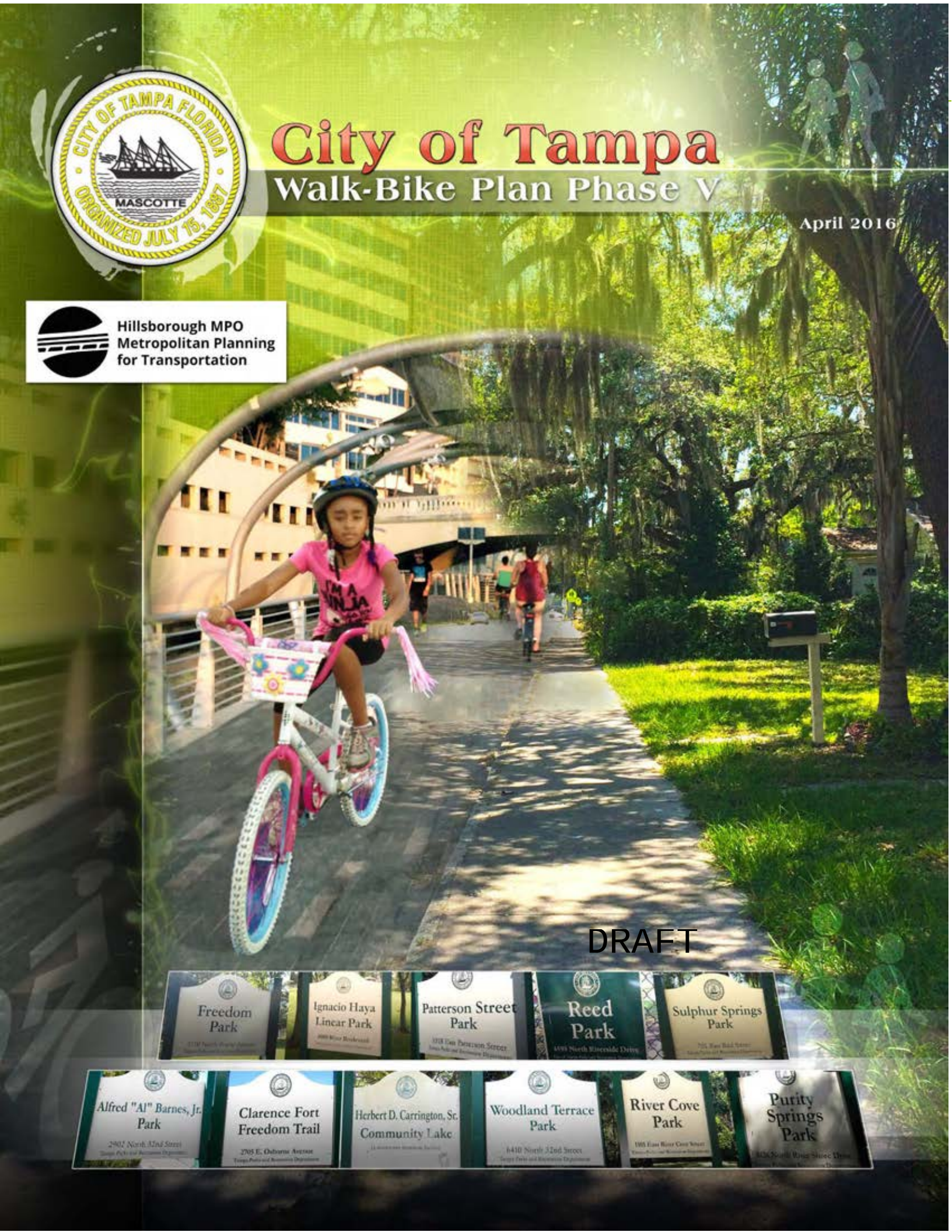
City of Tampa

Walk-Bike Plan Phase V

April 2016

Hillsborough MPO
Metropolitan Planning
for Transportation

DRAFT



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1 Overview

The City of Tampa Walk-Bike Plan Phase V Study is a cooperative effort between the City of Tampa and the Hillsborough Metropolitan Planning Organization (MPO) to identify a route for a bicycle/pedestrian loop trail linking downtown Tampa to Palmetto Beach, Ybor City, Rowlett Park, Sulphur Springs, Lowry Park and along the Hillsborough River back to downtown Tampa. The loop, known as the Perimeter Trail, will connect neighbourhoods, parks, and schools along its path. Phase V of the City of Tampa Walk-Bike Plan is the latest step in developing and implementing a bicycle and pedestrian circulation plan for the City of Tampa.

The City of Tampa Walk-Bike Plan Phase V primarily examined the routing of the Perimeter Trail north of Columbus Drive in addition to evaluating potential routes crossing Interstate 4 near Ybor City and connecting with SR 60/Adamo Drive. Roadways along or adjacent to the proposed route of the Perimeter Trail were evaluated for multi-use paths, sidewalks, bicycle lanes, shared lane markings or bicycle boulevards/neighbourhood greenways on roadways with low traffic volumes. Additional recommendations include signalized and grade-separated crossings for identified intersections with high traffic volumes.

1.1. Objectives

The main objective of this study is to identify an implementable route for the full length of the Perimeter Trail. More specifically the study included the following objectives:

- Identify implementable sections of the original Perimeter Trail north of SR 60/Adamo Drive on the east side, and north of Columbus Drive on the west side.
- Identify other major potential connecting trails to link neighborhoods and greenspaces along the Perimeter Trail.

- Identify sidewalk and resurfacing projects along the route of the study area segments of the Perimeter Trail so that those projects can be modified to incorporate a segment of the Perimeter Trail.
- Identify intersections and roadway segments that could pose dangerous crossings for users of the Perimeter Trail within the study area, and recommend modifications to make the crossings safer.
- Identify and evaluate potential alternate routes for the Perimeter Trail, if the original route is deemed to be impractical or not implementable.
- Develop initial cost estimates for proposed alignments of the Perimeter Trail identified using Florida Department of Transportation (FDOT)'s Long Range Estimating (LRE) methodologies.

In order to accomplish these tasks, data was collected and existing conditions within the study area evaluated. Earlier phases of the City of Tampa Walk-Bike Plan were reviewed to identify previously identified routes of the Perimeter Trail. Data was acquired from the City of Tampa, Hillsborough County, and FDOT, including locations of existing traffic signals, bicycle lanes, multi-use paths, and sidewalks within the study area. After the routes from previous phases of the plan were identified, field visits were conducted to examine existing conditions and evaluate potential roadways to be selected for the preferred routing of the trail. During the field visits, data regarding pavement and sidewalk widths, as well as the locations of signalized intersections, parks, and schools were collected.

1.2. Agency Coordination

Throughout the study, coordination meetings were held with the Hillsborough MPO and the City of Tampa. The meetings involved discussions regarding the original routing of the Perimeter Trail, as well as issues, challenges, and opportunities with the routing. Additional discussions related to safety concerns, relevant planned capital improvement projects, potential alternate routes, treatment options, cost estimates, and phasing of implementation also took place. Furthermore, multiple field reviews were conducted and maps documenting data collected and findings were developed. **Exhibit 1** depicts the original Perimeter Trail route and potential alternate routes, as well as locations of parks, schools, and traffic signals. This map served as the culmination of the data review phase and was used in identifying the proposed treatment options and trail routing presented in Sections 2 and 3 of this report.

1.3. Purpose and Need

Many communities throughout the country are seeing a resurgence in walking and bicycling. Walkable, pedestrian-friendly neighbourhoods and cities are some of the most vibrant communities in America. Furthermore, cities and municipalities have adopted Complete Streets policies to embrace and encourage walking and bicycling. The City of Tampa has made bicycling and walking a priority, and major investments are being made, including plans for the Perimeter Trail encircling the urban core.

The purpose of the Perimeter Trail is to provide a continuous bicycle and pedestrian pathway around the urban core of Tampa linking parks, schools, and other points of interest. The trail is a major

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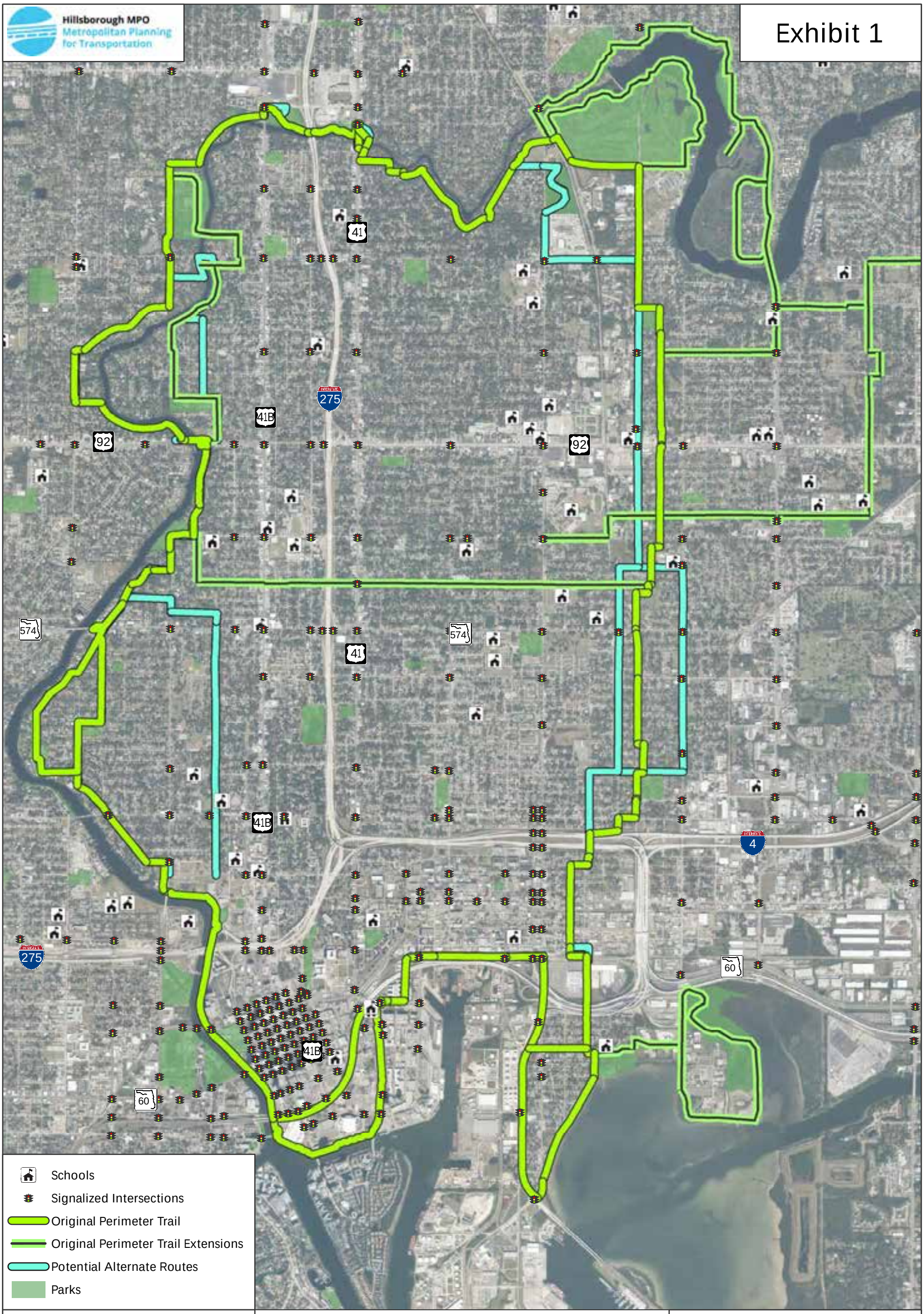
Exhibit 1



City of Tampa
Walk-Bike Plan Phase V

Study Area Overview

0 2,000 4,000
Feet

Figure Date: 12/30/2015

component of the proposed bicycle and pedestrian network within the city of Tampa, providing an alternative form of transportation for people to access jobs, schools, parks, shopping and entertainment areas. Another purpose of the Perimeter Trail is to provide bicycle and pedestrian connections to other existing multi-use facilities such as the Selmon Greenway and the Riverwalk, which enhances recreation opportunities and facilitates a healthier community.

Safety

FDOT recently released a Complete Streets Implementation Plan to guide the Department's efforts in implementing its Complete Streets Policy. Unfortunately, despite these efforts, traffic crashes involving bicycles and pedestrians continue to be a major problem in Florida. In fact, according to Smart Growth America, four Florida metropolitan areas were ranked as the most dangerous areas for pedestrians in America with the Tampa-St. Petersburg metropolitan area ranked second (**Table 1**).

An analysis of traffic crashes in the surrounding vicinity of the Perimeter Trail show that there were over 28,000 total crashes from 2010 to 2015. Of these, 1,132 crashes involved pedestrians or bicyclists. Closer inspection of the crashes involving pedestrians and bicyclists reveal that there were 49 fatalities over this time period - nearly 5 per year (**Table 2**).

The 1,132 crashes are shown on **Exhibit 2**, which also depicts the crash hotspot areas. As shown on the map, hotspots for bicycle and pedestrian crashes within the vicinity of the Perimeter Trail include:

- Downtown Tampa
- I-275 and Dr. Martin Luther King, Jr. Boulevard interchange area
- I-275 and Hillsborough Avenue interchange area
- Hillsborough Avenue and 22nd Street intersection area
- Florida Avenue and Waters Avenue intersection area

Table 1. Large metro areas, ranked by Pedestrian Danger Index

Large metro areas, ranked by Pedestrian Danger Index

Rank	Metropolitan area	Total pedestrian deaths (2003–2012)	Annual pedestrian deaths per 100,000 (2008–2012)	Percent of people commuting by foot (2008–2012)	Pedestrian Danger Index (2008–2012)
1	Orlando-Kissimmee, FL	583	2.75	1.1	**244.28**
2	Tampa-St. Petersburg-Clearwater, FL	874	2.97	1.6	**190.13**
3	Jacksonville, FL	359	2.48	1.4	**182.71**
4	Miami-Fort Lauderdale-Pompano Beach, FL	1,539	2.58	1.8	**145.33**
5	Memphis, TN-MS-AR	239	1.72	1.3	**131.26**
6	Birmingham-Hoover, AL*	148	1.33	1.1	**125.60**
7	Houston-Sugar Land-Baytown, TX	1,034	1.70	1.4	**119.64**
8	Atlanta-Sandy Springs-Marietta, GA	839	1.59	1.3	**119.35**
9	Phoenix-Mesa-Scottsdale, AZ	840	1.86	1.6	**118.64**
10	Charlotte-Gastonia-Concord, NC-SC	254	1.65	1.5	**111.74**

Table 2. Crashes Involving Pedestrians or Bicyclists

Crashes Involving Pedestrians or Bicyclists	
Severity of Crash	**Number of Crashes**
Fatality	49
Injury	1013
Property Damage Only	70

Additional areas with moderately heavy crashes involving pedestrians and bicyclists include Ybor City, Tampa Heights, the I-275 / Sligh Avenue interchange area, and East Hillsborough Avenue near 40th Street. While all of the hotspots are near the Perimeter Trail, the potential trail routes are generally in the green (or low crash) areas on the map. By implementing the Perimeter Trail, bicyclists and pedestrians will enjoy a safer route to travel then passing through the high crash areas mentioned above.

Environmental Justice

The proposed network of greenways and trails offer an equitable program to enhance the standard of living for residents of all races, ages, and abilities by providing facility users with safe, alternative mobility routes and improving connectivity between multiple communities and the natural environment. The trails also make the communities more livable by providing opportunities for physical activity to improve fitness and mental health, preserving and restoring open space; and improving the economy through tourism and civic improvement.

The United States Census, American Community Survey (ACS) 2014 shows the demographics of the surrounding communities are very diverse where the minority population makes up 73% of the total population, and 33% of the population is below the poverty level. In addition, 4% of the community speak English “not well” and 3% speak English “not at all”, and 22% has less than a high school education. The percentage of population over 64 years of age is 12% and the population under 5 years of age is 8%. Furthermore, about 16% of the population between the ages of 20 and 64 years old have a disability.

An environmental justice demographic index was calculated using the ACS data to identify traditionally underserved areas. The index was calculated by averaging the above demographic factors. This methodology is similar to the methodology used in the supplementary demographic index in the Environmental Protection Agency’s (EPA) EJSCREEN tool. **Exhibit 3** shows that the demographic groups are located throughout the project study area, with the higher propensity Environmental Justice areas primarily concentrated east of I-275. The Perimeter Trail serves many of these areas, and will offer enhanced mobility, health, and quality of life for residents.

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Exhibit 2

Crash Involving Pedestrian (Fatal)
Crash Involving a Pedestrian (Non-Fatal)
Crash Involving a Bicyclist (Fatal)
Crash Involving a Bicyclist (Non-Fatal)

Original Perimeter Trail
Original Perimeter Trail Extensions
Potential Alternate Routes

Density of Crashes
High
Low

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Bicycle/Pedestrian Crash Density

0 2,000 4,000
Feet

Figure Date: 12/30/2015

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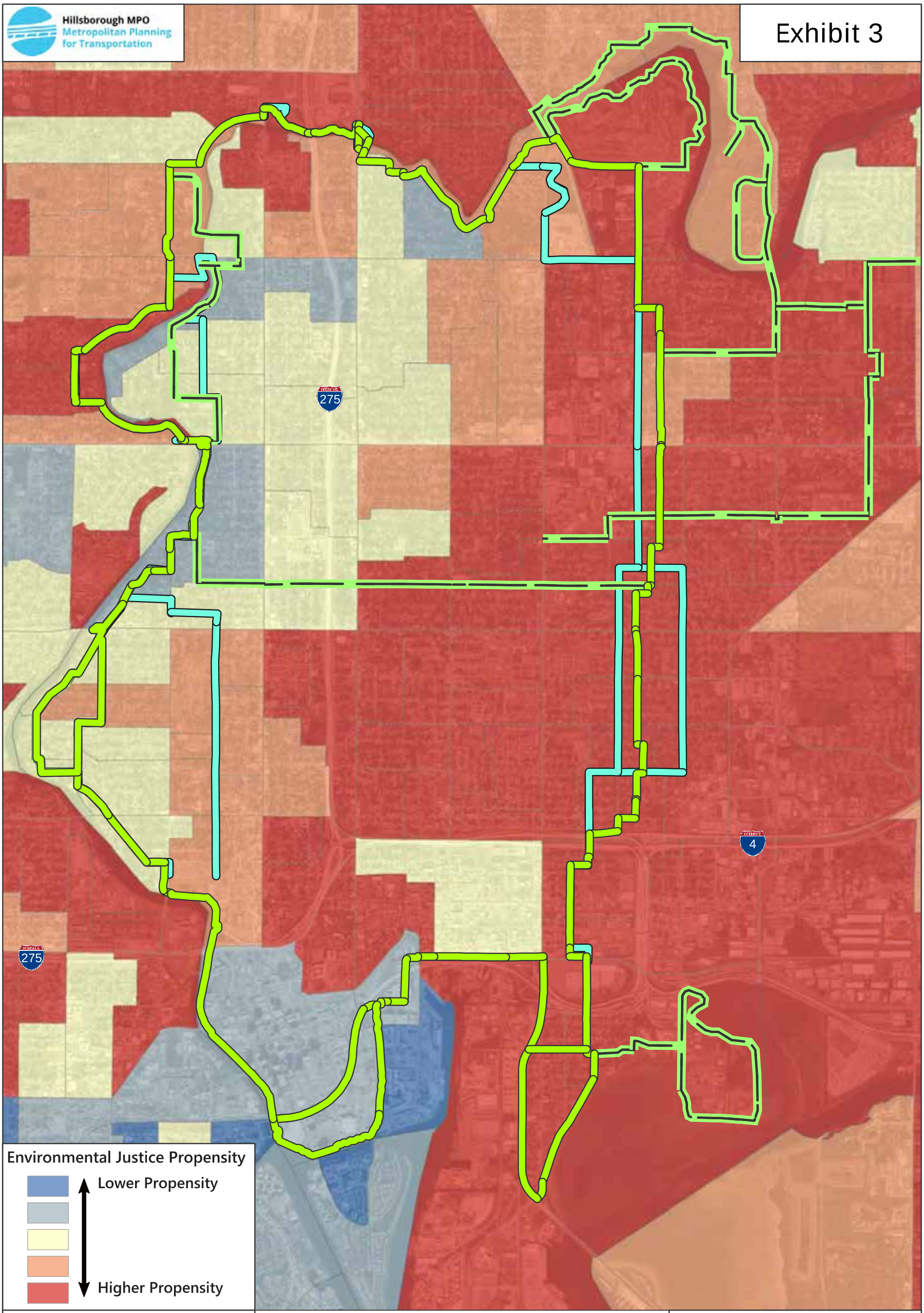
Exhibit 3



City of Tampa
Walk-Bike Plan Phase V

Environmental Justice Demographic Index

0 2,000 4,000 Feet

Figure Date: 4/29/2016

2 Perimeter Trail Bicycle & Pedestrian Treatments

The entire length of the Perimeter Trail was analyzed for potential bicycle and pedestrian treatments that are implementable and context-appropriate with existing conditions on each particular segment. Depending on the characteristics of the roadway, a combination of eight pedestrian/bicycle treatments are recommended.

- Bicycle Boulevards/Neighborhood Greenways
- Multi-Use Paths
- Dedicated Bicycle Lanes with Sidewalks
- Shared Lane Markings
- Crosswalks, Signals, and Signage
- Pedestrian Lanes
- Bicycle / Pedestrian Crosswalks and Signals
- High Intensity Activated Crosswalk (HAWK) Pedestrian Signals
- Wayfinding and Branding

In addition, wayfinding and branding will help raise the profile and visibility of the Perimeter Trail. Each of the treatments are described in this chapter.

2.1. Bicycle Boulevards/Neighborhood Greenways

According to the National Association of City Transportation Officials (NACTO), the definition of Bicycle Boulevards are "streets with low motorized traffic volumes and speeds, designated and designed to give bicycle travel priority. Bicycle Boulevards use signs, pavement markings, and speed and volume management measures to discourage through trips by motor vehicles and create safe, convenient bicycle crossings of busy arterial streets." Bicycle Boulevards (**Figure 1**) are also referred to as Neighborhood Greenways and are identified as such in this report to be consistent with previous phases of the plan.

Figure 1: Bicycle Boulevard
Source: Bloomington.in.gov; Bloomington, IN

Speed and traffic volume management techniques (e.g., speed tables, diverters) can be utilized to reduce the amount of vehicles and vehicle speed on a roadway. Crossings at major and minor intersections become safe and more convenient for bicyclists and pedestrians. The final design element is the development of a wayfinding system consisting of directional pavement markings and signage to direct bicyclists and pedestrians to bicycle-friendly routes (**Figures 2 and 3**). Bicycle Boulevards connect green spaces and neighborhoods along the trail highlighting parks, scenic views, and other natural points of interest.

Figure 2: Wayfinding Pavement Marking
Source: nacto.org; Vancouver, BC

Figure 3: Bicycle Boulevard Signage
Source: nacto.org; Madison, WI

2.2. Multi-Use Paths

A multi-use path **(Figure 4)**, also called a shared-use path, supports multiple mobility and recreation opportunities, such as walking, bicycling, skating, and sometimes even horseback riding. The American Association of State Highway Transportation Officials (AASHTO) defines a shared-use path as being physically separated from motor vehicular traffic with an open space or barrier. Multi-use paths are typically constructed of asphalt, concrete, or firmly packed crushed aggregate. Even if they are anticipated to be used primarily by bicyclists, multi-use paths should be designed to accommodate pedestrians. Ideally, a multi-use path should be 10-12 feet wide, although an 8-foot path is acceptable if additional width cannot be easily provided. In this study, areas where an 8-foot multi-use path could be constructed were identified. Within the parks, a 12-foot wide will be constructed where needed.

Figure 4: Multi-Use Path – Philadelphia

2.3. Dedicated Bicycle Lanes with Sidewalks

Along segments where there is not enough available right of way (ROW) to construct a multi-use path or the sidewalk cannot be widened to eight feet and converted to a multi-use path, dedicated bicycle lanes (**Figure 5**) are recommended, if there is sufficient pavement width on the roadway. The bicycle lane will be a minimum of five feet wide and one provided for each direction of travel. A sidewalk with a minimum width of five feet is also part of this treatment and must have a buffer of at least two feet between the sidewalk and roadway pavement. It should be noted that curbs may count as the buffer requirement for sidewalks and gutters can be part of the five foot bike lane.

Figure 5: Dedicated Bike Lane with Sidewalk

2.4. Shared Lane Markings

On segments where there is not sufficient space on the roadway pavement to implement a bicycle lane, a shared lane marking, also referred to as a sharrow (**Figure 6**), may be recommended. Shared lane markings are pavement markings that alert motorists that bicyclists have the right to use the full lane on a roadway. In addition, a sidewalk with a minimum width of 5 feet is part of this treatment and must have a buffer of at least 2 feet between the sidewalk and roadway pavement. Curbs, where available, may count as the buffer for the sidewalk. Share the Road Signage (**Figure 7**) may be used in conjunction with shared lane markings.

Figure 6: Shared Lane Markings – Euclid Avenue, Tampa

Figure 7: Share the Road Signage – EuclidAvenue, Tampa

2.5. Pedestrian Lanes

Pedestrian lanes are separated at-grade (**Figure 8**) paved areas specifically utilized by the walking public. These facilities offer a safer alternative compared with walking on the road itself when sidewalks are not feasible. In this study, recommended pedestrian lanes are marked by dashed lines along selected roadway segments on the Perimeter Trail, and primarily traverse wide driveways and parking areas.

Figure 8: Pedestrian Lane – Indian Rocks Beach, FL
Source: Google Street View, June 2015

2.6. Bicycle / Pedestrian Crosswalks and Signals

At unsignalized intersections where the Perimeter Trail crosses major roadways, it may be necessary to stripe a crosswalk on the pavement and install bicycle and pedestrian crossing signage (**Figure 9)** and/or flashing signals. Rectangular Rapid Flashing Beacons (RRFBs) may also be considered. These can be installed to flash automatically when a pedestrian is detected or activated by pedestrians pushing a button. RRFBs, with LED arrays that are approved by the Federal Highway Administration (FHWA), are proven to be more effective than traditional flashing signals. In fact, some studies show that drivers yield to pedestrians 80-90% of the time at high-risk unsignalized intersections. Where crossing signals are not deemed necessary, crosswalks designate where pedestrians may cross roadways. In some cases, high-intensity "ladder" crosswalks should be installed. Existing and proposed crosswalks along the Perimeter Trail are shown on the plan view layout sheets in **Appendix A**.

Figure 9: Bicycle/Pedestrian Crosswalk Signage –Ben T. Davis Beach, Tampa

2.7. High Intensity Activated Crosswalk (HAWK) Pedestrian Signals

According to NACTO, the HAWK pedestrian crossing beacon was developed to assist in pedestrian crossings for major arterials at minor street intersections. The purpose of a HAWK is to stop vehicles, allowing pedestrians to cross the roadway and then permit drivers to proceed as soon as as the pedestrians have passed. For this study, HAWK pedestrian crossing signals will be shown as a recommended treatment where the proposed Perimeter Trail crosses major intersections. HAWK pedestrian crossing signals can also display wayfinding signage for the Perimeter Trail (**Figure 10**).

Figure 10: HAWK Pedestrian Crossing Signal with Trail Signage
Source: nickelplatetrail.org; Fulton and Howard Counties, Indiana

Figure 11: Wayfinidng Signage
Source: City of Gresham, Oregon

2.8. Wayfinding and Branding

According to NACTO, bicycle wayfinding systems are comprehensive signing and/or pavement marking plans that guide bicyclists to their destinations along bicycle routes. Key placement locations for signage include intersections and decision points along the route. Types of wayfinding signs (**Figure 11**) and pavement markings include confirmation signs (signifying a Bicycle Boulevard), directional (typically at intersections). Pavement markings are utilized to guide bicyclists and pedestrians to the preferred bicycle route, and are also an ideal source for establishing a branding system for the route.

2.9. Design Standards

The Manual on Uniform Traffic Control Devices (MUTCD) serves as the national standard to create uniformity of traffic control devices, including signals, signage, and pavement markings throughout the United States. While the MUTCD serves as the base standard for traffic control devices, the use of additional traffic control measures proven to enhance safety and operation may be considered. The latest edition of the MUTCD, published over five years ago, does not contain standards for many of the newer bike facility innovations. In response, the Federal Highway Administration (FHWA) released a memorandum titled, *Guidance on Bicycle and Pedestrian Facility Design Flexibility*, which expressed support of using other guides released by AASHTO, NACTO, and ITE in order to help communities plan and design safe yet convenient facilities for pedestrians and bicyclists. This flexibility allows agencies to better incorporate walking and bicycling facilities into transportation projects in order to establish well-connected walking and bicycling networks that foster livable communities. Furthermore, although many bicycle facility innovations are not addressed within the MUTCD, FHWA has set forth alternative guidelines in order to account for the flexibility of bicycle facilities.

3 Routing of the Perimeter Trail

The final recommended preferred routing of the Perimeter Trail, as depicted on **Exhibit 4**, has been broken into segments beginning at the southeast section of the study area. The eight segments are:

Segment A – SR 60/Adamo Drive to the Intersection of 21st Avenue and 29th Street
Segment B – 21st Avenue to East Hillsborough Avenue
Segment C – East Hillsborough Avenue to 22nd Street Park (Includes 22nd Street Park)
Segment D – 22nd Street Park to Sulphur Springs Park
Segment E – Sulphur Springs Park to Sligh Avenue
Segment F – Sligh Avenue to West Hillsborough Avenue
Segment G – West Hillsborough Avenue to Dr. Martin Luther King, Jr. Boulevard
Segment H – Dr. Martin Luther King, Jr. Boulevard to Palm Avenue

In addition, three potential alternate routes, or spurs, have been identified. They are shown on **Exhibit 4** as the 34th Street Spur, East Bank Spur, and Ola Avenue Spur. Information on these routes is also included in this chapter.

Each segment of the recommended routing of the Perimeter Trail was evaluated to determine and recommend the appropriate bicycle and pedestrian treatments that could be implemented. This section provides details for each segment. Plan view layout sheets detailing each of the Perimeter Trail's segments are located in **Appendix A** of this report.

3.1. Segment A: SR 60/Adamo Drive to 29th Street at 21st Avenue

The first segment of the Perimeter Trail (**Exhibit 5**) begins at the intersection of SR 60/Adamo Drive and 26th Street, where it will connect to existing pedestrian facilities on SR 60/Adamo Drive and near the Selmon Greenway.

The Perimeter Trail will head north on 26th Street to 2nd Avenue and proceed west on 2nd Avenue to 24th Street. The Perimeter Trail will then follow 24th Street northbound to 11th Avenue where it will turn east on 11th Avenue back to 26th Street. From there, the trail turns north on 26th Street, passes under I-4, and continues on 26th Street up to 21st Avenue. The trail routing then utilizes 21st Avenue to travel three blocks, before turning on 29th Street.

The original proposed routing of the Perimeter Trail envisioned connecting to SR 60/Adamo Drive in the vicinity of 24th Street. However, 24th Street does not connect directly with SR 60/Adamo Drive, so the interim routing of the trail is proposed to shift off 24th Street at 2nd Avenue east to 26th Street. If additional funding becomes available, the City of Tampa may acquire the ROW from the end of 24th Street at 2nd Avenue to SR 60/Adamo Drive and construct a multi-use trail.

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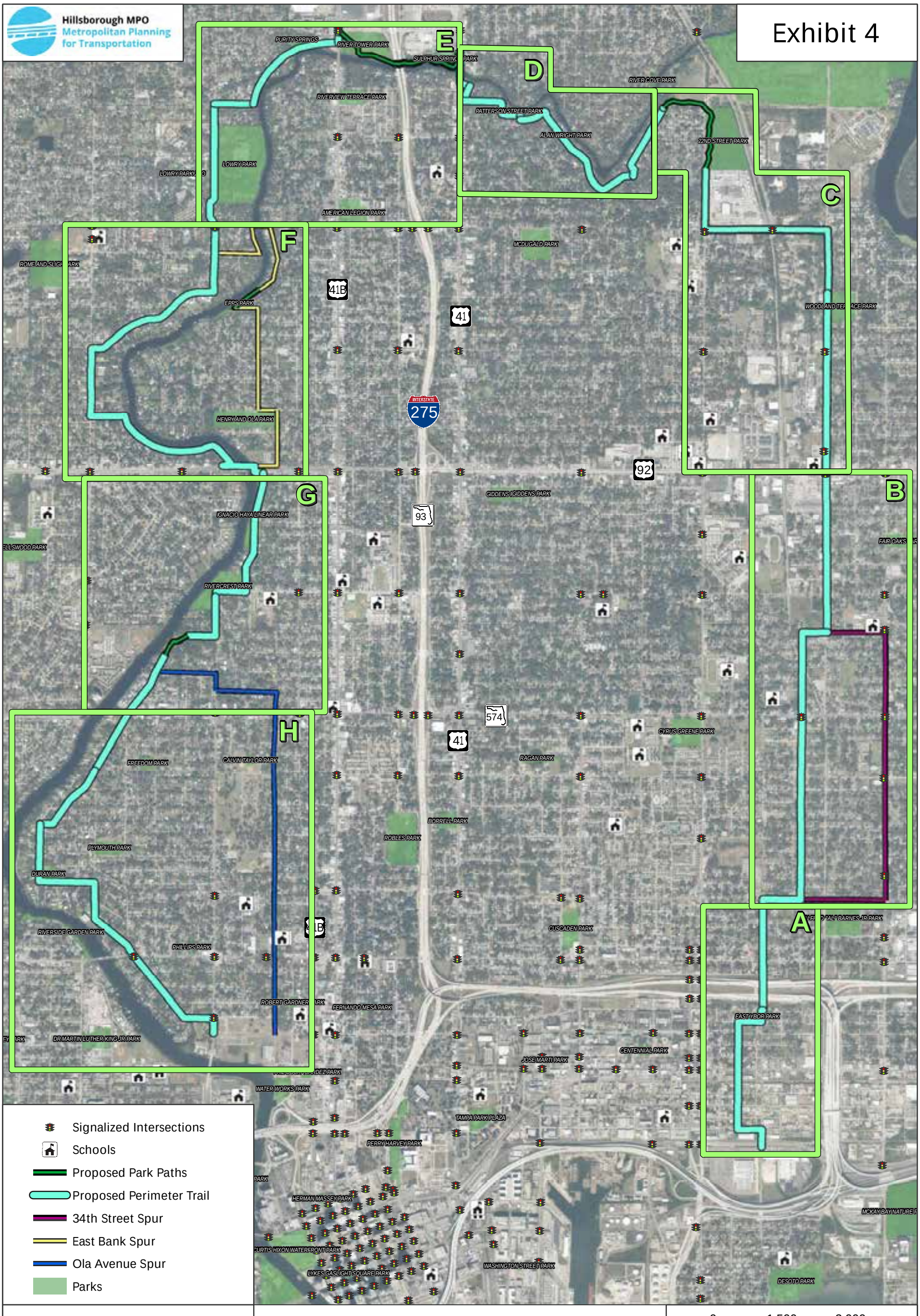
Exhibit 4



- Signalized Intersections
- Schools
- Proposed Park Paths
- Proposed Perimeter Trail
- 34th Street Spur
- East Bank Spur
- Ola Avenue Spur
- Parks

City of Tampa
Walk-Bike Plan Phase V

Proposed Perimeter Trail

0 1,500 3,000
Feet

Figure Date: 4/29/2016

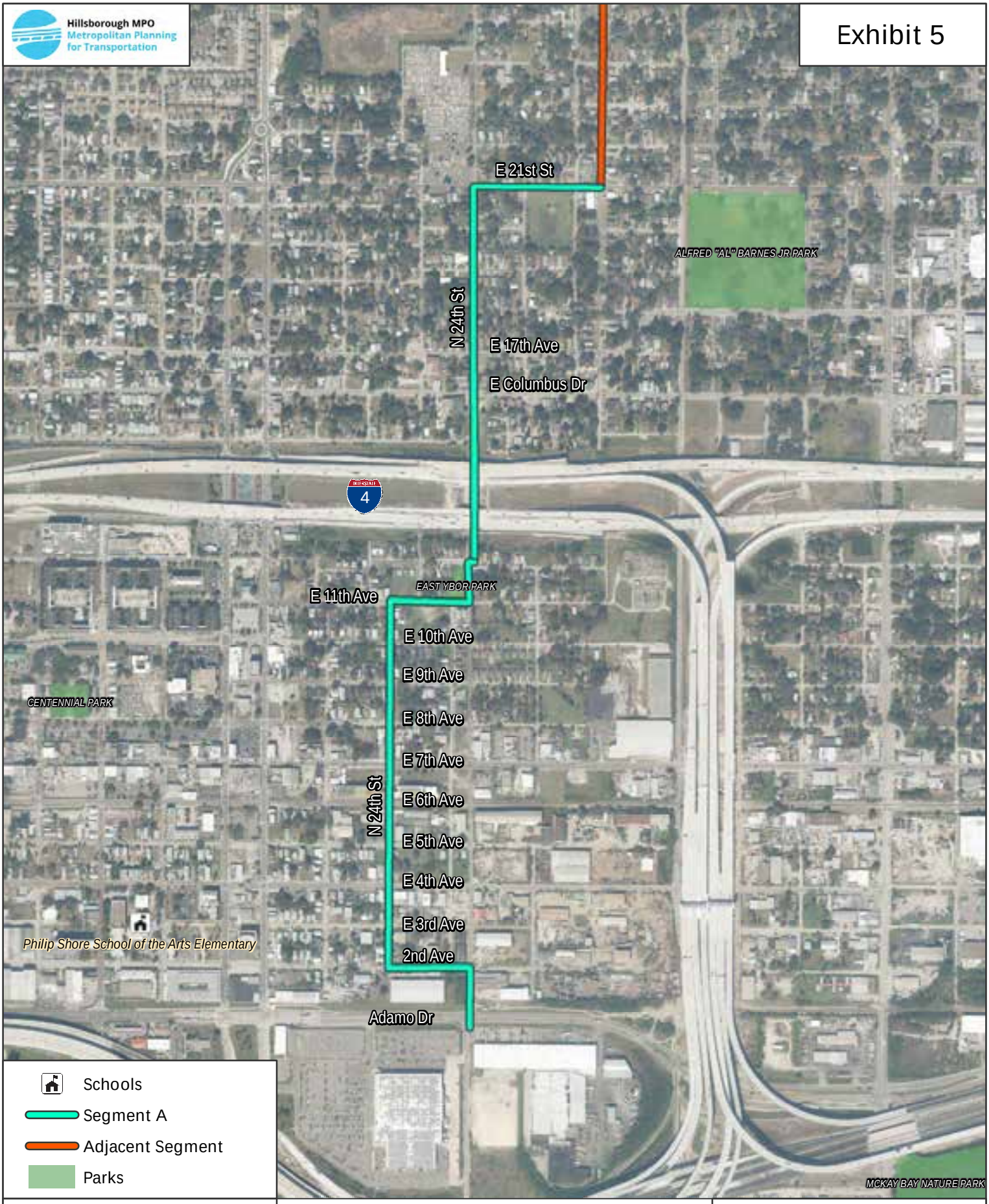

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Exhibit 5
E 21st St
ALFRED "AL" BARNES JR PARK
N 24th St
E 17th Ave
E Columbus Dr
INTERSTATE
4
E 11th Ave
EAST YBOR PARK
E 10th Ave
E 9th Ave
E 8th Ave
E 7th Ave
E 6th Ave
E 5th Ave
E 4th Ave
E 3rd Ave
2nd Ave
Adamo Dr
CENTENNIAL PARK
Philip Shore School of the Arts Elementary
MCKAY BAY NATURE PARK
Schools
Segment A
Adjacent Segment
Parks
City of Tampa
Walk-Bike Plan Phase V
Proposed Perimeter Trail
Segment A
0
510
1,020
Feet
Figure Date: 4/25/2016

The specific bicycle and pedestrian treatments for Segment A: SR 60/Adamo Drive to Intersection of 29th Street and 21st Avenue are shown on **Sheets A-1 through A-5 of Appendix A**. They include:

- Existing sidewalks are located on the east side of 26th Street from Adamo Drive to 2nd Avenue with limited ROW, utility poles close to the pavement, and no pavement striping.
    - This study recommends sharrows and bicycle/pedestrian crossings at the intersection of 26th Street and 2nd Avenue. Construction of sidewalks on 2nd Avenue from 26th Street to 24th Street, and along 24th Street to the existing sidewalk on the east side of the road is recommended as the interim treatment.
    - Another option would be construct an 8 foot multi-use path on the west side of 26th Street and the south side of 2nd Avenue to 24th Street and placing a bicycle/pedestrian crossing across 2nd Avenue to connect with the recommended sidewalk on the east side of 24th Street north of 2nd Avenue. This option could be done in part by private developers.
- There are no existing sidewalks located along 24th Street from 3rd Avenue to the CSX railroad crossing.
    - This study recommends the installation of crosswalks at 3rd Avenue and 24th Street and 4th Avenue and 24th Street to safely guide pedestrians to access the recommended sidewalks along 24th Street from 3rd Avenue to 5th Avenue.
    - A Bicycle Boulevard is recommended along 2nd Avenue from 26th Street to 24th Avenue, and along 24th Street from 2nd Avenue to 5th Avenue.
- North of 5th Avenue, the proposed sidewalk crosses the CSX railroad tracks.
    - Coordination with CSX to install a bicycle/pedestrian crossing over the railroad tracks may be necessary.
- Existing sidewalks are located on the west side of 24th Street from south of 7th Avenue to 8th Avenue, and there is enough available ROW on the east side of 24th Street to construct a 5-foot sidewalk from 8th Avenue to 11th Avenue.
    - This study recommends the Bicycle Boulevard/Neighborhood Greenway treatment continue to 11th Avenue as there is low traffic, and ROW issues make installation of an 8-foot path difficult.
    - Installation of pedestrian crossing at 24th Street and 7th Avenue and pedestrian lane markings from north of 7th Avenue to the proposed sidewalk on the west side of 24th Street.
    - Installation of pedestrian crossings at 24th Street and 9th Avenue is recommended, as there is no room to install a sidewalk on the west side of the road.
    - Installation of a crosswalk at the intersection of 24th Street and 11th Avenue is recommended for enhanced access to East Ybor Park.

