Seminole Boulevard Safe Streets and Roads for All - Recommendations Report

Prepared for:
City of Largo
Forward Pinellas

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Final Report

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FEHR PEERS

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Special thanks to Crossroads Christian Church for hosting the Community Meetings and to the entire Largo community for their continued engagement throughout the project.

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How to Use this Document

This report is organized into four chapters that document the framework and process used to develop and evaluate a range of alternatives that meet the purpose and need of the project and align with feedback received during stakeholder and public engagement, present the recommendations for the Seminole Boulevard Safe Streets and Roads for All (SS4A) Plan to provide guidance for the project as it moves into the design phase.

Chapter 1 – Project Background: Describes the various goals, objectives, and polices that informed the development of this plan.

Chapter 2 – Existing Conditions: Provides a summary of the existing transportation conditions along and connecting to the corridor, as well as a summary of opportunities and constraints. A full existing conditions report is provided in **Appendix A**.

Chapter 3 – Community Engagement: Summarizes the various community engagement activities and a high-level overview of how community and stakeholder engagement influenced the recommendations in this plan.

Chapter 4 – Concept Plan Development: Presents the preferred alternative concept plan along with a description of various intersection and corridor treatments. As detailed engineering designs will need to be prepared after plan adoption, this chapter includes considerations for the future design stage to better describe the design approach and parameters. A planning-level cost estimate, potential phasing for project implementation, and other engineering considerations are also provided in the final chapter to guide the next phases of the project. **Appendix B** has the alternatives presented to the community for feedback and **Appendix C** has the concept plan for the preferred alternative. A detailed cost estimate is provided in **Appendix D**.

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1. Project Background

Forward Pinellas prepared a Vision Zero Action Plan known as Safe Streets Pinellas, which was adopted in March 2021 with a minor revision in February 2023. That plan contains policies and action items aimed at eliminating fatal and severe injury collisions on roads in Pinellas County by 2045. This project, referred to as the Seminole Boulevard Safe Streets and Roads for All (SS4A) Plan, builds upon the direction from the Safe Streets Pinellas action plan to address crash profiles as well as reported concerns from residents related to vehicle speeds and pedestrian and bicycle comfort along Seminole Boulevard. This project is developed through the Safe Streets and Roads for All (SS4A) Grant Program from the U.S. Department of Transportation (USDOT) to help local communities plan, design, and deliver comprehensive roadway safety plans and roadway safety improvements to prevent serious injuries and deaths on our roadways.

What is a Complete Street?

Complete Streets are streets for everyone. They are designed and operated to enable safe access for all users, including pedestrians, bicyclists, motorists, and transit riders of all ages and abilities. Complete Streets make it easy to cross the street, walk to shops, and bicycle to work. They allow buses to run on time and make it safe for people to walk to and from train stations. – *National Complete Streets Coalition*

Not every Complete Street needs to accommodate all

The Seminole Boulevard SS4A Plan evaluates Seminole Boulevard between 8th Avenue S. and Ulmerton Road. **Figure 1** displays the limits of the approximately one-mile study corridor, which is an FDOT Roadway Access Class 7 facility[1]. The goals of the Seminole Boulevard SS4A Plan are to identify roadway improvements that increase transportation choices for the community by improving

[1] The corridor is FDOT Roadway 15010000, which can be viewed here: https://gis-fdot.opendata.arcgis.com/datasets/fdot::access-management-tda/explore?location=27.907281%2C-82.788685%2C14.39. Roadway Access Class 7 ties to the corridors functional purpose and FDOT design standards.

bicycle and pedestrian connectivity and comfort along Seminole Boulevard, to improve transportation safety outcomes for all roadway users, and to ultimately create a network of complete streets in Largo with connections to adjacent communities.

This chapter describes relevant local and regional planning documents and processes that serve as the policy framework for the project.

Figure 1: Project Extents

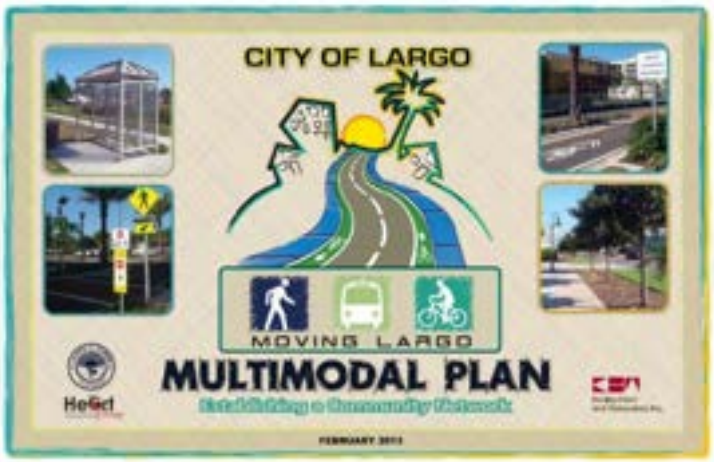
Policy Foundation

The Seminole Boulevard SS4A Plan builds upon several local and regional planning efforts and aligns with state laws

Local Plans

The City of Largo's Multimodal Plan[2] (2013) outlines the City's guidebook to funding and scheduling of multimodal improvements along the city's network of streets and trails, to improve mobility and safety for bicycles, pedestrians, and transit users from neighborhoods to local destinations. Seminole Boulevard is one of five locations identified in the plan with high crash concentrations, and additional locations that were identified are corridors adjacent to or near Seminole Boulevard. A summary of the safety issues highlighted in the Multimodal Plan is provided below:

- Many crashes involved right turns from a stop or right turn on red condition hitting pedestrians and bicyclists traveling against traffic on the sidewalk.
- Many pedestrian and bicycle crashes occurred at night, dawn, or dusk.
- Many crashes involved midblock crossings, crossings near but not at intersections, or at two-way stop-controlled intersections.
- Irregular lighting: the Plan recommends lighting to illuminate the entire cross section including the sidewalks and median.
- Crashes suggest a crossing treatment should be provided at 14th Avenue SW. A pedestrian mapping study should be conducted to determine the volumes and paths of pedestrians crossing Seminole Boulevard at 14th Avenue SW. All crashes at this



[2] City of Largo Multimodal Plan, Source: https://cms7files.revize.com/largoflorida/Mulitimodal%20Plan_Web.pdf

intersection occurred at night. A pedestrian crossing could be considered if volumes suggest it is merited; a pedestrian hybrid beacon would be the least restrictive recommended type of crossing treatment. A full signal, potentially at 16th Avenue S, could also help create gaps in traffic, which would allow additional time for pedestrian and bicycle users to cross.

Many of the findings from the City of Largo's Multimodal Plan for Seminole Boulevard were also observed in the Seminole Boulevard SS4A Plan through crash data and public feedback.

The City of Largo's 2040 Comprehensive Plan[3] is organized around six major themes to make Largo a "Community of Choice". Transportation goals outlined in the Plan include:

Goal 1: Utilize Smart Growth and Complete Streets principles to create an equitable, balanced, sustainable, effective, and integrated multimodal transportation system that allows all users to travel safely and comfortably and is compatible with and supportive of the City's Future Land Use Element.

[3] City of Largo Comprehensive Plan, Source: https://cms7files.revize.com/largoflorida/Comprehensive%20Plan_ADA.pdf

Goal 2: Utilize Vision Zero principles to create an effective transportation network that allows all users to travel safely and provides safe multimodal transportation options for all residents and visitors.

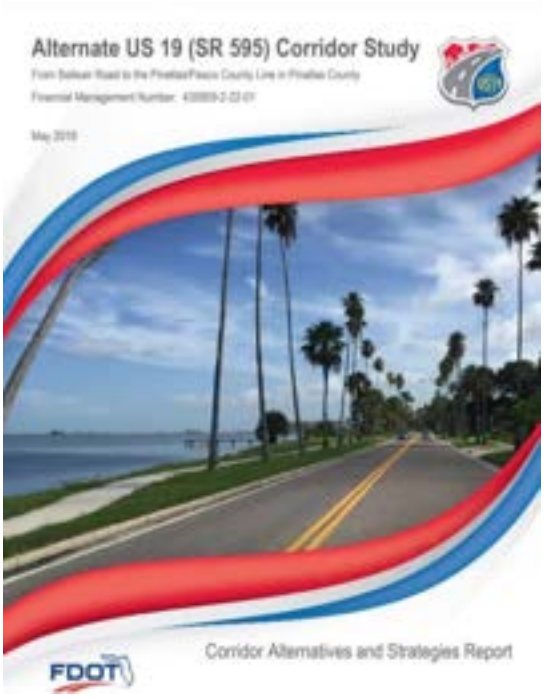
Regional Plans

Forward Pinellas prepared a Vision Zero Action Plan known as Safe Streets Pinellas, which was adopted in March 2021 with a minor revision in February 2023. The plan contains policies and action items aimed to reduce the number of fatal and severe injury collisions on roadways in Pinellas County to zero by 2045. The Seminole Boulevard SS4A project builds upon the direction from the Safe Streets Pinellas action plan to address safety issues identified in the plan and concerns reported by the community. Seminole Boulevard was identified in the Safe Streets Pinellas Action Plan as being on the High-Injury Network (HIN), which is a network of streets in Pinellas County with the highest concentration of serious injury and fatal crashes.

FDOT conducted a Signal Warrant Analysis at the intersection of Seminole Boulevard at 16th Avenue S to determine, based on turn movement volumes, field observations and crash history, if installation of a traffic signal or other improvement was warranted. Based on traffic counts collected in 2018, the Manual on Uniform Traffic Control Devices (MUTCD)[4] traffic signal warrants 1, 2, and 7 were met for the intersection, which are evaluated based on 8-hour vehicular volumes, 4-hour vehicular volumes, and crash data. The study identified a near term recommendation to address angle and left turn crashes by installing a median that restricts left and through movements on 16th Avenue S and left turns on Seminole Boulevard. Additionally, the study identified long term recommendations to 1) install a traffic signal, 2) lengthen the northbound and southbound left turn lanes 3) construct a westbound right turn lane to

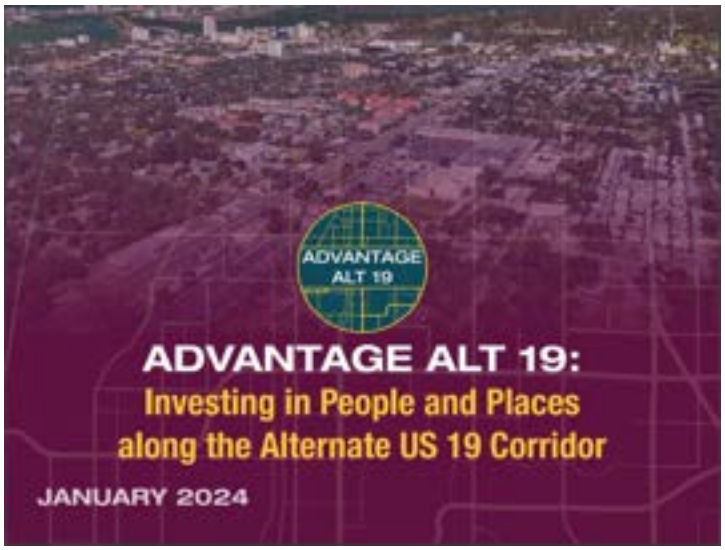
4 Chapter 4C. Traffic Control Signal Needs Studies, Source: https://mutcd.fhwa.dot.gov/htm/2003r1/part4/part4c.htm

minimize the impact of the signal on westbound through traffic, and 4) to consider extending 16th Avenue SW to Sabal Palm Drive to provide additional access to the Palm Hill community. Most recently in 2024, FDOT reviewed recent crash traffic volume data and has recommended a signal at this intersection. The Seminole Boulevard SS4A Plan identifies alternatives to improve the intersection of Seminole Boulevard at 16th Avenue S, presented in **Chapter 4.**



In 2019, FDOT conducted a study of Alternative US 19 (SR 595) from Belleair Road to the Pinellas/Pasco County Line[5], including the project study corridor. The corridor was identified as having a high number of pedestrian and bicycle involved crashes, poor level of service for vehicles at major intersections, inadequate and substandard multimodal facilities, and a lack of connectivity and accessibility to transit. The study applied FDOT's Complete Streets policy to identify corridor alternatives to improve multimodal operations and safety. Within the Seminole Boulevard project limits, Ulmerton Road was identified for intersection improvements to add capacity for turning movements. One of the goals of the City of Largo's Multimodal Plan is to improve mobility within constrained rights-of-way that cannot be expanded to allow additional automobiles. The Seminole Boulevard SS4A Plan recommends complete street design to accommodate multimodal travel along Seminole Boulevard. An expansion of safe and comfortable multimodal facilities provides people with alternative travel choices that helps to manage overall vehicle travel demand.

5 FDOT Corridor Alternatives and Strategies Report, Source: https://www.fdotd7studies.com/projects/altus19studies/wp-content/uploads/sites/121/pdf/435909-2-Corridor-Alternative-Strategies-Report-051519.pdf



In January 2024, Forward Pinellas developed *Advantage Alt 19: Investing in People and Places along the Alternative US 19 Corridor*[6], which identifies Forward Pinellas' priority for redevelopment and reinvestment along the ALT US-19 corridor to link jobs and housing countywide. The extents of the study along ALT US-19 is from SR 60 to 58th Street N at 5th Avenue N, and 58th Street N from 5th Avenue N to Central Avenue. The Plan encourages the incorporation of enhanced transit service and other multimodal transportation options through short, mid, and long-term implementation strategies to guide future development, as well as specific improvements that can potentially be advanced in the near term. One of the Plans focused study areas is the Downtown Largo Station Area, defined as one half-mile around the intersection of West/East Bay Drive and ALT US-19. The Downtown Largo Station Area overlaps with part of the northern end of this study segment around 8th Avenue S. The Downtown Largo Station Area is the future site for a City Hall, a community center or other civic space, and a Downtown Transfer Center. The Plan identifies a potential site for the Downtown Transfer Center approximately 700 feet north of East/West Bay Drive on the west side of ALT US-19 for bus services. Additionally, this Station Area is planned to include multimodal connections to major points of interest, bike-share and scooter rental facilities, bike parking, and rideshare pick-up and drop-off locations along the corridor. Intersection safety improvements at 8th Avenue S and improvements for bicycle and pedestrian facilities are also recommended for this Station Area.

6 Forward Pinellas Advantage Alt 19: Investing in People and Places, Source: https://forwardpinellas.org/project/finalplan/. See pages 174-181 for the Downtown Largo Station Area Profile.

2. Existing Conditions

A detailed existing conditions assessment was prepared to identify opportunities and constraints along the corridor to consider in the development of project recommendations. A summary of the existing conditions assessment is provided in this chapter with the full analysis provided in **Appendix A.**

Overview

The existing conditions assessment provides a detailed description of the study area roadways, transit service, bicycle and pedestrian network, roadway operations for people driving, and a collision assessment. Key findings are presented in **Table 1** based on the following parameters:

- Roadway operations for people driving were evaluated based on peak hour intersection level of service calculations and corridor travel time.
- The experience for people walking and bicycling was evaluated using a level of traffic stress assessment.
- Transportation safety was evaluated based on reported collisions from 2018 to 2022.

Table 1: Existing Conditions Summary

Topic	Key Findings
Transportation Safety	• During the analysis period (2018-2022), 552 collisions were reported along the corridor, including 8 that resulted in a fatality and 11 that resulted in a serious injury. • The majority of collisions along the corridor occurred at an intersection or were intersection-related, with most collisions occurring at the intersections of Ulmerton Road, 8th Avenue S, and 16th Avenue S. While Ulmerton Road had the highest concentration of crashes altogether, most crashes that resulted in a serious injury or fatality occurred between 14th Avenue SW and Brittany Bay and largely involved pedestrians. Serious injury crashes involving a bicyclist were clustered near Brittany Bay and 8th Avenue S. • Collision types that resulted in a disproportionate share in someone being killed or severely injured (KSI collision) are left turn, bicycle, and pedestrian crashes. ○ About 19 percent of the crashes on the roadway (97 crashes) fall into one of these three crash types, and 68 percent of those (19 crashes) resulted in a fatality or serious injury.

Table 1: Existing Conditions Summary

Topic	Key Findings
Driving	• Traffic volumes range between 26,480 and 28,740 vehicles per day. • Over half of vehicles that use the Seminole Boulevard corridor are passenger vehicles (56%), approximately 18% of vehicles are light duty trucks like pick-up trucks and sport utility vehicles, 16% are trucks including box trucks and semi-trailers, 10% are motorcycles, and about 1% are buses. • Some intersections along Seminole Boulevard operate within their established level of service standards for people driving, including at 8th Avenue S and Brittany Bay. Most intersections operate at unacceptable level of service standards for people driving, including at 16th Avenue S, 21st Avenue SE, and Ulmerton Road. • Based on vehicle queueing analysis, vehicle storage lengths at major intersections are long enough for vehicle traffic demands during the typical weekday peak hours. The vehicle queues exceed the available storage length at a few locations, including a few eastbound and westbound movements at 8th Avenue S in both the AM and PM peak hours, the southbound left lane at 16th Avenue S in the PM peak hour, and the eastbound left lane at Ulmerton Road in the AM peak hour.
Walking and Biking	• Walking and biking along and across the roadway is uncomfortable for most people and a barrier to walking and biking for many. For people using a wheeled mobility device, such as a wheelchair, the facility may present some additional difficulties. People may only use the facility when there are limited route and mode choices available. • In general, sidewalks are in good condition but there are locations where the sidewalks are narrow or where there are encroachments by overgrown vegetation. There is not a separation between the sidewalk and the travel lane. • On-street bicycles are not present and bicyclists were observed riding on the sidewalk. • Marked crosswalks are only provided at either end of the corridor at signalized intersections (Ulmerton Road and 8th Avenue S) which are spaced 1-mile apart.
Travel Speeds	• Average travel speeds along the corridor ranged from 35 mph south of 21st Avenue SE for vehicles traveling southbound, to 48 mph south of 21st Avenue SE for vehicles traveling northbound. • Most vehicles travel at or below the speed limit of 45 mph (73 percent) while approximately one-third of vehicles (27 percent) travel in excess of 50 mph, of which approximately 7 percent exceed 55 mph.

Table 1: Existing Conditions Summary

Topic	Key Findings
Other	• The study corridor has three travel lanes in each direction, a center median, and approximately 6-feet wide sidewalks that narrow to 3-5 feet along portions of the corridor due to overgrowth of landscaping and narrowing of the right-of-way. Travel lanes are 12 feet wide between Ulmerton Road and 11th Avenue SW, and 11 feet wide north of 11th Avenue SW. Right-of-way is typically to the back of the sidewalk. • Transit service along Seminole Boulevard is provided by the Pinellas Suncoast Transit Authority (PSTA). PSTA offers fixed route and Demand Response Transit (DRT) service within Pinellas County, connecting to other transit systems, including the Hillsborough Area Regional Transit Authority (HART), Pasco County Public Transportation (GOPASCO), and Manatee County Area Transit (MCAT). Route 18 operates along the corridor every 15 minutes during peak periods and up to 60 minutes during non-peak periods such as holidays and weekends. Bus stops are spaced approximately every 600 to 1,200 feet. Route 18 has between 5-25 boardings and alightings during a typical weekday at stops within the study corridor. • Utilities are generally provided above ground along the Seminole Boulevard corridor, with utility lines running along the east side of the roadway. At a few locations, utilities are located at the back of sidewalk. • Lighting is present on the east side of the roadway and minimal lighting is present on the west side of the roadway. • Existing Americans with Disability Act (ADA) deficiencies along the corridor will require upgrades as part of the project. • Improvements along the corridor will require coordination with FDOT.

Source: Fehr & Peers, 2025.

Opportunities

The following summarizes potential opportunities along the corridor that were considered in the development of project alternatives and the ultimate set of recommendations:

- The vehicle volumes along Seminole Boulevard are relatively low for a 6-lane roadway. There may be an opportunity in the future to repurpose the roadway to provide space for pedestrian or bicycle facilities. The available space gained through lane repurposing will allow for numerous alternatives to be considered.
- The space between marked crosswalks is approximately one mile. Consideration should be given to providing more marked and controlled crosswalks along the corridor.
- Travel speeds along the corridor can be better managed through roadway design elements aimed at a lower target speed of 35 miles per hour given the roads status on the high injury network.
- Opportunities to reduce the crossing distance at driveways and intersections along the corridor were identified, which would reduce the potential exposure of people crossing the roadway.
- Long-term potential to underground utilities along the corridor presents the opportunity to narrow vehicular travel lanes, move the existing curb and widen sidewalks or add off-street bicycle facilities.
- Signalized intersections operate at a poor Level of Service (LOS) for people driving based on the adopted thresholds. There are opportunities for signal timing optimization and coordination to improve traffic operations.

Constraints

The following summarizes potential constraints along the corridor to consider in the refinement of project recommendations:

- High density of driveways along some portions of the corridor limit potential bicycle facility design options.
- Existing ADA deficiencies along the corridor could limit low-cost quick-build alternatives that could be implemented while funding is sought for the long-term project.

- Opportunities to modify the corridor will require significant coordination with FDOT District 7 since the roadway is owned and maintained by FDOT.
- Enhanced transit service may be added along Seminole Boulevard. Coordination may be required for this alternative to align with other planned projects along the corridor.
- The City of Largo is considering lane repurposing on Clearwater-Largo Road from six lanes to four lanes, approximately one-half mile west of Seminole Boulevard, from 8th Avenue S to West Bay Drive. Enhancements to walking and bicycling facilities on 8th Avenue S should be considered as part of a separate process to better connect Clearwater-Largo Road to Seminole Boulevard for enhanced overall walking and bicycling connectivity.

3. Community Engagement

This chapter describes the various activities that were employed to obtain feedback from the community and stakeholders which informed the development of the recommendations. Feedback from the community is a vital component of the project, and was solicited in numerous ways, including:

- Meetings and discussions with City, FDOT and Forward Pinellas staff
- A project website and web based on-line feedback tool
- A walking audit with stakeholders, including community members, staff from the City, FDOT, Forward Pinellas, Pinellas County, and Law Enforcement
- Two public workshops:
    - Workshop #1 (April 15, 2024): To present initial findings of the analysis and gather feedback from the community on their concerns.
    - Workshop #2 (October 22, 2024): To present different alternatives and get feedback from the community on a preferred alternative.

