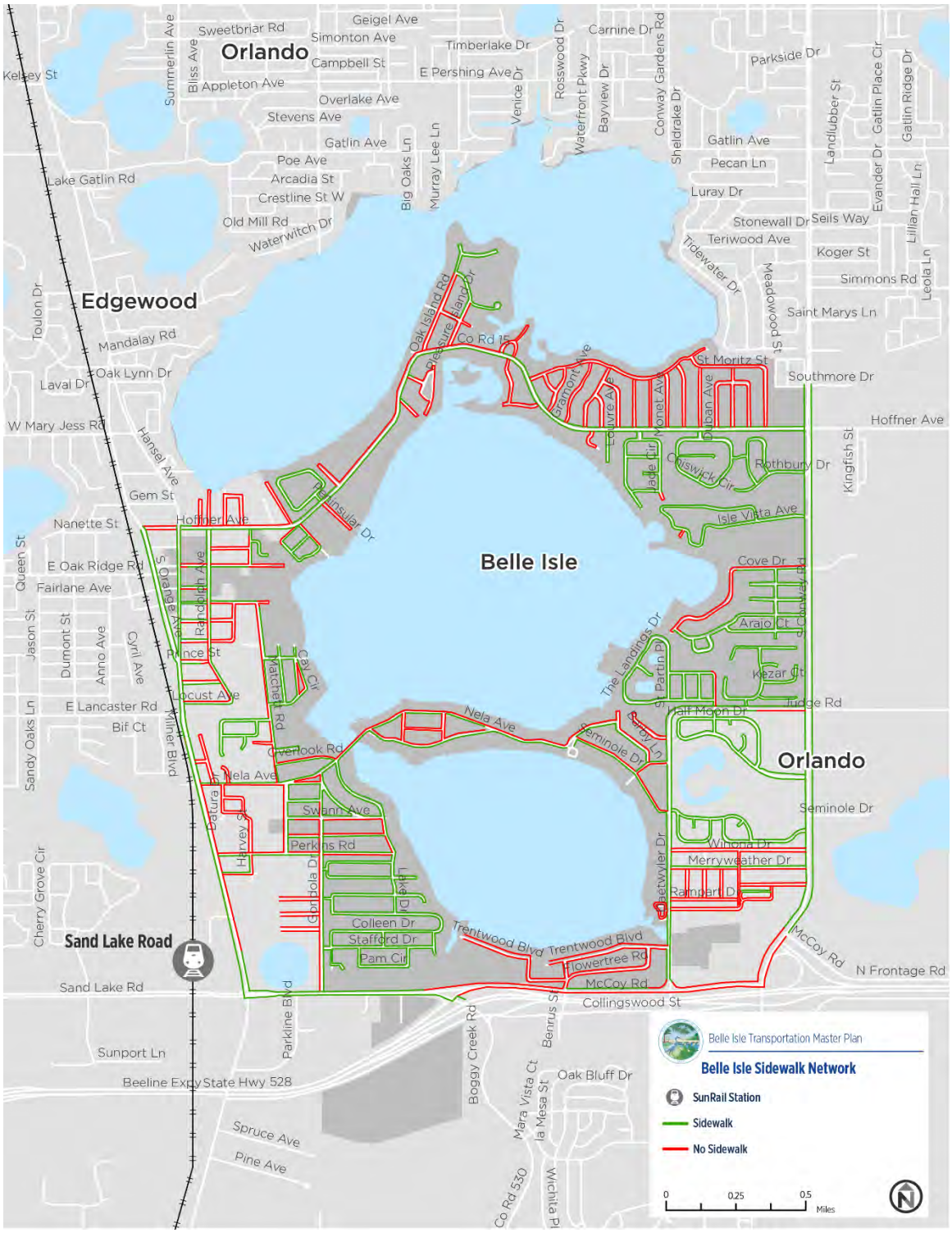
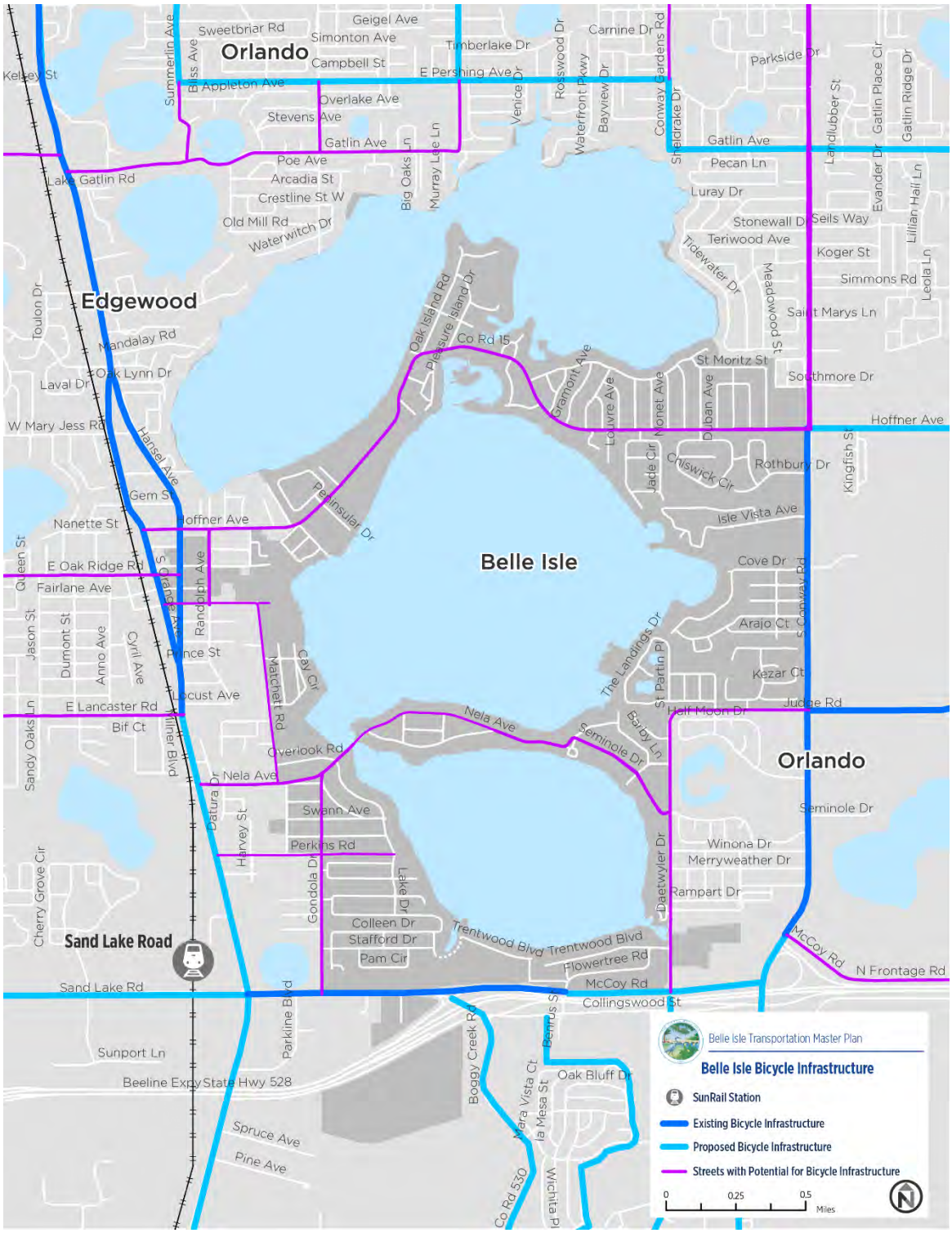


Figure 10 Belle Isle Bicycle Infrastructure



TRANSIT

Currently, there is limited public transit operating within the City, as shown on Figure 12. However, local LYNX bus service and commuter rail service operate adjacent and just beyond the City's borders.

LYNX Transit

LYNX Transit is the bus system serving the greater Orlando area. Minimal residents in the south and northeast of the City are within a five-minute walk of a LYNX bus stop, which is generally how far riders are willing to walk to access bus service. Routes that are walkable to City residents operate along Orange Avenue/Hansel Avenue, McCoy Road, and Conway Road. Twelve LYNX routes serve the Sand Lake Road SunRail Station, however this important regional transit connection is outside reasonable reach of residents who may not own a car or want to travel with a private automobile.

SunRail

SunRail is a commuter rail service that serves the greater Orlando area. Sand Lake Road lies approximately one-half mile outside of Belle Isle's southwest border along the service's main line, which extends from Poinciana, south of Belle Isle, through downtown Orlando, and to DeBary further to the north.

While a large amount of parking is available at the station, the station is not within a ten-minute walk of almost any residents of the City. Ten-minutes (one-half mile) is usually considered a reasonable distance to walk to access rail transit. However, using a network of lower-speed roads, the southwest portion of Belle Isle is accessible to the SunRail station within a five-minute bicycle ride with much of the western portion of the City within a ten-minute bicycle ride.

