TAMPA STREETCAR EXTENSION & MODERNIZATION

InVision: TAMPA STREETCAR
TRANSFORMING TAMPA'S TRANSIT

The Tampa Historic Streetcar System, known as the TECO Line, currently operates as a 2.7-mile-long, fixed guide way transit service connecting destinations in Downtown Tampa, Channel District, and Ybor City. Since the start of revenue service on Phase I (Ybor City to Convention Center) in October 2002 and opening of the Phase II-a (Convention Center to Whiting Street) in December 2010, the system has provided connections between Ybor City and key visitor destinations and event venues such as the Florida Aquarium, Tampa Bay History Center, Amalie Arena, and the Tampa Convention Center, as well as key employment centers.

In October 2018, supported by a three-year FDOT grant, HART initiated service improvements that have resulted in significant increases in ridership. These improvements, which include fare-free service, longer operation hours, and greater service frequency, have attracted more than 180,000 additional riders in the first four months of implementation, nearly tripling ridership over the same period the previous year.

With additional improvements, introduction of accessible, higher capacity vehicles, and extension through the Downtown core, the service has the potential to become an attractive transportation option for a broader cross-section of downtown residents, workers, students, and visitors, as well as serve as a catalyst for reinvestment and economic development. In 2017, the City of Tampa initiated the *InVision: Tampa Streetcar Feasibility Study* to evaluate modernizing and extending the Tampa Historic Streetcar System. In June 2018, the Federal Transit Administration approved entry of the proposed streetcar extension project into the Project Development phase in consideration for funding under the Small Starts program. The City of Tampa, working with Hillsborough Area Rapid Transit (HART) and Florida DOT, have been advancing planning and project development for the proposed modernization and extension.

Preferred Alternative Description

The preferred alternative selected in the *InVision: Tampa Streetcar Feasibility Study* consists of the following project elements: 1) replacement of the existing replica streetcar vehicles with modern streetcar vehicles; 2) construction of a new 1.3-mile transit fixed guideway with overhead power within existing rights-of-way from the western terminus of the existing system through the core of Downtown Tampa to Tampa Heights, 3) construction of stops along the extension guideway; 4) modifications to the existing 2.7-mile alignment guideway, power system, and stops to support modern streetcar operations; and 5) modifications to the existing vehicle maintenance and storage facility to accommodate new modern vehicles.

Vehicle Technology

Modern streetcar vehicles were selected as the preferred vehicle technology for operations along the existing system and extension. The modern streetcar provides the highest-capacity vehicle of the options considered (continued use of historic replica trolleys and premium bus). The configuration of the modern streetcar, with multiple, wide doors and level-boarding heights, would facilitate easy access by the greatest share of the population, including those with mobility challenges. With many portions of the route in a dedicated guideway, a modern streetcar would be able to move large numbers of people while minimizing constraints posed by traffic congestion. The modern streetcar's larger passenger capacity makes it the most efficient of the options in terms of cost per rider. In a rapidly-growing urban center like Tampa, this capacity provides the greatest degree of system flexibility for meeting mobility demands on a day-to-day basis, and over the long term.

Extension Alignment

The evaluation of alignment alternatives resulted in the selection of an extension traveling 1.3 miles north from Downtown to Palm Avenue within existing rights-of-way. The proposed extension alignment is proposed as a north/south couplet pairing Florida Avenue and Tampa Street. The alignment begins near the existing streetcar terminus at Whiting Street and Franklin Street. From the existing track on Franklin Street, the northbound track extension turns east at Brorein Street, then turns north at Florida Avenue to extend through the Downtown Core and Tampa Heights to Palm Avenue. At Palm Avenue, the

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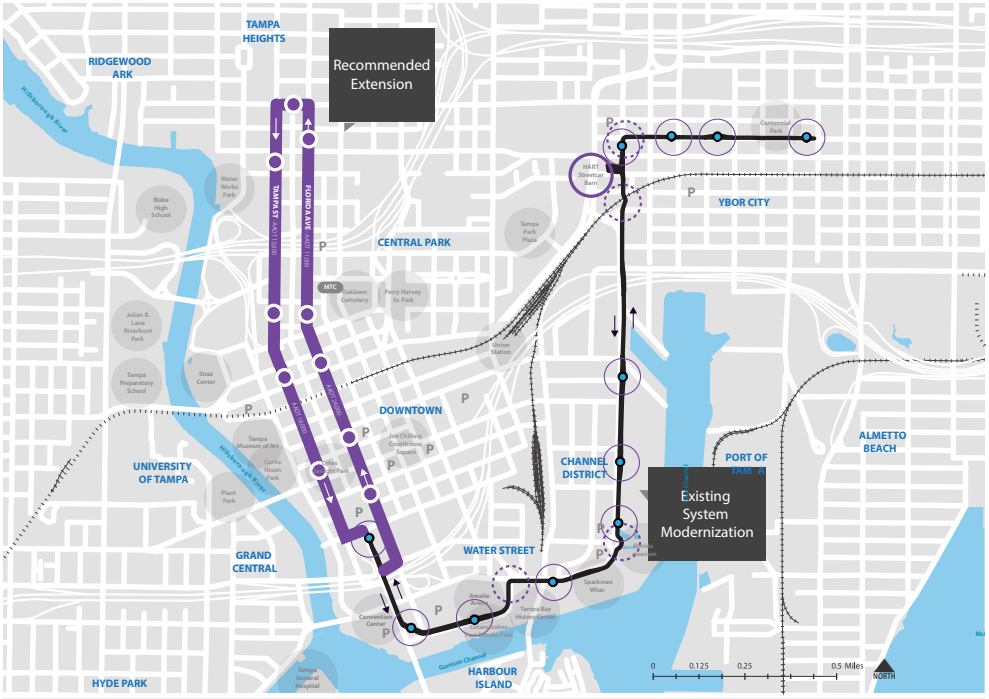

alignment turns west and travels two blocks before turning south onto Tampa Street. The southbound alignment runs along Tampa Street to Whiting Street. At Whiting Street, the alignment turns east to link back to the existing downtown streetcar terminus at the Whiting Street Station.

Extension Stops

To accommodate modern streetcar vehicles and allow for shared use by other transit vehicle types, stops along the extension will be designed with a 14-inch-high platform section for level, ADA-compliant streetcar boarding and a lower, 8-inch-high platform section for bus boarding. The overall footprint of the extension stops will be similar in scale to stops on the existing line, and measure approximately 10-feet-wide by 100-feet-long. New and retrofitted stops will have similar amenities, which will include canopy/covered area; seating, railings, trash receptacles; system information map, kiosk, signage; lighting and security elements; and ADA-compliant access and ramps.

One of two stop types will be constructed along the extension. Some stops will be positioned in the parking lane to the right of the guideway, while other stops will be positioned along existing sidewalks adjacent to the guide way. The type of stop depends on the guideway location in the street. During the project development phase of the project, primary stop locations have been identified as well as optional locations for several stops. All stops, both primary and optional, are being evaluated for potential impacts. All potential stop locations are shown on the map above.

Existing Guideway Modifications

Four locations along the existing streetcar guideway will require reconstruction to accommodate the larger turning radius of a modern streetcar vehicle. Starting at the northern end of the existing guideway, the four locations are:

- Near Jose Mart Park in Ybor City.
- South of East 5th Street near the intersection of the streetcar and CSX tracks.
- Near East Cumberland Avenue at the roundabout in the Channel District.
- The intersection of Channelside Drive and Old Water Street near the Tampa Bay History Center and Amelia Arena.

To serve modern streetcar vehicles, modifications to the existing traction power system will also be required. Modifications will include upgrading the system from trolley wire to overhead contact system to accommodate modern streetcar vehicles. This change can be accomplished using the existing power sources and pole/arm systems.

Existing System Stop Modifications

Each of the eleven stops along the existing streetcar line will be retrofitted to accommodate modern streetcar vehicles. Proposed stop modifications will occur with the footprint of the existing stop. The existing stops currently include a high-block boarding platform designed to accommodate the higher interior floor of replica streetcar vehicles. The existing 12-foot by 12-foot high block platforms and ramps will be removed and replaced with a new 14-inch high platform.

Existing shelters and other equipment and amenities will be removed and reinstalled or replaced in-kind. Future design phases will determine if the new concrete platform will be constructed around the existing columns or if the shelters will be removed and installed on the new platform or replaced in-kind. At all of the existing stops, the construction of new platforms will require removal of the existing concrete sidewalks, curb, and platforms, so that the new platform and ramps may be constructed.

Please visit the following website for more information on the proposed extension and modernization planning effort ***www.tampagov.net/streetcar.***

For specific questions, please contact:
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(813) 274-8998
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Revised Schedule

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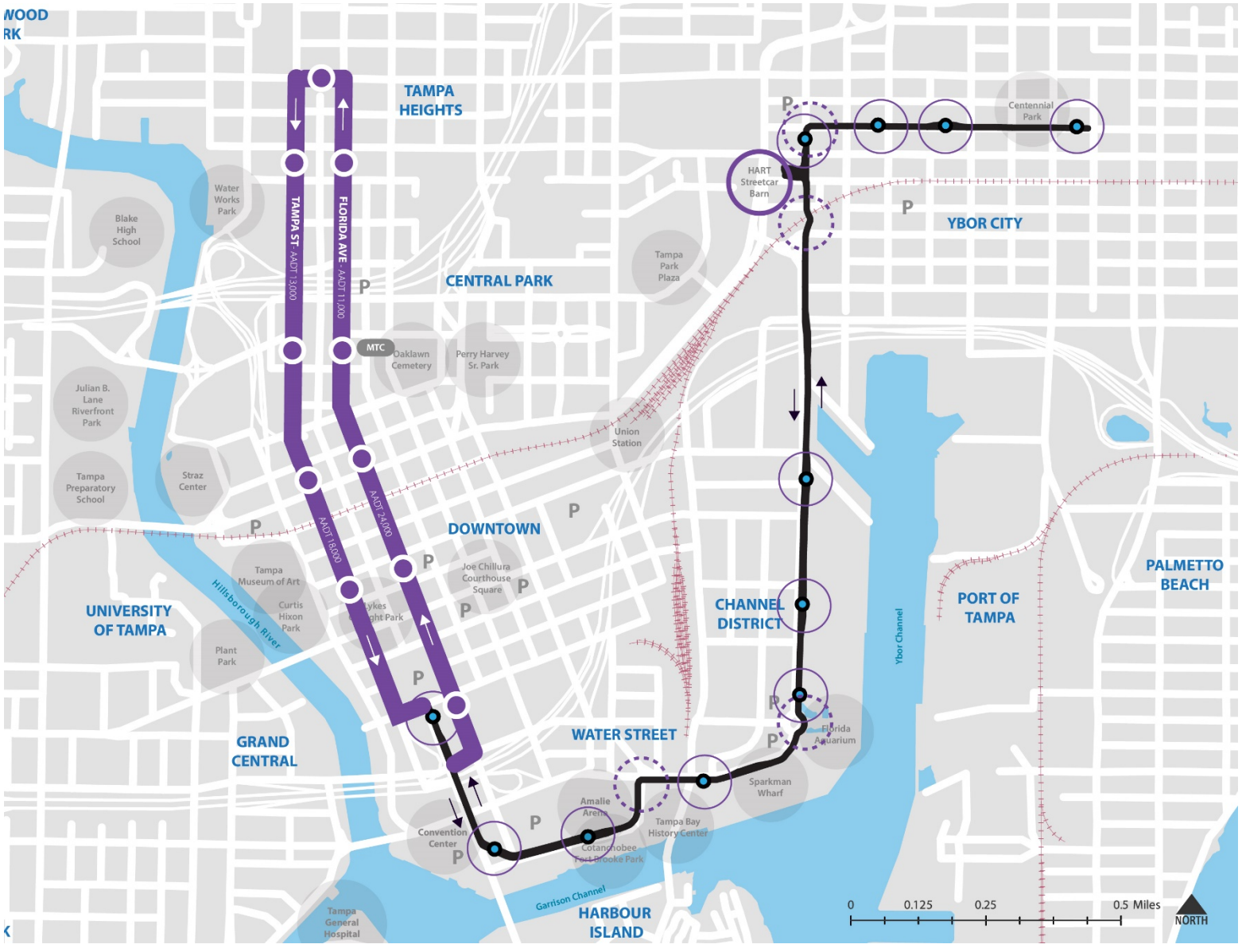
TRANSFORMING TAMPA'S TRANSIT

Feb 2019	Alignment Finalization
Mar 2019	Environmental Class of Action Determination
Dec 2019	Funding and Financing Plan Complete
Apr 2020	Completion of NEPA (Documented CE)
2020-2022	Preliminary & Final Engineering
Aug 2020	Submittal of Project Ratings & Funding Request to FTA
Mar 2021	Project Rating in Annual CIG Rating Report
2021-2022	Receipt of FTA/FDOT Grant Agreements
2021-2024	Construction & Vehicle Procurement
2024-2025	Start of Revenue Service

Project Definition - Extension & Modernization



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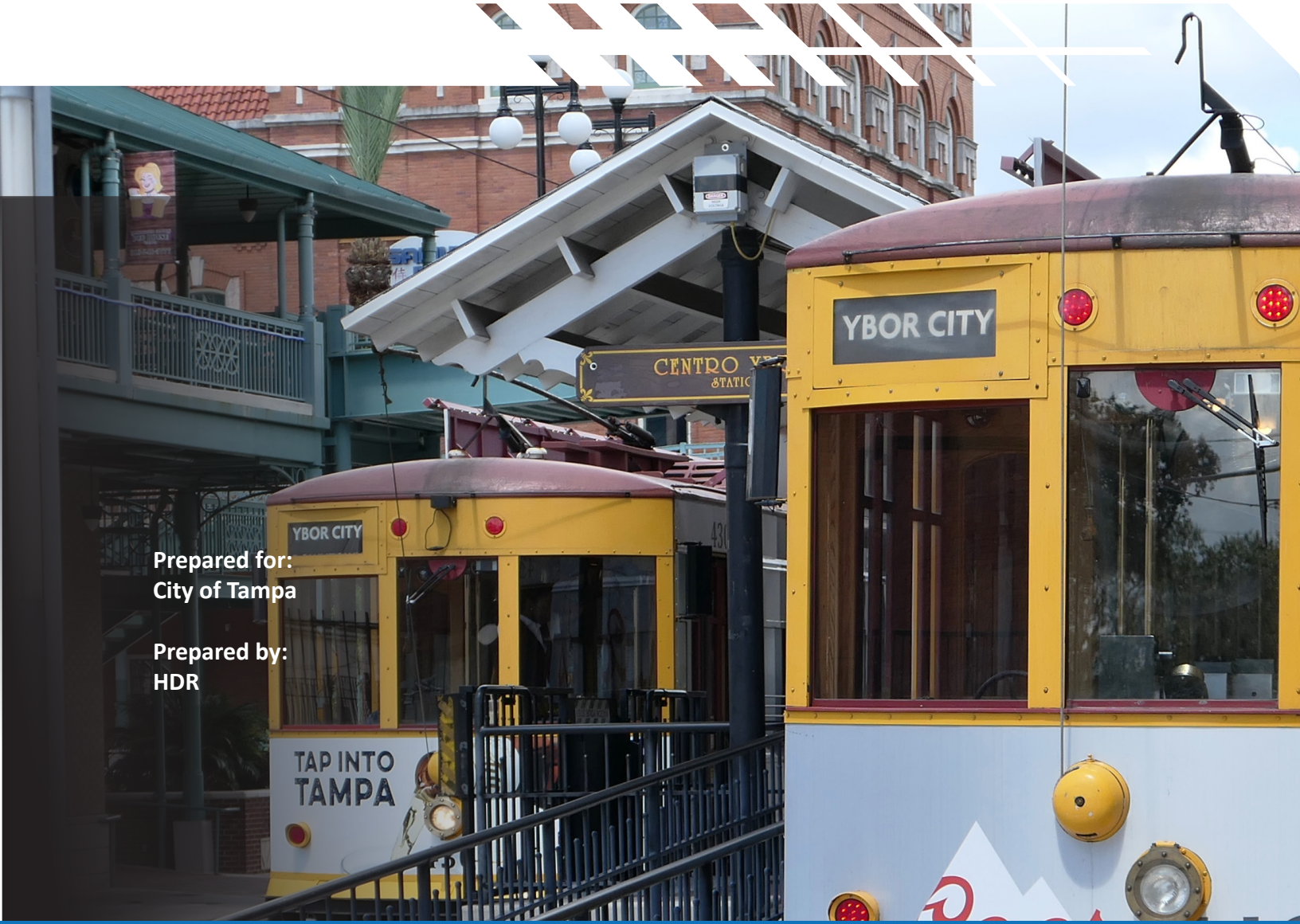
TAMPA STREETCAR
TRANSFORMING TAMPA'S TRANSIT

PREFERRED ALTERNATIVE REPORT

Vehicle Technology, Alignment & Guideway, Stops & Vehicle Maintenance Facility
DRAFT - April 2019



Prepared for:
City of Tampa

Prepared by:
HDR


TRANSPORTATION PLAZA
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CONTENTS


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1. INTRODUCTION

1.1 Report Contents

This report provides a review of the project purpose and need statement, a review of alignment options evaluated during the first phase of the study, and a presentation of preferred project alternatives, including preferences for the following:

» vehicle technology;
» extension alignment and guideway;
» existing guideway modernization;
» stop concepts and locations; and
» vehicle maintenance facility improvements.

The final section of this report summarizes engagement activities undertaken throughout the study to support project decisions.

The Preferred Alternative Report summarizes detailed information and analyses that can be found on the City of Tampa's *InVision: Tampa Streetcar* project website: www.tampagov.net/streetcar.

1.2 Study Background

The City of Tampa is conducting the *InVision: Tampa Streetcar Feasibility Study* to evaluate the potential modernization and extension of the Tampa Historic Streetcar System to better serve the mobility needs of residents, workers, visitors, and students in Downtown Tampa, Ybor City, Channel District, and surrounding urban neighborhoods. The planning and design effort is designed to advance mobility goals and strategies presented in the *InVision: Tampa Center City Plan* and build on previous studies assessing Downtown Tampa's transportation needs.

The current Tampa Historic Streetcar System is a 2.7-mile-long, fixed guideway transit service connecting destinations in Downtown Tampa, Channel District, and Ybor City. Since the start of revenue service on Phase I (Ybor City to Convention Center) in October 2002 and opening of the Phase II-a (Convention Center to Whiting Street) in December 2010, the system has provided connections between Ybor City and key visitor destinations and event venues. The system currently connects the Tampa Aquarium, Tampa Bay History Center, Amalie Arena, and the Tampa Convention Center.

In recent years, ridership on the existing system has been lower than anticipated due to several factors, including limited hours of operation, low service frequency, and lack of connectivity to important transit trip attractors and generators in the Downtown Core, including commercial and governmental offices, multifamily development, and the Marion Transit Center.

In October 2018, supported by a three-year FDOT grant, HART initiated service improvements that have resulted in significant increases in ridership. These improvements, which include fare-free service, longer operation hours, and greater service frequency, have attracted more than 180,000 additional riders in the first 4 months of implementation, nearly tripling ridership over the same period the previous year.

With additional improvements, introduction of accessible, higher capacity vehicles, and extension through the Downtown core, the service has the potential to become an attractive transportation option for a broader cross-section of downtown residents, workers, students, and visitors, as well as serve as a catalyst for reinvestment and economic development.

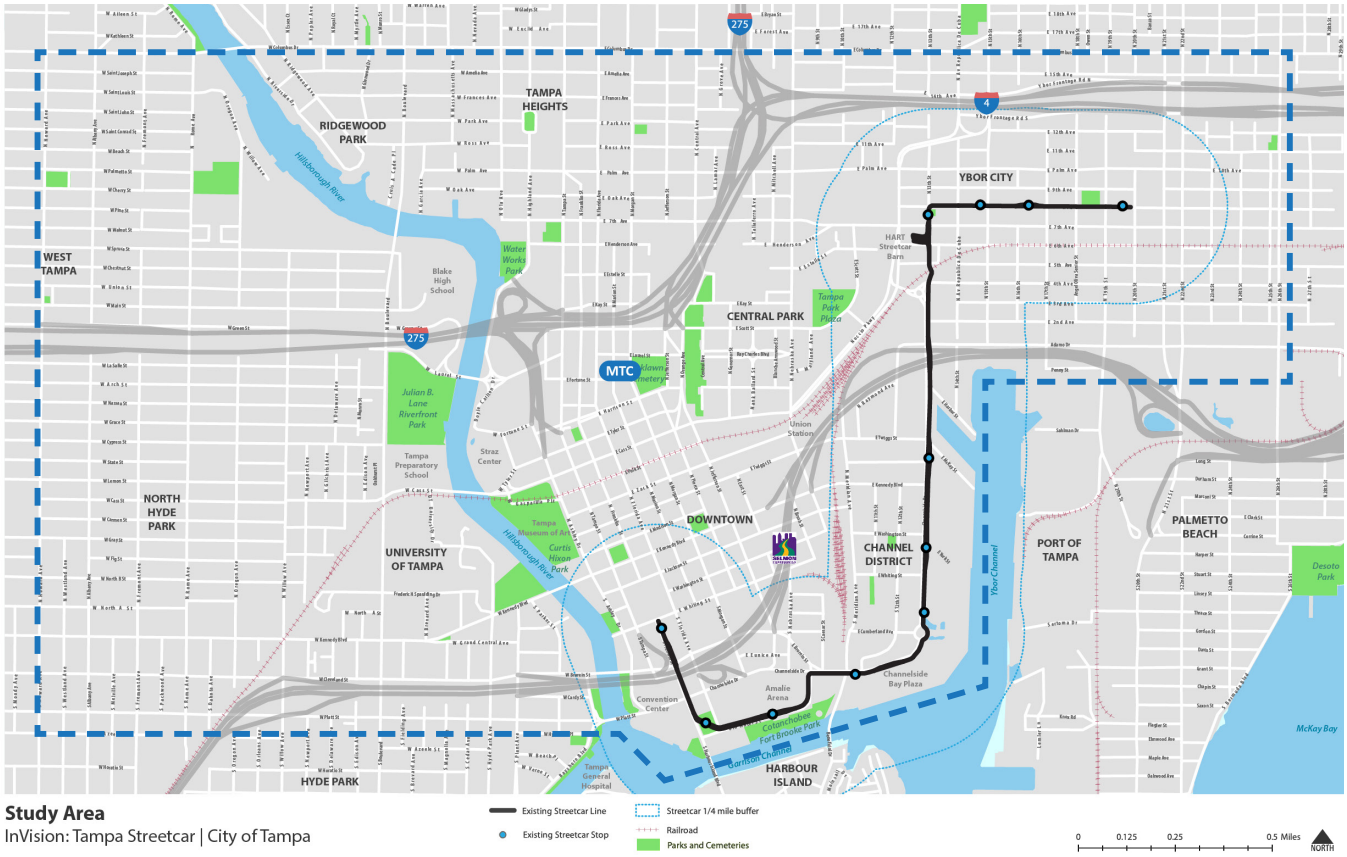
1.3 Study Overview

The *InVision: Tampa Streetcar Feasibility Study* has been undertaken to define and evaluate modernization options for the existing streetcar system and facilities, assess the potential for an extension of the system, and evaluate vehicle technology alternatives. The study is being led by the City of Tampa in partnership with the Florida Department of Transportation (FDOT) and the Hillsborough Area Regional Transit Authority (HART). The project is being developed in close coordination with other local and regional transit initiatives, including the HART *Regional Transit Feasibility Plan.*

As shown on Figure 1, the area under evaluation for the study matches the area defined for the *InVision: Tampa Center City Plan* and measures approximately three-miles by two-miles centered on the Downtown Core.

The study has proceeded under two phases of work. During the first phase of the study, the City completed assessments of land use and transportation conditions

Figure 1. InVision: Tampa Streetcar Feasibility Study Area



Study Area
InVision: Tampa Streetcar | City of Tampa

in the study area, prepared a purpose and need statement, and evaluated multiple alignments for the extension of the system through Downtown and surrounding urban neighborhoods. These efforts, including a series of public and stakeholder meetings held in the spring and fall of 2017, resulted in the identification of two north/south-oriented alignments as the best performing options for advancement into the second phase of the study (See Figure 3).

The first phase also resulted in a recommendation to improve service on the existing streetcar alignment between Ybor City, Channel District, Water Street, and the Tampa Convention Center. Recommendations called for the full alignment—the existing system plus the extension—to be designed to provide a "one seat" trip, maximize exclusive transit guideway operations, and offer high levels of service with full-day and evening operations with 15-minute service frequency.

During the second phase of the study, the two north/south-oriented alignments were evaluated in greater detail and additional analysis was conducted to determine preferences for vehicle technology, guideway configurations, stop locations and concepts, modernization improvements along the existing system, and potential improvements to the vehicle maintenance facility.

The results of the these initial phases of the study will serve as the basis for the assessment of environmental impacts, preparation of ridership and cost estimates, and the drafting of a project funding and implementation plan.

2. PURPOSE & NEED

Project research and feedback from public and stakeholder engagement during the first phase of the study established a foundation for the development of the project purpose and need statement. The purpose and need statement articulates issues and opportunities that may be addressed through the introduction of enhanced transit service. The statement served as the basis for evaluating initial alignment options and defining and selecting preferred project alternatives.

A summary of the project purpose and need statement follows:

» **Connect Downtown Centers.** Tampa's downtown has undergone a dramatic transformation in the past decade. The Downtown Core, Channel District, and north Harbour Island are now home to nearly 10,000 residents, and another 40,000 people reside in revitalizing districts surrounding the Downtown Core, including Central Park, Ybor City, North Hyde Park, Grand Central, and Tampa Heights. The number of employees in the study area has increased during the same period to around 100,000 and an additional 34,000 employees are projected in the study area between the years 2020 and 2040. As activity levels have increased, travel within and between downtown destinations has become increasingly time-consuming, costly, and inconvenient. Single occupancy vehicle travel is difficult given traffic congestion and diminished parking availability. Distance and physical barriers make walking an unattractive option for all but very short trips, particularly during hot weather, and although the existing streetcar connects some key destinations, many important ones are beyond walking distance of the system and alternative transit service is limited.

» **Serve Diverse Travel Markets.** As the traditional center of employment, governmental services, culture and history, and entertainment, Downtown Tampa serves a broad range of users from across the Tampa Bay region. Downtown residents, workers, and visitors travel to and within Downtown Tampa to conduct business, access public services, participate in educational programs, and enjoy sports, cultural, and entertainment events. These users place a strong and consistent demand on existing transportation, transit, and parking resources. And as these numbers increase—population and employment alone are projected to increase by 65,000 in the study area between 2020 and 2040—existing facilities will come under increasing stress. The introduction of a high capacity, reliable, and consistent circulator service could meet increased demands while also more efficiently use existing roadway capacity and street space. An improved service could help meet the demands of transit-dependent populations in downtown-adjacent neighborhoods, as well as meet the needs of downtown's growing residential and student populations, event and venue patrons, conventioneers, and workers.

Figure 2. Images from early project workshops held in April and May 2017

» **Improve First/Last Mile Service.** Although several regional transit services provide access to Downtown Tampa and significant investment has been made in public parking infrastructure, first mile/last mile transit between these and Downtown destinations are limited. While regional transit services like HART and PSTA express bus, Amtrak, and private regional bus operations cater to a wide range of users and geographical reaches, there is no single unifying service that addresses first/last mile mobility for large numbers of daily regional commuters and public parking users. A high-capacity, scheduled service that allows for frequent and efficient transfers to and from regional transit modes and parking resources is missing in the service area. Such a service could complement existing bike sharing, ride hailing, and limited capacity public transit services like the In-Towner and Downtowner.

» **Support Economic Development.** Investment in large-scale, multi-block, mixed use projects, including Water Street, The Heights, West River, and Port Tampa Bay, will have a dramatic impact on the future of the City and region. These projects, representing over six billion dollars in private investment, will reshape large sections of Downtown Tampa and surrounding neighborhoods. These projects, along with the continued revitalization of Ybor City, the North Franklin Street Corridor, and build out of the Channel District and Encore, will create new travel demand in and between locations not currently well-served by convenient, high capacity mobility services. Given spatial and physical barriers to walking, travel within and between downtown destinations and emerging development areas is often time-consuming and inconvenient. A core transit service linking planned population and employment concentrations will help bridge the distances across Downtown Tampa and connect adjacent subdistricts more directly to destinations, amenities, and activities.

» **Expand Sustainable Transportation Options.** Without improved local transit options, Downtown Tampa's long term sustainability and competitiveness will be diminished. Several factors limit the potential to improve access and mobility by automobile travel—downtown's location on a peninsula creates natural access and mobility challenges, roadway and parking capacity is limited, and the distance between regional transit hubs, subdistricts, and destinations makes pedestrian travel an impractical alternative for mid-range local trips. A core transit service with the potential to serve internal trips effectively, bypass peak hour and event-related congestion, integrate with on-demand and private ride-hailing services, and leverage the presence of regional transit connections and parking resources has the potential to support City goals for a more sustainable, livable, and energy-efficient future.

The full purpose and need statement is included in the *Purpose & Need, Context & Evaluation Report* available on City of Tampa's *InVision: Tampa Streetcar* project website: www.tampagov.net/streetcar..

3. EXTENSION OPTIONS

3.1 Extension Options Development & Evaluation

Early in the study process, seven alignment options were defined based on the results of the context assessment and feedback from public and stakeholder engagement activities. These alignment options included:

- Alignment A: N/S Franklin Street
- Alignment B: N/S Tampa Street-Florida Avenue Couplet
- Alignment C: E/W West River-Ybor City
- Alignment D: E/W North Hyde Park-Channel District
- Alignment E: E/W North Hyde Park-Convention Center Couplet
- Alignment F: Loop Downtown-Channel District
- Alignment G: Loop Downtown-Ybor City

These alignment options were evaluated based on measures associated with the purpose and need categories, as well as six performance and impact categories. The measures used for the performance and impact categories are shown in Table 1. The full results of the alignment option evaluation process are reported in a summary matrix and an overall evaluation matrix provided in Appendix A - Alignment Options Evaluation Process.

3.2 Preferred Extension Options

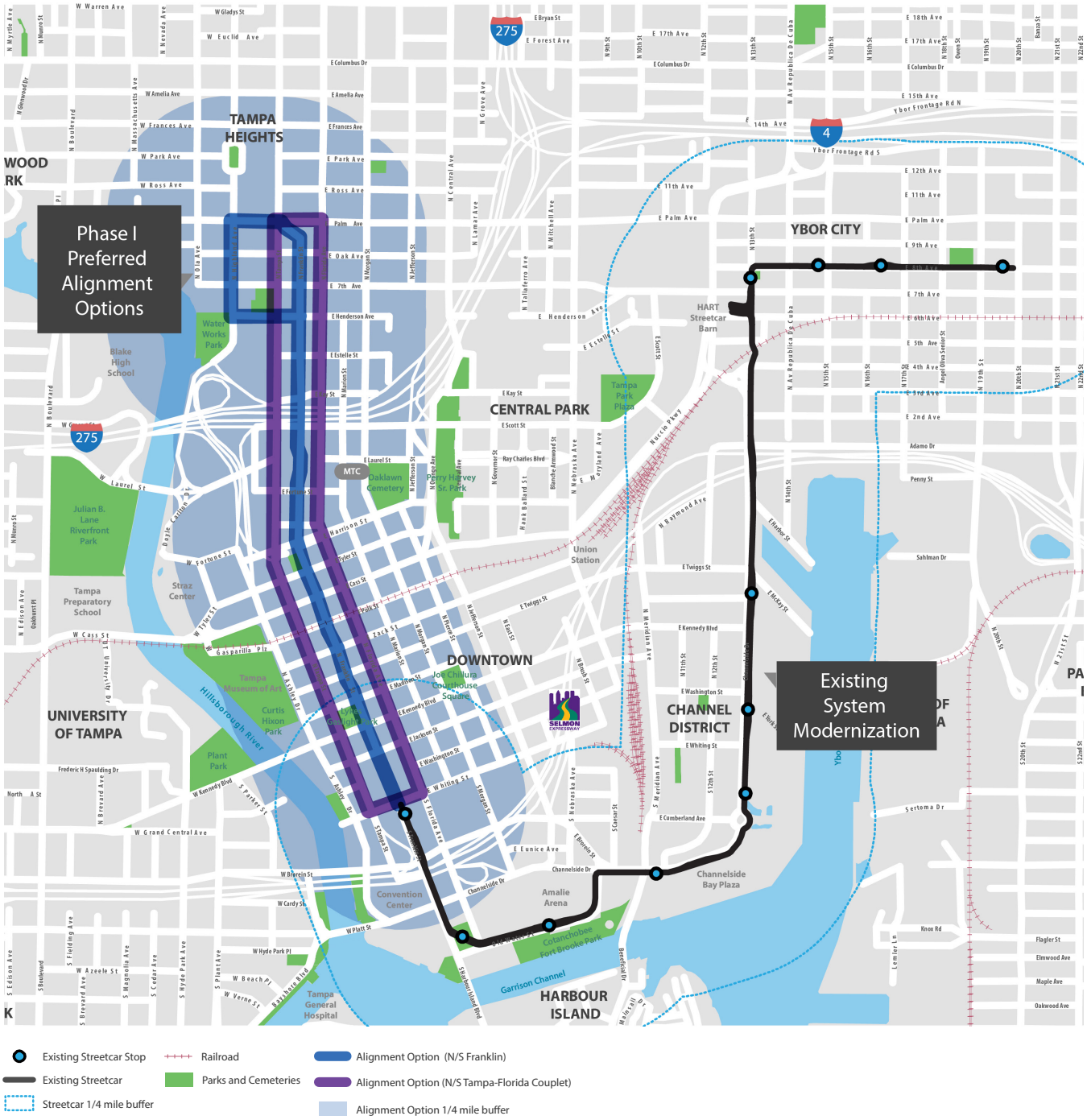
The alignment option evaluation effort resulted in the selection of Alignment Options A (N/S Franklin Street) and B (N/S Tampa Street-Florida Avenue Couplet). These alignment options performed above average in the purpose and need evaluation categories and were rated highly in the performance and impacts categories. Both options serve residents, employees, and special event venues in the Downtown Core, provide service to existing and potential regional transit hubs, including the Marion Transit Center, and were highly rated due to comparatively lower capital and operating costs.

For more detailed information on the alignment option evaluation and selection process, refer to the full report—*Definition & Evaluation of Alignment Options Report*—on the City of Tampa's InVision: Tampa Streetcar project website at www.tampagov.net/streetcar.

Table 1. Performance & Impact Evaluation Categories and Measures

Category	Measure
Population & Employment Served	Population/employment within 1/4 mile per track mile (2020)
	Population/employment within 1/4 mile per track mile (2024)
Capital & Operating Costs	Total capital cost (2017$) - mid-range (extension & new vehicle cost only)
	Annual O&M costs (2017$) - extension only
Cost Effectiveness	Capital cost (2017$) per track mile
	Annualized capital & O&M cost (2017$) per rider (2020)
Constructability /Operational Constraints	Avoids CSX railroad crossings
	Avoids river crossings
	Avoids Esplanade crossing
	Minimizes or avoids other constraints that would affect streetcar operations
	Avoids or minimizes impacts to major utilities
Traffic & Parking Impacts	Minimizes or avoids increases in roadway congestion (2020 existing roadway capacity)
	Provides potential for dedicated guideway based on adjusted roadway capacity
	Avoids or minimizes reduction in on-street parking
	Avoids or minimizes potential for intersection failure
Community & Environmental Impacts	Serves Environmental Justice (EJ) populations with minimal impacts
	Minimizes impacts to business access
	Minimizes or avoids impacts to noise/vibration-sensitive uses
	Minimizes potential impacts to historic districts
	Avoids potential impacts to parklands or other Section 4(f) resources

Figure 3. Alignment Options A and B



4. PREFERRED ALTERNATIVE

4.1 Definition & Evaluation of Project Alternatives

Following the alignment option selection, attention focused on defining a locally preferred alternative addressing the following elements of the project:

» vehicle technology;
» alignment and guideway concepts, including existing guideway modifications;
» stop locations and design concepts; and
» vehicle maintenance facility concepts.

In partnership with FDOT and HART, the City worked with local leaders, key stakeholders, and the general public through the process of evaluating and selecting preferred project alternatives to advance into the project development phase of the study.

A review of the preferred alternative and concepts for each project elements is provided below.

4.2 Vehicle Technology

This section of the report reviews the vehicle technology evaluation process that resulted in selection of modern streetcar vehicles as the preferred vehicle type for the system. The section also includes information regarding design considerations associated with modern streetcar operations and provides information on specific models which may be available for use on the system.

VEHICLE TECHNOLOGY EVALUATION

Methodology

The vehicle technology evaluation compared performance characteristics and costs of different transit vehicle technologies operating along the existing 2.7-mile streetcar line and the proposed Tampa Street-Florida Avenue extension.

For the purpose of the evaluation, it was assumed the service would operate mostly in an exclusive guideway and provide a one-seat trip from Ybor City to Tampa Heights along the existing line and the proposed extension with no change in vehicle technology. The comparative analysis considered the performance and costs implications of the following vehicle technologies:

» continued use of the existing TECO historic replica streetcars and related infrastructure;
» replacement of existing historic replica streetcars with modern streetcar technology and infrastructure; and,
» replacement of existing historic replica streetcars with premium bus technology and infrastructure.

The comparison considered key factors associated with each of the three transit technologies. Holding route and service characteristics constant among the three vehicle technologies, the analysis estimated operating costs, capital costs, and how each of those compared to the number of potential riders carried by each vehicle at maximum capacity. The analysis estimated fleet size required to provide 15-minute headway service over the route, as well as the annual number of service hours needed to meet that frequency. These were the core components used to calculate approximate annual operating costs. To equalize the cost across technologies, an annual cost per rider was calculated that took into account each technology's carrying capacity. Other considerations in the analysis included ride quality, image and community enthusiasm, accessibility–ADA and others (strollers, bikes)–life cycle costs, environmental sensitivity, and economic development impacts.

Vehicle Technology Selection

Of the three technologies studied, the modern streetcar most closely aligned with the local objectives, as expressed in the purpose and need statement, for a transit system serving greater Downtown Tampa. The modern streetcar provides the highest-capacity vehicle of the options considered. The configuration of the modern streetcar, with multiple, wide doors and level-boarding heights, would facilitate easy access by the greatest share of the population, including those with mobility challenges. With many portions of the route in a dedicated guideway, a modern streetcar would be able to move large numbers of people while minimizing constraints posed by traffic congestion.

The modern streetcar would also be an effective way to connect the downtown with neighboring districts, and to provide first/last mile service as a central component of the regional transit system. The streetcar's operation at street level in a dense urban environment, with frequent stops and easy boarding, make it an attractive and reliable service with "hop on/hop off" convenience. The tracks in the street provide a psychological assurance to riders that the route is fixed, and frequent service and real-time information allow riders to access the system without consulting a time table. These features, along with the modern streetcar's comfort and capacity, attract regular riders who will make the streetcar part of their daily travel solution. Furthermore, the proposed extension along the Tampa-Florida couplet provides a strong connection to HART's Marion Transit Center, as well as easy transfers to numerous HART bus routes along the alignment.

While the modern streetcar is the most expensive of the three technologies to construct and operate in absolute terms, its larger passenger capacity makes it the most efficient of the options in terms of cost per rider. In a rapidly-growing urban center like Tampa, this capacity provides the greatest degree of system flexibility for meeting mobility demands on a day-to-day basis, and over the long term.

For more information on the vehicle technology evaluation, please refer to the full report—*Vehicle Technology Comparison Technical Memorandum*—on the City of Tampa's InVision: Tampa Streetcar project website at www.tampagov.net/streetcar.

MODERN STREETCAR CHARACTERISTICS & SUPPLIERS

Standards for Conceptual Planning

Although a specific vehicle supplier and model will not be selected until the engineering phase, information regarding design requirements for modern streetcars has been used during the conceptual planning and design. Modern streetcar vehicles, regardless of model, share several characteristics which have informed the team's early work, including high passenger capacity; guideway dimension, track gauge, and overhead power; low floor configurations at primary boarding locations allowing for level boarding; and turning radii greater than required for the existing replica vehicles. In cases where more specific vehicle specifications where required, e.g. in conceptual planning for the vehicle maintenance facility, the study team referenced specifications for the Siemens S70 Short vehicle, which is one of the longer vehicles currently available to serve the U.S. market. Use of the S70 Short specifications allows for future flexibility in selection of the S70 vehicle or a vehicle from another supplier.

Table 2. General Technical Details for Current Active US Streetcar Suppliers

Criteria	Carbuilder		
Manufacturer	**Brookville**	**CAF**	**Siemens**
Model	Liberty	Urbos 3	S70 Short
Length	69 ft.*	74 ft.	82 ft.
Width	8.1 ft./8.7 ft.	8.1 ft./8.7 ft.	8.7 ft.
Low Floor	50%	100%	70%
Min Turning Radius	59 ft.	66 ft.	66 ft.
Seats/AW2 Load	43(+4)/90	32(+6)/116	52(+8)/90
Total Capacity	137	154	146
ADA Access	Level/Bridgeplate	Level	Level/Bridgeplate
Off Wire	Yes	Yes	Yes
Distance between Doors w/ Level Boarding	18 ft.	60 ft.	48 ft.
Doors/Side	2 (2 DBL)	4 (2 DBL, 2 Single)	4 (4 DBL)

** The Brookville streetcar proposed for Tempe will be longer than the cars previously built to conform to the ASME RT-1 requirements for crash energy management.*

Vehicle Suppliers & Specifications

Currently, three suppliers are active in delivering modern streetcars to systems in the United States—Brookville Equipment Corporation of Brookville, PA; CAF, headquartered in Spain with a final assembly facility in Elmira, NY; and Siemens, building cars in Sacramento, CA. Each use a different vehicle platform but share common characteristics, and all have proven capable of meeting FTA Buy America requirements. Photographs and floor plans for each are provided in Figures 4 through 8. A summary of the general specifications for each is provided in Table 2.

Other streetcar suppliers operate in North America, including Alstom, Bombardier, and Stadler, and may be able to provide vehicles adaptable for use in Tampa. While these suppliers have facilities within the United States and could possibly provide domestically-built and/or Buy America-compliant streetcars, they have not proposed on any streetcar procurements likely due to the small quantities of cars in each order. It is possible that Skoda, independent of its original partner Inekon for Portland and Tacoma, may be returning to the American market, while the Chinese carbuilder, CRRC, may become an active participant.

We also note that the Toronto Transit Commission (TTC), which is looking to purchase 60 100 percent low floor streetcars, received responses from ten carbuilders in November 2017 to an RFI which they posted in advance of this procurement. These included Bombardier, CAF, three divisions of CRRC, Hyundai Rotem of Korea, Inekon, Siemens, Stadler and Tatra-Yug of the Ukraine. One of TTC's requirements is 25 percent Canadian content.

Table 3 provides information on suppliers and vehicle models delivered through recent vehicle procurements in the United States.

Table 3. Modern Streetcar Suppliers

City	Supplier	Qty	Award	Model	Comments
Portland	Inekon-Skoda	5	1999	Astra	New contract
Tacoma	Inekon-Skoda	3	1999	Astra	Portland option
Portland	Inekon-Skoda	2	1999	Astra	Portland option
Washington, DC	Inekon	3	2004	Trio 12	Portland option
Portland	Inekon	3	2004	Trio 12	Portland option
Seattle	Inekon	3	2004	Trio 12	Portland option
Portland	USC	1	2007	10T3	Prototype
Portland	USC	6	2009	100	New contract
Tucson	USC	7	2010	100	New contract
Atlanta	Siemens	4	2011	S70 Short	UTA Option
Seattle*	Inekon	7	2011	Trio 121	New contract
Cincinnati	CAF	5	2012	Urbos 3	New contract
Kansas City	CAF	4	2012	Urbos 3	Cincinnati option
Tucson	USC	1	2012	100	Tucson option
Washington, DC	USC	3	2012	100	Portland option
Dallas*	Brookville	2	2013	Liberty (N)	New contract
Dallas*	Brookville	2	2015	Liberty (N)	Dallas option
Detroit*	Brookville	6	2015	Liberty (W)	New contract
Milwaukee*	Brookville	5	2015	Liberty (W)	New contract
Charlotte*	Siemens	6	2016	S70 Short	New contract
Oklahoma City*	Brookville	5	2016	Liberty (N)	New contract
Kansas City	CAF	2	2017	Urbos 3	New contract (Sole Source)
Tacoma	Brookville	2	2017	Liberty (N)	New contract
Portland	Brookville	2	2017	Liberty (N)	Tacoma option
Seattle*	CAF	10	2017	Urbos 3 (N)	New contract (on hold)
Tempe*	Brookville	6	2017	Liberty (W)	New contract
Orange County	Siemens	8	2018	S70 Short	New contract

** Equipment for off wire operation*

Figure 4. Brookville Liberty Streetcar (Dallas)

Source: HDR

Figure 5. Brookville Liberty Streetcar General Arrangement

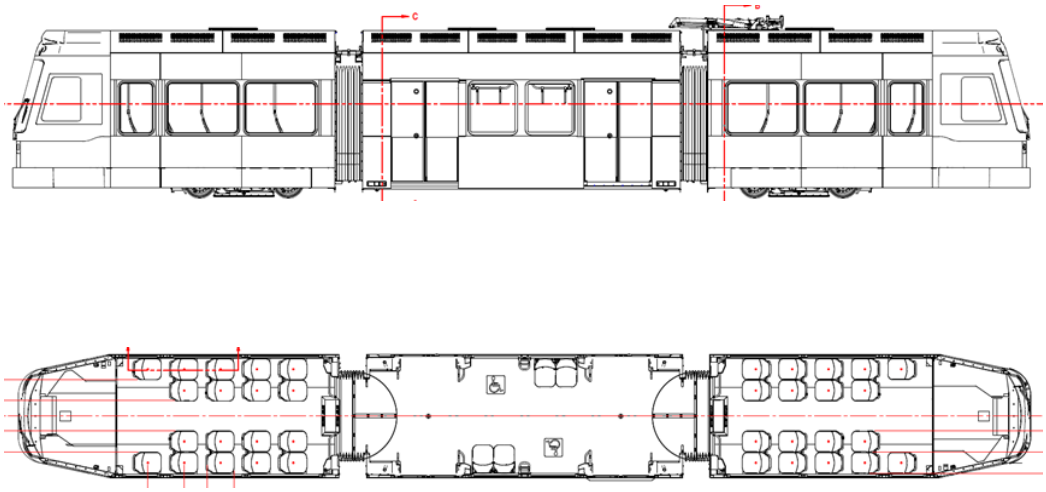


Figure 6. CAF Urbos 3 Streetcar (Cincinnati)

Source: HDR

Figure 7. CAF Urbos 3 Streetcar General Arrangement

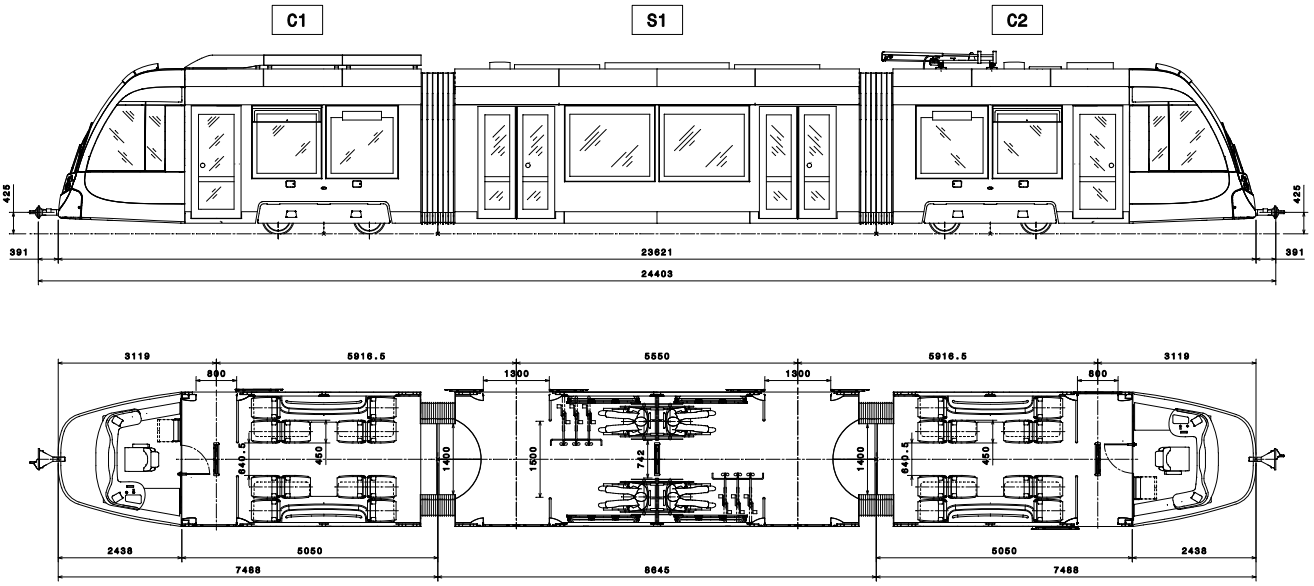
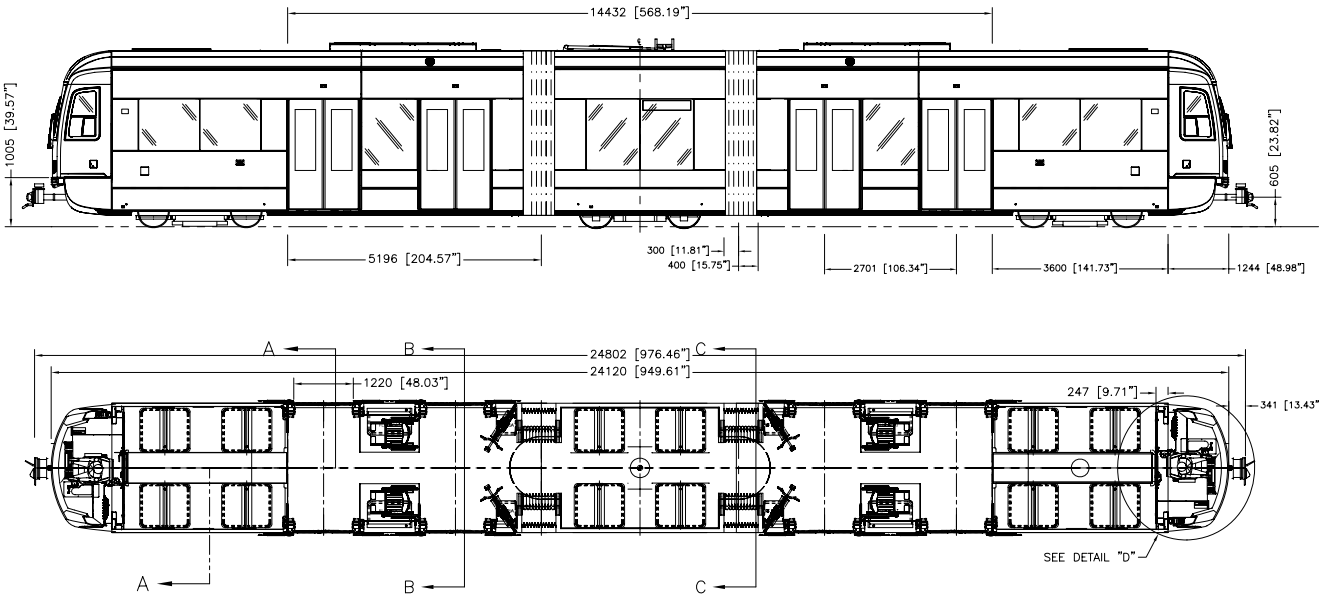


Figure 8. Siemens S70 Short Streetcar (Salt Lake City)

Source: HDR

Figure 9. Siemens S70 Short Streetcar General Arrangement



Source: Siemens Industry, Inc.

ENGINEERING PHASE DESIGN CONSIDERATIONS

A number of important decisions regarding vehicle specifications, configurations, and performance characteristics will need to be made during the early stages of project engineering. A review of key considerations follows.

Vehicle Access

The Siemens S70 Short streetcar features four double doors on each side. The car length between the front end of the forward-most door and the back end of the rear-most door is 48 feet. Comparatively, the Brookville Liberty streetcar has two doors per side spaced 18 feet apart. The CAF Urbos 3 vehicle has four doors per side with 60 feet between the forward and rear doors. Mobility impaired access is limited to the area adjacent to the two biparting center doors. The distance between the two center doors (front of lead door to rear of trailing door) is approximately 24 feet. Issues that need to be considered in making streetcar configuration selections are discussed below. The cost impacts of implementing these changes are not addressed in this document.

Vehicle Length

The advantage of using a longer car is the greater carrying capacity and therefore improved operational efficiency. The constraints presented in considering a longer car are the length of station platforms, possible need to design for a wider clearance through turns if the distance between the truck centers is longer than the turn, the length of yard storage tracks, and the size of the maintenance shop that would be required to service longer work positions and shop tracks and pits.

Given that Tampa is conceptually planning its system using the longest vehicle, selection of any vehicle presently under consideration will not have a greater impact on the length of the platform and parking places along the alignment. However, the configuration of the station platform, that is the length of the platform over which level boarding can be accommodated, may be impacted by car length. This criterion will be addressed later in this section.

The maintenance facility and rail yard layout may be affected by the length of the vehicle selected. Yard storage tracks and associated ladder tracks must be sized to accommodate the longer cars. The maintenance positions in the shop must also be sized to accommodate a longer vehicle, thereby increasing the length of the shop facility. As previously indicated, since current planning is based on the Siemens S70 Short vehicle, all other available cars fall within these parameters.

Vehicle Width

Modern streetcars operating in the United States have been designed and built with a car width of 8.1 feet or 8.7 feet (Siemens S70). The wider dimension has little effect on increasing capacity. The more significant benefit is that it allows two-and-two lateral seating in the passenger compartment versus a two-and-one arrangement. The effects of the car width must be considered with regard to infrastructure (e.g., station platform offset and clearance through curves along the right of way).

Vehicle Floor Height (Percent Low Floor)

Modern streetcars are built either with a low floor area between 50 and 70 percent of the length of the vehicle or are 100 percent low floor. The floor height in the low floor sections is approximately 14 inches above top of rail. See Figure 11 which shows differences in the extent of low floor sections in different vehicles.

The 50 to 70 percent low floor cars allow the car design to include a traditional truck configuration having solid axles connecting pairs of wheels and motors and gears in between the wheel pairs. The 100 percent low floor car designs require a special truck design incorporating motors and gears located on the truck frame outboard of the wheels. Wheels may be mounted individually on stub axles or with axle-connected pairs of wheels. Overall, the running gear is much more complicated than with traditional trucks.

The 50 to 70 percent low floor cars provide for easy boarding in the low floor area, but negotiating interior steps and being furthest from the doors generally discourages passenger circulation to the high floor areas. The S70 Short is designed with four doors per side, which provides for more space for passenger access and egress. Passengers not insistent on having a seat and traveling only a short distance tend to prefer to remain in the low floor area near the doors. For 100 percent low floor vehicles, mobility impaired access is limited to the area adjacent to the center sets of doors. General passenger access is available through the doors behind operator's cabs, but ADA circulation to the rest of the vehicle is restricted due to the narrow aisleways in the areas above the lower floor trucks.

Station Platform Configuration

Two approaches are being used to address vehicle accessibility in accordance with ADA requirements: the first uses bridgeplates to address the gap and the height difference between the vehicle floor (generally 14 inches) and a lower platform height (10 inches). Level boarding is accomplished when the vehicle floor height (14 inches) is the same elevation as a higher platform (also 14 inches), within allowable tolerances. All streetcars for New Starts projects since the Washington, D.C. procurement have been designed for level boarding.

Portland, the first modern streetcar system in the U.S. that opened in 2001, opted for use of bridgeplates since the approach applied to the regional light rail system serving that city. Tacoma, the second to open in 2003, followed suit. The station platforms are the same height as a typical sidewalk curb, generally between 8 and 10 inches. With the exception of the District of Columbia Department of Transportation (DDOT) streetcars, all of the early modern streetcars have been designed with vehicle borne bridgeplates that are deployed as a ramp to permit mobility impaired passengers to transition from the streetcar (14 inches above top of rail) to the station platform (8 to 10 inches above top of rail).

In 2016, DDOT, with the assistance of Washington Metropolitan Area Transit Authority (WMATA) at the time, was the first to require level boarding when the initial project was planned for implementation on abandoned railroad right-of-way in Anacostia. The DDOT alignment along H Street and Benning Road was the first modern system in the U.S. to be designed and built to provide for level boarding. The streetcars were built with a leveling system to match the floor height with the platform height. With the exception of newer streetcar lines in Seattle and expansion of the systems in Portland and Tacoma, all subsequent modern streetcar systems employ level boarding.

While DDOT built its platforms to provide a 14 inch height over a platform length corresponding to the distance between the doors in the low floor, level boarding area, subsequent systems have been built with level platforms equal to the full length of the vehicle. At present, Tampa is modeling its system using the Siemens S70 Short vehicle. If the station platform height is planned to be 14 inches above top of rail for the full length of the vehicle, all other candidate vehicles should be within this parameter. If the level station platform length is to be based upon the distance between the doors in the low floor area, the platform configuration may change. Figure 11 illustrates this dimension among several vehicle types.

Off Wire Capability

Streetcar systems typically utilized overhead wire systems to provide power. However, it may not be desirable or feasible to install overhead wires in all locations and there are several reasons for considering the elimination of overhead contact wires (OCS). For instance, the presence of existing traffic signals and other utilities that would require relocation to accommodate the OCS, historic structures or districts, or the presence of mature trees that the community wants to retain. The City may have an additional reason for desiring a car with off wire capability, including crossovers with an existing railroad, at which an overhead wire may not be permitted.

A number of approaches for OCS have been developed or are in development, including:

- Ground-level power systems (e.g., Bordeaux, France);
- Onboard Energy Storage Systems (OES) (e.g., batteries, supercaps, flywheels); and
- Onboard power supply (e.g., engine/generator).

The practical solution for Tampa may be an OES. The solution is relatively simple, and it is service proven. It is not proprietary, as in the case of the ground level systems, thereby permitting competition. The cost of implementation of a ground level system may be cost prohibitive for the Tampa streetcar system. Regardless, the costs associated with any extensions will then be limited to the original supplier to ensure compatibility of the system.

OES systems using batteries are in service in a number of U.S. cities, including Dallas, Detroit, Milwaukee, and Oklahoma City, and are planned for use in Charlotte and Tempe. Other OES systems that use supercaps or a combination of batteries and supercaps are being used around the world. The specific locations along the extenstion and existing alignment that would benefit from implemenation of OCS operations requires further investigation, but the technology to integrate this element into the Tampa alignment exists and is service proven.

Expandability

The streetcars that are available to be procured by Tampa are designed and built to operate in three section articulated vehicles. For the present, this approach is adequate. At some time in the future, as ridership grows, Tampa may need to expand its fleet of vehicles and possibly the passenger capacity of vehicles. While Tampa may simply procure additional streetcars of the same or larger size, some carbuilders have designed vehicle platforms that are modular, which means they can assemble longer vehicles by adding additional carbody sections. For instance, the CAF vehicle, presently operating as a three-section vehicle in Cincinnati and Kansas City, may be expandable to five or more sections. Of course, the corresponding changes in infrastructure would have to be addressed. Figure 10 shows the three-section streetcar used for Cincinnati.

The Bombardier Flexity and Alstom Citadis are designed to be similarly expandable. Alstom originally provided 98-foot three-section Citadis streetcars to Dublin in 2004. In 2007, as ridership increased and the system expanded, they added two sections to these vehicles, increasing their length to 131 feet. Alstom also supplied new 131-foot-long five-section streetcars. In 2009, they delivered a fleet of 141 feet seven-section cars, and their most recent cars are nine-section vehicles 180 feet long. Due to inability to meet certain commercial contract terms, Alstom has been quiet in the U.S. marketplace. They have been replaced by the likes of Brookville Equipment Corporation, CAF, and Siemens.

Figure 10. CAF Urbos 3 Three Section Vehicle (Cincinnati)

Figure 11. Distance between Forward-most and Rear-most Door Openings in Low Floor Areas

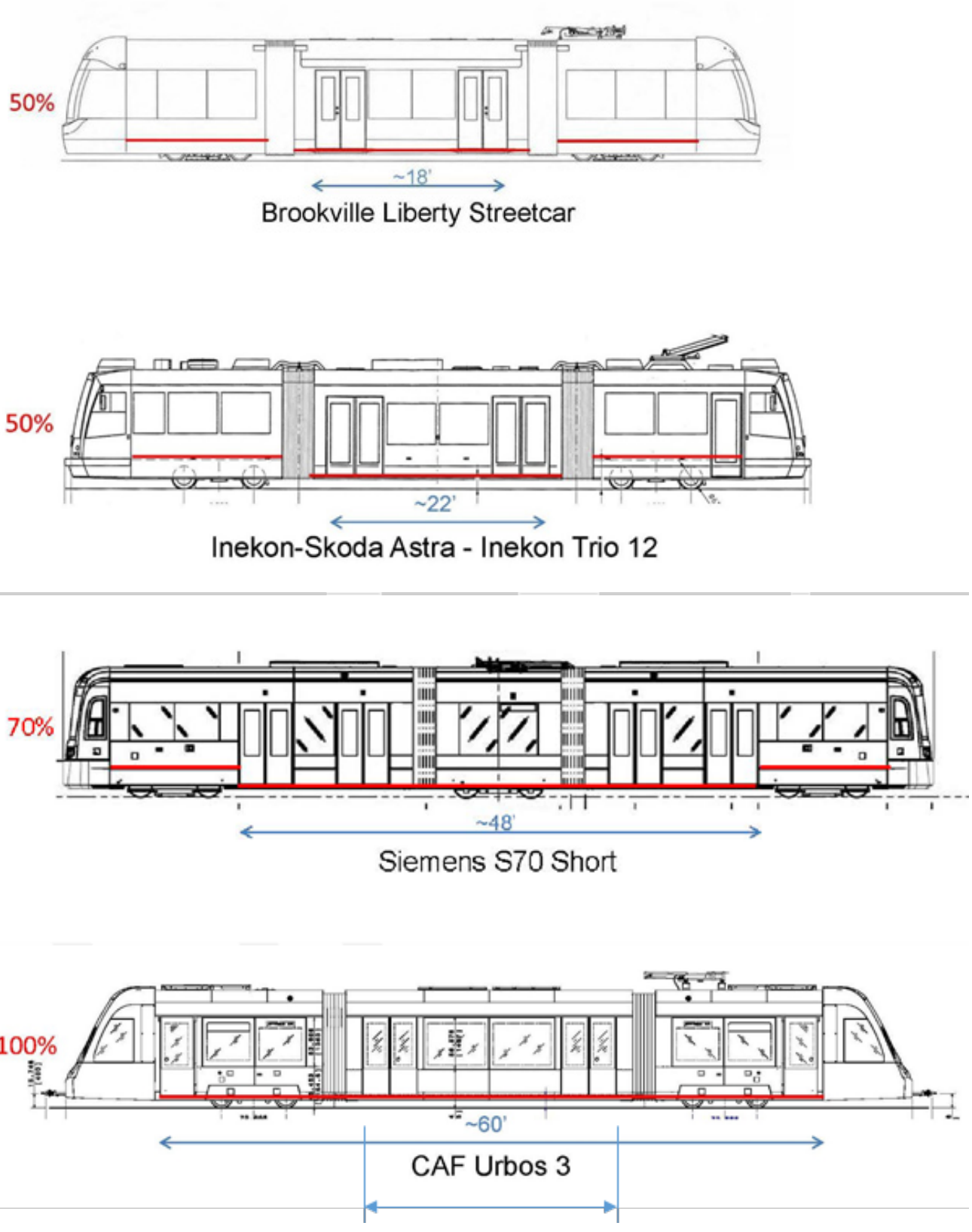
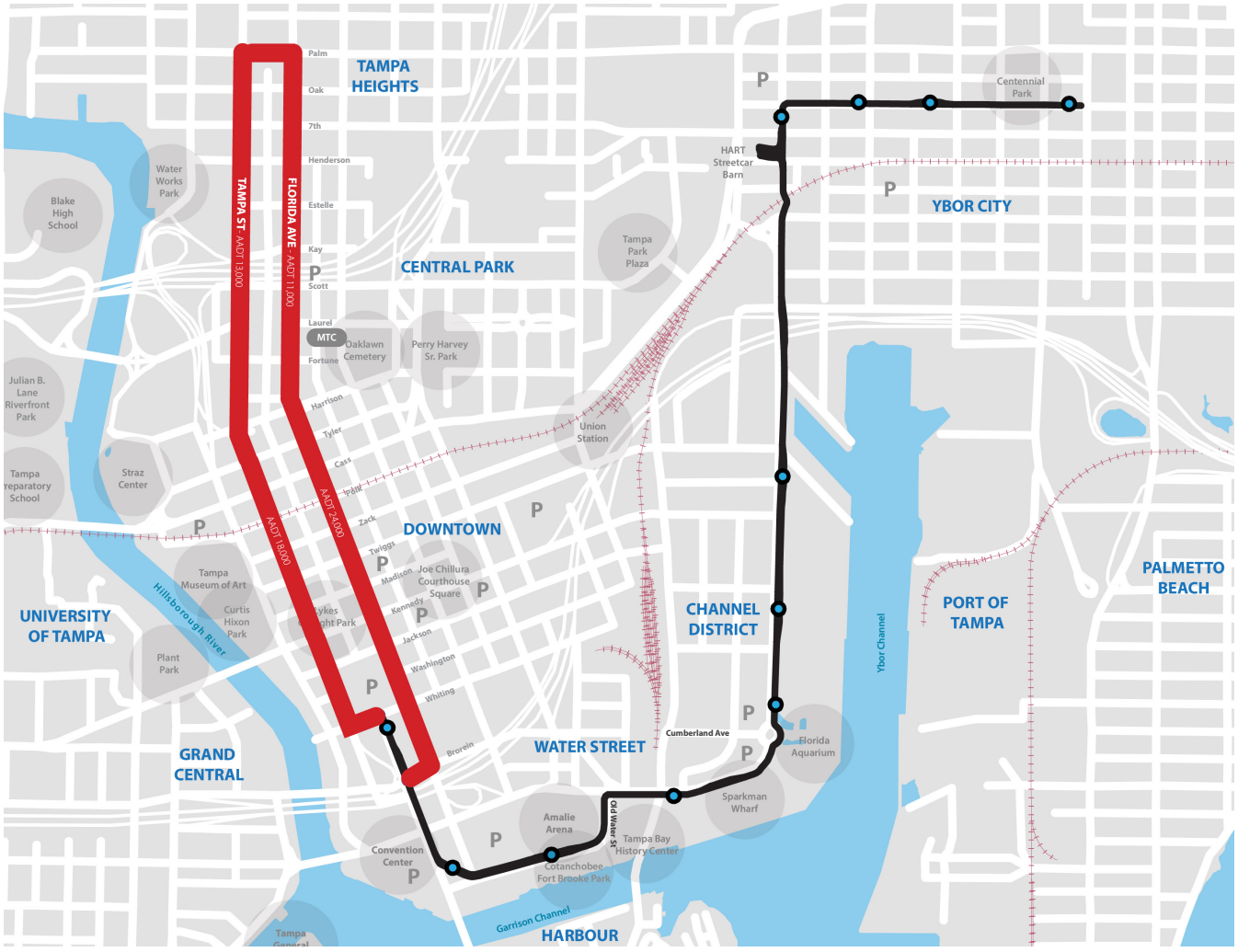


Figure 12. Preferred Extension Alignment



4.3 Extension Alignment & Guideway

Following the selection of extension alignment Options A (N/S Franklin Street) and B (N/S Tampa Street-Florida Avenue Couplet), a secondary evaluation was conducted to identify a preferred alignment and guideway configuration. The alignment and guideway alternative process, undertaken in the Summer and Fall of 2018, explored various alignment alternatives and guideway configurations and combinations along the Tampa Street, Franklin Street, and Florida Avenue corridors.

The evaluation took into account a wide range of impact, performance, and costs factors, as well as feedback from key stakeholders, including local property owners, residents, elected officials and agency representatives, and project partners FDOT and HART. Results of the evaluation were reviewed with project partners and elected officials in Fall 2018 work sessions, and with agency representatives and the general public during December 2018 workshops.

ALIGNMENT & GUIDEWAY SEGMENTS ALTERNATIVES

To support the alignment and guideway evaluation, six individual alignment segments where defined:

- Florida Avenue from Brorein Street to Harrison Street;
- Florida Avenue from Harrison Street to Palm Avenue;
- Tampa Street from Palm Avenue to Tyler Street;
- Tampa Street from Tyler Street to Kennedy Boulevard;
- Tampa Street from Kennedy Boulevard to Whiting Street; and
- Franklin Street from Tyler Street to Palm Avenue.

Guideway alternatives were prepared for each segment. Alternative typical sections were defined for each segment showing possible exclusive and shared guideway configurations along the Tampa Street, Franklin Street, and Florida Avenue corridors.

ALIGNMENT & GUIDEWAY DECISION FACTORS

Guideway alternatives for each segment were evaluated using the following four decision factors addressing performance benefits and impacts:

- **Transit Travel Time Reliability.** This decision factor evaluated potential travel time impacts of various guideway configurations on traffic congestion, turning movements, and on-street parking and loading. Alternatives with exclusive transit lane operations received high scores while those providing operations in mixed travel lanes received lower scores. Exclusive transit lane operations provide for greater transit travel time reliability. They allow transit vehicles operating in barrier-separated lanes to bypass traffic and turning lane congestion, and avoid potential impacts to transit operations associated with poorly parked and double-parked cars and delivery vehicles.
- **Traffic, Bike Lane, & Parking Impacts.** This decision factor assessed each segment's guideway alternatives based on impacts to existing vehicle traffic capacity and traffic operations, property and alley access, bike travel lanes, and on-street parking. Alignments and guideways with the fewest impacts scored high, and those with multiple impacts scored low. Although exclusive transit lane alternatives not requiring removal of travel lanes performed well under this category, these alternatives also resulted in the loss of on-street parking and would require relocation of bike lanes to parallel corridors.
- **Shared Transit Use.** Each alignment and guideway option was scored based on its ability to support potential shared use with local buses or other rubber tire vehicle technology. Segments that allowed for right-hand stops performed best, as these stops allow use by conventional bus types.
- **Right-of-Way & Street Reconstruction.** Alignment and guideway options not requiring additional right-of-way to accommodate lane configurations and stop locations scored highest under this factor.

Results of the evaluation scoring process, including the overall evaluation matrix, are included in Appendix A - Alignment Evaluation Process.

PREFERRED EXTENSION ALIGNMENT

The evaluation of segment alternatives resulted in the selection of an extension traveling 1.2 miles north from Downtown to Palm Avenue as a north/south couplet paring Florida Avenue and Tampa Street (see Figure 12). The preferred extension alignment begins near the existing streetcar terminus at Whiting Street and Franklin Street. From the existing track on Franklin Street, the northbound track extension turns east at Brorein Street, then turns north at Florida Avenue to extend through the Downtown Core and Tampa Heights to Palm Avenue. At Palm Avenue, the alignment turns west and travels two blocks before turning south onto

Tampa Street. The southbound alignment runs along Tampa Street to Whiting Street. At Whiting Street, the alignment turns east to link back to the existing downtown streetcar terminus at the Whiting Street Station.

PREFERRED EXTENSION GUIDEWAY

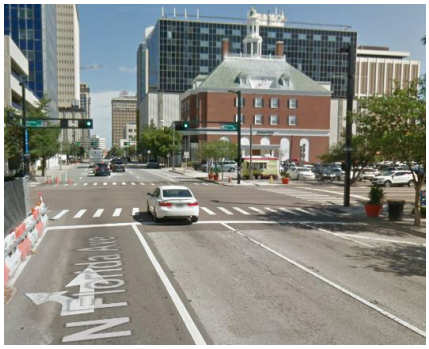
A detailed segment-by-segment description of the guideway along the preferred extension alignment is provided below. Detailed guideway exhibits by segment are included in Appendix B - Preferred Extension Guideway & Stops.

- **Segment 1: Florida Avenue from Brorein Street to Harrison Street.** A shown in Figure 13, Segment 1 of the preferred alignment runs on Florida Avenue from Brorein Street to Harrison Street. The guideway begins near the existing downtown streetcar terminus at Whiting Street and Franklin Street. From the existing track traveling north on Franklin Street, the guideway turns east at Brorein Street then turns north at Florida Avenue. On Florida Avenue, the guideway is an exclusive transit lane on the west side of the street. East-side parking along this segment would be removed to maintain three travel lanes. Existing parking on the west side of the street would be moved to run outboard of the exclusive transit lane. This allows for right-side transit stops in the west-side parking lane. Left turns to Kennedy Boulevard and Cass Street would displace the west-side parking. At the Tyler Street intersection, the guideway switches from the west side of Florida Avenue to the east side of the street where it will run in a shared travel lane. The existing bike lane on Florida Avenue will be replaced by a bike boulevard along Franklin Street.
- **Segment 2: Florida Avenue from Harrison Street to Palm Avenue.** As shown in Figure 14, Segment 2 of the preferred alignment on Florida Avenue runs from Harrison Street to Palm Avenue. The alignment then turns west and travels two blocks on Palm Avenue. Because of the reduced right-of-way width, in this segment the guideway will be in a shared travel lane on the east side of the street. This maintains three travel lanes along this segment and allows for a right-side stop close to the Marion Transit Center. The existing bike lane on Florida Avenue will be replaced by a bike boulevard along Franklin Street.
- **Segment 3: Tampa Street from Palm Avenue to Tyler Street.** As shown in Figure 15, Segment 3 runs along Tampa Street from Palm Avenue to Tyler Street. The guideway in this segment is an exclusive transit lane on the east side of the street. West-side parking along this segment would be removed to maintain three travel lanes. Right-side stops would be located in an extended buffer to the west side of the exclusive transit lane. Existing travel lanes will remain and shift to accomodate these stop locations. The existing bike lane on Tampa Street will be replaced by a bike boulevard on Franklin Street.
- **Segment 4: Tampa Street from Tyler Street to Kennedy Boulevard.** As shown in Figure 16, Segment 4 of the preferred alignment runs along Tampa Street from Tyler Street to Kennedy Boulevard. The guideway in this segment is an exclusive transit lane on the east side of the street. West-side parking along this segment would be removed to keep the existing three travel lanes for cars. Existing parking on the east side of the street would be moved to run outboard of the new transit lane. This allows for right-side transit stops in this parking lane. The existing bike lane on Tampa Street will be replaced by a bike boulevard on Franklin Street.
- **Segment 5: Tampa Street from Kennedy Boulevard to Whiting Street.** As shown in Figure 17, Segment 5 of the preferred alignment runs on Tampa Street from Kennedy Boulevard to Whiting Street. At Whiting Street, the alignment turns east to link back to the existing downtown streetcar terminus at the Whiting Street Station. The guideway in this segment is in a shared travel lane on the east side of the street, outboard of the existing east-side parking. This maintains three travel lanes, partially avoids left turn queuing at Jackson Street, and avoids the passenger drop-off and valet service at the Hilton hotel. No stops are planned for this segment. The existing bike lane on Tampa will be replaced by a bike boulevard on Franklin Street.

Figure 13. Segment 1: Florida Avenue from Brorein Street to Harrison Street

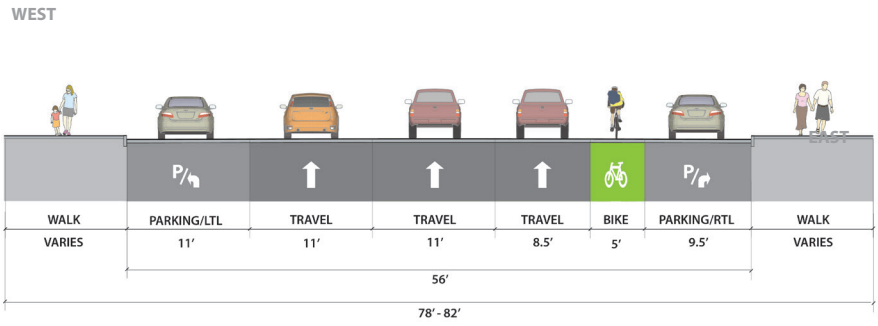
SEGMENT LOCATION

EXISTING CONDITIONS



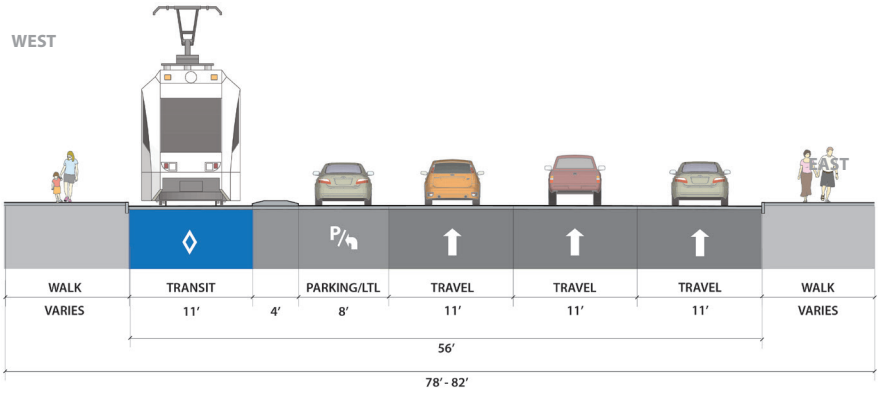
Looking North on Florida Avenue at Kennedy Boulevard

Looking North on Florida Avenue at Cass Street



RECOMMENDED EXTENSION GUIDEWAY

West Side Running in Exclusive Transit Lane

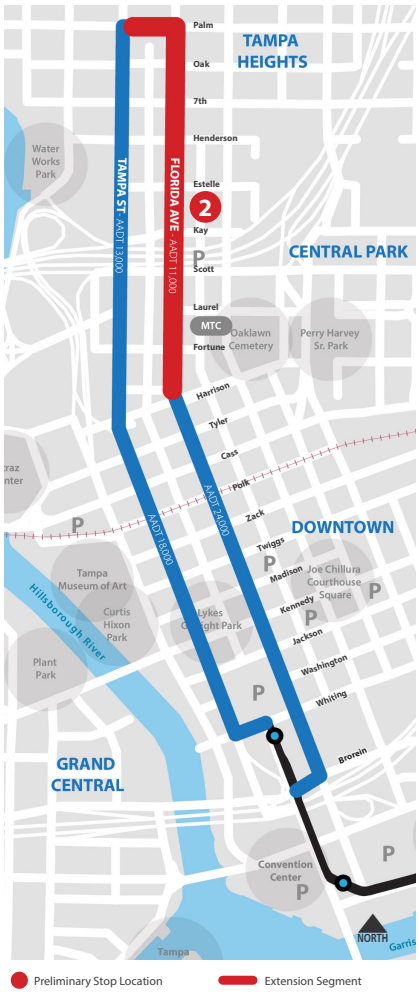


HIGHLIGHTS

- The Segment 1 guideway is primarily an exclusive transit lane on the west side of Florida Avenue.
- East-side parking would be removed to maintain three travel lanes.
- Existing parking on the west side of the street would be moved to run outboard of the exclusive transit lane.
- Right-side stops would be located in the west-side parking lane.
- Left turns to Kennedy Boulevard and Cass Street would displace the west-side parking.
- At Tyler Street, the guideway switches from the west side of Florida Avenue to the east side of the street where it will run in a shared travel lane.

Figure 14. Segment 2: Florida Avenue from Harrison Street to Palm Avenue

SEGMENT LOCATION

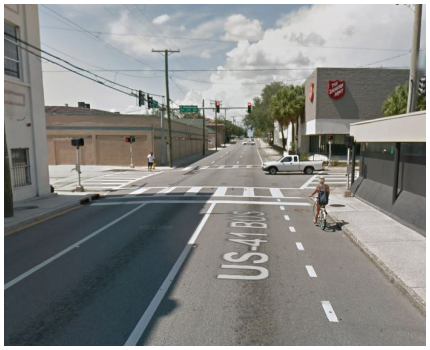


HIGHLIGHTS:

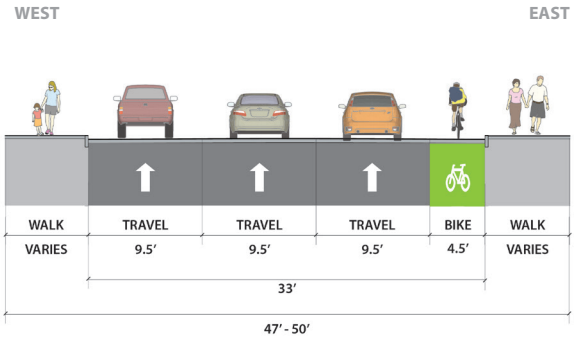
- Segment 2 runs from Harrison Street to Palm Avenue on the east side of Florida Avenue in a shared travel lane because of reduce right-of-way along this segment.
- Right-side stops would be located in the sidewalk.
- Maintains three travel lanes.
- Allows for a right-side stop close to the Marion Transit Center.
- The alignment turns west at Palm Avenue and travels two blocks.

