BROOKLYN
NEIGHBORHOOD
ROAD DIET STUDY

DOWNTOWN
INVESTMENT AUTHORITY
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ACKNOWLEDGMENTS

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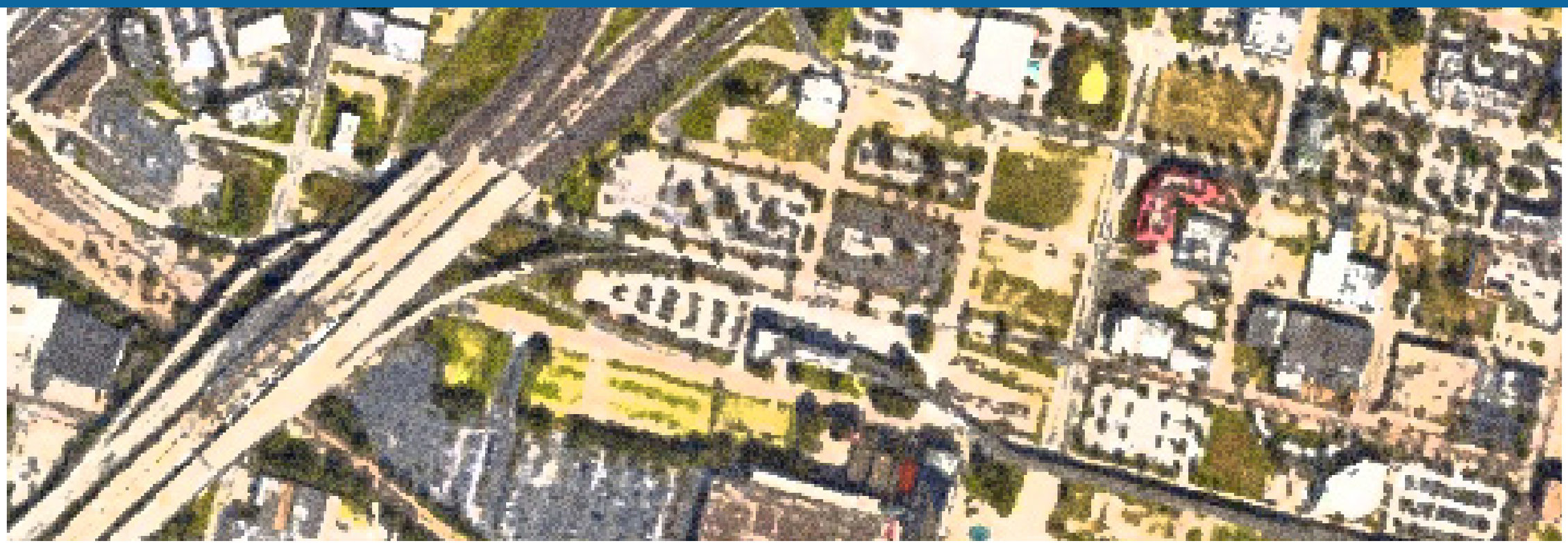

FOREWARD

The City of Jacksonville's Downtown Investment Authority (DIA) has embarked on creating safe and viable streets in the downtown districts for the residents and visitors to our area. The Brooklyn Neighborhood is an example of neighborhood revitalization in which the streets play a major role in the economic growth of the adjacent land uses. The neighborhood is unique with its boundaries being the St John's River waterfront, McCoy Creek, and I-95. It is adjacent to the Five Points and LaVilla neighborhoods and close to Downtown and San Marco. Brooklyn is a central location which includes a diverse mix of lane uses, including: office, residential, restaurant, light industrial, and community retail. Currently, Brooklyn is experiencing a renaissance of mixed use redevelopment including high density residential; where the new people moving into the neighborhood desire to have an active lifestyle with opportunities for walking and biking within the community.

The Road Diet Study provides an opportunity to re-examine transportation networks in the Brooklyn Neighborhood. Can we re-purpose the space along the corridors to make biking and walking safer? Can we shorten the crossing distances of Riverside Avenue to make walking more enticing? How can we connect the great asset that is the Northbank River Walk with the rest of the neighborhood? These transportation choices made in concert with redevelopment will help make the Brooklyn Neighborhood into a sustainable and economically viable choice destination in Jacksonville.

CONSULTANT TEAM

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town planning


N
I-95
Park Street
Riverside Avenue
Forest Street
I-10
I-95
STUDY AREA MAP

INTRODUCTION

The following reports are organized around four (4) major sections to maximize readability and effectively "tell the story" about improving multimodal conditions in JTA's high frequency Mobility Corridors. Each report provides an overview of the context, the public engagement process and the recommended set of Complete Street improvements. The Context section provides an introduction to the respective corridor including an overview of the existing safety and infrastructure conditions, previous or contributing planning efforts, as well as notable opportunities for improvement. The Process section details the collaborative and highly participatory, hands-on design charrette and workshop program conducted in each corridor. This section includes details on the community feedback loop and general themes and big ideas for improvements. Additionally, this process involves extensive coordination with FDOT staff, including a built-in design meeting during the charrette, whereby the design team and DIA staff met with FDOT to review key design concepts proposed since many of the corridors are an integral part of FDOT's system. This value-added component allowed the teams to vet the concepts with FDOT staff to determine both feasibility and opportunities to leverage other on-going transportation project opportunities, such as resurfacing or signal upgrades. Synthesizing the results of the previous two sections, Concepts showcases the conceptual design alternatives prepared for focus areas in each of the corridors. These designs reflect short and long-term Complete Street visions of the stakeholder participants and are focused on maximizing safety and multimodal access. Finally, the report Recommendations organizes the desired outcomes from the design charrette and workshops into a set of prioritized projects, reflecting three categories:

- **Keystone Projects**
- **Operational/Safety Enhancements**
- **Long-Term Vision Projects**

This approach will allow key agencies and stakeholders to continually refer back to this "living document" of potential Complete Street projects for implementation as opportunities and funding become available. The categories are designed to maximize the ability to leverage other projects and funding sources, from the low-cost, immediate quick fix improvements via FDOT resurfacing opportunities, for example, to bolder retrofits via Project Development & Environment (PD&E) efforts and/or other long-range transportation plans.

PROCESS

A two-day open "charrette" or workshop session with the public initiated the conceptual design effort for improvements within the Brooklyn area. The charrette was conducted at the Winston Family YMCA in the study area on April 4-5, 2017. This allowed the team to get input from key stakeholders and the community, which was then used to begin developing preliminary concepts for improvements to these corridors.

CHARRETTE

During the charrette, aerial images were available for each street so that participants, including interested citizens, business owners, community representatives, city representatives, bicycle advocates, developers and other professionals, could easily navigate the concerns of the three streets. Participants were encouraged to identify transportation challenges related to automobile travel, transit, walkability, and bikability within the study area. They were also asked to indicate their personal improvement priorities along each corridor. Guided exercises were performed in order to maximize the publics' focus on the corridors' respective issues. In the first, boards were presented with different improvement categories. Participants were asked which categories they thought were most important along each street. Along all corridors, sidewalk enhancements were shown to be in-demand improvements.

PUBLIC INPUT/KEY ISSUES

The team developed a list of questions to glean insight from the community. The table on the following page shows the results from the on-line survey.

What is the draw for the businesses outside of Brooklyn?	How much do they depend on outside visitors?	Do you have a vested interest or development in Brooklyn?	What do you think is the most challenging aspect of the Brooklyn Neighborhood?	Would you be agreeable to have traffic congestion in the neighborhood for the AM/PM hours?	What is your description of an Urban Neighborhood?	Would you support a dedicated transit lane within the neighborhood?
Destination Project	50/50. Walkable Location Is Desire With High Participation From Local Neighborhoods And Regional Towns (Beaches, Southside Etc)	Architects	Support From Local Neighborhoods.	Yes	Place Anchored In Primary And Secondary Street Intersection (Cardo And The Decomanus Sp?) With Supporting Mixed Use Buildings And Open Spaces As Well As Sufficient Residential Support	Need More Information
Relying On Both Locals And Others Outside Brooklyn	50%	Yes	Infrastructure	Some	Dense And Walkable	Maybe
San Marco All The Way Around To Avondale, I Call It The Upside Down Horse Shoe	The Daytime Trade Area Grows With The Businesses And Office Pop And Then Nights And Weekend Rely On The Trade Area	Rep Of Regency Centers	Creating The Vision, Getting Developers To Buy Land And Be Able To Make Sense Of The New Development And Safety.	Prefer Not	A Neighborhood That Has Public Transit, Dense Development, Mixed Uses, Walkability, Reuse Of Old Buildings Mixed With New, Public Space	If Done Right And At The Right Time Public Transit That Is Adopted By The Masses Would Be Supported.
A Very Passionate Group Of Residents That Is Constantly Looking For New Opportunities.	Like Any Location In Jacksonville, You Consistently Have People Coming In And Out Of The Riverside Area, However, The Residents In The Area Can Support Businesses On Their Own.	Yes, I Live In The 220 Riverside Apartment Complex.	Finding The Right Balance Between The History Of The Area, Blossoming New Businesses And Sustainability.	Yes, Depending On The Cause, Though.	A Neighborhood That Resides In-Or-Near A City Landscape. This Should Be A Symbiotic Relationship Where The Residents Help The City, And Vice-Versa.	Yes, Depending On Where The Destinations, The Associated Cost And How Long The Construction Project Would Take.
Brooklyn And The Surrounding Jax Communities. Really The Whole City	100%	Yes. The Success Of Brooklyn And How It Draws People From The Rest Of The Community, Completely Impacts Our Business	Our Problem Is More Signage And Parking And Approachability To The Unity Plaza Complex	AM. Not PM. It Would Be Difficult For Our Business If It Was Very Congested During The Dinner Hours.	Walkability. Bikability. A Draw For People To Come Here And It Be A Destination. Also, More Of A Connection Between Unity Plaza, The YMCA, Ram, Cummer And Five Points	Not Sure What That Would Entail
I Don't Go Because It Is A Suburban Development.	Probably A Lot.	Living In Riverside, My Interest Is In Getting The Connection Right Between Riverside And Brooklyn And Downtown. It Is The Key Pedestrian Connection.	Getting The Roads Right In Order To Get The Right Development Which Should Be Urban Versus Suburban. Makes Sense For Park St. To Be Mixed-Use With Retail And Residential.	Yes!!! Absolutely	Walkable And Bikeable, Serve The People Who Live There For Services And Entertainment. Great Sidewalks, Two-Lane Roads, Trees For Shade, Buildings Built To The Sidewalk, On-Street Parking.	Yes
Growing Redevelopment Opportunities; Demographic Shift	In The Short Term, Plenty; In The Long-Term As Neighborhood Redevelops More Local Support	No	Immediate ROI For Restaurants And New Businesses Awaiting Rooftops;	Yes	24/7 Live Work Play And Multimodal Mobility Choices	Yes
Not Sure Exactly, Question Is Confusing.	Currently A Lot.	No	Walkability, Including Infrastructure And Shade During The Walk.	Not Ideal	Highly Walkable, With Car-Less Promenades And Excellent Complete Streets Infrastructure For Many Modes Of Transport.	Yes
Not Sure If You're Asking What The Draw Is For Me To Visit Businesses Outside Of Brooklyn Or What The Draw Is That Brings Outside People To Businesses In Brooklyn.	They Might Be Able To Survive Without Them But Outside Visitors Are Important On The Weekends.	Other Than The Fact That I Live There, No.	Businesses And Housing Growing Faster Than Infrastructure.	No	A Neighborhood With Many Housing, Restaurant And Shopping Options That Is Highly Populated.	Yes

The design team used these and several other indicators as a framework with which they compared their own visual assumptions and observations against the perception of the public. These were then used to identify priority areas along the corridors, to verify issues that may have been overlooked during the team's site visit, and to inform preliminary designs.

The Stakeholder meetings and Charrette sessions that our team held produced many common themes throughout the 3 corridors.

Common themes included the need for more on-street parking, better wayfinding signage, reduced travel speeds, more shade coverage on sidewalks and pedestrian areas, increased public transportation and economic growth.

ON-STREET PARKING:

Throughout the neighborhood parking is limited to either surface lots or parking garages which does not allow for easy access to the existing retail and potential future mixed use development. By re-purposing the travel lanes in these corridors the addition of on-street parking could occur potentially on both sides of the streets.

WAYFINDING SIGNAGE:

The existing businesses throughout these corridors are limited currently with their directional signage. A more cohesive wayfinding plan would serve two purposes; assist travelers with locating retail stores, amenities, parking etc. and create an identity within the neighborhood.

REDUCE TRAVEL SPEEDS:

A major issue across our nation and specifically the state of Florida is the amount of pedestrian and bicycle deaths occurring along our roads. Reducing speeds is one way to reduce these deaths. Reaction times of drivers can increase dramatically as speeds are reduced. Pedestrians and bicyclists will feel safer sharing the road if travel speeds are reduced within the neighborhood.

SHADE COVERAGE:

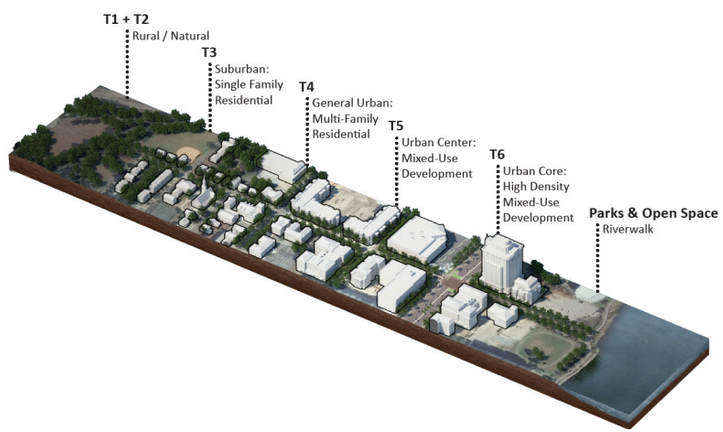
Successful streets are often lined with shade trees that protect pedestrians from the sun and provide a natural element to frame the human scale walking environment. With wide sidewalks and even wider streets the Brooklyn Neighborhood would benefit from some increased shade tree coverage. The current Medjool Palms do not provide the pedestrian scale shade coverage needed.

