



Silver Star Road

Complete Streets & Concept Development

CORRIDOR STRATEGIES REPORT

June 2019

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Introduction

MetroPlan Orlando envisions a regional transportation system that safely and efficiently moves people and goods through a variety of options that support the region's vitality. In 2015, MetroPlan Orlando convened a Complete Streets Task Force to develop a *Complete Streets* policy that would guide the implementation of MetroPlan Orlando's vision for Central Florida.

The Silver Star Road Complete Streets Study provides an ideal opportunity to show how a Complete Streets approach can create streets that are safe for people of all ages and abilities, balances the needs of different modes, and supports local land uses, economies, cultures, and natural environments.

For more information regarding the existing characteristics and evaluation of alternatives for the study area, you can find the **Planning Context Summary Report** and the **Alternatives Evaluation Report** on MetroPlan Orlando's website.

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Complete Streets are planned, designed, constructed, operated, and maintained to safely and comfortably accommodate people of all ages and abilities, including pedestrians, cyclists, transit users, motorists, and freight and service operators.

Background

The MetroPlan Orlando 2040 Long Range Transportation Plan (LRTP) classifies Silver Star Road as a Regional Freight Corridor. The LRTP identified the corridor as needing four (4) lanes by the year 2040; however, the segment to the east along Starke Lake is potentially constrained by physical and environmental factors. By definition, constrained roads are those that cannot be expanded as necessary to alleviate congestion due to either physical or policy limitations, environmental concerns, or other factors.

Given the constraint to the east, a context sensitive, non-capacity improvement designed to improve traffic flow without adding lanes was determined to be a potentially viable option. A Complete Streets approach makes roadways more efficient for all road users.

Purpose and Need

The purpose of the project is to develop a multimodal transportation plan along Silver Star Road / Franklin Street (SR 438) from SR 429 to east of Bluford Avenue and Ocoee Apopka Road from the railroad tracks to north of Palm Drive that improves traffic operations and network connectivity, while enhancing community and development opportunities. *Figure 1* shows an aerial of the study area where this plan is anticipated. Based on deficiencies, issues, and concerns detailed in the **Planning Context Summary Report**, the purpose and needs are established as follows:

Improve traffic operations & network connectivity

- *Peak hour congestion*
 - *Limited accommodation of freight mobility to SR 429*
 - *Poor connectivity of Downtown Ocoee to the thoroughfare network*
 - *Lack of a safe and comfortable connection to the West Orange Trail*
 - *Lack of bicycle facilities in the area*
 - *Sidewalk gaps in the area along thoroughfares*
- needs

Enhance community & development opportunities

- *Limited development activity near Downtown Ocoee*
 - *Desire for enhanced aesthetics*
 - *To provide consistency with the Downtown Ocoee Master Plan*
- needs

Guiding Principles

Guiding Principles aid in the development of Evaluation Criteria and Performance Measures which help track and measure the effectiveness of alternative improvements evaluated. These principles were developed based on the existing conditions, purpose and need, and stakeholder input.

The Guiding Principles have been divided into three categories:



1. Traffic Operations & Network Connectivity
2. Community Enhancement & Economic Development
3. Ease of Implementation & Potential Impacts

Traffic Operations & Network Connectivity

	Maximize roadway network utilizing existing right-of-way
	Reduce congestion and improve movements on SR 438 and Ocoee Apopka Road
	Facilitate freight traffic while minimizing impacts to Downtown Ocoee
	Promote traffic calming and bicycle/pedestrian mobility
	Connect West Orange Trail to Downtown Ocoee and completion of the regional trail system

Community Enhancement & Economic Development

	Enhance connectivity to Downtown Ocoee
	Provide enhanced aesthetics and gateway opportunities to Downtown Ocoee
	Limit impacts to developable lands near Downtown Ocoee

Ease of Implementation & Potential Impacts

	Minimize commercial parcel impacts
	Minimize residential parcel impacts
	Avoid potential wetland / floodplain impacts
	Avoid potential impacts to contaminated sites

Figure 1/ Study Area Aerial



Public Involvement

Project Advisory Group

In order to understand the character of the Silver Star Road corridor and the community which this facility weaves through, a team of key stakeholders was assembled as a part of the Project Advisory Group (PAG). Invitations to this committee were sent to representatives from the jurisdictions and public agencies by the MetroPlan Orlando Project Manager. Additionally, members of the residential and business community, along with key neighborhood groups were invited to serve on this advisory committee.

The role of this group was to provide area context and background throughout the project, as well as serve as a voice for the community. The PAG first met in **May 2018** to review and provide input on the Planning Context Summary phase of this study. The PAG then met for a second time in **January 2019** to provide input on the Alternatives Evaluation phase.

Public Engagement Workshop

The Public Engagement Workshop was held in **March 2019** at the City of Ocoee Community Center. The workshop included exhibits of the Draft Concept Plans, illustrations of corridor typical sections, maps of existing conditions from the **Planning Context Summary Report**, and traffic simulation videos. Comment cards were provided for the public to provide input on the material presented. Overall, the public supported the Enhanced Grid project recommendation discussed in the next section.



Regional Partners

In **Summer 2018**, the project team presented an overview of the study process, purpose and need, guiding principles, evaluation criteria, key issues and opportunities, the alternatives developed, and the recommended alternative to the Florida Department of Transportation staff. FDOT supported the recommended alternative.

Elected Officials, Committee, and Board Meetings

In **April and May of 2019**, the project team presented an overview of the study process, purpose and need, guiding principles, evaluation criteria, key issues and opportunities, the alternatives developed, and the recommended alternative to the City of Ocoee Commissioners, MetroPlan Orlando Community Advisory Committee, Technical Advisory Committee, and the MetroPlan Orlando Board. At each meeting, support was given for the recommended Enhanced Grid alternative.

Figure 2| Public Meeting Photos



Recommended Alternative

Based on the alternatives and criteria described in the **Alternatives Evaluation Report** found on the MetroPlan Orlando website, the **Enhanced Grid** (*Figure 3*) best meets the purpose, needs, and guiding principles established for this study. This alternative is consistent with the City's Vision, the Context Sensitive Approach, and the understanding that multiple routes through the community will better serve traffic, non-motorized users, and transit over a conventional arterial approach.

Network Connectivity & Traffic Operations

The success of this alternative relies on the peak hour traffic performance at intersections. Peak hour performance at intersections is a more specific measure of effectiveness than segment analysis.

Several methods are utilized in this concept including alternative routing, reallocation of existing movements, and improvements to the overall network, to provide the appropriate solutions for the study area to promote east-west movements on SR 438 and north-south movements on Ocoee Apopka Road.

By dispersing traffic over multiple corridors, it is anticipated that each corridor will require fewer lanes when compared to the other alternatives. Fewer lanes can provide a more comfortable environment for pedestrians and bicyclists. In addition, with less space allocated towards additional lanes, the potential extension of the West Orange Trail along Franklin Street into downtown Ocoee can be accommodated in the existing ROW.

Furthermore, the Ocoee roundabout at Taylor Street and Franklin Street can continue to be designed as a single lane roundabout.

Community Enhancement & Economic Development

The **Enhanced Grid** alternative best supports connectivity to downtown Ocoee by providing improved access to the existing downtown area when compared to the existing conditions. Economic development is supported by providing new easily

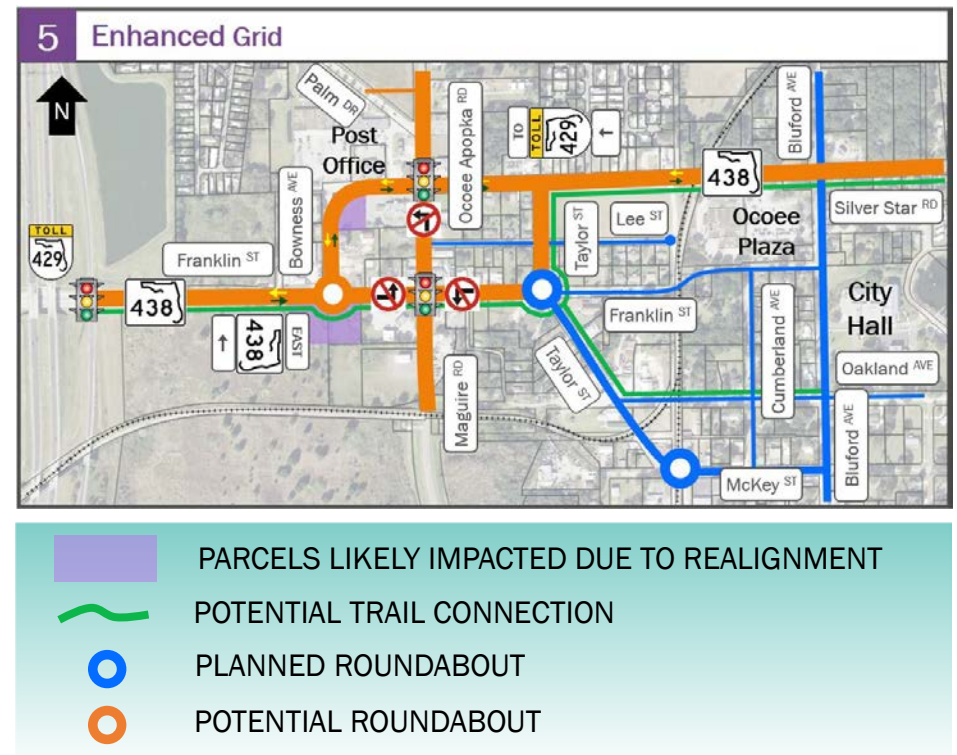
accessible redevelopment opportunities north of Silver Star Road and west of Ocoee Apopka Road. City of Ocoee gateways could be placed at the Franklin Street roundabout at Bowness Avenue and along the West Orange Trail extension.