General Feedback Summary

In reviewing the feedback received from the various engagement efforts, the following key themes emerged:

- People drive too fast along the corridor.
- There are too many decision points for vehicles at high speeds.
- There is a lack of consistent and comfortable pedestrian infrastructure along the corridor.
- There is no consistent and clearly delineated bicycle infrastructure along the corridor.

Feedback received along the corridor was scattered, however, the intersection of 16th Ave S and Seminole Blvd received nearly 40% of all comments. Many of these comments advocated for signalization of the intersection with an emphasis on pedestrian crossings. When asked which mode of transportation they use along the corridor on a weekly basis, 98% responded that they drive along the corridor, 35% walk, 21% ride a bicycle; public transportation and e-bikes were both at 6% of the respondents. When asked if they feel safe traveling along the

corridor, 95% of cyclists said no, which was the highest share. Additionally, 82% of pedestrians and 80% of transit users said they feel unsafe while traveling along the corridor.

4. Concept Plan Development

Concept Plan Approach

The following chapter describes the objectives and general approach for developing the proposed concepts.

Posted Speed – the maximum lawful speed for a particular location as displayed on a regulatory sign.

Operating Speed – the speeds at which vehicles are observed operating during free flow conditions. Free flow conditions mean that vehicles are unimpeded by other vehicles or by traffic control devices such as traffic signals.

Target Speed – the highest operating speed at which vehicles should ideally operate on a roadway in a specific context.

- **Remove Severe Conflicts**: Eliminate the most severe conflicts between road users, such as providing dedicated facilities for each user group or relocating a utility pole.
- **Manage Vehicular Speeds**: Reduce the speed of vehicles to align with the context of the roadway, the hazards, and conflicts between roadway users; includes horizontal and vertical deflection elements.
- **Manage Conflicts in Time**: Where conflicts cannot be removed, can they be separated in time, through signal timing strategies or providing dedicated space for other roadway users.
- **Increase Attentiveness and Awareness:** Where conflicts cannot be removed, increase attentiveness, and improve the visibility between road users and road hazards.
- **Implement Enforcing Features to Slow Traffic**: Similar to managing vehicular speeds, these are roadway features that help enforce the desired speed, like speed feedback signs.

Within that framework, the most effective strategies include removing conflicts and minimizing hazards, and where that is not feasible, better management of the conflict through speed reductions and managing conflicts in time.

Concept Plan Parameters

The concept plan was developed based on nine key principles that should be carried through to the design phase of the project. These features are based on complete street best practices as of the development of this concept plan (2024). Depending on the timing of the design phase and construction, more recent best practice documents should be consulted to determine if modifications from the concept plan should be considered in consultation with City and FDOT staff.

The 9 principles are as follows:

1. The target speed, the posted speed and the operating speed should be the same with a target speed no greater than 35 miles per hour.
2. PROWAG (Public Rights-of-Way Accessibility Guidelines) will be used in the design of all public streets, including shared use paths and curb ramps.
3. 10-foot travel lane as the default standard for inside lanes and 11-foot travel lanes for lanes used by transit vehicles and freight vehicles.
4. Constrain geometric features whenever feasible (i.e., reduce curb radii and shorten crossing distances).
5. New sidewalks should be at least 6-feet wide, with 8-feet preferred[7].
6. Crosswalks should be provided frequently, approximately every 600 feet, with consideration for the convenience of people walking as the primary factor in determining where to place crosswalks.
7. Lighting should be evaluated, and pedestrian-scale lighting considered with the idea that streetlights should also serve people walking not just people driving.
8. Bicycle facilities should be provided to promote more people biking, connectivity, and safety, in order of preference based on right-of-way availability:
    a. Shared use path – at least 10 feet, with 12 preferred, with 2-foot shoulders on both sides
    b. 7-foot protected bike lanes/cycle tracks
    c. 7-foot buffered bike lanes
    d. 6-foot buffered bike lanes

[7] There are several locations along the corridor where an existing 5-foot sidewalk is provided. Due to right-of-way constraints along the segment, it may not be feasible to widen to the minimum of 6-feet, but that will be explored in the final design once a full survey and understanding of utilities is available.

e. 5-foot bike lanes
f. 4-foot bike lanes

9. Trees and shade should be incorporated where feasible.

Recommendations

The recommendations developed as part of the Seminole Boulevard Safe Streets and Roads for All project are intended to be implemented in two phases: 1) **Short Term/Midterm Phase** which will allow the community to enjoy some of the benefits of safety measures immediately, while building enthusiasm and support for more permanent infrastructure; and 2) **Long Term Phase** which will build upon the recommendations implemented in the Short Term/Quick Build phase to provide a safer, more comfortable street for all users.

Several alternatives were considered initially and were presented to the community for feedback. Feedback from the community was collected as part of an online preference survey which was open between September 30, 2024, and October 29, 2024. In addition, the alternatives were presented in a Community Meeting held on October 22, 2024. The alternatives presented to the community are included in **Appendix B**. While there was mixed feedback about the proposed dedicated transit lanes, most people expressed support for the addition of bike facilities and the traffic calming elements along the corridor to slow people driving to provide a safer environment for people walking and biking. Based on the feedback received from the community and discussions with FDOT, Forward Pinellas and City of Largo staff, a preferred alternative was selected which was presented to the City Commission during a Commission Work Session on November 12, 2024. **Table 2** and **Table 3** summarize the recommendations from the preferred alternative. The concept plan for the preferred alternative is provided in **Appendix C**. Some of the recommendations will require additional study during the design phase and coordination with FDOT to ensure compliance with FDOT procedures and standards.

Table 2: Short Term/Mid Term Recommendations

Recommendation	Intended Benefit
Change the Target speed and Posted Speed to 35 mph along the corridor.	Reducing operating speeds to be context appropriate and reduce the risk and severity of crashes.
Evaluate pedestrian crossing times at all signalized intersections (and revise as necessary) using a 3.5 ft/sec pedestrian walking speed.	To ensure the traffic signals can accommodate people with slower walking speeds.
Evaluate Yellow and All-Red intervals at all signalized intersections and adjust if needed to meet current standards.	Provided as a margin of safety to reduce the risk of angle crashes at the signalized intersections.
Evaluate overall cycle lengths, recall times and detection at all signalized intersections.	To encourage pedestrian compliance with "WALK" and "DON'T WALK" indications. Shorter cycle lengths and longer "WALK" intervals generally provide better service for pedestrians and encourage better compliance.
Evaluate and upgrade the lighting, as necessary. Consider adding pedestrian-scale lighting along the corridor.	Improve visibility at night.
Provide Leading Pedestrian Intervals (LPI) at all signalized intersections.	To enhance pedestrian visibility and increase the likelihood of drivers yielding to pedestrians in the crosswalks.
Coordinate with Pinellas Suncoast Transit Authority (PSTA) to consolidate and relocate bus stops closer to marked crosswalks (see below for recommended locations of additional marked crosswalks).	Aligns crossings with infrastructure to reduce unexpected conflicts and encourage safer crossings.

Recommendation	Intended Benefit
Install Speed Feedback signs for northbound and southbound traffic at the following locations: • Between 23rd Avenue SW and Silvercrest Drive • Immediately south of Sea Oats Drive • Immediately south of Brittany Bay To improve effectiveness of these signs, speed feedback signs should be combined with other speed management countermeasures.	Increase attentiveness and awareness to reduce speeding.
Provide Marked Crosswalks with Pedestrian Hybrid Beacons (PHB) at the following locations[1]: • Brittany Bay • Immediately south of Sea Oats Drive	Improve visibility and awareness of pedestrians.
Narrow lanes to be 10-ft inside lanes and 11-ft outside lanes and provide 5-foot outside shoulders.	Manage vehicular speeds. Narrowing vehicular travel lanes also reserves space for future bicycle facilities, recommended in the long term.

Notes:

1. *Pursuant to Section 5.2 of the FDOT Traffic Engineering Manual, a controlled marked crosswalk study will need to be conducted for these locations.*

Source: Fehr & Peers, 2025.

Table 3: Long Term Recommendations

Recommendation	Intended Benefit
Provide Traffic Signal at 16th Avenue S.	Manage vehicular speed and access along the corridor and provide safe and central crossing points for pedestrians.
Retime all signals along the corridor.	Promote efficient movement of vehicles and manage vehicular speed.
Implement speed-sensitive "Rest in Red" technology at all signals.	Manage vehicular speeds during off-peak times.
Provide 5-foot directional bike lane with raised/vertical elements such as Zicla zipper, armadillo, or delineator posts[1].	Dedicate space to bicycles and provide comfort through separation in space at minimal cost.
Implement access management strategies (right-turn only) at the following locations: • 14th Avenue SW • Sea Oats Drive	Reduce potential conflict points.

Notes:

1. *There are several raised/vertical elements that may be considered to provide separation between vehicle and bicycle traffic. Ultimately, the choice of vertical element will depend on products on FDOT's Approved Products List.*
2. *Pursuant to Section 5.2 of the FDOT Traffic Engineering Manual, a controlled marked crosswalk study will need to be conducted for these locations.*

Source: Fehr & Peers, 2025.

The following recommendations are also provided for future consideration:

- Based on the effectiveness and performance of the marked crosswalks and Pedestrian Hybrid Beacons proposed above, the City of Largo should consider marked crosswalks equipped with Pedestrian Hybrid Beacons at two additional locations:
  - Immediately north of Silvercrest Drive
  - Immediately north of Canterbury Lane
- Consider narrowing the existing median to 14 feet to provide an additional buffer between the vehicle travel lanes and the bike lanes.

- The City of Largo should coordinate with FDOT District 7 to conduct a Lane Repurposing study in the future. As mentioned in the "Opportunities and Constraints" section of Chapter 2. Existing Conditions, the existing traffic volumes along Seminole Boulevard are relatively low for a 6-lane roadway which presents an opportunity to repurpose the roadway to provide space for pedestrian or bicycle facilities. In addition, the Alt 19 study mentioned in Chapter 1 of the report, identified up to 30% of households along the corridor do not have access to a car with the population having a propensity to walk or bike. The process for initiating a lane repurposing is provided in the *Lane Repurposing Guidebook* (July 2024) and some of the relevant state regulations are provided below.

Relevant State Laws

In 2024, the House Bill 1301 passed that adds additional requirements for the repurposing of vehicular travel lanes. Specifically, Section 334.61 of the Florida Statutes states[8]:

10. *When a governmental entity proposes any project that will repurpose one or more existing traffic lanes, the governmental entity shall include a traffic study to address any potential adverse impacts of the project, including, but not limited to, changes in traffic congestion and impacts on safety.*
11. *If, following the study required by subsection (1), the governmental entity elects to continue with the design of the project, it must notify all affected property owners, impacted municipalities, and the counties in which the project is located at least 180 days before the design phase of the project is completed. The notice must provide a written explanation regarding the need for the project and information on how to review the traffic study required by subsection (1) and must indicate that all affected parties will be given an opportunity to provide comments to the proposing entity regarding the potential impacts of the change.*
12. *The governmental entity shall hold at least one public meeting, with at least 30 days prior notice, before completing the design phase of the project in the jurisdiction where the project is located. At the public meeting, the governmental entity shall explain the purpose of the project and receive public input, including possible alternatives, to determine the manner in which the project will affect the community.*

[8] Florida House of Representatives 2024 Legislature House Bill 1301, Source: https://www.flsenate.gov/Session/Bill/2024/1301/BillText/er/PDF

13. *The governmental entity shall review all comments from the public meeting and take the comments and any alternatives presented during the meeting into consideration in the final design of the project.*

Opinion of Probable Cost for Preferred Alternative

A planning level cost estimate was prepared for the preferred alternative based on FDOT's Basis of Estimates and the Cost Per Mile Models Report. A per-mile cost for each project element was calculated based on the current unit prices of the compiled FDOT standard pay items required to construct the respective element. In addition to the construction costs, percentage-based costs were included for contractor mobilization and maintenance of traffic, set at 10 percent each. A project contingency factor of 30 percent was also applied to account for unknowns and additional cost escalations. The cost estimates include reconstruction of curb ramps along the corridor to meet current ADA standards as well as addressing other ADA deficiencies along the corridor. The cost for some roadway elements shown in **Table 4** are also reliant on other portions of the construction process. For example, the estimate for the bike lane does not include costs for site preparation and other elements, which are estimated elsewhere. Street lighting is also not included since the cost would largely depend on the type of fixture selected as well as the lighting levels provided that would dictate spacing. Other community amenities are also not included, such as benches and bike racks.

A high-level summary by major category is provided in **Table 4** and with the full cost estimates provided in **Appendix D**. The cost estimates included in **Table 4** are for evaluation purposes only; as the project moves into subsequent phases, detailed cost estimates will need to be prepared.

Table 4: Planning Level Cost Estimate Summary for Preferred Alternative

Description	Estimated Cost
Roadway Construction	$3,355,650
Signalization	$1,014,800
Signing and Pavement Markings	$233,250
Subtotal	$4,603,700
Mobilization (10%)	$460,370
Maintenance of Traffic (MOT) (10%)	$460,370
Subtotal with Mobilization and MOT	**$5,524,440**
Project Unknowns/Contingency (30%)	$1,657,330
Grand Total	**$7,181,770**

Source: Fehr & Peers, 2025.

Technical Appendices

Appendix A – Existing Conditions Report

Seminole Boulevard Safe Streets for All – Existing Conditions Assessment

Draft Memorandum

Prepared for:

City of Largo

Forward Pinellas

June 2024

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Executive Summary

The Seminole Boulevard SS4A project limits are between Ulmerton Road and 8th Avenue S, an approximately 1-mile segment. The road provides three travel lanes in each direction, a center median, and approximately 6-feet wide sidewalks. No buffer/separation is provided between the sidewalk and the vehicle travel lanes. The sidewalks narrow to 3 to 5 feet along portions of the corridor due to overgrowth of landscaping. No designated bicycling facilities are provided. The corridor has an active mix of commercial and residential uses and is a designated State Route. Transit Service is provided along Seminole Boulevard by Route 18 managed by Pinellas Suncoast Transit Authority (PSTA). The route operates along the corridor every 15 minutes during peak periods and up to 60 minutes during non-peak periods such as holidays and weekends. A bicycle and pedestrian level of comfort assessment was conducted as part of this study. Results determined the roadway is uncomfortable for most people and a barrier to walking and biking for many, including for transit users.

Seminole Boulevard at both Ulmerton Road and at 8th Avenue S is signalized, with marked crosswalks on all approaches and Leading Pedestrian Intervals. Between Ulmerton Road and 8th Avenue S, marked crosswalks are not present for pedestrians to cross Seminole Boulevard; Seminole Boulevard at 16th Avenue S has legal, unmarked crossings. Pedestrians and bicyclists were observed traveling along Seminole Boulevard, and pedestrians were often seen crossing at unmarked legal crossing locations at intersections or mid-block locations. Intersections between Ulmerton Road and 8th Avenue S are stopped controlled on the side streets. Due to the volume and speeds of vehicles traveling along Seminole Boulevard, vehicles often experience delays when making left turns or right turns onto Seminole Boulevard from a driveway or minor street. Vehicles traveling along Seminole Boulevard can make a U-turn at many intersections where a left turn lane is provided.

Crash history from the past five years revealed left turn crashes and crashes that involved bicycles and pedestrians represented a disproportionate share of crashes that resulted in a serious injury or fatality on the road. Crash history also showed that crashes involving a bicycle or pedestrian were most common around 14th Avenue SW and Brittany Bay, which do not have marked crossings along Seminole Boulevard. The greatest number of crashes occur at Ulmerton Road, 8th Avenue S, and 16th Avenue S. Traffic operations analysis conducted as part of this study showed that many intersections are operating below the adopted Level of Service D threshold for automobiles set for intersections by the City of Largo and Florida Department of Transportation (FDOT), primarily due to long cycle lengths and long minimum green times for pedestrians. These results indicate intersection modifications and signal

operational improvements could be considered to improve travel conditions for all modes.

Public input was obtained virtually through an online survey and interactive web map and in-person through a walk audit and community meeting. Through the online engagement, most respondents shared they do not feel safe traveling along or across Seminole Boulevard. This was true for all modes of travel (i.e., driving, walking, biking). Vehicle travel speeds and volumes, and narrow sidewalks adjacent to the roadway were most frequently reported reasons for not feeling safe. Additionally, U-turns along Seminole Boulevard and left turns onto Seminole Boulevard were reported as unsafe movements to make, in addition to unsafe conditions at the intersection of Seminole Boulevard and 8th Avenue S, and Seminole Boulevard and 16th Avenue S, of which many respondents recommended installation of a traffic signal. Responses also indicate a need for additional lighting, setback sidewalks, restricted U-turns, additional pedestrian crossings, bike facilities, and lower travel speeds. Public input received through a walk audit and community meeting also highlighted the need for traffic calming.

Traffic counts collected in January 2024 found that average daily traffic along Seminole Boulevard is approximately 26,000-29,000 vehicles per day. These traffic volumes can typically be accommodated on roadways with four travel lanes which suggests that there may be an opportunity to repurpose travel lanes on Seminole Boulevard to provide improved bicycle and/or pedestrian facilities. Opportunities to modify the corridor will require significant coordination with FDOT District 7 since the roadway is owned and maintained by FDOT. A description of opportunities and constraints is provided at the end of this memorandum.

Overview

Fehr & Peers is working with the City of Largo and Forward Pinellas to complete a corridor study for Seminole Boulevard (SR-595/ALT US-19) between Ulmerton Road (SR-688) and 8th Avenue S, referred to as the Seminole Boulevard Safe Streets for All (SS4A) project. The study corridor falls within the City of Largo and is a state managed facility under the jurisdiction of District 7 (D7) of the Florida Department of Transportation (FDOT). **Figure 1** displays the limits of the study corridor, which is approximately one mile long. The goal of the Seminole Boulevard SS4A project is to improve transportation safety outcomes for all roadway users and increase transportation choices for the community. The SS4A project includes identifying transportation safety concerns and collecting data to inform the development of alternative concepts that improve bicycle and pedestrian comfort and connectivity along the study corridor while balancing the needs of drivers. Data analysis and community feedback will be the basis of identified improvement alternatives.

This memorandum is organized to provide project background, describe the local roadway network, and provide an assessment of existing safety conditions and corridor operations, including conditions for people driving, walking, and bicycling. As part of this memorandum, the existing roadway cross sections are documented, and opportunities and constraints along the corridor are identified. An additional memorandum will be prepared to document the development of the alternatives, which may identify interim and long-term roadway modifications. The various interim documents and memorandums will be consolidated into a report that supports the preparation of detailed engineering plans when funding is available. The intent is that the final report will serve as a guiding document for City staff and Forward Pinellas to implement treatments that align with the goal of this SS4A project and with the broader mission of Safe Streets Pinellas[1] to reduce and eliminate crashes that result in fatalities and serious injuries.

[1] Safe Streets Pinellas, Source: https://forwardpinellas.org/safestreets/

Figure 1: Study Area

Previous Planning Efforts

The City of Largo's Multimodal Plan[2] (2013) outlines the City's guidebook to funding and scheduling of multimodal improvements along the multimodal network of streets and trails. The purpose of the Plan is to improve community streets to provide safe and efficient routes from neighborhoods to local destinations and accommodate growth by promoting the use of transit and addressing deficient bicycle and pedestrian facilities along community streets, in order to improve mobility within constrained rights-of-way that cannot be expanded to allow additional automobiles.

The Plan identifies five locations with high crash concentrations, which were selected for more detailed review. One of the five high hazard locations is Seminole Boulevard/ Missouri Avenue within the boundaries of the City of Largo (approximately from Walsingham Road to Belleair Road). A review of the roadway found:

- Many crashes involved right turn from stop or right turn on red condition hitting pedestrians and bicyclists traveling against traffic on the sidewalk.
- Many pedestrian and bicycle crashes occurred at night, dawn, or dusk.
- Many crashes involved midblock crossings, crossings near but not at intersections, or at uncontrolled intersections.
- Irregular lighting: the Plan recommends lighting to illuminate the entire cross section including the sidewalks and median.
- Crashes suggest a crossing treatment should be provided at 14th Avenue SW. A pedestrian mapping study should be conducted to determine the volumes and paths of pedestrians crossing Seminole Boulevard at 14th Avenue SW. All crashes at this intersection occurred at night. A pedestrian crossing could be considered if volumes suggest it is merited; a pedestrian hybrid beacon would be the least restrictive recommended type of crossing treatment. A full signal, potentially at 16th Avenue S, could also help create gaps in traffic, which would allow additional time for pedestrian and bicycle users to cross.

Some other locations that were identified as a high hazard location are corridors located adjacent to or near Seminole Boulevard, including Clearwater-Largo Road, North of West Bay Drive, and East and West Bay Drive. High Hazard locations are identified in red on the image below, from the City of Largo Multimodal Plan. Many observations at

[2] City of Largo Multimodal Plan, Source: https://cms7files.revize.com/largoflorida/Mulitimodal%20Plan_Web.pdf

these locations were similar to those made along Seminole Boulevard / Missouri Avenue as summarized above.

The City of Largo's 2040 Comprehensive Plan[3] is organized around six major themes to make Largo a "Community of Choice". Transportation goals outlined in the Plan include:

Goal 1: Utilize Smart Growth and Complete Streets principles to create an equitable, balanced, sustainable, effective, and integrated multimodal transportation system that allows all users to travel safely and comfortably and is compatible with and supportive of the City's Future Land Use Element.

Goal 2: Utilize Vision Zero principles to create an effective transportation network that allows all users to travel safely and provides safe multimodal transportation options for all residents and visitors.

Forward Pinellas prepared a Vision Zero Plan known as Safe Streets Pinellas, which was adopted in March 2021 and updated in February 2023. The plan contains policies and action items aimed to reduce the number of fatal and severe injury collisions on roadways in Pinellas County to zero by 2045. The Seminole Boulevard SS4A project builds upon the direction from the Safe Streets Pinellas action plan to address safety issues identified in the plan and concerns reported by the community. Seminole Boulevard was identified in the Safe Streets Pinellas Action Plan as being on the High-Injury Network (HIN), which is a network of streets in Pinellas County with the highest concentration of serious injury and fatal crashes.