EXISTING CONDITIONS

Looking North on Florida Avenue at Kay Street



Looking North on Florida Avenue at Henderson Avenue



RECOMMENDED EXTENSION GUIDEWAY

East Side Running in Shared Lane

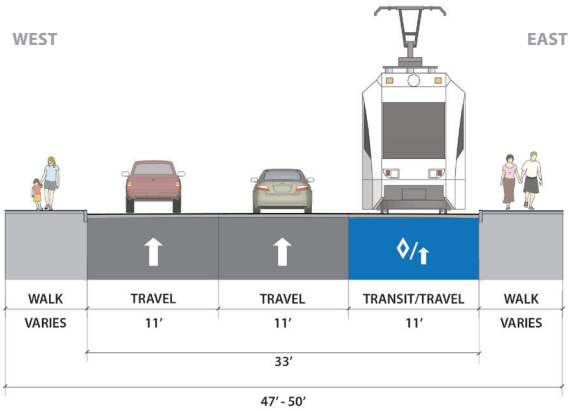
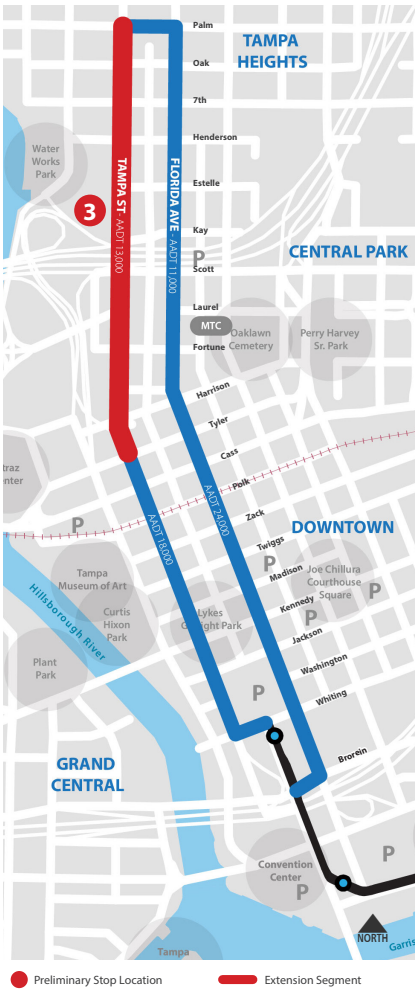


Figure 15. Segment 3: Tampa Street from Palm Avenue to Tyler Street

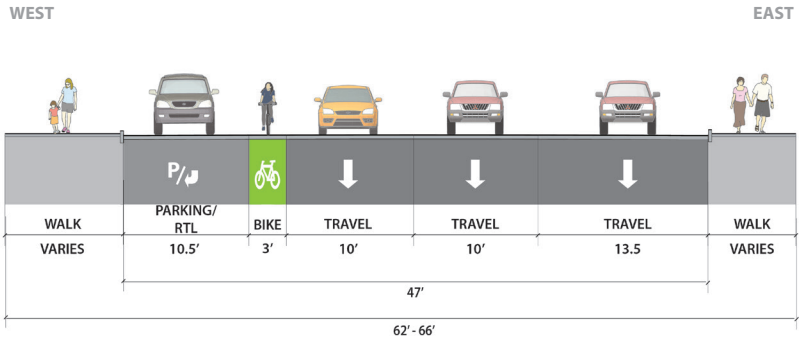
SEGMENT LOCATION



EXISTING CONDITIONS

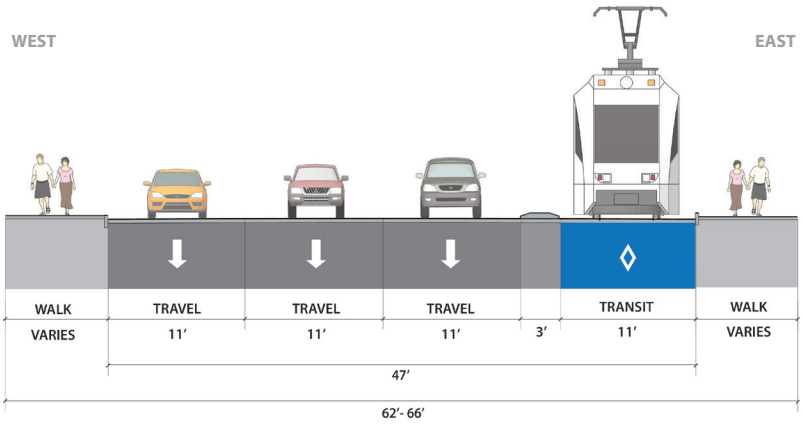
Looking North on Tampa Street at Harrison Street

Looking North on Tampa Street at Laurel Street



RECOMMENDED EXTENSION GUIDEWAY

East Side Running in Exclusive Transit Lane



HIGHLIGHTS:

- Segment 3 runs along Tampa Street from Palm Avenue to Tyler Street in an exclusive transit lane on the east side of the street.
- West-side parking would be removed to maintain three travel lanes.
- Right-side stops would be located in an extended buffer to the west of the exclusive transit lane.
- Existing travel lanes will remain and shift to accomodate these stop locations.

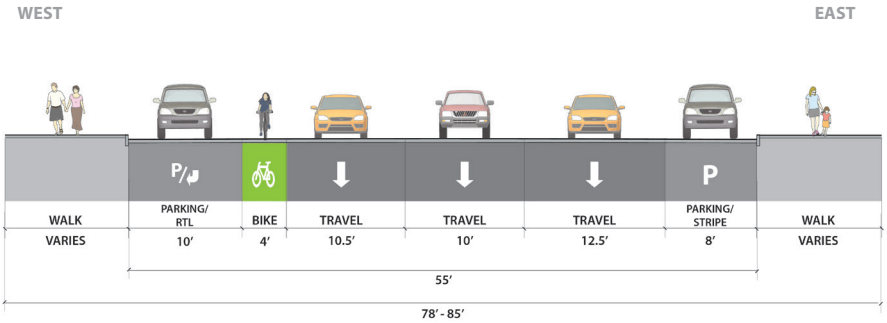
Figure 16. Segment 4: Tampa Street from Tyler Street to Kennedy Boulevard

SEGMENT LOCATION

EXISTING CONDITIONS

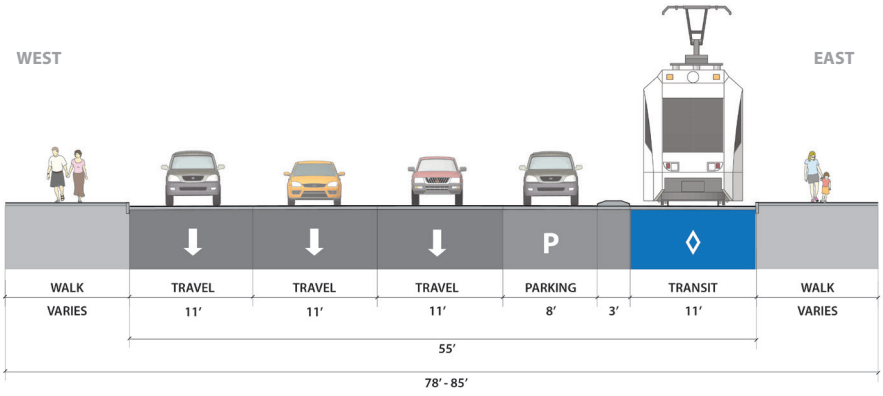
Looking North on Tampa Street at Kennedy Boulevard.

Looking North on Tampa Street at Polk Street



RECOMMENDED EXTENSION GUIDEWAY

East Side Running in Exclusive Transit Lane



HIGHLIGHTS:

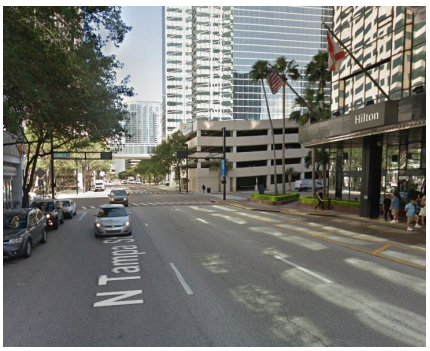
- Segment 4 runs along Tampa Street from Tyler Street to Kennedy Boulevard in an exclusive transit lane on the east side of the street.
- West-side parking would be removed to keep existing three travel lanes.
- Existing parking on the east side of the street would be moved to run outboard of the new transit lane.
- Right-side stops would be located in the west-side parking lane.

Figure 17. Segment 5: Tampa Street - from Kennedy Boulevard to Whiting Street

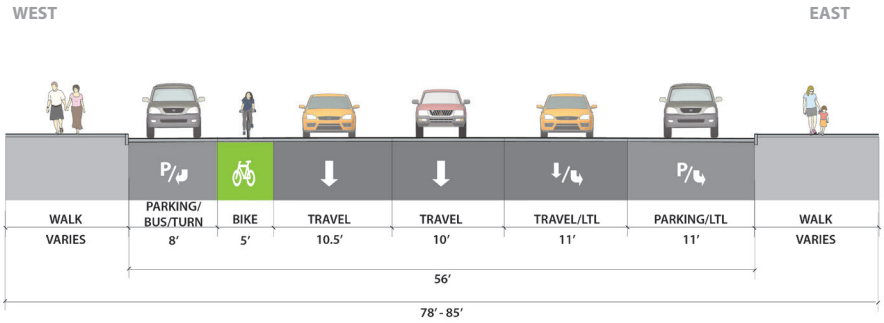
SEGMENT LOCATION

EXISTING CONDITIONS

Looking North on Tampa Street at Jackson Street

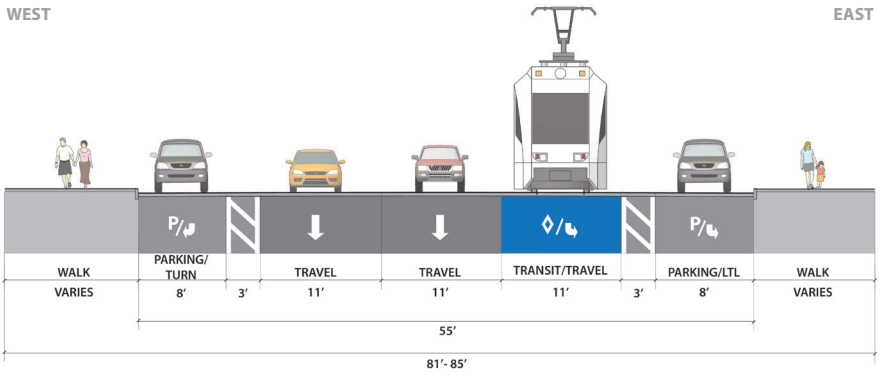


Looking North on Tampa Street at the Hilton just south of Jackson Street



PREFERRED EXTENSION GUIDEWAY

East Side Running in Shared Lane



HIGHLIGHTS:

- Segment 5 runs on Tampa Street from Kennedy Boulevard to Whiting Street in a shared travel lane outboard of existing east-side parking.
- Maintains three travel lanes.
- Partially avoids left turn queuing at Jackson Street, and avoids the passenger drop-off and valet service at the Hilton hotel.
- At Whiting Street, the alignment turns east to link back to the existing Whiting Street Station.
- No stops are planned for this segment.

TYPICAL TRACK SECTION

The proposed expansion of the streetcar system will utilize an embedded track section as shown in Figure 18. The 8-foot-wide track slab thickness will be installed within the existing pavement section where existing profile and transverse grades can be accommodated. A variable width transition area adjacent to the track slab will be utilized to minimize impacts on existing pavement sections. A 4 foot-8½ inch standard track gauge will be maintained through the track expansion. A 14 inch track slab thickness is shown with a single mat of reinforcing steel; however, the design will need to be verified with existing soil conditions and pavement design. Single 115 RE Tee Rail is shown with a rubber boot surround and flangeway for stray current isolation. In curves with radii of less than 400 feet, a second restraining rail will be provided. Depending on communications and traction power requirements to be determined in later design, embedded conduit within the track slab or duct bank below the track slab may be required.

112 TRAM Block Rail Alternative Track Slab

An alternative to standard 115 RE Tee Rail is 112 TRAM Block Rail. This rail has been successfully used on a number of modern streetcar projects in Dallas, Kansas City, Seattle, and Orange County, CA. The domestically produced, Buy American compliant block rail has the following benefits over tee rail:

- Low profile rail section (3 inches tall verse 7 inches typical of tee rail) provides design flexibility and reduces subsurface conflicts with shallow utilities and bridge decks.
- Narrow flangeway reduces the gap that narrow-tired vehicles such as wheelchairs, mopeds, and bicycles need to traverse and reduces the likelihood of a tire getting caught in the flangeway. This is an issue for embedded track independent of the rail type. Block rail allows for a 1⅝ inch flangeway which is less than the 2¼ inch gap that is typically achieved with tee rail because of construction and maintenance issues that accompany a non-steel flangeway.
- The durable steel flangeway does not spall like concrete or puncture like rubber. It minimizes the potential of longer term issues and greater hazards in the roadway such as damaged flangeway widths far in excess of the typical 2¼ inch gap that was installed/constructed.
- Three sides of the rail are wrapped in a rubber boot which mitigates the affects of stray current and dampens the noise and vibration levels.
- Allows for a thinner track slab (2 inches or more) where soil conditions and slab design permit it. That can result in decreased slab costs and utility conflicts.
- Lower future flangeway maintenance costs as opposed to formed rubber flangeways that deteriorate over time.

Disadvantages include:

- Increased cost per foot of block rail due to higher manufacturing costs and increased number of welded joints.
- Costs for transition rails between tee rail in the existing system and at special trackwork utilizing tee rail (block rail currently not used in domestic special trackwork).
- More complicated designs for insulated joints, track flangeway drainage, and restraint in tighter curves.

Figure 19 provides an example of a typical block rail installation.

Figure 18. Typical Section - Embedded Track Slab

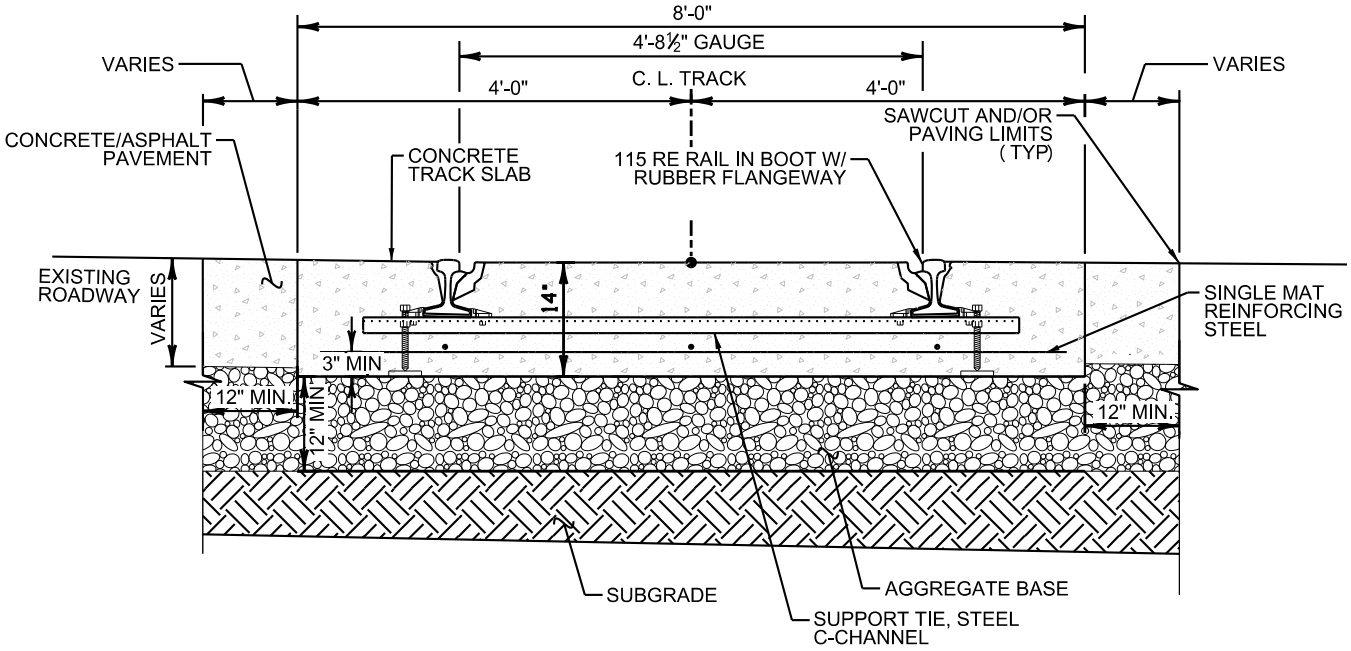
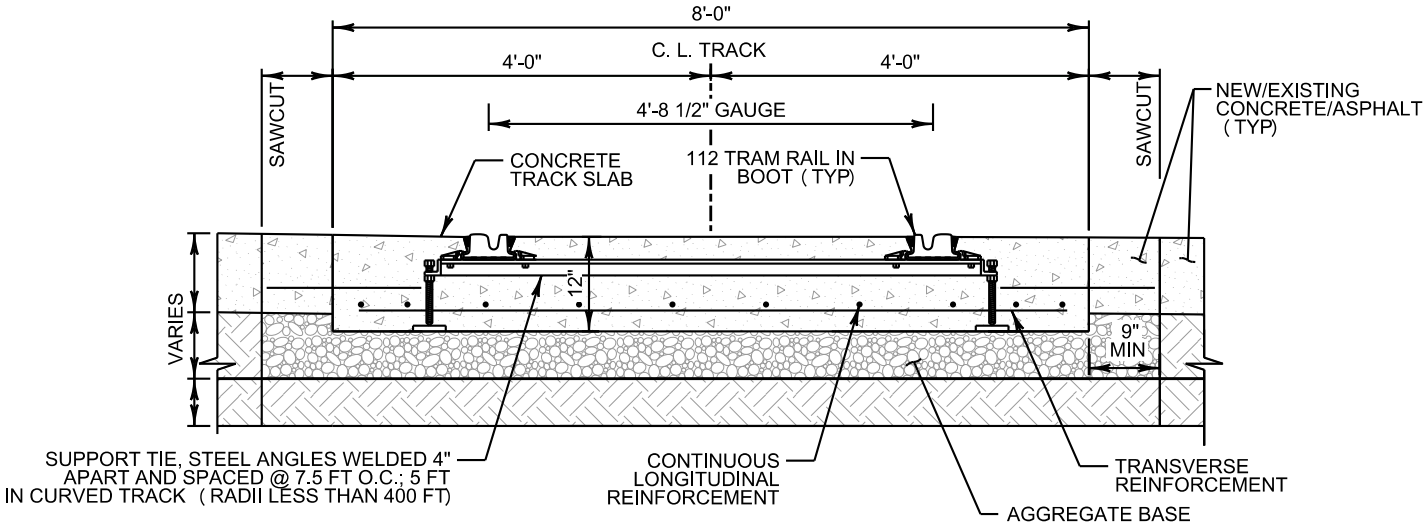


Figure 19. Typical Section – 112 TRAM Rail Track Slab



4.4 Existing Guideway Modification

As shown in Figure 20, four locations along the existing streetcar guideway will require reconstruction to accommodate the larger turning radius of a modern streetcar vehicle. Starting at the northern end of the existing guideway, the four locations are:

- Near Jose Marti Park in Ybor City.
- South of East 5th Street near the intersection of the streetcar and CSX tracks.
- Near East Cumberland Avenue at the roundabout in the Channel District.
- The intersection of Channelside Drive and Old Water Street near the Tampa Bay History Center and Amelia Arena.

Detailed concept drawings of these turn locations can be found in Appendix C - Existing Guideway Modifications.

4.5 Stop Concepts & Locations

STOP DESIGN CONCEPTS

To accommodate modern streetcar vehicles and allow for shared use by other transit vehicle types, stops along the extension will be designed with a 14-inch-high platform section for level, ADA-compliant streetcar boarding and a lower, 8-inch-high platform section for bus boarding. Along the existing streetcar line, stops will be retrofitted to provide a 14-inch high platform section for level, ADA-compliant streetcar boarding.

The overall footprint of stops will be similar in scale to stops on the existing line, and measure approximately 10-feet-wide by 100-feet-long. New and retrofitted stops will have similar amenities, which could include:

- canopy/covered area;
- seating, railings, trash receptacles;
- system information map, kiosk, signage;
- dynamic message sign, public address speaker;
- ticket vending machine;
- lighting and security elements; and
- ADA-compliant access and ramps.

NEW STOPS ALONG EXTENSION

For stops along the extension, one of two stop types will be constructed. As shown in Figures 22 and 23, one type will be positioned in the parking lane to the right of the guideway. The other type will be positioned along existing sidewalks adjacent the guideway. The type of stop depends on the guideway location in the street. Refer to Table 4 for information regarding stop type.

PREFERRED EXTENSION STOP LOCATIONS

Stops for the streetcar extension will be located every four to five blocks and within easy walking distance of nearby destinations. Figure 20 and Table 4 lists the preferred extension stop locations and types. More detailed proposed stop locations can be found in Appendix B - Preferred Extension Guideway & Stops.

MODIFICATION OF EXISTING STOPS

Each of the 11 stops along the existing streetcar line will be retrofitted to accommodate modern streetcar vehicles.

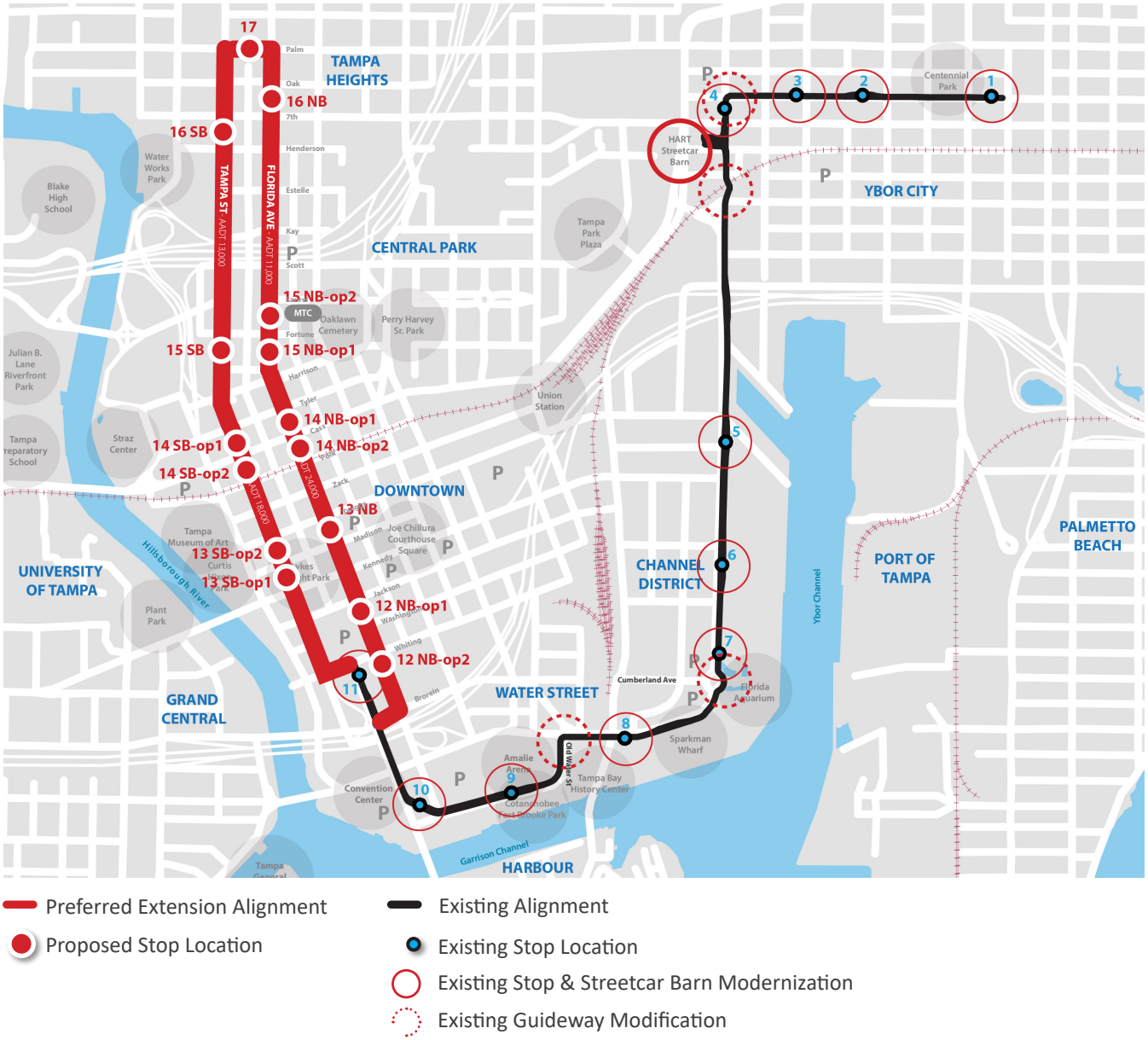
While most existing stops have many of the proposed amenities listed above, they also include a highblock boarding platform, accessed by a ramp, designed to provide wheelchair access via an ADA bridge to the higher interior floor of the replica streetcar vehicles. The existing highblock boarding platforms are 26 inches high.

The highblocks, ramps, and central sections of the existing stops will be removed, and a new 14-inch high platform will be constructed. Existing shelters and other equipment and amenities will be removed and reinstalled or replaced in-kind. Future design phases will determine if the new concrete platform will be constructed around the existing columns or if the shelters will be removed and installed on the new platform or replaced in-kind.

At all existing stops, the construction of new platforms will require removal of the existing concrete sidewalks, curb, and platforms, so the new platform and ramps may be constructed.

All new construction activity required to modify the existing stops will occur within the existing footprint of the stops.

Figure 20. Preferred Extension Alignment with Proposed Stop Locations and Moderization Projects



Preferred Extension Alignment
Proposed Stop Location
Existing Alignment
Existing Stop Location
Existing Stop & Streetcar Barn Modernization
Existing Guideway Modification

Table 4. Preferred Extension Stop Locations & Stop Types

Stop Number & Direction	Stop Location	Segment	Stop Type
FLORIDA AVENUE			
12 NB (option 1) 12 NB (option 2)	Jackson Street Whiting Street	1	right-side in island/parking lane
13 NB	Madison Street	1	right-side in island/parking lane
14 NB (option 1) 14 NB (option 2)	Cass Street Polk Street	1	right-side in island/parking lane
15 NB (option 1) 15 NB (option 2)	Fortune Street Laurel Street	2	right-side in sidewalk (ROW required)
16 NB	7th Avenue	2	right-side in sidewalk (ROW required)
PALM AVENUE			
17	Palm Avenue	2	right-side in sidewalk (ROW required)
TAMPA STREET			
16 SB	7th Avenue	3	right-side in island/parking lane
15 SB	Fortune Street	3	right-side in island/parking lane (ROW required)
14 SB (option 1) 14 SB (option 2)	Cass Street Polk Street	4	right-side in island/parking lane lane
13 SB	Madison Street	4	right-side in island/parking lane lane

Figure 21. Example Stops in Kansas City, Missouri; Portland, Oregon; and Seattle, Washington

Source: HDR

Figure 22. Right side stop on sidewalk as proposed for guideway segment 2

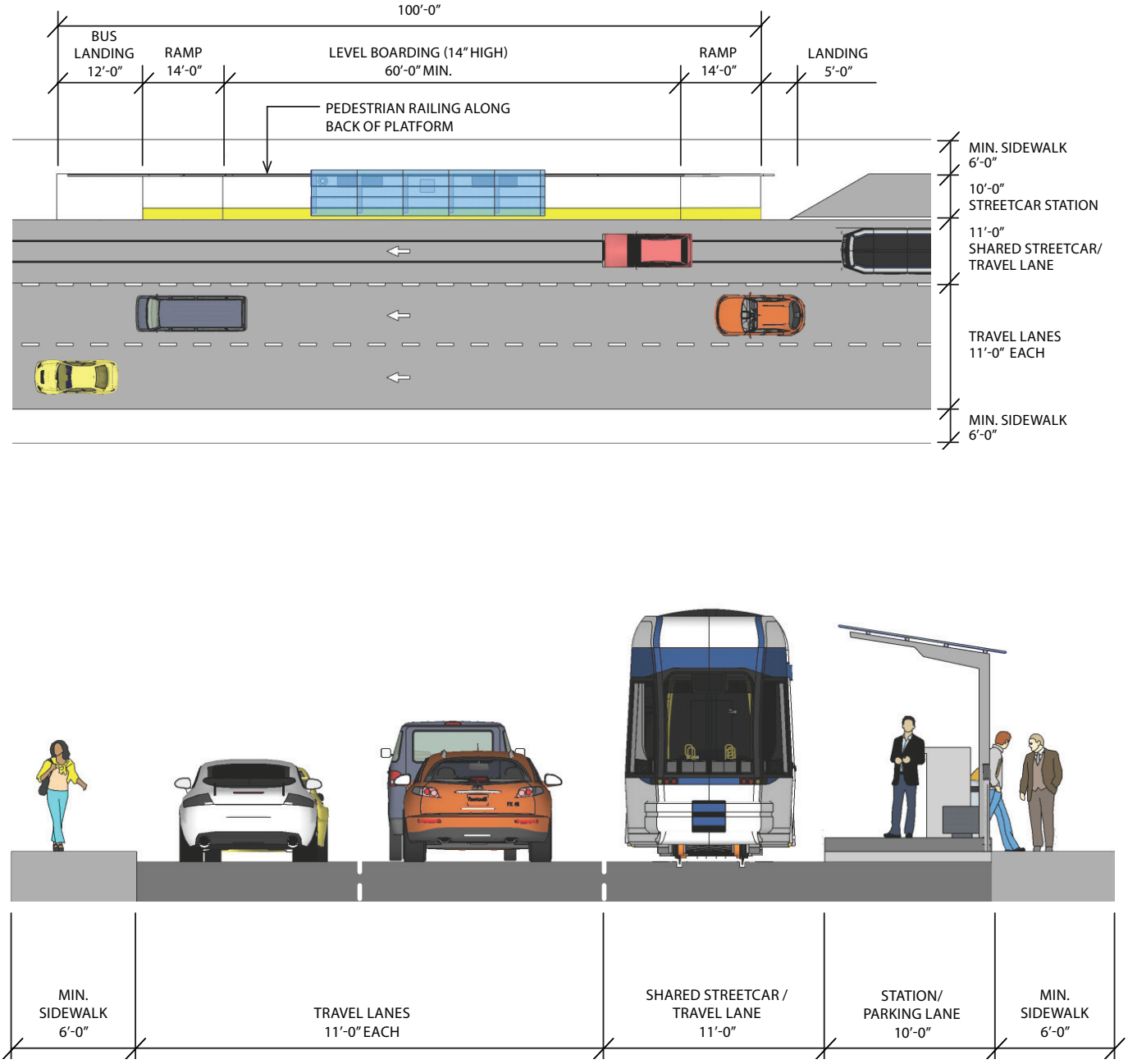
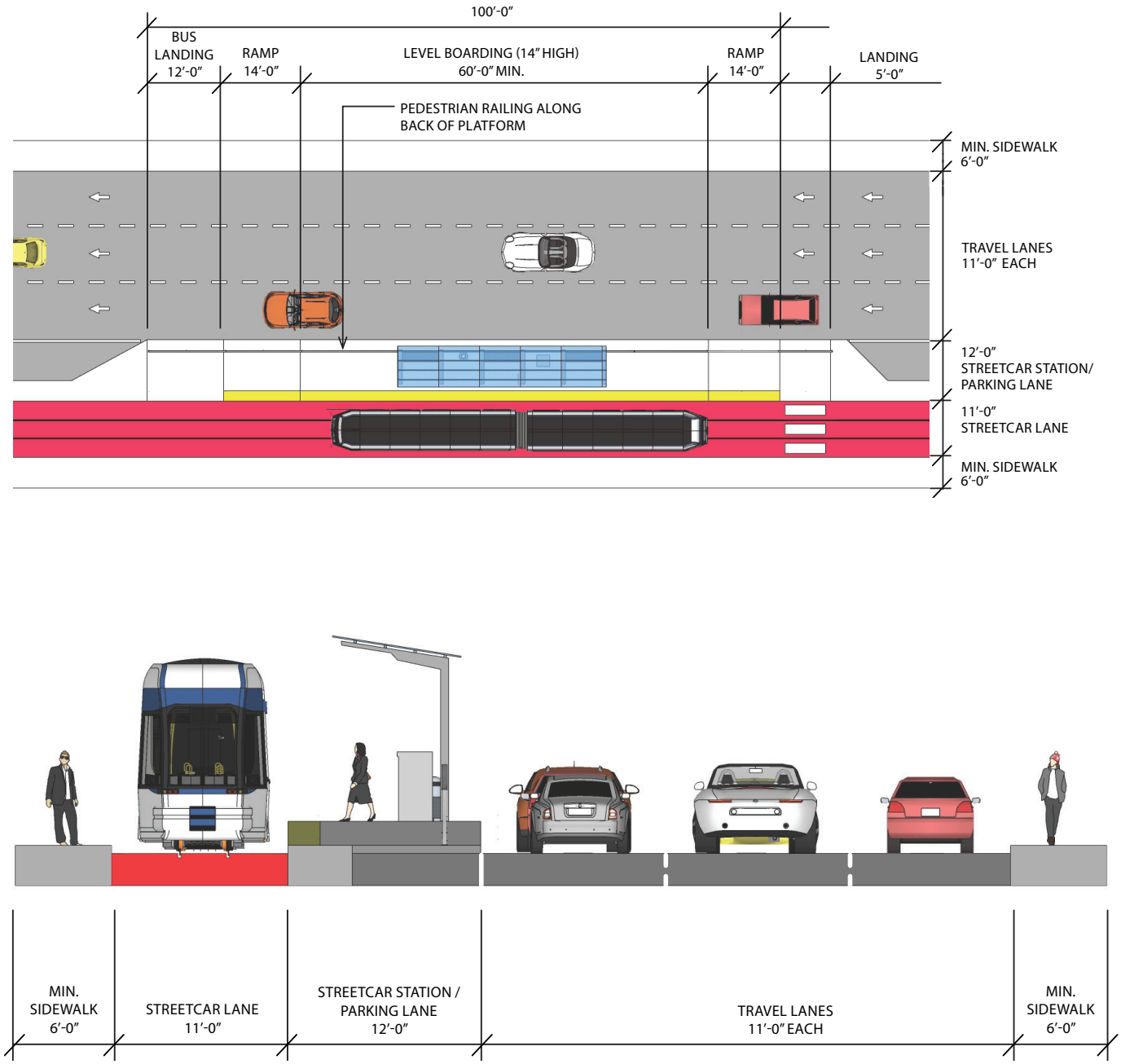


Figure 23. Right side stop in island/parking lane as proposed for guideway segments 1, 3, and 4



4.6 Vehicle Maintenance Facility Concepts

An evaluation of the existing streetcar vehicle maintenance facility (VMF) in Ybor City was conducted to determine the feasibility of modifying or expanding the facility to accommodate new vehicles. For the purposes of the evaluation, it was assumed that eight new modern streetcar vehicles and three existing replica historic vehicles will need to be maintained and stored on site along with related service and maintenance equipment. This section of the report provides a review of the evaluation process and findings from initial conceptual planning effort.

EXISTING FACILITY EVALUATION

An on-site evaluation of the existing VMF and site was conducted on November 6, 2018. The initial findings of the evaluation are organized around the following functional categories:

- Office and Staff Support (first and second level);
- Parts and Material Storage;
- Service and Inspection Position (S&I);
- Heavy Repair Position;
- Wheel Truing;
- Mezzanine Level Component Shops and Staging;
- Cleaning and Sanding (streetcar interior and exterior cleaning);
- Streetcar Storage; and
- Other Exterior Storage.

The findings are documented in the *VMF Evaluation Technical Memorandum*. [Memo to be finalized and made available for posting on project web site.]

VEHICLE SPECIFICATIONS FOR CONCEPTUAL PLANNING

For conceptual planning purposes to evaluate VMF requirements, the study team used specifications for the Siemens S70 Short vehicle, which is one of the larger vehicles currently available. Use of the S70 specifications for this evaluation and conceptual planning effort allows for future flexibility in selection of the S70 vehicle or a vehicle from another supplier. Final vehicle selection will occur during the engineering phase of the project.

The Siemens S70 Short streetcar is a low floor type modern streetcar. The S70 is a modern triple articulated streetcar with all three sections being low floor for easy boarding. For the purposes of the study, it was assumed that eight new vehicles would be required to provide service along the existing system and the extension to Tampa Heights. Additionally, three existing replica historic vehicles would be retained for future use.

CONCEPTUAL PLANS

To accommodate the Siemens S70 Short, significant modifications to the existing facility and yard will be required. Vehicle length is substantially longer than the existing vehicles. The S70 is 82 feet in length. They also have a different roof access height, are narrower, have a greater turning radius, and have a 70 percent low floor design, which requires a different motor truck design and a different arrangement of components on the car than the existing vehicles. Differences in component locations will require reconstruction of the maintenance bays to provide for a lower level work area with a "wide pit" design, and the difference in turning radius will require significant reconstruction of tracks in the yard to the immediate west of the existing VMF.

The planning team developed three conceptual plan alternatives illustrating options to meet maintenance, storage, and access requirements for eight new modern streetcar vehicles plus the three existing historic replica vehicles. The conceptual plan alternatives, all of which are constrained to the limits of the current site of the existing VMF and yard, required modifications to the existing maintenance bays, a westward expansion of the building to accommodate larger vehicles, the construction of a canopy or cover for outdoor storage of vehicles, and reconstruction of the track and yard to support larger vehicle turning radii.

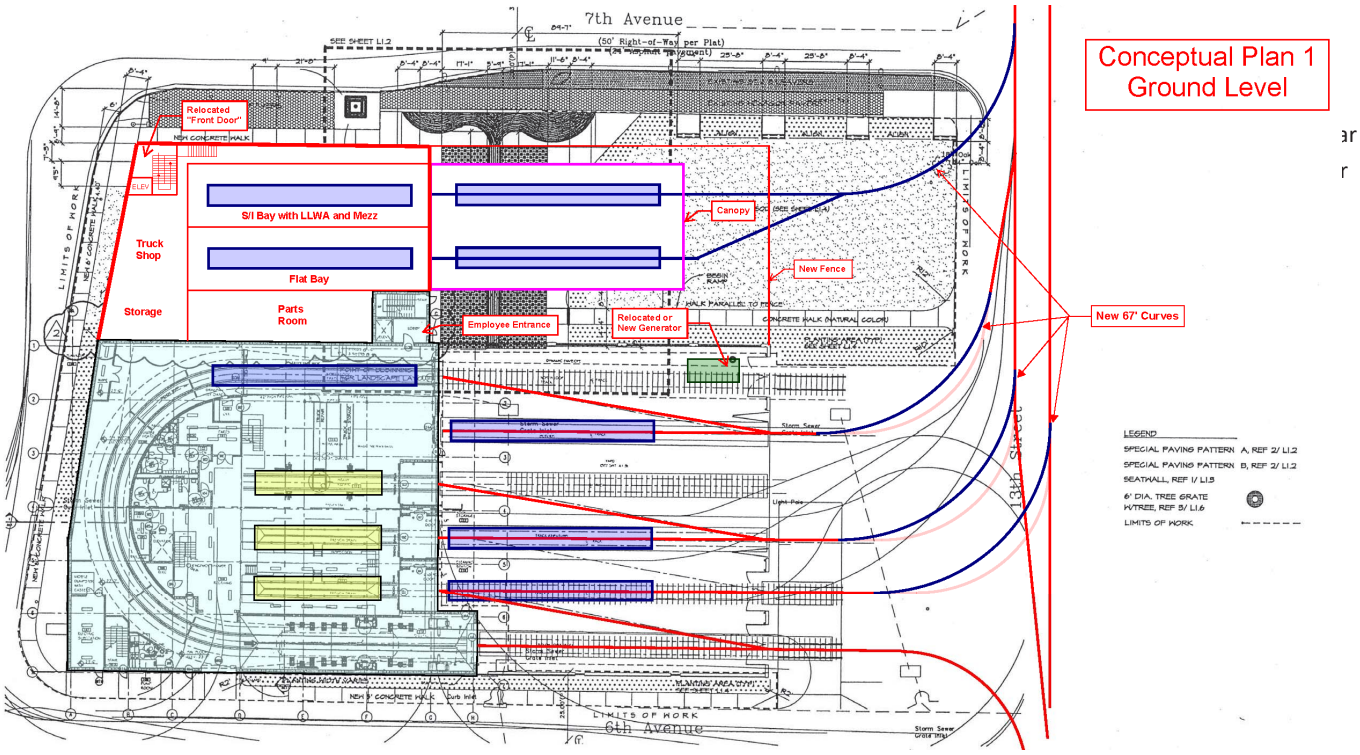
A description of each conceptual plan follows, along with preliminary sketches showing the extent of required modifications per alternative.

Conceptual Plan 1

Conceptual Plan 1 (Figure 25) has the least amount of impact on the current VMF and its operations, as the expansion would only effect the north side of the current building. The first level will have a properly sized service and inspection (S/I) bay, flat bay, parts room, truck shop, and storage space. This concept is also relocating the "front door" of the facility to the northwest corner of the building, near the corner of 7th Avenue and Nuccio Parkway. This would be the main entry for visitors and would have a staircase and elevator to the third level HART administration offices. There is a canopy in front of the bays large enough for

Figure 24. VMF Existing Conditions (image taken March 4, 2018)

Figure 25. VMF Conceptual Plan 1



two modern streetcars to park beneath. This is also where a new portable walk-around washer would be used to clean the outside of the vehicles.

Other modifications to the ground level would be to expand the site fencing for security and relocating or replacing the generator. Conceptual Plan 1 has eight available parking spots for the new modern streetcars. Only three of these spots would be enclosed, two would be covered, and three would be uncovered. New track work and turnouts would also be necessary to allow the streetcars to access the site. The mezzanine level of the plan would have the upper level work platform in the S/I bay to give full access to the top of the new modern streetcar. The flat bay and S/I bay will each be covered by an overhead bridge crane to be sized appropriately. The third level could all be available for future HART administration offices. With the relocated front door, the current third level layout would have to be reworked to accommodate this.

Below is a list of pros and cons associated with implementation of Conceptual Plan 1:

- Little impact to existing shop operations during construction.
- Modern streetcars have dedicated service and inspection bays properly sized for the vehicle.
- New parts room, storage, and truck shop for modern streetcars.
- New third floor above expanded shop for HART to consolidate office space.
- Separate new public entrance.
- Cars can be washed under canopy using a walk-around wash system and high-pressure washer.
- Existing entrance becomes dedicated for employees only.
- Majority of undeveloped portions of the site along 7th Avenue required for new expanded shop and canopy.

Conceptual Plan 2

Conceptual Plan 2 (Figure 26) has major impact on the current VMF and its operations as the expansion effects the north side, as well as the east side of the current building. On the north side of the building is a new parts room to help supplement the current undersized parts room. This plan also relocates the "front door" to the west side of the addition. This would become the main entrance for all visitors to the building. A new canopy sized to store six new modern streetcars would also be placed on the north side of the existing facility.

On the east side of the building, there is a new drive-through wash bay that will house all of the wash system equipment and the new drive-through wash system. This system would require the new modern streetcars to access the bay from the east, pull through the washer, then make a reverse movement out of the bay and into either the new canopied storage yard or maintenance bays. The maintenance bays, which include the two S/I bays and the flat bay, would be expanded to the east to accommodate the new modern streetcars. This would include expanding the pits, upper level work area and crane coverage as well. Other modifications to the ground level would be to expand the site fencing for security and relocating/replacing the generator. Conceptual 2 has ten available parking spots for the new modern streetcars. Only four of these spots would be enclosed and six would be covered by the new canopy. New track work and turnouts would also be necessary to move the streetcars onsite.

Below is a list of pros and cons associated with implementation of Conceptual Plan 2:

- New parts room.
- All cars under cover.
- Separate new public entrance.
- New enclosed wash bay with new drive-through wash system.
- Existing entrance becomes dedicated for employees only.
- Undeveloped portions of the site along 7th Avenue required for new canopy and trackwork.
- Existing shop operations extremely disrupted during construction.
- Construction of shop extension, upper level work platforms and pits to be phased to minimize impact to daily operations.
- No new office space for HART.
- No new truck shop. Existing truck shop will need to service heritage and new modern streetcars
- Potential for future expansion for additional vehicle storage on the existing site to the north of the existing building.

Conceptual Plan 3

Conceptual Plan 3 (Figure 27) would also have major impacts on the current VMF and its operations, as the expansion is on the north side, as well as the east side of the current building. A large parts room will be added to the north side of building, requiring the relocation or replacement of the generator. On the east side of the building, there is a new drive-through wash bay

Figure 26. VMF Conceptual Plan 2

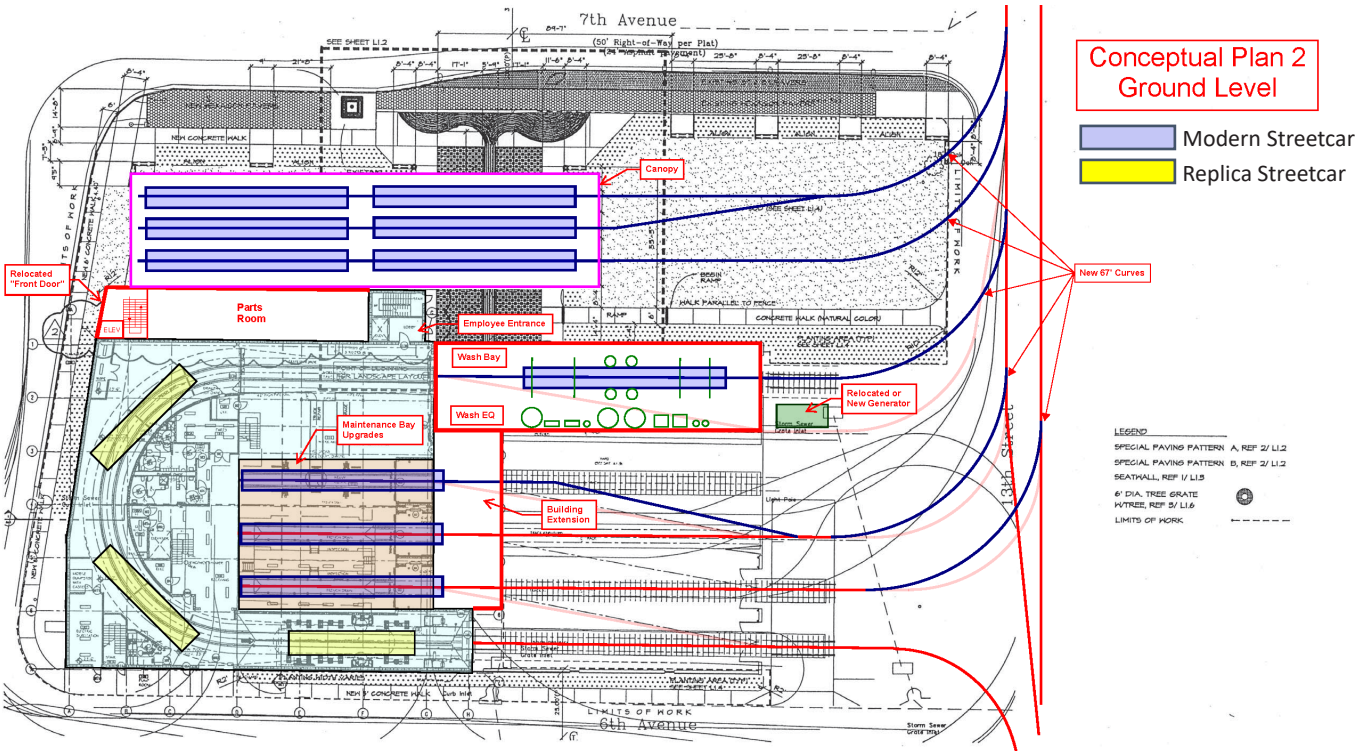
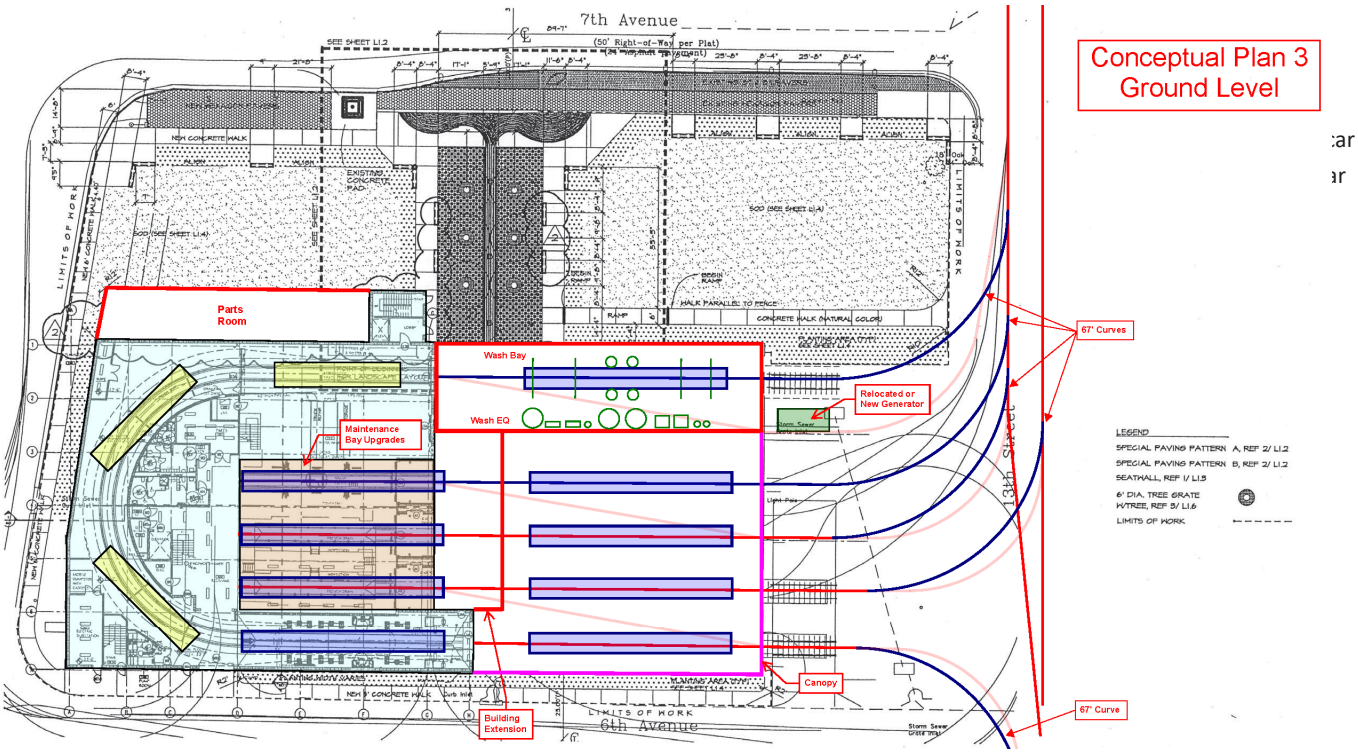


Figure 27. VMF Conceptual Plan 3



that will house all of the wash system equipment and the new drive-through wash system. This system would require the new modern streetcars to access the bay from the east, pull through the washer, then make a reverse movement out of the bay and into either the new canopied storage yard or maintenance bays. The maintenance bays, which include the two S/I bays and the flat bay, would be expanded to the east to accommodate the new modern streetcar. This would include expanding the pits, upper level work area, and crane coverage. Other modifications to the ground level would be to expand the site fencing for security and relocating/replacing the generator. Concept 3 has nine available parking spots for the new modern streetcars. Only five of these spots would be enclosed and four would be covered by the new canopy. New track work and turnouts would also be necessary to move the streetcars onsite.

Below is a list of pros and cons associated with implementation of Conceptual Plan 3:

- Majority of currently undeveloped portion of the site remains untouched.
- New parts room.
- All cars under cover.
- Existing entrance remains the same for employees and public.
- New enclosed wash bay with new drive-through wash system.
- Existing shop operations extremely disrupted during construction.
- Construction of shop extension, upper level work platforms, and pits to be phased to minimize impact to daily operations.
- No potential for new office space.
- No new truck shop. Existing truck shop will need to service heritage and new modern streetcars.

Final VMF conceptual plan selection will occur during the engineering phase of the project.

5. PUBLIC ENGAGEMENT SUMMARY

This study has included extensive public engagement outreach to multiple agencies and stakeholder groups. Outreach and engagement activities conducted from inception of the study through the selection of the preferred project alternative included the following:

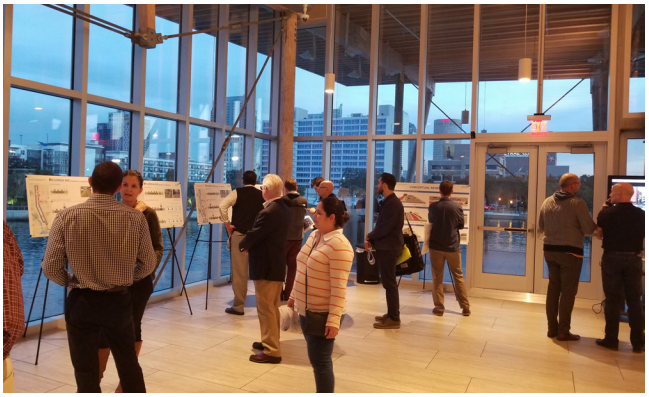
- **Project Branding**. At the onset of the study, the City undertook a project branding effort. A logo and other branding materials were developed for use throughout the study.
- **Project Website**. The City created a project specific webpage on the City's website: www.tampagov.net/streetcar. The webpage was frequently updated and provided details about the study, frequently asked questions, a study schedule, documents and relevant studies or plans, presentation materials from the public meetings held during the study, an interactive survey, and an on-line comment form. Comments received via the on-line comment form are provided in *Public Engagement & Agency Outreach Summary* report. The City also created a project email address: streetcar@tampagov.net.
- **Social Media**. Existing City of Tampa social media channels were used to share important information with residents and stakeholders. Notifications about the study and information about the public meetings were shared on the City's Facebook and Twitter accounts.
- **Presentations, Briefings, and Small Group Meetings.** Several presentations, briefings, and small group meetings were held with local property owners, community groups, and others with an interest in the project. These meetings provided opportunities for staff and project team members to educate participants and solicit feedback on the project.
- **Stakeholder Meetings.** Two key stakeholder meetings were held primarily with city and county agency representatives to share project information and provide opportunities for participants to voice comments and concerns. The first stakeholder meeting took place on March 23, 2017. The second stakeholder meeting took place on April 6, 2017. Both meetings were held at the Tampa Municipal Office Building. At these initial meetings stakeholders received an update on the study goals and schedule, and a report on initial fundings from

the project context assessment. A third stakeholder meeting was held on December 12, 2018 to review the preferred project alternatives.

- **Public Workshops.** Five large-scale public workshops were held to provide information and solicit input. The meetings were publicized through news release to local media, via social media, and with targeted email notices to key stakeholders. The City also created public Facebook Events for all of the workshops, which were pushed to the news feeds of anyone who follows the City of Tampa's Facebook page.
  - The first public workshop focused on purpose and need and was held on March 7, 2017 from 5:30 to 7:30 p.m. at the Tampa Bay History Center. Approximately 100 participants attended.
  - The second public workshop focused on corridor options and was held on April 4, 2017 from 5:30 to 7:30 p.m. at the Tampa Bay History Center. Approximately 60 participants attended.
  - The third workshop was a results roundtable and was held on May 2, 2017 from 5:30 to 7:30 p.m. in the Ybor Room at the Hillsborough Community College, Ybor City Campus. Approximately 80 participants attended.
  - The fourth public workshop introduced the draft preferred alignment and was held on October 24, 2017 from 5:30 to 7:30 p.m. at the Chester H. Ferguson Law Center. Approximately 55 participants attended.
  - The fifth public workshop was held to review preferred project alternatives on December 12, 2018. This workshop was organized as a presentation followed by an open house, and took place at the Tampa River Center at Julian B. Lane Park. Approximately 100 participants attended.
- **Online Survey**. The City conducted an on-line survey asking residents about their thoughts on the *InVision: Tampa Streetcar* project. Eight hundred and thirty five (835) people responded to the on-line survey, which was open from February 23 through March 27, 2017 on the study website.
- **Media Coverage.** Local news media coverage was extensive and numerous stories and articles were written in support of the project and about the public meetings that were held.

For more detailed information on public engagement activities, please refer to the full report—*Public Engagement & Agency Outreach Summary*—on the City of Tampa's InVision: Tampa Streetcar project website at www.tampagov.net/streetcar.

Figure 28. Preferred Alternatives Open House (December 12, 2018)



APPENDIX A - ALIGNMENT EVALUATION PROCESS

Table 1. Alignment Options - Summary Evaluation Table

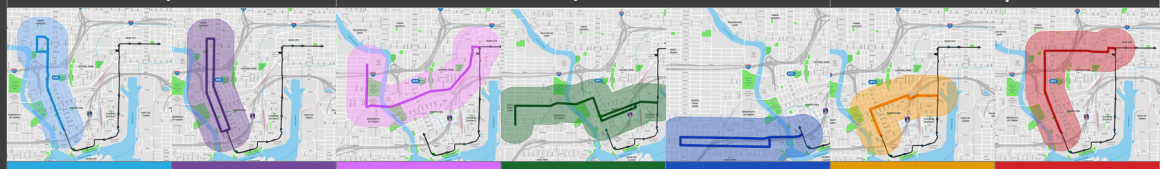
Evaluation Category	North/South		East/West			Loop	
							
	A N/S Franklin Street	B N/S Tampa Street Florida Avenue Couplet	C E/W West River Ybor City	D E/W North Hyde Park-Channel District	E E/W North Hyde Park-Convention Center Couplet	F Loop Downtown-Channel District	G Loop Downtown-Ybor City
Alignment Information							
Track Miles	2.67	2.60	4.66	4.94	3.27	2.46	4.12
Number of Vehicles	4	4	7	7	5	4	6
Capital Costs ($2017)	$94 million	$97 million	$174 million	$180 million	$124 million	$91 million	$138 million
Annual O&M Costs	$3.6 million	$3.6 million	$6.2 million	$6.2 million	$4.4 million	$3.6 million	$5.3 million
Average Weekday Boardings (2020)	2,200	2,200	2,450	2,700	1,500	2,300	2,300
Population & Employment within 1/4 mile (2020)	20,600	24,100	29,900	31,200	15,100	20,400	22,000
Purpose & Need Considerations							
Connect Downtown Districts							
Serve Diverse Travel Markets							
Improve First Mile/Last Mile Connections							
Support Economic Development							
Expand Sustainable Transportation Options							
Performance & Impact							
Population & Employment Served							
Capital & Operating Costs							
Cost Effectiveness							
Constructability/ Operational Constraints							
Traffic & Parking Impacts							
Community & Environment Impacts							
OVERALL RATING							

Table 2. Alignment Options - Detailed Evaluation Table

CATEGORY MEASURES SUBMEASURES	Alignment A N/S Franklin		Alignment B N/S Tampa Florida Couplet		Alignment C E/W West River Ybor		Alignment D E/W North Hyde Park Channel District		Alignment E E/W North Hyde Park-Convention Center Couplet		Alignment F Loop Downtown-Channel District		Alignment G Loop Downtown-Ybor	
	MEASURE	RATING	MEASURE	RATING	MEASURE	RATING	MEASURE	RATING	MEASURE	RATING	MEASURE	RATING	MEASURE	RATING
Purpose & Need Considerations														
Connect Downtown Districts														
Serves Downtown Core	yes	**5.0**	**yes**	**5.0**	**yes**	**5.0**	**yes**	**5.0**	**no**	**1.0**	**yes**	**5.0**	**yes**	**5.0**
Serves emerging subdistricts		**1.8**		**1.8**		**3.0**		**2.6**		**1.8**		**1.8**		**2.2**
Tampa Heights	*yes*	*5*	*yes*	*5*	*no*	*1*	*no*	*1*	*no*	*1*	*no*	*1*	*yes*	*5*
Grand Central/UT	*no*	*1*	*no*	*1*	*partial*	*3*	*partial*	*3*	*partial*	*3*	*no*	*1*	*no*	*1*
Central Park/Encore!	*no*	*1*	*no*	*1*	*partial*	*3*	*partial*	*3*	*no*	*1*	*yes*	*5*	*partial*	*3*
North Hyde Park	*no*	*1*	*no*	*1*	*partial*	*3*	*yes*	*5*	*partial*	*3*	*no*	*1*	*no*	*1*
West River	*no*	*1*	*no*	*1*	*yes*	*5*	*no*	*1*	*no*	*1*	*no*	*1*	*no*	*1*
AVERAGE RATING		**3.4**		**3.4**		**4.0**		**3.8**		**1.4**		**3.4**		**3.6**
Serve Diverse Travel Markets														
Serves the greatest population/employment within 1/4 mile (2020) - extension only		**3.0**		**3.0**		**4.0**		**4.0**		**1.0**		**4.0**		**3.0**
Population/employment within 1/4 mile (2020) - extension only	*20,639*	*3*	*24,080*	*3*	*29,865*	*5*	*31,202*	*5*	*15,075*	*1*	*20,393*	*3*	*21,962*	*3*
Acreage within 1/4 mile buffer - extension only	*434*	*	*483*	*	*626*	*	*640*	*	*569*	*	*231*	*	*486*	*
Average Activity Density within 1/4 mile (2020) - extension only	*48*	*3*	*50*	*3*	*48*	*3*	*49*	*3*	*26*	*1*	*88*	*5*	*45*	*3*
Provides access for transit-dependent population within 1/4 mile		**2.0**		**2.0**		**3.0**		**2.0**		**1.0**		**1.5**		**2.5**
High (Central Park/Encore)	*no*	*1*	*no*	*1*	*partial*	*3*	*no*	*1*	*no*	*1*	*partial*	*3*	*partial*	*3*
High (West River)	*no*	*1*	*no*	*1*	*yes*	*5*	*no*	*1*	*no*	*1*	*no*	*1*	*no*	*1*
Moderate (Tampa Heights)	*yes*	*5*	*yes*	*5*	*no*	*1*	*no*	*1*	*no*	*1*	*no*	*1*	*yes*	*5*
Moderate (North Hyde Park)	*no*	*1*	*no*	*1*	*partial*	*3*	*yes*	*5*	*no*	*1*	*no*	*1*	*no*	*1*
Connects major destinations and parks within 1/4 mile	11	**5.0**	12	**5.0**	12	**5.0**	11	**5.0**	3	**1.0**	8	**3.0**	11	**5.0**
# cultural/entertainment/tourism venues	*6*	*	*6*	*	*7*	*	*7*	*	*2*	*	*5*	*	*6*	*
# educational institutions (UT, Stetson, Brewster)	*2*	*	*2*	*	*1*	*	*1*	*	*0*	*	*0*	*	*2*	*
# parks	*3*	*	*4*	*	*4*	*	*3*	*	*1*	*	*3*	*	*3*	*
AVERAGE RATING		**3.3**		**3.3**		**4.0**		**3.7**		**1.0**		**2.8**		**3.5**
Improve First Mile/Last Mile Connections														
Provides connection to existing regional transit hubs		**5.0**		**5.0**		**4.0**		**2.0**		**1.0**		**2.0**		**5.0**
# blocks from Marion Transit Center (MTC)	*2*	*5*	*1*	*5*	*3*	*4*	*6*	*2*	*12*	*1*	*6*	*2*	*2*	*5*
Provides connection to existing regional & local transit services		**2.7**		**4.0**		**4.7**		**4.0**		**2.3**		**3.7**		**3.7**
# blocks from Tampa Union Station	*6*	*2*	*5*	*3*	*1*	*5*	*1*	*5*	*12*	*1*	*0*	*5*	*6*	*2*
# blocks from Greyhound station	*3*	*4*	*2*	*5*	*1*	*5*	*4*	*4*	*10*	*1*	*1*	*5*	*3*	*4*
# bus stops located within 2 blocks of alignment	*23*	*2*	*30*	*4*	*33*	*4*	*26*	*3*	*39*	*5*	*16*	*1*	*38*	*5*
Provides connection to potential new regional transit hubs		**5.0**		**5.0**		**4.0**		**4.0**		**2.0**		**3.0**		**5.0**
# regional transit corridors serving Downtown intersected (4 max)	*4*	*5*	*4*	*5*	*3*	*4*	*3*	*4*	*1*	*2*	*2*	*3*	*4*	*5*
AVERAGE RATING		**4.2**		**4.7**		**4.2**		**3.3**		**1.8**		**2.9**		**4.6**

Table 3. Preferred Alternative - Detailed Evaluation Table

Decision Factor	Measure	Florida Brorein to Harrison 1.1 W Exclusive	Florida Brorein to Harrison 1.2 W Shared	Florida Brorein to Harrison 1.3 E Exclusive	Florida Brorein to Harrison 1.4 E Shared	Florida Harrison to Palm 2.1 E Shared	Tampa Palm to Harrison 3.1 E Exclusive	Tampa Palm to Harrison 3.2 E Shared	Tampa Tyler to Kennedy 4.1 E Exclusive	Tampa Tyler to Kennedy 4.2 E Shared	Tampa Kennedy to Whiting 5.1 E Shared	Franklin Tyler to Palm 6.1 E Shared
Maximizes Transit Travel Time Reliability		**5.0**	**2.3**	**5.0**	**3.0**	**2.0**	**5.0**	**3.7**	**5.0**	**2.3**	**1.0**	**1.7**
Transit Travel Time Reliability	5 if exclusive / 1 if shared	5.0	1.0	5.0	1.0	1.0	5.0	1.0	5.0	1.0	1.0	1.0
Potential for Parking to Block Guideway	5 if no shared lane adjacent to parking / 1 if adjacent	5.0	1.0	5.0	3.0	N/A	5.0	5.0	5.0	1.0	1.0	1.0
Turning Que Conflicts	5 if avoids turning ques and ramps / 3 if modest conflicts / 1 if significant	5.0	5.0	5.0	5.0	3.0	5.0	5.0	5.0	5.0	1.0	3.0
Minimizes Traffic, Bike Lane, & Parking Impacts		**3.5**	**4.0**	**3.5**	**4.0**	**3.7**	**3.0**	**4.0**	**4.0**	**4.0**	**3.0**	**3.7**
Traffic Impacts	5 if no lanes removed and exclusive / 3 if shared or exclusive lane removed / 1 if lane removed	5.0	3.0	5.0	3.0	3.0	5.0	3.0	5.0	3.0	3.0	3.0
Bike Lane Impacts	5 if remain / 3 if relocated / 1 if removed	3.0	5.0	3.0	5.0	3.0	3.0	5.0	3.0	3.0	3.0	N/A
On-Street Parking Impacts	5 if min loss or potential to add parking / 3 if mod loss /1 if max loss	3.0	5.0	3.0	5.0	N/A	1.0	5.0	3.0	5.0	5.0	5.0
Driveway/Alley Access Crossings	5 if low number of curb cuts relative to segment / 3 if moderate / 1 if high	3.0	3.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	1.0	3.0
Allows for Shared Transit Use		**5.0**	**1.0**	**3.0**	**5.0**	**5.0**	**5.0**	**1.0**	**5.0**	**1.0**	**N/A**	**5.0**
Guideway Supports Shared Use	5 if all right side shared stop / 3 if both side stops required / 1 if no right side stop	5.0	1.0	3.0	5.0	5.0	5.0	1.0	5.0	1.0	N/A	5.0
Minimizes Costs for ROW & Street Reconstruction		**2.7**	**3.3**	**2.0**	**3.3**	**2.7**	**2.0**	**2.7**	**3.3**	**3.3**	**5.0**	**2.0**
Minimizes ROW Requirements	5 if no ROW / 3 if limited for stops / 1 if significant for alignment or turns	5.0	5.0	3.0	5.0	3.0	3.0	3.0	5.0	5.0	5.0	3.0
Minimize Street/Streetscape Reconstruction	5 if minimal impact (shared lane) / 3 if modest (transit lane) / 1 if significant	3.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0	5.0	5.0	3.0
	TOTALS	4.0	2.7	3.4	3.8	3.3	3.8	2.8	4.3	2.7	3.0	3.1