Furthermore, the planned development of Ocoee Village located along Franklin Street west of Bowness Road and the large developable parcel along Silver Star Road between Taylor Street and Kissimmee Avenue would not be significantly impacted with this alternative.

Ease of Implementation & Potential Impacts

This alternative succeeds in minimizing commercial and residential parcel acquisitions while also avoiding excessive environmental and contaminated site impacts. Therefore, it is anticipated that this alternative would be the least difficult to implement.

Figure 3/ Enhanced Grid Recommended Alternative



Concept Overview

The overall network of improvements is shown in *Figure 4*. Recommended improvements along state roadways follow the FDOT Design Manual and FDOT Standard Plans. Improvements along non-state roadways follow the Florida Greenbook. All improvements meet the American Association of State Highway and Transportation Officials (AASHTO) guidelines and criteria.

Accommodating All Users

The **Enhanced Grid** alternative best meets the vision of Ocoee's *Downtown Master Plan* by creating additional corridors that are pedestrian, bike, and transit friendly. By creating a safe environment for non-motorized users and accommodating freight away from the core of downtown Ocoee, this alternative supports active modes of transportation. To support these choices, the transit service NeighborLink should continue to be provided by LYNX.

Sidewalks have been incorporated into all roadway improvements in the study area (*Figure 5*). In addition, bicyclists have been accommodated by the extension of the West Orange Trail, on-street buffered bicycle lanes, protected bicycle lanes, and sharrows where limited right-of-way is available (*Figure 6*).

Bowness Avenue Extension

There is potential for a roundabout at Bowness Avenue and Silver Star Road if it is determined that an extension of Bowness Avenue to Palm Drive and Ocoee Apopka Road is desired in the future.

Figure 4/ Overall Concept Plan





Figure 5| Proposed Sidewalks in Study Area

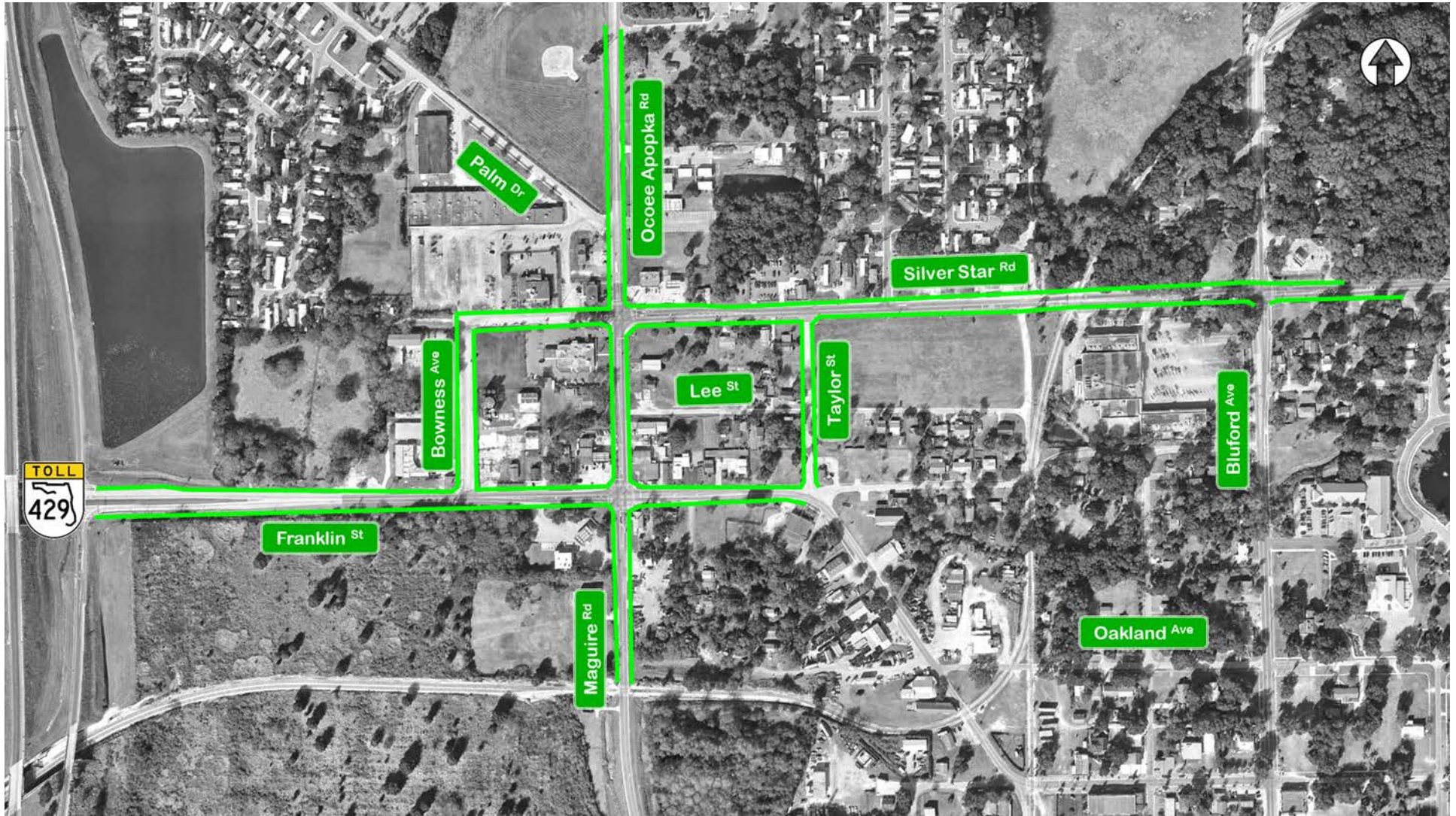
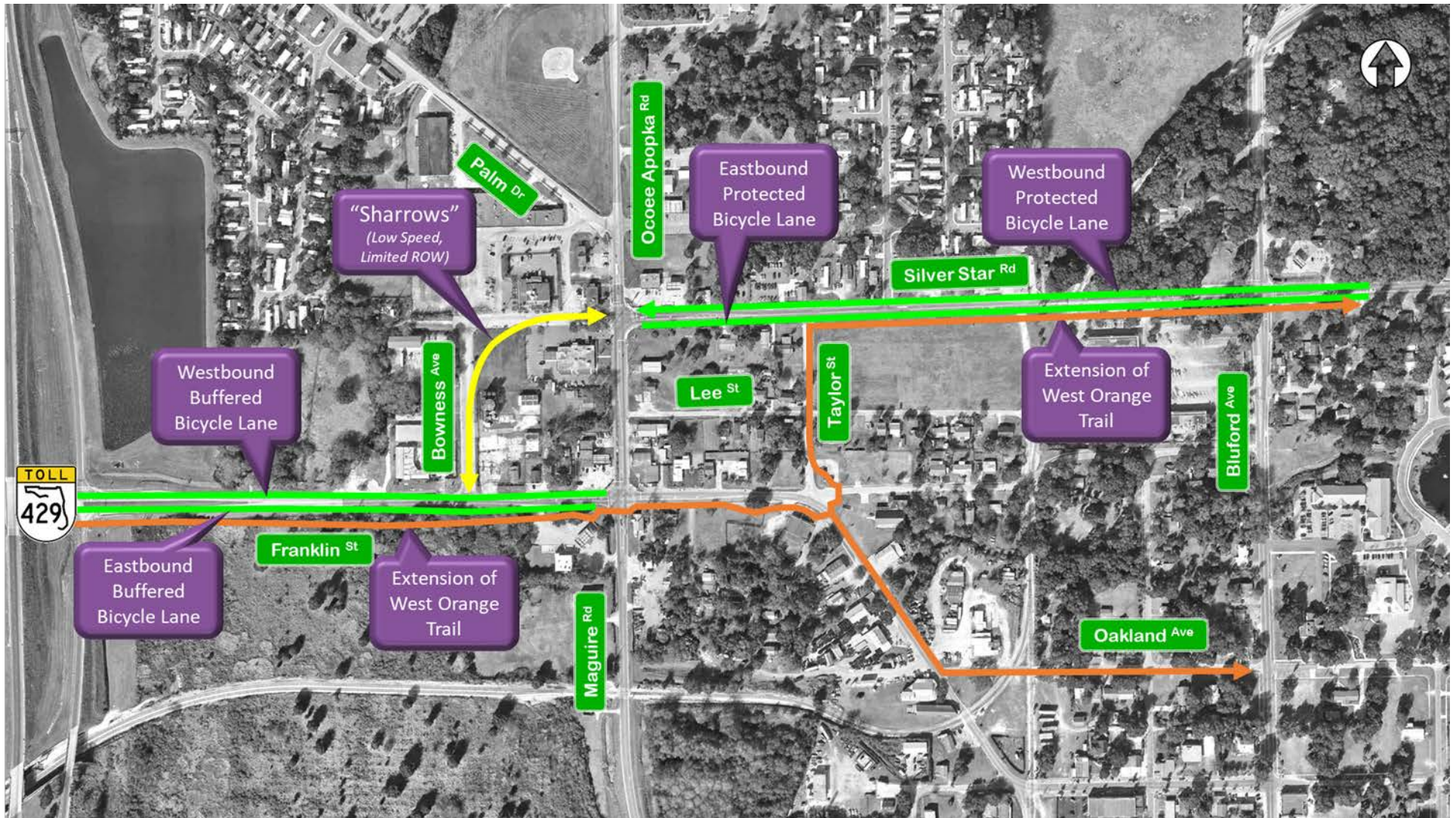


Figure 6| Proposed Bicycle / Trail Network in Study Area



Ocoee Apopka Road / Maguire Road

Railroad Tracks to North of Realigned Palm Drive

Ocoee Apopka Road is proposed to have two northbound lanes while maintaining one southbound lane. Improvements would include new sidewalk, and curb and gutter (*Figure 7*). In order to improve intersection operations and provide landscape opportunities, the recommendation is to restrict the northbound Ocoee Apopka Road left turn to Silver Star Road. A raised median between Franklin Street and Silver Star Road is also proposed for access management and to improve safety. Additionally, the median provides a gateway opportunity to the city.



