COMPLETE STREETS

JTAMobilityWorks

JACKSONVILLE TRANSPORTATION AUTHORITY



INTER-AGENCY COORDINATION

Several further steps are necessary to ensure the successful implementation of the concepts and recommendations provided throughout the charrette process. Coordination with all involved agencies including the Florida Department of Transportation (FDOT) and the City of Jacksonville (COJ) will remain a key priority, while continuing to foster partnerships within the community and leverage potential funding resources for the various stages of corridor improvements. This continual stakeholder coordination, and additional data collection and analyses will allow for the prioritization of corridor improvements and the creation of a consistent timeline during which these improvements will be made.

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FOREWORD

In 2014, the Jacksonville Transportation Authority (JTA) implemented a complete transit system redesign, known as the Route Optimization Initiative (ROI), overhauling its 43-year old system to be more frequent, direct and reliable. For years, the system spread resources thinly across the county, routes meandered through neighborhoods and schedules were poorly coordinated.

ROI focused on higher frequency and more direct service on key corridors. The idea was that if we could ask customers to walk an extra block or two to get to their desired stop, in return they would get a bus more often, the route would be faster and transfers much easier. As a result, the number of routes with 20 minute frequency increased from two to 20 and ten routes with 15 minute frequency were introduced—a service that had never been previously offered. JTA accomplished this at no additional recurring operating costs.

Far exceeding expectations, ROI has been a success with a 6 percent ridership increase in the first year. Most major changes (let alone complete overhauls) result in reduced ridership initially and at the same time many of JTA's peer agencies were seeing declines in ridership due to low gas prices.

> "If we can develop and design streets so that they are wonderful, fulfilling places to be—community-building places, attractive to all people—then we will have successfully designed about one-third of the city directly and will have had an immense impact on the rest."
>
> –Allan Jacobs, Great Streets

But there is another piece to JTA's effort to upgrade its system. More than 90 percent of JTA customers walk or bike to a bus stop. So the path to the stop is critical. Transit agencies must consider the trip before the trip, or what is known as the "first and last mile". Not doing so would be analogous to a port not worrying about how cargo gets to the docks.

To complement the ROI and address the first and last mile issue, JTA launched a Complete Streets-based infrastructure enhancement initiative known as Mobility Corridors. These designated Mobility Corridors represent JTA's newly deployed, high frequency transit routes established under the ROI. This program is intended to strike a balance between all the functions of a street, putting people and quality of place first, with the recognition that streets can play a major role in improving access to the transit system while also improving safety, public health, economic development and livability.

Acknowledging transit access as central to the program, this initiative seeks to incorporate a range of transformative design enhancements and safety countermeasures that seek to vastly improve the quality of the walking experience for JTA's customers. Equally important, the street can serve as a meaningful and inviting public space within the context of local conditions and street types. Whether it's the installation of protected bike lanes, the restriping of traffic lanes to reduce speed, or the addition of refuge islands or mid-block crossings for pedestrians, the efforts and recommendations described herein involve a rethinking and reallocation of the roadway space. Such retrofits on these key corridors ensure that seniors have time to cross the street, children can safely walk to school, or a parent can easily ride the bus to work or the grocery store.

There is no "one-size-fits-all" type of Complete Street. Our approach will not lead to sidewalks to nowhere or bike lanes on every street, but rather making sure that our core transportation network and road building systems are balanced for all users. In particular this involves a paradigm shift in which pedestrian, bicycle and transit accommodations are no longer merely viewed as "amenities" to be added when feasible, but central to the design process.

Safety is also chief objective of JTA's initiative. According to the 2014 "Dangerous by Design" report published by Smart Growth America, Florida has the top four metropolitan areas on the list of most dangerous large metro areas for walking

in the United States: 1) Orlando-Kissimmee, 2) Tampa-St. Petersburg-Clearwater, **3) Jacksonville**, and 4) Miami-Fort Lauderdale-Pompano Beach. In cities that have largely developed around the automobile, transportation planning has tended to focus on adding auto capacity without fully considering the needs of pedestrians and bicyclists. In cities like Jacksonville, where the climate is favorable to cyclists and pedestrians, our infrastructure regrettably has not always been so appealing to those not driving.



Complete Streets is more than a passing trend to help address this urgent safety and public health problem for our community, but a significant national movement aiming to permanently reverse these conditions. The National Complete Streets Coalition and Vision Zero initiatives are championing a system to substantially reduce traffic deaths and serious injuries in our roadway systems. The recently enacted Federal Transportation Reauthorization (FAST Act) is the first federal transportation bill to include language on Complete Streets. At the State level, the 2015 Florida Transportation Plan Policy Element highlights the need for a "safer environment for pedestrians, bicyclists, and other vulnerable road users" and makes it a key goal to offer more transportation choices for people. The Florida Department of Transportation adopted a formal Complete Streets policy in 2014 and has subsequently developed an Implementation Plan in 2015 to completely overhaul its design manual standards to facilitate Complete Street projects. Locally, the City of Jacksonville has established a Context Sensitive Streets Committee demonstrating its commitment to making roads safer. It will take a unified effort among all partners to get these types of projects implemented and improve safety outcomes.

Despite the link between transit and the pedestrian environment, JTA appears to be one of the few transit agencies in North America with its own Complete Streets program. Over the course of six months, the JTA conducted 13 planning and design charrettes with the community and other stakeholders to identify immediate, mid-term and long-term improvements designed to maximize transit and multimodal accessibility and safety. Some of the key highlights include a new roundabout and lane elimination near the gateway intersection with Jacksonville University; a roadway "rebalancing" including the reduction of lane widths and a new buffered shared use path as a centerpiece for the Blanding Boulevard/Park Street overpass at the approach of Riverside Avondale Historic District; as well as and a proposed shared bus/bike lane along the Norwood Avenue section of the Lem Turner Corridor designed to enhance JTA's First Coast Flyer Bus Rapid Transit service.

We know the demand for many of the projects will far outpace the initial funding that has been reserved for the program. Still, small scale enhancements on all corridors with a number of keystone projects can begin to demonstrate the transformative potential of such investments. Our long term goal is to identify and align funding partnership opportunities with our project priorities as federal, state and local funding become available. These investments, often relatively small, can have major benefits and improve the quality of life in our community.

This Complete Street document lays out the context, principles and vision for a new way to make our streets safe and inviting for all. The recommendations and desired outcomes expressed in each corridor reflect the robust public engagement process and provides a long-term "menu" of capital improvement options for implementation.

Whether you are an elected official, transportation professional or just a concerned citizen, we hope that this document provides the technical tools and insights for the Jacksonville community to work collaboratively and improve its safety reputation, maximize mobility choices and ultimately think differently about the role of design in developing truly great streets.

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1.0 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 each of the design teams and JTA 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: *These are projects JTA would use to showcase "complete streets" for immediate effect. These should be reasonably substantial projects that could be implemented in the near term.*

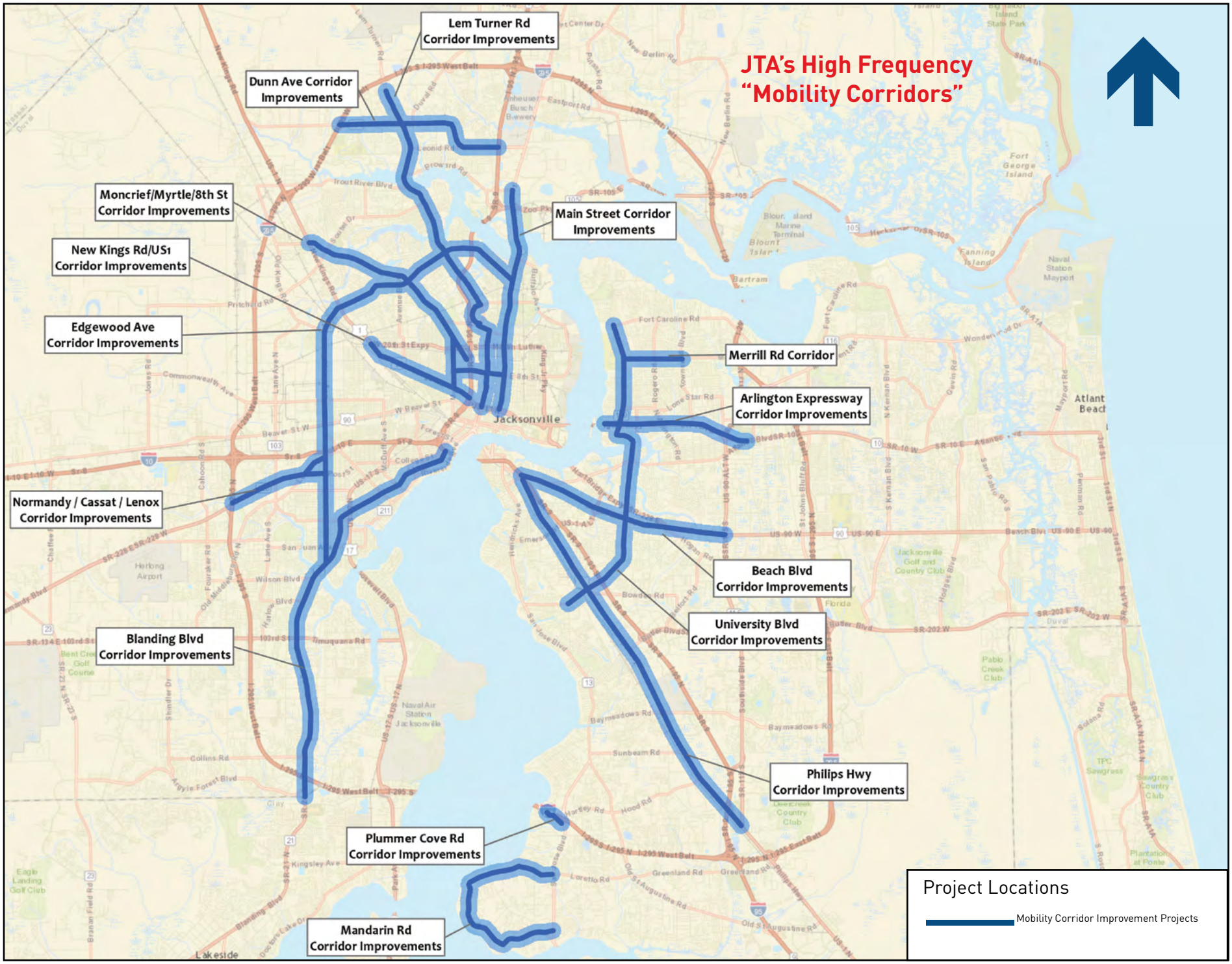
Operational/Safety Enhancements: *These represent "quick fix" improvements that can provide immediate safety and operational improvements at a lower cost.*

Long-Term Vision Projects: *These are complete, larger scale projects for the corridor or corridor segment. These are bolder, more costly investments, which would be included in a long range plan.*

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.

"IF YOU PLAN CITIES FOR CARS AND TRAFFIC, YOU GET CARS AND TRAFFIC. IF YOU PLAN FOR PEOPLE AND PLACES, YOU GET PEOPLE AND PLACES"

–FRED KENT, PROJECT FOR PUBLIC SPACES


JTA's High Frequency
"Mobility Corridors"
Lem Turner Rd
Corridor Improvements
Dunn Ave Corridor
Improvements
Moncrief/Myrtle/8th St
Corridor Improvements
New Kings Rd/US1
Corridor Improvements
Edgewood Ave
Corridor Improvements
Main Street Corridor
Improvements
Merrill Rd Corridor
Arlington Expressway
Corridor Improvements
Beach Blvd
Corridor Improvements
University Blvd
Corridor Improvements
Philips Hwy
Corridor Improvements
Normandy / Cassat / Lenox
Corridor Improvements
Blanding Blvd
Corridor Improvements
Plummer Cove Rd
Corridor Improvements
Mandarin Rd
Corridor Improvements
Jacksonville
Project Locations
Mobility Corridor Improvement Projects

Prior to conducting the design charrettes and workshops, JTA staff initiated a number of preliminary planning activities, including field reconnaissance and corridor screening to determine existing conditions and transit-stop deficiencies, as well as demand analysis and mapping. Additionally, extensive coordination with key stakeholders was carried out to introduce and gain participation into the program. This was intentionally designed to ensure a reasonable framework and methodology for effective communication and planning, as well as to provide for a realistic schedule and timeline for future implementation.

Recognizing that available funding would not enable the implementation of 13 full Complete Street projects, especially given the extensive lengths of many of the Corridors, JTA staff conducted a "5D Mobility Demand Analysis". This 5D (collectively representing **d**ensity, **d**iversity, **d**esign, **d**estinations and **d**istances) analysis is a GIS-based suitability analysis intended to identify areas within each corridor that contain the most optimal characteristics for investing in Complete Street-based improvements. These "D" variables tend to affect travel behavior (particularly the decision to walk or bike or use transit) in predictable ways in terms of having the highest population and employment density per acre; a complimentary mix of land uses; a compact network of connected streets or sidewalks; proximity to key activity centers; and relatively short distances to transit service—most of the ingredients necessary for walkability! More importantly, this effort enabled JTA to prioritize 'hot spot' locations within each corridor for the focus of improvement and investment. Combined with transit ridership and crash data analysis, this approach maximizes the use of limited resources by avoiding the focus on areas that have lower transit dependency and/or safety concerns. Many of these hot spot areas represent the keystone and short-term operational safety enhancements recommendations described in this document.

A sustainable JTA Complete Streets program will require on-going support and strategic collaboration from all agencies involved to provide guidance and identify funding opportunities necessary to implement these projects. A key component will also involve monitoring and performance measurement during and after such projects are constructed. Current federal and state funding opportunities strongly emphasize measurable outcomes. To the extent that these projects demonstrate meaningful results from a safety, economic development, environmental and livability standpoint, the greater the opportunity for leveraging additional funding.



2.0 COMPLETE STREET MOBILITY CORRIDORS

ARLINGTON EXPRESSWAY

EXECUTIVE SUMMARY

As part of the JTAMobilityWorks Complete Streets program, a study of the Arlington Expressway (State Highway 115) corridor begins on the Matthews Bridge as it exits downtown approximately 4 miles east to Atlantic Boulevard at Regency Square Mall.

The physical landscape along the corridor changes dramatically with the times reflecting the historic development pattern across the St. John's River nearer downtown to the east end pattern being auto-oriented Regency Square Mall, built in 1967. The residential neighborhoods in the western portion have tree-lined streets, parks and mixed-use buildings. And, early to mid-century residential suburbs are found in the mid-point portion. The eastern end, however, is a large regional mall and it completely auto-oriented with a bus transfer station the parking lot.

With the construction of new thoroughfares east and south, traffic volumes have remained stable on the corridor with 40,000 cars a day. JTA operates several transit routes on the corridor today, and plans to implement its First Coast Flyer BRT service along the entire length in the next few years.

In order to better understand the issues and concerns of the community, an interactive workshop for the Arlington Expressway JTA Complete Streets project, community members were invited to participate in an interactive "Arlington Expressway Mobility Community Workshop and Open House" on Thursday, October 21st, 2015.

Members of the public attended the charrette, and additional meetings were held with several area stakeholders better understand the revitalization occurring in the area. The project team also held in-house design reviews before and during the charrette to obtain more information and assist in developing and refining potential mobility concepts. Importantly, it was well-understood that this thoroughfare is over-engineered, too wide, and unnecessarily grade separated to provide a safe walking and biking environment and crossings.

To stimulate a dialog on what can feasibly be done to make this corridor a safer corridor for all, visual preference boards were developed for each segment of the corridor. Preferred enhancements identified by the public for the expressway were bike lanes and cycle tracks along the service lanes, enhanced bridge crossings, improve bus station shelters, signage, lighting, and wider sidewalks. With too many pedestrians attempting to cross the high-speed expressway, the need for enhanced safety for pedestrians and bicyclists was a strong theme of the charrette. The total number of pedestrian and automobile conflicts is more than double the nation average. Elements mentioned as ways to address the problem included providing bike lanes, intersection crossings with pedestrian refuge islands, implementing high visibility crosswalks, and providing better lighting in many areas. Finally, urban design and placemaking was a strong theme expressed by charrette attendees, with a desire for bridge decks or lids, a Main Street treatment at the Regency Square Mall, decorative lighting and signage with aesthetic treatments in several locations on the corridor.

A series of concepts and recommendations were developed for various points along the corridor. They were developed with the intention that they be used at any point where it was deemed appropriate throughout the corridor, but the recommendations may not be applicable for all areas:

- Wayfinding Program
- Replace or Add Missing Sidewalks
- Signalized Intersection at Key Location
- Lighting at Underpasses
- Shuttle Service

These main issues were raised during the community workshops by residents and business owners in the area. These elements create a more walkable environment by increasing pedestrian circulation options, and would increase safety in the area by slowing vehicular traffic. Bicycle crossing improvements are included with lane reductions or other measures needed to create the space required to add these elements. In addition, the potential for wayfinding elements are important for creating a sense of place within the corridor. Similarly, there is the potential to implement other wayfinding measures, such as increased signage on the ground or walls, throughout the rest of the corridor as well.

Many of these projects are minor and relatively easy to implement, yet will greatly enhance safety and mobility. Major catalyst intersections locations (with Bus Stops) that will require a range of signing, striping, lighting minor traffic signal updates and pedestrian features are: Arlington Road @ Arlington Expressway Service Road North; Arlington Road @ Arlington Expressway Service Road South; Cesery @ Arlington Expressway Service Road North, and; Add decorative lighting at bridge underpasses in the interim.

1: CONTEXT

The Arlington Expressway (State Highway 115) corridor is located in the eastern quadrant of Jacksonville. The corridor runs due east to/from the Downtown, across the Mathews Bridge, to/from the Southside Connector (State Highway 113) interchange, and terminating/beginning at the Regency Square Mall, where the Expressway becomes Atlantic Boulevard and continues east toward the beaches.

Between the St. John's River and Arlington Road, the Expressway transverses the community of Arlington, and its neighborhoods of Clifton to the south, and Monterey to the north. The Expressway continues east through Arlington, between the communities of Woodland Acres to the south, and Alderman Park to the north. The Expressway turns southeast at Townsend Boulevard, crosses Mill Creek Road, passes under the Southside Connector interchange, and then turns due east again as it terminates into the Regency Square Mall. Its eastern edge transitions directly into Atlantic Boulevard at the mid-point of the Mall entrance to the north.

Under the Mathews Bridge, the it transverses Exchange Club Park Island. Nearer its midway point, the Expressway cuts across the natural corridor of Tree Hill Park and the Arlington River tributary that weaves through Woodland Acres along its southern edge, up along its eastern edge of Alderman Park (Mill Creek) and up to Arlingwood north of the corridor, connecting with the St. John's River again.

For this purposes of this study area, the Arlington Expressway can be separated into three (3) general street segments:

- Arlington Expressway – 200' Street Section
- Southside Connector Interchange – 400' Street Section
- Regency Square – 300' – 230' Street Section

JTA'S FIRST COAST FLYER BUS RAPID TRANSIT (BRT)

A key feature of this corridor will include the implementation of JTA's First Coast Flyer BRT East service. The BRT(light) will travel 14-miles to connect the Downtown area at Rosa Park Station on Union Street to Jacksonville Beach ending at Beach Boulevard and 3rd Street. It is scheduled for construction as the network's 4th Phase to be implemented in 2016. This service will provide a high frequency connection from downtown along Arlington Expressway, Southside Boulevard and Beach Boulevard. Riders will be able to access FSCJ South Campus, Kernan Boulevard and the Beaches quickly and efficiently.



The service will include branded premium transit service, frequent headways, which are approximately every 10 minutes at peak times and 15 minutes during off-peak times. Other BRT elements include new low-floor energy efficient buses, limited stops, real time travel information, and intersection crossing improvements, such as Transit Signal Prioritization and Queue Jump or bypass lanes to allow buses to move to the front of line at traffic signals. This will result in shorter wait times, improved travel times, enhanced schedule reliability, easier transfers, and greater customer service.

The improvements recommended for the Arlington Expressway corridor are intended to "optimize" JTA's Route Optimization Initiative(ROI)/First Coast Flyer BRT with key "first and last mile" improvements. Importantly, the Expressway corridor includes some of JTA's highest frequency transit routes, with moderately high ridership. Furthermore, it is a significant east-west connector with significant safety issues, including a lack of pedestrian accommodations. Pedestrians have frequently been observed crossing the high-speed traffic on the expressway, identifying both a hazard and a need for improved connectivity.

UPGRADED STOPS

An effort to make all bus stops along the Expressway American Disabilities Act (ADA) compliant is underway. As a result, all bus stops are anticipated to have at a minimum a 10' by 5' concrete platform with numerous stops receiving a 30' by 10' concrete platform with new bus shelters, trash cans, and bike loops. In addition, areas with broken sidewalks are being repaired. Also, new concrete platforms that make bus stops compliant with ADA standards are currently being studied and will begin implementation soon.

DANGEROUS BY DESIGN

A 2014 report by Smart Growth America and the National Complete Street Coalition identified Jacksonville as the third most dangerous area to walk in the United States, behind Orlando and Tampa-St. Petersburg, with a Pedestrian Danger Index of 182. The index gives an indication of the likelihood of a person on foot being hit by a vehicle and killed, and the national average is 52, or equal to annual fatalities of 1.56 persons per 100,000 people walking each day. This equates to 2.48 fatalities per 100,000 people walking (359 fatalities from 2003 to 2012). The report states that "overwhelmingly, children, older adults and people of color suffer disproportionately from traffic violence." In the corridor's adjacent communities, the average population is 44% non-white, 35 years old, with 16% living below the poverty level.

ACTIVITY NODES

There are several historic and natural nodes of activity along the Arlington Expressway. These nodes of activity should be considered as key locations for bus stops, transfer centers, and land use considerations supporting the development of future Transit-Oriented Developments. The following nodes are identified at major intersections:

- University Boulevard, connecting to Jacksonville University to the north;
- Cesery Boulevard, connecting to Beach Blvd to the south;
- North Arlington Road, connecting to Bruce Park to the north and Atlantic Blvd to the south;
- Old Mill Creek Road, re-connecting the communities of Woodland and Alderman;
- Regency Square Mall, connecting to Atlantic Blvd.

AVERAGE DAILY TRIPS

There is a national trend in the reduction of vehicle miles traveled (VMT) and the Arlington Expressway follows this trend. The annual average daily traffic (AADT – or average vehicle trips per day from each household), has been consistently declining along the corridor. In general, traffic volumes of 15,000 Vehicles Per Day (VPD) are considered acceptable for a three-lane section (two travel lanes with a center turn lane), while traffic volumes between 15,000 and 25,000 VPD are worth analyzing to determine the street design. Traffic counts over 25,000 VPD typically require 4 to 5 lanes.

The Average Daily Traffic (ADT) counts for Arlington Expressway are expected to remain stable at over 40,000 VPD which has been the case since the early 1990s. This stability is mostly due to the Expressway being typically accessed by people who live in the area, and not used as much by people traveling through the area. Localized economic and demographic forces combined with other transportation improvements have shifted travel patterns. Given the current traffic volumes, a reallocation of the roadway on/off its service roads can be implemented with a bus and bike only lane as an ideal early demonstration project. With this corridor's service road opportunity, transit can more directly serve the community without pedestrian having to cross the Expressway's busier travel lanes.



2: PROCESS

One of the most important steps in any planning process is providing a platform to engage the community and receive meaningful feedback that can be incorporated into the final outcome. A hands-on process allows residents and other stakeholders to provide ideas, voice their opinion and stay informed. For the Arlington Expressway JTA Complete Streets project, community members were invited to participate in an interactive "Arlington Expressway Mobility Community Workshop and Open House" on Thursday, October 21st, 2015 .

The community workshop for the Arlington Expressway was organized in an open house format with a series of "stations", including a background presentation and focus area tables where participants could help develop short-term improvement projects and generate some longer term visions and big ideas. Attendees who participated were able to participate in design activities, speak one-on-one with members of the Project Team and ask questions, identify concerns, and learn more about complete streets.



FIGURE 1: MOBILITY WORKSHOP DISCUSSION IMAGE BOARD



FIGURE 2: MOBILITY WORKSHOP GROUP DISCUSSION



FIGURE 3: OVERALL STUDY AREA

The five stations consisted of:

1. Introduction: Project Overview and Background
   PowerPoint presentation providing background information on the project and area.
2. Visioning: Explore Treasures, Challenges, Ideas
   Provided the opportunity for stakeholders to contribute to the vision of Arlington Expressway
3. Design A: Arlington Expressway Gateway "West"
   Allowed stakeholders the opportunity to explore specific design ideas and improvements with a focus on the recessed Arlington Expressway and University Blvd./N. Arlington Road off ramps, as well as Arlington Expressway at/near grade.
4. Design B: Arlington Expressway "East"
   Opportunity to explore specific design ideas and improvements with a focus on Regency Mall and Southside/Arlington Expressway Intersection and Off-Ramp Redevelopment.
5. Dialogue: Open Forum with Tabletop Discussions
   Allowed stakeholders to meet each other and discuss topics of their choice within the context of the study area.

STATION 1 | INTRODUCTION: PROJECT OVERVIEW AND BACKGROUND

Station 1 provided participants with information on the project funding, history, and the study area. Additionally, it described the concept of complete streets through a combination of visuals and text while also providing basic data and statistics related to the City of Jacksonville's pedestrian, bicycle, and transit environment.

STATION 2 | VISIONING: EXPLORE TREASURES, CHALLENGES, & IDEAS

At Station 2, stakeholders were invited to participate in a visioning exercise by recording their thoughts about the project area directly onto Post-it Notes that were placed on the wall. They were also able to identify areas of concern or areas of opportunity directly on project base maps.

STATIONS 3 & 4 | HANDS-ON DESIGNING

DESIGN A - ARLINGTON EXPRESSWAY GATEWAY "WEST"

This design station included a hands-on activity for participants to explore specific design ideas and improvements, and provided the opportunity to work alongside the urban design team. Station 3 included two key focus areas – the recessed Arlington Expressway and University Blvd./N. Arlington Road off ramps and Arlington Expressway at/near grade.

DESIGN B - ARLINGTON EXPRESSWAY "EAST"

Similarly, the second design station included a hands-on activity for participants to explore specific design ideas and improvements, and the opportunity to work alongside the urban design team for Regency Mall and Southside/Arlington Expressway Intersection and Off-Ramp Redevelopment.

STATION 5 | DIALOGUE: OPEN FORUM – TABLETOP DISCUSSIONS

The final station was provided to allow attendees to have an open forum to discuss the project or specific ideas with their fellow community members and/or members of the project team.

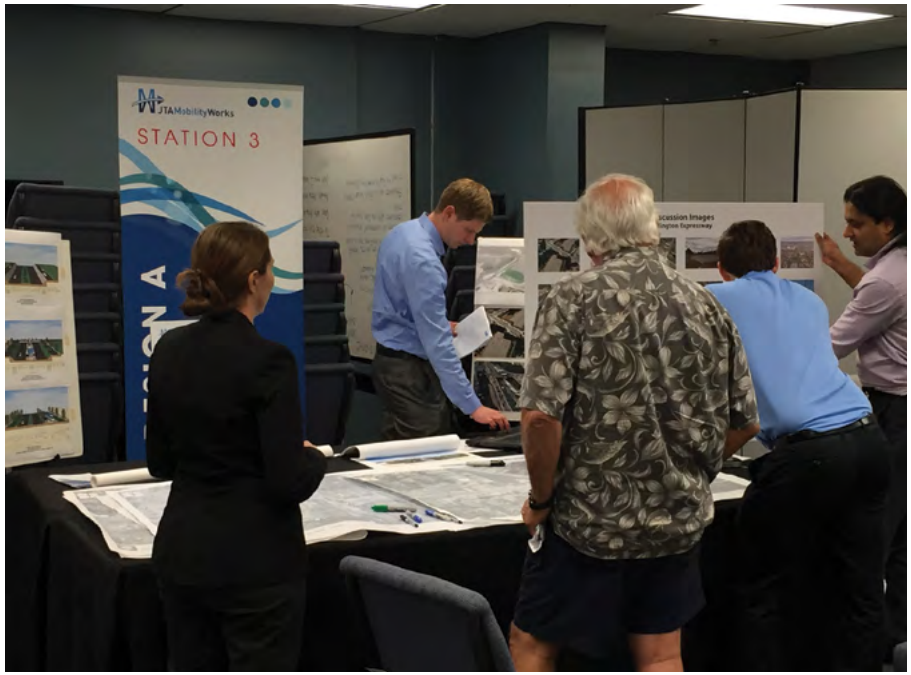


FIGURE 4: OPEN HOUSE WORKSHOP STATION

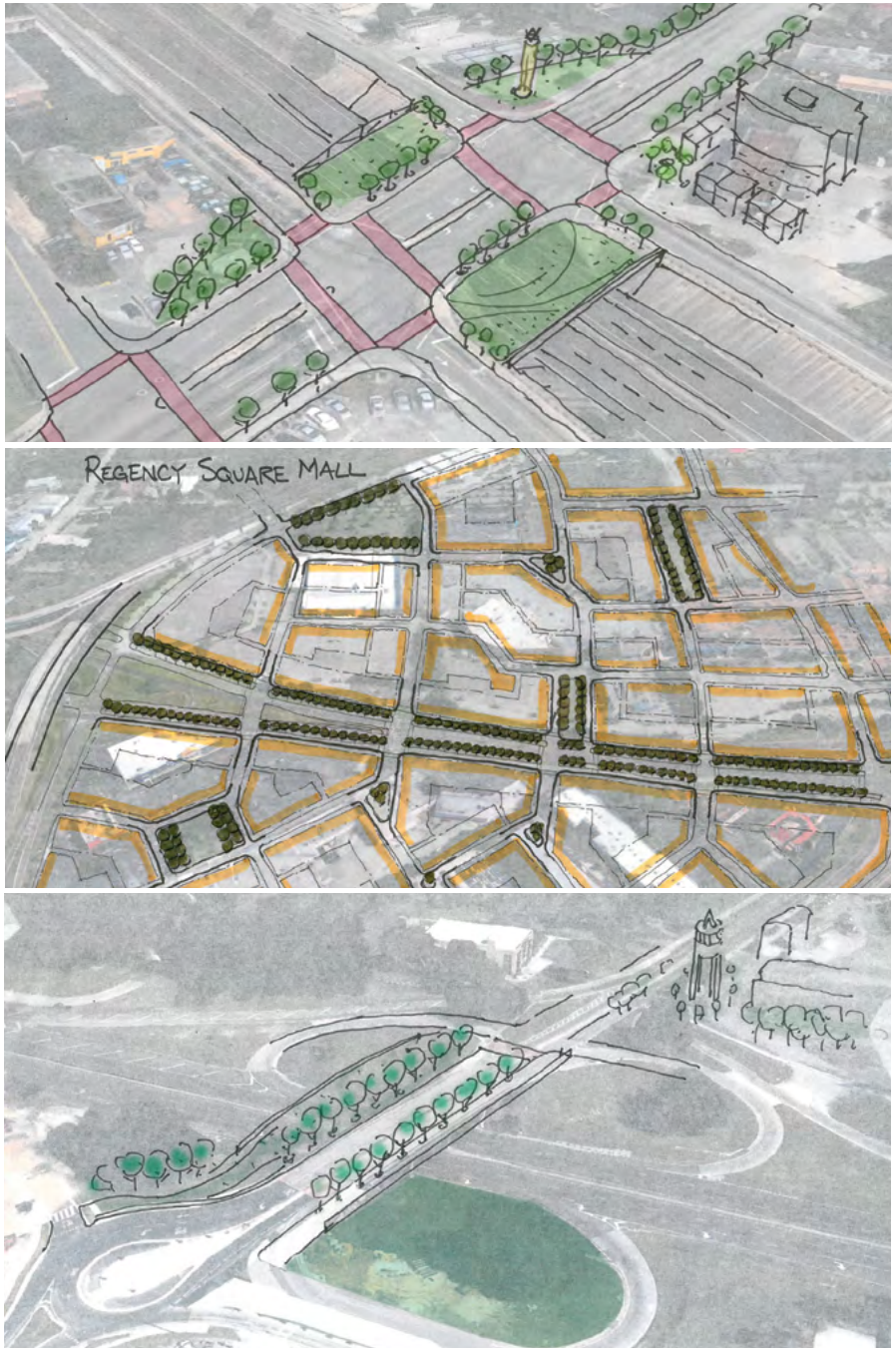


FIGURE 5: SAMPLE CONCEPT IMAGES DEVELOPED FROM WORKSHOP DISCUSSION

DESIGN TABLE EXERCISES

Workshop Stations examined the larger vision for Arlington Expressway, as a vital connection between Jacksonville's downtown core, public beaches and neighborhoods, and as place and destination in need of significant public safety improvements and opportunities for reinvestment.