- An existing 5' sidewalk is located on the north side of 11th Avenue between 24th Street and 26th Street at the location of East Ybor Park. Widening the sidewalk to an 8-foot multi use path would require ROW acquisition.

    - The recommended treatment for 26th Street from 11th Avenue to 17th Avenue is to widen the sidewalks to 8-foot multi-use paths on both sides of 26th Street.

    - 8-foot multi-use paths on the east and west side of 26th Street (**Figure 12**) are recommended from 12th Avenue to 17th Avenue (beneath I-4). Note that relocation of utility poles will be required on the east side of 26th Street from 15th Avenue to 17th Avenue.

- Finally, at the present time, 21st Avenue has no sidewalks but there is ROW available. It is recommended that an 8-foot path be installed along the south side of 21st Avenue from 26th Street to 29th Street.

Figure 12: 26th Avenue at I-4 Overpasses

3.2. Segment B: 21st Avenue to East Hillsborough Avenue

Segment B of the Perimeter Trail (**Exhibit 6**) travels north from the intersection of 21st Avenue at 29th Street. The East Tampa Community Redevelopment Area (CRA), is roughly bounded by 26th Street on the east, 26th Avenue on the north, I-4 to the south, and I-275 to the west. In November 2009, the East Tampa CRA published its Strategic Action Plan which recommended sidewalk upgrades, crosswalks, landscaping, and lighting enhancements to 29th Street.

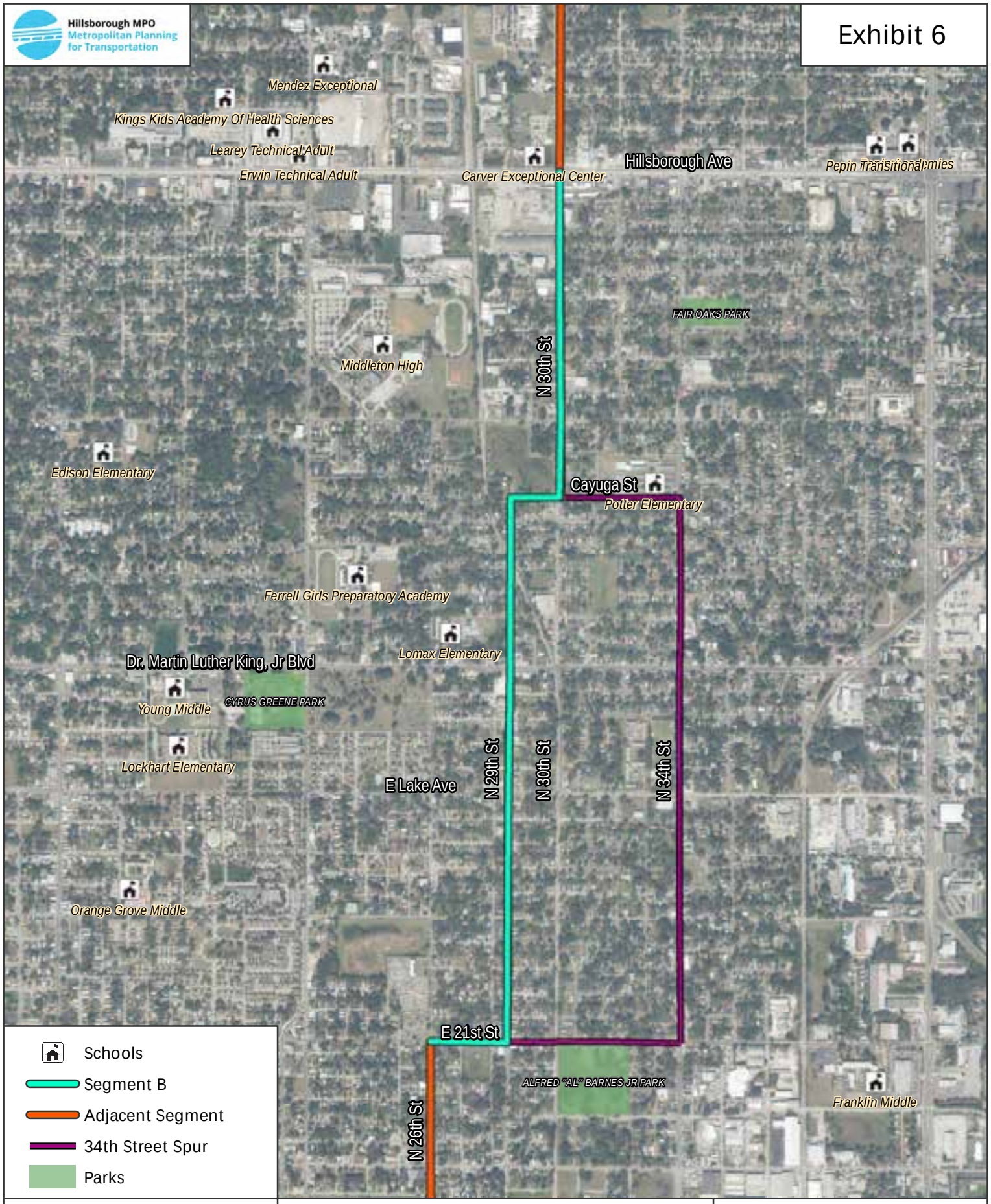
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Exhibit 6
Mendez Exceptional
Kings Kids Academy Of Health Sciences
Learey Technical Adult
Erwin Technical Adult
Carver Exceptional Center
Hillsborough Ave
Pepin Transitional Academies
FAIR OAKS PARK
Middleton High
N 30th St
Edison Elementary
Cayuga St
Potter Elementary
Ferrell Girls Preparatory Academy
Lomax Elementary
Dr. Martin Luther King, Jr Blvd
Young Middle
CYRUS GREENE PARK
Lockhart Elementary
E Lake Ave
N 29th St
N 30th St
N 34th St
Orange Grove Middle
E 21st St
ALFRED "AL" BARNES JR PARK
Franklin Middle
N 26th St
Schools
Segment B
Adjacent Segment
34th Street Spur
Parks
City of Tampa
Walk-Bike Plan Phase V
Proposed Perimeter Trail
Segment B
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Feet
Figure Date: 4/22/2016

The East Tampa CRA Strategic Action Plan refers to 29th Street as one of its main commercial areas and has also identified the corridor as one of its gateways. As such, the preferred route through this segment will travel primarily along 29th Street. The original route of the Perimeter Trail followed 30th, 31st and 32nd Street to Hillsborough Avenue. However, since 30th Street does not exist between 21st Avenue and Lake Avenue; and 31st Street and 32nd Street have limited ROW, the recommended routing of the Perimeter Trail was relocated to 29th Street with a spur proposed along 34th Street.

The recommended bicycle and pedestrian treatments for Segment B: 21st Avenue to E. Hillsborough Avenue are shown on **Sheets B-1 through B-8 in Appendix A**. They include:

- There are existing sidewalks on the east side of 29th Street from 21st Avenue to Cayuga Street. Existing traffic calming treatments (speed tables) are located on 29th Street until south of the intersection of 29th Street and Lake Avenue. Existing sidewalk is on the west side of 29th Street from 29th Avenue to Cayuga Street.
    - This study recommends the construction of a crosswalk at 29th Street and 21st Avenue (north side), and to widen the existing sidewalk to an 8-foot multi-use path on the east side of 29th Street from 21st Avenue to Cayuga Street.
- Railroad tracks exist on 29th Street between Genesee Street and Chelsea Street.
    - Coordination with CSX to install a bicycle/pedestrian crossing over the railroad tracks may be necessary.
- The signalized intersection of 29th Street and Dr. Martin Luther King, Jr. Boulevard already contains high intensity crosswalks and pedestrian signals.
- The Perimeter Trail heads east at the intersection of 29th Street and Cayuga Street along the Clarence Fort Freedom Trail east toward 30th Street, where it will turn north and travel toward East Hillsborough Avenue.
    - Crosswalks are recommended at 29th Street and Cayuga Street and at 30th Street and Cayuga Street.
- Existing sidewalks are located on both the east and west side of 30th Street from Cayuga Street to Osborne Avenue. From Osborne Avenue to East Hillsborough Avenue, sidewalks on both sides are intermittent.
    - This study recommends the construction of 5-foot sidewalks, crosswalks, and sharrows between Osborne Avenue and East Hillsborough Avenue.
    - Bicycle/pedestrian crossing signage is also recommended at the intersections of 30th Street and Osborne and Louisiana Avenues and Ellicott Street.
    - Pedestrian lanes are recommended on the west side of 30th Street from Ellicott Street to Caracas Street; from Wilder Avenue to McBerry Street; and on the east side of 30th Street from Frierson Avenue to the segment's terminus at East Hillsborough Avenue. These lanes traverse wide driveways and parking areas, and provide clear direction to pedestrians and drivers that it is a designated walking area.

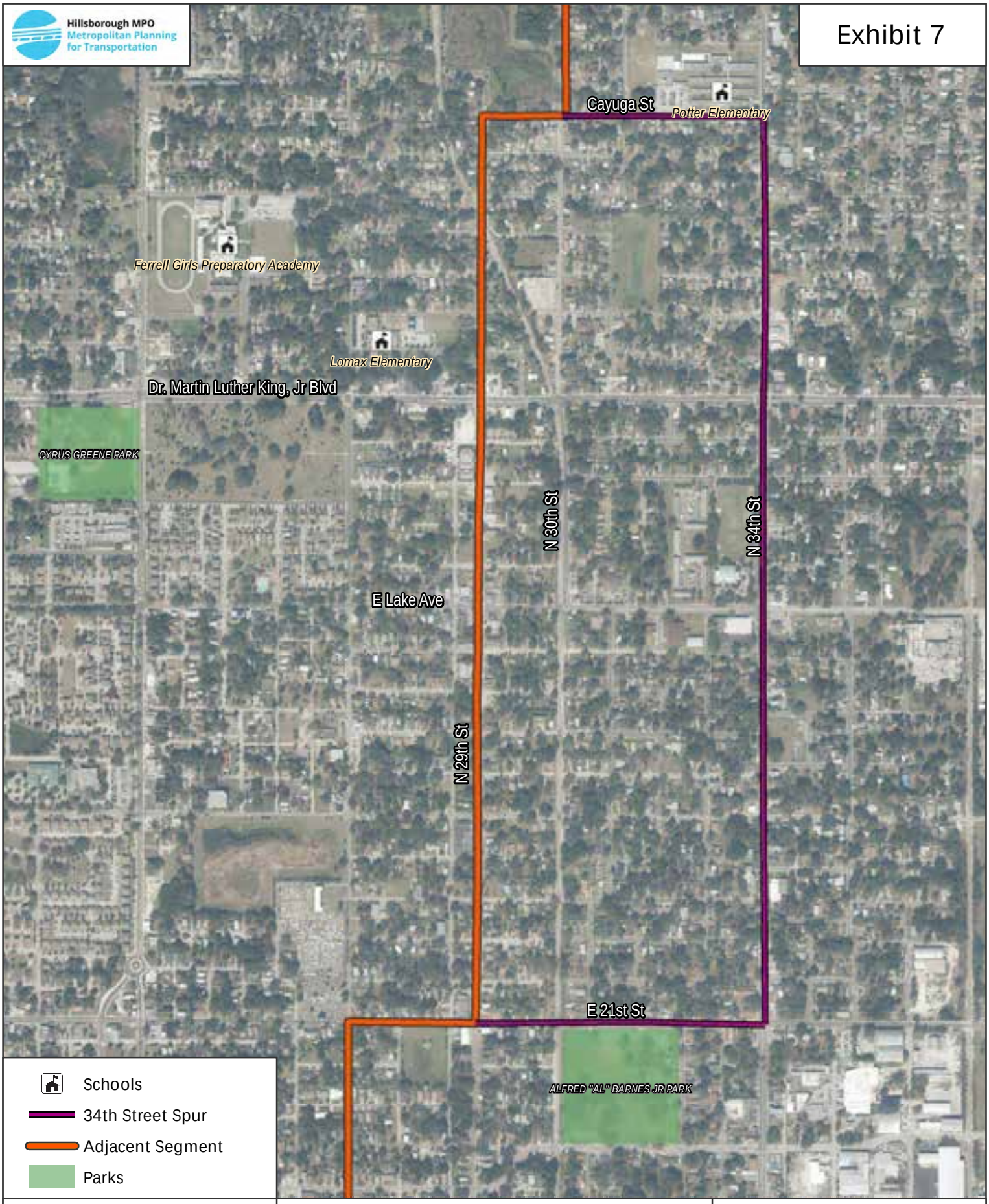
3.3. 34th Street Spur

A proposed spur route of the Perimeter Trail would follow 21st Avenue, by the north side of Alfred "Al" Barnes, Jr. Park, then head east to 34th Street, where it would turn north. Along 34th Street, the trail travels adjacent to the National Football League Youth Education Town (NFL YET) Center at Jackson Heights. The trail would cross Dr. Martin Luther King, Jr. Boulevard at the signalized intersection with 34th Street. It will then continue north on 34th Street to Cayuga Street, where it will turn west to 30th Street. Once at the intersection of 30th Street & Cayuga Street, the 34th Street Alternative Trail will turn north and follow 30th Street to Hillsborough Avenue. The Perimeter Trail passes by the Clarence Fort Freedom Trail Park which is located on the west side of 30th Street between Cayuga Street and Osbourne Avenue. **Exhibit 7** depicts the proposed routing of the Perimeter Trail as well as the proposed 34th Street Spur in this area.

The potential bicycle and pedestrian treatments for the 34th Street Spur are as follows:

- The proposed routing of the 34th Street Spur utilizes 34th Street from 21st Avenue to Cayuga Street. Portions of this section of 34th Street are proposed to be narrowed as part of a road diet program. Reconstruction of the roadway would create more opportunities for bicycle facilities. Currently there are existing sidewalks on 34th Street from 21st Avenue to Cayuga Street.
    - The recommended treatment for bicyclists is to stripe shared lane markings on the road. Utility poles are located close to the existing sidewalk and there is not enough available ROW to relocate them and widen the sidewalk to create an 8-foot multi-use path.

      At the intersection of 21st Avenue and 34th Street, 34th Street & Lake Avenue and 34th Street & Dr. Martin Luther King, Jr. Boulevard, bicycle/pedestrian crossing signage and markings should be installed.
- On Cayuga Street, an existing sidewalk is located on the north side of the roadway, mainly to serve Potter Early Childhood Center. Pedestrians could use this sidewalk as part of the Perimeter Trail.
    - It is recommended that shared lane markings be placed along Cayuga Street for bicyclists. Due to limited ROW and on-street parking on the north side of Cayuga Street, widening the sidewalk to a multi-use trail is not feasible without ROW acquisition. On the south side of the roadway, limited ROW and the location of utility poles make construction of a multi-use trail not feasible.


Hillsborough MPO
Metropolitan Planning for Transportation
Exhibit 7
Cayuga St
Potter Elementary
Ferrell Girls Preparatory Academy
Lomax Elementary
Dr. Martin Luther King, Jr Blvd
CYRUS GREENE PARK
N 30th St
N 34th St
E Lake Ave
N 29th St
E 21st St
ALFRED "AL" BARNES JR PARK
Schools
34th Street Spur
Adjacent Segment
Parks
City of Tampa
Walk-Bike Plan Phase V
Proposed Perimeter Trail
34th Street Spur
0
500
1,000
Feet
Figure Date: 4/22/2016

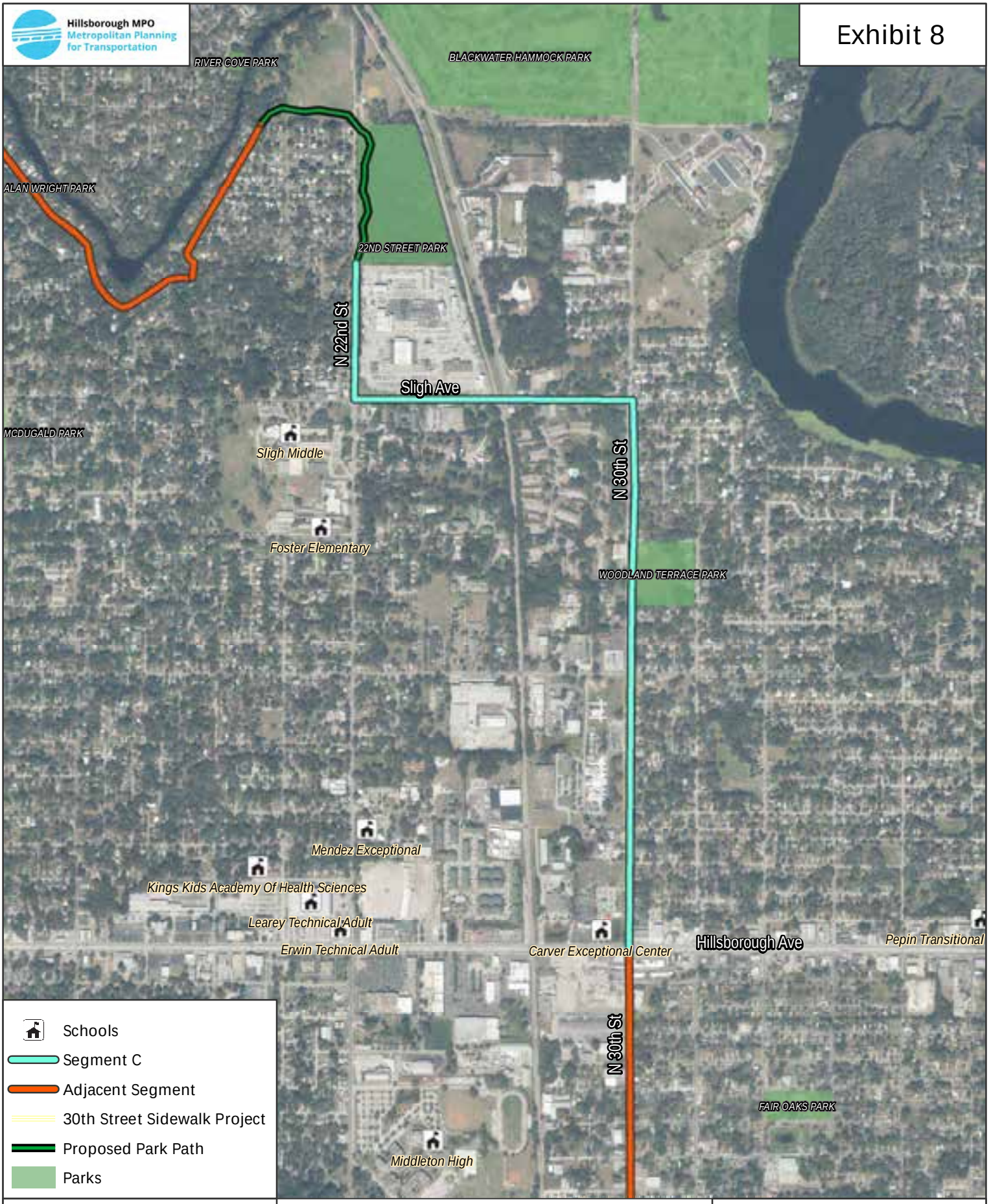
3.4. Segment C: East Hillsborough Avenue to 22nd Street Park

This segment of the Perimeter Trail heads north from East Hillsborough Avenue on 30th Street to Sligh Avenue where it turns west toward 22nd Street. At 22nd Street, the Perimeter Trail winds through the 22nd Street Park by way of a multi-use path proposed through the parcel of land owned by Tampa Electric Company (TECO) at the intersection of 22nd Street and Hamilton Avenue. The proposed path would then traverse along the southern portion of the 22nd Street Park, ending at Park Drive and Patterson Street. **Exhibit 8** depicts the routing of the trail in Segment C.

The routing of the Perimeter Trail from previous studies continued the trail north on 30th Street from Sligh Avenue through the Rogers Park Golf Course, but due to ROW issues, it is recommended that the trail follow Sligh Avenue to 22nd Street and then turn north to the 22nd Street Park.

The recommended bicycle and pedestrian treatments for Segment C: East Hillsborough Avenue to 22nd Street Park are shown on **Sheets C-1 through C-11 in Appendix A**, and are as follows:

- An existing traffic signal with high-intensity crosswalks at 30th Street and East Hillsborough Avenue will safely guide bicyclists and pedestrians through this heavily traveled intersection. Between Hillsborough Avenue and Deleuil Avenue, 5-foot sidewalk exists along both sides of 30th Street. An existing 8-foot multi-use path is located on the west side of 30th Street from Deleuil Avenue (at the Carver Exceptional Center) to Hanna Avenue.
    - This study recommends widening the sidewalk on the west side of 30th Street to an 8-foot multi-use path between East Hillsborough Avenue and the southern terminus of the existing 8-foot path at the Carver Exceptional Center. It should be noted that the path will narrow to a 5-foot width in two locations, to avoid mature oak trees.
- Beginning at the intersection of 30th Street and Hanna Avenue, the trail will continue north on 30th Street, passing by the Woodland Terrace Park to Sligh Avenue.
    - The study recommends construction of an 8-foot multi-use path along the west side of 30th Street from Hanna Avenue to Jean Street, with a striped crosswalk and bicycle/ pedestrian crossing signage on the south and west sides of the intersection of 30th Street and Hanna Avenue and at the at the southwest corner of 30th Street and Jean Street.
    - Continue the 8-foot multi-use path on the east side of 30th Street from Jean Street to Sligh Avenue, with proposed bicycle/pedestrian crossings at the intersection of 30th Street and Diana Street. There is an existing drainage ditch on the east side of 30th Street from north of Jean Street to Fern Street which must be addressed in order to accommodate an 8-foot multi-use path. Furthermore, a series of utility poles to accommodate an 8-foot multi-use path along the east side of 30th Street between Diana Street and Sligh Avenue.
    - A striped crosswalk at the northeast corner of 30th Street and Diana Street is recommended to accommodate residents accessing the Knollwood Manor Apartments.
    - Since existing pedestrian crossing signage already exists at this intersection, it is recommended that trail crossing signage be installed on the existing crossing sign.


Hillsborough MPO
Metropolitan Planning for Transportation
Exhibit 8
RIVER COVE PARK
BLACKWATER HAMMOCK PARK
ALAN WRIGHT PARK
22ND STREET PARK
N 22nd St
Sligh Ave
MCDUGALD PARK
Sligh Middle
N 30th St
Foster Elementary
WOODLAND TERRACE PARK
Mendez Exceptional
Kings Kids Academy Of Health Sciences
Learey Technical Adult
Erwin Technical Adult
Carver Exceptional Center
Hillsborough Ave
Pepin Transitional
N 30th St
FAIR OAKS PARK
Middleton High
Schools
Segment C
Adjacent Segment
30th Street Sidewalk Project
Proposed Park Path
Parks
City of Tampa
Walk-Bike Plan Phase V
Proposed Perimeter Trail
Segment C
0
500
1,000
Feet
Figure Date: 4/22/2016

- The Perimeter Trail then turns west onto Sligh Avenue and continues to 22nd Street. There is an existing 5-foot sidewalk on the south side of Sligh Avenue from 30th Street, across the CSX railroad tracks at Rowlett Park Drive, and to the existing signal at 22nd Street.
    - Recommend shared lane markings on Sligh Avenue from 30th Street to Rowlett Park Drive.
    - Installation of a sidewalk on the north side of Sligh Avenue from 30th Street to Rowlett Park Drive is not recommended due to the Robles Family cemetery in close proximity to the roadway.
    - This study recommends the construction of an 8-foot multi-use path along the north side of Sligh Avenue between Rowlett Park Drive and 22nd Street, and along the east side of 22nd Street from Sligh Avenue to Hamilton Avenue. It should be noted that drainage ditches and utilities must be addressed in order to implement an 8-foot multi-use path on Sligh Avenue between Rowlett Park Drive and 22nd Street, as well as along 22nd Street north of Sligh Avenue to the TECO parcel.
    - Recommend pedestrian lane markings on driveways that are adjacent to the existing 5-foot sidewalk on the south side of Sligh Avenue, and consider relocating the crosswalk at Rowlett Park Drive slightly east.
    - Coordination with CSX to extend the multi-use path across the railroad tracks will be necessary, as an official crossing of the railroad tracks would enhance safety for path users.
- The 8-foot multi-use path is to continue north on the east side of 22nd Street from Sligh Avenue. There is also an existing 5-foot sidewalk on the west side of 22nd Street from Sligh Avenue to Patterson Street. The trail continues north on 22nd Street until it reaches the north side of the TECO parcel at Hamilton Avenue.
- There are existing traffic calming treatments (speed tables) along 22nd Street between Sligh Avenue and Hamilton Avenue.
    - Recommend a striped crosswalk and combination bicycle pedestrian crossing signage at the intersection of 22nd Street and Hamilton Avenue.
- A 12-foot wide multi-use path is to continue from the east side of the crosswalk at the intersection of 22nd Street and Hamilton Avenue northward through the west side TECO Parcel along a dirt path that already exists near 22nd Street (**Exhibit 9**). This path will end just south of the baseball field in the 22nd Avenue Park.
    - In addition, a loop trail may be constructed that will run along the south and east sides of the TECO Parcel and rejoin the main route of the Perimeter Trail just south of the 22nd Street Park baseball field. Because the east side of the TECO Parcel has some wetlands, a boardwalk may be needed to accommodate this loop of the trail.
- The Perimeter Trail then will turn west and cross 22nd Street with a crosswalk and bicycle pedestrian signage crossing then continue across the south side of the 22nd Street Park on a 12-foot wide multi-use path to the northern terminus of Park Drive. This route through the 22nd Street Park was chosen so as to not interfere with the existing disc golf course which is located in the northern half of the park.

N

230 115 0 230

Feet

22nd STREET PARK / TECO PARCEL

PROPOSED TRAIL LAYOUT

EXHIBIT 9

ATKINS

APRIL 25, 2016

- However, a second loop may be constructed through the 22nd Street Park, following the dirt service road that extends north from 22nd Street. The trail would continue north to the southern bank of the Hillsborough River where it would turn southwest and rejoins the main trail just north of the terminus of Park Drive, as shown previously on **Exhibit 9**.

3.5. Segment D: 22nd Street Park to Sulphur Springs Park

Once southwest of the 22nd Street Park, the Perimeter Trail continues as a bicycle boulevard/neighborhood greenway through residential neighborhoods that lie along the Hillsborough River, as depicted on **Exhibit 10**. The Perimeter Trail utilizes Park Drive and Park Circle to 12th Street. Alan Wright Park on Park Circle (**Figure 13**) is along this segment of the Perimeter Trail.

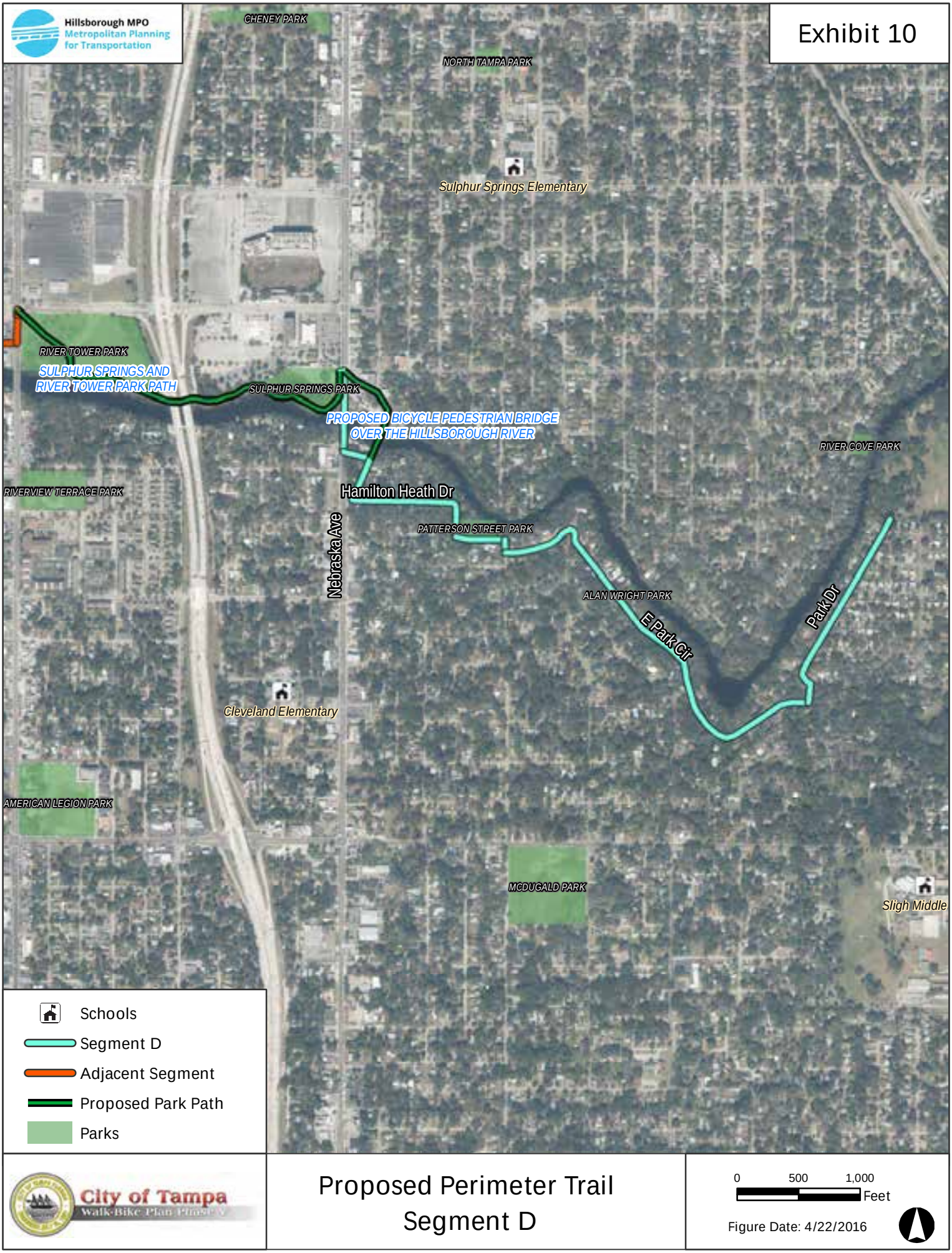
At 12th Street, the trail turns north for one block and then turns west on Patterson Street where it passes by Patterson Street Park, and then turns north on Hamilton Heath Drive. From Hamilton Heath Drive the trail continues north onto Van Dyke Place to Hollywood Street, and then uses Hollywood Street west to Nebraska Avenue. The trail would utilize the Nebraska Avenue Bridge to cross the Hillsborough River, and then turn into Sulphur Springs Park via Sitka Street.

The crossing of the Hillsborough River on Nebraska Avenue is proposed to be an interim solution for the Perimeter Trail. If or when additional funding becomes available, a new exclusive bicycle/pedestrian bridge is recommended to connect Van Dyke Avenue on both sides of the Hillsborough River. Historically, a streetcar line operated along this segment of Van Dyke Avenue and there was a streetcar bridge connecting Van Dyke Avenue on both sides of the river. A more detailed analysis of the cost to construct a bicycle/pedestrian bridge is found in the **Section 4** of this report.

The City of Tampa has plans to resurface some of the streets on this section of the Perimeter Trail in 2016, 2017, and 2018. Implementing the recommended treatments as part of the resurfacing projects may be good timing. The City of Tampa Paving Plan Map can be found in **Appendix B**.

The recommended bicycle and pedestrian treatments for Segment D: 22nd Street Park to Sulphur Springs Park are shown on **Sheets D-1 through D-8 in Appendix A** as follows:

- Low traffic volumes and location within a residential area, along with the lack of sidewalks, make this area ideal for a Bicycle Boulevard/Neighborhood Greenway. There is an existing 5-foot sidewalk on the west side of Park Drive from 17th Street to 12th Street, and on both sides from 17th Avenue to 12th Street and Patterson Street, but there is limited opportunity to extend it.
    - Recommend striping bicycle boulevard pavement markings along Park Drive from the 22nd Street Park to 12th Street; 12th Street from Park Drive to Patterson Street; Patterson Street from 12th Street to Hamilton Heath Drive (adjacent to Patterson Street Park); and along Van Dyke Place from Hamilton Heath Drive to Hollywood Street. This area would also be ideal for wayfinding signage/markings.
    - Construct a 5-foot wide sidewalk on the east side of Van Dyke Place from Hamilton Heath Drive to the Hillsborough River.


Hillsborough MPO
Metropolitan Planning for Transportation
Exhibit 10
CHENEY PARK
NORTH TAMPA PARK
Sulphur Springs Elementary
RIVER TOWER PARK
SULPHUR SPRINGS AND RIVER TOWER PARK PATH
SULPHUR SPRINGS PARK
PROPOSED BICYCLE PEDESTRIAN BRIDGE OVER THE HILLSBOROUGH RIVER
RIVER COVE PARK
RIVERVIEW TERRACE PARK
Hamilton Heath Dr
Nebraska Ave
PATTERSON STREET PARK
ALAN WRIGHT PARK
E Park Cir
Park Dr
Cleveland Elementary
AMERICAN LEGION PARK
MCDUGALD PARK
Sligh Middle
Schools
Segment D
Adjacent Segment
Proposed Park Path
Parks
City of Tampa
Walk-Bike Plan Phase V
Proposed Perimeter Trail
Segment D
0
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1,000
Feet
Figure Date: 4/22/2016

Until funding becomes available to construct an exclusive bicycle and pedestrian bridge across the Hillsborough River (**Figure 14**), pedestrians and bicyclists should use the sidewalks on Nebraska Avenue to connect to Sulphur Springs Park.

Figure 13: Park Circle

Figure 14: Extant remains of the streetcar/trolley crossing over the Hillsborough River on Van Dyke Place

3.6. Segment E: Sulphur Springs Park to Sligh Avenue

From Nebraska Avenue, the Perimeter Trail winds through Sulphur Springs and River Tower Parks. As shown in **Exhibit 11** this study recommends utilizing the existing sidewalk on the west side of Nebraska Avenue from the crosswalk at the intersection of Sitka Street to the beginning of the Sulphur Springs Park Trail. There the trail will use the existing Sulphur Springs Park Trail that begins at Nebraska Avenue just east of the Sulphur Springs Pool and connects with an existing boardwalk under I-275. The A 12' wide path would be built from the western end of the boardwalk through River Tower Park to the entrance at the southeast corner of Bird Street and Florida Avenue intersection. There is an existing 5-foot sidewalk on the south side of Bird Street as well as crosswalks on all four sides of the intersection of Bird Street and crosswalks on all four sides of the intersection at Bird Street and Florida Avenue.

The recommended bicycle and pedestrian treatments for Segment E: Sulphur Springs Park to Sligh Avenue are shown on **Sheets E-1 through E-10 in Appendix A**.

The treatments for the Sulphur Springs Park and River Tower Park are as follows:

- Replace the existing trail bridge over the Sulphur Springs outlet to a 12-foot wide multi-use path bridge.
- Construct a new 12-foot wide multi-use path from the end of the existing treated path/boardwalk west of the I-275 overpass to the intersection of Florida Avenue and Bird Street.
    - A river's edge loop may be constructed along the Hillsborough River in River Tower Park to access the river directly.

CONNECT TO EXISTING SIDEWALK

E. BIRD ST.

TAMPA
GREYHOUND TRACK

RIVER TOWER
PARK

INTERSTATE 275

E. NEBRASKA AVE.

PROPOSED PATH TO WATER TOWER

PROPOSED PERIMETER TRAIL

PROPOSED RIVER'S EDGE LOOP

EXISTING TREE (TYP.)

UTILIZE EXISTING PARK PATH

CONNECT TO EXISTING SIDEWALK

SULPHUR
SPRINGS POOL

HILLSBOROUGH RIVER

IMPROVE / WIDEN
EXISTING BOARDWALK

N

170 85 0 170

Feet

SULPHUR SPRINGS AND RIVER TOWER PARK

PROPOSED TRAIL LAYOUT

EXHIBIT 11

ATKINS

APRIL 25, 2016

- Depicted on Exhibit 11, another path may be constructed as a spur of the Perimeter Trail to access the River Tower.

As shown on **Exhibit 12**, the Perimeter Trail routing resumes along Florida Avenue for a short block and then turns west on River Shore Drive. The trail would continue westward on River Shore Drive passing Purity Springs Park, adjacent to the Hillsborough River (**Figure 15**) and then turns west on Kirby Street to North Boulevard. There are no sidewalks along River Shore Drive and Kirby Street. The proposed trail will travel south on North Boulevard toward Lowry Park, where it will continue on multi-use paths through Lowry Park and the Lowry Park Zoo. There are existing sidewalks located on both sides of North Boulevard between Kirby Street and Sligh Avenue. Once through Lowry Park, the Perimeter Trail again utilizes North Boulevard south to the existing signal at Sligh Avenue.

Figure 15: River Shore Drive at Purity Springs Park

Treatments west of River Tower Park include:

- Low traffic volumes and location within a residential area make this area ideal for a bicycle boulevard/neighborhood greenway.
  - On Florida Avenue between Bird Street and River Shore Drive, the study recommends widening the existing 5-foot sidewalk on the west side of Florida Avenue to an 8-foot multi-use path. Bicycle/pedestrian crossing signage should be installed at the intersection of Florida Avenue & Bird Street.
  - The recommended treatment on River Shore Drive and Kirby Street are to stripe bicycle boulevard pavement markings on both streets.
- There is enough ROW on the north and west sides of River Shore Drive, and along Kirby Street between River Shore Drive and North Boulevard, to install a 5-foot sidewalk if a variation of a 2-foot buffer between the sidewalk and roadway can be obtained. It should be noted that drainage ditches and utilities must be addressed in order to implement an 8-foot multi-use path on River Shore Drive and Kirby Street.
- This study recommends utilizing the existing sidewalks on and installing sharrows on North Boulevard between Kirby Street and Sligh Avenue.

It should be noted that the Perimeter Trail could wind through Lowry Park. If multi-use paths were constructed through the park, on-road sharrows would only be needed from Kirby Street to Clinton Street.


Hillsborough MPO
Metropolitan Planning for Transportation
Exhibit 12
PURITY SPRINGS
RIVER TOWER PARK
SULPHUR SPRINGS PARK
N Rivershore Dr
N Florida Ave
275
RIVERVIEW TERRACE PARK
W Kirby St
North Blvd
LOWRY PARK
AMERICAN LEGION PARK
EPPS PARK
Schools
Segment E
Adjacent Segment
Parks
City of Tampa
Walk-Bike Plan Phase V
Proposed Perimeter Trail
Segment E
0
500
1,000
Feet
Figure Date: 4/22/2016

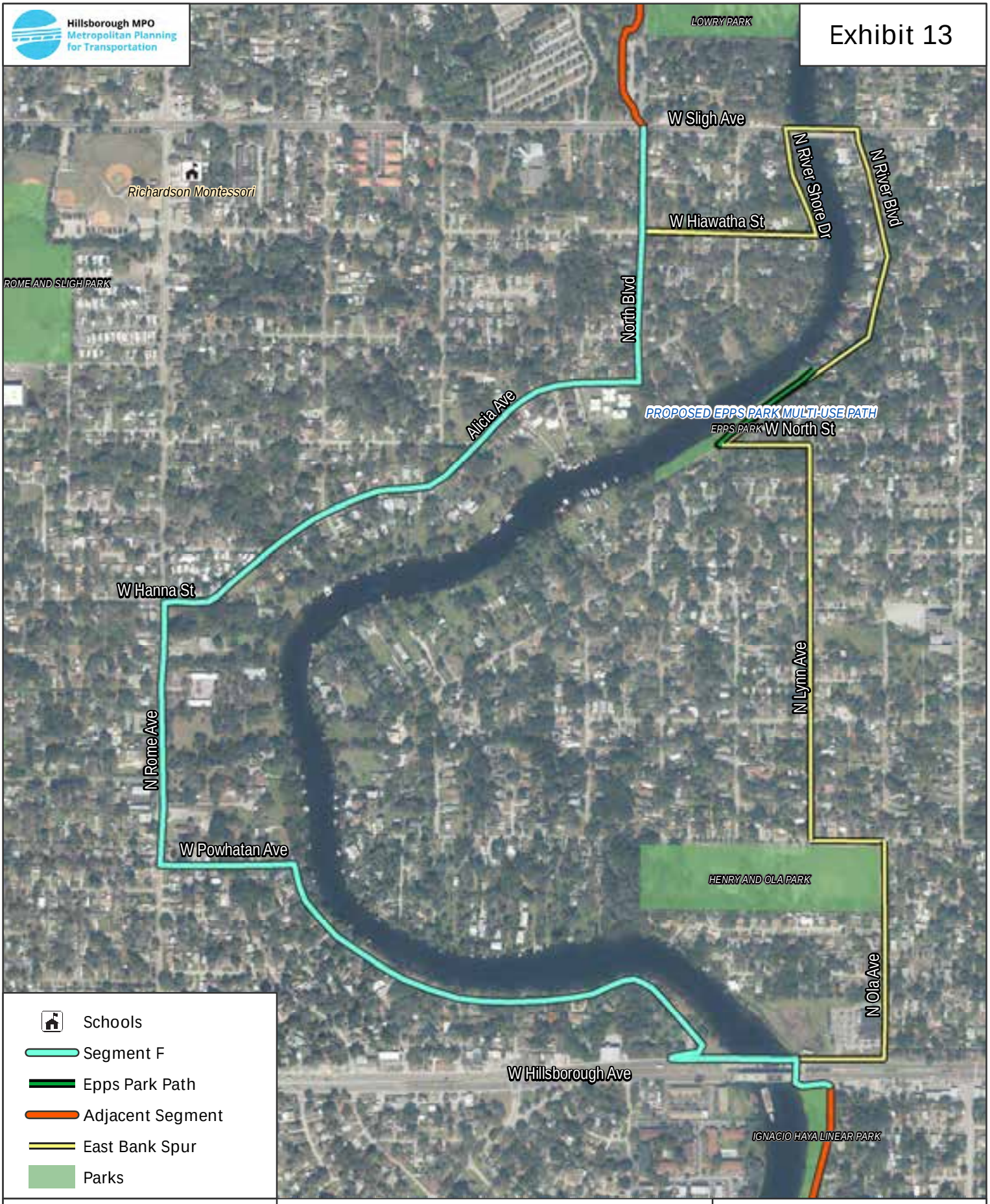
3.7. Segment F: Sligh Avenue to West Hillsborough Avenue

Figure16: Drainage on Alicia Avenue

The Perimeter Trail, as recommended, extends along North Boulevard south from Sligh Avenue to Alicia Avenue. From there, the trail continues on Alicia Avenue, south on Rome Avenue, east on Powhatan Avenue, and then southeast on River Shore Avenue to West Hillsborough Avenue. The trail utilizes the sidewalk on the north side of the Hillsborough River Bridge and then the underpass to get to the south side of West Hillsborough Avenue (**Exhibit 13**). There are no sidewalks located on North Boulevard between Sligh Avenue and Alicia Avenue. There are drainage issues on both sides of North Boulevard between Hiawatha Avenue and Alicia Avenue (**Figure 16**). Traffic calming treatments (speed tables) are located on Alicia Avenue and Hanna Avenue. The Perimeter Trail heads south on Rome Avenue, where an existing 5-foot sidewalk on the west side of the road will be widened to an 8-foot multi-use path.