Figure 7| Ocoee Apopka Road / Maguire Road Typical Section

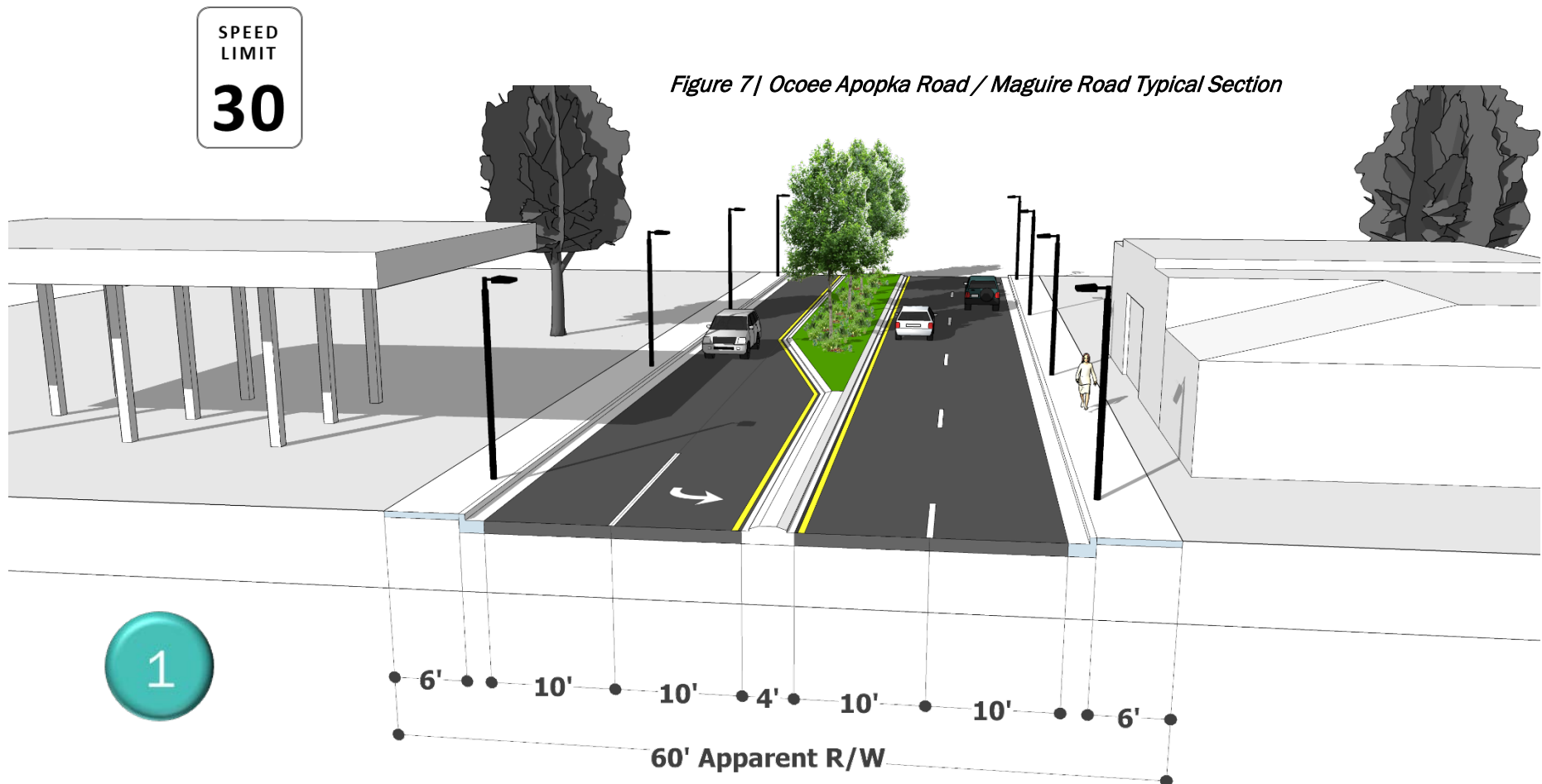


Figure 8| Concept Plan - Ocoee Apopka Road between Franklin Street and Silver Star Road

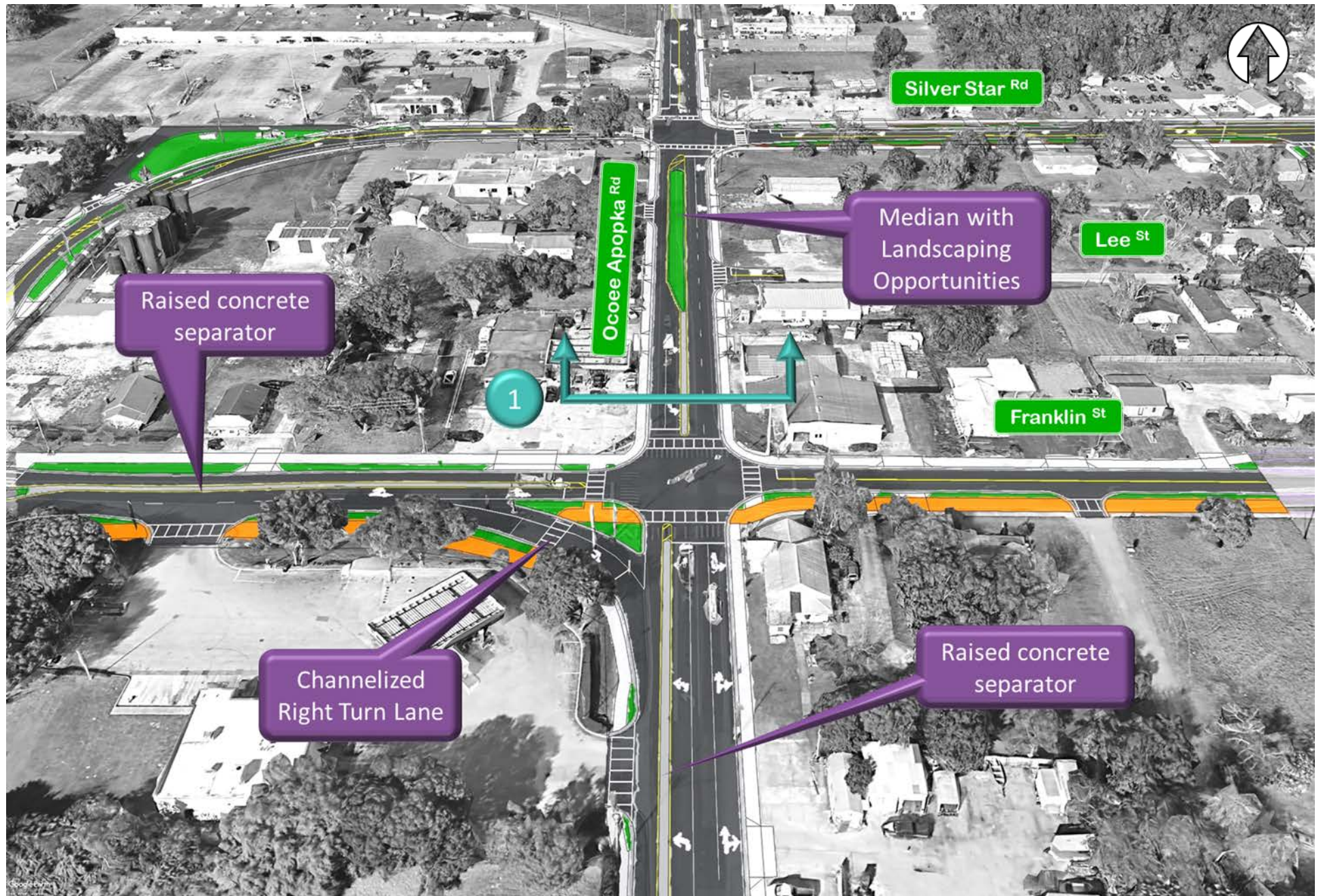


Figure 9/ Concept Plan – Maguire Road south of Franklin Street

Beginning north of the railroad tracks on Maguire Road, it is proposed to widen to two northbound lanes while maintaining one southbound lane.

Palm Drive Realignment

North of Silver Star Road, the two northbound lanes will merge to one past the realigned Palm Drive. The realignment of Palm Drive is considered an important part of the recommended alternative. The realignment allows for proper left turn lane storage along Ocoee Apopka Road at Palm Drive and Silver Star Road.