Figure 11 Sand Lake Road SunRail Station

Figure 12 Transit Pedestrian Access

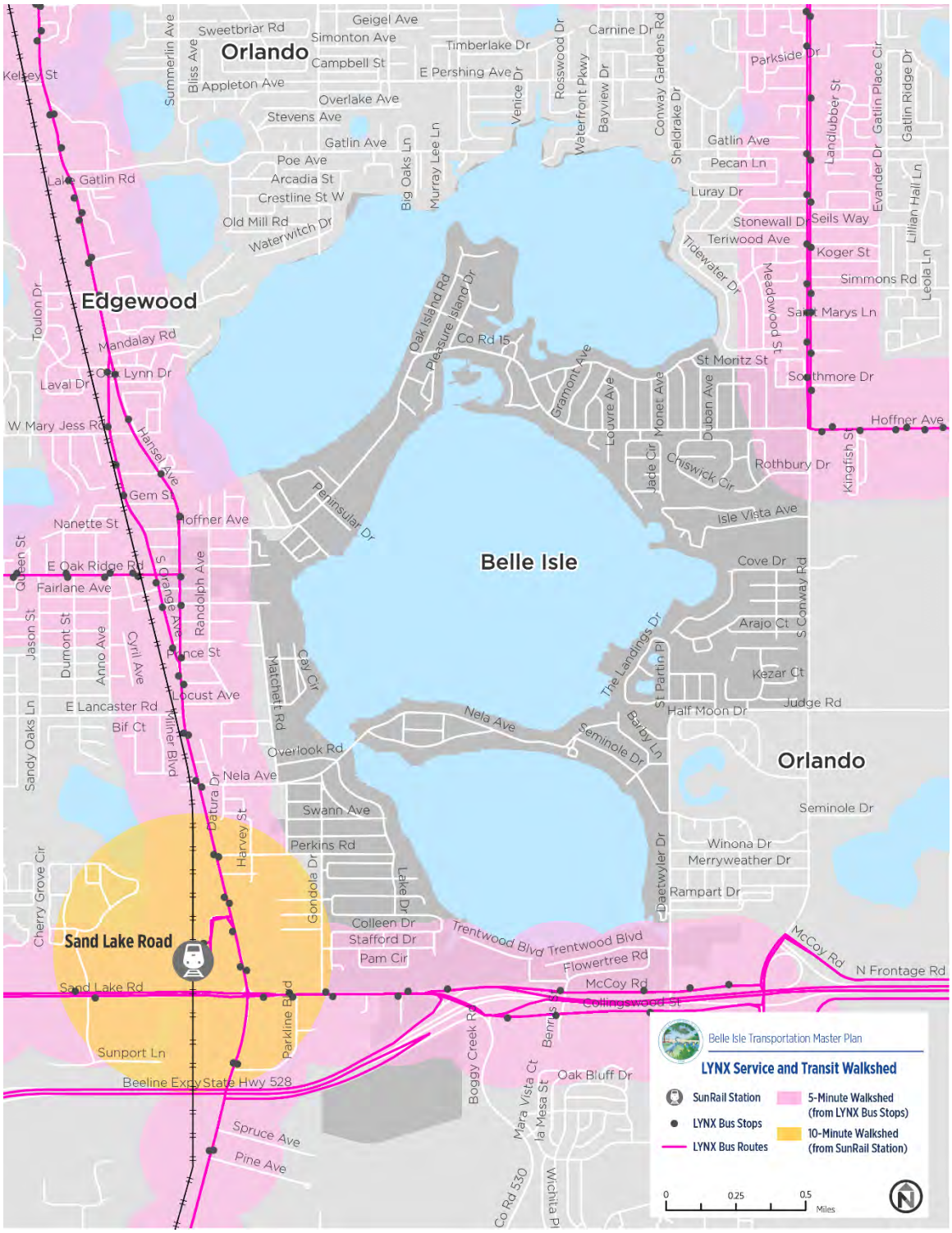
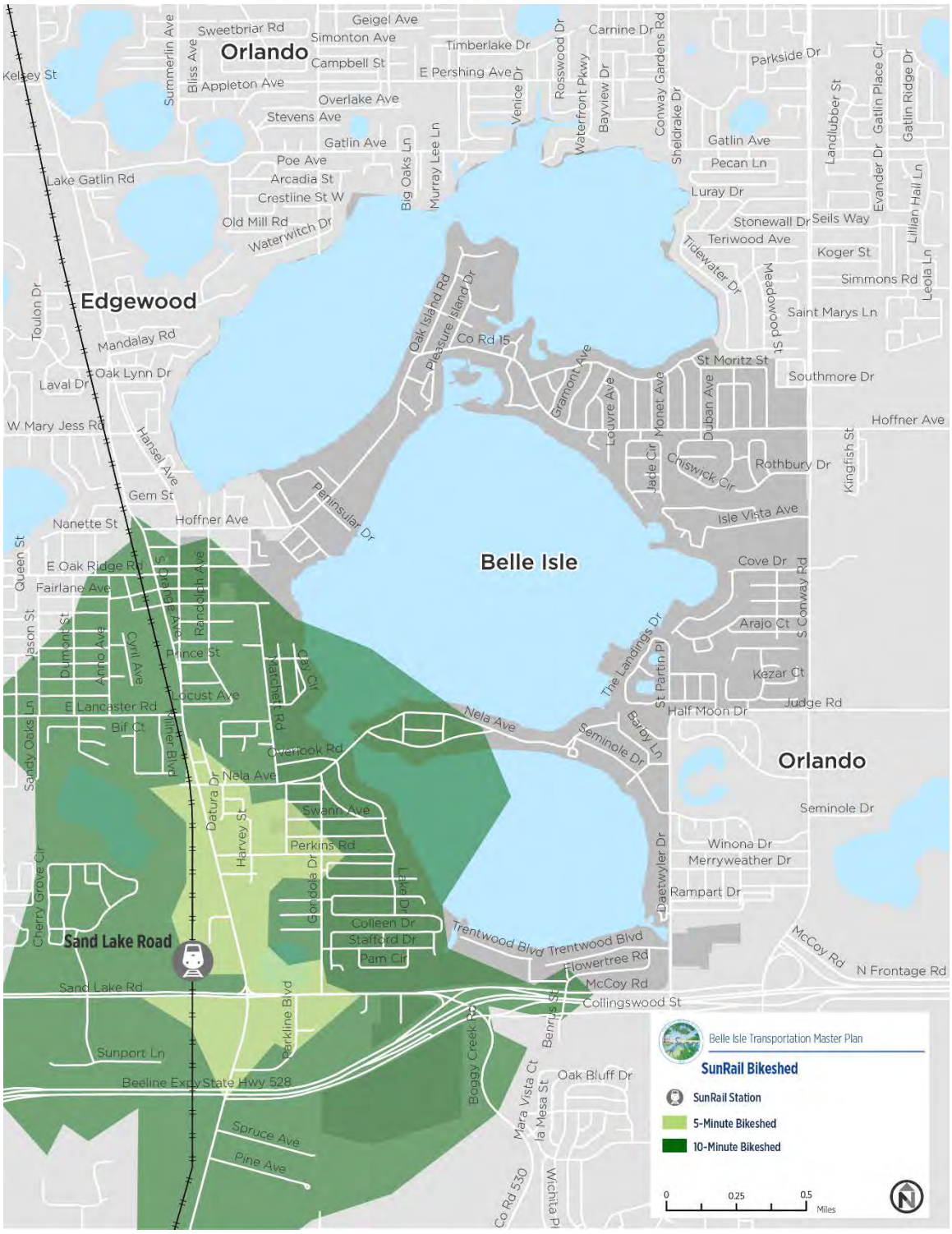


Figure 13 SunRail Bicycle Access



3 PUBLIC OUTREACH

The Transportation Master Plan was informed by a number of stakeholder and public outreach efforts. These efforts were intended to provide the project team with valuable insight and guidance from various local sources, including key municipal staff, local residents and employees, and business owners and managers with a stake in the City. The Project Team that oversaw this process consisted of staff from the City.

The stakeholder outreach activities conducted for this plan Outreach efforts included:

- Project Team Meetings
- A Public Workshop
- Stakeholder Interviews

PROJECT TEAM MEETINGS

The Project Team met for roughly bi-weekly phone calls. They also had three physical meetings - one as a kickoff to the project, another in conjunction with the Public Workshop, and a final in conjunction with the stakeholder interviews (see below). In addition to general project management tasks, the Project Team was responsible for confirming the goals of the study.

PUBLIC WORKSHOP

The Project Team held a public workshop, on June 21, 2018, that provided participants and team members with an opportunity for a more hands-on engagement with the plan. The public workshop gave the project team the opportunity to inform the public on the scope and progress of the plan and provided citizens with a forum to express issues and concerns, and share local knowledge, insight, and ideas with the Project Team.

Goal Setting

Through discussions with City staff and stakeholders, a set of goals were set for the project that were affirmed through the June 2018 public meeting. Of these, the primary goals identified by residents were as follows:

- *Transportation is safe for all residents and visitors whether driving, walking, or bicycling*
- *Residents can drive between destinations with minimal traffic congestion*
- *Residents can comfortably walk and bicycle to parks, schools, transit, and shopping areas.*

- *Belle Isle's streets are attractive and contribute to the beauty of the community.*

Public Comments

Public meeting attendees shared the common concern of the City being used by commuters and outside residents as a "cut through" town, specifically by way of Hoffner Avenue and Nela Avenue. Residents expressed that Nela Avenue and Hoffner Avenue are small, quiet roads by design, but "cut through" traffic makes both streets dangerous and congested. In the morning hours, as well as the hours of school drop-off/pick-up, traffic conditions intensify.