The recommended bicycle and pedestrian treatments for this segment are shown on **Sheets F-1 through F-10 of Appendix A** and include the following:

- Low traffic volumes within a residential area make much of this area an ideal candidate for a bicycle boulevard/neighborhood greenway.
    - The study recommends constructing an 8-foot wide multi-use path on the east side of North Boulevard from Sligh Avenue to Alicia Avenue. The above mentioned drainage issues, as well as relocation of utility poles will need to be addressed before construction of the 8-foot wide multi-use path
    - Installing bicycle boulevard/neighborhood greenway markings and a 5-foot sidewalk on the south/east side of Alicia Avenue from North Boulevard to Hanna Avenue.
    - Recommend striped crosswalk and combination bicycle pedestrian crossing signage on the south side of the intersection of Rome Avenue and Hanna Avenue, and the north side of the Rome Avenue and Powhatan Avenue intersection.
- Constructing an 8-foot multi-use path along the south side of Hanna Avenue between Alicia Avenue and Rome Avenue to cross at the southeast corner utilizing the above recommended crosswalk treatment. At this point, bicycles would shift from the road to the path.
- This study recommends extending the path down Rome Avenue by widening the existing 5-foot sidewalk on the west side from Hanna Avenue to Powhatan Avenue.


Hillsborough MPO
Metropolitan Planning for Transportation
Exhibit 13
LOWRY PARK
W Sligh Ave
N River Shore Dr
N River Blvd
Richardson Montessori
W Hiawatha St
ROME AND SLIGH PARK
North Blvd
Alicia Ave
PROPOSED EPPS PARK MULTI-USE PATH
EPPS PARK
W North St
W Hanna St
N Lynn Ave
N Rome Ave
W Powhatan Ave
HENRY AND OLA PARK
N Ola Ave
W Hillsborough Ave
IGNACIO HAYA LINEAR PARK
Schools
Segment F
Epps Park Path
Adjacent Segment
East Bank Spur
Parks
City of Tampa
Walk-Bike Plan Phase V
Proposed Perimeter Trail
Segment F
0
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Feet
Figure Date: 4/22/2016

- The multi-use path then crosses Rome Avenue at the designated crossing referenced above. The existing 5-foot sidewalks on the north side of Powhatan Avenue from Rome Avenue to North River Shore Drive would be widened to an 8-foot multi-use path.

- The bicycle boulevard/neighborhood greenway would pick back up on River Shore Drive. There is an existing sidewalk along the east side of the street from Powhatan Avenue to the cul-de-sac near West Hillsborough Avenue.

    - This segment ends at the Hillsborough Avenue Bridge over the Hillsborough River. The study recommends adding ramps to allow bicyclists to smoothly go from River Shore Drive onto the sidewalk approaching the north side of West Hillsborough Avenue Bridge (**Figure 17**).

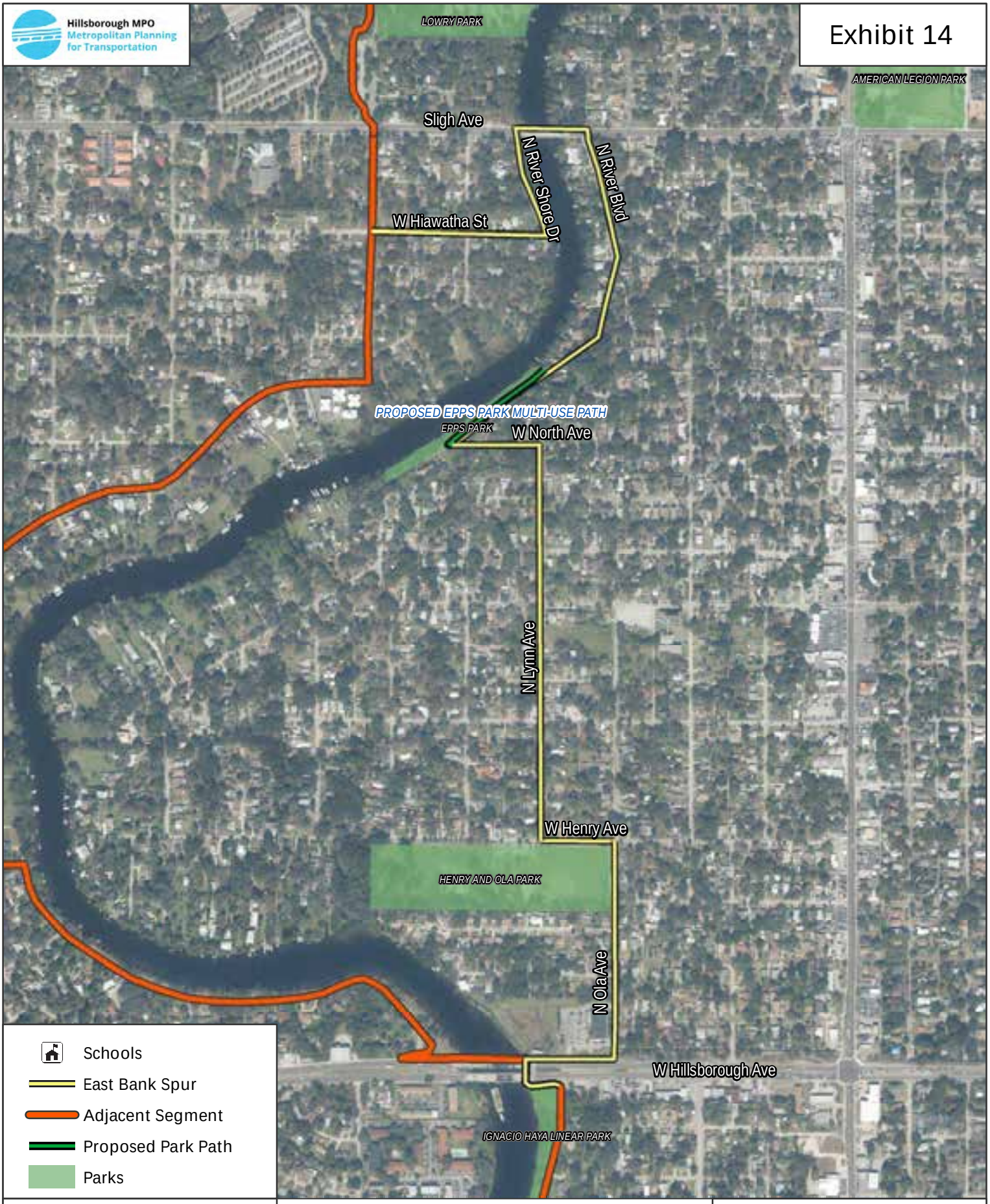
- Recommend guard rail placement where the sidewalk from North River Shore Drive meets the sidewalk along West Hillsborough Avenue. This would require bicyclists and pedestrians to use the sidewalk on the north side of West Hillsborough Avenue to cross the river. The sidewalk continues east to the existing 8-foot multi-use path that takes bicyclists and pedestrians under the Hillsborough Avenue Bridge (**Figure 18**). The multi-use path goes underneath West Hillsborough Avenue along the east bank of the river, thus allowing bicyclists and pedestrians a safe crossing of the heavily traveled roadway.

Figure 17: Hillsborough Avenue Bridge Underpass

Figure 18: Existing 5-foot sidewalk at River Shore Drive and Hillsborough Avenue Bridge

3.8. East Bank Spur

The original routing of the Perimeter Trail from previous Walk-Bike phases utilized Alicia Avenue and River Shore Drive on the west side of the Hillsborough River. Due to limited ROW available to construct multi-use paths or sidewalks, utility location issues, and narrow pavement widths, a spur to Segment F of the Perimeter Trail was developed in this study. This spur route would travel along the east bank of the Hillsborough River between Sligh and West Hillsborough Avenues (**Exhibit 14**), and could now be used as a spur trail serving the Seminole Heights area.



City of Tampa
Walk-Bike Plan Phase V

Proposed Perimeter Trail
East Bank Spur

0 490 980
Feet

Figure Date: 4/22/2016

The East Bank Spur would deviate from North Boulevard and travel east on Hiawatha Street, and then north on River Shore Drive back to Sligh Avenue. The spur trail will utilize the Sligh Avenue Bridge to cross to the east bank of the Hillsborough River. The trail would then turn south on North River Boulevard, and continue to Epps Park. The spur trail continues from the path through Epps Park to W. North Street, where it heads east to Lynn Avenue. The trail proceeds south on Lynn Avenue to Henry Avenue, where it passes through Henry and Ola Park, and then goes south on Ola Avenue.

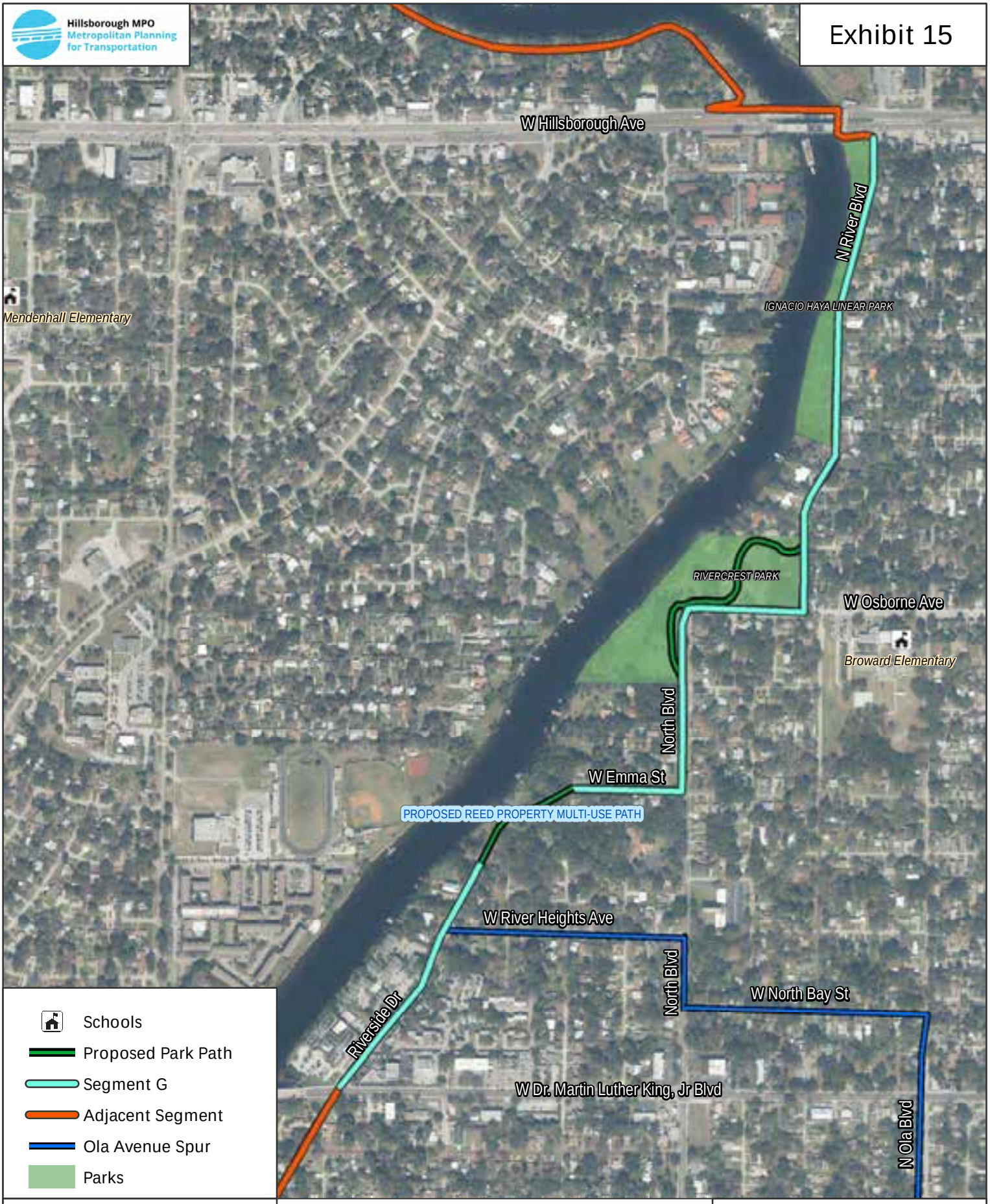
If implemented, the bicycle and pedestrian treatments for the East Bank Spur would include:

- Clearing of the easement at the south end of North River Boulevard to Epps Park and the construction of an 8-foot multi-use path along the existing dirt path in Epps Park.
- Due to issues with drainage located on the southern end of Epps Park, south of North Street, it is recommended that the 8-foot multi-use path connect to W. North Street, with striped bicycle boulevard markings between the intersection of W. North Street and Lynn Avenue, to Lynn Avenue and Henry Avenue adjacent to Henry and Ola Park.
- The spur trail will then cross Henry Avenue at Lynn Avenue and utilize the existing 5-foot sidewalk along the south side of Henry Avenue east and then turn south on Ola Avenue. The route would continue by utilizing the existing sidewalks on the west side of Ola Avenue.
- The study of this alternate route recommends striping Bicycle Boulevard markings on W. North Street, Lynn Avenue, and Ola Avenue down to West Hillsborough Avenue in lieu of riding along the sidewalk.
- The existing 5-foot sidewalk on the north side of West Hillsborough Avenue would be widened for a short distance and connected to the existing 8-foot multi-use path that takes bicyclists and pedestrians under the Hillsborough Avenue Bridge. The spur would join back up with the Perimeter Trail at this location.

3.9. Segment G: West Hillsborough Avenue to Dr. Martin Luther King, Jr. Boulevard

This Segment of the Perimeter Trail is proposed to meander along the east bank of the Hillsborough River between West Hillsborough Avenue and Dr. Martin Luther King, Jr. Boulevard (**Exhibit 15**). The segment follows River Boulevard south to Rivercrest Park. From there, the trail connects with an existing trail through Rivercrest Park heading southwest toward the intersection of North Boulevard and Osborne Avenue. At North Boulevard, the route heads south to Emma Street, and then west to the Reed Property, joining a proposed path through the property. The trail would pick up at Riverside Drive, and continue south, ending at the Riverside Drive and Dr. Martin Luther King, Jr. Boulevard intersection.

The recommended bicycle and pedestrian treatments for Segment G: West Hillsborough Avenue to Dr. Martin Luther King, Jr. Boulevard are shown on **Sheets G-1 through G-7 in Appendix A**. They include:


Hillsborough MPO
Metropolitan Planning for Transportation
Exhibit 15
W Hillsborough Ave
N River Blvd
Mendenhall Elementary
IGNACIO HAYA LINEAR PARK
RIVERCREST PARK
W Osborne Ave
Broward Elementary
North Blvd
W Emma St
PROPOSED REED PROPERTY MULTI-USE PATH
W River Heights Ave
North Blvd
W North Bay St
Riverside Dr
W Dr. Martin Luther King, Jr Blvd
N Ola Blvd
Schools
Proposed Park Path
Segment G
Adjacent Segment
Ola Avenue Spur
Parks
City of Tampa
Walk-Bike Plan Phase V
Proposed Perimeter Trail
Segment G
0
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1,000
Feet
Figure Date: 4/25/2016

- After the Perimeter Trail safely crosses under West Hillsborough Avenue, it is proposed to resume its journey south on the existing 5-foot sidewalk adjacent to the linear Ignacio Haya Park along the west side of North River Boulevard.

    - This study recommends the addition of bicycle boulevard markings along North River Boulevard from the Hillsborough Avenue Bridge to Rivercrest Park.

- Just north of the intersection of North River Boulevard and Louisiana Avenue, the sidewalk on the west side of North River Boulevard enters Rivercrest Park to connect to existing multi-use path within the park. This study recommends widening this sidewalk to a 12-foot multi-use path between Louisiana Avenue and the existing multi-use path within Rivercrest Park.

- Within Rivercrest Park the Perimeter Trail will follow the existing multi-use trail from the sidewalk connection discussed above to where the trail splits north of the gazeebo. The Perimeter Trail utilizes the portion of the trail that passes to the east of the gazeebo to the intersection of another trail paralleling Osbourne Avenue. This study recommends that the Perimeter Trail turn west on this multi-use path. It is recommended that the intersection of the two trails be reconstructed to provide a wider radii to make the southbound to westbound and eastbound to northbound connections.

    - The Perimeter Trail will follow the existing multi-use path that parallels Osbourne Avenue and North Boulevard to the south end of the park where an existing multi-use path connection exists between the Rivercrest Park trail and North Boulevard **(Exhibit 16).**

- There are existing shared bicycle lane markings and existing traffic calming treatments (speed tables) on North Boulevard **(Figure 19)**.

Figure 19: North Boulevard adjacent to Rivercrest Park

Figure 20: Flooded Area at Reed Park

N

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Feet

RIVERCREST PARK AND REED PROPERTY

PROPOSED TRAIL LAYOUT

EXHIBIT 16

ATKINS

APRIL 25, 2016

- The study recommends construction of a 5-foot sidewalk on the west side of North Boulevard from Curtis Street (Rivercrest Park) to Emma Street to complement the existing sidewalk on the east side of the road. A crosswalk is also recommend on the south side of the North Boulevard & Emma Street intersection. The sidewalk will continue on the south side of Emma Street west to the entrance of the Reed Property, also known as the headquarters of Keep Tampa Bay Beautiful. Additional ROW must be acquired, relocation of utilities must be completed, and drainage ditches must be addressed before the sidewalk could be widened into a multi-use path. As such, Bicycle Boulevard markings are recommended to be placed on Emma Street between North Boulevard and the Reed Property.

- This study recommends the construction of a raised, 12-foot multi-use path through the Reed Property from the western terminus at Emma Street south along the Hillsborough River to Riverside Drive at the park's southern entrance **(Exhibit 17)**. This raised path is recommended to minimize flooding during periods of heavy rain and river rise (**Figure 20**). The existing bridge on the Reed Property should be replaced with a bridge wide enough to accommodate the multi-use path.

- It is recommended that the park gates be open and/or modified to accommodate the 12-foot multi-use path at all times to connect Emma Street and Riverside Drive via the Reed Property.

- It should be noted that Rivercrest Park and Reed Park cannot be connected along the Hillsborough River due to several privately owned riverfront parcels. As a result, the trail routing utilizes North Boulevard and Emma Street to connect the two parks. An easement through the private riverfront properties must be obtained in order to fully develop the Perimeter Trail along the east bank of the river.

- The Perimeter Trail continues along Riverside Drive from Reed Park to Dr. Martin Luther King, Jr. Boulevard. There are existing 5-foot sidewalks on the east and west sides of Riverside Drive south of River Heights Drive, however the sidewalk on the west side of Riverside Drive is not ADA compliant.

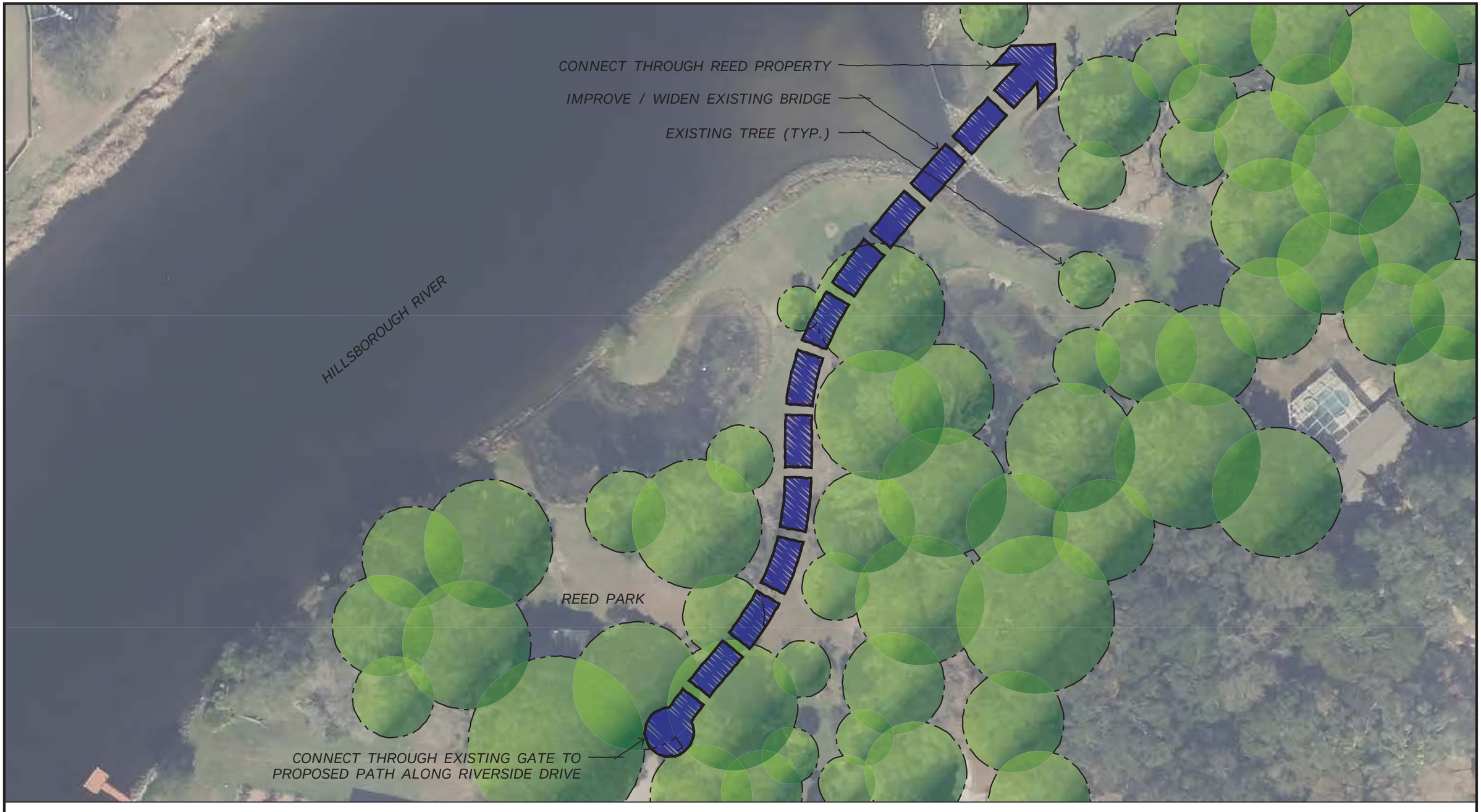
  - This study recommends the addition of bicycle boulevard pavement markings on Riverside Drive from Reed Park to Dr. Martin Luther King, Jr. Boulevard.

  - Constructing a new 5-foot wide sidewalk on the west side of Riverside Drive from the Reed Property to where the existing sidewalk begins is recommended. In addition, the 5-foot sidewalk along the west side of Riverside Drive should be modified to be ADA compliant.

- Finally, the intersection of Dr. Martin Luther King, Jr. Boulevard and Riverside Drive & Ridge Avenue is a potential safety issue for bicyclists and pedestrians (**Figures 21 and 22**). The posted speed limit along Dr. Martin Luther King, Jr. Boulevard in this area is 35 mph and the intersection is situated immediately east of the bridge crossing the Hillsborough River.

  - This study recommends that a HAWK pedestrian crossing beacon signal be installed at the intersection. The HAWK signal would be complemented with striped crosswalks and Perimeter Trail signage.

  - The ultimate recommended treatment for this crossing is the construction of an 8-foot multi-use path under the Dr. Martin Luther King, Jr. Boulevard Bridge along the east bank of the Hillsborough River. It is expected that the hills on the northeast and southeast sides of the bridge would need to be modified by constructing mechanically stabilized earth (MSE) walls.



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REED PROPERTY

PROPOSED TRAIL LAYOUT

EXHIBIT 17

ATKINS

APRIL 25, 2016

Figure 21: Riverside Drive Facing South at Dr. Martin Luther King, Jr. Boulevard

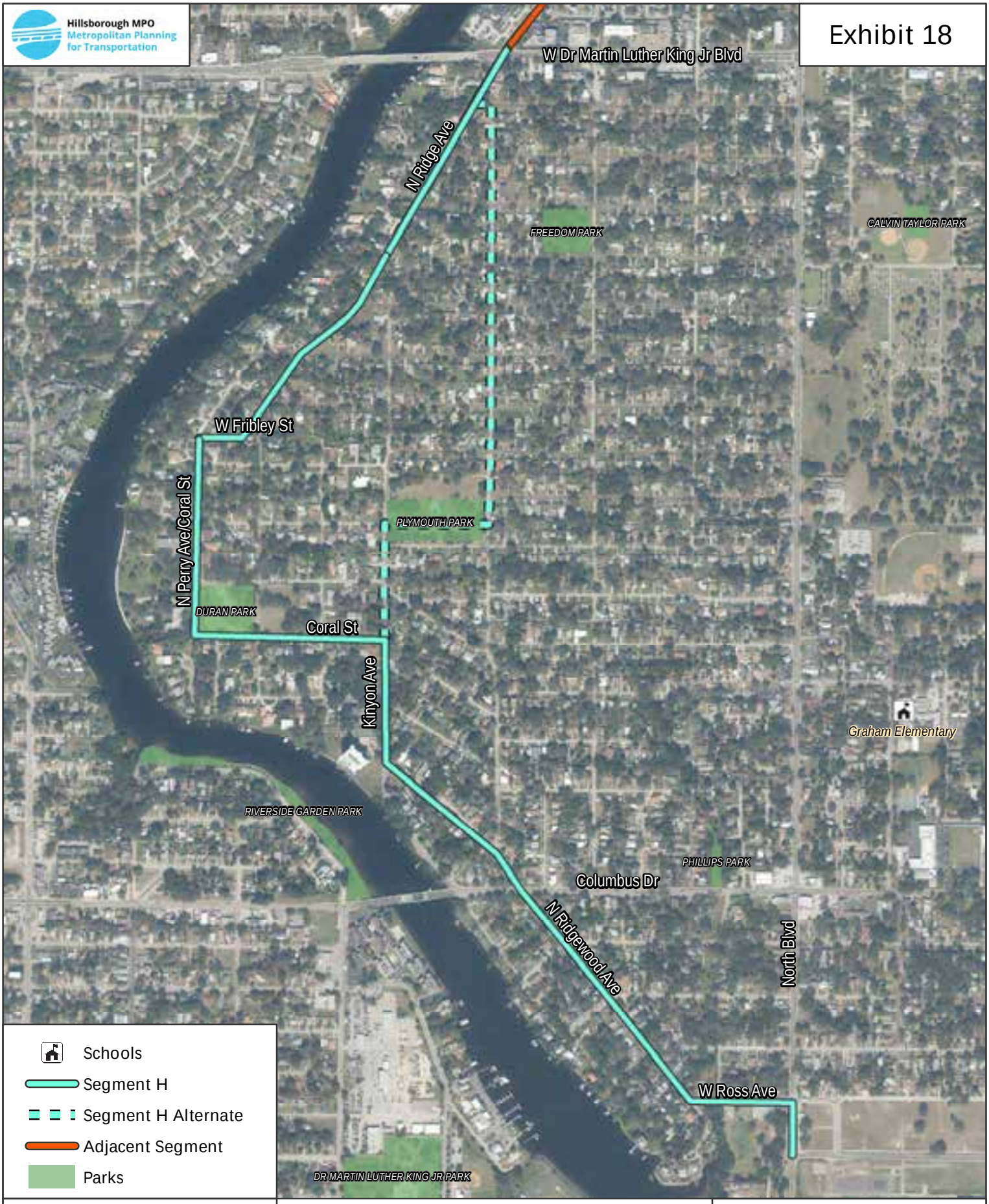
Figure 22: Riverside Drive at Dr. Martin Luther King, Jr. Boulevard Facing East

3.10. Segment H: Dr. Martin Luther King, Jr. Boulevard to Palm Avenue

The final segment of the Perimeter Trail (**Exhibit 18**) continues south on Ridge Avenue to Fribley Street. The segment traverses west along Fribley Avenue to Perry Avenue where it turns south onto Perry Avenue. The trail then travels along Perry Avenue south to Coral Street at Duran Park, east to Kinyon Avenue, and then south on Kinyon and Ridgewood Avenues. The trail will cross Columbus Drive at the existing signalized intersection and then continue south on Ridgewood Avenue to Ross Avenue. From Ross Avenue, the trail would connect with the proposed Riverwalk extension.

The recommended bicycle and pedestrian treatments for Segment H: Dr. Martin Luther King, Jr. Boulevard to Palm Avenue are depicted on **Sheets H-1 through H-10 in Appendix A**. The existing conditions and proposed treatments include:

- Many of the roadways in this segment have limited ROW. Installation of sidewalks would be difficult, but may not be necessary given the narrow width, low traffic volumes, residential character, and slow speeds.
    - This study recommends bicycle boulevard/neighborhood greenway pavement markings on Ridge Avenue from Dr. Martin Luther King, Jr. Boulevard to Fribley Street.
    - Bicycle boulevard/neighborhood greenway pavement markings would continue on Fribley Street and Perry Avenue.


Hillsborough MPO
Metropolitan Planning for Transportation
Exhibit 18
W Dr Martin Luther King Jr Blvd
N Ridge Ave
FREEDOM PARK
CALVIN TAYLOR PARK
W Fribley St
N Perry Ave/Coral St
PLYMOUTH PARK
DURAN PARK
Coral St
Kinyon Ave
Graham Elementary
RIVERSIDE GARDEN PARK
PHILLIPS PARK
Columbus Dr
N Ridgewood Ave
North Blvd
W Ross Ave
DR MARTIN LUTHER KING JR PARK
Schools
Segment H
Segment H Alternate
Adjacent Segment
Parks
City of Tampa
Walk-Bike Plan Phase V
Proposed Perimeter Trail
Segment H
0
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Feet
Figure Date: 4/25/2016

- An existing sidewalk begins on the west side of Perry Street at Adalee Street. The recommended treatment for the trail is to continue the Bicycle Boulevard markings south on Perry Avenue to Braddock Street, where bicyclists and pedestrians would move to a proposed 8-foot multi-use path around the edge of Duran Park on Perry Street and Coral Street to Decatur Avenue.

- East of Decatur Avenue, the recommended treatment is to return to bicycle boulevard pavement markings on Coral Street to Kinyon Street.

  - A 5-foot wide sidewalk would be constructed east of Decatur Avenue to Harding Avenue. An existing sidewalk is located east of Harding Avenue to just west of Kinyon Street, where the sidewalk would be extended to connect with Kinyon Street. Installation of a crosswalk with bicycle/pedestrian crossing signage is proposed at the intersection of Coral Street and Kinyon Street.

- The bicycle boulevard/neighborhood greenway pavement marking treatment would continue on Kinyon Street south to Ridgewood Avenue and on Ridgewood Avenue to the signalized intersection with Columbus Drive. Pedestrians may use the existing 5-foot existing sidewalk on the east side of Kinyon Street and on both sides of Ridgewood Avenue.

- After crossing Columbus Drive at the signalized intersection with Ridgewood Avenue, the recommended treatment of the Perimeter Trail is to implement bicycle boulevard pavement markings on Ridgewood Avenue south to Ross Avenue. Pedestrians will utilize sidewalks on both sides of the street.

  - There are five sidewalk gaps on the east side of Ridgewood Avenue between Amelia Avenue and Ross Avenue. The gaps are proposed to be filled in such that a continuous sidewalk will be provided from Columbus Drive to Ross Avenue.

- At Ross Avenue, the trail will connect with the proposed Riverwalk extension.

  - A sidewalk along the south side of Ross Avenue connects to sidewalks on North Boulevard. From there, pedestrians and bicyclists can continue on North Boulevard and cross the Hillsborough River, or connect with the proposed Palm Avenue road diet project. When completed, Palm Avenue will have bicycle and pedestrian accommodations such as shared lane markings and/or bicycle lanes, as well as mid-block crossings.

An alternate route of the original Perimeter Trail proposed to use Oakdale Avenue south from Ridge Avenue to Plymouth Park, and then through the park to Kinyon Avenue. The alternate route was to continue south on Kinyon Avenue to Ridgewood Avenue and then south on Ridgewood Avenue. This study does not recommend implementing this alternate route, due to narrower pavement width on Oakdale Avenue. However, if the route that is preferred along Ridgewood Avenue and Perry Avenue become unfeasible, the Oakdale Avenue to Plymouth Park to Kinyon Avenue routing may be used for the Perimeter Trail. As such, this route has been shown as an alternate on **Exhibit 18**.

3.11. Ola Avenue Spur

As a result of some of the findings and recommendations outlined in Segments G and H, a proposed spur route was developed primarily along Ola Avenue (**Exhibit 19**), and accessed via Riverside Drive south of the Reed Property to River Heights Avenue, east to River Heights Avenue, south to W. North Bay Street, and east to Ola Avenue. The spur then then travels south along Ola Avenue.

From there, the Ola Avenue Spur would intersect with Dr. Martin Luther King, Jr. Boulevard at an unsignalized intersection. A signalized trail crossing such as a HAWK will need to be implemented at this intersection to provide bicyclists and pedestrians a safe crossing of Dr. Martin Luther King, Jr. Boulevard. The City of Tampa has scheduled the resurfacing of Ola Avenue north of Dr. Martin Luther King Jr. Boulevard for 2018, at which time the proposed recommended treatments in this report could be implemented.

The Ola Avenue Spur continues south on Ola Avenue south of Dr. Martin Luther King, Jr. Boulevard, passing Calvin Taylor Park and Plymouth Playground. South of Plymouth Playground, the Ola Avenue Spur meets with the proposed Palm Avenue Road Diet, which when completed, will have bicycle and pedestrian accommodations such as shared lane markings and mid-block crossings. South of Palm Avenue, Ola Avenue continues south to the banks of the Hillsborough River where the proposed Ola Avenue Spur would connect with the Riverwalk extension.
The recommended bicycle and pedestrian treatments for this segment spur are as follows:

- On Riverside Drive from the Reed Property to River Heights Avenue, the recommended treatment is shared lane markings for bicycles and to construct a five foot wide sidewalk on the east side of the roadway. Additional ROW will be required to relocate utilities, address drainage issues, and construct a multi-use path.

- From Riverside Drive to North Boulevard on River Heights Drive, proposed treatments are to implement shared lane markings for bicycles and utilize the existing sidewalk for pedestrians. Additional ROW would be required to relocate utilities and construct a multi-use path.

- On North Boulevard from River Heights Drive to North Bay Street, shared lane markings currently exist on the pavement as do existing sidewalks on both sides of the roadway.

- From North Boulevard to Ola Avenue on North Bay Street the recommended treatment is to install bicycle boulevard pavement markings. Utility poles on both sides of the roadway would have to be relocated to construct a sidewalk.

- On Ola Avenue from North Bay Street to Palm Avenue the recommended treatment for bicyclists are bicycle boulevard pavement markings. A 5-foot wide sidewalk currently exists on the west side of the roadway from North Bay Street to Ross Avenue. Sidewalks are intermittent on the east side, from north of Floribraska Avenue to north of Keyes Avenue, from Gladys Street to north of Columbus Drive, from Columbus Drive to Ross Avenue and south of Ross Avenue to the Riverwalk at Water Works Park.

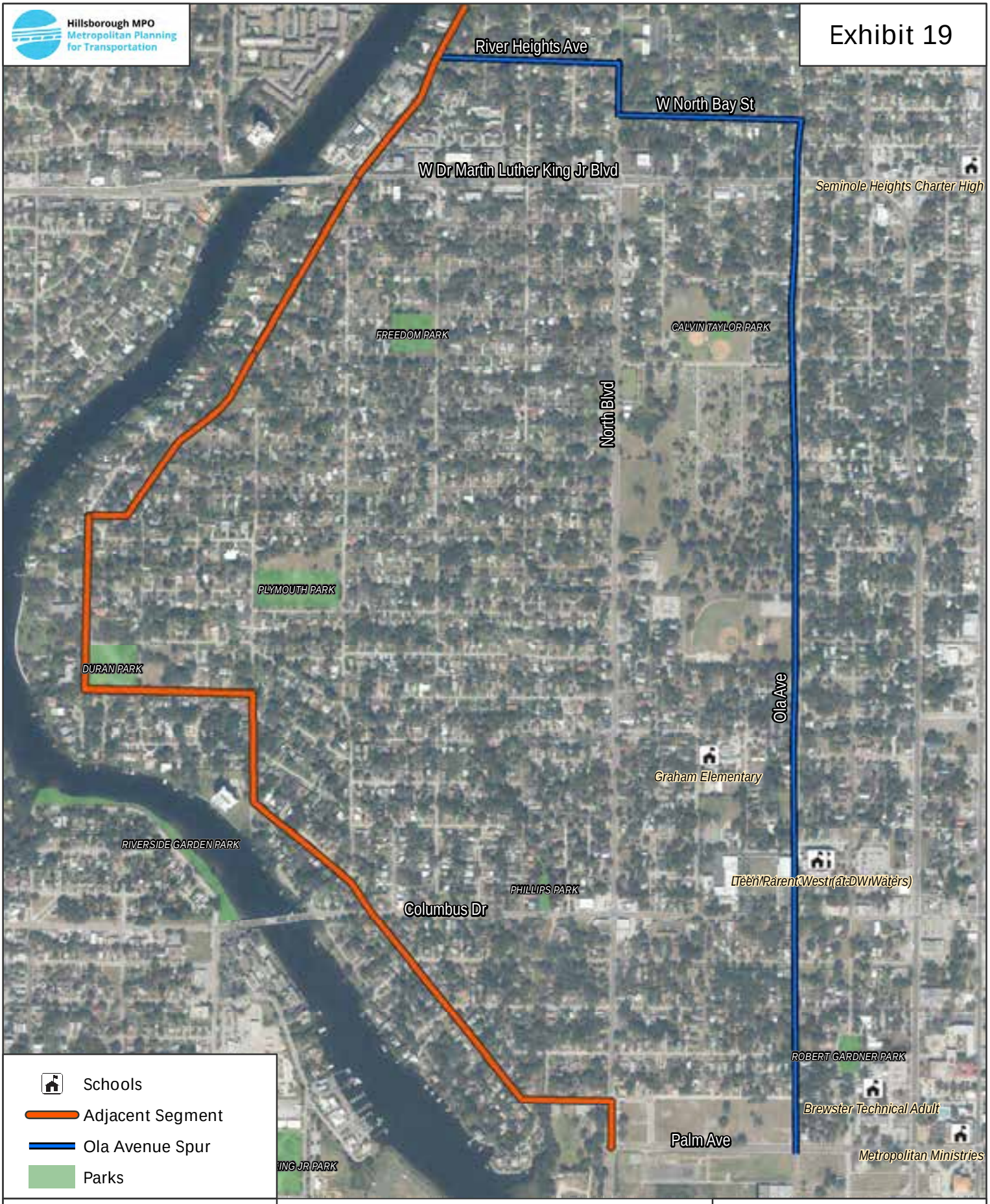
Hillsborough MPO
Metropolitan Planning for Transportation
Exhibit 19
River Heights Ave
W North Bay St
W Dr Martin Luther King Jr Blvd
Seminole Heights Charter High
FREEDOM PARK
CALVIN TAYLOR PARK
North Blvd
PLYMOUTH PARK
DURAN PARK
Ola Ave
Graham Elementary
RIVERSIDE GARDEN PARK
PHILLIPS PARK
Columbus Dr
Teen Parent West (at DW Waters)
ROBERT GARDNER PARK
Brewster Technical Adult
Palm Ave
Metropolitan Ministries
Schools
Adjacent Segment
Ola Avenue Spur
Parks
City of Tampa
Walk-Bike Plan Phase V
Proposed Perimeter Trail
Ola Avenue Spur
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Figure Date: 4/25/2016

- Striped crosswalks and pedestrian/bicycle crossing HAWK signals are recommended to be installed at the intersections of Ola Avenue and Dr. Martin Luther King, Jr. Boulevard, Ola Avenue and Columbus Drive, and Ola Avenue and Palm Avenue.

The Ola Avenue Spur would connect directly to the latest extension of the Riverwalk that is under construction as of April 2016. The newest extension of the Riverwalk will connect the already completed portion that ends at the Straz Center to Water Works Park. Once completed, the Riverwalk will be able to link directly to the Ola Avenue Spur at Water Works Park.

3.12. Additional Trail Elements

There are additional elements that are needed to fully designate the Perimeter Trail. Branding of the trail and providing wayfinding signage along and near the trail is recommended. To provide for a safer bicycling and walking experience, it is also recommended that lighting be installed in areas that do not have adequate lighting. Finally, modifications to drainage systems, including relocation of storm drains, will be needed at multiple locations along the corridor in order to construct sidewalks and/or multi-use paths. The cost estimates presented in **Section 4** include dedicated funds for wayfinding, increased lighting, and drainage modifications.