The Workshop Stations were organized into two Design Stations focused on "hot spots" in need of significant improvements: between the Matthews Bridge and Regency Mall:

DESIGN TABLE A FOCUS AREAS:

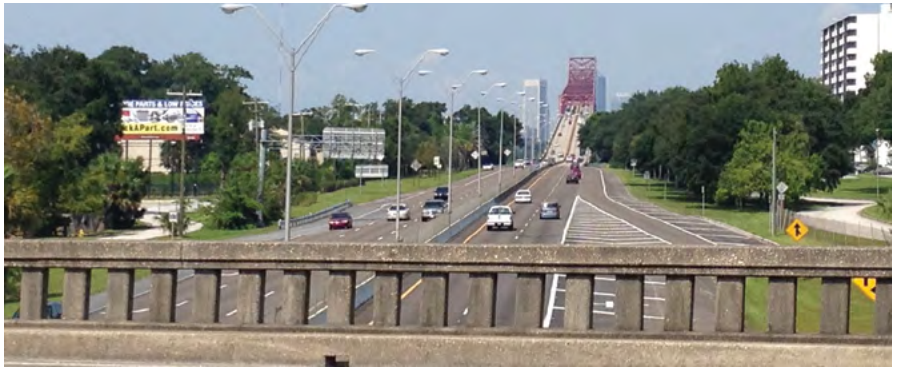
1) EXPRESSWAY - BELOW GRADE -

This Focus Area is located between University Blvd and Arlington Road along Arlington Expressway that is recessed below the adjacent neighborhood and service streets and includes three overpass bridges that were the focus of the discussion.

2) TYPICAL SERVICE STREET -

Examined the typical service street along Arlington Expressway, focusing on the physical conditions, such as lack of sidewalks, street trees and crosswalks.

DESIGN TABLE B FOCUS AREAS:



3) EXPRESSWAY - AT/NEAR GRADE -

Focus area is located between Arlington Road and Regency Mall along Arlington Expressway that is largely at-grade with the adjacent neighborhoods and is demarcated with a fence and landscaping to prevent pedestrian crossings.

4) RAMPS AT REGENCY MALL -

The Focus Area is located between the Southside Connector on- and off-ramps and the Regency Mall. This area has significant safety issues that stem from no sidewalks or crosswalks. Regency Mall has high vacancy rates and is in need of redevelopment.

The Focus Areas at each Design Station included large scale maps that attendees



FIGURE 6: FOCUS AREA LOCATIONS SHOWN DURING THE "WORKSHOP STATIONS" (DESIGN STATIONS A & B)

could write in ideas and suggest improvements. The design team presented conceptual hand-drawn renderings and sections of the Expressway, taking into account the possibilities of introducing BRT lines, bike boulevards, and wider sidewalks. The team also engaged the public with an image discussion board that included photos of built infrastructure projects throughout the United States, including imagery of landscaped bridges "lids" with park space, BRT systems, mixed-use development along expressways, gateway structures, wayfinding and decorative lighting elements.

COMMUNITY FEEDBACK FROM WORKSHOP ATTENDEES

Jacksonville's Arlington Expressway serves as a vital connection between Downtown, the Arlington neighborhoods and the Beaches Communities to the east. The Expressway physically divides the Arlington neighborhoods, limiting visibility and access to businesses and neighborhoods, while enabling high speeds that creates an array of pedestrian safety concerns and economic instabilities.

SAFETY on and around Arlington Expressway was the most mentioned topic. High speeds and few places to cross Arlington Expressway have led to pedestrian fatalities. Participants of the October 18, 2015 workshop reported seeing people regularly run across the Expressway, some even cutting through the chain link fence in the median. Others reported seeing children with backpacks trying to run across to get to their school. Many participants promoted the idea of a branded shuttle to connect the neighborhoods that are bisected by the Expressway.

REVITALIZATION is a top priority. Although problems exist within the Arlington Expressway, there is potential to improve the corridor, ultimately improving pedestrian safety and reestablishing business presence. Workshop participants favored promoting the revitalization of the vacant parcels of land with a anchor development at the intersection of Arlington Expressway and University Boulevard. Today, the location is a large, underutilized parking lot.

Workshop participants discussed the desire for a more upscale grocery store, such as Whole Foods. Participants also favored a secondary anchor nearby, in the location of the former Thunderbird Hotel. Many saw the location as a prime place for development since it receives so much traffic and visibility from the Expressway. Transportation improvements along the corridor were well received by workshop attendees.
Participants had ideas of their own for how to improve the Arlington Expressway.

For ways to attract businesses to the corridor, one individual mentioned setting up a "utility infrastructure" that would provide incentives for private development to relocate there. Another participant saw the introduction Bus Rapid Transit (BRT) a station that integrated offices or residential above as a potential incentive for other businesses to relocate nearby. Another interesting concept that was mentioned was leveraging a partnership between new businesses and Jacksonville University, which is located north of the Expressway as a focused strategy to promote residential and business development in the area.

MOBILITY along Arlington Expressway could be enhanced with BRT service, connecting the Arlington neighborhoods with Downtown and the beaches. Workshop participants envisioned a BRT stations could part of the overall redevelopment of the bridge overpass infrastructure, providing access to the BRT system along the Expressway as well as safe passage across the Expressway. BRT could be transitioned to light rail in the future.

The image discussion board and illustrative sketches was a source of public dialogue and feedback. The Landscaped Lid Concept was supported by the workshop participants. It showed a BRT line with a transit stop that became part of the bridge overpass redevelopment. Many were drawn to a landscaped overpass lid example in Redmond, Washington seeing it as having possible application in Jacksonville. Many participants emphasized gateway and wayfinding elements that would announce the arrival into Arlington.

Service streets were a recurring topic for workshop participants. Several residents and small business owners indicated the lack of sidewalks, inconsistent lighting, in addition to the few cross streets that bisect the Expressway, make navigation along the service streets confusing, limiting access and visibility to businesses in the area and contributing to the high vacancy.

Community branding is important for the neighborhoods along Arlington Expressway. Residents were drawn to the image board with examples of gateways, kiosks and district identification signage that gave a sense of identity to an area. Many saw the redevelopment of the University Avenue bridge into a landscaped lid with gateway signage announcing entry into Arlington as a first step in the revitalization of many vacant parcels located adjacent to the Expressway.

3: CONCEPTS

1 EXPRESSWAY - BELOW GRADE

Located between University Blvd and Arlington Road

Four concepts for the redevelopment of the bridge overpasses along Arlington Expressway were developed, including 3 concepts at University Blvd and 1 concept at Arlington Road. Each concept developed various approaches of modernizing the bridge to meet current code and standards, while improving connectivity between the neighborhoods with landscaped treatments with an iconic gateway identification.

UNIVERSITY AVENUE BRIDGE CONCEPTS:

[1.1] **Landscaped Lid Concept** maintains vehicular circulation along University Blvd and provides an extended park-like setting;

[1.2] **Full Width - Landscaped Lid Concept** - a landscaped park lid built above a reconstructed University Avenue bridge that allows traffic to continue under the bridge;

[1.3] **Reconstructed Bridge** with widened sidewalks and landscape area that is less in width than Option [1.1];

ARLINGTON ROAD BRIDGE CONCEPT:

[1.4] **Landscape Lid Treatment** added at both sides of reconstructed bridge, park treatment continued at adjacent blocks.

PHOTO EXAMPLES OF LANDSCAPE LIDS

Widened Bridge – Utilizing existing bridge infrastructure with widened sidewalks and bike lanes to improve north/south crossing for pedestrians.





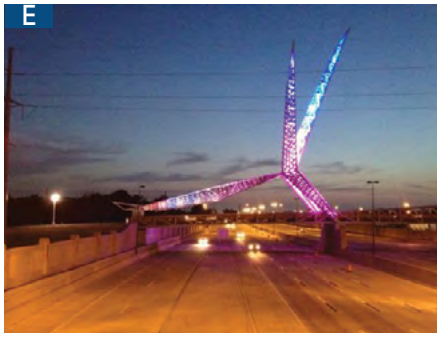
Park over Roadway – Greenspace above previously dividing roadway. Includes walking paths, decorative planting, and lighting. Potential to join neighborhoods separated by roadways.



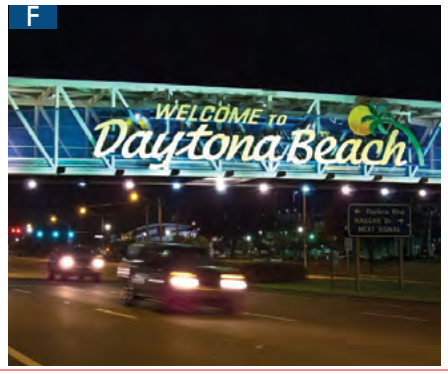
Overpass Lid – Example landscape lid in Redmond, Washington. A widened bridge deck with extensive planting and flowing retaining walls, pathways, and lighting. Walkways provide pedestrians with connections to nearby trails and development



Mass Transit with Station - Bus rapid transit on the same grade as the expressway, with a station and pedestrian risers/elevators to get them to the upper level of the overpass.



Gateway Element: Bridge - SkyDance Bridge in Oklahoma City, Oklahoma, is a pedestrian bridge that incorporates an iconic sculpture. A similar application for the Arlington Expressway could utilize overpasses as a gateway that defines the entry to Arlington.



Gateway Element: Signage - The pedestrian bridge in Daytona Beach, Florida, welcomes visitors and thanks them as they leave the area. The display acts as a gateway into Daytona Beach and emphasizes a region.



FIGURE 7: EXPRESSWAY - LANDSCAPED LID CONCEPT



FIGURE 8: EXPRESSWAY - FULL WIDTH LANDSCAPED LID CONCEPT



FIGURE 9: EXPRESSWAY - RECONSTRUCTED BRIDGE

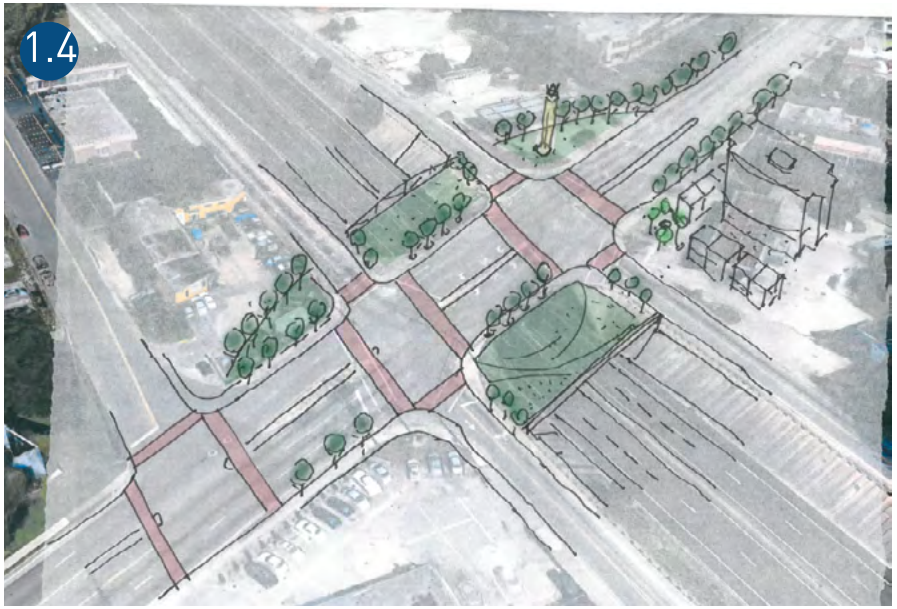


FIGURE 10: ARLINGTON ROAD BRIDGE CONCEPT - LANDSCAPE LID TREATMENT

DESIGN TABLE - A





2 TYPICAL SERVICE STREET

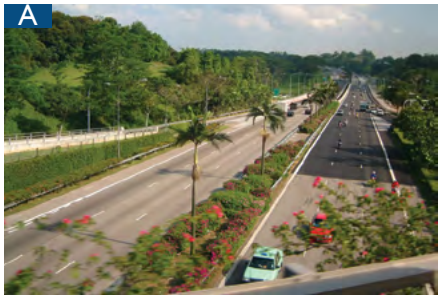
Typical service street condition

A typical section of service street along Arlington Expressway generally lacks sidewalks, lighting, street trees, on-street parking and bicycle infrastructure, making it nearly impossible and dangerous for pedestrians. Many of the businesses located along the service streets remain vacant or under utilized.

[A] A complete sidewalk - includes a Building Zone adjacent to the building that accommodates outdoor cafes and seating, a Pedestrian Through Zone, a minimum 5-foot clear zone for walking. and a Furnishing Zone that accommodates street trees, landscaping, utilities and light poles.

DESIGN TABLE - B





3 EXPRESSWAY - AT/ NEAR GRADE

Between Arlington Road and Connector Ramps

The landscaping along the at-grade median is inconsistent in foliage and maintenance and includes a fence that has disassembled by pedestrians attempting to cross the Expressway. Studies have been completed that convert Arlington Expressway into a Boulevard, by reducing the number of lanes, expanding the width of the median and providing for cross streets, where possible.

[A] Landscape Median Example - can include flowering trees that provide for beautification and maintain visibility through the expressway.



SERVICE LANES AS SLIP LANES IN A BOULEVARD SECTION



RENDERING FROM THE ARLINGTON EXPRESSWAY "CONTEXT SENSITIVE SOLUTIONS CORRIDOR STUDY" PREPARED BY HNTB







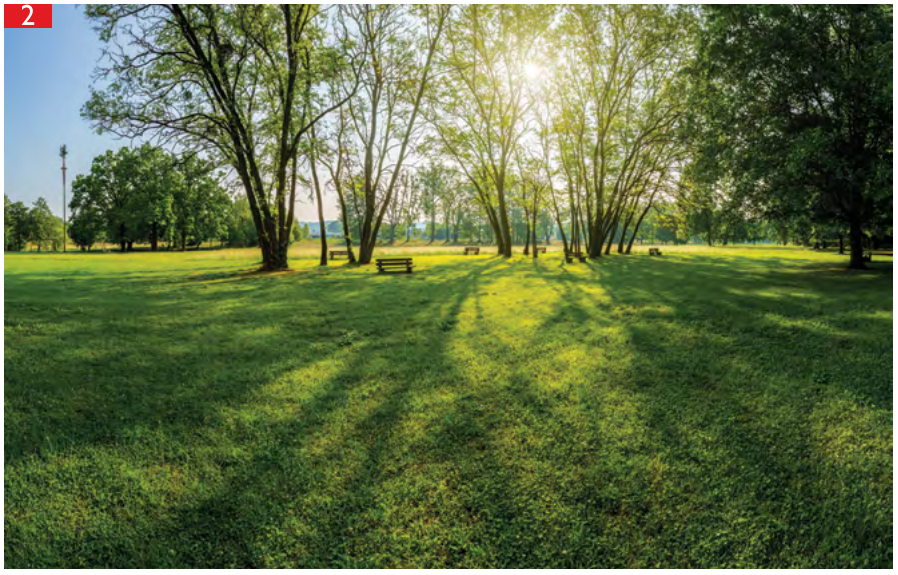
4 RECONNECTING MILL CREEK ROAD

Significant safety issue, reconnect sidewalks and crosswalks

Arlington was re-engineered over time to accommodate for more and more high-speed vehicles, culminating in the Southside Connector. With the BRT line connecting the region to Arlington, the need to regulate vehicle speeds throughout the corridor in order to allow for pedestrians, bicyclist, and transit buses to interact is of utmost safety importance. Woodland Acres, Alderman Park, and Regency Mall are now destinations as opposed to places to pass-by at high-speed.

Reconnecting Mill Creek Road with an intersection would provide the following ramifications. First, would be a declaration from Arlington Expressway, traveling east, which is a decision point to either continue east toward Regency Mall, or merge onto Southside Connector, or turn north or south to access the communities of Woodland Acres or Alderman Park. Second, This declaration will enable the park area to be formed that is accessible, picturesque and an entry into the Regency Mall Main Street between the Southside Connector and Atlantic Boulevard. And, third, pedestrians, bikes, and locally accessible vehicles will be able to reconnect the traditional urban fabric cut by the high-speed thoroughfares bifurcating Arlington.





5 RAMPS AT REGENCY MALL

Significant safety issue, no sidewalk and crosswalks

The Southside Connector on and off-ramps cuts off pedestrian access to the Regency Mall and demarcates the Expressway from its frontage. The Regency Mall suffers from high vacancy and is underutilized as result, in addition to being an outdated regional shopping mall. Various concepts were generated that addressed pedestrian accessibility and how the Regency Mall site could be redeveloped to engage Arlington Expressway, and how the expressway can be redesigned to be more of a complete street.

[5.1] and [5.2] - Reparcelization of the Regency Mall site and adjacent blocks into walkable and compact street grid. The street grid would also include with parks and opens space, with development modulated at the property line.

[5.3] - Converts the boulevard median into a parking district, narrowing the thoroughfare, and creating a more walkable connection by establishing connectivity with the Regency Mall to the north and Regency Shopping Center to the south. Intended to turn the high-speed thoroughfare into a Main Street.

[A] Example of a mixed-use development that includes active uses at the ground level, articulated streetwall, emphasized corners, wide sidewalks with street trees and outdoor cafes. The boulevard is as wide as Arlington Expressway, and includes striped bicycle lanes, bulbed-out street corners and an enhanced bus transit system integrated within the median design.

5.1



5.2



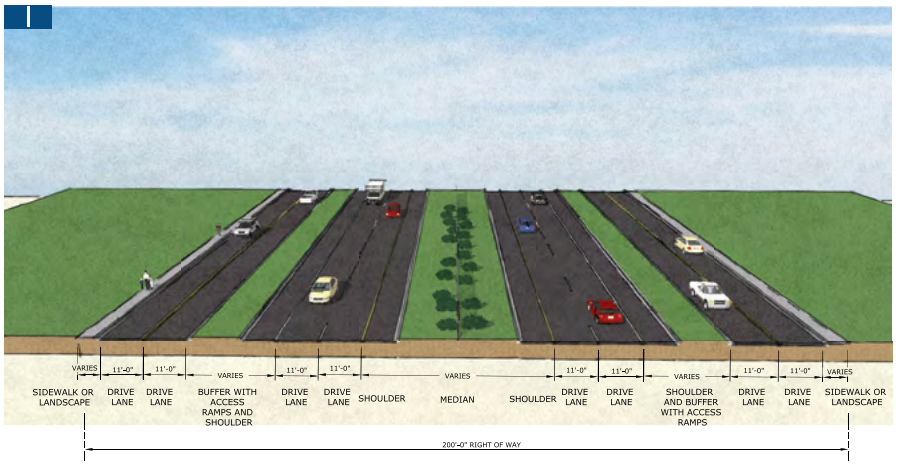
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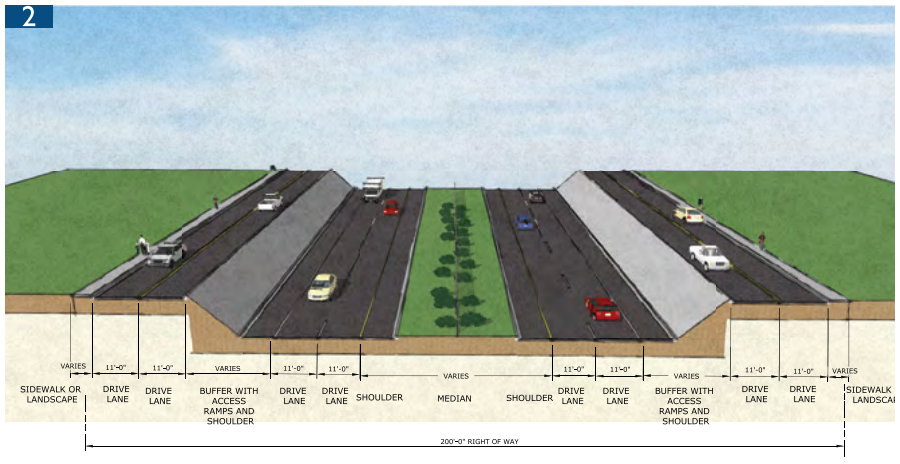


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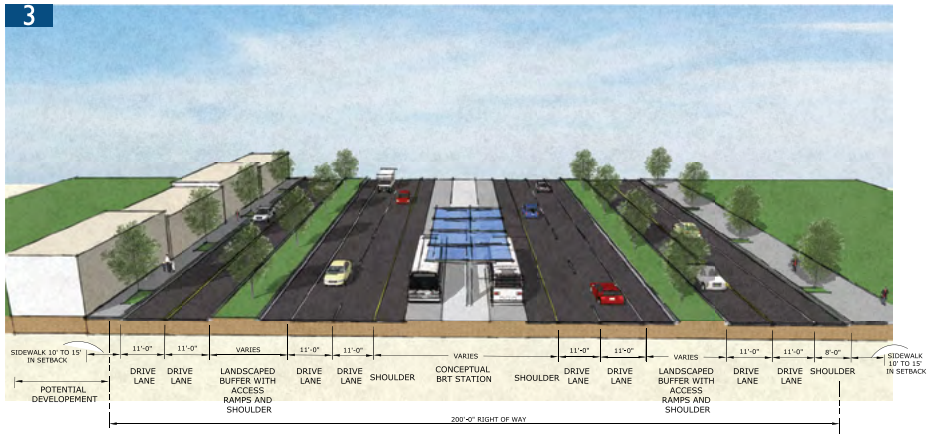


ARLINGTON EXPRESSWAY SECTION DESCRIPTIONS	
OPTION	**DESCRIPTION**
1	Existing Conditions at Grade: Two-way access road lanes each side, (2) drive lanes each direction, median
2	Existing Conditions Below Grade: Two-way access road lanes each side, (2) drive lanes each direction, median
3	Widened sidewalks adjacent to access roads, two-way access road lanes each side, street trees on sidewalks and landscape buffer areas, (2) drive lanes each direction, median removed and replaced with BRT station and tracks
4	Widened sidewalks adjacent to access roads, street trees on sidewalks and landscape buffer areas, two-way bike boulevard each side, (2) drive lanes each direction, (1) turn lane each direction, median removed and replaced with BRT station and tracks
5	Widened sidewalks adjacent to access roads, street trees on sidewalks and landscape buffer areas, two-way access road lanes each side, (2) drive lanes each direction, median remains
6	Widened sidewalks adjacent to access roads, street trees on sidewalks and landscape buffer areas, two-way bike boulevard one side, two-way bike boulevard and BRT station one side, (2) drive lanes each direction, median width reduced
7	Widened sidewalks adjacent to access roads, street trees on sidewalks and landscape buffer areas, two-way above-grade access road lanes each side, median removed and replaced with BRT station and tracks, pedestrian connection to overpass
8	Pedestrian Bridge Concept. Flexible location, could connect new developments on both sides of the Expressway.

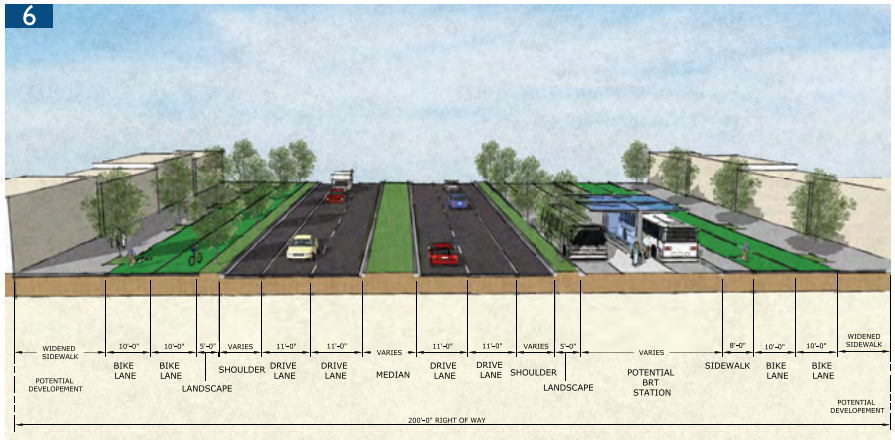




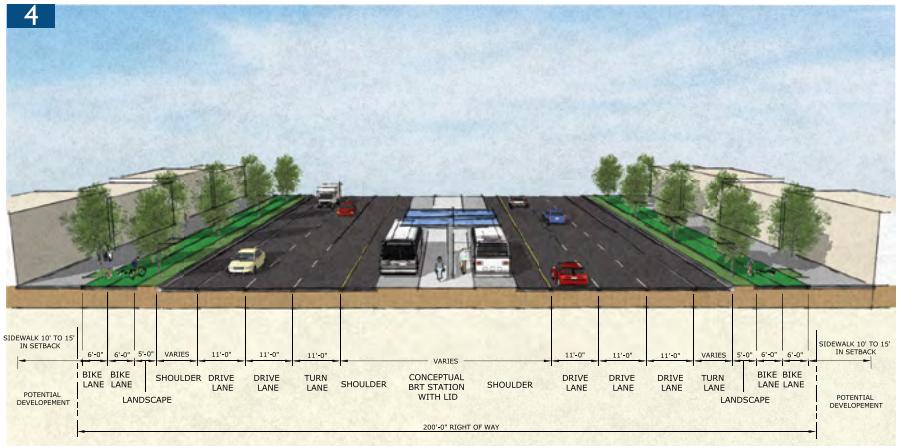
3


SIDEWALK 10' TO 15' IN SETBACK
11'-0"
11'-0"
VARIES
11'-0"
11'-0"
VARIES
11'-0"
11'-0"
VARIES
11'-0"
11'-0"
8'-0"
SIDEWALK 10' TO 15' IN SETBACK
DRIVE LANE
DRIVE LANE
LANDSCAPED BUFFER WITH ACCESS RAMPS AND SHOULDER
DRIVE LANE
DRIVE LANE
SHOULDER
CONCEPTUAL BRT STATION
SHOULDER
DRIVE LANE
DRIVE LANE
LANDSCAPED BUFFER WITH ACCESS RAMPS AND SHOULDER
DRIVE LANE
DRIVE LANE
SHOULDER
POTENTIAL DEVELOPEMENT
200'-0" RIGHT OF WAY

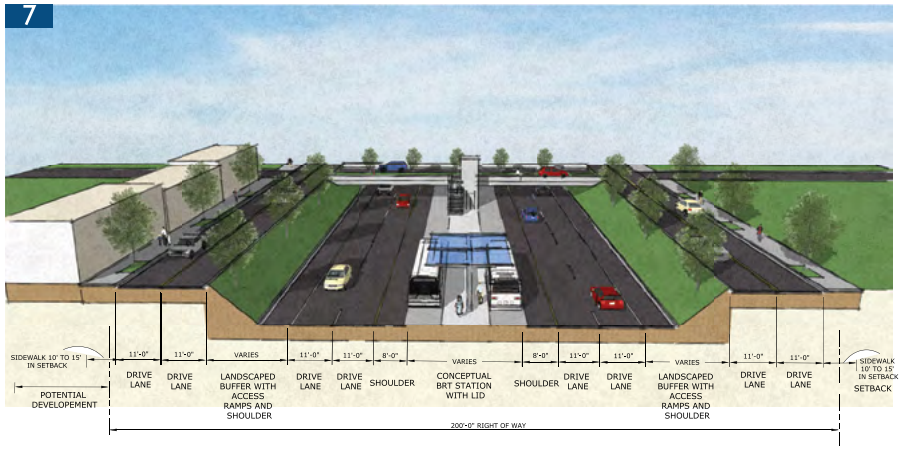
6


WIDENED SIDEWALK
10'-0"
10'-0"
5'-0"
VARIES
11'-0"
11'-0"
VARIES
11'-0"
11'-0"
VARIES
5'-0"
VARIES
8'-0"
10'-0"
10'-0"
WIDENED SIDEWALK
POTENTIAL DEVELOPEMENT
BIKE LANE
BIKE LANE
LANDSCAPE
SHOULDER
DRIVE LANE
DRIVE LANE
MEDIAN
DRIVE LANE
DRIVE LANE
SHOULDER
LANDSCAPE
POTENTIAL BRT STATION
SIDEWALK
BIKE LANE
BIKE LANE
POTENTIAL DEVELOPEMENT
200'-0" RIGHT OF WAY

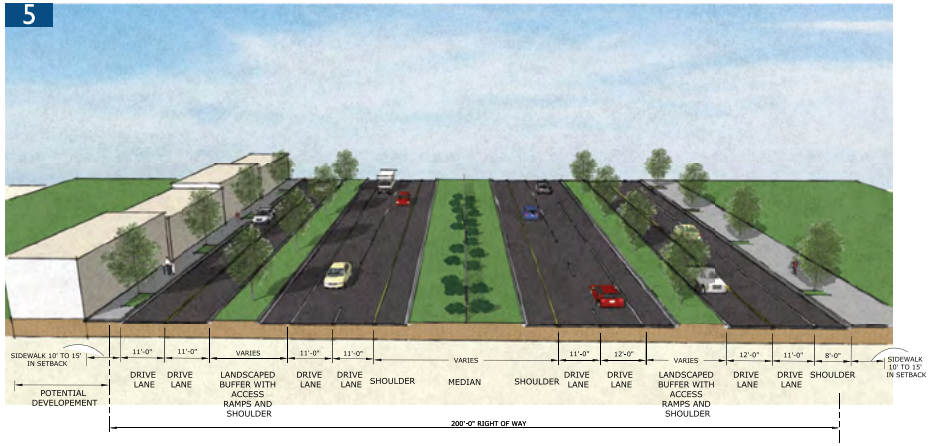
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SIDEWALK 10' TO 15' IN SETBACK
6'-0"
6'-0"
5'-0"
VARIES
11'-0"
11'-0"
11'-0"
VARIES
11'-0"
11'-0"
11'-0"
VARIES
5'-0"
6'-0"
6'-0"
SIDEWALK 10' TO 15' IN SETBACK
BIKE LANE
BIKE LANE
LANDSCAPE
SHOULDER
DRIVE LANE
DRIVE LANE
TURN LANE
SHOULDER
CONCEPTUAL BRT STATION WITH LID
SHOULDER
DRIVE LANE
DRIVE LANE
DRIVE LANE
TURN LANE
LANDSCAPE
BIKE LANE
BIKE LANE
POTENTIAL DEVELOPEMENT
POTENTIAL DEVELOPEMENT
200'-0" RIGHT OF WAY

7


SIDEWALK 10' TO 15' IN SETBACK
11'-0"
11'-0"
VARIES
11'-0"
11'-0"
8'-0"
VARIES
8'-0"
11'-0"
11'-0"
VARIES
11'-0"
11'-0"
SIDEWALK 10' TO 15' IN SETBACK
POTENTIAL DEVELOPEMENT
DRIVE LANE
DRIVE LANE
LANDSCAPED BUFFER WITH ACCESS RAMPS AND SHOULDER
DRIVE LANE
DRIVE LANE
SHOULDER
CONCEPTUAL BRT STATION WITH LID
SHOULDER
DRIVE LANE
DRIVE LANE
LANDSCAPED BUFFER WITH ACCESS RAMPS AND SHOULDER
DRIVE LANE
DRIVE LANE
SETBACK
200'-0" RIGHT OF WAY

5


SIDEWALK 10' TO 15' IN SETBACK
11'-0"
11'-0"
VARIES
11'-0"
11'-0"
VARIES
11'-0"
12'-0"
VARIES
12'-0"
11'-0"
8'-0"
SIDEWALK 10' TO 15' IN SETBACK
DRIVE LANE
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LANDSCAPED BUFFER WITH ACCESS RAMPS AND SHOULDER
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SHOULDER
MEDIAN
SHOULDER
DRIVE LANE
DRIVE LANE
LANDSCAPED BUFFER WITH ACCESS RAMPS AND SHOULDER
DRIVE LANE
DRIVE LANE
SHOULDER
POTENTIAL DEVELOPEMENT
200'-0" RIGHT OF WAY

8



LANDSCAPED LID AT UNIVERSITY AVENUE CONCEPT

The proposed Landscape Lid Concept at University Avenue would reconstruct the bridge to meet current standards and (1) allow for efficient vehicular circulation and (2) enhance pedestrian connectivity with a landscaped lid that would not only serve as an amenity for the neighborhood, but would brand and identify the entry into the Arlington neighborhood, (3) stimulating redevelopment of the nearby vacant lots.