Residents expressed frustration with the difficulty of making turning movements onto or from Hoffner Avenue, citing the lack of proper markings, high speeds and traffic as issues. It was also noted that Hoffner Avenue is not bicycle/pedestrian friendly. Sidewalks are uneven, cracked, and narrow, poorly lit and very close to the road, with little buffer from moving traffic. Some attendees indicated concerns that Nela Avenue was being used as a cut-through route for regional traffic, contributing to higher traffic volumes and speeds.

Daetwyler Drive, McCoy Road, Judge Road, and Gondola Drive were also mentioned. They suffer from similar issues with traffic, speeding, and subpar sidewalks.

Figure 14 Residents Offering Comments on Cycling in Belle Isle

STAKEHOLDER INTERVIEWS

A selection of key stakeholders for the area was identified by the Project Team and City staff. These individuals were interviewed in small groups to gain valuable input on the area's needs. In total, 13 stakeholders divided into groups of residents impacted by identified target areas in the City provided input over the course of three meetings held November 12-13 2018. These target areas focused discussions on the Hoffner Avenue corridor, Nela Avenue/Seminole Drive corridor, and the Daetwyler Drive/Judge Road corridor in order to gain resident feedback on potential solutions under consideration by the project team.

4 GAP ANALYSIS

In order to provide recommendations that will effectively support a multimodal transportation network to accommodate growth and development in Belle Isle, it is critical to understand the existing conditions of the transportation network as discussed in Section 2. Doing so allows the project team to gain an understanding of the mobility options community members have at their disposal, and helps with the identification of network gaps that may exist.

Below is a review of specific gaps in the roadway, pedestrian, and bicycle networks in Belle Isle, as well as a summary of potential safety concerns that will be instrumental in the development of recommendations.

ROADWAY NETWORK

The vehicular network facilitates acceptable traffic flows throughout most of the study City. However, vehicular constraints exist in some locations as follows:

- **Hoffner Avenue** – As an arterial that accommodates traffic traversing the City from Conway Road and points east to Orange Avenue/Hansel Avenue that is constrained by neighborhoods, Hoffner Avenue experience peak hour congestion and is expected to continue to experience congestion in the future. Future plans for the road do not contemplate significant widening within the city limits due to the constrained nature of the corridor. However, the slower speeds associated with congestion along the corridor will improve the safety of pedestrians and cyclists.
- **Judge Road** – Particular peak hour congestion and queuing is experienced on the eastbound approach to the Judge Road/Conway Road intersection that is primarily due to limited eastbound left turn queuing space and traffic signal timing.
- **Perkins Road/Gondola Drive** – Peak hour vehicular cut-through traffic presents increased northbound left and eastbound right turning vehicles at Perkins Road/Gondola Drive intersection. Since only the Gondola Drive approaches to the intersection are stop controlled and wide curb radii exist on all corners of the intersection, vehicular turning speeds present safety concerns.

Vehicular capacity constrains are present on FDOT roadways that cross or border the city limits such as McCoy Road, Orange Avenue, and Conway Road that are due to more regional commuting patterns. Overall, possibility of significant traffic improvements are hindered by existing constraints and city limit boundaries.

As the future for development and multimodal travel in and surrounding the City is envisioned, special consideration should be made for block size. This will impact the density and efficiency of the roadway network, particularly in areas where annexation

may be contemplated. Smaller blocks create opportunities to distribute traffic, and lessen bottlenecks resulting in congestion.

Finally, allowing low speed vehicles (such as golf carts) on city streets has been previously considered by the Belle Isle City Council and could allow for the addition of another mode of travel that would have less environmental impact than single occupant vehicles.

WALKING

As noted in Section 2, most streets appear to have sidewalks on at least one side of the street. While the presence of sidewalks on one side of the street, or even the absence of sidewalks, is acceptable for many neighborhood streets, higher traveled roadways such as Hoffner Avenue and McCoy Road present areas where pedestrian accessibility is difficult. For instance, along Hoffner Avenue, restricted right-of-way in areas where sidewalk is present only along one side of the street presents challenges to providing a complete sidewalk infrastructure. There are other locations, such as those along McCoy Road east of Via Flora and at Daetwyler Drive where sidewalk infrastructure is incomplete.

Figure 15 Hoffner Avenue Unsignalized Crossing

Many corridors in Belle Isle include an inviting environment for walking, particularly along streets such as Nela Avenue, Seminole Drive, and many of the neighborhood streets. However crosswalk markings are limited along some streets. Unsignalized crossings, for example, allow the pedestrian network to be more useful as they limit travel distances and support desire lines (paths that pedestrians would like to travel were there not barriers like busy streets). Midblock crossing are already legal in the state of Florida, whether or not a crossing is marked; marked crossing increase safety for those already making these legal crossings and require motor vehicles to yield where gaps in traffic flow may be sparse. Such treatments would be particularly helpful on long corridors with few signalized intersections such as Hoffner Avenue.

Similarly, wide curb radii at some intersections provide for longer crossing distances for pedestrians while encouraging faster turning speeds for through vehicles. Locations such as those at the eastern Nela Avenue/Homewood Drive intersection and along Hoffner Avenue at the Conway Isle Circle and Lake Conway Shores Drive intersections, as well as others, present locations where wide curb radii encourage faster turns by vehicles that could be detrimental to pedestrians crossing in those locations.

Street trees and landscaping add visual interest, provide shade, and soften environments dominated by hardscapes. Belle Isle has a beautiful native tree canopy and many of Belle Isle's residential neighborhoods take advantage of this creating inviting and calming streetscapes. Commercial areas along McCoy Road and Orange Avenue/Hansel Avenue, however, have relatively few trees and tend to be dominated by parking in lots or on street. This exacerbates the impact of the region's hot summers and tends to hurry people through outdoor spaces pushing them indoors and should be contemplated in commercial areas currently within the city limits as well as those that may be considered for annexation.

BIKING

Belle Isle has a limited existing bicycle network but does offer some streets that provide low-stress alternatives to riding on higher traveled nearby regional streets. Where available, this can makes for a comfortable riding experience for bicyclists of all ages and ability levels and is a tremendous asset for the community as it forms the basis for a much broader City and county-wide bicycle network.

However, connectivity in Belle Isle is hindered by the barriers presented by its lakes, which are otherwise an incredible asset for its residents. While neighborhood streets and corridors such as Nela Avenue and Seminole Drive provide relatively comfortable biking conditions for cyclists, north-south connectivity on the east side of the City is limited to bicycle lanes along Conway Road, which can provide a somewhat daunting environment for novice cyclists given the high vehicular speeds on the roadway, and on-street or on sidewalks along Judge Road and Daetwyler Drive. East-west bicycle connectivity in the northern third of the city is also limited along Hoffner Avenue which is a more highly traveled vehicular route with narrow right of way in some areas that limits the ability for additional connectivity.

While bicycles are allowed to share streets, the lack of dedicated facilities means that few are willing to do so. In addition to a less-than-friendly street layout in some streets, the many curb cuts and undulating curves of some streets create more points of conflict and reduced visibility between motorists and bicyclists. Defining part of the right-of-way for bicyclists would create safe space for bicyclists and encourage more to

Figure 16 Cyclist Using Nela Avenue Sidewalk

consider this mode of travel.

Finally, the lack of physically designated bicycle routes contributes to a lack of clarity among users as to what routes cyclists should use to travel through the City. While some residents have developed regular cycling routes to circumnavigate Belle Isle, most cyclists are left to determine for themselves which routes are acceptable to cycle around the City.

TRANSIT NETWORK

The transit network serving locations within the city limits of Belle Isle are limited to a minimal number of LYNX bus stops near the periphery of the City along McCoy Road, Orange Avenue, Hansel Avenue, and Conway Road. LYNX routes serving these corridors provide those within walking distance access to the wider Orlando area, but the number and location of stops limits the accessibility of residents in the City.

The Sand Lake Road SunRail station provides commuter rail access just beyond the city limits, however, limited porosity between the southwest quadrant of the City and Orange Avenue requires circuitous pedestrian and bicycle routing if City residents try to access the station. Adequate bicycle and vehicular parking for existing conditions is provided at the Sand Lake Road station for residents wishing to park and use SunRail services.

Figure 17 Sand Lake Road Sun Rail Station

5 RECOMMENDATIONS

Citywide transportation recommendations take a "complete network" approach that recognizes that each corridor cannot be all things to all people. While every street in the network should accommodate as many modes as feasible, some streets will provide certain enhancements for one or two modes. When taken together, this provides an overall network that provides quality connections and mobility for all users.