4 Cost Estimates

The construction costs discussed in this section were developed using the Florida Department of Transportation (FDOT) *Item Average Unit Cost 2014-2015,* which is the Department's Long Range Estimating (LRE) methodology. Because many sections of the proposed route would require ROW acquisition to fully construct a multi-use trail, the cost estimates are based on the recommended treatments described in Section 2.

The cost estimates that follow are divided out into the eight trail sections as described in Section 3. The parks have separate cost estimates but are included in the total cost of the segment they are in. The construction cost estimates include clearing and grubbing, concrete, turf/sod, signalization, signage, pavement markings, and relocation of utility poles where necessary. Additional costs for maintenance of traffic, mobilization, project unknowns, design, and construction, engineering, and inspections (CEI) are calculated as set percentages of the construction cost of each segment. Note that drainage modifications are not included in the cost estimates, but a recommended set aside is discussed at the end of this chapter.

Below are the cost estimates for the recommended treatments for each section of the Perimeter Trail. The type and location of each treatment is also listed. The full details on the cost estimates are included in **Appendix C**.

4.1. Segment A Cost Estimate

Segment A starts at SR 60/Adamo Drive and extends to the intersection of 21st Avenue and 29th Street, a length of 1.65 miles. The cost of constructing this segment of the Perimeter Trail is as follows:

- Total Cost: $453,800
- Construction Cost: $231,600 – including:
  - New sidewalk along the north side of 2nd Avenue from 26th Street to 24th Street
  - Bicycle Boulevard markings on 24th Street from 2nd Avenue to 11th Avenue
  - New sidewalks along 24th Street from 2nd Avenue to 11th Avenue where none exist
  - Pedestrian lane markings on 24th Street from 7th Avenue northward to proposed sidewalk

- New multi-use path along both sides of 26th Street from south of the I-4 underpass to 17th Avenue
- New sidewalk on the east side of 26th Street from 17th Avenue to 18th Avenue
- Sharrow markings on 26th Street from 17th Avenue to 21st Avenue
- Pedestrian lane markings on 26th Street from 15th Avenue to Columbus Drive
- New multi-use path on the south side of 21st Avenue from 26th Street to 28th Street
- New crosswalk with bicycle/pedestrian crossing signage these intersections:
  - 26th Street and 2nd Avenue
  - 24th Street and 4th Avenue
  - 24th Street and 7th Avenue
  - 26th Street and Columbus Drive
  - 26th Street and 17th Avenue
  - 26th Street and 18th Avenue
  - 26th Avenue and 21st Avenue
  - 21st Avenue and 29th Street

4.2. Segment B Cost Estimate

Segment B begins at the intersection of 21st Avenue & 29th Street and extends to East Hillsborough Avenue, a length of 2.00 miles. The cost of constructing this segment of the Perimeter Trail is as follows:

- Total Cost: $925,200
- Construction Cost: $472,000 – including:
  - New multi-use path along 29th Street from 21st Avenue to Cayuga Street
  - New sidewalk and pedestrian lane markings along west side of 30th Street from Osborne Avenue to Shadowlawn Avenue
  - New sidewalk and pedestrian lane markings on east side of 30th Street from Shadowlawn Avenue to Hillsborough Avenue
  - Sharrow markings on 30th Street from Cayuga Street to Hillsborough Avenue
  - New crosswalk with bicycle/pedestrian crossing signage these intersections:
    - 29th Street and Cayuga Street
    - 30th Street and Cayuga Street
    - 30th Street and Osborne Avenue
    - 30th Street and Louisiana Avenue
    - 30th Street and Ellicott Street

4.3. Segment C Cost Estimate

Starting at East Hillsborough Avenue, Segment C extends approximately 2.97 (including 0.47 miles within TECO Parcel and 22nd Street Park) miles through the TECO Parcel/22nd Avenue Park to the northern termini of Park Drive. The cost of constructing this segment of the Perimeter Trail is as follows:

- Total Cost (including TECO Parcel and 22nd Street Park): $785,300
- Total Cost (without TECO Parcel and 22nd Street Park): $496,800
- Construction Cost (including TECO Parcel and 22nd Street Park): $400,600
- Construction Cost (without TECO Parcel and 22nd Street Park): $253,400 – includes:
    - New multi-use path on west side of 30th Street from Hillsborough Avenue to Deleuil Avenue
    - New multi-use path on west side of 30th Street from Hanna Avenue to Jean Street
    - New multi-use path on east side of 30th Street from Jean Street to Woodland Terrace Community Center Park
    - New multi-use path on east side of 30th Street from Diana Street to Sligh Avenue
    - Pedestrian lane markings on south side of Sligh Avenue across wide driveways and parking areas to connect existing sidewalks (3 locations)
    - New multi-use path on north side of Sligh Avenue from Rowlett Park Drive to 22nd Street
    - New multi-use path along 22nd Street from Sligh Avenue to TECO Parcel/22nd Avenue Park
    - New crosswalk with bicycle/pedestrian crossing signage these intersections:
        - 30th Street and Hanna Avenue
        - 30th Street and Jean Street
        - 30th Street and Diana Street
        - 30th Street and Sligh Avenue
        - Sligh Avenue and Rowlett Park Drive (marked crosswalk only)
        - 22nd Street and Hamilton Avenue
        - 22nd Street within 22nd Street Park

<u>TECO Parcel and 22nd Street Park</u>

- Total Cost: $288,500
- Construction Cost: $147,200 – includes:
    - 12-foot wide multi-use path along west side of TECO Parcel from the crosswalk at 22nd Street and Hamilton Avenue to the baseball field in 22nd Street Park
    - 12-foot wide multi-use path along the southern edge of the 22nd Street Park from the baseball field to the northern termini of Park Drive.

4.4. Segment D Cost Estimate

Segment D picks up on the west side of the 22nd Street Park and continues approximately 1.60 miles to Sulphur Springs Park. The cost of constructing this segment of the Perimeter Trail is as follows:

- Total Cost: $41,600
- Construction Cost: $21,200 – includes:
    - Bicycle Boulevard markings on these roadways:
        - Park Drive
        - Park Circle
        - 12th Street
        - Patterson Street
        - Hamilton Heath Drive
        - Van Dyke Place
        - Hollywood Street
    - Sharrow markings on Nebraska Avenue from Hollywood Drive to Sitka Street
    - New 5-foot wide sidewalk on east side of Van Dyke Place from Hamilton Heath Drive to Hillsborough River

Note that the above costs do not include construction of a new bicycle/pedestrian bridge crossing the Hillsborough River. A rough cost estimate was developed using FDOT District Seven published costs. Assuming a 150 foot long bridge that is 12 feet wide, total costs would be approximately $1 million.

4.5. Segment E Cost Estimate

Segment E begins at Nebraska Avenue (includes segments within Sulphur Springs Park and River Tower Park) and continues to Sligh Avenue, a length of approximately 2.17 miles, including 0.57 miles within Sulphur Springs Park and River Tower Park. The cost of constructing this segment of the Perimeter Trail is:

- Total Cost (including Sulphur Springs and River Tower Park Segments): $1,245,500
- Total Cost (without Sulphur Springs and River Tower Park Segments): $225,200
- Construction Cost (including Sulphur Springs and River Tower Park Segments): $635,400
- Construction Cost (without Sulphur Springs and River Tower Park Segments): $114,900 – includes:
    - New multi-use path on west side of Florida Avenue from Bird Street to River Shore Drive
    - New sidewalk on north/west side of River Shore Drive from Florida Avenue to Kirby Street
    - New sidewalk on north side of Kirby Street from River Shore Drive to North Boulevard
    - Bicycle Boulevard markings on River Shore Drive and Kirby Street from Florida Avenue to North Boulevard
    - Sharrow markings on North Boulevard from Kirby Street to Sligh Avenue

- New crosswalk with bicycle/pedestrian crossing signage these intersections:
  - Kirby Street and North Boulevard
  - North Boulevard and Lowry Lane
  - North Boulevard and Clinton Street

Sulphur Springs Park and River Tower Park

- Total Cost: $1,020,300
- Construction Cost: $520,500 – includes:
  - Replacement of existing bridge over Sulphur Springs with a 12-foot wide multi-use path bridge
  - New 12-foot wide multi-use path within River Tower Park from west side of I-275 overpass to intersection of Bird Street and Florida Avenue

4.6. Segment F Cost Estimate

Beginning at Sligh Avenue, Segment F extends south to West Hillsborough Avenue, a length of approximately 2.15 miles. The cost of constructing this segment of the Perimeter Trail is as follows:

- Total Cost: $665,600
- Construction Cost: $339,600 – includes:
  - New multi-use path on east side of North Boulevard from Sligh Avenue to Alicia Avenue
  - New sidewalk on south side of Alicia Avenue from North Boulevard to Hanna Avenue
  - Bicycle Boulevard markings on Alicia Avenue from North Boulevard to Hanna Avenue
  - New multi-use path on south side of Hanna Avenue from Alicia Avenue to Rome Avenue
  - New multi-use path on west side of Rome Avenue from Hanna Avenue to Powhatan Avenue
  - New multi-use path on north side of Powhatan Avenue from Rome Avenue to River Shore Drive
  - Bicycle Boulevard markings on River Shore Drive from Powhatan Avenue to cul-de-sac at Hillsborough Avenue
  - Ramp cut out at River Shore Drive cul-de-sac to allow bicycles to connect to existing sidewalk to Hillsborough Avenue
  - New crosswalk with bicycle/pedestrian crossing signage at these intersections:
    - Hanna Avenue and Rome Avenue
    - Rome Avenue and Powhatan Avenue
    - Powhatan Avenue and River Shore Drive (marked crosswalk only)

4.7. Segment G Cost Estimate

Segment G begins at West Hillsborough Avenue and continues south for approximately 1.55 miles (including 0.52 miles within Rivercrest Park and the Reed Property) to Dr. Martin Luther King, Jr. Boulevard. The cost of constructing this segment of the Perimeter Trail is:

- Total Cost (including Rivercrest Park and Reed Property): $631,400
- Total Cost (without Rivercrest Park and Reed Property): $171,400
- Construction Cost (including Rivercrest Park and Reed Property): $322,100
- Construction Cost (without Rivercrest Park and Reed Property): $87,500 – includes:
    - Ramp cut out at River Boulevard cul-de-sac to allow bicycles to connect to existing sidewalk to Hillsborough Avenue
    - Bicycle Boulevard markings on River Boulevard from cul-de-sac at West Hillsborough Avenue to Rivercrest Park
    - New sidewalk on west side of North Boulevard from Rivercrest Park to Emma Street (Sharrow markings already exist on this segment of North Boulevard)
    - New sidewalk on south side of Emma Street from North Boulevard to Reed Property
    - Bicycle Boulevard markings on Emma Street from North Boulevard to Reed Property
    - New sidewalk on west side of Riverside Drive from Reed Property to Dr. Martin Luther King, Jr. Boulevard
    - Bicycle Boulevard markings on Riverside Drive from Reed Property to Dr. Martin Luther King, Jr. Boulevard
    - New crosswalk with bicycle/pedestrian crossing signage at these intersections:
        - North Boulevard and Emma Street
        - Riverside Drive and River Heights Avenue (crosswalk only)

<u>Rivercrest Park and Reed Property</u>

- Total Cost: $460,000
- Construction Cost: $234,600 – includes:
    - Widen existing sidewalk to a multi-use path from River Boulevard to existing multi-use path in Rivercrest Park
    - Construct a wider turning radii on existing Rivercrest Park multi-use path south of the gazebo
    - Construct a multi-use path within the Reed Property to connect Emma Street to Riverside Drive
    - Construct new bridge for multi-use path on the Reed Property

4.8. Segment H Cost Estimate

The final segment extends south from Dr. Martin Luther King, Jr. Boulevard to Palm Avenue, a length of approximately 2.25 miles. The cost of constructing Segment H of the Perimeter Trail is as follows:

- Total Cost: $709,000
- Construction Cost: $361,700 – includes:
  - New crosswalk with bicycle/pedestrian crossing signage and HAWK signalization with mast arms at the intersection of Dr. Martin Luther King, Jr. Boulevard and Ridge Avenue/Riverside Drive
  - Bicycle Boulevard markings on Ridge Avenue from Dr. Martin Luther King, Jr. Boulevard to Fribley Street
  - Bicycle Boulevard markings on Fribley Street from Ridge Avenue to Perry Avenue
  - Bicycle Boulevard markings on Perry Avenue from Fribley Street to Braddock Street
  - New multi-use path on east side of Perry Street from Braddock Street to Coral Street (along Duran Park)
  - New multi-use path on north side of Coral Street from Perry Street to Harding Avenue
  - New sidewalk on north side of Coral Street from west of Kinyon Avenue to Kinyon Avenue
  - Bicycle Boulevard markings on Coral Street from Harding Avenue to Kinyon Avenue
  - Bicycle Boulevard markings on Kinyon Avenue from Coral Street to Ridgewood Avenue
  - Bicycle Boulevard markings on Ridgewood Avenue from Kinyon Street to Columbus Drive
  - Bicycle Boulevard markings on Ridgewood Avenue from Columbus Drive to Ross Avenue
  - New sidewalk on east side of Ridgewood Avenue from Amelia Avenue to Ross Avenue to connect existing pieces of sidewalks
  - Bicycle Boulevard markings on Ross Avenue from Ridgewood Avenue to North Boulevard
  - New crosswalk with bicycle/pedestrian crossing signage at these intersections:
    - Columbus Drive & Ridgewood Avenue (existing signalized intersection, need to be high intensity crosswalks)

4.9. Cost Estimate for Additional Items

In addition to developing cost estimates for each segment of the Perimeter Trail, allowances for wayfinding signage, increased lighting, and drainage modifications are recommended. The cost of each wayfinding sign is estimated to be $1,500 which includes fabrication and installation of a metal sign. The study estimated up to 200 signs be placed along and adjacent to the Perimeter Trail. The total cost for 200 signs is estimated to be $300,000. In order to further enhance safety for bicyclists and pedestrians, increased lighting in key locations is desirable. It is recommended that $600,000 be set aside for this effort. Finally, another $400,000 should be set aside to make miscellaneous drainage modifications that may be needed to construct the multi-use paths and sidewalks identified in this study.

4.10. Summary of Estimated Costs

As shown in **Appendix C**, the total cost estimate for all eight sections is estimated to be approximately $5.46 million. This total does not include wayfinding signage, lighting enhancements, and drainage modifications. When including these, the cost of the Perimeter Trail would be approximately $6.8 million. As noted above, constructing an exclusive bicycle/pedestrian across the Hillsborough River at Van Dyke Place would cost an additional $1 million. **Table 3** shows a detail breakdown of the cost estimates.

Table 3. Summary of Cost Estimates

Perimeter Trail Segments									
Cost Element	A	B	C	D	E	F	G	H	All Segments
Construction	$164,700	$276,100	$342,400	$8,500	$612,200	$213,100	$293,900	$57,900	$1,968,800
Signing, Marking, & Signalization	$21,900	$10,900	$8,200	$12,700	$13,200	$21,500	$18,200	$248,800	$355,400
Utility Pole Relocation	$45,000	$185,000	$50,000	$0	$10,000	$105,000	$10,000	$55,000	$460,000
Subtotal	**$231,600**	**$472,000**	**$400,600**	**$21,200**	**$635,400**	**$339,600**	**$322,100**	**$361,700**	**$2,784,200**
Contingency & Other	$104,600	$213,400	$181,100	$9,600	$287,200	$153,500	$145,600	$163,500	$1,258,500
Design	$50,400	$102,800	$87,300	$4,600	$138,400	$73,900	$70,200	$78,800	$606,400
CEI	$67,200	$137,000	$116,300	$6,200	$184,500	$98,600	$93,500	$105,000	$808,300
Total	**$453,800**	**$925,200**	**$785,300**	**$41,600**	**$1,245,500**	**$665,600**	**$631,400**	**$709,000**	**$5,457,400**
Wayfinding									$300,000
Lighting									$600,000
Drainage									$400,000
Grand Total									**$6,757,400**

5 Implementation

The Perimeter Trail will be a significant addition to the City of Tampa's bicycle and pedestrian circulation system, as it connects residential areas to parks and other bicycle and pedestrian facilities such as the Selmon Greenway and the Riverwalk extension. Once completed, the Perimeter Trail will form a greenbelt around the central core of the City of Tampa. The 16.86 mile long trail is an ambitious project, and will likely not be constructed all at once. Rather, it is expected to be implemented in phases, depending on safety priorities, potential partnerships, and available funding. As the final element of the Walk Bike Phase V study, an implementation schedule for the Perimeter Trail was developed.

5.1. Phasing of Implementation

This study recommends implementing the proposed Perimeter Trail segments in the order shown below. Justification for the order of implementation is also provided. While not shown as a separate phase, branding wayfinding for the Perimeter Trail should coincide with implementation of each segment. Finally, there are additional elements of the trail that may not be feasible to construct yet, including the bicycle / pedestrian bridge over the Hillsborough River at Van Dyke Place and the separated path proposed to go under the Dr. Martin Luther King, Jr. Bridge on the west side of the Hillsborough River.

1. Segment D: 22nd Street Park to Sulphur Springs Park
    - This segment has the lowest implementation cost ($41,600) amount of construction, as much of the route is to be a bicycle boulevard/neighborhood greenway through residential areas.
    - Segment D would connect the 22nd Street Park with Patterson Street Park and Sulphur Springs Park.
    - This segment could be a good starting point to brand the Perimeter Trail and install wayfinding signs.
    - Note this does not include the proposed bicycle / pedestrian bridge crossing the Hillsborough River at Van Dyke Place.

2. Segment E: Sulphur Springs Park to Sligh Avenue
    - This segment would continue the Perimeter Trail west and south from Sulphur Springs Park connecting it to Purity Springs Park and Lowry Park.
    - Implementing this segment would complete the Perimeter Trail through two continuous segments.

- The implementation cost is one of the higher segments ($1,245,500) because the costs to construct the trail through Sulphur Springs Park and River Tower Park alone is $1,020,300. However, this segment could be split into two projects, the section through the parks and the remaining segments. The portion of Segment E not within the parks will cost approximately $225,200 to construct.

3. Segment G: West Hillsborough Avenue to Dr. Martin Luther King, Jr. Boulevard

   - This segment is the third lowest cost ($631,400) to implement and would connect residential areas between Hillsborough Avenue and Dr. Martin Luther King Jr. Boulevard to parks such as Ignacio Haya Linear Park, Rivercrest Park, and the Reed Property.

4. Segment F: Sligh Avenue to West Hillsborough Avenue

   - This segment is one of the more expensive segments to implement ($665,600) because it includes construction of multi-use trails as well as sidewalks.
   - Constructing Segment F would provide a continuous segment of the Perimeter Trail through four segments (Segments D through G), roughly half of the length of the recommended route.

5. Segment C: East Hillsborough Avenue to 22nd Street Park

   - Once this segment is constructed, the Perimeter Trail will be continuous from the intersection of Hillsborough Avenue and 30th Street on the east side around to the intersection of Dr. Martin Luther King, Jr. Boulevard and Ridge Avenue / Riverside Drive on the west side.

6. Segment B: Intersection of 21st Avenue & 29th Street to East Hillsborough Avenue

   - This segment would connect Segment A to the Clarence Fort Freedom Trail Park located on the north side of Cayuga Street between 29th and 30th Streets and the farmers market at the intersection of Hillsborough Avenue & 30th Street. It would also connect with Segment C.

7. Segment H: Dr. Martin Luther King, Jr. to Palm Avenue

   - Segment H is the fourth most expensive ($709,000) due to the construction of HAWK signalization and mast arms at the intersection of Dr. Martin Luther King Jr. Boulevard and Ridge Avenue / Riverside Drive.
   - This segment would connect the Perimeter Trail to Palm Avenue and the proposed Tampa Riverwalk extension where North Boulevard meets the Hillsborough River.
   - Several roads in this area, such as Ridge Avenue are scheduled to be resurfaced in 2017 by the City of Tampa. With coordination, the bicycle boulevard markings could be implemented with the resurfacing, thus moving implementation of portions of the segment up the list.

8. Segment A: SR 60/Adamo Drive to Intersection of 21st Avenue and 29th Street

   - Segment A would connect residents of eastern Ybor City neighborhoods with East Ybor Park. It would also connect eastern Ybor City with downtown Tampa via a connection to the Selmon Greenway extension.
   - This segment will also provide bicyclists and pedestrians a multi-use path crossing underneath I-4.

Appendix A: Plan View Layout Sheets

MATCH LINE

N 24TH STREET

N 25TH STREET

N 26TH STREET

E 2ND AVE

ADAMO DR

TAMPA STEEL & SUPPLY

COPPERTAIL BREWING CO.

KAUFFMAN TIRE

N

LEGEND

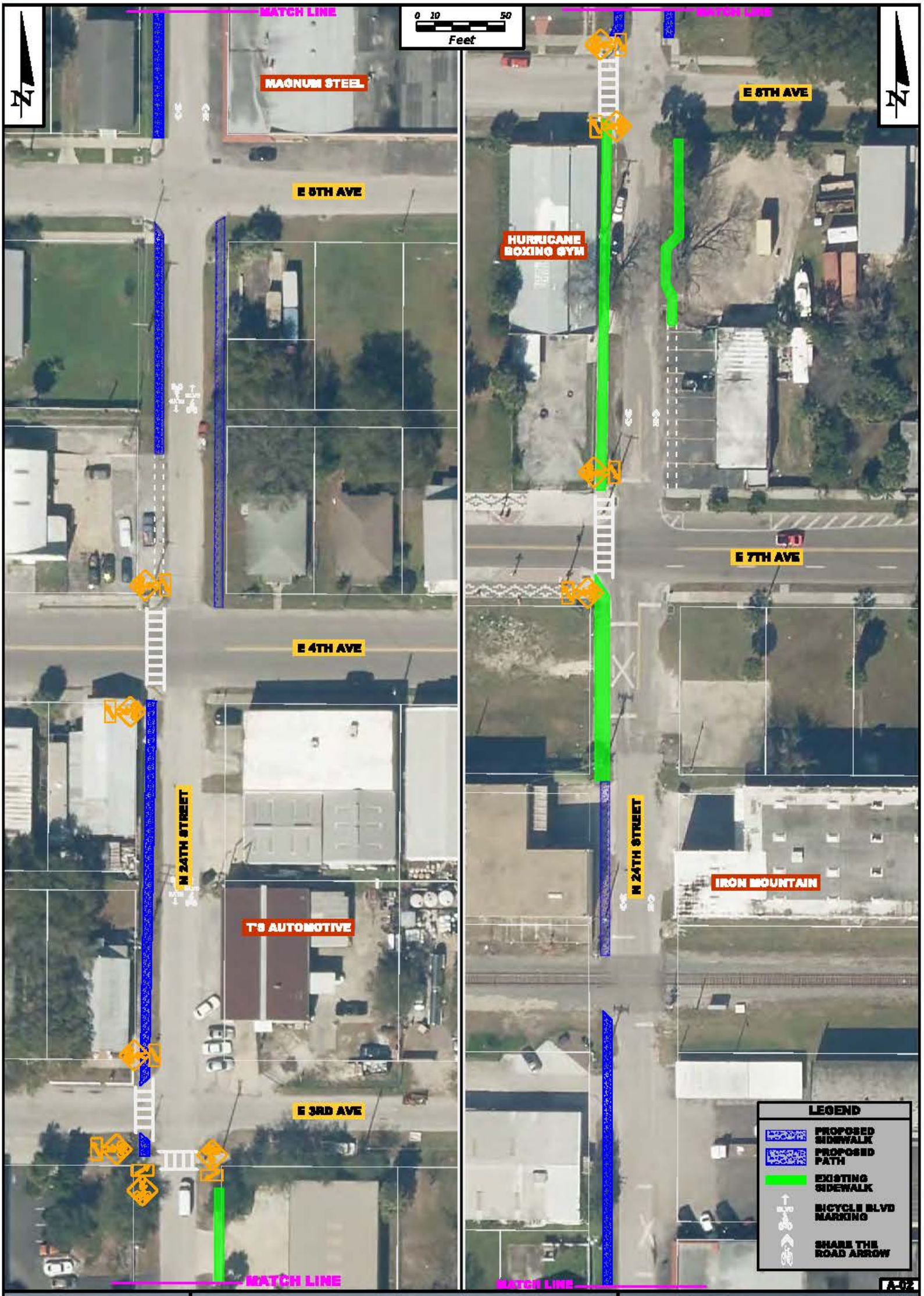
- PROPOSED SIDEWALK
- PROPOSED PATH
- EXISTING SIDEWALK
- BICYCLE BLVD MARKING
- SHARE THE ROAD ARROW

A-01

ATKINS | Walk-Bike Plan Phase V

0 10 50
Feet

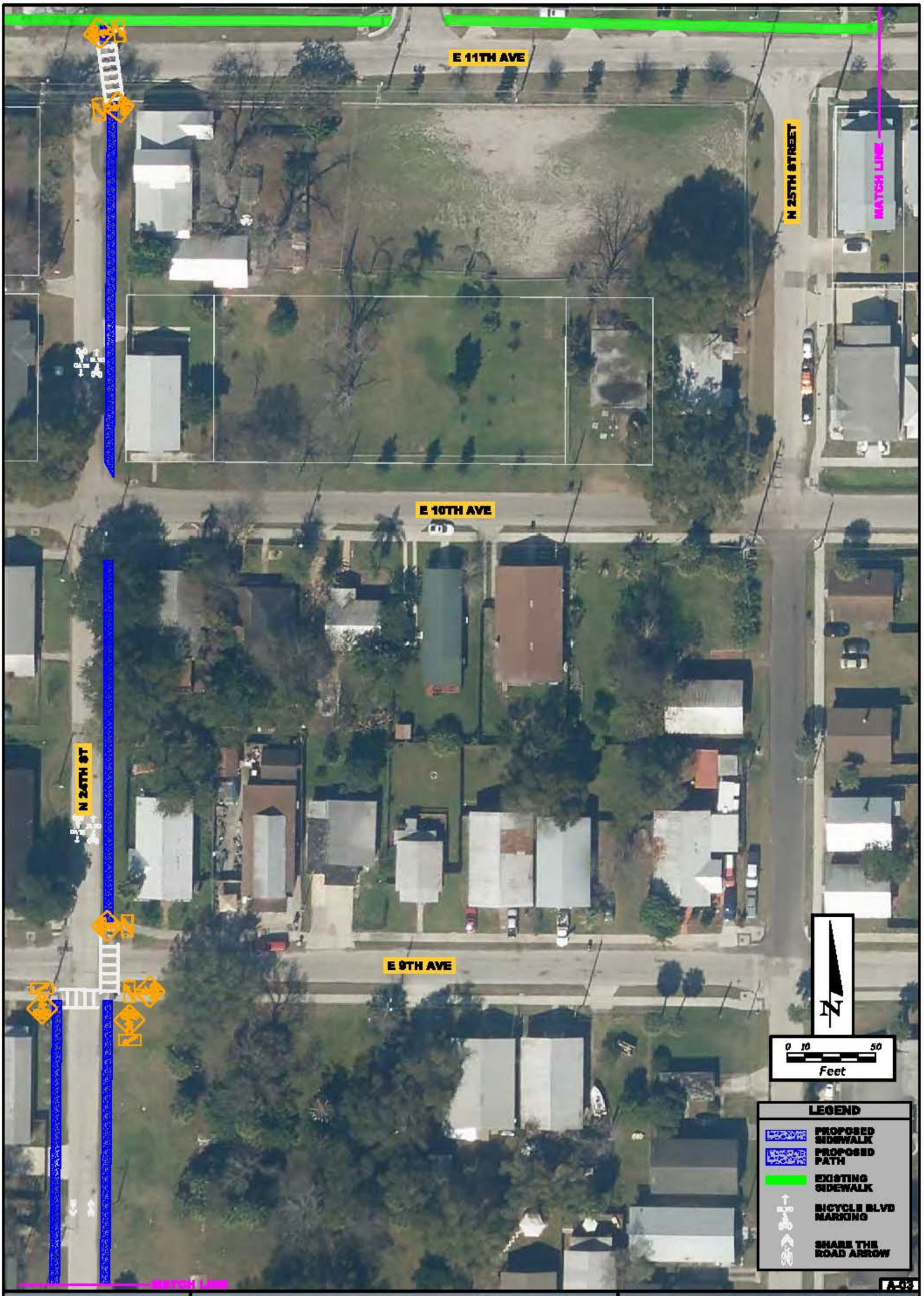
City of Tampa | Hillsborough MPO Metropolitan Planning for Transportation



ATKINS | Walk-Bike Plan Phase V

City of Tampa Florida

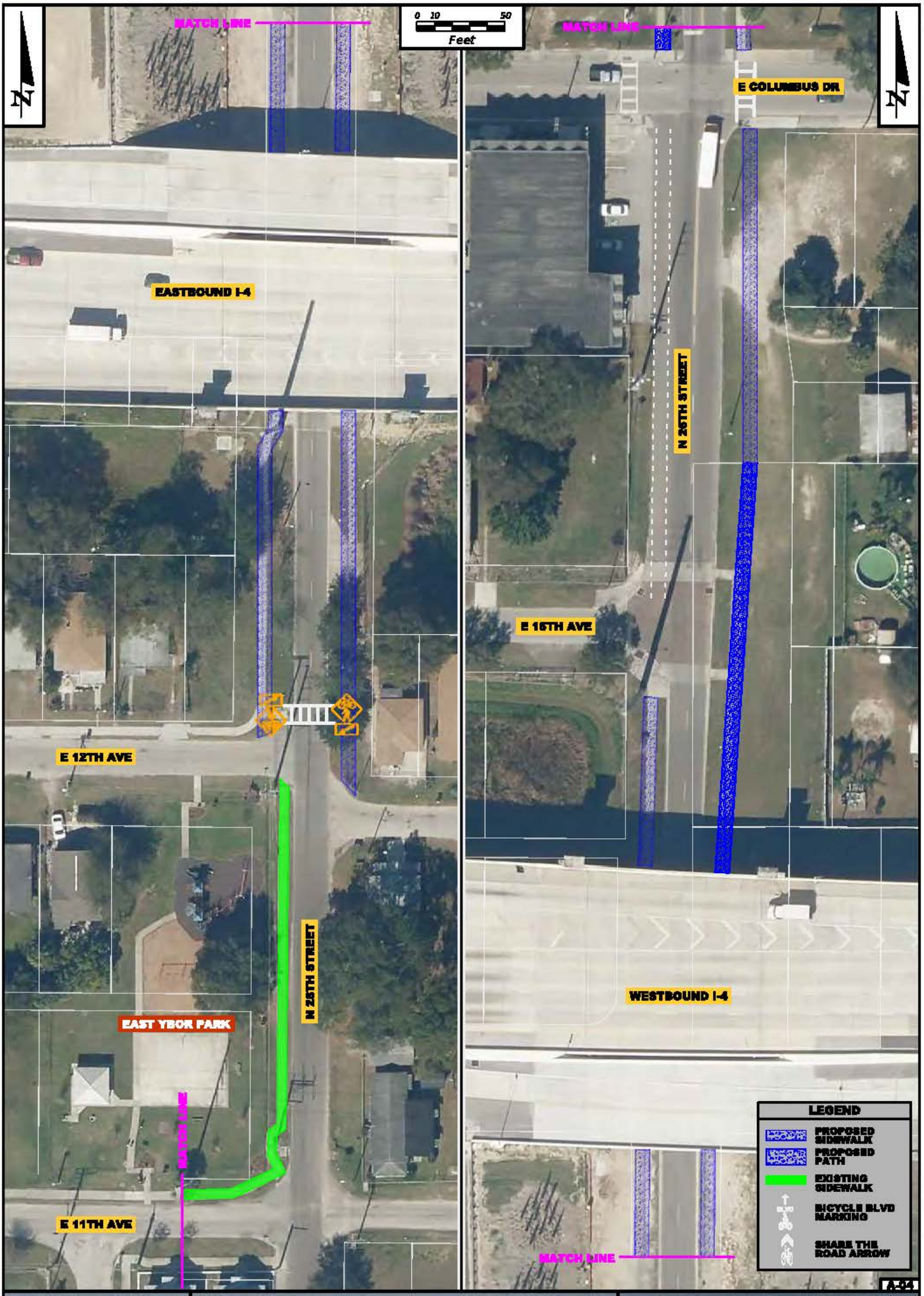
Hillsborough MPO Metropolitan Planning for Transportation



ATKINS | Walk-Bike Plan Phase V

City of Tampa Florida

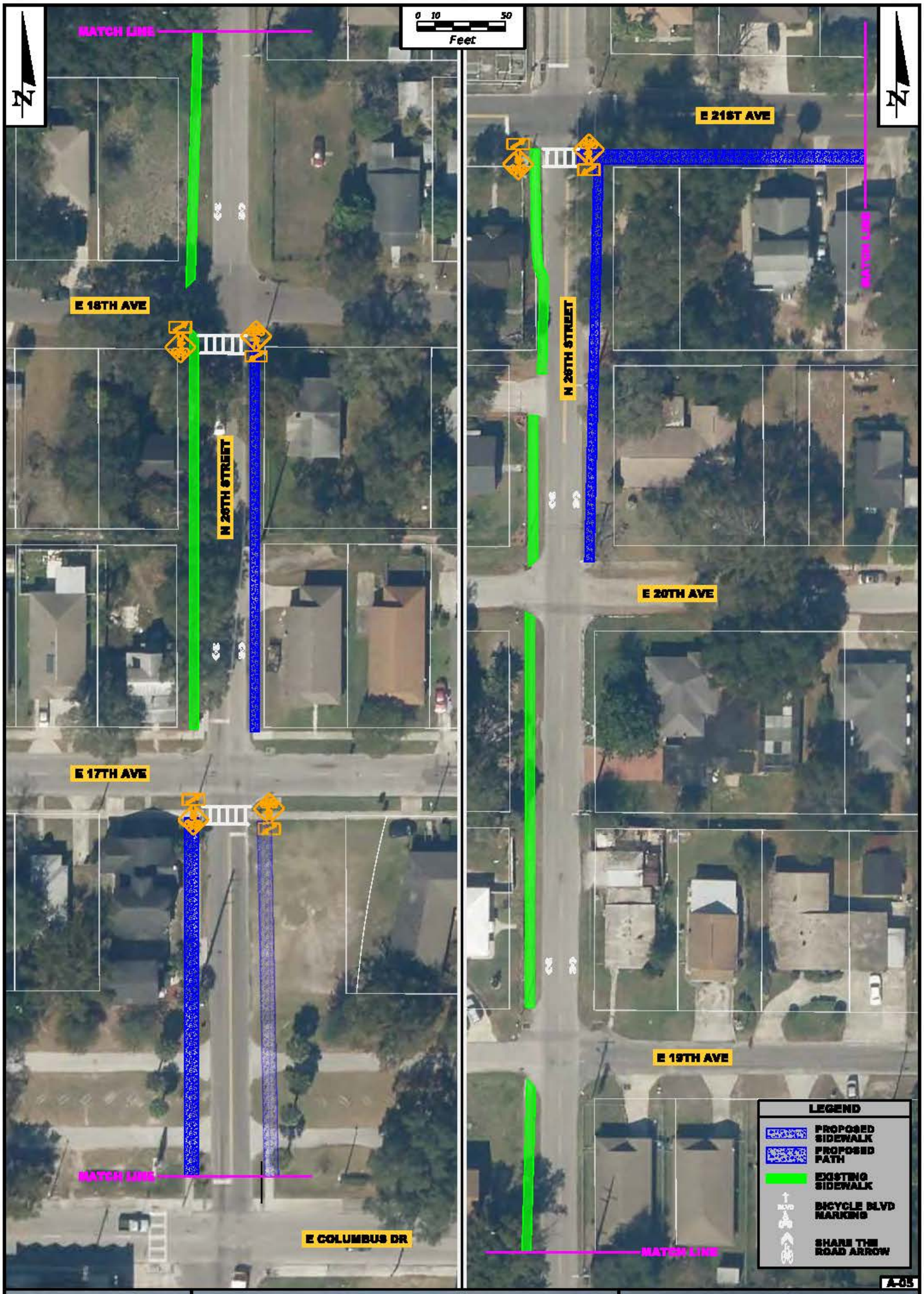
Hillsborough MPO Metropolitan Planning for Transportation



ATKINS | Walk-Bike Plan Phase V

City of Tampa Florida

Hillsborough MPO Metropolitan Planning for Transportation



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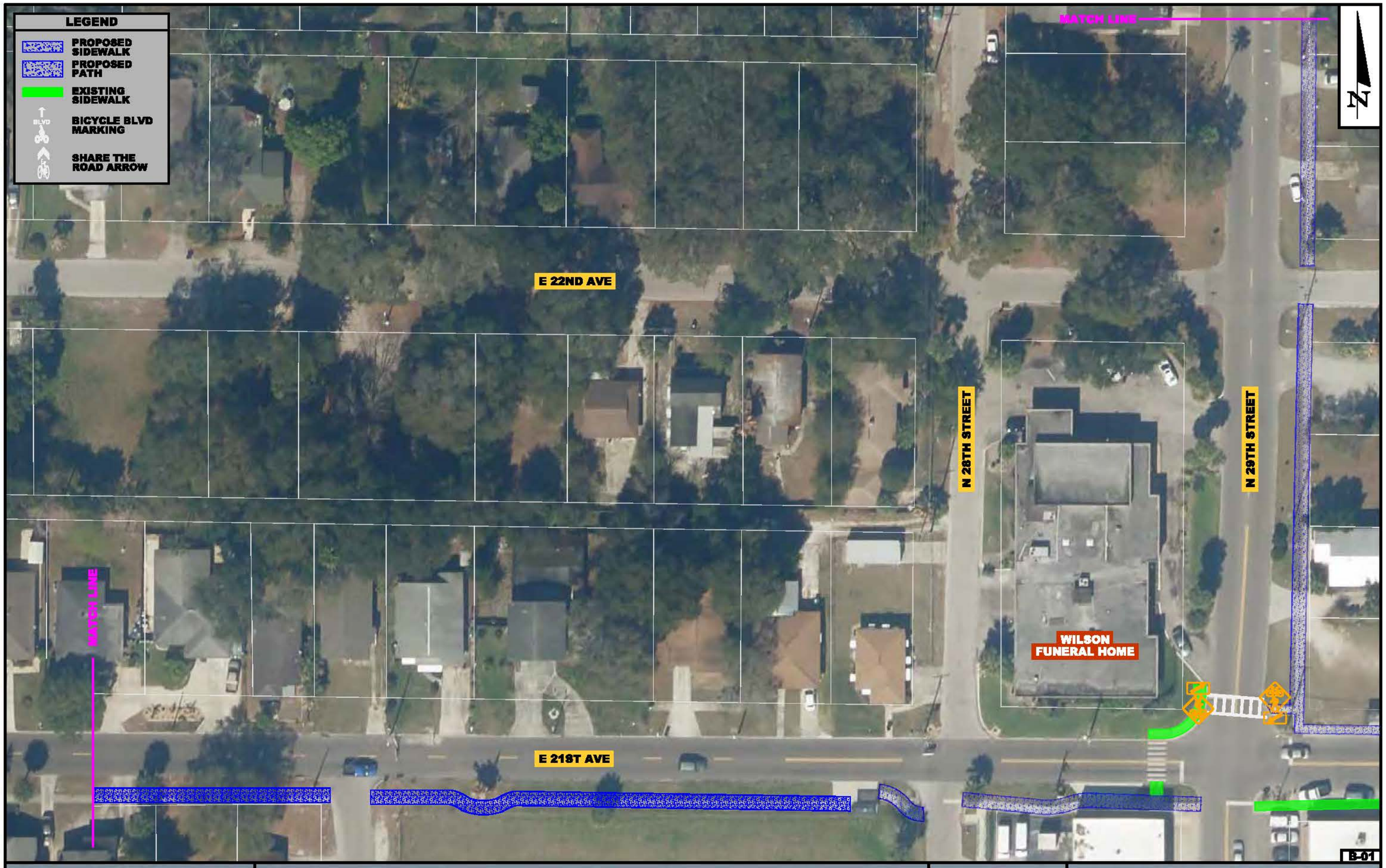