Streetscape improvements along University Avenue would continue northbound for one block to include improvements to the roadway, widen sidewalks, added street trees, enhanced curb cut entries into the existing and future redevelopment sites.



Final Concept of Landscape Lid. Improvements would include the following:

1. Landscape deck approximately 60 to 80 feet out in each direction from centerline of the bridge. Gateway and neighborhood identification incorporated into the bridge design would brand the entry into the Arlington neighborhood.
2. Landscape improvements to the on and off ramps to University Avenue
3. Streetscape Improvements along University Avenue, to include roadway enhancements sidewalk widening, street trees and improved entries to existing and nearby future redevelopment sites.
4. Redevelopment of vacant and underutilized lots would be part of the revitalization effort that would start with the implementation of the University Bridge Landscape Lid.



FIGURE 11: AERIAL OF EXISTING BRIDGE OVERPASS AT UNIVERSITY AVENUE



FIGURE 12: EARLY VERSION OF LANDSCAPED LID THAT INCLUDED A PARK-LIKE SETTING, DISTRICT IDENTIFICATION AND IMPROVED SIDEWALKS FOR PEDESTRIANS



FIGURE 13: RENDERING OF THE UNIVERSITY LANDSCAPED LID

4: RECOMMENDATIONS

The street and development concepts from the charrette have been sorted into a series of project recommendations. Projects have been described previously in the concepts section of this report. Recommendations fall into three categories:

- **Keystone Projects**
  Projects JTA would use to showcase "complete streets" for immediate effect. These should be reasonably substantial projects that could be implemented in the near term.

- **Operational/Safety Enhancements**
  These are "quick fix" improvements that can provide immediate safety and operational improvements at a lower cost.

- **Long-Term Vision Projects**
  These are complete projects for the corridor or corridor segment. These are bolder, more costly investments, which would be included in a long range plan.

KEYSTONE PROJECTS

PRIORITY PROJECT:

Wayfinding Program
- Vehicular and pedestrian wayfinding signage program, indicating destinations in the Arlington neighborhoods, such as Jacksonville University.

SECONDARY PROJECT:

Replace or Add Missing Sidewalks
- Add sidewalks where missing along Arlington Service Streets. Add striped crosswalks at all intersections

OPERATIONAL/SAFETY ENHANCEMENTS

PRIORITY PROJECT:

Signalized Intersection Locations
- Priority intersection locations (with Bus Stops) that will require a range of signing, striping, lighting minor traffic signal updates and pedestrian features.
- Arlington Road @ Arlington Expressway Service Road North
- Arlington Road @ Arlington Expressway Service Road South
- Cesery @ Arlington Expressway Service Road North

SECONDARY PROJECTS:

Lighting at Underpass
- Add decorative lighting at bridge underpasses in the interim

Shuttle Service
- Provide Shuttle Service to get people across the Expressway to key destinations

Unsignalized Intersection Locations
- Priority intersection locations (with Bus Stops) that will require a range of signing, striping, lighting and pedestrian features
- Townsend Blvd @ Arlington Expressway Service Road North
- Bert Road @ Arlington Expressway Service Road North
- Rogero Road @ Arlington Expressway Service Road North
- Underhill Drive @ Arlington Expressway Service Road North
- West of Cesary near Expressway entrance ramp @ Arlington Expressway Service Road South

LONG-TERM VISION PROJECTS

Landscaped Lid at University Boulevard

- Redevelopment of University Boulevard overpass to meet all Code requirements and include landscaping, pedestrian amenities and gateway/district signage highlighting the entrance into the Arlington neighborhoods.

BRT Expressway

- Dedicated BRT Expressway along the median of Arlington Expressway. Access from service roads and from possible redevelopment of University overpass (and Arlington Bridge) to allow for protected vertical access.

Southside Connector Ramps

- Redevelopment of the Southside Connector on and off-ramps to allow for pedestrian connectivity between communities north and south of the Arlington Expressway and access to the Regency Mall

Redevelopment

- Promote the revitalization of prime parcels adjacent to Arlington Expressway that are currently vacant or under-utilized, to promote mixed-use development at:
  - Regency Mall and frontage parcels along Arlington Expressway
  - Town and Country Shopping Center at University Avenue
  - Redevelopment of the Thunderbird Hotel
  - Redevelopment of the Arlington Plaza at Arlington Road

Streetscape Implementation

- Implement Phased Streetscape Plan for the reconfiguration of Arlington Service Roads to include widened sidewalks (and where sidewalks are missing), street trees, lighting, crosswalks and possible two-way traffic scenarios.



BEACH BOULEVARD

EXECUTIVE SUMMARY

As part of the JTAMobilityWorks Complete Streets program, a study of the Beach Boulevard (US 90) corridor was conducted. The portion of Beach Boulevard studied is approximately 5.5 miles long, and extends from Interstate 95 (I-95), through the St. Nicholas neighborhood to Southside Boulevard (SR 115). The east-west corridor connects I-95, San Marco, St. Nicholas with the east side of Jacksonville and the Beaches communities.

Beach Boulevard serves as a major arterial which traverses a variety of adjacent land uses, from a large high school/primary school complex, the historic St. Nicholas area, a medical district as well as numerous retail and shopping zones. Average daily traffic volumes (based on available 2013 data) range from 42,050 vehicles approaching I-95, 19,000 in St. Nicholas, 27,000 vehicles near University, and 56,000 vehicles per day at Southside Blvd. There are no bicycle facilities within the limits of the study area. There are sidewalks along most of Beach Boulevard, however, there are gaps in sidewalk connectivity and various segments are in disrepair. JTA operates transit service along Beach Boulevard with one of the highest ridership locations at the intersection with University Boulevard.

Much of the focus of the corridor was on the St. Nicholas area where the mobility challenges are most significant. There are challenges with vehicles traveling at higher speeds attributed in part to the proximity to the I-95 ramp.

In order to better understand the issues and concerns of the community, a multi-day charrette was held October 13-15th, 2015 at the St. Nicholas Park Christian Church. The community outreach for this corridor also included an outdoor event in the parking lot across from the Mudville Grille during the lunch hour on October 16. The "Open Tent Event" was held to capture members of the public who frequently travel through the area during midday hours. More than 30 members of the public, including City Council representatives, attended the charrette during the three day period.

The project team also conducted field reviews before and during the charrette to obtain more information and assist in developing and refining potential mobility concepts. During the field reviews, multiple photos were taken as the team observed mobility concerns with pedestrians crossing Beach Boulevard at locations not clearly marked, as well as challenges due to roadway physical barriers such as the overpass at Beach and Atlantic Boulevards.

Enhanced safety for pedestrians and bicyclists was a strong theme of the charrette. The community also expressed concern for high travel speeds and the inability to safely make turning movements on/off Beach Boulevard. The charrette presentations highlighted areas where mid-block crossings and enhanced crosswalks may be considered. Moreover, the project team obtained public feedback on alternative traffic flow and travel lane configurations in the St. Nicholas community.

Key recommendations for the Beach Boulevard corridor include:

- Implementing a Beach Boulevard Road Diet, reducing travel lanes from the pedestrian overpass near Kingman Avenue to Carmichael Avenue, to slow traffic and accommodate pedestrian and bicycle activity in a safer environment.
- Reconfiguring traffic patterns by implementing a "square-about" at Beach Boulevard and Atlantic Boulevard, to calm traffic and redefine traffic circulation.
- Enhancing the aesthetics of the pedestrian overpass to improve safety for students accessing the school and more prominently designate the St. Nicholas area.
- Focus on transit oriented development along the corridor to better utilize adjacent, vacant parcels.

The project team also highlighted the importance to address mid-block crossing in St. Nicholas to improve safety for pedestrians in the retail district. Additionally, safety and operational improvements are recommended to add bicycle facilities and address gaps in sidewalk connectivity, especially adjacent to transit stops and access to retail shopping areas and Virginia College. Adding a pedestrian walkway and wayfinding in the vicinity of the new Brooks Rehabilitation buildings and Memorial Hospital complex were also seen as important mobility enhancements to improve safety and accessibility along the corridor.

Potential long-term projects were also identified to help reshape auto-dominated Beach Boulevard into a safer multi-modal corridor. A long term vision for the corridor would include consideration of removing the roadway grade separation of Atlantic and Beach Boulevards that splits the St. Nicholas neighborhoods and expanding the pedestrian features including signalized crosswalks at multiple locations along the corridor. Further development and analysis of all the concepts and recommendations outlined in this study is essential. Moreover, continued coordination with stakeholders and other agencies may afford partnership opportunities for funding that could affect the prioritization and/or implementation of projects.

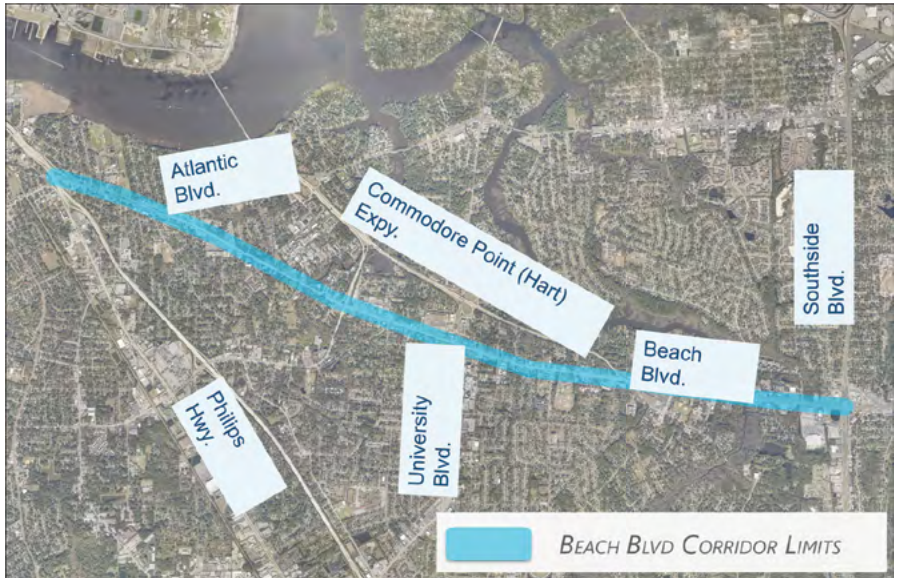
1: CONTEXT

The Beach Boulevard Mobility corridor extends from I-95 east to Southside Boulevard, see Figure 1 below. This particular effort examines existing conditions along this corridor and identifies deficiencies in pedestrian and bicycle accommodations, as well as opportunities to transform the corridor into a safer, more livable complete street.

The principles guiding this effort are:

- First mile, last mile - addresses the beginning and ending of every trip, often made on foot; however, more often than not, this portion of the journey is ignored. Passengers get off the bus and have to make their way across vast, un-shaded parking lots. People park their cars on one side of the road, but there is no safe crossing to the other. Sidewalks and walkways are not sufficiently lit, so walking at night is neither pleasant nor secure.
- Safety - addresses both traffic safety and personal security. Safety of the transportation user is of paramount concern. Over 70 pedestrian deaths occurred along the corridor in the last 10 years. No one should die or be injured in traffic. Whatever this project can do to increase safety will be of value.

FIGURE 1: BEACH BOULEVARD CORRIDOR LIMITS



- Economic development through "place-making" - addresses the recognition that streets are the lifeblood of our communities. Street design is a critical element in the facilitation of economic development. If they are designed solely as conveyances to parts unknown, then any economic benefit will be limited. If they are designed as places, then they will facilitate economic development.

This report is largely informed by observations, available traffic and transit ridership data and a series of public open houses and a charrette (described in Section 2 below) which was held on October 13-15, 2015 at the St. Nicholas Park Community Church.

EXISTING CONDITIONS

The Beach Boulevard corridor study area extends from I-95 to Southside Boulevard, a distance of approximately 5.5 miles. Activity centers include Bishop Kenny and the Assumption Schools, historic St. Nicholas commercial district, Save-a-Lot Plaza, K-Mart Plaza, Virginia College, Brooks Rehabilitation, Memorial Hospital, and Wal-Mart. Transportation - related conditions per mode consist of:

- Walking - Sidewalks exist along most of Beach Boulevard with intermittent gaps and segments where the pavement needs repair.
- Transit - JTA bus routes 8 and 33 serve the corridor. Transit ridership activity is highest at Beach and University (100-200 per day) followed by Wal-Mart, Parental Home Road, and the Save-a-Lot Plaza (50-100 per day). East of Southside Boulevard (beyond the focus area) Beach Boulevard is designated as a Bus Rapid Transit corridor for the future First Coast Flyer service.
- Cycling - There are no bicycle facilities along this portion of Beach Boulevard. East of Southside Boulevard (beyond the focus area) there are sub-optimal painted bike lanes.
- Driving - The corridor facilitates major east-west movement between downtown Jacksonville and the beaches. Daily traffic volumes show range from 42,050 vehicles approaching I-95, 19,000 in St. Nicholas, 27,000 at University, and 56,000 at Southside (Source: Annual Average Daily Traffic, 2013).

The following three graphics capture existing transportation conditions along the corridor. Figure 2 displays the bus routes in the area along with stops and ridership. This can be used as a proxy for pedestrian activity. Figure 3 shows the transit/mobility demand in the corridor, as calculated by JTA. This informs investment potential. Figure 4 shows the collisions in the corridor. Red swaths indicate high crash density, which suggests where mitigation measures should be implemented.

FIGURE 2: EXISTING BUS ROUTES ALONG BEACH BOULEVARD

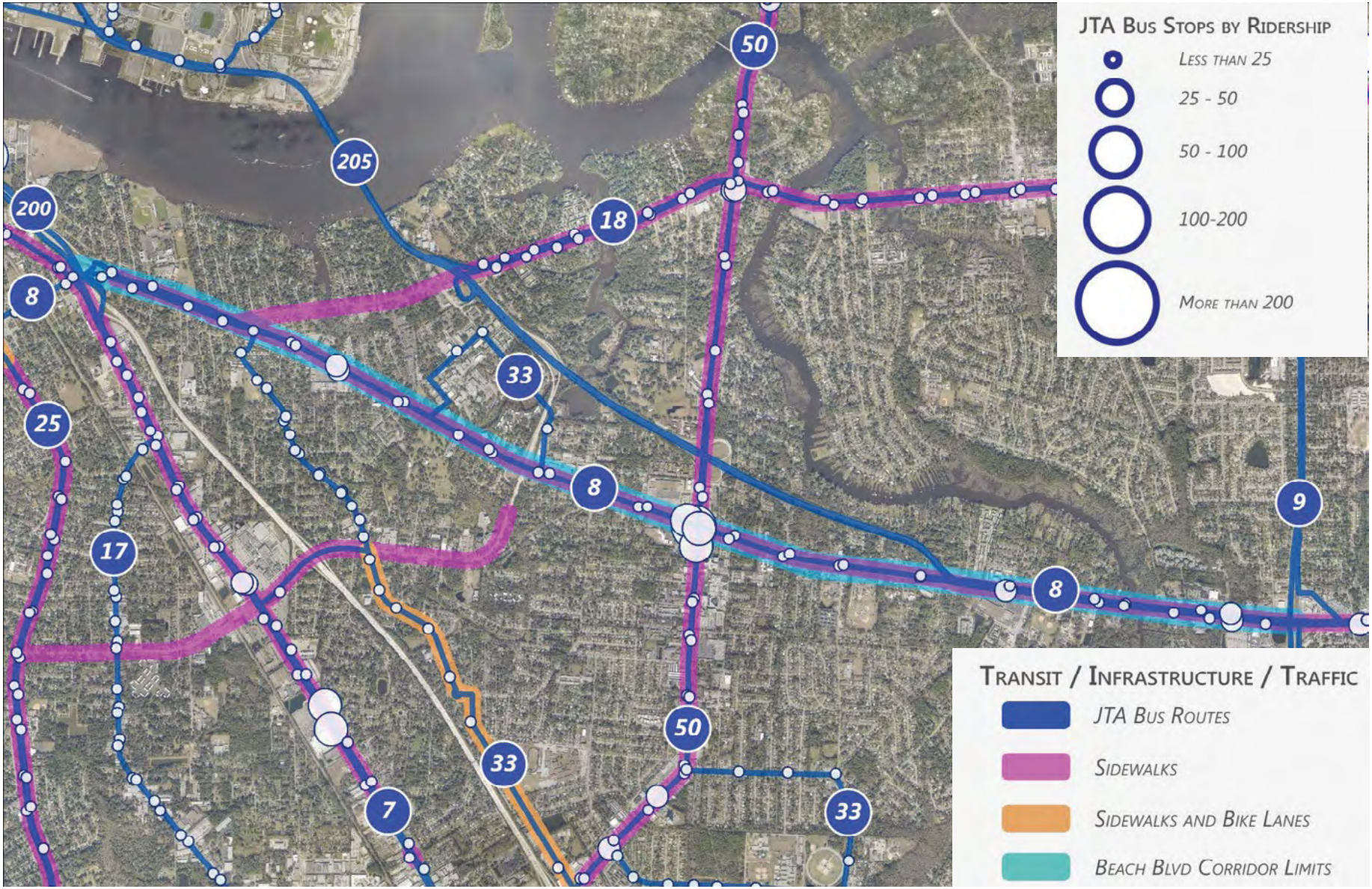
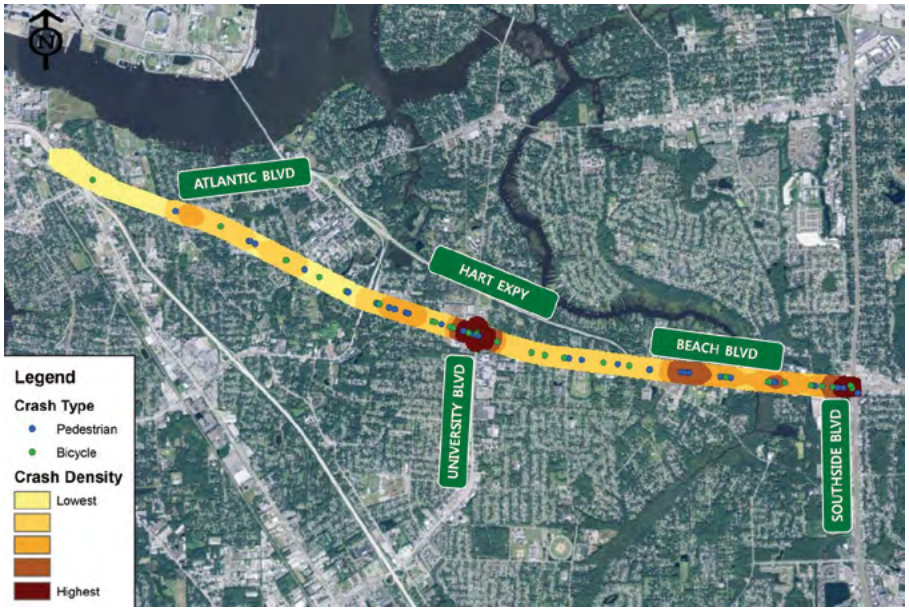


FIGURE 3: CUMULATIVE TRANSIT AND MOBILITY DEMAND ALONG BEACH BOULEVARD



FIGURE 4: COLLISION DIAGRAM FOR BEACH BOULEVARD



For the purposes of the study, the corridor was parsed into four distinct segments. Figure 5 below illustrates the legend utilized for Figures 6-9. From the west, the first segment extends from I-95 to the St. Nicholas community center (Figure 6). This segment has four traffic lanes in each direction, a wide landscaped median, a 40 mph speed limit. The land uses are mostly residential with two schools. The next segment is through the historic St. Nicholas town center (Figure 7). The street consists of two lanes per direction, left turn lanes at some intersections, sporadic on-street parking, and a posted speed limit of 40 mph. The third segment extends on either side of the intersection with University Boulevard (Figure 8). This segment consists of two lanes per direction, a center turn lane and a posted speed limit of 40 mph. The easternmost segment is between the Commodore Point Expressway and Southside Boulevard (Figure 9). This segment has four lanes per direction, turn lanes, a concrete median, and a 45 mph speed limit.

FIGURE 5: LEGEND FOR BEACH BOULEVARD CORRIDOR SEGMENT FIGURES 6-9



FIGURE 6: BEACH BOULEVARD FROM I-95 TO ST. NICHOLAS



FIGURE 7: BEACH BOULEVARD THROUGH HISTORIC ST. NICHOLAS TOWN CENTER



FIGURE 8: BEACH BOULEVARD AROUND UNIVERSITY BOULEVARD



FIGURE 9: BEACH BOULEVARD AROUND SOUTHSIDE BOULEVARD



PREVIOUS PLANS AND STUDIES

Two previous plans are referenced in this effort: the Southeast Vision Plan from 2010, and the St. Nicholas Town Center Vision Plan from 2004.

Southeast Vision Plan

The Southeast Vision Plan (2010) was prepared for the City of Jacksonville Planning and Development Department. It is meant to communicate "...a shared Vision for the Southeast Planning District - a clear picture of the future illustrating the issues, opportunities, overall potential for the City's fastest growing District, and how it should evolve." It informed the city's 2030 comprehensive plan and modifications to the Future Land Use Element (FLUE).

During the charrette (see Section 3.2 below) participants expressed interest in two concepts from this plan. First is sub-principle 2.2: "encourage redevelopment along arterials with higher densities and intensities which limit impacts on failing roadways," which is depicted in see Figure 10. This concept is consistent with our principle regarding economic development through placemaking. The second concept is sub-principle 5.3: "protect and provide public access to conservation areas and natural resources," shown in Figure 11.

FIGURE 10: SOUTHEAST VISION PLAN SUB-PRINCIPLE 2.2: ENCOURAGE REDEVELOPMENT ALONG ARTERIALS WITH HIGHER DENSITIES AND INTENSITIES WHICH LIMIT IMPACTS ON FAILING ROADWAYS



FIGURE 11: SOUTHEAST VISION PLAN SUB-PRINCIPLE 5.3: PROTECT AND PROVIDE PUBLIC ACCESS TO CONSERVATION AREAS AND NATURAL RESOURCES



St. Nicholas Town Center Vision Plan

The St. Nicholas Town Center Vision Plan (2004) was prepared for the City of Jacksonville Planning and Development Department as part of the Town Center Program Phase I Initiative for the applicant St. Nicholas Area Preservation. It's mission statement is: "...to develop a Vision for St. Nicholas that activates the needs and desires of the local community while incorporating the realities of cost, condition, and other constraints. Neighborhood workshops were conducted to gather community ideas and opinions, and this final Vision Plan is a direct result of that input."

During the charrette (see Section 3.2 below) participants expressed interest in two concepts from this plan. The first concept focused on a one-way circulation pattern in the town center, shown in Figure 12. This concept is similar to the "square-about" in the nearby San Marco neighborhood; as of 2014, the average daily vehicle volumes in the San Marco "square-about" (18,800) were comparable to the average daily volumes along this segment of Beach Boulevard (19,000). The second concept is the addition of medians, crosswalks, pocket parks, angled parking, and other street design treatments shown in Figure 13. The project team explored both options, see Section 4 below.

FIGURE 12: ONE-WAY CIRCULATION PATTERN FROM ST. NICHOLAS TOWN CENTER VISION PLAN

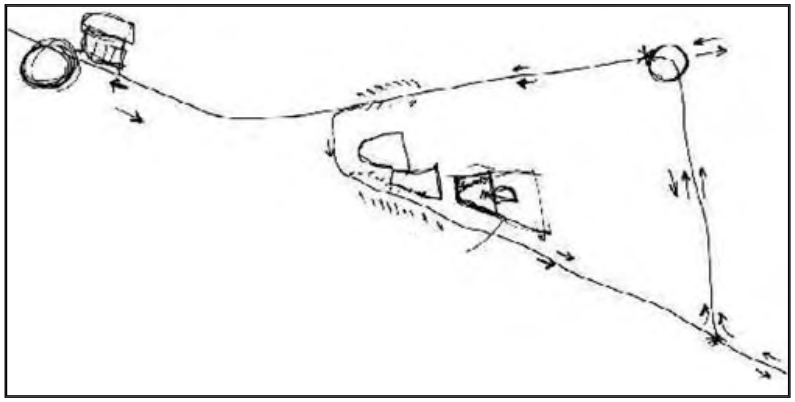
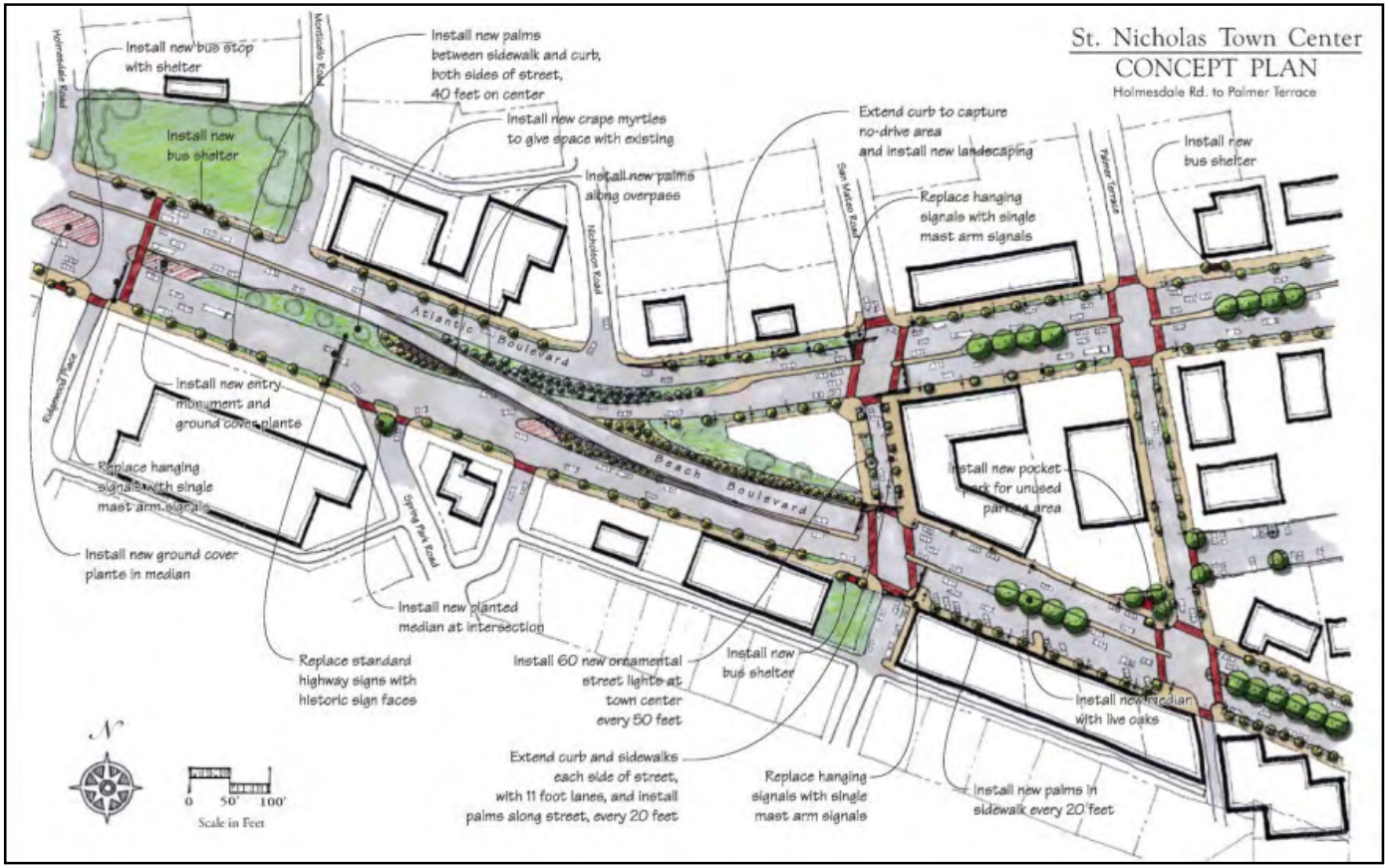


FIGURE 13: CONCEPT PLAN FROM ST. NICHOLAS TOWN CENTER VISION PLAN



CHALLENGES

The challenges to safety, mobility, and accessibility along this segment of Beach Boulevard are numerous. Essentially, Beach Boulevard is a high-speed suburban arterial designed for the automobile. The following visual audit captures many of the issues faced by daily residents and travelers daily along this stretch of roadway, see Figures 14-18:

- Businesses struggle where the street has been widened such that traffic is just outside the front door. (Figure 14)
- Traffic signals are designed primarily for auto level of service, at the expense of pedestrian delay. For example, pedestrians were observed waiting 84 seconds to cross Beach Boulevard at Schumacher Avenue. (Figure 15)
- The crosswalk at University Boulevard is roughly 80 feet long and has no pedestrian safety island in the middle. (Figure 16)
- The overpass at the junction of Beach and Atlantic Boulevards interrupts pedestrian flow. (Figure 17)
- Utility poles are placed in the center of the sidewalk, blocking direct access and limiting visibility. (Figure 18)

FIGURE 15: PEDESTRIAN WAIT TIME EXAMPLE AT SCHUMACHER AVENUE

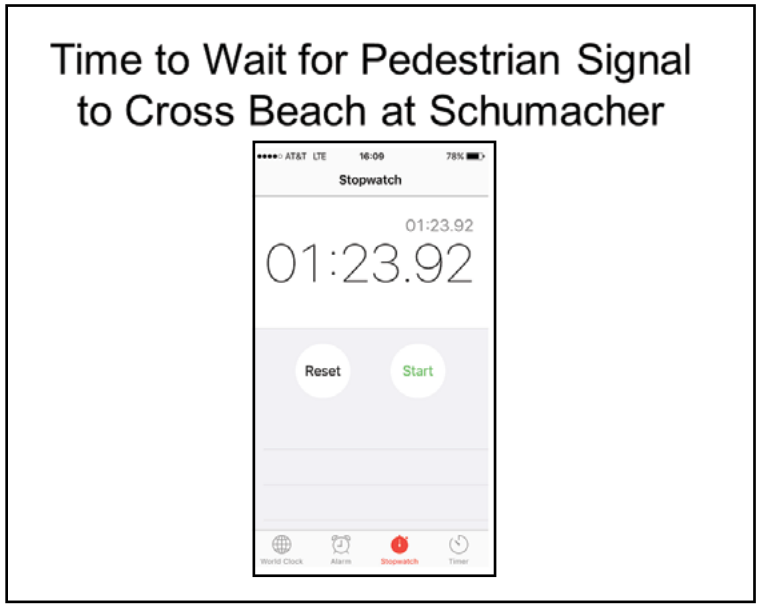


FIGURE 14: STRUGGLING BUSINESSES AND WIDENED STREETS EXAMPLE



FIGURE 16: CROSSWALK AT INTERSECTION OF UNIVERSITY BOULEVARD



FIGURE 17: INTERRUPTED PEDESTRIAN FLOW EXAMPLE AT JUNCTION OF BEACH AND ATLANTIC BOULEVARDS



FIGURE 18: UTILITY POLES IN THE CENTER OF THE SIDEWALK EXAMPLE



OPPORTUNITIES

Continuing the visual audit (Figures 19-22), the project team found a number of opportunities along corridor. People were observed walking and cycling throughout the corridor, albeit in limited numbers and generally to and from bus stops. St. Nicholas has active businesses which could benefit from context-sensitive and transit-supportive enhancements. The intersection of Beach and University Boulevards has many commercial and office entities, which could become a more dynamic commercial district. The following opportunities were identified:

- Active retail with well-maintained sidewalks. (Figure 19)
- Evidence of bicycle traffic. (Figure 20)
- A number of properties that are vacant and/or available for redevelopment. (Figure 21)
- There is considerable open space along the corridor, which presents the opportunity for implementing a connected network of greenways and blueways. (consistent with Southeast Vision Plan sub-principle 5.3 noted in the Previous Plans and Studies section above) (Figure 22)

FIGURE 19: ACTIVE RETAIL AND WELL-MAINTAINED SIDEWALKS EXAMPLES



FIGURE 20: EVIDENCE OF BICYCLE TRAFFIC EXAMPLE









FIGURE 22: CONSIDERABLE OPEN SPACE EXAMPLES ALONG BEACH BOULEVARD



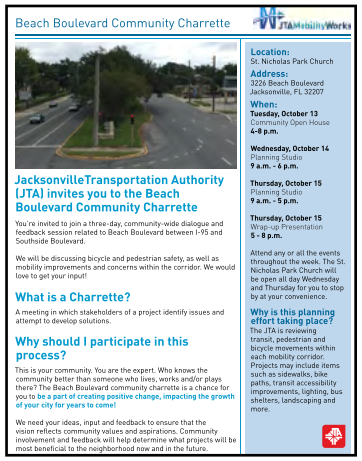




2: PROCESS

OUTREACH

Targeted outreach efforts were undertaken by the study team to increase participation from the community. These efforts included a community charrette; an open tent event; flyers describing JTA's planning program; and contacting key stakeholders from the community, including elected officials and neighborhood representatives. The outreach efforts proved to be successful, attracting over thirty (30) attendees, many of whom participated over multiple days.