APPENDIX B - PREFERRED EXTENSION GUIDEWAY & STOPS

Figure 1. Extension Guideway & Stops Key Sheet

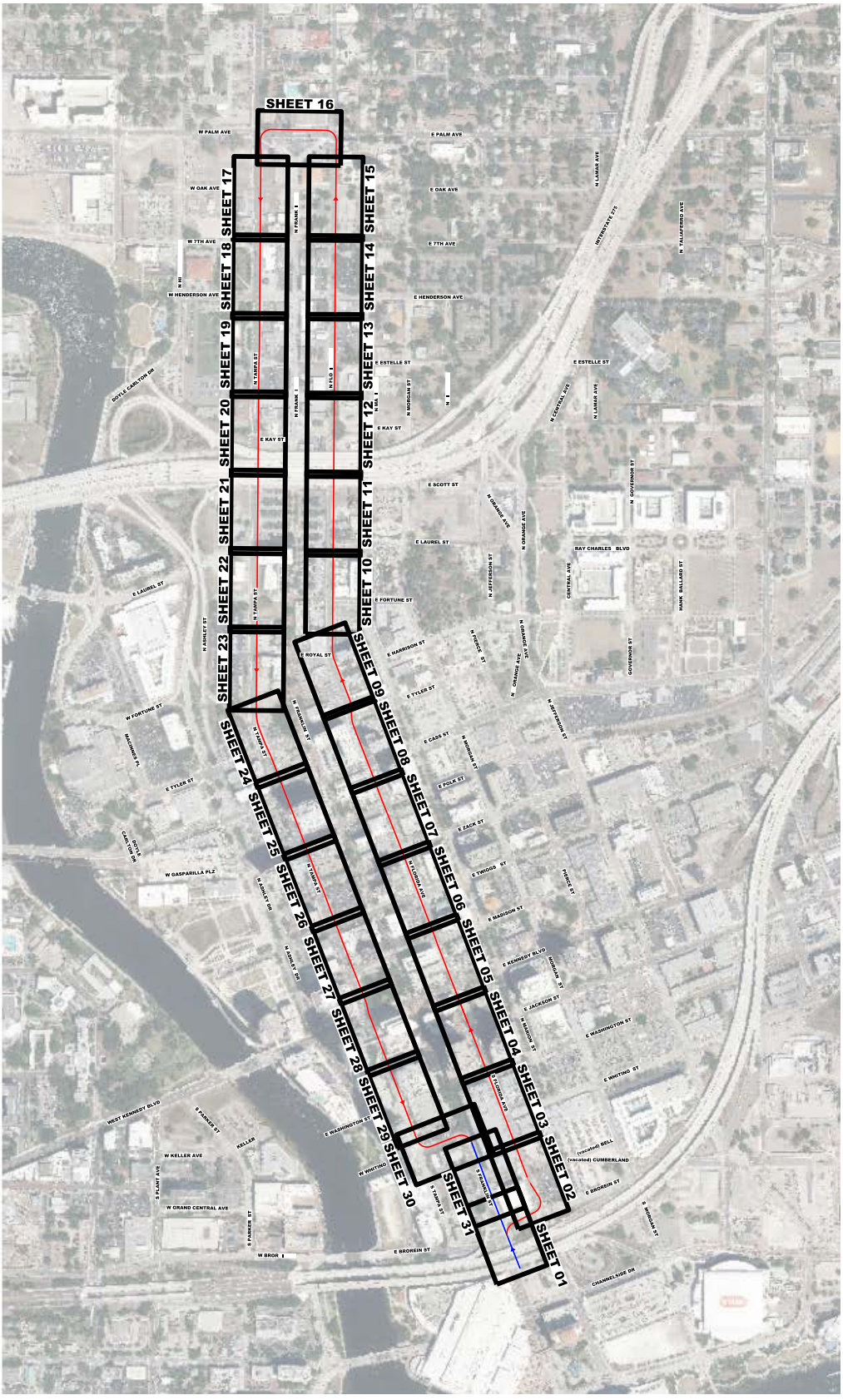


Figure 2. Extension Guideway & Stops - Sheet 01

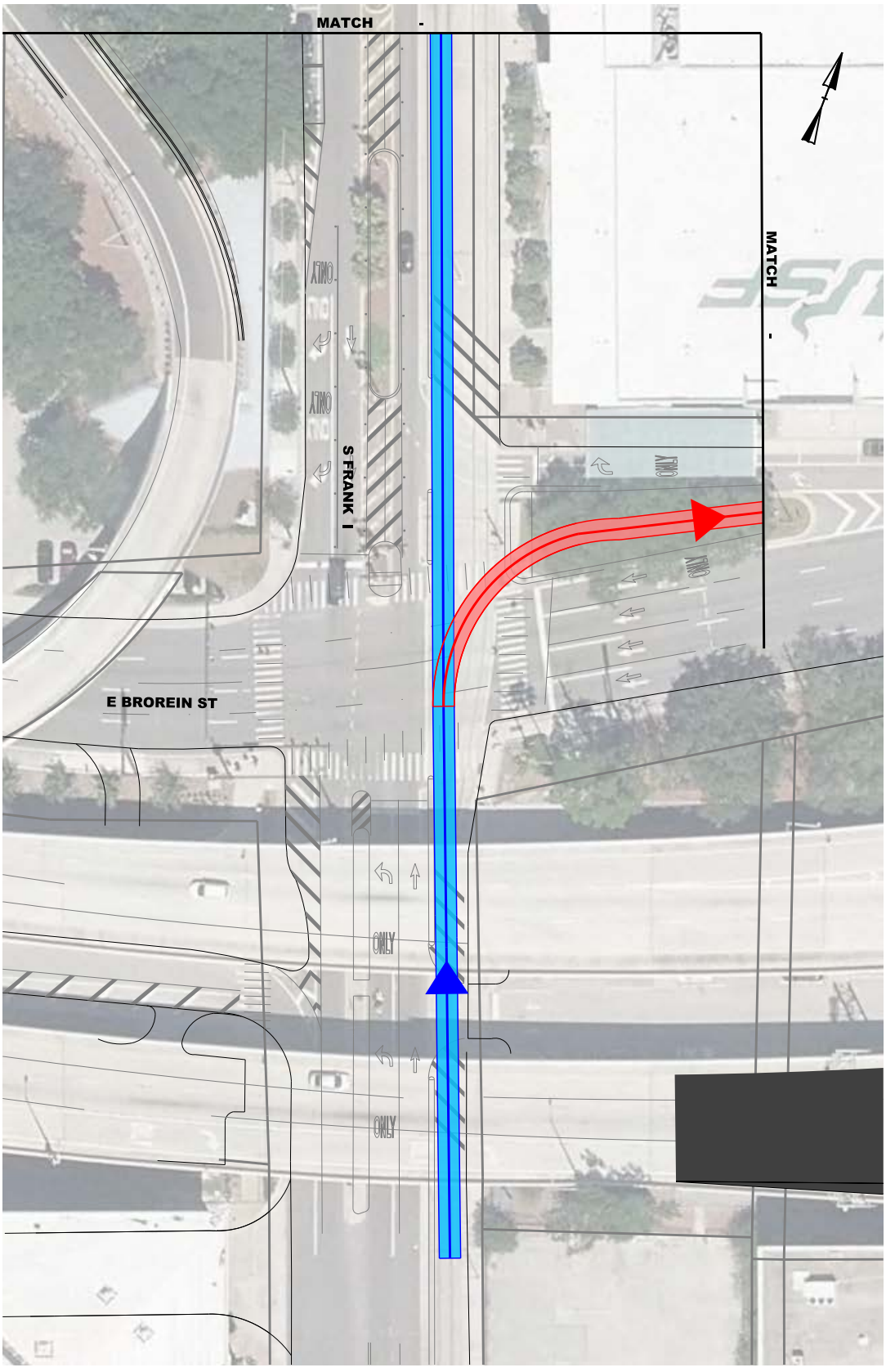


Figure 3. Extension Guideway & Stops - Sheet 02

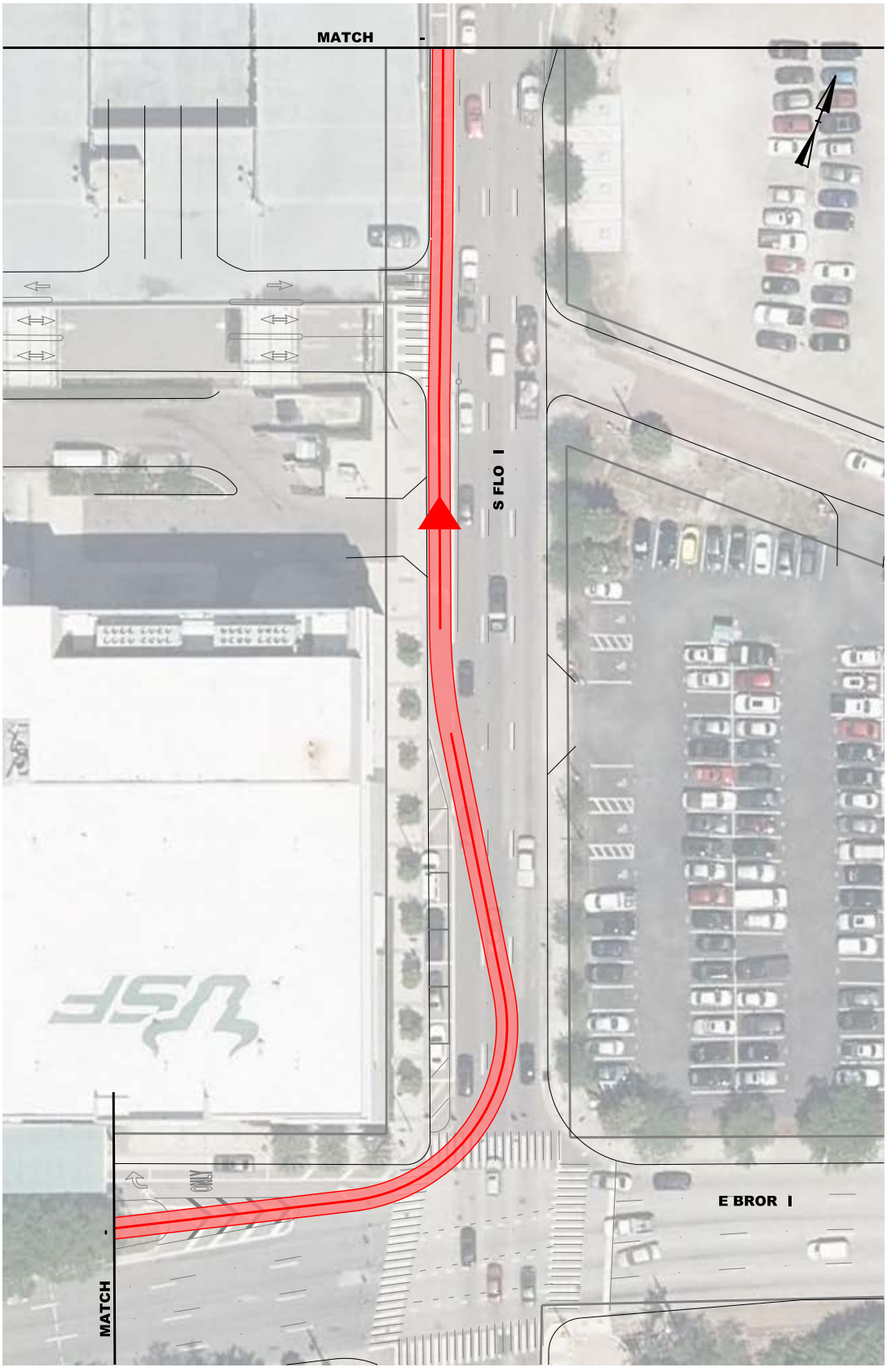


Figure 4. Extension Guideway & Stops - Sheet 03

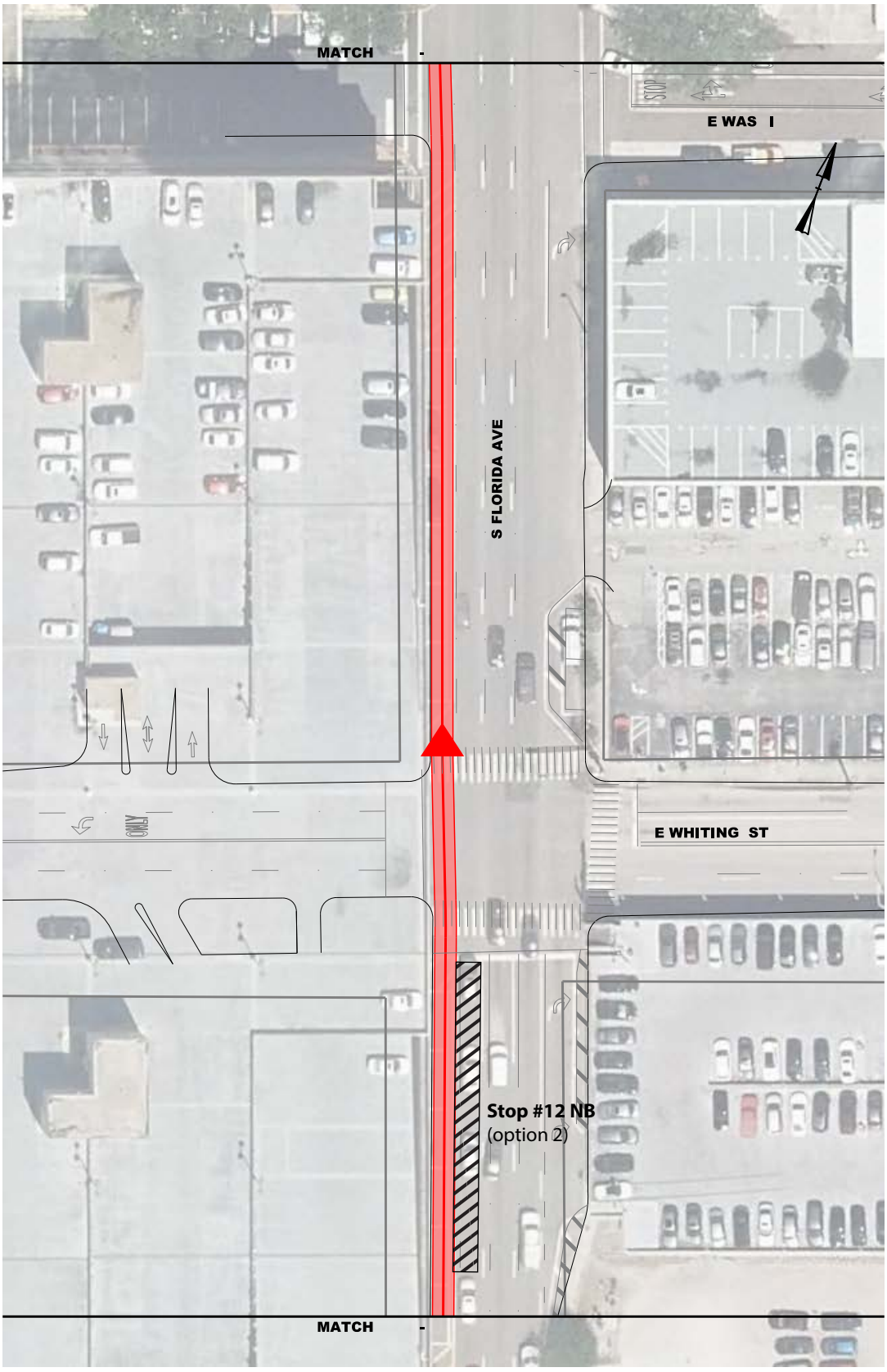


Figure 5. Extension Guideway & Stops - Sheet 04

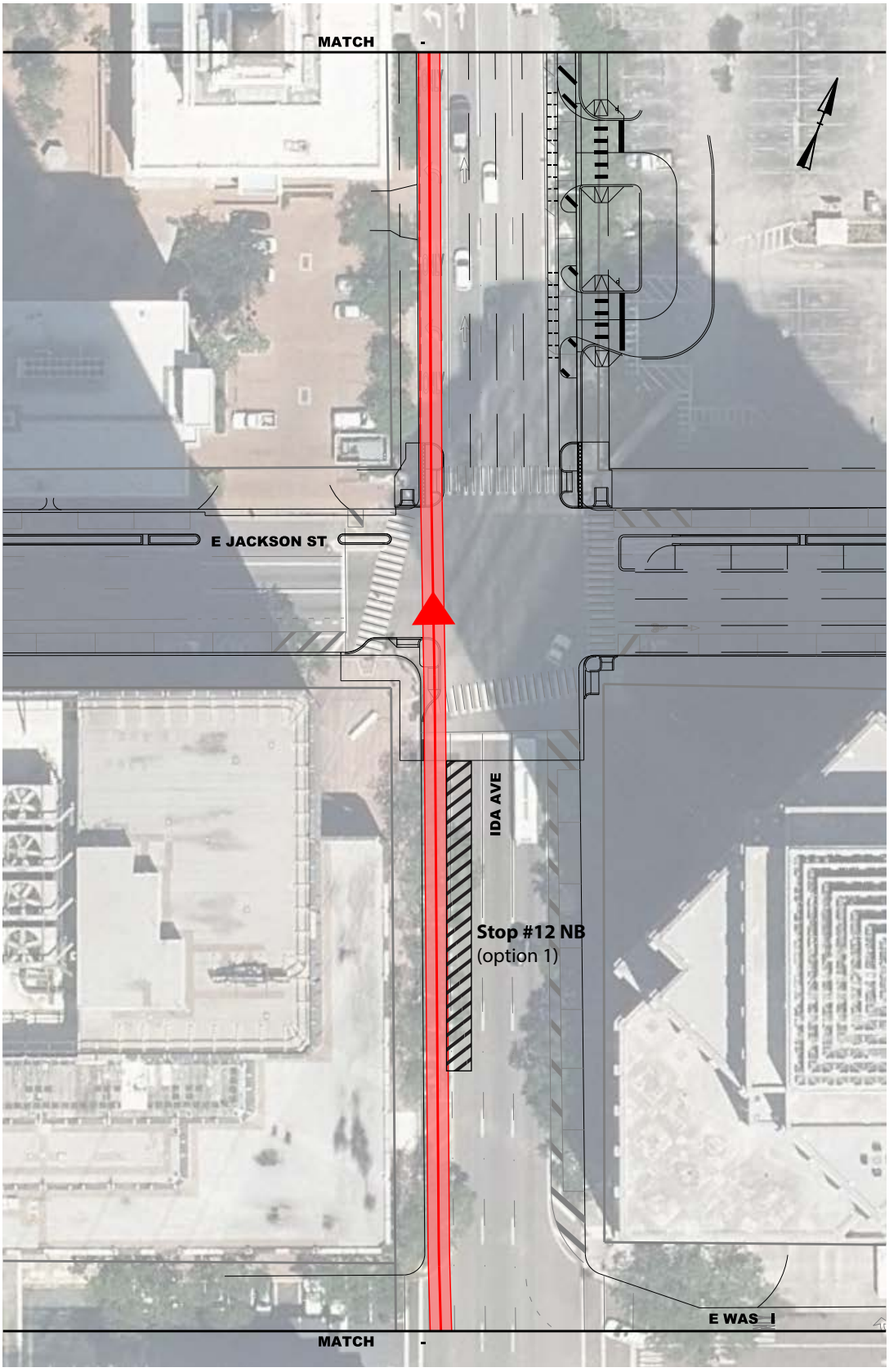


Figure 6. Extension Guideway & Stops - Sheet 05

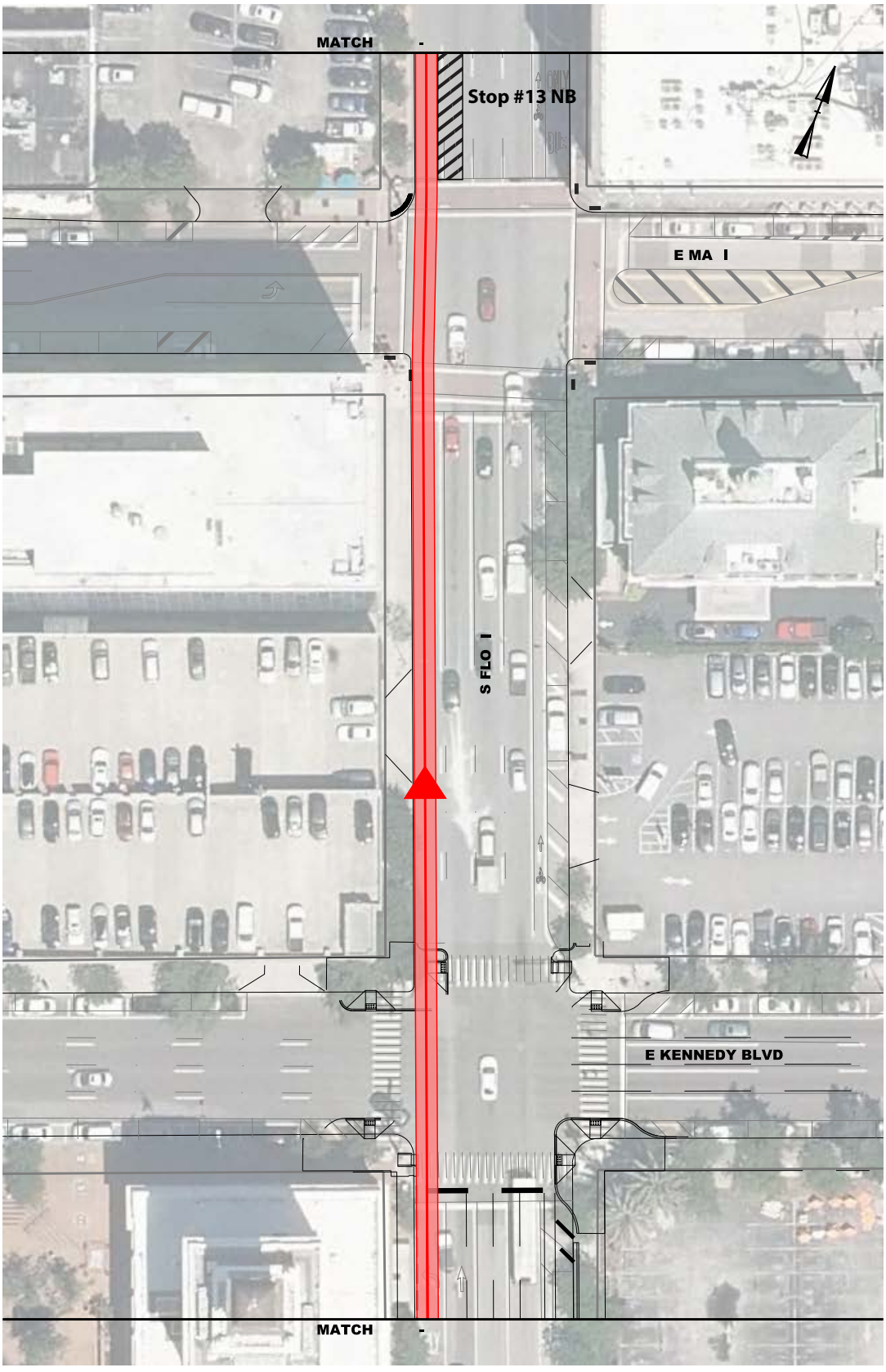


Figure 7. Extension Guideway & Stops - Sheet 06

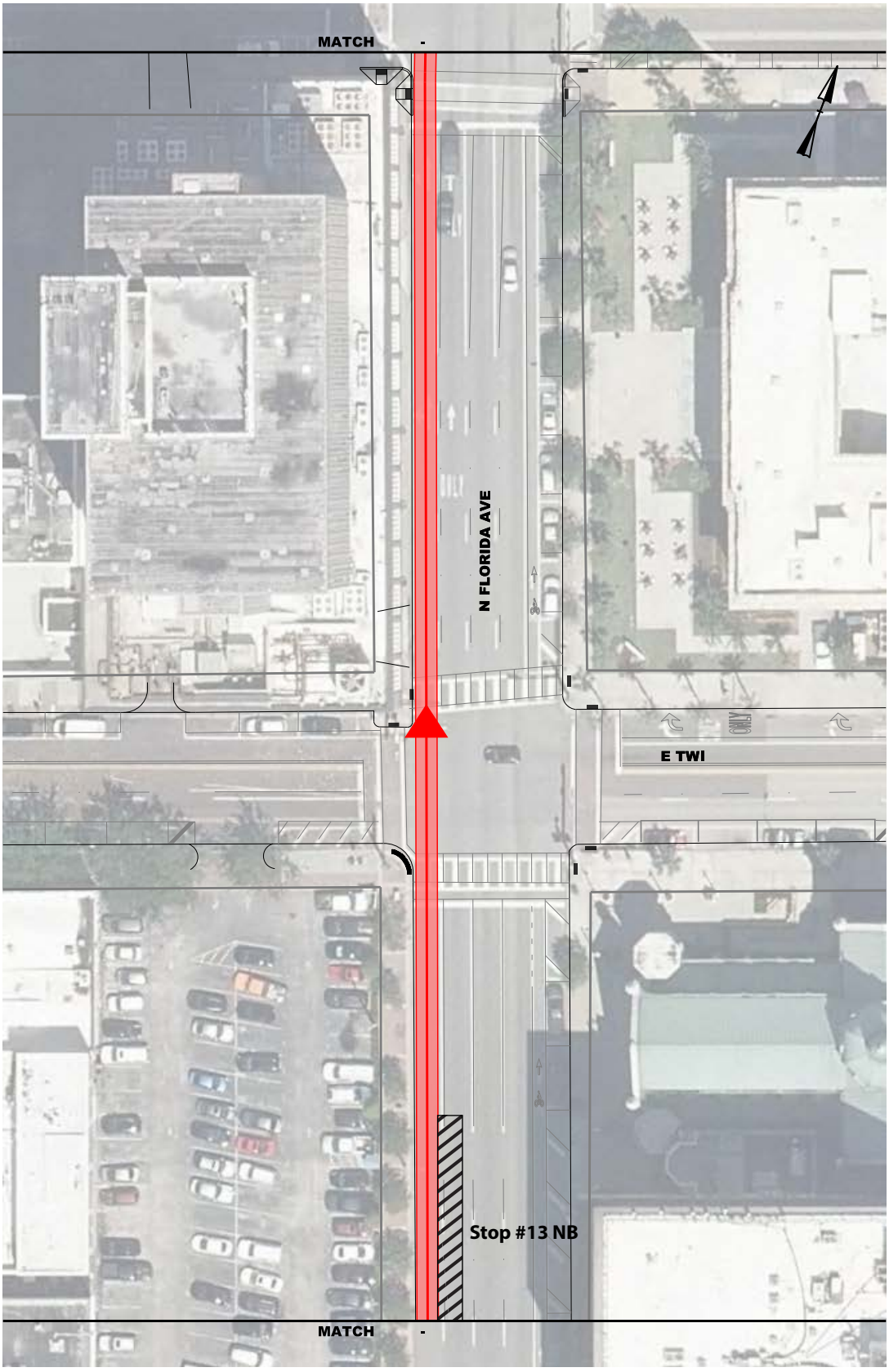


Figure 8. Extension Guideway & Stops - Sheet 07

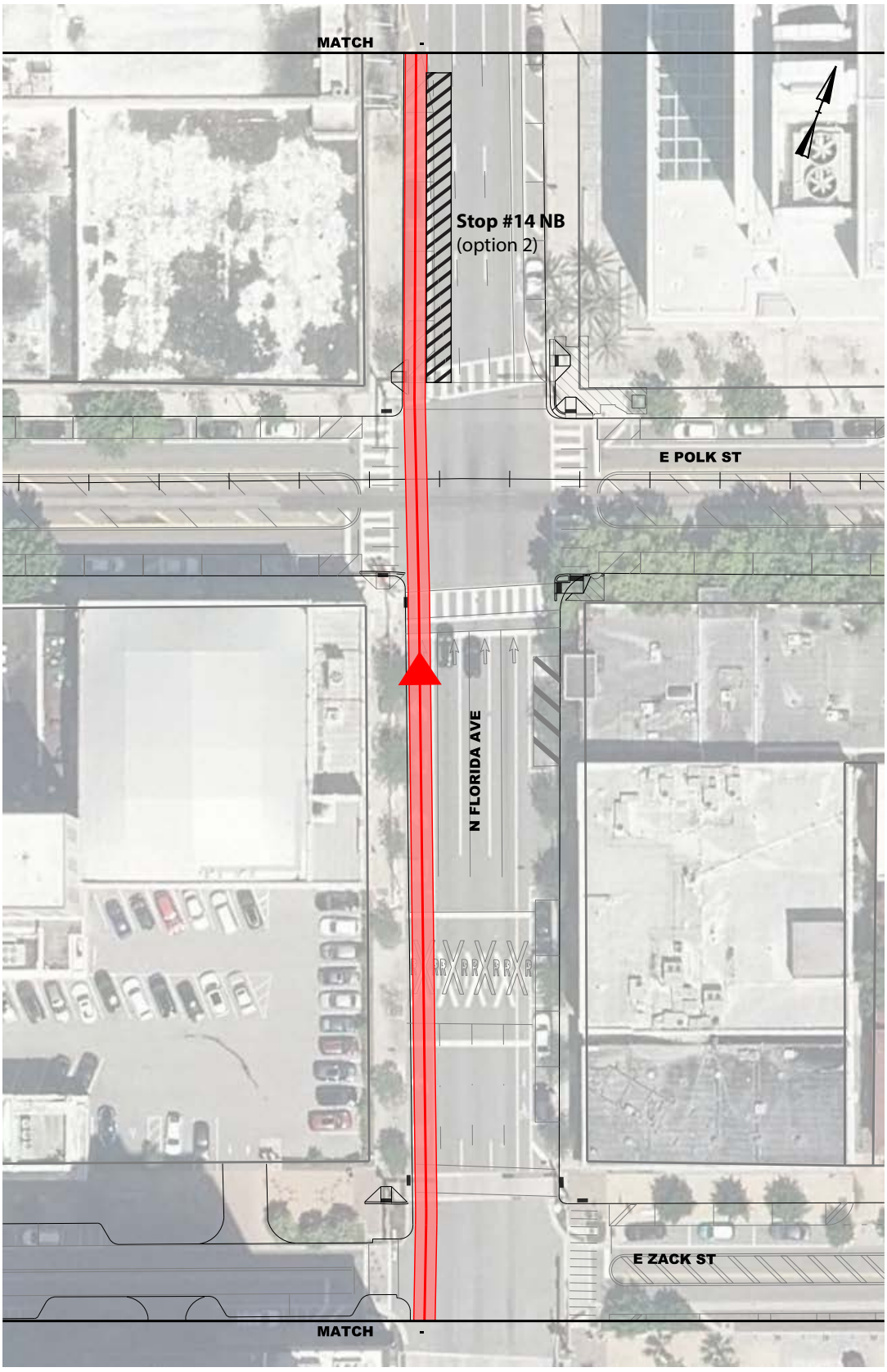


Figure 9. Extension Guideway & Stops - Sheet 08

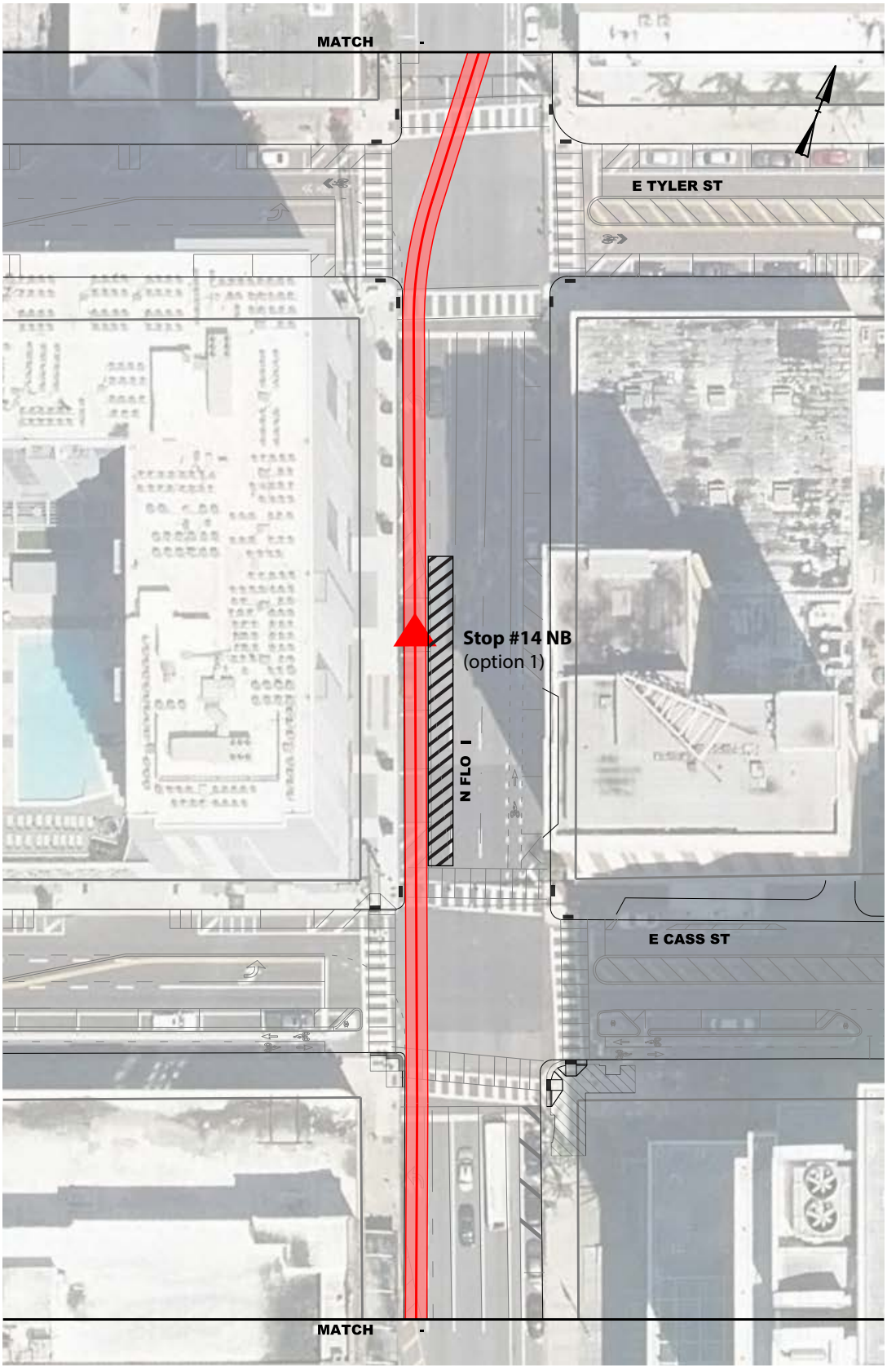


Figure 10. Extension Guideway & Stops - Sheet 09

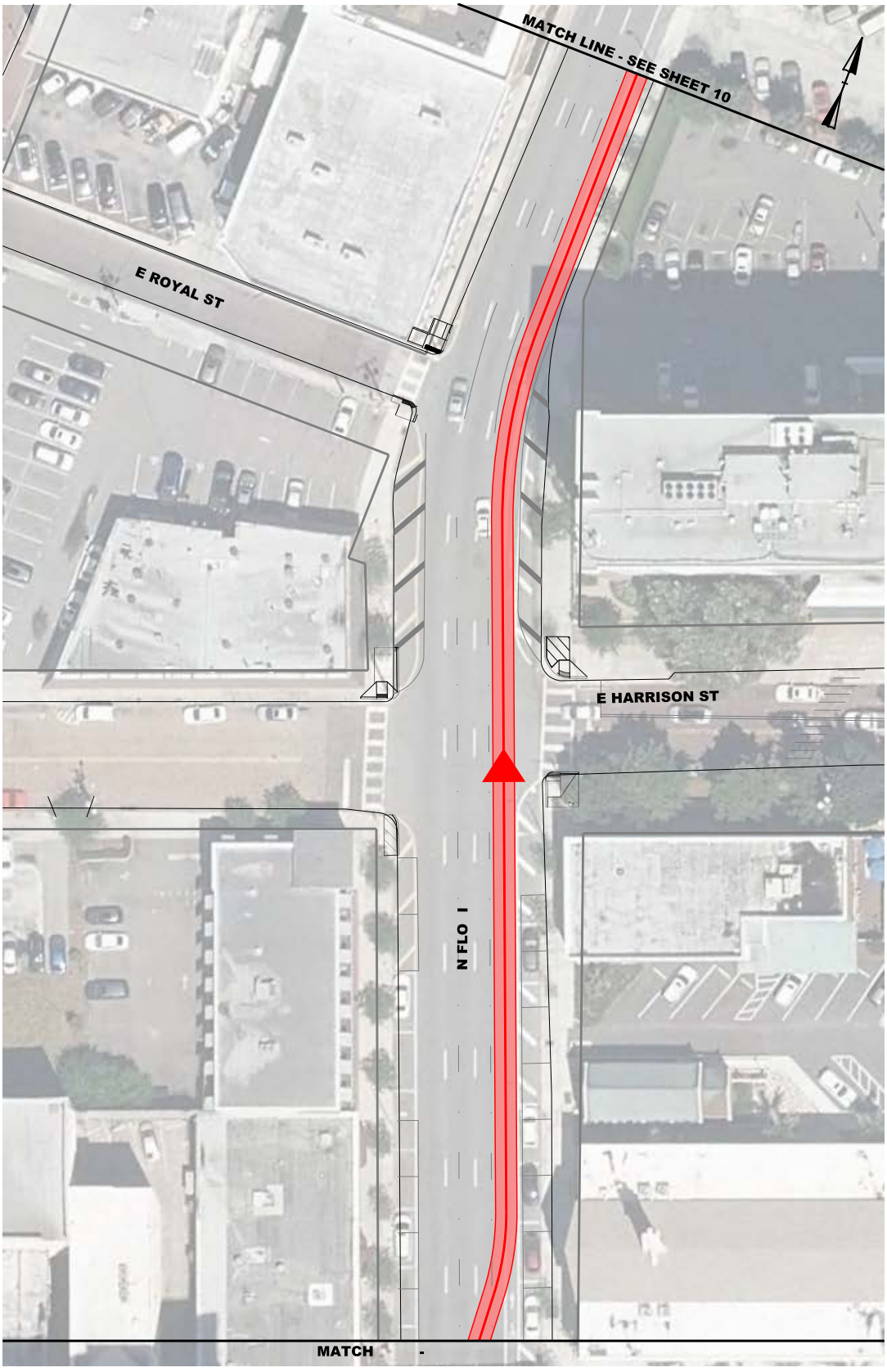


Figure 11. Extension Guideway & Stops - Sheet 10

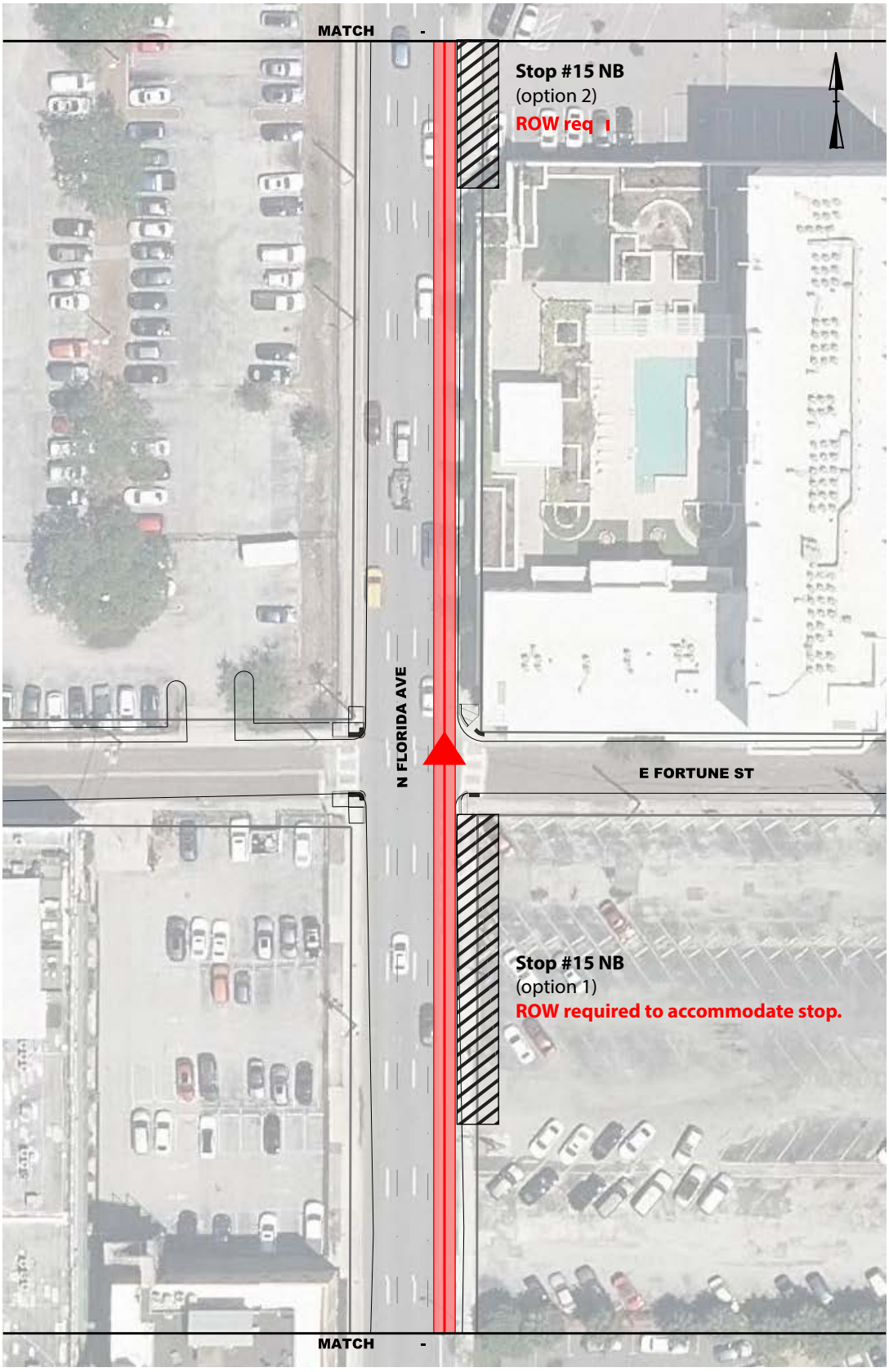


Figure 12. Extension Guideway & Stops - Sheet 11

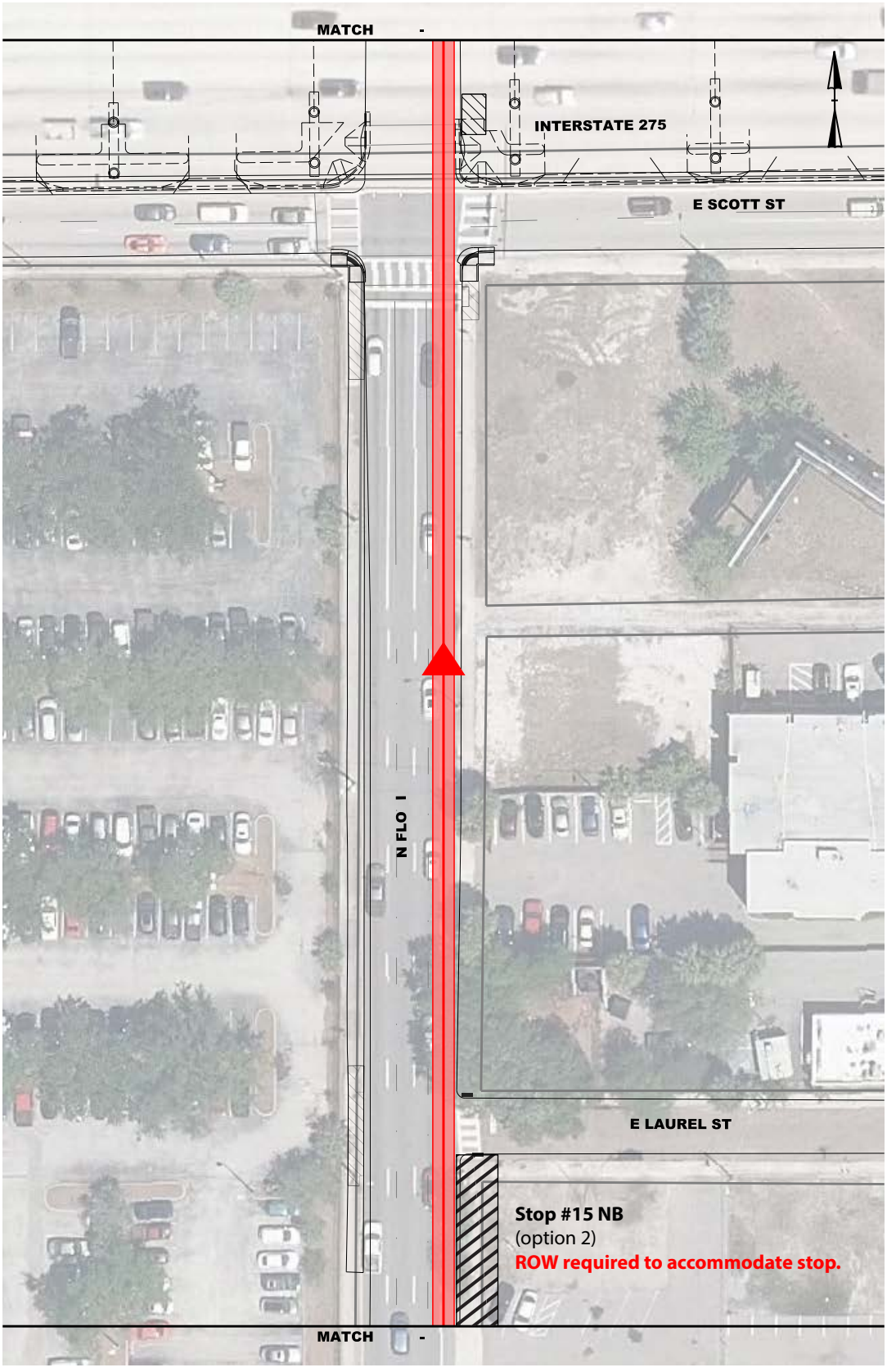


Figure 13. Extension Guideway & Stops - Sheet 12

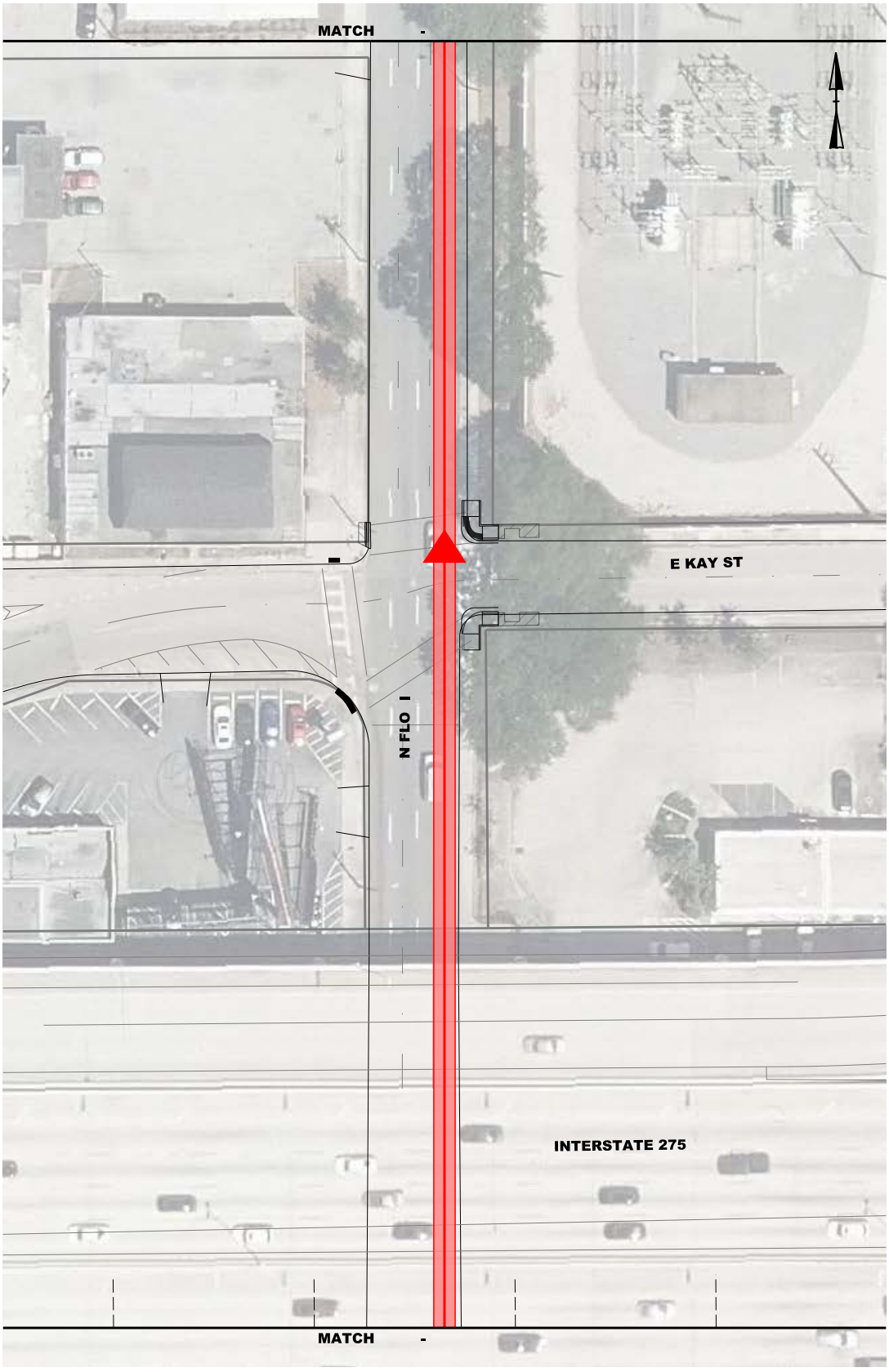


Figure 14. Extension Guideway & Stops - Sheet 13

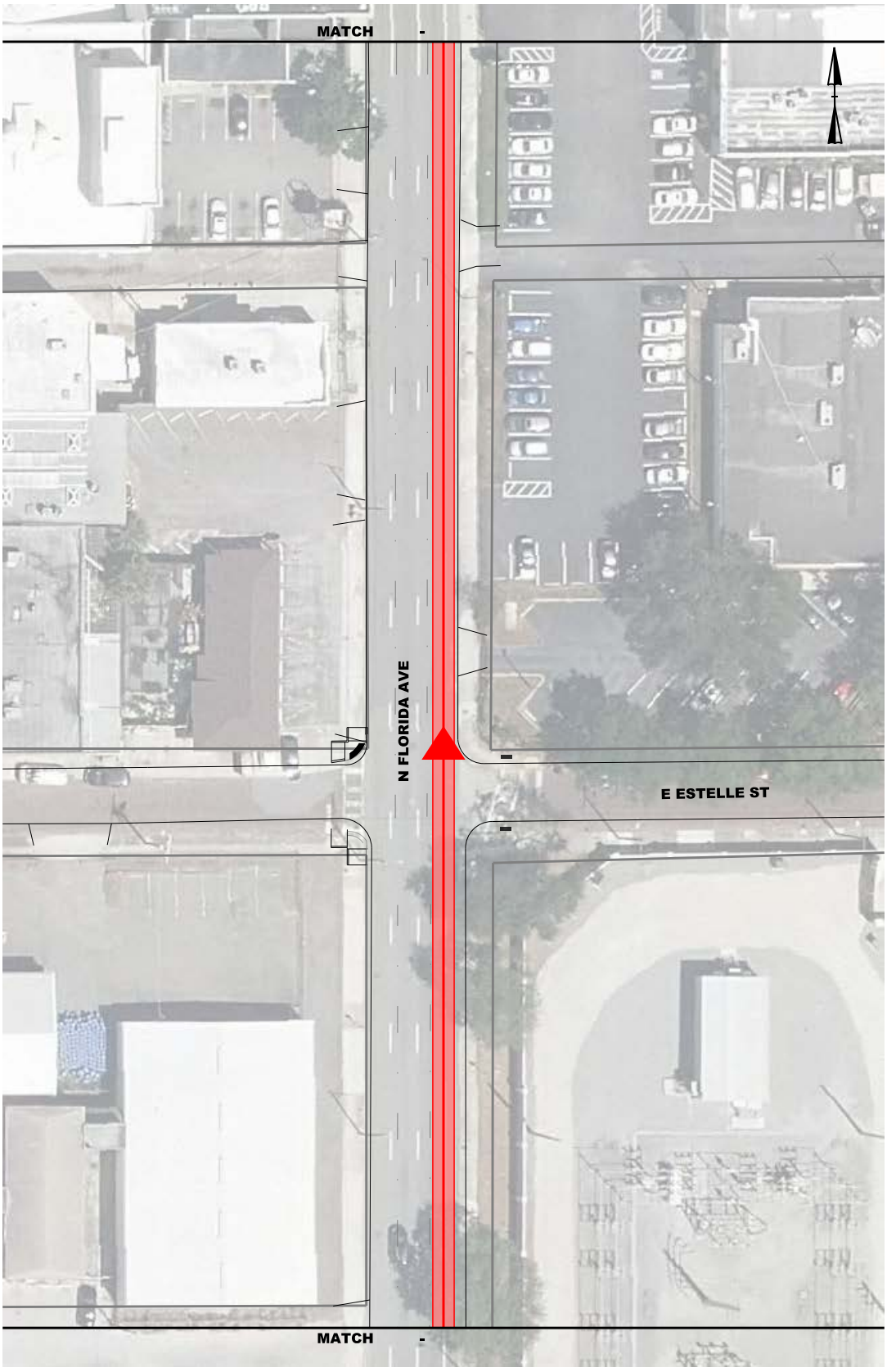


Figure 15. Extension Guideway & Stops - Sheet 14

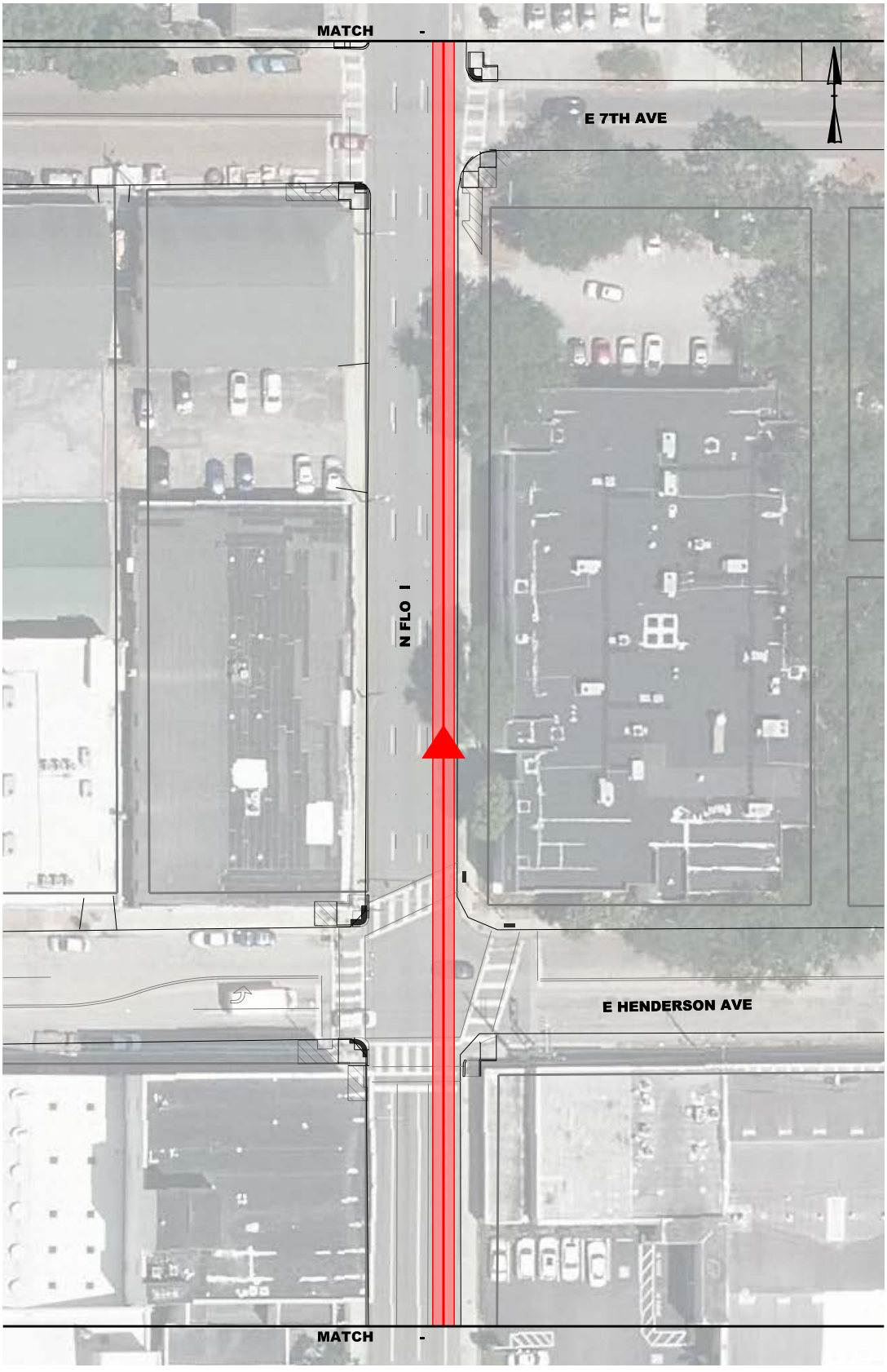


Figure 16. Extension Guideway & Stops - Sheet 15

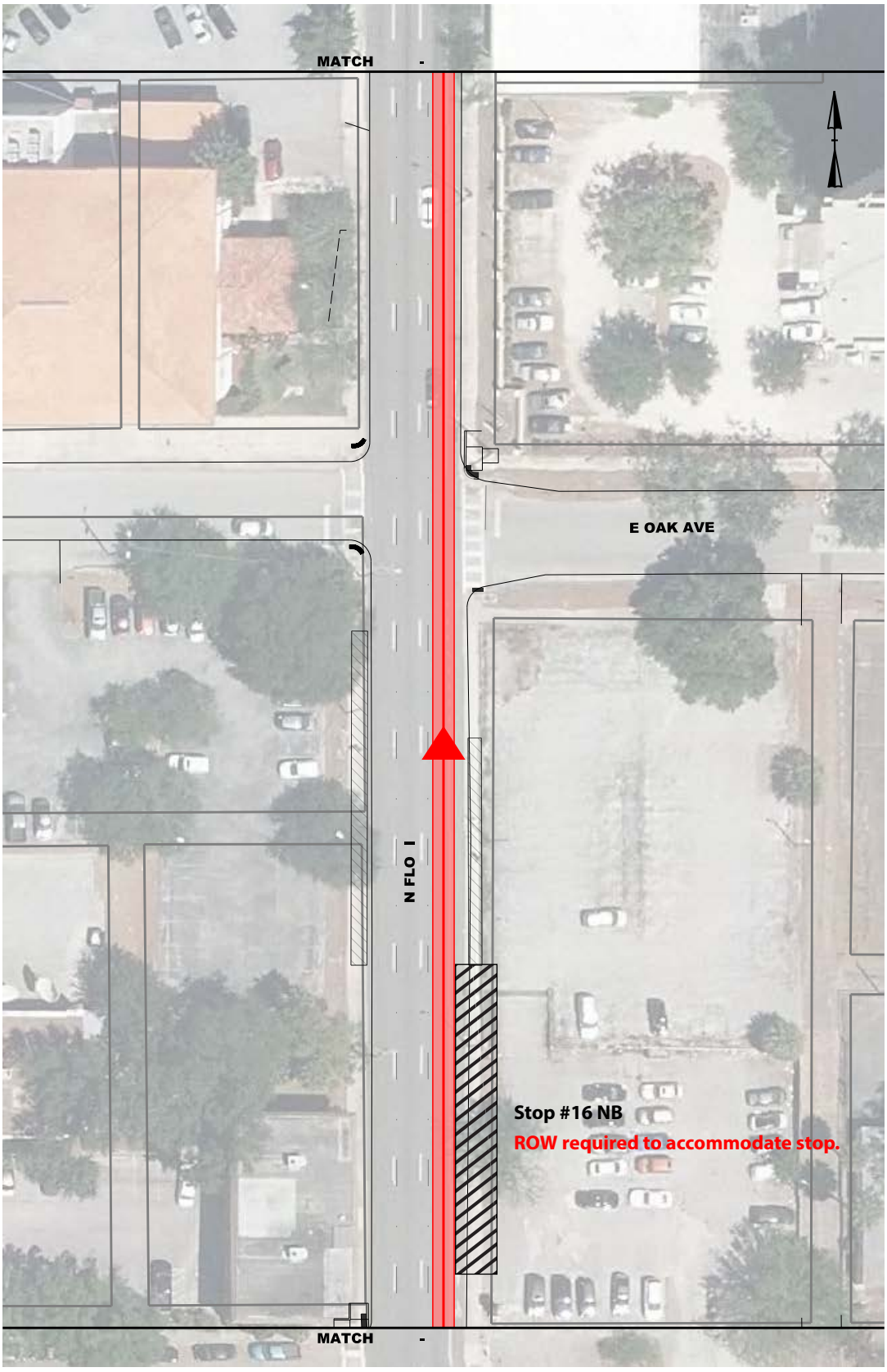


Figure 17. Extension Guideway & Stops - Sheet 16

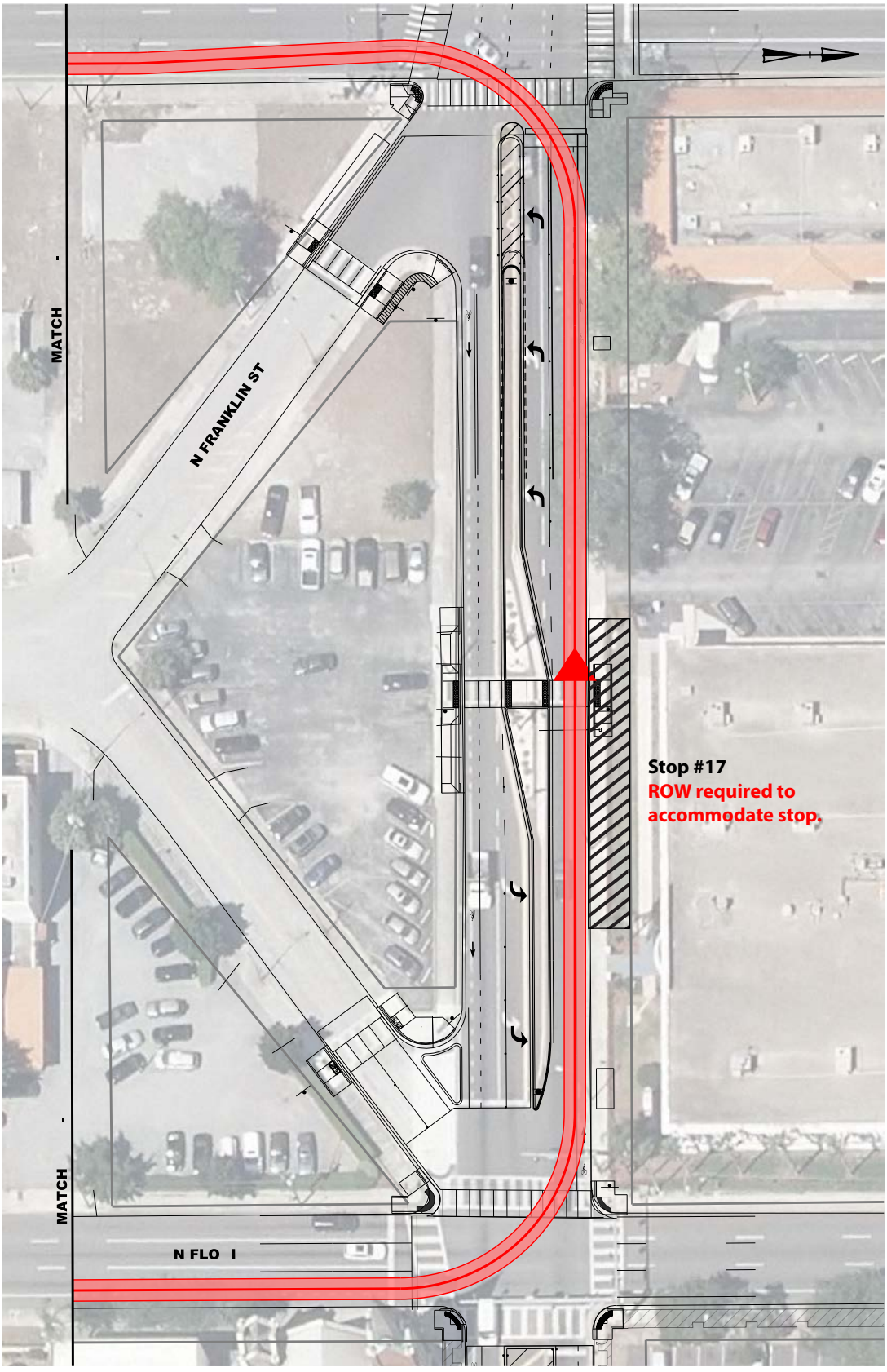


Figure 18. Extension Guideway & Stops - Sheet 17

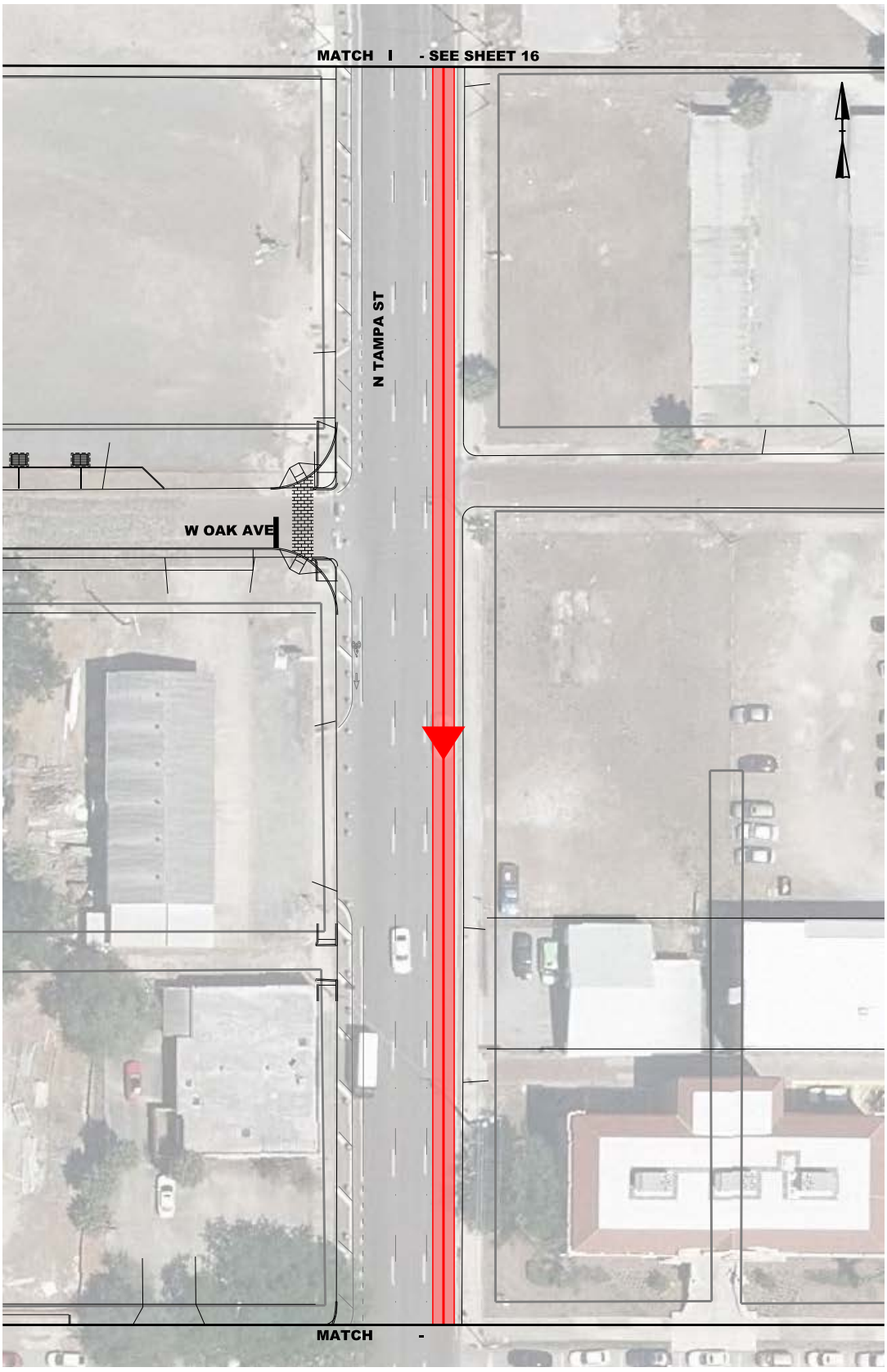


Figure 19. Extension Guideway & Stops - Sheet 18

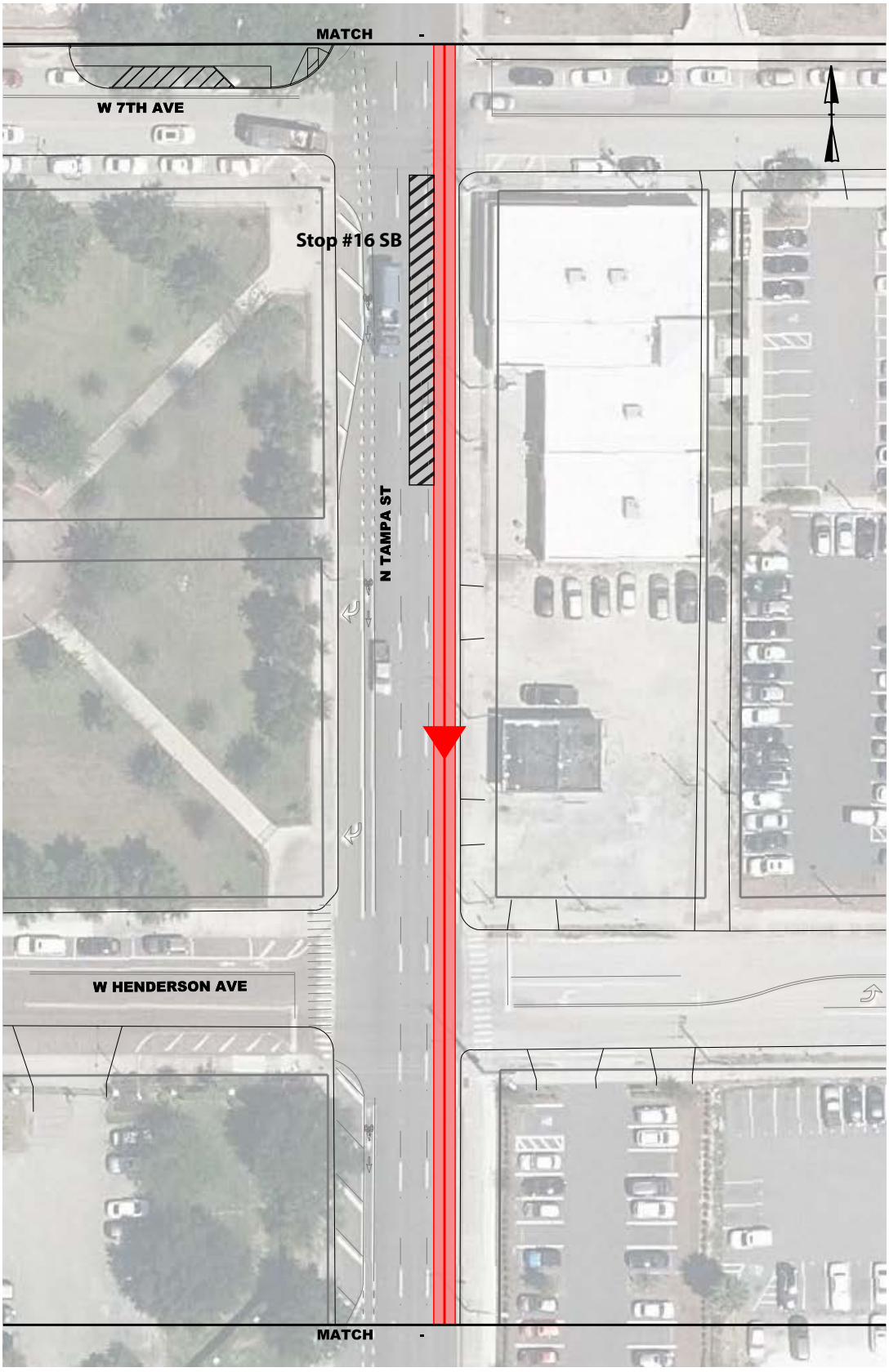


Figure 20. Extension Guideway & Stops - Sheet 19

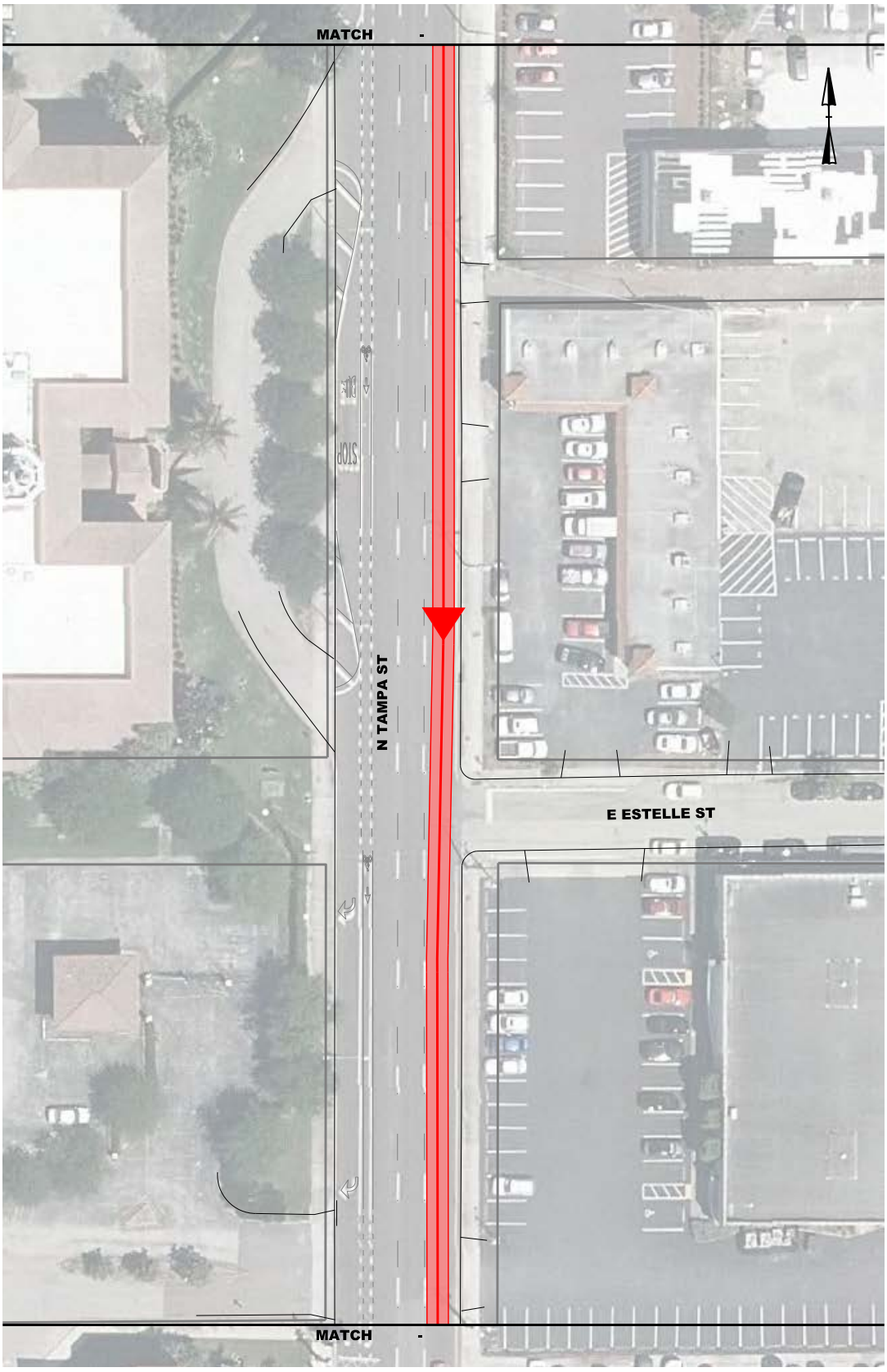


Figure 21. Extension Guideway & Stops - Sheet 20

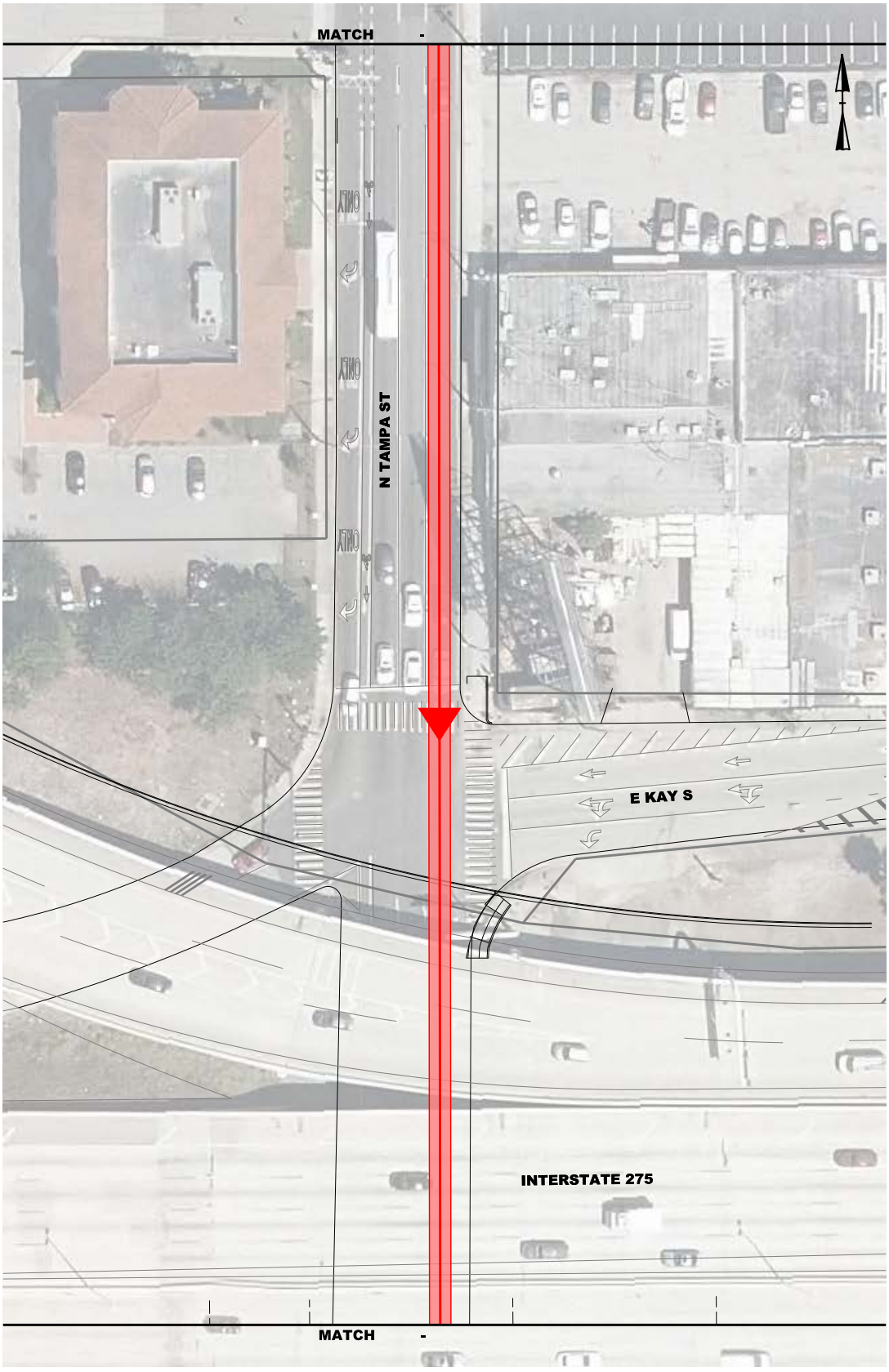


Figure 22. Extension Guideway & Stops - Sheet 21

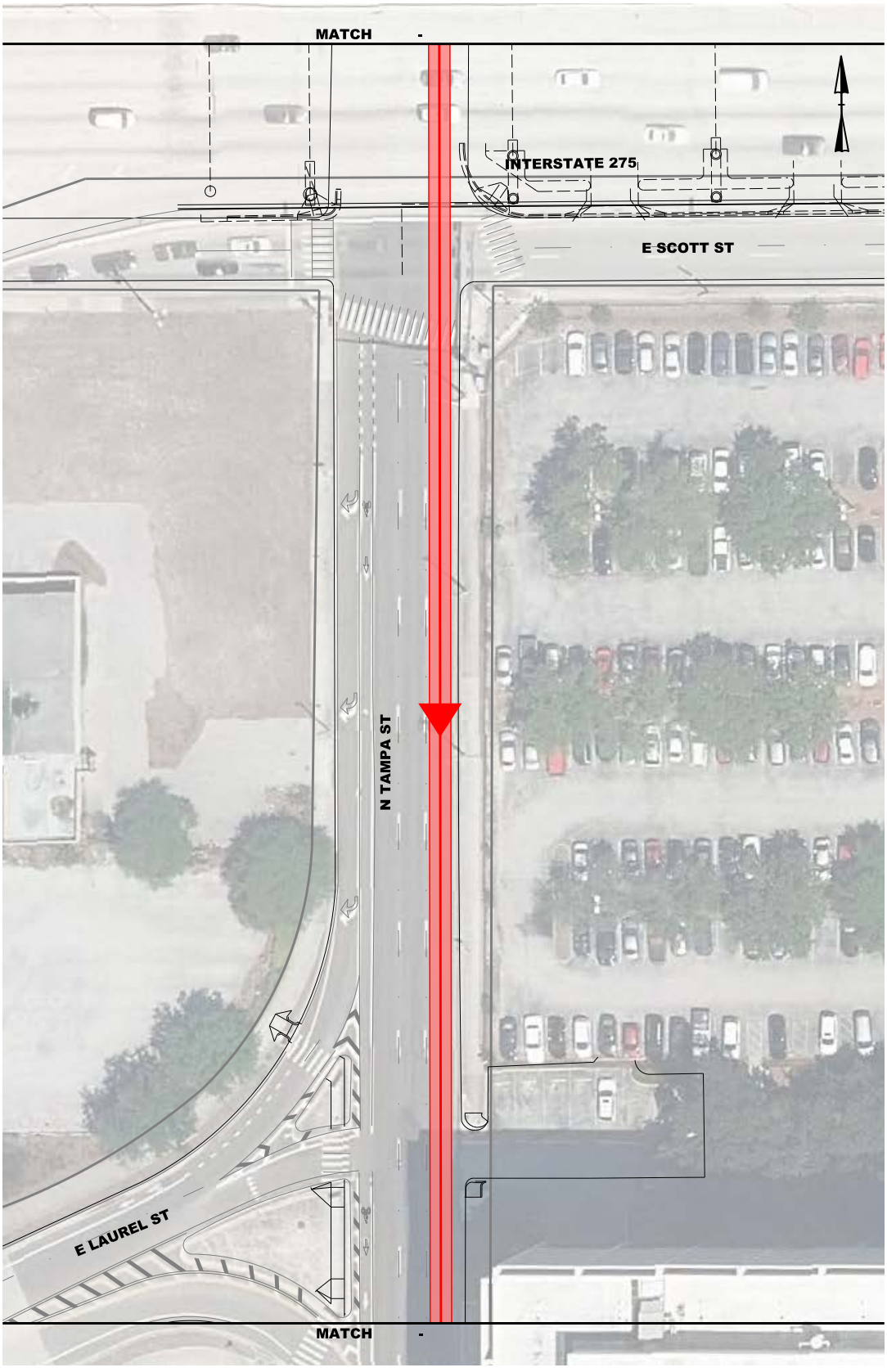


Figure 23. Extension Guideway & Stops - Sheet 22

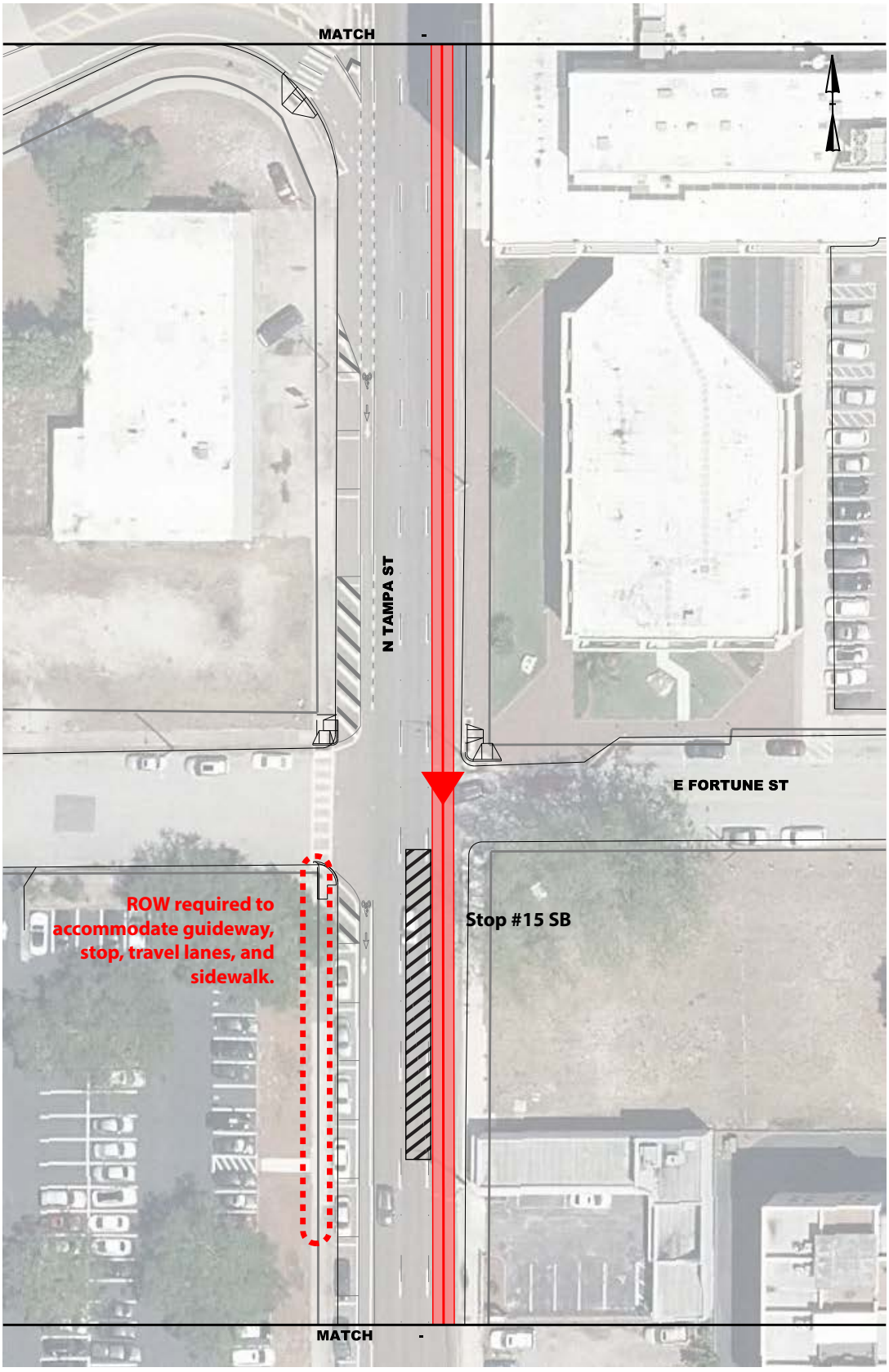


Figure 24. Extension Guideway & Stops - Sheet 23

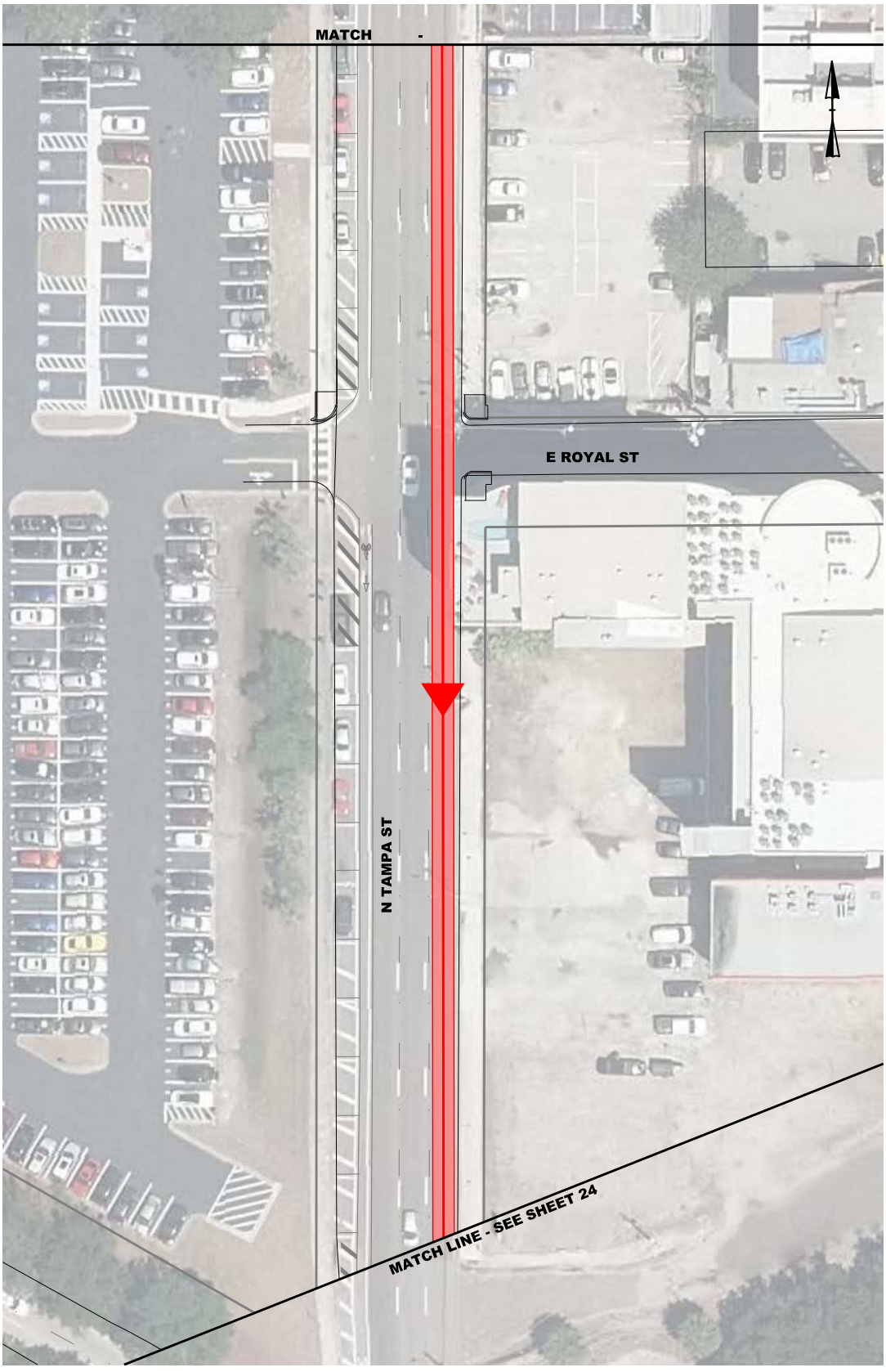


Figure 25. Extension Guideway & Stops - Sheet 24

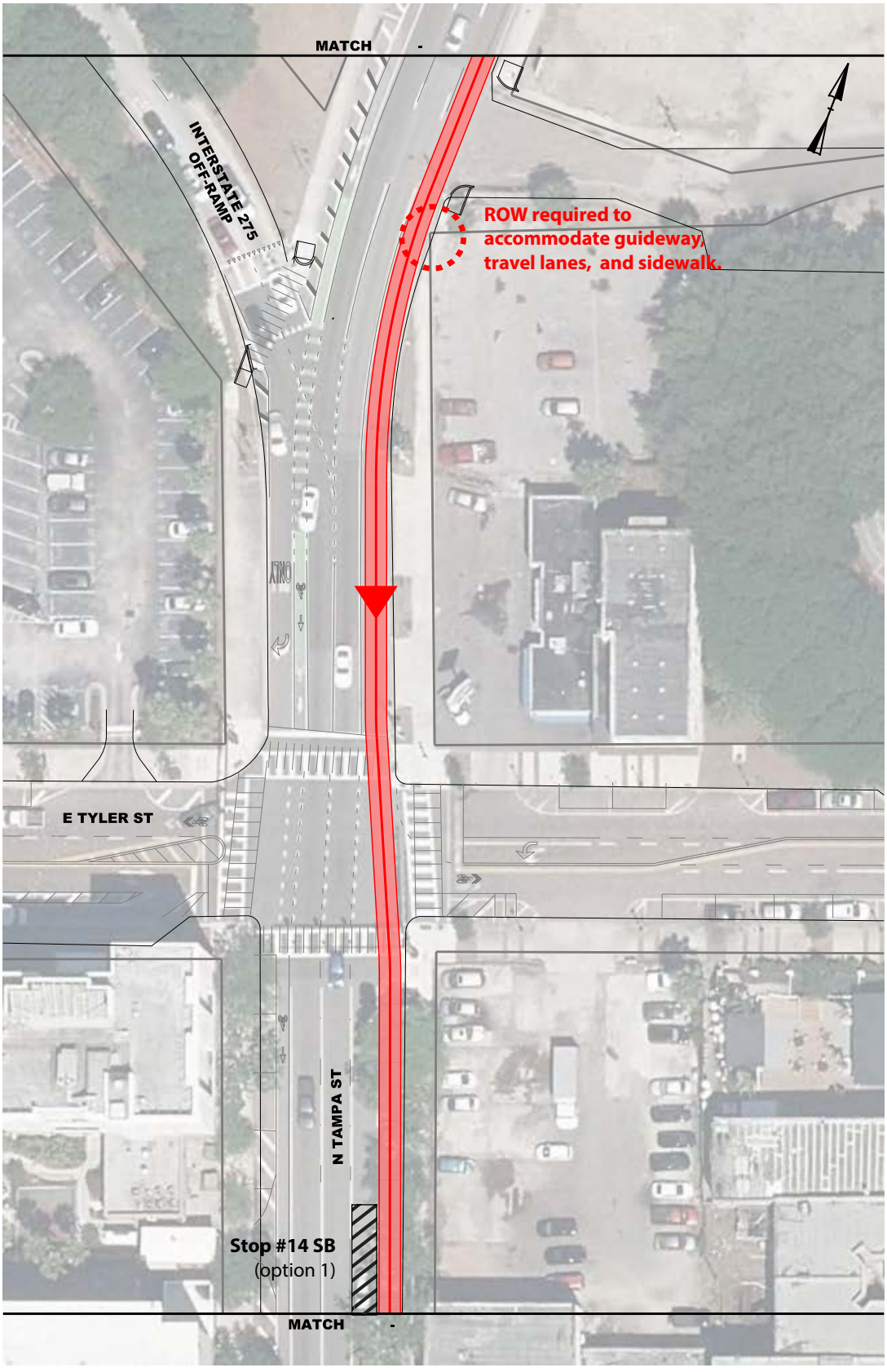


Figure 26. Extension Guideway & Stops - Sheet 25

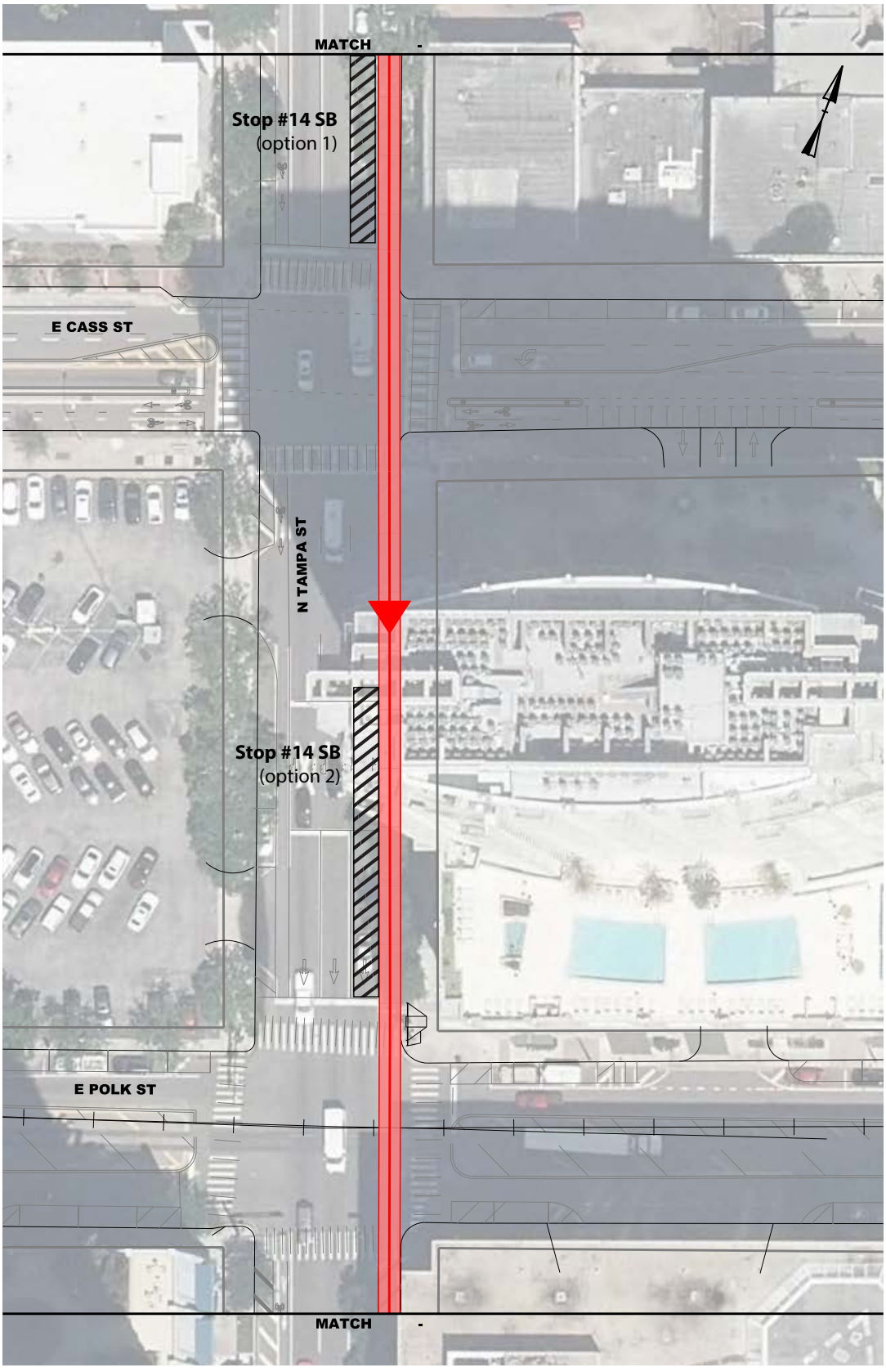


Figure 27. Extension Guideway & Stops - Sheet 26

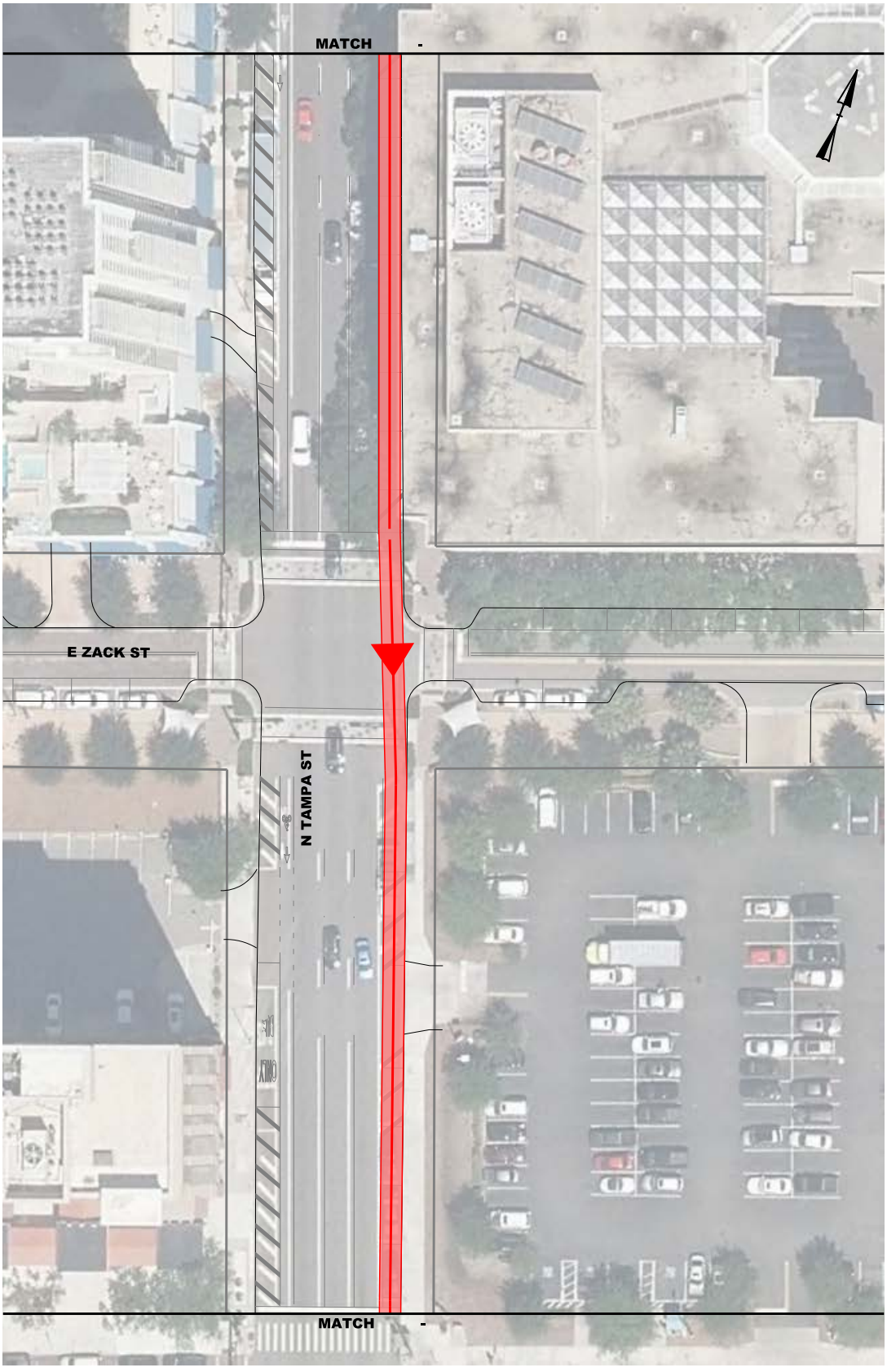


Figure 28. Extension Guideway & Stops - Sheet 27

Figure 29. Extension Guideway & Stops - Sheet 28

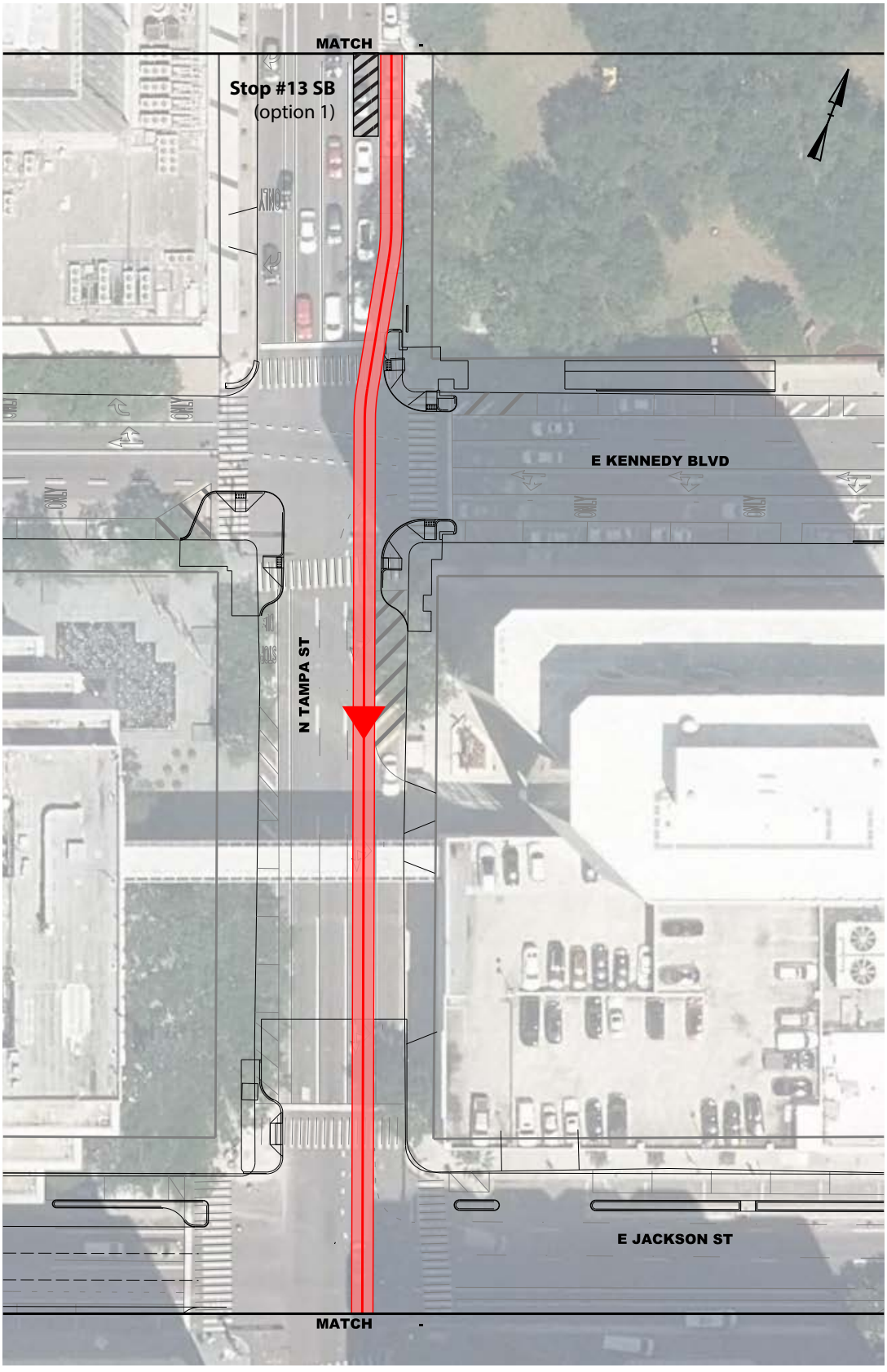


Figure 30. Extension Guideway & Stops - Sheet 29

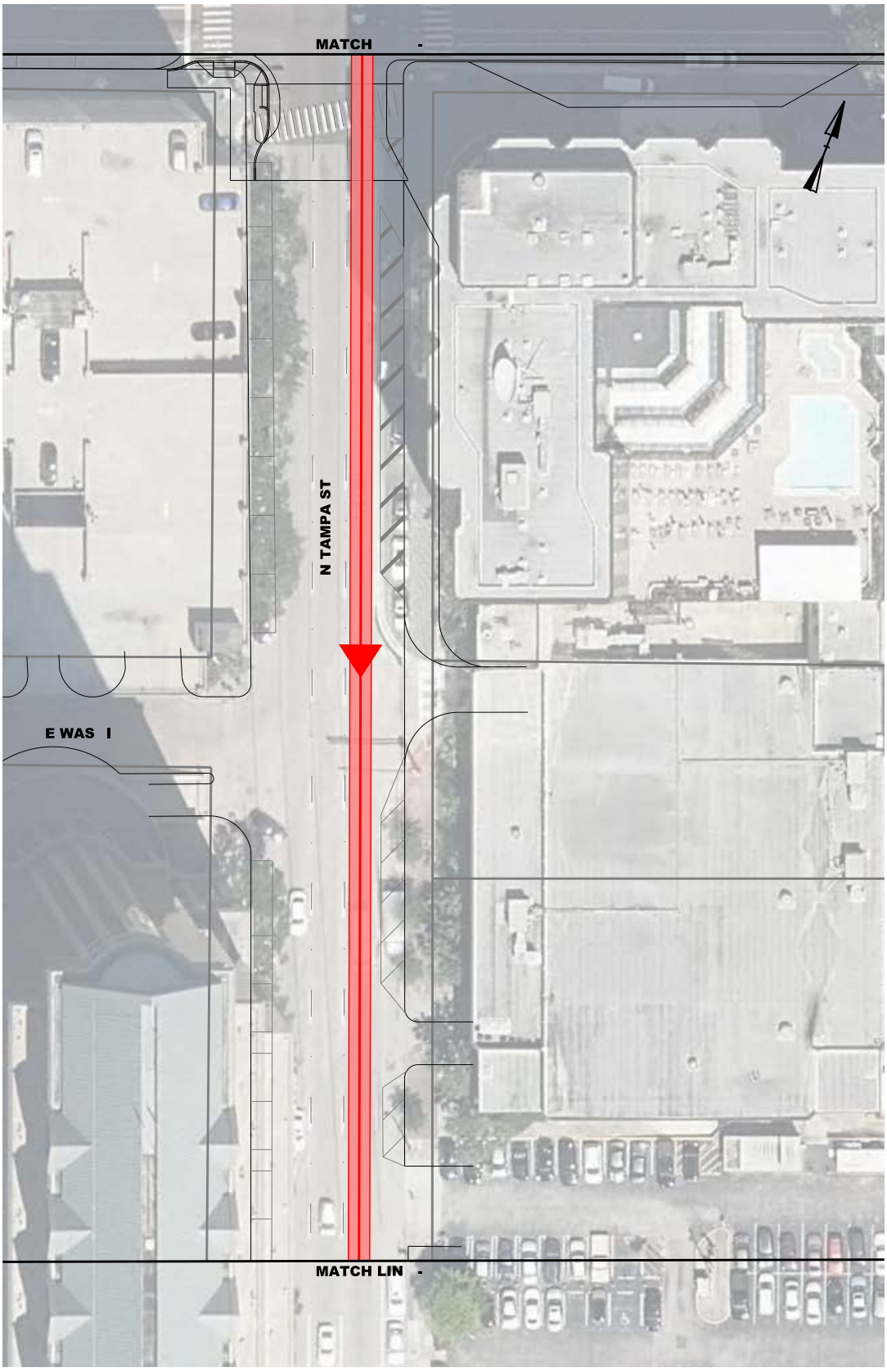


Figure 31. Extension Guideway & Stops - Sheet 30

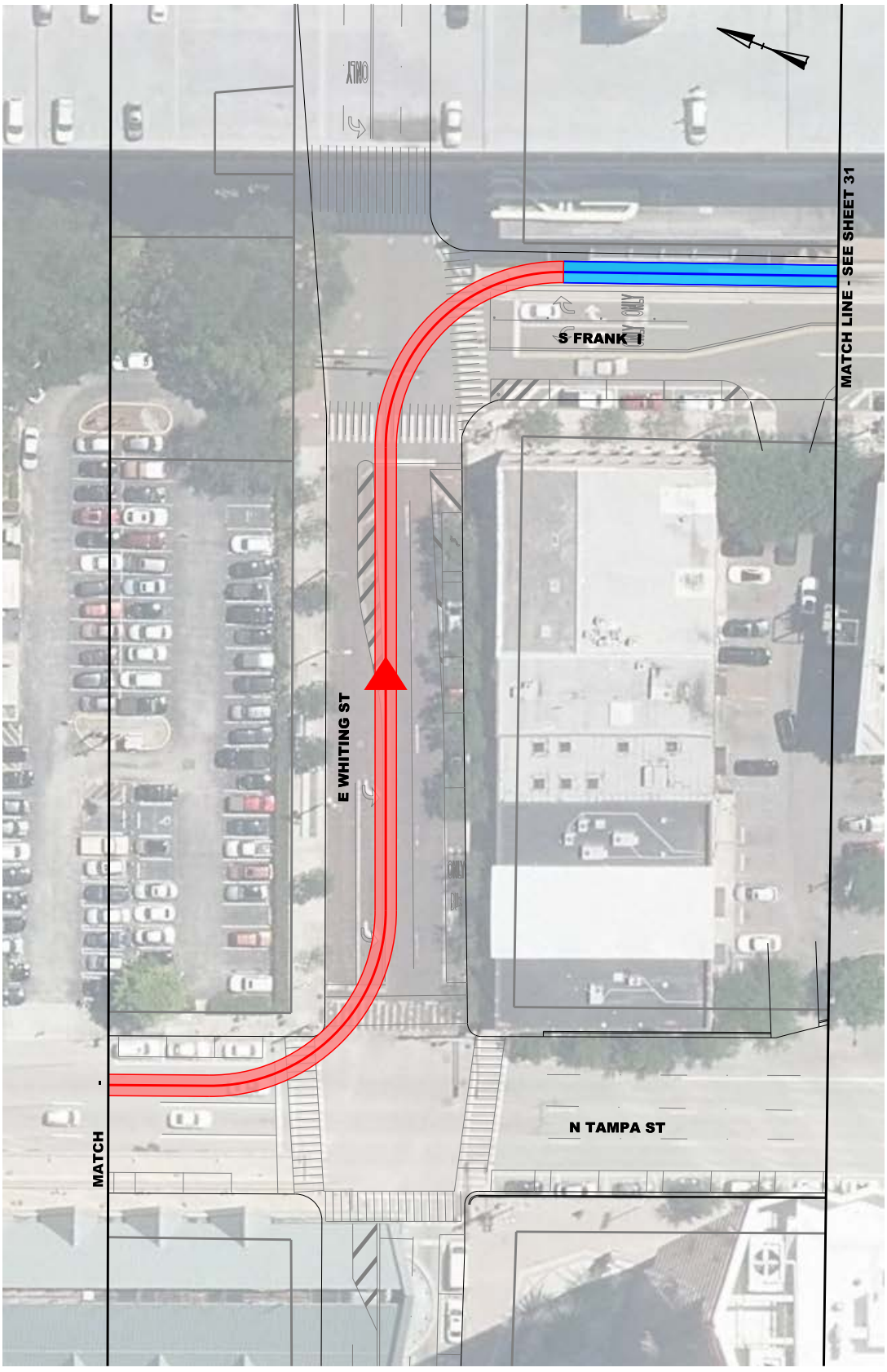
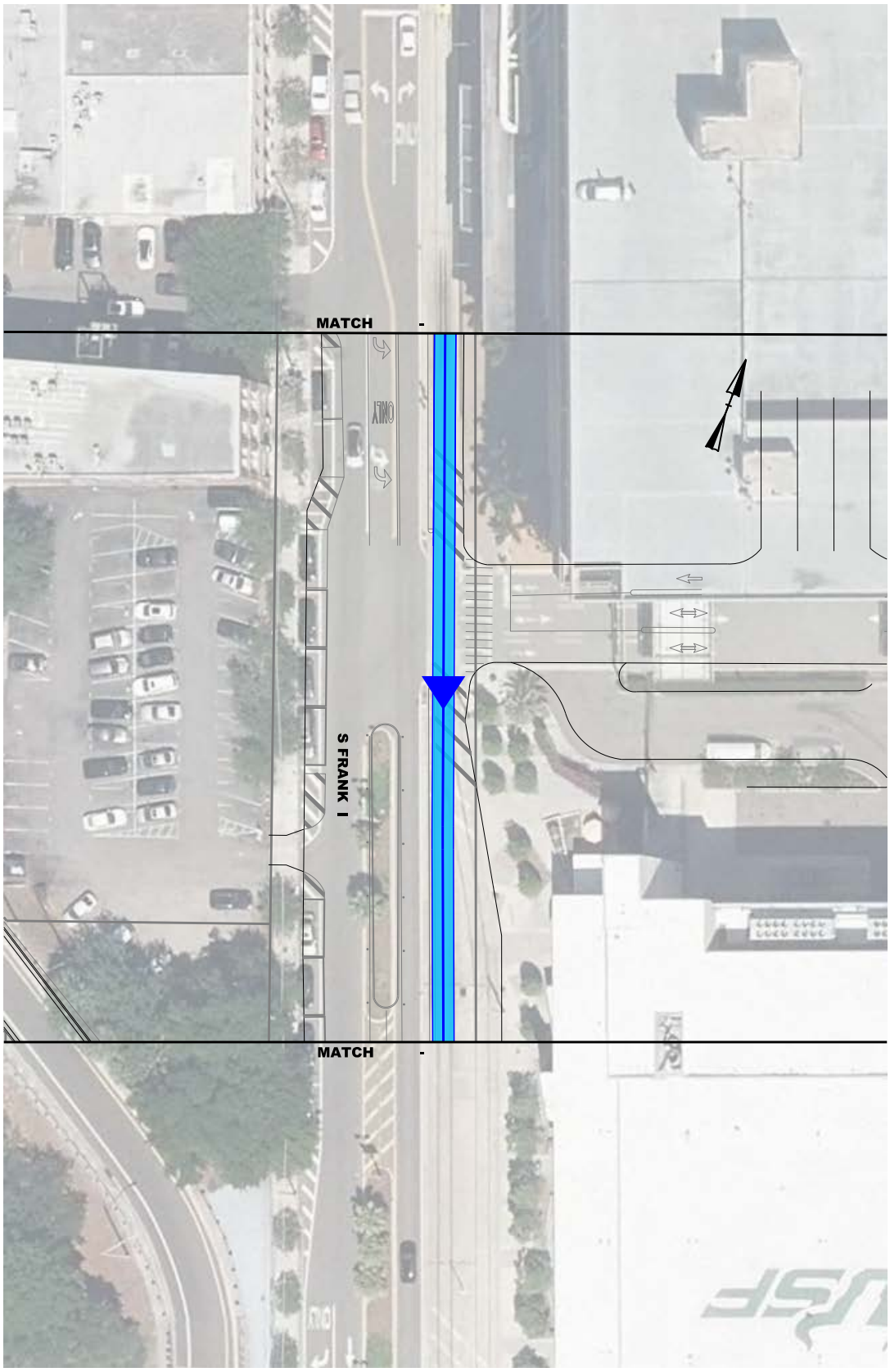


Figure 32. Extension Guideway & Stops - Sheet 31



APPENDIX C - EXISTING GUIDEWAY MODIFICATIONS

Figure 1. Existing Guideway Modifications - Key Sheet

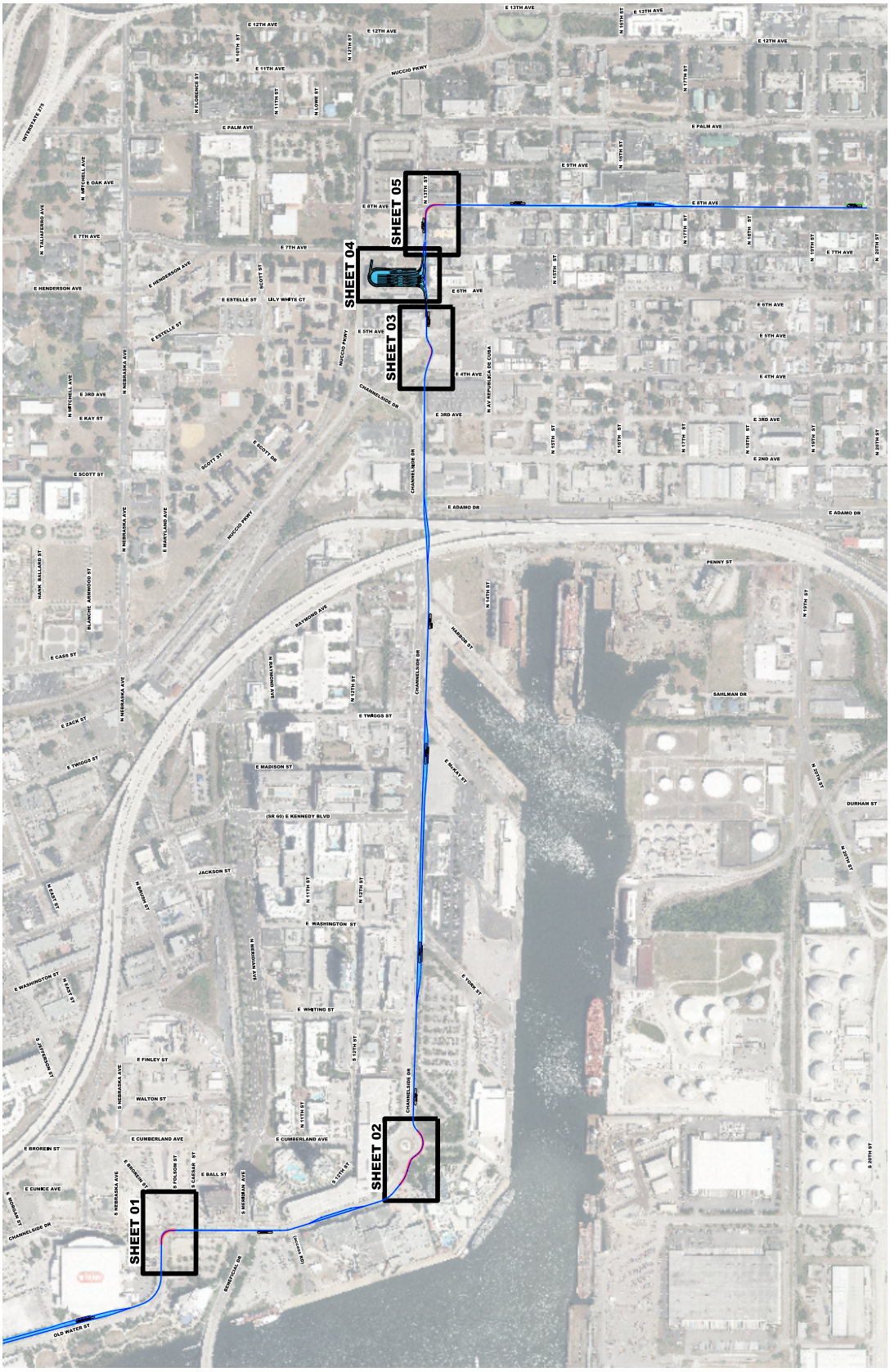


Figure 2. Existing Guideway Modifications - Sheet 01

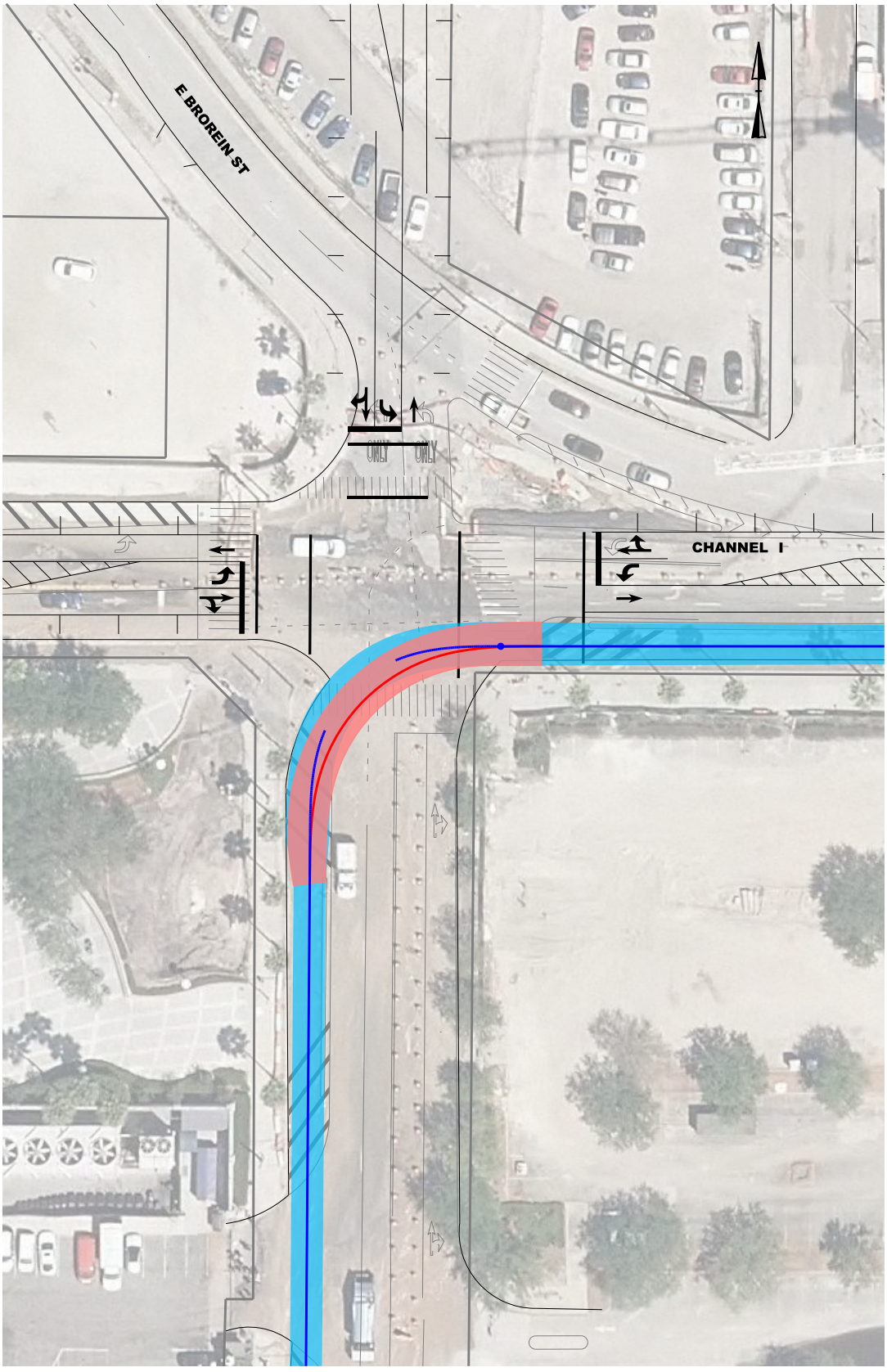


Figure 3. Existing Guideway Modifications - Sheet 02

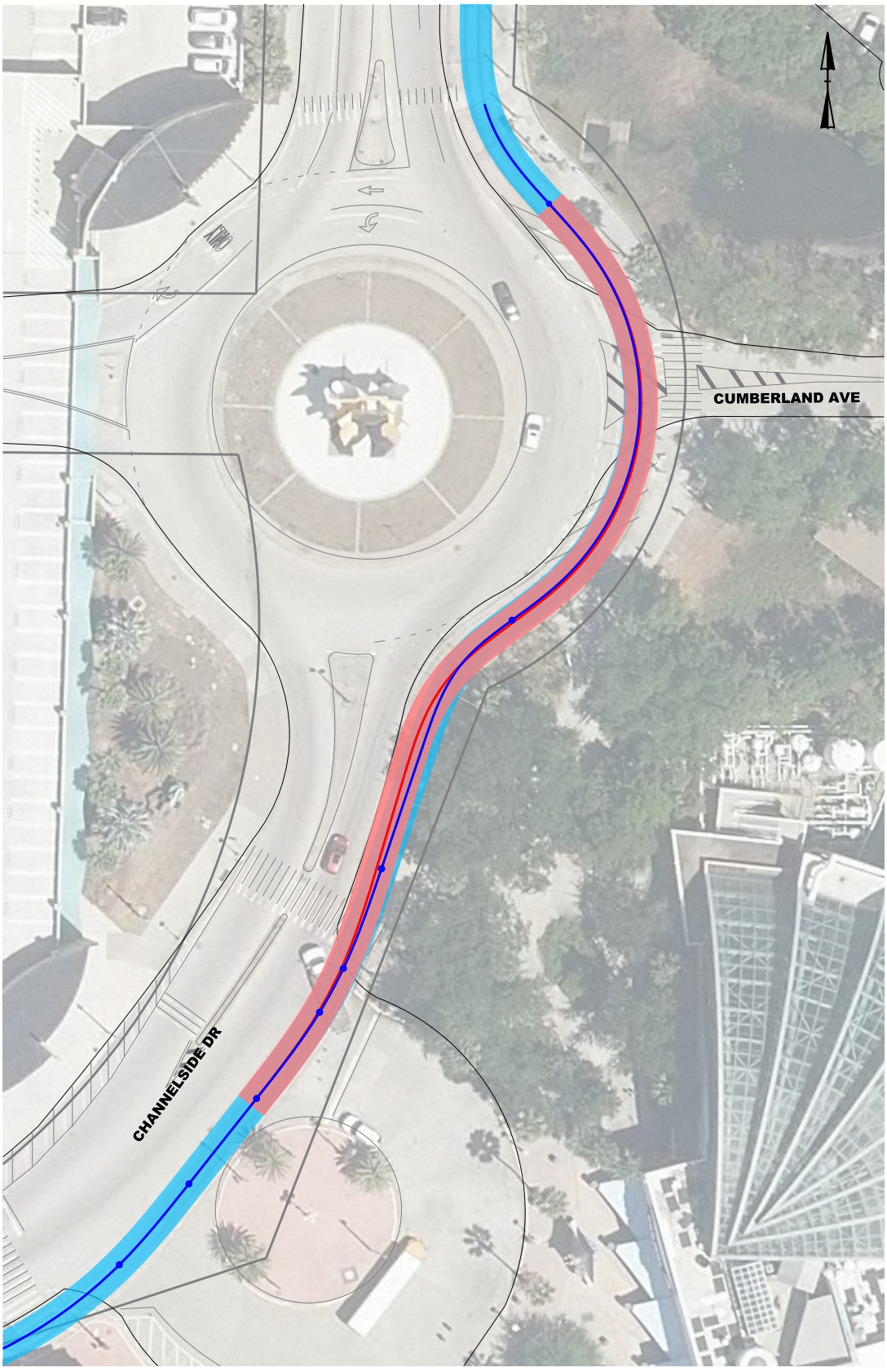


Figure 4. Existing Guideway Modifications - Sheet 03

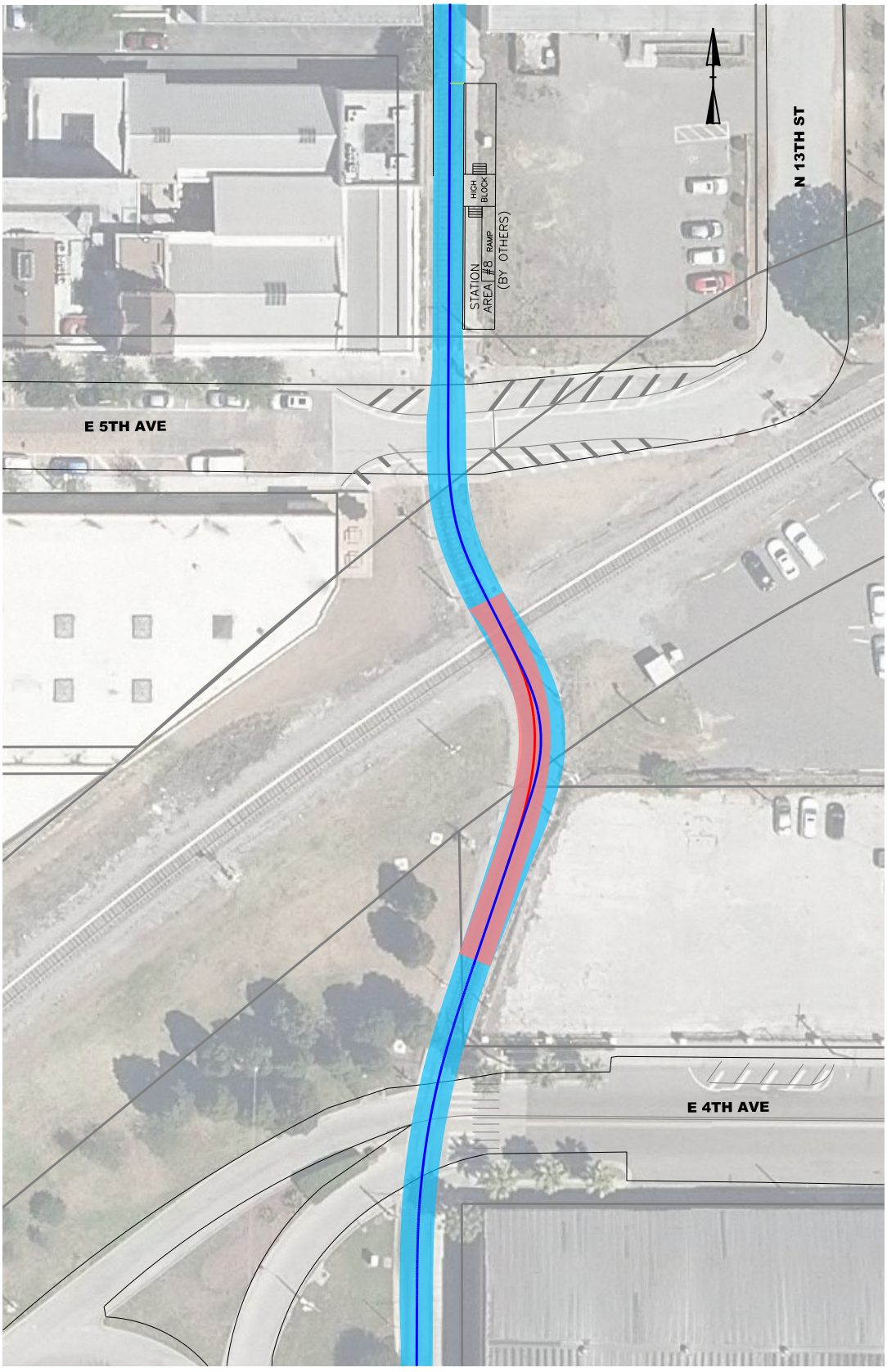


Figure 5. Existing Guideway Modifications - Sheet 04

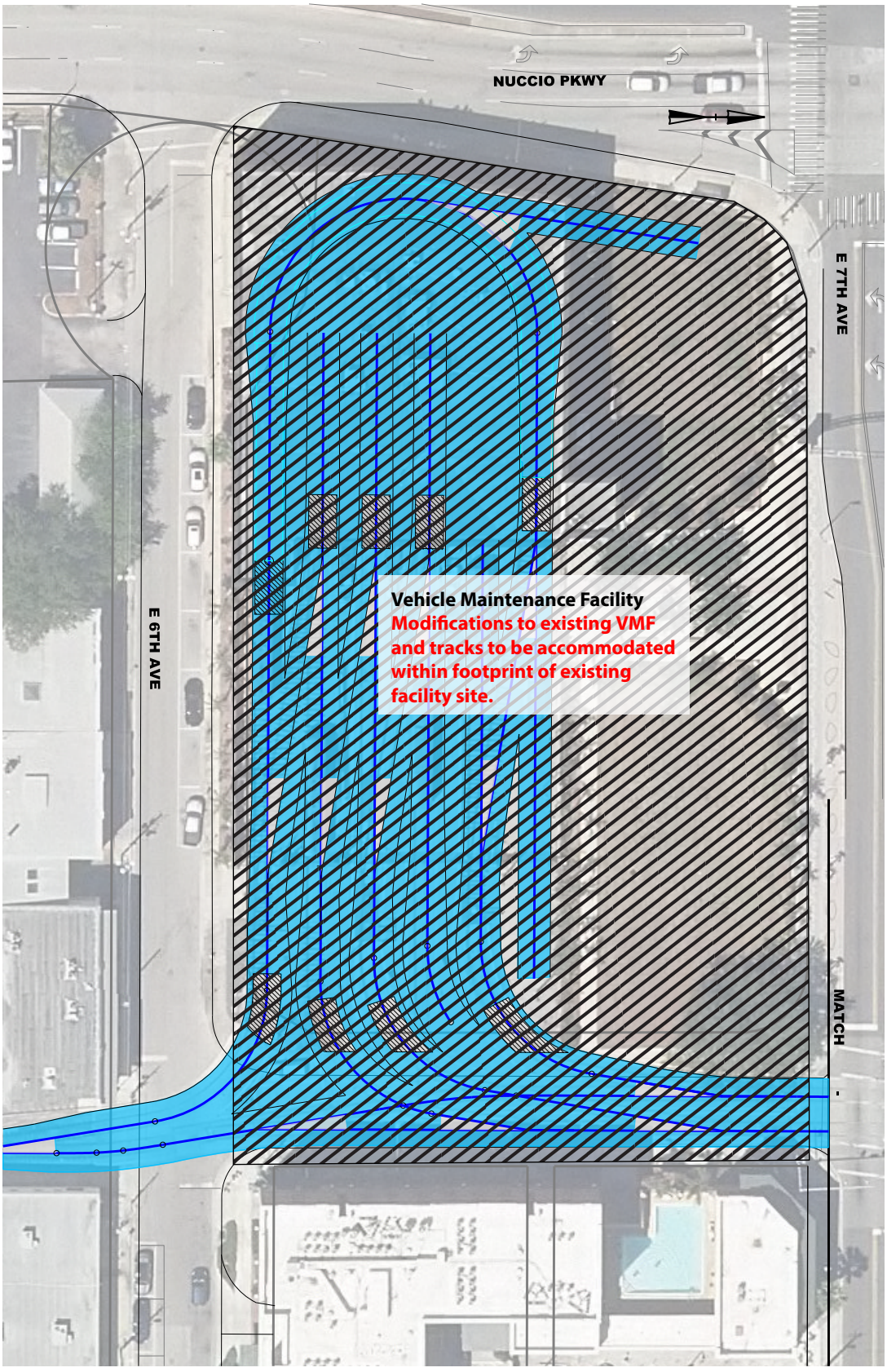
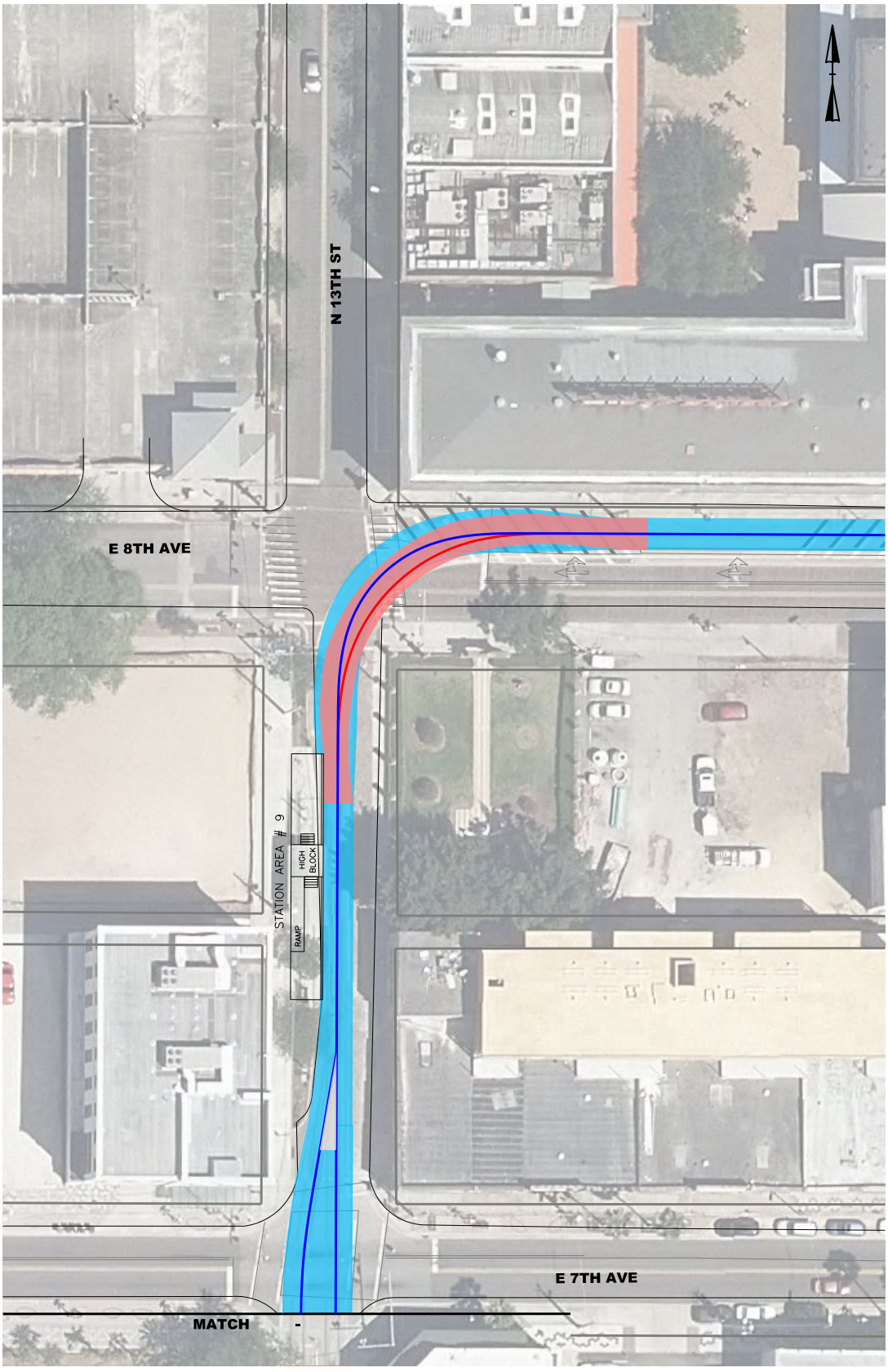


Figure 6. Existing Guideway Modifications - Sheet 05



FTA Region 4
CATEGORICAL EXCLUSION and
DOCUMENTED CATEGORICAL EXCLUSION WORKSHEET

Note: The purpose of this worksheet is to assist sponsoring agencies (grantees) in gathering and organizing materials for environmental analysis required under the National Environmental Policy Act (NEPA), particularly for projects that may qualify as a Categorical Exclusion (CE) or Documented Categorical Exclusion (DCE). The use and submission of this particular worksheet is NOT required. The worksheet is provided merely as a helpful tool for assembling information needed by FTA to determine the likelihood and magnitude of potential project impacts. **NOTE: Fields are expandable, so feel free to use more than a line or two if needed.**

Submission of the worksheet does not satisfy NEPA requirements. FTA must concur in writing in the sponsoring agency's NEPA recommendation. Project activities may not begin until this process is complete. Contact the FTA Region 4 office at (404) 865-5600 if you have any questions or require assistance.

I. Project Description

Sponsoring Agency	Date Submitted	FTA Grant Number(s) (if known)
Florida Department of Transportation		

Project Title
Tampa Streetcar Extension and Modernization Feasibility Study and Project Development

Project Description (brief, 1-2 sentences)
The City of Tampa is conducting the Tampa Streetcar Feasibility Study to evaluate the proposed extension of the existing Tampa Historic Streetcar from its current alignment northward through the downtown core to Tampa Heights.

Purpose and Need for Project (brief, 1-2 sentences, include as an attachment if adopted statement is lengthy)
The purpose of the Tampa Streetcar project is to serve the mobility needs of residents, workers, visitors, and students in Downtown Tampa, Ybor City, Channel District, and surrounding urban neighborhoods, both now and the future.

Project Location (include City and Street address)
Tampa, FL 33602

Project Contact (include phone number, mailing address and email address)
Milton Martinez, (813) 274-8998, 306 E Jackson Street, 6E, Tampa, Florida 33602, milton.martinez@tampagov.net

If your project involves construction, include the following:

- Project vicinity map
- Project site plan showing access points and project boundaries
- Other useful maps as appropriate (topo, for instance, depending on circumstances, and/or Google Earth aerial, NEPA Assist, etc.)
- A few photographs of the site if useful to illustrate important features
- Details pertaining to the depth of soil excavation
- Note if the soil has been previously disturbed by prior construction or other activity
- List parks or recreation areas within the project vicinity
- Any previous consultations that might be relevant? (HUD, SHPO, or DOTs)

II. NEPA Class of Action

Answer the following questions to determine the project's potential class of action. If the answer to any of the questions in Section A is "YES", contact the FTA Region 4 office to determine whether the project requires preparation of a NEPA environmental assessment (EA) or environmental impact statement (EIS).

A. Will the project significantly impact the natural, social and/or economic environment?

☐ YES (contact FTA Regional office)

☒ NO (continue)

A.1 Is the significance of the project's social, economic or environmental impacts unknown?

☐ YES (contact FTA Regional office)

☒ NO (continue)

A.2 Is the project likely to require detailed evaluation of more than a few potential impacts?

☐ YES (contact FTA Regional office)

☒ NO (continue)

A.3 Is the project likely to generate intense public discussion, concern or controversy, even though it may be limited to a relatively small subset of the community?

☐ YES (contact FTA Regional office)

☒ NO (continue)

B. Does the project appear on the following list of Categorical Exclusions (CEs)?

The types of activities listed below describe actions which, when the corresponding conditions are met, are under usual circumstances categorically excluded from further NEPA analysis under 23 CFR 771.118(c). Unusual circumstances may include, but are not limited to, the presence of wetlands, historic buildings and structures, parklands, or floodplains in the project area, or the potential for the project to impact other resources. (Descriptions of each type of activity, and corresponding conditions, are available here; this worksheet simply lists the name of each exclusion.)

☐ YES (If checked AND there are no special circumstances, check the applicable box and briefly describe the activity in Section III. A; then proceed to the signature block on the back page.)

☒ NO (continue to Section II. C)

23 CFR 771.118(c)(1-16)

☐ (1) Utility and Similar Appurtenance Action

☐ (2) Pedestrian or Bicycle Action

☐ (3) Environmental Mitigation or Stewardship Activity

☐ (4) Planning and Administrative Activity

☐ (5) Activities Promoting Transportation Safety, Security, Accessibility and Communication

☐ (6) Acquisition, Transfer of Real Property Interest

☐ (7) Acquisition, Rehab, Maintenance of Vehicles or Equipment

☐ (8) Maintenance, Rehab, Reconstruction of Facilities

☐ (9) Assembly or Construction of Facilities

☐ (10) Joint Development of Facilities

☐ (11) Emergency Recovery Actions
(Several conditions attach to this type of CE. We recommend you consult with FTA if you think this CE may apply to your action.)

☐ (12) Projects Entirely within the Existing Operational Right-of-Way.

☐ (13) Federally Funded Projects
(Must be less than $5 million in federal funding, or having a total estimated cost of not more than $30,000,000 and Federal funds comprising less than 15 percent of the total estimated project cost.

☐ (14) Bridge Removal and Related Activities.

☐ (15) Preventative Maintenance to Certain Culverts and Channels

☐ (16) Geotechnical and Similar Investigations

C. Does the project appear on the following list of potential documented Categorical Exclusions?

Projects that are categorical exclusions under 23 CFR 771.118(d) require additional documentation demonstrating that the specific conditions or criteria for the CEs are satisfied and that significant effects will not result.

☒ YES (Check correct box below and continue to Part III)

☐ NO (Contact FTA Regional Office)

23 CFR 771.118(d)(1-8)

☐ (1) Modernization of a highway by resurfacing, restoring, rehabilitating, or reconstructing shoulders or auxiliary lanes.

☐ (2) Bridge replacement or the construction of grade separation to replace existing at-grade railroad crossings.

☐ (3) Acquisition of land for hardship or protective purposes. (NOTE: Hardship and protective buying will be permitted only for one or a limited number of parcels, and only where it will not limit the evaluation of alternatives (including alignments) for planned construction projects.

☒ (4) Acquisition of right-of-way. (NOTE: No project development on the acquired right-of-way may proceed until the NEPA process for such project development, including the consideration of alternatives, where appropriate, has been completed.)

(5) [Reserved]

☐ (6) Facility modernization through construction or replacement of existing components.

☒ (7) Minor realignment for rail safety purposes

☒ (8) Facility modernization/expansion outside existing ROW

☒ "Other" actions which meet the criteria for a CE in the CEQ regulations (40 CFR 1508.4) and will not result in significant environmental effects. Actions must not: induce significant impacts to planned growth or land use; require the relocation of significant numbers of people; have a significant impact on any natural, cultural, recreational, historic or other resource; cause significant air, noise, or water quality impacts; have significant impacts on travel patterns; or otherwise have significant environmental impacts (either individually or cumulatively).

III. Information Required for Documented Categorical Exclusions

If you checked "Yes" to any of the options in Part II. C, complete each relevant subject area for Part III. Sections B-AA and submit to FTA. Depending on the project, some of the subject areas may not be applicable. In such cases, no discussion is needed.

The list below is not all-inclusive. If your proposed project has the potential to cause impacts to resources which are not listed below, please provide supplemental information about those potential impacts.

A. Detailed Project Description

Describe the project and explain how it satisfies the purpose and need identified in Part I.

See Attachment 1

B. Location and Zoning

Attach a map identifying the project's location and surrounding land uses. Note any critical resource areas (historic, cultural or environmental) or sensitive noise or vibration receptors (schools, hospitals, churches, residences, etc). Briefly describe the project area's zoning and indicate whether the proposed project is consistent with it. Briefly describe the community (geographic, demographic, economic and population characteristics) in the project vicinity.

See Attachment 1

C. Traffic

Describe potential traffic and parking impacts, including whether the existing roadways have adequate capacity to handle increased bus or other vehicular traffic. Include a map or diagram if the project will modify existing roadway configurations. Describe connectivity to other transportation facilities and modes, and coordination with relevant agencies.

See Attachment 1

D. Aesthetics

Will the project have an adverse effect on a scenic vista?

☐ No

☐ Yes, describe

Will the project substantially degrade the existing visual character or quality of the site and its surroundings?

☐ No

☐ Yes, describe

Will the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

☐ No

☐ Yes, describe

E. Air Quality

Does the project have the potential to impact air quality?

☒ No

☐ Yes, describe

Is the project located in an EPA-designated non-attainment or maintenance area?

☒ No

☐ Yes, indicate the criteria pollutant and contact FTA to determine if a hot spot analysis is necessary.

- ☐ Carbon Monoxide (CO)
- ☐ Ozone (O_3)
- ☐ Particulate Matter (PM_{10} or $PM_{2.5}$)

If the non-attainment area is also in a metropolitan area, was the project included in the MPO's Transportation Improvement Program (TIP) air quality conformity analysis?

☒ No

☐ Yes Date of USDOT conformity finding:

F. Coastal Zone

Is the proposed project located in a designated coastal zone management area?

☒ No

☐ Yes, describe coordination with the State regarding consistency with the coastal zone management plan and attach the State finding, if available.

See Attachment 1

G. Environmental Justice

Determine the presence of minority and low-income populations (business owners, land owners, and residents) within about a quarter-mile of the project area. Indicate whether the project will have disproportionately high and adverse impacts on minority or low-income populations. Describe any potential adverse effects. Describe outreach efforts targeted specifically at minority or low-income populations. Guidance is here.

H. Floodplains

Is the proposed project located within the Federal Emergency Management Agency (FEMA) 100-year floodplain?

☐ No

☒ Yes, describe potential impacts, indicate if the project will impact the base flood elevation, and include or link to the FEMA Flood Insurance Rate Map (FIRM) with the project location identified.

See Attachment 1

I. Hazardous Materials

Is there any known or potential contamination at the project site? This may include, but is not limited to, lead/asbestos in existing facilities or building materials; above or below ground storage tanks; or a history of industrial uses of the site.

☐ No, describe steps taken to determine whether hazardous materials are present on the site.

☒ Yes, note mitigation and clean-up measures that will be taken to remove hazardous materials from the project site. If the project includes property acquisition, identify if a Phase I Environmental Site Assessment for the land to be acquired has been completed and the results.

See Attachment 1

J. Navigable Waterways

Does the proposed project cross or have the potential to impact a navigable waterway?

☒ No

☐ Yes, describe potential impacts and any coordination with the US Coast Guard.

K. Noise and vibration

Does the project have the potential to increase noise or vibration?

☒ NO

☐ YES, describe impact and provide map identifying sensitive receptors such as schools, hospitals, parks and residences. If the project will result in a change in noise and vibration sources, you must use FTA's "Transit Noise and Vibration Impact Assessment" methodology to determine impact.

L. Prime and Unique Farmlands

Does the proposal involve the use of any prime or unique farmlands?

☒ No

☐ Yes, describe potential impacts and any coordination with the Soil Conservation Service of the U.S. Department of Agriculture.

M. Historic & Cultural Resources

Impacts to cultural, historic, or recreational properties may trigger Section 106 or tribal consultations or a Section 4(f) evaluation, requiring consideration of avoidance alternatives. Does the project involve any ground disturbing activities?

☐ No

☐ Yes, provide the approximate maximum ground disturbance depth. Also provide information on previous disturbances or where ground disturbance will occur.

Are there any historic resources in the vicinity of the project?

☐ No

☐ Yes, Attach photos of structures more than 45 years old that are within or adjacent to the project site and describe any direct or indirect impacts the project may cause.

N. Biological

Are there any species located within the project vicinity that are listed as threatened or endangered under the Endangered Species Act? Determine this by obtaining lists of threatened and endangered species and critical habitat from the US Fish and Wildlife Service and the National Marine Fisheries Service.

See Attachment 1

Describe any critical habitat, essential fish habitat or other ecologically sensitive areas within or near the project area.

See Attachment 1

O. Recreational

Is the project located in or adjacent to a park or recreation area?

☐ No

☒ Yes, provide information on potential impacts to the park or recreation area. Please also indicate if the park involved Land and Water Conservation Act funds (Section 6(f))

See Attachment 1

P. Seismic and Soils

Are there any unusual seismic or soil conditions in the project vicinity? If so, indicate on project map and describe the seismic standards to which the project will be designed.

☒ No

☐ Yes, describe

Q. Water Quality

Does the project have the potential to impact water quality, including during construction.

☒ No

☐ Yes, describe potential impacts and best management practices which will be in place.

See Attachment 1

Will there be an increase in new impervious surface or restored pervious surface?

☒ No

☐ Yes, describe potential impacts and proposed treatment for stormwater runoff.

See Attachment 1

Is the project located in the vicinity of an EPA-designated sole source aquifer (SSA)?

☐ No

☒ Yes, provide the name of the aquifer which the project is located in and describe any potential impacts to the aquifer. Also include the approximate amount of new impervious surface created by the project. (May require completion of SSA worksheet.)

See Attachment 1

R. Wetlands

Does the proposal temporarily or permanently impact wetlands or require alterations to streams or waterways?

☒ No

☐ Yes, describe potential impacts

S. Construction Impacts

Describe the construction plan and identify impacts due to construction noise, utility disruption, debris and spoil disposal, and staging areas. Address air and water quality impacts, safety and security issues, and disruptions to traffic and access to property.

See Attachment 1

T. Cumulative and Indirect Impacts

Are cumulative and indirect impacts likely?

☐ No

☒ Yes, describe the reasonably foreseeable:

a) Cumulative impacts, which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes them. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.
See Attachment 1

b) Indirect impacts, which are caused by the action but are later in time or farther removed in distance, yet are still reasonably foreseeable. Indirect impacts may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air, water and other natural systems, including ecosystems.

See Attachment 1

U. Property Acquisition

If property is to be acquired for the project, indicate whether acquisition will result in relocation of businesses or individuals.

Note: For acquisitions over $500,000, FTA concurrence in the property's valuation is also required.

See Attachment 1

V. Energy

If the project includes the construction or reconstruction of a building, identify potential opportunities to conserve energy which could be employed. This includes building materials and techniques used for construction; special innovative conservation features; fuel use for heating, cooling and operations; and alternative renewable energy sources.

See Attachment 1

W. Public Involvement

Describe public outreach efforts undertaken on behalf of the project. Indicate opportunities for public meetings (e.g. board meetings, open houses, special hearings). Indicate any significant concerns expressed by agencies or the public regarding the project.

See Attachment 1

X. Mitigation Measures

Describe all measures to be taken to mitigate project impacts.

See Attachment 1

Y. Other Federal Actions

Provide a list of other federal NEPA actions related to the proposed project or in the vicinity.

N/A

Z. State and Local Policies and Ordinances

Is the project in compliance with all applicable state and local policies and ordinances?

☐ No, describe noncompliance:

☒ Yes

AA. Related Federal and State/Local Actions

- ☐ Corps of Engineers Permit (Section 10, Section 404)
- ☐ Coast Guard Permit
- ☐ Coastal Zone Management Certification
- ☐ Critical Area Ordinance Permit
- ☐ ESA and EFH Consultation
- ☐ Floodplain Development Permit
- ☐ Forest Practice Act Permit
- ☐ Hydraulic Project Approval
- ☒ Local Building or Site Development Permits
- ☐ Local Clearing and Grubbing Permit
- ☐ National Historic Preservation Act-Section 106 consultation
- ☒ National Pollutant Discharge Elimination System General Construction Permit
- ☐ Shoreline Permit
- ☐ Solid Waste Discharge Permit
- ☐ Sole Source Aquifer Consultation
- ☐ Section 4(f) (Historic or Recreational Properties; Wildlife Refuges)
- ☐ Section 6(f) (Recreational Properties)
- ☐ Section 106 (Historic Properties)
- ☐ Stormwater Site Plan (SSP)
- ☒ Temporary Erosion and Sediment Control Plan (TESC)
- ☐ Water Rights Permit
- ☐ Water Quality Certification—Section 401
- ☐ Tribal Consultation or Permits (if any, describe below)
- ☒ Other

Others (describe as applicable):
Historical and Archaeological Assessment under City of Tampa Ordinance 8249-A (City Resolution 93-853)

Submitted By (name, title):	**Date:**

Please submit an electronic copy of this form, attachments, and a signed transmittal letter recommending a NEPA finding to either julia.walker@dot.gov or stanley.a.mitchell@dot.gov