FDOT conducted a focused analysis of Seminole Boulevard at 16th Avenue S to determine, based on turn movement volumes, field observations and crash history, if installation of a traffic signal or other improvement was warranted. Based on traffic counts collected in 2018, the Manual on Uniform Traffic Control Devices (MUTCD)[4] traffic signal warrants 1, 2, and 7 were met for the intersection, which are evaluated based on 8-hour vehicular volumes, 4-hour vehicular volumes, and crash data. The study identified near term recommendations to address angle and left turn crashes by installing a median that restricts left and through movements on 16th Avenue S and left turns on Seminole Boulevard, and long term recommendations to 1) install a traffic signal, 2) lengthen the northbound and southbound left turn lanes 3) construct a

[3] City of Largo Comprehensive Plan, Source: https://cms7files.revize.com/largoflorida/Comprehensive%20Plan_ADA.pdf
[4] Chapter 4C. Traffic Control Signal Needs Studies, Source: https://mutcd.fhwa.dot.gov/htm/2003r1/part4/part4c.htm

westbound right turn lane to minimize the impact of the signal on westbound through traffic, and 4) to consider extending 16th Avenue S to Sabal Palm Drive to provide additional access to the Palm Hill community.

In 2019 FDOT conducted a study of Alternative US 19 (SR 595) from Belleair Road to the Pinellas/Pasco County Line, including the project study corridor. The corridor was identified as having a high number of pedestrian and bicycle involved crashes, poor level of service for vehicles at major intersections, inadequate and substandard multimodal facilities, and a lack of connectivity and accessibility to transit. The study applied FDOT's Complete Streets policy to identify corridor alternatives to improve multimodal operations and safety. Within the Seminole Boulevard project limits, Ulmerton Road was identified for intersection improvements to add capacity for turning movements.

In January 2024 Forward Pinellas developed *Advantage Alt 19: Investing in People and Places along the Alternative US 19 Corridor*[5], which identifies Forward Pinellas' priority for redevelopment and reinvestment along the ALT US-19 corridor to link jobs and housing countywide. The extents of the study along ALT US-19 is from SR 60 to 58th Street N at 5th Avenue N, and 58th Street N from 5th Avenue N to Central Avenue. The Plan encourages the incorporation of enhanced transit service and other multimodal transportation options through short, mid, and long-term implementation strategies to guide future development, as well as specific improvements that can potentially be advanced in the near term. One of the Plans focused study areas is the Downtown Largo Station Area, defined as one half-mile around the intersection of West/East Bay Drive and ALT US-19. The Downtown Largo Station Area overlaps with part of the northern end of this study segment around 8th Avenue S. The Downtown Largo Station Area is the future site for a City Hall, a community center or other civic space, and a Downtown Transfer Center. The Plan identifies a potential site for the Downtown Transfer Center approximately 700 feet north of East/West Bay Drive on the west side of ALT US-19 for bus services. Additionally, this Station Area is planned to include multimodal connections to major points of interest, bike-share and scooter rental facilities, bike parking, and rideshare pick-up and drop-off locations along the corridor. Intersection safety improvements at 8th Avenue S and improvements for bicycle and pedestrian facilities are also recommended for this Station Area.

[5] Forward Pinellas Advantage Alt 19: Investing in People and Places, Source: https://forwardpinellas.org/project/finalplan/. See pages 174-181 for the Downtown Largo Station Area Profile.

Relevant State Laws

In 2024, the House Bill 1301 was passed that add additional requirements for the repurposing of vehicular travel lanes. Specifically, Section 5 Section 334.61 of the Florida Statutes states[6]:

1. *When a governmental entity proposes any project that will repurpose one or more existing traffic lanes, the governmental entity shall include a traffic study to address any potential adverse impacts of the project, including, but not limited to, changes in traffic congestion and impacts on safety.*
2. *If, following the study required by subsection (1), the governmental entity elects to continue with the design of the project, it must notify all affected property owners, impacted municipalities, and the counties in which the project is located at least 180 days before the design phase of the project is completed. The notice must provide a written explanation regarding the need for the project and information on how to review the traffic study required by subsection (1) and must indicate that all affected parties will be given an opportunity to provide comments to the proposing entity regarding potential impacts of the change.*
3. *The governmental entity shall hold at least one public meeting, with at least 30 days prior notice, before completing the design phase of the project in the jurisdiction where the project is located. At the public meeting, the governmental entity shall explain the purpose of the project and receive public input, including possible alternatives, to determine the manner in which the project will affect the community.*
4. *The governmental entity shall review all comments from the public meeting and take the comments and any alternatives presented during the meeting into consideration in the final design of the project.*

The 2023 Florida Statute 366.96 Storm Protection Plan Cost Recovery requires that local utility providers provide a plan to underground all utilities in the State to improve resiliency and minimize electricity disruptions in the event of severe weather.

[6] Florida House of Representatives 2024 Legislature House Bill 1301, Source: https://www.flsenate.gov/Session/Bill/2024/1301/BillText/er/PDF

Roadway Network

This section describes the existing roadway network in the vicinity of Seminole Boulevard.

Seminole Boulevard is part of a 7-mile segment of SR-595/ALT Route 19. Based on Plan Pinellas (Pinellas County's Comprehensive Plan), the corridor is named Seminole Boulevard between Bay Drive (to the north) and 50th Avenue N (to the south) and is categorized as an Urban Principal Arterial[7]. North of Bay Drive, the ALT Route 19 corridor continues north as Missouri Avenue. South of 50th Avenue N, ALT Route 19 continues south as Bay Pines Boulevard. Seminole Boulevard is a six-lane roadway with a center median. The land uses on Seminole Boulevard are primarily commercial and residential. Midway Plaza, Central Park Plaza, Largo Central Park, and Largo Mall are a few of the major destinations in Largo that are along Seminole Boulevard. Within the limits of the study, Seminole Blvd has an assigned preliminary Context Classification of C3R (Suburban Residential) which is characterized by mostly residential uses within large blocks and a disconnected/sparse roadway. As previously mentioned, Seminole Boulevard was identified in the Safe Streets Pinellas Action Plan as being on the High-Injury Network (HIN).

Based on data collected in January 2024 for this study, Seminole Boulevard carries approximately 26,000-29,000 vehicles/day between Ulmerton Road and 8th Avenue S and has a posted speed limit of 45 miles per hour (mph). Dedicated left turn lanes are provided at every intersection where the median does not restrict left turns. Sidewalks are provided along both sides of the roadway. Approximately five-foot bike lanes are present for portions of the roadway from 50th Avenue N on the south end to 102nd Avenue on the north end, where the bike facilities continue onto 102nd Avenue. No bike lanes are present within the study segment of Seminole Boulevard.

Transit service is provided along the corridor by Bus 18 with transit stops approximately every 600 to 1,200 feet. The study corridor has a few churches, Palm Hill Mobile Home

[7] Pinellas County uses the Federal Highway Administration guidelines in assigning functional classifications to roadways. Urban area roads within the State of Florida governed by the Comprehensive Planning Process are functionally classified as Principal Arterial, Minor Arterial, Collector Roads, and Local Roads. Arterial roads are typically roads that serve the greatest volume of traffic, provide regional connections, and serve longer trip lengths compared to other functional classifications. Source: https://plan.pinellas.gov/comp_plan/03trans/ch-3.pdf.

Park, apartments, mobile home parks, restaurants, a pharmacy, among other residential and commercial uses. Marked crossings are provided at Ulmerton Road and at 8th Avenue S which represents an approximate 1-mile space between marked crosswalks; this can result in people crossing at unmarked crosswalks, where vehicle drivers may not expect pedestrians.

8th Avenue S is a two and a half-mile residential east-west roadway that extends between Indian Rocks Road to the west, and Donegan Road to the east. 8th Avenue S provides access to Largo Public Library via Central Park Drive, and Largo Middle School, located approximately 1,200 feet east of Seminole Boulevard.

Ulmerton Road is a six-lane east-west roadway with a median. Ulmerton Road is a 10-mile section of FL-688 which spans from Indian Rocks Beach to Interstate 275 at the Howard Frankland Bridge. The roadway is a mixed-use corridor with commercial uses and carries approximately 35,000-46,500 vehicles daily west of Seminole Boulevard and up to 91,500 vehicles daily east of Seminole Boulevard[8].

The posted speed is 45 mph and there are sidewalks provided on both sides of the street. Bus Route 59 runs along the corridor near Seminole Boulevard, with stops spaced approximately every 1,200 feet. Ulmerton Road is also on Forward Pinellas' High-Injury Network (HIN) as identified in the Safe Streets Pinellas Action Plan. Grocery stores, parks, and the Florida Botanical Gardens are along Ulmerton Road to the west of Seminole Boulevard, and several commercial and hotels to the east. Ulmerton Road has approximately 4-foot directional bike lanes located on each side of the roadway.

16th Avenue S is a local three-quarter mile, two-lane east-west roadway that extends between 4th Street SW to the west and Blackjack Oak Drive to the east, where it ends at the CSX railroad tracks. West of Seminole Boulevard, the street is named 16th Avenue SW. East of Seminole Boulevard, the street is named 16th Avenue SE. West of 4th Street SW, 16th Avenue SW is discontinuous and continues to the west of Ridge Road S for another half mile where it ends at 119th Street N. The roadway is mostly residential, providing access to a mixture of single-family homes and multifamily housing developments. Sidewalks are present for portions of 16th Avenue SE, including on the north side of 16th Avenue SE from Seminole Boulevard to the edge of Whispering Palms Apartments (approximately 2,200 feet), and on the south side of 16th Avenue SE from

[8] Forward Pinellas Traffic Count Map (2022), Source: https://forwardpinellas.org/document-portal/traffic-count-maps/?ind=16952201509331&filename=Traffic_Count_Map_2022.pdf&wpdmdl=49841&refresh=66730c09d44b81718815753

Sodalis of Largo, an assisted living facility, to the entrance of Whispering Palms Apartments (approximately 800 feet). Dedicated bicycling facilities are not present on 16th Avenue S.

Bicycle and Pedestrian Facilities

Pedestrian facilities include sidewalks, pathways, crosswalks, and pedestrian signals. Pedestrian facilities are generally provided on all the major public roadways, as described above. However, many of the facilities do not provide a comfortable walking experience as some pedestrian paths are adjacent to high-speed, high-volume vehicular travel lanes, and some sidewalks are narrow and do not provide sufficient space for side-by-side pedestrian passing. Marked crosswalks are present at either end of the approximately 1-mile corridor, which are provided at 8th Avenue S and at Ulmerton Road, each of which are signalized intersections. Legal unmarked crosswalks are located at every intersection along the corridor. While pedestrians have the right-of-way at unmarked crosswalks, studies have shown very low rates of drivers yielding to people crossing the street when crosswalks are not marked. As a best practice, marked crossings should be placed at more frequent intervals along pedestrian desire lines, like at bus stop locations, to emphasize to drivers where to expect people crossing the roadway.

The sidewalk width along Seminole Boulevard is consistently around 6 feet with no buffer between the roadway and the sidewalk, except for an approximately 600-foot section of roadway on the east side of Seminole Boulevard north of Silvercrest Drive, which has a two-foot landscape buffer and 5-foot sidewalk. Narrow sidewalks (4-feet or greater) may meet current ADA requirements but do not adequately provide for two-way pedestrian travel. Sidewalks that are adjacent to vehicle travel lanes can feel uncomfortable to many roadway users and their effective width can be reduced as people walk as far from the travel lane as possible. In some areas along the corridor, the effective travel width for people using the sidewalk can feel smaller due to fencing. Additionally, portions of the corridor have narrower sidewalk widths due to overgrown vegetation.

Bicycle facilities are not provided along Seminole Boulevard within the study segment. Shared lane markings are provided on East Bay Drive, east of Seminole Boulevard and four-foot bike lanes are provided on Ulmerton Road. The Bayhead Action Park and Largo Central Park are accessible from Seminole Boulevard and include trails. The Fred Marquis Pinellas Trail is located approximately a three-quarter mile west of Seminole Boulevard. This shared use path runs north-south for 45 miles from Tarpon Springs in the north to St. Petersburg to the south. The path is physically separated from vehicular travel and bicyclists must yield to pedestrians on the path. The Fred Marquis Pinellas Trail crosses several streets that intersect Seminole Boulevard in the project study area, including 8th Avenue S and Ulmerton Road.

The Federal Highway Administration *Bikeway Selection Guide,* February 2019, provides criteria to aid in the selection of the most appropriate bicycle facility given specific roadway characteristics, including the volume of vehicles and the posted or prevailing travel speed for vehicles. A shared lane or bicycle boulevard is generally appropriate for low volume (between 2,000 and 3,000 vehicles per day) and low speed (20 to 25 mile per hour vehicle travel speeds) roadways. A bike lane (with or without a painted buffer) is generally appropriate for medium volume (between 3,000 and 6,500 vehicles per day) and medium speed (25 to 35 mile per hour vehicle travel speeds) roadways. For roadways with greater than 6,500 vehicles per day and vehicle travel speeds of greater than 35 miles per hour, a separated bike lane or shared use path is recommended. Based on the guidance provided by FHWA, the existing bicycling facilities along Ulmerton Road and East Bay Drive may not be the most appropriate type of bicycle facility for use by a wide proportion of the population.

Golf carts are not permitted in the public right of way in the City of Largo. Golf carts are permitted in designated areas within Pinellas County. Low Speed Vehicles (LSV's) and Neighborhood Electric Vehicles (NEV's) are not permitted on Seminole Boulevard due to the posted speed (45 mph)[9].

Transit Service

Transit service in the study area is provided by the Pinellas Suncoast Transit Authority (PSTA). PSTA offers fixed route and Demand Response Transit (DRT) service within Pinellas County, connecting to other transit systems, including the Hillsborough Area Regional Transit Authority (HART), Pasco County Public Transportation (GOPASCO), and Manatee County Area Transit (MCAT). Bus Route 18 operates along Seminole Boulevard. Bus stops are provided approximately every 600 to 1,200 feet at Canterbury Lane, 14th Avenue SW, 16th Avenue S, Sea Oats Drive, 21st Avenue SE, and 23rd Avenue SW. The ridership for a typical weekday for the stops within the study corridor is summarized in **Table 1.**

[9] Golf carts are legal within designated golf cart zones. Low Speed Vehicles (LSV's) and Neighborhood Electric Vehicles (NEV's) are street legal on all Pinellas County roads where the posted speed limit is 35 mph or less. Source: https://pinellas.gov/golf-cart-communities/#:~:text=Golf%20carts%20are%20only%20street,must%20be%20registered%20and%20insured.

Table 1: Typical Weekday Bus Boardings and Alightings: Route 18 on Seminole Boulevard

Stop	Description	Total On	Total Off
3787	Seminole Blvd & 23rd Ave SW	25	10
3789	Seminole Blvd & 23rd Ave SW	5	25
3803	Seminole Blvd & 21st Ave SE	10	5
3830	Seminole Blvd & Sea Oats Dr	5	5
3833	Seminole Blvd & Sea Oats Dr	5	5
3847	Seminole Blvd & 16th Ave SE	10	10
3852	Seminole Blvd & 16th Ave SW	5	10
3870	Seminole Blvd & 14th Ave SW	10	15
3876	Seminole Blvd & 14th Ave SW	15	10
3880	Seminole Blvd & Canterbury Ln	10	15
3883	Seminole Blvd & Canterbury Ln	15	10

Notes:
1. Numbers rounded up to the nearest 5.

Source: Pinellas Suncoast Transit Authority; Fehr & Peers, 2024

The pedestrian crossings are located on minor streets near bus stops. No pedestrian crossings are present along Seminole Boulevard for access to transit stops. Bus stops on the east side of the roadway are equipped with trash cans and benches. Some bus stops on the west side of the roadway have trash cans and/or bus shelters, although most are identified with a bus stop sign only. A bus shelter is provided on the west side of Seminole Boulevard at Sea Oats Drive (Bus Stop 3833).

Routes 18, 59, and 61 provide service (**Table 2**) in the study area. Although transit options are available, including on weekends and holidays, the routes operate on infrequent headways.

Table 2: Transit Service

Route	Frequency[1]	Operational Hours	Key Destinations[1]
Route 18 Operates along Seminole Boulevard in the study area, between Grand Central Station in St. Petersburg to the south to Park Street Terminal in Downtown Clearwater to the north.	• M-F: 20-30 minutes • Sat: 30-45 minutes • Sun & Holiday: 60 minutes	• M-F: 5:30 AM to 12:00 AM • S: 6:00 AM to 10:30 PM • Su & Holidays: 6:15 AM to 9:30 PM	• **Grand Central Station** • Largo High School • Largo Central Park • Largo Mall • **Seminole City Center** • Bay Pines Medical Center • **Tyrone Square Mall** • Tyrone Gardens Shopping Center • **Park Street Terminal**
Route 59 Operates along Ulmerton Road in the study area, between Indian Rocks Beach to the west to PSTA Complex to the east.	• M-F: 15-30 minutes with 50-minute frequency in the evening hours • Sat: 30 minutes • Sun & Holiday: 60 minutes	• M-F: 5:00 AM to 11:00 PM • S: 5:45 AM to 11:15 PM • Su & Holidays: 6:30 AM to 10:45 PM	• Indian Rocks Beach • Indian Rocks Shopping Center • Florida Botanical Gardens • SPC • Mary Grizzle State Office Building • **Largo Mall** • **Ulmerton Park & Ride** • Largo Health Department • ICOT Center • Pinellas Court House • **PSTA Complex**
Route 61 Operates along 8th Avenue S in the study area, between Indian Rocks Shopping Center to the south and Main Street/ Summerdale Drive to the north.	• M-F: 40 minutes in AM peak hours, 60 minutes all other times of the day • Sat: 40 minutes in AM peak hours, 60 minutes all other times of the day • Sun & Holiday: 60 minutes	• M-F: 5:30 AM to 8:30 PM • S: 5:30 AM to 8:30 PM • Su & Holiday: 7:20 AM to 6:30 PM	• Indian Rocks Shopping Center • Largo Central Park • Ross Norton Creation Center • **Park Street Terminal** • North Greenwood Library • Dunedin High School • Palm Lake Village • **Countryside Mall**

Notes:
2. Destinations in bold are major destinations that have greater bus transfers.
3. M – Monday, F – Friday, Sat – Saturday, Sun - Sunday
4. Frequency is approximate and may vary due to traffic conditions, weather, or unforeseen events.

Source: Pinellas Suncoast Transit Authority; Fehr & Peers, 2024

Safety

Crash Analysis

Reported crash data along the study segment was downloaded from Signal 4 Analytics for a 5-year period (2018-2022) which included a total of 552 reported crashes. At the time the data was downloaded (January 2024), 2023 data was only available through November and had not been verified by FDOT Central Office—and the team opted to only include complete years of data for the analysis.

Of the 552 reported crashes along the study segment between 2018 and 2022, 19 resulted in someone being killed or severely injured (KSI crashes). Eight of the 19 reported KSI crashes resulted in a fatality, and 11 resulted in a serious injury. These KSI crashes represent 3.5% of the total crashes. Of the 8 crashes that resulted in a fatality, five involved a person walking. Alternatives developed as part of this study will seek to reduce the risk of KSI crashes and particularly those involving pedestrians and bicyclists.

Most reported crashes involved motor vehicles only (501 of the 552 collisions), 14 involved a pedestrian, 25 involved bicyclists, and 12 involved a motorcyclist. Combined, collisions involving vulnerable users i.e., users who are not in an automobile, accounted for 10% of all crashes but 69% of KSI crashes. Along the corridor, crashes involving a pedestrian or motorcyclist tend to have more severe outcomes with approximately 40% of every pedestrian or motorcycle crash resulting in a KSI. A summary of the crashes by mode is provided in **Table 3**.

Table 3: Crash Summary by Mode

Mode	# of Crashes	% of Crashes	# of KSI Crashes	% of KSI Crashes	% of Crashes resulting in KSI
Pedestrian	14	3%	6	32%	43%
Bicycle	25	5%	2	11%	8%
Motorcycle	12	2%	5	26%	42%
Motor Vehicle	501	91%	6	32%	1%
Total	**552**	**100%**	**19**	**100%**	**N/A**

Source: Signal4 Analytics; Fehr & Peers, 2024

All collisions are mapped on **Figure 2** (page 19), with fatal and serious injury collisions shown in the foreground of the map. The following sections of the crash analysis evaluated and summarized the data during the analysis period by:

- Location
- Road Condition
- Time of Day
- Driving Under the Influence
- Hit-and-Run Collisions
- Crash Type

Location

Most reported collisions along the corridor occurred at an intersection or were intersection-related, with the highest frequency of crashes at the intersections of Ulmerton Road, 8th Avenue S, and 16th Avenue S. While Ulmerton Road had the highest concentration of crashes altogether, most serious and fatal injury crashes occurred between 14th Avenue SW and Brittany Bay and largely involved pedestrians. Serious injury crashes involving a bicyclist were clustered near Brittany Bay and 8th Avenue S.

Time of Day

Crashes along the corridor tend to occur during the daytime (between 9 AM and 6 PM) when traffic volumes along the corridor are the highest, with the most crashes occurring between 12-3 pm. The greatest number of crashes leading to serious and fatal injuries occur between 3-6 pm. Although fewer crashes occur during the nighttime (between 6 PM and 6 AM), a greater share of these crashes result in a serious injury or a fatality. The pedestrian-involved collisions that resulted in a serious or fatal injury between 14th Avenue SW and Brittany Bay occurred at night.

Alcohol or Drug Related and Hit and Run Collisions

There were 12 crashes (2% of all crashes) that were reported as being alcohol related or drug related and almost all (10 out of the 12 crashes) alcohol or drug related crashes occurred at night. For the purposes of this analysis, alcohol related crashes include both when the alcohol test was refused by the driver as well as when the Blood Alcohol Content was listed as above 0.0 in the crash report. Drug-related crashes include crashes where a drug test of a driver was positive, or a driver refused a test after being suspected of a drug impairment.

There were 37 crashes (7% of all crashes) where a hit and run were noted in the crash report. No hit and run crashes resulted in a serious injury or fatality.

Crash Type

Table 4 displays a summary of the crashes by type, presented in order from the most frequent crash type to the least frequent crash type. The most frequent crash types are rear end and sideswipe crashes. The most frequent crash types that result in KSI outcome are pedestrian involved crashes and bicycle involved crashes. Overrepresented crash types i.e., crashes with a greater share of KSI crashes than their share of all crashes are identified in **red**.

Table 4: Crash Summary by Crash Type

Collision Type	All Crashes		KSI Crashes		Crashes resulting in KSI
	Number of Crashes	Percent of Crashes	Number of Crashes	Percent of Crashes	
Rear End	260	47%	4	21%	2%
Sideswipe	103	19%	1	5%	1%
Left Turn	58	11%	5	**26%**	9%
Angle	40	7%	1	5%	3%
Bicycle	25	5%	2	**11%**	8%
Off Road	21	4%	0	0%	0%
Right-Turn	17	3%	0	0%	0%
Pedestrian	14	3%	6	**32%**	43%
Head On	6	1%	0	0%	0%
Rollover	6	1%	0	0%	0%
Animal	1	0%	0	0%	0%
Other	1	0%	0	0%	0%
Total	552	100%	19	100%	n/a

Notes:
1. KSI crashes are those that involve a fatality or serious injury.
2. Crashes that represent a greater share of KSI crashes than their share of all crashes are identified in red.