PUBLIC TRANSPORTATION:

Positioned between downtown and 5 Points and LaVilla neighborhoods, Brooklyn is well suited for use of public transportation. Currently the Jacksonville Transportation Authority is researching potential routes through the neighborhood for the new Ultimate Urban Circulator (U2C) vehicles, as well as their current BRT system. These alternative modes of transportation will enhance the urban connectivity for the neighborhood residents.

ECONOMIC DEVELOPMENT:

As the neighborhood continues to thrive infill development is likely to occur. Combined with better streets, the surrounding land uses will be compatible to the existing mixed use and residential buildings that have already been developed. It is important that the developments are sensitive to the streets and provide opportunities for walkable and bikeable connections.



DESIGN PHILOSOPHY

Brooklyn is a dynamic neighborhood, with several different incarnations throughout its history. The neighborhood was dramatically changed in the 2000s, when the area welcomed a wave of major office developments and employment centers. Brooklyn's most recent development is more focused on creating a mixed-use urban neighborhood, with moderate densities of residences served by various scales and types of shops and restaurants. Outreach in the community is supportive of these kinds of neighborhood-serving types of development, and of a more walkable and bikeable Brooklyn. This urban mixed-use development combined with existing employment centers and amenities like the Riverwalk creates real potential to build a place where people can live, work, and play comfortably without needing to travel long distances.

For Brooklyn to continue to become an economically sustainable mixed-use community, its public infrastructure – and especially its streets – need to support that kind of community. Currently many of Brooklyn's primary thoroughfares are designed to accommodate high volumes of vehicular traffic, and encourage that traffic to travel at high speeds through the neighborhood. This results in corridors that tend to divide rather than to connect the neighborhood. In a community where people are able to shop, relax, and work near home, high-speed vehicular travel is less important than alternative modes, including walking and biking.

LANE WIDTH

Wider lane widths have been shown to encourage faster driving. Lane widths vary across the three corridors from 13 feet down to 11 feet. For all corridors, lane widths between 10 and 11 feet are more appropriate for this neighborhood, in order to encourage driving at or below 35 miles per hour. In addition to encouraging lower motor vehicle speeds, narrowing lanes also provides additional existing space on the road that can be used for other uses, such as bike lanes, on-street parking, etc.

CURB RADII

The size of curb radii has a direct influence on the character of a roadway. Tighter curb radii require that vehicles slow down when negotiating turns, providing an upper limit on speeds through the corridor. Tighter curb radii also reduce the size of intersection, reducing the distance pedestrians must cross, limiting the amount of time they're potentially sharing space with motor vehicles. For speeds of 25 to 35 miles per hour, a curb radius of 15 to 25 feet is recommended for most cross-streets.

DESIGNING FOR TARGET SPEED VERSUS MINIMUM DESIGN SPEED

One of the most important aspects of designing for pedestrians and bicyclists is designing roadways that provide safe conditions for these vulnerable roadway users. One way to improve safety is to utilize a design that encourages lower speed vehicular traffic. Research has shown a dramatic relationship between pedestrian safety and motor vehicle speeds, as shown in the graphic below.

Source: Vision Zero Network

Often a vehicle will travel at a speed determined by the feeling or design of a roadway than by a posted speed limit sign. As such, a roadway design that encourages slower driving is a powerful tool to enhance pedestrian safety and comfort. Based on existing and desired configurations, Park Street should be designed with a target speed of 25 miles per hour, and both Riverside Avenue and Forest Street should have a target speed of 35 miles per hour. Roadway features should be consistently designed so that most vehicles travel at the target speed.

Vision Cone

Source :National Association of City Transportation Officials

A driver's visual focus diminishes as speed increases.

15 mph

20 mph

25 mph

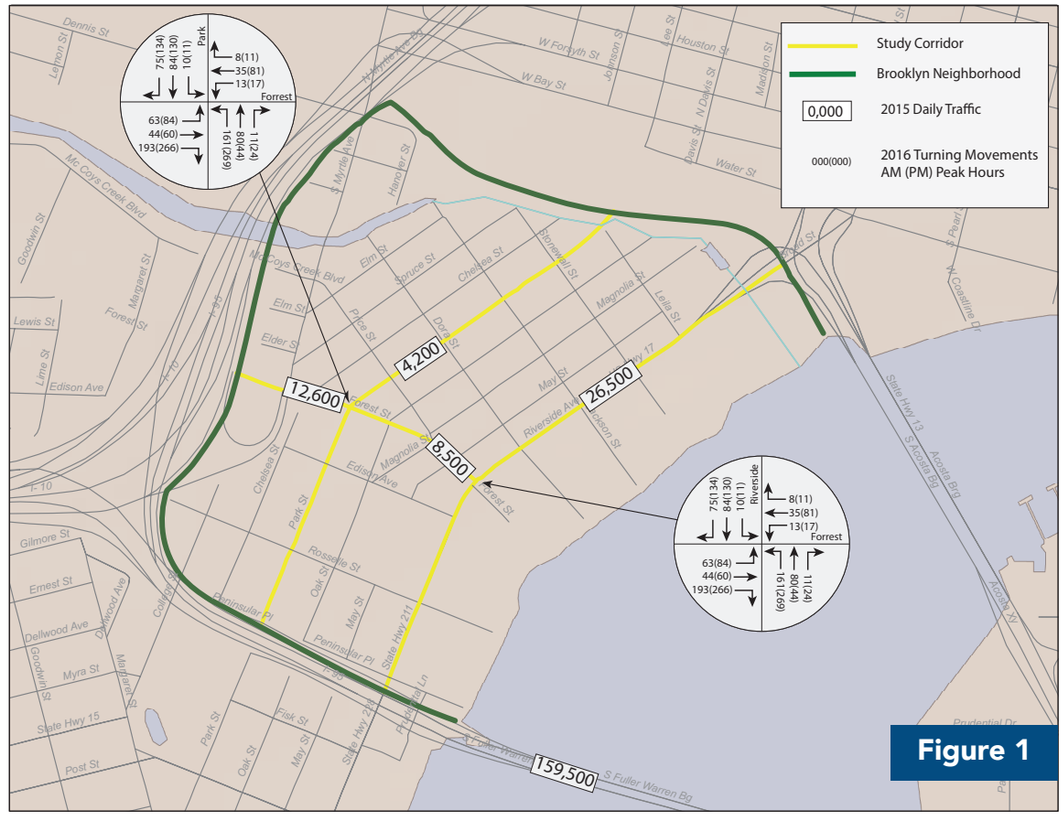
30 mph

TRAFFIC ASSESSMENT

The Brooklyn neighborhood is uniquely positioned in the City of Jacksonville as a prime destination that is close to downtown. In addition, the neighborhood serves as a pass-through connection between the downtown, surrounding neighborhoods and freeway connections. The later use results in drivers that are trying to move quickly through the area, favoring speed and efficiency over safety and accessibility. Over time traffic volumes have fluctuated depending on changes and construction activity to the surrounding roadways and to a certain extent the changes in development. Within the Brooklyn Neighborhood there is both an opportunity and desire to re-purpose excess capacity in travel lanes for other purposes such as walkability, bicycling and transit. The traffic assessment conducted for this study examines the historical conditions and travel patterns to determine what the possibilities could be for the neighborhood. Beyond this study a more thorough traffic analysis will be required to confirm recommended designs.

CURRENT TRAFFIC CONDITIONS

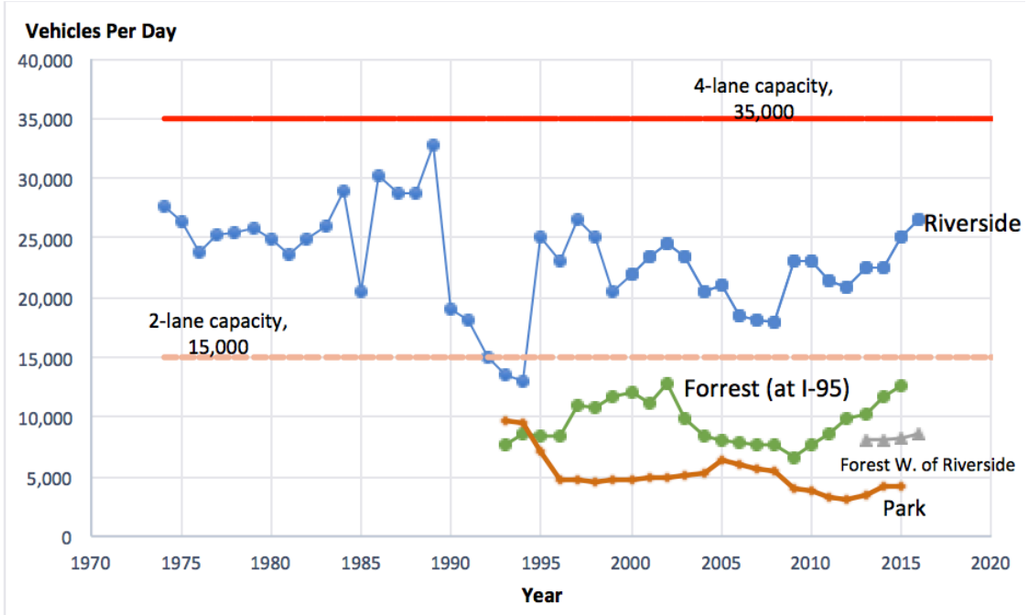
The most recent daily traffic counts in the Brooklyn Neighborhood were collected in 2016. In addition, turning movement counts were collected by the City of Jacksonville at the signalized intersections for the purposes of re-timing traffic signals. Figure 1 is an illustration of the traffic counts and turning movements.



HISTORICAL TRAFFIC PATTERNS

A valuable assessment of traffic is an examination of historical traffic counts. For this study, historical counts going back as far as 1974 were gathered and reviewed. The chart in Figure 2 shows the available historical traffic for the study. In addition to the count data, there are two lines indicating relative daily capacities for both a 2-lane road and a 4-lane road. These are approximate daily capacities based on planning level peak hour capacity and an extrapolation of peak hour to daily traffic. The actual capacities may fluctuate based on a variety of conditions and assumptions. However, in the case of the Brooklyn Neighborhood, these capacity assumptions are a good indicator. Historical data shows that Riverside has fit within a daily capacity threshold of a 4-lane road. Forest and Park have been experiencing traffic volumes that are lower than the capacity of a typical 2-lane road.

Figure 2 - Historical Daily Traffic

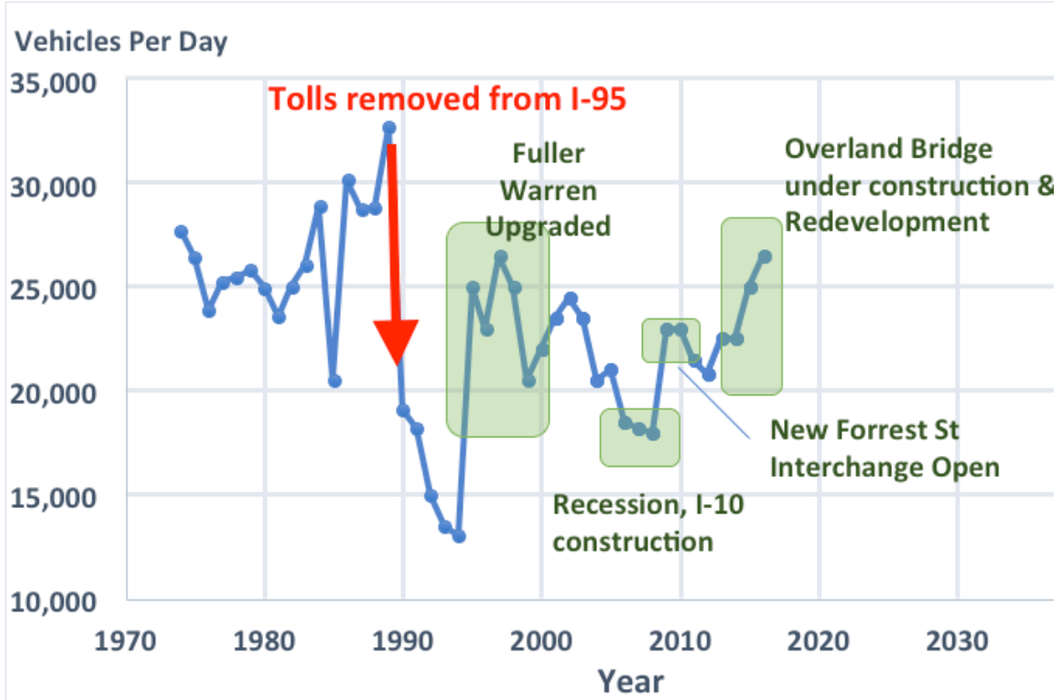


An additional examination and breakdown of the historical traffic was conducted for the Riverside Avenue Count location. This location has experienced some of the most unique traffic fluctuations over time of any road in the city. Most of the fluctuations can be associated with major external changes to the roadway network. Some of the bigger changes are indicated on the chart below. The bigger impacts have included:

- The removal of Tolling on I-95
- The replacement of the Fuller Warren Draw Bridge
- Various other construction activities on I-95 and I-10

All these fluctuations in traffic make it difficult to identify the stable pattern or determine what the future growth in traffic should be when looking at only a few years of data. What is clear looking at the data is that a 3-4-year trend is not necessarily sustained or meaningful. For instance, the last 3 years there has been a sharp increase in traffic, however, how much of that is associated with the current overland bridge project remains to be seen. There is one more major phase of construction about to start on the Fuller Warren Bridge, and it will not be until at least 2020 before traffic will begin to stabilize following the capacity improvement, particularly on Riverside.