For links to further topical guidance, please visit Region 4's webpage.

INVISION: TAMPA STREETCAR
TRANSFORMING TAMPA'S TRANSIT

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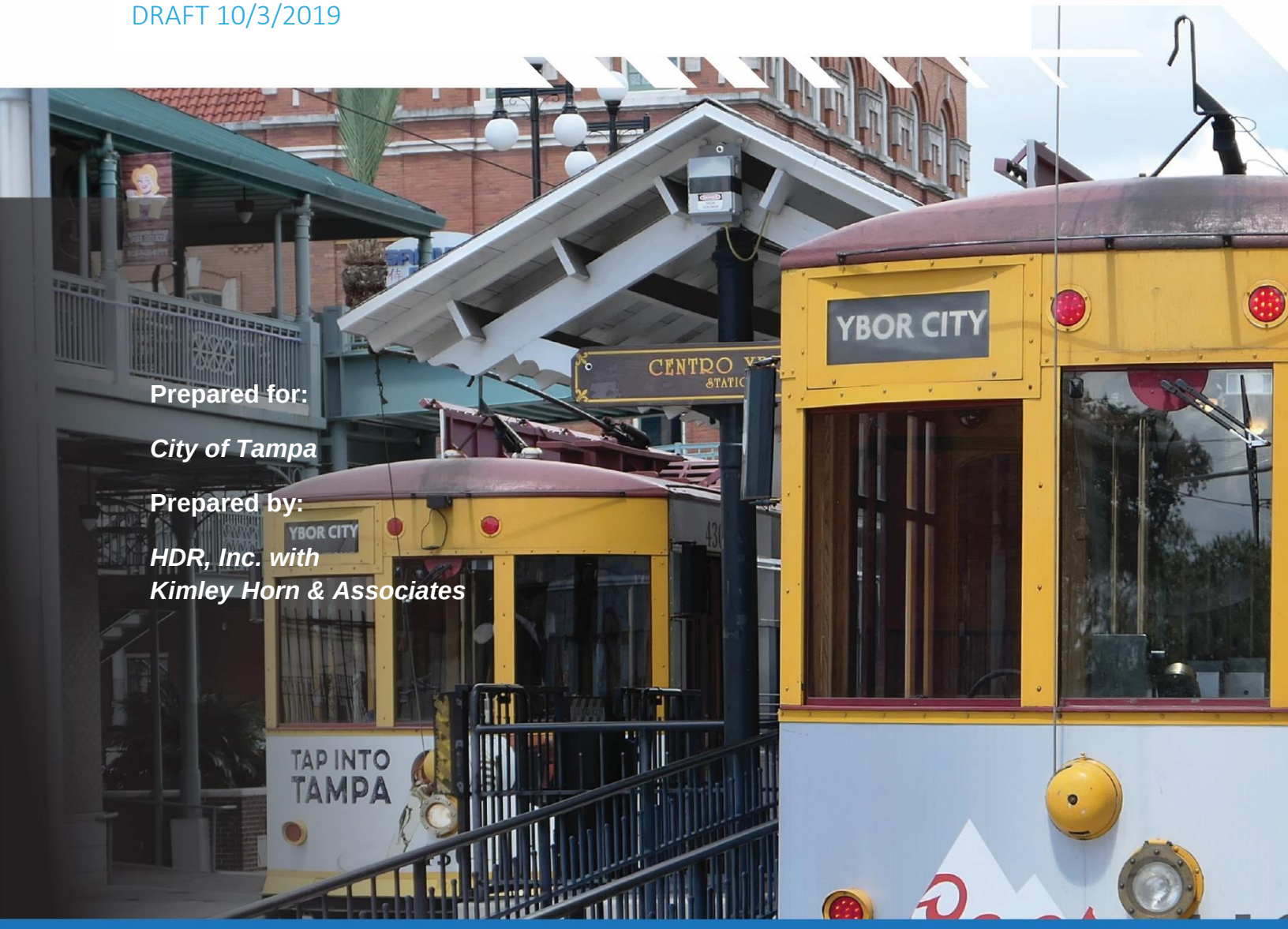
TRANSFORMING TAMPA'S TRANSIT

TAMPA MODERN STREETCAR: ATTACHMENT 1: NEPA DOCUMENTED CATEGORICAL EXCLUSION

DRAFT 10/3/2019



Prepared for:

City of Tampa

Prepared by:

HDR, Inc. with
Kimley Horn & Associates

Contents

III. Information Required for Documented Categorical Exclusions

A. Project Description

Project Overview

The City of Tampa is completing project development activities for the InVision Tampa Streetcar project. These activities are designed to identify improvements to the Tampa Historic Streetcar System to better serve the mobility needs of residents, workers, visitors, and students in Downtown Tampa, Ybor City, Channel District, and surrounding urban neighborhoods. The project is being led by the City of Tampa in partnership with the Florida Department of Transportation (FDOT) and the Hillsborough Area Regional Transit Authority (HART). Project activities include intensive public engagement and close coordination with other local and regional transit initiatives, including the Tampa Bay Area Regional Transportation Authority (TBARTA) Regional Transit Feasibility Plan.

Project activities have proceeded under two phases. During the first phase, the project team completed assessments of land use and transportation conditions in the study area, prepared a purpose and need statement, and evaluated multiple alignments for the extension of the system through Downtown and surrounding urban neighborhoods. These efforts, including a series of general public and stakeholder meetings and workshops held in the spring and fall of 2017, resulted in the identification of two north/south-oriented alignments as the best performing options for advancement into the second phase of the study. The first phase also resulted in a recommendation to improve service on the existing streetcar alignment between Ybor City, Channel District, Water Street, and the Tampa Convention Center. Project objectives prepared during the first phase call the full alignment—the existing system plus the extension—to be designed to provide a "one seat" trip, maximize exclusive transit guideway operations, minimize community and environmental impacts, and offer high levels of service with full-day and evening operations and 10- to 15-minute service frequency.

During the second phase of the study, the two north/south-oriented alignments were evaluated in greater detail and a final preferred alignment was selected, and additional analyses were conducted to determine preferences for vehicle technology, guideway configurations, stop locations and design concepts, and modernization improvements along the existing system, including improvements to the existing vehicle maintenance and storage facility (VMSF) to accommodate modern streetcar vehicles. For more detailed information on the alignment option evaluation and selection process, refer to the full report—Definition & Evaluation of Alignment Options Report—on the City of Tampa's InVision: Tampa Streetcar project website at www.tampagov.net/streetcar.

The preferred alternative serves as the basis for the assessment of environmental impacts, preparation of ridership and cost estimates, and the preparation of project funding and implementation plan.

Current Tampa Historic Streetcar System

The current Tampa Historic Streetcar System is a 2.7-mile-long, fixed guideway transit service connecting destinations in Downtown Tampa, Channel District, and Ybor City. Since the start of revenue service on Phase I (Ybor City to Convention Center) in October 2002 and opening of the Phase II-a (Convention Center to

Whiting Street) in December 2010, the system has provided connections between Ybor City and key visitor destinations and event venues. The system currently connects the Tampa Aquarium, Tampa Bay History Center, Amalie Arena, and the Tampa Convention Center.

In recent years, ridership on the existing system has been lower than anticipated due to several factors, including limited hours of operation, low service frequency, and lack of connectivity to important transit trip attractors and generators in the Downtown Core, including commercial and governmental offices, multifamily development, the Tampa Convention Center, the Marion Transit Center, and cultural and entertainment venues.

In October 2018, supported by a three-year FDOT grant, HART initiated service improvements that have resulted in significant increases in ridership. These improvements, which include fare-free service, longer operation hours, and greater service frequency, have attracted more than 180,000 additional riders in the first four months of implementation, nearly tripling ridership over the same period the previous year.

With additional improvements, introduction of accessible, higher capacity vehicles, and extension through the Downtown core, the service has the potential to become an attractive transportation option for a broader cross-section of downtown residents, workers, students, and visitors, as well as serve as a catalyst for reinvestment and economic development.

Purpose & Need

A purpose and need statement was prepared during the first phase of the project and served as the basis for defining and evaluating modernization and alignment options. The purpose of the Tampa Streetcar project is to serve the mobility needs of residents, workers, visitors, and students in Downtown Tampa, Ybor City, Channel District, and surrounding urban neighborhoods, both now and in the future (2040). The purpose and need statement, shaped by extensive public and stakeholder input, identifies the following problems and opportunities to be addressed through the introduction of enhanced transit service in the study area.

CONNECT DOWNTOWN CENTERS

Tampa's downtown has undergone a dramatic transformation in the past decade. The downtown core, Channelside, and north Harbour Island are now home to nearly 10,000 residents and another 40,000 people reside in revitalizing districts surrounding the core, including Central Park, Ybor City, North Hyde Park, Grand Central, and Tampa Heights. The number of employees in the study area has increased to around 100,000 with an additional 34,000 projected to be added between the years 2020 and 2040. But as activity levels have increased, travel within and between downtown destinations has become increasingly time-consuming, costly, and inconvenient. Single occupancy vehicle travel is difficult given traffic congestion, diminished parking availability, and increased parking costs. Distance and physical barriers make walking an unattractive option for all but very short trips, particularly during hot weather. And although the existing streetcar connects some key destinations and other modes offer options, many important destinations are beyond walking distance of the system and the capacity and range of existing transit services is limited.

SERVE DIVERSE TRAVEL MARKETS

As the traditional center of employment, governmental services, culture and history, and entertainment, downtown Tampa serves a broad range of users from across the Tampa Bay region. Downtown residents, workers, and frequent visitors travel to and within the downtown core to conduct business, access public services, participate in educational programs, and enjoy sports, cultural, and entertainment events. These users place a strong and consistent demand on existing transportation, transit, and parking resources. And as these numbers increase—population and employment alone are projected to increase by 65,000 in the study area between 2020 and 2040—existing facilities will come under increasing stress. The introduction of a high capacity, reliable, and consistent circulator service could meet increased demands while also more efficiently using existing roadway capacity and street space. The service could meet demand of transit-dependent populations in downtown-adjacent neighborhoods as well as meet the needs of downtown's growing residential population, event and venue patrons, conventioneers, and downtown workers.

IMPROVE FIRST/ LAST MILE SERVICE

Regional transportation modes serving downtown Tampa have limited first/last mile mobility support options. And while these services cater to a wide range of users and geographical reaches, there is no one unifying service that addresses the first/ last mile mobility needs of a large numbers of daily regional transit commuters and residents seeking seamless local connections. An intermediate-capacity, scheduled service that allows for frequent and efficient transfers to and from regional transit modes is missing in the service area. Such a service can complement existing bike sharing, ride hailing, and limited capacity public transit services like the In-Towner and Downtowner.

SUPPORT ECONOMIC DEVELOPMENT

Investment in large-scale, multi-block, mixed use projects, including Water Street, The Heights, West River, and Port Tampa Bay, will have a dramatic impact on the future of the City and region. These projects, representing several billion dollars of private investment, will reshape large sections of downtown and surrounding neighborhoods. These projects, along with the continued revitalization of Ybor City, redevelopment and infill in North Hyde Park and Central Park, and the build out of the Channel District and Encore, will create new travel demand in and between locations not currently well-served by convenient, high capacity transit and shared mobility services. Given the spatial and physical barriers to walking, existing travel within and between the downtown core and emerging development areas is time-consuming and inconvenient. A core transit service linking planned population and employment concentrations will help bridge the distances across downtown, and connect downtown adjacent subdistricts more directly to destinations, amenities, and activities focused in the downtown core.

EXPAND SUSTAINABLE TRANSPORTATION OPTIONS

Without improved local transit options, downtown Tampa's long-term sustainability and competitiveness will be diminished. Several factors limit the potential to improve access and mobility by automobile travel—downtown's location on a peninsula creates natural access and mobility challenges, roadway and parking capacity is limited, and the distance between regional transit hubs, subdistricts, and destinations makes pedestrian travel an impractical alternative for mid-range local trips. A core transit service with the potential to serve internal trips effectively, bypass peak hour and event-related congestion, integrate with on-demand and private ride-hailing services, and leverage the presence of regional transit connections and parking resources has the potential to support City goals for a more sustainable, livable, and energy-efficient future.

Project Elements

The project consists of the following elements:

1) replacement of the existing replica streetcar vehicles with modern streetcar vehicles;
2) construction of a 1.3-mile fixed guideway with overhead power within existing rights-of-way from the western terminus of the existing system through the core of Downtown Tampa to Tampa Heights;
3) construction of stops along the extension guideway;
4) modifications to the existing 2.7-mile alignment guideway, power system, and stops to support modern streetcar operations; and
5) modifications to the existing VMSF to serve new vehicles.

A map indicating the location of improvements is included as **Figure 1**. Further description of the project elements is provided below.

VEHICLE TECHNOLOGY

Modern streetcar vehicles were selected as the preferred vehicle technology for operations along the existing system and proposed extension. The modern streetcar provides the highest-capacity vehicle of the options considered. The configuration of the modern streetcar, with multiple, wide doors and level-boarding heights, would facilitate easy access by the greatest share of the population, including those with mobility challenges. With many portions of the route in a dedicated guideway, a modern streetcar would be able to move large numbers of people while minimizing constraints posed by traffic congestion. The modern streetcar's larger passenger capacity makes it the most efficient of the options in terms of cost per rider. In a rapidly-growing urban center like Tampa, this capacity provides the greatest degree of system flexibility for meeting mobility demands on a day-to-day basis, and over the long term.

EXTENSION ALIGNMENT

The proposed extension travels 1.3 miles north from Downtown to Palm Avenue within existing rights-of-way. The alignment is proposed as a north/south couplet pairing Florida Avenue and Tampa Street. The alignment begins near the existing streetcar terminus at Whiting Street and Franklin Street. From the existing track on Franklin Street, the northbound track extension turns east at Brorein Street, then turns north at Florida Avenue to extend through the Downtown Core and Tampa Heights to Palm Avenue. At Palm Avenue, the alignment turns west and travels two blocks before turning south onto Tampa Street. The southbound alignment runs along Tampa Street to Whiting Street. At Whiting Street, the alignment turns east to link back to the existing downtown streetcar terminus at the Whiting Street Station (see **Figure 1**).

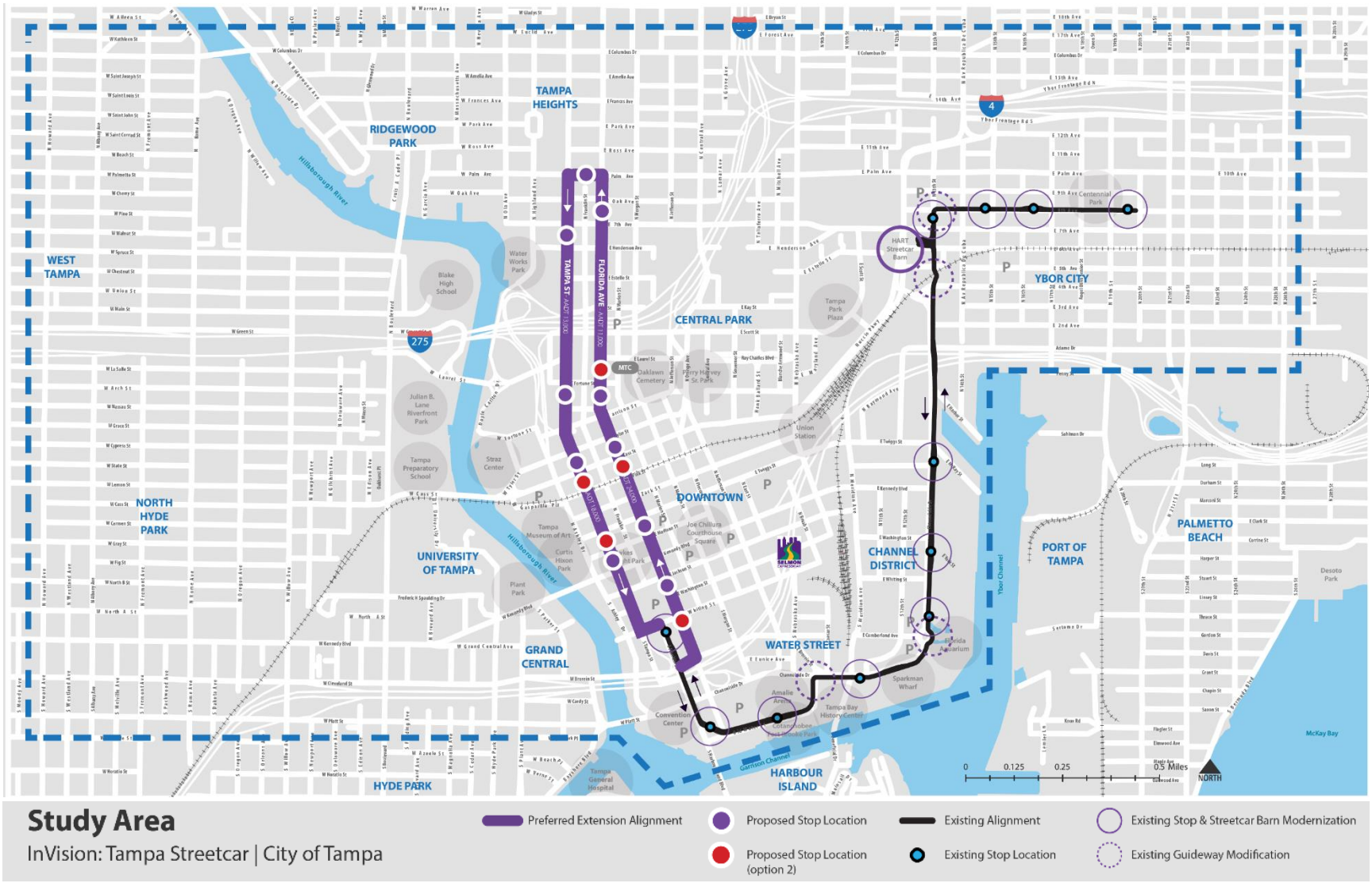


Figure 1: Study Area

EXTENSION GUIDEWAY

The proposed expansion of the streetcar system will utilize an 8-foot-wide embedded track slab. The track slab will be installed within the existing pavement section where existing roadway profile and grades can be accommodated, primarily within the curbside travel lane. Impacts to the existing pavement sections will be minimal. Depending on communications and traction power requirements to be determined in later design, embedded conduit within the track slab or duct bank below the track slab may be required.

EXTENSION TRACTION POWER

Power to support modern streetcar operations on the extension will be delivered via an Overhead Contact System (OCS) compatible with a streetcar-mounted pantograph. Poles spaced approximately 80 feet apart will be installed to carry the energized contact wire. Power for the extension will be provided by two 750 kilowatt (kW) traction power substations located along Florida Avenue, one beneath the Lee Roy Selmon Expressway (Selmon Expressway) and the other below the Interstate 275 (I-275) overpass.

EXTENSION STOPS

To accommodate modern streetcar vehicles and allow for shared use by other transit vehicle types, stops along the extension will be designed with a 14-inch-high platform section for level, ADA-compliant streetcar boarding and a lower, 8-inch-high platform section for bus boarding. The overall footprint of stops will be similar in scale to stops on the existing line, and measure approximately 10-feet-wide by 100-feet-long.

New and retrofitted stops will have similar amenities, which will include canopy/covered area; seating, railings, trash receptacles; system information map, kiosk, signage; lighting and security elements; and ADA-compliant access and ramps.

For stops along the extension, one of two stop types will be constructed. One type of stop will be positioned in the parking lane to the right of the guideway. The other type will be positioned in existing sidewalks adjacent the guideway. The type of stop will depend on the existing conditions and proposed roadway configuration at each location. During the project development phase, primary and optional stop locations have been identified. All stops, both primary and optional, are being evaluated for potential impacts, and are shown on **Figure 1**.

EXISTING GUIDEWAY MODIFICATIONS

Four locations along the existing streetcar guideway will require track reconstruction to accommodate the larger turning radius of a modern streetcar vehicle. Starting at the northern end of the existing guideway, the four track locations are:

- Near Jose Marti Park in Ybor City (on North 13th Street and East 8th Avenue).
- South of East 5th Street near the intersection of the streetcar and CSX tracks.
- On Channelside Drive at East Cumberland Avenue at the roundabout in the Channel District.
- On Channelside Drive and Old Water Street near the Tampa Bay History Center and Amalie Arena.

EXISTING SYSTEM TRACTION POWER MODIFICATIONS

The existing traction power system will be modified to support modern streetcar operations. Modifications include upgrading the system from trolley wire to an overhead contact system that will accommodate the increased power demands of modern streetcar vehicles. Planned modifications also include replacing the

existing overhead trolley wire (4/0 wire) with 350 thousand circular mils (kcmil) wire, and reconfiguration for use with a pantograph in lieu of a trolley pole. This upgrade to OCS will replace existing cantilevers, cross spans, and select poles and foundations. Additional power for the existing system to support modern streetcar operations will be delivered by a new 500 kW substation along the existing alignment and located within existing rights-of-way.

EXISTING SYSTEM STOP MODIFICATIONS

Each of the 11 stops along the existing streetcar line will be retrofitted to accommodate modern streetcar vehicles. Proposed stop modifications will occur with the footprint of the existing stop. The existing stops currently include a high-block boarding platform designed to accommodate the higher interior floor of replica streetcar vehicles. The existing 12-foot by 12-foot by 2-foot high-block platforms and ramps will be removed and replaced with a new 14-inch high platform for level, ADA-compliant streetcar boarding.

Existing shelters and other equipment and amenities will be removed and reinstalled or replaced in-kind. Future design phases will determine if the new concrete platform will be constructed around the existing columns or if the shelters will be removed and installed on the new platform or replaced in-kind. At the existing stops, the construction of new platforms will require removal of the existing concrete sidewalks, curb, and platforms, so that the new platform and ramps may be constructed.

VEHICLE MAINTENANCE FACILITY MODIFICATIONS

To accommodate the scale and number of modern streetcar vehicles required to serve the proposed system, including both the modernization and extension segments, the existing VMSF and yard will be modified. Based on preliminary design evaluation of existing site, buildings, and yard conditions it has been determined that proposed modifications can be accomplished within the the existing facility's site.

PROPERTY ACQUISITION

A majority of the Tampa Streetcar system, existing and proposed extension, will be within the existing right-of-way. However, there are up to five locations that will require the acquisition or dedication of property for conversion to right-of-way. These locations are described under Section U below.

B. Location and Zoning

Attach a map identifying the project's location and surrounding land uses. Note any critical resource areas (historic, cultural or environmental) or sensitive noise or vibration receptors (schools, hospitals, churches, residences, etc). Briefly describe the project area's zoning and indicate whether the proposed project is consistent with it. Briefly describe the community (geographic, demographic, economic and population characteristics) in the project vicinity.

The project study area is based on the area defined for the InVision: Tampa Center City Plan with the exception that it is focused more closely on the Downtown Core and the existing streetcar service area. As shown on **Figure 1**, the Streetcar Feasibility Study Area measures approximately three-miles by two-miles, and is centered on the Downtown Core with East Columbus Drive to the north, North 27th Street and Ybor Channel to the east; Plat Street, Garrison Channel, and Adamo Drive to the south, and South/North Howard Avenue to the west. This area spans the following urban districts and neighborhoods:

- Tampa Heights
- Central Park/Encore!
- Ybor City
- Channel District
- Downtown Core/Central Business District
- University of Tampa/Grand Central
- North Hyde Park
- West River

The Streetcar Feasibility Study Area is approximately 4,600 acres in size. A majority of the study area (nearly 70 percent, or 3,138 acres) is developed or undeveloped land. The remaining 1,438 acres are bodies of water, including the Hillsborough River, McKay Bay, Ybor Channel, and Garrison Channel. This section provides an overview of the existing land use and the future land use designations within the study area.

Demographics

Using the population and employment estimates and projections from Hillsborough County Metropolitan Planning Organizations' (MPO) Tampa Bay Regional Planning Model (TBRPM), the study team evaluated the existing and future number of residents and workers in the study area. As shown in **Table 1**, in 2020, the study area is anticipated to have approximately 52,900 residents and 101,000 employees. By 2040, the anticipated number of residents will grow to approximately 83,600 and the number of employees within the study area will grow to approximately 135,300.

Table 1: Population & Employment Summary, 2020 and 2040

	2020	2040	Change (2020 2040)	% Change (2020 2040)
Population	52,923	83,613	30,690	58%
Employment	101,056	135,345	34,289	34%
Total	153,979	218,958	64,979	42%

Source: TBRPM

Using Census Block data (2010 Census), six study zones were established to assess the concentrations of persons younger than 18 or older than 65, since such groups are typically unable or have less access to use of a personal vehicle. Within the Streetcar Feasibility Study Area, West River, Tampa Heights, and Ybor City are the study zones with the highest total potential transit dependency based on the number of residents younger than 18 or older than 65. West River has 42 percent of its population within these select age groups; nearly one-third of its residents are younger than 18 and approximately 1 out of 10 residents are older than 65. Tampa Heights has the second highest amount with 39 percent and Ybor City has the third highest at 28 percent of its total population under 18 and over 65 years old. **Table 2** provides a summary of the population for these select age groups within the consolidated study zones.