Beach Boulevard Community Charrette

JTAMobilityWorks

Location:
St. Nicholas Park Church

Address:
3226 Beach Boulevard
Jacksonville, FL 32207

When:
Tuesday, October 13
Community Open House
4-8 p.m.

Wednesday, October 14
Planning Studio
9 a.m. - 4 p.m.

Thursday, October 15
Planning Studio
9 a.m. - 5 p.m.

Thursday, October 15
Wrap-up Presentation
5 - 8 p.m.

Attend any or all the events throughout the week. The St. Nicholas Park Church will be open all day Wednesday and Thursday for you to stop by at your convenience.

Why is this planning effort taking place?
The JTA is reviewing transit, pedestrian and bicycle movements within each mobility corridor. Projects may include items such as sidewalks, bike paths, transit accessibility improvements, lighting, bus shelters, landscaping and more.

Jacksonville Transportation Authority (JTA) invites you to the Beach Boulevard Community Charrette

You're invited to join a three-day, community-wide dialogue and feedback session related to Beach Boulevard between I-95 and Southside Boulevard.

We will be discussing bicycle and pedestrian safety, as well as mobility improvements and concerns within the corridor. We would love to get your input!

What is a Charrette?

A meeting in which stakeholders of a project identify issues and attempt to develop solutions.

Why should I participate in this process?

This is your community. You are the expert. Who knows the community better than someone who lives, works and/or plays there? The Beach Boulevard community charrette is a chance for you to be a part of creating positive change, impacting the growth of your city for years to come!

We need your ideas, input and feedback to ensure that the vision reflects community values and aspirations. Community involvement and feedback will help determine what projects will be most beneficial to the neighborhood now and in the future.

BEACH BOULEVARD OUTREACH FLYER

CHARRETTE

The Beach Boulevard Complete Streets Community Charrette was conducted over three days from October 13th to 15th, 2015. The process included an open public forum on the evening of the first day, an open house tent event, two days of open studio planning and design activities, and concluded with a public presentation the evening of the third day. The charrette was graciously hosted by St. Nicholas Park Christian Church. The purpose of the Community Charrette was to identify context-sensitive multimodal enhancements - pedestrian and bicycle infrastructure, lighting, landscaping, crosswalks, signalization improvements, and traffic calming - designed to better connect the roadway to adjacent land uses, facilitate economic development and redevelopment, and to increase transit ridership by enhancing transit network accessibility through "first and last mile" improvements.

Over 30 people attended the community charrette including City Council representatives. Figure 23 shows scenes from the charrette. Key contributions from the public included ideas to slow traffic, the addition of on-street parking, the addition of landscaping, and the creation of heightened awareness of the high number of pedestrian deaths at specific locations. The community lamented the demise of historic St. Nicholas as a recognized activity center and community following a series of road widening projects over the past thirty years.

FIGURE 23: COMMUNITY CHARRETTE ACTIVITIES







COMMUNITY FEEDBACK/KEY ISSUES

Data and public comments collected were used to identify and define existing conditions, issues and opportunities, and recommendations. Traffic and crash data were obtained from FDOT and other sources for the corridor. Transit ridership data was obtained from the JTA. FDOT staff were interviewed and consulted concerning existing conditions and potential solutions. The public provided verbal and written comments and suggestions. The key assessments from the public were:

- Traffic speeds are too high through St. Nicholas and along the Beach Boulevard corridor.
- Turning onto and off of Beach Boulevard at driveways and smaller cross streets is dangerous because of traffic and excessive speeds.
- Pedestrian safety is lacking due to high traffic speeds and the lack of signalized, marked, and convenient crossings.
- 45 bicycle/pedestrian crashes and 2 fatalities occurred along Beach Boulevard between 2004 – 2014.
- Lighting is insufficient, such that it is difficult to see pedestrians and bicyclists at night.
- The community of St. Nicholas has been harmed by the high travel speeds along Beach Boulevard through the community; the sense of place has been lost and businesses struggle.
- The intersection of Beach Boulevard and University Boulevard is extremely busy, with high volumes of transit, pedestrian, and bicycle traffic due to employment, educational, and retail activity at this location; the mix with heavy automobile traffic is dangerous.
- The community clearly voiced clearly that improvements are needed to improve safety, slow down traffic, and recreate a sense of place.

The overarching themes identified by the community and confirmed by the study team include the following:

- Vehicle **speed** through the corridor needs to be slowed
- Turning movements to and from Beach Blvd. are dangerous due to **speeds**
- Crossing the street is difficult, especially given the **lack of designated crosswalks**
- There is **insufficient street lighting** and a need for landscaping
- Community desires a **sense of place** or arrival – "You have arrived in St. Nicholas"
- Community desires "something" to happen, rather than nothing, even small improvements

The team identified recurring themes in the community's input and created a "wordle" to summarize priorities expressed by the charrette attendees, as illustrated in Figure 24.

FIGURE 24: "WORDLE" OF THEMES FROM THE CHARRETTE



3: CONCEPTS

DESIGN CONCEPTS

During the charrette, the topics for discussion were divided into four focus areas: safe routes to transit, street cross-sections, St. Nicholas Town Center, and the Beach/University intersection. Each subject is described in detail below.

Safe Routes to Transit

Transit activity is strong along Beach Boulevard, especially at University Boulevard and in the St. Nicholas community. Because each transit trip involves a pedestrian or a bicycle connection, the corridor needs adequate and safe accommodation for pedestrian, bicycle, and ADA movements. Sidewalks along the corridor are incomplete, in poor condition, and in some cases lacking. Pedestrian crossings are required at intersections and especially in locations with high transit and pedestrian activity. Commercial driveways are frequent and pose dangerous obstacles for transit riders, pedestrians, and bicyclists. In some locations, access to existing land uses (offices, retail, education, employment) are accommodated for automobiles but not for pedestrians (including those with disabilities) or bicyclists. Figure 25 depicts select bus stops and their environs in detail.

FIGURE 25: ISSUE AND OPPORTUNITIES AT SELECT BUS STOPS



Street Cross Sections

As described earlier, the corridor can be parsed into four distinct segments summarized in the subsections below.

Beach Boulevard from I-95 to St. Nicholas

This section is characterized by a wide, planted median which defines it as a tree-lined boulevard; however, the travel lanes lead directly into access points to and from I-95 which results in a highway-like lend a highway-like form of travel and operation. The overall sentiment from charrette participants was to reduce the speed of vehicles while accentuating the landscaping. The boulevard configuration makes protected bicycle lanes a feasible and appealing solution. Two options were developed, shown in Figure 26. The first alternative reduces the number of lanes from four to three and introduces a protected bicycle lane. The second, less desirable option keeps the number of lanes at four and narrows the median to provide room for protected bike lanes. There is also an opportunity to add a "gateway" feature to the pedestrian bridge at Kingman Avenue -- a visually appealing entrance to St. Nicholas Town Center as shown in Figure 27.

FIGURE 26: BEACH BOULEVARD, I-95 TO SPRING PARK ROAD TYPICAL CROSS SECTIONS CONCEPT OPTIONS

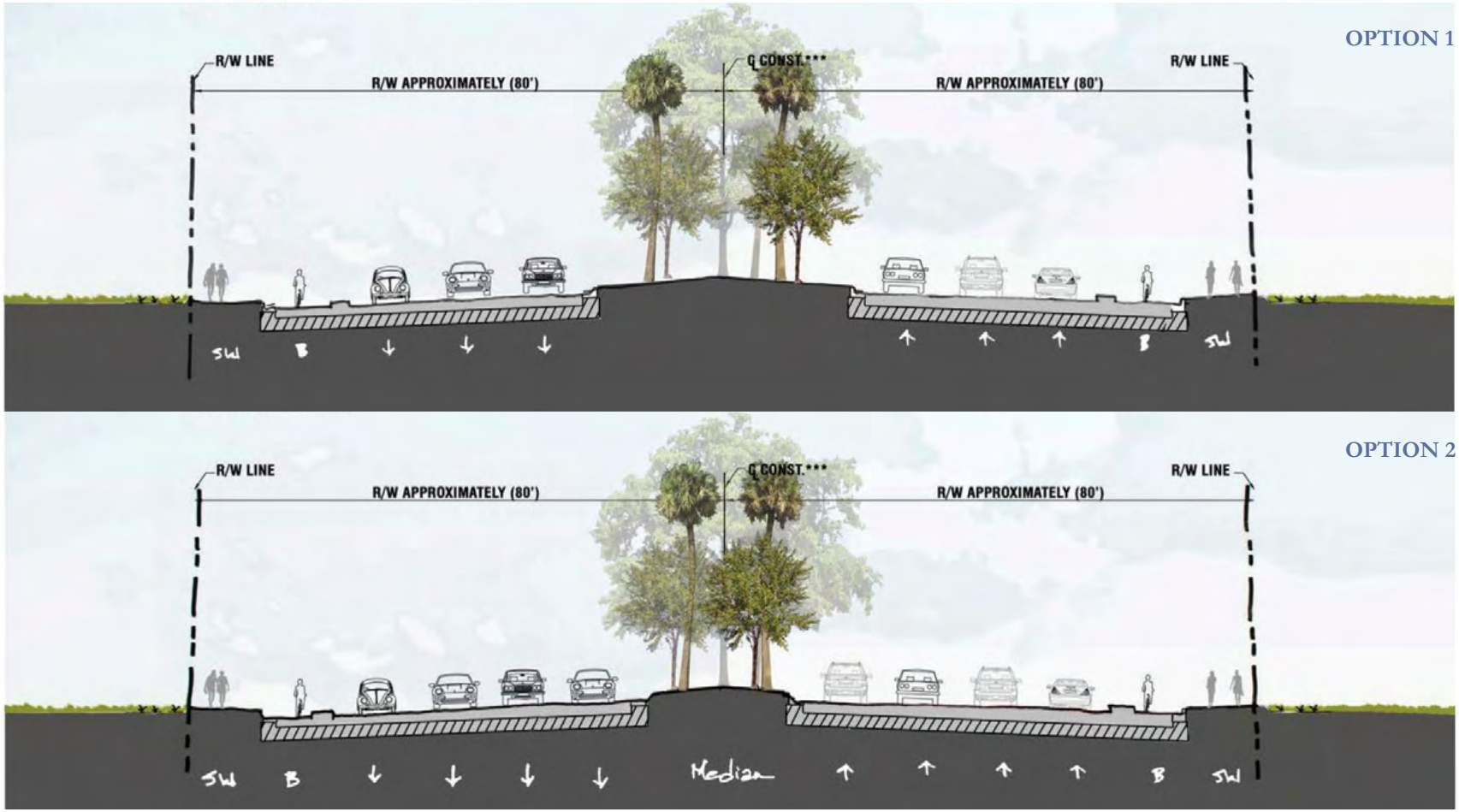


FIGURE 27: WELCOME "GATEWAY" TO ST. NICHOLAS SIGNAGE CONCEPTUAL RENDERING



Beach Boulevard through St. Nicholas

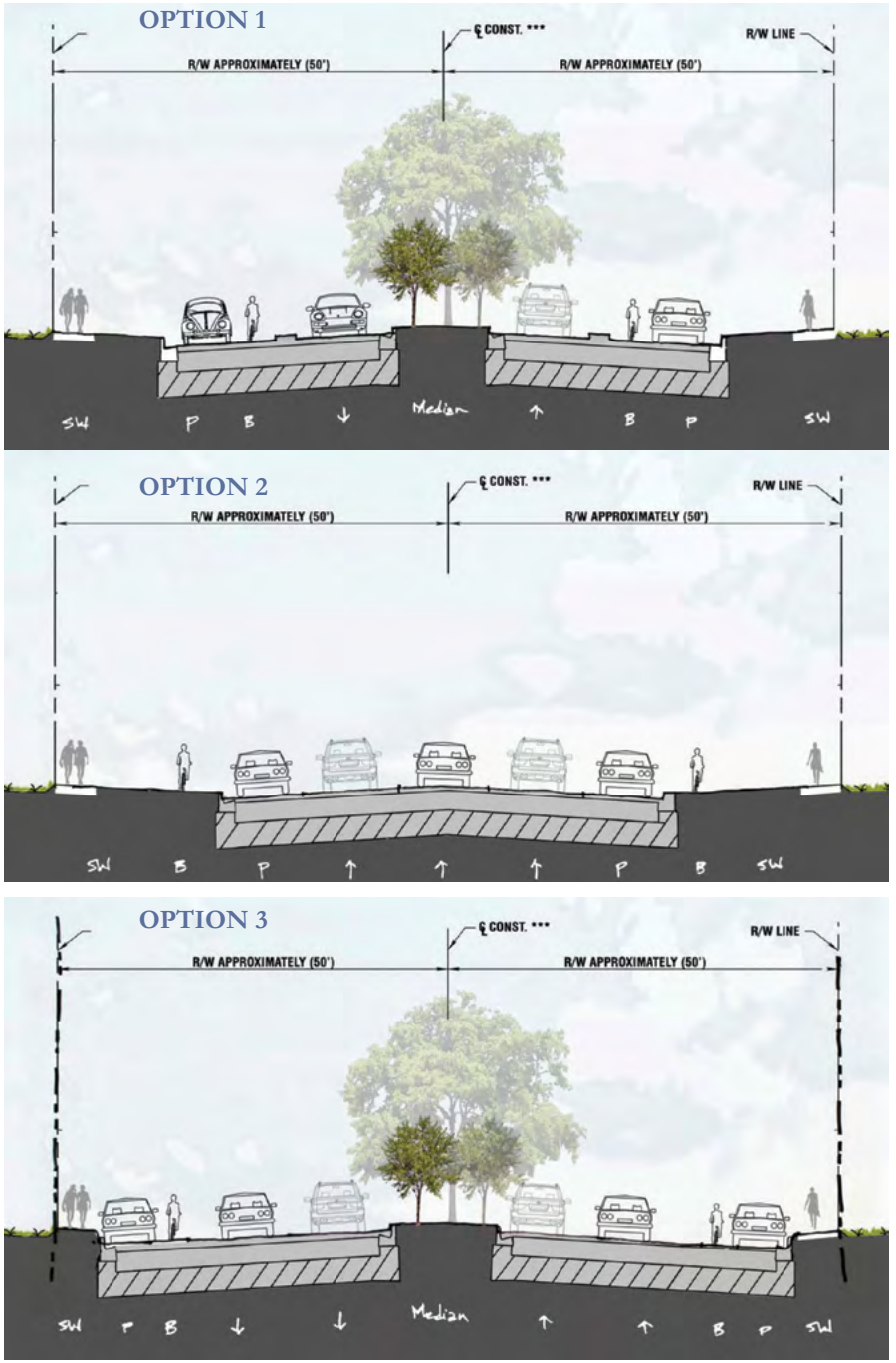
The stretch of Beach Boulevard through St. Nicholas Town Center has recently been redesigned; however, charrette participants expressed the desire for more changes. Figure 28 shows three options. The first converts the street to one-lane with parking, bike lanes, and a median with turn lanes. This "road diet" would benefit the adjoining businesses by creating a more pedestrian-friendly environment. Road diets of this type work well for up to 25,000 vehicles per day; this section only carries 19,000. A second option is a more traditional road diet with no planted median or bike lanes. This option could be implemented within the existing cross-section and paved area. A third, less preferred option maintains the two through lanes and adds the median, parking, and bike lane. The sidewalk in this case is be reduced in width. Figure 29 illustrates the first two options; note the raised intersection in Option 2.

FIGURE 29: BEACH BOULEVARD, SPRING PARK ROAD TO SCHUMACHER AVENUE CONCEPTUAL RENDERINGS





FIGURE 28: BEACH BOULEVARD, SPRING PARK ROAD TO SCHUMACHER AVENUE TYPICAL CROSS SECTIONS CONCEPT OPTIONS



Beach Boulevard around University Boulevard

The segment east of St. Nicholas Town Center all the way to the Commodore Point Expressway is a long stretch of five-lane blacktop. Two ideas became immediately apparent (see Figures 30-31):

- Add planted medians in the center turn lane wherever there are no left turns, and
- Add a protected bicycle lane in the space between the curb and sidewalk.

Auto traffic operations would not be affected, but the additional green space and trees in the median would serve to slow drivers. Additionally, the introduction of a bike lane presents the opportunity to redesign driveways and intersections to increase safety for people walking and cycling.

FIGURE 30: BEACH BOULEVARD, SCHUMACHER AVENUE TO COMMODORE POINT EXPRESSWAY TYPICAL CROSS SECTIONS OPTION

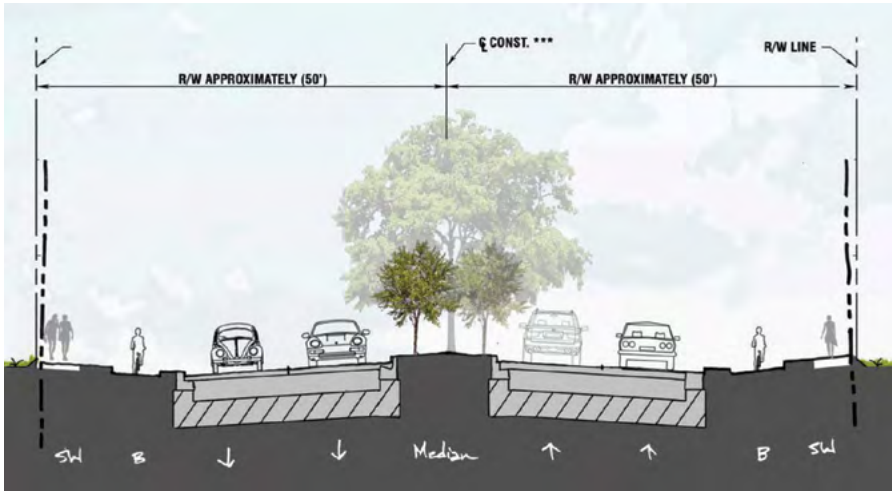


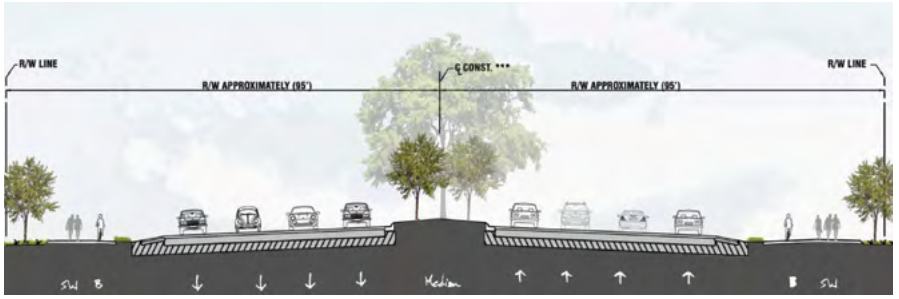
FIGURE 31: BEACH BOULEVARD, SCHUMACHER AVENUE TO COMMODORE POINT EXPRESSWAY CONCEPTUAL RENDERING



Beach Boulevard around Southside Boulevard

The segment of Beach Boulevard east of the Commodore Point Expressway merge with Beach Boulevard has tremendous opportunities to bring the roadway to a human scale, rather than an automobile scale. The existing right-of-way dimensions can be reconfigured to provide protected bike lanes in both directions and planted medians as shown in Figure 32.

FIGURE 32: BEACH BOULEVARD, COMMODORE POINT EXPRESSWAY TO SOUTHSIDE BOULEVARD TYPICAL CROSS SECTIONS OPTION



St. Nicholas Town Center

The area known as St. Nicholas Town Center received much attention during the charrette. It is a historic community along the corridor dating from 1783 when the Spanish built a fort here. From about 1900 to 1920 the Florida East Coast Railroad operated a line from Jacksonville to the beach with a stop in St. Nicholas[1]. Today St. Nicolas is a lively retail center surrounded by very walkable neighborhoods.

Building on the idea broached in the St. Nicholas Town Center Vision Plan, charrette participants discussed creating a "square-about", similar to that in the nearby neighborhood of San Marco. The idea is to convert Beach Boulevard, Atlantic Boulevard, and Linden Avenue to the one-way operation seen in Figure 33. The overpass at Beach/Atlantic Boulevards is to be removed and that space used for a curve meant to slow drivers. This proposal would requires a detailed study. While the total daily traffic volumes in 2014 were comparable between Beach Boulevard (19,000) and San Marco (18,800), the volumes along the Atlantic Boulevard segment of the "square-about" was 25,000.

1 http://www.metrojacksonville.com/article/2010-mar-urban-neighborhoods-st-nicholas,accessed 02.19.2016.

A second idea was to perform a road diet along Beach Boulevard, as shown in Figures 28-29. Figure 34 details how the intersections would be redesigned and indicates the locations for medians, turn lanes, and crosswalks. This was identified as a potential demonstration project for the corridor. See trafficcalmer.tumblr.com, betterblock.org, and tacticalurbanismguide.com for examples of demonstration projects.

FIGURE 33: "SQUARE-ABOUT" AT ST. NICHOLAS TOWN CENTER

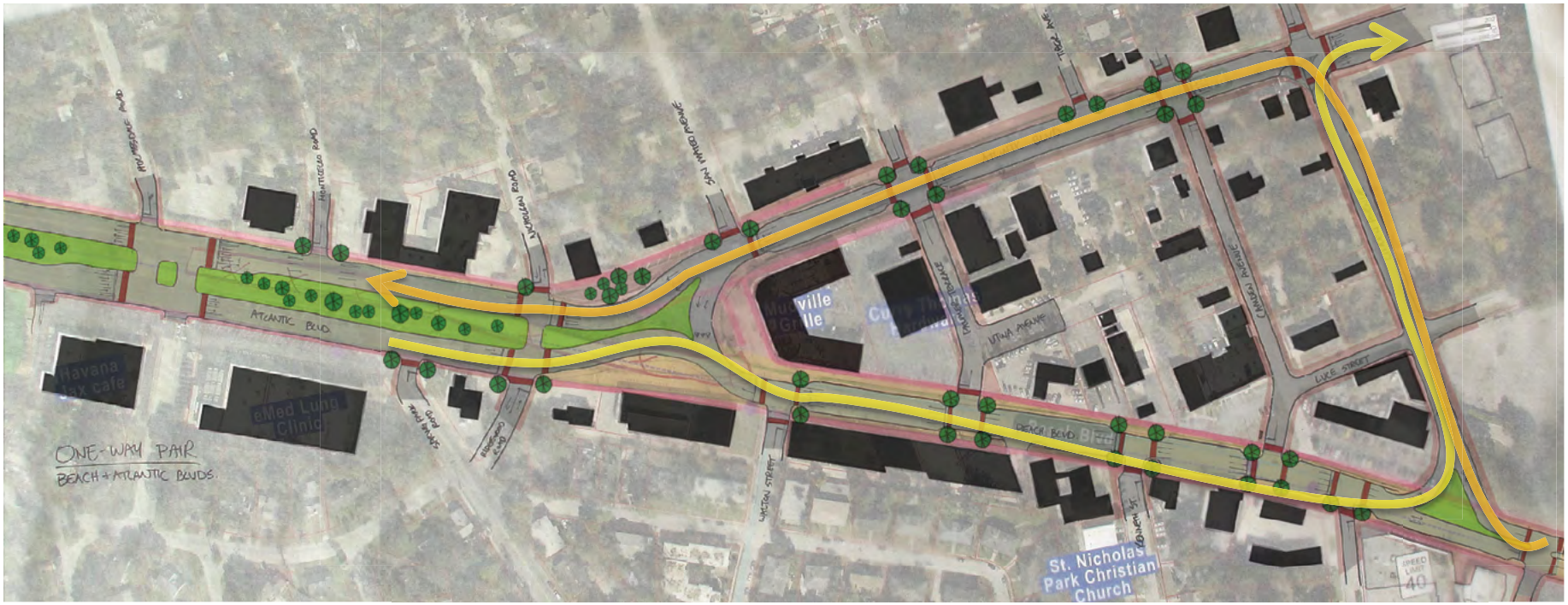
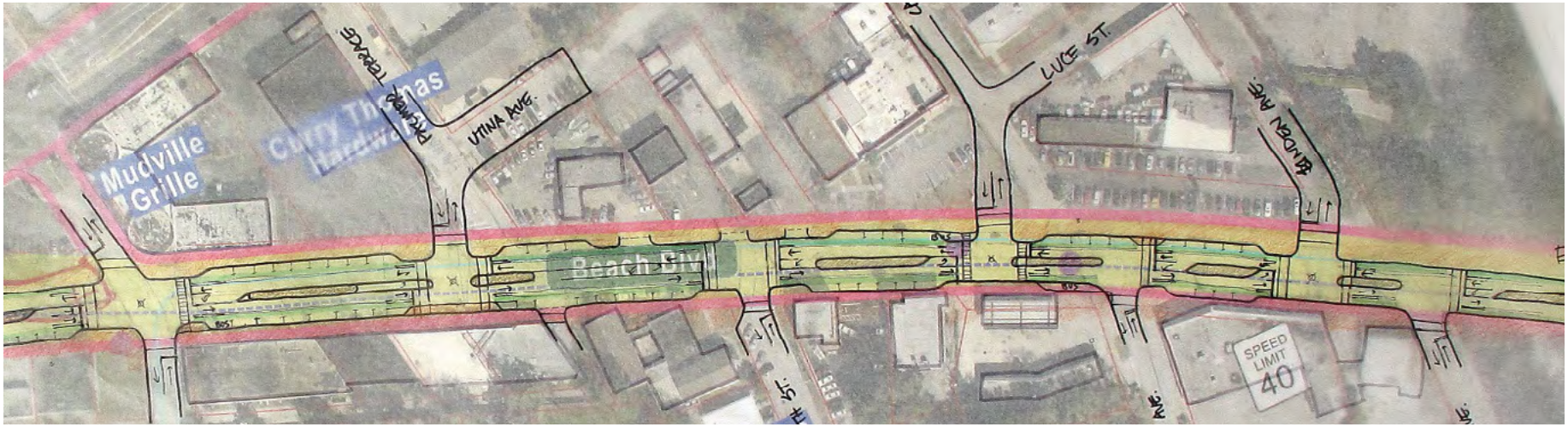


FIGURE 34: ROAD DIET ALONG BEACH BOULEVARD THROUGH ST. NICHOLAS TOWN CENTER



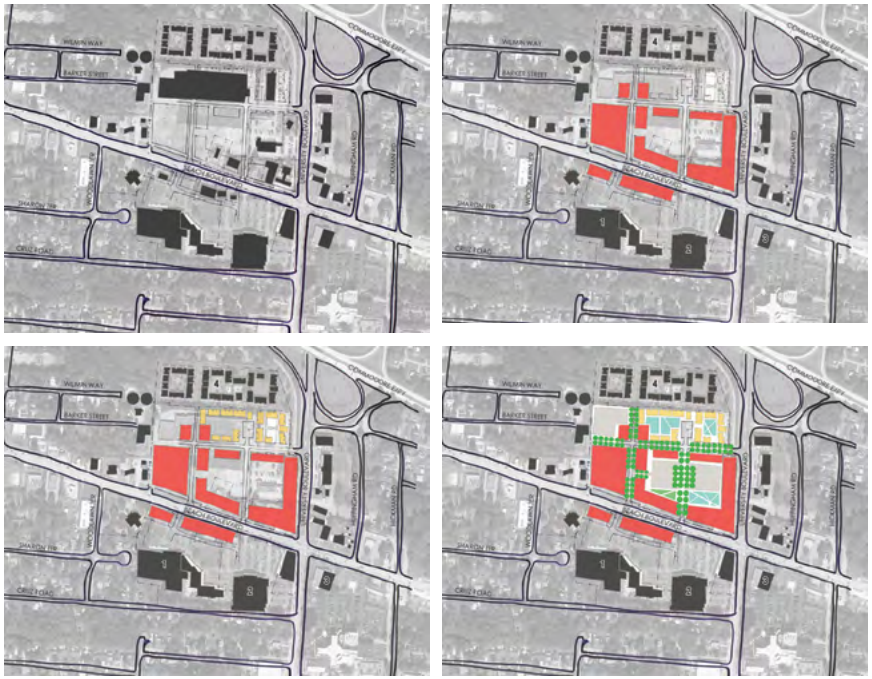
Beach/University Area Plan

Land use in proximity of the intersection of Beach Boulevard and University Boulevard was identified as an opportunity for both redevelopment and transformation into a more walkable, transit accessible, and mixed use area. The transformation of existing vacant and underutilized land holds significant potential for improving mobility, safety, and economic development through a more walkable and mixed use development pattern. The project team explored a series of ideas for phasing redevelopment primarily of the parcels in the northwest quadrant of the intersection of University Boulevard and Beach Boulevard. The focus of this exercise is to show the potential to repurpose a large track of underutilized land into a mixed use development creating walkable connections to surrounding residential and commercial activity centers.

As shown in Figure 35, the area currently contains a number of larger commercial buildings set back from the street and fronted by large surface parking lots. The project team sketched a redevelopment scenario for the area:

- The first step (top left) is the subdivision of these large parcels into pedestrian-scaled blocks (200-250 feet in length) connected by a network system of new streets and/or walkways.
- In the second step (top right), new commercial buildings could be designed to front Beach and Atlantic Boulevards and create a pedestrian-friendly streetscape environment. These new buildings are shown in red and they surround proposed mid-block parking courts.
- In the third step (bottom left), a residential component could be considered to create a true mixed-use development with apartment buildings and/or townhouses. These new residential buildings are shown in yellow and surround community gardens and plazas.
- Lastly (bottom right), plazas, parks, and boulevards would be added.

FIGURE 35: POTENTIAL INFILL DEVELOPMENT SCHEME FOR THE BEACH/UNIVERSITY AREA



4: RECOMMENDATIONS

The following recommendations summarize the concepts presented in this report and are organized into three project categories: keystone projects, operational/ safety improvements, and long term vision projects. **Keystone Projects** are those that JTA could use to showcase "complete streets". They are high profile projects that could be implemented in the near term. **Operational/ Safety Enhancements** consist of "quick fix" projects that will provide immediate safety and operational benefits at a lower cost. **Long-Term Vision** projects are bolder, and costlier investments that would be included in a long range plan.

KEYSTONE PROJECTS

Projects and actions that "showcase" complete streets principals, designed to enhance a sense of community or place, and can be implemented to correct deficiencies in safety and pedestrian accessibility.

- **Beach Boulevard Road Diet**, The road diet would extend from the gateway pedestrian overpass near Kingman Avenue west to Carmichael Avenue. The road diet would be designed to slow speeds, accommodate safe pedestrian and bicycle activity, and improve the corridor. This project would slow speeds to/from I-95 and improve safety and walkability in St. Nicholas and on Beach Boulevard through lane narrowing and traffic calming features. The road diet could include a possible 30-day tactical urbanism pilot project that an example of how the road diet would function.
- **Beach Boulevard and Atlantic Boulevard interchange "square-about"** intended to redefine traffic circulation at this complex intersection and channel through traffic onto Atlantic Boulevard and local traffic onto Beach Boulevard as well as calm traffic circulation about St. Nicholas.
- **Gateway pedestrian bridge** to create an aesthetic enhancement to the bridge and provide an improved safe student crossing at Kingman Ave. (St. Nicholas).
- Focus **transit-oriented redevelopment** of vacant, underutilized land and develop complete streets redesign at Beach Boulevard and University Boulevard. This section of Beach Boulevard includes significant vacant and underutilized parcels that could be repurposed into future mixed use walkable communities through overlay zoning and redevelopment policies and incentives.