RECOMMENDATIONS

This plan proposes a complete, connected network for pedestrians, low stress/"family-friendly" bicycle corridors, commuter bicycle networks, transit, and vehicles. Together, these networks provide a composite multimodal network that supports the goals of the plan:

- *Transportation is safe for all residents and visitors whether driving, walking, or bicycling*
- *Residents can drive between destinations with minimal traffic congestion*
- *Residents can comfortably walk and bicycle to parks, schools, transit, and shopping areas.*
- *Belle Isle's streets are attractive and contribute to the beauty of the community.*

The following sections describe recommendations for Belle Isle's transportation network in support of these goals.

Provide Complete Streets

Complete streets work for everyone in the community, regardless of their travel mode. A complete street network comprises a variety of street types that account for all users and create multiple safe and convenient ways for people to get around in a comfortable and integrated environment.

Complete streets support safety and community cohesion. They respect diversity and choice and make multiple transportation options viable. Complete streets enable those that do not drive to remain active and connected members of the community, whether they are too young or old, whether they have a disability, cannot afford a car, or simply choose not to drive. Complete streets also support the objectives of improved human and environmental health.

Belle Isle has made efforts to improve pedestrian and bicycle facilities, but the overall network favors the mobility of automobiles at the expense of other users. As the City

repaves and rebuilds its roadways, Belle Isle should take the opportunity to create or retrofit facilities to adequately accommodate pedestrians, bicyclists, and transit users.

- Adopt a complete street policy for Belle Isle.
    - Belle Isle should approach all planned transportation improvements and all planned development projects within the right-of-way as an opportunity to advance the value and objective of safety and complete streets.
    - Every street should safely accommodate all users.
    - Any street subject to major maintenance, rehabilitation, or reconstruction should provide safe accommodation for all users, of all abilities.
    - The means of accommodation should be appropriate to the street context and developed in consultation with local community stakeholders.
    - Capacity of transportation infrastructure (and potential impacts from proposed developments) should be judged from a multimodal perspective and not from a purely vehicular level of service standpoint.
    - The City should actively pursue regional, state, and federal funding opportunities to support complete streets improvements.
    - City agencies and departments should collaborate and coordinate with one another and adjacent jurisdictions to apply complete street principles and provide continuous networks.
    - Progress on complete streets should be measured in concert with the adopted measures of the Belle Isle Transportation Master Plan.

Provide a Safe and Accessible Pedestrian Network

Every street must provide for safe accommodation of pedestrian travel. On busy streets, the best practice is to provide buffered sidewalks on both sides, while streets with lower traffic volumes may only need a sidewalk on one side.

- Prioritize walking connections to transit stops, schools, and parks. Implement first-last mile walking connection to transit and prioritize access to transit stops.
- Support projects that improve pedestrian connectivity.
- Require new development or redevelopment to provide appropriate pedestrian connectivity within the site and to adjacent properties with existing development or future development potential.
    - On commercial sites, on-site sidewalks should connect the public sidewalk to building entrances along a legible and direct route.
- Improve pedestrian access to destination areas in the City.
- Improve pedestrian routes that connect students to schools.
- Maintain a sidewalk inventory.
- Establish a methodology for project prioritization and performance evaluation.

- Improve pedestrian access across major roadways that create barriers to connecting the network. Comply with all state and federal regulations including the Americans with Disabilities Act (ADA).
- Adopt a formal sidewalk policy requiring sidewalks on all new, reconstructed, or substantially rehabilitated streets that respond to local needs and community context.
    - All new streets should provide sidewalks on both sides of the street irrespective of anticipated traffic volumes unless explicitly designed as a shared street.
    - Sidewalks should be considered with every major maintenance, restoration or street reconstruction project. Sidewalks may be constructed independent of other street projects.
    - Recommended guidance for sidewalks is that streets with moderate to high vehicle volumes (5,000 or more vehicles per day) should have sidewalks on both sides of the street. Moderate volume streets should have a continuous sidewalk at least along one side; local streets (less than 5,000 vehicles per day) should have a sidewalk on at least one side of the street, unless specifically redesigned or actively managed as a shared street.
    - Sidewalks should be a minimum of 5 feet wide.
    - The sidewalk network should be continuous and connected. Curb ramps must be provided at street crossings.

Figure 18 Existing Daetwyler Drive Sidewalk

- Provide a buffer/parkway/amenity zone between sidewalks and curb or edge of pavement, with street trees planted and old growth trees retained wherever possible.
- Plant or retain canopy trees near the sidewalk to provide shade for people walking in the hot Florida climate.

Provide a Robust Network for Bicycle Travel

Despite having a year-round warm climate and relatively flat topography, bicycle mode share in Belle Isle is quite low compared to other modes and well below what has been demonstrated to be possible in many comparable communities throughout the United States. There is an active and engaged bicycle constituency in Belle Isle who have expressed a desire for greater accommodation and more support to increase the bicycle mode share. Increasing the bicycle mode share has the potential to reduce the growth of vehicle traffic and congestion, improve public health, and advance environmental goals.

A number of different factors can support bicycling as a viable mode choice. These include adequate provision of bicycle parking for both short term and long term users; bike share services; enhanced bicycle facilities; and building amenities for bicyclists such as bicycle storage, changing rooms, and showers.

Bicycle supportive policies and services should be integrated into the community's existing transportation policies to strengthen provisions for bicycle facilities and amenities. Policies should be flexible enough to allow for revisions over time as bicycle infrastructure and programming develops. Policies should be in coordination with a Complete Streets policy and proactively look toward the future for opportunities in technology and bicycle programming or systems.

Adoption of the following policies have become widespread:

- Create conditions that make bicycling more attractive than driving for trips of three miles or less.
- Coordinate with regional bicycle planning efforts.
- Fully integrate bicycles into ongoing local planning efforts.
- Further integrate support for bicycling into existing City policies.
- Adopt a plan for a system of bicycle facilities linking major destinations.
- Create, distribute, and regularly update a map of existing bicycle facilities and low-stress routes.
- Adopt bicycle facility design standards to ensure best practices in design and delivery of facilities.
- Adopt bicycle-supportive policies, including the provision of short- and long-term bicycle parking, showers, and changing facilities in non-residential developments.
    - This will be increasingly recommended as possible annexations and redevelopment opportunities arise.

- Improve and expand bicycle safety and education programs targeted at both drivers and cyclists.

Provide Effective Transit Connectivity

Transit service is most concentrated on the Orange Avenue, McCoy Road, and Conway Road corridors. Multiple LYNX routes converge around the Sand Lake Road SunRail station, just beyond the city limits. Given the potential for transit oriented development surrounding the Sand Lake Road SunRail station, planning to accommodate effective transit service will be critical as the City contemplates annexations and redevelopment opportunities. The potential for water taxi service was reviewed. However, given the privatized nature of the lakeshores within the City, public water transportation along the lakes would be difficult or inefficient from a cost perspective.

- Promote transit-friendly design features in new development and redevelopment projects.
- Expand ADA-accessible sidewalks and crosswalks serving bus stops.
- Encourage employers located near the Sand Lake Road SunRail station to provide transit subsidies or other transit incentives.

Provide for the Safe and Efficient Flow of Private Vehicles

Motor vehicle travel is and will continue to be the leading form of travel in Belle Isle. For many, commuting by private vehicle is the most convenient, if not the only viable mode. Prioritizing motor vehicle travel on some corridors recognizes the need to accommodate local residents and visitors and to provide efficient connections to regional networks, while acknowledging the limitations imposed by constrained rights-of-way and natural barriers within the City. Recommended improvements are not intended to invite or accommodate additional regional traffic through the City.

- Promote and support regional efforts to enhance vehicle performance of Orange Avenue.
- Promote safe speeds with traffic calming and design queues for slower speeds in more neighborhood settings.
- Improve safety for all travelers by improving congestion where possible in the City, including Judge Road and Daetwyler Drive.
- Coordinate with FDOT to optimize signal timings along McCoy Road to improve congestion.
- Consider allowing low speed vehicles (such as golf carts) on roadways within the city limits that are not within the jurisdiction of Orange County or FDOT[7].

[7] As of the publication of this plan, low speed vehicles (such as golf carts) are not allowed on Orange County streets, but are being considered by the Orange County Commission. Further consideration of this recommendation may be warranted given the decision made by the Orange County Commission.

IMPROVEMENTS AND IMPLEMENTATION

A set of physical improvements for implementation have been recommended to support the goals determined at the onset of the plan and the overall planning recommendations described above. These are summarized on Figure 19 and Figure 20.

Roadway Network

Widen Eastbound Judge Road Approach to Conway Road

Peak period queuing along eastbound Judge Road at Conway Road has impacted drivers with the demand for storage of eastbound left turning vehicles outpacing the capacity of the existing left turn lane. It is recommended that Judge Road be widened to allow for a three 11 foot lanes between Conway Road and Franconia Drive. This will allow for an additional 900 feet of storage for left turning vehicles at the Judge Road/Conway Road intersection.