Table 2: Population Under 18 and Over 65, 2010

Zone	Under 18	Over 65	Total Pop.	% of Pop. Under 18	% of Pop. Over 65	Total % Under 18 and Over 65
Channel District	56	30	1,316	4%	2%	7%
Downtown	206	224	2,946	7%	8%	15%
Tampa Heights	674	356	2,674	25%	13%	39%
University of Tampa / Grand Central	179	316	5,026	4%	6%	10%
West River	2,008	519	6,004	33%	9%	42%
Ybor City	276	249	1,849	15%	13%	28%
City of Tampa	**80,071**	**38,078**	**352,062**	**23%**	**9%**	**32%**

Source: U.S. Census Bureau, 2010 Census

For more detailed information on demographics please refer to the Purpose & Need, Context & Evaluation Plan for the project, dated November 1, 2017.

Existing Land Use

As shown in **Table 3**, and **Figure 2**, a majority of the 14,134 parcels in the study area are developed. One-third of land is public, institutional, utilities, or right-of-way. This includes 671 acres of public/quasi-public, or institutional uses such as municipal, county, and state government offices, hospitals, public parking, museums, sports facilities, cultural sites, public safety, non-profit social services, schools, higher educational institutions, libraries, judicial facilities, and right-of-way. These uses are located throughout the study area, but are concentrated in the Downtown Core, along major highways such as I-275, Interstate 4 (I-4), and the Selmon Expressway, along Palm Avenue in Ybor City, Channelside Drive in the Channel District, and Florida Avenue in Tampa Heights.

Table 3: Study area Existing Land Use Summary

Existing Land Use	Parcels	Acres	% of Total
Residential	**9,426**	**874**	**28%**
Single-family	4,617	582	19%
Two-family	549	78	2%
Multi-family	4,260	214	7%
Industrial	**301**	**371**	**12%**
Light Industrial	237	200	6%
Heavy Industrial	64	171	5%
Commercial	**1,523**	**505**	**16%**
Light Commercial	1,158	377	12%
Heavy Commercial	70	20	1%
Commercial Parking	295	108	3%
Public/Institutional/Utilities/ROW	**1,412**	**1,030**	**33%**
Public/Quasi-Public/Institutional	1,219	671	21%
Public Communications/Utilities	29	31	1%
Right-of-Way/Roads/Highways	82	116	4%
Educational	82	211	7%
Parks/Cemetery/Open Space	**51**	**99**	**3%**
Agricultural	**3**	**4**	**<1%**
Vacant	**1,418**	**256**	**8%**
TOTAL	**14,134**	**3,138**	**100%**

Source: Hillsborough County Property Appraiser, HDR

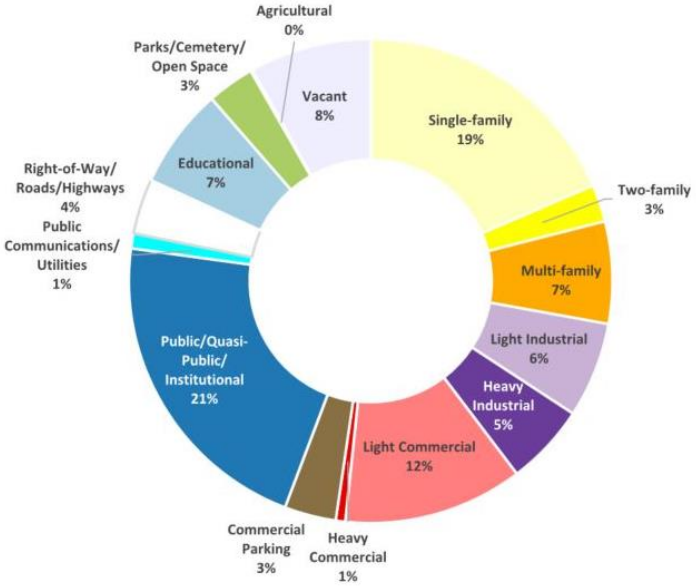


Figure 2: Study Area Existing Land Use Summary Chart

Twenty-eight percent of land is in primarily residential use (*note: mixed uses with commercial and residential uses combined are categorized under the predominant use*). This includes 582 acres of single-family residential uses that are located along the outer fringes of the study area and 214 acres of multi-family residential located in concentrated pockets in the Channel District, Ybor City, North Hyde Park, Hyde Park, and Central Park.

Commercial uses make up 16 percent of the study area. Light commercial uses are concentrated in the Downtown Core and Ybor City and along commercial corridors including Kennedy Boulevard, Plat Street, Cleveland Street, Cass Street, Howard Avenue, Columbus Drive, Seventh Avenue, and Adamo Drive. Commercial parking is located throughout the Central Business District (CBD), Ybor City, and area south of the University of Tampa.

Industrial uses make up 12 percent of the area, including heavy industrial uses in the Port of Tampa on the eastern side of the Ybor Channel and some smaller light industrial uses in the Channel District, along Adamo Drive and eastern portions of Ybor City, and scattered sites in North Hyde Park and West Tampa.

The Center City area has about 100 acres of parks, cemeteries, or open space and four acres of agricultural lands. The parks include Julian B. Lane Riverfront Park, Perry Harvey Park, Tampa Park Plaza, Cotanchobee Fort Brooke Park, Desoto Park, Water Works Park. (*note: Curtis Hixon Park is categorized as public/quasi-public/ institutional because it is on the same property as the Tampa Museum of Art, Children's Museum, and a public parking garage*.)

Approximately 250 acres of land within the study area are currently designated as vacant. This includes some sites currently under development including the University of South Florida (USF) Health Morsani College of Medicine and Heart Institute, a multi-family building site in the Encore! Development, a multi-family building site in Ybor City, and The Heights development project.

Future

The City of Tampa adopted the Imagine 2040: Tampa Comprehensive Plan in January 2016. The plan includes future land use designations for the City, including the study area shown in **Figure 3**.

The majority of the land within the study area is designated as medium or high intensity/density mixed-use area. One-third of the land within the study area is designated as right-of-way including local roadways, limited access roadways such as I-275, I-4, and the Selmon Expressway, utility corridors, and railroad right-of-way.

Within the core of the study area including the Downtown Core, Channel District, Harbor Island, and Central Park, the primary future land use designations are Central Business District (CBD), Regional Mixed Use-100 (RMU-100), or Community Mixed Use-35 (CMU-35). In Ybor City, future land use designations include Community Commercial-35 (CC-35), Urban Mixed Use-60 (UMU-60), Residental-50 (R-50), and CMU-35. Future land use designations in Tampa Heights include Residental-83 (R-83), Residental-35 (R-35), CC-35, and RMU-100.

West of the Hillsborough River, there are a wider ranges of future land use designations, but these areas are primarily residential or lower intensity mixed use. South of Kennedy Boulevard, the future land use designations are higher density/intensity (RMU-100, CC-35, R-35, R-50, and R-83). In North Hyde Park and West Tampa, there is a mix of low and medium density residential future land use categories (R-10, R-20, and R-35) and commercial and mixed-use areas (CC-35, GMU-24, UMU-60, NMU-35).

The Port of Tampa and areas along Adamo Drive are primarily Heavy Industrial (HI) or Light Industrial (LI). Palmetto Beach includes a mixture of residential (R-10, R-20, R-35) and Transitional Use-24 (TU-24).

Institutional uses including the University of Tampa, Blake High School, and Cotanchobee Fort Brooke Park are designated as Public/Semi-Public (P/QP). The large parks and recreational areas including Julian B. Lane Riverfront Park, Perry Harvey Park, and Bayshore Linear Park are designated as Recreational/Open Space (R/OS).

Conclusion

The Tampa Streetcar project will enhance the ability to travel between downtown destinations and will provide transportation access to areas with a high population of age groups that are typically unable to use or have less access to a personal vehicle. Within a quarter mile, the proposed extension of the Tampa Streetcar alignment is estimated to serve approximately 400 acres which has an existing future land use (FLU) category that permits high-density residential (greater than or equal to 35 dwelling units/acre). As a result of the expanded service, transit-oriented development is anticipated to occur and will be compatible with existing and future land uses and the Imagine 2040: Tampa Comprehensive Plan in January 2016.

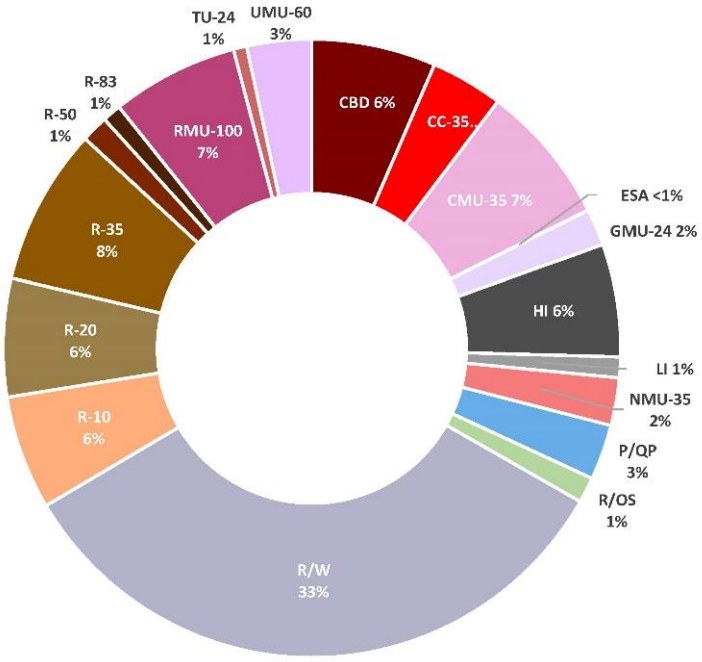


Figure 3: Study area Future Land Use Summary Chart

C. Traffic

Describe potential traffic and parking impacts, including whether the existing roadways have adequate capacity to handle increased bus or other vehicular traffic. Include a map or diagram if the project will modify existing roadway configurations. Describe connectivity to other transportation facilities and modes, and coordination with relevant agencies.

Traffic impacts were analyzed at 27 signalized study intersections and roadway segments of Florida Avenue and Tampa Street between Brorein Street and Palm Avenue. On Florida Avenue between Brorein Street and Harrison Street, and Tampa Street between Palm Avenue and Kennedy Boulevard, the alignment is proposed to be an exclusive transit lane, parking and transit stop lane, and three general purpose lanes. On Florida Avenue between Harrison Street and Palm Avenue, and Tampa Street between Kennedy Boulevard and Whiting Street, the streetcar is proposed to operate in mixed traffic. On Florida Avenue between Kennedy Boulevard and Zack Street, travel lanes are anticipated to be reduced from four to three through lanes and would qualify for a Lane Elimination Study as defined by Florida Department of Transportation (FDOT) Lane Elimination Committee at the Initial Meeting on June 12, 2019. The proposed typical sections and lane elimination section are shown in **Figure 4**.

The Lane Elimination Study and Study Area Traffic Impact Analysis included the following scenarios:

- Existing 2018
- Future 2040 No Build
- Future 2040 Build with Signal Timing Adjustments and Streetcar Phase

The Lane Elimination Study and Study Area Traffic Impact Analysis Future 2040 No Build scenario indicates that there are study roadway segments and study intersections that are anticipated to operate with an unacceptable Level of Service (LOS) or movements with a volume to capacity ratio (v/c) > 1 due to the projected growth for the 2040 traffic volumes. Minimal impact to the study roadway segments and study intersections is anticipated due to the proposed Tampa Streetcar project geometry changes, signal timing optimization, and dedicated streetcar phase. Signal retiming based on the City's Smart Mobility Division Advanced Traffic Management System (ATMS) plan will also benefit both the vehicles and streetcar operation in the future. In conclusion, the anticipated benefits of the proposed changes are aligned with the goals of the City of Tampa, FDOT and HART.

The Lane Elimination Study was submitted to FDOT D7 on September 17, 2019 and is currently under review with FDOT District 7 and FDOT Central Office per Lane Elimination approval guidelines. The Study Area Traffic Impact Analysis was submitted to FDOT District 7 on October X, 2019 and is currently under review with FDOT District 7. Traffic impact studies supplemental information are included as ATTACHMENT 2.

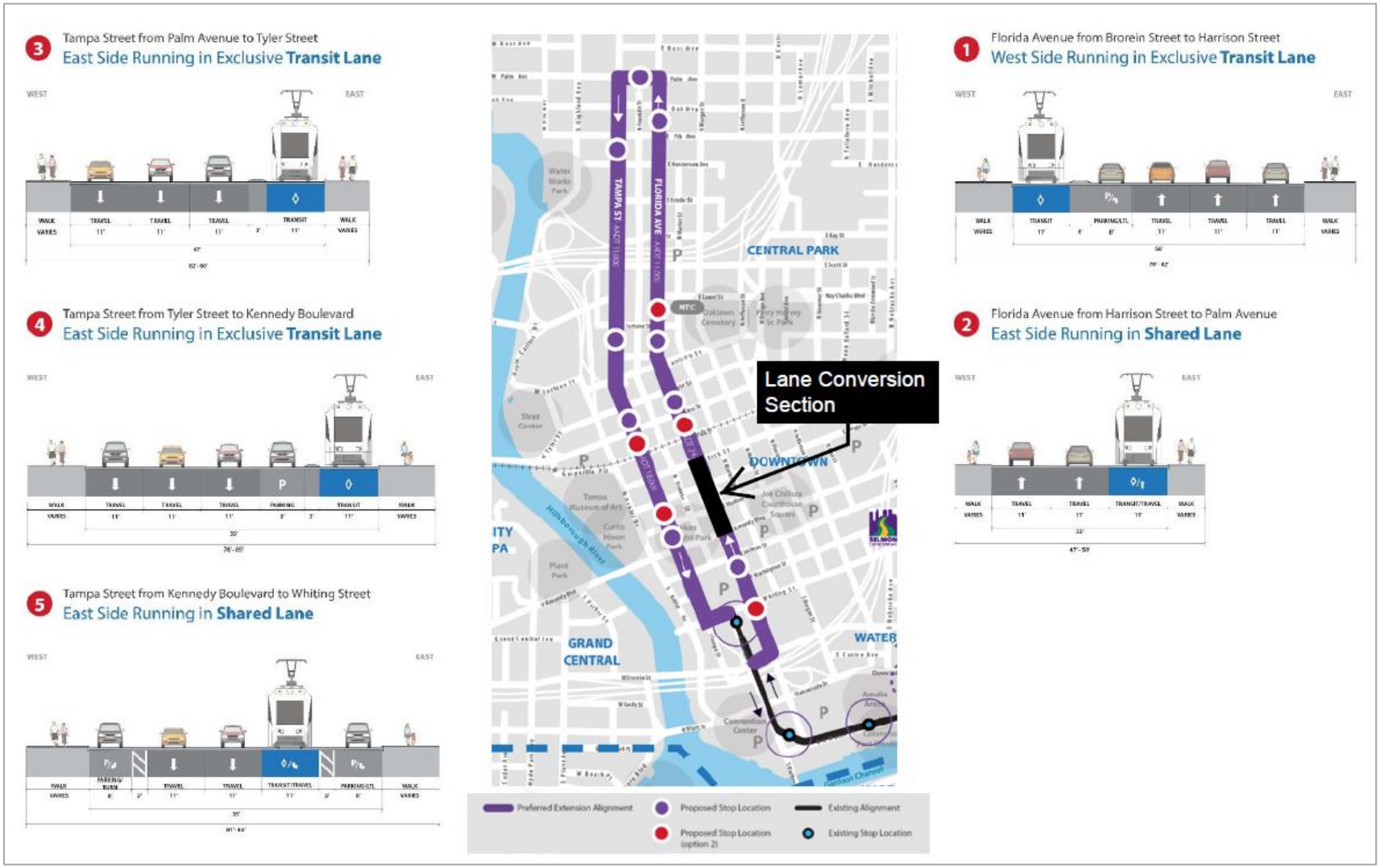


Figure 4: Proposed Typical Sections and Lane Elimination Section

D. Aesthetics

Will the project have an adverse effect on a scenic vista?

☒ *No*

☐ *Yes*

Will the project substantially degrade the existing visual character or quality of the site and its surroundings?

☒ *No*

☐ *Yes*

Will the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

☒ *No*

☐ *Yes*

The proposed project will modify visual features along the existing alignment. The replica streetcars will be replaced with modern streetcar vehicles, the stops will be retrofitted to provide a 14-inch high platform section, and the traction power system will be modified to accommodate the modern streetcar vehicles. However, these modifications to the existing system are not anticipated to degrade the visual character of the project area or adversely affect any scenic vistas.

The proposed project will also introduce new visual features along the proposed extension, including the embedded track, stations, and OCS. With the exception of the stations and OCS, the proposed project is at-grade and will be compatible with surrounding land uses. The design of the stations will comply with all historic district and local design guidelines. The intrusion of wires and poles into the visual landscape will be minimal. No scenic views will be adversely affected. The project will not create a new source of substantial light or glare that would adversely affect views in the area. A separate Determination of Effects Report will be prepared, and will include analysis of effects to all relevant NRHP-eligible or NRHP-listed resources identified within the APE and focus on the discussion of effects that the project improvements will have on those above-ground resources.

E. Air Quality

Does the project have the potential to impact air quality?

☒ *No*

☐ *Yes*

Is the project located in an EPA-designated non-attainment or maintenance area?

☒ *No*

☐ *Yes. Indicate the criteria pollutant and contact FTA to determine if a hot spot analysis is necessary.*

☐ *Carbon monoxide (CO)*

☐ *Ozone (O_3)*

☐ *Particulate matter (PM_{10} or $PM_{2.5}$)*

If the non-attainment area is also in a metropolitan area, was the project included in the MPO's Transportation Improvement Program (TIP) air quality conformity analysis?

☒ *No*

☐ *Yes. Date of USDOT conformity finding:*

The proposed project is an electric-powered streetcar that will not adversely affect emissions. Portions of Hillsborough County are currently designated as non-attainment or maintenance for National Ambient Air Quality Standards (NAAQS) pollutants (sulfur dioxide and lead, respectively);[1] however, the proposed project is not located in these areas.

F. Coastal Zone

Is the proposed project located in a designated coastal zone management area?

☒ *No*

☐ *Yes, describe coordination with the State regarding consistency with the coastal zone management plan and attach the State finding, if available.*

The majority of the Tampa Streetcar system, existing and proposed extension, would be within the existing right-of-way. No adverse effects are anticipated to Coastal Zone Management Areas. An email dated August 15, 2019 states that the Florida State Clearinghouse does not select to review the project (see ATTACHMENT 3).

G. Environmental Justice

Determine the presence of minority and low-income populations (business owners, land owners, and residents) within about a quarter-mile of the project area. Indicate whether the project will have disproportionately high and adverse impacts on minority or low-income populations. Describe any potential adverse effects. Describe outreach efforts targeted specifically at minority or low-income populations.

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires that federal agencies consider and address disproportionately adverse environmental effects of proposed federal projects on minority and low-income populations. Minority includes persons who are American Indian or Alaska Native, Asian, Black or African American, Hispanic or Latino, or Native Hawaiian or other Pacific Islander. Low-income means a person whose median household income is at or below the Department of Health and Human Services' poverty guidelines.

[1] US Environmental Protection Agency. Florida Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants. Available at https://www3.epa.gov/airquality/greenbook/anayo_fl.html. Accessed July 31, 2019.

American Community Survey 2017 5-year estimates derived from 2010 U.S. Census data was used to identify environmental justice communities within the study area. The study area is defined as a half-mile buffer around the existing and proposed extension alignment. Minority areas were identified where minority populations exceed 50% of the population in a census block group. Low-income areas were identified where median household income was below the 2017 5-year estimate for the City of Tampa ($48,245). Minority and low-income population areas are shown in **Figure 5.**

The existing and proposed extension streetcar alignment is within a half mile from over 5,200 transit dependent residents who would have access to greater mobility options. The modernization and extension of the Tampa Streetcar is not anticipated to have disproportionately high or adverse impacts on minority or low-income populations.

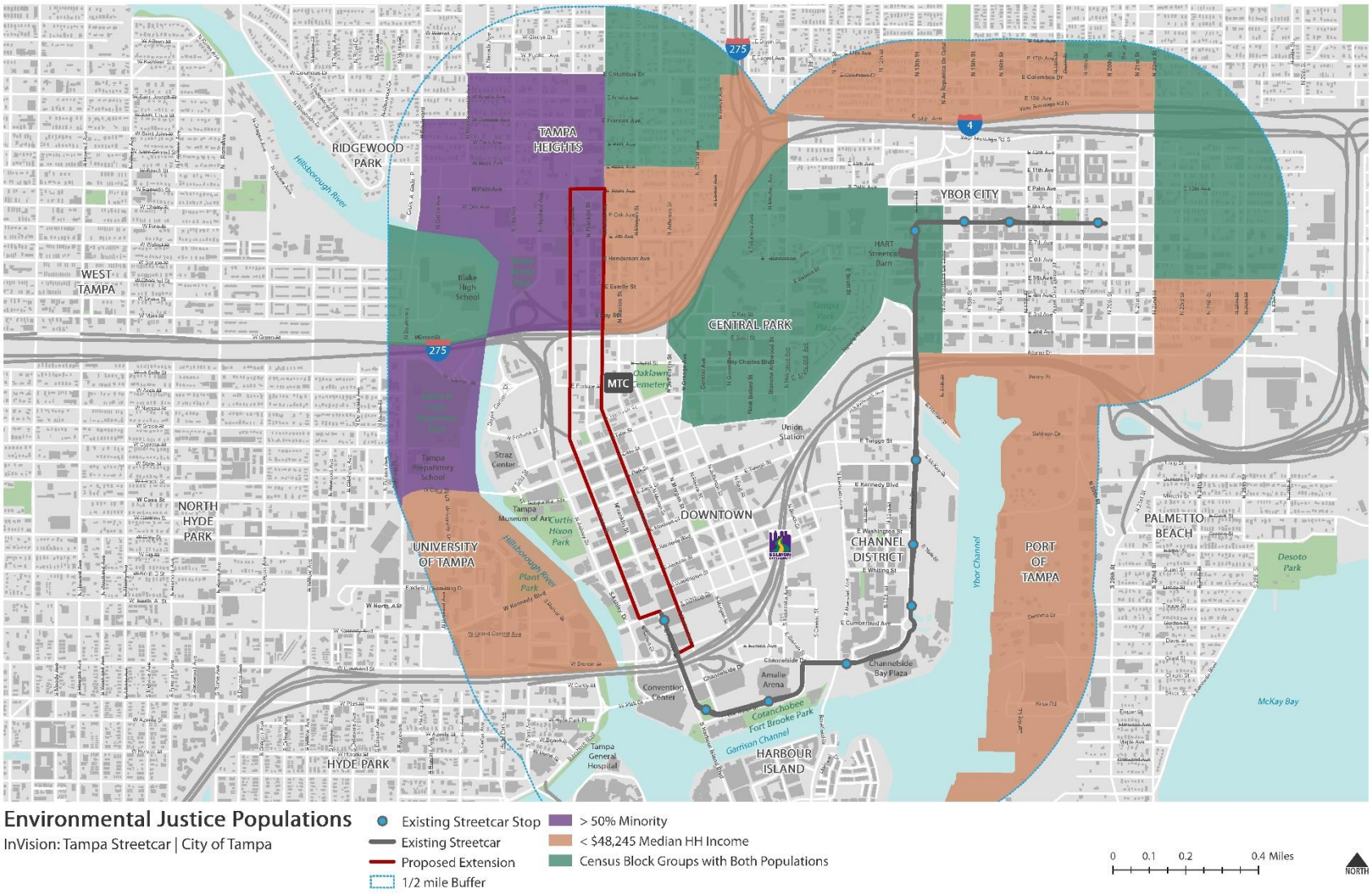


Figure 5: Environmental Justice Population Census Block Groups

H. Floodplains

Is the proposed project located within the Federal Emergency Management Agency (FEMA) 100-year floodplain?

☐ *No*

☒ *Yes, describe potential impacts, indicate if the project will impact the base flood elevation, and include or link to the FEMA Flood Insurance Rate Map (FIRM) with the project location identified.*

The Tampa Streetcar existing and proposed extension alignment crosses through two designations of floodplains, AE and X. The majority of construction will mainly be completed within the existing right-of-way. No changes to floodplains are anticipated within the corridor. **Figure 6** shows the FEMA flood hazard zones with the project location identified.

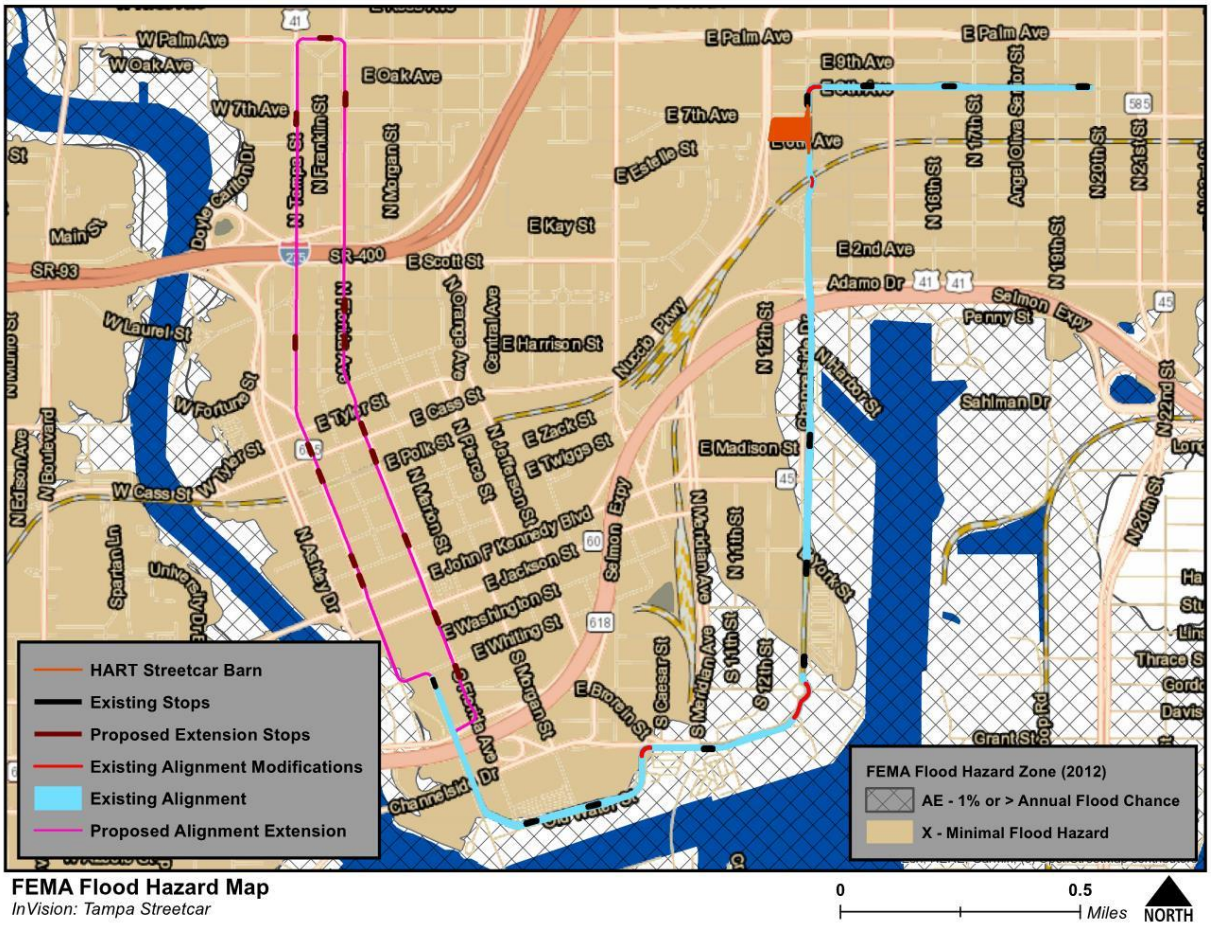


Figure 6: FEMA Flood Hazard Map

I. Hazardous Material

Is there any known or potential contamination at the project site? This may include, but is not limited to, lead/asbestos in existing facilities or building materials; above or below ground storage tanks; or a history of industrial uses of the site.

☐ *No, describe steps taken to determine whether hazardous materials are present on the site.*

☒ *Yes, note mitigation and clean-up measures that will be taken to remove hazardous materials from the project site. If the project includes property acquisition, identify if a Phase I Environmental Site Assessment for the land to be acquired has been completed and the results.*

The project study area was evaluated to determine the potential for contamination of the proposed Tampa Streetcar existing and proposed extension alignments from adjacent properties and business operations.

A desktop environmental database review was conducted in July 2019. Electronically available information on the Florida Department of Environmental Protection (FDEP) Oculus website was reviewed for the Preferred Alternative. This review identified locations including but not limited to underground storage tanks (USTs), petroleum discharges, registered dry cleaners, superfund sites, solid waste sites, and brownfield sites.

Nineteen sites were determined as having the potential for contamination involvement with the existing and proposed extension alignments. As shown on **Figure 7**, of the 19 sites investigated, the following risk rankings have been applied: eight HIGH ranking sites, five MEDIUM ranking sites, and six LOW ranking sites. There are over 100 sites listed in the EDR report that are within 500 feet of the project alignment that were determined to have NO potential contamination impact to the project. Given this significant number of sites determined not to have potential contamination involvement with the existing and proposed extension alignments, site reconnaissance was not performed for these sites.

For sites ranked “LOW” for potential contamination, no further action is required at this time. These sites/facilities have the potential to impact the study area but have been determined to have low risk to the project at this time. Variables that may change the risk ranking include a facility’s non-compliance to environmental regulations, new discharges to the soil or groundwater, and modifications to current permits. Should any of these variables change, additional assessment of the facilities would be conducted.

For those locations with a risk ranking of “MEDIUM” or “HIGH”, additional investigation and/or research is recommended to understand the level of potential contamination conditions. A thorough review of files with the FDEP and discussions with case managers may provide enough information on the contamination conditions and concerns at these sites. Level II field screening may be required in which a soil and groundwater sampling plan may be needed. The Contamination Assessment Technical Memorandum is provided in ATTACHMENT 4.

Figure Site #	Site Address	Distance from Alignment	Concern
1	1898 Nuccio Parkway, Tampa, FL 33605	860 ft	HIGH
2	1234 North 5th Avenue, Tampa, FL 33602	200 ft	HIGH
3	101 S 13th Street, Tampa, FL 33602	200 ft	MEDIUM
4	908 East Eunice Street, Tampa, FL 33602	350 ft	LOW
5	908 East Eunice Street, Tampa, FL 33602	100 ft	HIGH
6	100 Tampa Street, Tampa, FL 33602	100 ft	LOW
7	400 North Tampa Street, Tampa, FL 33602	60 ft	MEDIUM
8	700 North Tampa Street, Tampa, FL 33602	75 ft	LOW
9	1004 North Florida Avenue, Tampa, FL 33602	50 ft	LOW
10	1005 North Tampa Street, Tampa, FL 33602	75 ft	MEDIUM
11	Royal Street & Tampa Street, Tampa, FL 33602	75 ft	MEDIUM
12	1201 North Tampa Street, Tampa, FL 33602	50 ft	HIGH
13	1710 North Tampa Street, Tampa, FL 33602	350 ft	LOW
14	1112 North Florida Avenue, Tampa, FL 33602	75 ft	HIGH
15	400 East Harrison Street, Tampa, FL 33602	75 ft	HIGH
16	905 North Florida Avenue, Tampa, FL 33602	75 ft	HIGH
17	801 North Florida Avenue, Tampa, FL 33602	200 ft	MEDIUM
18	401-405 East Kennedy Boulevard, Tampa, FL 33602	100 ft	HIGH
19	401 East Jackson Street, Tampa, FL 33602	150 ft	LOW

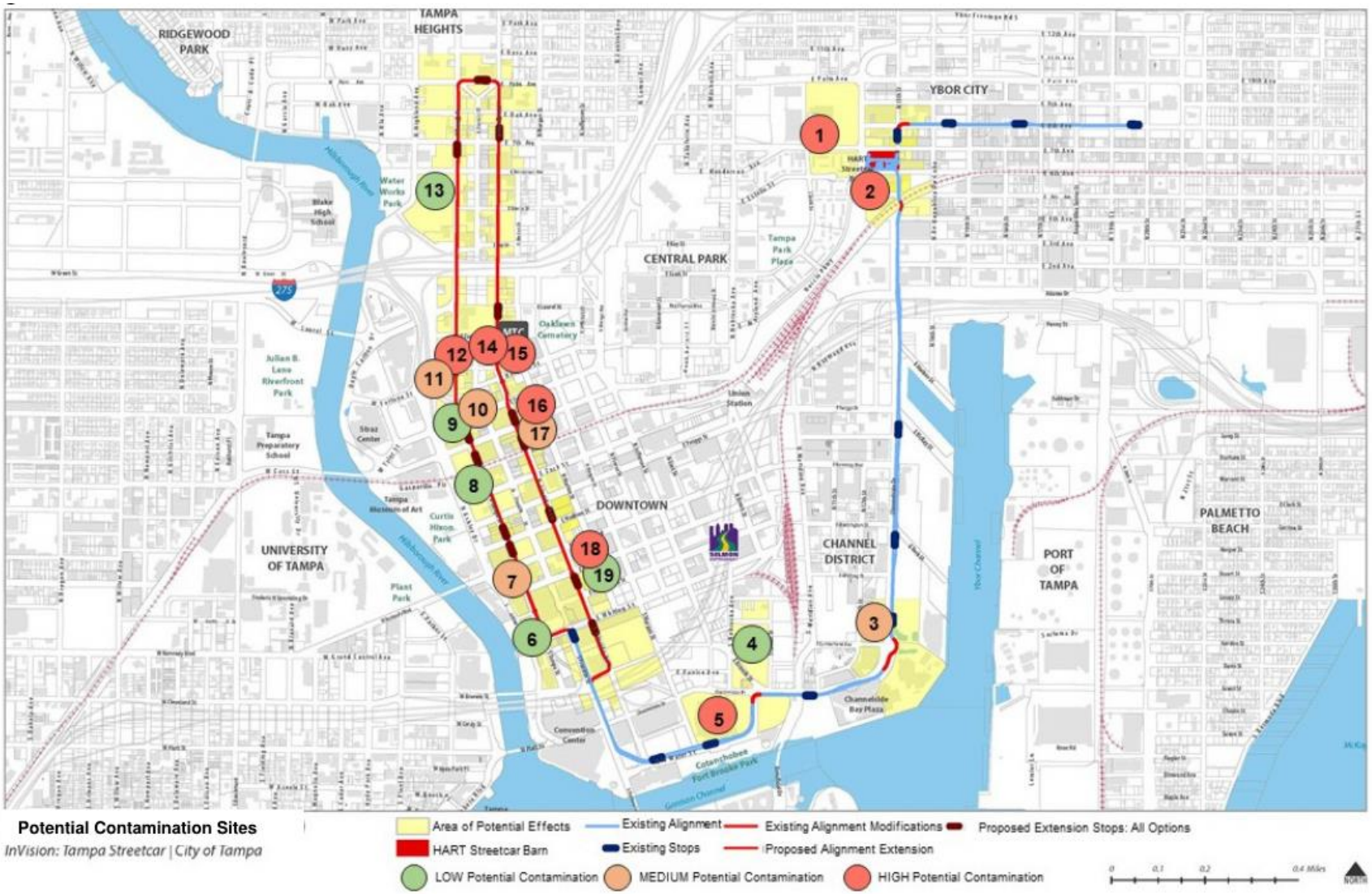


Figure 7: Potential Contamination Sites

J. Navigable Waterways

Does the proposed project cross or have the potential to impact a navigable waterway?

☒ *No*

☐ *Yes, describe potential impacts and any coordination with the US Coast Guard*

K. Noise and Vibration

Does the project have the potential to increase noise or vibration?

☒ *No*

☐ *Yes. Describe impact and provide map identifying sensitive receptors such as schools, hospitals, parks and residences. If the project will result in a change in noise and vibration sources, you must use FTA's "Transit Noise and Vibration Impact Assessment" methodology to determine impact.*

A noise and vibration assessment was conducted based on the guidelines outlined in the Federal Transit Authority's (FTA) *Transit Noise and Vibration Impact Assessment Manual* (September 2018) and is summarized below. The full report is included as ATTACHMENT 5.

Noise

Land uses along the proposed extension are comprised of a mix of commercial, retail, office, institutional, residential, medical, and recreational land uses. No Category 1 (high sensitivity) land uses exist along the proposed extension, and the primary land uses of interest are classified as a Category 2 (residential) or Category 3 (institutional) land use. Operations along the proposed extension may emit noise from the following sources:

- Rolling noise from the interaction of wheels with their running surfaces.
    - This is a function of the speed at which the transit vehicle operates and the condition of the running surface (rail) and the wheels.
- Impact noise from wheels at turnouts.
- Noise from the interaction of wheels in tight radius curves (i.e., wheel squeal).
    - This was not modeled in this assessment since it is variable. Transit vehicles can be equipped with a friction modifier dispenser, which reduces the potential for wheel squeal when applied to the wheel-rail contact area.
- Noise from auxiliary equipment, such as ventilation units and electric drive motors.
- Noise from warning devices, such as bells and horns.
    - It is not anticipated that warning devices will be an issue for this project since the streetcars will operate within the right-of-way with local traffic. Warning devices will only be sounded if the operator feels that it is necessary to avoid a dangerous situation.
- Noise from traction power substations.
    - Transformers located within each substation emit a low-frequency hum, and the Heating, Ventilation and Air Conditioning (HVAC) systems used to heat and cool the building emit noise like a residential air conditioner.

The existing day-night average noise level (Ldn) in the vicinity of the project corridor ranges between 70 A-weighted decibels (dBA) and 74 dBA, and the existing one hour equivalent noise level [Leq(h)] in the vicinity of the project corridor ranges between 66 dBA and 69 dBA. The operations associated with the streetcar along the proposed extension are anticipated to create Ldn noise levels that range between 43 and 58 dBA as well as Leq(h) noise levels that range between 36 and 54 dBA. These levels are below FTA criteria thresholds of 69 to 70 dBA that would constitute a moderate impact for Ldn, or 66 to 69 dBA for Leq(h). No impacts to noise sensitive land uses are anticipated.

The proposed modernizations along the existing streetcar track are being completed in the same locations as the existing track or stations; therefore, noticeable changes in noise levels are not expected to occur along the existing alignment.

Vibration

No special building or high sensitivity land uses are located along the proposed extension. The primary land uses of interest are classified as a land use Categories 2 (residential) or 3 (institutional).

Ground-borne vibration (GBV) levels along the project corridor are anticipated to range from 56 to 72 Vibration decibels (VdB) for Land Use Category 2 properties, and GBV levels are anticipated to range from 52 to 74 VdB for Land Use Category 3 properties. The GBV levels are below the FTA Impact Criteria of 75 VdB and 78 VdB for Land Use Category 2 properties and Land Use Category 3 properties, respectively.

Ground-borne noise (GBN) levels along the project corridor are anticipated to range from 21 to 37 dBA for Land Use Category 2 properties, and GBN levels are anticipated to range from 17 to 39 dBA for Land Use Category 3 properties. None of these levels are expected to exceed the ground-borne noise criteria of 38 dBA and 43 dBA for Land Use Category 2 properties and Land Use Category 3 properties, respectively.

L. Prime and Unique Lands

Does the proposal involve the use of any prime or unique farmlands?

☒ *No*

☐ *Yes, describe potential impacts and any coordination with the Soil Conservation Service of the U.S. Department of Agriculture.*

M. Historic and Cultural Resources

Impacts to cultural, historic, or recreational properties may trigger Section 106 or tribal consultations or a Section 4(f) evaluation, requiring consideration of avoidance alternatives. Does the project involve any ground disturbing activities? Are there any historic resources in the vicinity of the project?

To comply with federal and State regulations, a Cultural Resources Assessment Survey (CRAS) was conducted to identify historic and archaeological resources that may be affected by the Tampa Streetcar project. The CRAS is a major task required as part of the National Historic Preservation Act of 1966 Section 106 process. An Area of Potential Effect (APE) was established to determine the physical area in which cultural resources will be identified. The APE was determined by considering the type of improvements being proposed and the

potential effects these improvements could have on cultural resources. The APE determination also considered the urban/commercial/industrial character and setting of the project corridor as well as the current noise levels.

The Area of Potential Effects (APE) for the Tampa Streetcar project was defined as:

1. The construction footprint of the proposed extension, proposed extension stops, modifications to the existing alignment, modifications to existing stops, and modifications to the existing VMSF; and

2. Those parcels adjacent to the proposed extension, proposed extension stops, modifications to the existing alignment, and the existing VMSF.

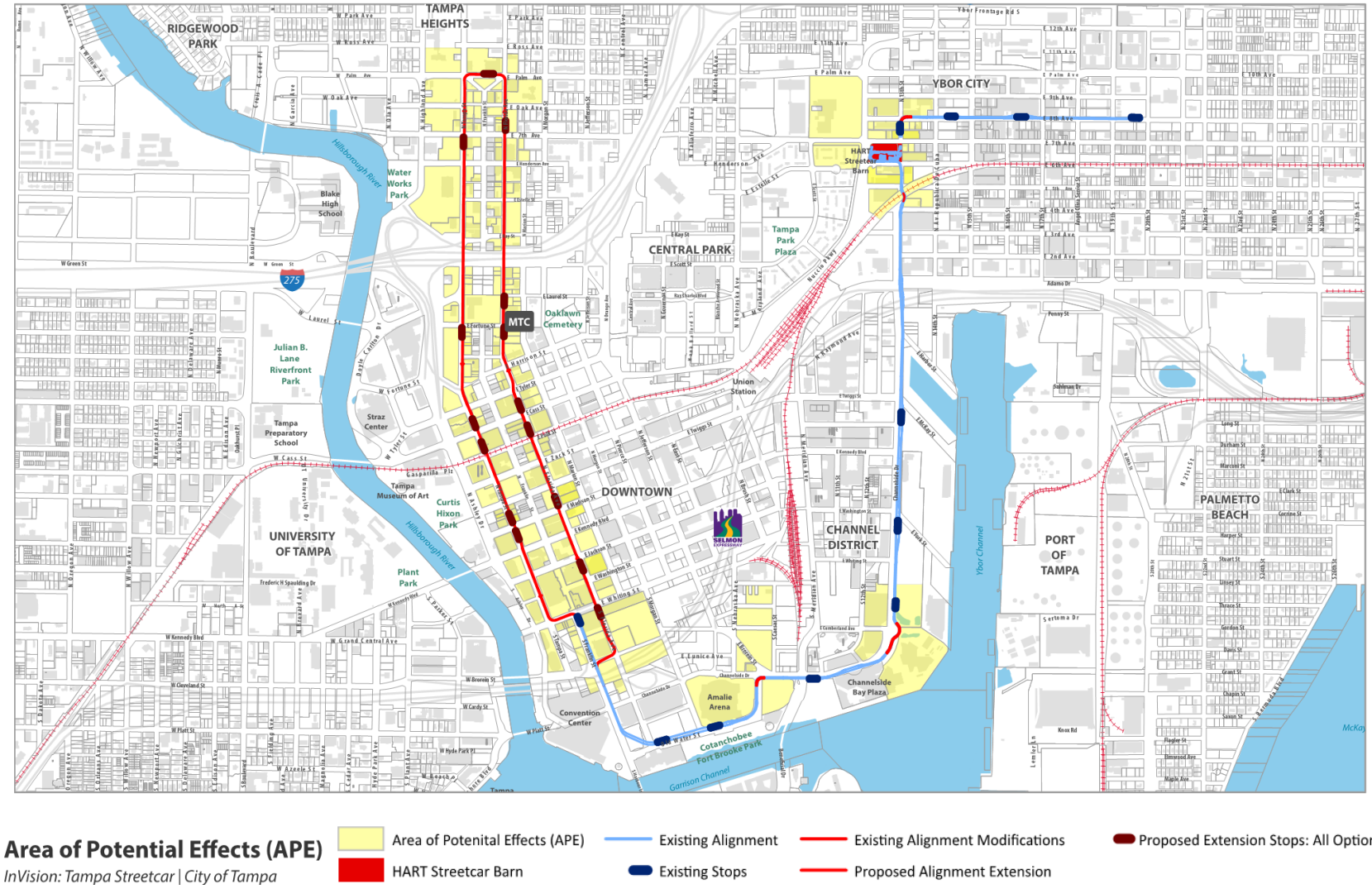
The APE is shown in Figure 8. Within this APE, the elements listed in Item 1 have potential to affect archaeological resources, while elements in both items 1 and 2 have potential to affect above-ground historic resources. With regard to proposed modifications of existing stops, the City commits to restriction of construction activities to the footprint of the existing stops and use of materials consistent in quality and type with those currently in place. Therefore, the FTA has determined that proposed modifications to existing stops do not have the potential to affect any above-ground historic resources that may be located in adjacent parcels. Assuming construction of similar-or-like stations and no additional substantial subsurface work such as new underground utility lines, the FTA also agrees that proposed modifications to existing stops do not have potential to affect archaeological resources. If new utility lines or extensive subsurface work is needed at these locations, additional review may be requested.

The CRAS completed for the Tampa Streetcar Project is provided in ATTACHMENT 6. It focuses on the proposed streetcar extension and includes the following:

- An archaeological desktop analysis of the preferred route to document the presence of known archaeological sites within the project area and to identify areas where testing may be required by the City, State, or Federal agencies. As part of the route exists within the CBD of the City of Tampa, the project would be subject to review of potential effects to archaeological resources within the CBD under current City ordinances. No archaeological field survey or testing was conducted at this stage of the project.

- A historic resources survey of the preferred route, including a description and evaluation of National Register of Historic Places (NRHP) eligibility for each historic resource identified.

No archaeological field survey was undertaken, but the results of a desktop archaeological review of the APE are provided in the CRAS. In general, it is recommended that great care be taken to avoid or conduct appropriate archaeological testing in areas that have the potential for unmarked human burials, or other disturbed human remains. Specific areas within the APE were identified as having a higher probability of archaeological resources being impacted during project construction, and recommendations for testing and/or monitoring are included. The majority of the proposed alignment lies within the Tampa CBD, and



Area of Potential Effects (APE)
InVision: Tampa Streetcar | City of Tampa

Area of Potenital Effects (APE)
HART Streetcar Barn
Existing Alignment
Existing Stops
Existing Alignment Modifications
Proposed Alignment Extension
Proposed Extension Stops: All Options

Figure 8: Area of Potential Effects (APE)

therefore, falls under requirements to conduct Historical and Archaeological Assessment under City Ordinance 8249-A (City Resolution 93-853).

City streets built on brick paving have a considerable likelihood of preserving archaeological features. It is recommended that demolition (including hand removal/palletization of brick) of these sections of road be monitored by a qualified archaeologist. Any archaeological features (as described in the CRAS) that are observed should be carefully documented and tested with shovel skimming, bisecting, and screening of any excavated material through ¼-inch hardware cloth. Any significant features that are discovered, such as barrel wells, privies, and/or foundations, should be considered for avoidance or an expanded scope of archaeological testing and data collection. Great caution is recommended when disturbing any subgrade surfaces in vicinity of known or predicted unmarked human burials. As described in the CRAS, these areas include Florida Avenue immediately south of Whiting Street and both crossings of Jackson Street on Florida and Tampa avenues. Particularly in the section of Florida Avenue south of Whiting Street, human remains are known to lie immediately beneath the proposed track alignment.

Historic resources field survey was conducted between June 5 and June 20, 2019, and resulted in the identification of 85 historic resources, 58 of which were previously recorded and 27 of which are newly recorded. These 85 historic resources include 4 NRHP or NHL-listed historic districts, 2 locally designated historic districts, 1 local multiple property designation, 3 resource groups (1 railroad, 1 structure complex, and 1 landscape), and 75 structures. The 26 newly recorded resources comprise 25 of the structures and 1 of the resource groups (the structure complex). NRHP-listed or eligible above-ground resources have been identified along or adjacent to the existing and proposed extension alignment and the existing VMSF. A separate Determination of Effects Report will be prepared and will include analysis of effects to all relevant NRHP-eligible or NRHP-listed resources identified within the APE and focus on the discussion of effects that the project improvements will have on those above-ground resources.

Mitigation measures for historic and cultural resources are described in Section X.

N. Biological

Are there any species located within the project vicinity that are listed as threatened or endangered under the Endangered Species Act? Determine this by obtaining lists of threatened and endangered species and critical habitat from the US Fish and Wildlife Service and the National Marine Fisheries Service.

Describe any critical habitat, essential fish habitat or other ecologically sensitive areas within or near the project area.

A Florida Natural Areas Biodiversity Matrix was queried (July 2019) to identify federal and State threatened and endangered species recorded within the project area. A U.S. Fish and Wildlife Service (USFWS) Species by County Report was generated for Hillsborough County (July 2019) to review protected wildlife with the potential to utilize the project area. Subsequently, desktop analysis was performed to evaluate State and federal geodatabase records for species previously documented within this region and to evaluate potential wildlife habitat. These records were analyzed using Geographic Information System (GIS). Geodatabase sources included:

- Florida Department of Environmental Protection Outstanding Florida Water (2019)
- Florida Fish and Wildlife Conservation Commission (FWC) Eagle Nest database (2016)
- Florida Fish and Wildlife Conservation Commission Florida Shorebird database (2018)
- Florida Fish and Wildlife Conservation Commission Manatee Synoptic Surveys ('91-2014)
- FWC Wildlife Research Institute Sea Turtle Data (2016)
- Florida Natural Areas Inventory Florida Conservation Lands (2014)
- Natural Resources Conservation Service Soils of Hillsborough County Geodatabase (2012)
- USFWS Wood Stork Active Nesting Colonies and Core Foraging Areas (2009-2018).
- USFWS Threatened and Endangered Species Act (ESA) Critical Habitat (2019)

No USFWS critical habitat, essential fish habitat, or other ecologically sensitive habitat is located within the project area. **Table 4** lists protected species known to occur within this part of Hillsborough County. An email dated August 15, 2019 states that the Florida State Clearinghouse does not select to review the project (see ATTACHMENT 3).

Table 4: Protected Wildlife Known to Occur in this region of Hillsborough County

Scientific Name	Common Name	Federal Listing	State Listing
Fish			
Acipenser oxyrinchus desotoi	Gulf Sturgeon	Threatened	Threatened
Pristis pectinata	Smalltooth sawfish	Endangered	Endangered
Reptiles and Amphibians			
Caretta	Loggerhead sea turtle	Threatened	Threatened
Chelonia mydas	Green sea turtle	Endangered	Endangered
Crotalus adamanteus	Eastern diamondback rattlesnake	Under Review	Not Listed
Drymarchon corais couperi	Eastern indigo snake	Threatened	Threatened
Gopherus polyphemus	Gopher tortoise	Candidate for Listing	Threatened
Lampropeltis extenuata	Short-tailed snake	Not Listed	Threatened
Lepidochelys kempii	Kemp's ridley sea turtle	Endangered	Endangered
Birds			
Platalea ajaja	Rosette spoonbill	**	Threatened
Athene cunicularia floridana	Florida burrowing owl	**	Threatened
Calidris canutus rufa	Red knot	Threatened	Threatened
Charadrius melodus	[1] Piping plover	Threatened	Threatened
Charadrius nivosus	Snowy plover	**	Threatened
Egretta caerulea	Little blue heron	**	Threatened
Egretta rufescens	Reddish egret	**	Threatened
Egretta tricolor	Tricolored heron	**	Threatened
Haematopus palliatus	American oystercatcher	**	Threatened

Scientific Name	Common Name	Federal Listing	State Listing
Haliaeetus leucocephalus	Bald eagle	* | **	Not Listed
Laterallus jamaicensis	Black rail	Proposed Threatened	Not Listed
Mycteria americana	[2] Wood stork	Threatened	Threatened
Rynchops niger	Black skimmer	**	Threatened
Pandion haliaetus	Osprey	**	Not Listed
Sternula antillarum	Least tern	**	Threatened
Mammals			
Trichechus manatus	[1] West Indian manatee	Endangered	Endangered

Species designations updated as of July 2019.

[1] Project within the USFWS Consultation Area. [2] Project within the USFWS 15-mile Core Foraging Area for eight (8) wood stork colonies.

Protected - * Bald & Golden Eagle Protection Act and Migratory Bird Treaty Act ▪ ** Migratory Bird Treaty Act.

O. Recreational

Is the project located in or adjacent to a park or recreation area?

☐ *No*

☒ *Yes, provide information on potential impacts to the park or recreation area. Please also indicate if the park involved Land and Water Conservation Act funds (Section 6(f))*

Recreational uses in the study area include Julian B. Lane Riverfront Park, Perry Harvey Park, Tampa Park Plaza, Cotanchobee Fort Brooke Park, Desoto Park, and Water Works Park. The proposed project will be located in existing transportation right-of-way and will not require any permanent or temporary right-of-way acquisition or easement from these parks. No Section 4(f) use of any recreational property is anticipated.

P. Seismic and Soils

Are there any unusual seismic or soil conditions in the project vicinity? If so, indicate on project map and describe the seismic standards to which the project will be designed.

☒ *No*

☐ *Yes, describe*

Q. Water Quality

Does the project have the potential to impact water quality, including during construction.

☒ *No*

☐ *Yes, describe potential impacts and best management practices which will be in place.*

Will there be an increase in new impervious surface or restored pervious surface?

☒ *No*

☐ *Yes, describe potential impacts and proposed treatment for stormwater runoff.*

Is the project located in the vicinity of an EPA-designated sole source aquifer (SSA)?

☐ *No*

☒ *Yes, provide the name of the aquifer which the project is located in and describe any potential impacts to the aquifer. Also include the approximate amount of new impervious surface created by the project. (May require completion of SSA worksheet.)*

Neither wetlands nor surface waters exist within the study area. The project will not temporarily or permanently impact wetlands or surface waters, nor will it require alternations to streams or waterways. The project does not discharge to an Outstanding Florida Water or an Aquatic Preserve. A Stormwater Pollution Prevention Plan (SWPPP) would be developed and implemented and a National Pollution Discharge Elimination System (NPDES) permit obtained prior to construction, as needed. An Erosion and Sediment Control Plan will be prepared per the Florida Department of Environmental Protection State of Florida Erosion and Sediment Control Designer and Reviewer Manual, FDOT and FDEP (2013). The SWPPP will contain Erosion and Sediment Control Plan exhibits and will describe the implementation of best management practices (BMPs) that reduce pollutants in stormwater discharges during construction as required.

The project is located within the boundaries of the Floridian Aquifer. The total amount of new impervious surface areas for the project is minimal and will be contained to stop locations. No adverse effects are anticipated from this project.

R. Wetlands

Does the proposal temporarily or permanently impact wetlands or require alterations to streams or waterways?

☒ *No*

☐ *Yes, describe potential impacts*

No wetlands exist within the study area.

S. Construction Impacts

Describe the construction plan and identify impacts due to construction noise, utility disruption, debris and spoil disposal, and staging areas. Address air and water quality impacts, safety and security issues, and disruptions to traffic and access to property.

Construction techniques employed for the project will be characteristic of municipal infrastructure activities associated with maintenance or installation of utilities, street pavement or other infrastructure features. Deployment of equipment and materials will occur within public right-of-way. Work hours will be those commonly found in the industry. Nighttime work may be utilized subject to circumstances, appropriate conditions, and property owner notification.

Construction Noise

The predominant construction activities associated with this project are expected to be pavement removal, hauling, grading, and paving. Temporary and localized construction noise and vibration impacts may occur as a result of these activities. During daytime hours, the potential effects of these impacts will be temporary speech interference for passers-by and those individuals living or working near the project. Loud construction noise activities, such as the usage of impact-hammers (jack hammer, hoe-ram), will provide sporadic and temporary construction noise and vibration impacts in the vicinity of those activities. Construction noise from the proposed streetcar project along the corridor could impact noise and vibration sensitive receptors directly adjacent to these activities. It is anticipated that construction activities in any one area for extended periods will be limited; therefore, any such intrusive noise and/or vibration will be temporary and would not be considered an impact under FTA criteria.

Generally, low-cost and easily implemented construction noise control measures should be incorporated into the project plans and specifications to the extent possible. These measures include, but are not limited to, work-hour limits, equipment exhaust muffler requirements, elimination of "tail gate banging", ambient-sensitive backup alarms, construction noise complaint mechanisms, as well as consistent and transparent community communication. Construction activities will comply with Chapter 5, Section 301 of the City of Tampa's Code of Ordinances and FDOT's *Standard Specifications for Road and Bridge Construction*.

Utility Disruption

Excavation work associated with installation of the track may require that some utilities be relocated. Temporary interruptions in services could be experienced during relocation or rerouting of utilities. The City is planning to upgrade sections of stormwater utility along the alignment during construction. Streets will remain open, with partial lane closures as necessary. The City will continue to coordinate with utility providers so that any required changes to their facilities will minimize disruption to services and be coordinated with the construction schedule.

Debris and Spoil Disposal

All solid wastes generated by construction of the proposed project will be disposed of properly in a permitted, licensed solid waste facility. Project demolition of concrete, asphalt, and other potentially recyclable construction materials will be directed to the appropriate storage, crushing, or renovation facility for recycling.

Appropriate measures will be taken during construction to avoid spills that could contaminate groundwater or surface water in the project area. In the event that a leak or spill occurs during construction, appropriate action to remedy the situation will be taken in accordance with state guidelines and regulations.

Staging Areas

Staging areas will be determined during final design or by the contractor. Storage for idle equipment and materials will be done in a matter that does not obstruct access or visibility to adjacent businesses.

Air and Water Quality

The air quality impact will be negligible and limited primarily to initial rail construction activities and dust from hauling material. Air pollution associated with the creation of airborne particles will be effectively

controlled through the use of watering or the application of calcium chloride in accordance with FDOT's *Standard Specifications for Road and Bridge Construction*.

Water quality impacts resulting from erosion and sedimentation will also be controlled in accordance with FDOT's Standard Specifications for Construction and through the use of BMPs. Water runoff caused by soil displacement will be contained and filtered using appropriate methods specified by the Hillsborough County Environmental Protection Commission, Water Management Division. The use of hay bales, silt screens, or other EPC approved methods of erosion and turbidity control will be required as conditions of permit approvals.

Safety and Security

Safety and security measures for the proposed streetcar extension will be the same as those deployed on the existing streetcar line. The project design will consider crime prevention through environmental design (CPTED) principles. To increase personal security, the project will use transparent glass shelters and ample lighting at the stops. In addition, existing or new security cameras may serve as an additional deterrent for criminal activity.

Streetcar stops and shelters will be designed to comply with ADA guidelines by including stable surfaces, no steep slopes, space to maneuver from the shelter to the streetcar doors, and safe linkages to the sidewalk. Stop platforms will be positioned to coordinate smoothly with the vehicle threshold and to minimize vertical and horizontal gaps.

The City and HART will coordinate to appropriately place warning signage and/or pavement markings to direct pedestrians, bicyclists and vehicular traffic as necessary to avoid hazards.

The streetcars will be equipped with a bell and a horn. The bell will be used under normal operating conditions, while the horn will only be used if the operator feels that there is a dangerous situation. HART will ensure that the streetcar operators will receive driver safety training to make sure operators know how to identify and respond to potential conflicts with pedestrians, vehicles, and bicycles.

Disruptions to Traffic and Access to Property

Maintenance of traffic (MOT) during construction is not anticipated to initiate long-term lane closures along the Tampa Street and Florida Avenue corridors. Short-term lane closures are anticipated to facilitate construction of the streetcar infrastructure. Intersection closures are also anticipated due to repaving and will be scheduled with lane closures to minimize traffic impacts. The existing parallel parking spaces on the corridor may be impacted during construction due to a shift in lanes to maintain roadway capacity. Currently there is limited access from Tampa Street and Florida Avenue to properties adjacent to the proposed extension alignment which can be accessed from the intersecting minor streets throughout the study area. Therefore, property access is not anticipated to be impacted due to construction. Construction of the proposed extension and modernization improvements may impact the existing streetcar service schedule. Construction scheduling and phasing will be addressed during the final design and engineering phases of the project.

Construction related to the expansion of the existing VMSF is not anticipated to impact the adjacent roadway network traffic. Construction at the VMSF and yard is anticipated to be completed within the existing property boundaries, which is owned by the City of Tampa.

T. Cumulative and Indirect Impacts

Are cumulative and indirect impacts likely?

☐ *No*

☒ *Yes, describe the reasonably foreseeable:*

b) Cumulative impacts, which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes them. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Cumulative impacts related to transit-oriented development and enhanced connections to existing and proposed transit modes are expected at buildout of the Tampa Streetcar project. Within a quarter mile, the proposed extension of the Tampa Streetcar alignment is estimated to serve approximately 400 acres which has an existing future land use (FLU) category that permits high-density residential (greater than or equal to 35 dwelling units/acre). Additionally, the proposed extension of the Tampa Streetcar alignment will connect to existing Hillsborough Area Regional Transit (HART) routes which travel to and from the Marion Transit Center (MTC) that is located within the quarter mile study area. This connection is expected to increase overall system ridership and could also relate to an increase in transit, roadway, and mobility investment using the one-cent transportation tax revenue.

b) Indirect impacts, which are caused by the action but are later in time or farther removed in distance, yet are still reasonably foreseeable. Indirect impacts may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air, water and other natural systems, including ecosystems.

FDOT is conducting the Tampa Interstate Study (TIS) to evaluate the options for the future modernization of the Downtown I-275 and I-4 Interchange (DTI). FDOT has prepared a Supplemental Environmental Impact Statement (SEIS) to determine the preferred alternative between four build options and a no-build option. Currently, the proposed buildout and timeline for the Tampa Streetcar project is ahead of the DTI. Since a preferred alternative has not been identified for the DTI, this assessment for the Tampa Streetcar project evaluates the no-build option.

U. Property Acquisition

If property is to be acquired for the project, indicate whether acquisition will result in relocation of businesses or individuals.

The majority of the Tampa Streetcar system, existing and proposed extension, would be within the existing right-of-way. However, there are up to five locations that will require the acquisition or dedication of

property for conversion to right-of-way. These locations are described below and mainly consists of parking lot or sidewalk areas adjacent to the existing right-of-way.

North Florida Avenue south of East Fortune Street – approximately 0.021 acres (920 square feet) may be required to accommodate a proposed stop on the east side of North Florida Avenue just south of East Fortune Street along the proposed extension. This area is currently used as a sidewalk and parking lot, is currently zoned as CBD-1 (Central Business District) and would be converted to right-of-way once acquired.

North Florida Avenue south of East Laurel Street – approximately 0.016 acres (710 square feet) may be required to accommodate a proposed stop on the east side of North Florida Avenue just south of East Laurel Street along the proposed extension. This area is currently used as a sidewalk and parking lot, is currently zoned as CBD-1 and would be converted to right-of-way once acquired.

North Florida Avenue between East Oak Street and East 7th Avenue – approximately 0.007 acres (290 square feet) may be required to accommodate a proposed stop on the east side of North Florida Avenue between East Oak Street and East 7th Avenue along the proposed extension. This area is currently used as a sidewalk and parking lot, is currently zoned as CI (Commercial Intensive) and would be converted to right-of-way once acquired.

Palm Avenue west of North Florida Avenue – approximately 0.005 acres (230 square feet) may be required to accommodate a proposed stop on the north side of Palm Avenue west of North Florida Avenue along the proposed extension. This area is currently used as a sidewalk and parking lot, is currently zoned as CG (Commercial General) and would be converted to right-of-way once acquired.

North Tampa Street south of East Fortune Street – approximately 0.017 acres (750 square feet) may be required to accommodate the proposed guideway, stop, travel lanes and sidewalk on the west side of North Tampa Street just south of East Fortune Street along the proposed extension. This area is owned by the City of Tampa and is currently used as a sidewalk and parking lot, is currently zoned as CBD-1 and would be converted to right-of-way once dedicated.

V. Energy

If the project includes the construction or reconstruction of a building, identify potential opportunities to conserve energy which could be employed. This includes building materials and techniques used for construction; special innovative conservation features; fuel use for heating, cooling and operations; and alternative renewable energy sources.

The present alignment is powered from two 1.5-Megawatt (MW) traction power substations located near the present maintenance facility. The streetcars collect electric power from an OCS using a trolley pole with a current collector that can be a wheel or a sliding 'shoe'.

The OCS installed along the extended alignment will be compatible with a streetcar-mounted pantograph, rather than a trolley pole. The pantograph provides a wider surface for physical contact, accommodates higher operating currents, and can operate in either direction. The overhead contact system along the

existing right of way will be replaced with the same OCS as that to be implemented on the extended alignment to be compatible with pantograph operation.

The change to modern streetcars, and likely shorter operating headways, will increase power demand such that additional substation capacity and feeder cables may be needed on the existing alignment. The need for the added power capacity, if necessary, and its location will become apparent after the load flow studies are performed.

Additional substations will be required to provide power along the proposed extension. These substations will be placed within existing public right-of-way along Florida Avenue, one beneath the Selmon Expressway overpass and the other beneath the Interstate 275 overpass. Subject to performing more detailed analyses, it is anticipated that the capacity of these substations will be in the range of 500 kW to 750 kW. The number of substations required, location, and power capacity, as well as the sizing of any parallel feeders, will become better defined when traction power load studies are performed and the operating parameters become clearer. The project power requirements and additional substations needed will be coordinated with TECO.

W. Public Involvement

Describe public outreach efforts undertaken on behalf of the project. Indicate opportunities for public meetings (e.g. board meetings, open houses, special hearings). Indicate any significant concerns expressed by agencies or the public regarding the project.

The feasibility study has included extensive public engagement outreach to multiple agencies and stakeholder groups. Outreach and engagement activities conducted from inception of the study through the selection of the preferred project alternative included the following:

- **Project Branding.** At the onset of the study, the City undertook a project branding effort. A logo and other branding materials were developed for use throughout the study.
- **Project Website**. The City created a project specific webpage on the City's website: www.tampagov.net/streetcar. The webpage was frequently updated and provided details about the study, frequently asked questions, a study schedule, documents and relevant studies or plans, presentation materials from the public meetings held during the study, an interactive survey, and an on-line comment form. Comments received via the on-line comment form are provided in a Public Engagement & Agency Outreach Summary report. The City also created a project email address: streetcar@tampagov.net.
- **Social Media**. Existing City of Tampa social media channels were used to share important information with residents and stakeholders. Notifications about the study and information about the public meetings were shared on the City's Facebook and Twitter accounts.
- **Presentations, Briefings, and Small Group Meetings.** Several presentations, briefings, and small group meetings were held with local property owners, community groups, and others with an interest in the project. These meetings provided opportunities for staff and project team members to educate participants and solicit feedback on the project.
- **Stakeholder Meetings.** Two key stakeholder meetings were held primarily with City and county agency representatives to share project information and provide opportunities for participants to

voice comments and concerns. The first stakeholder meeting took place on March 23, 2017. The second stakeholder meeting took place on April 6, 2017. Both meetings were held at the Tampa Municipal Office Building. At these initial meetings stakeholders received an update on the study goals and schedule, and a report on initial findings from the project context assessment. A third stakeholder meeting was held on December 12, 2018 to review the preferred project alternatives.

- **Public Workshops.** Five large-scale public workshops were held to provide information and solicit input. The meetings were publicized through news release to local media, via social media, and with targeted email notices to key stakeholders. The City also created public Facebook Events for all of the workshops, which were pushed to the news feeds of anyone who follows the City of Tampa's Facebook page.
    - The first public workshop focused on purpose and need and was held on March 7, 2017 from 5:30 to 7:30 p.m. at the Tampa Bay History Center. Approximately 100 participants attended.
    - The second public workshop focused on corridor options and was held on April 4, 2017 from 5:30 to 7:30 p.m. at the Tampa Bay History Center. Approximately 60 participants attended.
    - The third workshop was a results roundtable and was held on May 2, 2017 from 5:30 to 7:30 p.m. in the Ybor Room at the Hillsborough Community College, Ybor City Campus. Approximately 80 participants attended.
    - The fourth public workshop introduced the draft preferred alignment and was held on October 24, 2017 from 5:30 to 7:30 p.m. at the Chester H. Ferguson Law Center which is located in a minority area and adjacent to a low-income area. Approximately 55 participants attended.
    - The fifth public workshop was held to review preferred project alternatives on December 12, 2018. This workshop was organized as a presentation followed by an open house, and took place at the Tampa River Center at Julian B. Lane Park is located in a minority area and adjacent to a low-income area. Approximately 100 participants attended.
- **Online Survey.** The City conducted an on-line survey asking residents about their thoughts on the InVision: Tampa Streetcar project. Eight hundred and thirty-five (835) people responded to the on-line survey, which was open from February 23 through March 27, 2017 on the study website.
- **Media Coverage.** Local news media coverage was extensive and numerous stories and articles were written in support of the project and about the public meetings that were held.

For more detailed information on public engagement activities, please refer to the full report—Public Engagement & Agency Outreach Summary—on the City of Tampa's InVision: Tampa Streetcar project website at www.tampagov.net/streetcar.

X. Mitigation Measures

Describe all measures to be taken to mitigate project impacts.

Mitigation measures based on the traffic impacts are included in the Lane Elimination Study and Study Area Traffic Impact Analysis that have been submitted to FDOT District 7 and FDOT Central office. Mitigation measures related to traffic impacts are anticipated to include the following:

- Implementation of City of Tampa Smart Mobility Division ATMS plan to optimize intersection system and integrate vehicular and streetcar operation
- Dedicated signal phase for the streetcar (to be integrated into the ATMS)

The Lane Elimination Study and Study Area Traffic Impact Analysis are attached as ATTACHMENT 2.

Mitigation measures for historic and cultural resources are described below.

- For disturbances planned in the section of Florida Avenue south of Whiting Street, where human remains are known to lie immediately beneath the proposed track alignment, controlled archaeological excavations should first be carried out to the planned depth and extent of disturbance. If unmarked human burials are encountered all work should stop, following the proposed Procedure for Discovery of Unmarked Human Burials provided in the CRAS. Similar caution and procedures should be taken when disturbing any subgrade surfaces in the vicinity of known or predicted unmarked human burials or other disturbed human remains. In these areas, archaeological testing should be carried out in advance of any proposed ground disturbance. All work should be monitored by a qualified archaeologist familiar with the appearance of historic burials, and grave features. If possible, Stream-C Ground Penetrating Radar (GPR) survey may be employed to delineate the location of any existing burials before the outset of work. Stream C, a multi-antennae radar system, may have the ability to discern any possible underlying graves beneath road surfacing and utilities.

- Each potential streetcar stop location should be tested for significant archaeological deposits during the removal of slab/road surfaces. The removal of asphalt/brick/slab surfaces around proposed stops should be monitored by an archaeologist, and shovel testing should be carried out beneath the exposed footprint of the stops. All work should be monitored by a qualified archaeologist familiar with the appearance of historic burials, and grave features.

- The alignment and proposed stop near East Jackson Street lie directly on top of the Quad Block archaeological site (8HI00998) and abuts the location of previously recorded human remains. Caution should be exercised during any work undertaken in this area for either the alignment or proposed stops and impacts minimized. Archaeological testing should be carried out in advance of any proposed ground disturbance. If ground disturbance is to be undertaken, then additionally, all work should be monitored by a qualified archaeologist familiar with the appearance of historic burials, and grave features.

- NRHP-listed or eligible above-ground resources have been identified along or adjacent to the proposed extension alignment, proposed stop, existing alignments, and the existing VMSF. A separate Determination of Effects Report will be prepared, and will include analysis of effects to all relevant NRHP-eligible or NRHP-listed resources identified within the APE and focus on the discussion of effects that the project improvements will have on those above-ground resources.

The CRAS completed for the Tampa Streetcar Project is provided as ATTACHMENT 6.

Y. Other Federal Actions

Provide a list of other federal NEPA actions related to the proposed project or in the vicinity.

N/A

Z. State and Local Policies and Ordinances

Is the project in compliance with all applicable state and local policies and ordinances?

☐ *No, describe noncompliance:*

☒ *Yes*

The Tampa Streetcar project is in compliance with all applicable state and local policies and ordinances.

AA. Related Federal and State/Local Actions

☐ Corps of Engineers Permit (Section 10, Section 404)
☐ Coast Guard Permit
☐ Coastal Zone Management Certification
☐ Critical Area Ordinance Permit
☐ ESA and EFH Consultation
☐ Floodplain Development Permit
☐ Forest Practice Act Permit
☐ Hydraulic Project Approval
☒ Local Building or Site Development Permits
☐ Local Clearing and Grubbing Permit
☐ National Historic Preservation Act-Section 106 consultation
☒ National Pollutant Discharge Elimination System General Construction Permit
☐ Shoreline Permit
☐ Solid Waste Discharge Permit
☐ Sole Source Aquifer Consultation
☐ Section 4(f) (Historic or Recreational Properties; Wildlife Refuges)
☐ Section 6(f) (Recreational Properties)
☐ Section 106 (Historic Properties)
☐ Stormwater Site Plan (SSP)
☒ Temporary Erosion and Sediment Control Plan (TESC)
☐ Water Rights Permit
☐ Water Quality Certification—Section 401
☐ Tribal Consultation or Permits (if any, describe below)
☒ Other

Others (describe as applicable):

- Historical and Archaeological Assessment under City of Tampa Ordinance 8249-A (City Resolution 93-853)

ATTACHMENT 2

Lane Elimination Study and Study Area Traffic Impact Analysis

UPDATING BASED ON CITY OF TAMPA COMMENTS

ATTACHMENT 3

Florida Clearinghouse Project Review

ATTACHMENT 4

Contamination Assessment Technical Memorandum

ATTACHMENT 5

Noise and Vibration Technical Study Report

ATTACHMENT 6

Cultural Resource Assessment Survey

INVISION: TAMPA STREETCAR
TRANSFORMING TAMPA'S TRANSIT

TAMPA STREETCAR EXTENSION PROJECT

SMALL STARTS RATING
EXISTING LAND USE REPORT

DRAFT – October 2019

Prepared by:

HDR, Inc.

DRAFT – October 2019

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PROJECT OVERVIEW

The City of Tampa is completing project development activities for the InVision Tampa Streetcar project. These activities are designed to identify improvements to Tampa Historic Streetcar System to better serve the mobility needs of residents, workers, visitors, and students in Downtown Tampa, Ybor City, Channel District, and surrounding urban neighborhoods. The project is being led by the City of Tampa, in partnership with the Florida Department of Transportation (FDOT) and the Hillsborough Area Regional Transit Authority (HART). Project activities include intensive public engagement and close coordination with other local and regional transit initiatives, including the Tampa Bay Area Regional Transportation Authority (TBARTA) Regional Transit Feasibility Plan.

Project activities have proceeded under two phases. During the first phase, the project team completed assessments of land use and transportation conditions in the study area, prepared a purpose and need statement, and evaluated multiple alignments for the extension of the system through Downtown Tampa and surrounding urban neighborhoods. These efforts, including a series of general public and stakeholder meetings and workshops held in the spring and fall of 2017, resulted in the identification of two north/south-oriented alignments as the best performing options for advancement into the second phase of the study. The first phase also resulted in a recommendation to improve service on the existing streetcar alignment between Ybor City, Channel District, Water Street, and the Tampa Convention Center. Project objectives prepared during the first phase call for the full alignment—the existing system plus the extension—to be designed to provide a "one seat" trip, maximize exclusive transit guideway operations, minimize community and environmental impacts, and offer high levels of service with full-day and evening operations and 10- to 15-minute service frequency.

During the second phase of the study, the two north/south-oriented alignments were evaluated in greater detail and a final preferred alignment was selected. Additional analyses were conducted to determine preferences for vehicle technology, guideway configurations, stop locations and design concepts, and modernization improvements along the existing system, including improvements to the existing vehicle maintenance facility to accommodate modern streetcar vehicles. For more detailed information on the alignment option evaluation and selection process, refer to the full report—Definition & Evaluation of Alignment Options Report—on the City of Tampa's InVision: Tampa Streetcar project website at www.tampagov.net/streetcar.

The preferred alignment serves as the basis for the assessment of environmental impacts, preparation of ridership and cost estimates, and the preparation of project funding and implementation plan.

Current Tampa Historic Streetcar System

The current Tampa Historic Streetcar System is a 2.7-mile-long, fixed guideway transit service connecting destinations in Downtown Tampa, Channel District, and Ybor City. Since the start of revenue service on Phase I (Ybor City to Convention Center) in October 2002 and opening of the Phase II-a (Convention Center to Whiting Street) in December 2010, the system has provided connections between Ybor City and key visitor destinations and event venues. The system currently connects the Tampa Aquarium, Tampa Bay History Center, Amalie Arena, and the Tampa Convention Center.

Between 2010-2018, ridership on the existing system has been lower than anticipated due to several factors, including limited hours of operation, low service frequency, and lack of connectivity to important transit trip attractors and generators in the Downtown Core, including commercial and governmental offices, multifamily development, the Tampa Convention Center, the Marion Transit Center, and cultural and entertainment venues.

In October 2018, supported by a three-year FDOT grant, HART initiated service improvements that have resulted in significant increases in ridership. These improvements, which include fare-free service, longer operation hours, and greater service frequency, have attracted more than 180,000 additional riders in the first 4 months of implementation, nearly tripling ridership over the same period the previous year.

With additional improvements, introduction of accessible, higher capacity vehicles, and extension through the Downtown Core, the service has the potential to become an attractive transportation option for a broader cross-section of downtown residents, workers, students, and visitors, as well as serve as a catalyst for reinvestment and economic development.

Purpose & Need

A purpose and need statement was prepared during the first phase of the project and served as the basis for defining and evaluating modernization and alignment options. The purpose and need statement, shaped by extensive public and stakeholder input, identifies the following problems and opportunities to be addressed through the introduction of enhanced transit service in the study area.

Connect Downtown Centers

Tampa's Downtown has undergone a dramatic transformation in the past decade. The Downtown Core, the Channel District, and north Harbour Island are now home to nearly 10,000 residents. Another 40,000 people reside in revitalizing districts surrounding the core, including Central Park, Ybor City, North Hyde Park, Grand Central, and Tampa Heights. The number of employees in the study area has increased to around 100,000, with an additional 34,000 projected to be added between the years 2020 and 2040. But as activity levels have increased, travel between downtown destinations has become increasingly time-consuming, costly, and inconvenient. Single occupancy vehicle travel is difficult given traffic congestion, diminished parking availability, and increased parking costs. Distance and physical barriers make walking an unattractive option for all but very short trips, particularly during hot or inclement weather. And although the existing streetcar connects some key destinations and other modes offer options, many important destinations are beyond walking distance of the system and the capacity and range of existing transit services is limited.

Serve Diverse Travel Markets

As the traditional center of employment, governmental services, culture and history, and entertainment, Downtown Tampa serves a broad range of users from across the Tampa Bay region. Downtown residents, workers, and frequent visitors travel to and within the Downtown Core to conduct business, access public services, participate in educational programs, and enjoy sports, cultural, and entertainment events. These users place a strong and consistent demand on existing transportation, transit, and parking resources. And as these numbers increase—population and employment alone are projected to increase by 65,000 in the study area between 2020

and 2040—existing facilities will come under increasing stress. The introduction of a high capacity, reliable, and consistent circulator service could meet increased demands while also more efficiently using existing roadway capacity and street space. The service could meet the demands of transit-dependent populations in downtown-adjacent neighborhoods, as well as meet the needs of downtown's growing residential population, event and venue patrons, conventioneers, and downtown workers.

Improve First/ Last Mile Service

Regional transportation modes serving Downtown Tampa have limited first/last mile mobility support options. While these services cater to a wide range of users and geographical reaches, there is no one unifying service that addresses the first/ last mile mobility needs of the large numbers of daily regional transit commuters and residents seeking seamless, local connections. An intermediate-capacity, scheduled service that allows for frequent and efficient transfers to and from regional transit modes is missing in the service area. Such a service could complement existing bike sharing, ride hailing, and limited capacity public transit services like the In-Towner and Downtowner.

Support Economic Development

Investment in large-scale, multi-block, mixed-use projects, including Water Street, The Heights, West River, and Port Tampa Bay, will have a dramatic impact on the future of the City and region. These projects, representing several billion dollars of private investment, will reshape large sections of downtown and the surrounding neighborhoods. These projects, along with the continued revitalization of Ybor City, redevelopment and infill in North Hyde Park and Central Park, and the build out of the Channel District and ENCORE!, will create new travel demand in and between locations not currently well-served by convenient, high capacity transit and shared mobility services. Given the spatial and physical barriers to walking, existing travel within and between the Downtown Core and emerging development areas is time-consuming and inconvenient. A core transit service linking planned population and employment concentrations will help bridge the distances across downtown, and connect downtown adjacent subdistricts more directly to destinations, amenities, and activities focused in the Downtown Core.

Expand Sustainable Transportation Options

Without improved local transit options, Downtown Tampa's long term sustainability and competitiveness will be diminished. Several factors limit the potential to improve access and mobility by automobile travel—downtown's location on a peninsula creates natural access and mobility challenges, roadway and parking capacity is limited, and the distance between regional transit hubs, subdistricts, and destinations makes pedestrian travel an impractical alternative for mid-range local trips. A core transit service with the potential to serve internal trips effectively, bypass peak hour and event-related congestion, integrate with on-demand and private ride-hailing services, and leverage the presence of regional transit connections and parking resources has the potential to support City goals for a more sustainable, livable, and energy-efficient future.

Preferred Alternative Description

The preferred alternative for the project consists of the following project elements:

1) replacement of the existing replica streetcar vehicles with modern streetcar vehicles;
2) construction of a new 1.3-mile fixed guideway with overhead power within existing rights-of-way from the western terminus of the existing system through the core of Downtown Tampa to Tampa Heights;
3) construction of stops along the extension guideway;
4) modifications to the existing 2.7-mile alignment guideway, power system, and stops to support modern streetcar operations; and
5) modifications to the existing vehicle maintenance and storage facility to serve new vehicles.

A map indicating the location of the preferred alternative is included as **Figure 1**. A review of elements of the preferred alternative is provided below.

Vehicle Technology

Modern streetcar vehicles were selected as the preferred vehicle technology for operations along the existing system and extension. The modern streetcar provides the highest-capacity vehicle of the options considered. The configuration of the modern streetcar, with multiple, wide doors and level-boarding heights, would facilitate easy access by the greatest share of the population, including those with mobility challenges. With many portions of the route in a dedicated guideway, a modern streetcar would be able to move large numbers of people while minimizing constraints posed by traffic congestion. The modern streetcar's larger passenger capacity makes it the most efficient of the options in terms of cost per rider. In a rapidly-growing urban center like Tampa, this capacity provides the greatest degree of system flexibility for meeting mobility demands on a day-to-day basis, and over the long term.

Extension Alignment

The evaluation of alignment alternatives resulted in the selection of an extension traveling 1.3 miles north from the Downtown Core to Palm Avenue within existing rights-of-way. The proposed extension alignment is proposed as a north/south couplet paring Florida Avenue and Tampa Street. The alignment begins near the existing streetcar terminus at Whiting Street and Franklin Street. From the existing track on Franklin Street, the northbound track extension turns east at Brorein Street, then turns north at Florida Avenue to extend through the Downtown Core and Tampa Heights to Palm Avenue. At Palm Avenue, the alignment turns west and travels two blocks before turning south onto Tampa Street. The southbound alignment runs along Tampa Street to Whiting Street. At Whiting Street, the alignment turns east to link back to the existing downtown streetcar terminus at the Whiting Street Station.