Figure 3 - Riverside Avenue South of Jackson Street Historical Analysis



DAILY TRAFFIC PATTERNS

A drill down into hourly traffic patterns was conducted on Riverside Avenue. Figure #3 is a chart that shows traffic volumes by 15 minute increments in vehicle per hour rates for the northbound and southbound directions. The conversion to a vehicle per hour rate allows for a comparison to roadway capacity as is shown with the horizontal line indicating the capacity of a 4-lane road that is being considered. It is clear, that most of the day that the volumes are well below capacity. Only 30 minutes in the morning and 45 minutes in the afternoon are the volumes exceeding the 4-lane capacity. This amounts to 101 cars in the morning and 147 cars in the afternoon exceeding capacity. This type of corridor operation with volumes briefly exceeding capacity during the Peak hours is typical in the Jacksonville Metro area and other urbanized areas.

Another preliminary assessment of data was conducted through Streetlight Data. Streetlight is a company that has business relations with major cell phone carriers that allows them to get GPS information from users. The sampling size is substantial and creates a good snapshot of the origin-destination information of vehicles. A quick study of the Brooklyn neighborhood indicated 50% of the traffic is passing through without stopping. Given this high percentage of pass through traffic it is reasonable to assume that the few cars over the capacity of a 4-lane could divert to another route.

FEASIBILITY OF REPURPOSING LANES

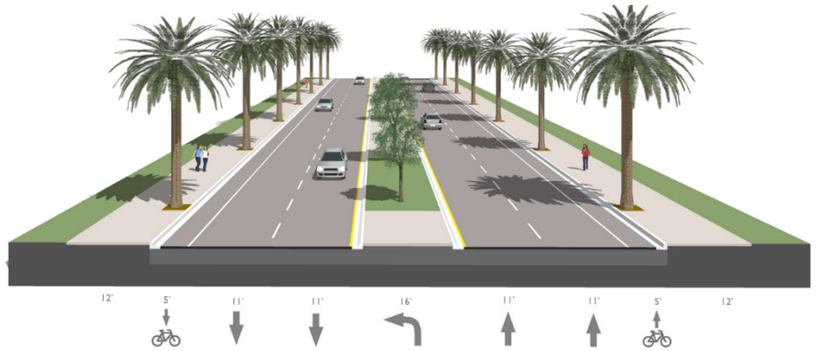
Based on our initial assessment, re-purposing lanes on parts of Riverside, Park Street and Forrest for uses other than moving automobile traffic is possible if the City desires. With Riverside Avenue and Forrest Street compatible with four lane roads and Park Street compatible with a two-lane road.

RIVERSIDE AVENUE

CONTEXT

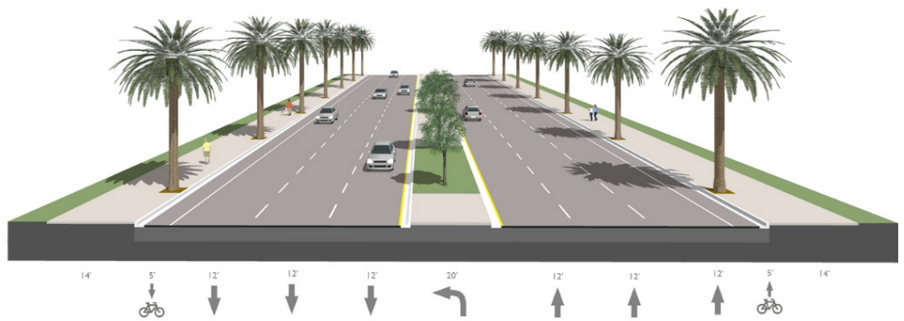
EXISTING CONDITIONS

Riverside Avenue runs along the easternmost portions of the Brooklyn neighborhood, providing access to the many offices and other buildings along the banks of the St. Johns River. In the southern part of the neighborhood, Riverside Avenue travels under I-95 at the end of the Fuller Warren Bridge, without providing access to the freeway. From this point to the north, the road has four vehicular lanes (two in each direction) with left turn lanes at signalized intersections. The center of the roadway is occupied by a narrow median, which has plantings where possible. Outside of the vehicular travel lanes sit narrow, unprotected bike lanes, which are flanked by sidewalks that include large palm trees and street lights, as illustrated below.



Riverside Avenue south of Forest Street, current conditions

North of the intersection with Forest Street, Riverside Avenue widens to include a total of six vehicular travel lanes (three in each direction), while maintaining medians between signals, a narrow, unprotected bike lane, and sidewalks, as shown below. At the northeastern end of the study corridor, Riverside Avenue raises off the ground to pass over a railroad and provides access to an interchange connecting Jefferson Street, Broad Street, and the Acosta Bridge to Riverside Avenue.



Riverside Avenue north of Forest Street, current conditions

CHALLENGES

Much of the roadside is lined with parking lots rather than active buildings, especially on the southeast side of the road. In many cases the developments between Riverside Avenue and the St. Johns River are built along the river itself, and have built large surface lots or garages adjacent to Riverside Avenue. This extends the walking distance for people traveling between buildings and erodes the walkability of Riverside Avenue itself by voiding the street of any meaningful activity.

North end of Riverside Avenue, at approach to Acosta Bridge

South of Forest Street, Riverside Avenue is tightly constrained. Current traffic volumes do not support a reduction to a two-lane road, and existing roadway lanes are approximately 11 to 12 feet wide, leaving little room for changes that can be made in a simple restriping.

At the northern end of the neighborhood, the interchange of Riverside Avenue, the Acosta Bridge, Jefferson Street, and Broad Street creates a huge obstacle to bicycle and pedestrian connectivity to Downtown Jacksonville. This interchange does provide pedestrian accommodations, but they are narrow and do not provide space for bicyclists. Part of the journey currently includes a crosswalk across a high-speed, downhill ramp with a pedestrian-activated signal. While this does provide access for pedestrians, it is clearly designed to emphasize automobile travel.

Pedestrian walkway on Riverside Avenue, crossing the Acosta Bridge

OPPORTUNITIES

Riverside Avenue currently supports some of the largest developments in Brooklyn, ranging from large office towers to brand new apartment blocks with restaurants at street level. It also provides access to amenities like the local YMCA, and the Jacksonville Riverwalk, a multi-use trail along the St. Johns River. This close-knit diversity of uses makes it possible for people to make trips without cars by placing a wide range of services, businesses, and amenities within walking distance of each other. Even with the current configuration of the roads, pedestrians can be seen walking across Riverside Avenue to cross from the offices to the restaurants for lunch every weekday. Further improvements to the pedestrian environment would likely increase this existing activity.

Existing transit opportunities in the neighborhood are being expanded to provide enhanced service and accessibility. JTA is working towards a transit improvement plan called the Ultimate Urban Circulator (U2C). The U2C explores the idea of expanding the existing Skyway into street-level facilities for small autonomous transit vehicles. At the ends of the existing lines, these vehicles could drop to street level and continue routes on at-grade facilities located along existing roads. While preliminary, the expansion plan suggests two routes traveling on Riverside Avenue. Both routes would utilize the existing monorail that connects the system to a maintenance and storage facility in the northeast part of the neighborhood. From here, one would travel down Riverside Avenue to the Riverside Arts Market just north of I-95. The second would follow Riverside Avenue to Forest Street, which would use to access Park Street and continue to the Five Points neighborhood. This new, autonomous service would provide high-frequency access to Downtown Jacksonville and beyond, making Riverside Avenue a very well-connected and attractive part of Brooklyn.

Potential extension of Skyway routes as an at-grade AV route Source: JTA

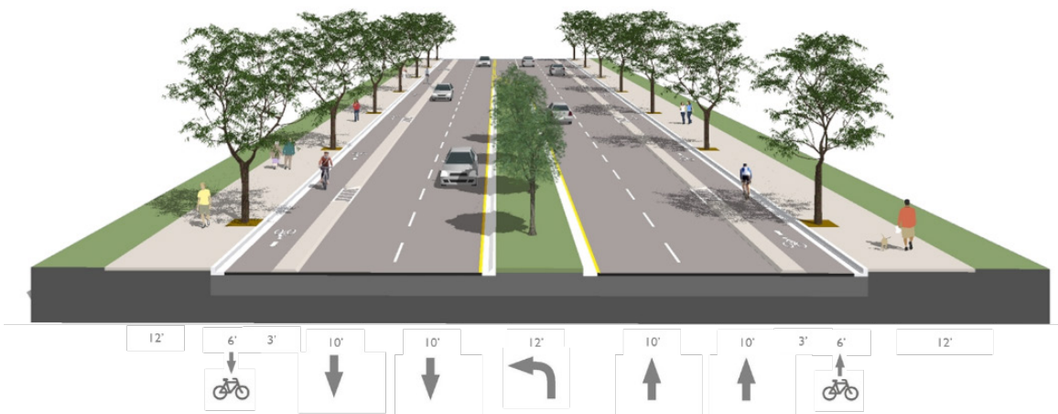
Traffic along the northern section of Riverside Avenue is compatible with a four-lane roadway section, so a road diet is feasible along this section.

CONCEPT

Riverside Avenue south of Forest Street has an approximate right-of-way width of 94'. The current approximate curb-to-curb width is 70'.

The existing roadway is configured as a four-lane road (11' lanes each) with narrow unprotected bike lane in both directions. Most cyclists prefer to ride along the sidewalks despite the dedicated on-street facilities.

The proposed section below suggests narrowing the lanes down to 10' each and the median down to 12' while adding more generous 6' bike lanes with either a 3' painted buffer or a 3' concrete curb separator to protect cyclists from cars. The new section also suggests replacing the existing palms with shade trees to increase pedestrian and bicyclist comfort.

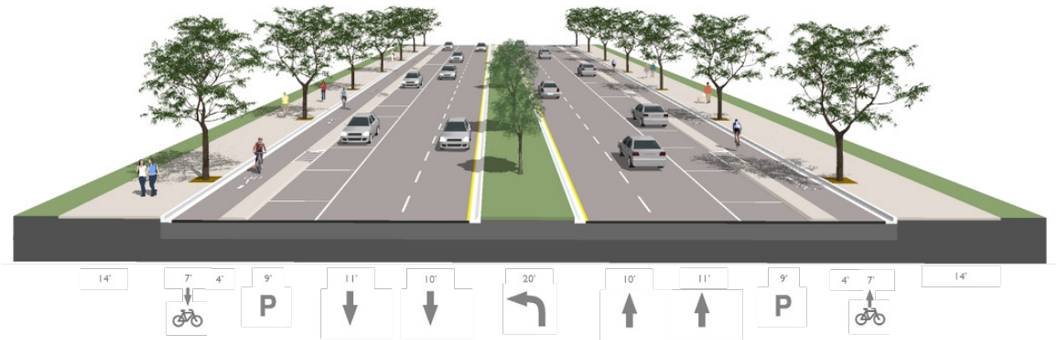


Riverside Avenue south of Forest Street, recommended cross-section

Riverside Avenue north of Forest Street has an approximate right-of-way width of 130'. The current approximate curb-to-curb width is 102'.

The existing roadway is configured as a six-lane road (12' lanes each) with narrow unprotected bike lanes in both directions. Most cyclists today prefer to use the generous sidewalks instead of the 5' wide dedicated bike lanes.

The proposed section below suggests a road diet that reduces Riverside Avenue north of Forest Street to four narrower lanes, adds on-street parking on both sides, creates generous 7' wide protected bike lanes in both directions, and maintains the existing curb and median. The new section also suggests replacing the existing palms with shade trees to increase pedestrian and bicyclist comfort. Below the proposed cross-section is a rendering of how Riverside Avenue could change with these improvements, along with potential redevelopment along the corridor.



Riverside Avenue north of Forest Street, recommended cross-section

Riverside Avenue with recommended improvements, looking southwest from Leila Street

Currently the intersection of Riverside Avenue and Forest Street presents a sizable barrier for pedestrians and bicyclists, and its footprint and design promote high-speed driving, creating conditions that are challenging for vulnerable road users. In order to discourage high-speed driving without inordinately affecting motor vehicle mobility, a roundabout has been considered at this intersection. The curvature and yielding conditions of a roundabout require that drivers be more attentive to other roadway users and slow down to navigate the intersection. Before construction, this roundabout would need additional, detailed traffic analysis to determine best lane configuration and layout along with the spacing and allowable movements at adjacent signalized intersections. A conceptual drawing of a roundabout at this location is included at the end of this chapter.

Riverside Avenue's approach to the Acosta Bridge is lacking high-quality facilities for pedestrians and bicyclists. One potential reconfiguration uses existing shoulder space to add a two-way bike facility connecting to downtown Jacksonville, and provides an additional crossing opportunity for pedestrians. A drawing of this configuration is included in the conceptual drawings at the end of this chapter.

RECOMMENDATIONS

A cost estimate has been prepared for long-term recommendations along Riverside Avenue totaling between $3.0 million and $3.6 million(not including buried utilities which can add $500 to $1000 per foot estimating $1.7 million to $3.4 million additional for buried utilities). In addition, a cost of $1.2 million to $1.5 million is needed for the roundabout at the intersection of Forest Street at Riverside Avenue. As noted, these designs are intended to require minimal additional right-of-way. Therefore, the cost for right-of-way and easements is estimated at 10% of the construction cost and is included in the cost estimate above. Please refer to appendix A for additional details regarding the cost estimates.

SHORT TERM

Throughout

- Neighborhood Wayfinding & Signage (including public access to the Riverwalk)
- Enhanced Lighting
- Pedestrian indications that use countdown timers and that actuate on a pre-timed sequence during periods of high pedestrian activity, without the need for pedestrians to push the push-buttons.