Source: Signal4 Analytics; Fehr & Peers, 2024

Figure 2: Crash Summary

There are flowers and memorial markers at several locations along Seminole Boulevard, in memory of a loved one lost on the roadway, including at the intersection of Seminole Boulevard at 8th Avenue S.

Roadway Operations

Operations along the Seminole Boulevard corridor was evaluated to understand how people move along and across the corridor. For this assessment, data was collected to obtain the following information:

1. Vehicular segment volumes
2. Intersection volumes for vehicles, pedestrians, and bicycles
3. Vehicular travel speeds

This data is provided in **Attachment A**.

Data Collection

Continuous 72-hour classification and speed counts were collected between Tuesday January 23, 2024, and Thursday January 25, 2024, at the following locations:

1. Seminole Boulevard between 21st Avenue SE and Ulmerton Road
2. Seminole Boulevard between 16th Avenue S and 21st Avenue SE
3. Seminole Boulevard between 8th Avenue S and 16th Avenue S

Daily traffic volumes for each segment are summarized in

Table 5, which shows that roadway volumes are relatively similar throughout the corridor, with the highest recorded volume between 16th Avenue S and 8th Avenue S. The lowest levels of daily traffic are in the middle section of the corridor, between 21st Avenue SE and 16th Avenue S.

Table 5: Average Daily Traffic

	8th Avenue S to 16th Avenue S	16th Avenue S to 21st Avenue SE	21st Avenue SE to Ulmerton Road	Roadway Average
Vehicular Volume[1]	28,740	26,480	28,570	27,930

Notes:
1. Volume represents the bi-directional three-day average rounded to the nearest 10.
Source: Fehr & Peers, 2024

FDOT[10] reports the AADT along Seminole Boulevard from 8th Avenue S to Ulmerton Road for the past five years, which ranges between 35,000-37,5000 vehicles. FDOT also reports peak season factors by County and axle correction factors by roadway facility on a weekly basis in 2023 to convert ADT to AADT using the formula:

AADT = Traffic Count (ADT) x Season Factor (SF) x Axle Correction Factor (ACF)

Using reports available through the Florida Traffic Online Web Application (2023), the fourth week of January in 2023 has a peak season factor for Pinellas County of 1.00[11] and an axle correction factor for US19-SR 686 of 0.99[12]. The fourth week of January is close to peak season and is likely a similar case in 2024 when traffic counts were collected for this study. Overall, traffic counts collected in this study were consistent across all three days and are much lower (approximately 10,000 vehicles lower) than FDOT collected counts in 2023.

Most vehicles that use the Seminole Boulevard corridor are passenger vehicles (56 percent). Light duty trucks like pick-up trucks and sport utility vehicles represent approximately 18 percent of the vehicle mix. Motorcyclists, heavy trucks, and buses combined comprise of about 26 percent of activity along the corridor, as summarized in **Table 6**.

10 Florida Traffic Online Web Application (2023), Source: https://tdaappsprod.dot.state.fl.us/fto/
11 Florida Traffic Online Web Application (2023) Peak Season Factor Category Report for Pinellas County, Source: https://tdaappsprod.dot.state.fl.us/fto/reports/Concatenated_PeakSeason_2023/15_PKSEASON.pdf
12 Florida Traffic Online Web Application (2023), Axle Factor Report, Source: https://tdaappsprod.dot.state.fl.us/fto/reports/Concatenated_AXWOY_2023/15_AXWOY.pdf

Table 6: Volume by Vehicle Type

	Passenger Cars	Light Duty Trucks	Buses	Motorcycles	Trucks	Total
Average Volume[1]	15,600	4,990	180	2,730	4,420	27,930[2]
% of Vehicles	56%	18%	1%	10%	16%	100%

Notes:
1. Volume represents the bi-directional three-day average rounded to the nearest 10.
2. Volume difference due to rounding.

Source: Fehr & Peers, 2024

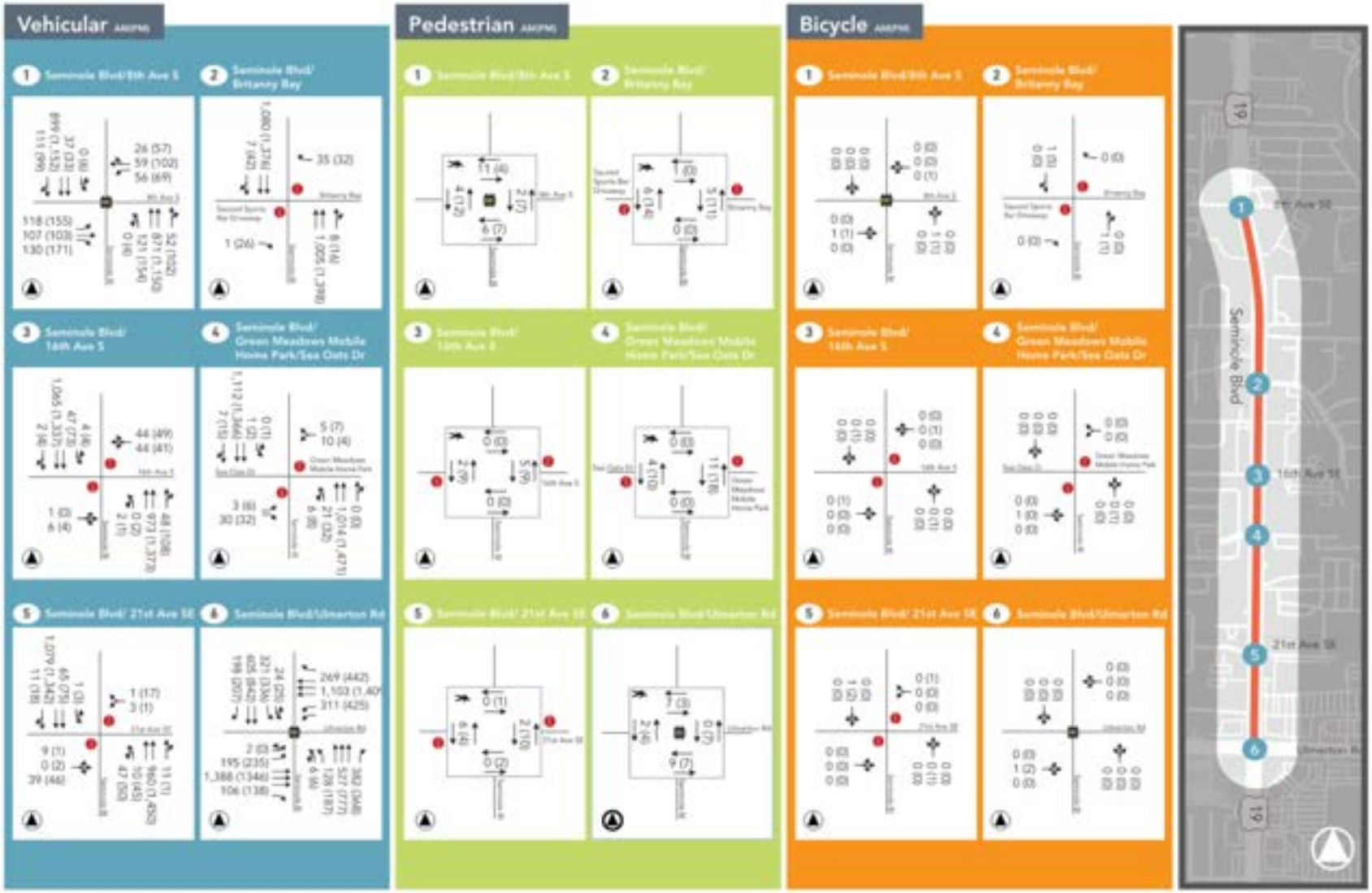
Multimodal Turning Movement Counts (TMC's) were collected on Thursday, January 25, 2024, for a 24-hour period at the following locations:

1. Seminole Boulevard / 8th Avenue S
2. Seminole Boulevard / Brittany Bay
3. Seminole Boulevard / 16th Avenue S
4. Seminole Boulevard / Sea Oats Drive / Green Meadows Mobile Home Park
5. Seminole Boulevard / 21st Avenue SE
6. Seminole Boulevard / Ulmerton Road

The TMC's included a separate count of vehicles, pedestrians, bicyclists, and heavy vehicles, recorded in 15-minute intervals. It should be noted that schools were in session and weather conditions were dry. Based on the TMC's, the morning and afternoon peak hours were determined to be 8:00-9:00 AM and 4:45 – 5:45 PM, respectively.

Figure 3 displays the AM and PM peak hour turn movement volumes for the study intersections as well as bicycle and pedestrian volumes. Marked crosswalks are only provided at 8th Avenue S and at Ulmerton Road, with these intersections having the highest level of pedestrian activity. Pedestrians were also counted crossing Seminole Boulevard in the PM peak hour at 21st Avenue SE, which does not have a marked crossing. Additional pedestrians may have crossed Seminole Boulevard during the peak hours at mid-block locations, which would not have been counted in the intersection count study. The highest levels of pedestrian activity were observed at Brittany Bay Apartments and Green Meadows Mobile Home Park/Sea Oats Drive during the PM peak hour; however, the pedestrians were counted crossing the side street (not Seminole Boulevard). Bicycle activity was relatively homogenous along the corridor with bicycles observed traveling northbound and southbound on Seminole Boulevard during the AM and PM peak hours. The highest levels of bicycle activity were observed at Brittany Bay Apartments with five bicyclists counted during the PM peak hour traveling southbound.

Figure 3: AM and PM Peak Turning Movement Counts



Travel Speeds

The posted speed limit on Seminole Boulevard is 45 mph. As part of the data collection efforts, travel speeds were captured at three locations along the corridor over a 72-hour period, which corresponds to the same three locations traffic volumes were recorded as described above. Average travel speeds along the corridor ranged from 35 mph south of 21st Avenue SE for vehicles traveling southbound, to 48 mph south of 21st Avenue SE for vehicles traveling northbound. On average, 51 percent of people driving traveled below the speed limit (5 to 44 mph), 27 percent of people driving traveled about the speed limit (45-49 mph) and 22 percent of people driving were traveling in excess of 50 mph, with more than 7 percent over 55 mph, as shown in **Table 7** and **Table 8**. The speed percentiles represent the distribution of speed values showing their observed or theoretical frequency of occurrence. For example, the 15th percentile speed represents the speed at or below which 15 percent of vehicles travel.

Table 7: Percent of Traffic by Speed Bin

	< 30	30-34	35-39	40-44	45-49	50-54	55-59	60-64	> 65
% of Northbound	3%	5%	10%	22%	30%	18%	8%	3%	1%
% of Southbound	9%	10%	17%	27%	24%	10%	2%	0%	0%
% of Totals	6%	7%	14%	24%	27%	14%	5%	2%	1%

Notes:
1. Volume represents a 72-hour average.

Source: Fehr & Peers, 2024

Table 8: Percentile Speeds by Direction

Direction	Percentiles				
	15th	50th	Average	85th	95th
Between 8th Avenue S and 16th Avenue S					
Northbound	39	46	46	52	55
Southbound	39	45	44	51	55
Average	39	46	45	51	55
Between 16th Avenue S and 21st Avenue SE					
Northbound	38	44	44	50	53
Southbound	38	43	44	49	53
Average	38	44	44	50	53
Between 21st Avenue SE and Ulmerton Road					
Northbound	38	49	48	58	63
Southbound	27	36	35	43	48
Average	32	42	42	51	55

Notes:
1. Volume represents a 72-hour average.

Source: Fehr & Peers, 2024

The speed at which people travel in a motor vehicle has a direct correlation with the outcome of a crash. A person walking or bicycling struck by a person driving a vehicle at 20 miles per hour has a 90 percent chance of surviving the collision, while a person walking or bicycling struck by a person driving a vehicle at 40 miles per hour has a 10 percent chance of surviving the crash.

As a current practice, speed limits on roadways are generally set by the 85th percentile travel speed, or the speed at which 85 percent of people are driving at or below; the 85th percentile speed by segment is also presented in **Figure 4**, which shows 85th percentile speeds ranging between 43 mph to 58 mph along the corridor. While some drivers base their travel speed on the speed limit, most people drive the speed that represents their assessment of the acceptable level of risk; this assessment is informed by the design of the street, the expected users, and the surrounding land uses. A large gap between the 85th percentile speed and the posted speed limit typically indicates a divergence between the roadway design elements, and the desired travel speed (i.e., Target Speed) along the corridor. Ideally, the posted speed, the target speed and the operating speed should all be the same.

Although there is not a large gap between the posted speed and the operating speeds for the majority collected data (85th percentile speed approximately five mph above the posted speed), there were a few egregious occurrences of speeding with some vehicles traveling in excess of 80 mph. Travel speeds are highest for northbound vehicles in the segment from Ulmerton Road to 21st Avenue SE, where an average of 25% of vehicles are traveling above 50 mph and 11% of vehicles are driving over 60 mph.

Posted Speed - the maximum lawful speed for a particular location as displayed on a regulatory sign.

Operating Speed – the speeds at which vehicles are observed operating during free flow conditions. Free flow conditions mean that vehicles are unimpeded by other vehicles or by traffic control devices such as traffic signals.

Target Speed - the highest operating speed at which vehicles should ideally operate on a roadway in a specific context.

Source: ITE

Figure 4: Speed and Volume Summary

Intersection Operations

Existing Operating Conditions

Vehicular traffic operations were evaluated based on level of service (LOS) calculations for the morning and evening peak hours, with the results summarized in **Table 9**. LOS measures traffic flow on a scale from A to F from the perspective of the motorist and indicates the comfort and convenience associated with driving. LOS A represents free-flow traffic conditions with little to no congestion. LOS F represents oversaturated conditions where traffic demand exceeds capacity resulting in long queues and delays. The LOS analysis uses procedures outlined in the Highway Capacity Manual (HCM) 7th Edition. The intersection-level traffic count data collected on January 25, 2024, was used in this analysis, which includes pedestrian, bicycle, and vehicle volumes. The traffic count data was used to calculate a global percent heavy vehicle and a global peak hour factor as inputs to the traffic operations analysis. Additionally, traffic signal timings provided by the City of Largo were input into Synchro. The LOS at signalized intersections is based on the average delay experienced by all motorists. At unsignalized intersections, the LOS is based on the movement with the greatest average delay. The study intersections were evaluated using Synchro version 12 software with microsimulation in SimTraffic.

The City of Largo 2040 Comprehensive Plan defines a deficient roadway as a road operating at peak hour level of service E or F, and/or a volume-to- capacity (v/c) ratio of 0.9 or higher with no mitigating improvements scheduled within three years[13]. FDOT set a motorized vehicle LOS target for roadways on the state highway system as LOS D in urbanized areas during peak travel hours[14]. The last four study intersections (Seminole Boulevard at Ulmerton Road, 21st Avenue SE, Sea Oats Drive/ Green Meadows Mobile Home Park Driveway, and 16th Avenue S) located in the southern half of the study corridor, do not meet the City of Largo's target for peak hour Level of Service nor do they meet FDOT's LOS policy.

For side street stop-controlled and side street yield-controlled intersections, the intersection average (worst movement average delay) is reported. At 21st Avenue SE, the eastbound left movement experiences the worst movement delay in the AM peak

[13] The target for all county, state, and local roads within the City is to operate at LOS "C" for the daily average and "D" for peak hours (7 AM – 9 AM & 4 PM to 6 PM) with a volume-to-capacity (VTC) ratio of less than 0.9 or better.

[14] Level of Service Targets for the State Highway System. Source: https://pdl.fdot.gov/Procedures

hour, and the eastbound through movement experiences the worst movement delay in the PM peak hour. At Sea Oats Drive / Green Meadows Mobile Home Park Driveway, the westbound left movement experiences the worst movement delay in the AM and PM peak hour. At 16th Avenue S, the westbound left movement experiences the worst delay in the AM and PM peak hour. All three of these side-street stop intersections experience long traffic delays for the minor street approaches. At Brittany Bay, vehicles on the minor street are only able to make a westbound right turn, and the average delay is less than 10 seconds. The SimTraffic worksheets are provided as **Attachment B.**

Table 9: Existing Conditions Intersection Operations

Intersection	Control	AM		PM	
		Delay[3]	LOS	Delay[3]	LOS
1. Seminole Boulevard / 8th Avenue S	Signal	31	C	33	C
2. Seminole Boulevard / Brittany Bay	SSYC	4	A	8	A
3. Seminole Boulevard / 16th Avenue S	SSSC	45	**E**	116	**F**
4. Seminole Boulevard / Sea Oats Drive / Green Meadows Mobile Home Park Driveway	SSSC	27	D	85	**F**
5. Seminole Boulevard / 21st Avenue SE	SSSC	50	**E**	280	**F**
6. Seminole Boulevard / Ulmerton Road	Signal	59	**E**	65	**E**

Notes:
1. SSSC = side street stop controlled. SSYC = side street yield controlled.
2. Bold indicates unacceptable operations.
3. Average delay (seconds)/LOS for intersection. For signalized intersections, average delay is the weighted average for all movements. For side street stop-controlled and side street yield-controlled intersections, the worst movement average delay is reported.

Source: Fehr & Peers, 2024

In addition to evaluating peak hour intersection delay, vehicle queues were also assessed. The maximum vehicle queue is defined as the maximum queue length experienced during the analysis period. While it is a useful parameter for determining the appropriate length of turn lanes (when available), it may not be typical of what an average driver would experience. The maximum vehicle queues are summarized in **Table 10**, which shows vehicle queues at intersections along the corridor are typically contained within the available storage and do not extend beyond adjacent intersections at the unsignalized intersections.

At Seminole Boulevard and 8th Avenue S, eastbound left, eastbound right, westbound left, and southbound left vehicle queues exceed the available storage length in the AM peak hour, and eastbound left, eastbound right, westbound left, and southbound left vehicle queues exceed the available storage length in the PM peak hour. Eastbound left may get blocked about 10% of the time in the AM peak hour, eastbound left, eastbound through, westbound left, westbound through, and southbound through may be blocked about 10% of the time in the AM peak hour due to queuing for other approach movements. In the PM peak hour, the likelihood of vehicles blocking the available storage length increases to 20-30% of the time for eastbound left and through vehicles, 30% of the time for westbound left vehicles, 60% of the time for westbound through/right vehicles, and 15% of the tie for southbound through vehicles.

At Seminole Boulevard and 16th Avenue S, the southbound left vehicle queues exceed the available storage length in the PM peak hour.

At Seminole Boulevard and Ulmerton Road, the eastbound left vehicle queue exceeds the storage length in the AM peak hour. Because of the eastbound left vehicle queues the eastbound through vehicles may get blocked about 10-15% of the time during the peak hours. Similarly, the northbound through vehicles may get blocked by the northbound left vehicles about 20% of the time in the PM peak hour.

Table 10: Maximum Vehicle Queues

Intersection	Movement[4]	Storage Length (ft)	AM (ft)	PM (ft)
1. Seminole Boulevard / 8th Avenue S	EBL	125	**175**	**175**
	EBT[3]	1,300	375	450
	EBR	100	**175**	**150**
	WBL	75	**150**	**125**
	WBTR[3]	1,300	225	425
	NBL	385	200	275
	NBTR[3]	5,280	300	375
	SBL	250	225	250
	SBT	2,100	400	450
	SBTR[3]	2,100	300	400
2. Seminole Boulevard / Brittany Bay	WBR	275	75	50
3. Seminole Boulevard / 16th Avenue S	EBLTR	1,200	50	50
	WBLTR[3]	2,990	175	300
	NBL	80	25	25
	NBTR	2,600	25	50
	SBL	80	75	**100**
	SBT	2,640	25	175
4. Seminole Boulevard / Sea Oats Drive / Green Meadows Mobile Home Park Driveway	EBLTR	270	100	75
	WBLTR[3]	840	50	50
	NBL	100	75	75
	SBL	80	25	25
	SBTR	3,230	-	25

Intersection	Movement[4]	Storage Length (ft)	AM (ft)	PM (ft)
5. Seminole Boulevard / 21st Avenue SE	EBLTR	240	125	225
	WBLTR[3]	450	50	50
	NBL	200	100	150
	NBTR	770	25	100
	SBL	80	75	75
	SBTR	4,420	25	100
6. Seminole Boulevard / Ulmerton Road	EBL	475	**525**	475
	EBT[3]	2,450	625	650
	EBR	900	100	125
	WBL	725	300	400
	WBT[3]	1,100	450	575
	WBR	925	150	350
	NBL	325	275	325
	NBT[3]	1,100	425	525
	NBR	680	425	450
	SBL	475	375	450
	SBT	5,280	425	575
	SBTR	5,280	500	625

Notes:
1. Results based on SimTraffic. Maximum queue lengths are rounded to nearest 25 feet. All queues are expressed on a 'per lane" basis. Bolded values indicate vehicle queues exceed storage length.
2. Available storage lengths based on review of aerial imagery and measured to upstream adjacent intersection and does not include additional storage that can be provided in the taper.
3. Driveways are present in between adjacent intersections. Maximum queues may restrict access in to and out of driveways during peak hours.
4. Lane Assignments for vehicles at an intersection (i.e., EBL = eastbound left, EBT = eastbound through, EBR = eastbound right, EBU = eastbound U-turn, SBTR = southbound through/right, WBLTR = westbound left/through/right).

Source: Fehr & Peers, 2024

Future Operating Conditions

As noted previously, the study corridor is a 6-lane arterial with average daily traffic volumes of 26,000-29,000 vehicles based upon traffic counts collected in January 2024. FDOT provides generalized service volumes for motor vehicle arterials based upon the operating LOS, land use context, and facility type. Seminole Boulevard falls under the C3R-Suburban Residential arterial type; at 6-lanes operating at LOS D, the target LOS for Seminole Boulevard, a generalized service volume of 55,100 ADT is provided. For a 4-lane facility operating at LOS D, a generalized service volume of 37,300 ADT is

provided[15]. FDOT also provides future year forecasts for the Tampa Bay Region. Within this study's limits, FDOT forecasts Seminole Boulevard will have 34,000-35,000 ADT in 2045[16]. Based upon existing and forecasted daily traffic volumes on Seminole Boulevard, the roadway would accommodate traffic volumes on a 4-lane facility.