Extension Guideway

The proposed expansion of the streetcar system will utilize an embedded track section. The 8-foot-wide track slab thickness will be installed within the existing pavement section where existing profile and transverse grades can be accommodated. A variable width transition area adjacent to the track slab will be utilized to minimize impacts on

existing pavement sections. A 4 foot-8½ inch standard track gauge will be maintained through the track expansion. A 14-inch thick track slab is proposed with a single mat of reinforced steel. The slab design will need to be verified with existing soil conditions and pavement design. Single 115 RE Tee Rail is proposed with a rubber boot surround and flangeway for stray current isolation. In curves with radii of less than 400 feet, a second restraining rail will be provided. Depending on communications and traction power requirements to be determined in the design, phase embedded conduit within the track slab or duct bank below the track slab may be required.

Extension Traction Power

Power to support modern streetcar operations on the extension will be delivered via an Overhead Contact System (OCS) compatible with a streetcar-mounted pantograph. Poles spaced approximately 80 feet apart on level tangent track locations with closer spacing on corners and curves will be installed to carry the OCS. Power for the extension will provided by two 750 kW traction power substations located within existing rights-of-way.

Extension Stops

To accommodate modern streetcar vehicles and allow for shared use by other transit vehicle types, stops along the extension will be designed with a 14-inch-high platform section for level, ADA-compliant streetcar boarding and a lower, 8-inch-high platform section for bus boarding. Along the existing streetcar line, stops will be retrofitted to provide a 14-inch high platform section for level, ADA-compliant streetcar boarding. The overall footprint of stops will be similar in scale to stops on the existing line, and measure approximately 10-feet-wide by 100-feet-long. New and retrofitted stops will have similar amenities, which will include canopy/covered area; seating; railings; trash receptacles; system information map; kiosk; signage; lighting and security elements; and ADA-compliant access and ramps.

For stops along the extension, one of two stop types will be constructed. One type of stop will be positioned in the parking lane to the right of the guideway. The other type will be positioned along existing sidewalks adjacent the guide way. The type of stop depends on the guideway location in the street. During the project development phase of the project, primary stop locations have been identified as well as optional locations for several stops. All stops, both primary and optional, are being evaluated for potential impacts. All primary potential stop locations are shown on **Figure 1**.

Existing Guideway Modifications

Four locations along the existing streetcar guideway will require reconstruction to accommodate the larger turning radius of a modern streetcar vehicle. Starting at the eastern end of the existing guideway, the four locations are:

- The intersection of East 8th Ave and North 13th St near Jose Marti Park in Ybor City;
- South of East 5th Street near the intersection of the streetcar and CSX tracks in Ybor City;
- Near East Cumberland Avenue at the Channelside Drive roundabout in the Channel District; and
- The intersection of Channelside Drive and Old Water Street near the Tampa Bay History Center and Amelia Arena.

To serve modern streetcar vehicles, modifications to the existing traction power system will also be required. Modifications will include upgrading the system from trolley wire to overhead contact system to accommodate modern streetcar vehicles. This change can be accomplished using the existing power sources and pole/arm systems.

Existing System Traction Power Modifications

The existing traction power system will be modified to support modern streetcar operations. Planned modifications will include placement of the existing overhead trolley wire (4/0 wire) with 350 kcmil wire and reconfiguration for use with a pantograph. This upgrade to OCS will include replacement of existing cantilevers, cross spans, and select poles and foundations. Additional power for the existing system to support modern streetcar operations will be delivered by a new 500 kW substation along the existing alignment and located within existing rights-of-way.

Existing System Stop Modifications

Each of the 11 stops along the existing streetcar line will be retrofitted to accommodate modern streetcar vehicles. Proposed stop modifications will occur with the footprint of the existing stop. The existing stops currently include a high-block boarding platform designed to accommodate the higher interior floor of replica streetcar vehicles. The existing 12-foot by 12-foot high block platforms and ramps will be removed and replaced with a new 14-inch high platform.

Existing shelters and other equipment and amenities will be removed and reinstalled or replaced in-kind. Future design phases will determine if the new concrete platform will be constructed around the existing columns or if the shelters will be removed and installed on the new platform or replaced in-kind. At all of the existing stops, the construction of new platforms will require removal of the existing concrete sidewalks, curb, and platforms, so that the new platform and ramps may be constructed.

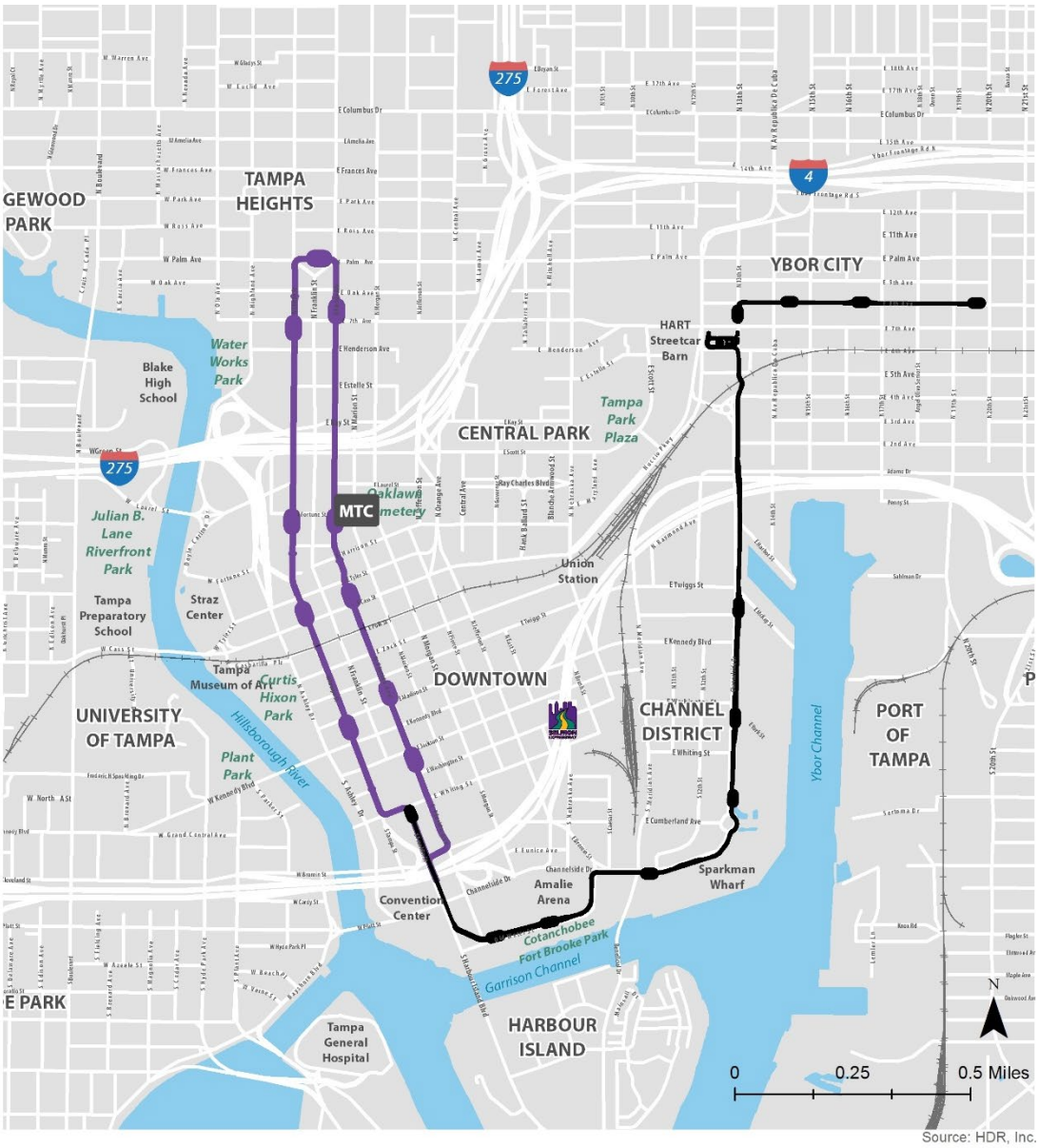
Vehicle Maintenance Facility Modifications

To accommodate the scale and number of modern streetcar vehicles required to serve the proposed system, including modernization and extension, the existing vehicle maintenance and storage facility and yard will be modified. Based on preliminary design evaluation of existing site, buildings, and yard conditions it has been determined that proposed modifications can be accomplished within the confines of the existing facility's site.

Property Acquisition

The majority of the Tampa Historic Streetcar System including modifications to the existing alignment and proposed extension, would be within the existing right-of-way. However, there are up to six locations that will require the acquisition of property for conversion to right-of-way.

Figure 1. Preferred Extension Alignment with Proposed Stop Locations



Preferred Extension Alignment

InVision: Tampa Streetcar | City of Tampa

- Proposed Stop Locations
- Preferred Extension Alignment
- Existing Alignment
- Existing Stop Locations

Existing Land Use	
Information Requested	Documentation
Existing corridor and station area development (population, employment, high trip generators)	

Corridor and Station Area Population, Housing Units, and Employment

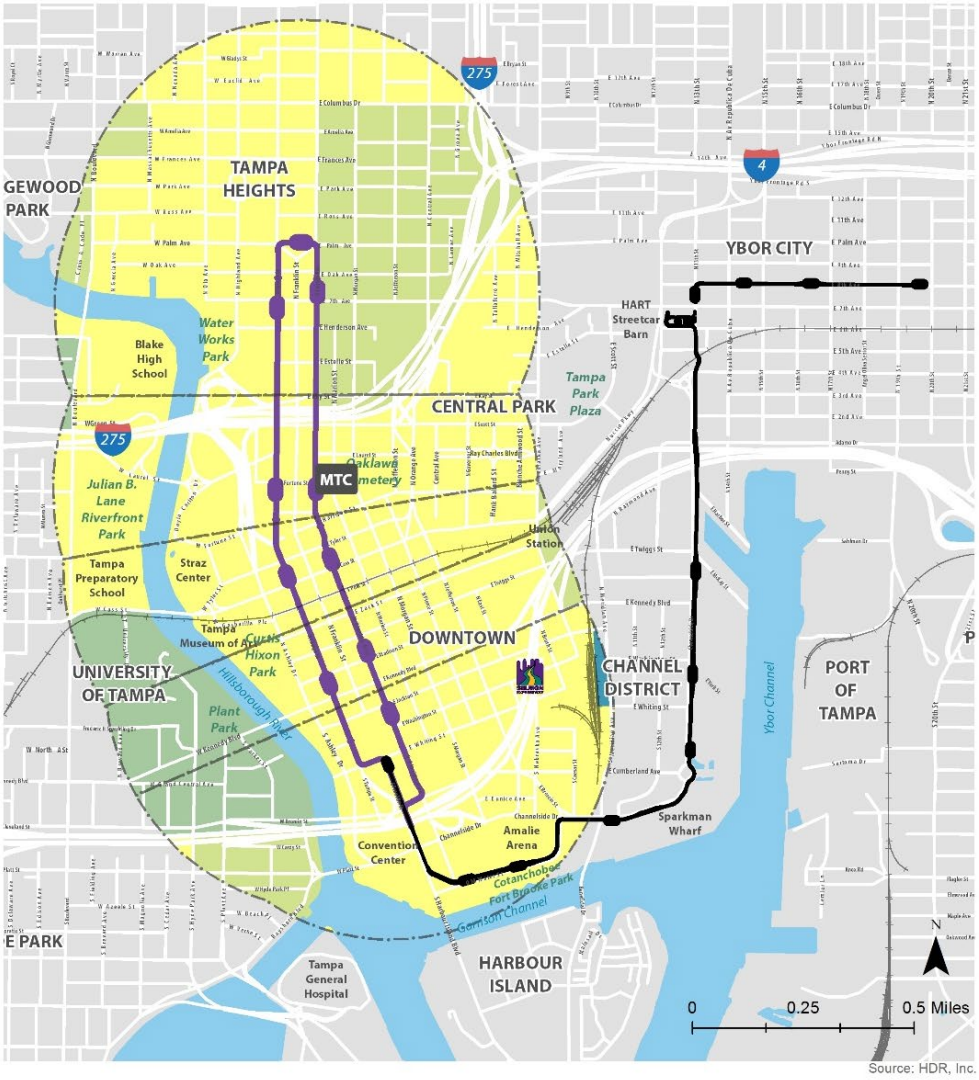
As shown in **Table 1**, in 2017 the five station areas within a half mile of the Tampa Historic Streetcar extension had a total population of 8,426 people, 3,926 housing units of all types, and a total employment of 48,465. In 2019, there were 1,646 legally binding affordability restricted housing units in the station areas. Additionally, the existing streetcar alignment station areas had a total of 22,333 employees in 2017. The population density within the entire extension station area is 4,154 persons per square mile, the housing unit density is 1,935 people per square mile, and the employment density is 23,895 persons per square mile.

Table 1. Station Area Population, Housing Units, and Employment

	POPULATION		HOUSING UNITS			EMPLOYMENT	
	Population (2017)	Population Density (persons /sq.mi.)	Housing Units- All Types (2017)	Housing Units Density (units /sq.mi.)	Housing Units- Legally Binding Affordability Restricted (2019)	Employment (2017)	Employment Density (employees /sq.mi.)
Extension- All Station Areas	8,426	4,154	3,926	1,935	1,646	48,465	23,895
Existing - Station Areas	-					22,333	-
Source	*Census, Housing Units, 2013-2017 ACS 5-Year Estimates (Hillsborough County)*		*Census, Housing Units, 2013-2017 ACS 5-Year Estimates (Hillsborough County)*		*National Housing Preservation Database, and the Shimberg Center for Housing Studies*	*TBRPM TAZ, 2017*	

Existing Land Use	
Information Requested	Documentation
Existing corridor and station area development (population, employment, high trip generators)	

Figure 2. Population Density within 1/2 Mile of Extension Station Areas



Population Density (U.S. Census, 2017)

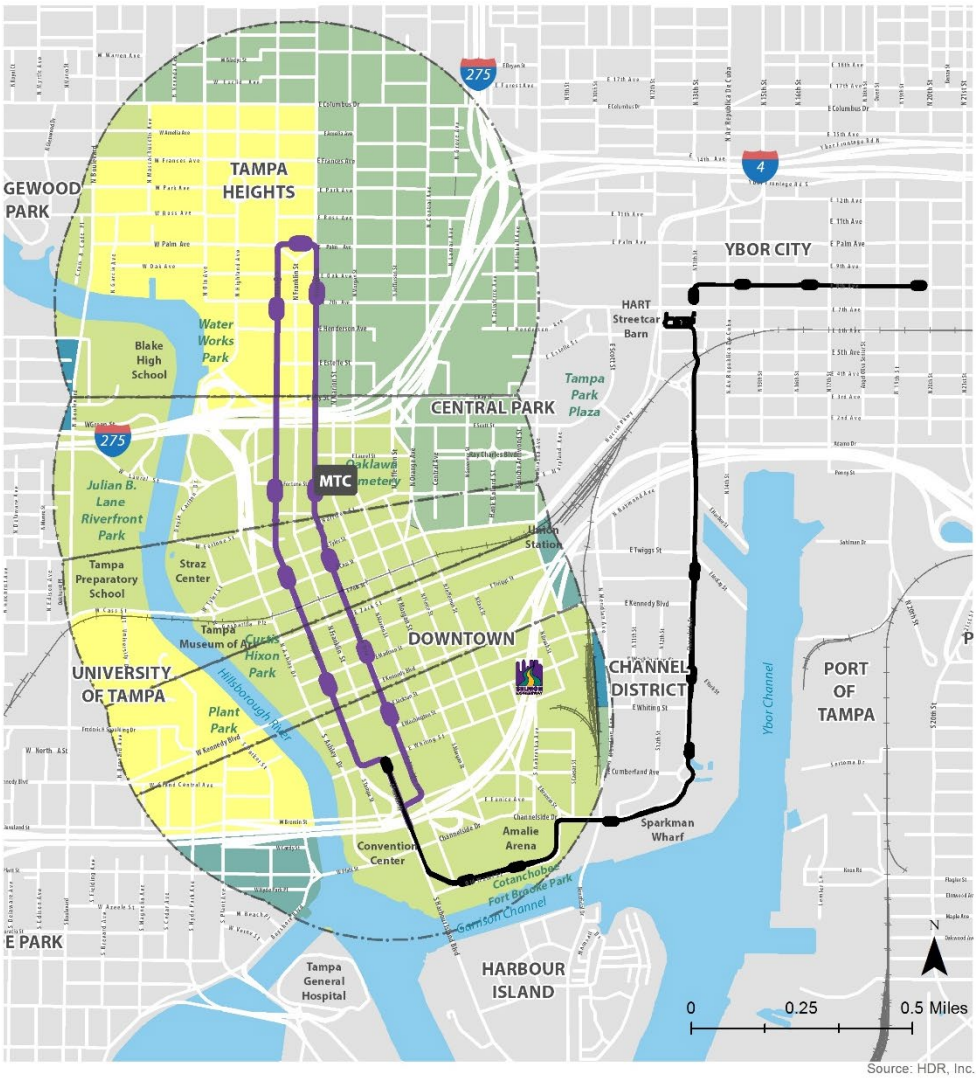
InVision: Tampa Streetcar | City of Tampa

Extension Station Areas - Half Mile Buffer
Existing Stop Locations
Existing Alignment
Proposed Stop Locations
Preferred Extension Alignment

PERSONS/SQ. MILE
0 - 5,000
5,001 - 10,000
10,001 - 15,000
15,001 - 20,000
20,001 - 30,000

Existing Land Use	
Information Requested	Documentation
Existing corridor and station area development (population, employment, high trip generators)	

Figure 3. Housing Unit Density (All Types) within 1/2 Mile of Extension Station Areas



Housing Unit Density, All Types (U.S. Census, 2017)

InVision: Tampa Streetcar | City of Tampa

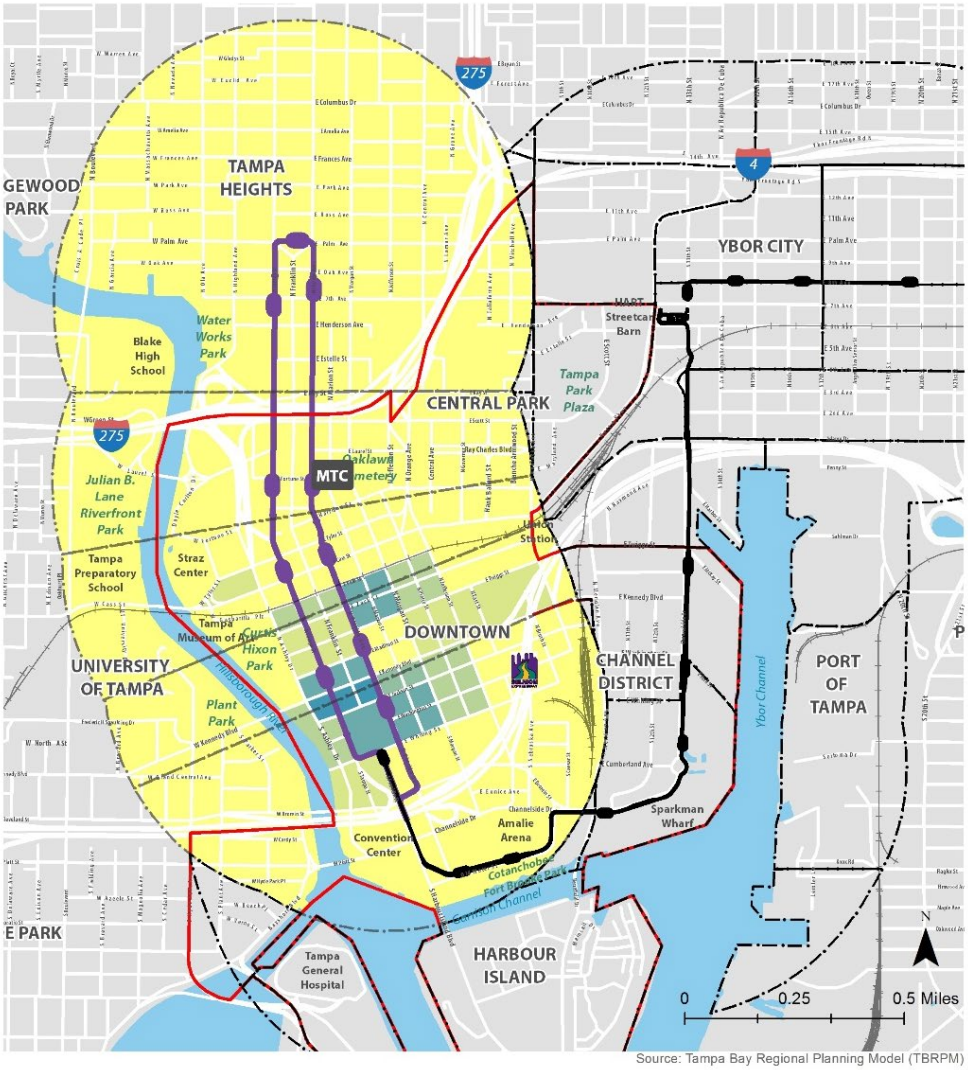
- Extension Station Areas - Half Mile Buffer
- Existing Stop Locations
- Existing Alignment
- Proposed Stop Locations
- Preferred Extension Alignment

HOUSING UNITS/SQ. MILE

- less than 1,000
- 1,001 - 2,000
- 2,001 - 4,000
- 4,001 - 6,000
- 6,001+

Existing Land Use	
Information Requested	Documentation
Existing corridor and station area development (population, employment, high trip generators)	

Figure 4. Employment Density within 1/2 Mile of Extension Station Areas



Source: Tampa Bay Regional Planning Model (TBRPM)

Employment Density 2040 (TBRPM, 2017)

InVision: Tampa Streetcar | City of Tampa

- Extension Station Areas - Half Mile Buffer
- Existing Stop Locations
- Existing Alignment
- Proposed Stop Locations
- Preferred Extension Alignment
- Existing Streetcar - Half Mile Buffer
- CBD TAZ Activity Center

EMPLOYEES/SQ. MILE

- less than 50,000
- 50,001 - 100,000
- 100,001 - 150,000
- 150,001 - 200,000
- 200,001 - 250,000
- 250,001+

Existing Land Use	
Information Requested	Documentation
Existing corridor and station area development (population, employment, high trip generators)	

High Trip Generators

Many of Tampa's most popular cultural attractions, local events, and waterfront parks are located within a ½ mile of the proposed station areas. The Hillsborough River, which runs along the Downtown Core's western border, features the Tampa Riverwalk along the eastern shoreline that serves as a means of connection for many amenities in the area. On the eastern border, the existing streetcar line connects the Downtown Core, the Channel District, and Ybor City.

This section provides a summary of the station area's high trip generators. These districts include the Downtown Core, the University of Tampa/Grand Central area, Central Park, Tampa Heights, and West Tampa. A list of districts and trip generators can be found in **Table 2** and **Figure 5**.

Downtown Core

Tampa's Downtown Core is bordered by the Hillsborough River to the west, the Channel District to the east, Interstate I-275 and Scott Street to the north, and Harbour Island to the south. It is home to several businesses and well-attended museums and parks.

University of Tampa

The University of Tampa, located west of the Downtown Core along the Hillsborough River, currently has an enrollment of over 8,000 students, many of whom live on campus. The Henry B. Plant Museum is located in Plant Hall on the University's campus. Plant Hall was formerly known as the Tampa Bay Hotel built by Henry B. Plant in 1891. The museum focuses on the building's former use as well as the elite lifestyle of the hotel's guests. The building is a National Historic Landmark.

Central Park

Central Park is a historic residential neighborhood located north of the Downtown Core. Central Park is home to ENCORE!, a mixed-use redevelopment project with three new apartment buildings. A fourth building is nearing completion.

To the western edge of ENCORE! is the newly redeveloped Perry Harvey Park. The park features sculptures, and interactive fountains. An art installation features members of the African American community who helped shape the neighborhood around the park.

Existing Land Use	
Information Requested	Documentation
Existing corridor and station area development (population, employment, high trip generators)	

Tampa Heights

Tampa Heights is located directly north of the Downtown Core. This mostly residential neighborhood has had many new businesses such as art galleries and coffee shops open in the last decade. Water Works Park is a major destination in the area and features an open lawn, children's splash pad and playground, amphitheater, and dog park. The nearby Ulele Spring has been restored to feed into the Hillsborough River. A popular onsite restaurant brings many more visitors to the park and neighborhood. Additionally, nearby Tampa Armature Works is part of The Heights redevelopment project, which currently includes residential, retail, and recreational uses.

The Stetson Tampa Law Center and Brewster Technical College are also located in Tampa Heights.

West Tampa

West Tampa is located northwest of the Downtown Core, on the west side of the Hillsborough River. In 2014, the City kicked off the planning and design for the renovation and expansion of the neighborhood's largest park, Julian B. Lane Riverfront Park. The 23-acre park sits on the western edge of the Hillsborough River. The completed renovation project provides open green space for the community to congregate, dine, and experience outdoor concerts and events.

Additionally, the City of Tampa's *West River Redevelopment Plan* focuses on bringing new development to West Tampa. The development program includes over 2,000 new housing units, 90,000 square feet of retail, and 70,000 square feet of office space. The plan also includes improved street network connection, better-quality public education and community services, and a focus on connections along the Hillsborough River. By 2025, the goal is to have created a genuinely diverse and economically integrated community.

Existing Land Use	
Information Requested	Documentation
Existing corridor and station area development (population, employment, high trip generators)	

Table 2. High Trip Generators within 1/2 Mile of Extension Station Areas

Map ID	Name	Description	Center City District
1	Tampa Bay History Center	A museum highlighting Tampa Bay's history with over 80,000 visitors per year.	Downtown
2	Cotanchobee Fort Brooke Park	A 4.5-acre park located along the Hillsborough River. It includes a playground, pier, canoe launch and trails.	Downtown
3	Amalie Arena	A large-scale entertainment center where the NHL's Tampa Bay Lightning and Tampa Bay Storm play their home games. The Arena hosts over 150 concerts and other events per year and was just awarded the 2018 NHL All-Star Game.	Downtown
4	Tampa Convention Center	A large-scale business event space that includes an exhibit hall, ballroom, breakout rooms, and restaurants. The Center hosts over 300 events per year.	Downtown
5	Tampa Riverwalk	A 2.4-mile long pedestrian trail that connects nearby parks and attractions.	Downtown
6	Gasparilla Events	A 3-month long celebration highlighting Tampa's cultural scene. Over 300,000 people attended the Gasparilla Pirate Festival. It is the 3rd largest parade in the United States. (multiple locations Downtown)	Downtown
7	USF Health, CAMLS	A 90,000 square foot, state-of-the-art facility with numerous health professional education and training. About 1,350 students are enrolled at this location.	Downtown
8	Downtown Core	Area of high concentration of employment downtown.	Downtown
9	City of Tampa / Tampa City Hall	Government building	Downtown
10	Florida Museum of Photographic Arts	A museum focused on exhibiting culturally important photographic art.	Downtown

Existing Land Use	
Information Requested	Documentation
Existing corridor and station area development (population, employment, high trip generators)	

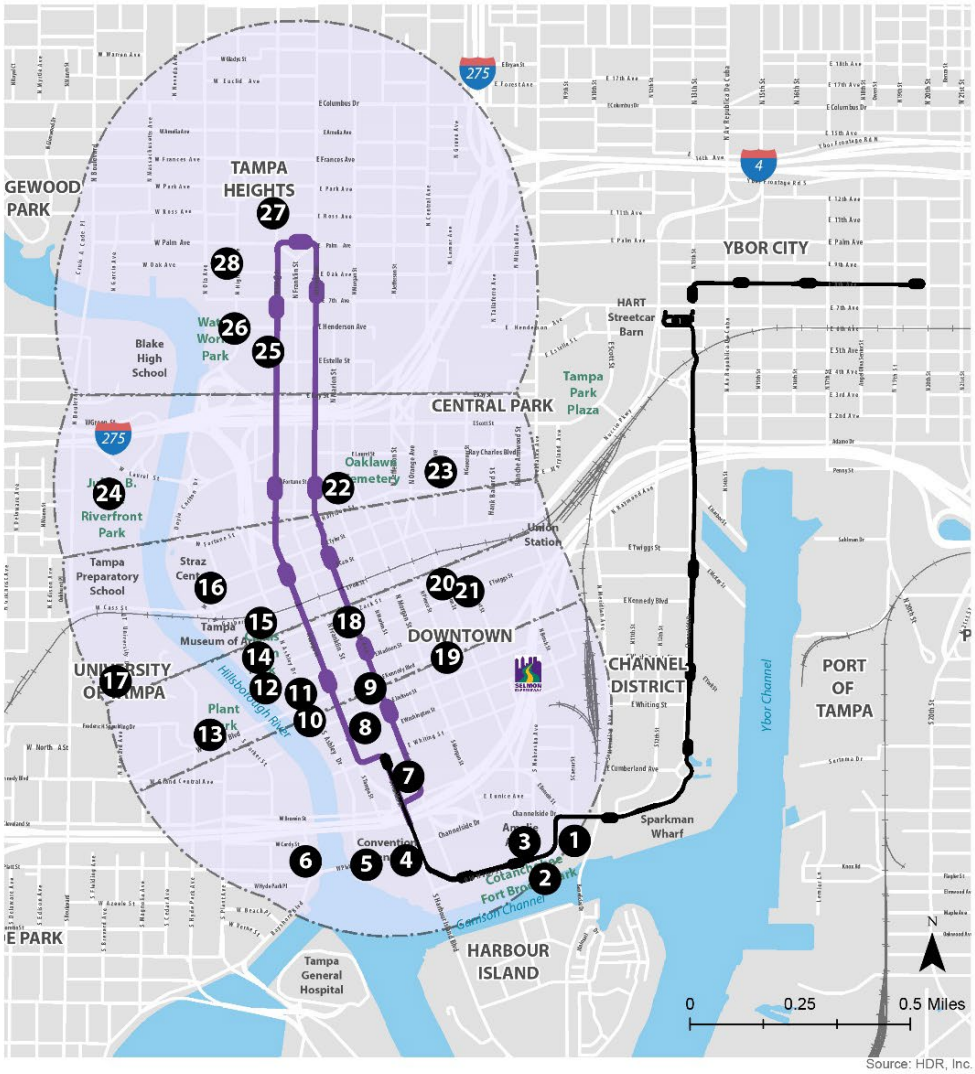
11	Gasparilla Events	A 3-month long celebration highlighting Tampa's cultural scene. Over 300,000 people attended the Gasparilla Pirate Festival. It is the 3rd largest parade in the United States. (multiple locations Downtown)	Downtown
12	Curtis Hixon Waterfront Park	An eight-acre public park overlooking the Hillsborough River and the University of Tampa's Plant Hall. The park hosts a number of diverse events.	Downtown
13	Henry B. Plant Museum	Formerly known as the Tampa Bay Hotel built by Henry B. Plant in 1891. The museum focuses on the building's former use as well as the elite lifestyle of the hotel's guests.	University of Tampa/ Grand Central
14	Tampa Museum of Art	A modern and contemporary art museum.	Downtown
15	Glazer Children's Museum	A children's exploratory museum with over 250,000 annual visitors.	Downtown
16	Straz Center for the Performing Arts	Performing Arts Center with over 680,000 annual visitors and over 4,148 events per year.	Downtown
17	University of Tampa	The University of Tampa is located west of Downtown, along the Hillsborough River and currently enrolls over 8,000 students, many of whom live on campus.	University of Tampa/ Grand Central
18	Tampa Theater	A historic theater that hosts over 600 events per year.	Downtown
19	Hillsborough County Center	Government building	Downtown
20	Tampa Firefighters Museum	A museum preserving Tampa's fire service history.	Downtown
21	Hillsborough County Courthouse	Government building	Downtown

Existing Land Use	
Information Requested	Documentation
Existing corridor and station area development (population, employment, high trip generators)	

22	Marion Transit Center (MTC)	Government building	Downtown
23	Perry Harvey Park	The park features sculptures, interactive fountains, and an informational timeline for the historic Central Ave community. An art installation features members of the African American community who helped shape the neighborhood around the park.	Central Park
24	Julian B. Lane Park	Recently renovated 23-acre park.	West Tampa
25	Stetson Tampa Law Center	Law school with over 800 students.	Tampa Heights
26	Water Works Park	Water Works Park is a major destination with open lawn, children's splash pad and playground, amphitheater, and dog park.	Tampa Heights
27	Brewster Technical College	Technical college with over 581 students.	Tampa Heights
28	Armature Works	A 73,000 square foot mixed-use commercial space consisting of the Heights Public Market, multiple event spaces, a co-shared workspace as well as multiple restaurants and bars	Tampa Heights

Existing Land Use	
Information Requested	Documentation
Existing corridor and station area development (population, employment, high trip generators)	

*Figure 5. High Trip Generators within 1/2 Mile of Extension Station Areas (See **Table 2** for Location Descriptions)*



High Trip Generators

InVision: Tampa Streetcar | City of Tampa

- Extension Station Areas - Half Mile Buffer
- Existing Alignment
- Existing Stop Location
- Proposed Stop Location
- Preferred Extension Alignment

Existing Land Use	
Information Requested	Documentation
Existing station area development character	

Existing land use in the extension station areas is urban in character with dense mixed-use commercial, retail, and residential buildings in the Downtown Core and lower to medium density developments and residential areas in Tampa Heights. The extension alignment is bookended by the Downtown Core on the south and The Heights District on the north. On both sides of the extension, the streetcar would make important connections through major employment areas and close in residential districts, as well as numerous high trip generating destinations such as Curtis Hixon Park, Tampa's RIverwalk, Marion Transit Center, and Armature Works. See representational photos other these destinations below (**Figures 6-9**).

Figure 6. Downtown Tampa

Existing Land Use	
Information Requested	Documentation
Existing station area development character	

Figure 7. Curtis Hixon Park

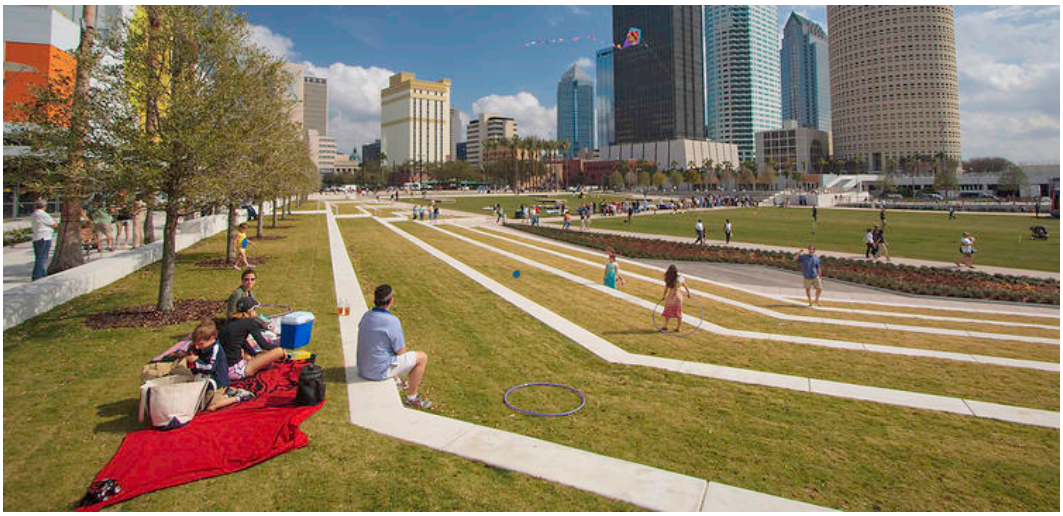


Figure 8. Tampa's Riverwalk

Existing Land Use	
Information Requested	Documentation
Existing station area development character	

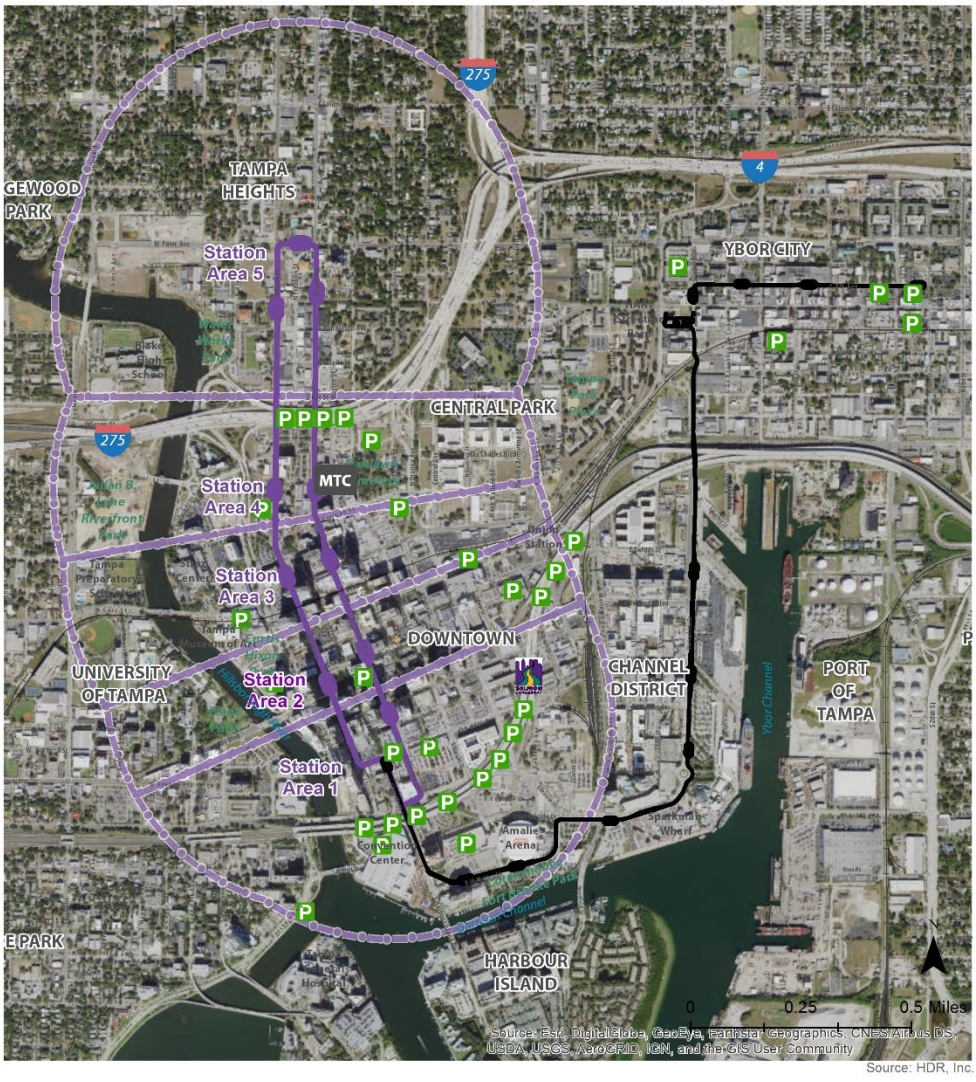
Figure 9. Armature Works, Tampa Heights

Station Areas

There are 10 proposed new station locations along the extension alignment. For purposes of this report, a half mile buffer was created around each station location. To avoid double counting in the analysis, stations that are coupled or in otherwise close proximity were grouped into generalized station areas. Five station areas within the extension corridor are connected by the proposed extension alignment (**Figure 10**) and are used in this document to report a variety of data. **Figures 11** to **26** show the existing land use within the five extension station areas in more detail.

Existing Land Use	
Information Requested	Documentation
Existing station area development character	

Figure 10. Extension Station Areas



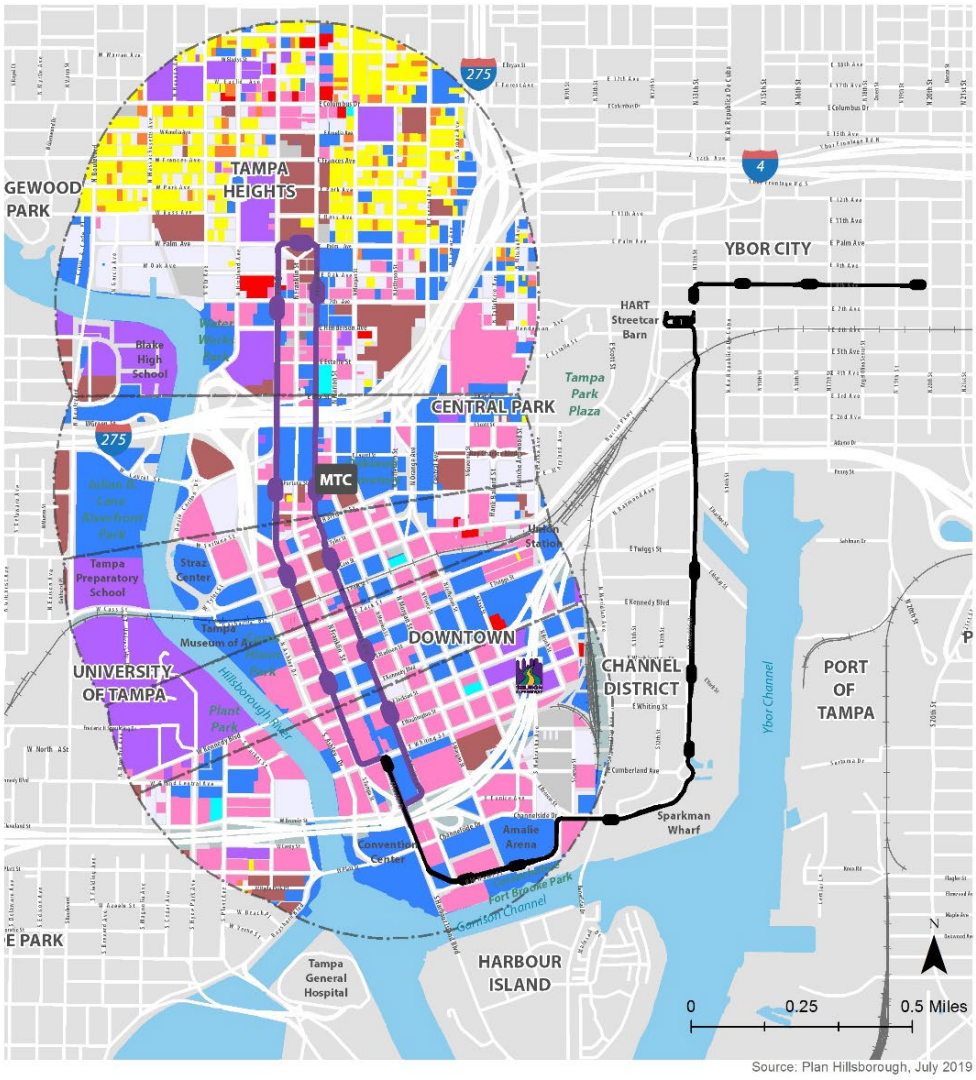
Station Areas

InVision: Tampa Streetcar | City of Tampa

- Extension Station Areas - Half Mile Buffer
- Parking Garages and Lots
- Existing Stop Location
- Existing Alignment
- Proposed Stop Location
- Preferred Extension Alignment

Existing Land Use	
Information Requested	Documentation
Existing station area development character	

Figure 11. Existing Land Use within 1/2 miles of Extension Station Areas



Existing Land Use

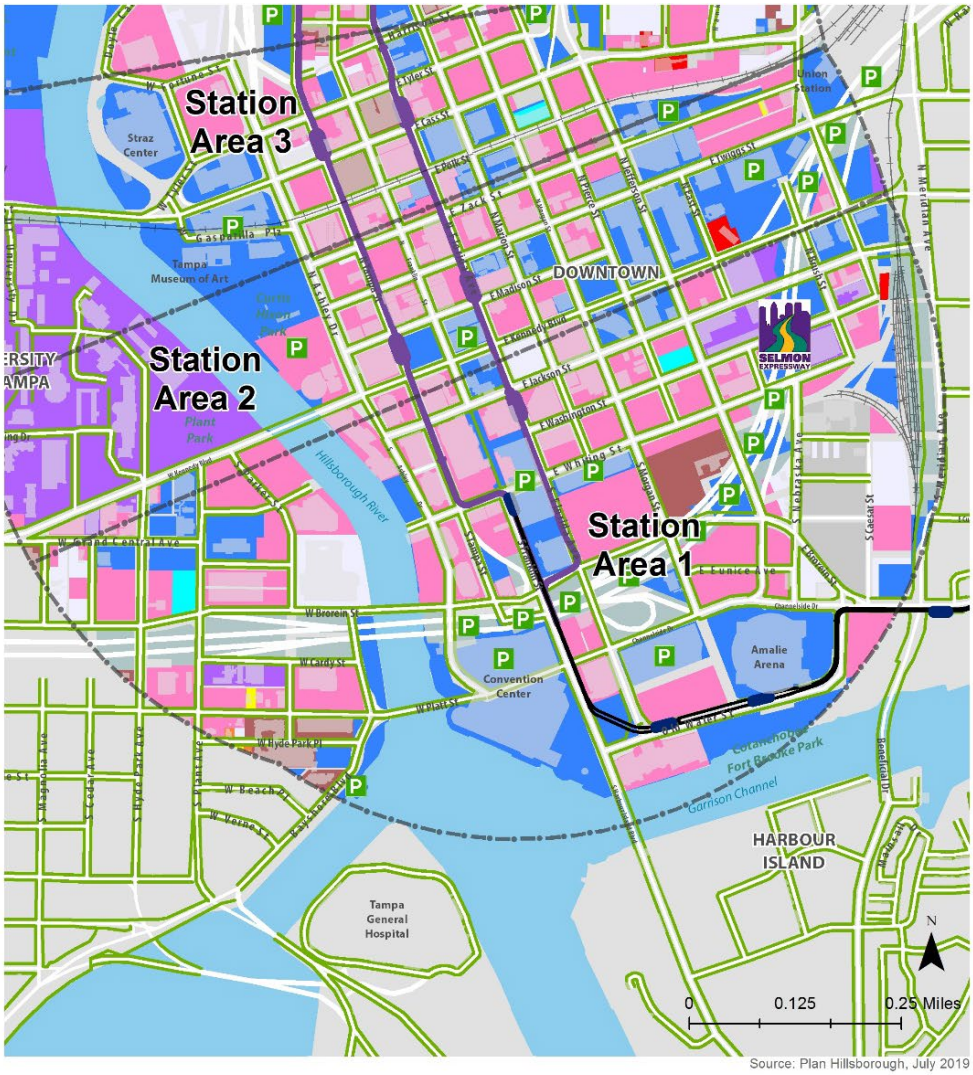
InVision: Tampa Streetcar | City of Tampa

- *Extension Station Areas - Half Mile Buffer*
- Existing Stop Location
- Existing Alignment
- Proposed Stop Location
- Preferred Extension Alignment
- SINGLE FAMILY / MOBILE HOME
- TWO FAMILY
- MULTI-FAMILY
- VACANT
- PUBLIC / QUASIPUBLIC / INSTITUTIONS
- PUBLIC COMMUNICATIONS / UTILITIES
- RIGHT OF WAY
- EDUCATIONAL
- HEAVY COMMERCIAL
- LIGHT COMMERCIAL
- HEAVY INDUSTRIAL
- LIGHT INDUSTRIAL

Existing Land Use	
Information Requested	Documentation

Existing station area development character

Figure 12. Existing Land Use, Station Area 1



Source: Plan Hillsborough, July 2019

Existing Land Use

InVision: Tampa Streetcar | City of Tampa

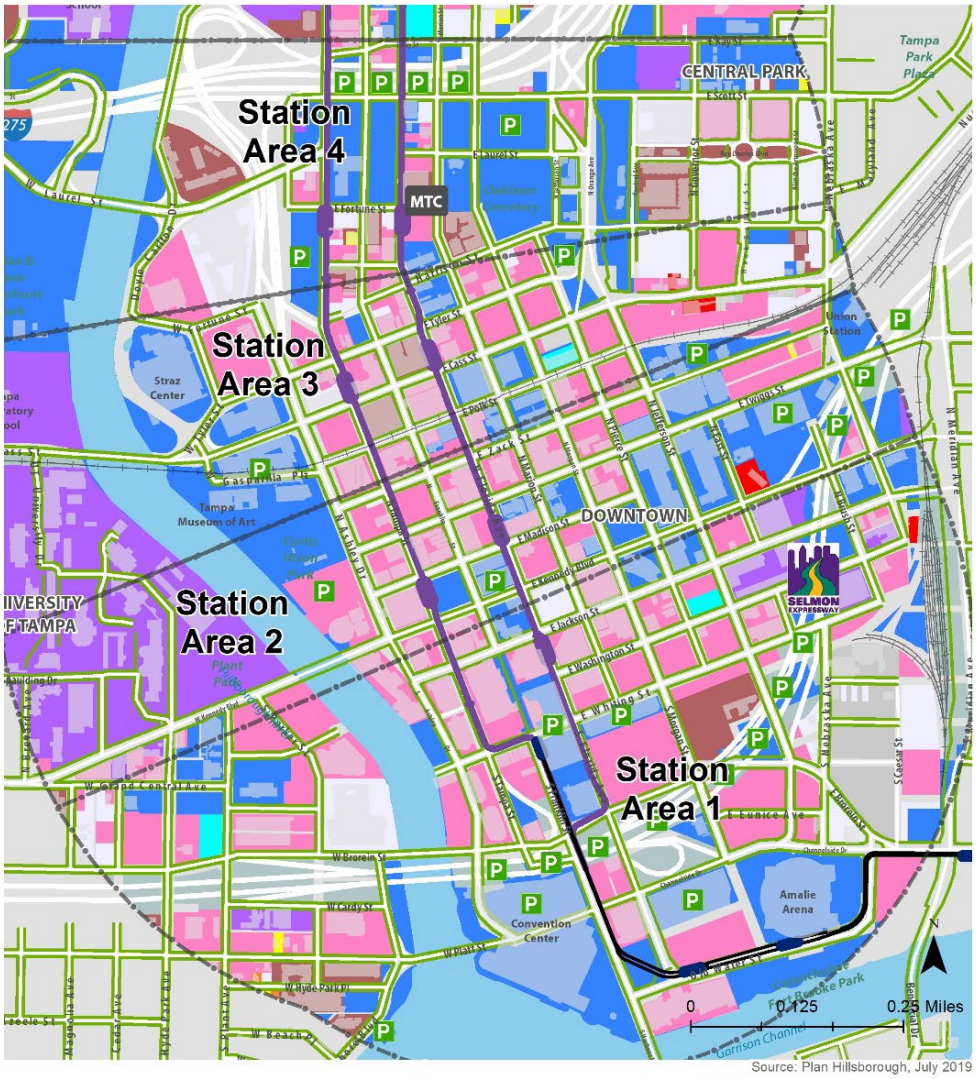
Extention Station Areas - Half Mile Buffer
Existing Stop Locations
Existing Alignment
Proposed Stop Locations
Preferred Extension Alignment
Parking Garages and Lots
Sidewalk
SINGLE FAMILY / MOBILE HOME
TWO FAMILY
MULTI-FAMILY
VACANT
PUBLIC / QUASIPUBLIC / INSTITUTIONS
PUBLIC COMMUNICATIONS / UTILITIES
RIGHT OF WAY
EDUCATIONAL
HEAVY COMMERCIAL
LIGHT COMMERCIAL
HEAVY INDUSTRIAL
LIGHT INDUSTRIAL

Existing Land Use	
Information Requested	Documentation
Existing station area development character	

Figure 13. Station Area 1 – Jackson & Florida, Looking North

Existing Land Use	
Information Requested	Documentation
Existing station area development character	

Figure 14. Existing Land Use, Station Area 2



Source: Plan Hillsborough, July 2019

Existing Land Use

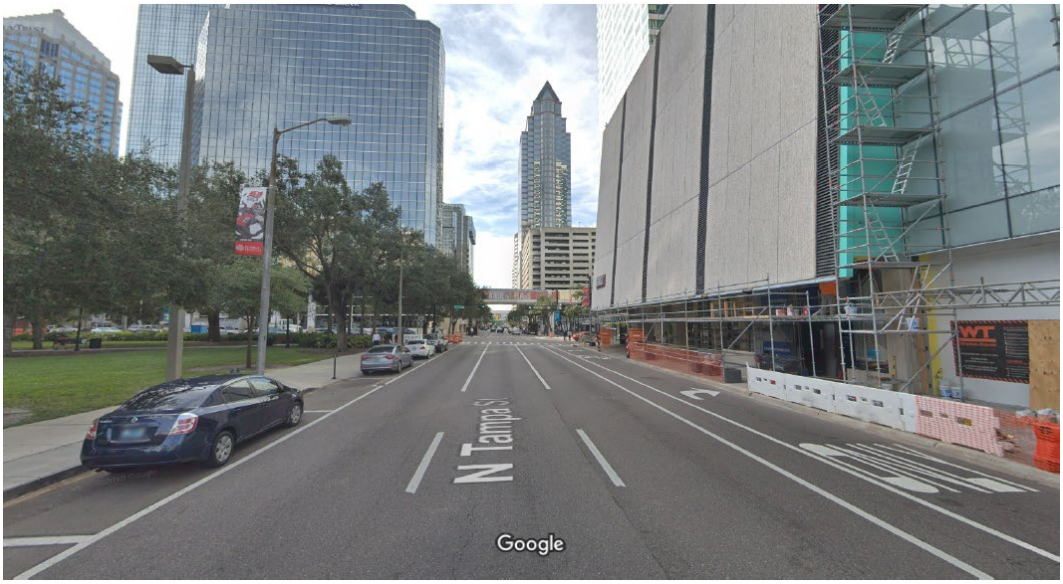
InVision: Tampa Streetcar | City of Tampa

- Extension Station Areas - Half Mile Buffer
- Existing Stop Locations
- Existing Alignment
- Proposed Stop Locations
- Preferred Extension Alignment
- Parking Garages and Lots
- Sidewalk
- SINGLE FAMILY / MOBILE HOME
- TWO FAMILY
- MULTI-FAMILY
- VACANT
- PUBLIC / QUASIPUBLIC / INSTITUTIONS
- PUBLIC COMMUNICATIONS / UTILITIES
- RIGHT OF WAY
- EDUCATIONAL
- HEAVY COMMERCIAL
- LIGHT COMMERCIAL
- HEAVY INDUSTRIAL
- LIGHT INDUSTRIAL

Existing Land Use	
Information Requested	Documentation
Existing station area development character	

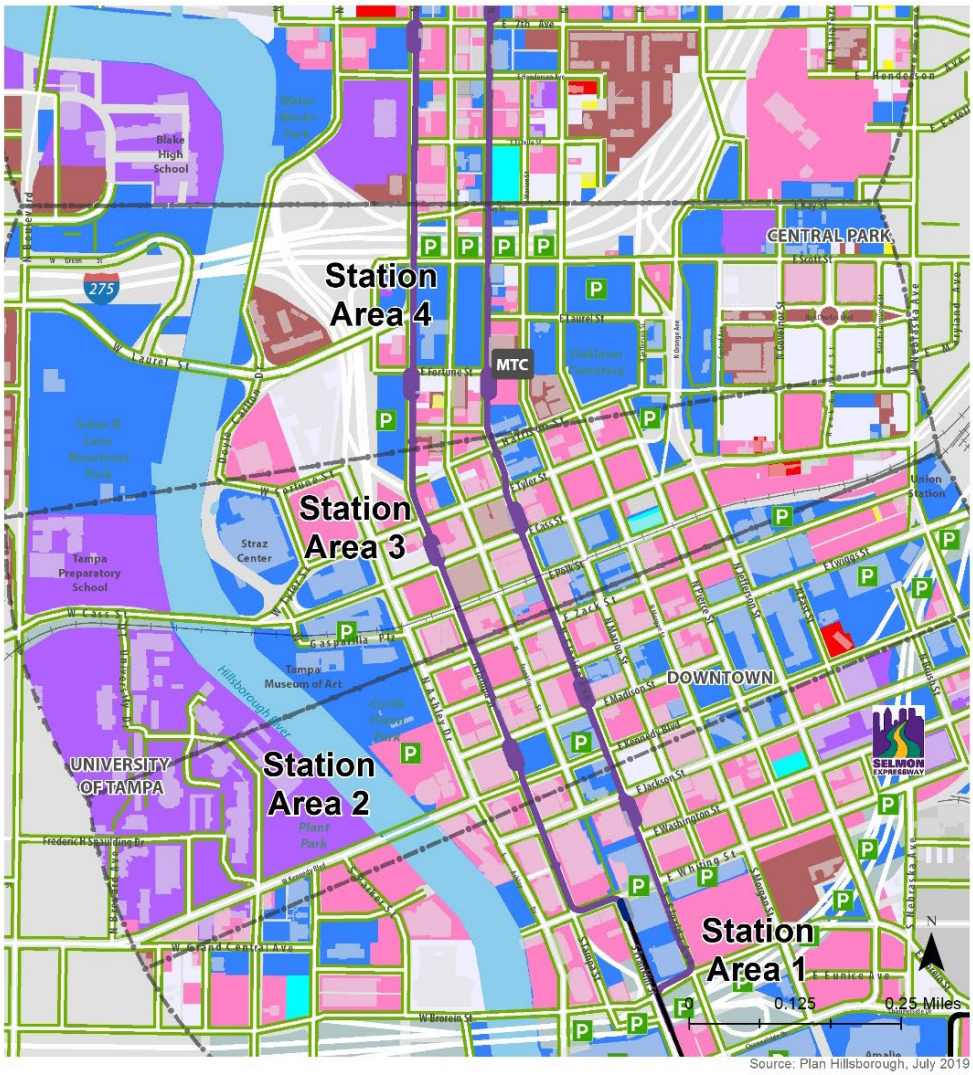
Figure 15. Station Area 2 – Madison & Florida Ave, Looking North

Figure 16. Station Are 2 - Madison & Tampa, Looking South



Existing Land Use	
Information Requested	Documentation
Existing station area development character	

Figure 17. Existing Land Use, Station Area 3



Existing Land Use

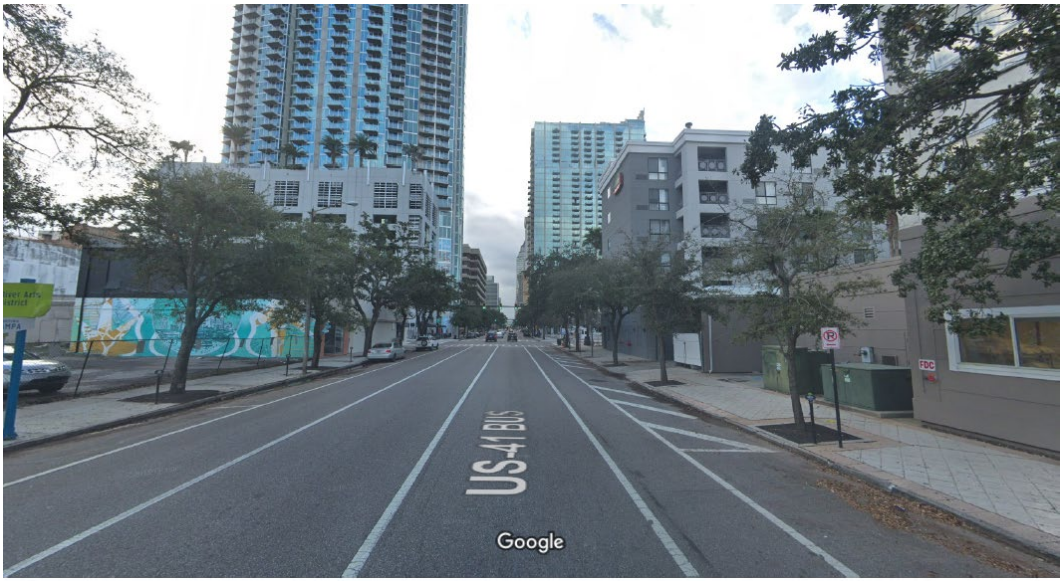
InVision: Tampa Streetcar | City of Tampa

- Extension Station Areas - Half Mile Buffer
- Existing Stop Locations
- Existing Alignment
- Proposed Stop Locations
- Preferred Extension Alignment
- Parking Garages and Lots
- Sidewalk
- SINGLE FAMILY / MOBILE HOME
- TWO FAMILY
- MULTI-FAMILY
- VACANT
- PUBLIC / QUASIPUBLIC / INSTITUTIONS
- PUBLIC COMMUNICATIONS / UTILITIES
- RIGHT OF WAY
- EDUCATIONAL
- HEAVY COMMERCIAL
- LIGHT COMMERCIAL
- HEAVY INDUSTRIAL
- LIGHT INDUSTRIAL

Existing Land Use	
Information Requested	Documentation
Existing station area development character	

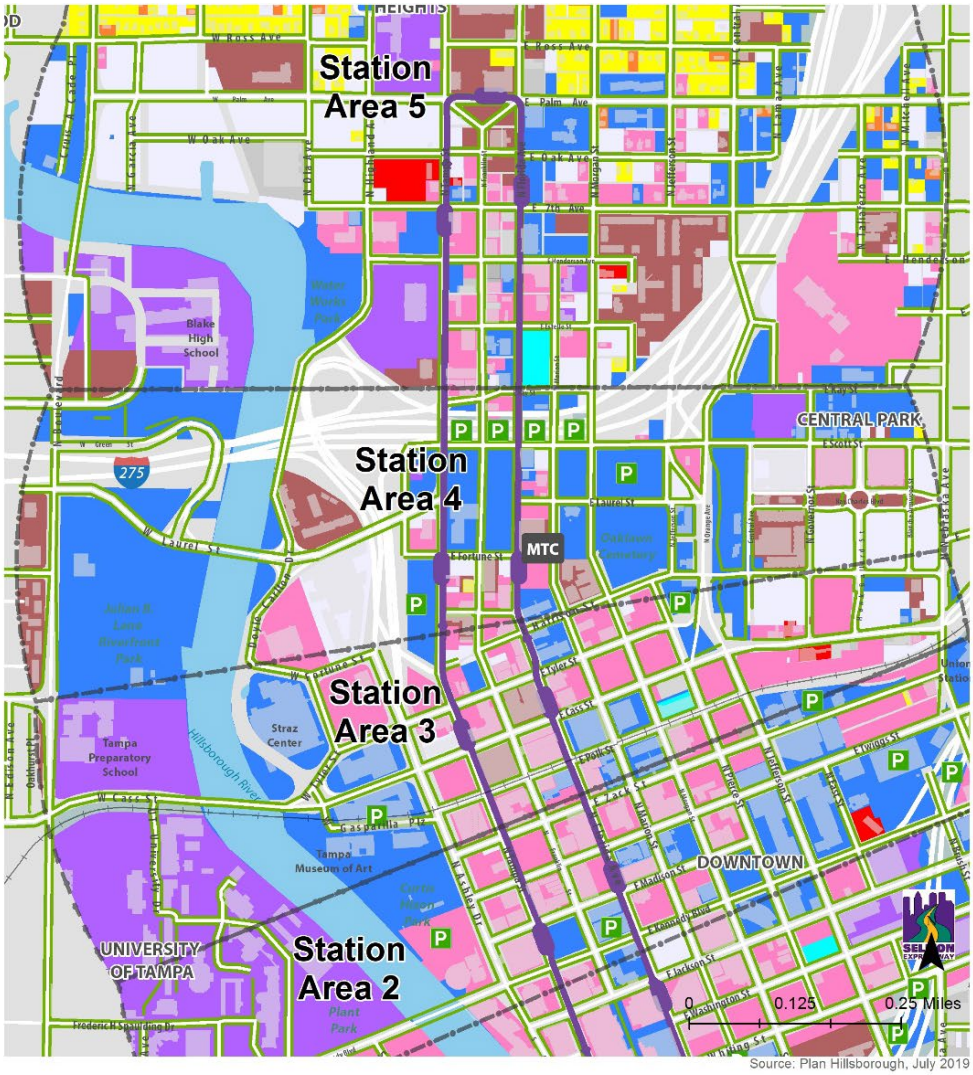
Figure 18. Station Area 3 - Tyler & Florida, Looking North

Figure 19. Station Area 3 - Tyler & Tampa, Looking South



Existing Land Use	
Information Requested	Documentation
Existing station area development character	

Figure 20. Existing Land Use, Station Area 4



Source: Plan Hillsborough, July 2019

Existing Land Use

InVision: Tampa Streetcar | City of Tampa

Extension Station Areas - Half Mile Buffer
Existing Stop Locations
Existing Alignment
Proposed Stop Locations
Preferred Extension Alignment
Parking Garages and Lots
Sidewalk
SINGLE FAMILY / MOBILE HOME
TWO FAMILY
MULTI-FAMILY
VACANT
PUBLIC / QUASIPUBLIC / INSTITUTIONS
PUBLIC COMMUNICATIONS / UTILITIES
RIGHT OF WAY
EDUCATIONAL
HEAVY COMMERCIAL
LIGHT COMMERCIAL
HEAVY INDUSTRIAL
LIGHT INDUSTRIAL

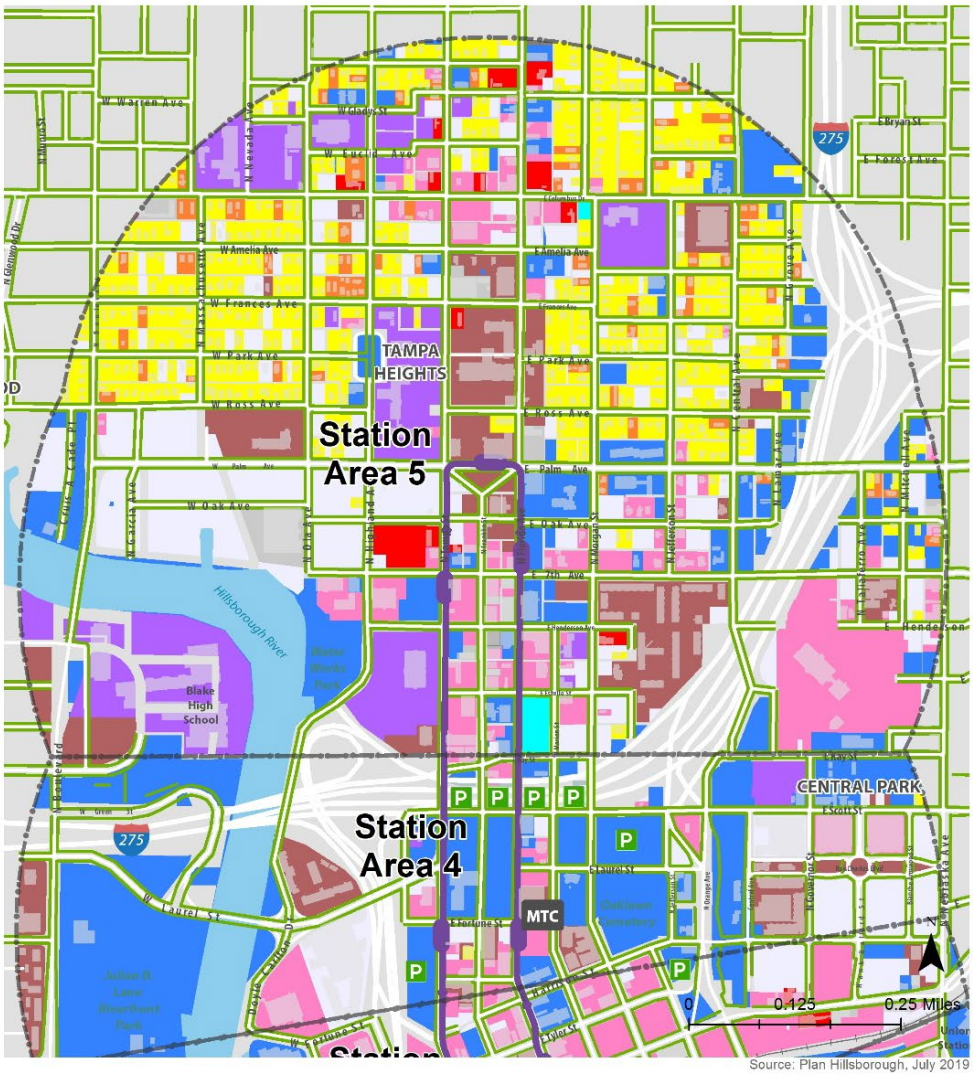
Existing Land Use	
Information Requested	Documentation
Existing station area development character	

Figure 21. Station Area 4 - Fortune & Florida, Looking North

Figure 22. Station Area 4 - Fortune & Tampa, Looking South

Existing Land Use	
Information Requested	Documentation
Existing station area development character	

Figure 23. Existing Land Use, Station Area 5



Existing Land Use	
Information Requested	Documentation
Existing station area development character	

Figure 24. Station Area 5 - 7th & Florida, Looking North

Figure 25. Station Area 5 - Palm, Looking West

Existing Land Use	
Information Requested	Documentation
Existing station area development character	

Figure 26. Station Area 5 - 7th & Tampa, Looking South

Existing Land Use	
Information Requested	Documentation

Existing Station Area Pedestrian Facilities, Including Access for Persons with Disabilities

The existing street pattern in the extension station areas is organized as a walkable grid with short block dimensions and sidewalks and crosswalks available throughout. The walkable grid pattern facilitates a pedestrian-friendly environment by enabling direct routes and easy wayfinding to destinations throughout the corridor and station areas. Sidewalks exist on both sides of the street along the Tampa Historic Streetcar extension corridor and range in width from 4 to 8 feet (**Figure 27**). All intersections along the extension corridor are signalized and include pedestrian crosswalks and signage on all four legs. Within the Downtown Core, along the extension corridor, the pedestrian crossing signals utilize Leading Pedestrian Intervals (LPIs). LPIs give pedestrians an advance start before the concurrent green traffic signal to increase pedestrian visibility and safety at intersections and in crosswalks.

Figure 27. Example of Curb Ramps Along Extension Corridor

Existing Land Use	
Information Requested	Documentation

Existing Station Area Pedestrian Facilities, Including Access for Persons with Disabilities

The Tampa Riverwalk, a 2.4-mile waterside walkway, runs alongside the Hillsborough River throughout all station areas (**Figure 28**). The Riverwalk connects Downtown Tampa to its surrounding neighborhoods such as the West River District, Tampa Heights, and the Channel District. The Riverwalk provides a safe venue for biking and walking through and within Downtown Tampa and has been designed and built to accommodate all users. In 2018, the Riverwalk was voted one of America's Great Places by the American Planning Association.

Figure 28. The Tampa Riverwalk

The City of Tampa continually evaluates and improves their service, facilities, programs and public rights-of-way to ensure accessibility. The City of Tampa's *Self-Evaluation and Transition Plan* complies with the Americans with Disabilities Act (ADA) of 1990. Within the public right-of-way, facilities such as sidewalks, street, curb ramps, street furnishings, pedestrian signals, and transit stops are evaluated and improved to provide access for persons with disabilities. The *Self-Evaluation and Transition Plan* was recently updated in 2016.

In 2017, the City of Tampa completed the *Transportation ADA Prioritization Methodology and Framework* as a component of the Citywide *Self-Evaluation and Transition Plan*. The City has an ADA Coordinator to facilitate

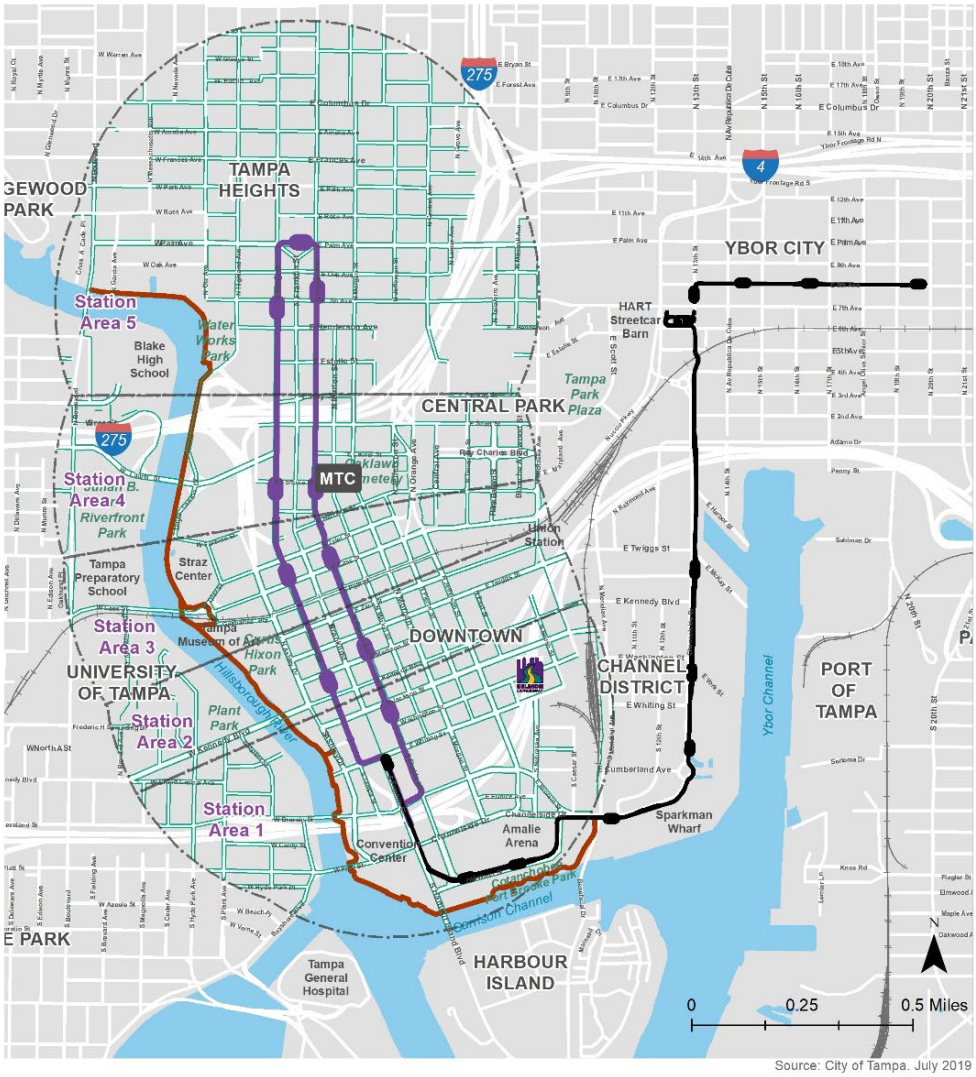
Existing Land Use	
Information Requested	Documentation
Existing Station Area Pedestrian Facilities, Including Access for Persons with Disabilities	

compliance efforts under Title II of the Americans with Disabilities Act (ADA), ADA Amendments and Section 504 of the Rehabilitation Act.

Citywide ADA improvements and sidewalk construction projects are included in the adopted 2019 *Capital Improvement Plan Budget,* under Transportation and Stormwater services. The Transportation and Stormwater Services Department maintains an ongoing initiative to "develop a comprehensive resurfacing, rehabilitation, and restoration approach to pavement management to ensure appropriate inclusion of Americans with Disabilities Act (ADA) sidewalk, stormwater, signing, pavement markings, and signalization upgrades." Similarly, as a Capital Improvement Plan project, the Tampa Streetcar will incorporate ADA-compliant pedestrian facilities designs.

Existing Land Use	
Information Requested	Documentation
Existing Station Area Pedestrian Facilities, Including Access for Persons with Disabilities	

Figure 29. Extension Station Area Pedestrian Facilities



Station Area Pedestrian Facilities

InVision: Tampa Streetcar | City of Tampa

- Extension Station Areas - Half Mile Buffer
- Existing Stop Locations
- Existing Alignment
- Proposed Stop Locations
- Preferred Extension Alignment
- Station Area Sidewalks
- Riverwalk

Existing Land Use	
Information Requested	Documentation
Existing Corridor & Station Area Parking Supply	

Station area parking is available on-street and in garages and surface lots. On-street parking is maintained and operated by the City of Tampa. Off-street parking, both surface lots and structured parking, are operated and maintained by the City of Tampa and private parking operators. The City of Tampa operates approximately 40 percent of parking in the Downtown Core. The remaining 60 percent is operated by private entities.

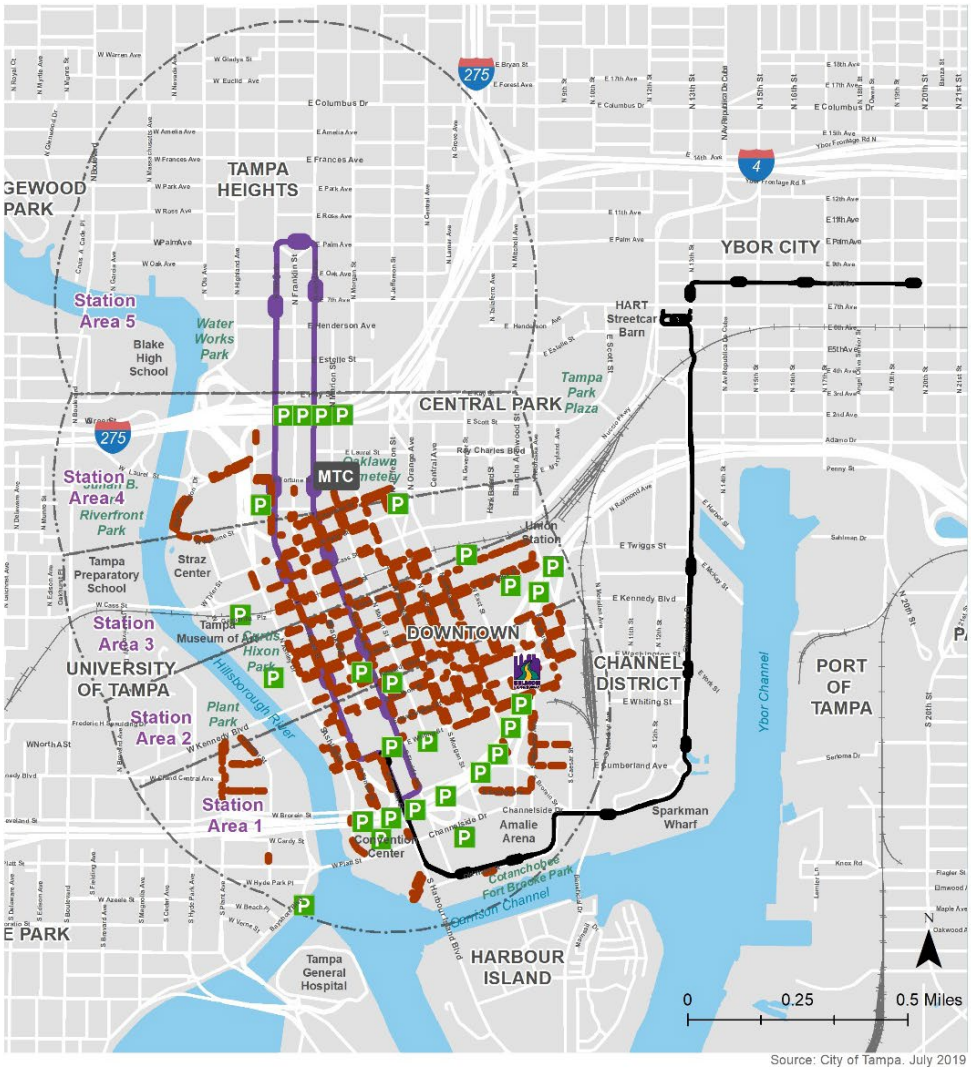
In the CBD, there are approximately 10,336 parking spaces and 55,985 employees (or 0.19 parking spaces per employee). In the five station areas, there are 10,137 parking spaces and 48,465 employees, equating to 0.21 spaces per employee (**Figure 30**).

In the CBD, the daily price for public parking facilities ranges between $7.15 and $9.65. The monthly price for public parking ranges from $19.00 to $139.00 per month. For private parking facilities, daily price for parking ranges from $5.00 to $20.00. The monthly price for private parking facilities ranges from $47.87 to $197.90. Monthly parking permits in the CBD are in high demand for public and private facilities. The percent of wait-list customers to permit sales capacity ranges between 20 percent to 371 percent dep ending on the parking facility location.

Existing Land Use	
Information Requested	Documentation

Existing Corridor & Station Area Parking Supply

Figure 30. Extension Station Area Parking Supply



Source: City of Tampa. July 2019

Station Area Parking Supply

InVision: Tampa Streetcar | City of Tampa

- Extension Station Areas - Half Mile Buffer
- Existing Stop Locations
- Existing Alignment
- Proposed Stop Locations
- Preferred Extension Alignment
- Parking Lots And Garages
- On-Street Parking

Existing Land Use	
Information Requested	Documentation

Existing Affordable Housing

Successful public transportation serves transit dependent populations by providing daily mobility options for their travel needs to work, school, shopping destinations, medical facilities, and recreational areas. These transit dependent populations also rely on access to affordable housing. Hillsborough County and the City of Tampa are currently implementing plans and policies to preserve and increase affordable housing in the region and extension station areas. As seen in **Table 3**, currently there are 1,640 legally binding affordable housing units within the five extension station areas.