OPERATIONAL/SAFETY IMPROVEMENTS

This set of improvements focus on operational and safety fixes that will provide immediate benefits at low costs.

- Consider midblock Crossings at St. Nicholas slows speeds to/from I-95, improves safe at-grade street crossings through lane narrowing and traffic calming/control features.
- Complete sidewalk gaps; define pathways to/from bus stops; add bikeways for designated transit stops. Targeted locations include:
  - Beach Blvd at Grove Park (Southside);
  - The bridge between Foster Dr and Grove Park;
  - Parental Home at Beach Blvd (north side crossing);
  - E Road at Beach Blvd west of E Road;
  - Beach Blvd north side at Bridgewater Cir.
- Add pedestrian walkways and wayfinding to the new Brooks Rehabilitation, to Memorial Hospital, and to the Virginia College shopping center at the intersection of Beach Boulevard and University Boulevard – including short sections of new sidewalk, wayfinding, restriping the Virginia College and adjacent parking lots and coordinating with new and/or improved transit stops.
- Add bicycle facilities along Beach Blvd from Stevens St. to Schumacher Ave; also consider adding bicycle lanes east of Schumacher Ave to University Blvd if funding is available.
- Consolidate driveways, connect contiguous parcels for automobile and multimodal travel, and introduce shared parking on commercial parcels. Specifically, consider consolidating driveways into the Virginia College shopping center to minimize auto/pedestrian conflicts from both Beach Blvd and University Blvd and redesign parking lots into a shared parking for commercial activity and Virginia College between Woodlawn Terrace and University Blvd.

LONG TERM VISION

These improvements and actions involved longer term, more expensive and bolder changes to occur over time. These improvements can be advanced depending on available funding and program priorities. The primary long term action is to remove the existing overpass that splits St. Nicholas and contributes to speeding and to redefine traffic flow, slow speeds, add on street parking, facilitate community economic development, and enhance the sense of place in historic St. Nicholas. The keystone projects options of the Beach Boulevard "road-diet" and the St. Nicholas "square-about" would be a step forward towards the long term vision identified above.

The recommended actions and proposed projects described above reflect a set of logical and needed improvements along Beach Boulevard. Combined these represent a series of improvements along a time continuum. This approach facilitates both a holistic solution to an on-going community problem and a triage approach that advances near term and long term improvement and investment strategies.

The stretch of Beach Boulevard from I-95 to University Boulevard has a long and historical place in Jacksonville. This once vibrant and popular community has over time, through a series of increasingly detrimental roadway expansions, has been relegated to a pass through location. Coincident with this deterioration of place and economy, has been the increase in pedestrian deaths and further disconnection of residents from the greater community.

The recommended multimodal, complete streets improvements described above facilitates several key objectives:

- Slow speeds along Beach Boulevard through the community
- Create a gateway for historic St. Nicholas
- Enhance safe student crossings of Beach Boulevard
- Test impacts of a road diet
- Foster and facilitate renewed near and long term sense of place and redevelopment of St. Nicholas and Beach Boulevard – Walton Street to University Boulevard

This strategically and phased approach offers an affordable and effective means to make Beach Boulevard safer, more economically viable, better connected via multimodal options, and fosters a renewed sense of place.



BLANDING/PARK

EXECUTIVE SUMMARY

As part of the JTAMobilityWorks Complete Streets program, a study of the Blanding Boulevard (State Road 21) and Park Street corridor was conducted. The portion of Blanding Boulevard studied is approximately 9 miles long, and extends from the Orange Park mall to Roosevelt Boulevard (US 17). The Park Street portion of the corridor begins at Roosevelt Boulevard and extends another 3 miles to Interstate 95. The corridor connects suburban Clay County and I-295 with the west side of Jacksonville, I-95, and downtown.

The physical landscape along the corridor changes dramatically, with suburban commercial areas lining much of the southern portion and tree-lined historic neighborhoods surrounding the northern portion. Likewise, traffic volumes vary widely on the corridor, from more than 80,000 cars a day south on Blanding Boulevard of I-295 to just over 12,000 cars a day on Park Street in the Riverside-Avondale area. JTA operates several transit routes on the corridor today, and plans to implement its First Coast Flyer BRT service along the entire length in the next few years.

In order to better understand the issues and concerns of the community, a multi-day charrette was held January 26th – 28th, 2016 at Riverside Baptist Church. More than 80 members of the public attended the charrette, and additional meetings were held with several area stakeholders. The project team also conducted field reviews before and during the charrette to obtain more information and assist in developing and refining potential mobility concepts. Because of the strong differences in the physical character surrounding Blanding Boulevard and Park Street, visual preference boards were developed for each road. Preferred enhancements identified by the public for Blanding Boulevard were bike lanes, midblock crossings, BRT stops, and lighting. Along Park Street, the preferred enhancements were painted bike lanes, bus shelters, cycle tracks, and wide sidewalks.

Not surprisingly, enhanced safety for pedestrians and bicyclists was a strong theme of the charrette. While the total number of crashes on Park Street are lower than on Blanding Boulevard, the crash rate on Park Street is more than double the state average. Slowing vehicles down by narrowing lane widths and/or reducing speed limits were mentioned as ways to address the problem. Additional ideas included providing bike lanes, installing midblock crossings with pedestrian refuge islands, implementing high visibility crosswalks, and providing better lighting in many areas.

Placemaking was also a strong theme expressed by charrette attendees, with a desire for gateways and aesthetic treatments in several locations on the corridor. These areas include the Blanding Boulevard / Cassat Avenue intersection, the area surrounding the Blanding Boulevard / San Juan Avenue intersection, the entrance to Avondale at the Park Street / FSCJ intersection, and the Five Points area on Park Street.

A series of concepts and recommendations were developed for both Blanding Boulevard and Park Street. From south to north, the ideas include:

- Add sidewalks on Blanding through I-295 interchange
- Fill-in sidewalk gaps on Blanding from Collins Road to 103rd Street
- Install a raised median on Blanding from 103rd Street to Park Street
- Add 5 midblock crossings on Blanding with appropriate signage
- Reduce lanes on Cassat Avenue from Blanding to San Juan
- Add aesthetic treatments in Blanding / San Juan intersection area
- Replace one travel lane on Blanding overpass with multi-use path
- Reconfigure Park / FSCJ intersection as gateway for Avondale
- Designate neighborhood greenway through Riverside-Avondale
- Add 6 midblock crossings on Park Street in Riverside-Avondale
- Narrow width of lanes on Park Street in Riverside and add parking
- Modify Five Points intersection to enhance safety and aesthetics
- Reconstruct Park / Post intersection as gateway for Riverside

Many of these projects are minor and relatively easy to implement, yet will greatly enhance safety and mobility. Major catalyst projects for the area include reconfiguration of the Blanding Boulevard overpass to add a multi-use trail, and reconstruction of the Park/Margaret and Park/Post intersections in the Five Points area.

Finally, several long-term vision projects were identified that can help reshape automobile-dominated Blanding Boulevard into a comprehensive multi-modal mixed-use corridor. Further development and analysis of all the concepts and recommendations outlined in this study is essential. Moreover, continued coordination with stakeholders and other agencies may afford partnership opportunities for funding that could affect the prioritization and/or implementation of projects.

1: CONTEXT

In an effort to develop a multimodal transportation system accessible to all users, the Jacksonville Transportation Authority (JTA) initiated a Complete Streets program that promotes the safety, comfort, and convenience of walking, bicycling, and transit. Complete Streets are designed and operated to enable safe and comfortable access for pedestrians, bicyclists, drivers, and public transportation users of all ages and abilities. Compete Streets must also serve adjacent land uses and respond appropriately to community visions for corridor development and design.

Communities around the country have embraced the concept of Complete Streets as a response to the unintended consequences of transportation practices and policies that have historically catered singularly to automobile users. The focus on moving cars efficiently has resulted in unsafe and inefficient environments for people walking, riding bicycles, and taking public transportation.

One approach JTA is taking to address Jacksonville's automobile-oriented transportation system is to retrofit roadway corridors served by JTA's highest frequency transit service in a way that accommodates multi-modal travel option, both today and in the future as redevelopment occurs. The process of developing Complete Streets begins with significant input from the community regarding specific transportation needs and land use visions, as well as safety and operational concerns related to all travel modes. In order to solicit input from community stakeholders, transportation agencies and the public, JTA conducted a three-day charrette at an accessible location within the community served by the SR 21/ Blanding Boulevard and Park Street corridor.

The SR 21/Blanding Boulevard corridor extends from the Orange Park Mall to US 17/Roosevelt Boulevard and is approximately 9 miles in length. The Park Street corridor extends from US 17/Roosevelt Boulevard to I-95 near Downtown Jacksonville and is approximately 3 miles in length. The SR 21/Blanding Boulevard portion of the corridor connects suburban Orange Park and I-295 to US 17/Roosevelt Boulevard just south of I-10 and Downtown Jacksonville. Park Street connects SR 21/Blanding Boulevard and US 17/Roosevelt Boulevard to I-95 and Downtown Jacksonville via the historic and residential neighborhoods of Avondale and Riverside. Traffic volumes decrease as one travels north as the corridor transitions from a regional thoroughfare to a neighborhood collector. JTA operates the Routes 5 and 34 on the corridor, with 30 minute frequencies. The highest ridership along the corridor is in the area of the intersection of SR 21/Blanding Boulevard & San Juan Avenue where several transit routes intersect. The SR 21/Blanding Boulevard segment has a higher number crashes than Park Street, mainly due to higher traffic volumes. The intersections of SR 21/Blanding Boulevard & 103rd Street, SR 21/Blanding Boulevard & Cassat Avenue, and SR 21/Blanding Boulevard & San Juan Avenue are hot spots for crashes; however the overall crash rate is lower than the statewide average for similar roadways.



BLANDING BOULEVARD NORTH OF CEDAR RIVER BRIDGE



PARK STREET WEST OF COPELAND STREET

Historical Background

The SR 21/Blanding Boulevard and Park Street corridor have development patterns that span mid to late 20th century automobile influenced development on the south and middle segments of the corridor. The northern end of the corridor along Park Street developed from the late 19th to early 20th centuries due to its proximity to Downtown Jacksonville. The Lakeshore neighborhood was platted between 1908 and 1928 and promoted for development and horticultural uses. The arches located at the intersection of SR 21/Blanding Boulevard and Bayview Road were constructed in the 1920s as a grand entrance to the Lakeshore neighborhood and once spanned over SR 21/Blanding Boulevard until the road was widened decades later. The Lakeshore area exploded in growth after the opening of Naval Air Station Jacksonville in 1940. The other sections of the

SR 21/Blanding Boulevard corridor from I-295 to US 17/Roosevelt Boulevard developed primarily after World War II in the late 1940s through 1960s as the automobile was the preferred method of transportation.

The Park Street segment of the study corridor traverses the historic Avondale and



LAKE SHORE POCKET PARK OFF BLANDING BOULEVARD SOUTH OF SAN JUAN AVENUE

Riverside neighborhoods. Both Avondale and Riverside were once plantations prior to and just after the Civil War. Riverside was first platted in 1868 and Avondale was first platted in 1884. Both were annexed into the City of Jacksonville in 1887. After annexation into Jacksonville, a streetcar line was constructed between Downtown Jacksonville and Riverside/Avondale. Riverside and Avondale were promoted as suburbs for the wealthier citizens of Jacksonville who built large houses along the St. Johns River. The Great Fire of 1901 pushed even more people into both neighborhoods, thus the area experienced a large growth spurt that lasted through the 1920s. In the 1960s, many of the historic homes in Riverside and Avondale were destroyed to make way for I-95, St. Vincent's Medical Center, and other commercial buildings. As a response to the loss of historic buildings, Riverside was added to the National Register of Historic Places in 1985 and Avondale was added to that same list in 1989. In 2010, the American Planning Association named Riverside/Avondale as one of the nation's top ten neighborhoods.

SR 21/Blanding Boulevard

Blanding Boulevard is a wide and heavily traveled roadway. The posted speed limit varies from 45 mph to 35 mph. North of the interchange with I-295 to Collins Road, SR 21/Blanding Boulevard is a six-lane divided roadway with no sidewalks and bicycle lanes. From Collins Road to Morse Avenue, SR 21/ Blanding Boulevard is a four lane divided roadway with intermittent sidewalks and no bicycle lanes. North of Morse Avenue to 103rd Street, SR 21/Blanding Boulevard widens out to a 6 lane divided roadway, although the right lane on both sides of the roadway are marked as bus-only lanes that may also be used by drivers for right turns signalized intersections. Sidewalks are present along the majority of this portion of SR 21/Blanding Boulevard on both sides of the roadway but there are no striped bicycle lanes.

From 103rd Street to Wilson Boulevard, SR 21/Blanding Boulevard is a 4 lane



BLANDING BOULEVARD SOUTH OF 103RD STREET WITH BUS LANE

roadway with a two-way center left turn lane. Sidewalks are provided on both sides of the roadway along most of this segment, however there are no striped bicycle lanes. North of Wilson Boulevard to Cassat Avenue, SR 21/Blanding Boulevard widens to six lanes with a raised median, sidewalks on both sides of the roadway, and striped bicycle lanes. North of Cassat Avenue to Park Street, SR 21/Blanding Boulevard narrows back to a four lane roadway with a two-way center left turn lane with no striped bicycle lanes. Sidewalks are found along the majority of the length of this segment as well, although in many places they are in need of repair. Lane widths are 11 feet wide for all four travel lanes and the two-way left turn center turn lane.



BLANDING BOULEVARD NORTH OF PARK STREET

Blanding Boulevard Overpass

North of Park Street, SR 21/Blanding Boulevard takes on a freeway-like character as it crosses over Hamilton Street and US 17/Roosevelt Boulevard on an overpasses with ramps connecting to US 17/Roosevelt Boulevard. Just beyond the interchange with US 17/Roosevelt Boulevard, at a signalized intersection with the entrance to Florida State College, SR 21/Blanding Boulevard narrows to Park Street as it enters the residential Avondale neighborhood.

The Blanding Boulevard overpass is an important link in the corridor because it connects SR 21/Blanding Boulevard to Park Street. At the present time, the overpass has three 12 foot wide lanes on the southbound side and two 12 foot wide lanes on the northbound side. Each side has a two foot wide outside shoulder and a three foot wide inside shoulder with a three foot high Jersey barrier in the center. These characteristics have the feel of a freeway and field observations confirmed that automobile traffic frequently exceeds the posted 35 mph speed limit. There are no existing bicycle and pedestrian facilities on the overpass, thus adding to the freeway like feel. In addition, with no bicycle facilities on Park Street between SR 21/Blanding Boulevard and US 17/Roosevelt Boulevard and no designated crossing of US 17/Roosevelt Boulevard, a safe bicycle and pedestrian connection between the Avondale neighborhood and the SR 21/Blanding Boulevard corridor does not exist.



BICYCLIST RIDING ON BLANDING BOULEVARD OVERPASS OF ROOSEVELT BOULEVARD

Park Street

For the purposes of this study, the Park Street segment of the corridor was broken into two sections, the Avondale section from west of US 17/Roosevelt Boulevard to Willow Branch Avenue, and the Riverside section from Willow Branch Avenue to I-95. Park Street is two lane roadway with one 15 foot travel lane in each direction through a mostly residential area with some commercial developments around the intersection of Dancy Street. In Avondale, sidewalks are found along the north side of Park Street and intermittently along the south side of Park Street.



BICYCLIST CROSSING THROUGH FIVE POINTS INTERSECTION

In Riverside, Park Street shifts from being more residential near Willow Branch Avenue to having a commercial feel closer to the intersection of King Street. East of King Street, more residential land uses can be found along Park Street until the intersection of Goodwin Street, where Park Street enters the Five Points district of Riverside. Five Points is the historic commercial district of Riverside featuring stores and restaurants, and is so-named because it features a five-legged intersection where Park Street, Margaret Street, and Lomax Street cross. Near the center of the intersection is a historic 1920s pedestal-mounted traffic beacon. Sidewalks are mostly continuous along both sides of Park Street through the Riverside neighborhood but gaps do remain. The posted speed limit is 30 mph and there are no striped bicycle lanes along Park Street.

Traffic Volumes

Traffic volumes are highest on the SR 21/Blanding Boulevard segment of the study corridor. Traffic volumes are higher in the southern portion of study area and decrease the further north one travels on SR 21/Blanding Boulevard. Once north of I-295, the highest traffic volumes on SR 21/Blanding Boulevard in 2014 were near the Cedar River Bridge, with 35,000 vehicles per day. The lowest traffic volumes occurred near the intersection of Park Street with an average of 22,000 vehicles per day.

Because Park Street has a more residential characteristic to it than does SR 21/Blanding Boulevard, traffic volumes are lower. However, Park Street is often used as cut through for traffic from SR 21/Blanding Boulevard and US 17/Roosevelt Boulevard to Downtown Jacksonville when I-10 and I-95 are congested. According to the Florida Department of Transportation's Florida Traffic Online 2014, traffic volumes on Park Street averaged about 12,400 vehicles per day in 2014.

2:PROCESS

The process for the SR 21/Blanding Boulevard and Park Street Corridor Study centered around a design charrette that occurred January 26-28, 2016 at Riverside Baptist Church in Jacksonville, Florida. The charrette included more than 80 members of the public over the three day period. The charrette began on the morning of January 26 with the consultant team dividing into three groups. Each group was responsible for conducting a field review of their segment. The three segments were:

- SR 21/Blanding Boulevard from I-295 to US 17/Roosevelt Boulevard
- Park Street from west of US 17/Roosevelt Boulevard to Willow Branch Avenue (Avondale section)
- Park Street from Willow Branch Avenue to I-95 (Riverside section)

After the consultant team split into three groups, each group went into the field and performed a walking, driving, and in some cases bicycling audit of existing conditions such as the locations of bicycle lanes, sidewalks, crosswalks, transit stops and other relevant features for their assigned segment.

After the three groups completed field observations, the consultant team and JTA staff gathered back at Riverside Baptist Church for an evening presentation and public input session. The presentation and public input session was from 5:00 PM to 8:00 PM on January 26, 2015. The presentation to the public included an overview of the JTA Mobility Corridors project, background information such as existing conditions and possible safety issues, and how the public can help. After the presentation, consultant team members answered questions and asked the public for input on what they would like to see in the corridors.

The second day of the charrette lasted from 9:00 AM to 5:00 PM in a drop-in open house format where the consultant team continued to receive comments and ideas from the public. In addition, during the day the consultant team analyzed the comments from the public to see if they could be incorporated.

The final day of the charrette began at 9:00 AM as a drop-in open house for the consultant team to receive additional comments while analyzing identified issues and preparing the wrap up presentation. The wrap up presentation was held from 5:00 PM to 7:00 PM on January 28, 2016. At the wrap up presentation the consultant team unveiled the concepts and recommendations for complete streets on the SR 21/Blanding Boulevard and Park Street corridor.



CHARETTE ENGAGEMENT

3: CONCEPTS

The project team used the community input as a framework for which they compared their data collection and observations. By assimilating this information, the team gained a well-rounded understanding of the issues facing the corridor and identified priority areas and needed enhancements along the corridor. The overarching concepts that emerged from the data collection, community input, and design process included the need for Safety enhancements, Beautification, and Placemaking/Gateways.

To gather the thoughts and ideas from the community, the consultant team asked public participants to place a sticker on the top three potential enhancements that they would like to see on both the SR 21/Blanding Boulevard and Park Street corridors. The responses received indicate the community's desire for safety enhancements such as midblock crossings, bike lanes, and wide sidewalks as well as a desire for beautification attributes such as enhanced landscaping and lighting.

For the SR 21/Blanding Boulevard corridor, the top four potential enhancements **(Figure 1)** were:

- bicycle lanes
- midblock crossings
- bus rapid transit stops
- lighting

On the Park Street corridor, the top four potential enhancements **(Figure 2)** were:

- painted bicycle lanes
- bus stop shelters
- cycle tracks
- wide sidewalks

FIGURE 1: PUBLIC INPUT ON POTENTIAL BLANDING BOULEVARD ENHANCEMENTS



FIGURE 2: PUBLIC INPUT ON POTENTIAL BLANDING BOULEVARD ENHANCEMENTS



Safety Enhancements

According to Smart Growth America's pedestrian danger index, the Jacksonville metropolitan area is the third most dangerous metropolitan are in the nation for pedestrians. The pedestrian danger index is a calculation which indicates the likelihood of pedestrians being involved in crashes on roadways. It is based on the total number of pedestrian deaths from 2003 to 2012, the annual pedestrian deaths per 100,000 people from 2008 to 2012, and the percent of people commuting by foot from 2008 to 2012. For the Jacksonville metropolitan area the pedestrian danger index is 182.71.

Crash rates are highest along the SR 21/Blanding Boulevard portion of the study area. According to data provided by FDOT, high crash intersections **(Figure 3)** for people walking and bicycling on SR 21/Blanding Boulevard include:

- I-295 interchange area
- 103rd Street
- Wilson Boulevard
- Cassat Avenue
- San Juan Avenue

All of these areas are activity and commercial centers for the surrounding neighborhoods and lack adequate sidewalks, bikeways, and intersection treatments to provide a safer environment for bicyclists and pedestrians.

Fewer crashes occurred along the Park Street segment than along SR 21/Blanding Boulevard because of lower traffic volumes, but as with the SR 21/Blanding Boulevard segment, the bicycle and pedestrian crashes are concentrated at major intersections. While the total number of crashes on Park Street are lower, the corridor has a higher crash rate (6.23) than the statewide average (2.63) for similar type roadways. The crash rate is based on the number of crashes per 100,000 vehicle miles traveled. The intersections with the highest number of crashes on Park Street are located at US 17/Roosevelt Boulevard, Dancy Street, Edgewood Avenue, Cherry Street, Stockton Street, and Margaret Street **(Figure 4)**. All of these intersections are located at or near activity centers and lack adequate crosswalks, sidewalks, signals, bicycle lanes, and signage to help guide bicyclists and pedestrians.

FIGURE 3: HEAT MAP OF CRASHES ALONG CORRIDOR

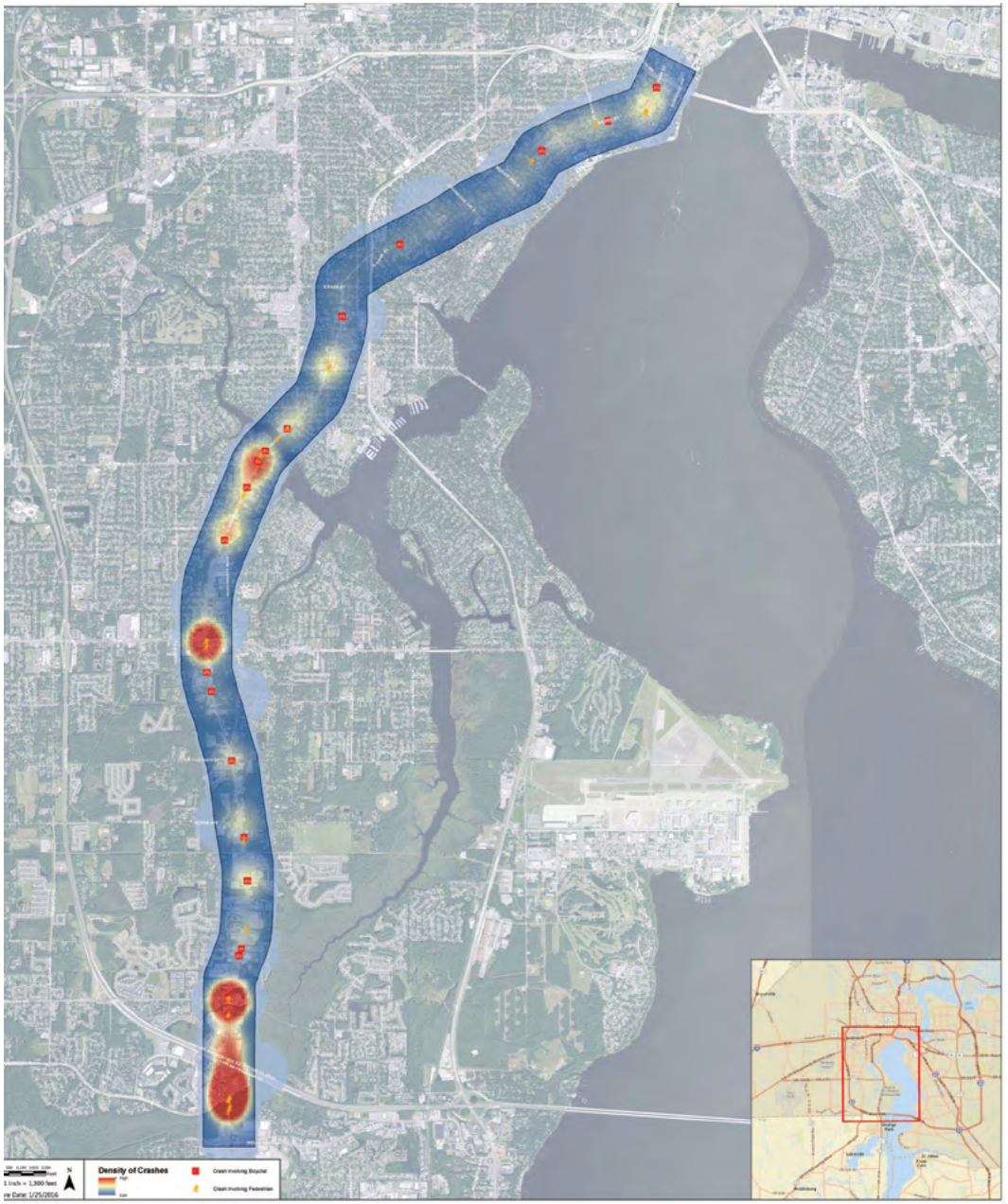


FIGURE 4: TOTAL CRASHES BY INTERSECTION ON PARK STREET



Discussions with the community to enhance safety on the SR 21/Blanding Boulevard and Park Street corridors included:

- Reducing vehicle speeds
- Reconfiguring the roadway with fewer or narrower motor vehicle lanes
- Providing bicycle lanes and sidewalks on both sides
- Installing high-visibility crosswalks
- Installing mid-block pedestrian crossings with refuge islands

These techniques have the potential to change the physical design and character of the roadway to enable safe access along and across the corridor for all modes of transportation.



ELDERLY WOMAN CROSSING BLANDING BOULEVARD MID-BLOCK NORTH OF 103RD STREET

A popular suggestion for the SR 21/Blanding Boulevard segment was the installation of mid-block pedestrian crossings with appropriate signage and median refuge islands. When designed properly, mid-block pedestrian crossings with appropriate signage allow pedestrians to safely cross the roadway where block lengths make traveling to the nearest marked crossing impractical.

On the Park Street segment through Avondale, participants liked the idea creating a neighborhood greenway as an alternative to Park Street for bicycling. Neighborhood greenways are bicycle and pedestrian routes on lower volume roadways that provide a safer and more comfortable environment for bicyclists and pedestrians Wayfinding signage **(Figure 5)** is generally used on neighborhood greenways to help bicyclists and pedestrians navigate their way.

Beautification

The second theme that came up during the charrette was beautification. Beautification is enhancing the corridor's "curb appeal" by adding streetscape elements such as such as landscaping, pedestrian lighting, and site furnishings that can help define the character of an area. Beautification ideas that came from the charrette process include:

- Landscaped medians
- Street trees
- Public spaces/pocket parks
- Pedestrian amenities such as bus stop shelters
- Lighting

Currently, SR 21/Blanding Boulevard has a three foot wide planting strip on both sides between the roadway and the sidewalk. Park Street has a 20 foot wide planting strip on both sides between the roadway and sidewalk, particularly on the segment between King Street and Five Points. These areas could be better utilized with wider sidewalks, landscaping, site furnishings, pedestrian lighting, etc. to beautify the roadway.



SAMPLE BICYCLE BOULEVARD PAVEMENT MARKINGS





SAMPLE BICYCLE BOULEVARD PAVEMENT MARKINGS

Placemaking & Gateways

Placemaking was the third concept heard from the community during the charrette. Placemaking is the creation of a special or unique place such as a commercial center or a park. On the SR 21/Blanding Boulevard corridor, the area around the intersection of SR 21/Blanding Boulevard and San Juan Avenue was expressed by the community as somewhere that placemaking should occur since it is the historical commercial center of the Lakeshore neighborhood.

Gateway features often let people know they have entered a "special district or neighborhood". The community expressed a desire to have some sort of gateway features on either end of Park Street to let people know they are entering the Riverside/Avondale area. Another area mentioned as a possible gateway is the Lakeshore area where SR 21/Blanding Boulevard intersects San Juan Avenue and Bayview Road. The arches that span Bayview Road once stretched across SR 21/Blanding Boulevard when first constructed in the 1920s but have been reduced to their current length after SR 21/Blanding Boulevard was widened. The arches were built as a sort of "gateway" to promote the Lakeshore development in the 1920s. Residents supported creating a gateway with arches as a centerpiece. A final potential Gateway identified in the charrette is at the SR21/Blanding Boulevard intersection with Cassat Avenue.

FIGURE 5: DEPICTION OF BICYCLE ROUTE WAYFINDING





BLANDING BOULEVARD SOUTH OF SAN JUAN AVENUE

4: RECOMMENDATIONS

After gathering the corridor data, completing field reviews, and understanding the community's vision for the future, the project team had a detailed understanding of the issues and opportunities along the Blanding/Park corridor. Various conceptual designs were explored and prompted the division of the corridor into segments based on the existing roadway character and potential improvements. While the goal for each segment is to create a roadway and roadside environment that enables safe and enjoyable access for all users, including pedestrians, bicyclists, and motorists, the specific recommendations reflect the unique context of the corridor segment. These six segments serve as the basis of development for individual strategies for improvement and their limits are detailed below:

- SR 21/Blanding Boulevard from I-295 to 103rd Street
- SR 21/Blanding Boulevard from 103rd Street to Wilson Boulevard
- SR 21/Blanding Boulevard from Wilson Boulevard to Cassat Avenue
- SR 21/Blanding Boulevard from Cassat Avenue to Park Street
- Park Street from SR 21/Blanding Boulevard to Willow Branch Avenue (Avondale segment)
- Park Street from Willow Branch Avenue to I-95 (Riverside segment)

SR 21/Blanding Boulevard Recommendations

Because the SR 21/Blanding Boulevard corridor is long with different characteristics and typical sections, the recommendations were broken into four sections. The first section beginning on the south end of the corridor is the segment of SR 21/Blanding Boulevard from I-295 to 103rd Street. As this segment already has a raised median, recommendations are to fill in sidewalk gaps, add crosswalks at signalized intersections, and install midblock pedestrian crossings with appropriate signage at the following locations:

- In the vicinity of Anderson Road and Goodman Road
- In the vicinity of Maggie's Lane

It is worth noting that FDOT is currently designing a project that will add a sidewalk on Blanding Boulevard through the I-295 interchange north to Collins Road.

The next segment of SR 21/Blanding Boulevard is from 103rd Street to Wilson Boulevard. Along this segment the recommendations are to reduce the posted speed limit to 40 mph, install a midblock pedestrian crossing with appropriate signage in the vicinity of Cedar Hills Shopping Center and road rebalancing. Road rebalancing is reallocating space within the roadway for other uses such as narrowing lanes to accommodate bicycle lanes or converting an existing center turn lane to a median. The road rebalancing recommendations for SR 21/ Blanding Boulevard including reducing travel lanes from 12' to 11', converting the existing 12-14' center turn lane to a 16-18' raised landscaped median with left turn pockets, and to eliminate the narrow planting strips and widen the sidewalks where possible.

The third segment deals with SR 21/Blanding Boulevard from Wilson Boulevard to Cassat Avenue. The recommendations for this segment are to reduce travel lanes from 12' to 11' and widen the bicycle lane to a buffered bicycle lane using the extra space gained by reducing the width of the travel lanes. Another recommendation is to add decorative lighting and gateway features such as banners on the Cedar River Bridge and to add a bus rapid transit stop on SR 21/ Blanding Boulevard near Wilson Boulevard.