New All-Way Stop at Gondola Drive and Perkins Road

The Gondola Drive/Perkins Road intersection currently operates under two-way stop control on the northbound and southbound Gondola Drive approaches. With this configuration eastbound and westbound traffic on Perkins Road does not stop. Congestion at the nearby Orange Avenue/McCoy Road/Sand Lake Road intersection combined with the presence of a traffic signal at the Gondola Drive/McCoy Road intersection has caused the Gondola Drive/Perkins Road intersection to see increased cut-through traffic. Vehicular volumes have been noted to be particularly increased on the eastbound Perkins Road approach to the intersection that can, at peak times, reach approximately 400 vehicles or more on this two-lane neighborhood street[8]. As such, it is recommended that all-way stop control be investigated for this intersection in an effort to improve safety conditions for drivers, pedestrians, and cyclists, as well as to reduce cut-through traffic along these neighborhood streets. This recommendation would need to be coordinated with Orange County given the city limit boundaries extend along the eastern edge of pavement on Gondola Drive and northern edge of pavement of Perkins Road, leaving the intersection itself primarily within Orange County's jurisdiction.

[8] Traffic volumes based on Orange County data collected May 4, 2018 which note 392-443 vehicles per hour on the eastbound Perkins Road approach to the intersection from 3-6pm.

Figure 19 Recommended Improvements (North)

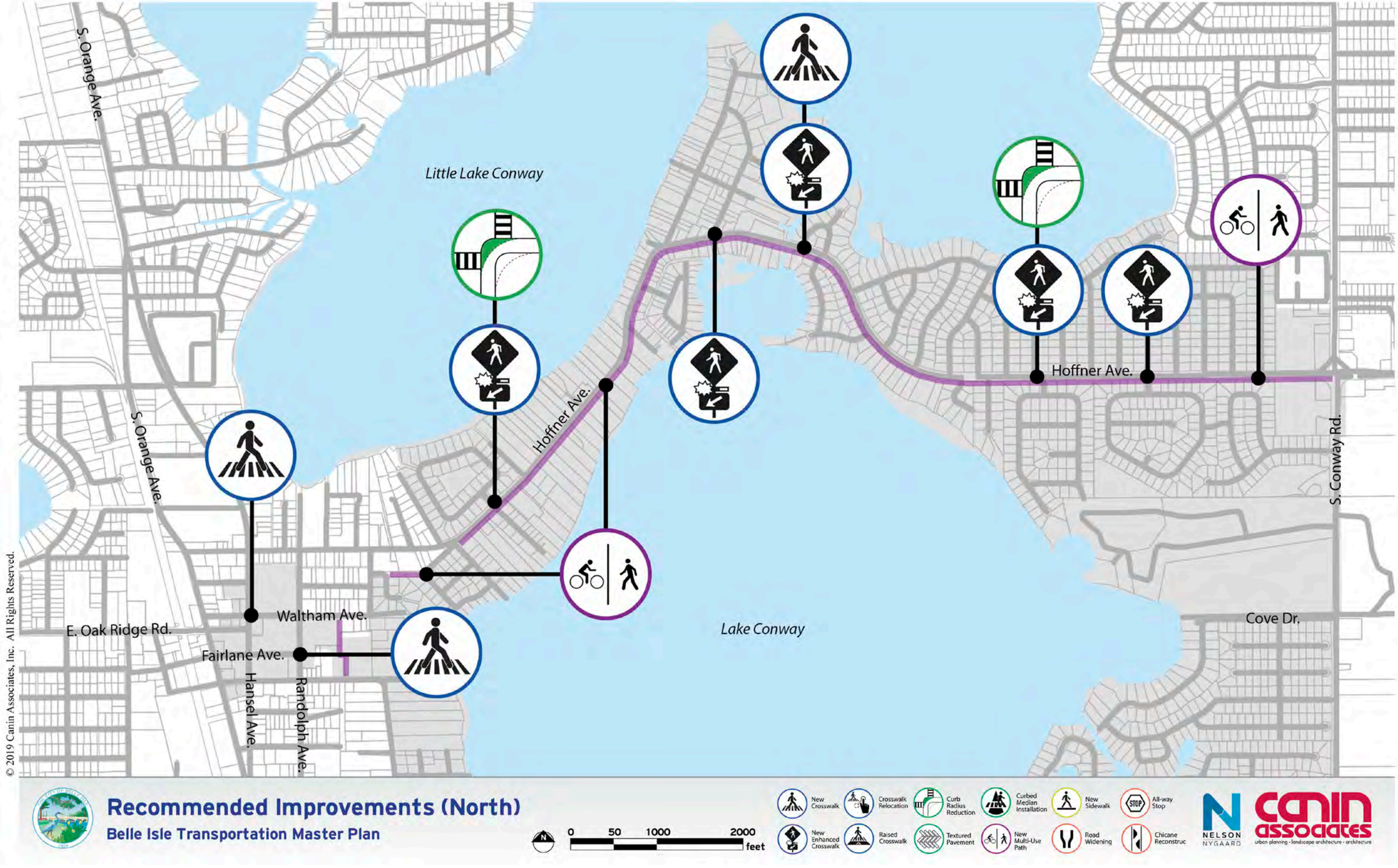
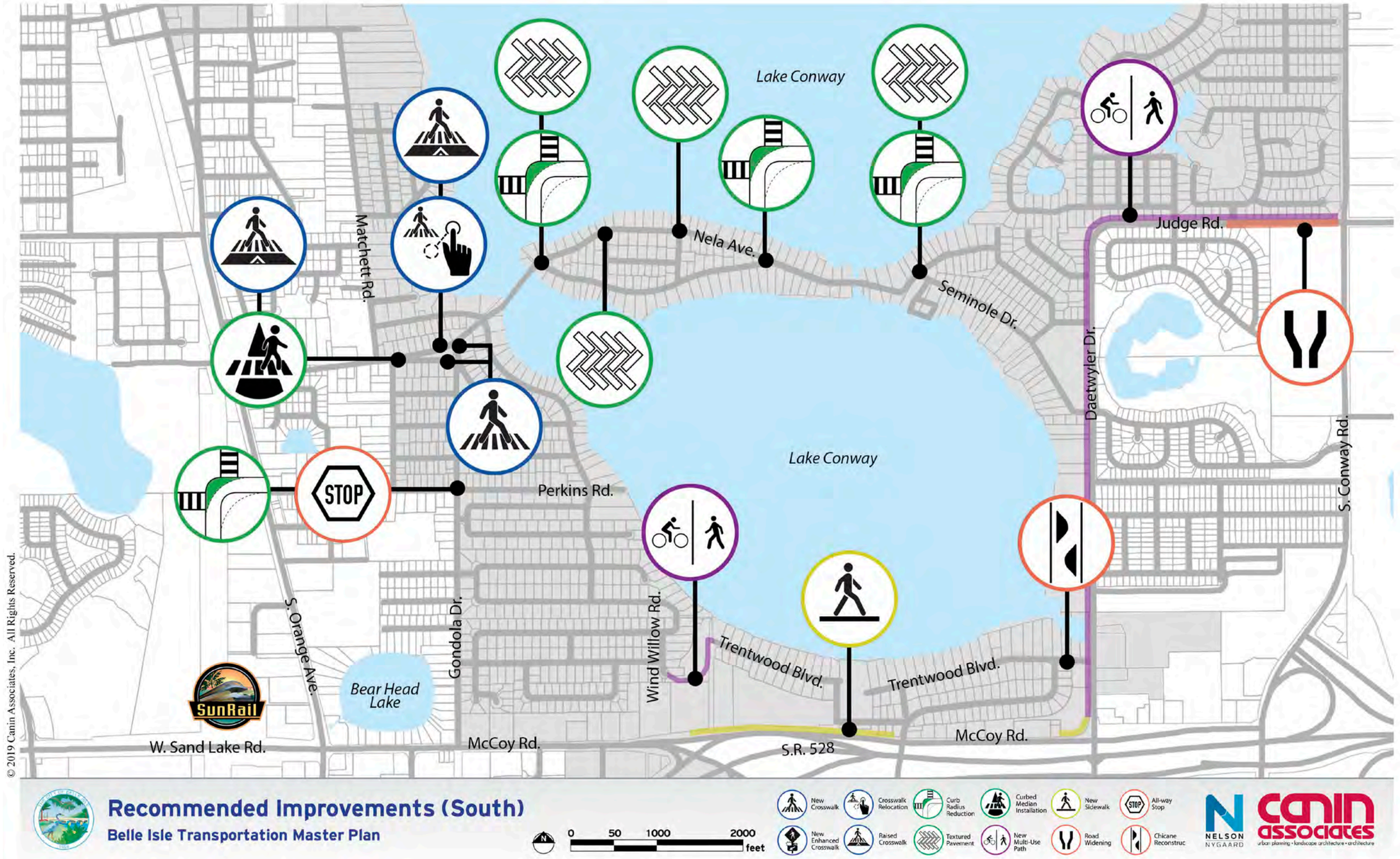


Figure 20 Recommended Improvements (South)



Traffic Calming

Traffic is calmed by adding "texture" to the right of way. This disrupts a driver's environmental certainty, forces them to pay attention, and to slow down and drive more cautiously. Traffic calming measures are not new to Belle Isle, having been implemented in several locations within the City in the form of speed humps, chicanes, raised intersection diverters, and a hybrid roundabout. However, improvements to some of these treatments would result in more effective implementation of traffic calming. These are described as follows:

Nela Avenue Intersections Textured Pavement

Textured pavement treatments are recommended along Nela Avenue at the existing stop-controlled intersections at Island Street, Easter Street, Homewood Drive (west), and Seminole Drive. This will increase driver awareness of speeds along Nela Avenue to complement existing traffic control measures along Nela Avenue.