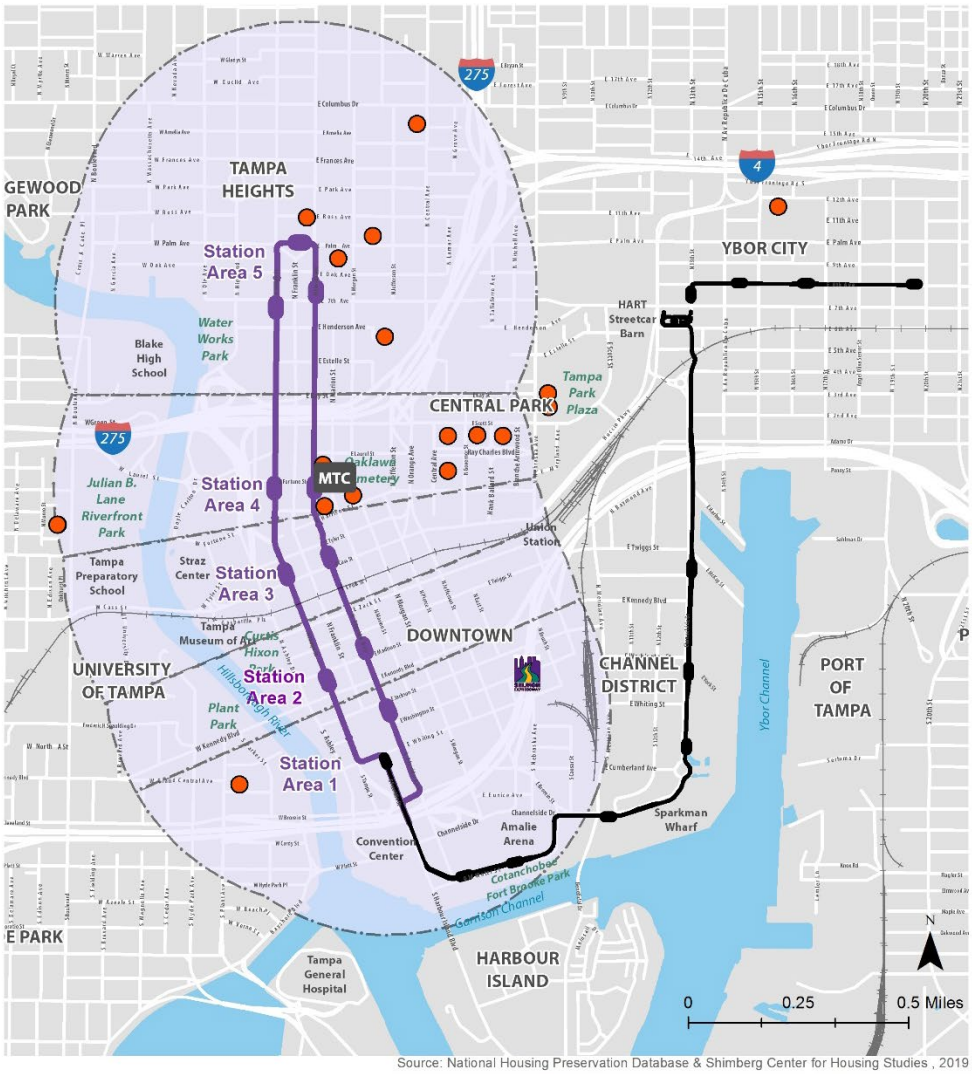
Table 3. Legally Binding Affordable Housing Units by County and Station Area, 2019

	Total Housing Units (all Types) (2017 ACS 5 Year Estimates)	Affordable Units (2019)
Hillsborough County		
	563,638	23,271
Extension Station Areas (1/2 mile)		
1	1,079	240
2	365	-
3	411	-
4	546	1,044
Note: ENCORE! Affordable Housing development (in Station Area 4) opened after 2017 data.		
5	1,525	362
TOTAL	**3,926**	**1,646**

Source: National Housing Preservation Database and the Shimberg Center for Housing Studies, Aug 2019

Existing Land Use	
Information Requested	Documentation
Existing Affordable Housing	

Figure 31. Legally Binding Affordable Housing Units in Station Areas



Source: National Housing Preservation Database & Shimberg Center for Housing Studies , 2019

Legally Binding Affordable Housing Units, 2019

InVision: Tampa Streetcar | City of Tampa

- Extension Station Areas - Half Mile Buffer
- Proposed Stop Locations
- Preferred Extension Alignment
- Existing Alignment
- Existing Stop Locations
- Affordable Housing Location

Quantitative Land Use Template

SMALL STARTS LAND USE TEMPLATE (QUANTITATIVE DATA)			
PROJECT NAME:			
Population, Employment and Housing – Metropolitan Area, CBD, and Corridor			
Geographic Area Item	**Current Year ()**	**Horizon ()**	**Growth (%)**
Metropolitan Area			
Total Population	3,091,399		-
Total Employment	1,454,667		-
Central Business District [see footnote 1]			
Total Employment	55,985		-
Employment – Percent of Metropolitan Area	3.8%	-	
CBD Land Area (sq. mi.)	1.8	-	
Employment Density (e.g., jobs per sq. mi.)	31,934.3	-	
Corridor			
Total Population	10,802		-
Total Employment	53,419		-
Population – Percent of Metropolitan Area	0%	-	
Employment – Percent of Metropolitan Area	4%	-	
Corridor Land Area (sq. mi.)	2.3	-	
Population Density (persons per sq. mi.)	4,778.3	-	
Employment Density (jobs per sq. mi.)	23,629.9	-	
Total - All Counties in which Project Stations are Located			
Housing Units - All Types	563,638		
Housing Units - Legally Binding Affordability Restricted	23,271		
Number of Counties	1		
Total - All Station Areas (1/2-mile radius) [See footnote 2]			
Housing Units - All Types	3,926		
Housing Units - Legally Binding Affordability Restricted	1,646		
Population	8,426	-	-
Employment at New Project Stations	48,465	-	-
Employment at Existing Stations Along the Line [see footnote 3]	22,333		
Land Area (square miles)	2.0	-	
Housing Unit Density (units per sq. mi.) - All Types	1,935.7		
Population Density (persons per sq. mi.)	4,154.4	-	
Employment Density (persons per sq. mi.)	23,895.7	-	
Station-Area Share of Legally Binding Affordability Restricted Housing Units	42%		
Share of Housing Units that are Legally Binding Affordability Restricted in the Corridor compared to Share in the Counties			
Proportion in All Station Areas	42%		
Proportion in All Counties in which Project Stations are Located	4%		
Ratio, Proportion in All Station Areas to Proportion in All Counties in which Project Stations are Located	10.15		
Housing Totals for Each County in which Project Stations are Located			
	Current Year		
County 1 **County Name:**	Hillsborough		
Housing Units - All Types [See footnote 4]	563,638		
Housing Units - Legally Binding Affordability Restricted	23,271		
County 2 **County Name:**			
Housing Units - All Types			
Housing Units - Legally Binding Affordability Restricted			
County 3 **County Name:**			
Housing Units - All Types			
Housing Units - Legally Binding Affordability Restricted			
County 4 **County Name:**			
Housing Units - All Types			
Housing Units - Legally Binding Affordability Restricted			
County 5 **County Name:**			
Housing Units - All Types			
Housing Units - Legally Binding Affordability Restricted			

SMALL STARTS LAND USE TEMPLATE (QUANTITATIVE DATA) page 2

Housing, Population and Employment for Each Station Area That is Part of the Proposed Project			
	Current Year	Horizon	Growth (%)
Station Area 1 [See footnote 5] **Station Name:**	**Station Area 1**		
Housing Units - All Types	1,079		
Population	2,074		-
Employment	20,786		-
Land Area (square miles)	0.5	-	
Housing Unit Density (units per sq. mi.) - All Types	2,244		
Population Density (persons per sq. mi.)	4,313	-	
Employment Density (persons per sq. mi.)	43,223	-	
Station Area 2 **Station Name:**	**Station Area 2**		
Housing Units - All Types	365		
Population	1,175		-
Employment	13,739		-
Land Area (square miles)	0.2	-	
Housing Unit Density (units per sq. mi.) - All Types	1,658		
Population Density (persons per sq. mi.)	5,337	-	
Employment Density (persons per sq. mi.)	62,402	-	
Station Area 3 **Station Name:**	**Station Area 3**		
Housing Units - All Types	411		
Population	1,054		-
Employment	7,064		-
Land Area (square miles)	0.3	-	
Housing Unit Density (units per sq. mi.) - All Types	1,643		
Population Density (persons per sq. mi.)	4,212	-	
Employment Density (persons per sq. mi.)	28,231	-	
Station Area 4 **Station Name:**	**Station Area 4**		
Housing Units - All Types	546		
Population	945		-
Employment	3,146		-
Land Area (square miles)	0.3	-	
Housing Unit Density (units per sq. mi.) - All Types	1,812		
Population Density (persons per sq. mi.)	3,136	-	
Employment Density (persons per sq. mi.)	10,441	-	
Station Area 5 **Station Name:**	**Station Area 5**		
Housing Units - All Types	1,525		
Population	3,178		-
Employment	3,730		-
Land Area (square miles)	0.8	-	
Housing Unit Density (units per sq. mi.) - All Types	1,966		
Population Density (persons per sq. mi.)	4,097	-	
Employment Density (persons per sq. mi.)	4,809	-	
Station Area 6 **Station Name:**			
Housing Units - All Types			
Population			-
Employment			-
Land Area (square miles)		-	
Housing Unit Density (units per sq. mi.) - All Types	0		
Population Density (persons per sq. mi.)	0	-	
Employment Density (persons per sq. mi.)	0	-	
Station Area 7 **Station Name:**			
Housing Units - All Types			
Population			-
Employment			-
Land Area (square miles)		-	
Housing Unit Density (units per sq. mi.) - All Types	0		
Population Density (persons per sq. mi.)	0	-	
Employment Density (persons per sq. mi.)	0	-	

Data Sources

Topic	Source
Metropolitan Area	
Total Population	Census, Metropolitan Statistical Area, 2017 Population Estimates
Total Employment	Bureau of Labor Statistics, June 2017
Central Business District	
Total Employment	TAZ, 2017 growth rate (per TAZ Activity Center: Tampa Downtown) *GIS Statistics Sum*
CBD Land Area (sq. mi.)	TAZ Activity Center: Tampa Downtown *GIS Statistics Sum*
Corridor	
Total Population	Census, Total Population, 2013-2017 ACS 5-year Estimates (adjusted proportionally) via Cheryl
Total Employment	TAZ , 2017 growth rate (adjusted proportionally)
Corridor Land Area (sq. mi.)	Census, Corridor Land Area, 2013-2017 ACS 5-year Estimates (adjusted proportionally)
Total - All Station Areas (1/2 mile radius)	
Housing Units - Legally Binding Affordability Restricted	National Housing Preservation Database & Shimberg Center for Housing Studies
Employment at Existing Stations Along the Line	
County 1	
Housing Units - All types	Census, Housing Units, 2013-2017 ACS 5-Year Estimates (Hillsborough County)
Housing Units - Legally Binding Affordability Restricted	National Housing Preservation Database & Shimberg Center for Housing Studies
Station Area 1 - 5	
Housing Units - All types	Census, Housing Units, 2013-2017 ACS 5-Year Estimates (Hillsborough County)
Population	Census, Housing Units, 2013-2017 ACS 5-Year Estimates (Hillsborough County)
Employment	TAZ , 2017 growth rate (adjusted proportionally)
Land Area (sq mi)	Census, Housing Units, 2013-2017 ACS 5-Year Estimates (Hillsborough County)

INVISION:
TAMPA STREETCAR
TRANSFORMING TAMPA'S TRANSIT

INVISION TAMPA STREETCAR EXTENSION PROJECT

SMALL STARTS RATING
ECONOMIC DEVELOPMENT REPORT

DRAFT – October 2019

Prepared by:

HDR, Inc.

DRAFT – October 2019

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PROJECT OVERVIEW

The City of Tampa is completing project development activities for the InVision Tampa Streetcar project. These activities are designed to identify improvements to Tampa Historic Streetcar System to better serve the mobility needs of residents, workers, visitors, and students in Downtown Tampa, Ybor City, Channel District, and surrounding urban neighborhoods. The project is being led by the City of Tampa, in partnership with the Florida Department of Transportation (FDOT) and the Hillsborough Area Regional Transit Authority (HART). Project activities include intensive public engagement and close coordination with other local and regional transit initiatives, including the Tampa Bay Area Regional Transportation Authority (TBARTA) Regional Transit Feasibility Plan.

Project activities have proceeded under two phases. During the first phase, the project team completed assessments of land use and transportation conditions in the study area, prepared a purpose and need statement, and evaluated multiple alignments for the extension of the system through Downtown Tampa and surrounding urban neighborhoods. These efforts, including a series of general public and stakeholder meetings and workshops held in the spring and fall of 2017, resulted in the identification of two north/south-oriented alignments as the best performing options for advancement into the second phase of the study. The first phase also resulted in a recommendation to improve service on the existing streetcar alignment between Ybor City, Channel District, Water Street, and the Tampa Convention Center. Project objectives prepared during the first phase call for the full alignment—the existing system plus the extension—to be designed to provide a "one seat" trip, maximize exclusive transit guideway operations, minimize community and environmental impacts, and offer high levels of service with full-day and evening operations and 10- to 15-minute service frequency.

During the second phase of the study, the two north/south-oriented alignments were evaluated in greater detail and a final preferred alignment was selected. Additional analyses were conducted to determine preferences for vehicle technology, guideway configurations, stop locations and design concepts, and modernization improvements along the existing system, including improvements to the existing vehicle maintenance facility to accommodate modern streetcar vehicles. For more detailed information on the alignment option evaluation and selection process, refer to the full report—Definition & Evaluation of Alignment Options Report—on the City of Tampa's InVision: Tampa Streetcar project website at www.tampagov.net/streetcar.

The preferred alignment serves as the basis for the assessment of environmental impacts, preparation of ridership and cost estimates, and the preparation of project funding and implementation plan.

Current Tampa Historic Streetcar System

The current Tampa Historic Streetcar System is a 2.7-mile-long, fixed guideway transit service connecting destinations in Downtown Tampa, Channel District, and Ybor City. Since the start of revenue service on Phase I (Ybor City to Convention Center) in October 2002 and opening of the Phase II-a (Convention Center to Whiting Street) in December 2010, the system has provided connections between Ybor City and key visitor destinations and event venues. The system currently connects the Tampa Aquarium, Tampa Bay History Center, Amalie Arena, and the Tampa Convention Center.

Between 2010-2018, ridership on the existing system has been lower than anticipated due to several factors, including limited hours of operation, low service frequency, and lack of connectivity to important transit trip attractors and generators in the Downtown Core, including commercial and governmental offices, multifamily development, the Tampa Convention Center, the Marion Transit Center, and cultural and entertainment venues.

In October 2018, supported by a three-year FDOT grant, HART initiated service improvements that have resulted in significant increases in ridership. These improvements, which include fare-free service, longer operation hours, and greater service frequency, have attracted more than 180,000 additional riders in the first 4 months of implementation, nearly tripling ridership over the same period the previous year.

With additional improvements, introduction of accessible, higher capacity vehicles, and extension through the Downtown Core, the service has the potential to become an attractive transportation option for a broader cross-section of downtown residents, workers, students, and visitors, as well as serve as a catalyst for reinvestment and economic development.

Purpose & Need

A purpose and need statement was prepared during the first phase of the project and served as the basis for defining and evaluating modernization and alignment options. The purpose and need statement, shaped by extensive public and stakeholder input, identifies the following problems and opportunities to be addressed through the introduction of enhanced transit service in the study area.

Connect Downtown Centers

Tampa's Downtown has undergone a dramatic transformation in the past decade. The Downtown Core, the Channel District, and north Harbour Island are now home to nearly 10,000 residents. Another 40,000 people reside in revitalizing districts surrounding the core, including Central Park, Ybor City, North Hyde Park, Grand Central, and Tampa Heights. The number of employees in the study area has increased to around 100,000, with an additional 34,000 projected to be added between the years 2020 and 2040. But as activity levels have increased, travel between downtown destinations has become increasingly time-consuming, costly, and inconvenient. Single occupancy vehicle travel is difficult given traffic congestion, diminished parking availability, and increased parking costs. Distance and physical barriers make walking an unattractive option for all but very short trips, particularly during hot or inclement weather. And although the existing streetcar connects some key destinations and other modes offer options, many important destinations are beyond walking distance of the system and the capacity and range of existing transit services is limited.

Serve Diverse Travel Markets

As the traditional center of employment, governmental services, culture and history, and entertainment, Downtown Tampa serves a broad range of users from across the Tampa Bay region. Downtown residents, workers, and frequent visitors travel to and within the Downtown Core to conduct business, access public services, participate in educational programs, and enjoy sports, cultural, and entertainment events. These users place a strong and consistent demand on existing transportation, transit, and parking resources. And as these numbers increase—population and employment alone are projected to increase by 65,000 in the study area between 2020

and 2040—existing facilities will come under increasing stress. The introduction of a high capacity, reliable, and consistent circulator service could meet increased demands while also more efficiently using existing roadway capacity and street space. The service could meet the demands of transit-dependent populations in downtown-adjacent neighborhoods, as well as meet the needs of downtown's growing residential population, event and venue patrons, conventioneers, and downtown workers.

Improve First/ Last Mile Service

Regional transportation modes serving Downtown Tampa have limited first/last mile mobility support options. While these services cater to a wide range of users and geographical reaches, there is no one unifying service that addresses the first/ last mile mobility needs of the large numbers of daily regional transit commuters and residents seeking seamless, local connections. An intermediate-capacity, scheduled service that allows for frequent and efficient transfers to and from regional transit modes is missing in the service area. Such a service could complement existing bike sharing, ride hailing, and limited capacity public transit services like the In-Towner and Downtowner.

Support Economic Development

Investment in large-scale, multi-block, mixed-use projects, including Water Street, The Heights, West River, and Port Tampa Bay, will have a dramatic impact on the future of the City and region. These projects, representing several billion dollars of private investment, will reshape large sections of downtown and the surrounding neighborhoods. These projects, along with the continued revitalization of Ybor City, redevelopment and infill in North Hyde Park and Central Park, and the build out of the Channel District and ENCORE!, will create new travel demand in and between locations not currently well-served by convenient, high capacity transit and shared mobility services. Given the spatial and physical barriers to walking, existing travel within and between the Downtown Core and emerging development areas is time-consuming and inconvenient. A core transit service linking planned population and employment concentrations will help bridge the distances across downtown, and connect downtown adjacent subdistricts more directly to destinations, amenities, and activities focused in the Downtown Core.

Expand Sustainable Transportation Options

Without improved local transit options, Downtown Tampa's long term sustainability and competitiveness will be diminished. Several factors limit the potential to improve access and mobility by automobile travel—downtown's location on a peninsula creates natural access and mobility challenges, roadway and parking capacity is limited, and the distance between regional transit hubs, subdistricts, and destinations makes pedestrian travel an impractical alternative for mid-range local trips. A core transit service with the potential to serve internal trips effectively, bypass peak hour and event-related congestion, integrate with on-demand and private ride-hailing services, and leverage the presence of regional transit connections and parking resources has the potential to support City goals for a more sustainable, livable, and energy-efficient future.

Preferred Alternative Description

The preferred alternative for the project consists of the following project elements:

1) replacement of the existing replica streetcar vehicles with modern streetcar vehicles;
2) construction of a new 1.3-mile fixed guideway with overhead power within existing rights-of-way from the western terminus of the existing system through the core of Downtown Tampa to Tampa Heights;
3) construction of stops along the extension guideway;
4) modifications to the existing 2.7-mile alignment guideway, power system, and stops to support modern streetcar operations; and
5) modifications to the existing vehicle maintenance and storage facility to serve new vehicles.

A map indicating the location of the preferred alternative is included as **Figure 1**. A review of elements of the preferred alternative is provided below.

Vehicle Technology

Modern streetcar vehicles were selected as the preferred vehicle technology for operations along the existing system and extension. The modern streetcar provides the highest-capacity vehicle of the options considered. The configuration of the modern streetcar, with multiple, wide doors and level-boarding heights, would facilitate easy access by the greatest share of the population, including those with mobility challenges. With many portions of the route in a dedicated guideway, a modern streetcar would be able to move large numbers of people while minimizing constraints posed by traffic congestion. The modern streetcar's larger passenger capacity makes it the most efficient of the options in terms of cost per rider. In a rapidly-growing urban center like Tampa, this capacity provides the greatest degree of system flexibility for meeting mobility demands on a day-to-day basis, and over the long term.

Extension Alignment

The evaluation of alignment alternatives resulted in the selection of an extension traveling 1.3 miles north from the Downtown Core to Palm Avenue within existing rights-of-way. The proposed extension alignment is proposed as a north/south couplet paring Florida Avenue and Tampa Street. The alignment begins near the existing streetcar terminus at Whiting Street and Franklin Street. From the existing track on Franklin Street, the northbound track extension turns east at Brorein Street, then turns north at Florida Avenue to extend through the Downtown Core and Tampa Heights to Palm Avenue. At Palm Avenue, the alignment turns west and travels two blocks before turning south onto Tampa Street. The southbound alignment runs along Tampa Street to Whiting Street. At Whiting Street, the alignment turns east to link back to the existing downtown streetcar terminus at the Whiting Street Station.

Extension Guideway

The proposed expansion of the streetcar system will utilize an embedded track section. The 8-foot-wide track slab thickness will be installed within the existing pavement section where existing profile and transverse grades can be accommodated. A variable width transition area adjacent to the track slab will be utilized to minimize impacts on

existing pavement sections. A 4 foot-8½ inch standard track gauge will be maintained through the track expansion. A 14-inch thick track slab is proposed with a single mat of reinforced steel. The slab design will need to be verified with existing soil conditions and pavement design. Single 115 RE Tee Rail is proposed with a rubber boot surround and flangeway for stray current isolation. In curves with radii of less than 400 feet, a second restraining rail will be provided. Depending on communications and traction power requirements to be determined in the design, phase embedded conduit within the track slab or duct bank below the track slab may be required.

Extension Traction Power

Power to support modern streetcar operations on the extension will be delivered via an Overhead Contact System (OCS) compatible with a streetcar-mounted pantograph. Poles spaced approximately 80 feet apart on level tangent track locations with closer spacing on corners and curves will be installed to carry the OCS. Power for the extension will provided by two 750 kW traction power substations located within existing rights-of-way.

Extension Stops

To accommodate modern streetcar vehicles and allow for shared use by other transit vehicle types, stops along the extension will be designed with a 14-inch-high platform section for level, ADA-compliant streetcar boarding and a lower, 8-inch-high platform section for bus boarding. Along the existing streetcar line, stops will be retrofitted to provide a 14-inch high platform section for level, ADA-compliant streetcar boarding. The overall footprint of stops will be similar in scale to stops on the existing line, and measure approximately 10-feet-wide by 100-feet-long. New and retrofitted stops will have similar amenities, which will include canopy/covered area; seating; railings; trash receptacles; system information map; kiosk; signage; lighting and security elements; and ADA-compliant access and ramps.

For stops along the extension, one of two stop types will be constructed. One type of stop will be positioned in the parking lane to the right of the guideway. The other type will be positioned along existing sidewalks adjacent the guide way. The type of stop depends on the guideway location in the street. During the project development phase of the project, primary stop locations have been identified as well as optional locations for several stops. All stops, both primary and optional, are being evaluated for potential impacts. All primary potential stop locations are shown on **Figure 1**.

Existing Guideway Modifications

Four locations along the existing streetcar guideway will require reconstruction to accommodate the larger turning radius of a modern streetcar vehicle. Starting at the eastern end of the existing guideway, the four locations are:

- The intersection of East 8th Ave and North 13th St near Jose Marti Park in Ybor City;
- South of East 5th Street near the intersection of the streetcar and CSX tracks in Ybor City;
- Near East Cumberland Avenue at the Channelside Drive roundabout in the Channel District; and
- The intersection of Channelside Drive and Old Water Street near the Tampa Bay History Center and Amelia Arena.

To serve modern streetcar vehicles, modifications to the existing traction power system will also be required. Modifications will include upgrading the system from trolley wire to overhead contact system to accommodate modern streetcar vehicles. This change can be accomplished using the existing power sources and pole/arm systems.

Existing System Traction Power Modifications

The existing traction power system will be modified to support modern streetcar operations. Planned modifications will include placement of the existing overhead trolley wire (4/0 wire) with 350 kcmil wire and reconfiguration for use with a pantograph. This upgrade to OCS will include replacement of existing cantilevers, cross spans, and select poles and foundations. Additional power for the existing system to support modern streetcar operations will be delivered by a new 500 kW substation along the existing alignment and located within existing rights-of-way.

Existing System Stop Modifications

Each of the 11 stops along the existing streetcar line will be retrofitted to accommodate modern streetcar vehicles. Proposed stop modifications will occur with the footprint of the existing stop. The existing stops currently include a high-block boarding platform designed to accommodate the higher interior floor of replica streetcar vehicles. The existing 12-foot by 12-foot high block platforms and ramps will be removed and replaced with a new 14-inch high platform.

Existing shelters and other equipment and amenities will be removed and reinstalled or replaced in-kind. Future design phases will determine if the new concrete platform will be constructed around the existing columns or if the shelters will be removed and installed on the new platform or replaced in-kind. At all of the existing stops, the construction of new platforms will require removal of the existing concrete sidewalks, curb, and platforms, so that the new platform and ramps may be constructed.

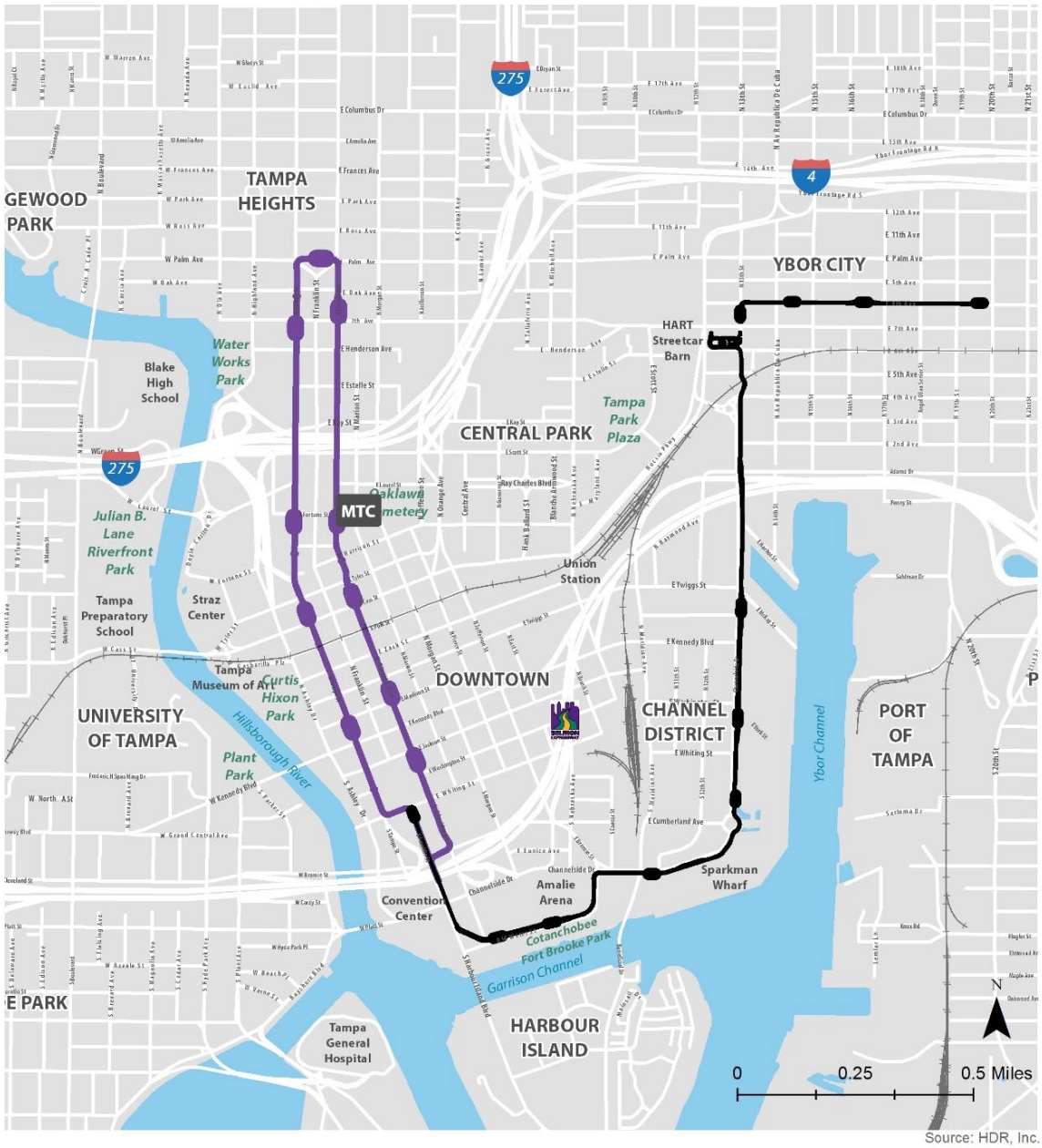
Vehicle Maintenance Facility Modifications

To accommodate the scale and number of modern streetcar vehicles required to serve the proposed system, including modernization and extension, the existing vehicle maintenance and storage facility and yard will be modified. Based on preliminary design evaluation of existing site, buildings, and yard conditions it has been determined that proposed modifications can be accomplished within the confines of the existing facility's site.

Property Acquisition

The majority of the Tampa Historic Streetcar System including modifications to the existing alignment and proposed extension, would be within the existing right-of-way. However, there are up to six locations that will require the acquisition of property for conversion to right-of-way.

Figure 1. Preferred Extension Alignment with Proposed Stop Locations



Preferred Extension Alignment

InVision: Tampa Streetcar | City of Tampa

- Proposed Stop Locations
- Preferred Extension Alignment
- Existing Alignment
- Existing Stop Locations

Economic Development	
Information Requested	Documentation
I. Transit Supportive Plans and Policies **a. Transit Supportive Corridor Policies**	
Plans and policies to increase corridor and station area development	

The City of Tampa has several adopted plans and policies that support increased corridor and station area development, as well as enhanced transit-friendly character of the station areas and Downtown Tampa. The following section gives a brief overview of these plans and policies and how they allow for increased development.

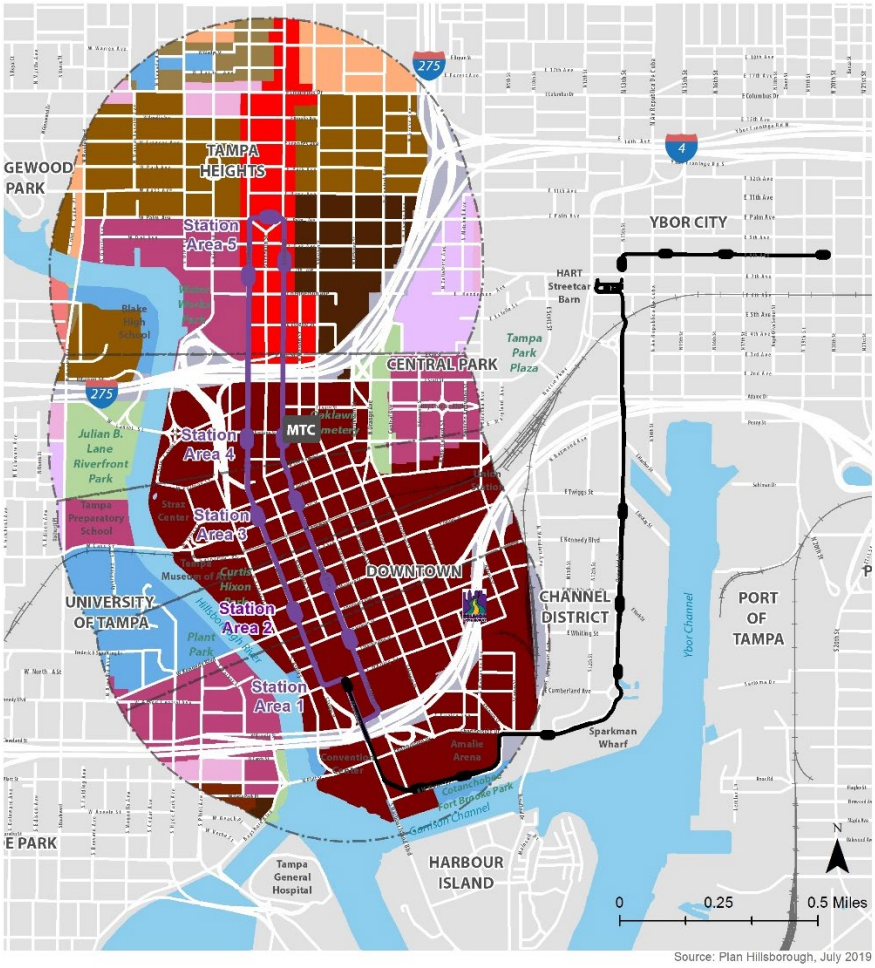
Imagine 2040: Tampa Comprehensive Plan (January 2016)

In January 2016, the City of Tampa adopted the *Imagine 2040: Tampa Comprehensive Plan* (*Comprehensive Plan*) The plan includes future land use designations for the City (**Figure 2**). Most of the land within the Tampa streetcar station areas south of I-275 is designated as Central Business District (CBD). Station areas north of I-275 are designated as Community Commercial (CC-35) and Regional Mixed-Use-100 (RMU-100). For areas designated as CBD, the dwelling units per acre (du/acre) requirements maintain the dense development of the Downtown Core without density and Floor Area Ratio (FAR) maximums. Community Commercial allows for 30 du/acre (or 35 du/acre with a density bonus) and 2.0 FAR. Regional Mixed Use-100 allows for 75 du/acre (or 100 du/acre with a density bonus) and 3.5 FAR.

Detailed descriptions of the future land use categories in the five streetcar extension station areas are provided in **Table 1**.

Economic Development	
Information Requested	Documentation
I. Transit Supportive Plans and Policies **a. Transit Supportive Corridor Policies**	
Plans and policies to increase corridor and station area development	

Figure 2. Future Land Use



Future Land Use

InVision: Tampa Streetcar | City of Tampa

- Extension Station Areas - Half Mile Buffer
- Preferred Extension Alignment
- Proposed Stop Locations
- Existing Alignment
- Existing Stop Locations
- R-6
- R-10
- R-20
- R-35
- R-50
- R-83
- NMU-35
- UMU-60
- CMU-35
- RMU-100
- CC-35
- R/OS
- Public/Semi Public
- CBD
- R/W

Economic Development	
Information Requested	Documentation
I. Transit Supportive Plans and Policies **a. Transit Supportive Corridor Policies**	
Plans and policies to increase corridor and station area development	

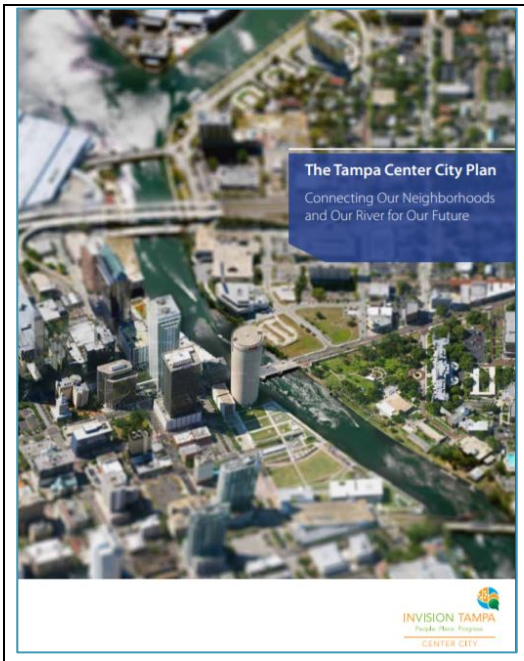
Table 1. Station Area Future Land Use Category Descriptions

Map Color	Category	Floor Area Ratio (FAR)	Dwelling Units(DU)/Acre	Max Height
CBD	**Central Business District** High intensity/density high-rise residential, major office, and regional serving commercial developments encourage and maintain the development of Tampa's central core (Central Business District) as the principal governmental, financial, commercial, convention, and entertainment center of Hillsborough County. (Intensive and general commercial, service, office and residential uses including apartments and condominiums)	N/A	N/A	Height limit is set by FAA
RMU-100	**Regional Mixed-Use-100** High intensity/density high-rise residential, major office, and regional serving commercial developments that because of their need for space, significant vehicular access, or intensity of use require locations related to major transportation facilities. (Intensive and general commercial, service, office and residential uses)	up to 3.5 (mixed-use preferred)	Up to 100 du/acre	Varies, up to 24 stories
UMU-60	**Urban Mixed-Use-60** High intensity/density residential, professional office and commercial development. (Intensive and general commercial, service, office and residential uses)	Varies, Up to 2.5	Up to 50.0 du/acre Up to 60.0 du/acre with bonus provisions met	Varies, up to 10 stories
CC-35	**Community Commercial-35** Medium intensity/density horizontal and vertical mixed-use	vertical mixed-use development up to 1.5	up to 30 du/acre up to 35 du/acre	Up to 5 stories

Economic Development	
Information Requested	Documentation
I. Transit Supportive Plans and Policies **a. Transit Supportive Corridor Policies**	
Plans and policies to increase corridor and station area development	

	and single-use commercial and residential. (Intensive and general commercial, service, office, and residential uses)	>1.5 up to 2.0 with performance provisions met	with bonus provisions met	
CMU-35	**Community Mixed-Use-35** Medium intensity/density horizontal and vertical mixed-use and single-use commercial and residential (Retail, general commercial, service, office, and residential uses	vertical mixed-use development up to 1.5 >1.5 up to 2.0 with performance provisions met	up to 30 du/acre up to 35 du/acre with bonus provisions met	Up to 5 stories
R-83	**Residential-83** High density uses (multifamily dwellings)	Up to .65	Up to 75 du/acre Up to 83 du/acre with bonus provisions met	Up to 24 stories for High Density
R-35	**Residential-35** Medium density uses (multifamily dwellings; small-lot single family units)	Varies, Up to 0.6	Up to 30 du/acre Up to 35/acre with bonus provisions met	Up to 8 stories for Medium Density
R-10	**Residential-10** Low density uses (single family detached; limited townhomes; duplexes; accessory second units)	Up to 0.35	Up to 10 du/acre	Up to 3 stories

Economic Development	
Information Requested	Documentation
I. Transit Supportive Plans and Policies **a. Transit Supportive Corridor Policies**	
Plans and policies to increase corridor and station area development	



InVision: Tampa Center City Plan (November 2012)

The Tampa Streetcar extension planning effort is designed to advance mobility goals and strategies presented in the *InVision: Tampa Center City Plan* (*InVision Plan*). Adopted in 2012, this master plan envisions Downtown Tampa as an urban, mixed use, transit-supportive city center. The *InVision Plan* identifies the Downtown Core as an area to "encourage active streets" and "leverage existing market dynamics to enable future growth." The *InVision Plan* supports increased station area development with a goal of "enhancing the area's mixed-use urbanism to develop dense, active spaces in the near-term that build a case for transit over time."

The *InVision Plan* identifies "Ten Moves Forward" for the City of Tampa to realize its vision. One of these is "rebalancing Tampa Street and Florida Avenue as local streets, joining neighborhoods while providing regional access." The proposed Tampa Streetcar extension along these corridors will help move this goal forward by completing a connection between Ybor City, the Channel District, and the Downtown Core to the Tampa Heights neighborhoods.

The *InVision Plan*'s vision statement asserts the following:

> "We can no longer build communities that are solely reliant on the private automobile if we want to have a sustainable society. The amount of land and energy required for a transportation system based on cars is enormous. We must create environments that can easily be connected to efficient mass transit networks, but that also allow people to walk or bike to many of their daily destinations. Density and mixed land uses are critical parts of this equation, but so are the design details that make transit or walking an attractive option, not just a functional one."

Downtown Community Redevelopment Area (CRA) Plan

The Downtown Community Redevelopment Area (CRA), created in 1983 and amended in 1988, raises financial capital for redevelopment and new development in the Downtown Core. The Downtown CRA leverages tax-

Economic Development	
Information Requested	Documentation
I. Transit Supportive Plans and Policies **a. Transit Supportive Corridor Policies**	
Plans and policies to increase corridor and station area development	

increment financing (TIF) and incentive programs to attract private development and encourage sustained economic development in the Downtown Core.

As stated in the amended 1988 *Downtown CRA Community Redevelopment Plan*, the goal of the Downtown CRA is to "maintain and expand Downtown Tampa as the major economic and activity center." The Downtown CRA's goal is supported by objectives that guide development into a "highly compact and integrated urban center that encourages maximum social and economic benefit." Today, the Downtown CRA's goal is to maintain Downtown Tampa's transit-supportive environment and reputation as a high-caliber urban center with quality residential, commercial, and recreational assets.

Hillsborough County Surtax Referendum (November 2018)

In November 2018, Hillsborough County voters passed by referendum, a 30-year, 1 percent sales tax increase for transportation improvements. Revenue generated from the sales tax increase is distributed among the Hillsborough Area Regional Transit Authority (HART), Hillsborough County, City of Tampa, City of Temple Terrace, City of Plant City, and the Hillsborough County Metropolitan Planning Organization (MPO) . The surtax is estimated to generate about $276 million per year, of which 12 percent is allocated to the City Tampa and 45 percent is allocated to HART. HART's funds are restricted for transit, of which 35 percent is reserved for exclusive transit right-of-way improvements and additions. As partners, the City of Tampa and HART have discussed the joint use of their respective tax revenues for the Tampa Streetcar project. The surtax will encourage and support development within the station areas by increasing funds for multi-modal improvements and enhanced safety for all modes of transportation. The surtax proceeds are primarily targeted for use under five categories, of which three categories are relevant to transit improvements--congestion reduction, transportation safety improvements, and transportation network improvements.

Economic Development	
Information Requested	Documentation
I. Transit Supportive Plans and Policies **a. Transit Supportive Corridor Policies**	
Plans and policies to enhance transit-friendly character of station area development	

The City of Tampa's design standards, current zoning regulations, and future land use categories explicitly define policies for enhancing the transit-friendly character of the Central Business District (CBD), including the proposed extension station areas. The following is a brief summary of the plans, which will be reviewed in greater detail later in this document.

Land Development Code

Design standards in the City of Tampa's *Land Development Code* require new development to maintain or improve the CBD's existing walkable block and street grid pattern. New development must consist of small walkable blocks and contribute to the interconnected, human-scale street network. Zoning categories (**Figure 6**, **Table 2**) in the CBD, CBD-1 and CBD-2, further support the land development polices and the goals, objectives, and policies of the *InVision Plan* for a walkable, high-density, mixed-use Downtown Core.

Future Land Use

Future land use categories in the CBD uphold existing goals, objectives, and policies that maintain or improve the CBD's walkable block and street pattern as future development in the Downtown Core occurs. As previously noted in this report (**Figure 2**, **Table 1**), future land use categories in the station areas are Central Business District (CBD), Regional Mixed-Use-100 (RMU-100), and Community Commerical-35 (CC-35). The CBD category calls for the highest density and does not set a limit on building heights, except per FAA regulations. The RMU-100 and CC-35 categories have maximum building height limits of 24 and five stories respectively. Collectively, the three future land use categories maintain the existing transit-friendly character of the CBD and its surrounding neighborhoods by allowing dense, mixed-use development, and redevelopment.

Land Use Policies

Land use policies in the *Comprehensive Plan* require buildings to be oriented to actively engage and complete the public realm. Development standards address specific features such as building orientation, build-to and setback lines, facade articulation, ground-floor transparency, and location of parking. The *Land Development Code* defines specific CBD design standards that require appropriate building placements, building setbacks, and building frontages to maintain the existing transit-friendly character of the CBD.

Economic Development	
Information Requested	Documentation
I. Transit Supportive Plans and Policies **a. Transit Supportive Corridor Policies**	
Plans and policies to enhance transit-friendly character of station area development	

Transit Station Goals, Objectives and Policies

The adoption of transit station goals, objectives, and policies in the *Comprehensive Plan* further supports the transit-friendly character of the station areas. The transit station goals, objectives, and policies provide a framework for maximized transit-oriented development (TOD) potential around existing and future fixed-use guideway stations. The transit station policies establish TOD overlays around fixed-guideway transit stations. Within the overlays, transit-oriented amenities improve pedestrian and bike facilities, decrease automobile use and parking, and provide mixed-uses. In the TOD overlays, a TOD bonus development incentive is available. Implementation of TOD overlays preserve the transit-oriented character of the existing and future streetcar station areas.

HART, Plan Hillsborough, and City of Tampa FTA TOD Grant (January 2019)

In January 2019, the Hillsborough Area Regional Transit Authority (HART), along with Plan Hillsborough and the City of Tampa, was awarded an $800,000 Federal Transit Administration (FTA) grant to analyze potential TOD locations, including the streetcar extension corridor along Florida Avenue. Adopted TOD land use policies will ultimately be incorporated into the *Comprehensive Plan* and applied to proposed station locations as the City's public transportation network expands. HART plans to initiate the study in late 2019 and conclude their plan within 18 months.

Economic Development	
Information Requested	Documentation
I. Transit Supportive Plans and Policies **a. Transit Supportive Corridor Policies**	
Plans to develop pedestrian facilities and enhance disabled access	

Walk-Bike Plan

Since 2011, the City of Tampa, Hillsborough County, and the Hillsborough County MPO have worked together to improve pedestrian facilities throughout Tampa and Hillsborough County. In 2011, the City of Tampa initiated the *Walk-Bike Plan* that established the pedestrian and bicycle existing conditions, needs, and improvements throughout the city. The fifth and final phase of the *Walk-Bike Plan* was completed in 2016 and identifies a potential trail connecting Downtown Tampa to neighborhoods throughout the city limits.

Mobility Plan

The City of Tampa's *Mobility Plan* (2012) establishes multi-modal needs and projects for the enhancement of mobility and safety for all, including persons with disabilities. Collectively, the *Walk-Bike Plan* and *Mobility Plan* create an overall framework for addressing pedestrian and bicycle needs throughout the City of Tampa, including the CBD.

Complete Streets Resolutions

In 2012, both the City of Tampa and Hillsborough County MPO passed Complete Street resolutions. Since 2012, numerous complete street projects have been completed throughout the City of Tampa and Hillsborough County. These initiatives are a testament to the City and MPO's collective dedication to enhancing mobility and improving safety within the City of Tampa and greater Hillsborough County.

Complete Street Projects

Recent Complete Street projects in Downtown Tampa and Ybor City demonstrate the City of Tampa, Hillsborough County, and the Florida Department of Transportation's (FDOT) efforts in implementing multi-modal solutions, enhancing safety, and improving accessibility for all. The Jackson Street project in Downtown Tampa is the first dedicated cycle track on a state road in Florida (**Figure 4**). The project reduces travel lanes and provides on-street parking. In Ybor City, the reconstruction of 21st Street and 22nd Street includes seven blocks of lane-reduction, on-street parking, and continuous bike lanes and wide sidewalks.

Economic Development	
Information Requested	Documentation
I. Transit Supportive Plans and Policies **a. Transit Supportive Corridor Policies**	
Plans to develop pedestrian facilities and enhance disabled access	

Figure 3. Jackson Street Cycle Track

Capital Improvements

The City of Tampa's Capital Improvement Plan allocates funding for additional pedestrian enhancements and complete street projects. The *FY2019 Capital Improvement Budget* includes $870,000 for citywide sidewalk installation and repair "to ensure pedestrian safety and contribute to a sense of community." The FY2019 budget also includes $300,000 dedicated for Complete Street Safety Improvements to "increase the safety of pedestrians, bicyclists, and motorists."

Self-Evaluation and Transition Plan

The City of Tampa continually evaluates and improves its service, facilities, programs, and public rights-of-way to ensure accessibility. The City of Tampa's *Self-Evaluation and Transition Plan* complies with the Americans with Disabilities Act (ADA) of 1990. Within the public rights-of-way, facilities such as sidewalks, streets, curb ramps, street furnishings, pedestrian signals, and transit stops are evaluated and improved to provide access for persons with disabilities. The *Self-Evaluation and Transition Plan* was recently updated in 2016.

Economic Development	
Information Requested	Documentation
I. Transit Supportive Plans and Policies **a. Transit Supportive Corridor Policies**	
Plans to develop pedestrian facilities and enhance disabled access	

Public Realm Zoning

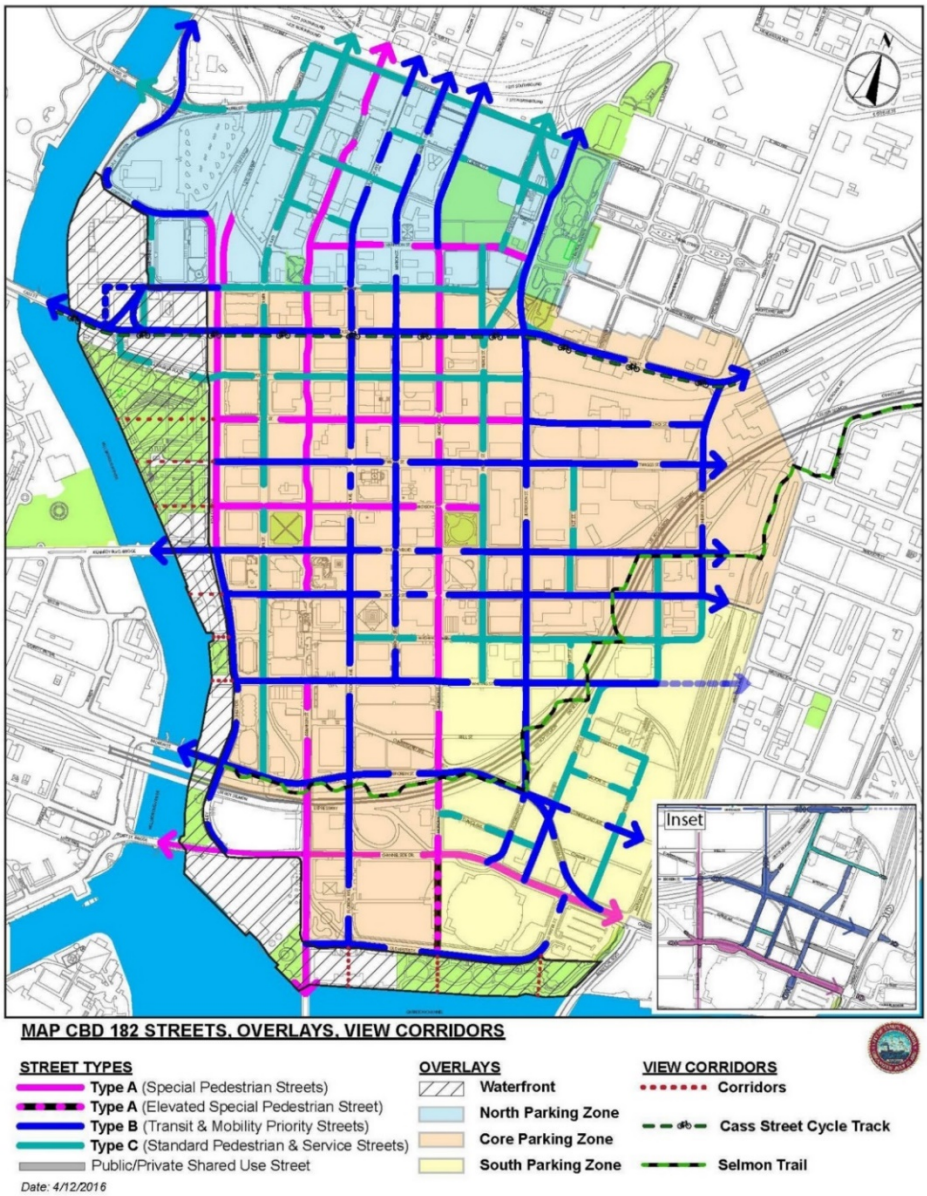
Pedestrian facilities in station areas are currently designed and constructed in accordance to the *City of Tampa's Land Development Code* public realm zoning standards. The public realm standards establish a hierarchy of pedestrian accommodations consisting of three street classifications: Special Pedestrian Streets (Type A), Transit and Mobility Priority Streets (Type B), and Standard Pedestrian and Service Streets (Type C) (**Figure 5**). Special Pedestrian Streets maintain high activity level building frontages and streetscapes have the highest level of detail with enhanced lighting, street furniture, and specialized paving. Transit and Mobility Priority Streets provide increased multi-modal access to and through the CBD with moderate to high activity level of building frontages. Transit and Mobility Priority Streets have a moderate to high level of design detail with a mix of standard and enhanced public amenities. Standard Pedestrian and Service Streets are local service streets within the CBD grid. Standard Pedestrian and Service Streets generally serve adjacent buildings with primary vehicular, service, and loading access and have low activity level building frontages. Florida Avenue is classified as a Transit and Mobility Priority Street and Tampa Street is a Standard Pedestrian and Service Street. Both street categories accommodate the streetcar extension project.

Water Street Tampa

The proposed Tampa Water Street project is underway with a plan to add 9,000,000 square feet of mixed-used development to the CBD. To date, 1.1 million square feet of office space, 300,000 square feet of retail space, and 1,300 residential units have been completed or are under construction. Water Street Tampa is the first community in the world to earn WELL Certification from the International WELL Building Institute. The WELL designation demonstrates the development's proactive approach to improving the public realm through the development and enhancement of pedestrian facilities in the CBD. These enhancements are guided by the principles of walkability, sustainability, connectivity, and wellness.

Economic Development	
Information Requested	Documentation
I. Transit Supportive Plans and Policies **a. Transit Supportive Corridor Policies**	
Plans to develop pedestrian facilities and enhance disabled access	

Figure 4. CBD Public Realm Classifications (City of Tampa)



Economic Development	
Information Requested	Documentation
I. Transit Supportive Plans and Policies **a. Transit Supportive Corridor Policies**	
Parking policies (allowances for reductions in parking and traffic mitigation for development near station areas, plans for park-and-ride lots, parking management)	

Parking in the CBD is available on-street and in surface lots and structures. The City of Tampa's *Land Development Code* promotes structured parking in lieu of surface parking within the CBD. Specifically, land use policies require that parking in the CBD "be accommodated in well maintained and managed parking structures for the purpose of promoting higher density development." Land use policies also require parking structures to be designed for the promotion of a pedestrian-friendly environment by incorporating architectural detailing and active street-level uses.

Additionally, land use policies in the *Comprehensive Plan* encourage the replacement of surface parking with structured parking, the conversion of drive aisles with pedestrian-friendly shopping streets, and the infill of parking areas with multi-story mixed-use buildings to create attractive streetscapes. Specific land use policies are listed below.

- **LU Policy 2.2.6**: Encourage redevelopment of existing employment centers into dynamic mixed-use centers by replacing surface parking with structured parking, replacing parking area drive aisles with pedestrian friendly shopping streets, infilling parking areas with multi-story mixed-use buildings, and creating attractive, well-appointed streetscapes and plazas.
- **LU Policy 3.1.11:** Require that CBD parking be accommodated in well maintained and managed parking structures for higher density development.
- **LU Policy 3.1.12:** Parking structures shall be designed to contribute positively to the aesthetic quality of downtown and pedestrian activity with the implementation of architectural detailing and active street-level uses.

Special District CBD zoning allows new developments, redevelopments, and building improvements to reduce standard parking minimums with an in-lieu parking payment as outlined in the *Land Development Code.* The in-lieu payment option allows land to be developed into active spaces rather than parking.

According to the City of Tampa *Land Development Code*, required parking minimums may also be reduced in accordance with the following provisions:

- Reuse of existing structures up to 10,000 square feet including additions thereto, shall be eligible for a reduction in required parking, for all uses, up to a maximum of 25 percent of the required amount.
- Developments that mix 3 or more uses (establishments) within a common building, shall be eligible for a 15 percent reduction in total required parking.
- Up to 10 percent of required parking may be offset with the installation of bicycle racks at a rate of 1 vehicle stall to 5 bicycle slots.

Economic Development	
Information Requested	Documentation
I. Transit Supportive Plans and Policies **a. Transit Supportive Corridor Policies**	
Parking policies (allowances for reductions in parking and traffic mitigation for development near station areas, plans for park-and-ride lots, parking management)	

- Up to 10 percent of required parking may be offset with the installation of motorcycle parking measuring 4' x 8'.

The Downtown Tampa Partnership completed the *Best Practices in Parking Management* study in May 2016. The study explored innovative parking solutions for implementation in Downtown Tampa. The study recommends the use of multiple parking innovations and technologies to address Downtown Tampa's evolving parking needs.

Economic Development	
Information Requested	Documentation
I. Transit Supportive Plans and Policies **b. Supportive Zoning Regulations Near Transit Stations**	
Zoning ordinances that support increased development density in transit station areas	

As shown in **Figure 5** and **Table 2**, there are a number of zoning districts that allow development with transit supportive densities along the streetcar extension alignment. These zoning districts include:

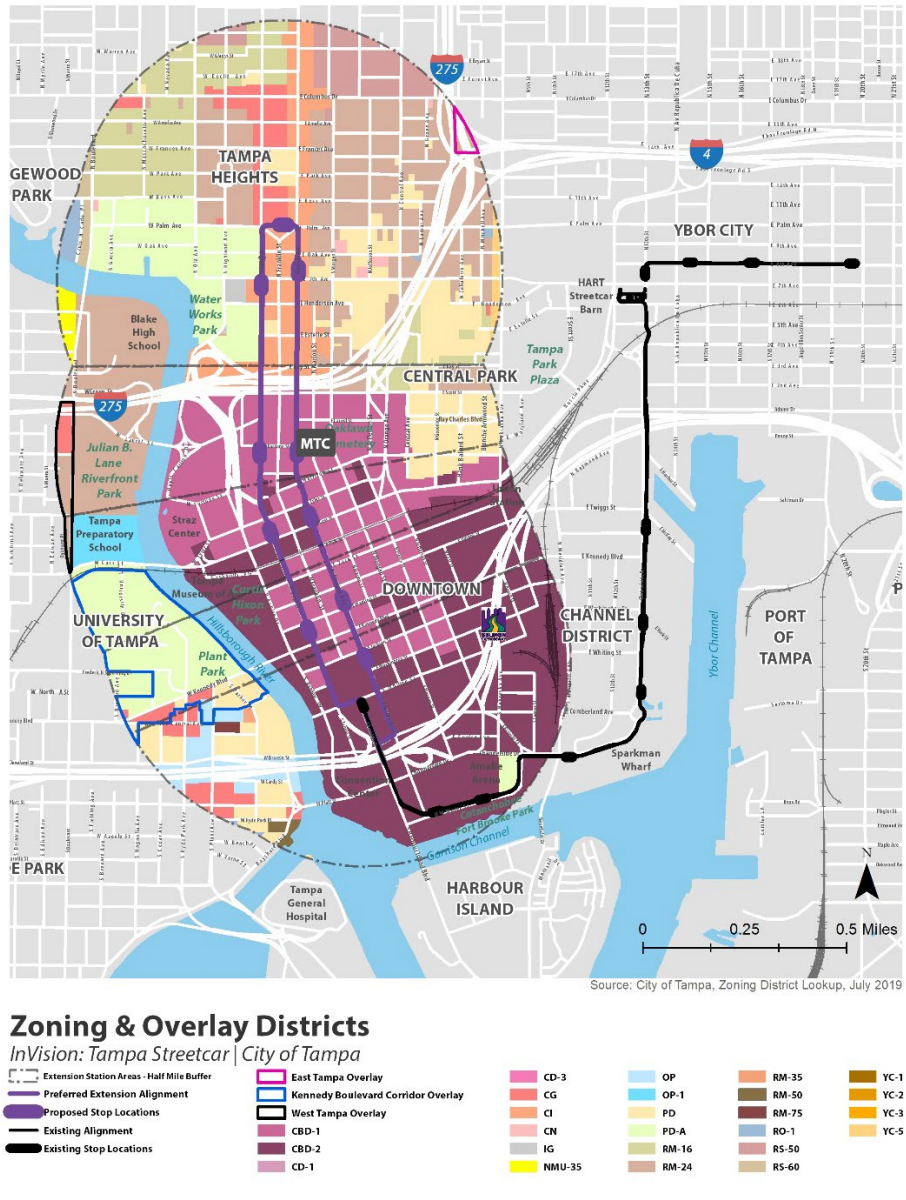
- Central Business Districts (CBD-1 and CBD-2), which allow for the highest intensity in the City of Tampa;
- Office Professional (OP-1), which allows for intense office development with a maximum height of 200 feet;
- Planned Development (PD and PD-A);
- Multi-Family Residential Districts (RM-50 and RM-75), which allows for high density multi-family development with a maximum height of 200 feet;
- Commercial Districts (CG and CI) with a maximum height of 45 feet; and
- Mixed-Use Districts (NMU-35).

Detailed descriptions of all zoning categories within a half mile of the station areas can be found in **Table 2**. Zoning and Land Development ordinances can be found in Chapter 27 of the City of Tampa's *Land Development Code*.

Zoning throughout the southern end of streetcar extension alignment allows for projects with low- to mid-rise structures, or high-rise structures. Zoning in the northern portion of the extension alignment allows for a variety of retail and commercial service activities with a maximum height of 45 feet, planned development districts involving large-scale developments, and low-medium density multi- and single- family residential uses with maximum heights of 35 feet.

Economic Development	
Information Requested	Documentation
I. Transit Supportive Plans and Policies **b. Supportive Zoning Regulations Near Transit Stations**	
Zoning ordinances that support increased development density in transit station areas	

Figure 5. Zoning and Overlay Districts within Half Mile of the Extension Station Areas



Zoning & Overlay Districts

InVision: Tampa Streetcar | City of Tampa

- Extension Station Areas - Half Mile Buffer
- Preferred Extension Alignment
- Proposed Stop Locations
- Existing Alignment
- Existing Stop Locations
- East Tampa Overlay
- Kennedy Boulevard Corridor Overlay
- West Tampa Overlay
- CBD-1
- CBD-2
- CD-1
- CD-3
- CG
- CI
- CN
- IG
- NMU-35
- OP
- OP-1
- PD
- PD-A
- RM-16
- RM-24
- RM-35
- RM-50
- RM-75
- RO-1
- RS-50
- RS-60
- YC-1
- YC-2
- YC-3
- YC-5

Economic Development	
Information Requested	Documentation
I. Transit Supportive Plans and Policies **b. Supportive Zoning Regulations Near Transit Stations**	
Zoning ordinances that support increased development density in transit station areas	

Table 2. Zoning Districts within Half Mile of Station Areas

Zoning District	Description	Minimum Lot Size (sf)	Maximum FAR	Maximum Height (ft)
CENTRAL BUSINESS DISTRICT				
Central Business District (CBD-1)	CBD Projects In Areas With Low- To Mid- Rise Structures.			
Central Business District (CBD-2)	CBD Projects In Areas With High-Rise Structures. CBD-2 Zoned Property May Be Controlled By A Site Plan Approved By City Council.			
THE CHANNEL DISTRICT				
The Channel District (CD-1)	A Variety Of Residential And Commercial Projects With An Urban And Pedestrian Development Pattern.			
The Channel District (CD-3)	Site Plan Controlled District Approved By City Council Prior To 2007.			
COMMERCIAL DISTRICTS				
Commercial-General (CG)	a variety of retail and commercial service activities can be conducted compatible with surrounding uses and residential districts.	10000 square feet	1.0-1.5	45 feet
Commercial-intensive (CI)	a variety of retail and commercial service activities can be conducted compatible with surrounding uses and residential districts.	10000 square feet	1.0-1.5	45 feet
Commercial-neighborhood (CN)	for limited retail and personal services in residential neighborhoods. This district shall be placed at appropriate locations to supply the daily service needs of such neighborhoods and shall not be used to promote strip commercial development.	5000 square feet, 1 unit per 2500 (sq. ft.)	0.35	
INDUSTRIAL DISTRICTS				
Industrial-general (IG)	areas of light manufacturing, wholesaling, warehousing, assembly or product processing, heavy equipment and vehicular repairs and other light industrial uses. The industrial general district is established to provide areas for industry in locations, which are served by major transportation facilities and adequate	5000 square feet	.75	60 feet

Economic Development	
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I. Transit Supportive Plans and Policies **b. Supportive Zoning Regulations Near Transit Stations**	
Zoning ordinances that support increased development density in transit station areas	

	utilities, but are not feasible nor highly desirable for heavier industrial development because of proximity to residential, recreational, commercial or related developments. The district is to permit development compatible with uses of residential property adjoining or surrounding the district, with suitable open spaces, landscaping and parking area, which emits limited noise, odors, or light which can be detected or surrounding land.			
OFFICE DISTRICTS				
Office Professional (OP)	Primarily for institutional, professional and general office development of an intensity greater than the RO-1 residential office zoning district and less than the OP-1 office professional zoning district. This district shall be applied to land located along arterial and collector streets, as shown on the major street map.	1000 square feet, 1 unit per 1815 (sq. ft.)	1.0-1.5	60 feet
Office Professional (OP-1)	Primarily for high intensity areas of institutional, professional and general office development. This district shall be applied in areas of the city where specific nodes of intense office development are appropriate. The district shall be applied to land located along arterial or collector streets, as shown on the major street map.	1000 square feet, 1 unit per 871 (sq. ft.)	3.0-3.5	200 feet
PLANNED DEVELOPMENT				
Planned Development (PD)	Allows for the development of land uses that are in conformance with the adopted future land use element of the Tampa *Comprehensive Plan* while encouraging maximum land development opportunities and well-designed developments that: 1. Are characterized by unique conditions or situations which other zoning districts cannot accommodate including, but specifically not			

Economic Development	
Information Requested	Documentation
I. Transit Supportive Plans and Policies **b. Supportive Zoning Regulations Near Transit Stations**	
Zoning ordinances that support increased development density in transit station areas	

	limited to unusual physical or environmental features, transportation, access, etc.; or 2. Include a mixture of appropriate land uses which may not otherwise be permitted in other districts.			
Planned Development Alternative (PD-A)	Provides conceptual approval for planned development districts involving large-scale developments with a lengthy projected build out time. The alternative review process allows flexibility within the parameters established by specific stated performance standards.			
MULTIPLE-FAMILY RESIDENTIAL DISTRICTS				
Residential Multiple-Family (RM-16)	Primarily for low-medium density residential uses, similar to those provided in the RM-12 district, including single-family and two-family developments, at an increased density. Multiple- family development may be permitted through the special use permit procedure.	5000 square feet, 1 unit per 2723 (sq. ft.)		35 feet
Residential Multiple-Family (RM-24)	Primarily for low-medium density residential uses, similar to those provided in the RM-12 district, including single-family and two-family developments, at an increased density. Multiple- family development may be permitted through the special use permit procedure.	5000 square feet, 1 unit per 1815 (sq. ft.)		35 feet
Residential Multiple-Family (RM-50)	Primarily for high density multiple-family residential development.	5000 square feet, 1 unit per 871 sq. ft		200 feet
Residential Multiple-Family (RM-75)	Primarily for high density multiple-family residential development. Such high density residential structures shall be located in close proximity to regional shopping, employment and public transportation opportunities.	5000 square feet, 1 unit per 580 (sq. ft.)		

Economic Development	
Information Requested	Documentation
I. Transit Supportive Plans and Policies **b. Supportive Zoning Regulations Near Transit Stations**	
Zoning ordinances that support increased development density in transit station areas	

OFFICE DISTRICTS				
RO-1	Primarily for low to low-medium density residential development and low-medium intensity office uses compatible with residential neighborhoods. This district would permit conversion of residential structures or the construction of new structures for office and related use.	5000 square feet	0.5	35 feet
SINGLE-FAMILY RESIDENTIAL DISTRICTS				
Residential single-family (RS-50)	Primarily low density single-family detached dwellings similar to those provided for in the RS-150, RS-100, RS-75 and RS-60 single-family districts, but with smaller minimum lot size requirements.	5000 square feet, 1 unit per 5000 (sq. ft.).		35 feet
Residential single-family (RS-60)	Primarily low density single-family detached dwellings similar to those provided for in the RS-150, RS-100, and RS-75 single-family districts, but with smaller minimum lot size requirements.	6000 square feet, 1 unit per 6000 (sq. ft.).		35 feet
YBOR CITY HISTORIC DISTRICTS				
Central Commercial Core (YC-1)	This subdistrict comprises the cultural, social, shopping and service heart of the Original Ybor City Historic District. The regulations are intended to preserve and enhance the touristic, cultural and economic functions by preserving its rich mixture of land uses, relatively modest intensity of development, low-rise structures and distinctive architecture.			
Hillsborough Community College (YC-3)	This subdistrict comprises land devoted to and designated for development as part of the Hillsborough Community College and supporting related uses.			
General Commercial (YC-5)	This subdistrict comprises land used and designated for retail and commercial service operations primarily to serve the residents of the immediate area.			

Economic Development	
Information Requested	Documentation
I. Transit Supportive Plans and Policies **b. Supportive Zoning Regulations Near Transit Stations**	
Zoning ordinances that support increased development density in transit station areas	

NEIGHBORHOOD MIXED-USE DISTRICTS				
NMU-35	allow the development of land uses that are consistent with the Tampa *Comprehensive Plan*, encourage maximum land development opportunities that are well designed, provide for a balanced mixed-use development, including residential and neighborhood scale office and commercial uses, which contribute to the appropriate mix of land uses needed to ensure a viable economic base within Tampa's Urban Villages. Mixed-use civic, neighborhood scale office and commercial, and all single-family and multi-family dwelling types.			
Source: https://www.tampagov.net/sites/default/files/land-development/files/Zoning_districts.pdf				

Economic Development	
Information Requested	Documentation
I. Transit Supportive Plans and Policies **b. Supportive Zoning Regulations Near Transit Stations**	
Zoning ordinances that enhance transit-oriented character of station area development and pedestrian access	

Two special zoning districts within the streetcar extension alignment allow for transit-oriented character. These districts include street types and overlay zones with specific ordinances related to architectural design guidance.

Special Zoning Districts

Central Business Districts (CBD) – "Center City"

The purpose and intent of this special district, commonly known and referred to as "Center City" or "Downtown," is to implement the *Center City Plan* and *Comprehensive Plan*; to create a public realm of high-quality through the regulation of the physical form of buildings, streets, and open spaces, the form and mass of buildings in relation to one another; and the establishment of a pedestrian-friendly relationship between building facades and the public realm. CBD-1 and CBD-2 are the only zoning districts permitted within the CBD. Both sub-districts are appropriate for a variety of residential, office, commercial, and mixed-use developments with an urban, pedestrian, and transit-oriented development pattern.

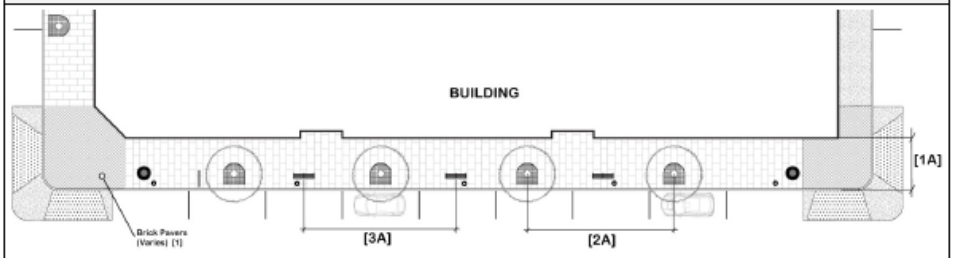
As previously discussed in this report, a number of design standards for streets (street types) and blocks (overlay zones) exist within the CBD Special Zoning District. As shown in **Figure 5**, Florida Ave, along the extension alignment, is zoned as a Transit and Mobility Priority Street (Type B). This provides for increased multi-modal access to and through Center City; moderate to high activity level building frontages required; and streetscapes with moderate to high level design detail, with mix of standard and enhanced public amenities (**Figure 8**). Tampa Street, also along the extension alignment, is zoned as a Standard Pedestrian and Service Street (Type C), which provides for local service streets within the Center City grid; service to adjacent buildings with primary vehicular and service access, loading areas, typical "back of house" activities; low activity level building frontages permitted; and basic/standard pedestrian features (**Figure 9**).

Economic Development	
Information Requested	Documentation
I. Transit Supportive Plans and Policies **b. Supportive Zoning Regulations Near Transit Stations**	
Zoning ordinances that enhance transit-oriented character of station area development and pedestrian access	

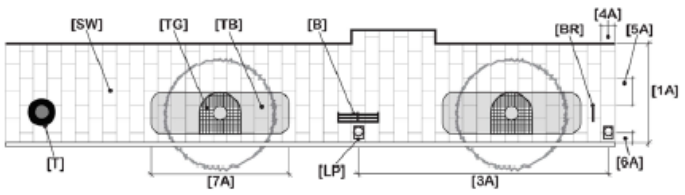
Figure 6. (Type B) Transit & Mobility Priority Streets Streetscape Details

TABLE 182.1B PUBLIC REALM ZONE [1-10] (*continued*)

'B' – TRANSIT & MOBILITY PRIORITY STREETS: STREETSCAPE DETAILS BY STREET TYPE



KEY
[B] Bench
[BR] Bike Rack
[LP] Lamp and Pole
[P] Parking
[SW] Sidewalk
[TG] Tree Grate
[TB] Tree Bed
[T] Trash Receptacle



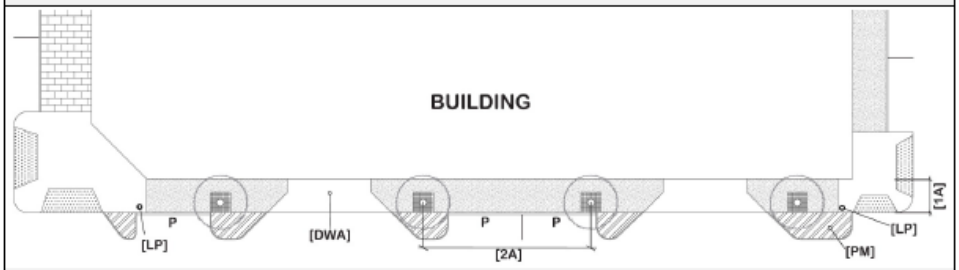
PLACEMENT & LAYOUT STANDARDS			
[1A]: Total Sidewalk Width	15'	[5A]: Sidewalk Pattern – Depth (3/8" width by 1/2" depth tooled 'V' joint, staggered rectangles)	3'
[2A]: Street Tree Spacing (On Center)	35' min – 40' max	[6A]: Required Space between Tree Grate/Tree Bed (Pit) and Curb (Inside edge)	16"
[3A]: Lamp and Pole & Bench Spacing (when applicable)	35' min – 40' max	[7A]: Tree Bed (Pit) Option (Options in Table 182.1D)	6' x 6' min up to 6' x 20' max
[4A]: Sidewalk Pattern – Width (3/8" width by 1/2" depth tooled 'V' joint, staggered rectangles)	2'		
FURNISHINGS, COMPONENTS, SPECS [6]: TYPICAL AESTHETIC			
REFER TO TABLE 182.1D FOR SPECIFIC TYPES AND MATERIALS REQUIRED, AND APPLICABLE TABLE NOTES BELOW.			

Economic Development	
Information Requested	Documentation
I. Transit Supportive Plans and Policies **b. Supportive Zoning Regulations Near Transit Stations**	
Zoning ordinances that enhance transit-oriented character of station area development and pedestrian access	

Figure 7. (Type C) Standard Pedestrian & Service Streets Streetscape

TABLE 182.1C PUBLIC REALM ZONE [1-10] (*continued*)

'C' – STANDARD PEDESTRIAN & SERVICE STREETS: STREETSCAPE DETAILS BY STREET TYPE



KEY

[B]: Bench	**[DWA]:** Driveway Apron with Flares (refer to COT Trans. Tech. Manual)	**[LP]:** Lamp and Pole	**[P]:** Parking	**[PM]:** Pavement Markings (refer to COT Trans. Tech. Manual)

PLACEMENT & LAYOUT STANDARDS

[1A]: Total Sidewalk Width (Standard Brushed Concrete)	10'
[2A]: Street Tree Placement/Spacing (On Center)	35' min – 65' max (placement/spacing is dependent on vehicular access locations)
[LP]: Lamp and Pole Placement/Spacing (when applicable)	35' min – 65' max (placement/spacing is dependent on vehicular access locations)

FURNISHINGS, COMPONENTS, SPECS [6]: TYPICAL AESTHETIC

REFER TO TABLE 182.1D FOR SPECIFIC TYPES AND MATERIALS REQUIRED, AND APPLICABLE TABLE NOTES BELOW.

Neighborhood Mixed-Use Districts (NMU)

Parcels zoned as Neighborhood Mixed-Use-35 (NMU-35) are also within the streetcar extension alignment. This zoning district specifically allows mixed-use civic, neighborhood scale office and commercial, and all single-family and multi-family dwelling types. Mixed-Use Districts within the City of Tampa's zoning ordinances allow for the development of land uses that are consistent with the boundaries of a designated Urban Village, as set forth in the *Comprehensive Plan*, encourage maximum land development opportunities that are well designed, and provide for a balanced mixed-use development, including residential and neighborhood scale office and commercial uses, which contribute to the appropriate mix of land uses needed to ensure a viable economic base within these Urban Villages. Urban Villages function as villages within the larger city. Designated Urban Villages

Economic Development	
Information Requested	Documentation
I. Transit Supportive Plans and Policies **b. Supportive Zoning Regulations Near Transit Stations**	
Zoning ordinances that enhance transit-oriented character of station area development and pedestrian access	

have had some type of adopted secondary planning process that is being used to guide or inform the future of that area.

Overlay Districts

As seen on **Figure 6**, currently there are three Overlay Districts within the extension alignment. The Kennedy Boulevard Corridor District and the West Tampa Overlay District intersect with the streetcar extension alignment. The Kennedy Boulevard Corridor District serves as a gateway corridor connecting neighborhoods within the City. The standards set forth in the Kennedy Boulevard Corridor District are intended to help improve the aesthetic appearance of Kennedy Boulevard, connect roadways through the use of enhanced landscaping and buffering, and create form-based parameters to ensure compatible architectural elements are implemented throughout the corridor as a whole. Additionally, provisions are introduced that establish pedestrian and transit friendly design standards for this corridor. Likewise, the standards set forth in the West Tampa Overlay ensures that all types of new infill development and major additions to structures are compatible in building and structural orientation, design elements, height, lot dimensional requirements, public safety, and other site spatial relationships precedent within the area. The various regulatory elements are used to provide an aesthetic framework for design to encourage development that creates a sense of interest, promotes a physically attractive and functionally integrated environment and compatibility with pedestrian access.

Economic Development	
Information Requested	Documentation
I. Transit Supportive Plans and Policies **b. Supportive Zoning Regulations Near Transit Stations**	
Zoning allowances for reduced parking	

As mentioned previously in this report, Chapter 27, Section 27-211.12 of Tampa's *Land Development Code* incudes guidance on parking design and access management by use. The ordinances include the following reduced parking allowances:

- Developments that mix three or more uses (establishments) within a common building, shall be eligible for a 15 percent reduction in total required parking. Uses specifically excluded from this method of parking reduction are bars, places of assembly, and vehicle sales and/or repair.
- Up to 10 percent of required parking may be off-set with the installation of bicycle racks at a rate of 1 vehicle stall = 5 bicycle slots.
- Up to 10 percent of required parking may be off-set with the installation of motorcycle parking measuring 4' x 8'.

In addition to zoning allowances, both Hillsborough County and City of Tampa's Housing Plans, *Hillsborough County's 2016-2020 Five Year Consolidation Plan* and the City of Tampa's *Annual Action Plan*, identify reduced parking requirements for affordable housing as a way to reduce barriers to affordable housing development.

Economic Development	
Information Requested	Documentation
I. Transit Supportive Plans and Policies **c. Tools to Implement Transit Supportive Policies**	
Outreach to government agencies and the community in support of transit-supportive planning	

Imagine 2040: Tampa Comprehensive Plan (January 2016)

As discussed in the beginning of this report, the City of Tampa adopted its *Comprehensive Plan* in January 2016. The plan's Land Use section includes a number of goals, objectives, and policies geared toward the development of transit-friendly land uses. The overarching goals of these policies include the following:

- To build a livable city that enhances the unique attributes of Tampa's diversity where heritage is appreciated and celebrated, creating diverse communities and neighborhoods inter- connected through walking, bicycling, and transit, through excellent urban design, with public spaces that are beautiful and functional, all supported by a thriving economy.
- A city of compact, compatible, higher-density development within employment centers, mixed-use corridors and transit stations to conserve land resources, protect single family detached neighborhoods, natural habitat, support transit, reduce vehicle trips, improve air quality, conserve energy and water, and diversify Tampa's housing stock.
- Mixed-use corridors: major corridors transformed into vibrant pedestrian-friendly environments that serve as gathering places for adjacent neighborhoods.
- Develop a transit system that supports our continued economic success, enhances livability, and promotes reductions in greenhouse gases through the use of alternative transportation modes.

The plan also includes future land use designations for the City (**Figure 2**, **Table 1**). Land immediately surrounding the streetcar extension alignment are designated as Central Business District (CBD) and Regional Mixed-Use-100 (RMU-100) south of Scott Street. Future land uses north of Scott Street are Community Commercial-35 (CC-35), Regional Used Use-100 (RMU-100), Residential-83 (R-83), and Residential-35 (R-35). Detailed descriptions of all future land use categories within a half mile of the station areas can be found in **Table 2**. The full future land use category matrix can be found in the Land Use section of the *Comprehensive Plan*.

InVision: Tampa Center City Plan

The Tampa Streetcar extension is designed to advance mobility goals and strategies presented in the *InVision Plan* from 2012 in which the community envisions an urban, mixed-use, transit-supportive city center. The plan identifies the Downtown Core as an area to encourage active streets and leverage existing market dynamics to enable future growth. This is due to its strong concentration of commercial and government office space, regional

Economic Development	
Information Requested	Documentation
I. Transit Supportive Plans and Policies **c. Tools to Implement Transit Supportive Policies**	
Outreach to government agencies and the community in support of transit-supportive planning	

cultural and entertainment facilities, and recent residential development that enhance the area's mixed-use urbanism to develop dense, active spaces in the near-term that build a case for transit over time.

The *InVision Plan* concludes with an implementation section identifying "Ten Moves Forward" for the City to realize its vision. One of the ten moves included rebalancing Tampa Street and Florida Avenue as local streets, joining neighborhoods while providing regional access. The proposed Tampa Streetcar extension along these corridors will help move this goal forward.

Economic Development	
Information Requested	Documentation
I. Transit Supportive Plans and Policies **c. Tools to Implement Transit Supportive Policies**	
Regulatory and financial incentives to promote transit-supportive development	

City of Tampa Land Development Code

The City of Tampa's *Land Development Code* provides some incentives to promote transit-supportive development within a one-half mile of the proposed station areas.

Sec. 27-140. Bonus Provisions states that all new development requesting CD-2, PD, PD-A, YC-9, or SH-PD zoning, within the CBD Periphery, and/or within a future land use category that allows for potential bonus density and/or intensity ("FAR"), shall adhere to the regulations set forth in this section, in order to seek approval for such bonus. Developments that have been granted bonuses by city council, per the provisions of this section, shall not be granted any further administrative increase in floor area or unit count through section 27-138(7).

The following is a list of improvements and amenities to achieve bonus density/FAR:

- Provision of ten (10) percent of the project's dwelling units as affordable housing.
- Use of unused developments rights, approved through the Transfer of Development Rights Program procedures, set forth in section 27-141.
- Contribute to or provide an improvement for use by the general public, located within a public easement, public right-of-way, or on public property, within the same multi-modal transportation impact fee district as the proposed development project,
- Provision of public parking (paid-parking is allowed), available and open to the general public, twenty-four (24) hours per day, year-round.
- Transit operational support subsidy, provided in accordance with (g)(1) of this section.

HART, Plan Hillsborough, and City of Tampa FTA TOD Grant

In January 2019, the Hillsborough Area Regional Transit authority (HART), along with Plan Hillsborough and the City of Tampa was awarded an $800,000 FTA grant to analyze potential transit-oriented development (TOD) locations along Florida Avenue (a streetcar extension corridor), Nebraska Avenue, and Fowler Avenue. Adopted TOD use policies will ultimately be adopted into the *Comprehensive Plan* to be applied to proposed station locations as the City's public transportation network expands. An RFQ to select consultants will take place in the summer of 2019 and the study will commence over a year and a half.

Economic Development	
Information Requested	Documentation
I. Transit Supportive Plans and Policies **c. Tools to Implement Transit Supportive Policies**	
Regulatory and financial incentives to promote transit-supportive development	

Tampa's Downtown Community Redevelopment Area (CRA) - Tax Increment Financing (TIF)

Downtown is one of eight community redevelopment areas (CRA) in Tampa. A CRA is a geographic area in which the physical and economic conditions meet the definition of slum or blight as provided in the State's Community Redevelopment Act of 1969 ("Act") that the local government formally designates for redevelopment. It is a tool that Tampa and municipalities throughout Florida use to help struggling commercial districts and neighborhoods. The Act allows for the creation of a Tax Increment Financing ("TIF") district within a CRA.

Economic Development	
Information Requested	Documentation
I. Transit Supportive Plans and Policies **c. Tools to Implement Transit Supportive Policies**	
Efforts to engage the development community in station-area planning and transit-supportive development	

Tampa's Downtown Community Redevelopment Area (CRA)

As described in the previous section, Downtown is one of eight Community Redevelopment Areas (CRA) in Tampa. The City Council serves as the Community Redevelopment Agency. The primary function of the Agency is to oversee the implementation of CRA Plans and to administer TIF expenditures. The Agency appoints community advisory committees to serve each redevelopment area. The committees meet regularly with city staff and other stakeholders to help prioritize redevelopment initiatives. Committee recommendations are then presented to the Agency for consideration.