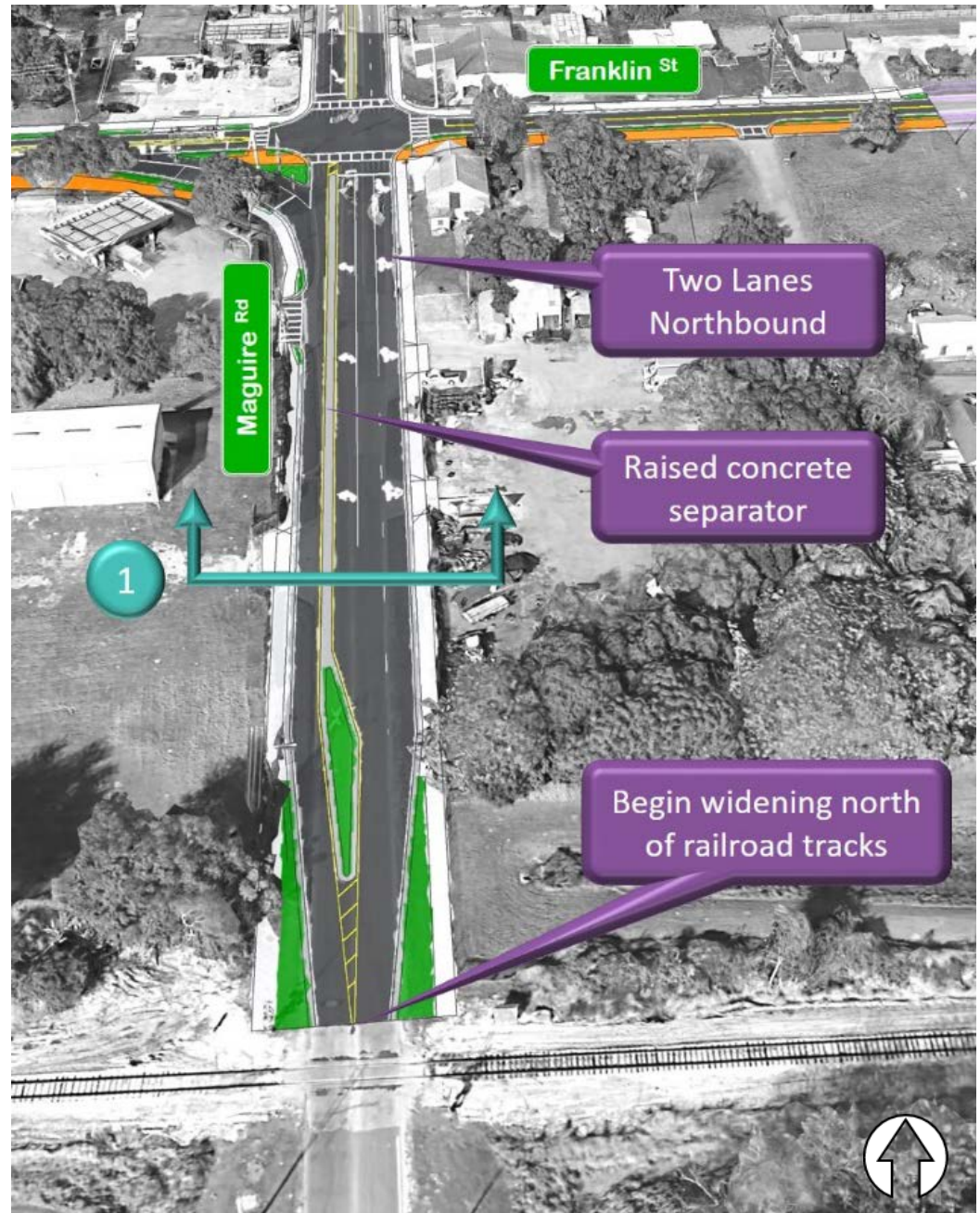
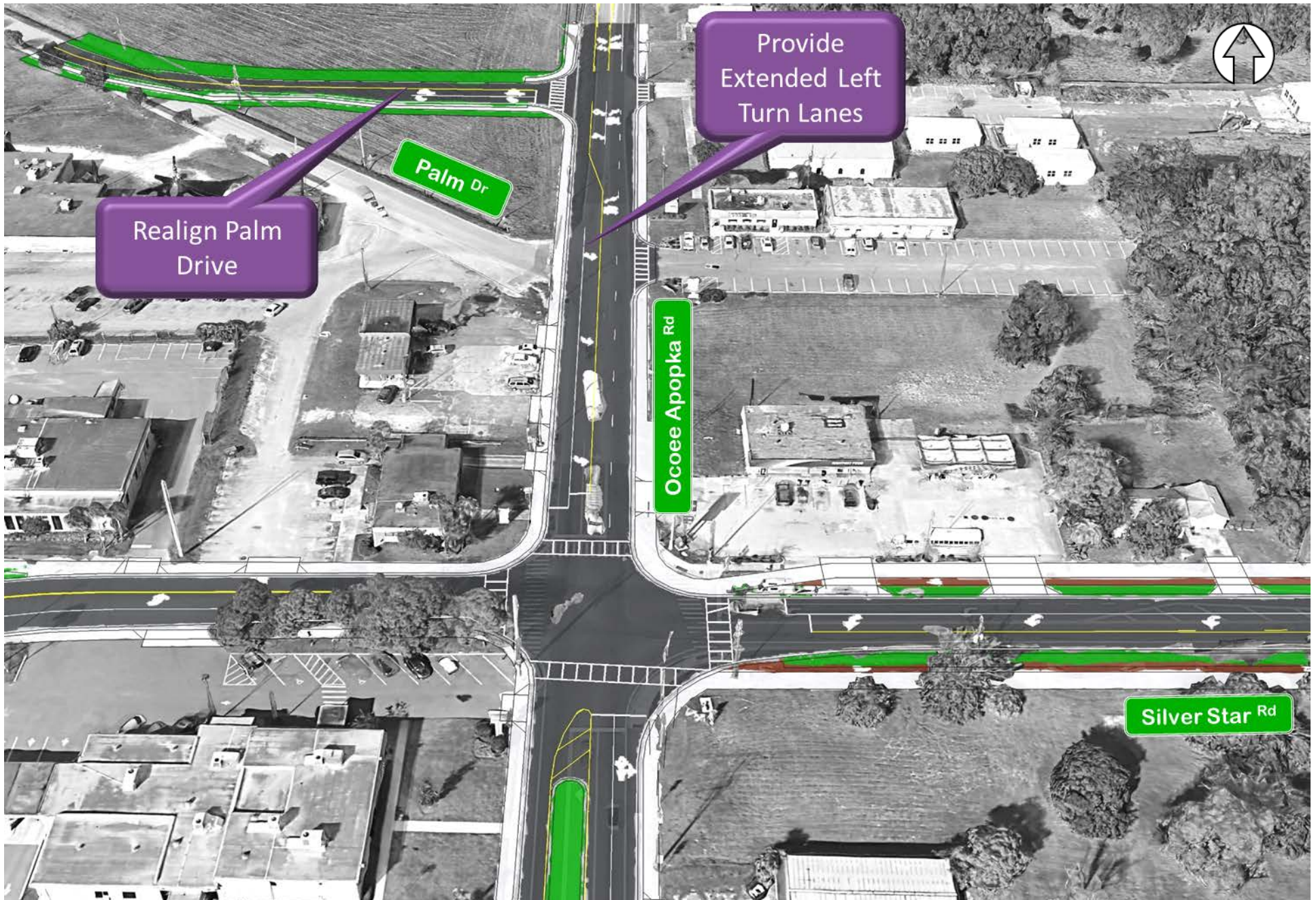


Figure 10| Concept Plan - Ocoee Apopka Road north of Silver Star Road



Franklin Street

SR 429 Ramps to Ocoee Apopka Road

Beginning at the SR 429 ramps, it is proposed that Franklin Street will consist of a four lane divided curbed roadway with a 12-foot shared use path (the extension of the West Orange Trail) on the south side (**Figure 11**). Approximately 30-feet of frontage right-of-way on the south side would be required in order to fit the proposed typical section to Ocoee Apopka Road. At the intersection with Ocoee Apopka Road, a channelized right turn lane with pedestrian refuge island is proposed to accommodate the heavy truck movement and trail crossing. Turning restrictions onto Ocoee Apopka Road would include no westbound left turns and no eastbound left turns. In addition to the trail, a 7-foot buffered bicycle lane would be included in both directions.