ATKINS | Walk-Bike Plan Phase V

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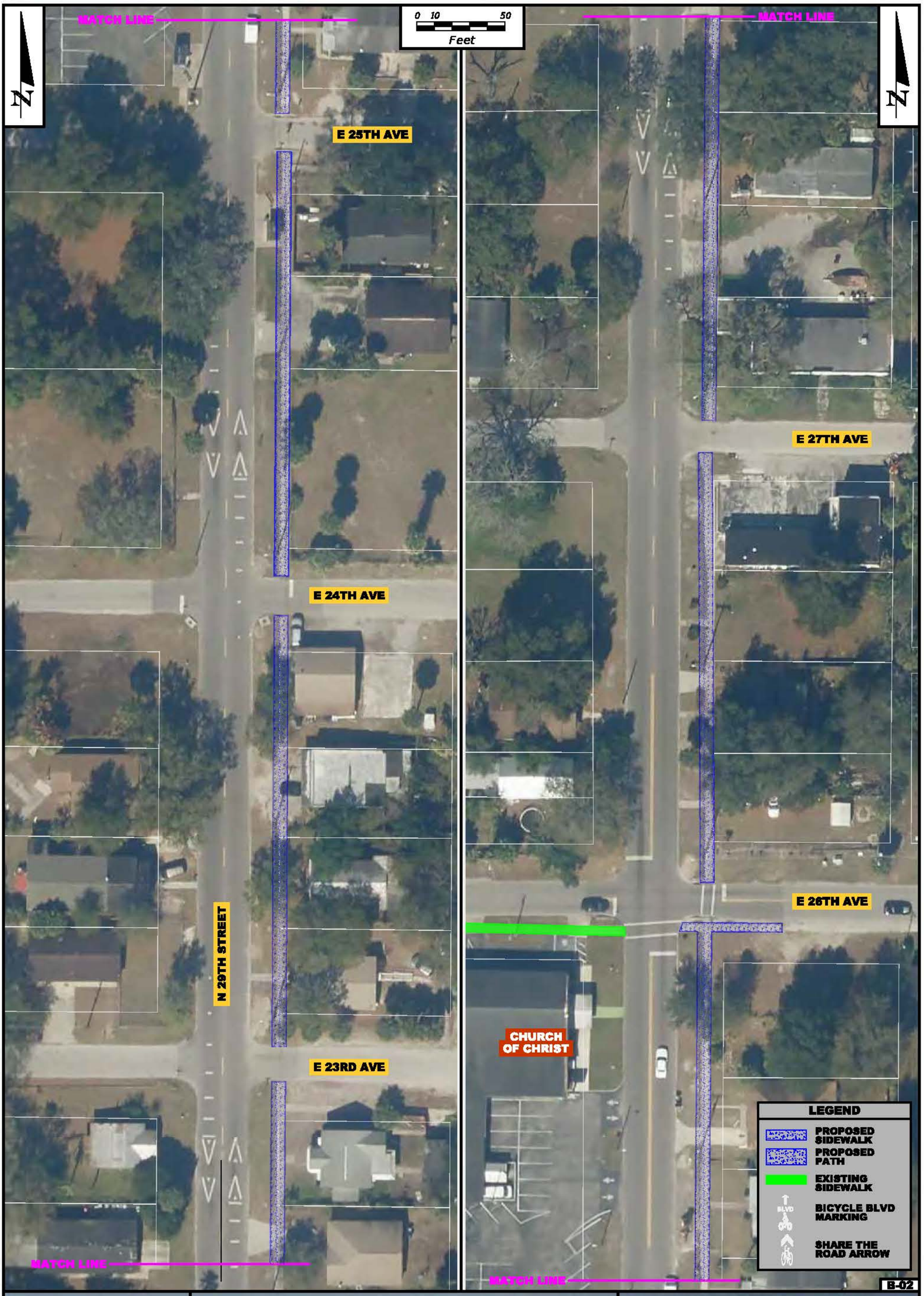
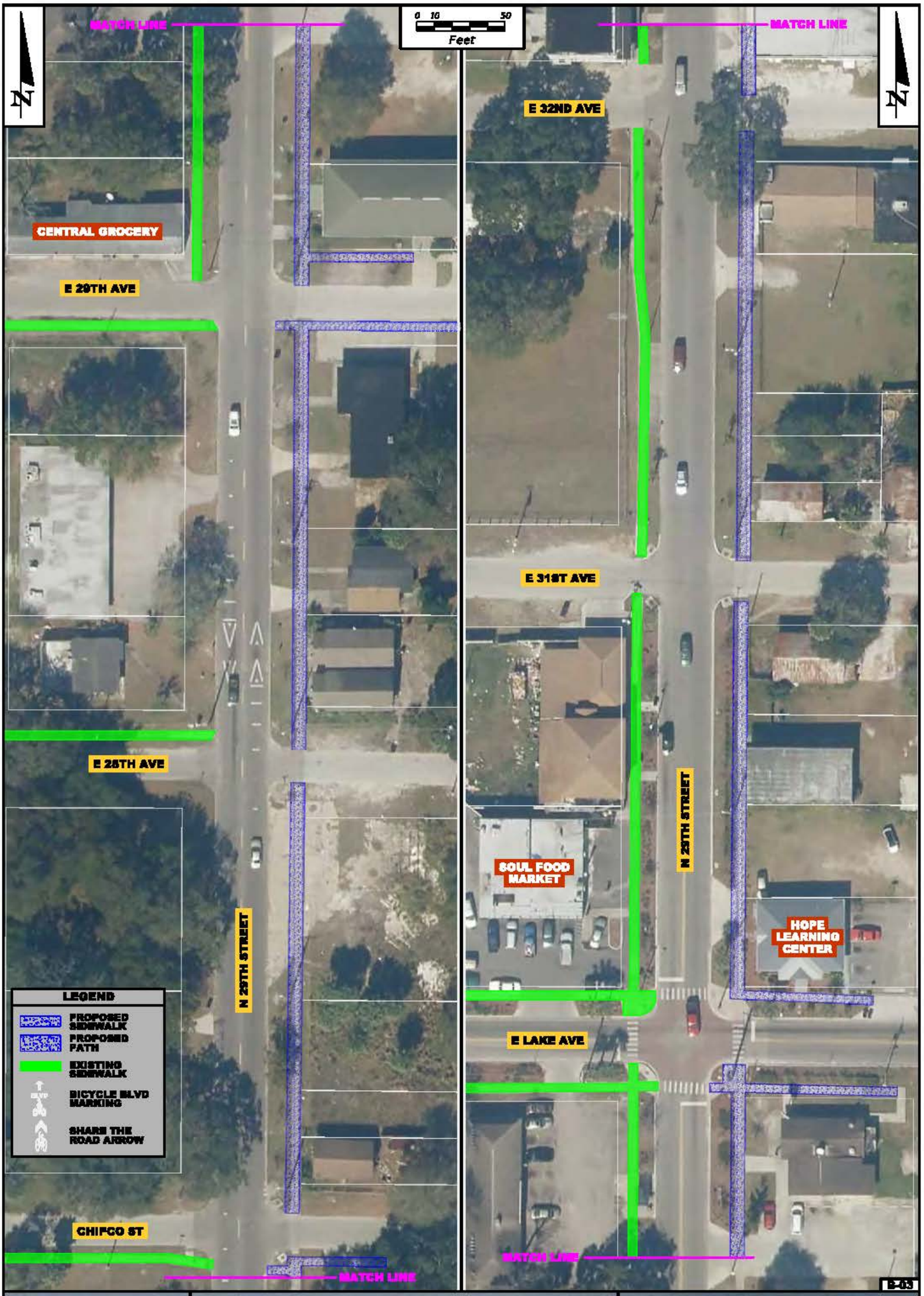
Feet

City of Tampa Florida
Hillsborough MPO
Metropolitan Planning for Transportation



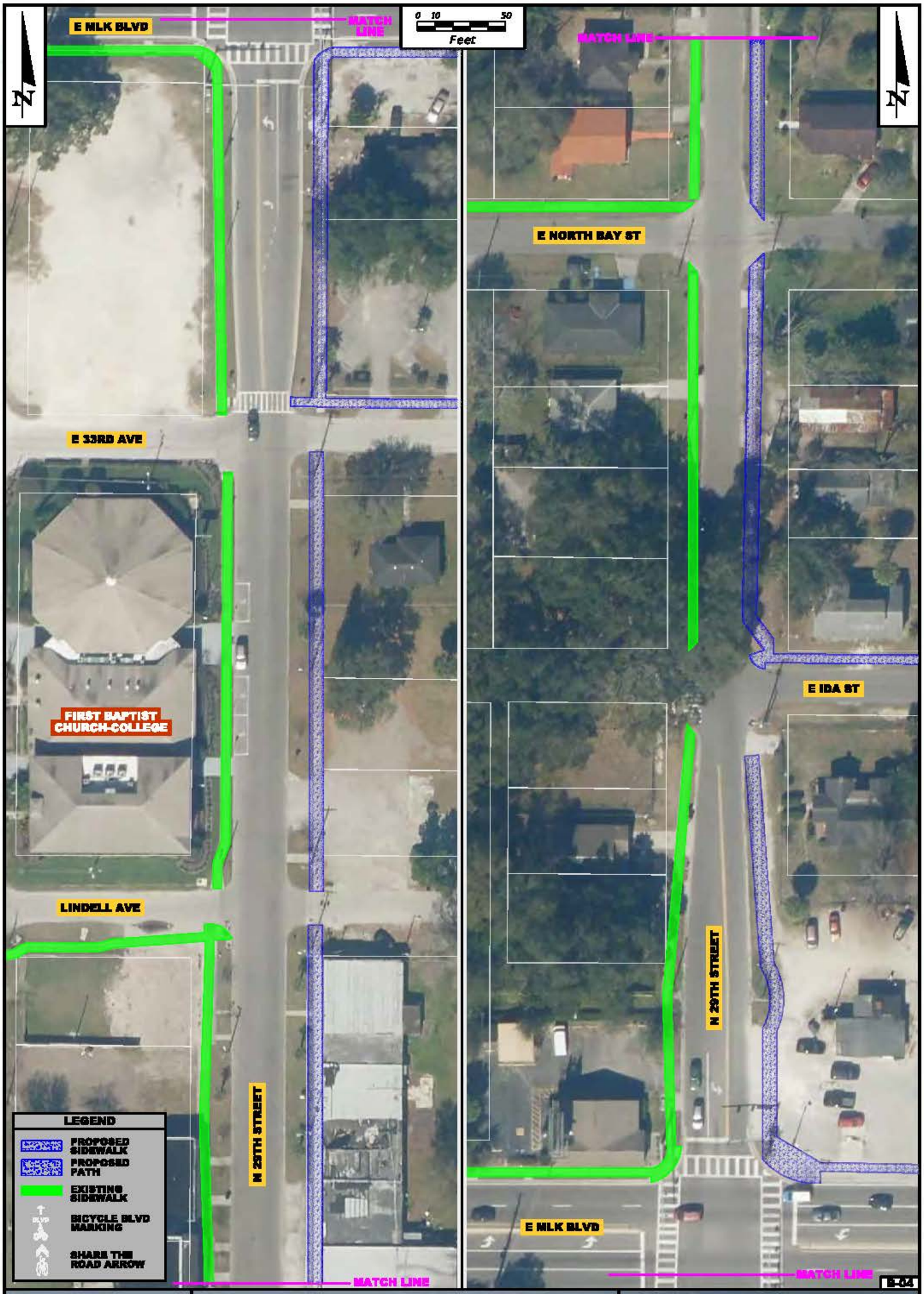
ATKINS | Walk-Bike Plan Phase V

City of Tampa Florida | Hillsborough MPO Metropolitan Planning for Transportation

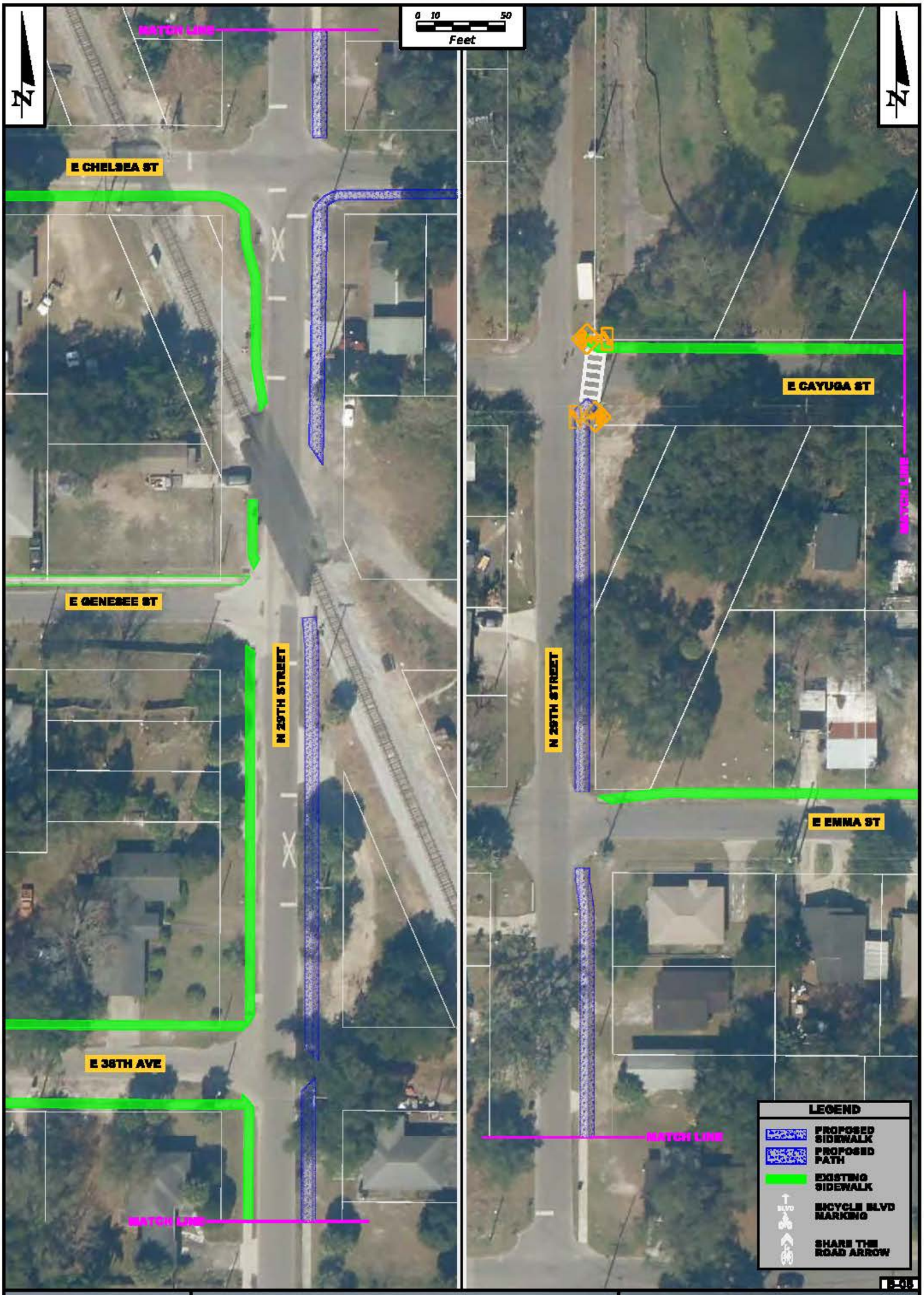


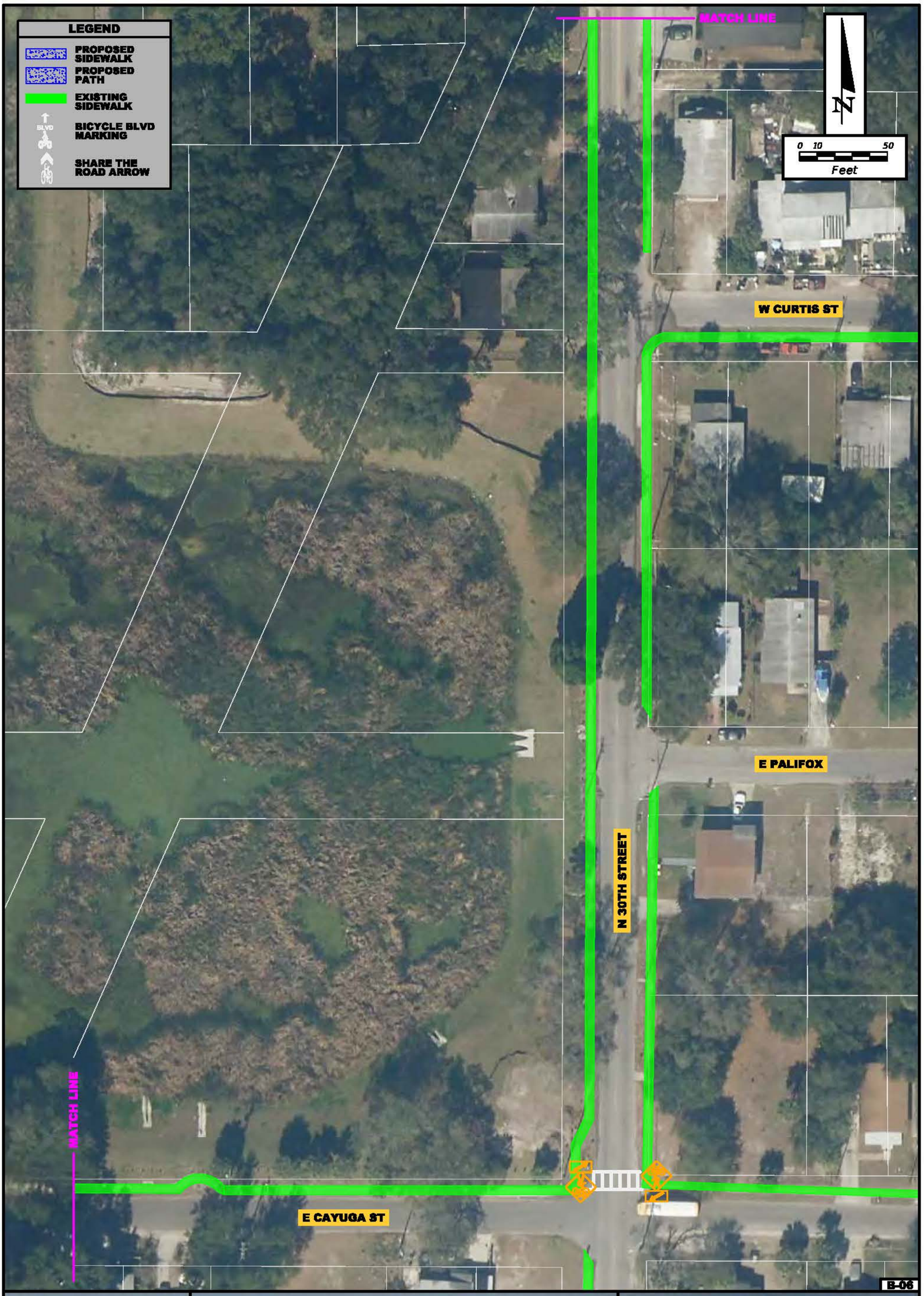
ATKINS | Walk-Bike Plan Phase V | City of Tampa | Hillsborough MPO Metropolitan Planning for Transportation

E-03



ATKINS | Walk-Bike Plan Phase V | City of Tampa | Hillsborough MPO Metropolitan Planning for Transportation


0 10 50
Feet
MATCH LINE
E CHELSEA ST
E GENESEE ST
N 29TH STREET
E 38TH AVE
MATCH LINE
E CAYUGA ST
MATCH LINE
N 29TH STREET
E EMMA ST
MATCH LINE
LEGEND
PROPOSED SIDEWALK
PROPOSED PATH
EXISTING SIDEWALK
BICYCLE BLVD MARKING
SHARE THE ROAD ARROW



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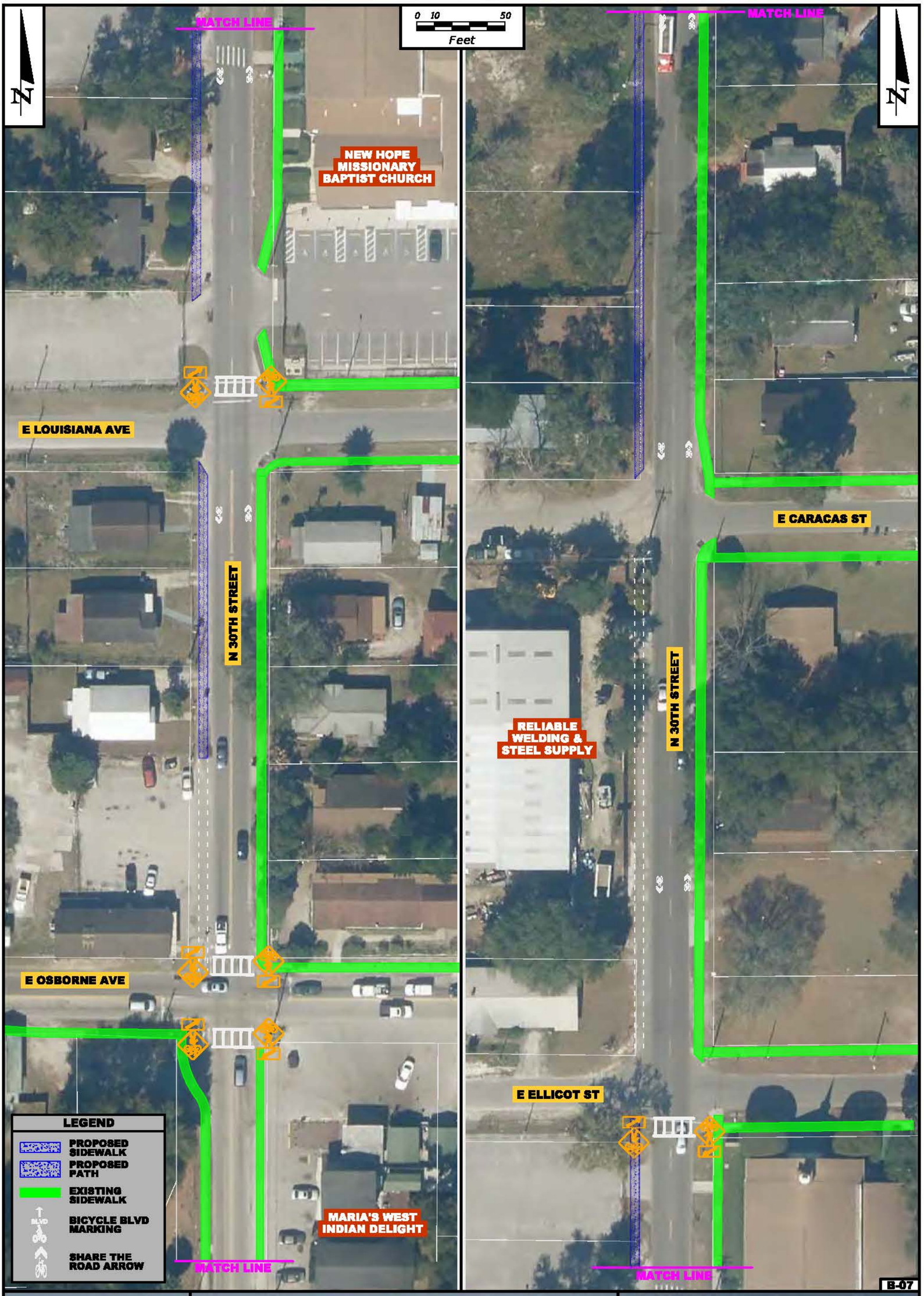
City of Tampa Florida | Hillsborough MPO Metropolitan Planning for Transportation



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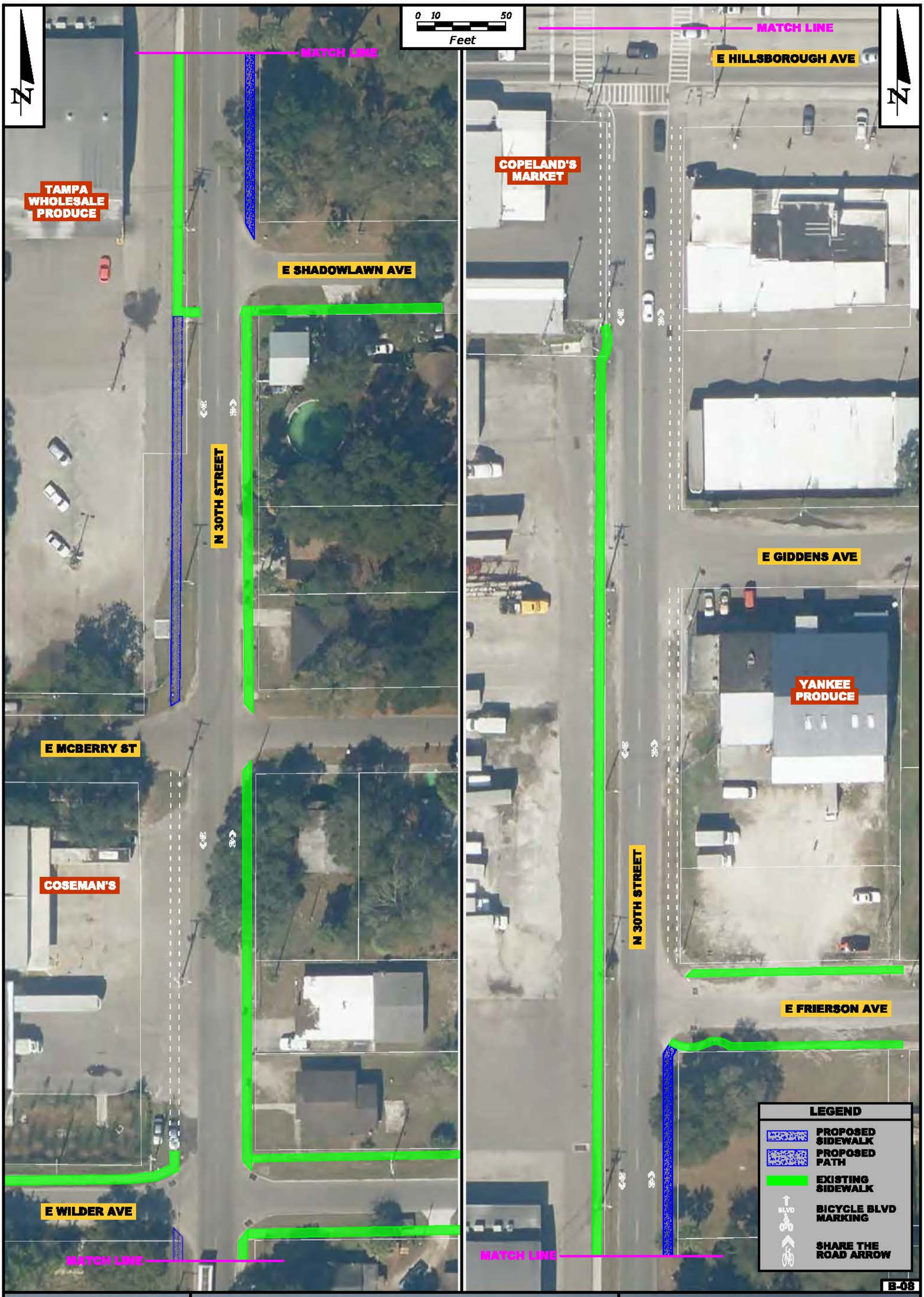
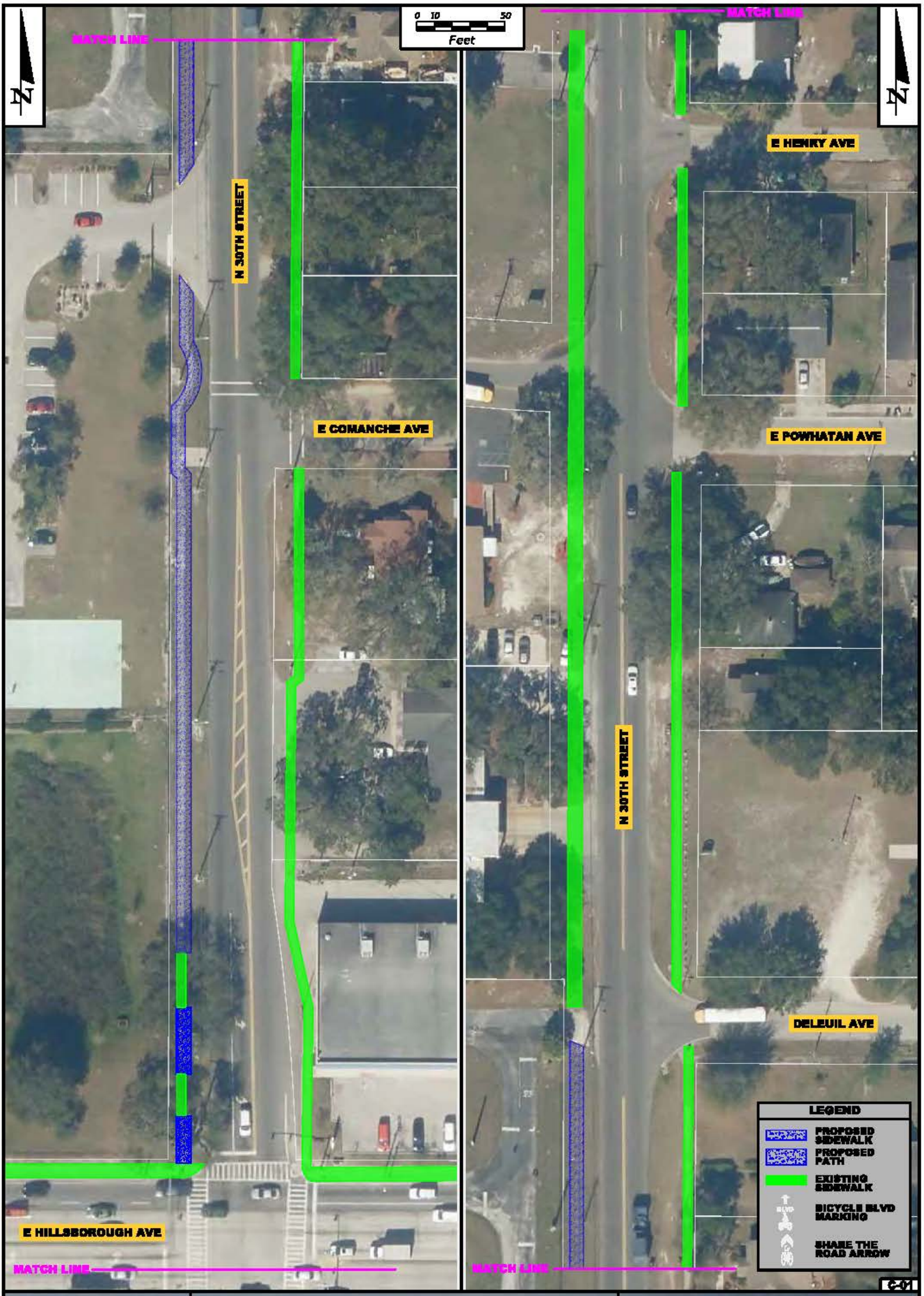
City of Tampa | Hillsborough MPO Metropolitan Planning for Transportation



ATKINS | Walk-Bike Plan Phase V

City of Tampa Florida

Hillsborough MPO Metropolitan Planning for Transportation



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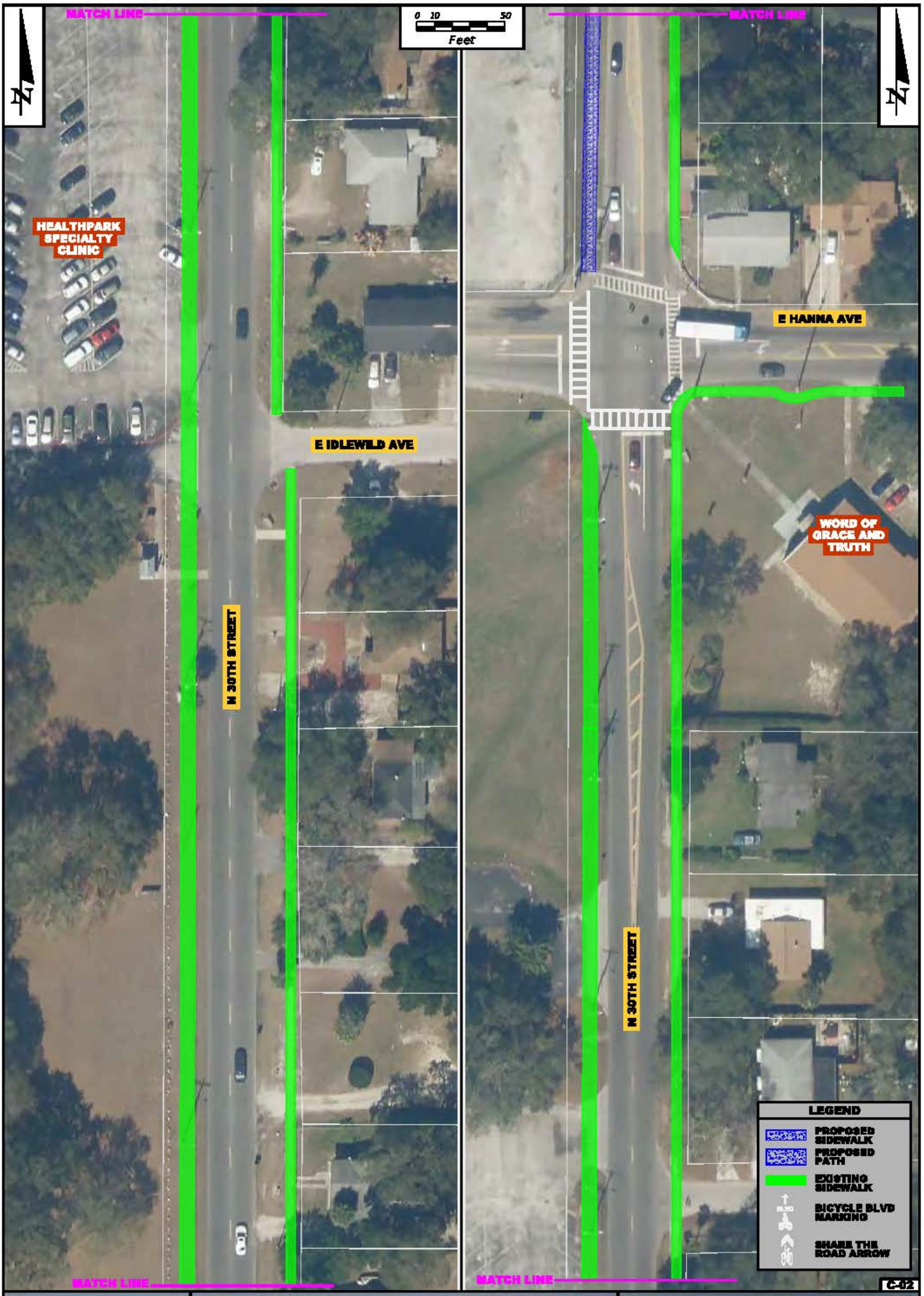
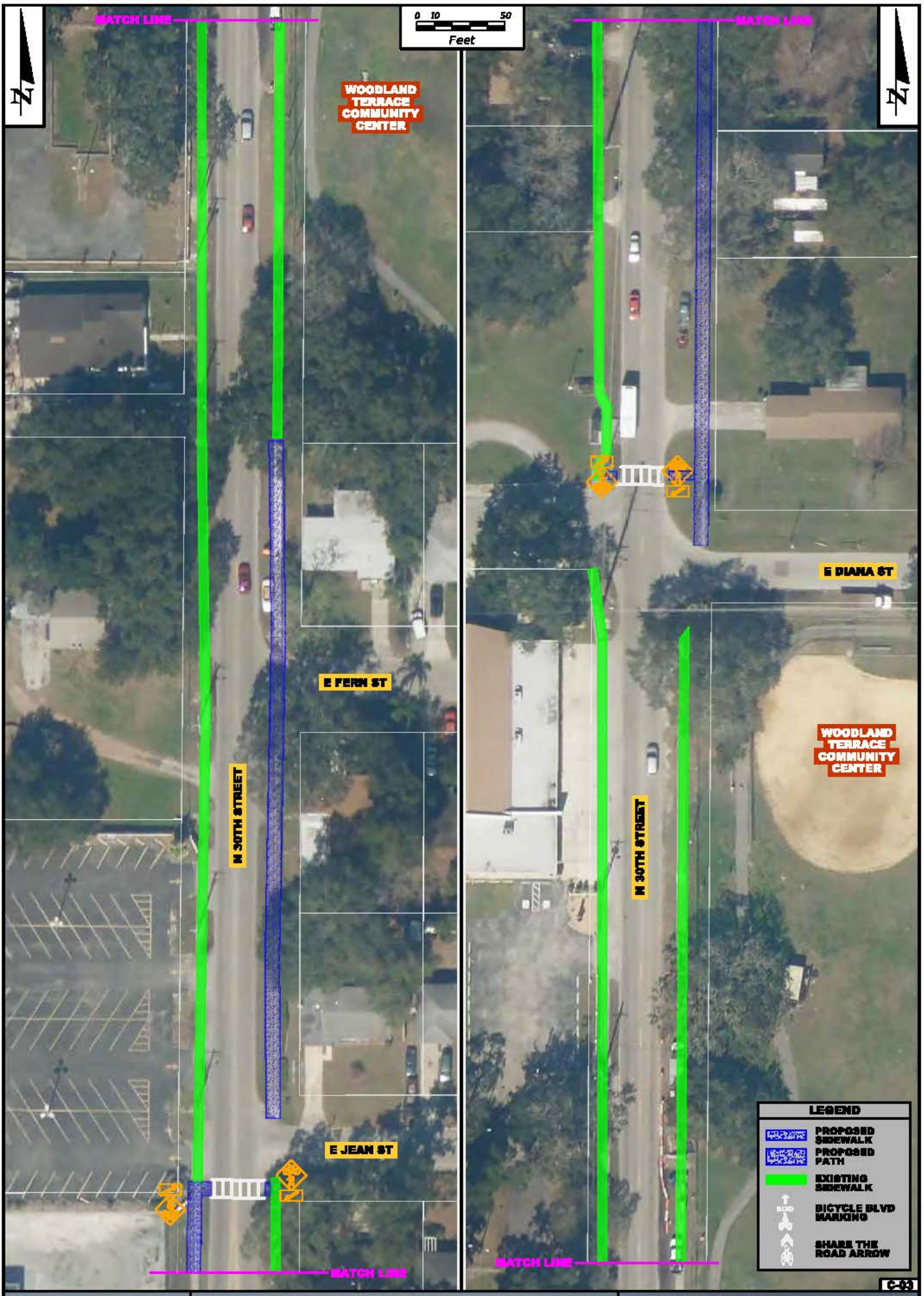
City of Tampa | Hillsborough MPO Metropolitan Planning for Transportation



ATKINS | Walk-Bike Plan Phase V

City of Tampa Florida

Hillsborough MPO Metropolitan Planning for Transportation



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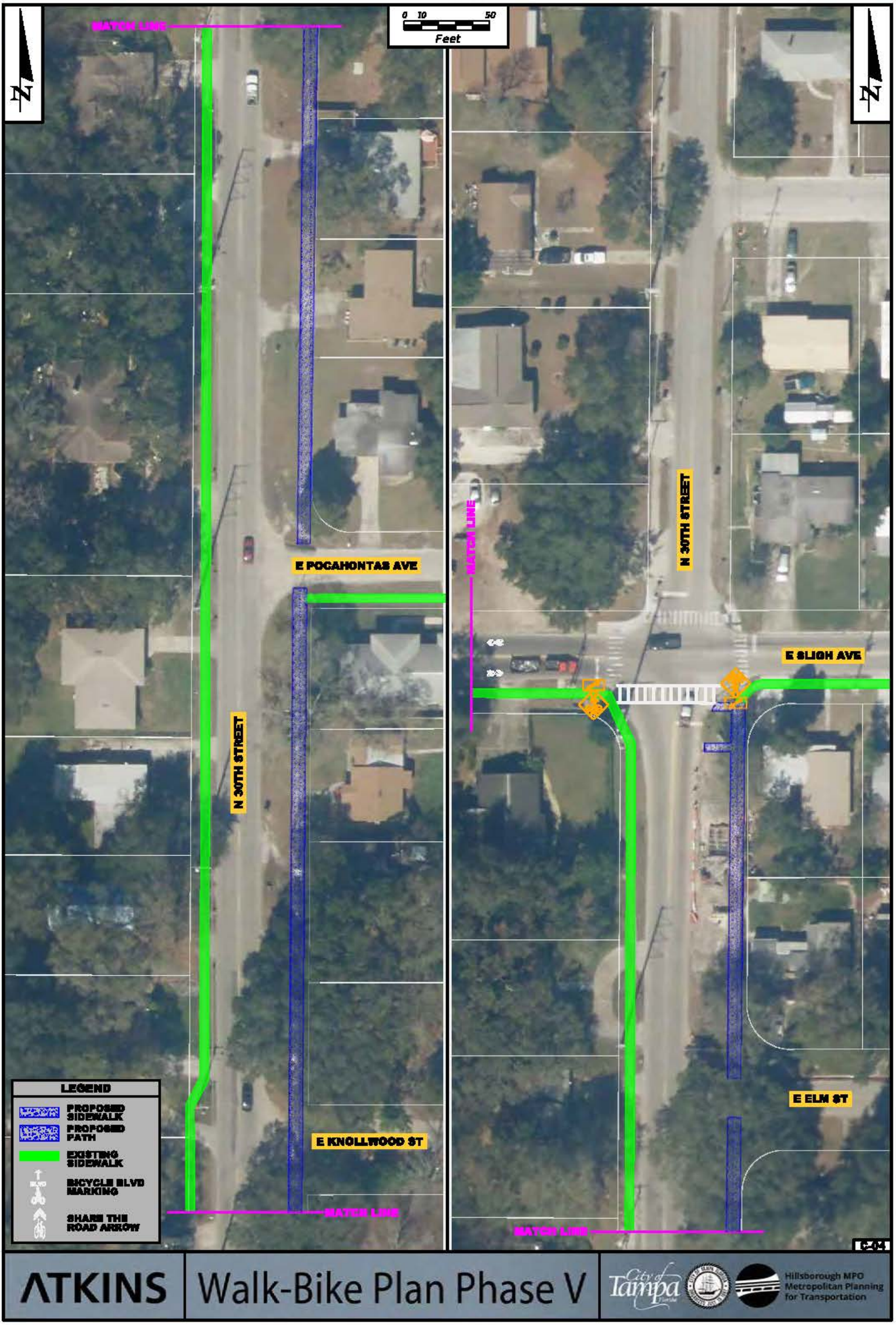
City of Tampa | Hillsborough MPO Metropolitan Planning for Transportation