At Forest Street

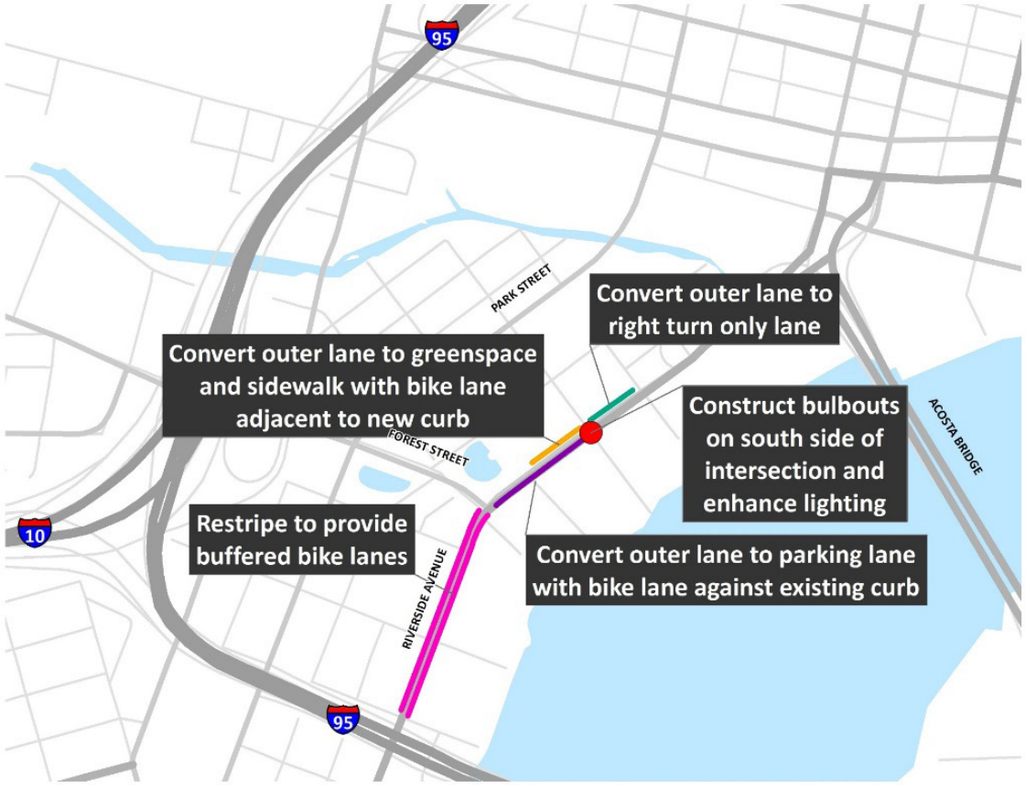
- Conduct detailed traffic study to validate roundabout at Forest Street and Riverside Avenue and determine best lane configuration

Riverside Avenue South of Forest Street

- Improve Landscaping - Replace Palm Trees with Shade Trees
- Restripe to provide buffered bike lanes

Riverside Avenue North of Forest Street

- Install Gateway Signage near Leila Street
- Reduce through lanes near Jackson Street
    - Convert outermost southbound lane to right turn lane at Jackson Street
    - Convert outermost southbound lane to greenspace and sidewalk with bike lanes adjacent to existing curb between Jackson Street and Dora Street
    - Convert outermost northbound lane to parking lane with bike lane against existing curb from Forest Street to Jackson Street
- Improve Jackson Street Intersection for Pedestrian Movements
    - Construct bulbouts to reduce crossing distance
    - Enhance lighting
    - Install pedestrian countdown timers and set pedestrian phases to cycle without need to push button



Riverside Avenue short-term recommendations

LONG-TERM

At Forest Street

- Construct roundabout at Forest Street and Riverside Avenue

Riverside Avenue South of Forest Street

- Narrow center median and replace striped buffers with raised concrete barriers

Riverside Avenue North of Forest Street

- Replace Palms with Oak/other shade trees
- Restripe to narrow travel lanes and add on-street parking and buffered bike lane
- Construct concrete barriers to protect bike lane

CONCEPTUAL DRAWINGS

The following pages contain conceptual drawings of improvements to Riverside Avenue:

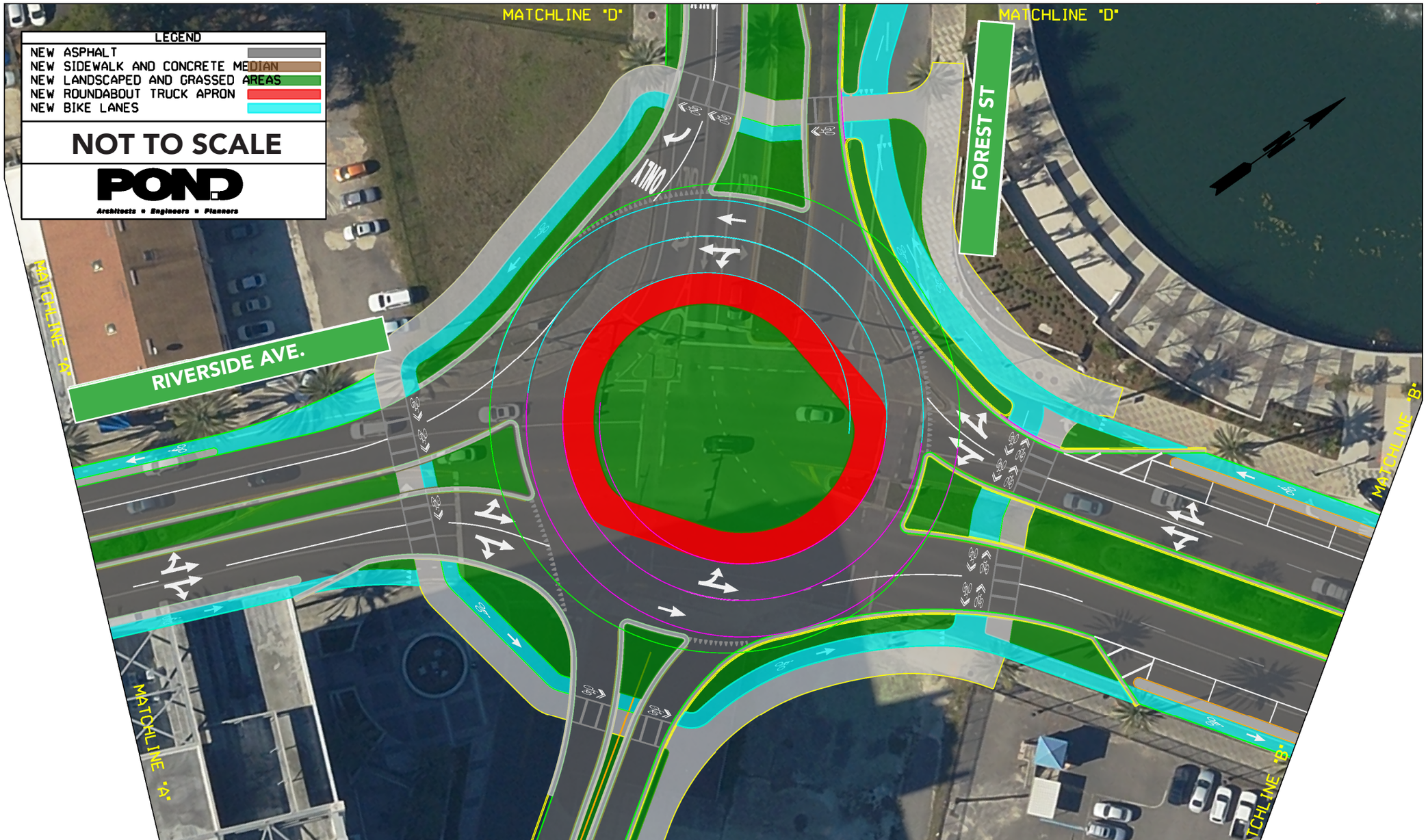
1. Riverside Avenue with improvements, Peninsular Place to Edison Avenue (Riverside 1)
2. Riverside Avenue with improvements, Dora Street to Leila Street (Riverside 2)
3. Roundabout at Forest Street and Riverside Avenue (Riverside-Forest)
4. Bridge Crossing Concept Layout (Bridge Pedestrian Crossing Concept Layout)

Riverside Avenue South of Forest Street

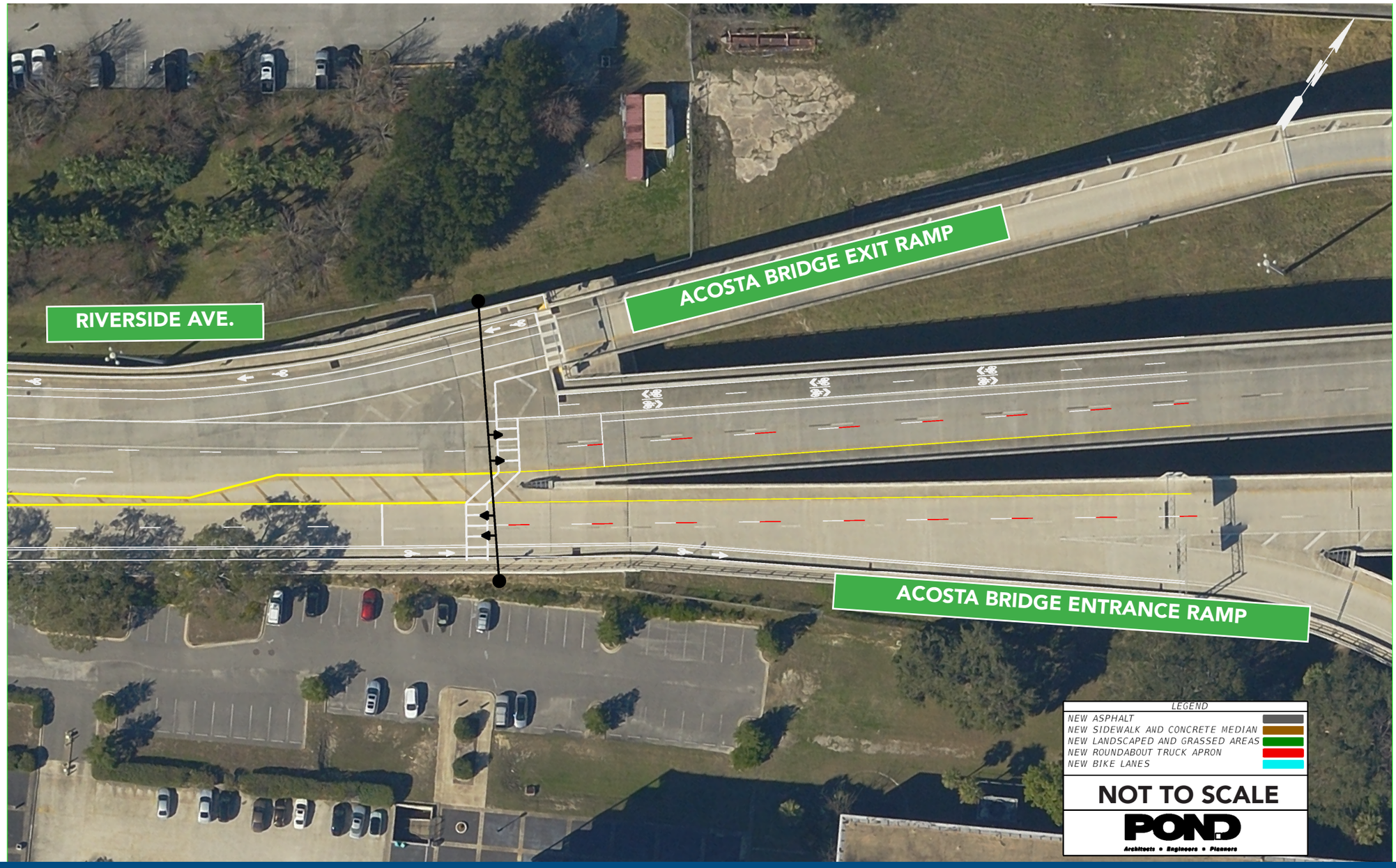

RIVERSIDE AVE.
MATCHLINE "A"
MATCHLINE "A"
LEGEND
NEW ASPHALT
NEW SIDEWALK AND CONCRETE MEDIAN
NEW LANDSCAPED AND GRASSED AREAS
NEW ROUNDABOUT TRUCK APRON
NEW BIKE LANES
NOT TO SCALE
POND
Architects • Engineers • Planners

Riverside Avenue North of Forest Street


STONEWALL ST.
LEILA ST
LEGEND
NEW ASPHALT
NEW SIDEWALK AND CONCRETE MEDIAN
NEW LANDSCAPED AND GRASSED AREAS
NEW ROUNDABOUT TRUCK APRON
NEW BIKE LANES
NOT TO SCALE
POND
Architects • Engineers • Planners



Riverside Avenue at Forest Street Roundabout Concept



Pedestrian and Bicycle Facilities on Riverside Avenue Bridge Concept

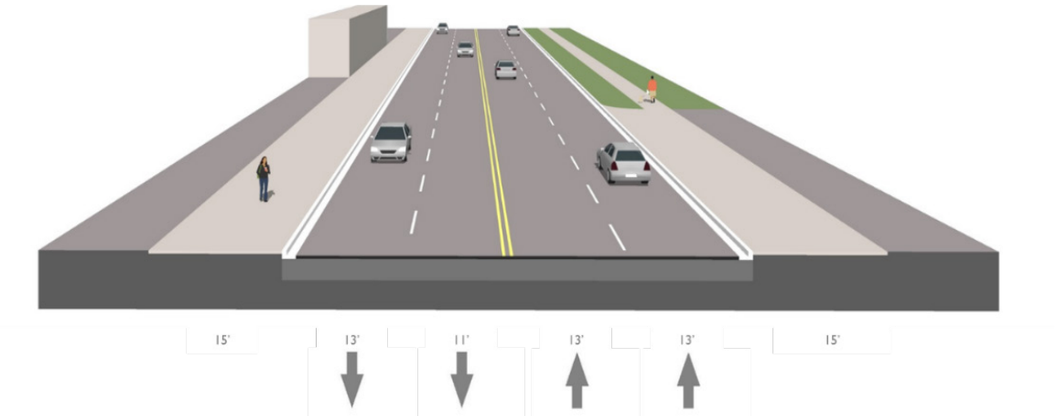
PARK STREET

CONTEXT

EXISTING CONDITIONS

Park Street is a core street in the Brooklyn neighborhood, running through the middle of the neighborhood. Park Street connects Brooklyn directly to the LaVilla neighborhood, which sits immediately west of downtown Jacksonville. South of Brooklyn, Park Street travels to the Five Points neighborhood, where it serves as a local Main Street, with walkable restaurants and shops just south of Riverside Park. Park Street and Riverside Avenue are the only through roads that cross the train tracks along the north edge of Brooklyn, and cross I-95 to the south of Brooklyn. Park Street also provides connectivity from I-95 northbound and to I-95 southbound in a half-diamond interchange.