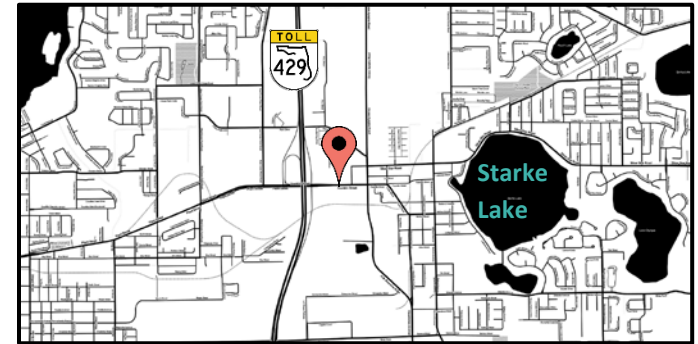


Figure 11/ Franklin Street Typical Section

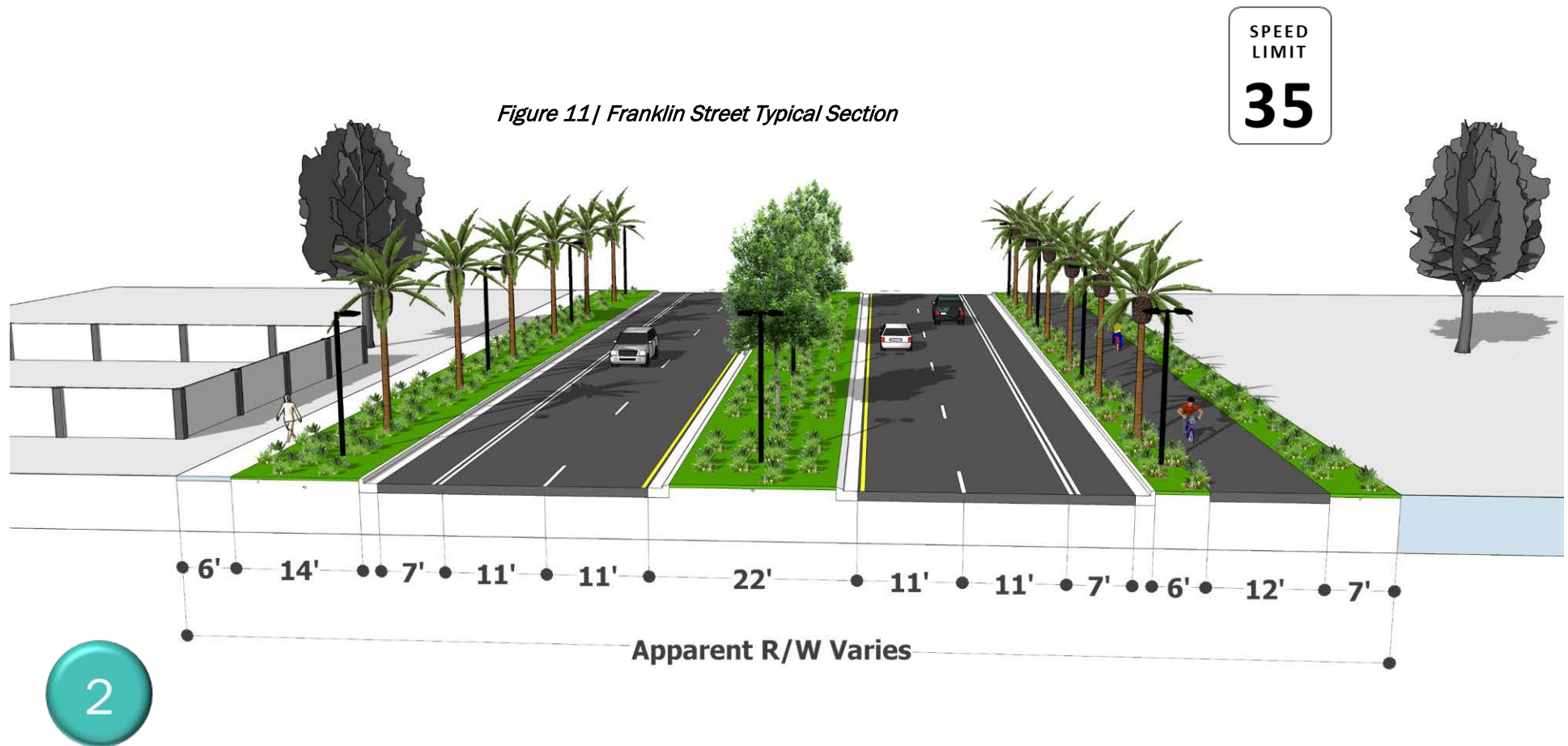
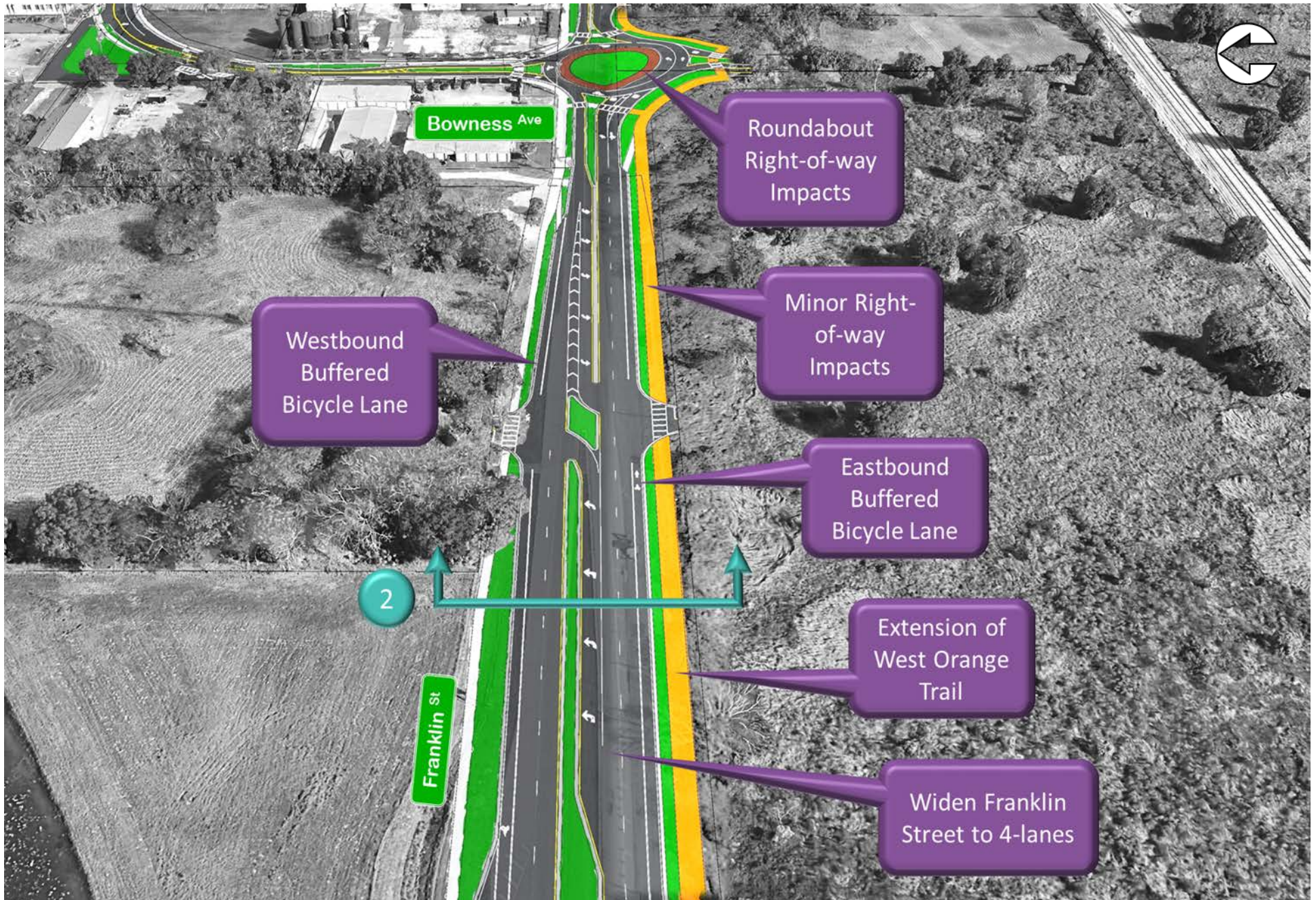


Figure 12| Concept Plan – Franklin Street west of Bowness Avenue



Bowness Avenue

Franklin Street to Silver Star Road

Bowness Avenue is proposed to be a two lane curbed roadway with sidewalks (*Figure 13*). The intersection of Bowness Avenue with Silver Star Road would be realigned with a curve in order to provide a continuous movement to and from Bowness Avenue and Silver Star Road. The modern roundabout on Franklin Street at Bowness Avenue accommodates travel in all directions. A modern roundabout is a circular intersection in which traffic travels counterclockwise around a central island, and entering traffic must yield to circulating traffic. In addition, access to the businesses near the intersection of Bowness Avenue and Silver Star Road would be maintained with a frontage street.

As a future consideration, there is potential for the extension of Bowness Avenue north to Palm Drive and Ocoee Apopka Road. If this is desired and implemented, the location of the proposed curve of Silver Star Road and Bowness Avenue would be converted to a modern roundabout.