Trentwood Boulevard Chicane

The existing chicane on Trentwood Boulevard between Daetwyler Drive and Flowertree Road is in poor condition and is recommended for redesign and reconstruction. Currently requiring oncoming vehicular traffic to yield to one another, the existing chicane has been designed too narrow such that many vehicles mount the chicane's curbs, causing damage to the chicane.

Reduced Curb Radii

Wide curb radii at the corners of intersections can invite drivers to turn through intersections at higher speeds, presenting potential hazards for pedestrians, cyclists, and other drivers. While Belle Isle contains many locations where curb radii wide, encouraging higher speed turns, recent NACTO design standards recommend curb radii of 10-15 feet. Given this, some specific locations are recommended for reductions in curb radii as follows:

- Hoffner Avenue/Conway Isle Circle/Peninsula Drive
- Hoffner Avenue/Lake Conway Shores Drive/Mortier Avenue
- Gondola Drive/Perkins Road
- Nela Avenue/Homewood Drive (west)
- Nela Avenue/Homewood Drive (east)
- Nela Avenue/Seminole Drive

Pedestrian Network

Sidewalk Needs

Sidewalks function as integral components of a pedestrian-friendly transportation network where pedestrians can experience safety, comfort, access, and efficient mobility. While Belle Isle generally provides an overall acceptable sidewalk network for its neighborhood context, some gaps exist along McCoy Road within the City that are

recommended. These include connecting the gap missing in the northwest quadrant of the Daetwyler Drive/McCoy Road intersection as well as missing sidewalks along the north side of McCoy Road between Via Flora and Boggy Creek Road. It is also recommended that these sidewalk links be designed to be adapted as shared-use paths for pedestrians and cyclists should the sidewalk infrastructure along the north side of McCoy Road be upgraded in the future given the difficult existing environment posed for cyclists in the bicycle lanes provided on McCoy Road.

Figure 21 Existing City Hall/Police Department Pedestrian Connectivity

In addition, while there are sidewalks within the area of City Hall, there are no sidewalks providing direct connections to City Hall. Currently, pedestrians are required to use a crosswalk that is marked within the vehicular path of opposite driveways for City Hall and the Police Department. It is recommended that sidewalks be constructed to along the south side of Nela Avenue (east of the City Hall driveway), the west side of Conway Circle (between Nela Avenue and Gondola Drive/Nela Avenue), and along the north side of south Nela Avenue to connect to a sidewalk that would bisect City Hall's property.

Crosswalk Improvements

Where crosswalks are marked, high-visibility crosswalk styles should be used. NACTO guidance suggests that high visibility markings be used at any locations where greater motorist warning is considered beneficial, or where pedestrians may not be expected to cross (such as mid-block locations), or where there are substantially higher pedestrian crossing volumes. High-visibility crosswalk styles typically fall into one of three general categories:

- Transverse (Solid, Standard, Dashed)
- Longitudinal (Continental, Ladder)
- Diagonal (Zebra)

NACTO guidance suggests that ladder, zebra, and continental crosswalk markings are more visible to approaching vehicles and have been shown to improve yielding behavior, and therefore are preferable to standard or dashed markings.[9]

[9] https://nacto.org/publication/urban-street-design-guide/intersection-design-elements/crosswalks-and-crossings/conventional-crosswalks/

Ladder and Continental crosswalks are most ubiquitous in Belle Isle and Orange County, providing a preferred high-visibility crosswalk style. It is recommended that crosswalks be at least 8 feet wide, or at least the width of the approaching sidewalk if the sidewalk exceeds 8 feet. Approaching sidewalks should also be free of obstruction to allow pedestrians to move freely across the intersection and ramps or paved landings (when no curb is present) should be provided on either side of the crosswalk.

Figure 22 High-Visibility Crosswalk Styles[10]

New or improved crosswalks are recommended at numerous locations throughout the City to improve pedestrian accessibility. Some additional locations have been identified for raised crosswalks to further act as traffic calming in addition to pedestrian safety measures. Overall, crosswalks have been specifically identified to improve pedestrian connectivity in three areas:

- Hoffner Avenue at:
  - St. Germain Avenue/Wandsworth Avenue
  - Lake Conway Shores Drive/Mortier Avenue
  - St Denis Court (west)
  - Pleasure Island Drive (improved, should this crosswalk remain)
  - Peninsula Drive/Conway Isle Circle
- Surrounding Cornerstone Charter Academy at:
  - Randolph Avenue/Fairlane Avenue (eastbound approach)
  - Hansel Avenue/Waltham Avenue (westbound approach)
- Surrounding City Hall at:
  - Gondola Drive/Conway Circle/Nela Avenue (eastbound appoach)
  - Conway Circle/Nela Avenue (northbound approach)
  - Nela Avenue/City Hall/Police Department (relocate and install raised crosswalk)
  - Nela Avenue/Matchett Road (construct median and raised crosswalk)

[10] Source: sfbetterstreets

Rectangular Rapid Flashing Beacon (RRFB) Crosswalks

Crosswalks enhanced with Rectangular Rapid Flashing Beacons provide on-demand flashing signal lights alerting drivers to a pedestrian crossing. Stop bars are provided where cars are to stop as if at a traditional traffic signal. RRFB signals are recommended at all midblock crossings along Hoffner Avenue to allow safe passage.

Currently the only signalized pedestrian crossings along Hoffner Avenue are at Conway Road and Hansel Avenue, approximately 2.75 miles apart from one another. Improving pedestrian connectivity in this area is necessary given the significant amount of residential development and lack of traffic control along Hoffner Avenue. RRFBs are recommended in conjunction with the crosswalks noted previously along Hoffner Avenue at the following:

Figure 23 RRFB Example

- St. Germain Avenue/ Wandsworth Avenue
- Lake Conway Shores Drive/ Mortier Avenue
- St Denis Court (west)
- Pleasure Island Drive (improved, should this crosswalk remain)
- Peninsula Drive/ Conway Isle Circle

Bicycle Network

Shared-Use Paths

Shared-use paths are pathways within a public right-of-way or easement that are designed to accommodate two-way non-motorized users, but are physically separated from motor vehicle traffic by an open space or a barrier. Users of shared-use paths typically include people riding bicycles and walking, as well as joggers, skaters and skateboarders, and scooter riders, to name a few.

The lack of east/west connectivity combined with resident input on the comfort level of biking on higher traveled corridors within the City such as Hoffner Avenue and Daetwyler Drive/Judge Road suggest these as corridors that should have upgraded facilities. As such, shared-use path are recommended as described below:

Hoffner Avenue Path

Hoffner Avenue is a key east/west connector along the north side of the City that is highly traveled by vehicles, resulting in uncomfortable conditions for cyclists on the corridor. While Hoffner Avenue has a wide right of way for most of the eastern portion of the corridor, the right of way narrows considerably between Conway Isles Circle and Oak Island Road along the western portion of the corridor, making the incorporation of bicycle lanes difficult.