Currently Brooklyn's section of Park Street is a four-lane road, with no auxiliary lanes. The corridor has consistent sidewalk coverage but sidewalks vary in width, condition, and placement. In some instances the sidewalk is immediately adjacent to the roadway, but in others there is a small strip of grass providing a buffer between the sidewalk and the road. An illustration of this cross section is provided below.



Park Street, current conditions

Park Street is host to a variety of buildings, ranging from apartments to light industrial to fast food restaurants and small shops. Many of the older buildings are built in a traditional style, with facades and walls immediately adjacent to the sidewalk.

Park Street, looking northbound at Price Street

CHALLENGES

Park Street is a tightly constrained roadway with buildings, trees, parking lots, and other private structures existing immediately on the outside of the sidewalk. This dramatically limits space for bicycle accommodations. In several areas, the pedestrian experience is like a tightrope, stuck on a narrow strip between fast-moving traffic and blank walls or other barriers.

Park Street, looking southbound from bridge over train lines at northern limits of Brooklyn

OPPORTUNITIES

Park Street's historic building stock, which is most prevalent in the northern part of the neighborhood, provides a rare opportunity to create a community with a diversity of building types and ages. If retrofitted and updated rather than torn down and replaced, many of these buildings could serve as useful assets to the strip, giving it invaluable character and history.

Park Street serves as a connection between two very important destinations. To the south of Brooklyn, Park Street becomes an active commercial corridor and the focal point of the Five Points neighborhood, and is a mixed-use corridor with uses including an antiques store, a theater, boutique shops, and a wide array of restaurants. North of Brooklyn, Park Street connects directly to the existing JTA Skyway system and the site of the Jacksonville Regional Transportation Center (JRTC), which is currently under construction. When complete, the JRTC will be the central transfer station for all JTA buses and will connect to the Intercity Bus Terminal, which will be the central station for all intercity bus services (Megabus, Greyhound, etc.). The Brooklyn section of Park Street is well situated to capitalize on the activity at both of these nodes, and this proximity could be leveraged to create a healthy, vibrant "Main Street" area for the neighborhood.

The existing transit options in the area are being expanded to provide enhanced service and accessibility. JTA is working towards a transit improvement plan called the Ultimate Urban Circulator (U2C). The U2C explores the idea of expanding the existing Skyway into street-level facilities for small autonomous transit vehicles. At the ends of the existing lines, these vehicles could drop down and continue routes on at-grade facilities located along existing roads. While preliminary, the expansion plan suggests a new route on Park Street south of Forest Street, connecting the existing Skyway system to Five Points. This new, autonomous service would provide connectivity to the economic engine of Downtown Jacksonville, the eclectic offerings of Five Points, and potentially to the exciting energy of the Sports Complex east of downtown making this section of Park Street a more attractive area to live or open a business.

Potential extension of Skyway routes as an at-grade AV route Source: JTA

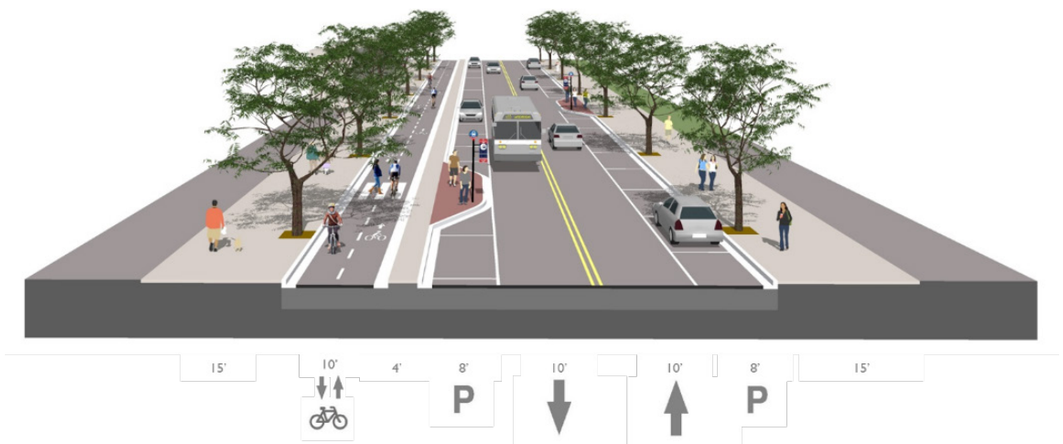
Traffic along Park Street has a low volume in comparison to its capacity. Therefore, this section is compatible with a two-lane road, so a road diet is feasible along Park Street.

CONCEPT

Park Street from Peninsular Place to Forest Street has an approximate right-of-way width of 80'. The current approximate curb-to-curb width is 50'.

The existing roadway is configured as a four lane road with wide 11'-13' lanes and a 15' sidewalk on each side. Today, the road serves several bus lines and is lined with light industrial buildings, commercial buildings, and surface parking lots.

The proposed section below envisions Park Street as a complete street that accommodates pedestrian, cyclists, and transit riders. A road diet takes the street down to two 10' lanes with on-street parking and BRT stops on both sides, and a two-way protected cycle track running along the West side of the street. The section also suggests planting street trees to improve pedestrian comfort.

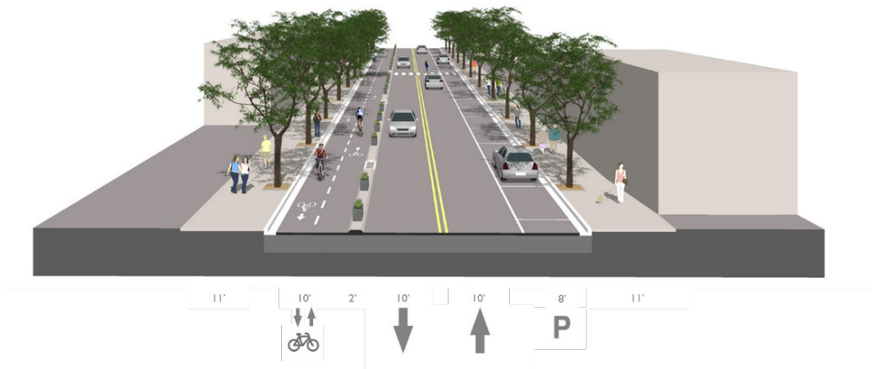


Park Street, south of Forest Street, recommended cross-section

Park Street from Forest Street to Stonewall Street has an approximate right-of-way width of 62'. The current approximate curb-to-curb width is 40'.

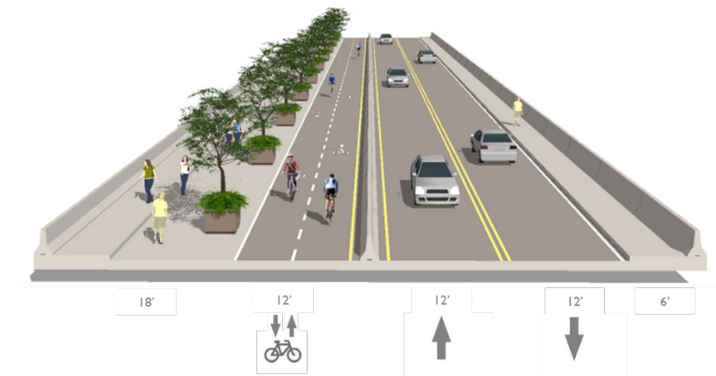
The existing roadway is configured as a four-lane road (10' lanes each) with an 11' sidewalk on each side. Today, the road serves several bus lines and is lined with old industrial buildings that come right up to the street, some surface parking, and a couple of vacant lots.

The proposed section below envisions Park Street as a vibrant main street that accommodates pedestrians and cyclists while encouraging new businesses to open up shop. A road diet takes the street down to two 10' lanes with on-street parking on the East side of the road, and a two-way protected cycle track running along the West side. The section also suggests planting street trees to improve pedestrian comfort.



Park Street, between Forest Street and railroad bridge, recommended cross-section

Where Park Street uses a bridge to cross the railroad tracks that form the northern boundary of Brooklyn, on-street parking is not necessary, and a different utilization of space is preferred. As the section below shows, this includes 12' vehicular lanes and wider bicycle and pedestrian spaces on the west side of the road. This will provide fantastic bicycle and pedestrian connections to the convention center and eventually to the JRTC. This cross-section will also activate the space, making the bridge itself a destination rather than the barrier it is today.



Park Street, on railroad bridge, recommended cross-section

RECOMMENDATIONS

A cost estimate has been prepared for long-term recommendations along Park Street totaling between $3.3 million and $3.9 million (not including buried utilities which can add $500 to $1000 per foot estimating $1.9 million to $3.8 million additional for buried utilities). As noted, these designs are intended to require minimal additional right-of-way. Therefore, the cost for right-of-way and easements is estimated at 10% of the construction cost and is included in the cost estimate above. Please refer to appendix A for additional details regarding the cost estimates.

SHORT TERM

Throughout

- Neighborhood Wayfinding & Signage (including public access to the Riverwalk)
- Enhanced Lighting
- Pedestrian indications that use countdown timers and that actuate on a pre-timed sequence during periods of high pedestrian activity, without the need for pedestrians to push the push-buttons.
- Restripe to convert from four to two through lanes and install cycle track

Park Street from Peninsular Place to Forest Street

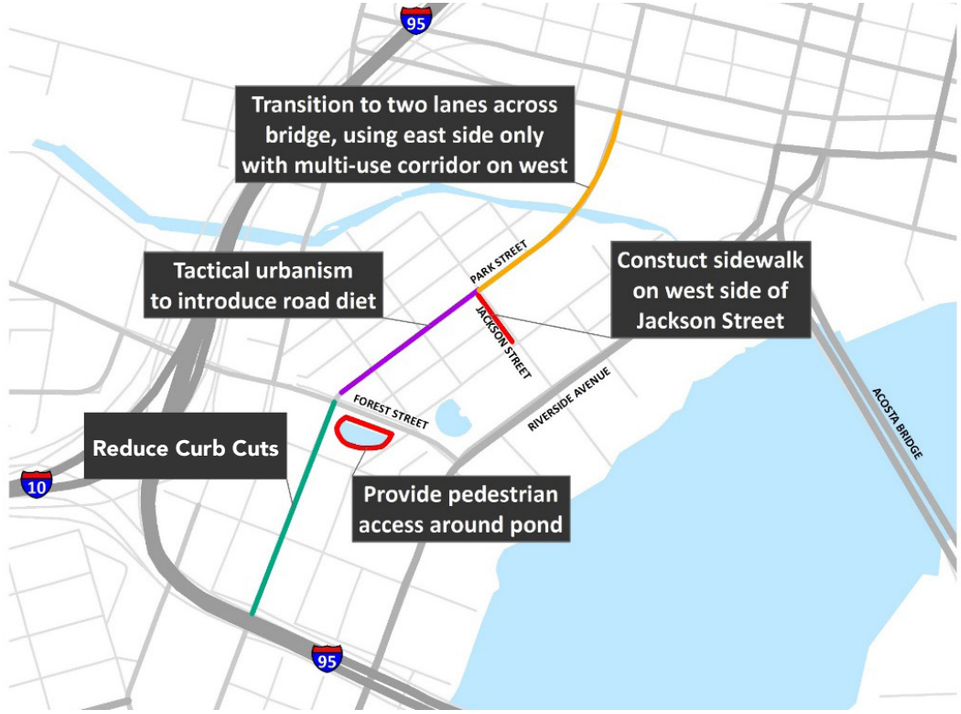
- Reduce redundant curb cuts to make way for on-street parking
- Pedestrian access around Forest/Park retention pond

Park Street from Stonewall Street to Price Street

- Employ Tactical Urbanism Trial along Park Street from Stonewall Street to Price Street for trial of road diet

Park Street from Jackson Street to Water Street

- Modify Bridge to provide two-way traffic on east side and multi-use trail / pedestrian promenade on the west side
- Transition from four lanes to two lanes between Jackson Street and the bridge and install on-street parking on the west side of Park Street



Park Street short-term recommendations

LONG TERM

- Replace existing Palm trees with Oak/other shade trees
- Install cycle track with concrete curb or other physical barrier along west side of Park Street
- Install BRT stations near Jackson Street, per Frequent Flyer plans

CONCEPTUAL DRAWINGS

The following pages contain conceptual drawings of improvements to Park Street:

1. Park Street with Improvements from Peninsular Place to Edison Avenue (Park 1)
2. Park Street with improvements from Price Street to Jackson Street (Park 2)
3. Park Street with improvements from Stonewall Street to Water Street (Park 3)