The fourth segment of the SR 21/Blanding Boulevard corridor is from Cassat Avenue to Park Street. The recommendations for this segment include a road rebalancing project to reduce the travel lanes from 12' to 11', converting the 12-14' center turn lane to a 16-18' raised landscaped median with left turn pockets, converting the five foot sidewalk and three foot planting strip to an eight foot shared use path wherever possible and reducing the speed limit to 35 mph.

In the Lakeshore area, around the intersection of SR 21/Blanding Boulevard and San Juan Avenue, landscaping, street trees, additional lighting, and signage would be added to enhance placemaking. The intersection of SR 21/Blanding Boulevard and Bayview Road is recommended to be reconfigured so that Bayview Road ends at Appleton Road instead of the existing awkward intersection of SR 21/Blanding Boulevard and Bayview Road and Palmer Avenue. In addition, adding gateway features such as landscaping and lighting around the arches located at the intersection of SR 21/Blanding Boulevard and Bayview Road will create a gateway for the Lakeshore neighborhood.

Another recommendation is to reconfigure the intersection of SR 21/Blanding Boulevard and Cassat Avenue by eliminating one northbound left turn lane and replacing it with a wider median. The final recommendation for this area is to implement a road rebalancing project for Cassat Avenue from SR 21/Blanding Boulevard to San Juan Avenue where the existing 11' center turn lane be converted to a raised, landscaped median with left turn pockets. The existing seven foot parking lane and 11' outside travel lane on this segment of Cassat Avenue is recommended to be converted into a seven foot bicycle lane with a three foot buffer and an eight foot parking lane in each direction of travel. Pedestrian scale lighting on Cassat Avenue is also recommended.

SR 21/Blanding Rebalancing Concept

SR 21/Blanding Boulevard from 103rd Street to Wilson Boulevard and from Cassat Avenue Park Street south of the US 17/Roosevelt Boulevard overpass is currently a five lane undivided roadway with two 12' travel lanes in each direction and a 12-14' two-way center turn lane **(Figure 6)**. In most places there is a three foot planting strip on both sides of the roadway and a five foot sidewalk on the outside of the planting strips.

The input from the community and the data collected suggested that the existing typical sections for SR 21/Blanding Boulevard could be revised to allow for better facilities for bicycles and pedestrians. The proposed concept is to narrow the four travel lanes to 11' in width and to eliminate the two-way center left turn land and replace it with a 16-18' wide raised median with landscaping **(Figure 7)**. The existing three foot wide planting strip should be filled into widen the sidewalk into an eight foot wide shared use path for bicycles and pedestrians, thus creating a safer riding and walking environment.

FIGURE 6: EXISTING TYPICAL SECTION FOR BLANDING BOULEVARD NORTH OF 103RD STREET

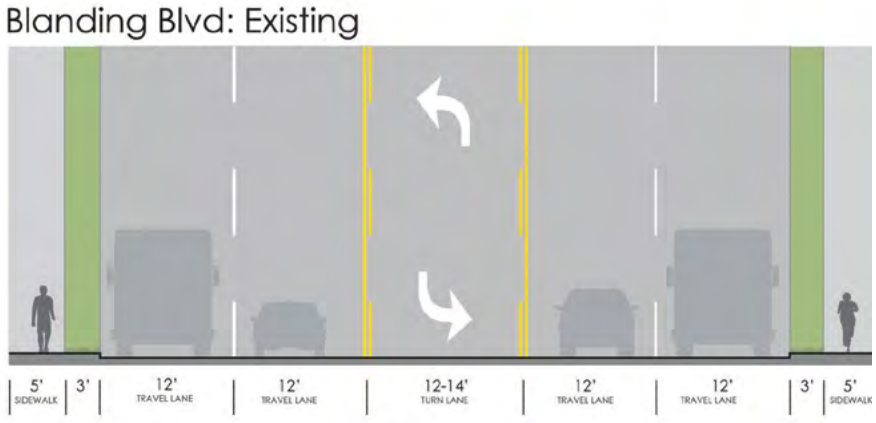


FIGURE 7: PROPOSED TYPICAL SECTION FOR BLANDING BOULEVARD NORTH OF 103RD STREET



Cassat Avenue Road Diet Concept

In the Lakeshore neighborhood area, the consultant team along with input from the community indicated that improvements could be made to the intersection of SR 21/Blanding Boulevard and Cassat Avenue as well as Cassat Avenue between SR 21 Blanding Boulevard and San Juan Avenue. Between Wilson Boulevard and Cassat Avenue, SR 21/Blanding Boulevard widens to six travel lanes with a raised median and bicycle lanes and sidewalks on the outside of the roadway in both directions. At the intersection of Cassat Avenue, the northbound left travel lane becomes a left turn lane along with another inside left turn lane thus creating a situation of duel left turn lanes.

After reviewing traffic data and existing conditions at the intersection of SR 21/ Blanding Boulevard and Cassat Avenue and on Cassat Avenue with input from the community, the consultant team and JTA staff put together a proposed new layout for the intersection of SR 21/Blanding Boulevard and Cassat Avenue. The proposal would remove the inside left turn lane and replace it with a raised landscaped median. The left travel lane would turn into the only left turn lane from northbound SR 21/ Blanding Boulevard to Cassat Avenue.

Currently Cassat Avenue from SR 21/Blanding Boulevard to San Juan Avenue has four 11 foot wide travel lanes, an 11 foot wide two-way center left turn lane, a seven foot wide parking lane on both sides, two foot planting strip on both sides, and five foot wide sidewalks outside of the planting strip on both sides of the roadway **(Figure 8)**. The 2014 average daily traffic volumes for this section of Cassat Avenue is 8,100 vehicles per day, which indicates that the roadway may not need four travel lanes to operate acceptable level of service (LOS). The level of service of Cassat Avenue would be LOS C if reduced to two travel lanes, which is an acceptable level of service in an urbanized area.

With the low traffic volumes and community input, the consultant team and JTA staff recommend that Cassat Avenue from SR 21/Blanding Boulevard to San Juan Avenue have a "road diet" treatment. A road diet is when a road has more lanes than needed to carry its traffic volume and the roadway is reconfigured to fewer travel lanes but has more amenities added to it such as on street parking, bicycle lanes, sidewalks, and medians implemented. The proposed road diet for Cassat Avenue allows for one 11' travel lane in each direction with an 11' raised landscaped median separating the northbound and southbound travel lanes, and an eight foot wide on-street parking lane on each side **(Figure 9)**. On the outside of the parking lane on both sides of the roadway, the consultant team and JTA propose that a three foot buffer be implemented to protect the seven foot bicycle lane, two foot planting strip, and five foot sidewalk.

FIGURE 8: EXISTING TYPICAL SECTION FOR CASSAT AVENUE SOUTH OF SAN JUAN AVENUE

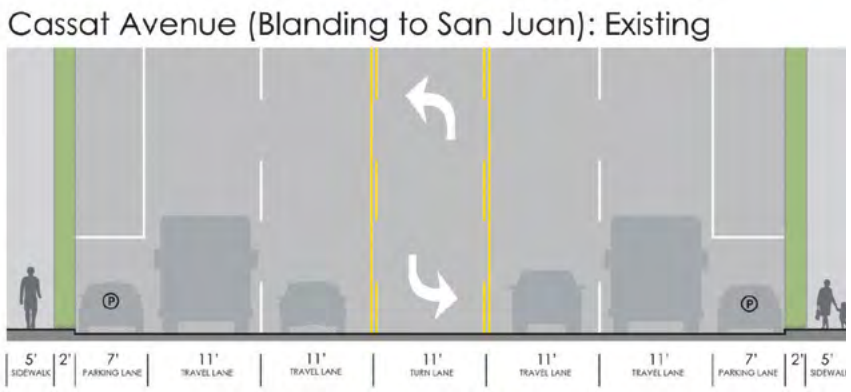


FIGURE 9: PROPOSED TYPICAL SECTION FOR CASSAT AVENUE SOUTH OF SAN JUAN AVENUE

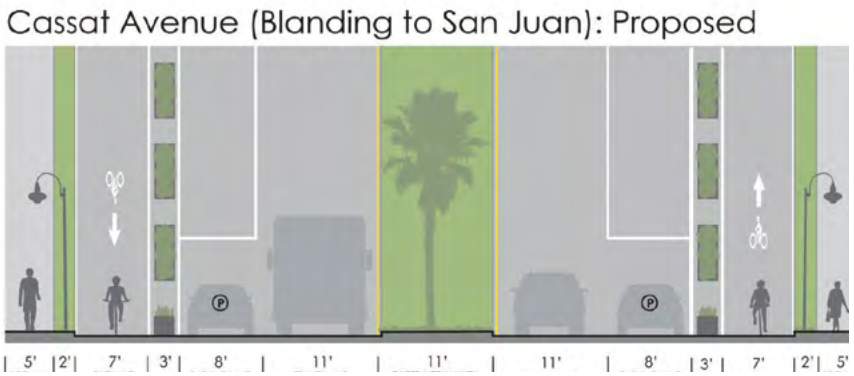


FIGURE 10: CONCEPT RENDERING FOR LAKE SHORE TOWN CENTER AREA



Lakeshore Gateway Concept

North of Cassat Avenue, SR 21/Blanding Boulevard enters the heart of the Lakeshore neighborhood, with its center located where SR 21/Blanding Boulevard intersects Bayview Road and San Juan Avenue. As previously discussed in this report, the community expressed a strong desire to reestablish this area as a gateway for the Lakeshore neighborhood like it was when the arches were constructed in the 1920s. Currently, Bayview Road intersects SR 21/Blanding Boulevard at an odd angle with Palmer Avenue, making this intersection a five legged intersection. Because of this odd angle it makes for a dangerous intersection for vehicles, bicycles and pedestrians.

The consultant team and JTA staff developed a concept that would remove the Bayview Road leg of the intersection, thus making the intersection a more typical four legged intersection and safer while creating a possible gateway area at the entrance to the Lakeshore neighborhood **(Figure 10)**. The portion of Bayview Road from Appleton Avenue to Palmer Avenue would be removed under this concept and portions of it will become a park while another part of it could be deeded over to the Puerto Plata Restaurant to be used for parking and/or outdoor seating. Traffic going to or from Bayview Road would use Appleton Avenue to access SR 21/Blanding Boulevard. The park could be designed as an enhanced gateway for the Lakeview neighborhood.

Park Street Avondale Recommendations

The Park Street Avondale segment of the study area corridor begins just west of the Hamilton Street and US 17/Roosevelt Boulevard overpasses to Willow Branch Avenue. The recommendations for the segment include a road rebalancing project on the SR21/ Blanding Boulevard overpass over US 17/Roosevelt Boulevard that will reduce travel lanes from 12' to 11', reduce the number of southbound travel lanes from three to two, convert the Jersey barrier to a raised landscaped median with lighting, and provide a six foot vegetated buffer and 12' shared use path on the northbound side of the roadway.

On Park Street east of US 17/Roosevelt Boulevard, the recommendations are to narrow travel lanes wherever possible, add crosswalks with pedestrian signals at all signalized intersections and add midblock pedestrian crossings with appropriate signage at these locations: Park Street in the vicinity of Boone Park

- Park Street in the vicinity of Ingleside Avenue
- Park Street in the vicinity of Avondale Avenue
- Park Street in the vicinity of Willow Branch Park

The final recommendation is to develop a neighborhood greenway that utilizes Glendale Street, Valencia Road, Challen Avenue, Oak Street and Margaret Street in lieu of bicyclists riding on Park Street.

Blanding Boulevard Overpass Concepts

During the course of the charrette, JTA staff and consultant team members heard continually from the community about the unpleasant sight of the overpass and how its freeway-like design and feel encourages motorists to speed up despite the posted 35 mph speed limit and its approach to the Avondale residential area on Park Street. This bridge is the link between SR 21/Blanding Boulevard and Park Street which leads into the Avondale and Riverside neighborhoods. After reviewing data and community input, the consultant team recommends to reconfigure the space on the overpass to slow traffic and provide facilities for bicycles and pedestrians.

The concept developed would narrow the existing roadway **(Figure 11)**. A road rebalancing is feasible on this segment because traffic volumes are approximately 22,000 vehicles per day, within the threshold of what a four lane roadway can handle at an acceptable level of service. The level of service would be LOS D, which is acceptable according to the Jacksonville Comprehensive Plan. As such, the existing three lanes on the southbound side will be reduced to two lanes **(Figure 12)**. All travel lanes would be reduced from the existing width of 12 feet to 11 feet. The existing concrete Jersey barrier will be replaced by an eight foot wide raised median that could be landscaped. Lighting may also be added to the median. A two foot wide shoulder will be maintained on the outside of the southbound travel lanes. Adjacent to the northbound travel lanes, a six foot wide raised buffer will be installed to protect bicyclists and pedestrians that will be using the 12 foot wide multi-use path to traverse the overpasses **(Figure 13)**.

Reconfiguring the overpass will be complicated, somewhat costly. In order to provide a safe link for bicyclists and pedestrians to cross US 17/Roosevelt Boulevard and connect the FSCJ-Kent Campus, Avondale, and Riverside to the SR 21/Blanding Boulevard corridor, an easily implementable solution was found. **(Figure 14)** At the present time, Park Street west of SR 21/Blanding Boulevard has bicycle lanes. It is feasible that the segment of Park Street east of SR 21/Blanding Boulevard to US 17/Roosevelt Boulevard have a road diet treatment implemented to take away one travel lane in each direction thus allowing for the extension of bicycle lanes.

FIGURE 11: EXISTING TYPICAL SECTION FOR BLANDING BOULEVARD OVERPASS

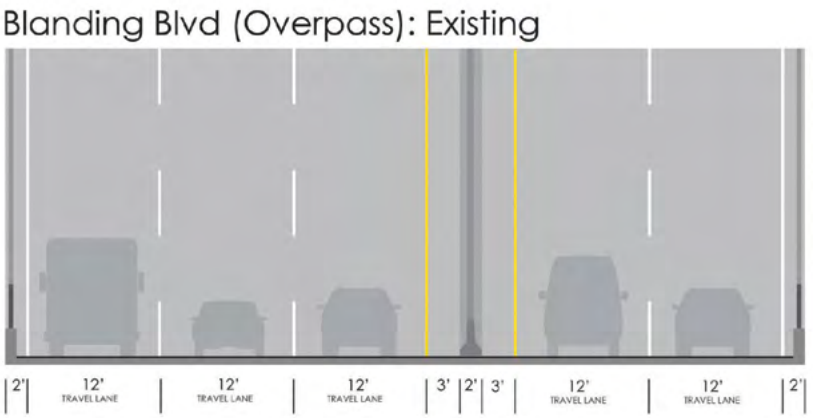
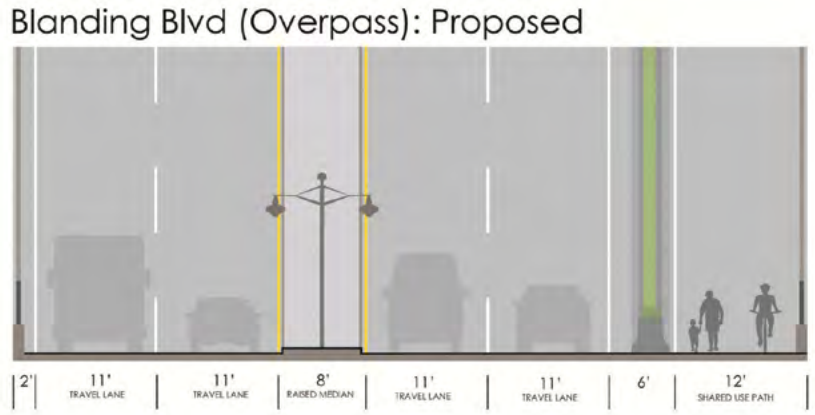


FIGURE 12: PROPOSED TYPICAL SECTION FOR BLANDING BOULEVARD OVERPASS



At the intersection of Park Street and US 17/Roosevelt Boulevard, a proposed multi-use path would be constructed along the west side of US 17/Roosevelt Boulevard northward to the Park Street Ramp. The multi-use path will allow bicyclists and pedestrians a safe route away from traffic on US 17/Roosevelt Boulevard. At the US 17/Roosevelt Boulevard and Park Street Ramp, a crosswalk with pedestrian signalization would be implemented to allow pedestrians and bicyclists a safe crossing of US 17/Roosevelt Boulevard.

The Park Street Ramp from US 17/Roosevelt Boulevard to the intersection of Park Street, FSCJ, and the US 17/Roosevelt Boulevard overpass could also be reconfigured to allow for bicycle lanes and sidewalks so that a connection between Park Street in Avondale to the SR 21/Blanding Boulevard corridor can be made.

FIGURE 13: CONCEPTUAL DESIGN FOR BLANDING BOULEVARD OVERPASS ENHANCEMENTS

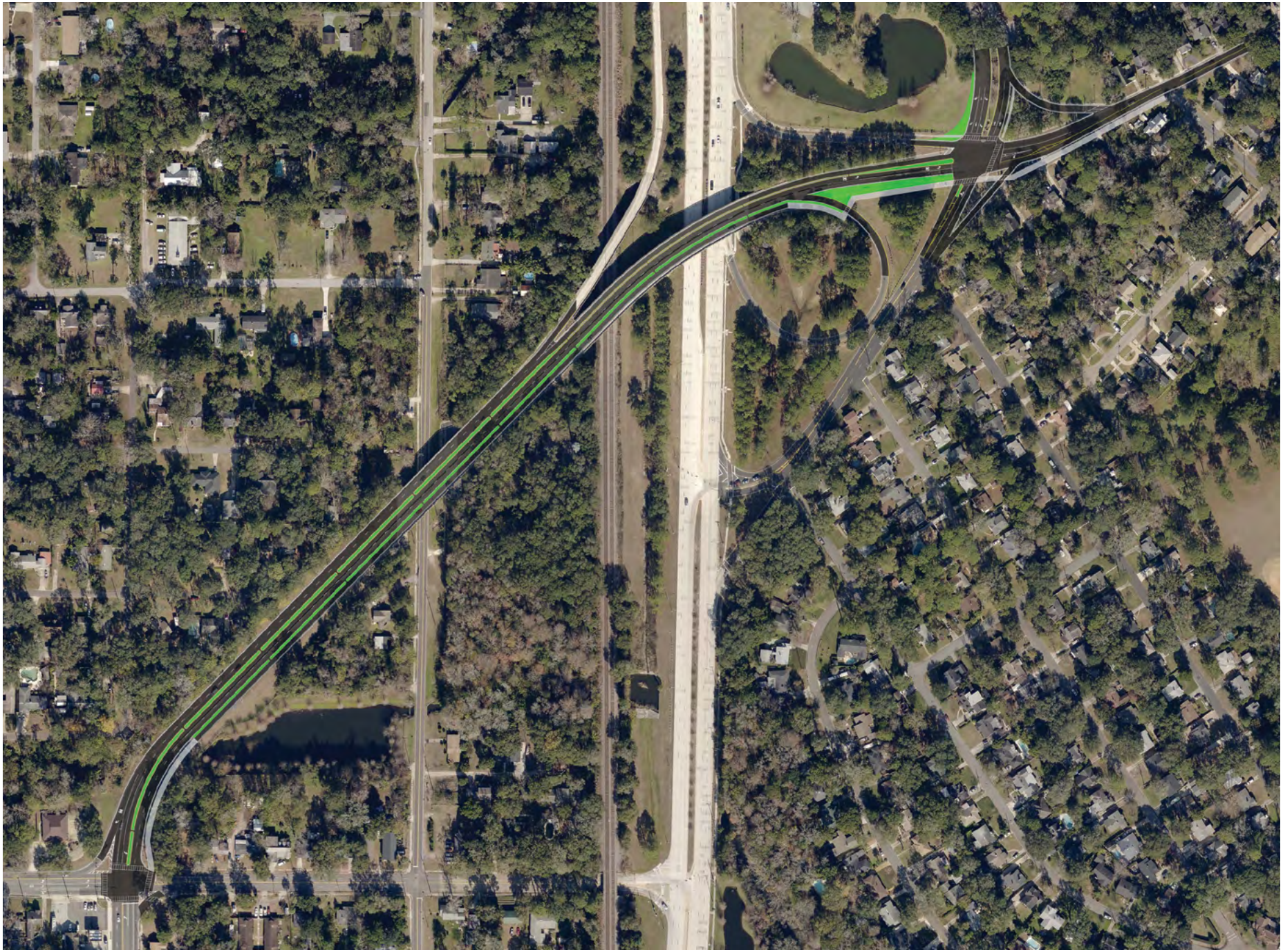
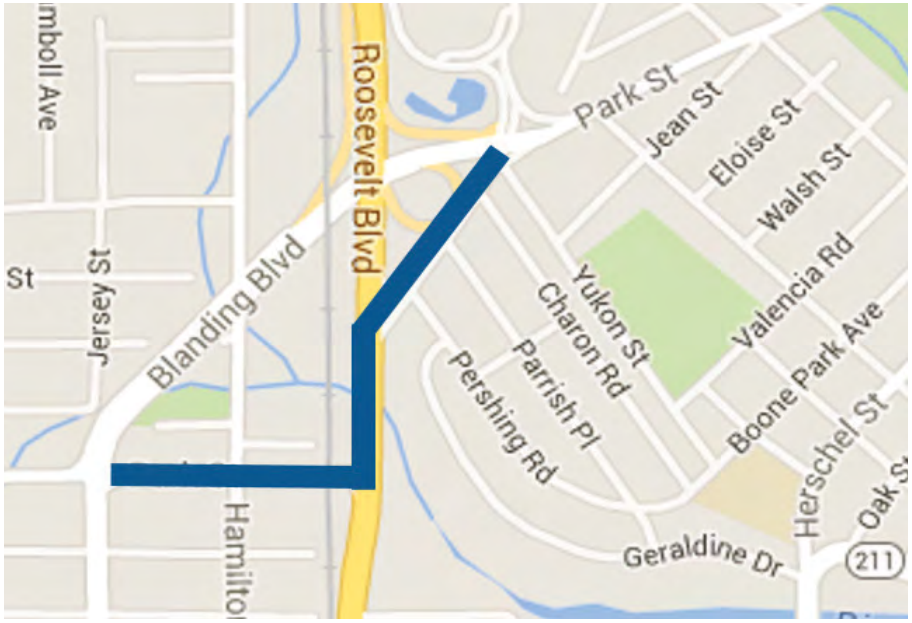


FIGURE 14: INTERIM BICYCLE & PEDESTRIAN ROUTING PLAN



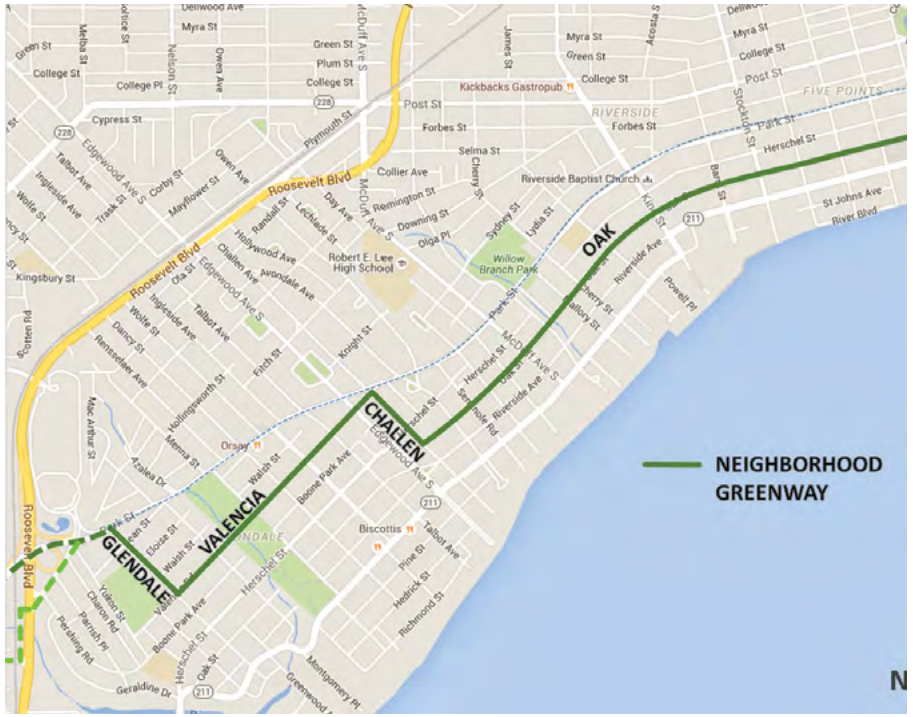
The Park Street and FSCJ intersection marks the beginning of the historic Avondale neighborhood. A multi-use path would extend along the south side of Park Street from the overpass to Glendale Street and gateway landscape/ hardscape features would be added at the intersection.

Neighborhood Greenway Concept

At the intersection of Park Street and Glendale Street, a bicycle route or neighborhood greenway, is recommended to be implemented to allow bicyclists a parallel route to Park Street. The Avondale-Riverside neighborhood greenway is a proposed bicycle route through residential streets and parks that parallel Park Street through the Avondale and Riverside neighborhoods **(Figure 15)**. The neighborhood greenway recommendation was developed because Park Street in Avondale is not wide enough to stripe bicycle lanes on it and input received from the community was that many bicyclists were not comfortable biking on Park Street due to relatively high traffic volumes.

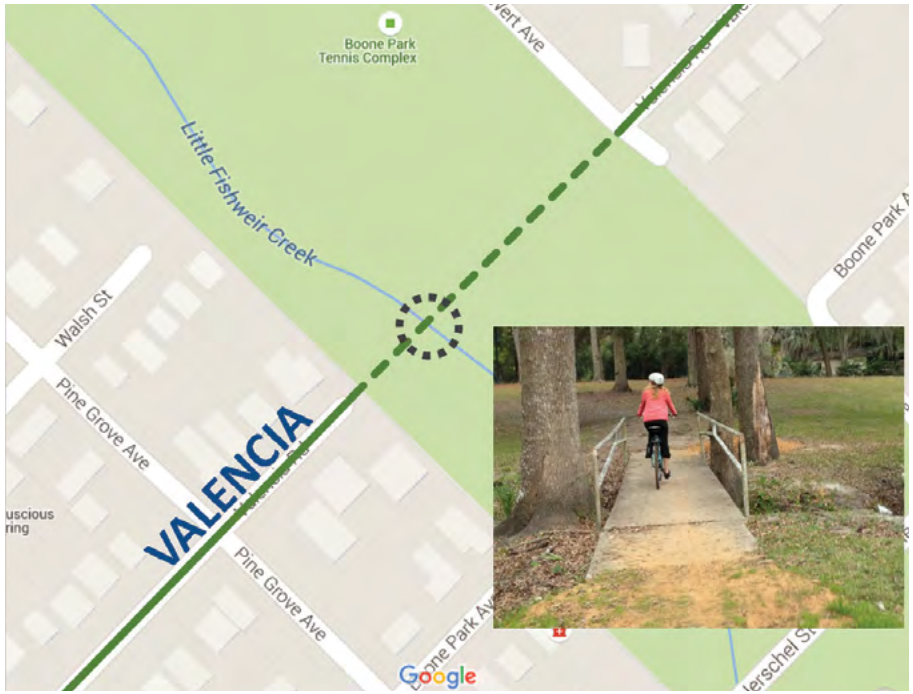
The proposed Avondale-Riverside neighborhood greenway will leave Park Street at Glendale Street and follow Glendale Street south to Valencia Road. The neighborhood greenway will turn east on Valencia Road and traverse Boone Park and continue on Valencia Road to Challen Avenue. The neighborhood greenway will then travel south on Challen Avenue to Oak Street where it will turn east on Oak Street and use Oak Street until Margaret Street where it will turn north on Margaret Street to Five Points where it will rejoin Park Street. Wayfinding signage is recommended to help bicyclists navigate the route of the neighborhood greenway.

FIGURE 15: PROPOSED ROUTING OF BIKE BOULEVARD THROUGH RIVERSIDE & AVONDALE



The proposed routing of the neighborhood greenway does have two areas in it where it does not follow a street. The first is in Boone Park were an existing path should be upgraded to a 12 foot wide multi-use path to provide a better facility for bicyclists and pedestrians. This path will link to two disconnected sections of Valencia Road **(Figure 16)**.

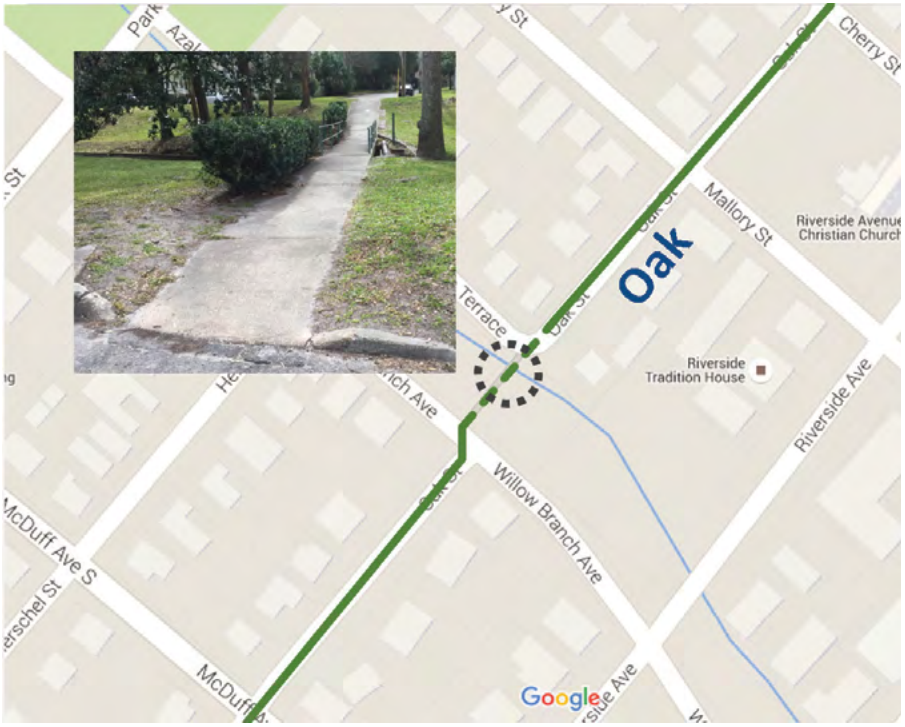
FIGURE 16: LOCATION OF TRAIL WIDENING THROUGH BOONE PARK



The second gap is where Oak Street is disconnected by Willow Branch Creek. There is an existing five foot wide concrete path with a bridge over Willow Branch Creek connecting the two segments of Oak Street. It is recommended that this path be upgraded to a 12 foot wide multi-use path to provide a better facility for bicyclists and pedestrian on the proposed Avondale-Riverside neighborhood greenway **(Figure 17)**.

Finally, another major concern brought up by community residents and observed in the field was the faded crosswalks and disconnected sidewalks at several major intersections on Park Street in Avondale. These should be addressed in the near term as safety enhancements.

FIGURE 17: LOCATION OF TRAIL WIDENING SOUTH OF WILLOW BRANCH PARK



Park Street Riverside Recommendations

The Park Street Riverside segment of the study area corridor begins at Willow Branch Avenue and continues through the Five Points district to I-95. The recommendations for the segment are to reduce speed the limit to 25 mph on Park Street from west of King Street to I-95, reconstruct sidewalks to provide a flat surface, further delineate and clean up parking areas on Park Street from Acosta Street to Five Points, and provide pedestrian crosswalks with appropriate signage at all intersections. In addition, midblock crossings would be installed west of King Street (near City Cycle) and near Acosta Street.

A road rebalancing project is also recommended on Park Street. The consultant team developed three options for the project.

Option 1 Adds on-street parallel parking
Option 2 Widens sidewalk to shared use paths
Option 3 Adds bicycle lanes

Park Street Rebalancing Concepts
The concepts section of the Park Street Riverside segment will look at three potential concept options for a typical section of Park Street, two concept options for the Five Points intersection and a concept for the Park Street and Post Street intersection east of Five Points.

Earlier in this report, the existing typical section of Park Street from King Street to Five Points was discussed **(Figure 18)**. The consultant team and JTA staff with input from the community devised three concept options for a new typical section for Park Street.