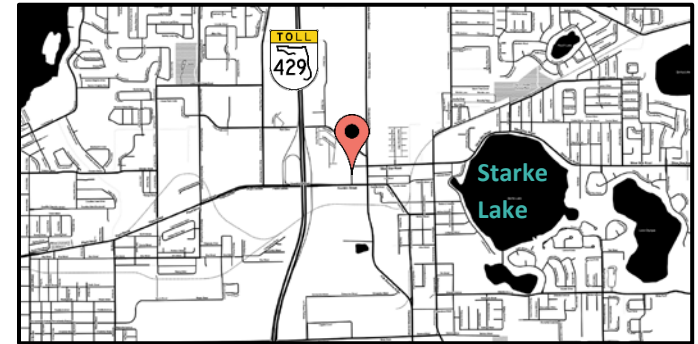


Figure 13| Bowness Avenue Typical Section

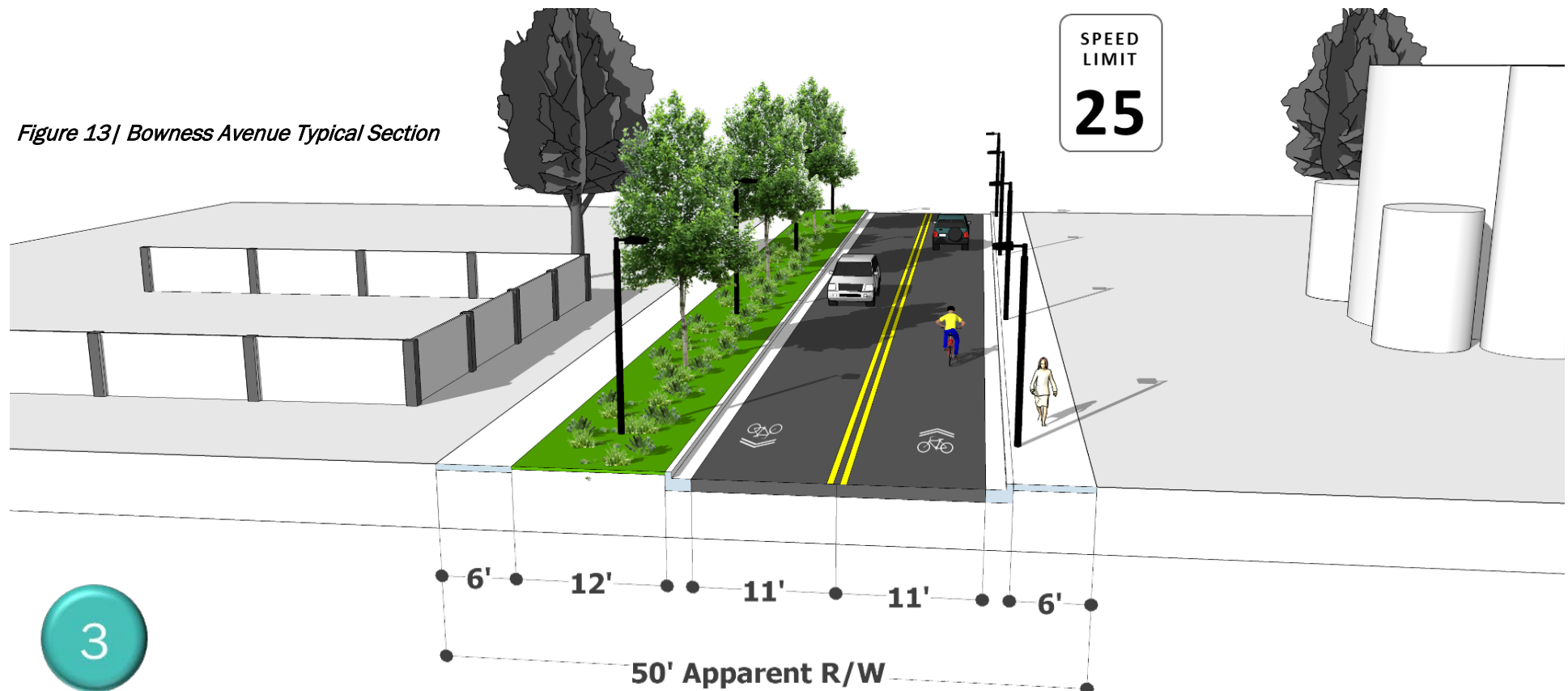
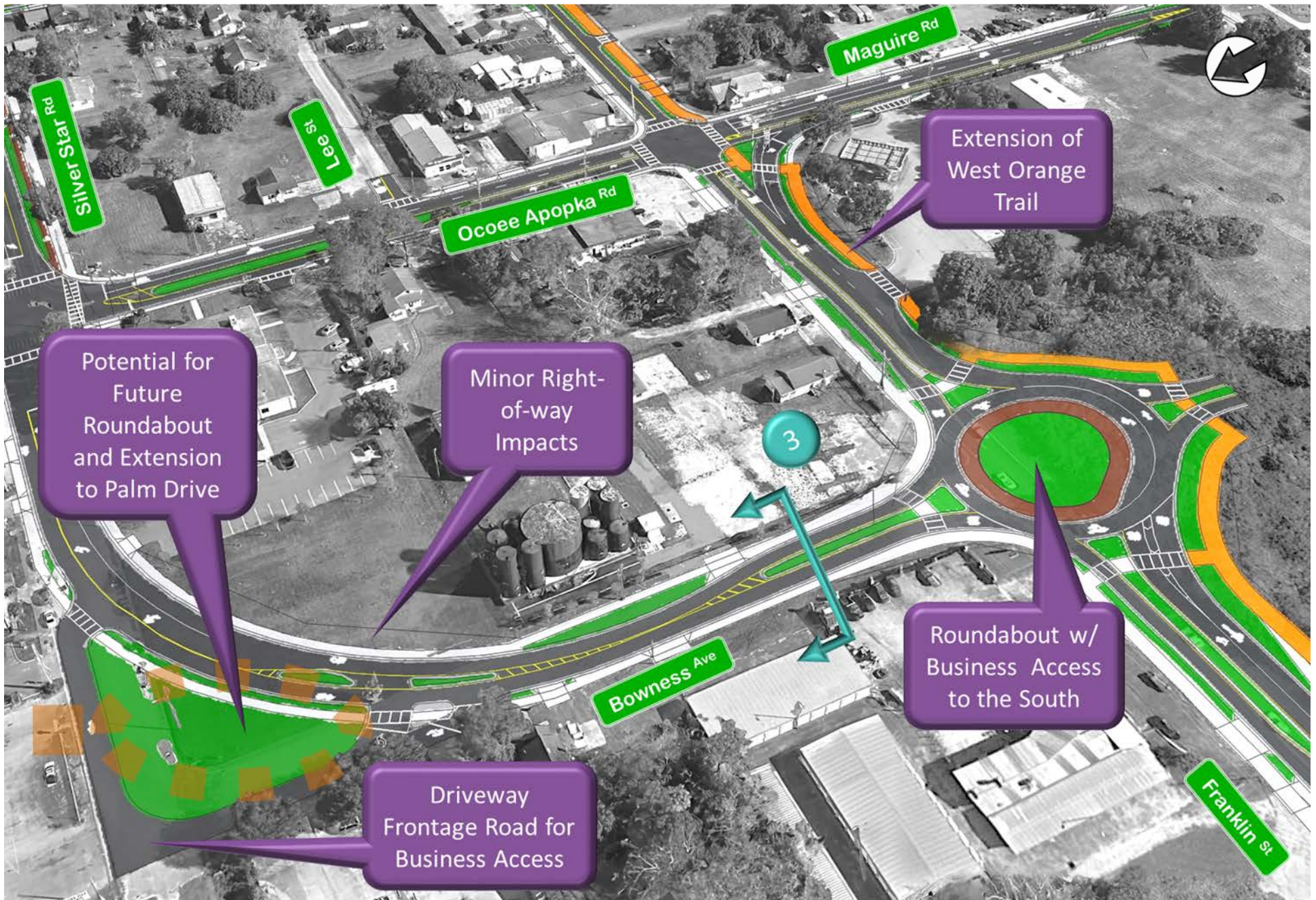


Figure 14| Concept Plan – Bowness Avenue to Silver Star Road Realignment



Franklin Street

Ocoee Apopka Road to Taylor Street

East of Ocoee Apopka Road, Franklin Street is proposed as a two lane curbed roadway. The proposed improvements tie into the City of Ocoee roundabout at Taylor Street that is currently in the design phase. The typical section shown below applies to both Franklin Street east of Ocoee Apopka Road and Taylor Street.

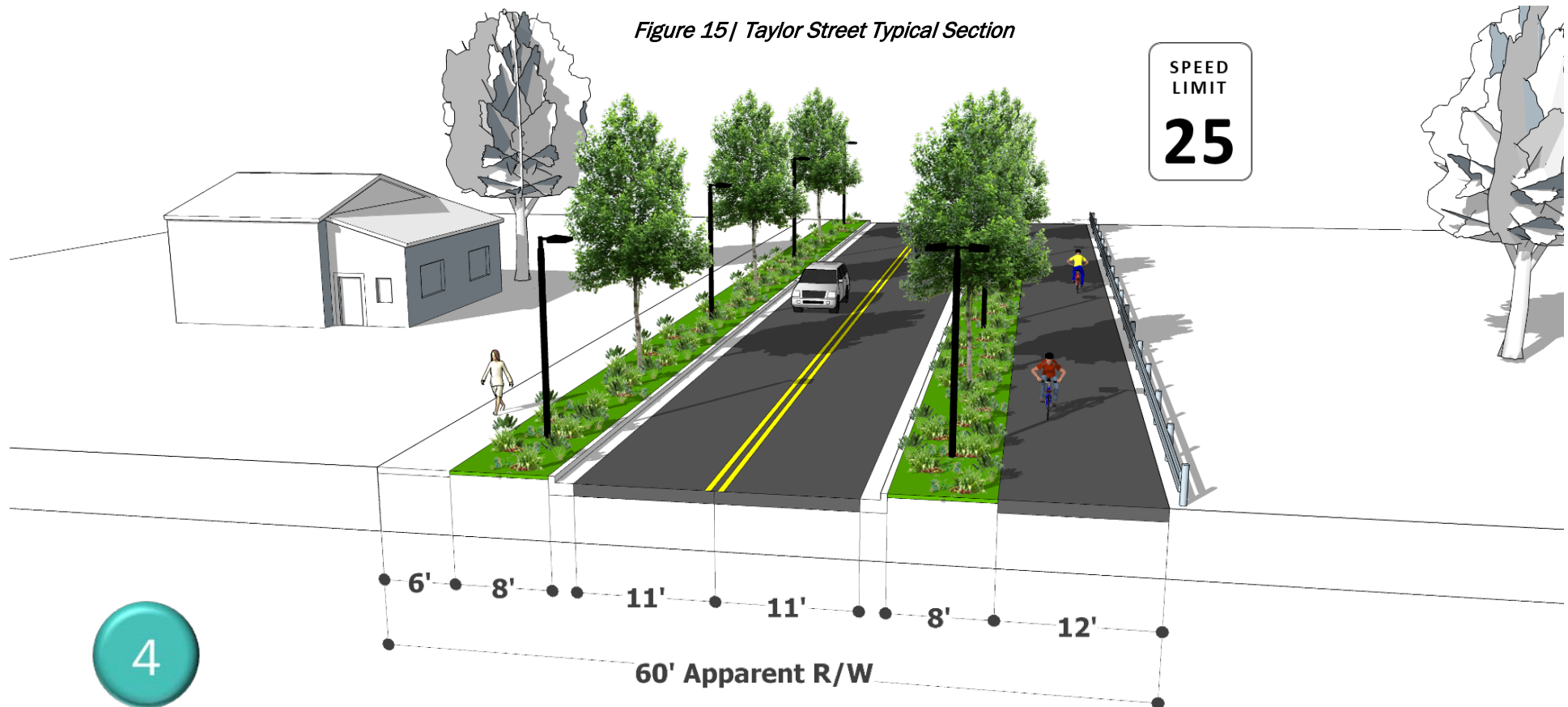
Taylor Street

Franklin Street to Silver Star Road

Taylor Street is proposed to be reconstructed as a two lane curbed roadway with a new sidewalk on the west side and the trail on the east side as shown in the typical section below.