Walking and Bicycling Comfort

While level of service calculations measure mobility from the perspective of a person driving, level of service calculations is not the best way to measure the experience of a person walking or bicycling. People outside of a vehicle are typically more concerned about how close adjacent vehicle traffic is to their location in the right-of-way, the speed of adjacent vehicle traffic, the number of conflict points (i.e., points where their path of travel crosses that of a motor vehicle), as well as the type of facility provided for them to walk or bike along. Level of Traffic Stress (LTS) is a way to evaluate the stress a person walking or bicycling might experience while using the street. A Level of Traffic Stress (LTS) analysis can serve as a baseline for where new and enhanced walking and bicycling facilities could improve comfort along the corridor. A high-level description of LTS are presented in **Table 11**. The analysis, originally developed by the Mineta Transportation Institute, is based on the analysis methodology outlined in the 2023 Florida Department of Transportation (FDOT) Multimodal Quality/Level of Service (Q/LOS) Handbook[11]. A more detailed description is provided on pages 97 through 99 of the Q/LOS Handbook.

Level of Traffic Stress ratings should not be construed as a predictor of facility use by people walking and bicycling. Area demographics and land uses along a corridor are better predictors of the level of walking and bicycling that does and could occur. For example, in a low-density area where land uses are spread apart and most people have access to a vehicle, people may walk or bicycle for recreational purposes in the area, but not as a primary mode of travel. Conversely, in an area where complementary uses are

15 FDOT Multimodal Quality / Level of Service Handbook (2023). Source: https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/planning/systems/systems-management/document-repository/qlos/fdot_qlos_handbook_v6-0_clean-june-2023.pdf?sfvrsn=198c6846_2

16 FDOT Traffic Projection Tool. There are two count stations along Seminole Boulevard in the project limits. Source: Traffic Projection Tool (tbrta-bcc.github.io)

within close proximity and people have less access to vehicles, walking and bicycling activity is typically higher, even when low stress facilities are not available.

A Bike Level of Traffic Stress (BLTS) analysis and a Pedestrian Level of Traffic Analysis (PLTS) analysis were conducted for the Seminole Boulevard corridor. The two metrics aim to assess how comfortable a cyclist or pedestrian would feel while traveling through the study area. This analysis considers:

- Posted speed limit
- Number of travel lanes
- Adjacent land use
- Average Annual Daily Traffic (AADT)
- Existing bicycle or pedestrian facilities

The results of the analysis are presented on **Figure 5**. Seminole Boulevard received a score of 4 for both BLTS and PLTS meaning the roadway is uncomfortable for most people and a barrier to walking and biking for many. Improvements to the pedestrian and bicycle infrastructure could increase the overall comfort for walking and bicycling in the area thus making non-motorized travel a more appealing travel choice. Additional pedestrian crossings would also improve the safety and comfort of pedestrians traveling across Seminole Boulevard, such as from a transit stop to their residence.

Table 11: Level of Traffic Stress and Pedestrian Level of Comfort Summary

Rating	Description	Typical Facilities
LTS 1	Facilities are suitable for all users, including children traveling alone, the elderly and people using a wheeled mobility device. People generally feel safe and comfortable using the facility and they are willing to use the facility.	Low vehicle volume, low speed roadways with sidewalks on both sides of the street. As traffic volumes and speeds increase, the addition of separation between the vehicle lanes and walking and bicycling facilities increases.
LTS 2	All users are able to use the facility, and most are willing to use the facility.	Moderate vehicle volume, moderate speed roadways with sidewalks on both sides of the street. As traffic volumes and speeds increase, the addition of separation between the vehicle lanes and walking and bicycling facilities increases. In some instances, there may only be sidewalks on one side of the roadway but typically not active uses on that side of the roadway.
LTS 3	Tolerable for trained and experienced bicyclists and some pedestrians. People may only use the facility when there are limited route and mode choices available.	Higher vehicle volume, higher speed roadways with sidewalks on both sides of the street. Limited separation exists between vehicle lanes and walking and bicycling facilities. In some instances, there may only be sidewalks on one side of the roadway.
LTS 4	Uncomfortable for most people and a barrier to walking and bicycling for many. For people using a wheeled mobility device, such as a wheelchair, the facility may be impassible. People may only use the facility when there are limited route and mode choices available.	Multilane roadways with high speed/high volume vehicle travel typically without facilities for bicycling. Sidewalks may be present, but typically with no separation between sidewalk and travel lane. Bicycle facilities may be present, but with no separation from the adjacent travel lane.

Notes: Adapted from the FDOT Multimodal Quality / Level of Service Handbook, 2023

Figure 5: Level of Traffic Stress Summary

Existing Roadway Cross Sections

The Seminole Boulevard study corridor was divided into three segments for the purpose of assessing the existing roadway cross-section to aid in the development of roadway cross section alternatives. As part of this process, alternatives will also be developed for key intersections along the corridor where travel conditions (vehicle operations, collision history, key north-south bicycle/pedestrian connection) require additional treatments. A roadway cross section's compatibility with various intersection treatments could be part of the evaluation criteria. The Seminole Boulevard corridor was divided into the following segments:

- Ulmerton Road to 21st Avenue SE
- 21st Avenue SE to 16th Avenue S
- 16th Avenue S to 8th Street

For each segment, the following information is summarized in **Table 12**:

- Length
- Vehicle speeds and volume
- Intersecting streets
- Number of driveway conflicts
- Preliminary right-of-way assessment

Right-of-way along the corridor is typically at edge of the sidewalk, referred to as the back of sidewalk. Seminole Boulevard has curbs with a gutter on both sides of the roadway. Unlike the other roadway characteristics described above, the typical cross section changes at 11th Avenue SW; **Figure 6** displays the roadway cross sections for each segment.

Utilities are generally provided above ground along the Seminole Boulevard corridor, with utility lines running along the east side of the roadway. At a few locations, utilities are located at the back of sidewalk. Streetlights are primarily provided on the east side of the roadway in 150–200-foot intervals. While not included as a part of this project, construction could accommodate the undergrounding of aboveground utilities along the corridor. The probable cost to bury power lines as a standalone project range between $600,000 and $1,000,000 per mile. If incorporated into the overall project, this cost per mile is likely to be significantly reduced.

The 2023 Florida Statute 366.96 Storm Protection Plan Cost Recovery requires that local utility providers provide a plan to underground all utilities in the State to improve resiliency and minimize electricity disruptions in the event of severe weather. Further

along in the project, coordination with the local utility provider is recommended to determine if undergrounding of utilities can be included in the overall project construction to reduce the overall cost of constructing each item separately, as well as minimize the disruptions to residents and businesses along the corridor.

Table 12: Street Segment Summary

Segment (Length)	Direction /Location	Daily Traffic Volume	Average Speed	85th Percentile Speed	Number of Driveways	Intersecting Streets	Locations with Marked Crosswalks on Side Street	Estimated Right-of-Way
1. Ulmerton Road to 21st Avenue SE (Approximately 930 feet) Data collected north of Silvercrest Drive	Northbound/ Eastside of Street	14,204	48	58	3	• Silvercrest Drive • 21st Avenue SE • 23rd Avenue SW	• Silvercrest Drive (NB) • 21st Avenue SE (NB) • 23rd Avenue SW (SB)	140-foot typical ROW
	Southbound/ Westside of Street	14,367	35[1]	43	3			
2. 21st Avenue SE to 16th Avenue S (Approximately 1,780 feet) Data collected north of Sea Oats Drive	Northbound/ Eastside of Street	13,864	44	50	6	• Sea Oats Drive/Green • Meadows Mobile Home Parkway • 20th Terrace SW • 16th Avenue S	• 20th Terrace SW (SB) • 16th Avenue S (NB/SB)	100-foot typical ROW
	Southbound/ Westside of Street	12,618	44	49	1			
3. 16th Avenue S to 8th Avenue S (Approximately 2,680 feet) Data collected south of Brittany Bay	Northbound/ Eastside of Street	14,420	46	52	6	• 14th Avenue SW • Brittany Bay • Canterbury Lane • 11th Avenue SW	• 14th Avenue SW (SB) • 11th Avenue SW (SB)	100-foot typical ROW
	Southbound/ Westside of Street	14,320	44	51	11			

Notes:
1. Average speed is considerably lower for the southbound traveling vehicles north of Ulmerton Road than at other locations along Seminole Boulevard. The lower average speed is likely attributed to vehicles stopped in queue for southbound movements at Seminole Boulevard and Ulmerton Road; in reviewing 24-hour vehicle speed data, the greatest portion of hourly vehicle speeds in the 0-15 mph category were observed during peak periods, notably between 4 PM to 6 PM. This observation was not found to occur for vehicles traveling northbound at the same count location.

Source: Fehr & Peers, 2024

Figure 6: Roadway Cross Section Summary

Community Engagement

Community outreach and engagement is a critical component of the Seminole Boulevard SS4A project. The public was able to learn about the project and provide feedback through the City of Largo website (https://www.largo.com/news_detail_T27_R1007.php). Community members were engaged through three components:

- Online Engagement
- Walking Audit
- Community workshop

The following sections provide details about each component of the engagement.

Online Engagement

The online engagement materials were hosted on an online platform called Social Pinpoint, which people could access through the Seminole Boulevard project website (https://fp.mysocialpinpoint.com/seminole-boulevard-ss4a). The goal of the online engagement was to understand how and why people travel along Seminole Boulevard, how they feel about transportation safety along the corridor, and what their priorities are for the roadway.

The online engagement comprised of an interactive comment map and survey. The interactive web map received 28 contributions. There were 152 survey responses but not every respondent answered all the questions as they were not all required to submit the survey. The following sections provide summaries of the feedback received.

Survey Results

The survey consisted of 13 questions aimed at understanding people's connection to Seminole Boulevard and their concerns related to safety and mobility. Each question is provided below with a summary of responses.

The survey asked community members about their connection to Seminole Boulevard. They were asked to select as many of the following options that apply to them:

- I live off of Seminole Boulevard.
- I work off of Seminole Boulevard.
- I own or operate a business or commercial property on Seminole Boulevard.
- I travel on Seminole Boulevard to another destination.
- Other (please specify).

Approximately 63% of respondents live in a community with direct access to Seminole Boulevard and 60% travel along Seminole Boulevard to another destination. A small percentage of respondents work on Seminole Boulevard (7%) or own or operate a business or commercial property on Seminole Boulevard (2%). Since there is a possibility of overlap between the answers, the cumulation of the percentages exceeds 100%.

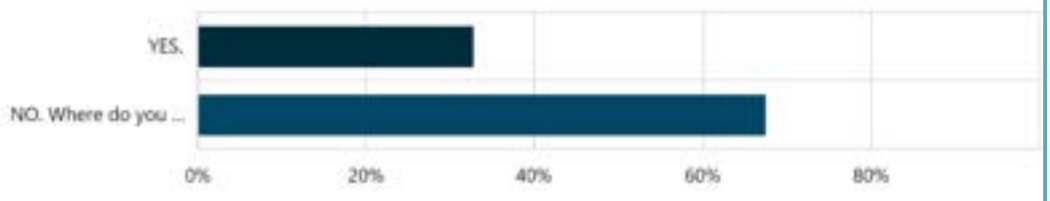
Participants were asked what modes of transportation they use when traveling along or across Seminole Boulevard during a typical week. Participants could select as many of the following options that applied to them:

- Biking
- Driving
- Walking
- Wheelchair
- Public Transit
- E-bike or another low-speed vehicle
- None/Other (please specify)

Almost all of the respondents (99%) included driving as one of their modes of transportation along Seminole Boulevard; while 26% included walking, 15% included biking, 5% included e-bike or other low-speed vehicle, and 3% included public transit. None of the respondents selected they use a wheelchair. One respondent noted they drive a 3-wheel motorcycle. Of the six respondents that e-bike or operate another low-speed vehicle on Seminole Boulevard, five of them live off Seminole Boulevard and four of them travel on Seminole Boulevard to other destinations. None of the respondents that own or operate a business along Seminole Boulevard, walk, bike, take public transit, or use other modes of travel except for driving.

Then respondents were asked if they feel safe traveling on Seminole Boulevard. Most respondents (67%) indicated they do not feel safe.

3. Do you feel safe traveling on Seminole Boulevard? Why? Required
Select Box | Skipped: 8 | Answered: 144 (94.7%)



Answer choices	Percent	Count
YES.	32.64%	47
NO. Where do you feel unsafe traveling on Seminole Boulevard and why? (Show us on the interactive map)	67.36%	97
Total	**100.00%**	**144**

The number of respondents that do not feel safe increased to 95% when filtered to participants that indicated they bike along Seminole Boulevard, 82% when filtered to participants that walk along Seminole Boulevard, and 80% for those that take public transit. All respondents that answered they do not feel safe traveling on Seminole Boulevard provided a written response. The most common reasons for feeling unsafe include:

- Speed of vehicle
- Too many vehicles
- Left turns from minor streets and U-turns along Seminole Boulevard
- 16th Avenue S / Seminole Boulevard (especially left turns)
- Narrow sidewalks and bikes on sidewalk restrict space for pedestrians
- Pedestrians crossing at many locations (most notably at Brittany Bay)

Additionally, respondents noted difficulty making a left turn out of Palm Hill at Sea Oats Drive, that queueing onto Seminole Boulevard occurs in the morning due to the Dunkin' Donuts drive through, and safety concerns with traffic movements on Silvercrest Drive for Home Depot traffic. People are also concerned with additional developments (most notably apartments) built on Seminole Boulevard, and the resulting impact to traffic, and pedestrian and bicycle safety.

To further understand participants' concerns for the corridor related to safety and mobility, participants were given a list of 10 transportation safety concerns and asked to

select and rank their top five concerns from most important (1) to least important (5). The following list presents those concerns in order of importance.

1. Drivers failing to yield to pedestrians
2. Impaired driving (e.g., alcohol, cannabis, prescription drugs)
3. Lack of marked crosswalks or crosswalks not visible
4. Lack of safe routes for children to walk to school
5. Lack of sidewalks/poor condition of sidewalks
6. Long distances between marked crosswalks
7. Long distances to cross the street/not enough time to cross the street
8. Not enough gaps in traffic to cross
9. Poor accessibility for people with disabilities
10. Speeding/operating speed of vehicles

After gaining an understanding of people's perspective of the roadway, participants were asked if they have any ideas or suggestions to improve transportation safety on Seminole Boulevard. Below are common themes from those that responded. A complete list of the suggestions can be found in **Attachment C**.

- Provide protected facilities for pedestrians and cyclists. Some noted desire for a pedestrian overpass.
- Provide additional crossing opportunities for pedestrians. Some noted desire for enhanced, more visible crossings.
- Provide traffic calming devices to slow vehicle speeds
- Install a traffic signal at Seminole Boulevard / 16th Avenue S
- Create a safer intersection at Seminole Boulevard / 8th Avenue S (reduce speeds, shorten cycle length to allow greater frequency of pedestrian crossing opportunities)
- Install lighting
- Conduct more enforcement
- Install Bus Rapid Transit lanes

The survey asked participants whether there were any drainage issues affecting travel along Seminole Boulevard during or after periods of rain. Almost all participants (92%) did not note having observed drainage issues. A few drainage issues described include clogged storm drains (occasionally) on the west side of Seminole Boulevard and poor drainage for the crosswalks at Seminole Boulevard and 8th Avenue S.

Lastly, participants were asked if they had any concerns with the project area that the project team should consider. Below are common themes from those that responded.

- Narrow travel lanes
- Restrict U-turns along the corridor (at least at a few locations)
- Beautify the street (landscaping in median, placemaking, plantings in shoulder between roadway and sidewalk, shade)
- Add crosswalks at bus stop locations
- Install device at crosswalks to enhance visibility (flashing lights)
- Vehicles entering Brittany Bay Apartments have been seen making a southbound left turn against traffic through the northbound left turn lane. Vehicles do so instead of making a U-turn and traveling northbound right to enter the apartments.

Interactive Map

The interactive map provided a platform for users to leave comments at specific locations along Seminole Boulevard on an online map. There were five pre-set options for comment types, each of which gave the user the possibility to write in a comment. There were 28 contributions to the comment map placed by 16 contributors, of which, about half of the comments were ideas provided to improve the corridor, and 30% of which were users reporting feeling unsafe. Concerns reported on the map were relatively similar to those provided in the survey. The five options, along with the number of comments received in each category are shown in **Table 13.**

"Begin the process of lane repurposing. Traffic counts don't support Seminole, along this corridor, being three lanes each way. Traffic would support two lanes, each way, with a separated & protected bike lane along the corridor, providing safety to schoolers, and connectivity into Downtown Largo's thriving and upcoming district. Increasing connectivity for pedestrians and cyclists into the DMAC from the Largo Mall area would do wonders for the retail, and for those living along the Seminole corridor. With new housing projects developing in the area, now is the time to rethink the corridor for all road users."

– Public Survey Response

Table 13: Summary of Comment Map Feedback

Category	Number of Comments	Notable remarks
I feel unsafe	8	Comments placed throughout corridor
I like this	0	N/A
I want a crossing	4	All comments placed at Seminole Blvd/16th Ave S
I have an idea	14	Comments placed throughout corridor; 5 of the comments were located at Seminole Blvd/16th Ave S
I have a comment	2	Comment placed at Seminole Blvd/8th Ave S and south of Ulmerton Rd

Source: Fehr & Peers, 2024

Common themes from the interactive map include:

Intersection safety concerns

- Seminole Boulevard / 8th Avenue S
  - Multimodal intersection with crashes related to motorcycles, bicyclists, and pedestrians)
  - No right turn on red
  - Reduce speed
- Seminole Boulevard / 16th Avenue S
  - Signalize intersection to support both vehicle and pedestrian movements
- Seminole Boulevard / Ulmerton Road
  - No right turn on red
- Sonny's BBQ Entrance
  - Vehicles traveling northbound to enter Sonny's driveway (visibility/sign distance, and U-turn required)

Speeding concerns

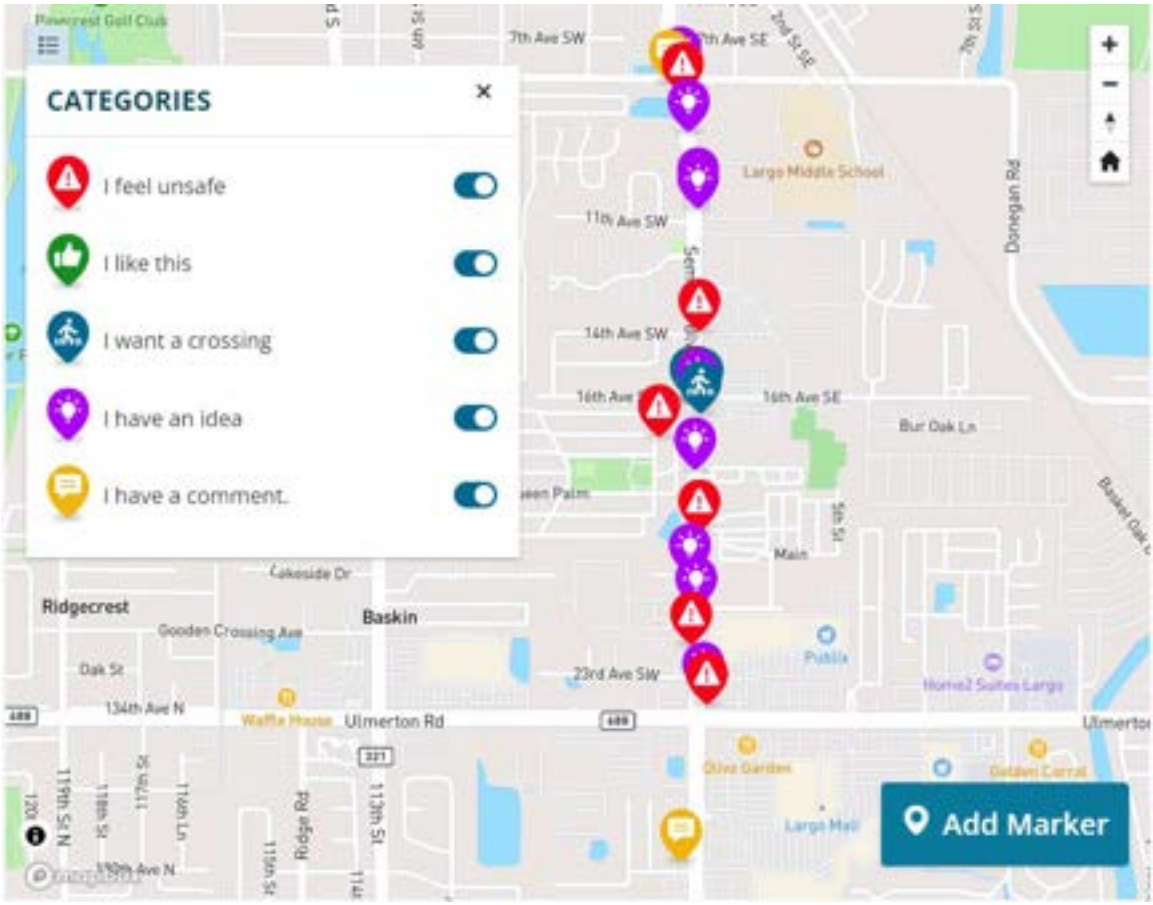
- School safety zone and reduced speed in northern section of corridor

Other Comments

- Provide multiple crossings for pedestrians throughout corridor
- Provide bus rapid transit lanes

Comment locations and type are shown on **Figure 7**.

Figure 7: Comment Map



Walk Audit

A Walk Audit was conducted along Seminole Boulevard on April 15, 2024, to document deficiencies that could impact safety and mobility along the corridor and to provide insight into the needs and preferences of those who live and work along Seminole Boulevard, especially those who are older, disabled, or have children. The walk audit included the project team, community members, and technical staff from stakeholder agencies who are actively engaged in the project or who have been involved in design and planning along Seminole Boulevard. Walk audits, through their collaborative and on-the-ground nature, frequently reveal issues and opportunities that may not be otherwise evident through traditional data collection methods. Field materials were provided ahead of the audit and included a summary of crashes, prompt lists and questions, aerial maps, and note pages. The field audit package is provided as **Attachment D**.

Following a briefing on audit goals and safety protocols, participants split into two groups to walk the study segment, pausing at numerous locations to discuss observations and insights. One group walked the southern half of the study corridor, while the second group walked the entire study corridor. Generally, participants report feeling uncomfortable walking along Seminole Boulevard due to the lack of shade, proximity of the sidewalk to the vehicle travel way, and driver aggression (honking and yelling).