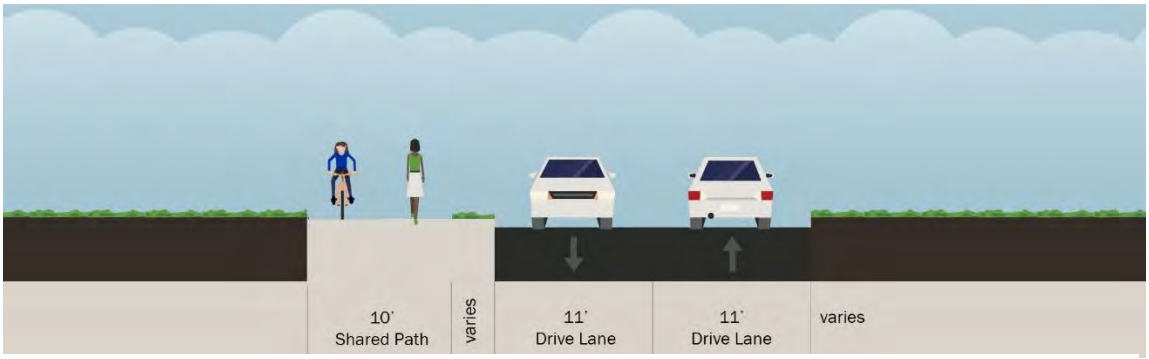


Figure 25 Hoffner Avenue (western section looking west) Cross-Section

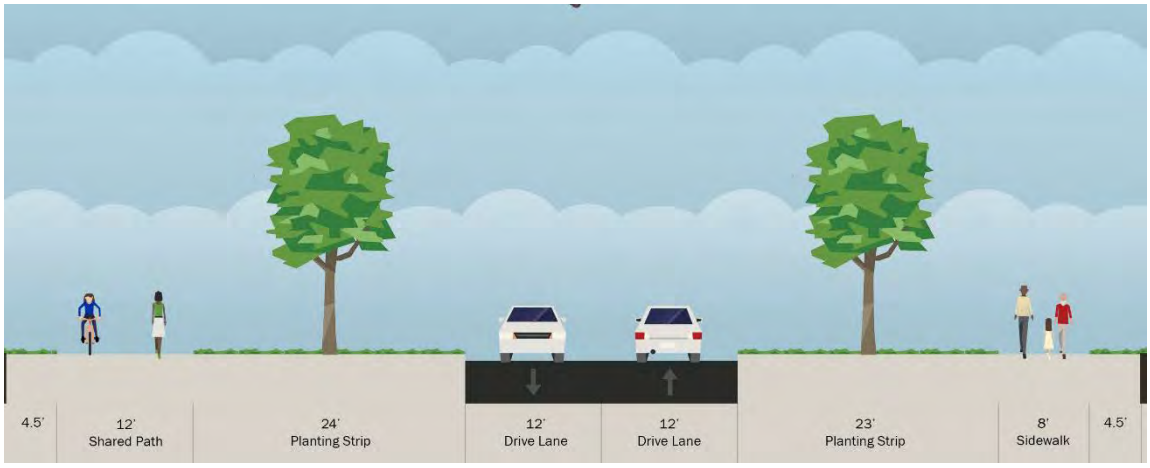


Figure 24 Hoffner Avenue (eastern section looking west) Cross-Section

As a result, it is recommended that a 10-foot wide shared-use path be constructed along the south side of Hoffner Avenue from Wilks Avenue to St. Denis Court as an upgrade the south side sidewalk. A dismount zone for cyclists is recommended as the path crosses the bridge over the canal linking Lake Conway with Little Lake Conway given the narrow nature of the existing pedestrian path alongside the bridge. This dismount zone could be reconsidered should the existing bridge be redesigned and reconstructed in the future. Beyond St. Denis Court to Conway Road, it is recommended that the shared-use path be constructed as a wider 12-foot upgrade to the south side sidewalk to take advantage of the wider right-of-way that is present on the eastern portion of the corridor. Further study of right-of-way impacts and the impact of potential utility and stormwater relocations will be necessary should this recommendation be designated for implementation.

Wilks Avenue/Windmill Court Connector

Approximately 400 feet of abandoned roadway right of way exists between Wilks Avenue and Windmill Court that is recommended to be repurposed as a 12-foot wide shared-use path to continue the east/west connectivity provided by the longer Hoffner Avenue shared-use path. Connecting lower traveled Wilks Avenue and Windmill Court (and nearby Marinell Drive), this connector would provide a vital link within the City of Belle Isle[11]. Coordination would be required with the residents of Windmill Terrace for the reconstruction of the brick neighborhood signage built across the right of way.

Waltham Avenue/Wallace Street Connector

It is recommended that a shared-use path be constructed to connect Waltham Avenue and Wallace Street, bisecting the City-owned parkland partially occupied by ballfields serving Cornerstone Charter Academy. This shared-use path would use the existing 10-foot wide sidewalk meeting Wallace Street adjacent to the Orange County Fire Rescue Station 70, extending it north between the existing softball field parking lot to connect to Waltham Avenue. Coordination may be required with Cornerstone Charter Academy to reconfigure fencing securing the school's portions of the property to allow access to the shared-use path.

Daetwyler Drive/Judge Road Path

Vehicular volumes along the Daetwyler Drive/Judge Road corridor make cycling uncomfortable on the roadway itself and while sidewalks exist along much of the corridor, they can be narrow for cycling purposes and are often placed close to fences and walls that can pose hazards for cyclists (such as along the north side of Judge Road). As a result, a 10-foot shared-use path is recommended along the north side of Judge Road and the west side of Daetwyler Drive to provide a vital link in the southeast quadrant of the City connecting existing bicycle lanes on McCoy Road and Conway Road as well as linking Belle Isle neighborhood streets with the larger regional bicycle network. Connection of the shared use path to the existing sidewalk along Conway

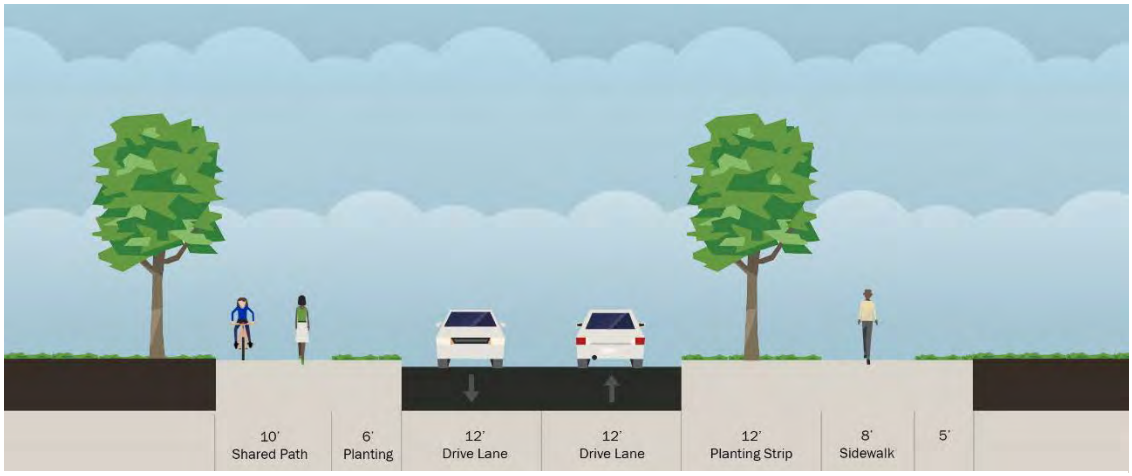


Figure 26 Daetwyler Drive (looking north) Cross-Section

[11] Alternatively the Hoffner Avenue shared-use path could be extended to Marinell Drive with coordination with Orange County, as this segment of Hoffner Avenue falls outside of the City of Belle Isle.

Road should be shifted away from the subdivision wall that the existing sidewalk currently follows. Finally, further study of utility and stormwater impacts as well as spacing of the shared use path at pinch points such as adjacent to the Waters Edge Drive and Franconia Drive intersection may need be necessary should this recommendation be designated for implementation.

Trimble Park Connector

An approximately 850 foot sidewalk exists within Trimble Park connecting Wind Willows Road and Trentwood Boulevard that is recommended to be repurposed as a 12-foot wide shared-use path to continue the east/west connectivity provided by neighborhood streets in the southern half of the City. Connecting lower traveled Wind Willows Road and Trentwood Boulevard, this connector would provide a vital link along the southern edge of the City of Belle Isle.

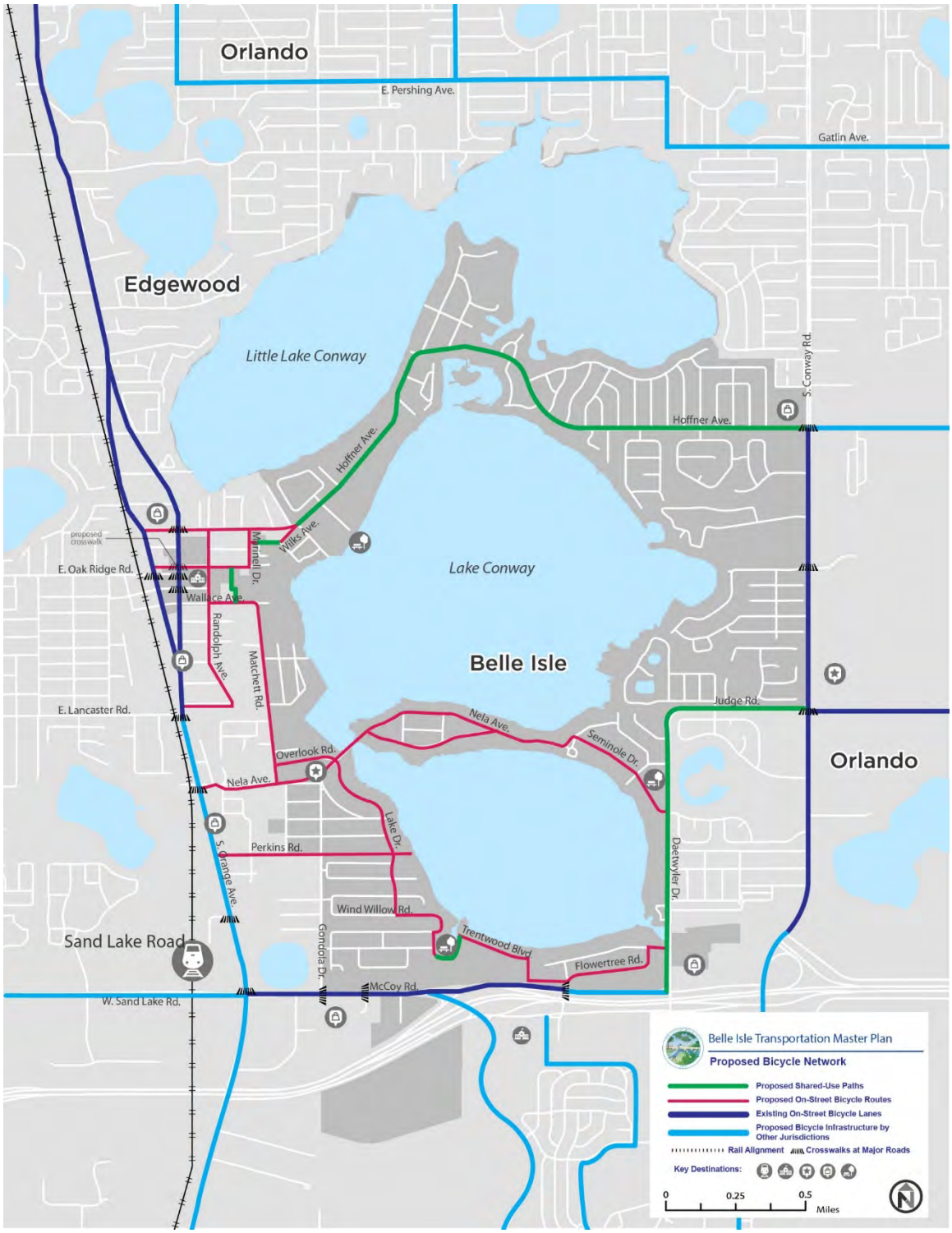
Potential Other Connectivity (Nela Avenue/Seminole Drive)