Option 1 (Figure 19) allows the existing six foot wide sidewalk to remain while narrowing the existing 20 foot wide planting strip to 16 feet and the existing 15 foot wide travel lanes to be narrowed to 11 feet. This will allow a 7 foot wide parking lane on both sides of the roadway to be implemented and the narrower travel lanes will reduce automobile speeds.

Option 2 (Figure 20) narrows the existing 15 foot wide travel lanes to 11 feet and widens the existing 6 foot wide sidewalk to a 10 foot wide multi-use trail for bicycles and pedestrians. The existing 20 foot wide planting strips remain but are shifted in option 2.

Option 3 (Figure 21) leaves the existing six foot wide sidewalks and 20 foot wide planting strips, but narrows the existing 15 foot wide travel lanes to 10.5 feet which allows for a 4.5 foot wide bicycle lane to be marked on both sides of the roadway.

FIGURE 18: EXISTING TYPICAL SECTION FOR PARK STREET IN RIVERSIDE

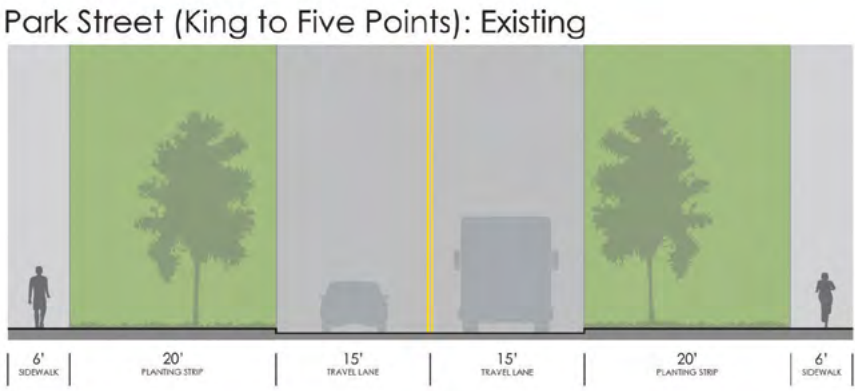


FIGURE 19: PROPOSED OPTION 1 TYPICAL SECTION FOR PARK STREET IN RIVERSIDE

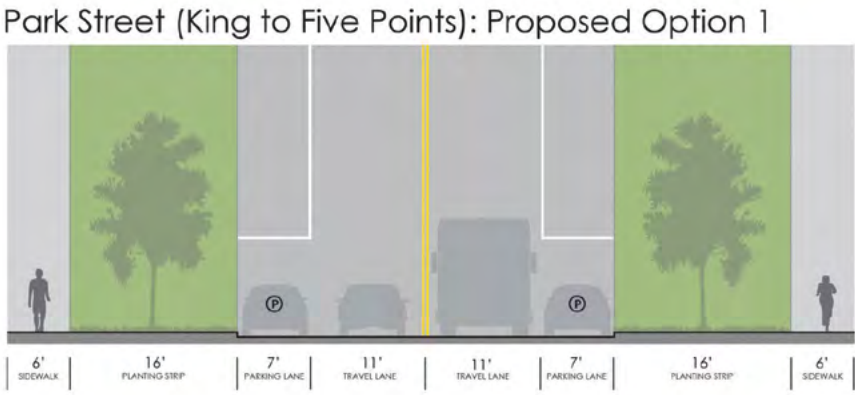


FIGURE 20: PROPOSED OPTION 2 TYPICAL SECTION FOR PARK STREET IN RIVERSIDE

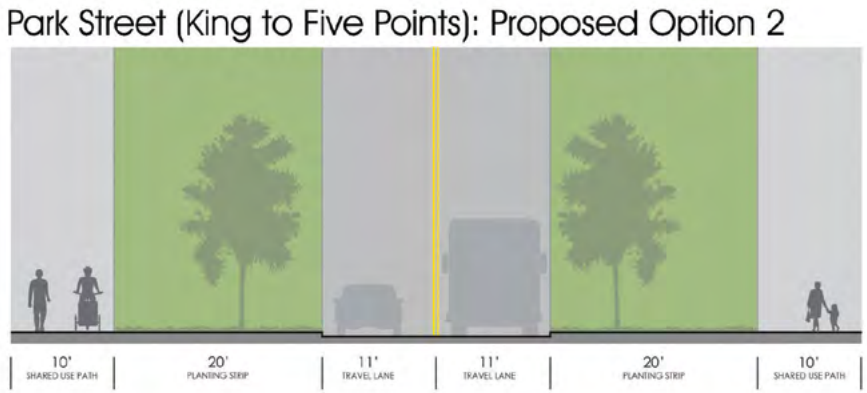


FIGURE 21: PROPOSED OPTION 3 TYPICAL SECTION FOR PARK STREET IN RIVERSIDE

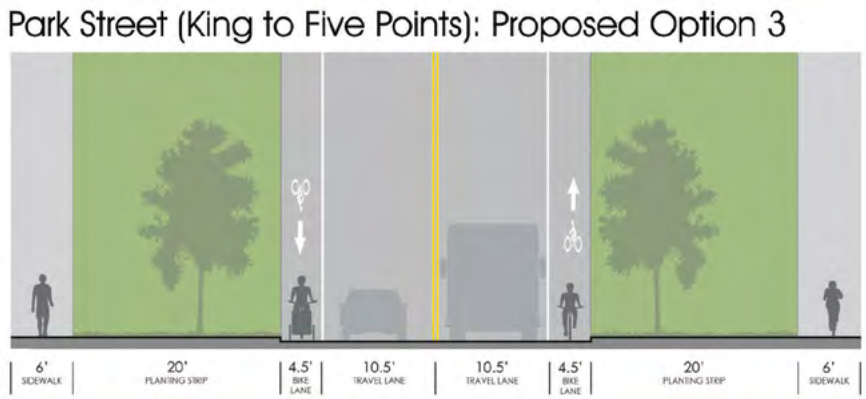


FIGURE 22: CONCEPT 1 FOR FIVE POINTS INTERSECTION (COURTESY OF CITY OF JACKSONVILLE)



FIGURE 23: CONCEPT 2 FOR FIVE POINTS INTERSECTION (COURTESY OF CITY OF JACKSONVILLE)



Prioritization

Following the charrette, the project team conducted further analyses and additional coordination regarding the corridor recommendations. From that, a prioritization plan was developed. Projects identified have been classified as **Keystone Projects, Operational/Safety Enhancements, or Long-Term Vision Projects.** Keystone Projects will showcase the immediate effect the Complete Streets program should have on a corridor, and provide a catalyst for change. They are relatively substantial projects that should be implemented in the near term. For the SR 21/Blanding Boulevard and Park Street corridors the

KEYSTONE PROJECTS

These are the rebalancing of the Park Street overpass over US 17/Roosevelt Boulevard, **(Figures 25-28)** the reconfiguration of the intersections of Park Street and Margaret Street and Park Street and Post Street.

OPERATIONAL/SAFETY ENHANCEMENTS

These are "quick fix" projects that can provide immediate operational and safety improvements at a reasonable low cost. Within the SR 21/Blanding Boulevard and Park Street corridors, these enhancements include the following:

- Add sidewalks on Blanding Boulevard south of Collins Road (FDOT Project)
- Implement crosswalks with pedestrian countdown signals at the following intersections:SR 21/Blanding Boulevard and Argyle Forest Road
- SR 21/Blanding Boulevard and Lake Gray Boulevard
  - SR 21/Blanding Boulevard and Hicks Road
- Fill in sidewalk gaps along SR 21/Blanding Boulevard between Collins Road and 103rd Street
- Install midblock pedestrian crossings with appropriate signage at:
  - SR 21/Blanding Boulevard in the vicinity of Longchamp Drive
  - SR 21/Blanding Boulevard in the vicinity of Maggie's Lane
  - SR 21/Blanding Boulevard between Anderson Road and Goodman Road
  - SR 21/Blanding Boulevard between Dorminy Avenue and Claret Drive

FIGURE 24: CONCEPT RENDERING FOR ENHANCEMENTS AT PARK STREET/POST STREET INTERSECTION



FIGURE 25: BIRD'S-EYE RENDERING OF PARK STREET /FSCJ INTERSECTION



FIGURE 26: GROUND LEVEL RENDERING OF PARK STREET/FSCJ INTERSECTION



FIGURE 27: BLANDING BOULEVARD OVERPASS LOOKING NORTH (EXISTING)



FIGURE 28: CONCEPT RENDERING OF BLANDING BOULEVARD OVERPASS LOOKING NORTH



  - SR 21/Blanding Boulevard in the vicinity of the Cedar Hills Shopping Center
  - Park Street in the vicinity of Boone Park
  - Park Street in the vicinity of Ingleside Avenue
  - Park Street in the vicinity of Avondale Avenue
  - Park Street in the vicinity of Willow Branch Park
  - Park Street west of King Street (City Cycle/European St. Cafe)
  - Park Street in the vicinity of Acosta Street
- Add a stop on SR 21/Blanding Boulevard at Wilson Boulevard to the planned Southwest BRT route.
- Reduce the speed limit on SR 21/Blanding Boulevard to 40 mph between 103rd Street and Colonial Avenue
- Reduce the speed limit on SR 21/Blanding Boulevard to 35 mph between Colonial Avenue and Park Street
- Widen sidewalks on SR 21/Blanding Boulevard between 103rd Street to Park Street
- Designate a bicycle and pedestrian connection from the Lakeshore area to the Avondale area.
  - Implement a road diet on Park Street from SR 21/Blanding Boulevard to US 17/Roosevelt Boulevard
  - Construct a multi-use path along US 17/Roosevelt Boulevard from Park Street to the Park Street ramp with marked pedestrian crossings at the signals
- Implement neighborhood greenway enhancements along the recommended neighborhood greenway in the Avondale and Riverside neighborhoods
- Re-stripe Park Street to 11' lanes through the Avondale
- Modify the intersection of Park Street and Jean Street/Pine Grove Avenue to minimize cut-through traffic
- Add sidewalks where needed along Park Street in Avondale
- Install bus shelters with amenities at transit stops in Riverside and Avondale
- Designate a neighborhood greenway on Glendale Street to Valencia Road to Challen Avenue to Oak Street to Margaret Street to Five Points
- Reduce the speed limit on Park Street to 25 mph though Riverside
- Install crosswalks at all Park Street intersections in Riverside

LONG-TERM VISION

These are projects that are often bold, relatively costly projects that may take many years to be fully implemented. The Long-Term Vision projects within the SR 21/Blanding Boulevard and Park Street corridors are as follows:

- Reduce lane widths on SR 21/Blanding Boulevard to 11' with raised median north of 103rd Street to Park Street
- Install decorative pedestrian lighting on the Cedar River Bridge
- Implement enhanced median landscaping on SR 21/Blanding Boulevard at Cassat Avenue and a road diet on Cassat Avenue between SR 21/Blanding Boulevard to San Juan Avenue **(Figure 29)**
- Promote redevelopment of the area along SR 21/Blanding Boulevard near Lakeshore and San Juan Avenue through streetscape enhancements
- Rebalance Park Street to include on-street parking in the Avondale and Riverside neighborhoods **(Figure 30-31)**

The realization of this long-term vision will remake the automobile-dominated Blanding Boulevard into a fully inclusive multimodal and mixed-use corridor for the west side of Jacksonville.

FIGURE 29: CONCEPT RENDERING OF BLANDING BOULEVARD/CASSAT AVENUE INTERSECTION



FIGURE 30: PARK STREET EAST OF ACOSTA STREET (EXISTING)



FIGURE 31: RENDERING OF ENHANCEMENTS TO PARK STREET IN RIVERSIDE



DUNN AVENUE

EXECUTIVE SUMMARY

A study of the Dunn Avenue corridor from I-295 in the west and I-95 in the east was conducted as part of the JTAMobilityWorks Complete Streets Program. The study began with a public charrette from August 24 – 28, 2015 at the Gateway Town Center, to ask for community ideas of the operations of the roadways and what they would like improved in the area. Starting with the communities ideas, the corridor was looked at as having two distinct characters.

The first section from I-295 to Biscayne Boulevard is approximately 3.3 miles long and has a typical right-of-way of 80' with five travel lanes and five foot sidewalks. This section of the corridor is often used by recreational walkers, joggers, and equestrian riders. There is a commercial node at the intersection of Lem Turner Road which appears stable and there are few vacant storefronts. A new hospital is planned for the western end of the Dunn Avenue near I-295 and just off of the corridor is the north campus of Florida State College.

Recommendations for this stretch of roadway primarily consist of operational and safety enhancements. These include improvements to the intersections of Pine Estate Road, Duval Road (which is close to an elementary school), and North Campus Boulevard. The long-term vision has this segment of roadway adding medians where the turn lane is not needed and a buffered bike lane along with wider sidewalks to improve the safety of the roadway and provide more comfort for pedestrians and cyclists.

The second section of Dunn Avenue from Leonid Avenue to I-95 is a little under a mile long and has a typical 100' right-of-way with seven travel lanes, three travel lanes in each direction with a continuous center turn lane and a five foot sidewalk with a small planting strip. This section of road is flanked by strip commercial restaurants and retail. This section of Dunn Avenue was resurfaced and striped in late 2015. Some of the crosswalks, such as at Monaco Road, have been restriped with zebra stripes to make them more visible and safer for pedestrians.

Dunn Avenue had a recorded death in 2010 by Harts Road. The restriping of the crosswalks may help with this concern. The areas adjacent to the on and off ramps for the interstates are a particularly dangerous place for pedestrians. Motorists leaving the highway and entering a surface road tend to be acclimated to the higher speeds of the interstate and are looking for other vehicles as possible conflicts, not cyclists or pedestrians. The built environment of the roadway and surrounding uses need to immediately have an impact on motorists leaving the highway so that they become more aware of their surroundings and adjust to slower speeds immediately.

The main recommendation for this section of corridor is for the removal of one travel lane in each direction and adding additional street trees and bike facilities in the area recovered. This can begin with demonstration projects that can later become permanent. It can begin with a demonstration lane reduction with one lane in the in the eastbound direction to create a protected bikeway from Briarcliff Road to Monaco Drive with a buffered bike lane in other areas. A demonstration lane reduction with one lane in the westbound direction can be used to create a buffered bike lane in the recovered space between Biscayne Boulevard and I-95.

The five way intersection of Dunn Avenue with Biscayne Boulevard and Leonid Drive is of importance as this is where a lot of the vehicular traffic on Dunn Avenue peels off onto other streets meaning that a lot of turning movements are occurring. In coordination with the reduction in travel lanes, this intersection could become a roundabout to facilitate the flow of turning vehicles while also making it safer for pedestrians and cyclists to navigate the area.

1: CONTEXT

The Dunn Avenue Corridor is located in the northwest quadrant of Jacksonville. Dunn Avenue runs primarily east and west where it intersects with I-295 in the west and I-95 in the east.

The corridor has two distinct characters:

- I-295 in the east to Leonid Road in the east
- Leonid Road in the west to I-95

The first section from I-295 to Leonid Road has a typical right-of-way of 80' with five travel lanes and five foot sidewalks. This section of the corridor is often used by recreational walkers, joggers, and equestrian riders. There is a commercial node at the intersection of Lem Turner Road which appears stable and there are few vacant storefronts. A new hospital is planned for the western end of the Dunn Avenue near I-295 and just off of the corridor is the north campus of Florida State College.

The section of Dunn Avenue from Leonid Avenue to I-95 has a typical 100' right-of-way with seven travel lanes, three travel lanes in each direction with a continuos center turn lane and a five foot sidewalk with a small planting strip. This section of road is flanked by strip commercial restaurants and retail. This section of Dunn Avenue was resurfaced and striped in late 2015. Some of the crosswalks, such as at Monaco Road, have been restriped with zebra stripes to make them more visible and safer for pedestrians.

DANGEROUS BY DESIGN

A 2014 report by Smart Growth America and the National Complete Street Coalition identified Jacksonville as the third most dangerous area to walk in the United States, behind Orlando and Tampa-St. Petersburg. Dunn Avenue had a recorded death in 2010 by Harts Road. The restriping of the crosswalks may help with this concern. The areas adjacent to the on and off ramps for the interstates are a particularly dangerous place for pedestrians. Motorists leaving the highway and entering a surface road tend to be acclimated to the higher speeds of the interstate and are looking for other vehicles as possible conflicts, not cyclists or pedestrians. The built environment of the roadway and surrounding uses need to immediately have an impact on motorists leaving the highway so that they become more aware of their surroundings and adjust to slower speeds immediately.

ACTIVITY NODES

There are several nodes or potential future nodes of activity along Dunn Avenue.

The largest node of activity is the commercial area just to the east of I-95 all the way through Leonid Road. The commercial activity in this area follows suburban models which can be appropriate due to its location so far from the downtown. However, a lot can be done to rethink the infrastructure of the street to give the area more of a sense of place and safer for non-motorists.

Another activity node is the intersection of Lem Turner and Dunn Avenue. There is also a potential future node along the western end of Dunn Avenue if the land next to the interstate is developed.

AVERAGE DAILY TRAFFIC

There is a national trend in the reduction of vehicle miles traveled (VMT), particularly in older corridors. Dunn Avenue follow this trend. The annual average daily traffic (AADT or average vehicles per day) has been declining along the corridor.

In general, traffic volumes of 15,000 vehicles per day (VPD) are considered acceptable for a three lane section (two travel lanes with a center turn lane), while traffic volumes between 15,000 and 25,000 vpd are worth analyzing, and over 25,000 vpd typically require four or five travel lanes.[1]

The average daily traffic (ADT) counts for the Dunn Avenue were mapped. Areas in green mark where the ADT counts are below 20,000 cars and the areas marked in red denote where the ADT is more than 20,000 cars a day.

Most of Dunn Avenue has traffic volumes below 15,000 vpd from I-295 in the west until the street meets with Leonid Road in the

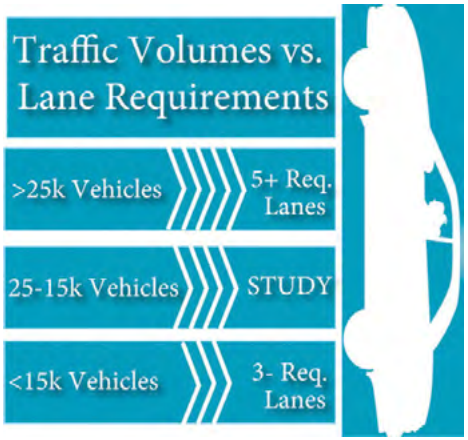


FIGURE 1: TRAFFIC VOLUMES VS. LANE REQUIREMENTS

1 Road Diets Information Guide. Chapter 3.3.5 Average Daily Traffic. FHWA. http://safety.fhwa.dot.gov/info_guide/

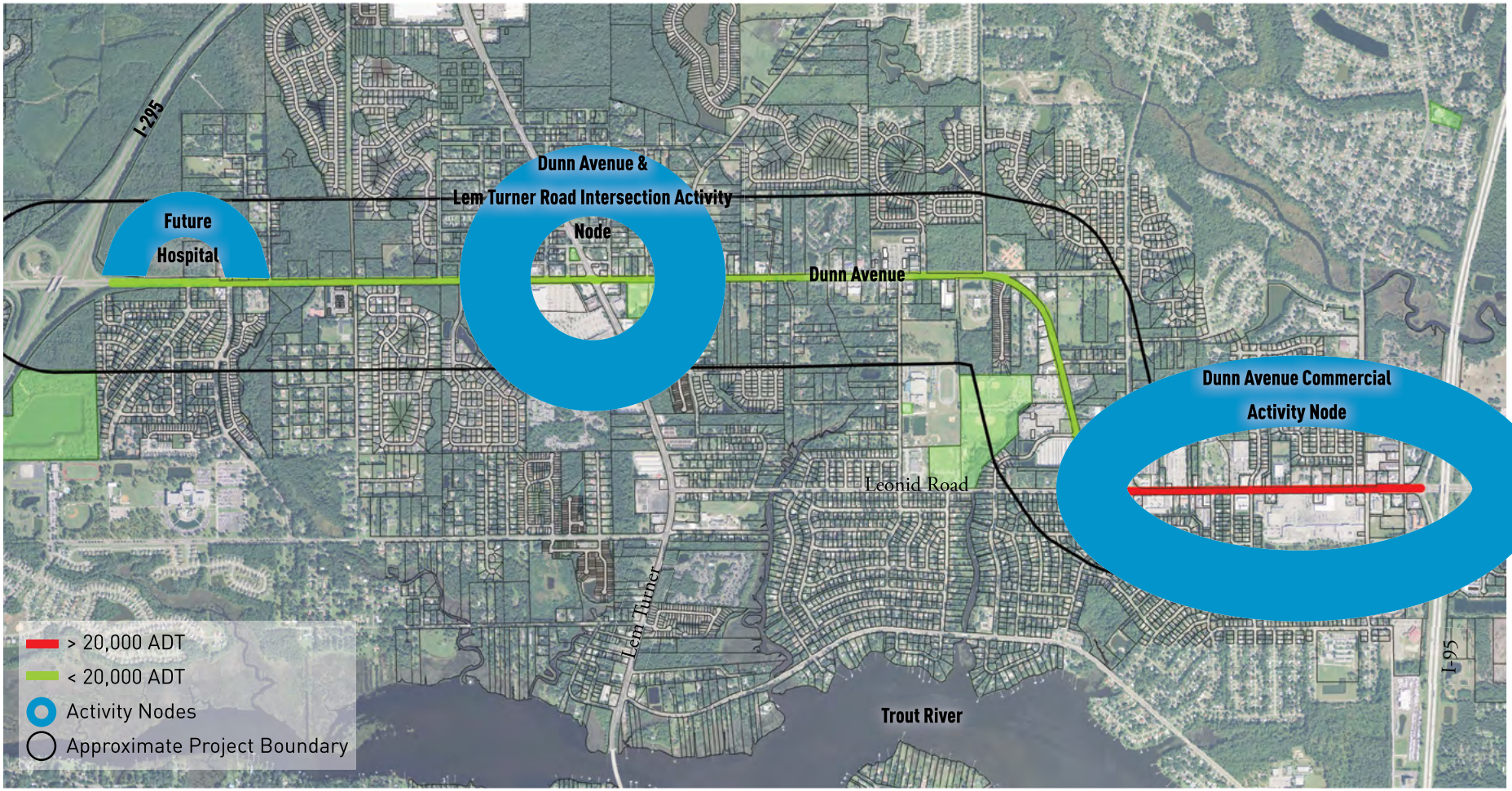


FIGURE . DUNN AVENUE CORRIDOR PROJECT AREA AND AVERAGE DAILY TRAFFIC VOLUMES

west (as shown on Figure 2). This stretch of the road has five lanes and given today's volumes, a reallocation of this roadway space can be done now.

From Leonid Avenue to I-95 the traffic volumes on Dunn Avenue are over 20,000 vpd, however this stretch of roadway has seven lanes. There is an opportunity to study the traffic volumes further to see if a lane reduction to five lanes is possible.

The change in the traffic volumes at Leonid Road is due to traffic dispersing at this intersection. Motorists travel down Leonid Road to connect with Lem Turner Road or they turn onto Biscayne Boulevard to access the surrounding neighborhoods.

2: PROCESS

One of the most important steps in the planning process is providing a platform to engage the community and an opportunity to receive meaningful feedback that can be incorporated into the final outcome. This allows residents in the area to voice their opinion and stay informed regarding developments that will potentially impact them.

For both the Lem Turner and Dunn Avenue corridors, Michael Baker, in collaboration with Dover, Kohl & Partners, engaged community stakeholders through an interactive design charrette held August 24-28, 2015 at the Gateway Town Center along Norwood Avenue. A charrette is a series of community engagement events spanning a week that included the Hands-On Design Workshop, Open Design Studio, an Open House, and a Work-In-Progress Presentation. It was important to hold all of the meetings within the study area to allow easier access to residents.

HANDS –ON DESIGN WORKSHOP

In the evening of August 24 and in the afternoon of August 25 the community was invited to an evening Hands-on Design Workshop where participants were given the opportunity to voice, describe, and draw how they would like to see the corridor and its surrounding areas to be in the future.

The evening began with a brief presentation that highlighted the Lem Turner and Dunn Avenue corridors and presented some of the concerns with each corridor including a food-for-thought presentation about "complete streets" introduced participants to the what has been done in other communities.

COMPLETE STREETS

Complete Streets are typically defined as streets designed and operated to enable safe access for all users, including pedestrians, bicyclists, motorists, and transit riders of all ages and abilities. Rather than just defining a street from within its curbs, Complete Streets also incorporate land uses, from building facade to building facade, which includes outdoor dining, street furniture, landscaping, art, and lighting (as well as others).

In progressive transportation engineering projects, the important role that the public right-of-way plays in moving and connecting people is essential for communities to truly thrive. A roadway is not only a place for cars to move efficiently, it is a place for people. A lot of roadways have been built where success is defined solely by the Level of Service (LOS) for motorists. If we define success by LOS, the full potential of a corridor has almost certainly lost many (if not all) of the things that make a roadway, city, or town a great place to be.

To implement a successful Complete Streets project, it has to be a project that makes people feel, see, do, and say something because of their experience. We have to continue to explore the community values and align them with the built environment so the potential of Jacksonville--a unique place--can truly be experienced.

Complete streets do not have a "one size fits all" approach. How a roadway fits into the overall network and the purposes it serves, can change the function and makeup that the right-of-way has. Complete streets may not necessarily need to be implemented everywhere and some places may want to continue to be and operate as auto-oriented, drive to and drive through locations--and that makes sense. A variety of street types is essential. Where there is a priority on creating places, or investments are being made to upgrade public transit, complete streets need to be a priority.

ATTENDEE POLLING

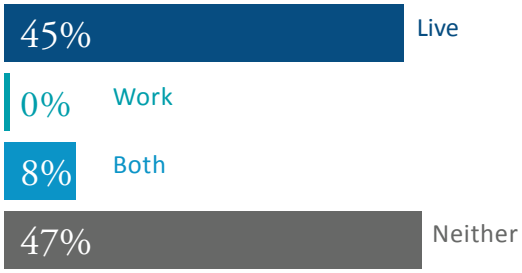
Real time polling was utilized as an interactive part of the presentation in order to gather information about the project area. Attendees were asked a series of questions about themselves and how they use the corridors. The answers were tallied and the results were shown to those participating as a way of conveying information back to the stakeholders and residents during the presentation. Polling was used at several different points throughout the discussion.

The following page shows some of the questions asked along with the participants results.

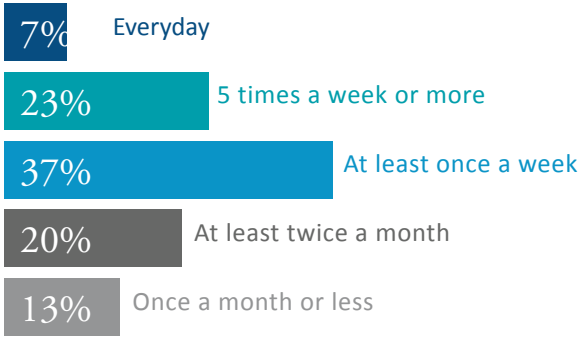
HOW DO YOU FEEL ABOUT THE LEM TURNER AND DUNN AVENUE CORRIDORS?



DO YOU LIVE AND /OR WORK IN THE LEM TURNER OR DUNN AVENUE CORRIDORS?



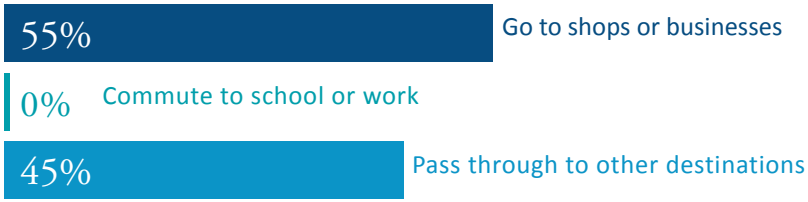
HOW OFTEN DO YOU TRAVEL ALONG THESE CORRIDORS?



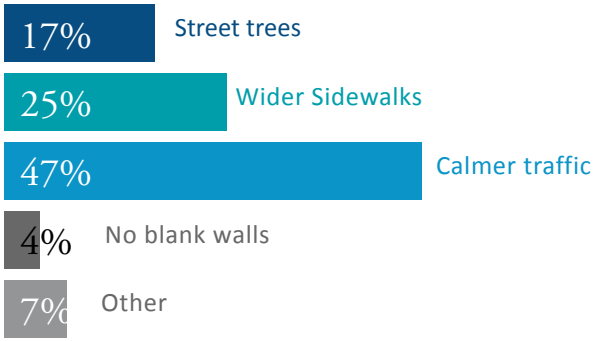
THE PRIMARY WAY I MOVE ABOUT THE CORRIDORS IS BY:



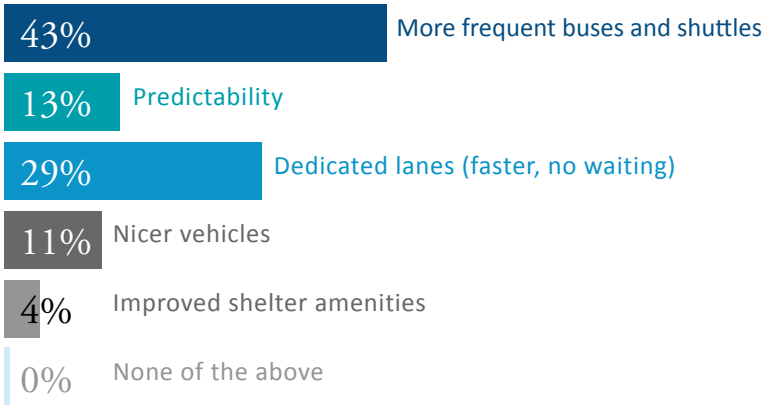
I MOST OFTEN TRAVEL ALONG THE LEM TURNER OR DUNN AVENUE CORRIDORS TO:



WHICH OF THESE FEATURES WOULD MOST AFFECT YOUR DESIRE TO WALK OR BIKE?



WHICH OF THESE FEATURES WOULD MOST AFFECT YOUR DESIRE TO USE A BUS OR SHUTTLE?



Designing With The Community

Following the presentation participants were asks to discuss the corridors and draw their ideas or areas of concern on maps. To help facilitate the conversation participants were asked to a series of questions to consider when imagining the areas future. These questions included:

- What is missing in the area? Where would it belong?
- Is it easy enough to walk or ride a bike in this area? What improvements would you suggest?
- Should there be new squares, plazas, green space(s)? Where?
- What can we do to help existing businesses in the area?

The meeting ended with a representative from each table presenting their map to the other tables and recapping the big ideas discussed at their table. This allowed everyone to have a sense of the other conversations happening around the room.

The workshop was an interactive exercise to gather ideas from the workshop attendees. The intention was to encourage them to think of the area as a whole, focusing more on what was needed and less about how to implement it. The exercise was an extremely visual one, with participants asked to draw their ideas and "argue with their pencils." This allowed people to participate in the design process and see how their ideas related to those of other people around the room.

Some of the initial feedback, concerns, and comments received at the table maps includes the following:

Overall Dunn Avenue Corridor:

- Dunn Avenue is more residential in nature
- Shared bike system
- BMX Course
- Senior Living
- Affordable housing needed
- People ride horses along Dunn
- Bus stops too far apart
- Need Signals at key intersections for pedestrians
- No trees – sidewalks
- Need new trees
- Add bike lane
- Dedicated bike lane
- Balance community & local needs
- No transfers – system should have transfers
- Predictability needed
- Hard to get to bus stops
- More shelters
- More safe parks





FIGURE 3: HANDS-ON DESIGN SESSION. PARTICIPANTS FROM THE SURROUNDING COMMUNITY ATTEND THE HANDS-ON DESIGN SESSION AND PROVIDE IDEAS FOR THE FUTURE OF THE CORRIDOR TO THE DESIGN TEAM.

OPEN DESIGN STUDIO

Throughout the week the design team worked in an Open Design Studio that was open for members of the community to drop-in and discuss the design concepts that were in progress. Technical meetings, focused on transportation, land use, and the vision for the future of the corridor were also occurring during the Open Design Studio.