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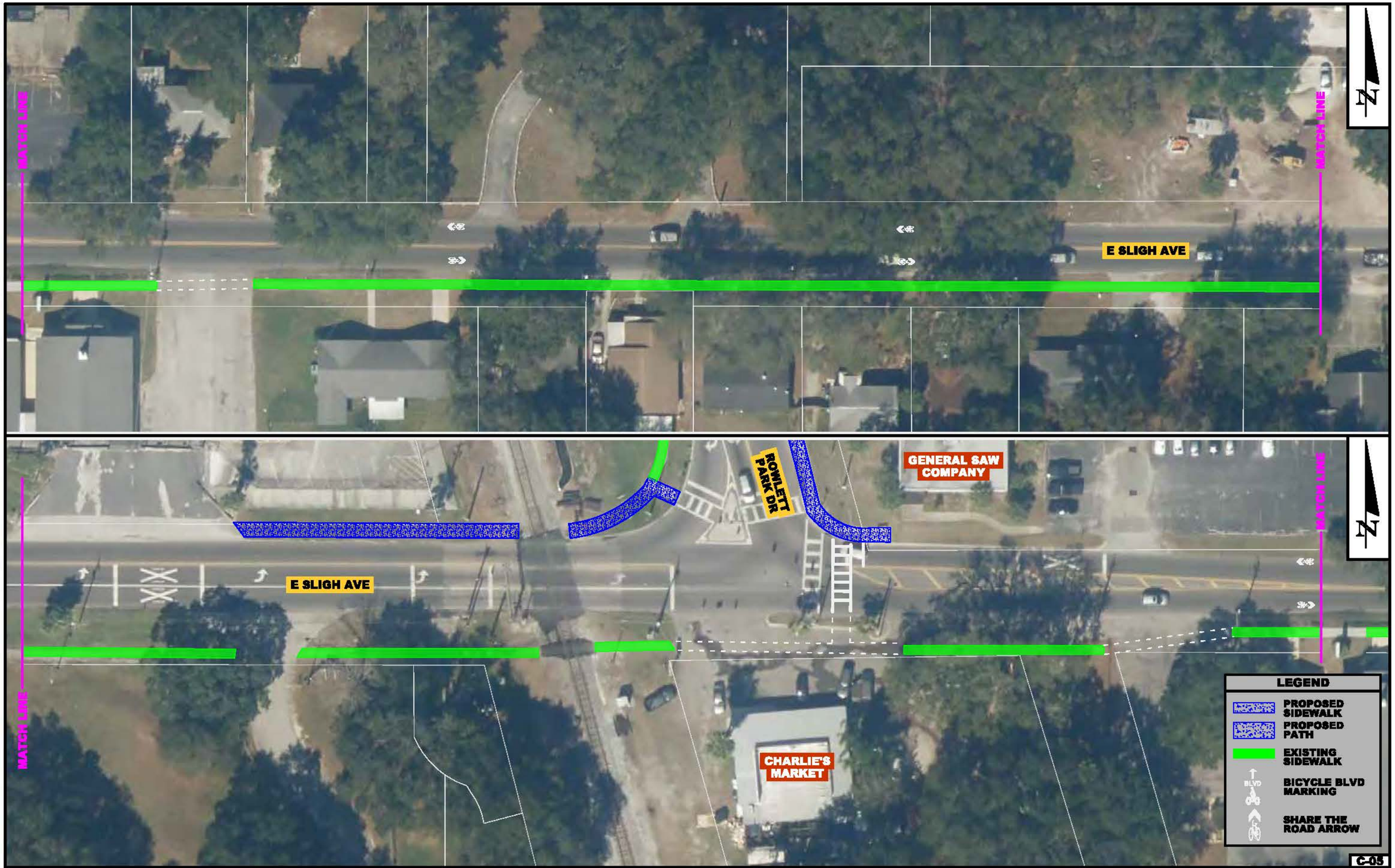
City of Tampa | Hillsborough MPO Metropolitan Planning for Transportation



ATKINS | Walk-Bike Plan Phase V

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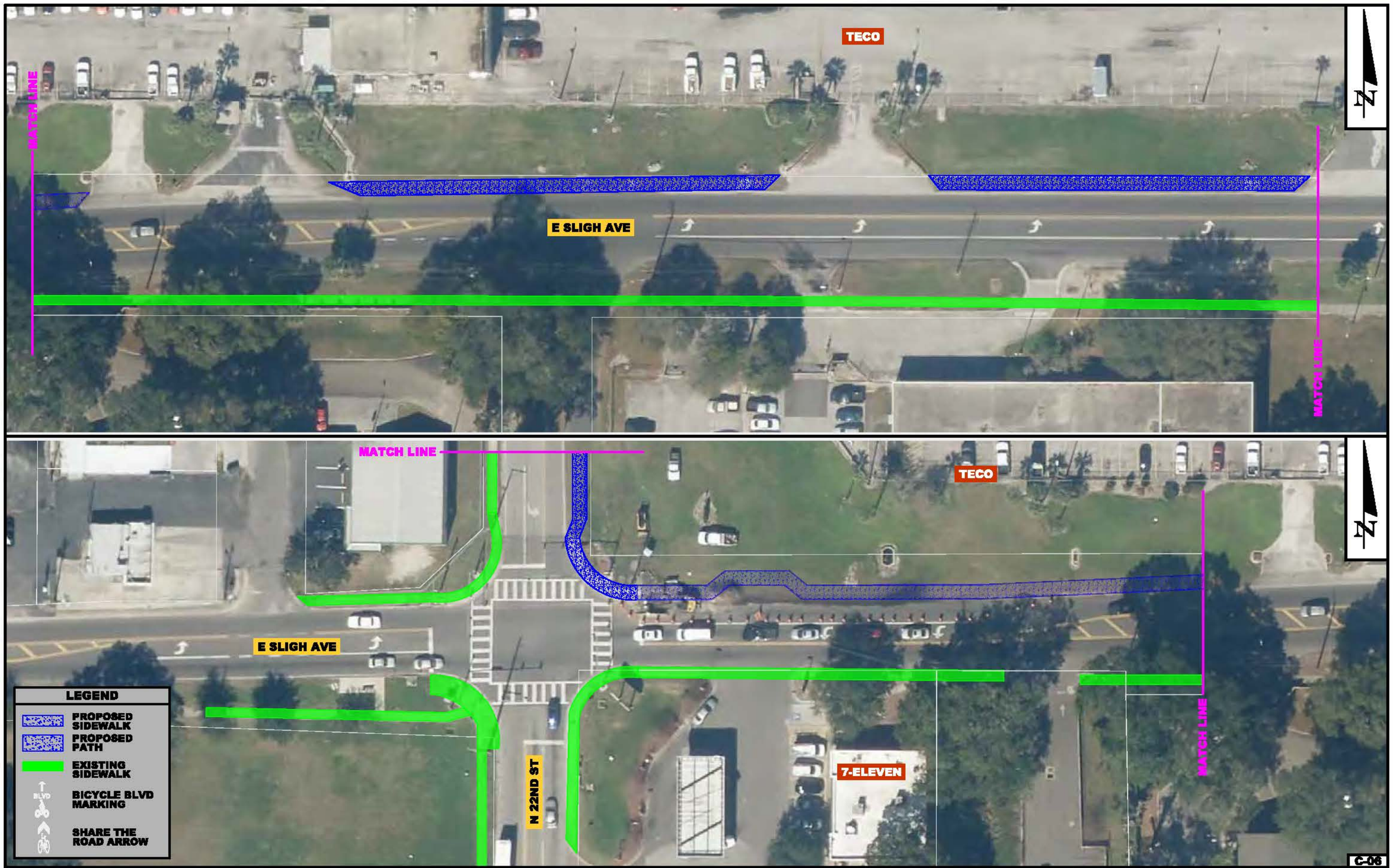
Feet

City of Tampa Florida | Hillsborough MPO Metropolitan Planning for Transportation



ATKINS | Walk-Bike Plan Phase V

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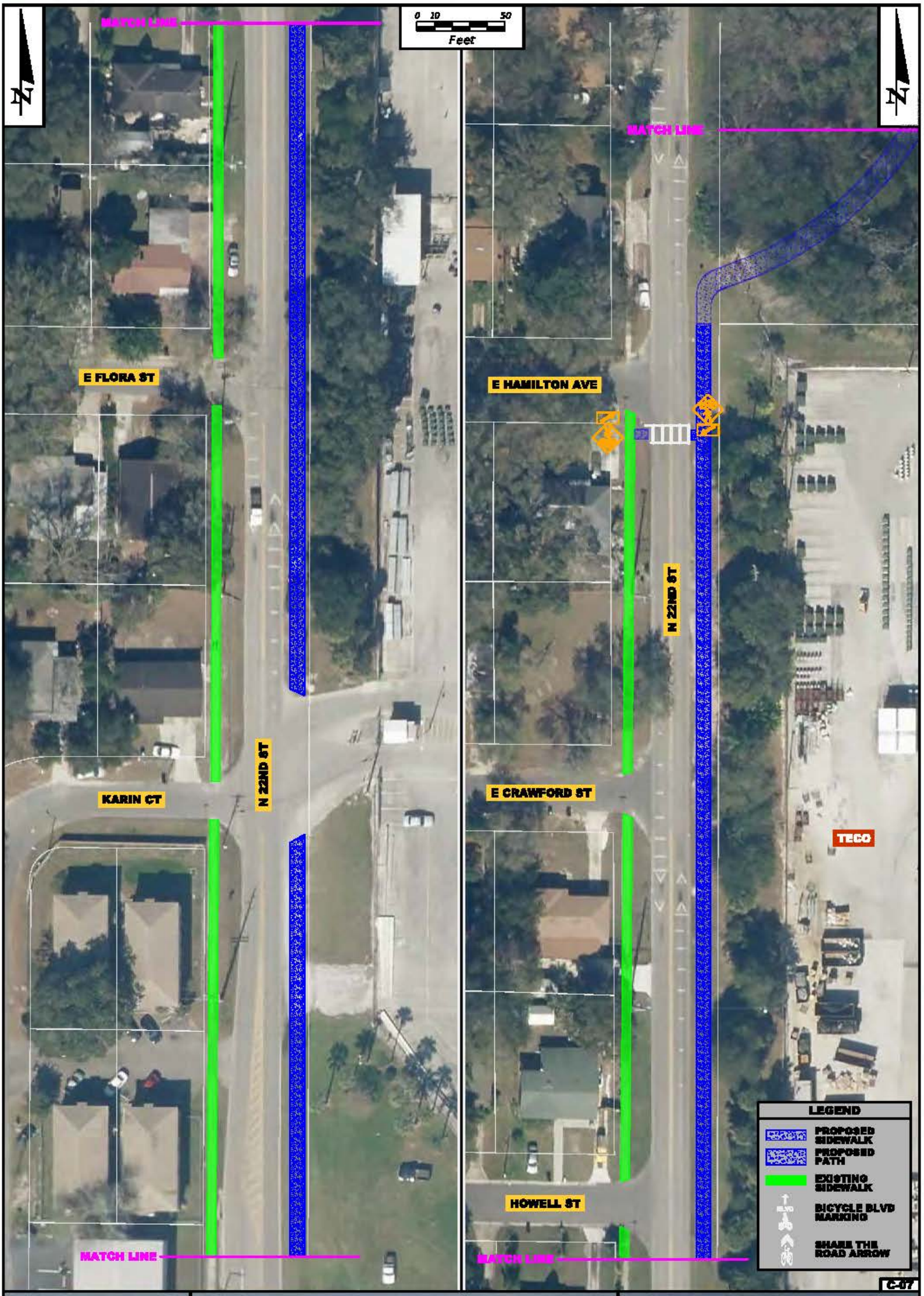
Feet

City of Tampa Florida

Hillsborough MPO
Metropolitan Planning for Transportation



ATKINS | Walk-Bike Plan Phase V | City of Tampa Florida | Hillsborough MPO Metropolitan Planning for Transportation

MATCH LINE

E CLINTON ST

N 22ND ST

TECO PARCEL

E CRENSHAW ST

MATCH LINE

N

LEGEND

- PROPOSED SIDEWALK
- PROPOSED PATH
- EXISTING SIDEWALK
- BICYCLE BLVD MARKING
- SHARE THE ROAD ARROW

C-08

ATKINS

Walk-Bike Plan Phase V

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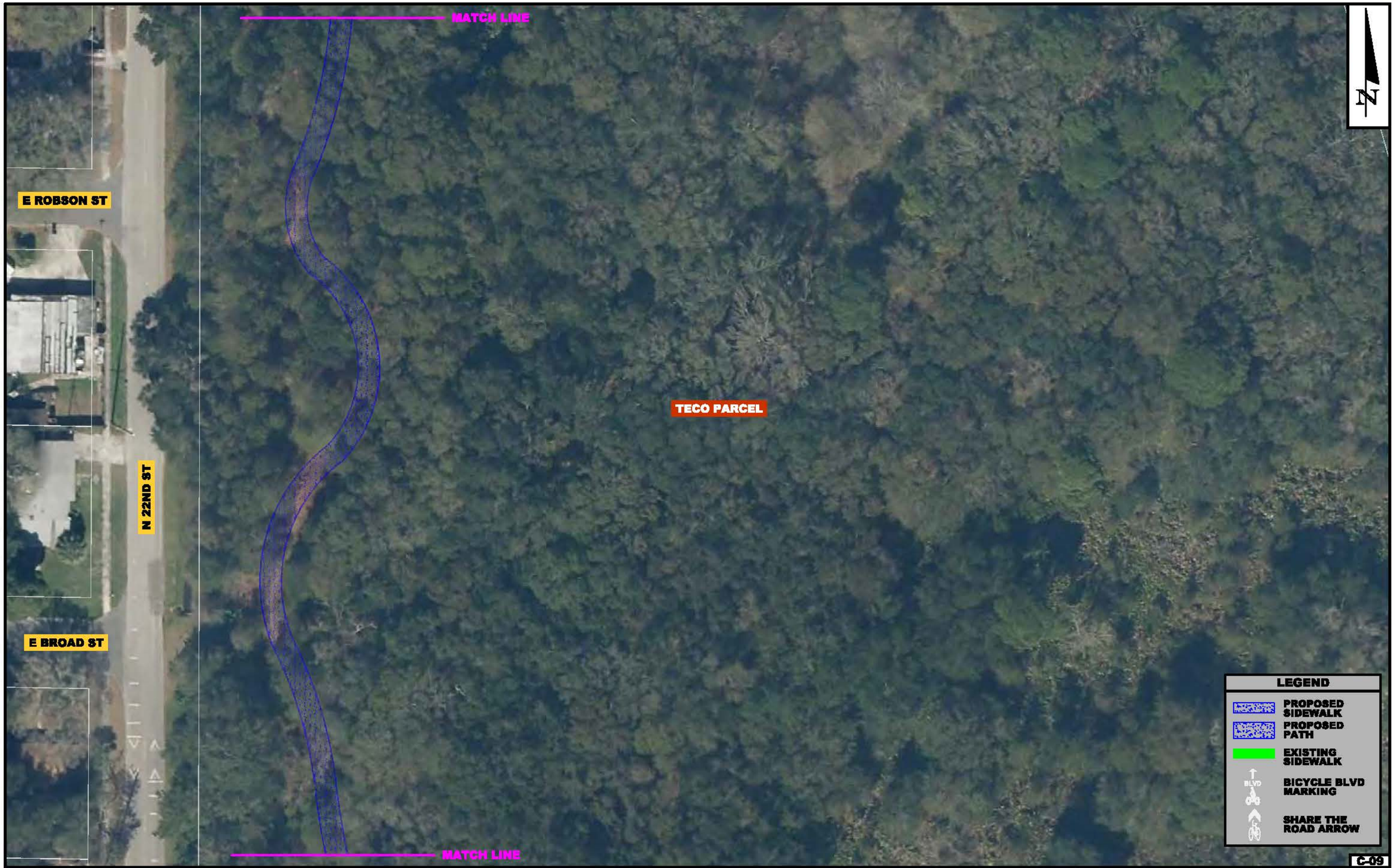
Feet

City of Tampa

Hillsborough MPO
Metropolitan Planning
for Transportation



ATKINS | Walk-Bike Plan Phase V

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City of Tampa Florida | Hillsborough MPO Metropolitan Planning for Transportation

ATKINS | Walk-Bike Plan Phase V

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City of Tampa | Hillsborough MPO Metropolitan Planning for Transportation

ATKINS | Walk-Bike Plan Phase V

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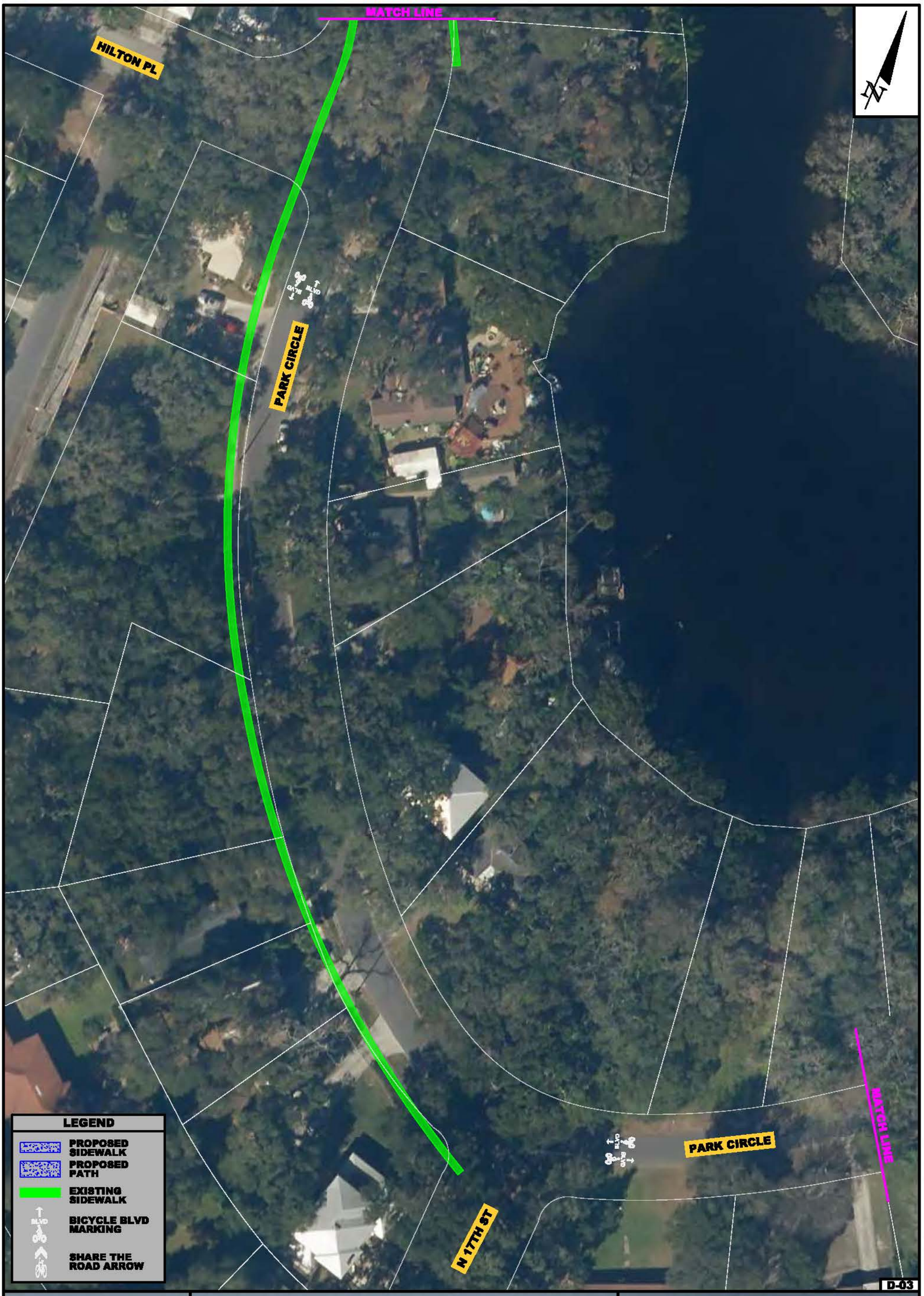
Feet

City of Tampa Florida

Hillsborough MPO
Metropolitan Planning
for Transportation

ATKINS | Walk-Bike Plan Phase V | City of Tampa | Hillsborough MPO Metropolitan Planning for Transportation

ATKINS | Walk-Bike Plan Phase V | City of Tampa Florida | Hillsborough MPO Metropolitan Planning for Transportation



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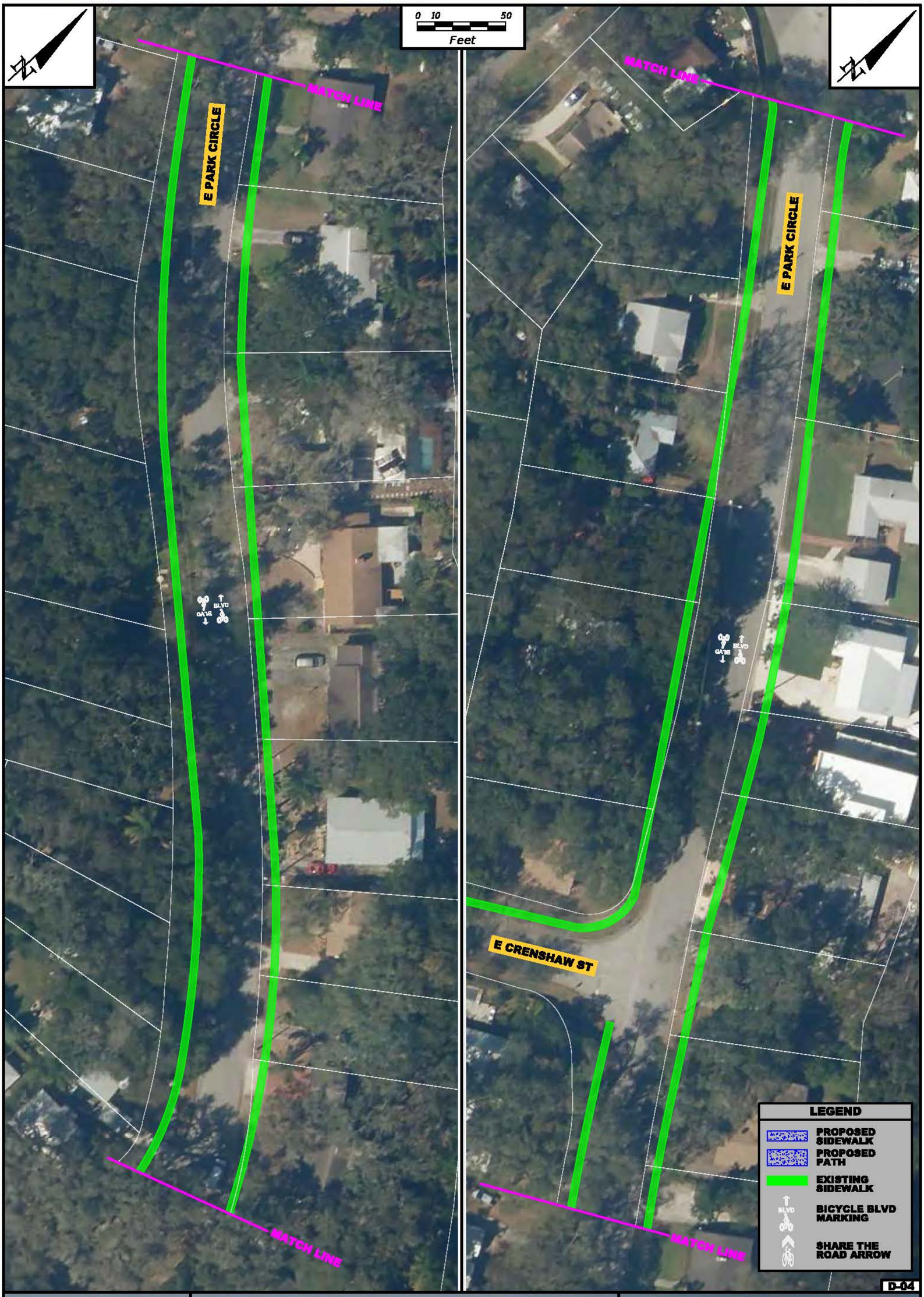
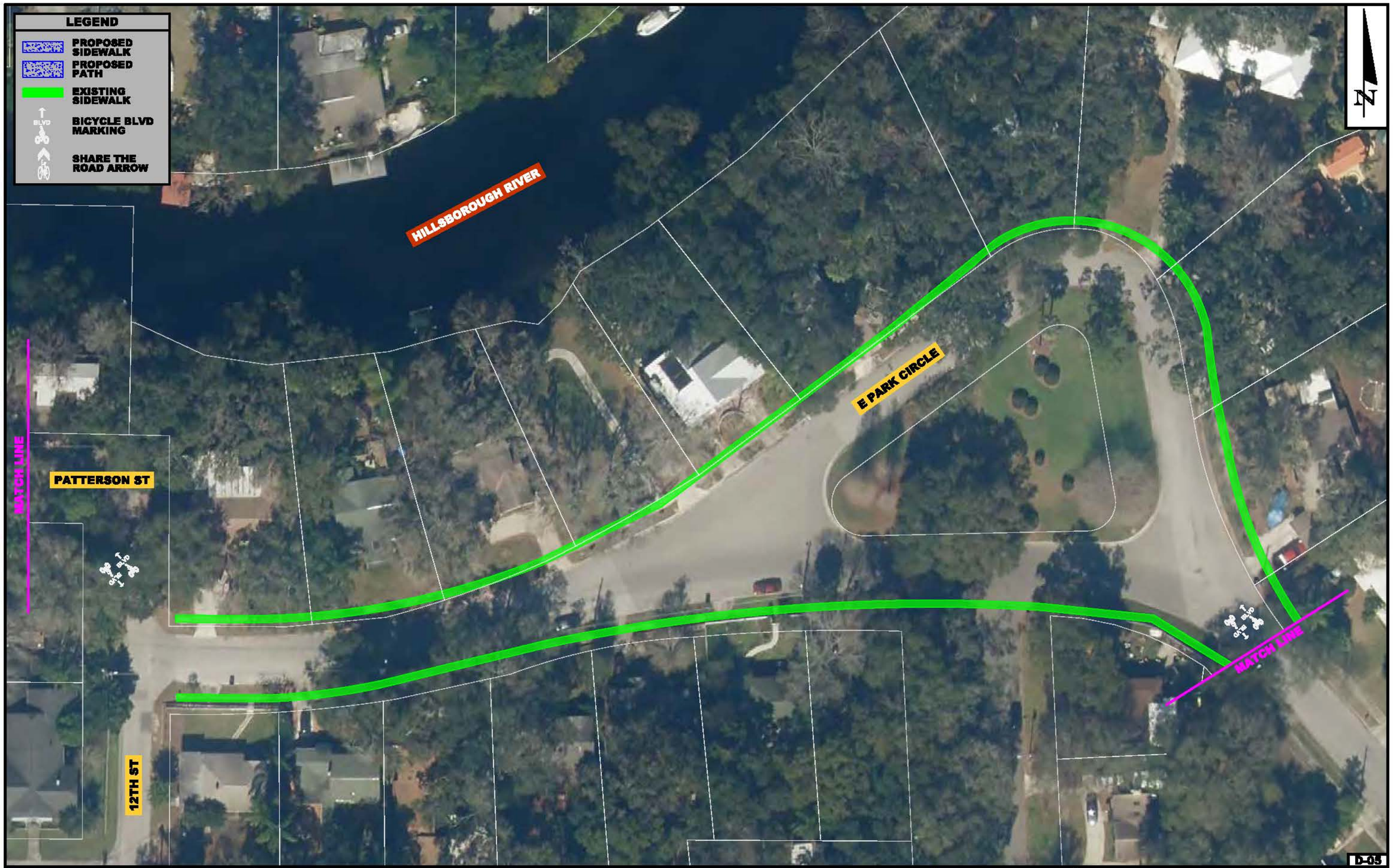


ATKINS | Walk-Bike Plan Phase V

City of Tampa Florida

Hillsborough MPO Metropolitan Planning for Transportation



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Walk-Bike Plan Phase V

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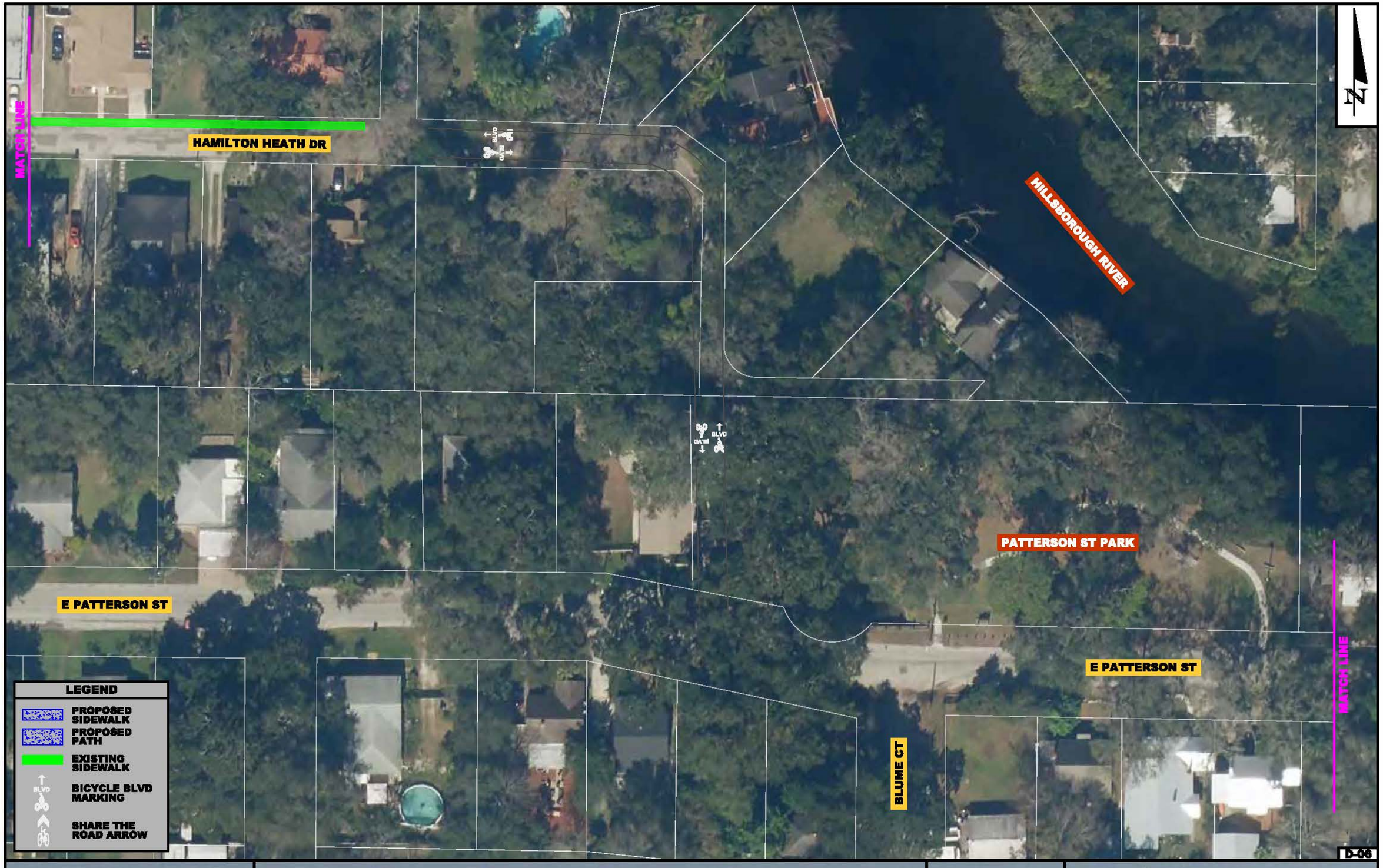
City of Tampa

Hillsborough MPO
Metropolitan Planning
for Transportation



ATKINS | Walk-Bike Plan Phase V

0 10 50
Feet

City of Tampa | Hillsborough MPO Metropolitan Planning for Transportation

MATCH LINE

E HOLLYWOOD ST

N NEBRASKA AVE

VAN DYKE PL

HAMILTON HEATH DR

MATCH LINE

N

LEGEND

- PROPOSED SIDEWALK
- PROPOSED PATH
- EXISTING SIDEWALK
- BICYCLE BLVD MARKING
- SHARE THE ROAD ARROW

D-07

ATKINS

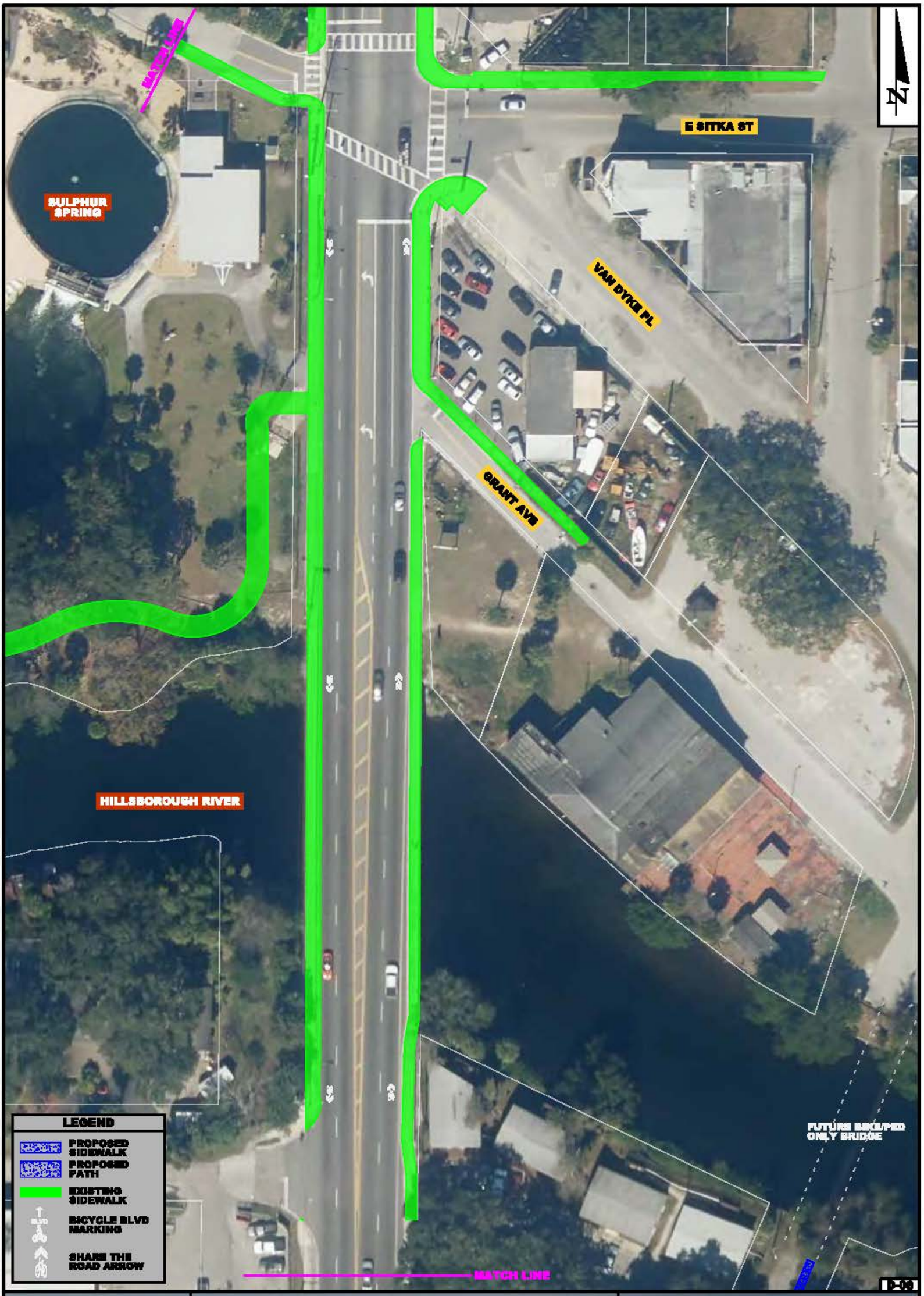
Walk-Bike Plan Phase V

0 10 50

Feet

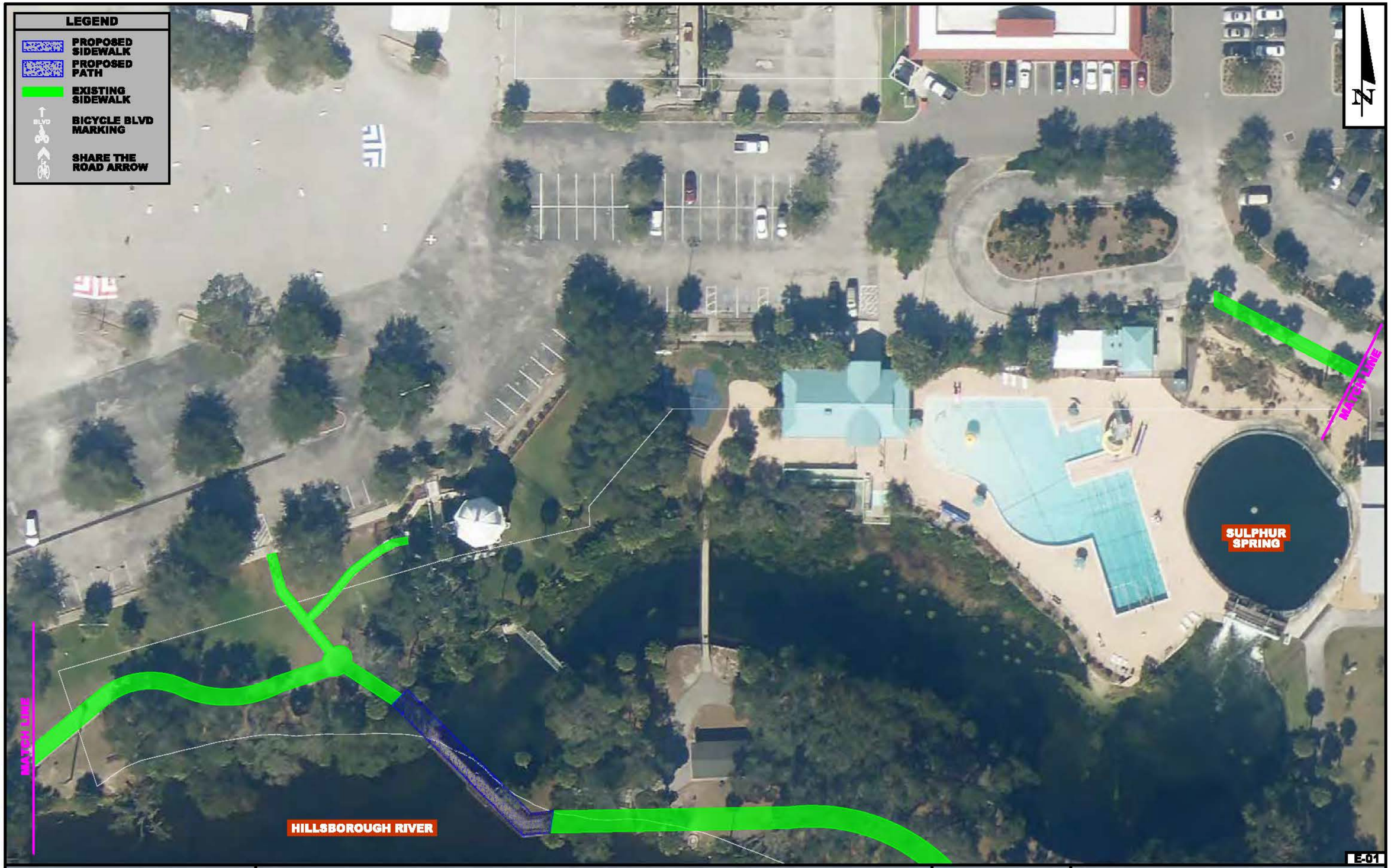
City of Tampa

Hillsborough MPO
Metropolitan Planning
for Transportation



ATKINS | Walk-Bike Plan Phase V

City of Tampa | Hillsborough MPO Metropolitan Planning for Transportation



ATKINS

Walk-Bike Plan Phase V

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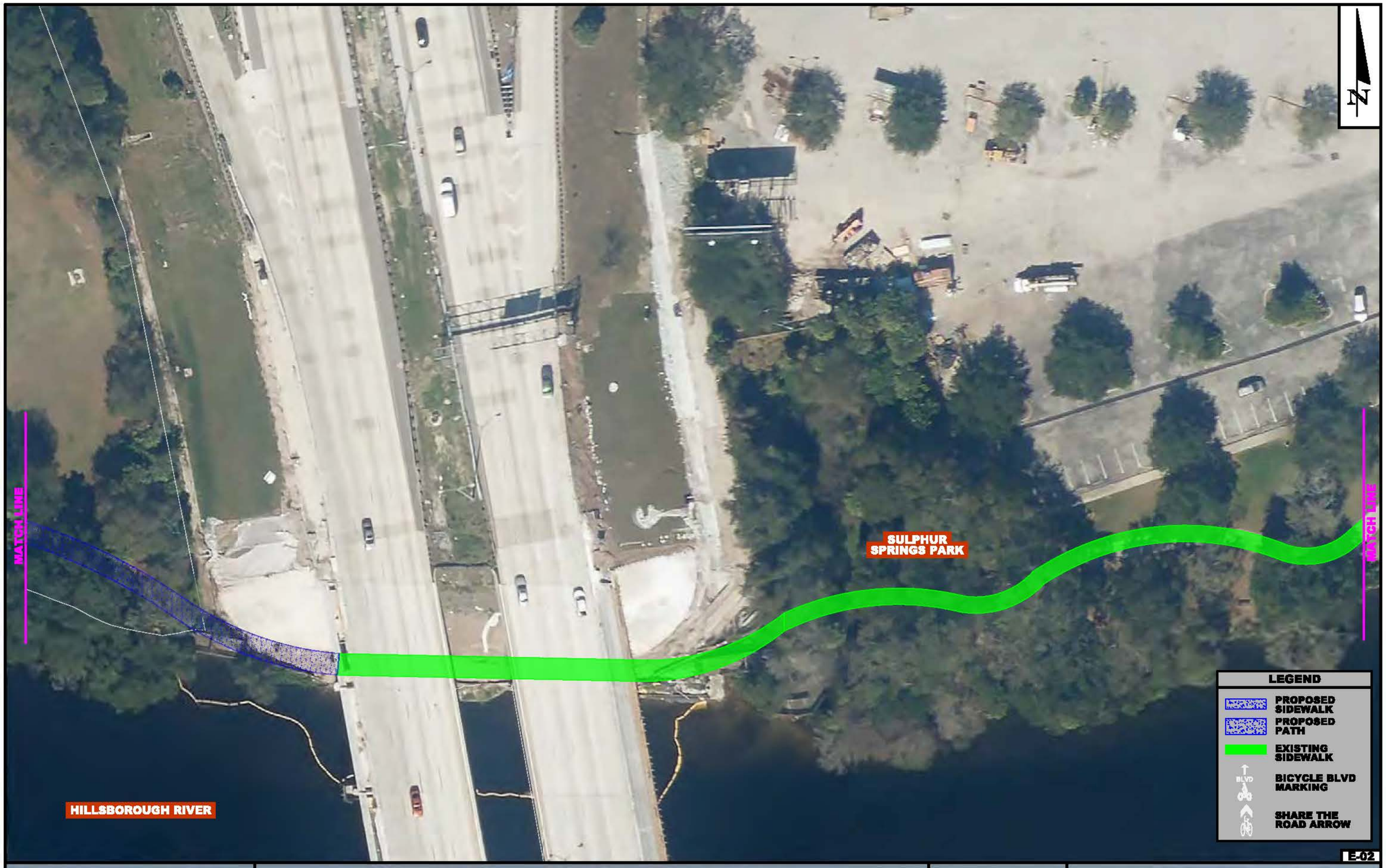
City of Tampa Florida