The remainder of this section provides a summary of observations made during the walk audit. The summary does not capture every possible observation made during the walk audits but lists common concerns reported on the audit forms and issues highlighted by the participants and discussed during the audit.

ADA

While many Americans with Disabilities Act (ADA) accessibility-related observations were made, this summary focuses primarily on other design elements. A formal ADA assessment was not conducted as part of this audit; however, a high-level review indicates that there are some locations along the corridor that do not meet current ADA requirements related to the design of curb ramps and pedestrian access routes, typically found at commercial and residential access roads, including at Britttany Bay and 11th Avenue SW. Additionally, the pedestrian push buttons at some signalized intersections along the corridor are not ADA compliant. More specifically, push buttons are not installed parallel to the associated crosswalk along Seminole Boulevard at Ulmerton Road and at 8th Avenue S, which could be confusing for people with a vision impairment who expect push buttons to be oriented parallel to their desired direction of travel. ADA requires that whenever streets are altered, new curb ramps must be constructed to the current ADA standards, including roadway resurfacing and restriping. It is recommended that a formal ADA review be completed for the corridor. ADA recommendations could include modifications to directional curb ramps, addressing changes in level between sidewalk panels, and correcting noncompliant cross slopes, driveway aprons and traffic signals.

Sidewalks

In general, sidewalks were in good condition along both sides of the street, but there were instances where the sidewalks would narrow or where there were encroachments by utilities and/or overgrown vegetation. Participants on the walk audit felt like the effective width of the sidewalk was narrower than six feet due to their proximity to adjacent travel lanes. The sidewalk width narrowed in sections along the corridor due to plant overgrowth. The sidewalk space closest to the roadway is often not usable space because of discomfort. Additionally, fencing on the west side of the roadway south of 8th Avenue S also contributed to the feeling of the sidewalk being narrow. There were few opportunities for shade along the sidewalks on Seminole Boulevard. Sidewalks are not present on most minor streets that intersect Seminole Boulevard.

Bicycle Facilities

As previously mentioned, there are no dedicated bicycle facilities along Seminole Boulevard. During the walk audit several people were observed riding on the sidewalk in both directions with pedestrians having to move out of the way into the grass to allow bicyclists to pass. Additionally, the sidewalks were observed to be too narrow for two bicyclists to travel in tandem, or to allow a bicyclist to comfortably pass another user.

Crosswalks

As previously mentioned, crosswalks on Seminole Boulevard are only provided at either end of the study limits at 8th Avenue S to the north and Ulmerton Road to the south, approximatley 1-mile apart. Crosswalks are provided along minor streets running parallel to Seminole Boulevard. Crosswalks are generally not provided along driveways to private developments, including Brittany Bay Apartments, Canterbury Lane, Sea Oats Drive serving Palm Hill Mobile Home Park, and 21st Avenue SE serving The Boulevard apartments. Pedestrians were observed during the Walk Audit crossing midblock around Brittany Bay Apartments.

Where present, crosswalks are striped with high visibility pavement markings. The setback of the vehicle stop bar from the crosswalks varies widely across the corridor. Participants noted a need for consistency across design of pedestrian facilities. Participants also noted the need for a Pedestrian Hybrid Beacon or standard traffic signal at Seminole Boulevard and 16th Avenue S due to pedestrian activity and heavy vehicle turning movements. On 16th Avenue S, vehicles were observed to encroach on the crosswalks for better visibility when making turns onto Seminole Boulevard.

Pavement and Markings

The pavement and markings were generally in good condition, and the roadway was resurfaced in 2019.

Drainage

The walk audit was completed on a sunny day with no signs of rain having previously occurred; drainage issues were not observed. However, sand and other debris was noticed around the tactile domes at several side streets, which could be indicative of some water pooling to those areas.

Utilities

Utilities run overhead on the east side of Seminole Boulevard. At a few locations, utilities on the ground were present at the back of the sidewalk. Lighting is present on the east side of the roadway, with minimal lighting present on the west side of the roadway.

Driveways

Several driveways are present along both sides of the corridor for both commercial and residential uses. The presence of sidewalks, crosswalks, width of the driveway, among other design features varied quite a bit across locations. The majority of driveways did not have marked crossings or tactile pavement to alert a visually impaired pedestrian of a conflict area with vehicles. Many driveways are relatively wide which expose pedestrians to conflict with vehicles for a greater portion of their path and allow vehicles to make turns into and out of the driveways at greater speeds compared to a turn on a narrower driveway.

Other Observations

Other observations made by participants include:

- Narrow center medians do not provide enough storage vehicles to make a two-stage maneuver across Seminole Boulevard which makes left turns and through movements from minor streets challenging
- Many conflicting movements occurring at Seminole Boulevard and 14th Avenue SW
- PSTA trash cans at bus stops are open, which are allowing debris to come out of the container

Community Workshop

A Community workshop was held following the walk audit on April 15, 2024, from 5:30 to 7:30 PM at Crossroads Christian Church, located at the southeast corner of 16th Avenue S and Seminole Boulevard. The workshop began with a presentation covering complete street topics, existing conditions along the corridor (collisions, speeds and traffic volumes collected along the corridor, level of traffic stress assessment for pedestrians and bicyclists, roadway cross sections), and preliminary survey responses. Following the presentation, attendees were invited to voice concerns and provide feedback on the informational boards provided. These concerns were shared during a collective discussion among attendees, and through comments on the various boards and roll plot showing the study corridor. **Attachment D** includes photos from the community workshop.

Generally, the public communicated a desire for traffic calming along Seminole Boulevard to help reduce speeding, greater speed enforcement, wider sidewalks and wider setback of pedestrian facilities from the vehicle travel way, protected bicycle lanes, additional street lighting, and a traffic signal or Pedestrian Hybrid Beacon at the intersection of Seminole Boulevard and 16th Avenue S to provide a pedestrian crossing and create safer turning movements at the intersection.

Other concerns identified by the community include:

- Number of e-bikes and cyclists on sidewalk making it challenging to walk
- Vehicles making turns off Seminole Boulevard at high speeds due to high speed of the roadway
- Wanting a trail or other bicycle and pedestrian facilities to connect Seminole Boulevard to other facilities for greater access to destinations in the City of Largo
- Long signal cycle lengths at Seminole Boulevard and 8th Avenue S and at Seminole Boulevard and Ulmerton Road. Desire for reduced cycle lengths, a Leading Pedestrian Interval (LPI) longer than the minimum 3 seconds, and “all-red” time which is a gap between vehicle green time and the walk indication to allow vehicles to clear the intersection

- Visibility issues turning out of Brittany Bay onto Seminole Boulevard
- More left turn restrictions along Seminole Boulevard
- Sidewalk located on Seminole Boulevard at 20th Avenue having a 90-degree turn, which is too sharp for a cyclist to make (utilities located where sidewalk could have continued straight rather than jogging)
- Trees and shrubs needing to be cleared on side streets and driveways for visibility
- Many people walking across the street at uncontrolled crossing locations
- Vehicles parking on-street on 16th Avenue S near intersection with Seminole Boulevard

Opportunities and Constraints

Based on the analysis of existing conditions along the corridor, we have identified several opportunities and constraints to consider in the development of project alternatives.

Opportunities

The following summarizes potential opportunities along the corridor to consider in the refinement of project alternatives:

- The vehicle volumes along Seminole Boulevard are relatively low for a 6-lane roadway. There may be an opportunity to repurpose the roadway to provide space for pedestrian or bicycle facilities. The available right-of-way allows for numerous alternatives to be considered.
- The space between marked crosswalks is approximately 1 mile. Consideration should be given to providing more marked crosswalks along the corridor.
- Travel speeds along the corridor can be better managed through roadway design elements aimed at a lower target speed of 35 miles per hour given the roads status on the high injury network.
- Opportunities to reduce the crossing distance at crossings along the corridor, reducing the potential exposure of people crossing the roadway.
- Long-term potential to underground utilities along the corridor presents the opportunity to narrow street sections and widen sidewalks.

Constraints

The following summarizes potential constraints along the corridor to consider in the refinement of project alternatives:

- Signalized intersections operate at a poor LOS for people driving based on the adopted thresholds. Current roadway capacity may be required at intersections.
- Many developments rely on access to the roadway network via Seminole Boulevard. It will be difficult to address mobility and safety for all travel modes within the right-of-way.
- High density of driveways along some portions of the corridor limit potential bicycle facility design options.
- Existing ADA deficiencies along the corridor could limit low-cost quick-build alternatives that could be implemented while funding is sought for the long-term project.
- Opportunities to modify the corridor will require significant coordination with FDOT District 7 since the roadway is owned and maintained by FDOT.
- BRT may be added along Seminole Boulevard. Coordination may be required for the recommended alternative to align with other planned developments along the corridor.
- The City of Largo is considering lane repurposing on Clearwater-Largo Road from six lanes to four lanes, approximately one-half mile west of Seminole Boulevard, from 8th Avenue S to West Bay Drive. Lane repurposing may contribute to additional traffic along Seminole Boulevard.

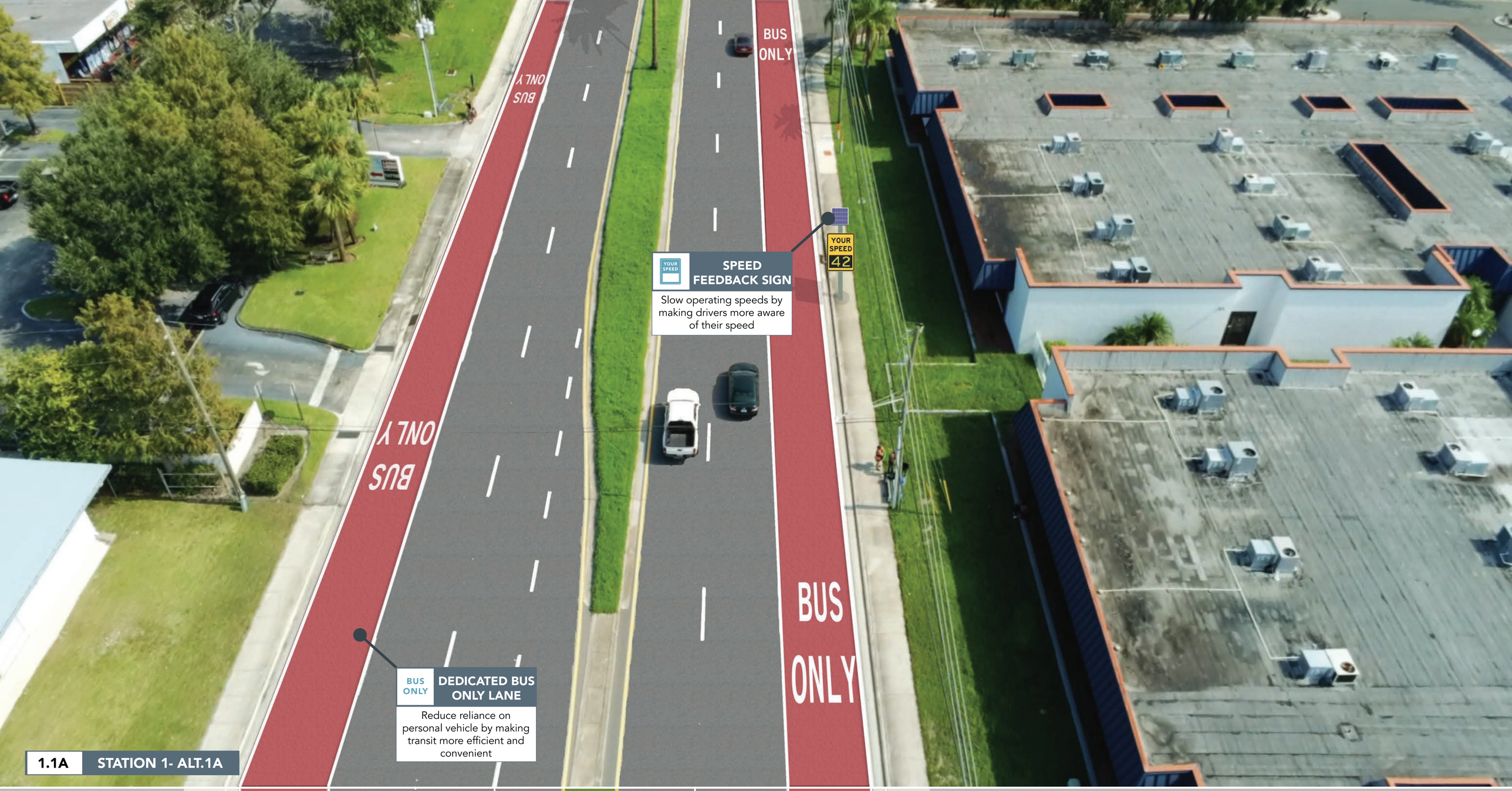
Next Steps

This completes our existing conditions assessment for the Seminole Boulevard SS4A project. The information used in this memorandum will be used to help inform the development of project alternatives.

Attachments

- Attachment A: Traffic Count Sheets
- Attachment B: SimTraffic Worksheets
- Attachment C: Online Engagement Summary
- Attachment D: In-Person Engagement Summary

Appendix B – Alternatives



1.1A STATION 1- ALT.1A

Property Line	Sidewalk 5′	Transit Lane 12′	Travel Lane 12′	Travel Lane 12′	Turn Lane 12′		Travel Lane 12′	Travel Lane 12′	Transit Lane 12′	Sidewalk 5′	Property Line

SPEED FEEDBACK SIGN

Slow operating speeds by making drivers more aware of their speed

SEPARATED BIKE LANES

Can mitigate or prevent interactions, conflicts, and crashes between bicyclists and motor vehicles.

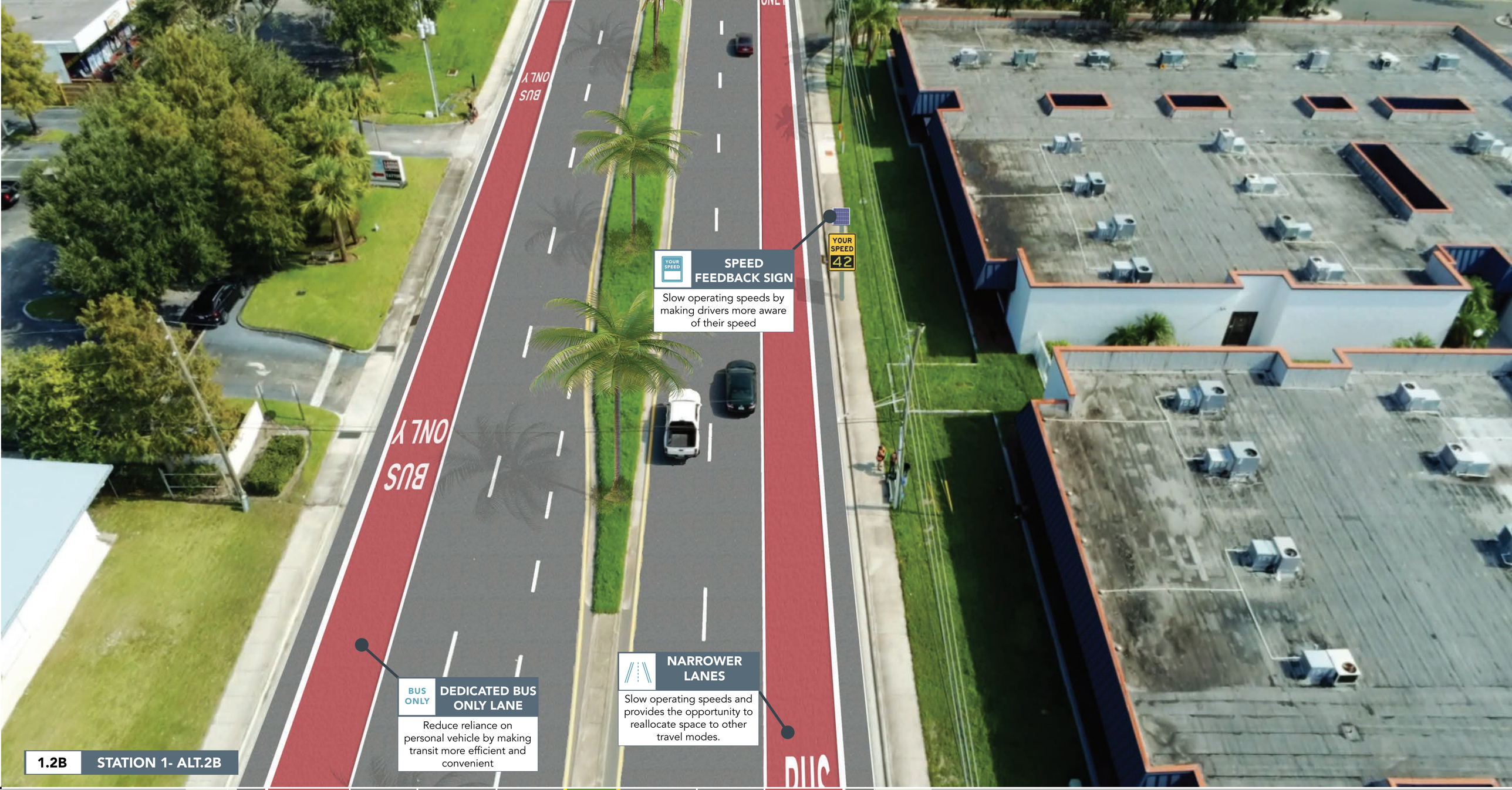
NARROWER LANES

Slow operating speeds and provides the opportunity to reallocate space to other travel modes.

YOUR SPEED 42

1.2A STATION 1- ALT.2A

Property Line	Sidewalk 5′	Bike Lane 5′	Travel Lane 11′	Travel Lane 10′	Travel Lane 10′	Turn Lane 10′		Travel Lane 10′	Travel Lane 10′	Travel Lane 11′	Bike Lane 5′	Sidewalk 5′	Property Line



1.2B STATION 1- ALT.2B

Property Line	Sidewalk 5′	Shoulder 5′	Transit Lane 11′	Travel Lane 10′	Travel Lane 10′	Turn Lane 10′		Travel Lane 10′	Travel Lane 10′	Transit Lane 11′	Shoulder 5′	Sidewalk 5′	Property Line

SPEED FEEDBACK SIGN

Slow operating speeds by making drivers more aware of their speed

DEDICATED BUS ONLY LANE

Reduce reliance on personal vehicle by making transit more efficient and convenient

SIDEWALK LEVEL SEPARATED BIKE LANES

Can mitigate or prevent interactions, conflicts, and crashes between bicyclists and motor vehicles.

NARROWER LANES

Slow operating speeds and provides the opportunity to reallocate space to other travel modes.

1.2C STATION 1- ALT.2C

Property Line	Sidewalk 5′	Bike Lane 5′	Transit Lane 11′	Travel Lane 10′	Travel Lane 10′	Turn Lane 10′		Travel Lane 10′	Travel Lane 10′	Transit Lane 11′	Bike Lane 5′	Sidewalk 5′	Property Line

PEDESTRIAN HYBRID BEACONS

Are used at unsignalized crosswalks to help pedestrians safely cross the street, particularly on multi-lane and/or higher-speed roadways.

MIDBLOCK CROSSWALKS

Increase visibility of pedestrians and lets motorists know to yeild to them.

2.1A STATION 2- ALT.1A

Property Line	Sidewalk 5′	Travel Lane 12′	Travel Lane 12′	Travel Lane 12′	Turn Lane 10′		Travel Lane 12′	Travel Lane 12′	Travel Lane 12′	Sidewalk 5′	Property Line

PEDESTRIAN HYBRID BEACONS

Are used at unsignalized crosswalks to help pedestrians safely cross the street, particularly on multi-lane and/or higher-speed roadways.

MIDBLOCK CROSSWALKS

Increase visibility of pedestrians and lets motorists know to yeild to them.

SEPARATED BIKE LANES

Can mitigate or prevent interactions, conflicts, and crashes between bicyclists and motor vehicles.

NARROWER LANES

Slow operating speeds and provides the opportunity to reallocate space to other travel modes.

2.2A STATION 2- ALT.2A

Property Line	Sidewalk 5′	Bike Lane 5′	Travel Lane 11′	Travel Lane 10′	Travel Lane 10′	Turn Lane 10′		Travel Lane 10′	Travel Lane 10′	Travel Lane 11′	Bike Lane 5′	Sidewalk 5′	Property Line

PEDESTRIAN HYBRID BEACONS

Are used at unsignalized crosswalks to help pedestrians safely cross the street, particularly on multi-lane and/or higher-speed roadways.

MIDBLOCK CROSSWALKS

Increase visibility of pedestrians and lets motorists know to yeild to them.

NARROWER LANES

Slow operating speeds and provides the opportunity to reallocate space to other travel modes.

DEDICATED BUS ONLY LANE

Reduce reliance on personal vehicle by making transit more efficient and convenient

2.2B STATION 2- ALT.2B

Property Line	Sidewalk 5′	Transit Lane 11′	Travel Lane 10′	Travel Lane 10′	Turn Lane 10′		Travel Lane 10′	Travel Lane 10′	Transit Lane 11′	Sidewalk 5′	Property Line

PEDESTRIAN HYBRID BEACONS

Are used at unsignalized crosswalks to help pedestrians safely cross the street, particularly on multi-lane and/or higher-speed roadways.

MIDBLOCK CROSSWALKS

Increase visibility of pedestrians and lets motorists know to yeild to them.

SIDEWALK LEVEL SEPARATED BIKE LANES

Can mitigate or prevent interactions, conflicts, and crashes between bicyclists and motor vehicles.

NARROWER LANES

Slow operating speeds and provides the opportunity to reallocate space to other travel modes.

2.2C STATION 2- ALT.2C

Property Line	Sidewalk 5′	Bike Lane 5′	Travel Lane 11′	Travel Lane 10′	Travel Lane 10′	Turn Lane 10′		Travel Lane 10′	Travel Lane 10′	Travel Lane 11′	Bike Lane 5′	Sidewalk 5′	Property Line


SEA OATS DR
16TH AVE SE
RIGHT TURN MOVEMENT
Right turn only at 14th Ave and Sea Oats Drive
3.1A
STATION 3- ALT.1A

TWO STAGE MOVEMENT

1. Move to Refuge Island
2. Pause
3. Continue

NARROWER LANES

Slow operating speeds and provides the opportunity to reallocate space to other travel modes.