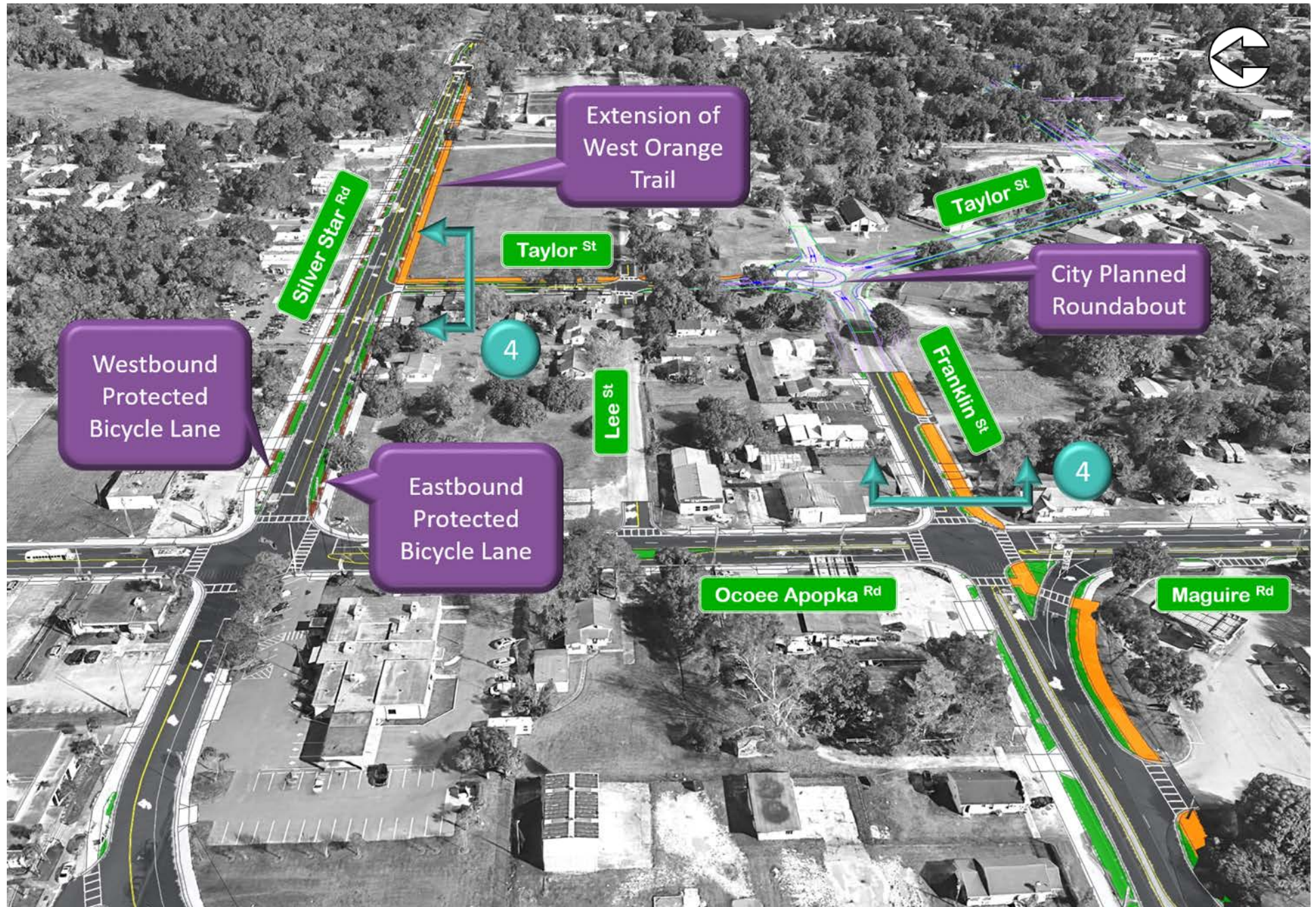


Figure 15/ Taylor Street Typical Section



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Figure 16| Concept Plan –Silver Star Road and Franklin Street east of Ocoee Apopka Road



Silver Star Road

Bowness Avenue to East of Bluford Avenue

Silver Star Road from Bowness Avenue to east of Bluford Avenue is proposed as a two lane curbed roadway with a two-way left turn lane with opportunities for landscaping and medians where left turns are intermittent (*Figure 17*). As previously stated, the intersection of Bowness Avenue with Silver Star Road would be realigned with a curve to provide a continuous movement to and from Bowness Avenue. In addition, bicyclists have been accommodated by a shared use path and protected bicycle lanes.

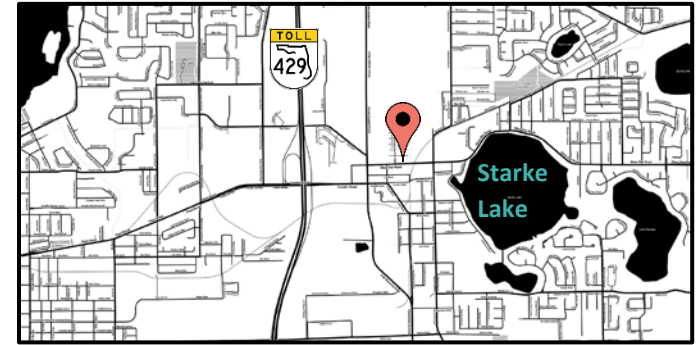
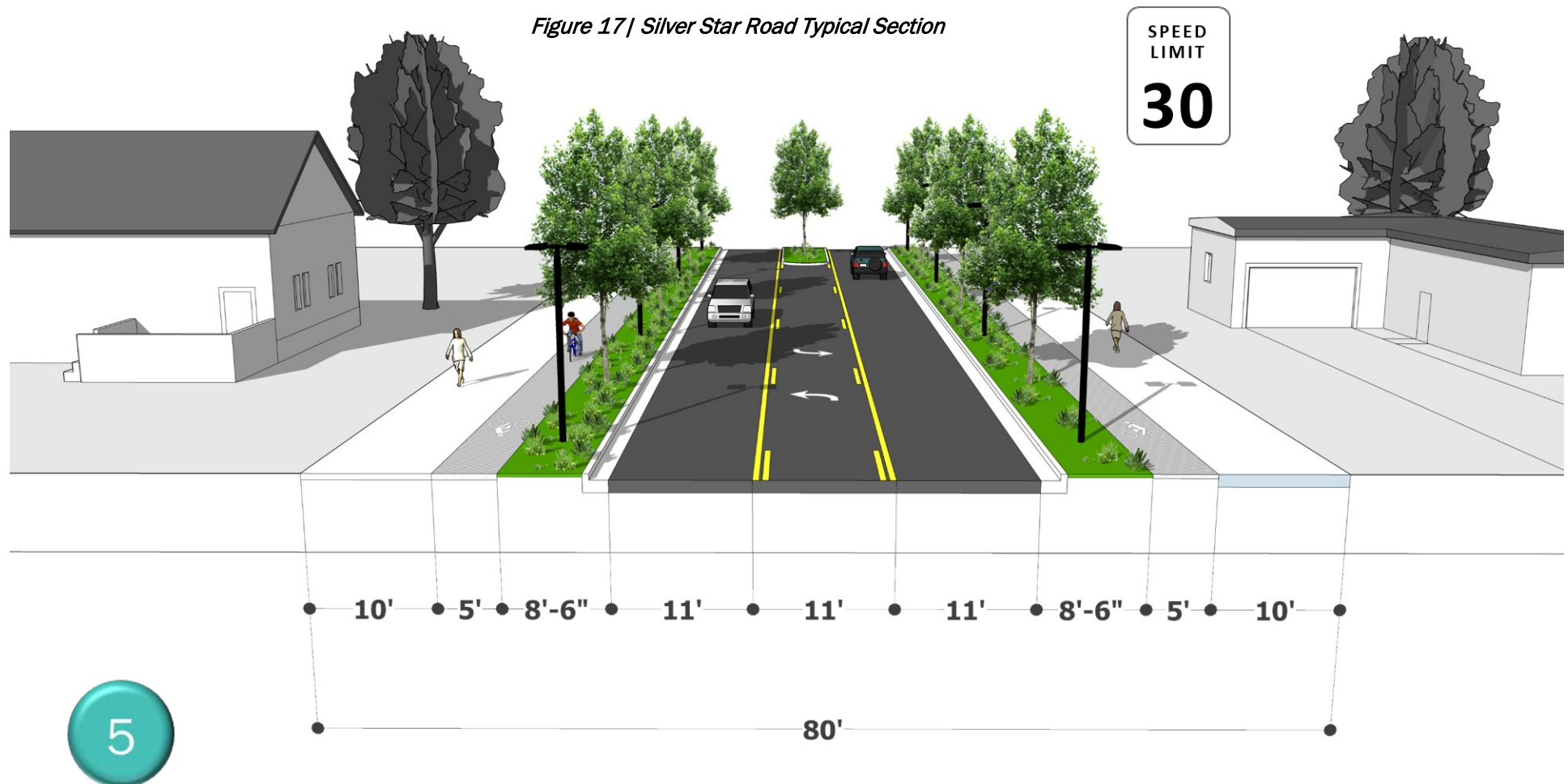


Figure 17 | Silver Star Road Typical Section



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Figure 18| Concept Plan –Silver Star Road and Taylor Street