Additional shared-use facilities could be considered in the long-term for the Nela Avenue/Seminole Drive corridor between the Nela Avenue bridge and Daetwyler Drive. While right-of-way appears to exist to widen the existing sidewalk to accommodate a 10-12 foot wide shared-use path, the low speed and low traffic volume nature of Nela Avenue and Seminole Drive lends itself better to use as a bicycle boulevard with signing and striping for shared use of the roadway with bicycles in the near-term.

Bicycle Route and Wayfinding

A designated bicycle route within the City combined with wayfinding (directional signage) can play an important role in ensuring that bicycle riders can navigate the network options that may be available to them. New riders, who may not have adequate knowledge of the network, may have little tolerance for wayfinding errors when trying to figure out where to go. The development of a bicycle network map (as recommended on Figure 27) that is enhanced with wayfinding signs placed at or near important destinations, at bicycle network intersections, or other key decision making points will improve conditions for cyclists in the City. It is recommended that roadways along these bicycle routes that are designated for shared on-street bicycle usage be signed and striped for those roadways' shared nature.

Figure 27 Recommended Bicycle Network



6 GETTING IT DONE

The Belle Isle Transportation Master Plan seeks to create policies and projects to support future investments in the area by guiding the development of a multimodal transportation network that facilitates walking, bicycling, transit-use, and effectively manages vehicular demands. This section includes specific recommendations to implement and fund the solutions identified as a part of this plan.

Cost Estimates

The recommended major capital facility improvements by category and potential costs are shown in Figure 28.

Figure 28 Cost Estimates of Major Capital Facility Improvements[12] [13]

Type	Treatment	Estimated Cost
Road Widening	Judge Road widen from two to three lanes (900' between Franconia Drive and Conway Road)	$310,000
Sidewalks	McCoy Road/Daetwyler Drive Northwest Corner	$24,000
	McCoy Road from Via Flora to Boggy Creek Road	$121,000
	City Hall	$12,000
RRFB	Rectangular Rapid Flashing Beacons (per location)[14]	$25,000
Multi-Use Paths	Hoffner Avenue Path from Wilks Avenue to Conway Road	$650,000
	Wilks Avenue/Windmill Court Connector Path	$22,000
	Waltham Avenue/Wallace Street Connector Path	$15,000
	Daetwyler Drive/Judge Road Path from McCoy Road to Conway Road	$415,000
	Trimble Park Connector Path	$46,000

[12] Cost estimates are generally approximated for planning purposes based on FDOT Long Range Estimate models (except where noted): https://www.fdot.gov/programmanagement/estimates/lre/costpermilemodels/cpmsummary.shtm

[13] Cost estimates may fluctuate based on right-of-way acquisition, realignment of utilities, or other factors that are not included in these estimates.

[14] Adjusted estimate based on FHWA Pedestrian and Bicycle Information Center Costs: http://www.pedbikeinfo.org/cms/downloads/Countermeasure_Costs_Summary_Oct2013.pdf

Regional Coordination

Given Belle Isle's position within the Greater Orlando Metro area, coordination with adjoining jurisdiction and regional planning organizations is critical to the success of any transportation projects that may seek to improve the lives of City residents. This becomes increasingly critical as regional roadways serving Belle Isle (such as Orange Avenue, McCoy Road, and Conway Road) become increasingly congested and alternate forms of transportation such as SunRail, LYNX, and regional bicycle infrastructure is expanded. The location of Belle Isle's city limits along many roadways as well as ownership of many roadway facilities by other entities (such as Hoffner Avenue (Orange County) or Orange Avenue (FDOT) makes coordination required in order to provide transportation improvements in certain areas of the City. Regular participation and cooperation with MetroPlan Orlando, Orange County, FDOT, the Cities of Orlando and Edgewater, and other nearby governmental entities can further the visibility of Belle Isle's priorities.

Funding

There are many funding sources that can be used to support the Belle Isle Transportation Master Plan's implementation, including leveraging existing resources; local, regional, state, and federal grant funding opportunities; private funding; and partnership opportunities. While many of these funding sources are competitive—particularly the public grant sources—many cities have been very successful at competing for grant funds. By matching projects to the funding sources for which they are best suited (and for which they can be most competitive), the City can continue to use a variety of funding mechanisms to build projects and implement new programs.

This section is organized into public funding sources and private funding sources. The public sources are further categorized into local, regional, state, and federal programs.

Public Funding Sources

Public funding sources include local, regional, state, and federal funds and grant opportunities. The regional, state, and federal sources are distributed through regular funding competitions, and the amount available in a given year depends on a wide range of factors. It is expected that some of the projects identified will be competitive for public funding given the benefits they provide to specific communities and their focus on improving comfort and safety. Examples of these types of sources include Federal Highway Administration (FHWA) Safe Routes to School funding, Federal Transit Administration (FTA) funding through programs like the National Aging and Disability Transportation Center (NADTC), and FDOT funding for safety programs (also including Safe Routes to School).

Private Funding Sources

Private funding sources are increasingly used to supplement public funds, particularly in areas that are experiencing a great deal of growth and development. While private funding is most often the "last dollar in" for a project—rather than the seed money for an improved pedestrian crossing, for example—leveraging private investment is a powerful

way for cities to implement more projects and build stronger partnerships with community members.

Particularly as annexation and new development are contemplated, partnerships with local businesses can generate support and funding for projects in specific places or as a part of larger neighborhood initiatives. Projects funded through public-private partnerships may include green streets and pedestrian plazas, pedestrian tunnels, bike share programs, and multi-use trails. Working proactively with corporate stakeholders, which often occurs as a part of large redevelopment projects or within the scope of a specific community benefits agreement—can also lead to a partnership for funding projects.

Finally, a number of national foundations have begun to play important roles in supporting pedestrian infrastructure improvements and programming. National foundations that have funded urban health and active transportation investments in the recent past include the following:

- Bloomberg Philanthropies' Sustainable Cities and Initiative for Global Road Safety, respectively, grants aim to tackle climate change at the city and local level and reduce traffic deaths and injuries.
- The Kresge Foundation has supported planning (not construction) for bicycle and pedestrian facilities.
- Outside the Box is a grant program funded by Redbox and managed by the Online Computer Library Center (OCLC) in partnership with the Project for Public Spaces to support libraries and their communities in carrying out free, fun events in the public right-of-way to activate spaces.
- The Robert Wood Johnson Foundation funds projects and research related to the health impacts of active transportation and the built environment.
- Southwest Airlines' Heart of the Community Program grants provide financial and technical assistance to local community partners who seek to bring new life to public spaces and transform them into vibrant places that connect people and strengthen communities.
- The Surdna Foundation's Sustainable Transportation Networks and Equitable Development Patterns Grant supports efforts to boost sustainable transportation networks.

Development Fees

Some jurisdictions have implemented impact fees that can be used to fund various types of infrastructure. For example, a fee may be adopted for each peak hour vehicle trip that is generated by a new residential project. In most cases, this funding is combined with funds from other projects to establish a pool of money to construct the improvements that are on an adopted project list which can include projects that serve many travel modes. As part of approval for new projects, the City could require developers to fund or build infrastructure in right-of-way adjacent to their project.

Business Improvement Districts and Community Benefit Districts

Infrastructure can be funded as part of a local benefit assessment district, which is based on the concept that those who benefit from a service should help to fund it. One common example is the Business Improvement District (BID), where business owners pay directly into a common fund to provide improved infrastructure, support operations to maintain clean and safe streets, and enhance wayfinding and placemaking elements in the district. These districts may fund bike improvements along with ongoing maintenance, placemaking, and landscaping projects. This approach may become more applicable as the City contemplates annexation and/or with further development surrounding the Sand Lake SunRail station.