3.2A STATION 3- ALT.2A

Property Line	Sidewalk 5′	Travel Lane 11′	Travel Lane 10′	Travel Lane 10′		Travel Lane 10′	Travel Lane 11′	Travel Lane 11′	Sidewalk 5′	Property Line

Appendix C – Concept Plan for Preferred Alternative

- Retime signal for speed management.
- Reduce cycle lengths and progression speed.
- Implement overnight coordinated pattern.
- Implement speed sensitive "Rest in Red" technology.
- Provide Leading Pedestrian Interval (LPI).

8th Ave SE

8th Ave SW

MATCH LINE - SEE SHEET 2

Install delineator post (Typical).

BIKE LANE
ENDS

Seminole Blvd

N

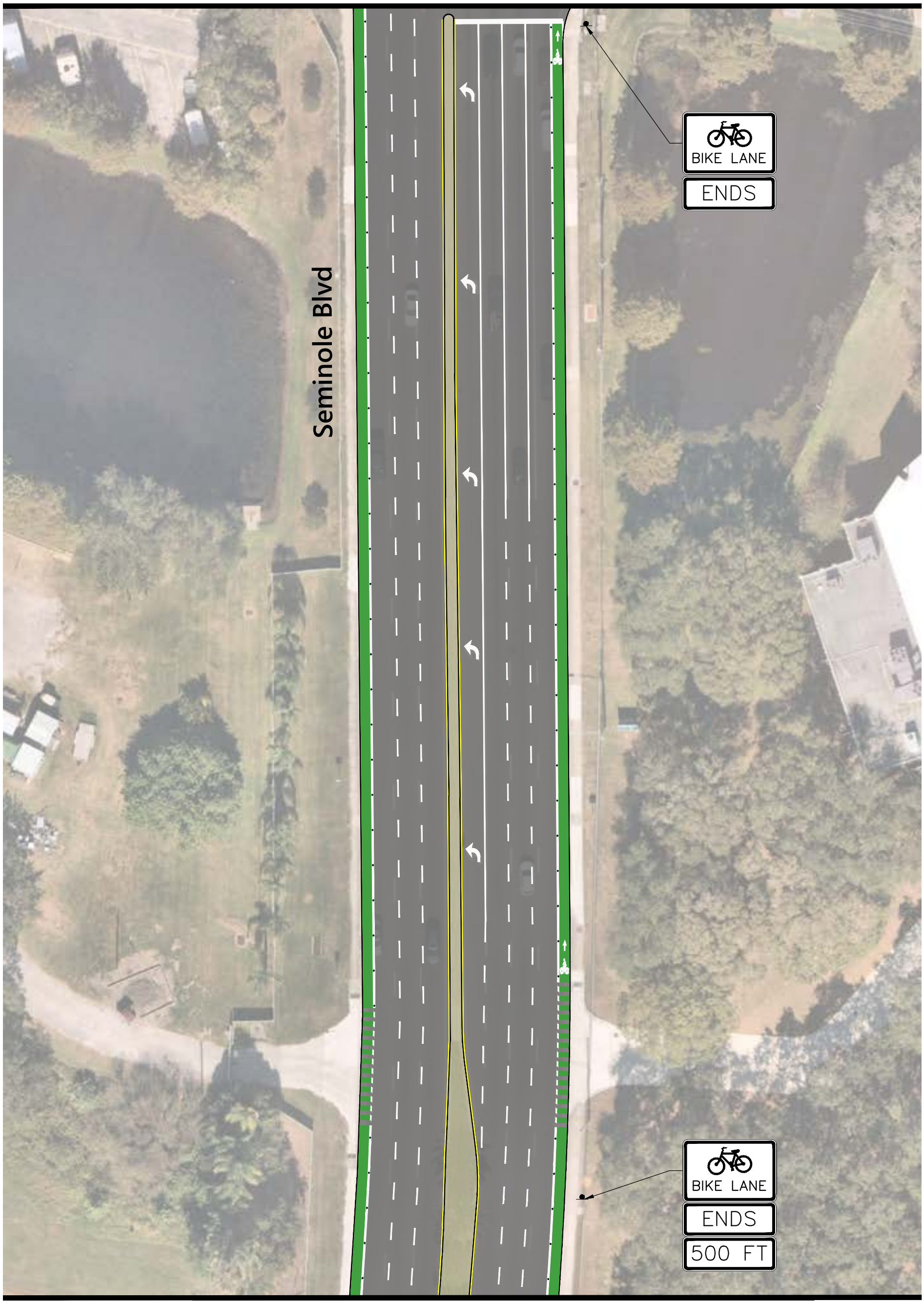
1:40

Seminole Boulevard SS4A - Long Term

Sheet 1

CONCEPTUAL - NOT FOR CONSTRUCTION. ADDITIONAL DETAILED ANALYSIS AND ENGINEERING DESIGN REQUIRED.

MATCH LINE - SEE SHEET 1



MATCH LINE - SEE SHEET 3

N

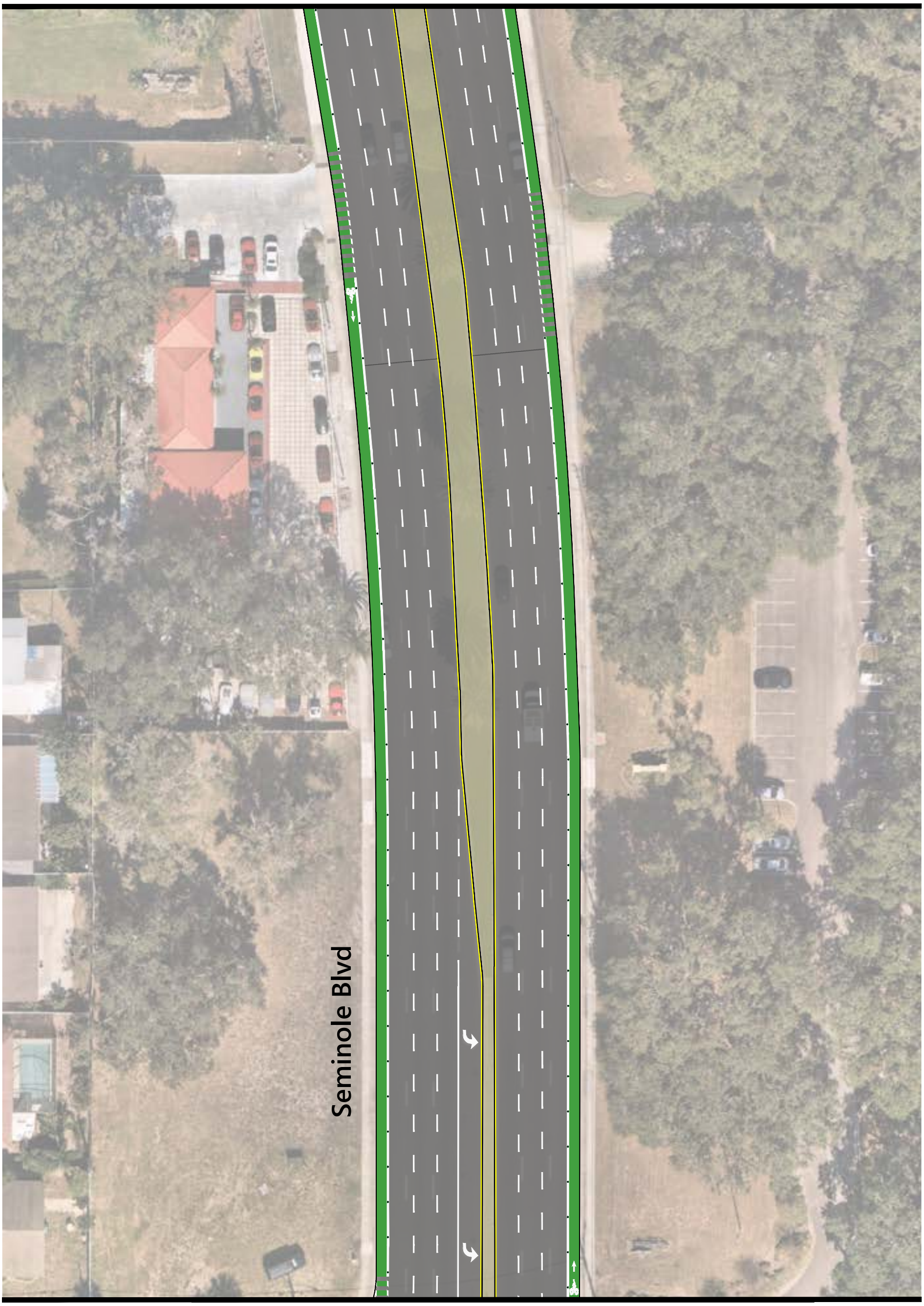
1:40

Seminole Boulevard SS4A - Long Term

Sheet 2

CONCEPTUAL - NOT FOR CONSTRUCTION. ADDITIONAL
DETAILED ANALYSIS AND ENGINEERING DESIGN REQUIRED.

MATCH LINE - SEE SHEET 2



MATCH LINE - SEE SHEET 4

N

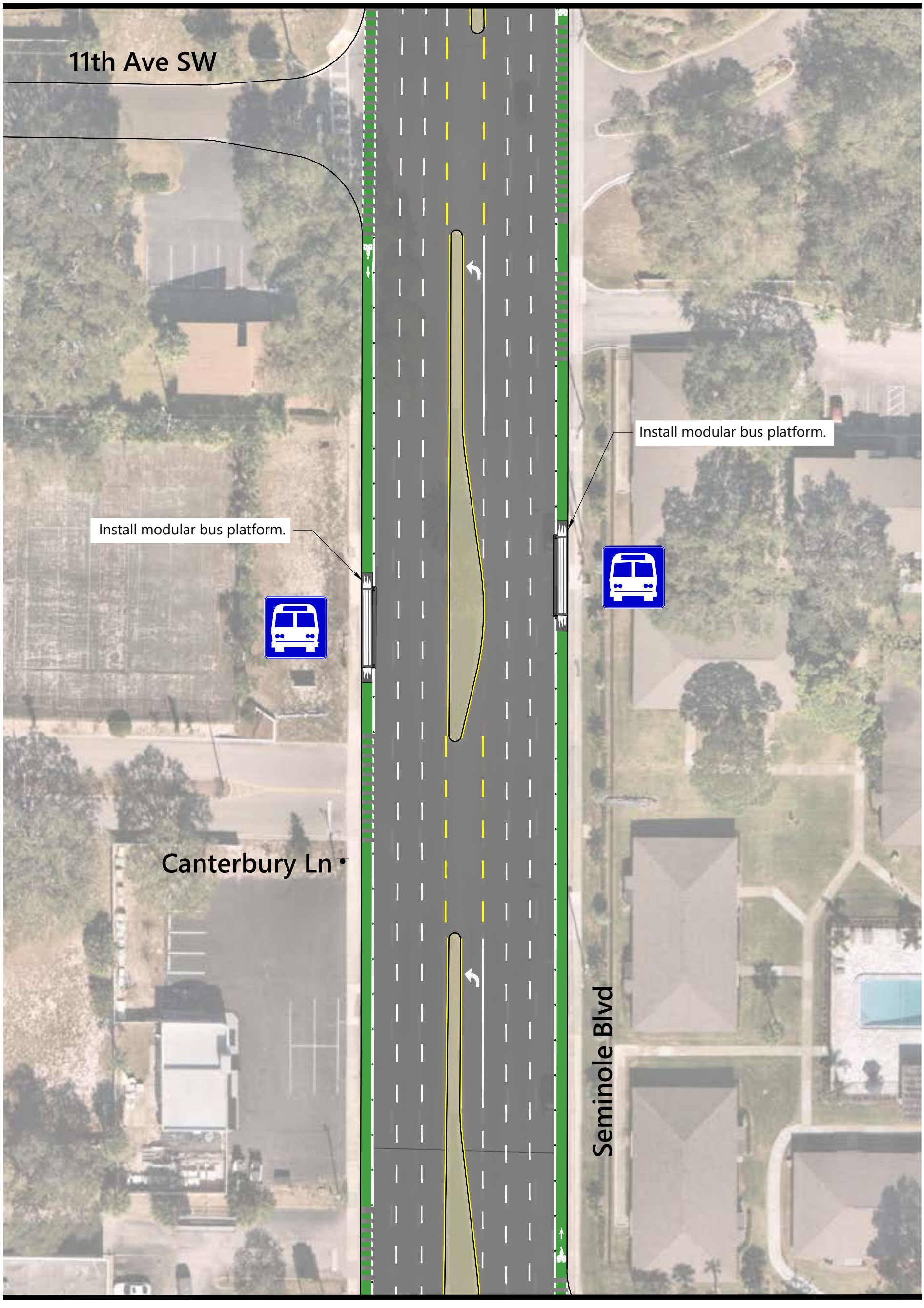
1:40

Seminole Boulevard SS4A - Long Term

Sheet 3

CONCEPTUAL - NOT FOR CONSTRUCTION. ADDITIONAL
DETAILED ANALYSIS AND ENGINEERING DESIGN REQUIRED.

MATCH LINE - SEE SHEET 3



MATCH LINE - SEE SHEET 5

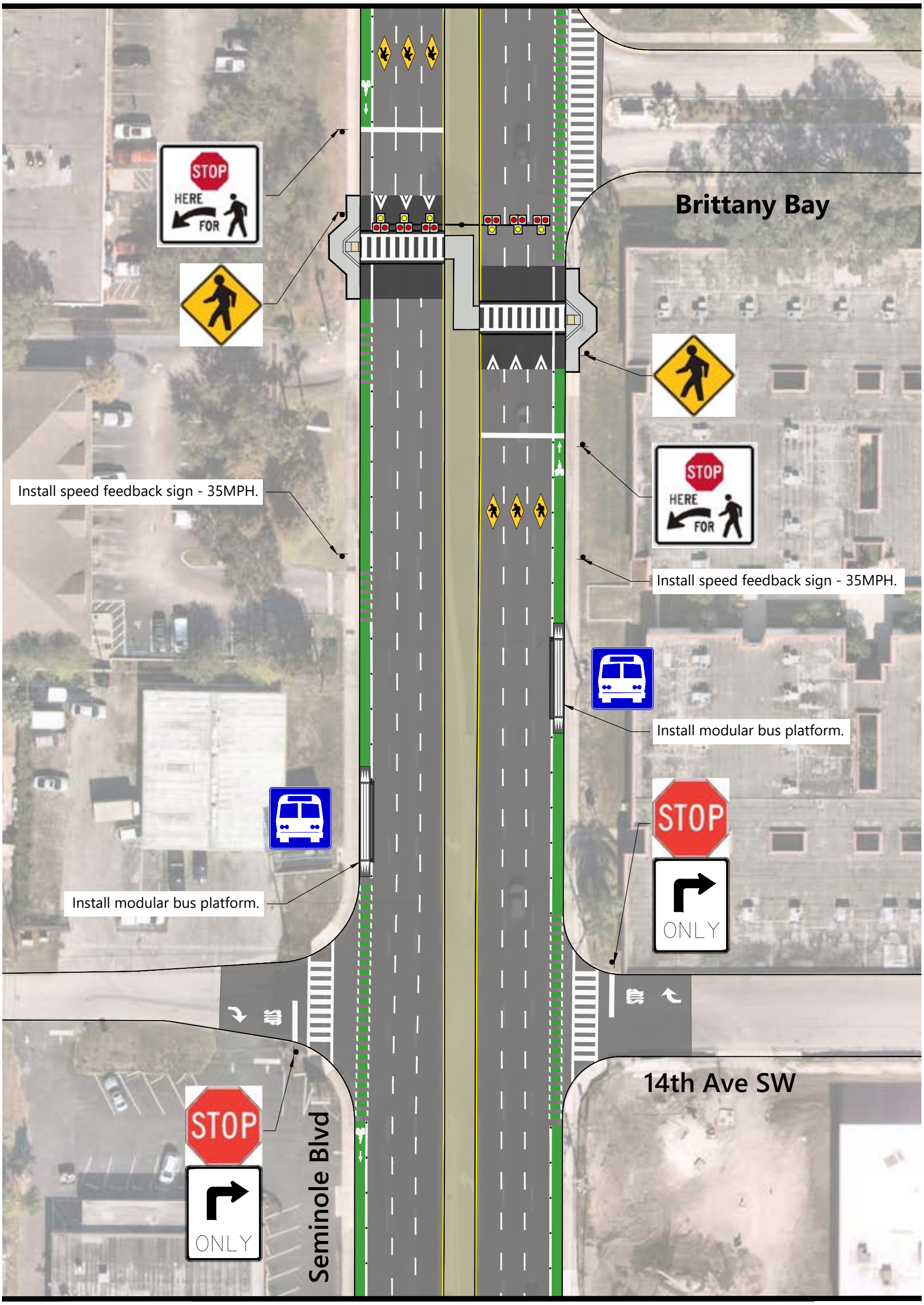
N
1:40

Seminole Boulevard SS4A - Long Term

Sheet 4

CONCEPTUAL - NOT FOR CONSTRUCTION. ADDITIONAL
DETAILED ANALYSIS AND ENGINEERING DESIGN REQUIRED.

MATCH LINE - SEE SHEET 4



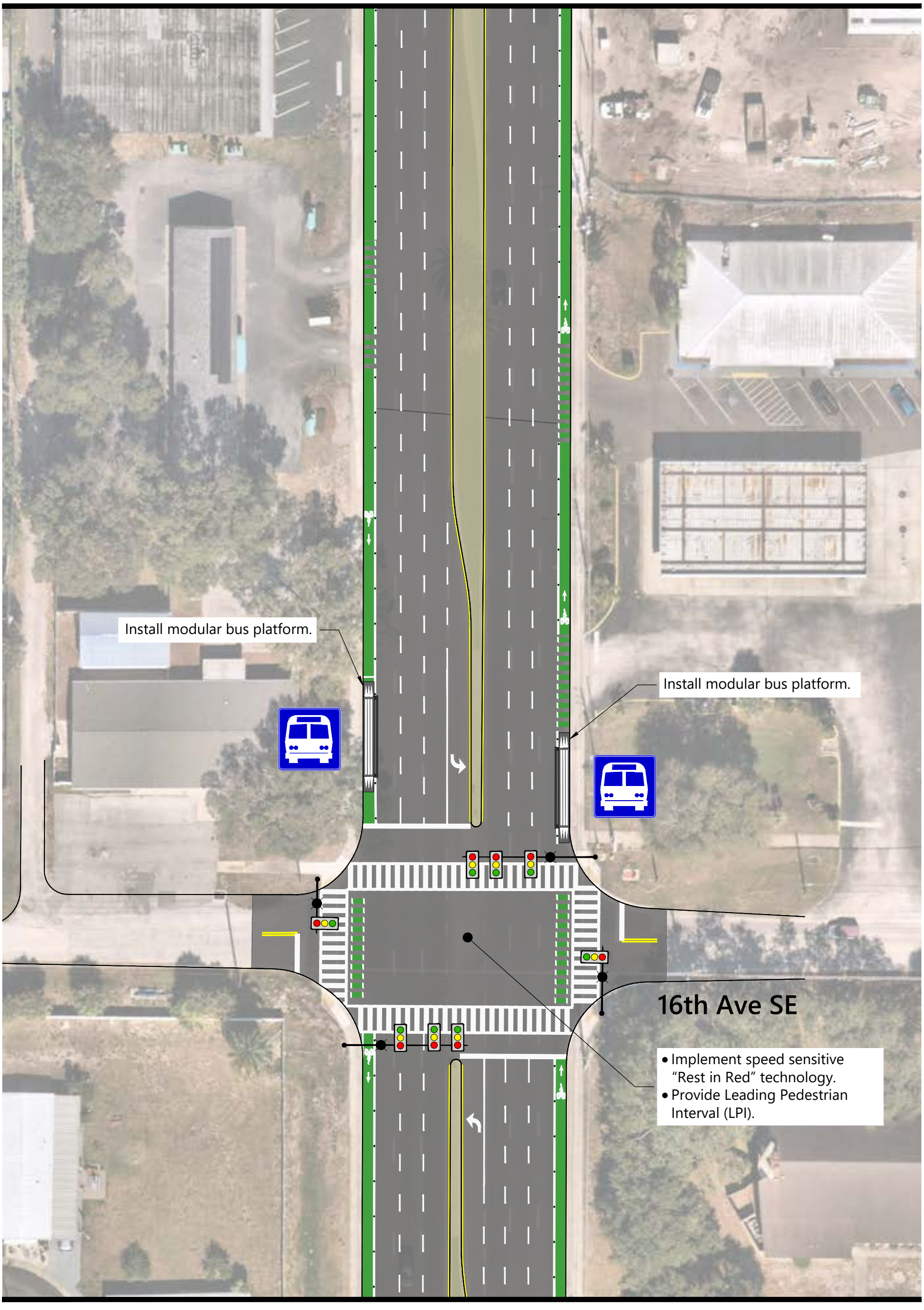
MATCH LINE - SEE SHEET 6

N
1:40

Seminole Boulevard SS4A - Long Term

CONCEPTUAL - NOT FOR CONSTRUCTION. ADDITIONAL
DETAILED ANALYSIS AND ENGINEERING DESIGN REQUIRED.