Some recent CRA private sector investments of transit-supportive development within the station areas can be found in the 2018 Annual Activity Report and include:

- A new 519-room JW Marriott hotel at Florida Avenue and Old Water Street.
- A completed RFP to purchase and redevelop the City Hall Parking Lot. The development will be a mixed-use building with two hotels, retail space, and public parking.
- Plans to build a Spring Hills Suites hotel with approximately 153 rooms along Franklin Street.
- 394 apartment units ranging from studio to three bedroom units along Fortune Street.
- Commencement of the new development of Riverwalk Place. This will be a 53-story tower with condominiums and office space. The lower floors will have retail that directly connects to the Riverwalk.

Additionally the CRA continually works on streetscape projects in the Downtown and surrounding areas geared towards enhancing the pedestrian experience through improved sidewalk and roadwork connectivity. Among these projects is the reopening of Harrison Street between Franklin Street and Tampa Street Downtown. This will improve connectivity for future streetcar stations and riders.

Tampa's Downtown Partnership

The Tampa Downtown Partnership is a private, not-for-profit organization that oversees the Special Services District (SSD) Program. The Partnership works to stimulate downtown through business development, transportation, and placemaking activities. In October 2018 the SSD expanded its services into Tampa Heights, making the streetcar extension alignment completely within the boundaries of the SSD.

Economic Development	
Information Requested	Documentation
I. Transit Supportive Plans and Policies **c. Tools to Implement Transit Supportive Policies**	
Efforts to engage the development community in station-area planning and transit-supportive development	

Yellow Brick Row Business Association

Within the Tampa Heights neighborhood is the Yellow Brick Row Business Association. This group is made up of business owners and local residents along North Franklin and surrounding streets. Their mission is historic preservation, better transit, affordability, and more small-scale, locally owned startups.

Economic Development	
Information Requested	Documentation
II. Performance and Impacts of Policies **a. Performance of Transit Supportive Plans and Policies**	
Demonstrated cases of developments affected by transit supportive policies	

Downtown Tampa is experiencing rapid growth and development. Since 2016, the area has experienced a 32 percent increase in residential units. These were approximately 5,700 units in 2016 and these increased to 7,550 units in 2018. As of late 2018, there were approximately 1,650 residential units under construction and 4,150 new residential units proposed for development. Furthermore, there are approximately 1,250 hotel rooms planned for Downtown Tampa. Downtown development continues to intensify and densify with increases in residential units, hotel rooms, and residential square feet that support the streetcar extension project.

Table 3 highlights demonstrated cases of development affected by Tampa's transit-supportive policies. In total, these developments have added approximately 3,920 residential units and hotel rooms and 168,900 square feet of retail space to downtown and the surrounding neighborhoods. Recent development such as The Fitzgerald (**Figure 11** and Nine15 (found in **Figure 12**), combined with currently under construction and proposed station area development, positively contributes to Downtown Tampa's transit-supportive environment.

Figure 8. The Fitzgerald (Mixed-Use Residential), Located 0.10 miles from the existing Tampa Streetcar alignment

Economic Development	
Information Requested	Documentation
II. Performance and Impacts of Policies **a. Performance of Transit Supportive Plans and Policies**	
Demonstrated cases of developments affected by transit supportive policies	

Table 3. Demonstrated Cases of Developments Affected by Transit-Supportive Policies

Project Name	Year Constructed	Project Type	Residential Units/Hotel Rooms	Retail Square Feet	Miles To Existing Streetcar or Extension
500 Harbour Island	2017	Residential	235	-	0.40
Aloft Downtown Tampa	2014	Hotel	130	-	0.05
Armature Works	2018	Retail	-	70,000	0.20
Bainbridge Apartments Ybor	2017	Residential	240	-	0.30
Icon Harbour Island	2017	Residential	340	-	0.50
Le Meridien Tampa Downtown	2014	Hotel	130	-	Adjacent to Extension Corridor
Madison Heights	2014	Residential	80	-	Adjacent to Extension Corridor
Manor Riverwalk	2018	Mixed-Use Residential	400	10,000	0.25
Nine15 Franklin	2017	Mixed-Use Residential	362	8,000	Adjacent to Extension Corridor
Novel Riverwalk	2018	Residential	394	-	0.10
Skyhouse	2014	Residential	320	6,400	0.10
The Aurora	2016	Residential	351	-	0.15
The Channel Club	2018	Mixed-Use Residential	324	38,000	0.15
The Fitzgerald	2017	Mixed-Use Residential	300	4,000	0.10
The Hall on Franklin	2017	Retail	-	8,000	Adjacent to Extension Corridor
The Pearl	2017	Mixed-Use Residential	314	28,500	0.20
		Total	**3,920**	**172,900**	

Economic Development	
Information Requested	Documentation
II. Performance and Impacts of Policies **a. Performance of Transit Supportive Plans and Policies**	
Demonstrated cases of developments affected by transit supportive policies	

Figure 9. Nine15 Franklin (Mixed-Use Residential), Located adjacent to the Streetcar Extension corridor

Economic Development	
Information Requested	Documentation
II. Performance and Impacts of Policies **a. Performance of Transit Supportive Plans and Policies**	
Station area development proposals and status	

Recent, proposed, and under construction development projects in the City of Tampa demonstrate the effectiveness of adopted transit-oriented policies and plans. Current under construction developments will add approximately 7,600 residential units and hotel rooms, 1.4 million square feet of retail, and 1.4 million square feet of office space to the station areas. Currently planned developments will add 1,400 residential units and hotel rooms, 800,000 square feet of retail to the station areas (**Figure 22**). The following section summaries the recently proposed and under construction projects.

Economic Development	
Information Requested	Documentation
II. Performance and Impacts of Policies **a. Performance of Transit Supportive Plans and Policies**	
Station area development proposals and status	

Water Street Tampa

As one of the nation's largest developments, the $3 billion Water Street Tampa project (**Figure 13**) will expand upon the CBD's existing pedestrian-friendly and transit-supportive environment. When completed, 1 million square feet of retail, cultural, educational, and entertainment space, 12.9 acres of parks and public spaces, and 3,500 dwelling units will be added to the Downtown Core. It is estimated that 23,000 plus people will live, work, study, and visit Water Street once the development is completed around 2025. Phase 1 of the development is under construction and is scheduled for completion between 2020 and 2021. The completion of Phase 1 will add 1.1 million square feet of office space, 300,000 square feet of retail space, 100,000 square feet of meeting space, and 1,300 residential units to Station Area 1. Construction of the JW Marriot Hotel, USF Health Morsani College of Medicine and Heart Institute, and Sparkman Wharf development is included in Phase 1.

As previously mentioned in this report, sustainability and resiliency are at the forefront of the Water Street development. Water Street is the first neighborhood in the world to be awarded a WELL Community Standard designation, the WELL Design and Operations designation. Water Street was awarded the designation for designs that improve walkability, reduce light pollution, mitigate urban heat island effects, and ensure readily available recycling throughout the public realm.

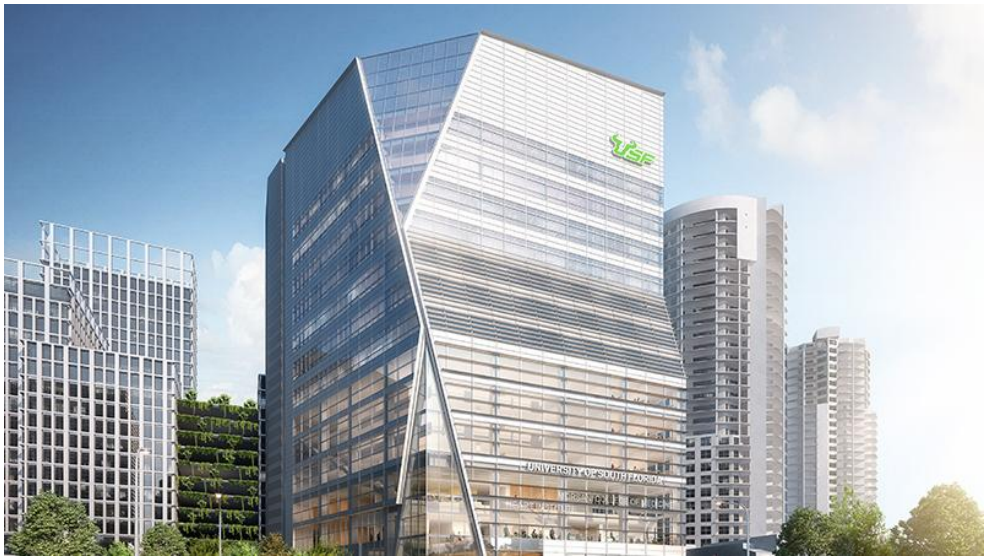
Figure 10. Water Street Tampa Rendering

Economic Development	
Information Requested	Documentation
II. Performance and Impacts of Policies **a. Performance of Transit Supportive Plans and Policies**	
Station area development proposals and status	

USF Health Morsani College of Medicine and Heart Institute

The USF Health Morsani College of Medicine and Heart Institute in Downtown Tampa (**Figure 14**) broke ground on construction in 2017 and is scheduled to open in late 2019. The 13-story, 395,000 square foot building is an anchor in the Water Street development and creates a medical focus in close proximity to Tampa General Hospital and medical village within a one-mile radius. Once completed the development will bring 1,800 students, facility, and researchers to the downtown area. In addition to drawing students and facility to the Downtown Core, the development is expected to spark twice the acquired research funding in local economic activity.

Figure 11. USF at Water Street Rendering



Economic Development	
Information Requested	Documentation
II. Performance and Impacts of Policies **a. Performance of Transit Supportive Plans and Policies**	
Station area development proposals and status	

Sparkman Wharf

Sparkman Wharf (**Figure 15**) is a mixed-use center that anchors the Water Street development and consists of 180,000 square feet of office space, 65,000 square feet of retail space, and ample green and open space. The first phase of Sparkman Wharf was completed in 2018 with the opening of a public park, events pavilion, and a beer garden. Since the grand opening, Sparkman Wharf has become a favorite outdoor waterfront destination for residents and visitors alike.

The expansion of Sparkman Wharf is scheduled for late 2018 and early 2019. The second phase of construction includes demolition and redevelopment of the existing plaza to create 70,000 square feet of retail and office space. The third phase includes proposed construction of two residential towers along Channelside Drive in Station Area 1.

Figure 12. Sparkman Wharf Rendering

Economic Development	
Information Requested	Documentation
II. Performance and Impacts of Policies **a. Performance of Transit Supportive Plans and Policies**	
Station area development proposals and status	

Hotels

The Water Street development includes plans for multiple hotels, including Tampa's first JW Marriot (**Figure 16**) and The Tampa EDITION. The JW Marriot is under construction and is expected to open in 2020. Upon completion, the hotel will add 519 hotel rooms and 156,000 square feet of meeting space to Station Area 1. An additional 173 hotel room and 46 resident units will be added to Station Area 1 when The Tampa EDITION is completed 2021.

Figure 13. JW Marriot Rendering

Economic Development	
Information Requested	Documentation
II. Performance and Impacts of Policies **a. Performance of Transit Supportive Plans and Policies**	
Station area development proposals and status	

The Heights

The Heights is a $820 million, 43-acre mixed-use development under construction in Station Area 5. The completed development will add 1,500 residential units, 240 hotel rooms, 200,000 square feet of retail space, 300,000 square feet of office space, and three schools to the Tampa Heights neighborhood.

The Heights development will intensify the density within the Tampa Heights neighborhood, while maintaining its unique and historic character. This increased density will be beneficial to the streetcar extension as the proposed extension corridor runs adjacent to The Heights development. The streetcar extension will provide a direct connection for Heights residents, employees, and visitors to the Downtown Core.

Figure 14. The Heights Rendering

The Heights development is anchored by Armature Works, a 70,000 retail and event space and The Pearl, a 314-unit mixed-used residential development with 28,500 square feet of retail space. Armature Works is a redeveloped 73,300 square foot two-story building. Within the building there is 22,000 square feet of retail space including a 16-vendor food market and three restaurants, an 800-seat banquet hall, a 200-seat event space, and 12,000 square

Economic Development	
Information Requested	Documentation
II. Performance and Impacts of Policies **a. Performance of Transit Supportive Plans and Policies**	
Station area development proposals and status	

feet of co-work office space. The development received $21.5 million in funding from a tax-exempt bond for the construction of new roads, sidewalks and parking facilities, and improvements for the Tampa Riverwalk.

Armature Place and The Heights Union Creative Office Center (**Figure 18**) are projects that are currently underway in The Heights development. Armature Place is a proposed redesigned main street within the development. The Heights Union Center Office Center is a 342,000 square-foot office and retail space. Construction began in 2019 and occupancy is expected to begin in 2020.

Figure 15. The Heights Union Creative Office Center Rendering

Economic Development	
Information Requested	Documentation
II. Performance and Impacts of Policies **a. Performance of Transit Supportive Plans and Policies**	
Station area development proposals and status	

ENCORE! Downtown's Tempo District

ENCORE! is a master planned mixed-use, mixed-income development in Station Area 4 (**Figure 19**). The development is a joint venture agreement between the City of Tampa Housing Authority and the Bank of America Community Development Corporation. Upon completion, the $425 million development will consist of 2,030 residential units, 300 plus hotel rooms, 50,000 square feet of retail space, and 59,000 square feet of office space. Parcels within the project site have been set aside for a grocery store and hotel. Construction began in 2010 and to date three of the four residential buildings have been completed. ENCORE! is the first master-planned development project in Florida to receive a LEED Neighborhood Development certification for its environmental and sustainability stewardship.

Figure 16. ENCORE! Development

Economic Development	
Information Requested	Documentation
II. Performance and Impacts of Policies **a. Performance of Transit Supportive Plans and Policies**	
Station area development proposals and status	

Riverwalk Place Tower

Riverwalk Place (**Figure 20**) is a proposed high density, mixed-use development located along Tampa's Riverwalk in Station Area 1. At 50 stories high, Riverwalk Place will to be the tallest building on Florida's Gulf Coast and will include 211 residential units. The development plans include a promenade along the Riverwalk with at least four restaurants and various retail options. The non-residential space equates to 195,000 square feet of retail and commercial space.

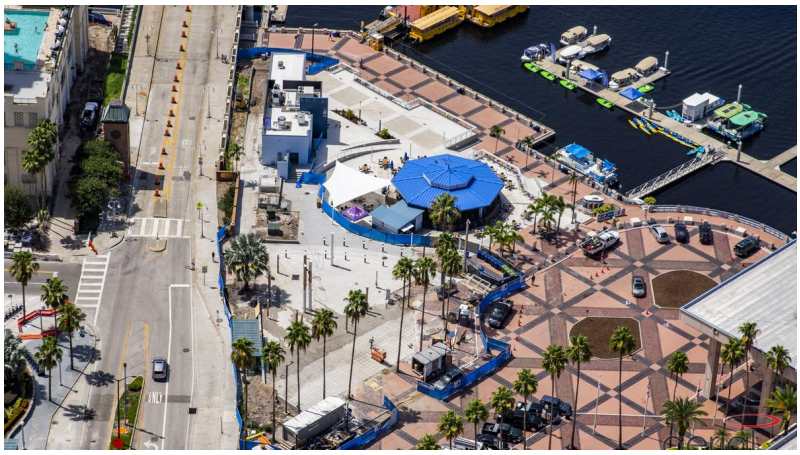
Figure 17. Riverwalk Place Tower Rendering

Economic Development	
Information Requested	Documentation
II. Performance and Impacts of Policies **a. Performance of Transit Supportive Plans and Policies**	
Station area development proposals and status	

Tampa Convention Center

The Tampa Convention Center, located in Station Area 1, is currently undergoing a $30 million renovation, funded by the City of Tampa *Capital Improvement Plan*. The renovation includes new and upgraded meeting spaces, facilities, and restaurants along the Riverwalk waterfront. The Convention Center renovation began in 2018 and is planned to be completed in 2022. The renovation will add 18 new meeting rooms and 16,000 square feet of new meeting and office space. Along the waterfront, the renovation includes upgrades to the existing Sail Pavilion. The existing space will be transformed into the Sail Plaza and will include two restaurants and an expanded outdoor seating area. The Sail Plaza renovation was completed and opened for business in August 2019.

Figure 18. Completed Sail Plaza Renovation



Additional under construction and proposed developments in the station areas are listed below in **Table 5**.

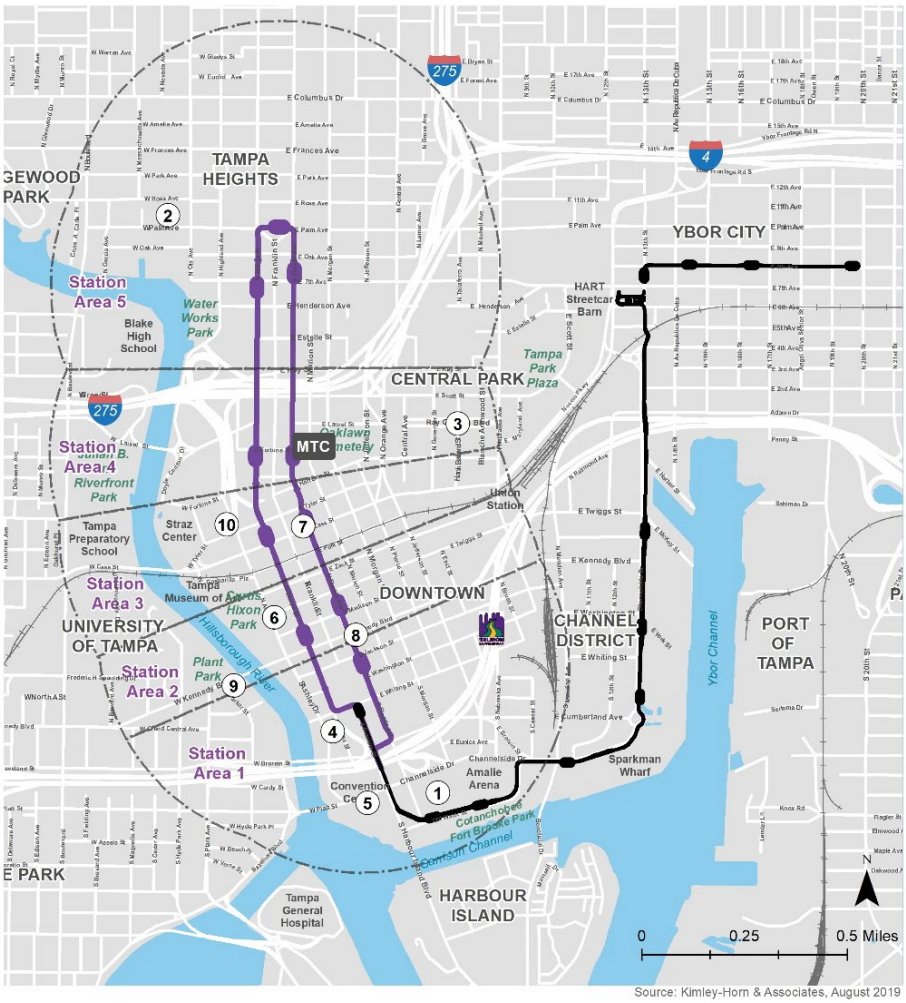
Economic Development	
Information Requested	Documentation
II. Performance and Impacts of Policies **a. Performance of Transit Supportive Plans and Policies**	
Station area development proposals and status	

Table 3: Additional Station Area and Corridor Developments

Project Name	Project Status	Station Area	Project Type	Residential Units/ Hotel Rooms	Retail Square Feet
Arris Tampa	Proposed	2	Mixed-Use Residential	80	5,000
Historic Kress Property	Proposed	3	Mixed-Used Hotel/Residential	58 Units & 190 Hotel Rooms	15,200
Hyatt House/Hyatt Place	Proposed	2	Hotel	345 Rooms	7,200
Lafayette Place	Approved	2	Mixed-Used Residential	375 Units & 350 Hotel Rooms	750,000
Modera Tampa	Under Construction	3	Mixed-Used Residential	300 Units	12,000
			Total	**1,698**	**789,400**

Economic Development	
Information Requested	Documentation
II. Performance and Impacts of Policies **a. Performance of Transit Supportive Plans and Policies**	
Station area development proposals and status	

Figure 19. Proposed Development Locations



Station Area Proposed Developments

InVision: Tampa Streetcar | City of Tampa

- Extension Station Areas - Half Mile Buffer
- Existing Stop Locations
- Existing Alignment
- Proposed Stop Locations
- Preferred Extension Alignment

1. Water Street Tampa
2. The Heights
3. The Encore!
4. Riverwalk Place Tower
5. Tampa Convention Center
6. Arris Tampa
7. Historic Kress Property
8. Hyatt House/Hyatt Place
9. Lafayette Place
10. Modera Tampa

Economic Development	
Information Requested	Documentation
II. Performance and Impacts of Policies **b. Potential Impact of Transit Investment on Regional Development**	
Adaptability of station area land for transit-supportive development	

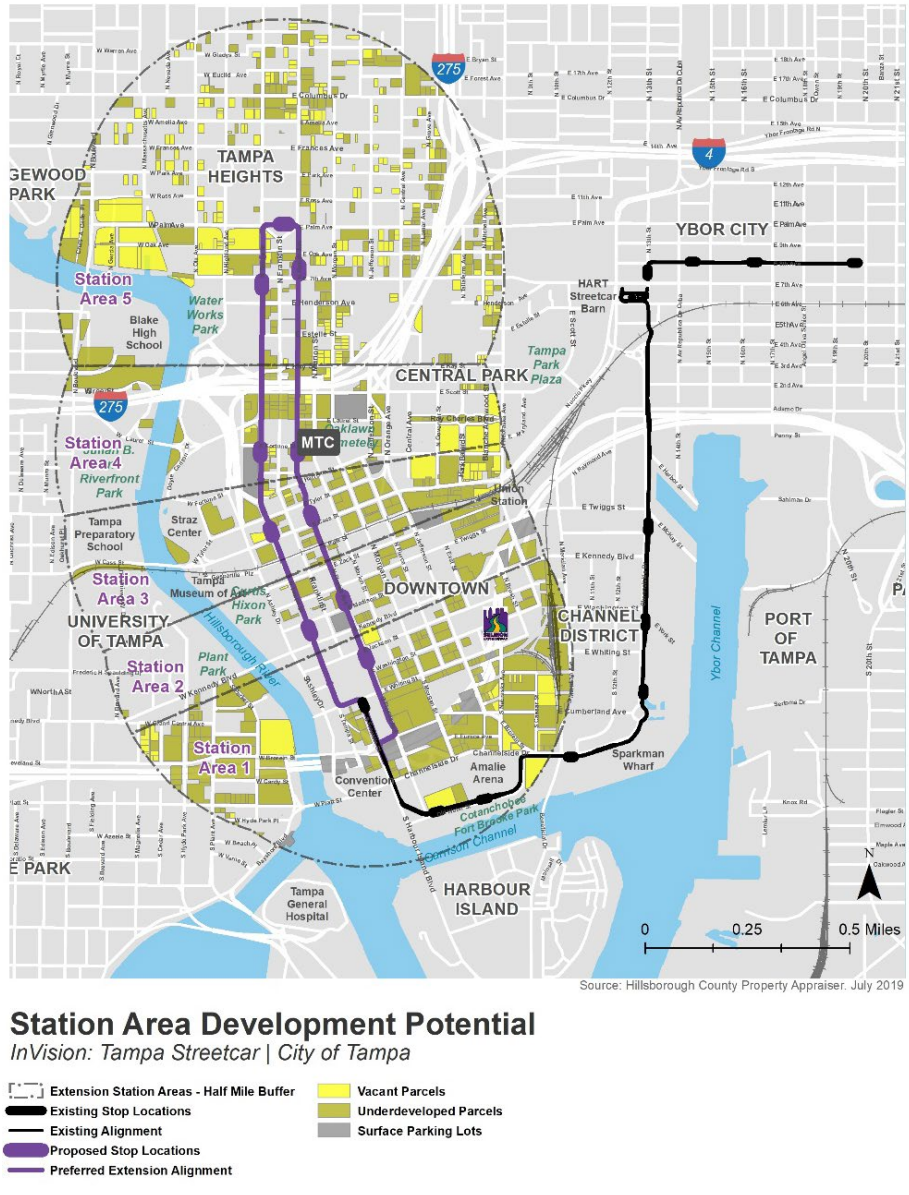
Numerous vacant or underdeveloped parcels are readily available for redevelopment in the station areas (**Figure 23**). The Tampa Streetcar extension station areas contain approximately 870 parcels for redevelopment, reuse, and revitalization. These parcels are zoned for high-density and medium-density, mixed-use development. As enhanced transit, pedestrian, and bicycle infrastructure continues to be implemented according to City of Tampa planning documents, increased densification is anticipated in the station areas. As zoning and development policies continue to become more transit-friendly, it will support continued development and densification of the station areas and CBD. Currently within the City of Tampa, the average developed density is 5.1 du/acre while the average allowable density is 19.0 du/acre. Within the City of Tampa and the CBD, there are ample opportunities to densify development in support of current and future transit initiatives.

Opportunity for high-density, mixed-used development exists in Station Areas 1, 2, 3 and 4. To date, there are 74 vacant parcels and 358 underdeveloped parcels and surface parking lots within a half mile of the extension stations. Collectively, the vacant and underdeveloped parcels equate to 188 acres of land available for transit-oriented and supporting development in Station Areas 1, 2, 3 and 4. Zoning in these station areas consists of Regional Mixed-Use 100 (RMU-100) and Central Business District (CBD). RMU-100 allows for density maximums at up to 75 du/acre, or 100 du/acre with a density bonus. CBD zoning does not set a maximum dwelling unit per acre density or floor area ratio. Redevelopment and new development in these station areas can further enhance the existing transit-oriented and pedestrian-friendly environment with increased density.

Although the density maximums in Station Area 5 are less than the CBD, opportunity for intensified development is also available in the station area. In Station Area 5, there are 231 vacant parcels and 215 underdeveloped parcels within a half mile of the station. Collectively, the parcels equate to 113 acres of land available for transit-oriented and supportive development in Station Area 5. Zoning policies within the station area allow these parcels to be developed or redeveloped with a maximum density of 30 du/acre or 35 du/acre with a density bonus.

Economic Development	
Information Requested	Documentation
II. Performance and Impacts of Policies **b. Potential Impact of Transit Investment on Regional Development**	
Adaptability of station area land for transit-supportive development	

Figure 20. Station Area Development Potential



Station Area Development Potential

InVision: Tampa Streetcar | City of Tampa

- Extension Station Areas - Half Mile Buffer
- Existing Stop Locations
- Existing Alignment
- Proposed Stop Locations
- Preferred Extension Alignment
- Vacant Parcels
- Underdeveloped Parcels
- Surface Parking Lots

Economic Development	
Information Requested	Documentation
II. Performance and Impacts of Policies **b. Potential Impact of Transit Investment on Regional Development**	
Corridor economic environment	

Growth projections for Hillsborough County assume a 13 percent increase in population and 12 percent increase in employment by the year 2025. The Hillsborough County Planning Commission expects these trends to continue through the year 2045. By 2045, it is anticipated that Hillsborough County will have grown by 714,000 more people and add 404,400 more jobs. At the same time as, the City of Tampa is expected to experience higher rates of growth with a 15 percent increase in population and 18 percent increase in employment by 2025. As one of Hillsborough County's major employment areas, Downtown Tampa is expected to experience a higher proportion of the anticipated regional growth. Downtown Tampa has recently experienced significant growth, with a 32 percent increase in residential units since 2016. Development in Tampa and the CBD will need to densify to accommodate the anticipated future growth as full buildout is realized.

In 2018, Tampa was named one of the nation's top 10 markets for real estate investors given its growing economic base and population, which is increasing at almost twice the national rate. Tampa is the fastest growing city in the state of Florida. Downtown Tampa will continue to account for a large share of the region's rapid growth due to its strength as a desirable urban location to live, work, and play.

Continued growth in Downtown Tampa and the station areas can be expected given the real estate and economic environment. The cost of living in Tampa is 32 percent below the national average. Based on U-Haul truck rental data, Tampa is ranked second in the nation for people moving into an area. It is estimated that nearly 150 people move to Tampa daily. The influx of people moving to Tampa, coupled with historically consistent growth rates, demonstrates the strength of Tampa's real estate market. As growth continues there is a strong potential for transit supportive development within the station areas and throughout the greater Tampa Bay Area region.

Economic Development	
Information Requested	Documentation
III. Tools to Maintain or Increase the Share of Affordable Housing in the Project Corridor	
Evaluation of corridor-specific affordable housing needs and supply	

Successful public transportation serves transit dependent populations by providing daily mobility options for their travel needs to work, school, shopping destinations, medical facilities, and recreational areas. These transit dependent populations also rely on access to affordable housing.

Hillsborough County and the City of Tampa are currently implementing plans and policies to preserve and increase affordable housing in the region and extension station areas. Currently there are 1,646 affordable housing units within the five station areas.

Hillsborough County Five Year Consolidated Plan Program Years 2016 – 2020

Hillsborough County's *2016-2020 Five Year Consolidation Plan* provides the framework for the use of funds received from the U.S. Department of Housing and Urban Development (HUD). The plan's needs assessment found that only 111,036 households (or 34 percent) are considered affordable in Hillsborough County (2007-2011). With less than half of the households in Hillsborough County being considered affordable, it can be concluded that the current housing market does not provide sufficient housing for households at all income levels. To that end, the market analysis section of the *Five Year Plan* identifies challenges and barriers to affordable housing that effect the County's ability to provide affordable housing in the future, as well as identification of specific strategies to remove these barriers.

City of Tampa Annual Action Plan for 2018

The *Annual Action Plan* presents the City of Tampa's strategic approach to housing activities and community development for the fiscal year 2018-2019. The plan considers market conditions for a wide range of housing characteristics, including the number of available housing units, cost and condition of housing, homeless facilities and services, special needs facilities and services, and barriers to affordable housing. The City pursues strategies focused on housing rehabilitation, homeownership assistance, rental assistance, new construction of affordable housing, assistance for supportive housing operations, assistance for persons experiencing homelessness, and support for public service operations. The City recognizes the critical importance of maintaining its supply of affordable housing and has selected a number of projects designed to enhance the supply of affordable housing, and increase access to sustainable housing options for low-income residents across the City. In particular, the City will fund three programs through its Community Development Block Grant (CDBG) allocation for housing counseling services. The first program is offered through the Center for Affordable Homeownership, which provides housing counseling services to help low-moderate income families achieve homeownership. A total of $180,000 will be awarded to three organizations to administer the housing counseling services, assisting in processing

Economic Development	
Information Requested	Documentation
III. Tools to Maintain or Increase the Share of Affordable Housing in the Project Corridor	
Evaluation of corridor-specific affordable housing needs and supply	

applications for the City's Mortgage Assistance Program (MAP). The program is expected to assist approximately 150 clients within the City.

Economic Development	
Information Requested	Documentation
III. Tools to Maintain or Increase the Share of Affordable Housing in the Project Corridor	
Plans and policies to preserve and increase affordable housing in region and/or corridor	

The Imagine 2040: Tampa Comprehensive Plan

Goal ten in the *Comprehensive Plan*'s Land Use section is to recognize that community prosperity, and neighborhood health and revitalization is dependent upon quality housing for its citizens. Policy 10.1.1 calls to continue to promote the benefits of affordable housing programs and urban neighborhoods. Additionally, Policy 10.2.3 states to continue to encourage the revitalization of abandoned properties and renovate buildings for the housing needs of special populations and seek public-private partnerships to provide affordable housing.

The first goal of the *Comprehensive Plan*'s Housing section is to provide a range of housing options by 2040 to address the future housing needs of Tampa's diverse population. Policies in this goal include:

- Provide incentives such as development density bonuses, expedited permitting for affordable housing, and eco-friendly "green" sustainable building standards to encourage developers to include affordable housing in large scale residential projects.
- Continue collaboration among housing agencies such as Tampa Housing Authority, Housing Finance Authority, faith-based organizations, Hillsborough County and state housing offices, not-for profits, and private developers to develop housing opportunities.
- Continue to work with nonprofit partners to integrate very low–income housing units into predominantly market-rate housing projects.
- Promote the preservation and development of a sufficient supply of housing affordable to extremely low-income individuals and households with children in order to reduce or prevent homelessness.
- Support stabilization programs that help people stay in their homes.
- Expand the availability of financing mechanisms that enable middle income households to buy and rehabilitate houses in existing Tampa neighborhoods.
- Continue to use State and Federal funding to assist in the rehabilitation of housing in very low-, low and moderate income areas within the City.

Tampa's Affordable Housing Advisory Committee (AHAC)

Tampa's Affordable Housing Advisory Committee (AHAC) was established as required by the Florida Housing Finance Corporation for the State Housing Initiative Partnership (SHIP) per ss. 420.9076 (2). The AHAC has the responsibility to review established policies, procedures, ordinances, land development regulations, and the local government comprehensive plan and make recommendations on initiatives that will encourage affordable housing. According to Sec. 17.5-10 of Tampa's *Land Development Code*, at a minimum, the AHAC shall submit an initial

Economic Development	
Information Requested	Documentation
III. Tools to Maintain or Increase the Share of Affordable Housing in the Project Corridor	
Plans and policies to preserve and increase affordable housing in region and/or corridor	

report to the local governing body, and triennially thereafter, that includes recommendations on, and evaluation and implementation of, affordable housing incentives in the following areas:

- The processing of approvals of development orders or permits, as defined in F.S. § 163.3164(7) and (8), for affordable housing projects, is expedited to a greater degree than other projects.
- The modification of impact-fee requirements, including reduction or waiver of fees and alternative methods of fee payment for affordable housing.
- The allowance of flexibility in densities for affordable housing.
- The reservation of infrastructure capacity for housing for very-low-income persons, low-income persons, and moderate-income persons.
- The allowance of affordable accessory residential units in residential zoning districts.
- The reduction of parking and setback requirements for affordable housing.
- The allowance of flexible lot configurations, including zero-lot-line configurations for affordable housing.
- The modification of street requirements for affordable housing.
- The establishment of a process by which a local government considers, before adoption, policies, procedures, ordinances, regulations, or plan provisions that increase the cost of housing.
- The preparation of a printed inventory of locally owned public lands suitable for affordable housing.
- The support of development near transportation hubs and major employment centers and mixed-use developments.

Tampa Mayor Jane Castor's Affordable Housing Advisory Team

The Affordable Housing Advisory Team will complement three other teams that have been launched to focus on Workforce Development, and Transportation and Development Services, respectively. The Advisory Teams are vital to helping guide the Mayor's strategic visioning for key City priorities and are planned to each engage for approximately 90 days.

"Home ownership is part of the American dream and access to that is one of the top priorities of my administration," said Mayor Jane Castor. "This advisory team will serve as a compass to ensure that dream becomes a reality for past and future Tampa residents." Castor said she wants to know "what we can do as a city looking at codes and ordinances that may hamper or slow down the creation of affordable housing." Then she wants the committee to look at ways to pay for more affordable housing and ways to assist buyers and renters.

Economic Development	
Information Requested	Documentation
III. Tools to Maintain or Increase the Share of Affordable Housing in the Project Corridor	
Plans and policies to preserve and increase affordable housing in region and/or corridor	

Dare to Own The Dream Program

The City of Tampa offers down payment assistance loans to income eligible home buyers of property within the City limits of Tampa. The loan is in second position behind primary financing from a mortgage lender and is typically known as a "silent second" because of the zero percent rate and $0 monthly payment. The Deferred Payment Loan (DPL) will become due and payable when the primary mortgage is satisfied or ownership is transferred, whichever comes first. The program provides up to $30,000.00 to assist income eligible first time homebuyers to achieve the dream of homeownership.

Tampa's Community Heroes Homeownership Program

The *Community Heroes Program,* presented by the City of Tampa Housing and Community Development (HCD) Division in partnership with Federal Home Loan Bank-Atlanta, provides housing assistance to first responders. The program provides funds to match the City's down payment assistance program. Through this added funding, community heroes have an even greater opportunity to own a home in the community where they serve. Eligible participants can receive a $5,000 grant to match the $15,000 provided through the City's "*Dare to Own the Dream*" program. Eligible buyers include: law enforcement personnel, fire rescue personnel, K-12 public school staff, and other first responders.

Economic Development	
Information Requested	Documentation
III. Tools to Maintain or Increase the Share of Affordable Housing in the Project Corridor	
Adopted financing tools and strategies targeted to preserve and increase affordable housing in the region and/or corridor	

Hillsborough County's 2016-2020 Five Year Consolidation Plan

As mentioned previously on page 60 of this report, Hillsborough County's *2016-2020 Five Year Consolidation Plan* identifies specific strategies to remove barriers and increase affordable housing in the region. These strategies include:

- Expedite processing of approvals of development orders or permits for affordable housing projects.
- Modify impact-fee requirements, including reduction or waiver of fees and alternative methods of fee payment for affordable housing.
- Allow flexibility in densities for affordable housing.
- Reserve infrastructure capacity for housing for very low income persons, low income, and moderate income persons.
- Allow affordable accessory residential units in residential zoning districts.
- Reduce parking and setback requirements for affordable housing.
- Allow flexible lot configurations, including zero-lot-line configurations for affordable housing.
- Modify street requirements for affordable housing.
- Establish a process by which a local government considers, before adoption, policies, procedures, ordinances, regulations, or plan provisions that increase the cost of housing.
- Prepare a printed inventory of locally-owned public lands suitable for affordable housing.
- Support development near transportation bubs, major employment and mixed-use centers.

City of Tampa's Adopted 2040 Comprehensive Plan

The Housing section of the *Comprehensive Plan* outlines objectives and policies for the preservation of existing housing. The main objective is to develop and maintain programs that identify substandard housing and provide a range of options to correct housing code violations. Policies include:

- Expanding the availability of financing mechanisms that enable middle income households to buy and rehabilitate houses in existing Tampa neighborhoods;
- Supporting public and private actions that improve the physical and social environment of areas that have experienced disinvestment in housing, that have a concentration of low-income households, or that lack infrastructure;

Economic Development	
Information Requested	Documentation
III. Tools to Maintain or Increase the Share of Affordable Housing in the Project Corridor	
Adopted financing tools and strategies targeted to preserve and increase affordable housing in the region and/or corridor	

- And continuing to use State and Federal funding to assist in the rehabilitation of housing.

City of Tampa's Annual Action Plan

Additionally, in the previously mentioned (page 60) *Annual Action Plan*, the City of Tampa plans to continue utilizing the following strategies to eliminate barriers to affordable housing:

- Implement the goals and objectives of the City's *Comprehensive Plan* as it pertains to increasing the supply of affordable housing.
- Expedited permitting for affordable housing projects providing for efficient review and minimal delays.
- Provide incentives to assist in the provision of affordable housing such as the allowance of flexibility in densities for affordable housing, the reduction of parking and setback requirements, and reduction of impact fees.
- The allowance of affordable accessory residential units in residential zoning districts.
- Prepare a printed inventory of publicly owned land suitable for affordable housing and develop a strategy for disposition of this land.
- Support affordable housing developments near transportation and major employments centers.
- Review policies, procedures, and regulations to determine the impact on the cost of housing.

Available Vacant Lots, City of Tampa

The Housing and Community Development Division maintains a list of vacant properties available for single family home development as well as properties suitable for multi-family housing.

Economic Development	
Information Requested	Documentation
III. Tools to Maintain or Increase the Share of Affordable Housing in the Project Corridor	
Evidence of developer activity to preserve and increase affordable housing in the corridor	

ENCORE! Downtown's Tempo District

ENCORE! is a major redevelopment project in the Central Park neighborhood within the streetcar extension alignment (**Figure 25**). It is a joint venture agreement between the Tampa Housing Authority (THA) and the Bank of America Community Development Corporation (BACDC). Through this partnership, a master plan of a mixed-use, mixed-income housing development consisting of the entire Central Park site has been developed.

Once construction is complete, the development will consist of 2,030 residential units; 50,000 square feet of commercial retail space; 59,000 square feet of office space including a hotel, supermarket, and St. James Church restoration; Perry Harvey Park restoration and Town Center. Construction of this project began in the fall of 2010. Four of the 11 pads consist of THA owned mixed income rental units.

The Ella senior residence building opened in December 2012. The Trio, ENCORE!'s first family residence, opened in June 2014. The Reed senior residence building opened June 2015. Finally, the Tempo opened in January of 2019 and is a 203 unit multi-family affordable development built to LEED standards.

Madison Heights & Metro 510

Madison Heights and Metro 510 are new rent-restricted apartment buildings in Downtown Tampa. Madison Heights (**Figure 26**) opened in 2014 and Metro 510 (**Figure 27**) opened in 2011. Both apartment buildings are within walking distance to Marion Transit Center, a major downtown transit hub. The Metro 510 project saved a historic church while providing 120 affordable units to downtown. The St. Paul African Methodist Episcopal Church was constructed in 1913 and is listed on the City of Tampa's Local Historic Landmarks.

West River Redevelopment Plan

Additionally, the City of Tampa's *West River Redevelopment Plan* (**Figure 28**) focuses on bringing new development to West Tampa. The development program includes over 2,000 new housing units, 90,000 square feet of retail, and 70,000 square feet of office space. The plan also includes improved street network connection, better-quality public education and community services, and a focus on connections along the Hillsborough River. This community will provide new opportunities for affordable housing, employment, and commercial development. By 2025, the goal is to have created a diverse and economically integrated community.

A complete listing of affordable housing units within all station areas is shown in **Table 6**.

Economic Development	
Information Requested	Documentation
III. Tools to Maintain or Increase the Share of Affordable Housing in the Project Corridor	
Evidence of developer activity to preserve and increase affordable housing in the corridor	

Figure 21. The Trio at ENCORE!

Figure 22. Madison Heights

Economic Development	
Information Requested	Documentation
III. Tools to Maintain or Increase the Share of Affordable Housing in the Project Corridor	
Evidence of developer activity to preserve and increase affordable housing in the corridor	

Figure 23. Metro 510

Figure 24. West River Plan Rendering

Economic Development	
Information Requested	Documentation
III. Tools to Maintain or Increase the Share of Affordable Housing in the Project Corridor	
Evidence of developer activity to preserve and increase affordable housing in the corridor	

Table 4. Legally Binding Affordable Housing Units by Station Area, 2019

Station Area	Development	Street Address	Total Units	Assisted Units	Affordability Year
1	Tampa Baptist Manor	215 West Grand Central	240	240	1973
Station Area 1 Total			**240**	**240**	
4	Reed at ENCORE!	1240 Ray Charles Boulevard	158	158	2012
4	Ella at ENCORE!	1210 Ray Charles Boulevard	160	160	2012
4	Madison Heights	1250 Marion Street	80	80	2012
4	Tempo at ENCORE!	1102 Ray Charles Boulevard	203	143	2014
4	Metro 510	510 East Harrison Street	120	120	2010
4	VISTA 400	400 E Harrison St	200	200	1970
4	Oakhurst Square I Apartments	1120 N Boulevard	120	45	1970
4	Oakhurst Square II Apartments	1120 N Boulevard	80	39	1970
4	Trio at ENCORE!	1101 Ray Charles Boulevard	141	99	2012
Station Area 4 Total			**1262**	**1044**	
5	Central Court Apartments	2510 Central Ave	68	68	1970
5	Casa De Palma	302 E Palm Ave	24	24	1981
5	Palm Avenue Baptist Towers	215 E Palm Ave	199	168	1974
5	Mobley Park Apartments	401 East 7th Avenue	238	96	2001
5	Metropolitan Ministries Miracle Place	2106 N Florida Ave	6	6	2014
Station Area 5 Total			**535**	**362**	
Overall Total			**2037**	**1646**	

Source: National Housing Preservation Database, and the Shimberg Center for Housing Studies

Economic Development	
Information Requested	Documentation
III. Tools to Maintain or Increase the Share of Affordable Housing in the Project Corridor	
Extent to which local plans and policies account for long-term affordability and the needs of very- and extremely-low income households in the corridor	

City of Tampa's Adopted 2040 Comprehensive Plan

The Housing section of the *Comprehensive Plan* outlines objectives and policies for the long-term affordability and needs of low-income households in the corridor. Goal 1 is to provide a range of housing options by 2040 to address the future housing needs of Tampa's diverse population. Objective 1.1 states plans to provide additional housing units to serve moderate income, low income, and very low income households by 2040. Policies include the following:

- Work with existing Community-Based non-profit organizations to provide affordable housing opportunities.
- Continue to work with the residents of lower income areas within the City, to increase rehabilitation efforts to minimize code enforcement liens and further deterioration of the housing stock and neighborhoods.
- Continue to allocate a percentage of its state funding for new multi-family housing in very low, low and moderate income areas.
- Continue to promote awareness of the availability of federal and state funds to provide deferred payment and low interest loans in very low, low and moderate income areas.
- Continue to promote the use of the most feasible, safe, and energy efficient systems and methods for constructing very low to moderate- income housing.
- Encourage regional approaches to providing affordable housing.
- In coordination with private organizations, develop permanent and transitional housing that is affordable for extremely low and very low income households and special needs populations.
- Provide opportunities throughout the City for emergency shelters and transitional housing for people who are homeless.
- Continue to utilize federal and state subsidies to the fullest to meet the needs of low income residents.

Tampa's Affordable Housing Advisory Committee (AHAC)

As previously mentioned on page 63, Tampa's Affordable Housing Advisory Committee (AHAC) was established as required by the Florida Housing Finance Corporation for the State Housing Initiative Partnership (SHIP) per ss. 420.9076 (2). The AHAC has the responsibility to review established policies, procedures, ordinances, land development regulations, and the local government comprehensive plan and make recommendations on initiatives that will encourage affordable housing. According to Sec. 17.5-10 of Tampa's Land Development Code, at a

Economic Development	
Information Requested	Documentation
III. Tools to Maintain or Increase the Share of Affordable Housing in the Project Corridor	
Extent to which local plans and policies account for long-term affordability and the needs of very- and extremely-low income households in the corridor	

minimum, the AHAC shall submit an initial report to the local governing body, and triennially thereafter, that includes recommendations on, and evaluation and implementation of, affordable housing incentives in the following areas:

- The processing of approvals of development orders or permits, as defined in F.S. § 163.3164(7) and (8), for affordable housing projects, is expedited to a greater degree than other projects.
- The modification of impact-fee requirements, including reduction or waiver of fees and alternative methods of fee payment for affordable housing.
- The allowance of flexibility in densities for affordable housing.
- The reservation of infrastructure capacity for housing for very-low-income persons, low-income persons, and moderate-income persons.
- The allowance of affordable accessory residential units in residential zoning districts.
- The reduction of parking and setback requirements for affordable housing.
- The allowance of flexible lot configurations, including zero-lot-line configurations for affordable housing.
- The modification of street requirements for affordable housing.
- The establishment of a process by which a local government considers, before adoption, policies, procedures, ordinances, regulations, or plan provisions that increase the cost of housing.
- The preparation of a printed inventory of locally owned public lands suitable for affordable housing.
- The support of development near transportation hubs and major employment centers and mixed-use developments.

InVision: TAMPA STREETCAR - Capital Cost Estimate

FEDERAL TRANSIT ADMINISTRATION - STANDARD COST CATEGORIES

2019 Base Year, 2025 Revenue Service

Preferred Alternative: Tampa - Florida Couplet

August 16, 2019

CONCEPT LEVEL

	Extension (w/o Vehicles)				VMF and Yard				Modernization				Vehicles			
Standard Cost Category	**Base Year (2019)**	**Allocated Contingency**	**Base Year Total**	**Year of Expenditure**	**Base Year (2019)**	**Allocated Contingency**	**Base Year Total**	**Year of Expenditure**	**Base Year (2019)**	**Allocated Contingency**	**Base Year Total**	**Year of Expenditure**	**Base Year (2019)**	**Allocated Contingency**	**Base Year Total**	**Year of Expenditure**
SCC 10 Guideway and Track	$ 10,590,527	$ 2,147,256	$ 12,737,782	$ 14,775,626	$ -	$ -	$ -	$ -	$ 962,226	$ 195,594	$ 1,157,820	$ 1,343,053	$ -	$ -	$ -	$ -
SCC 20 Station Stops	$ 2,654,430	$ 530,886	$ 3,185,316	$ 3,758,017	$ -	$ -	$ -	$ -	$ 3,054,689	$ 610,938	$ 3,665,627	$ 4,324,685	$ -	$ -	$ -	$ -
SCC 30 Maintenace Facility and Yard	$ -	$ -	$ -	$ -	$ 10,620,000	$ 2,124,000	$ 12,744,000	$ 14,782,839	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
SCC 40 Sitework (Civil, Roadway, Utilities, Mobilization, Gen Conditions)	$ 17,295,383	$ 4,601,574	$ 21,896,957	$ 25,400,124	$ 1,593,000	$ 318,600	$ 1,911,600	$ 2,217,426	$ 2,557,943	$ 654,486	$ 3,212,429	$ 3,726,367	$ -	$ -	$ -	$ -
SCC 50 Systems (Traffic, Comms, Train Control, Traction Power, Fare Collection)	$ 13,943,200	$ 2,788,640	$ 16,731,840	$ 19,408,670	$ -	$ -	$ -	$ -	$ 6,972,800	$ 1,394,560	$ 8,367,360	$ 9,706,005	$ -	$ -	$ -	$ -
Construction Subtotal 10-50	**$ 44,483,540**	**$ 10,068,356**	**$ 54,551,896**	**$ 63,342,438**	**$ 12,213,000**	**$ 2,442,600**	**$ 14,655,600**	**$ 17,000,264**	**$ 13,547,658**	**$ 2,855,578**	**$ 16,403,236**	**$ 19,100,110**	**$ -**	**$ -**	**$ -**	**$ -**
SCC 60 Right-of-Way	$ 690,000	$ 345,000	$ 1,035,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
SCC 70 Vehicles	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 55,000,000	$ 5,500,000	$ 60,500,000	$ 73,785,175
SCC 80 Professional Services	$ 16,014,074	$ 3,202,815	$ 19,216,889	$ 20,650,348	$ 3,786,030	$ 757,206	$ 4,543,236	$ 4,882,133	$ 4,877,157	$ 975,431	$ 5,852,588	$ 6,289,154	$ 3,000,000	$ 550,000	$ 3,550,000	$ 3,814,808
SCC 90 Unallocated Contingency	$ 9,178,142	$ -	$ 9,178,142	$ 10,277,162	$ 2,399,855	$ -	$ 2,399,855	$ 2,687,221	$ 2,763,722	$ -	$ 2,763,722	$ 3,094,659	$ 9,525,000	$ -	$ 9,525,000	$ 10,665,554
SCC 100 Finance Charges	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total	**$ 70,365,757**	**$ 13,616,170**	**$ 83,981,927**	**$ 94,269,948**	**$ 18,398,885**	**$ 3,199,806**	**$ 21,598,691**	**$ 24,569,618**	**$ 21,188,537**	**$ 3,831,009**	**$ 25,019,546**	**$ 28,483,924**	**$ 67,525,000**	**$ 6,050,000**	**$ 73,575,000**	**$ 88,265,536**

Summary	Year of Expenditure
Extension	$94.3M
VMF and Yard	$24.6M
Modernization	$28.5M
Vehicles	$88.3M
Total	$235.7M

InVision: TAMPA STREETCAR - Capital Cost Estimate

FEDERAL TRANSIT ADMINISTRATION - STANDARD COST CATEGORIES

2019 Base Year, 2025 Revenue Service

Preferred Alternative Tampa/Florida Couplet

August 16, 2019

CONCEPT LEVEL

	CATEGORIES	UNIT	UNIT COST	QUANTITY	TOTAL COST	ALLOC CONT		TOTAL COST	
10	**GUIDEWAY & TRACK ELEMENTS (route miles)**	**TM**	**$ 4,026,816**	**2.63**	**$ 10,590,527**		**$ 2,147,256**	**$ 12,737,782**	
10.03	Guideway: At-grade in mixed traffic	TF	$ 42	13,886	$ 583,007	25%	$ 145,752	$ 728,758	
10.10a	Track: Embedded (NEW)	TF	$ 550	13,886	$ 7,637,520	20%	$ 1,527,504	$ 9,165,024	
10.12	CSX Crossing - Single Track	EA	$ 1,000,000	2	$ 2,000,000	20%	$ 400,000	$ 2,400,000	
10.14	Track: Special (switches, turnouts)	EA	$ 370,000	1	$ 370,000	20%	$ 74,000	$ 444,000	
20	**STATIONS, STOPS, TERMINALS, INTERMODAL (number)**	**TM**	**$ 1,009,289**	**2.63**	**$ 2,654,430**		**$ 530,886**	**$ 3,185,316**	
20.01a	At-grade station stop (NEW)	EA	$ 265,443	10	$ 2,654,430	20%	$ 530,886	$ 3,185,316	
40	**SITEWORK & SPECIAL CONDITIONS**	**TM**	**$ 6,576,191**	**2.63**	**$ 17,295,383**		**$ 4,601,574**	**$ 21,896,957**	
40.02	Site Utilities, Utility Relocation	TF	$ 400	13,886	$ 5,554,560	30%	$ 1,666,368	$ 7,220,928	
40.06	Pedestrian / bike access and accommodation, landscaping	MI	$ 300,000	1	$ 300,000	25%	$ 75,000	$ 375,000	
40.07	Automobile, bus, van accessways including roads, parking lots	LS	$ 4,026,900	1	$ 4,026,900	25%	$ 1,006,725	$ 5,033,625	
40.08	Temporary Facilities and other indirect costs during construction	LS	$ 7,413,923	1	$ 7,413,923	25%	$ 1,853,481	$ 9,267,404	
50	**SYSTEMS**	**TM**	**$ 5,301,597**	**2.63**	**$ 13,943,200**		**$ 2,788,640**	**$ 16,731,840**	
50.01	Train control and signals	TF	$ 50	13,886	$ 694,320	20%	$ 138,864	$ 833,184	
50.02	Traffic signals and crossing protection	EA	$ 100,000	30	$ 3,000,000	20%	$ 600,000	$ 3,600,000	
50.03a	Traction power supply: substations 750kw	EA	$ 1,500,000	2	$ 3,000,000	20%	$ 600,000	$ 3,600,000	
50.03b	Traction power supply: substations 500kw	EA	$ 1,200,000	-		20%			
50.04a	Traction power distribution: new OCS	TF	$ 200	13,886	$ 2,777,280	20%	$ 555,456	$ 3,332,736	
50.04b	Traction power distribution: retrofit existing OCS	TF	$ 150	-		20%			
50.05	Communications	TF	$ 250	13,886	$ 3,471,600	20%	$ 694,320	$ 4,165,920	
50.06	Fare collection system and equipment	EA	$ 100,000	10	$ 1,000,000	20%	$ 200,000	$ 1,200,000	
50.07	Central Control	EA	$ -		$ -	20%	$ -	$ -	
Construction Subtotal (10, 20, 40, 50)		**TM**	**$ 16,913,894**	**2.63**	**$ 44,483,540**		**$ 10,068,356**	**$ 54,551,896**	
60	**ROW, LAND, EXISTING IMPROVEMENTS**								
60.01	Purchase or lease of real estate	LS	$ -		$ -	50%	$ -	$ -	
60.02	Relocation of existing households and businesses	LS	$ 690,000	1	$ 690,000	50%	$ 345,000	$ 1,035,000	
80	**PROFESSIONAL SERVICES (applies to Cats. 10-50)**	**TM**	**$ 6,089,002**	**2.63**	**$ 16,014,074**		**$ 3,202,815**	**$ 19,216,889**	
80.01	Preliminary Engineering	3%		$ 1,334,506	$ 1,334,506	20%	$ 266,901	$ 1,601,407	
80.02	Final Design	7%		$ 3,113,848	$ 3,113,848	20%	$ 622,770	$ 3,736,617	
80.03	Project Management for Design and Construction	7%		$ 3,113,848	$ 3,113,848	20%	$ 622,770	$ 3,736,617	
80.04	Construction Administration & Management	10%		$ 4,448,354	$ 4,448,354	20%	$ 889,671	$ 5,338,025	
80.05	Professional Liability and other Non-Construction Insurance	1%		$ 444,835	$ 444,835	20%	$ 88,967	$ 533,802	
80.06	Legal; Permits; Review Fees by other agencies, cities, etc.	2%		$ 889,671	$ 889,671	20%	$ 177,934	$ 1,067,605	
80.07	Surveys, Testing, Investigation, Inspection	3%		$ 1,334,506	$ 1,334,506	20%	$ 266,901	$ 1,601,407	
80.08	Start up	3%		$ 1,334,506	$ 1,334,506	20%	$ 266,901	$ 1,601,407	
Subtotal (10,20, 40 - 60, 80)					**$ 60,497,614**		**$ 13,271,170**	**$ 73,768,785**	
90	**UNALLOCATED CONTINGENCY**	15%			$ 9,074,642			$ 9,074,642	
Subtotal (10,20, 40 - 60, 80, 90)					**$ 69,572,257**		**$ 13,271,170**	**$ 82,843,427**	
100	**FINANCE CHARGES**				$ -			$ -	
TOTAL CAPITAL COST (10,20, 40 - 60, 80 - 100)							**$ 74,559,084**	**$ 82,843,427**	**$ 91,127,770**
							LOW	**MEDIUM**	**HIGH**
70	**VEHICLES (number)**		**$ 6,050,000.00**	**10.00**	**$ 60,500,000**		**$ 6,050,000**	**$ 66,550,000**	
70.01	Light Rail	EA	$ 5,500,000	10	$ 55,000,000	10%	$ 5,500,000	$ 60,500,000	
70.07	Spare parts	EA	$ 550,000	10	$ 5,500,000	10%	$ 550,000	$ 6,050,000	
80	**PROFESSIONAL SERVICES (applies to Cats. 10-50)**	**TM**	**$ 7,257,500**	**10.00**	**$ 72,575,000**		**$ 6,650,000**	**$ 154,850,000**	
80.03	Vehcile procurement, inspections, etc	0%		$ 3,000,000	$ 3,000,000	20%	$ 600,000	$ 3,600,000	
Subtotal VEHICLE					**$ 60,500,000**		**$ 6,050,000**	**$ 66,550,000**	
90	**UNALLOCATED CONTINGENCY**	15%			$ 9,075,000			$ 9,075,000	
100	**FINANCE CHARGES**							$ -	
TOTAL VEHICLE COST								**$ 75,625,000**	

InVision: TAMPA STREETCAR - Capital Cost Estimate

FEDERAL TRANSIT ADMINISTRATION - STANDARD COST CATEGORIES

2019 Base Year, 2025 Revenue Service

Upgrades to Existing Heritage Trolley Infrastructure to Accommodate Modern Streetcar

August 16, 2019

CONCEPT LEVEL

	CATEGORIES	UNIT	UNIT COST	QUANTITY	TOTAL COST		ALLOC CONT	TOTAL COST	
10	**GUIDEWAY & TRACK ELEMENTS (route miles)**	**TM**	**$ 271,815**	**3.54**	**$ 962,226**		**$ 195,594**	**$ 1,157,820**	
10.03	Guideway: At-grade in mixed traffic	TF	$ 42	1,500	$ 62,976	25%	$ 15,744	$ 78,720	
10.10	Track: Embedded	TF	$ 550	1,500	$ 825,000	20%	$ 165,000	$ 990,000	
10.10b	Track: Embedded (removal)	TF	$ 50	1,500	$ 74,250	20%	$ 14,850	$ 89,100	
20	**STATIONS, STOPS, TERMINALS, INTERMODAL (number)**	**TM**	**$ 277,699**	**11.00**	**$ 3,054,689**		**$ 610,938**	**$ 3,665,627**	
20.01	At-grade station stop (RETROFIT)	EA	$ 277,699	11	$ 3,054,689	20%	$ 610,938	$ 3,665,627	
30	**SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS**	**TM**	**$ -**	**1.00**	**$ -**		**$ -**	**$ -**	
30.01	Administration Building: Office, sales, storage, revenue counting	EA	$ -	-	$ -	20%	$ -	$ -	
30.02	Light Maintenance Facility	EA	$ 6,100,000	-	$ -	20%	$ -	$ -	
30.03	Heavy Maintenance Facility	EA	$ -	-	$ -	20%	$ -	$ -	
30.04	Storage or Maintenance of Way Building	EA	$ -	-	$ -	20%	$ -	$ -	
30.05	Yard and Yard Track	EA	$ 4,520,000	-	$ -	20%	$ -	$ -	
40	**SITEWORK & SPECIAL CONDITIONS**	**TM**	**$ 722,583**	**3.54**	**$ 2,557,943**		**$ 654,486**	**$ 3,212,429**	
40.02	Site Utilities, Utility Relocation	TF	$ 200	1,500	$ 300,000	30%	$ 90,000	$ 390,000	
40.06	Pedestrian / bike access and accommodation, landscaping	MI	$ 300,000	-	$ -	25%	$ -	$ -	
40.07	Automobile, bus, van accessways including roads, parking lots	LS	$ 4,026,900	-	$ -	25%	$ -	$ -	
40.08	Temporary Facilities and other indirect costs during construction	LS	$ 2,257,943	1	$ 2,257,943	25%	$ 564,486	$ 2,822,429	
50	**SYSTEMS**	**TM**	**$ 1,969,718**	**3.54**	**$ 6,972,800**		**$ 1,394,560**	**$ 8,367,360**	
50.01	Train control and signals	TF	$ 50	-	$ -	20%	$ -	$ -	
50.02	Traffic signals and crossing protection	EA	$ 100,000	-	$ -	20%	$ -	$ -	
50.03a	Traction power supply: substations 750kw	EA	$ 1,500,000	-	$ -	20%	$ -	$ -	
50.03b	Traction power supply: substations 500kw	EA	$ 1,200,000	1	$ 1,200,000	20%	$ 240,000	$ 1,440,000	
50.04a	Traction power distribution: new OCS	TF	$ 200	-	$ -	20%	$ -	$ -	
50.04b	Traction power distribution: retrofit existing OCS	TF	$ 150	18,691	$ 2,803,680	20%	$ 560,736	$ 3,364,416	
50.05	Communications	TF	$ 100	18,691	$ 1,869,120	20%	$ 373,824	$ 2,242,944	
50.06	Fare collection system and equipment	EA	$ 100,000	11	$ 1,100,000	20%	$ 220,000	$ 1,320,000	
50.07	Central Control	EA	$ -	-	$ -	20%	$ -	$ -	
Construction Subtotal (10, 20, 30, 40, 50)		**TM**	**$ 3,827,022**	**3.54**	**$ 13,547,658**		**$ 2,855,578**	**$ 16,403,236**	
60	**ROW, LAND, EXISTING IMPROVEMENTS**								
60.01	Purchase or lease of real estate	LS	$ -	-	$ -	50%	$ -	$ -	
60.02	Relocation of existing households and businesses	LS	$ 690,000	-	$ -	50%	$ -	$ -	
80	**PROFESSIONAL SERVICES (applies to Cats. 10-50)**	**TM**	**$ 1,377,728**	**3.54**	**$ 4,877,157**		**$ 975,431**	**$ 5,852,588**	
80.01	Preliminary Engineering	3%		$ 406,430	$ 406,430	20%	$ 81,285.95	$ 487,716	
80.02	Final Design	7%		$ 948,336	$ 948,336	20%	$ 189,667.21	$ 1,138,003	
80.03	Project Management for Design and Construction	7%		$ 948,336	$ 948,336	20%	$ 189,667.21	$ 1,138,003	
80.04	Construction Administration & Management	10%		$ 1,354,766	$ 1,354,766	20%	$ 270,953.16	$ 1,625,719	
80.05	Professional Liability and other Non-Construction Insurance	1%		$ 135,477	$ 135,477	20%	$ 27,095.32	$ 162,572	
80.06	Legal; Permits; Review Fees by other agencies, cities, etc.	2%		$ 270,953	$ 270,953	20%	$ 54,190.63	$ 325,144	
80.07	Surveys, Testing, Investigation, Inspection	3%		$ 406,430	$ 406,430	20%	$ 81,285.95	$ 487,716	
80.08	Start up	3%		$ 406,430	$ 406,430	20%	$ 81,285.95	$ 487,716	
Subtotal (10,20, 40 - 60, 80)					**$ 18,424,815**		**$ 3,831,009**	**$ 22,255,824**	
90	**UNALLOCATED CONTINGENCY**	15%			$ 2,763,722			$ 2,763,722	
Subtotal (10,20, 40 - 60, 80, 90)					**$ 21,188,537**		**$ 3,831,009**	**$ 25,019,546**	
100	**FINANCE CHARGES**							$ -	
TOTAL CAPITAL COST (10,20, 40 - 60, 80 - 100)							**$ 22,517,591**	**$ 25,019,546**	**$ 27,521,501**
							LOW	**MEDIUM**	**HIGH**

InVision: TAMPA STREETCAR - Capital Cost Estimate

FEDERAL TRANSIT ADMINISTRATION - STANDARD COST CATEGORIES

2019 Base Year, 2025 Revenue Service

Vehicle Maintenance Facility and Yard

August 16, 2019

CONCEPT LEVEL

	CATEGORIES	UNIT	UNIT COST	QUANTITY	TOTAL COST		ALLOC CONT	TOTAL COST	
30	**SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS**				**$ 12,213,000**		**$ 2,442,600**	**$ 14,655,600**	
30.01	Administration Building: Office, sales, storage, revenue counting	EA	$ -	0.0	$ -	20%	$ -	$ -	
30.02	Light Maintenance Facility	EA	$ 6,100,000	1.0	$ 6,100,000	20%	$ 1,220,000	$ 7,320,000	
30.03	Heavy Maintenance Facility	EA		0.0	$ -	20%	$ -	$ -	
30.04	Storage or Maintenance of Way Building	EA	$ -	0.0	$ -	20%	$ -	$ -	
30.05	Yard and Yard Track	EA	$ 4,520,000	1.0	$ 4,520,000	20%	$ 904,000	$ 5,424,000	
30.06	Temp facilities, Mobilization, Gen Conditions	15%		1.0	$ 1,593,000	20%	$ 318,600	$ 1,911,600	
80	**PROFESSIONAL SERVICES (applies to Cats. 10-50)**	**TM**			**$ 3,786,030**		**$ 757,206**	**$ 4,543,236**	
80.01	Preliminary Engineering	3%		$ 366,390	$ 366,390	20%	$ 73,278.00	$ 439,668	
80.02	Final Design	7%		$ 854,910	$ 854,910	20%	$ 170,982.00	$ 1,025,892	
80.03	Project Management for Design and Construction	7%		$ 854,910	$ 854,910	20%	$ 170,982.00	$ 1,025,892	
80.04	Construction Administration & Management	10%		$ 1,221,300	$ 1,221,300	20%	$ 244,260.00	$ 1,465,560	
80.05	Professional Liability and other Non-Construction Insurance	1%		$ 122,130	$ 122,130	20%	$ 24,426.00	$ 146,556	
80.06	Legal; Permits; Review Fees by other agencies, cities, etc.	2%		$ 244,260	$ 244,260	20%	$ 48,852.00	$ 293,112	
80.07	Surveys, Testing, Investigation, Inspection	0.5%		$ 61,065	$ 61,065	20%	$ 12,213.00	$ 73,278	
80.08	Start up	0.5%		$ 61,065	$ 61,065	20%	$ 12,213.00	$ 73,278	
Subtotal (30, 80)					**$ 15,999,030**		**$ 3,199,806**	**$ 19,198,836**	
90	**UNALLOCATED CONTINGENCY**	15%			$ 2,399,855			$ 2,399,855	
Subtotal (30, 80, 90)					**$ 18,398,885**		**$ 3,199,806**	**$ 21,598,691**	
100	**FINANCE CHARGES**				$ -			$ -	
TOTAL CAPITAL COST (10,20, 40 - 60, 80 - 100)							**$ 19,438,821**	**$ 21,598,691**	**$ 23,758,560**
							LOW	**MEDIUM**	**HIGH**

InVision: TAMPA STREETCAR - Capital Cost Estimate **August 16, 2019**

FEDERAL TRANSIT ADMINISTRATION - STANDARD COST CATEGORIES **CONCEPT LEVEL**

2019 Base Year, 2025 Revenue Service

Unit Cost Derivation, Reference, & Notes

	CATEGORIES	UNIT	UNIT COST	UNIT COST Adjusted.	ASSUMPTIONS
10	**GUIDEWAY & TRACK ELEMENTS (route miles)**	MI		1.00	
10.01	Guideway: At-grade exclusive right-of-way	TF	$ -	$ -	N/A - Some options within the alternatives are exclusive, but unit cost will be same as 10.03 since in same roadway right-of-way
10.02	Guideway: At-grade semi-exclusive (allows cross-traffic)	TF	$ -	$ -	N/A
10.03	Guideway: At-grade in mixed traffic	TF	$ 42.0	$ 42	Unit cost based on other, similar projects; Sawcut, excavate, compaction
	Sawcut	TF	$ 8.0	$ 8.0	Both sides of guideway, $4/lf
	Excavation	TF	$ 7.83	$ 7.83	FDOT8 5.64/cy; per TF: 12'w x 2.5'd x1' = 1.11cy / tf; plus 1.25 factor for narrow linear work in road
	Stabilization	TF	$ 9.91	$ 9.91	FDOT8 5.96/sy; per TF: 12'w x 1' = 1.33sy/tf; plus 1.25 factor for narrow linear work in road
	Limerock	TF	$ 16.25	$ 16.25	$65/cy; per TF: 8'x.7'= .21cy/tf; plus 1.25 factor
10.04	Guideway: Aerial structure	TF	$ -	$ -	N/A
10.05	Guideway: Built-up fill	TF	$ -	$ -	N/A
10.06	Guideway: Underground cut & cover	TF	$ -	$ -	N/A
10.07	Guideway: Underground tunnel	TF	$ -	$ -	N/A
10.08	Guideway: Retained cut or fill	TF	$ -	$ -	N/A
10.09	Track: Direct fixation	TF	$ -	$ -	N/A - For aerial structure only
10.10a	Track: Embedded (new)	TF	$ 550	$ 550	seeing $500 - $600/tf recent bids
10.10b	Track: Embedded (removal)	TF	$ 50	$ 50	Demo track $30-$55/sy; 0.9sy/tf
10.11	Track: Ballasted	TF	$ -	$ -	
10.12	CSX Crossing - Single Track	EA	$ 1,000,000	$ 1,000,000	
10.13	CSX Crossing - Double Track	EA	$ -	$ -	
10.14	Track: Special (switches, turnouts)	EA	$ 370,000	$ 370,000	Unit cost based on other, similar projects
10.15	Track: Vibration and noise dampening	EA	$ -	$ -	N/A - Minor cost, included within contingency
20	**STATIONS, STOPS, TERMINALS, INTERMODAL (number)**		$ -	$ -	
20.01a	At-grade station stop (NEW)	EA	$ 265,443	$ 265,443	Additional station stop costs contained in section 50
	Demo Concrete Sidewalk	EA	$ 2,744	$ 2,744	FDOT8, $14/sy @ 196sy
	14" Concrete Platform	EA	$ 26,910	$ 26,910	FDOT8 $585/cy NS Conc, $420/cy appr.slabs, use $500/cy; incl. ramps, adjacent sdwk, 10' platfrom x 110' long = 46cy
	6" Concrete Sidewalk	EA	$ 3,869	$ 3,869	FDOT8 $53/sy; 6' x 110' = 73sy
	Shelter	EA	$ 150,000	$ 150,000	incl. lighting within/under shelter, platform to act as foundation
	Furniture	LS	$ 8,000	$ 8,000	Trash Can $4k, Bench $2k, Bike Rack $1.5k (off platform)
	Steel pedestrian railing	EA	$ 12,100	$ 12,100	FDOT8 $110/lf type 1; 110lf per station
	Signage / misc	LS	$ 10,000	$ 10,000	
	Tactile Warning Surface	EA	$ 4,320	$ 4,320	FDOT8 $27/sy; 2' x 60' + 10'x2'x2 = 160sf
	System Info Map	EA	$ 4,000	$ 4,000	
	Advertising Kiosk	EA	$ 4,000	$ 4,000	
	Elec meter, conduits, service point coord	LA	$ 8,000	$ 8,000	
	Passenger Information Sign pole	EA	$ 6,500	$ 6,500	
	PIS / Next Train sign	EA	$ 7,000	$ 7,000	
	Public Address Speakers, conduit, pull boxes, modem	EA	$ 8,000	$ 8,000	
	Communications Cabinet	EA	$ 10,000	$ 10,000	
20.01b	At-grade station stop (RETROFIT)	EA	$ 277,699	$ 277,699	Additional station stop costs contained in section 50
	Demo Existing Platform	EA	$ 5,000	$ 5,000	FDOT8, $14/sy for sidewalk x4 for add'l depth of platform and work around exist. shelter; use $56/sy 10'x80'= 89sy = 4984
	Demo Existing Highblocks and Shelters	EA	$ 10,000	$ 10,000	FDOT8 $125/cy (extraplocated from 4" sdwk), highblock 16'x11'x2.17' + ramp 26'x4'x2.16x.5 = 15cy = 1,875
	14" Concrete Platform	EA	$ 26,910	$ 26,910	FDOT8 $585/cy NS Conc, $420/cy appr.slabs, use $500/cy; incl. ramps, adjacent sidewalk, 10' platfrom x 110' long = 46cy
	6" Concrete Sidewalk	EA	$ 3,869	$ 3,869	FDOT8 $53/sy; 6' x 110' = 73sy
	Shelter	EA	$ 150,000	$ 150,000	incl. lighting within/under shelter, platform to act as foundation
	Furniture	LS	$ 8,000	$ 8,000	Trash Can $4k, Bench $2k, Bike Rack $1.5k (off platform)
	Steel pedestrian railing	EA	$ 12,100	$ 12,100	FDOT8 $110/lf type 1; 110lf per station
	Signage / misc	LS	$ 10,000	$ 10,000	
	Tactile Warning Surface	EA	$ 4,320	$ 4,320	FDOT8 $27/sy; 2' x 60' + 10'x2'x2 = 160sf
	System Info Map	EA	$ 4,000	$ 4,000	
	Advertising Kiosk	EA	$ 4,000	$ 4,000	
	Elec meter, conduits, service point coord	LA	$ 8,000	$ 8,000	
	Passenger Information Sign pole	EA	$ 6,500	$ 6,500	Sign included under section 50
	PIS / Next Train sign	EA	$ 7,000	$ 7,000	
	Public Address Speakers, conduit, pull boxes, modem	EA	$ 8,000	$ 8,000	
	Communications Cabinet	EA	$ 10,000	$ 10,000	
20.02	Aerial station, stop, shelter, mall, terminal, platform	LS	$ -	$ -	N/A
20.03	Underground station, stop, shelter, mall, terminal, platform	LS	$ -	$ -	N/A
20.04	Other stations, landings, terminals: Intermodal, ferry, trolley, etc.	LS	$ -	$ -	N/A
20.05	Joint development	LS	$ -	$ -	N/A

20.06	Automobile parking multi-story structure	LS	$ -	$ -	N/A
20.07	Elevators, escalators	LS	$ -	$ -	N/A
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS			$ -	$ -	
30.01	Administration Building: Office, sales, storage, revenue counting	EA	$ -	$ -	N/A - Administration will be included within maintenance facility
30.02	Light Maintenance Facility	EA	$ 6,100,000	$ 6,100,000	Low estimate $6.1M, high estimate $11.2M
30.03	Heavy Maintenance Facility	EA		$ -	
30.04	Storage or Maintenance of Way Building	EA	$ -	$ -	Modified Yard Facility, Open Air, Add Pit Track, OCS Yard/Stinger Power, Roll Down Curtains, Bumping Posts
30.05	Yard and Yard Track	LS	$ 4,520,000	$ 4,520,000	N/A - Included in 30.03 and 30.03
	remove existing track		$ 60,000		$50/tf x 1200 tf
	replace track		$ 660,000		$550/tf x 1200 tf
	turnouts		$ 3,300,000		$300,000/ea x 11
	crossover		$ 500,000		$500,000/ea x 1
40 SITEWORK & SPECIAL CONDITIONS			$ -	$ -	
40.01	Demolition, Clearing, Earthwork		$ -	$ -	N/A - Street running track requires only minor earthwork and is covered within contingency
40.02	Site Utilities, Utility Relocation	TF	$ 400	$ 400	Public utility relocations. Wave $200/tf (private util relo ~$690/tf); DC $500/tf, other recent $650,
40.03	Haz. mat'l, contam'd soil removal/mitigation, ground water treatments	LS	$ -	$ -	N/A - Little earthwork will be required for constructing street running track; any remediation will be covered in contingency
40.04	Environmental mitigation, e.g. wetlands, historic/archeologic, parks	LS	$ -	$ -	N/A - Streetcar will be located in urban environment and will avoid impacts to parks
40.05	Site structures including retaining walls, sound walls	LS	$ -	$ -	N/A
40.06	Pedestrian / bike access and accommodation, landscaping	MI	$ 300,000	$ 300,000	$300k art allowance
40.07	Automobile, bus, van accessways including roads, parking lots	LS	$ 4,026,900	$ 4,026,900	
	Mill and Resurface corridor	LS	$ 1,113,000	$ 1,113,000	Mill $5/sy; new asphalt $100/ton @ 110lb/sy-in @ 1.5" = $8.25/sy; $13.25/sy * 84,000sy
	Allowance for misc pavement reconstruction	LS	$ 333,900	$ 333,900	30% allowance for additional pavement reconstruction
	Signage and Striping	LS	$ 1,260,000	$ 1,260,000	$15/sy general
	Stormwater drainage improvements	LS	$ 500,000	$ 500,000	Drainage allowance
	Concrete separator	LS	$ 400,000	$ 400,000	$40/lf x 10,000 lf, includes demo, sawcut, stabilization
	Curb ramp reconstruction	LS	$ 420,000	$ 420,000	Throughout alignment, $3500 each, 4 per intersection, 30 signalized intersections
			EXIST.	MODERN.	
40.08	Temporary Facilities and other indirect costs during construction	LS	$ 7,413,923	$ 2,257,943	Unit cost based on other similar projects. Include MOT (Wave MOT - $130/tf)
	MOT 5%	5%	$ 1,853,481	$ 564,486	
	Contractor Gen conditions / Mobilization (office, staff, etc) 15%	15%	$ 5,560,443	$ 1,693,457	
50 SYSTEMS			$ -	$ -	
50.01	Train control and signals	TF	$ 50	$ 50	New Transit Signal Head / blank out signs
50.02a	Traffic signals and crossing protection	EA	$ 100,000	$ 100,000	Reconstructed or modifed traffic signal - assumed all exist. signals along each alignment are modified @$100k each
50.02b	Full new signal for special movement	EA	$ 300,000	$ 300,000	7 total
50.03a	Traction power supply: substations 750kw	EA	$ 1,500,000	$ 1,500,000	Install below existing overpasses.
50.03b	Traction power supply: substations 500kw	EA	$ 1,200,000	$ 1,200,000	Install below existing overpasses.
50.04a	Traction power distribution: new OCS	TF	$ 200	$ 200	
50.04b	Traction power distribution: retrofit existing OCS	TF	$ 150	$ 150	Replace existing 2 wires w/ 350kcmil, replace 40% of poles, other 60% new hardware
50.05	Communications	TF	$ 250	$ 250	$100/tf for general comms; adding $150/tf for dedicated fiber ductbank along alignment.
50.06	Fare collection system and equipment	EA	$ 100,000	$ 100,000	TVM and infrastructure at each platform
50.07	Central Control	EA	$ -	$ -	
Construction Subtotal (10 - 50)				$ -	
60 ROW, LAND, EXISTING IMPROVEMENTS				$ -	
60.01	Purchase or lease of real estate	LS		$ -	VMF property already owned by streetcar
60.02	Relocation of existing households and businesses	LS	$ 690,000	$ 690,000	Estimate for three acquisitions from City of $517,700. a 4th was identified, so bumping up by 33%.
70 VEHICLES (number)				$ -	
70.01	Light Rail	EA	$ 5,500,000	$ 5,500,000	Modern Streetcar Vehicles (non hybrid)
70.02	Heavy Rail	EA		$ -	N/A
70.03	Commuter Rail	EA		$ -	N/A
70.04	Bus	EA		$ -	N/A
70.05	Other	EA		$ -	N/A
70.06	Non-revenue vehicles	EA		$ -	N/A
70.07	Spare parts	EA		$ -	N/A
80 PROFESSIONAL SERVICES (applies to Cats. 10-50)				$ -	
80.01	Preliminary Engineering	3%		$ -	
80.02	Final Design	7%		$ -	
80.03	Project Management for Design and Construction	7%		$ -	
80.04	Construction Administration & Management	10%		$ -	
80.05	Professional Liability and other Non-Construction Insurance	1%		$ -	
80.06	Legal; Permits; Review Fees by other agencies, cities, etc.	2%		$ -	
80.07	Surveys, Testing, Investigation, Inspection	3%		$ -	
80.08	Start up	3%		$ -	
90 UNALLOCATED CONTINGENCY				$ -	
100 FINANCE CHARGES				$ -	

InVision: TAMPA STREETCAR - Capital Cost Estimate

FEDERAL TRANSIT ADMINISTRATION - STANDARD COST CATEGORIES

2019 Base Year, 2025 Revenue Service

Inflation Distribution and Schedule

August 16, 2019

CONCEPT LEVEL

For input into SCC Workbooks

	2019	2020	2021	2022	2023	2024	2025
10 GUIDEWAY & TRACK ELEMENTS (route miles)				20%	40%	30%	10%
20 STATIONS, STOPS, TERMINALS, INTERMODAL (number)				0%	30%	60%	10%
30 SUPPORT FACILITIES: YARDS, SHOPS, ADMIN. BLDGS				20%	40%	30%	10%
40 SITEWORK & SPECIAL CONDITIONS				20%	40%	30%	10%
50 SYSTEMS				20%	40%	30%	10%
60 ROW, LAND, EXISTING IMPROVEMENTS			100%				
70 VEHICLES (number)				100%			
80 PROFESSIONAL SERVICES (applies to Cats. 10-50)		60%	10%	10%	10%	5%	5%
90 UNALLOCATED CONTINGENCY		15%	20%	20%	20%	20%	5%
100 FINANCE CHARGES							

February 2019	Alignment Finalization (Guideway, Stops, and Maintenance Facility)
March 2019	Environmental Class of Action Determination
Summer 2019	Policy Committee formed and meeting (addressing funding and governance)
Summer 2019	Conceptual design capital and O&M cost estimate
September 2019	Completion of NEPA (Documented CE)
December 2019	Complete draft small starts rating pkg (project justification, cost, financial plan)
TBD	Adoption of the LPA into the Fiscally Constrained Long-Range Transportation Plan
January 2020	City issues NTP for design consultant
Summer 2020	Updated/interim cost estimate (30% design underway)
Aug/Sept 2020	Small starts rating submittal to FTA
December 2020	30% design complete
March 2021	Project rating in Annual CIG Report to Congress
Summer 2021	60% design complete
Summer 2021	SSGA roadmap with FTA (note relation of SSGA timing to DBB or CMAR)
2021-2022	FTA executes Small Starts Grant Agreement
2021-2024	Construction and Vehicle Procurement
2024-2025	Testing and Start-up of Revenue Service