Park Street South of Forest Street


PARK ST
EDISON AVE
MATCHLINE "F"
MATCHLINE "F"
LEGEND
NEW ASPHALT
NEW SIDEWALK AND CONCRETE MEDIAN
NEW LANDSCAPED AND GRASSED AREAS
NEW ROUNDABOUT TRUCK APRON
NEW BIKE LANES
NOT TO SCALE
POND
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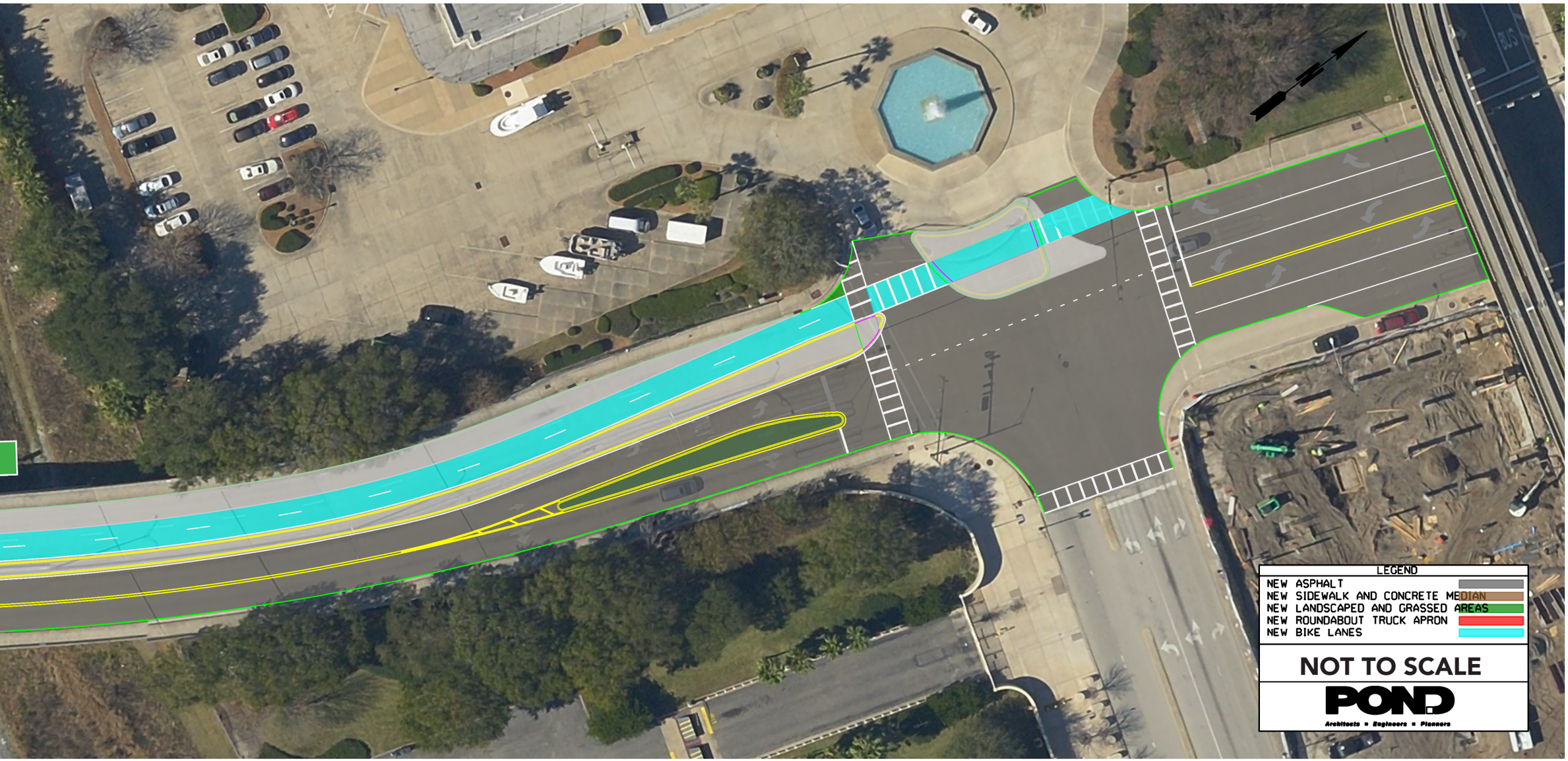
Park Street North of Forest Street


K ST
JACKSON ST
MATCHLINE "H"
MATCHLINE "H"
LEGEND
NEW ASPHALT
NEW SIDEWALK AND CONCRETE MEDIAN
NEW LANDSCAPED AND GRASSED AREAS
NEW ROUNDABOUT TRUCK APRON
NEW BIKE LANES
NOT TO SCALE
POND
Architects • Engineers • Planners

Park Street – Stonewall Street to Water Street

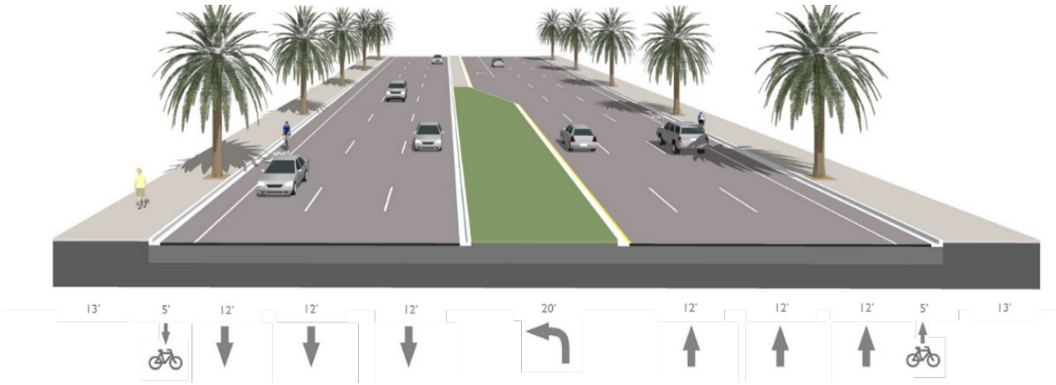

LEGEND
NEW ASPHALT
NEW SIDEWALK AND CONCRETE MEDIAN
NEW LANDSCAPED AND GRASSED AREAS
NEW ROUNDABOUT TRUCK APRON
NEW BIKE LANES
NOT TO SCALE
POND
Architects ▪ Engineers ▪ Planners

FOREST STREET

CONTEXT

EXISTING CONDITIONS

Forest Street is the primary vehicular east-west thoroughfare in Brooklyn, connecting the Mixon Hill/Lackawanna neighborhood to the west with Riverside Avenue, including direct access to I-95 northbound and I-10 westbound and from I-10 eastbound. In Brooklyn, the street has very few buildings that directly face the street. Instead most are oriented to the side-streets in the neighborhood. This segment generally has six travel lanes (three in each direction) with a planted median and left turn lanes at signalized intersections. Similar to Riverside Avenue, the road also has a narrow bike lane on each side, and a wide sidewalk that includes street trees. An illustrative typical cross-section is shown in the next column.



Forest Street, current conditions

CHALLENGES

While Forest Street does include a bike lane and sidewalks, the design of the street is much more hospitable to high-speed vehicular travel than bicycle or pedestrian use. The road includes overhead signage, making it feel more like a freeway than a neighborhood street.

Forest Street eastbound, east of I-95 interchange

Between Park Street and Riverside Avenue, there is a gap of almost 1,000 feet where there is no opportunity to cross Forest Street for vehicles, bicyclists, or pedestrians. Magnolia Street used to provide a crossing, but the intersection was removed in the 2000s to preserve vehicular movement along the corridor.

The section of Forest Street between
Imagery Source: Google Earth Professional

With some exceptions, buildings near the corridor are not oriented to Forest Street, eliminating any sense of activity or accessibility for pedestrians. Additionally, the block south of Forest Street and east of Park Street is occupied by a large retention pond.

OPPORTUNITIES

The existing transit options in the area are being expanded to provide enhanced service and accessibility. JTA is working towards a transit improvement plan called the Ultimate Urban Circulator (U2C). The U2C explores the idea of expanding the existing Skyway into street-level facilities for small autonomous transit vehicles. At the ends of the existing lines, these vehicles could drop down and continue routes on at-grade facilities located along existing roads. While preliminary, the expansion plan suggests a new route on the section of Forest Street between Riverside Avenue and Park Street, connecting the existing Skyway system to Five Points. This new, autonomous service would provide connectivity to the economic engine of Downtown Jacksonville and the exciting energy of Five Points, making this section of Forest Street a more attractive area to live or open a business.

Potential extension of Skyway routes as an at-grade AV route Source: JTA

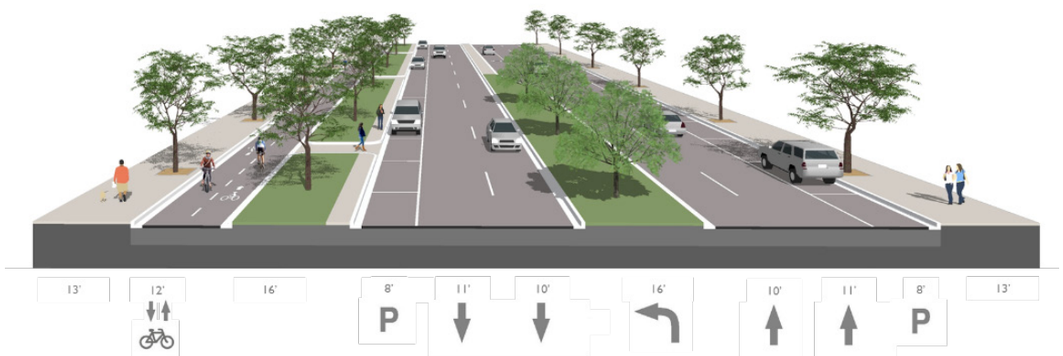
Traffic along Forest Street has a low volume in comparison to its capacity. Therefore this section is compatible with a four-lane road section, so a road diet is feasible along Forest Street.

CONCEPT

Forest Street from Myrtle Avenue to Riverside Avenue has an approximate right-of-way width of 128'. The current approximate curb-to-curb width is 102'.

The existing roadway is configured as a six-lane road (12' lanes each) with narrow unprotected bike lanes in each direction. The street is never used to capacity and rarely sees much pedestrian or bicycle activity. There are little to no businesses facing out onto Forest Street and several retention ponds line it's edges.

The proposed section below suggests a road diet that takes Forest Street down to four 10' and 11' lanes, reduces the median down to 16', and adds on-street parking in both directions and a protected two-way cycle track along the South side. A 16' median between the cycle track and the roadway allows for an allée of trees along the new bike facility and helps turn Forest Street into a more inviting green boulevard.



Forest Street, recommended cross-section

Forest Street today is a highly underutilized road with little activity along it. Though there are many retention ponds located along it, there is an opportunity for urban mixed-use infill, particularly on the North side from Myrtle Avenue to Magnolia Street.

The proposed image in the next column imagines Forest Street as a green boulevard that invites people down to the Riverwalk. New infill has been created along the North side that actively engages with the sidewalk and encourages pedestrian activity. Along the South side a two-way cycle track lined with an allée of trees has been added to connect cyclists from other neighborhoods to the Brooklyn riverfront. While today there is little need for additional parking, on-street parking has been proposed to accommodate future development along this corridor.

Forest Street, with recommended improvements

In order to reduce block spacing and create a more robust bike and pedestrian grid network in the neighborhood, a mid-block crossing of Forest Street near Magnolia Street may be appropriate, especially as pedestrian-oriented development happens near the intersection. Such a crossing would restore the grid for alternative modes, while preserving the vehicular mobility and safety provided by the median. Additionally, alternative routing of the U2C program has considered Magnolia Street as a potential corridor for the transit vehicles. If this is done, a dedicated median break built in conjunction with the pedestrian crossing could provide access for these vehicles, and allow them to travel on lower-traffic roads than Riverside Avenue. A conceptual drawing of such a combined mid-block crossing is included in the conceptual drawings at the end of this chapter.

RECOMMENDATIONS

A cost estimate has been prepared for long-term recommendations along Forest Street totaling between $1.4 million and $1.7 million (not including buried utilities which can add $500 to $1000 per foot estimating $0.8 million to $1.6 million additional for buried utilities). Please see the Riverside Avenue section for costs related to roundabout installation. As noted, these designs are intended to require minimal additional right-of-way. Therefore, the cost for right-of-way and easements is estimated at 10% of the construction cost and is included in the cost estimate above. Please refer to appendix A for additional details regarding the cost estimates.

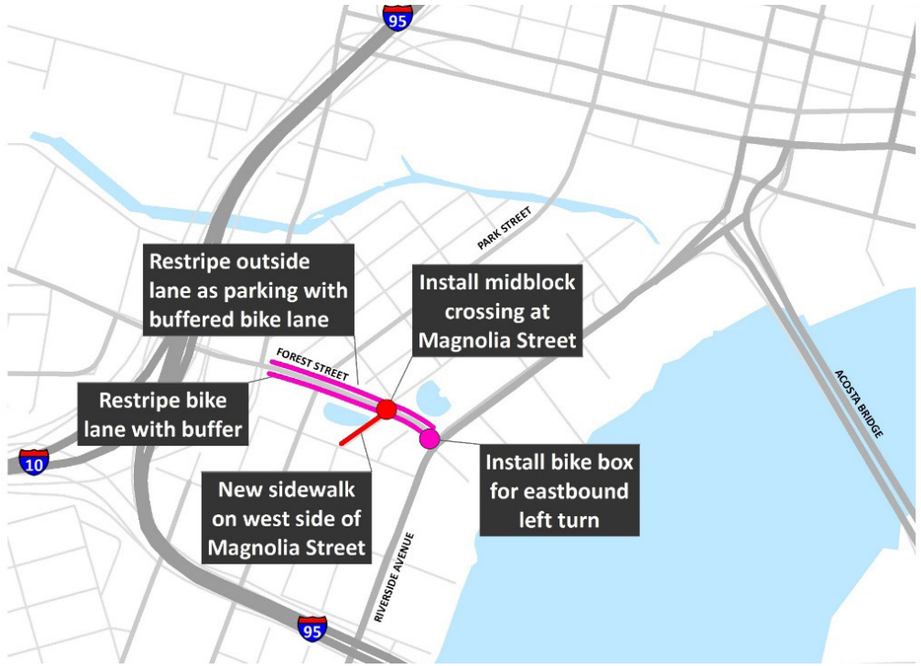
SHORT TERM

Throughout

- Neighborhood Wayfinding & Signage (including public access to the Riverwalk)
- Enhanced Lighting
- Pedestrian indications that use countdown timers and that actuate on a pre-timed sequence during periods of high pedestrian activity, without the need for pedestrians to push the push-buttons.