MATCH LINE - SEE SHEET 5



MATCH LINE - SEE SHEET 7

N

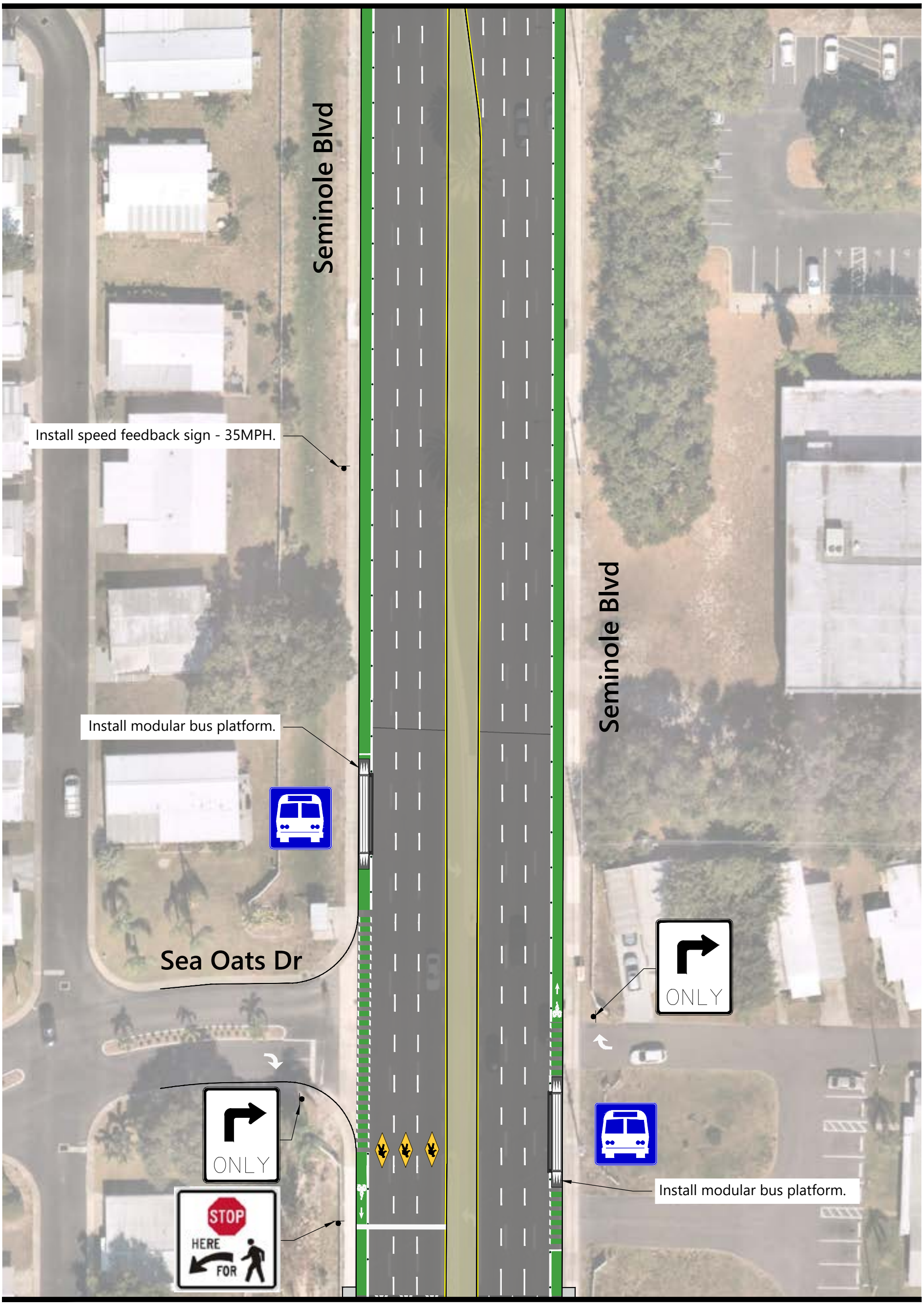
1:40

Seminole Boulevard SS4A - Long Term

Sheet 6

CONCEPTUAL - NOT FOR CONSTRUCTION. ADDITIONAL
DETAILED ANALYSIS AND ENGINEERING DESIGN REQUIRED.

MATCH LINE - SEE SHEET 6



MATCH LINE - SEE SHEET 8

N
1:40

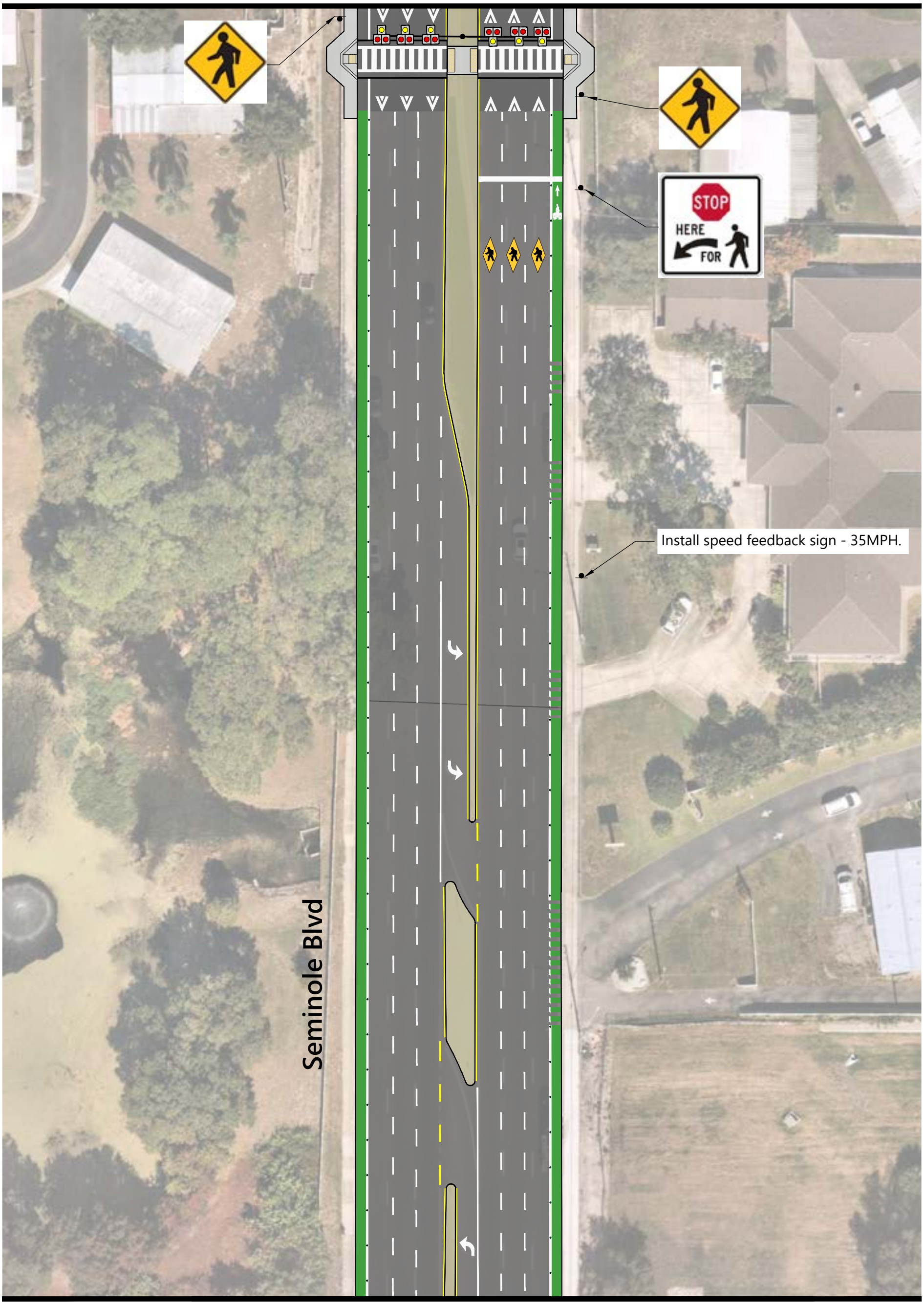
CADD FILE: C:\fpbox\Box_Projects\OR-Projects\2024\OR24-0049.00_Seminole_Blvd\Graphics\CAD\Current CAD Files\0049-Proposed Conditions.dwg
Jan 08, 2025

Seminole Boulevard SS4A - Long Term

Sheet 7

CONCEPTUAL - NOT FOR CONSTRUCTION. ADDITIONAL
DETAILED ANALYSIS AND ENGINEERING DESIGN REQUIRED.

MATCH LINE - SEE SHEET 7



MATCH LINE - SEE SHEET 9

N

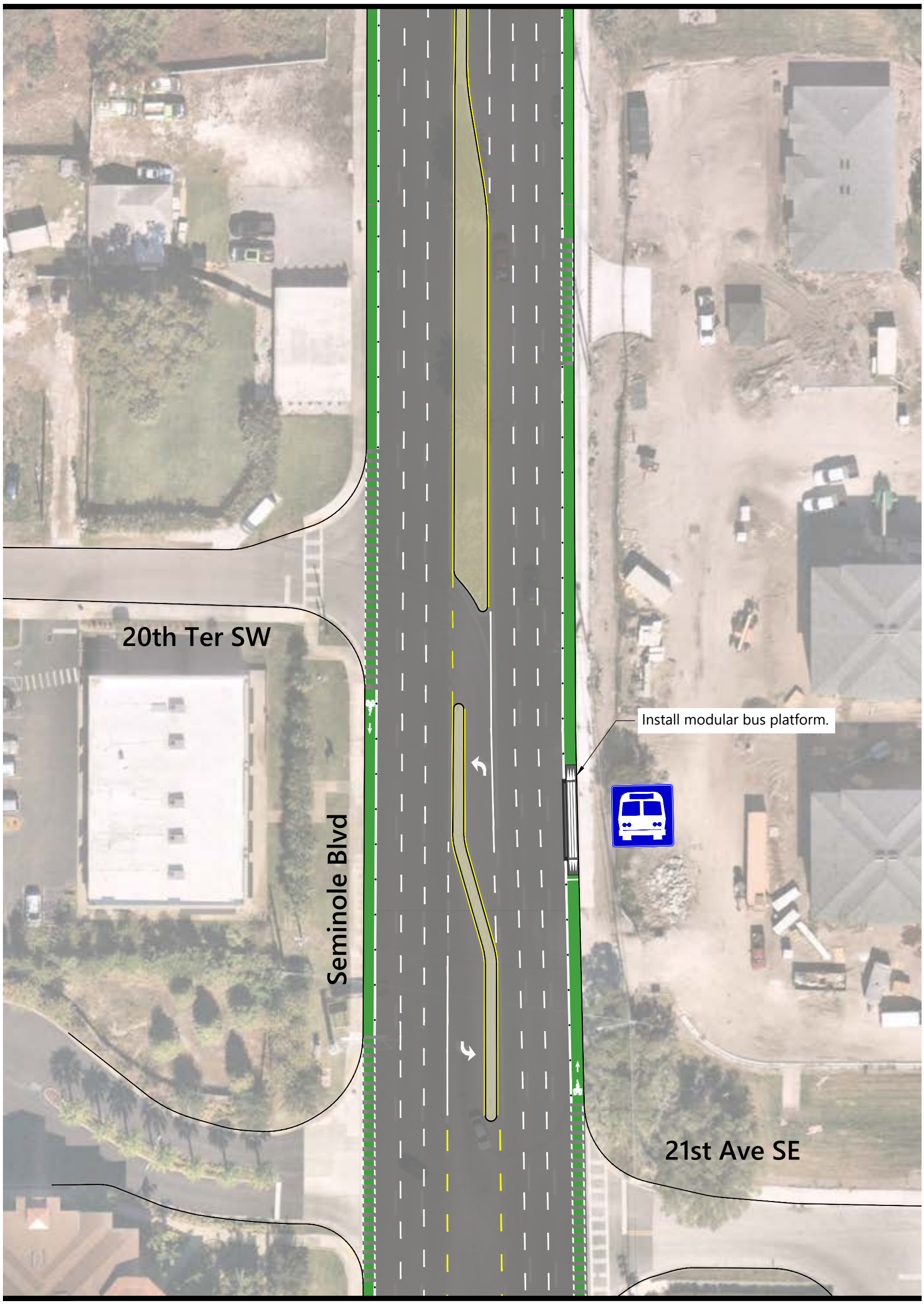
1:40

Seminole Boulevard SS4A - Long Term

Sheet 8

CONCEPTUAL - NOT FOR CONSTRUCTION. ADDITIONAL
DETAILED ANALYSIS AND ENGINEERING DESIGN REQUIRED.

MATCH LINE - SEE SHEET 8



MATCH LINE - SEE SHEET 10

N

1:40

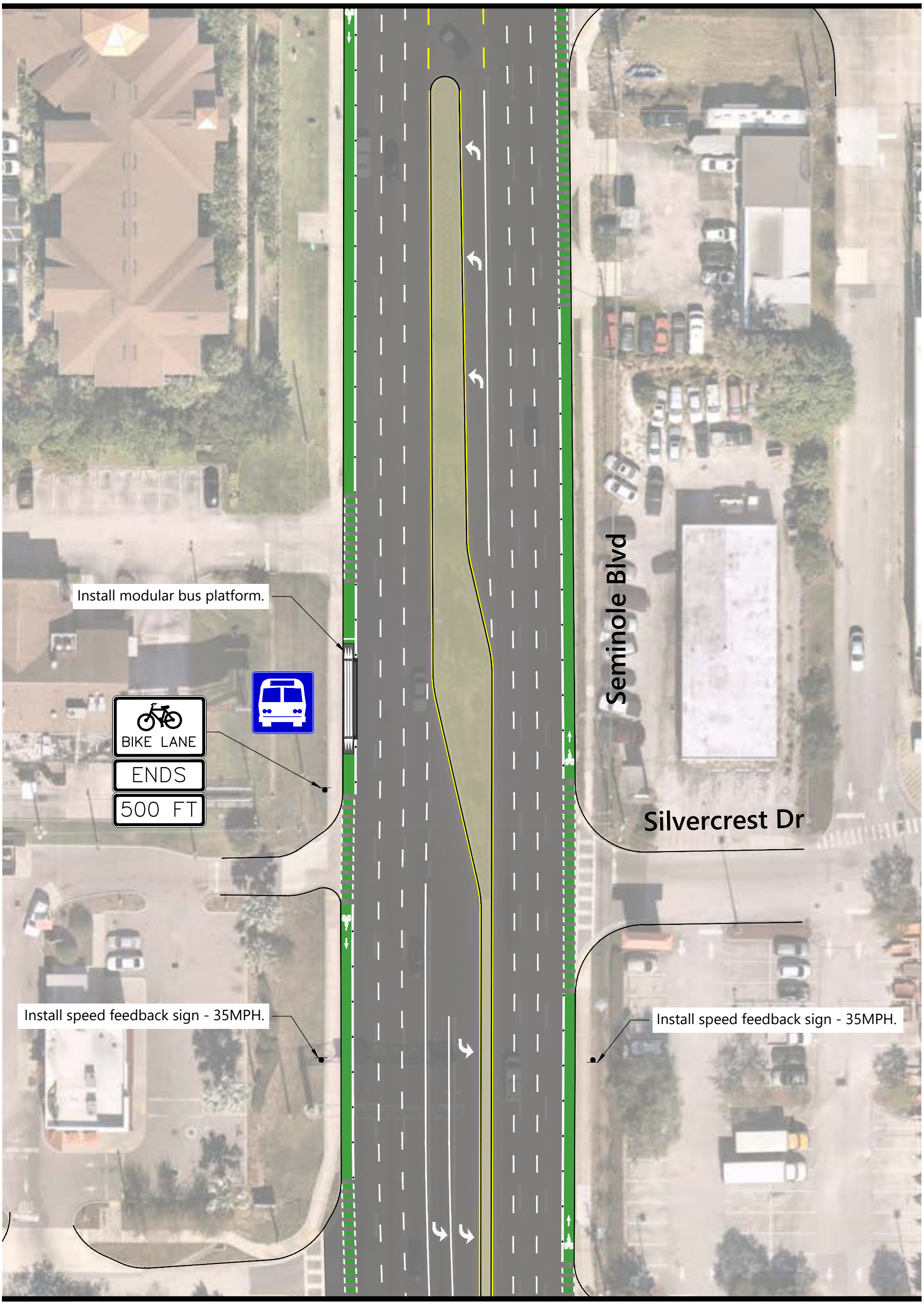
CADD FILE: C:\fpbox\Box\~Projects\OR~Projects\2024\OR24~0049.00_Seminole_Blvd\Graphics\CAD\Current CAD Files\0049-Proposed Conditions.dwg

Jan 08, 2025

CONCEPTUAL - NOT FOR CONSTRUCTION. ADDITIONAL
DETAILED ANALYSIS AND ENGINEERING DESIGN REQUIRED.

Seminole Boulevard SS4A - Long Term

MATCH LINE - SEE SHEET 9



MATCH LINE - SEE SHEET 11

N

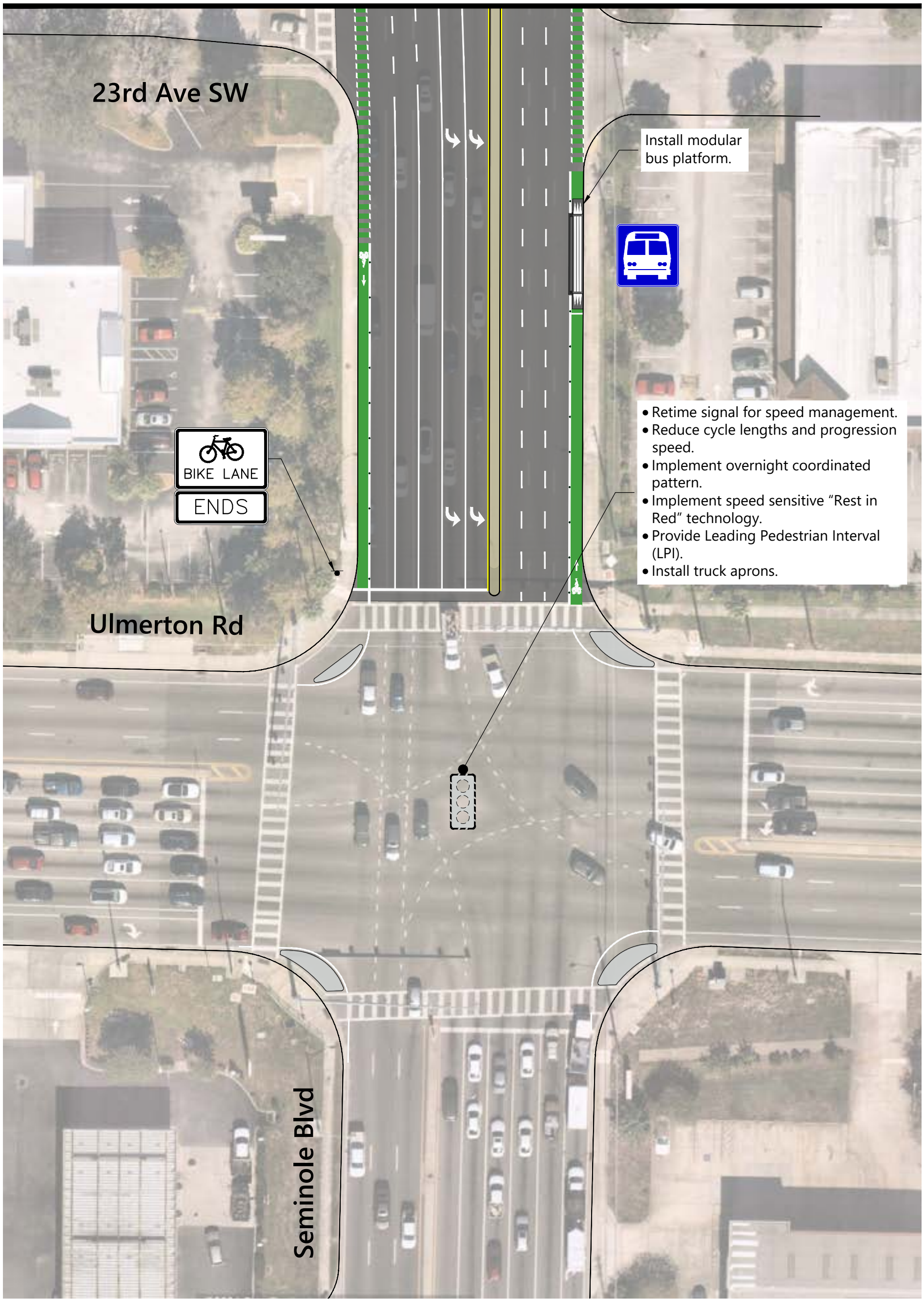
1:40

Seminole Boulevard SS4A - Long Term

Sheet 10

CONCEPTUAL - NOT FOR CONSTRUCTION. ADDITIONAL
DETAILED ANALYSIS AND ENGINEERING DESIGN REQUIRED.

MATCH LINE - SEE SHEET 10



N

1:40

Seminole Boulevard SS4A - Long Term

Sheet 11

CONCEPTUAL - NOT FOR CONSTRUCTION. ADDITIONAL DETAILED ANALYSIS AND ENGINEERING DESIGN REQUIRED.

Appendix D – Cost Estimate for Preferred Alternative

Item	Unit	Estimated Cost	Qty	Total
Corridor Improvements				
Mill & Resurface 6 Lane Urban Road with 4' Bike Lanes (U17)	Per Mile	$2,736,124	1	$2,736,124
Standard Bike Lanes	Per Mile	$42,240.0	1	$42,240
Green Bike Lane Paint	Sq Ft	$1.60	27,200	$43,520
Bike Lane Markings (Raised Thermo)	Each	$12.00	26	$312
Bike Lane Crossing Markings (Green Raised Thermo)	Sq Ft	$1.60	2,000	$3,200
Delineator Posts	Each	$120.00	600	$72,000
New Sign & Post	Each	$1,700.00	18	$30,600
Speed Feedback Sign	Each	$12,500.00	6	$75,000
Modular Bus Platform	Each	$40,000.00	11	$440,000
Pedestrian Hybrid Beacons at Crossing Locations (2)				
Flashing Beacons	Each	$170,000.00	2	$340,000
Raised Crossing	Each	$42,500.00	2	$85,000
ADA Curb Ramp	Each	$6,000.00	3	$18,000
Concrete Work	SY	$100.00	330	$33,000
Pavement Markings / Striping	LF	$5.00	460	$2,300
New Sign on New Post	Each	$800.00	8	$6,400
Intersection Improvements at 16th Avenue S				
Traffic Signal	Per Intersection	$300,000.00	1	$300,000
Pedestal Push Button and Pole	Each	$6,000.00	4	$24,000
Video Detection System	Each	$17,000.00	1	$17,000
Signal Cabinet	Each	$55,000.00	1	$55,000
Signal Controller	Each	$6,000.00	1	$6,000
Opticon	Each	$4,000.00	2	$8,000
Conduit Runs	LF	$60.00	300	$18,000
Pull Box (24"x36")	Each	$3,000.00	1	$3,000
Pull Box (13"x24")	Each	$1,600.00	8	$12,800
Rest in Red Technology	Each	$75,000.00	1	$75,000
High Visibility Crosswalk Striping	Per Each	$300.00	4	$1,200
Signal Improvements at 8th Ave S and Ulmerton Rd				
Rest in Red Technology	Each	$75,000.00	2	$150,000
Signal Retiming	Each	$3,000.00	2	$6,000
Sub Total				**$4,603,700**
Maintenance of Traffic (10%)				**$460,370**
Mobilization (10%)				**$460,370**
Sub-total with Mobilization and MOT				**$5,524,440**
Contingency (30%)				**$1,657,330**
Total Cost Estimate				**$7,181,770**