Hillsborough MPO
Metropolitan Planning
for Transportation



ATKINS | Walk-Bike Plan Phase V

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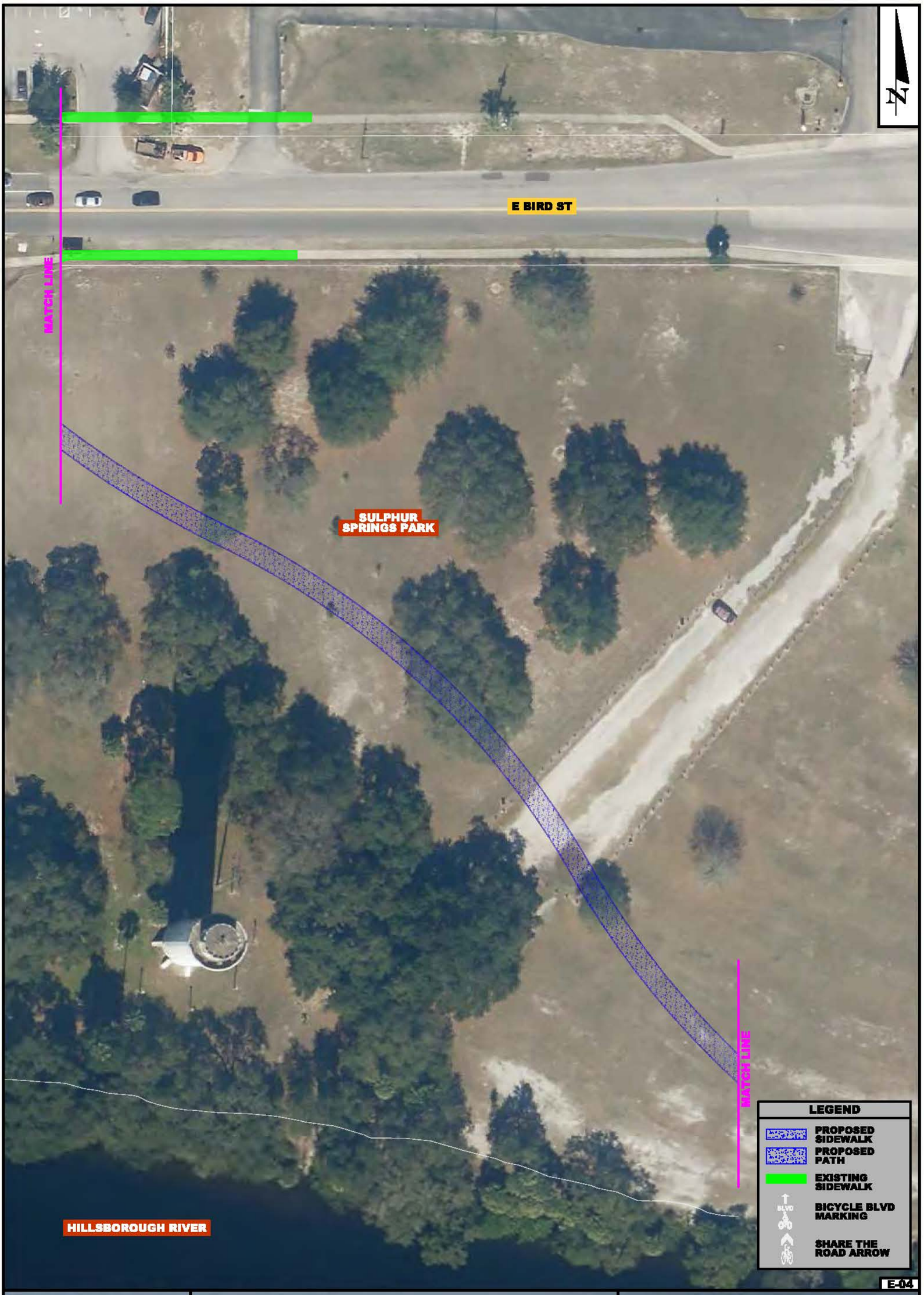
Feet

City of Tampa | Hillsborough MPO Metropolitan Planning for Transportation

ATKINS | Walk-Bike Plan Phase V

City of Tampa Florida

Hillsborough MPO Metropolitan Planning for Transportation

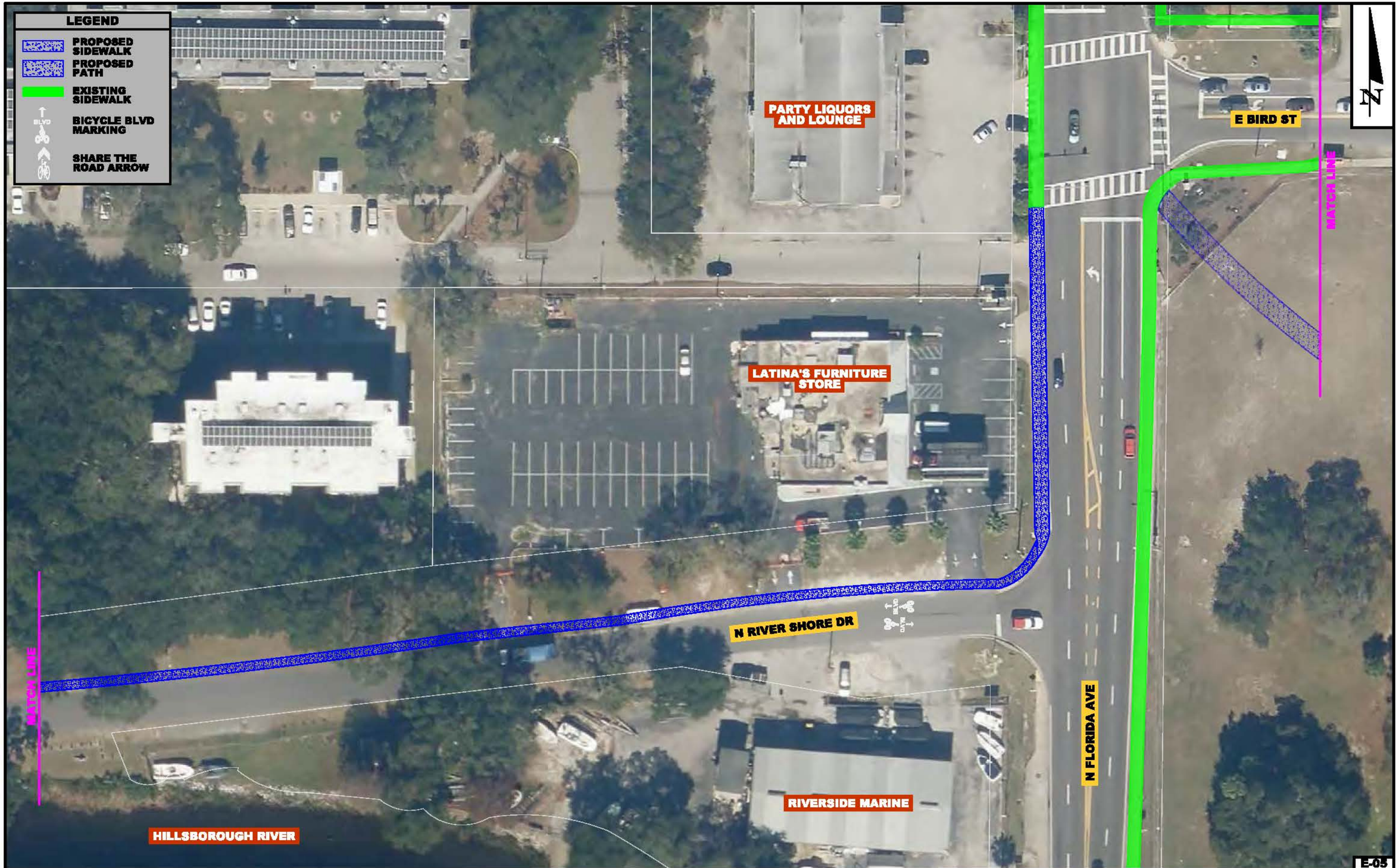


E-04

ATKINS | Walk-Bike Plan Phase V

City of Tampa Florida

Hillsborough MPO Metropolitan Planning for Transportation



ATKINS | Walk-Bike Plan Phase V

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Feet

City of Tampa Florida | Hillsborough MPO Metropolitan Planning for Transportation

ATKINS | Walk-Bike Plan Phase V

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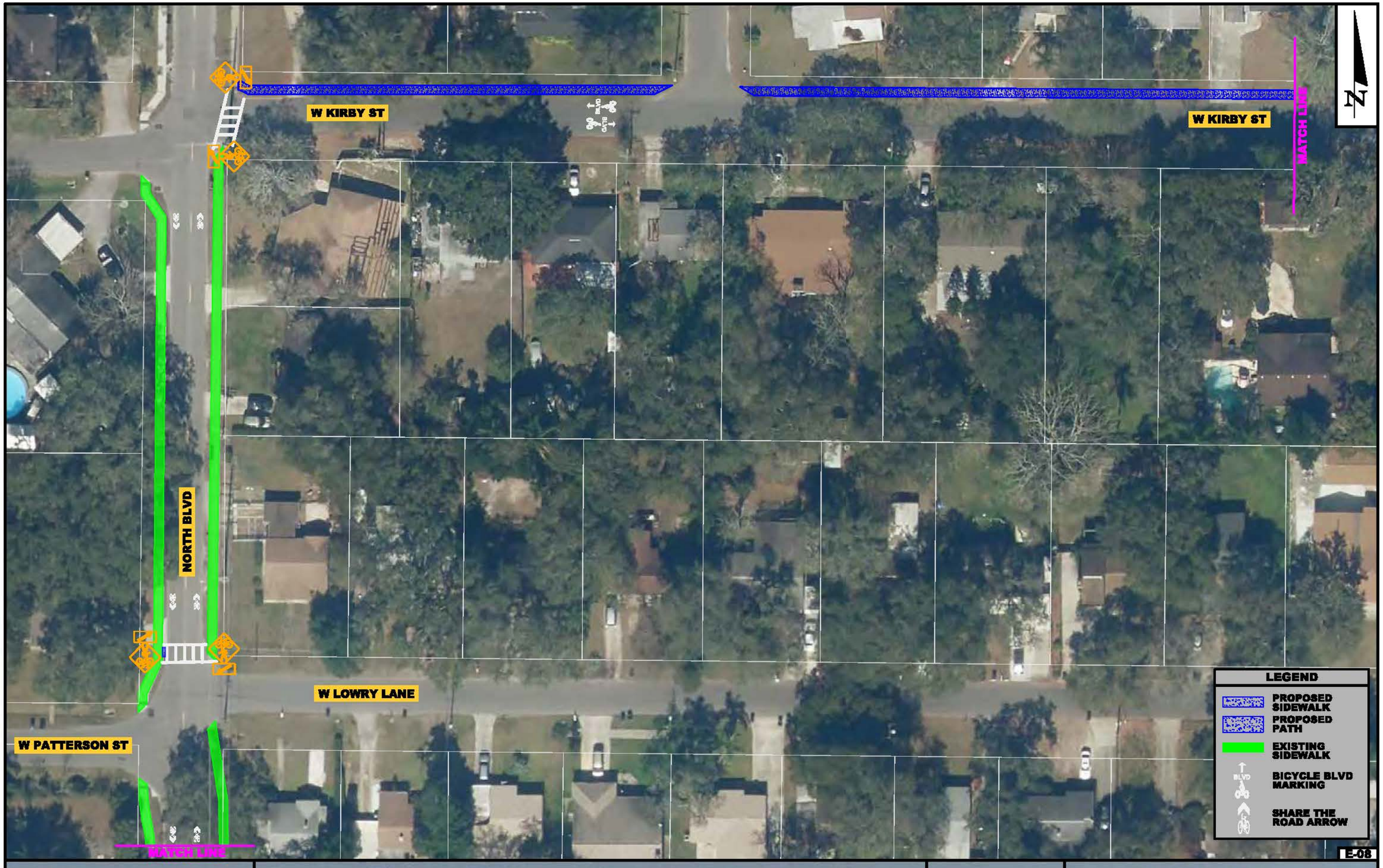
City of Tampa Florida | Hillsborough MPO Metropolitan Planning for Transportation

ATKINS | Walk-Bike Plan Phase V

City of Tampa Florida

Hillsborough MPO Metropolitan Planning for Transportation



ATKINS | Walk-Bike Plan Phase V

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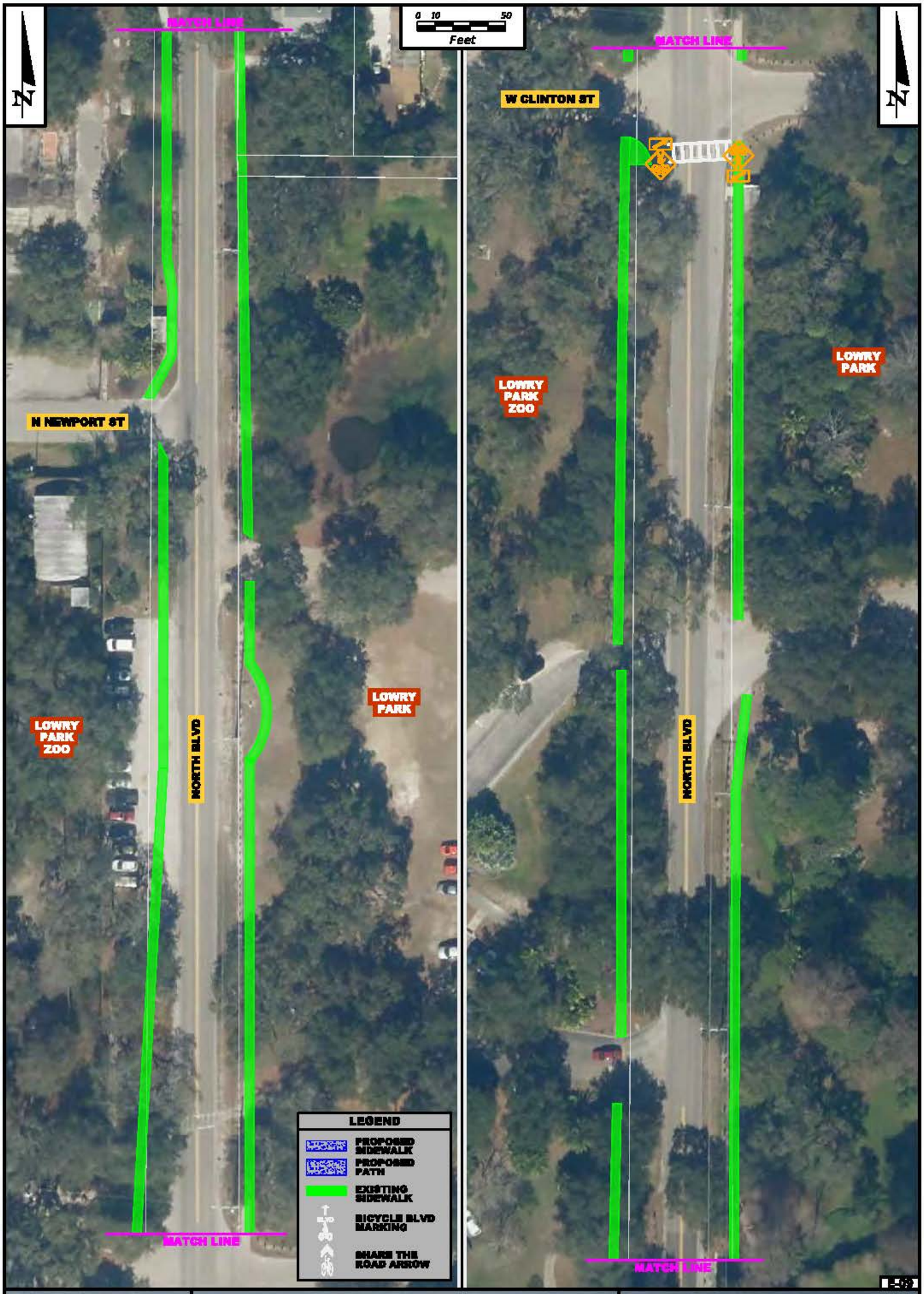
Feet

City of Tampa Florida | Hillsborough MPO Metropolitan Planning for Transportation



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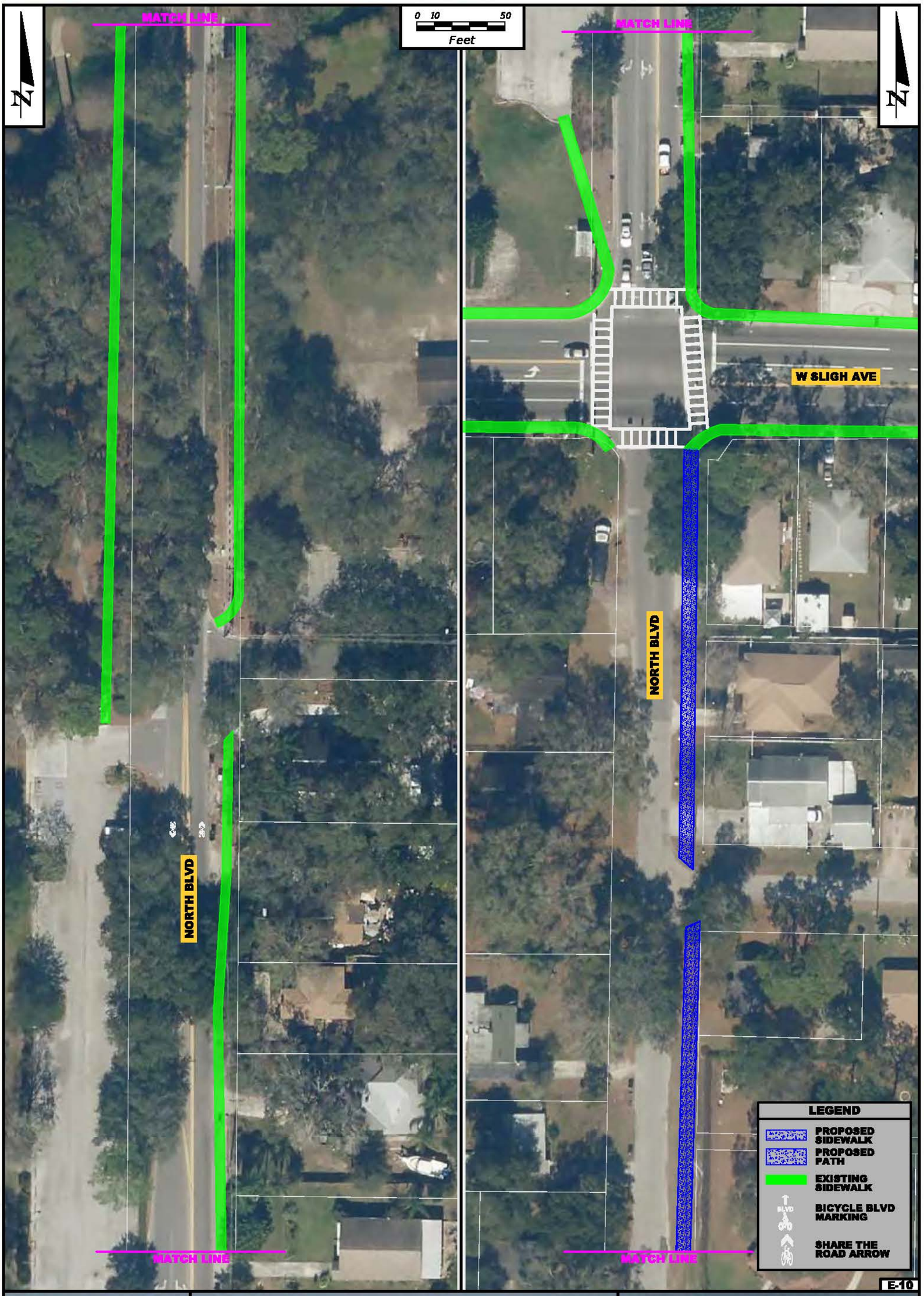
City of Tampa | Hillsborough MPO Metropolitan Planning for Transportation



E-10

ATKINS | Walk-Bike Plan Phase V | City of Tampa Florida | Hillsborough MPO Metropolitan Planning for Transportation

ATKINS | Walk-Bike Plan Phase V | City of Tampa | Hillsborough MPO Metropolitan Planning for Transportation

ATKINS

Walk-Bike Plan Phase V

0 10 50
Feet

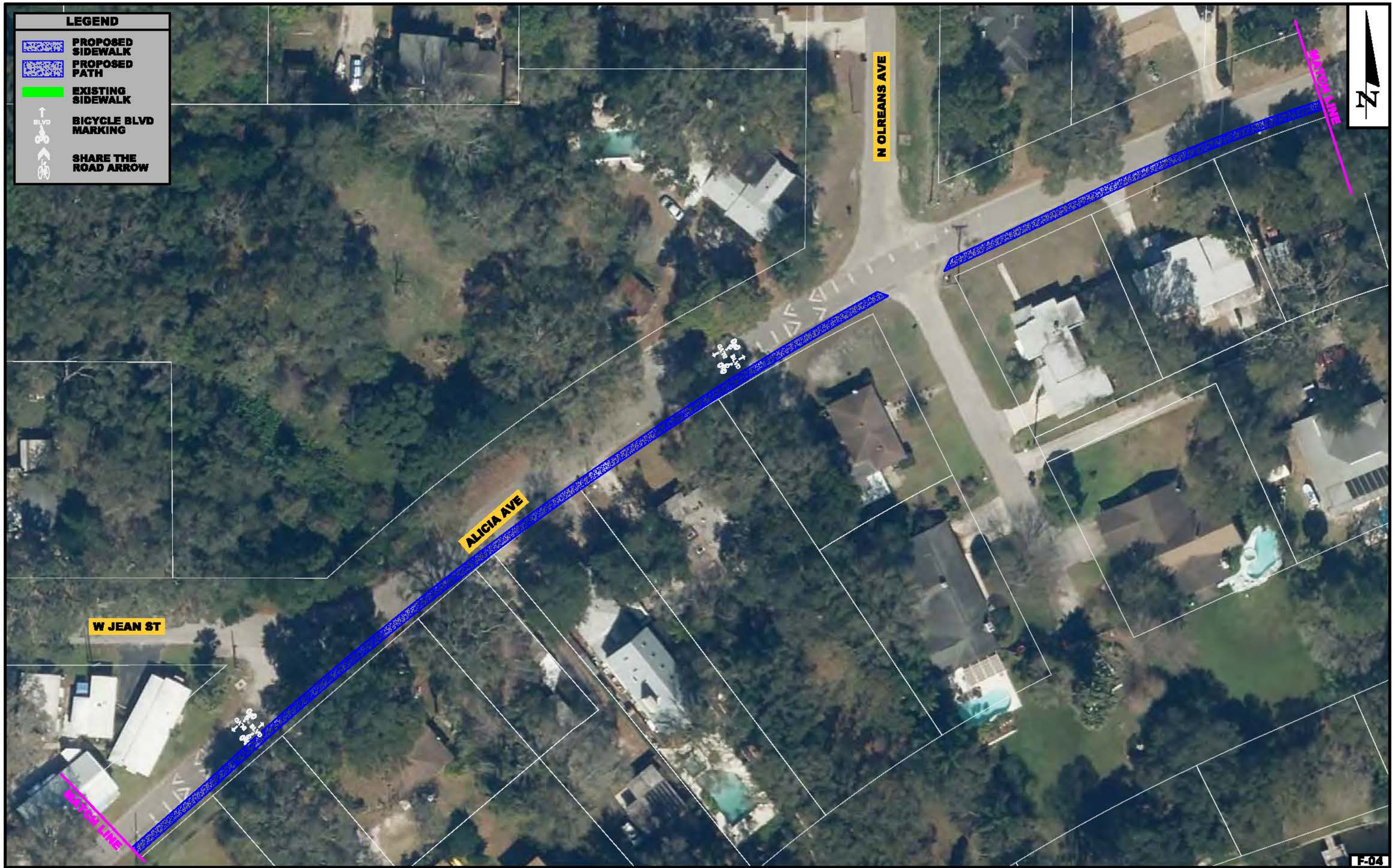
City of Tampa

Hillsborough MPO
Metropolitan Planning for Transportation

ATKINS | Walk-Bike Plan Phase V

0 10 50
Feet

City of Tampa Florida
Hillsborough MPO
Metropolitan Planning for Transportation



ATKINS | Walk-Bike Plan Phase V

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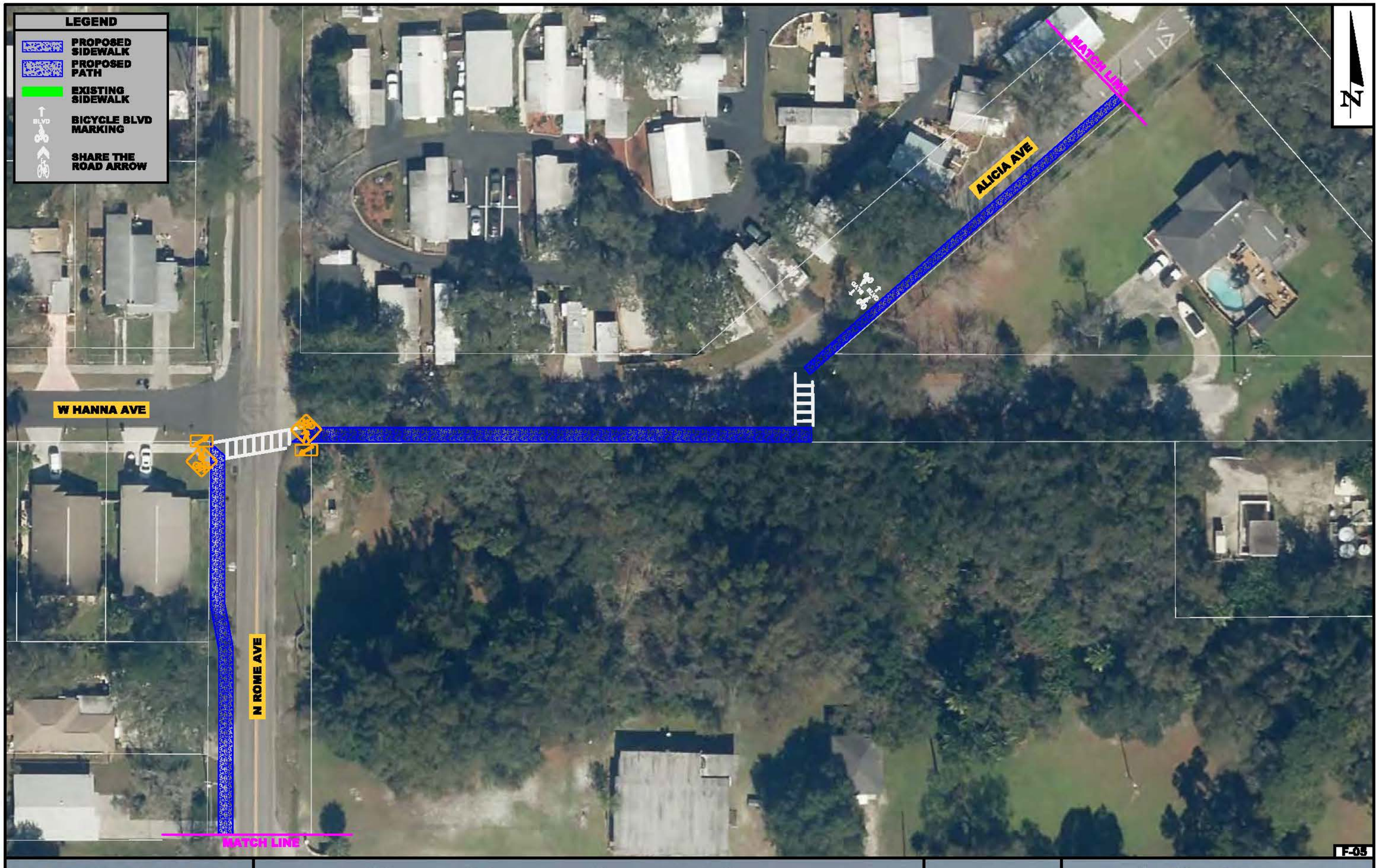
Feet

City of Tampa Florida

Hillsborough MPO
Metropolitan Planning for Transportation



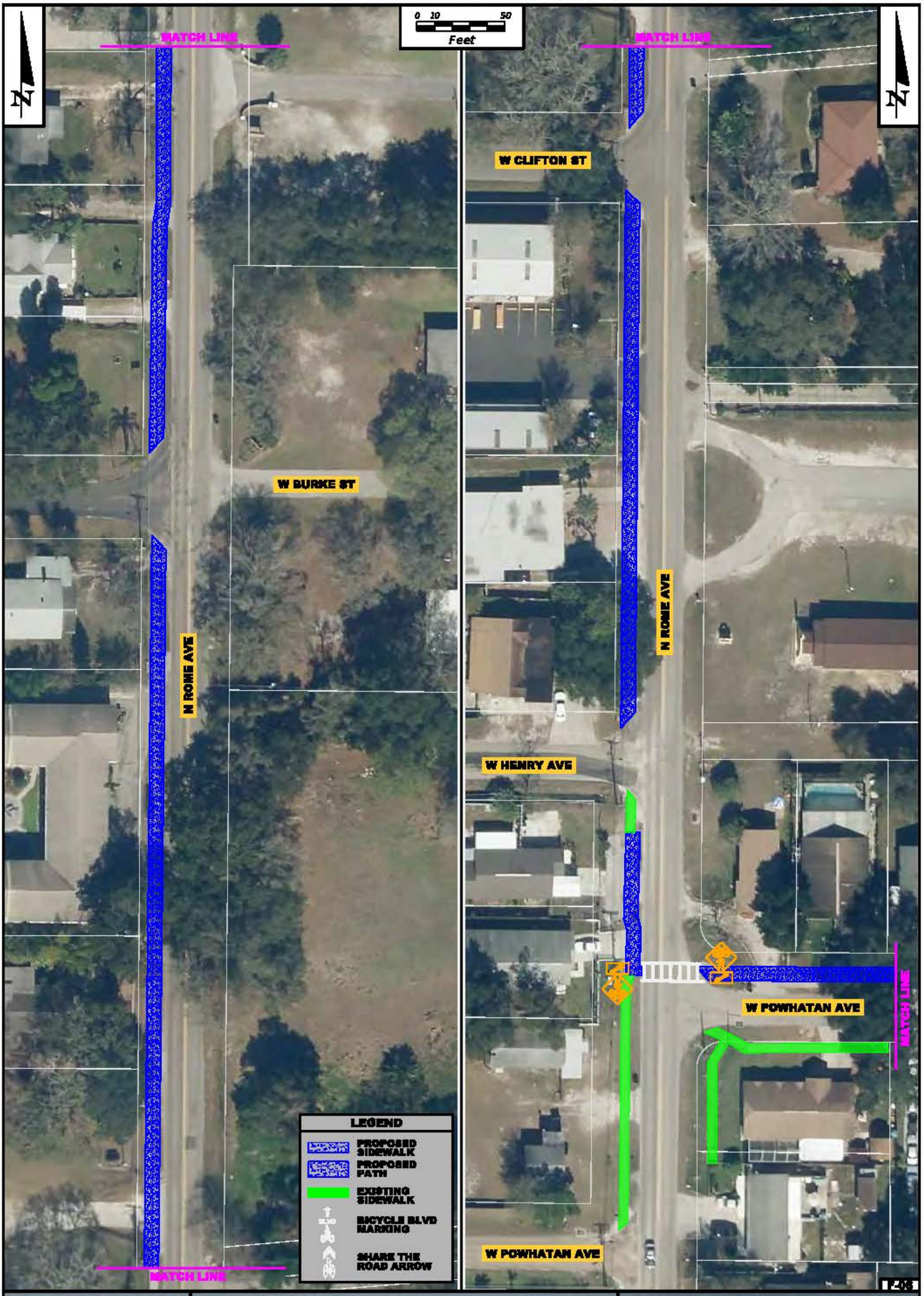
ATKINS

Walk-Bike Plan Phase V

0 10 50
Feet

City of Tampa

Hillsborough MPO
Metropolitan Planning
for Transportation


0 10 50
Feet
MATCH LINE
MATCH LINE
W CLIFTON ST
W BURKE ST
N ROME AVE
N ROME AVE
W HENRY AVE
W POWHATAN AVE
MATCH LINE
W POWHATAN AVE
MATCH LINE
LEGEND
PROPOSED SIDEWALK
PROPOSED PATH
EXISTING SIDEWALK
BICYCLE BLVD MARKING
SHARE THE ROAD ARROW

MATCH LINE

W POWHATAN AVE

N

BLVD

N RIVER SHORE DR

MATCH LINE

W RIO VISTA AVE

LEGEND

- PROPOSED SIDEWALK
- PROPOSED PATH
- EXISTING SIDEWALK
- BICYCLE BLVD MARKING
- SHARE THE ROAD ARROW

F-07

ATKINS

Walk-Bike Plan Phase V

0 10 50

Feet

City of Tampa Florida

Hillsborough MPO
Metropolitan Planning
for Transportation

MATCH LINE

W COMANCHE AVE

F-06

HILLSBOROUGH RIVER

N RIVER SHORE DR

W MOHAWK AVE

MATCH LINE

F-08

N

LEGEND

- PROPOSED SIDEWALK
- PROPOSED PATH
- EXISTING SIDEWALK
- BICYCLE BLVD MARKING
- SHARE THE ROAD ARROW

ATKINS

Walk-Bike Plan Phase V

0 10 50
Feet

City of Tampa

Hillsborough MPO
Metropolitan Planning
for Transportation

ATKINS | Walk-Bike Plan Phase V

0 10 50
Feet

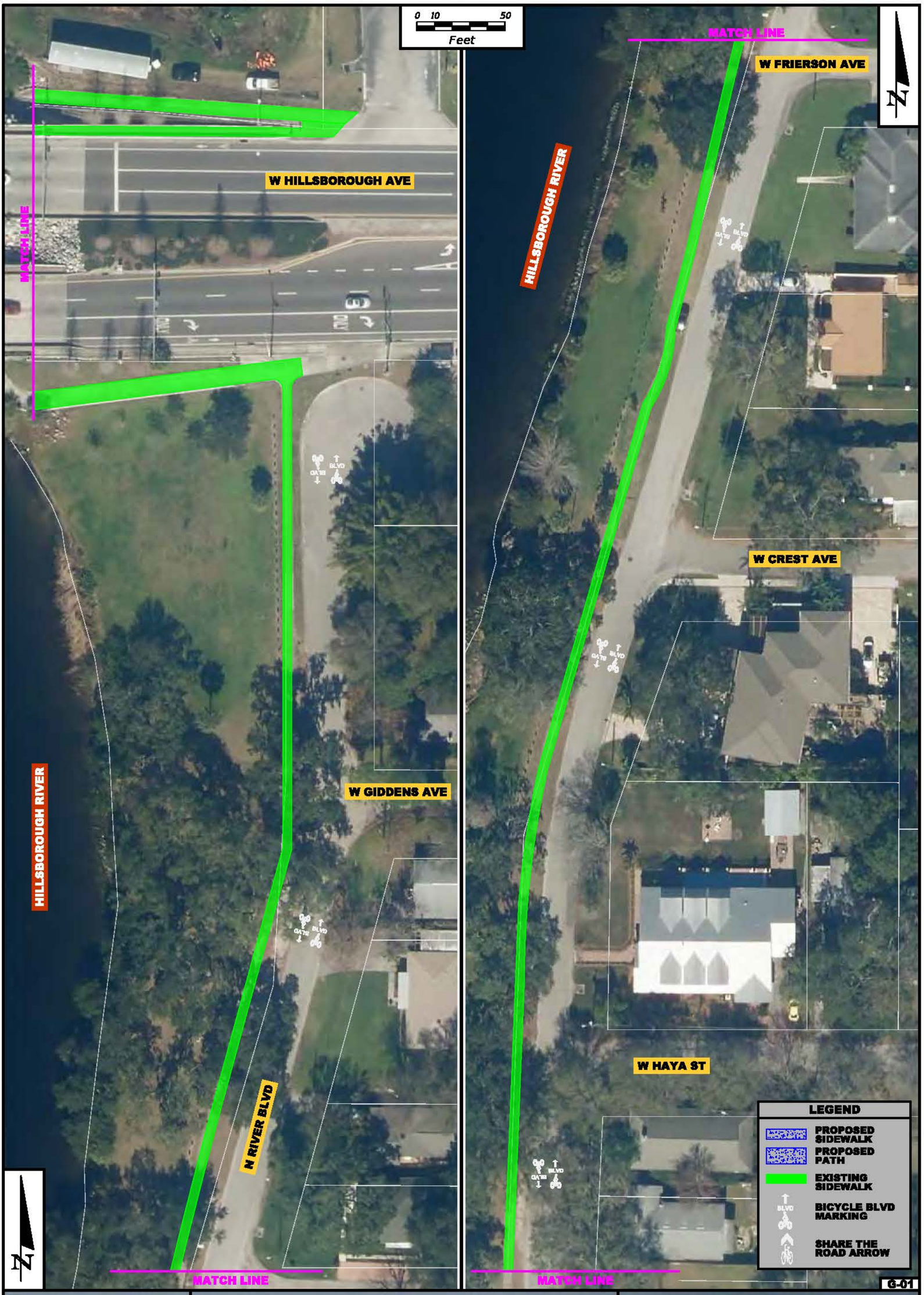
City of Tampa Florida | Hillsborough MPO Metropolitan Planning for Transportation

ATKINS | Walk-Bike Plan Phase V

0 10 50
Feet

City of Tampa Florida

Hillsborough MPO
Metropolitan Planning
for Transportation



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City of Tampa | Hillsborough MPO Metropolitan Planning for Transportation

ATKINS | Walk-Bike Plan Phase V | City of Tampa Florida | Hillsborough MPO Metropolitan Planning for Transportation