Forest Street

- Improve Landscaping (Replace Palm Trees with Shade Trees)
- Mid-block crossing at Magnolia Street
- Install sidewalk along Magnolia Street south of Forest Street
- Restripe outside lane for on-street parking in Westbound direction with buffered bike lane
- Stripe crosswalks where missing along side streets
- Install Bike Box for Southbound Left Turn from Forest Street



Forest Street, short-term recommendations

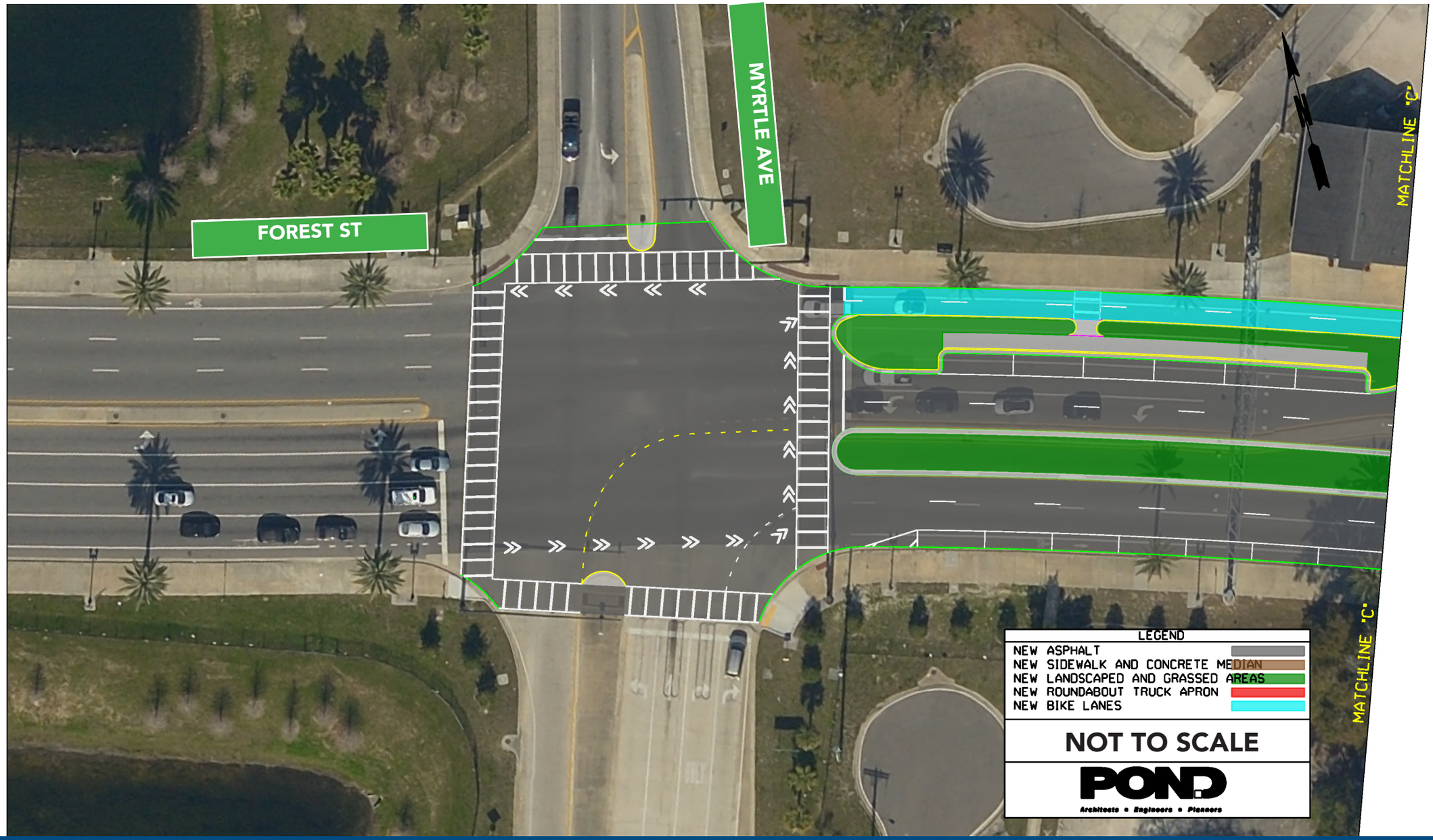
LONG TERM

- Reconstruct median and add allée, narrowing vehicular roadway, shifting median to side, and adding protected cycle track
- Restripe road to provide on-street parking

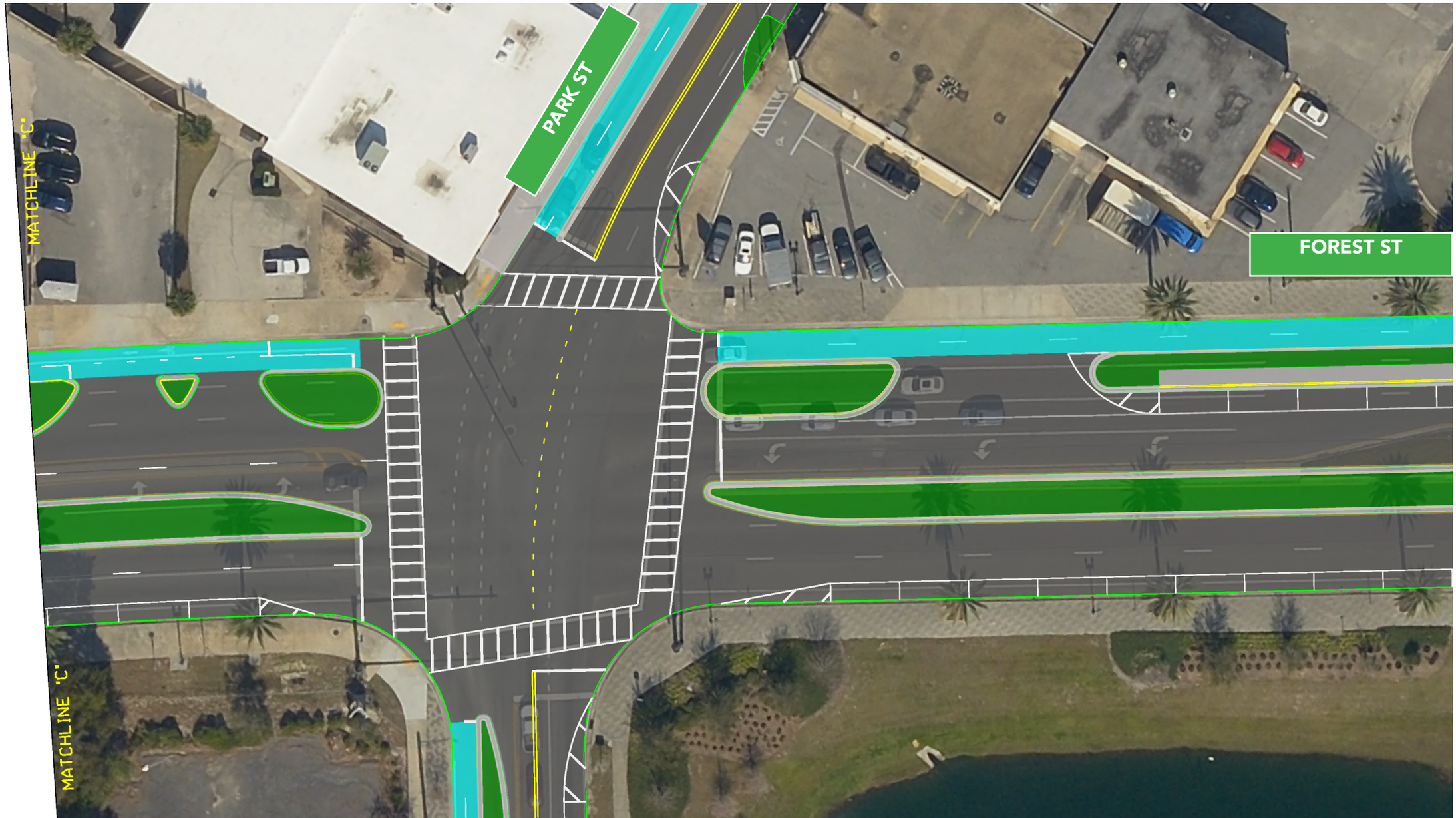
CONCEPTUAL DRAWINGS

The following pages contain the following conceptual drawings of improvements to Riverside Avenue:

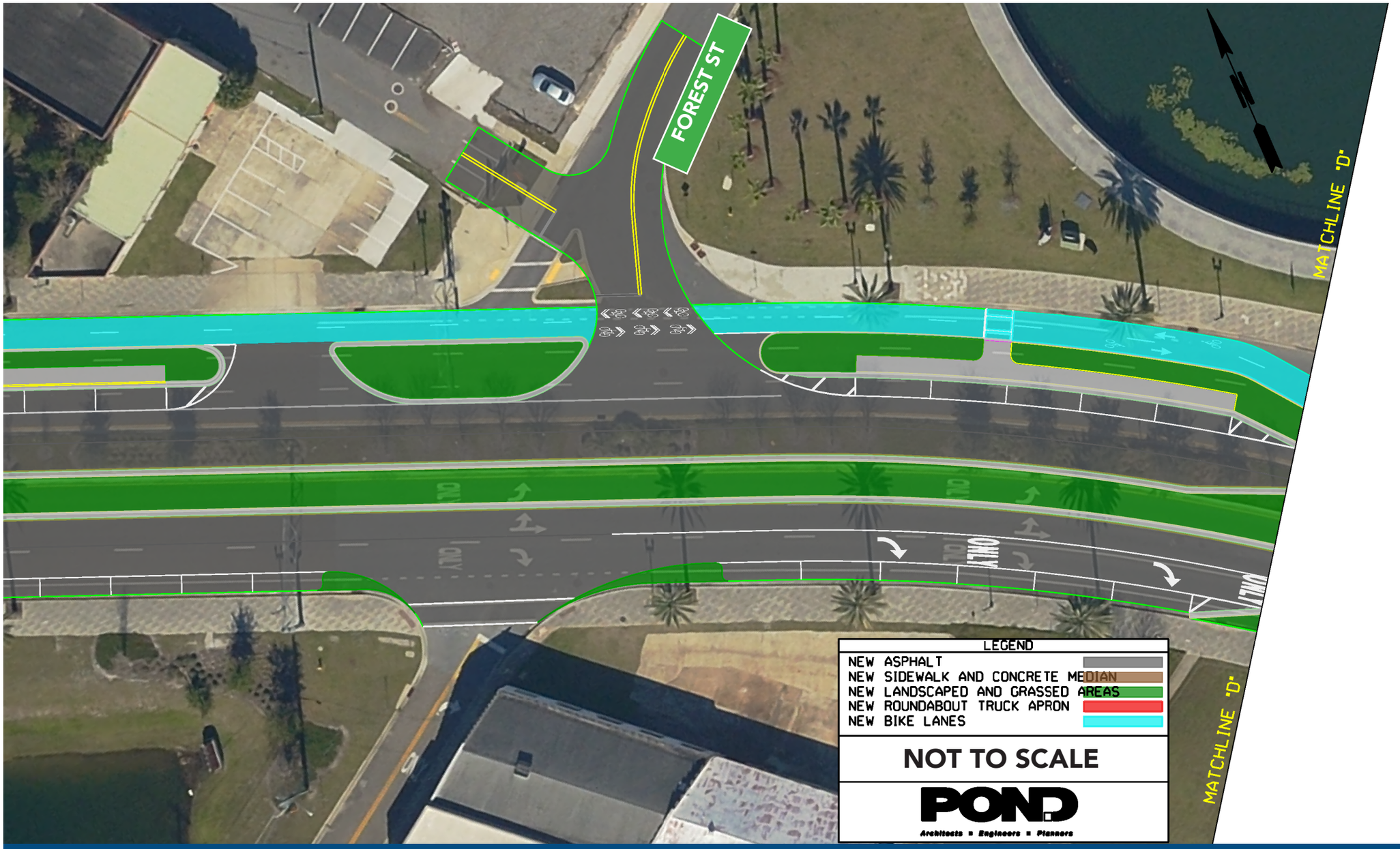
1. Intersection of Forest Street and Myrtle Avenue with improvements (Forest 1)
2. Intersection of Forest Street and Park Street
3. Forest Street east of Park Street, without potential mid-block crossing (Forest 2)
4. Mid-block pedestrian and AV crossing of Forest Street at Magnolia Street (Forest 3)
5. Proposed realigned Forest Street south of Riverside Avenue, to transition from roundabout (Forest 4)