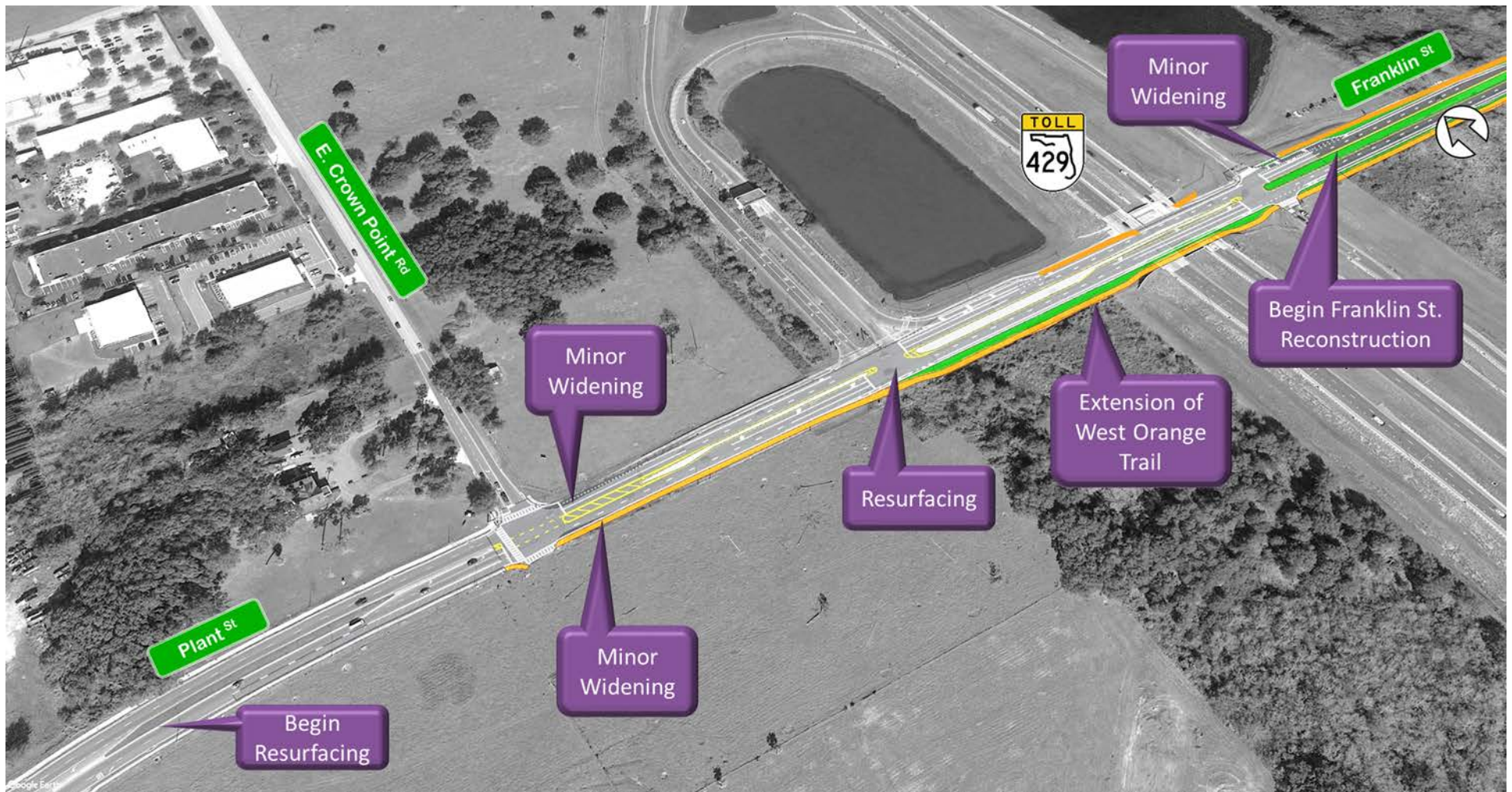


SR 429 Interchange Improvements

In coordination with the Central Florida Expressway Authority, SR 438 within the interchange should be expanded to four lanes. The existing pavement can accommodate the four lanes from E. Crown Point Road to the SR 429 northbound off ramp with minor widening. The widening would be limited to the intersection at E. Crown Point Road and at the northbound on ramp right turn lane.

It is recommended that the West Orange Trail Extension remain on the south side of SR 438 / Franklin Street from Ocoee Apopka Road to E. Crown Point Road where it would cross to the north side. The location on the south side offers the benefit of fewer SR 429 ramp crossings and conflicts.

Figure 19/ Concept Plan - SR 429 Interchange Improvements



Phased Implementation & Costs

In order to develop the planning level costs associated with the Silver Star Road Complete Streets Study, the project has been segmented to allow for the phased implementation of the recommendations. The project phases/segments are shown in **Figure 20**. Planning level costs shown below were developed using FDOT's Cost per Mile values based on number of lanes. Right-of-Way costs are based on property appraiser land values per square foot. Business damages were not included in right-of-way costs. Design and CEI fee estimates are also included based on a percentage of construction cost and area to be surveyed. These opinions are preliminary and subject to change during later project phases.

Table 1 | Planning Level Costs (in thousands)

Phase / Segment	Design & Survey	Right-of-Way	Construction	CEI	Total
1. Silver Star Road	\$1,000	\$ -	\$4,500	\$500	\$6,000
2. Ocoee Apopka Road	\$1,000	\$200	\$4,200	\$600	\$6,000
3. Franklin Street & Bowness Avenue	\$1,500	\$400	\$6,200	\$900	\$9,000

Next Steps

The next steps for each of the project phases/segments differs depending on jurisdiction and other factors:

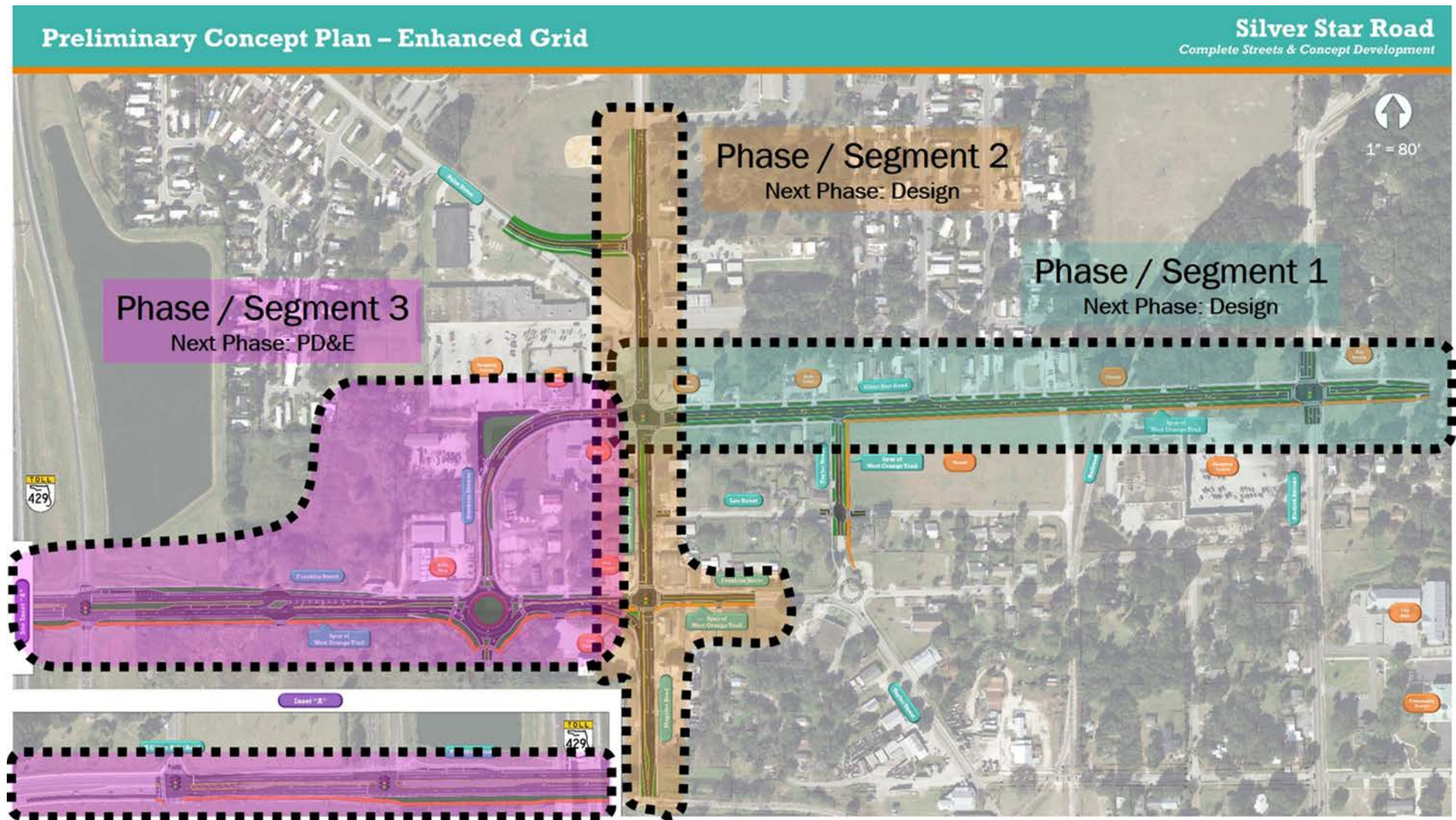
- Segment 1 – Silver Star Road from Ocoee Apopka Road to Bluford Avenue should advance to design by FDOT
- Segment 2 – Ocoee Apopka Road from the railroad tracks to north of Palm Avenue should advance to design by Orange County or the city
- Segment 3 – Franklin Street and Bowness Avenue reconstruction should have additional environmental analysis performed in a PD&E phase

In addition, these post planning study items should also be addressed:

- *Documentation of stormwater approach*
- *Finalize project segmentation*
- *Program future phases & segments*
- *Finalize the determination of agency lead for segments / phases*

The efforts for this project have been prepared in accordance with the FDOT PD&E Manual and will be incorporated into the subsequent PD&E Study.

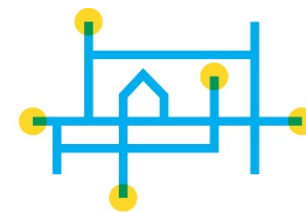
Figure 20| Preliminary Concept Plan – Enhanced Grid





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SILVER STAR RD

COMPLETE STREETS STUDY