MATCH LINE

N RIVER BLVD

W LOUISIANA AVE

N

RIVERCREST PARK

W OSBORNE AVE

MATCH LINE

LEGEND

- PROPOSED SIDEWALK
- PROPOSED PATH
- EXISTING SIDEWALK
- BICYCLE BLVD MARKING
- SHARE THE ROAD ARROW

G-03

ATKINS

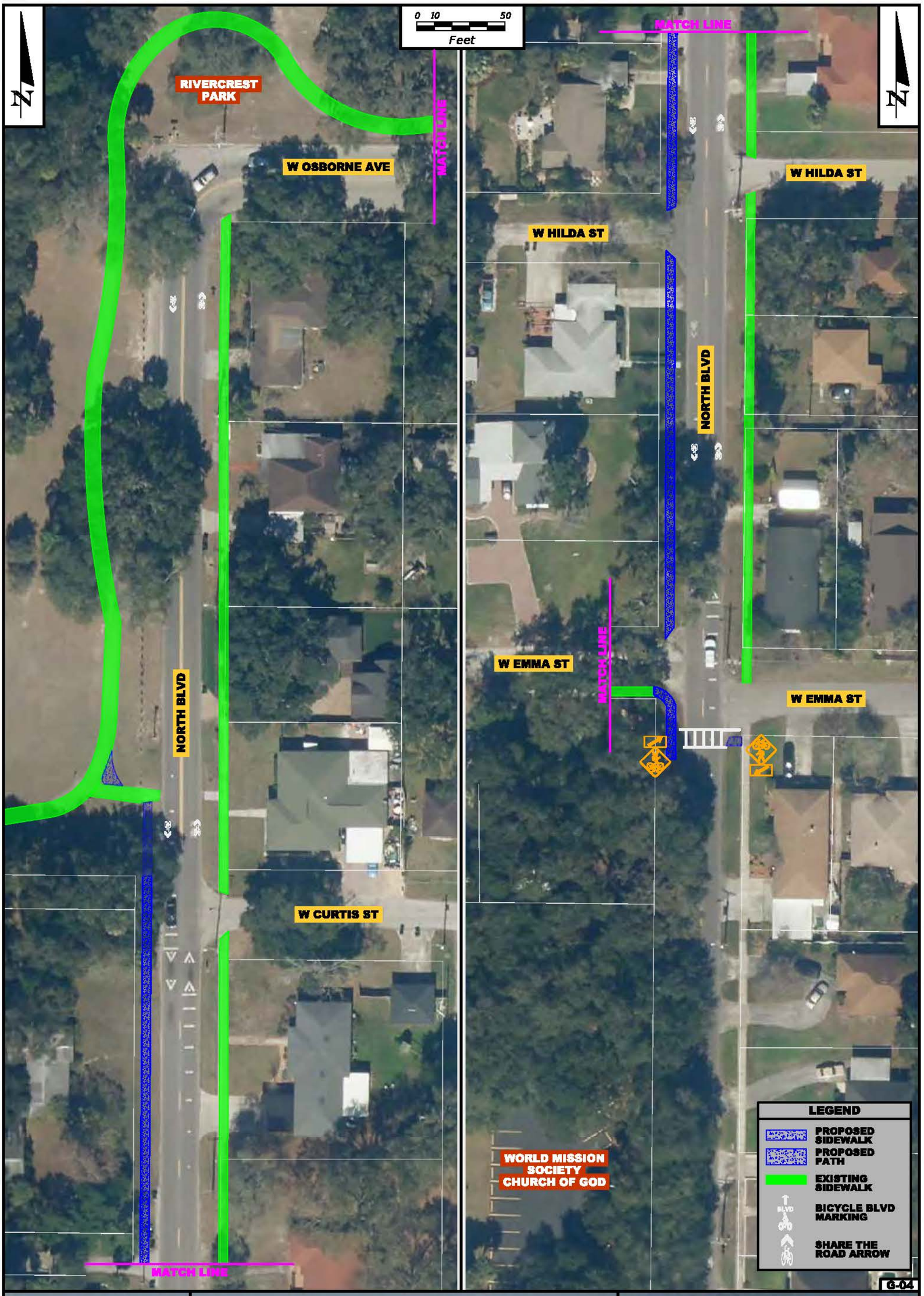
Walk-Bike Plan Phase V

0 10 50

Feet

City of Tampa Florida

Hillsborough MPO Metropolitan Planning for Transportation



ATKINS | Walk-Bike Plan Phase V

City of Tampa Florida

Hillsborough MPO Metropolitan Planning for Transportation

W EMMA ST

MATCH LINE

MATCH LINE

W EMMA ST

NORTH BLVD

REED PROPERTY

WORLD MISSION SOCIETY CHURCH OF GOD

N

LEGEND

- PROPOSED SIDEWALK
- PROPOSED PATH
- EXISTING SIDEWALK
- BICYCLE BLVD MARKING
- SHARE THE ROAD ARROW

G-05

ATKINS

Walk-Bike Plan Phase V

0 10 50

Feet

City of Tampa

Hillsborough MPO
Metropolitan Planning
for Transportation

ATKINS | Walk-Bike Plan Phase V

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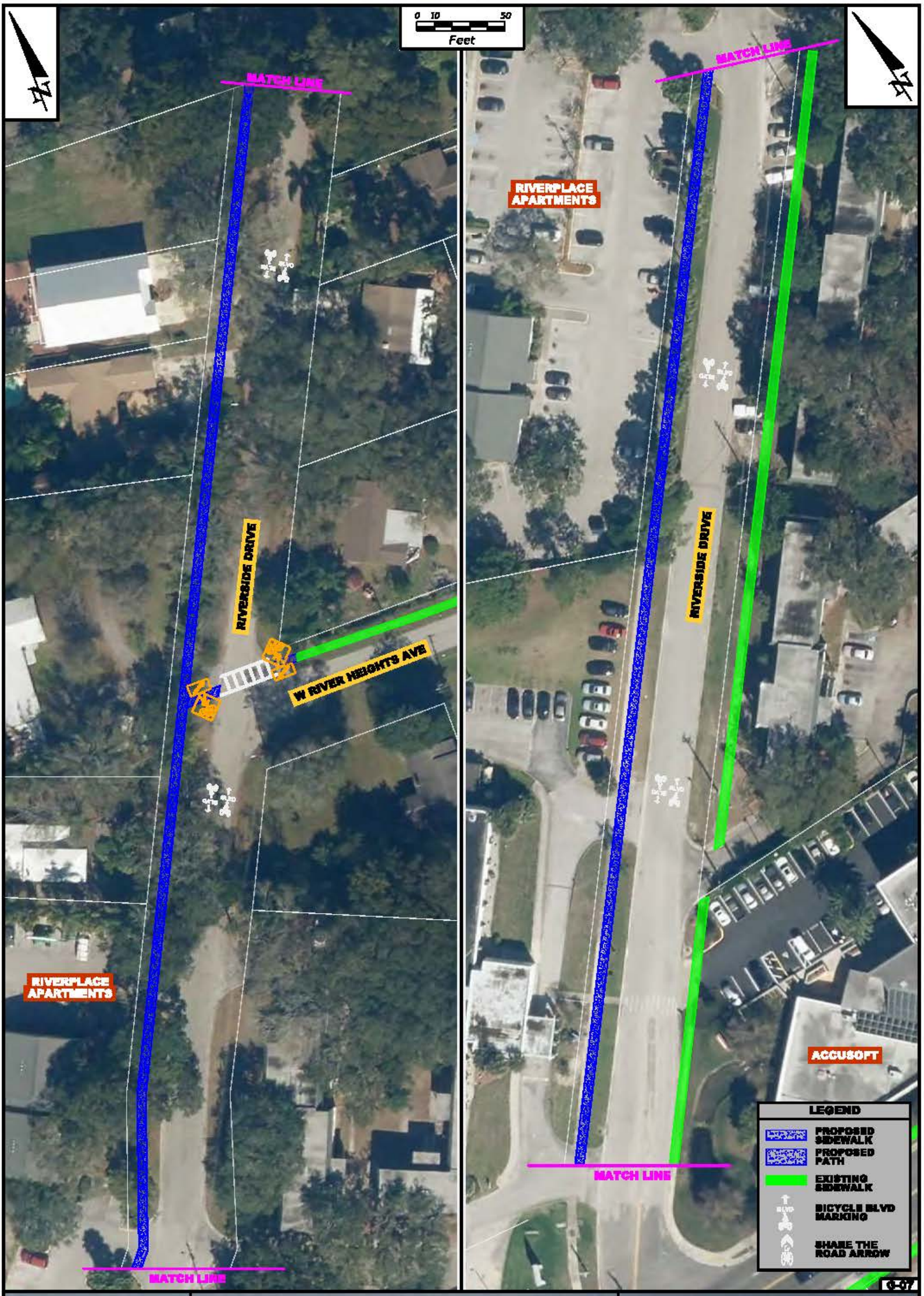
Feet

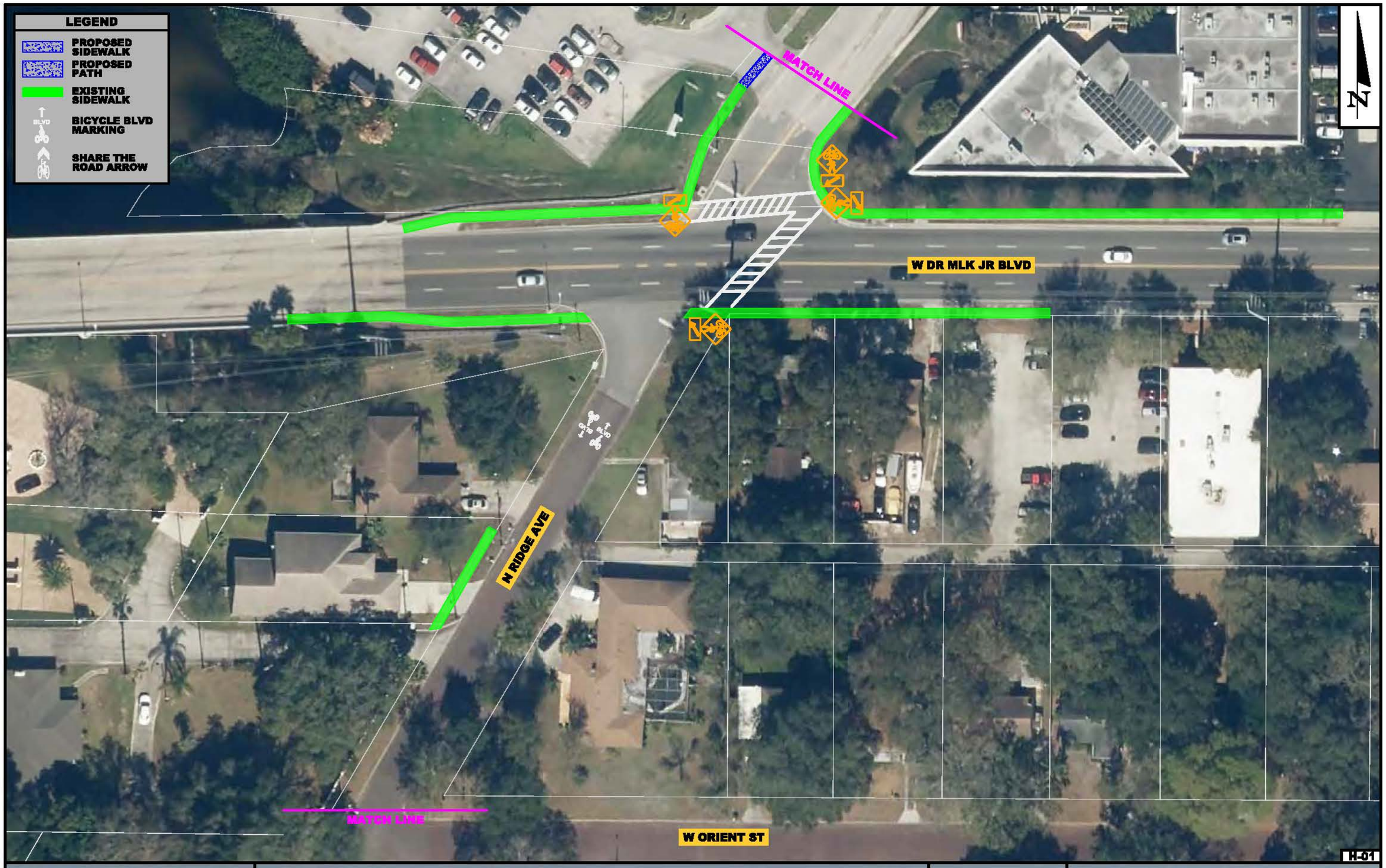
City of Tampa Florida | Hillsborough MPO Metropolitan Planning for Transportation



ATKINS | Walk-Bike Plan Phase V

City of Tampa Florida

Hillsborough MPO Metropolitan Planning for Transportation



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Feet

City of Tampa Florida | Hillsborough MPO Metropolitan Planning for Transportation

H-02

ATKINS | Walk-Bike Plan Phase V

City of Tampa Florida

Hillsborough MPO Metropolitan Planning for Transportation

ATKINS | Walk-Bike Plan Phase V | City of Tampa Florida | Hillsborough MPO Metropolitan Planning for Transportation

ATKINS | Walk-Bike Plan Phase V

City of Tampa Florida | Hillsborough MPO Metropolitan Planning for Transportation

LEGEND

- PROPOSED SIDEWALK
- PROPOSED PATH
- EXISTING SIDEWALK
- BICYCLE BLVD MARKING
- SHARE THE ROAD ARROW

DURAN PARK

N DECATUR AVE

HARDING AVE

CORAL ST

MATCH LINE

MATCH LINE

HARDING AVE

CORAL ST

MATCH LINE

MATCH LINE

H-05

ATKINS

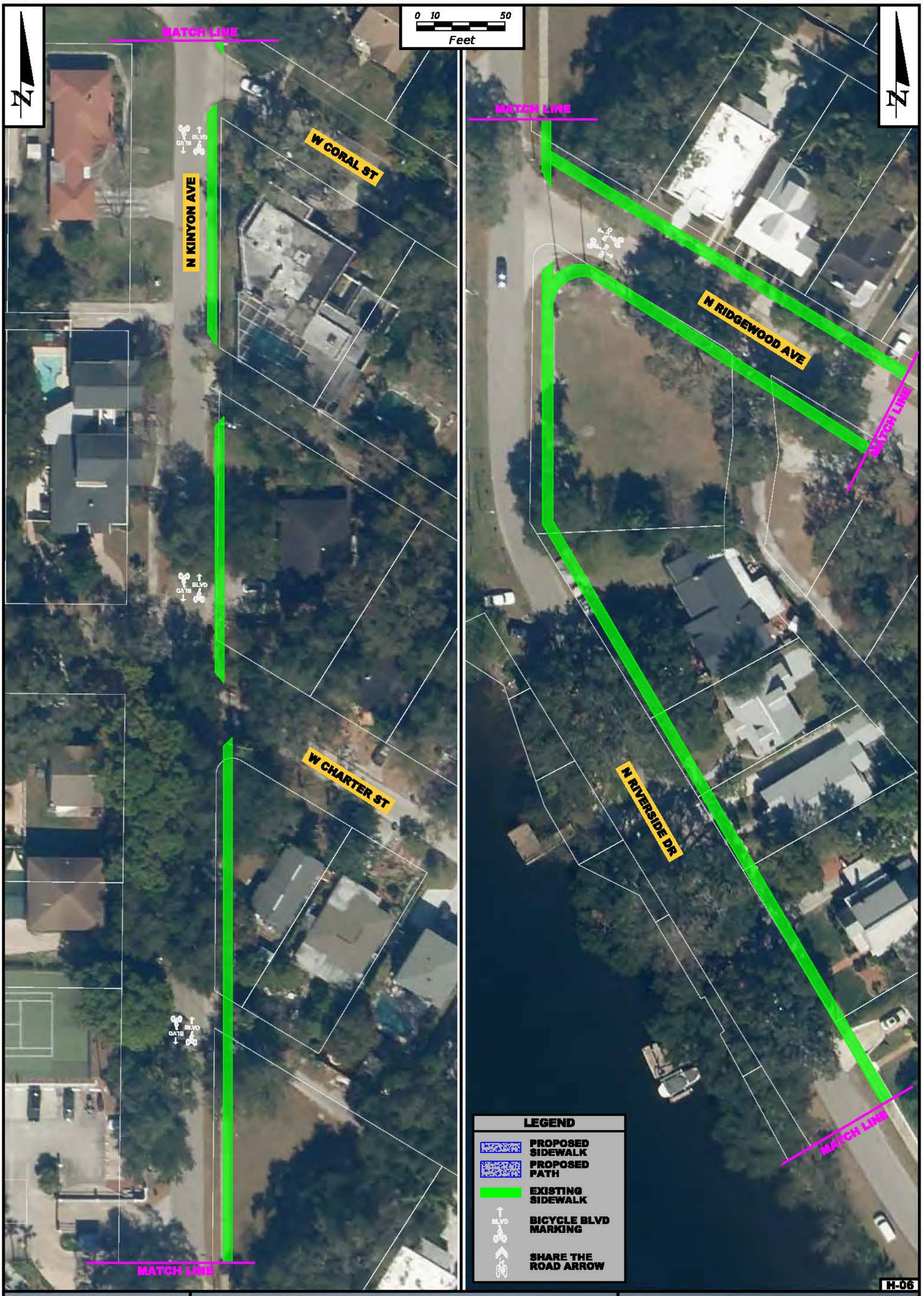
Walk-Bike Plan Phase V

0 10 50

Feet

City of Tampa Florida

Hillsborough MPO
Metropolitan Planning
for Transportation



ATKINS | Walk-Bike Plan Phase V

City of Tampa Florida

Hillsborough MPO Metropolitan Planning for Transportation

MATCH LINE

N RIDGEWOOD AVE

N OAKDALE AVE

W WARREN AVE

N RIVERSIDE DR

MATCH LINE

MATCH LINE

N

LEGEND

PROPOSED SIDEWALK

PROPOSED PATH

EXISTING SIDEWALK

BLVD

BICYCLE BLVD MARKING

SHARE THE ROAD ARROW

H-07

ATKINS

Walk-Bike Plan Phase V

0 10 50

Feet

City of Tampa

Hillsborough MPO
Metropolitan Planning
for Transportation

MATCH LINE

N RIDGEWOOD AVE

N ESSEX CT

W COLUMBUS DR

W COLUMBUS DR

N RIDGEWOOD AVE

MATCH LINE

N

LEGEND

- PROPOSED SIDEWALK
- PROPOSED PATH
- EXISTING SIDEWALK
- BICYCLE BLVD MARKING
- SHARE THE ROAD ARROW

H-08

ATKINS

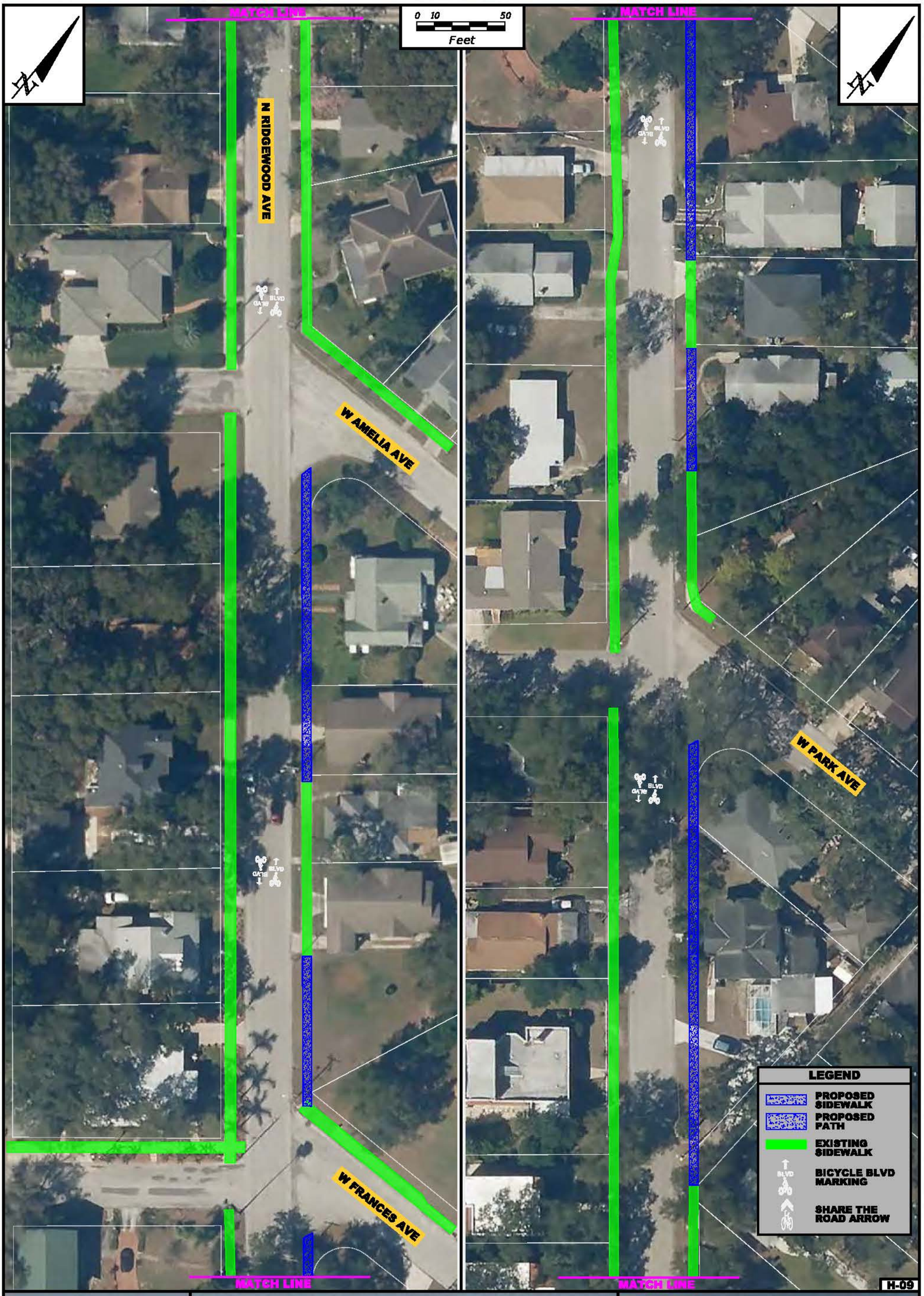
Walk-Bike Plan Phase V

0 10 50

Feet

City of Tampa

Hillsborough MPO
Metropolitan Planning
for Transportation



ATKINS | Walk-Bike Plan Phase V

City of Tampa Florida

Hillsborough MPO Metropolitan Planning for Transportation

MATCH LINE

GLENWOOD DR

GLENWOOD DR

W ROSS AVE

N RIDGEWOOD AVE

NORTH BLVD

W PALM AVE

N

LEGEND

- PROPOSED SIDEWALK
- PROPOSED PATH
- EXISTING SIDEWALK
- BICYCLE BLVD MARKING
- SHARE THE ROAD ARROW

H-10

ATKINS

Walk-Bike Plan Phase V

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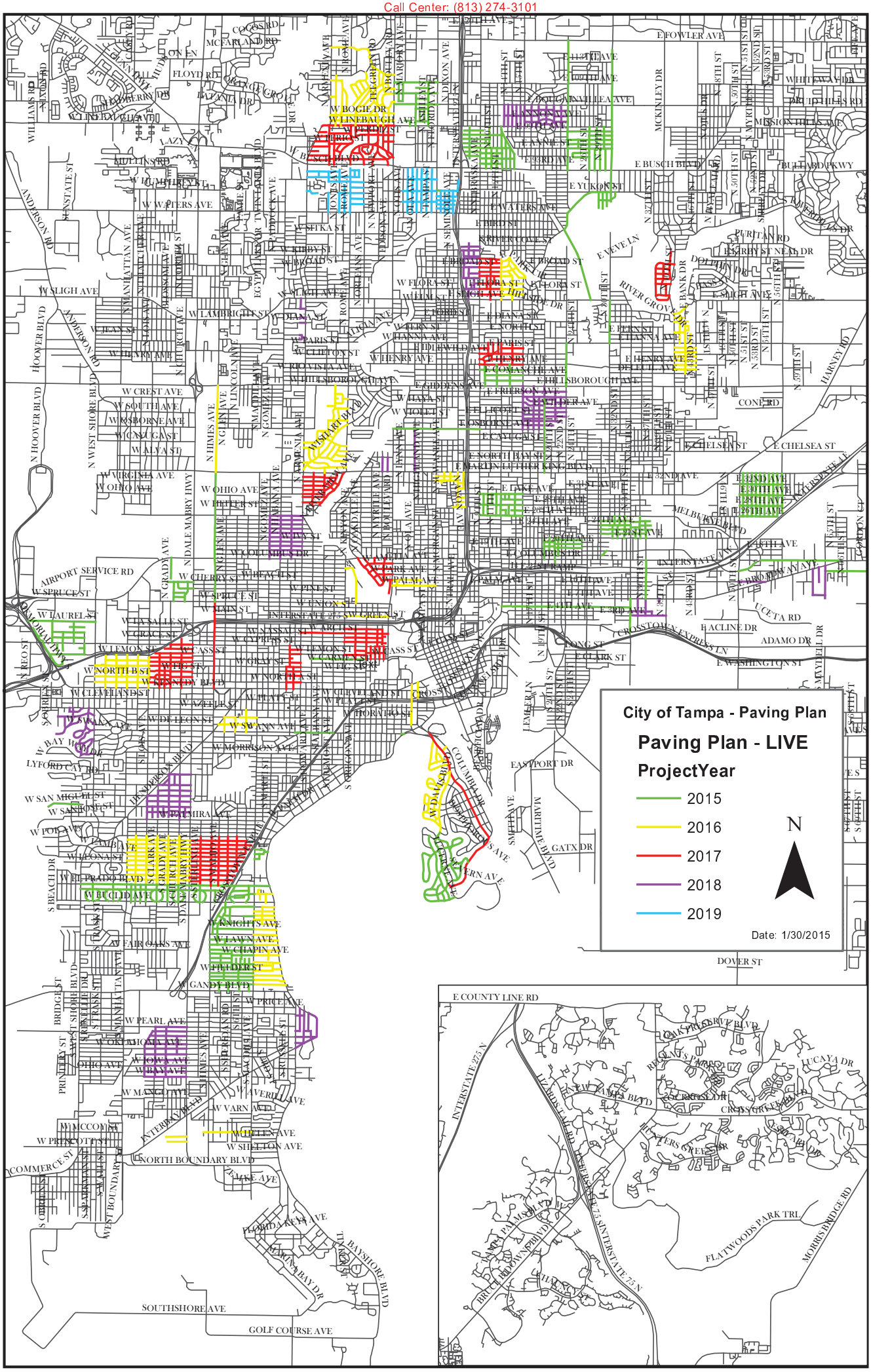
Feet

City of Tampa Florida

Hillsborough MPO
Metropolitan Planning
for Transportation

Appendix B: City of Tampa Paving Plan 2015-2019

Call Center: (813) 274-3101



Appendix C: Construction Cost Estimates

Walk Bike Phase V

Construction Cost Estimate

Description	Segment A: Adamo to E 21st Ave & N 29th St	Segment B: E 21st Ave & N 29th St to Hillsborough	Segment C: Hillsborough to 22nd St Park	Segment C: 22nd St Park	Segment D: 22nd St. Park to Sulphur Spring	Segment E: Sulphur Spring and River Tower Park	Segment E: Sulphur Spring to Sligh Ave.	Segment F: Sligh Ave. to Hillsborough Ave.	Segment G: Hillsborough Ave. to MLK	Segment G: Rivercrest and Reed Park	Segment H: MLK to Palm	Totals
Clearing and Grubbing	$25,181	$42,682	$29,634	$19,824	$1,587	$11,411	$15,302	$32,650	$10,148	$9,358	$9,388	$207,166
Mailbox F&I	$153	$1,836	$306	$0	$0	$0	$1,836	$5,967	$306	$0	$612	$11,017
6" Concrete	$134,435	$222,960	$161,255	$123,155	$6,467	$70,973	$70,908	$167,659	$46,330	$55,962	$45,835	$1,105,939
Performance Turf, Sod	$4,890	$8,609	$5,556	$2,719	$439	$1,560	$3,675	$6,774	$2,483	$1,426	$2,102	$40,233
Signalization	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$217,257	$217,257
Signing	$7,075	$4,127	$2,358	$1,179	$0	$0	$1,769	$1,179	$2,358	$0	$590	$20,637
Utility Pole Relocation	$45,000	$185,000	$50,000	$0	$0	$0	$10,000	$105,000	$10,000	$0	$55,000	$460,000
Pavement Markings	$14,783	$6,812	$4,321	$318	$12,701	$0	$11,438	$20,285	$15,858	$0	$30,894	$117,410
Bridge Widening	$0	$0	$0	$0	$0	$436,540	$0	$0	$0	$167,900	$0	$0
Subtotal	**$231,517**	**$472,027**	**$253,429**	**$147,196**	**$21,194**	**$520,485**	**$114,929**	**$339,516**	**$87,483**	**$234,646**	**$361,678**	**$2,784,099**
Maintenance of Traffic (10%)	$23,152	$47,203	$25,343	$14,720	$2,119	$52,048	$11,493	$33,952	$8,748	$23,465	$36,168	$278,410
Mobilization (10%)	$25,467	$51,923	$27,877	$16,192	$2,331	$57,253	$12,642	$37,347	$9,623	$25,811	$39,785	$306,251
Project Unknowns (20%)	$56,027	$114,230	$61,330	$35,621	$5,129	$125,957	$27,813	$82,163	$21,171	$56,784	$87,526	$673,752
Construction Cost Total	**$336,163**	**$685,383**	**$367,979**	**$213,729**	**$30,773**	**$755,744**	**$166,877**	**$492,977**	**$127,026**	**$340,705**	**$525,157**	**$4,042,512**
Design (15%)	$50,424	$102,807	$55,197	$32,059	$4,616	$113,362	$25,031	$73,947	$19,054	$51,106	$78,773	$606,377
CEI (20%)	$67,233	$137,077	$73,596	$42,746	$6,155	$151,149	$33,375	$98,595	$25,405	$68,141	$105,031	$808,502
Total Component Cost	**$453,820**	**$925,267**	**$496,772**	**$288,534**	**$41,544**	**$1,020,254**	**$225,283**	**$665,519**	**$171,485**	**$459,952**	**$708,961**	**$5,457,391**

Total Project Cost	**$5,457,391**

Note:

1. Unit prices for roadway costs were derived from Area 8 Historical Cost as of July 2015.
2. Costs do not include drainage ditch relocations.

Pay Item	Description	Quantity	Unit	Unit Cost	Total
110-1-1	Clearing and Grubbing	1.17	AC	$21,589.50	$25,181
110-7-1	Mailbox F&I Single	1.00	EA	$153.01	$153
522-2	6" Concrete	3624.56	SY	$37.09	$134,435
570-1-2	Performance Turf, Sod	2020.56	SY	$2.42	$4,890
654-3-10	Signalization	0.00	EA	$2,939.67	$0
700-1-11	Signing	24.00	EA	$294.81	$7,075
MISC	Utility Pole Relocation	9.00	EA	$5,000.00	$45,000
	Pavement Markings				$14,783
710-11-160	Painted Pavt, Message	60.00	EA	$38.65	$2,319
711-11-160	Thermoplastic, Message	60.00	EA	$112.55	$6,753
710-11-123	Painted Pavt, 12" White	690.00	LF	$0.71	$490
711-11-123	Thermoplastic, 12" White	690.00	LF	$2.09	$1,442
710-11-125	Painted Pavt, 24" White	660.00	LF	$1.18	$779
711-11-125	Thermoplastic, 24" White	660.00	LF	$4.19	$2,765
710-11-131	Painted Pavt, 6" Skip White	0.14	GM	$381.09	$53
711-15-131	Thermoplastic, 6" Skip White	0.14	GM	$1,299.11	$182

Pay Item	Description	Quantity	Unit	Unit Cost	Total
110-1-1	Clearing and Grubbing	1.98	AC	$21,589.50	$42,682
110-7-1	Mailbox F&I Single	12.00	EA	$153.01	$1,836
522-2	6" Concrete	6011.33	SY	$37.09	$222,960
570-1-2	Performance Turf, Sod	3557.33	SY	$2.42	$8,609
654-3-10	Signalization	0.00	EA	$2,939.67	$0
700-1-11	Signing	14.00	EA	$294.81	$4,127
MISC	Utility Pole Relocation	37.00	EA	$5,000.00	$185,000
	Pavement Markings				$6,812
710-11-160	Painted Pavt, Message	20.00	EA	$38.65	$773
711-11-160	Thermoplastic, Message	20.00	EA	$112.55	$2,251
710-11-123	Painted Pavt, 12" White	360.00	LF	$0.71	$256
711-11-123	Thermoplastic, 12" White	360.00	LF	$2.09	$752
710-11-125	Painted Pavt, 24" White	380.00	LF	$1.18	$448
711-11-125	Thermoplastic, 24" White	380.00	LF	$4.19	$1,592
710-11-131	Painted Pavt, 6" Skip White	0.44	GM	$381.09	$168
711-15-131	Thermoplastic, 6" Skip White	0.44	GM	$1,299.11	$572

Pay Item	Description	Quantity	Unit	Unit Cost	Total
110-1-1	Clearing and Grubbing	1.37	AC	$21,589.50	$29,634
110-7-1	Mailbox F&I Single	2.00	EA	$153.01	$306
522-2	6" Concrete	4347.67	SY	$37.09	$161,255
570-1-2	Performance Turf, Sod	2295.67	SY	$2.42	$5,556
654-3-10	Signalization	0.00	EA	$2,939.67	$0
700-1-11	Signing	8.00	EA	$294.81	$2,358
MISC	Utility Pole Relocation	10.00	EA	$5,000.00	$50,000
	Pavement Markings				$4,321
710-11-160	Painted Pavt, Message	8.00	EA	$38.65	$309
711-11-160	Thermoplastic, Message	8.00	EA	$112.55	$900
710-11-123	Painted Pavt, 12" White	353.00	LF	$0.71	$251
711-11-123	Thermoplastic, 12" White	353.00	LF	$2.09	$738
710-11-125	Painted Pavt, 24" White	364.00	LF	$1.18	$430
711-11-125	Thermoplastic, 24" White	364.00	LF	$4.19	$1,525
710-11-131	Painted Pavt, 6" Skip White	0.10	GM	$381.09	$38
711-15-131	Thermoplastic, 6" Skip White	0.10	GM	$1,299.11	$130

Pay Item	Description	Quantity	Unit	Unit Cost	Total
110-1-1	Clearing and Grubbing	0.92	AC	$21,589.50	$19,824
110-7-1	Mailbox F&I Single	0.00	EA	$153.01	$0
522-2	6" Concrete	3320.45	SY	$37.09	$123,155
570-1-2	Performance Turf, Sod	1123.68	SY	$2.42	$2,719
654-3-10	Signalization	0.00	EA	$2,939.67	$0
700-1-11	Signing	4.00	EA	$294.81	$1,179
MISC	Utility Pole Relocation	0.00	EA	$5,000.00	$0
	Pavement Markings				$318
710-11-160	Painted Pavt, Message	0.00	EA	$38.65	$0
711-11-160	Thermoplastic, Message	0.00	EA	$112.55	$0
710-11-123	Painted Pavt, 12" White	37.00	LF	$0.71	$26
711-11-123	Thermoplastic, 12" White	37.00	LF	$2.09	$77
710-11-125	Painted Pavt, 24" White	40.00	LF	$1.18	$47
711-11-125	Thermoplastic, 24" White	40.00	LF	$4.19	$168
710-11-131	Painted Pavt, 6" Skip White	0.00	GM	$381.09	$0
711-15-131	Thermoplastic, 6" Skip White	0.00	GM	$1,299.11	$0

Pay Item	Description	Quantity	Unit	Unit Cost	Total
110-1-1	Clearing and Grubbing	0.07	AC	$21,589.50	$1,587
110-7-1	Mailbox F&I Single	0.00	EA	$153.01	$0
522-2	6" Concrete	174.36	SY	$37.09	$6,467
570-1-2	Performance Turf, Sod	181.35	SY	$2.42	$439
654-3-10	Signalization	0.00	EA	$2,939.67	$0
700-1-11	Signing	0.00	EA	$294.81	$0
MISC	Utility Pole Relocation	0.00	EA	$5,000.00	$0
	Pavement Markings				$12,701
710-11-160	Painted Pavt, Message	84.00	EA	$38.65	$3,247
711-11-160	Thermoplastic, Message	84.00	EA	$112.55	$9,454
710-11-123	Painted Pavt, 12" White	0.00	LF	$0.71	$0
711-11-123	Thermoplastic, 12" White	0.00	LF	$2.09	$0
710-11-125	Painted Pavt, 24" White	0.00	LF	$1.18	$0
711-11-125	Thermoplastic, 24" White	0.00	LF	$4.19	$0
710-11-131	Painted Pavt, 6" Skip White	0.00	GM	$381.09	$0
711-15-131	Thermoplastic, 6" Skip White	0.00	GM	$1,299.11	$0

Pay Item	Description	Quantity	Unit	Unit Cost	Total
110-1-1	Clearing and Grubbing	0.53	AC	$21,589.50	$11,411
110-7-1	Mailbox F&I Single	0.00	EA	$153.01	$0
522-2	6" Concrete	1913.54	SY	$37.09	$70,973
570-1-2	Performance Turf, Sod	644.71	SY	$2.42	$1,560
654-3-10	Signalization	0.00	EA	$2,939.67	$0
700-1-11	Signing	0.00	EA	$294.81	$0
MISC	Utility Pole Relocation	0.00	EA	$5,000.00	$0
	Pavement Markings				$0
710-11-160	Painted Pavt, Message	0.00	EA	$38.65	$0
711-11-160	Thermoplastic, Message	0.00	EA	$112.55	$0
710-11-123	Painted Pavt, 12" White	0.00	LF	$0.71	$0
711-11-123	Thermoplastic, 12" White	0.00	LF	$2.09	$0
710-11-125	Painted Pavt, 24" White	0.00	LF	$1.18	$0
711-11-125	Thermoplastic, 24" White	0.00	LF	$4.19	$0
710-11-131	Painted Pavt, 6" Skip White	0.00	GM	$381.09	$0
711-15-130	Thermoplastic, 6" Skip White	0.00	GM	$1,298.11	$0
	Bridge Widening	1560.00	SF	$273.00	$436,540

Pay Item	Description	Quantity	Unit	Unit Cost	Total
110-1-1	Clearing and Grubbing	0.71	AC	$21,589.50	$15,302
110-7-1	Mailbox F&I Single	12.00	EA	$153.01	$1,836
522-2	6" Concrete	1911.78	SY	$37.09	$70,908
570-1-2	Performance Turf, Sod	1518.78	SY	$2.42	$3,675
654-3-10	Signalization	0.00	EA	$2,939.67	$0
700-1-11	Signing	6.00	EA	$294.81	$1,769
MISC	Utility Pole Relocation	2.00	EA	$5,000.00	$10,000
	Pavement Markings				$11,438
710-11-160	Painted Pavt, Message	44.00	EA	$38.65	$1,701
711-11-160	Thermoplastic, Message	44.00	EA	$112.55	$4,952
710-11-123	Painted Pavt, 12" White	612.00	LF	$0.71	$435
711-11-123	Thermoplastic, 12" White	612.00	LF	$2.09	$1,279
710-11-125	Painted Pavt, 24" White	572.00	LF	$1.18	$675
711-11-125	Thermoplastic, 24" White	572.00	LF	$4.19	$2,397
710-11-131	Painted Pavt, 6" Skip White	0.00	GM	$381.09	$0
711-15-131	Thermoplastic, 6" Skip White	0.00	GM	$1,299.11	$0

Pay Item	Description	Quantity	Unit	Unit Cost	Total
110-1-1	Clearing and Grubbing	1.51	AC	$21,589.50	$32,650
110-7-1	Mailbox F&I Single	39.00	EA	$153.01	$5,967
522-2	6" Concrete	4520.33	SY	$37.09	$167,659
570-1-2	Performance Turf, Sod	2799.33	SY	$2.42	$6,774
654-3-10	Signalization	0.00	EA	$2,939.67	$0
700-1-11	Signing	4.00	EA	$294.81	$1,179
MISC	Utility Pole Relocation	21.00	EA	$5,000.00	$105,000
	Pavement Markings				$20,285
710-11-160	Painted Pavt, Message	120.00	EA	$38.65	$4,638
711-11-160	Thermoplastic, Message	120.00	EA	$112.55	$13,506
710-11-123	Painted Pavt, 12" White	268.00	LF	$0.71	$190
711-11-123	Thermoplastic, 12" White	268.00	LF	$2.09	$560
710-11-125	Painted Pavt, 24" White	259.00	LF	$1.18	$306
711-11-125	Thermoplastic, 24" White	259.00	LF	$4.19	$1,085
710-11-131	Painted Pavt, 6" Skip White	0.00	GM	$381.09	$0
711-15-131	Thermoplastic, 6" Skip White	0.00	GM	$1,299.11	$0

Pay Item	Description	Quantity	Unit	Unit Cost	Total
110-1-1	Clearing and Grubbing	0.47	AC	$21,589.50	$10,148
110-7-1	Mailbox F&I Single	2.00	EA	$153.01	$306
522-2	6" Concrete	1249.11	SY	$37.09	$46,330
570-1-2	Performance Turf, Sod	1026.00	SY	$2.42	$2,483
654-3-10	Signalization	0.00	EA	$2,939.67	$0
700-1-11	Signing	8.00	EA	$294.81	$2,358
MISC	Utility Pole Relocation	2.00	EA	$5,000.00	$10,000
	Pavement Markings				$15,858
710-11-160	Painted Pavt, Message	86.00	EA	$38.65	$3,324
711-11-160	Thermoplastic, Message	86.00	EA	$112.55	$9,679
710-11-123	Painted Pavt, 12" White	331.00	LF	$0.71	$235
711-11-123	Thermoplastic, 12" White	331.00	LF	$2.09	$692
710-11-125	Painted Pavt, 24" White	359.00	LF	$1.18	$424
711-11-125	Thermoplastic, 24" White	359.00	LF	$4.19	$1,504
710-11-131	Painted Pavt, 6" Skip White	0.00	GM	$381.09	$0
711-15-131	Thermoplastic, 6" Skip White	0.00	GM	$1,299.11	$0

Pay Item	Description	Quantity	Unit	Unit Cost	Total
110-1-1	Clearing and Grubbing	0.43	AC	$21,589.50	$9,358
110-7-1	Mailbox F&I Single	0.00	EA	$153.01	$0
522-2	6" Concrete	1508.81	SY	$37.09	$55,962
570-1-2	Performance Turf, Sod	589.11	SY	$2.42	$1,426
654-3-10	Signalization	0.00	EA	$2,939.67	$0
700-1-11	Signing	0.00	EA	$294.81	$0
MISC	Utility Pole Relocation	0.00	EA	$5,000.00	$0
	Pavement Markings				$0
710-11-160	Painted Pavt, Message	0.00	EA	$38.65	$0
711-11-160	Thermoplastic, Message	0.00	EA	$112.55	$0
710-11-123	Painted Pavt, 12" White	0.00	LF	$0.71	$0
711-11-123	Thermoplastic, 12" White	0.00	LF	$2.09	$0
710-11-125	Painted Pavt, 24" White	0.00	LF	$1.18	$0
711-11-125	Thermoplastic, 24" White	0.00	LF	$4.19	$0
710-11-131	Painted Pavt, 6" Skip White	0.00	GM	$381.09	$0
711-15-130	Thermoplastic, 6" Skip White	0.00	GM	$1,298.11	$0
	Bridge Widening	600.00	SF	$273.00	$167,900

Pay Item	Description	Quantity	Unit	Unit Cost	Total
110-1-1	Clearing and Grubbing	0.43	AC	$21,589.50	$9,388
110-7-1	Mailbox F&I Single	4.00	EA	$153.01	$612
522-2	6" Concrete	1235.78	SY	$37.09	$45,835
570-1-2	Performance Turf, Sod	868.78	SY	$2.42	$2,102
654-3-10	Signalization	4.00	EA	$2,939.67	$11,759
MISC	Mast Arm	2.00	EA	$102,749.26	$205,499
				Total	$217,257
700-1-11	Signing	2.00	EA	$294.81	$590
MISC	Utility Pole Relocation	11.00	EA	$5,000.00	$55,000
	Pavement Markings				$30,894
710-11-160	Painted Pavt, Message	180.00	EA	$38.65	$6,957
711-11-160	Thermoplastic, Message	180.00	EA	$112.55	$20,259
710-11-123	Painted Pavt, 12" White	487.00	LF	$0.71	$346
711-11-123	Thermoplastic, 12" White	487.00	LF	$2.09	$1,018
710-11-125	Painted Pavt, 24" White	431.00	LF	$1.18	$509
711-11-125	Thermoplastic, 24" White	431.00	LF	$4.19	$1,806
710-11-131	Painted Pavt, 6" Skip White	0.00	GM	$381.09	$0
711-15-131	Thermoplastic, 6" Skip White	0.00	GM	$1,299.11	$0