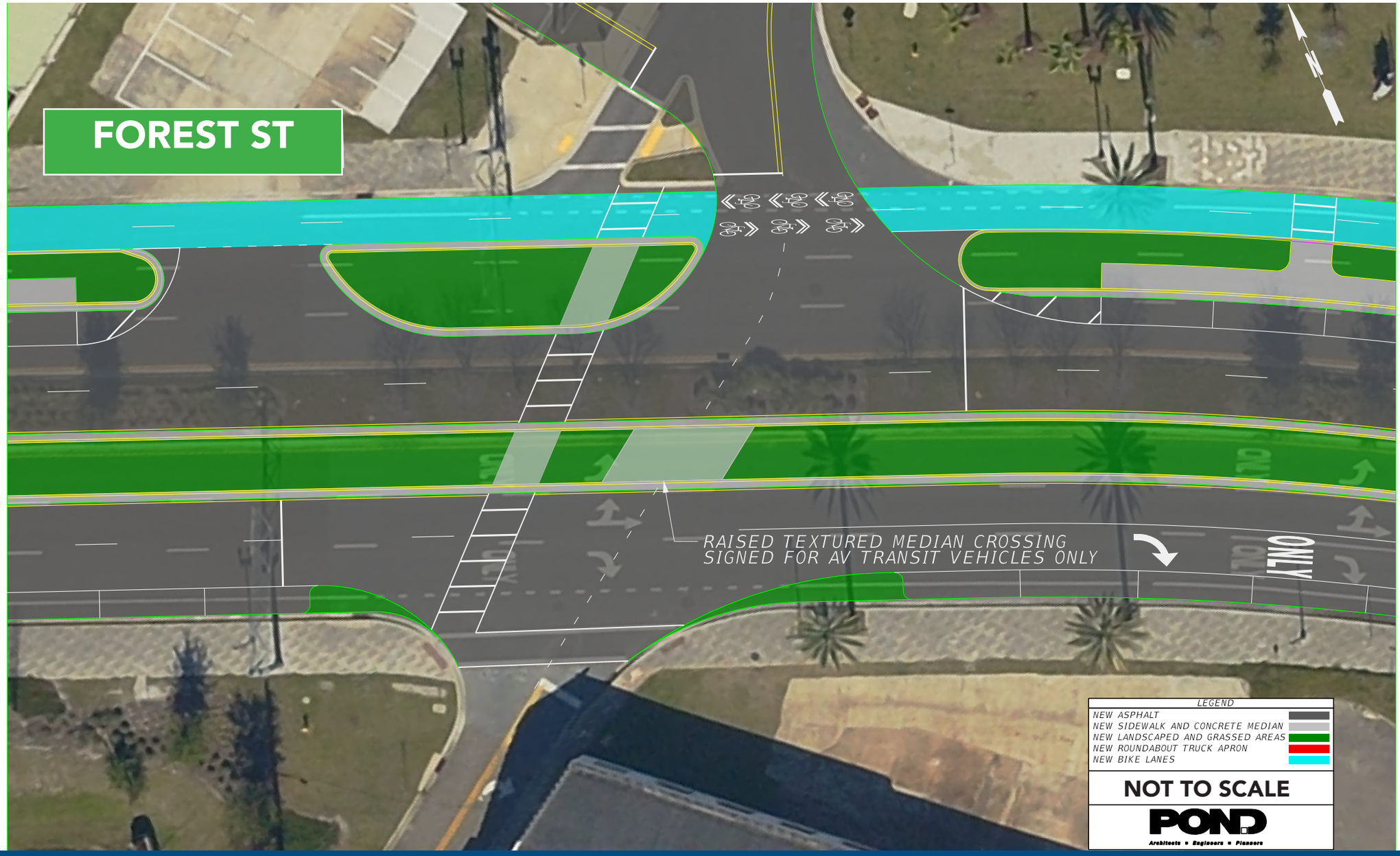
Forest Street at Myrtle Avenue



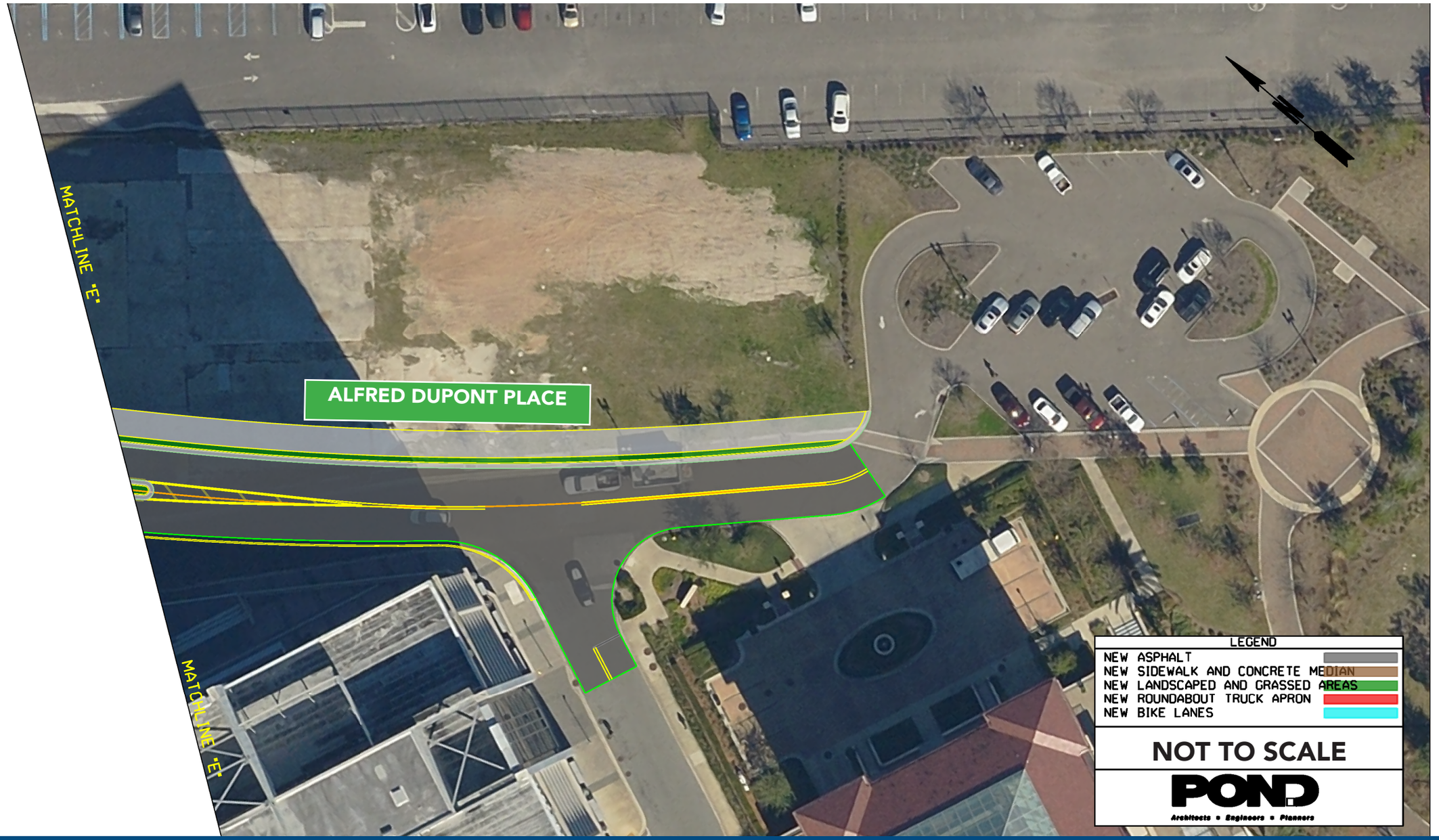
Forest Street at Park Street



Forest Street East of Park Street without Pedestrian and A/V Crossing



Forest Street East of Park Street with Pedestrian and A/V Crossing



Forest Street South Riverside Avenue

NEXT STEPS

The Brooklyn neighborhood is experiencing a renaissance of mixed use redevelopment which is increasing the residential activity in the area and creating a combination of land uses that facilities walking and cycling within the community. However, the current transportation network in this area is focuses on higher speed/high volume vehicular traffic. The recommendations in this report provide infrastructure modifications to facilitate the use of pedestrian, bicycle, and transit travel modes while retaining the roadway and intersection capacity needed to maintain effective vehicular traffic operations. These recommendations include reductions in the number of through lanes along Riverside Avenue, Park Street, and Forest Street and re-purposing this space for use pedestrians and cyclists. The recommendations also include recommendations for enhanced streetscape environment, particularly in regards to the need for trees that can provide shade to pedestrians and wide sidewalks to support redevelopment. They also address the need for accommodation of future BRT along Park Street and the potential for future automated transit operations along Riverside Avenue or Magnolia Street/Oak Street.

A key improvement that is recommended for initial implementation is modification of the Park Street Railroad bridge to provide two way traffic on the east side with a multi use Trail / Promenade on the west side. This would transition to a four lane section near Jackson Street. This short-term recommendation would connect the Brooklyn neighborhood to the Convention Center and regional transit center to the north. The cost of this Short-Term improvement would be approximately $1.0 million.

The recommendations are intended to primarily re-purpose the existing right of way to reduce implementation costs. Estimated costs for implementation of improvements are included in the report, indicating an estimated cost of $8.9 to $10.7 million for improvement of all three corridors. An additional cost that is more difficult to quantify at this level of project development is the cost of placing utilities underground, which is typically $500 to $1000 per linear foot estimating $4.8 million to $9.6 million additional for buried utilities and represents a significant cost in retrofitting urban streets.

Implementation of improvements over time can make it easier to achieve the overall plan while providing significant incremental changes. The recommendations include short term improvements that could be implemented first to provide initial change and improve multimodal transportation in the Neighborhood. Next steps for implementation of the plan include:

- Coordinate with City of Jacksonville to further scope and define individual projects.
- Coordinate with FDOT regarding modifications to Riverside Avenue bridge and Forest Street near I-95 interchange
- Coordinate with City of Jacksonville and North Florida TPO to request funding and program projects in the Transportation Improvement Program and Long Range Transportation Plan.
- Coordinate with JTA regarding plans for corridors with BRT and potential future automated shuttle
- Coordinate with the City of Jacksonville and JEA regarding the potential for overhead utilities to be located underground

APPENDIX A

Planning level cost estimates were prepared for the long-range improvement items included in the Brooklyn Neighborhood Road Diet Study. In addition, the cost for short-term improvement recommendations along Park Street were also prepared and included below. These costs do not include the costs for relocating above ground utilities to underground, which can range from $500 to $1,000 per foot.

RIVERSIDE AVENUE LONG-RANGE IMPROVEMENT COSTS

Construction - $1,167,198
Landscaping (Trees) - $268,000
Signal Reconstruction - $1,260,000
Right of Way - $269,520
Total – $2,964,717
Total + 20% - $3,557,661

Assumptions:

- Construction: Estimate based on concept drawings and cross-section includes milling and repaving, striping, keeping basic curb line with some modifications, minor drainage modifications, median modifications, and construction of barrier separation for bike lanes, traffic control, and minor landscaping/earthwork.
- Landscaping (Trees): Cost for planning of Live Oaks (4" caliper) planted 40'-0" o.c. @ $750.00/each plus irrigation estimated based on roadway section type. Other minor landscaping is included in the construction cost estimate.
- Signal Reconstruction: Assumed major modification of seven mast arm signals.
- Right of Way: Assumed as 10% of construction, landscaping, and signal reconstruction costs.

PARK STREET LONG-RANGE IMPROVEMENT COSTS

Construction - $1,021,984
Landscaping (Trees) - $248,325
Signal Reconstruction - $1,620,000
BRT Stations - $80,000
Right of Way - $289,031
Total – $3,259,340
Total + 20% - $3,911,208

Assumptions:

- Construction: Estimate based on concept drawings and cross-section includes milling and repaving, striping, keeping basic curb line with some modifications, minor drainage modifications, median modifications, and construction of barrier separation for cycle track, traffic control, and minor landscaping/earthwork.
- Landscaping: Cost for planning of Live Oaks (4" caliper) planted 40'-0" o.c. @ $750.00/each plus irrigation estimated based on roadway section type. Other minor landscaping is included in the construction cost estimate.
- BRT Stations: Estimate for constructing BRT stations at four locations along the corridor.
- Signal Reconstruction: Assumed reconstruction of nine mast arm signals.
- Right of Way: Assumed as 10% of construction, landscaping, and signal reconstruction costs.

FOREST STREET LONG-RANGE IMPROVEMENT COSTS

Construction - $844,401
Landscaping (Trees) - $158,025
Signal Reconstruction - $300,000
Right of Way - $130,243
Total – $1,432,669
Total + 20% - $1,719,203

Assumptions:

- Construction: Estimate based on concept drawings and cross-section includes milling and repaving, striping, keeping basic curb line with some modifications, minor drainage modifications, median modifications, and construction of barrier separation for cycle track, traffic control, and minor landscaping/earthwork.
- Landscaping (Trees): Cost for planning of Live Oaks (4" caliper) planted 40'-0" o.c. @ $750.00/each plus irrigation estimated based on roadway section type. Other minor landscaping is included in the construction cost estimate.
- Signal Reconstruction: Assumed major modification of two mast arm signals.
- Right of Way: Assumed as 10% of construction, landscaping, and signal reconstruction costs.

RIVERSIDE AVENUE AT FOREST STREET ROUNDABOUT COSTS

Construction - $1,058,880
Landscaping (Trees) - $40,000
Signal Removal - $20,000
Right of Way - $111,888
Total – $1,230,768
Total + 20% - $1,476,922

Assumptions:

- Construction: Estimate based on concept drawings and cross-section includes new pavement, milling and repaving, striping, drainage modifications, and construction of center island, traffic control, and minor landscaping/earthwork.
- Landscaping (Trees): Cost for planning of Live Oaks (4" caliper) planted 40'-0" o.c. in vicinity of roundabout @ $750.00/each and center island plantings plus irrigation estimated based on roadway section type. Other minor landscaping is included in the construction cost estimate.
- Signal Removal: Assumed removal of one mast arm signal.
- Right of Way: Assumed as 10% of construction, landscaping, and signal reconstruction costs.

PARK STREET SHORT-RANGE IMPROVEMENT COSTS

Construction - $408,794
Landscaping (Trees) - $99,330
Signal Reconstruction - $360,000
Right of Way - $0
Total – $868,124
Total + 20% - $1,041,748

Assumptions:

- Construction: Estimate based on concept drawings and cross-section includes modification to bridge striping, bollards to designate half of bridge for pedestrians, minor milling and repaving, striping, keeping basic curb line, minor drainage modifications, , traffic control, and minor landscaping/earthwork.
- Landscaping: Cost for planting of Live Oaks in ground or similar trees in planters on bridge (4" caliper) planted 40'-0" o.c. plus irrigation. Other minor landscaping is included in the construction cost estimate.
- Signal Reconstruction: Assumed reconstruction of two mast arm signals.
- Right of Way: Assumed no Right of Way for short-range improvements.

DOWNTOWN
INVESTMENT AUTHORITY
JACKSONVILLE, FLORIDA