OPEN HOUSE & WORK-IN-PROGRESS PRESENTATION

Mid-way through the charrette week, an Open House occurred. Designers and engineers pinned up initial design concepts and reviewed them with JTA staff members and different stakeholders from the community. On the final day of the design charrette, the design team led a Work-in-Progress presentation to discuss the plan ideas that were generated throughout the week.



FIGURE 4: WORK-IN-PROGRESS PRESENTATION

3: CONCEPTS

DUNN AVENUE - 80' STREET SECTION

Dunn Avenue's right-of-way from I-295 in the west to Leonid Road is 80', with five travel lanes, including two eastbound lanes, two westbound lanes, and a continuous center turn lane. The width of the road is an invitation for drivers to travel at excessive speeds. There are few protections for pedestrians and cyclists in such a wide street with minimal sidewalks.

MORE MEDIANS

Medians should added within the turn lane wherever possible along the corridor. These create a physical barrier between the opposing sides of the street. The medians can provide a place of refuge for pedestrians at mid-block crossing points. Planting shade trees along the median would provide shade for pedestrians and improve the visual quality of the corridor.



FIGURE 5: DUNN AVENUE 80' STREET SECTION: MORE MEDIANS



FIGURE 6: DUNN AVENUE 80' STREET SECTION: EXISTING CONDITIONS



FIGURE 7: DUNN AVENUE 80' STREET SECTION: ALTERNATIVE A

Alternative A: Bike Lane

Current oversized lanes could be narrowed from 12 feet to 10 or 11 feet. Narrow travel lanes naturally reduce the speed of motor vehicle traffic, making the corridor safer for all users. A bike lane can be implemented on both sides of the road with the gained asphalt.

Alternative B: Wider Sidewalks

Physically relocating the curbs can reinforce a slow speed environment and provide extra space for street trees to be planted along the wider sidewalks, providing shade for pedestrians and cyclists. Cyclists would share the wider sidewalks, or multi-use path, with pedestrians.

Alternative C: BRT & Bike Lane

Although the existing amount of traffic through this portion of Dunn Avenue is enough for four lanes of vehicular traffic (partly due to the limited number of river crossings available), a continuation of nationwide trends could see significant mode shift to walking, biking, and transit in the coming years. This would allow for the creation of a dedicated bike and bus lane along on either side of the corridor through this section of the Lem Turner corridor as well and allow for the creation of a mature Bus Rapid Transit system.



FIGURE 8: DUNN AVENUE 80' STREET SECTION: ALTERNATIVE B



FIGURE 9: DUNN AVENUE 80' STREET SECTION: ALTERNATIVE C

Dunn Avenue - 100' Street Section

Dunn Avenue's right-of-way from Leonid Road to I-95 is 100', with seven travel lanes, including three eastbound lanes, three westbound lanes, and a continuous center turn lane. The travel lanes have recently been narrowed in order to paint 5' bike lanes on either side of the road. While individual lanes are now appropriately sized, the overall width of the road is still an invitation for drivers to travel at excessive speeds. There are few protections for pedestrians and cyclists in such a wide street with minimal sidewalks.

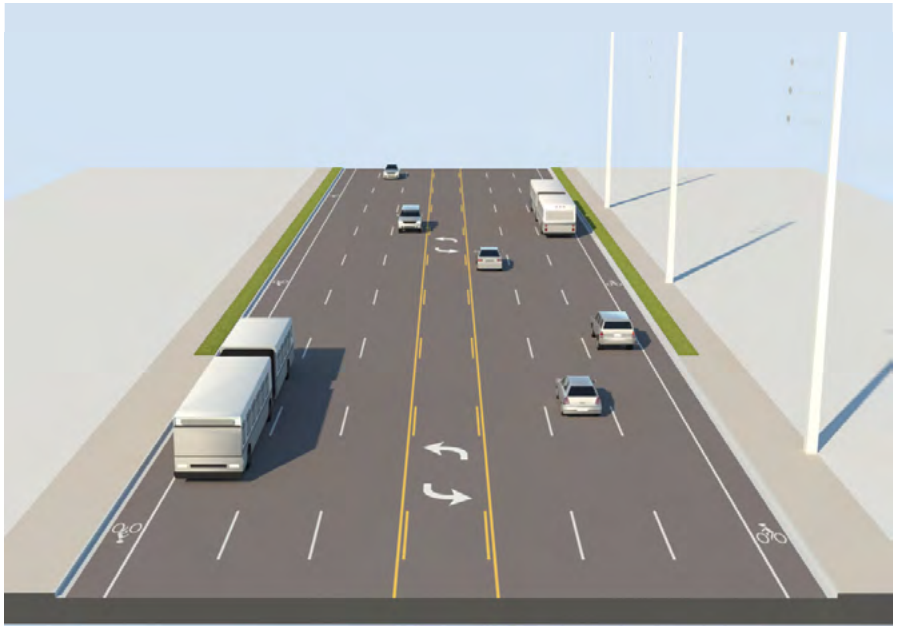


FIGURE 10: DUNN AVENUE 100' STREET SECTION: EXISTING CONDITIONS



FIGURE 11: DUNN AVENUE EXISTING CONDITIONS

Alternative A: Buffered Bike Lanes

Current traffic counts do not justify having seven vehicular travel lanes through this section of Dunn Avenue. There is an opportunity to reallocate space currently devoted to vehicular travel to create a more generous bike lane, with a painted buffer, and to devote additional space for a tree planting area where street trees can grow to maturity.



FIGURE 12: DUNN AVENUE 100' STREET SECTION: ALTERNATIVE A



FIGURE 13: DUNN AVENUE BUFFERED BIKE LANE

Alternative B: Protected Bike Lanes

The bike lanes can also be shifted away from the travel lanes, and protected by an additional row of street trees. Although this configuration creates a more comfortable cycling space for inexperienced riders, careful attention needs to be given to areas with closely spaced curb cuts where bicyclists may be less visible to drivers. An early opportunity to add a protected bike lane along Dunn Avenue is in the eastbound direction in front of the shopping plaza where there are relatively fewer existing curb cuts.



FIGURE 14: DUNN AVENUE 100' STREET SECTION: ALTERNATIVE B

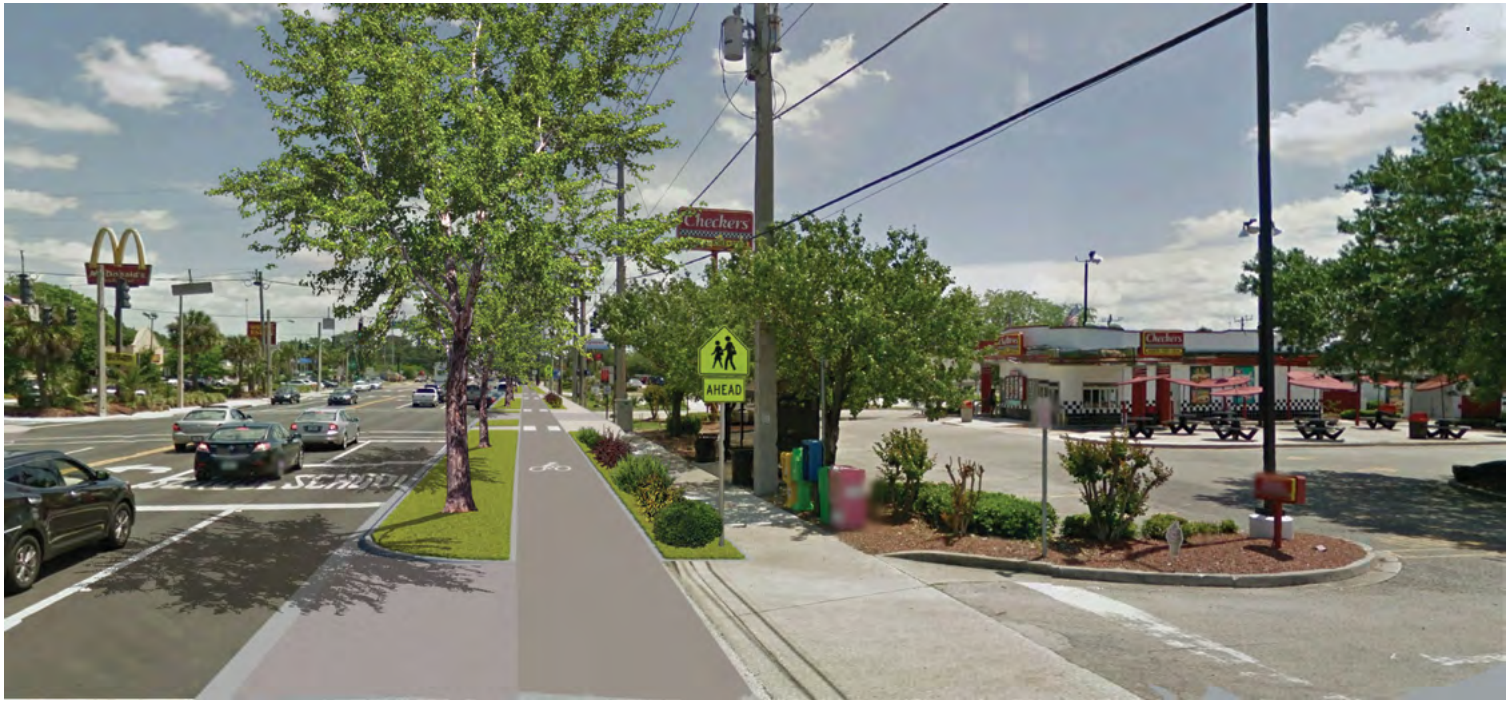


FIGURE 15: DUNN AVENUE PROTECTED BIKE LANE

Implementation Options

Taking a close look at the intersections of Dunn Avenue with Regency Drive and Monaco Drive one can see one way that a redesign can be implemented. The southern edge of the roadway through this area has few curb cuts where Alternative B could be implemented without too many conflicts. The northern edge has many more curb cuts for several fast food establishments, and thus Alternative A is shown on the northern half of Dunn Avenue, creating a balance between comfort and visibility where it is needed the most.

Over time a side access lane could be built adjacent to Dunn Avenue, allowing for the redevelopment of underutilized properties, and creating a more urban, bike and pedestrian-friendly environment. Large parcels could be broken up into several blocks to create a more walkable urban fabric and to allow for additional parallel routes that can filter traffic through the area without creating overly-large roadways.



FIGURE 18: DUNN AVENUE 100' STREET SECTION: A COMBINATION OF ALTERNATIVES A & B



FIGURE 16: DUNN AVENUE 100' PLAN VIEW: EXISTING CONDITIONS



FIGURE 17: DUNN AVENUE 100' PLAN VIEW: SHORT-TERM IMPLEMENTATION



FIGURE 19: DUNN AVENUE 100' PLAN VIEW: IMPLEMENTATION WITH PRIVATE REDEVELOPMENT

4: RECOMMENDATIONS

The street and development concepts developed during the charrette have been sorted into a series of project recommendations. Projects have been described previously in the concepts section of this report. Recommendations fall into three categories:

- **Keystone Projects**
  Projects JTA would use to showcase "complete streets" for immediate effect. These should be reasonably substantial projects that could be implemented in the near term.

- **Operational/Safety Enhancements**
  These are "quick fix" improvements that can provide immediate safety and operational improvements at a lower cost.

- **Long-Term Vision Projects**
  These are complete projects for the corridor or corridor segment. These are bolder, more costly investments, which would be included in a long range plan.

KEYSTONE PROJECTS

- Demonstration lane reduction with one lane in the in the eastbound direction to create a protected bikeway from Briarcliff Road to Monaco Drive with a buffered bike lane in other areas.

- Demonstration lane reduction with one lane in the westbound direction to create a buffered bike lane in the recovered space between Biscayne Boulevard and I-95.

OPERATIONAL /SAFETY ENHANCEMENTS

Priority intersection locations (with Bus Stops) that will require a range of signing, striping, lighting, minor traffic signal updates and pedestrian features: (estimated costs $50k - $100k)

Major priority operational and safety enhancements for Dunn Avenue at:

- Duval Road (school nearby)
- Pine Estates

Secondary priority operational and safety enhancements for Dunn Avenue at:

- Harts Road (pedestrian fatality)
- Regency Drive (school nearby)
- N. Campus Boulevard
- Biscayne Boulevard
- Briar Cliff Road

LONG-TERM VISION

DUNN AVENUE FROM I-295 TO BISCAYNE BOULEVARD

- Add median where turn lane is not needed.

- Add buffered bike lane with new wider standards.

DUNN AVENUE FROM BISCAYNE BOULEVARD TO I-95

Long Term Vision 1:

- Add a roundabout at intersection of Dunn Avenue, Biscayne Boulevard, and Leonid Drive (in coordination with a road diet).

- Make demonstration lane reductions permanent and reduce Dunn Avenue from 7 lanes to 5 lanes. This will include rebuilding the curbs to accommodate a buffered bike lane in the westbound direction, a protected two-way bike lane in the eastbound direction (where there are fewer existing curb cuts), a wider landscape strip for trees to provide shade, and wider sidewalks.

Long Term Vision 2:

- Create an access management plan that ties redevelopment with a reduction in curb cuts. Convert the buffered bike lane to a protected bike lane where possible in coordination with the retired curb cuts.

Long Term Vision 3:

- Create a complete multi-way boulevard with contra flow side access lanes.

EDGEWOOD AVENUE

EXECUTIVE SUMMARY

As part of the JTAMobilityWorks Complete Streets Program, a study of the Edgewood Avenue / Tallulah Avenue (State Road 111) corridor was conducted. The study limits extend for 8.5 miles, from Cassat Avenue on the west side of Jacksonville to Main Street on the north side. Edgewood Avenue connects I-10 with I-95, and also provides access to US 1. The southern portion of Edgewood Avenue is a heavy freight corridor, serving major distribution centers as well as the Norfolk Southern and CSX railroads. Traffic volumes begin to decrease north of New Kings Road (US 1), and drop significantly east of I-95. As the roadway crosses Moncrief Creek, it transitions from four lanes to two lanes and becomes Tallulah Avenue.

The project team held a two-day workshop at the Bradham Brooks Library on November 4th and 5th, 2015 to gather input from the community. Aerial maps of the corridor, along with information on area bus routes, were available. A visual preference board was also developed, offering workshop attendees the opportunity to select enhancements they felt were most needed or desired along the corridor. The top selected options were more crosswalks, installation of raised medians, enhanced lighting, and the addition of bike lanes. The issues, concerns, and ideas shared by the public were supplemented with field reviews conducted before and after the workshops.

As with many corridors in Jacksonville, there are safety concerns along Edgewood Avenue. While the crash rates on Edgewood Avenue and Tallulah Avenue are lower than the state average, there were still over 1,000 crashes on the corridor from 2009 to 2013. The vast majority involved vehicles only, but ten involved pedestrians, 11 involved bicyclists, and 5 were collisions with trains. Furthermore, there have been 15 fatalities on the corridor since 2005, of which three were pedestrians and two were bicyclists. Ideas that emerged at the workshop to enhance safety included:

- Reducing vehicle speeds
- Reconfiguring the roadway with fewer and/or narrower lanes
- Replacing center turn lanes with raised medians
- Providing bike lanes
- Installing high-visibility crosswalks and midblock crossings
- Adding more lighting

These ideas have the potential to change the physical design and character of the roadway, and enable safe access and mobility for all users. Workshop participants also expressed a desire to beautify the corridor. Edgewood Avenue currently lacks streetscape elements such as street trees, landscaping, and pedestrian lighting. Additionally, some mentioned the need for more public spaces and gateway features to better identify the area.

Concepts were developed for each of the seven segments identified on the corridor, with varying typical sections. The segments and major improvement ideas developed include:

1. Cassat to Ina – replace wide outside/parking lane with bike lanes
2. Ina to New Kings – install sidewalk on north side of rail overpass
3. New Kings to Lem Turner – narrow lanes & install raised median
4. Lem Turner to Bunker Hill – narrow lanes & install raised median
5. Bunker Hill to Valley Forge – widen sidewalk on south side
6. Valley Forge to Lorain – reduce from four lanes to two lanes
7. Lorain to Main – narrow travel lanes and add marked bike lanes

The road diet concept for Edgewood/Tallulah from Valley Forge Road to Lorain Street has the potential to transform that portion of the corridor, and serve as a gateway into the North Shore neighborhood. Another catalyst project worth noting is the proposed Edgewood Avenue / Cassat Avenue intersection reconfiguration developed as part of another corridor study. This was presented at the workshop and received positively by attendees.

In addition to these main concepts, other recommendations include providing twelve midblock pedestrian crossings on Edgewood Avenue with appropriate signage, adding marked crosswalks at six locations on Tallulah Avenue, installing a new traffic signal at the intersection of Edgewood Avenue and Raines Vikings Way, and development of gateway features on the pedestrian overpass near I-95 and on the Moncrief Creek bridge.

Further refinement of the concepts identified in this study will be required, and additional coordination with agency and community partners will be essential. Many of the ideas presented in this study, if implemented, can serve as catalysts for growth and reinvestment in northwest Jacksonville.

1: CONTEXT

In an effort to develop a multimodal transportation system accessible to all users, the Jacksonville Transportation Authority (JTA) initiated a Complete Streets program that promotes the safety, comfort, and convenience of walking, bicycling, and transit. Complete Streets are designed and operated to enable safe and comfortable access for pedestrians, bicyclists, drivers, and public transportation users of all ages and abilities. Compete Streets must also serve adjacent land uses and respond appropriately to community visions for corridor development and design.

Communities around the country have embraced the concept of Complete Streets as a response to the unintended consequences of transportation practices and policies that have historically catered singularly to automobile users. The focus on moving cars efficiently has resulted in unsafe and inefficient environments for people walking, riding bicycles, and taking public transportation.

One approach JTA is taking to address Jacksonville's automobile-oriented transportation system is to retrofit roadway corridors served by JTA's highest frequency transit service in a way that accommodates multi-modal travel option, both today and in the future as redevelopment occurs. The process of developing Complete Streets begins with significant input from the community regarding specific transportation needs and land use visions, as well as safety and operational concerns related to all travel modes.

In order to solicit input from community stakeholders, transportation agencies and the public, JTA conducted a three-day charrette at an accessible location within the community served by the Edgewood Avenue corridor. The Edgewood Avenue / SR 111 corridor extends from Cassat Avenue to Main Street North **(Figure 1)**. It is approximately 8.5 miles in length and provides connections with I-10 and I-95 in northwest Jacksonville. The southern portion of Edgewood Avenue is a significant freight corridor, with nearly 10% of daily vehicles being heavy trucks. Traffic volumes decrease north and east of New Kings Road / US 1, and the corridor narrows to a 2-lane roadway east of Moncrief Creek, where it becomes Tallulah Avenue. JTA operates the Route 51 bus on the corridor, with 30 minute frequencies. The highest ridership along the corridor can be found in the area between Avenue B and Moncrief Road, where several transit routes cross Edgewood Avenue. Finally, while the corridor has overall crash rates similar to similar corridors in Florida, portions of it are dangerous, especially for pedestrians. Since 2005, there have been 15 traffic fatalities along the corridor, with 3 being pedestrians and 2 being bicyclists.

2: PROCESS

In an effort to prepare context sensitive recommendations for the Edgewood Avenue corridor, the project team collected data and conducted field visits to understand the existing conditions along the corridor. The Edgewood Avenue Complete Streets Workshop was held November 4th – 5th, 2015 at the Bradham Brooks Library. It began Wednesday afternoon with a walking and driving audit, examining the conditions and deficiencies along the corridor. By touring the corridor both in a vehicle and on foot, the team was able to experience the corridor from the vantage point of multiple users. While walking the corridor, the team was also able to take more detailed field measurements, photographs, and observations.

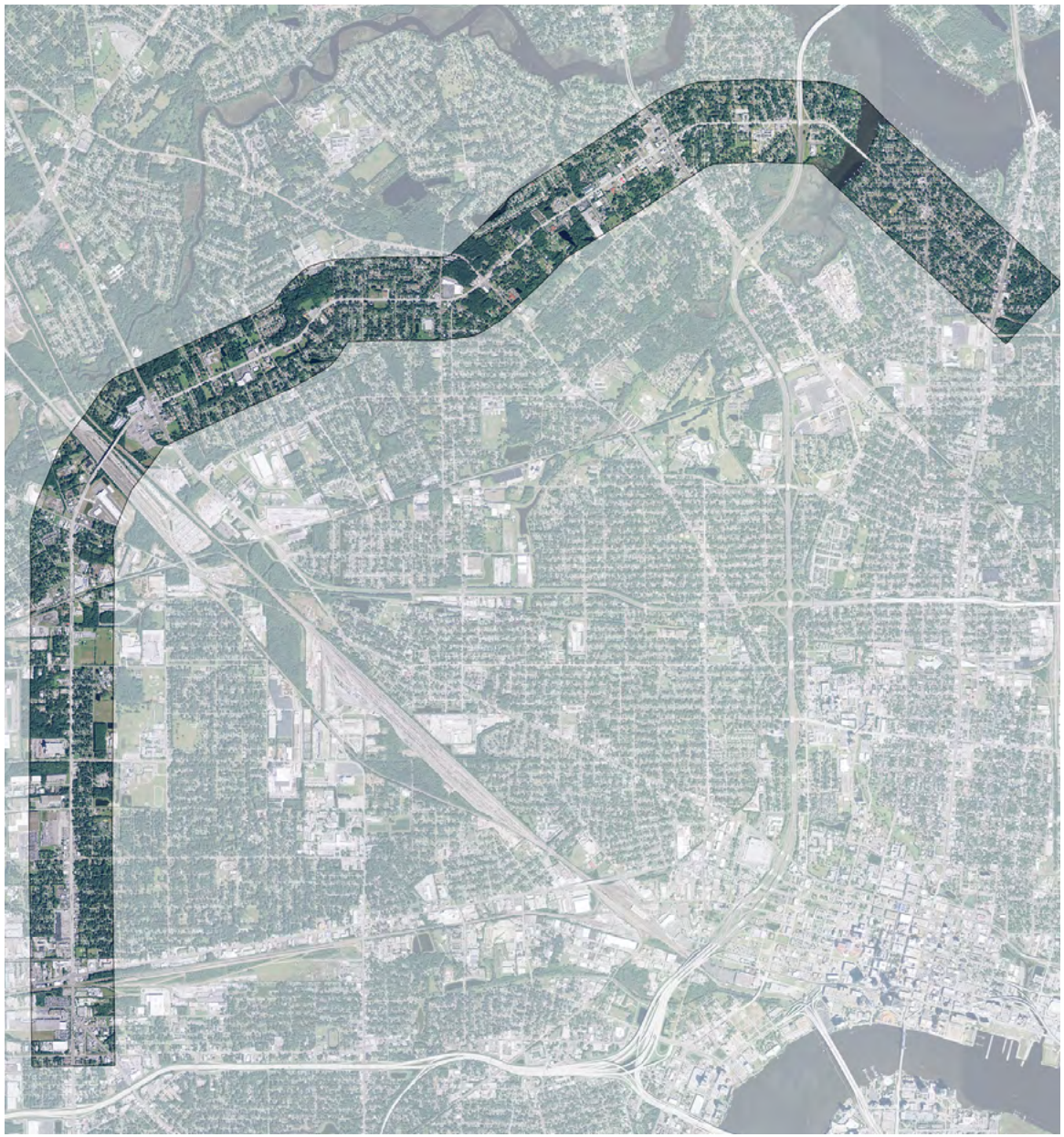


EDGEWOOD AVENUE EAST OF AVENUE B



TALLULAH AVENUE EAST OF LORAIN STREET

FIGURE 1: EDGEWOOD AVENUE CORRIDOR STUDY AREA



These efforts were followed by an Agency kickoff presentation and workshop with the public from 5:30 – 7:00pm. The presentation provided attendees and overview of information on complete streets and the JTA Mobility Works Complete Streets Program, as well as more detailed statistics and observations specific to the Edgewood Avenue corridor. The focus of the workshop was to understand the community's vision for the future, so participants were encouraged to share their personal knowledge, concerns, and ideas about the corridor. These ideas were shared via interactive mapping exercises, preference polling, and oral and written comments. Large-scale aerial maps were on display for participants to help identify and note challenges and opportunities within the study area. Participants were also given colored dots to indicate what categories they thought were most important on a board showing potential enhancements along the corridor.

Following the workshop, the project team focused on synthesizing the existing conditions assessment and public input into design recommendations. An open studio format continued on Thursday from 1:00 – 5:00pm and functioned as an "open house" designed to gather feedback from the community. During this time, additional community members came to share input and attendees from the previous evening were encouraged to return and participate in the development of design strategies and recommendations.

The corridor data, observations, and public input were synthesized into an initial set of recommendations that were presented to the public at the conclusion of the workshop on Thursday evening. Again, participants were engaged in discussion and encouraged to provide feedback, so recommendations could be further refined to reflect the needs and goals of the community. Following the completion of the workshop, additional data collection and analysis was performed to develop a final set of recommendations for the Edgewood Avenue corridor presented in this report.



WORKSHOP ENGAGEMENT



WORKSHOP ENGAGEMENT



COMMUNITY INPUT AT WORKSHOP



WORKSHOP ENGAGEMENT

3: CONCEPTS

The project team used the community input as a framework for which they compared their data collection and observations. By assimilating this information, the team gained a well-rounded understanding of the issues facing the corridor and identified priority areas and needed enhancements along the corridor. The overarching concepts that emerged from the data collection, community input, and design process included the need for:

- safety enhancements
- beautification
- access management

Safety for All

The importance of increasing safety for all users along the corridor was repeatedly voiced by the workshop participants, noted during site visits, and a documented need based on historic crash data. As detailed in the corridor crash rate table, Edgewood Avenue and Tallulah Avenue had crash rates similar to the state average of 4.96 from 2009 to 2013 **(Figure 2)**.

FIGURE 2: ROADWAY CRASH RATES, 2009 – 2013

Roadway	Crash Rate
Edgewood Avenue	4.32
Tallulah Avenue	4.38
State Average	*4.96*

The crash rate is a ratio that compares the number of crashes on a roadway per 1,000,000 vehicle miles traveled. The crash rate is calculated by multiplying the total number of crashes for the project section roadway segment times 1,000,000 vehicle miles traveled. This number is then divided by the product of number of days in the year (365 days) times the average daily traffic times project section length in miles. This crash rate calculation provides a useful tool to make comparisons about the safety of roadways.

The type and number of crashes over this time period is also detailed in the table below **(Figure 3)**. The location and frequency of these crashes is displayed in the heat map, **(Figure 4)** where areas shaded in red represent the highest frequency of crashes. While the crash rates on Edgewood Avenue and Tallulah Avenue may not seem overly significant when compared to the state average, the physical design of portions of the corridor make it dangerous, especially for pedestrians, bicyclists, and transit riders. Since 2005, there have been 15 traffic fatalities along the corridor, with 3 being pedestrians and 2 being bicyclists.

FIGURE 3: CORRIDOR CRASHES BY TYPE, 2009– 2013

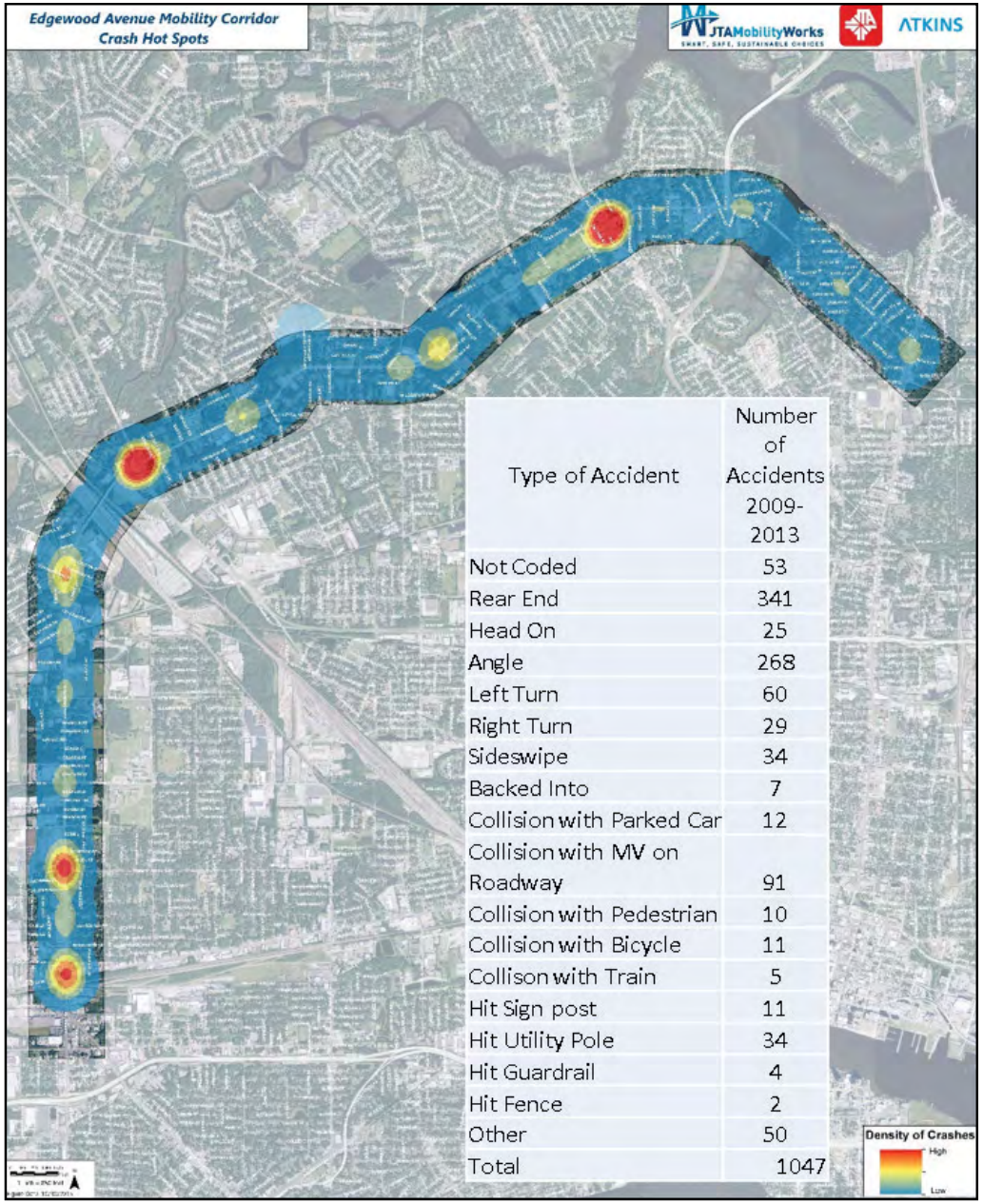
Crash Type	Number of Crashes
Rear End	341
Angle	268
Backed Into	7
Left Turn	60
Right Turn	29
Head On	25
Sideswipe	34
Collision with a Parked Car	12
Collision with a Motor Vehicle on Roadway	91
Collision with a Pedestrian	10
Collision with a Bicycle	11
Collision with a Train	5
Hit Sign Post	11
Hit Utility Pole	34
Hit Guardrail	4
Hit Fence	2
Other	50
Not Coded	53
Total	1,047

An analysis of crash types reveals high incidences of rear end, angle, collision with motor vehicle on roadway, and left turn crashes. These crash types are characteristic of multilane roadways such as Edgewood Avenue with a high number of left turning movements and no right turn lanes into driveways. During this time period there were 10 crashes involving pedestrians and 11 crashes involving bicyclists.

Some of the ideas that emerged from discussions to enhance corridor safety included:

- reducing vehicle speeds
- reconfiguring the roadway with fewer or narrower motor vehicle lanes
- providing bike lanes
- installing high-visibility crosswalks
- installing midblock pedestrian refuge islands with flashing beacons
- installing pedestrian lighting

These techniques have the potential to change the physical design and character of the roadway to enable safe access along and across the corridor for all modes of transportation.



Type of Accident	Number of Accidents 2009-2013
Not Coded	53
Rear End	341
Head On	25
Angle	268
Left Turn	60
Right Turn	29
Sideswipe	34
Backed Into	7
Collision with Parked Car	12
Collision with MV on Roadway	91
Collision with Pedestrian	10
Collision with Bicycle	11
Collison with Train	5
Hit Sign post	11
Hit Utility Pole	34
Hit Guardrail	4
Hit Fence	2
Other	50
Total	1047

On Edgewood Avenue, vehicles routinely exceed the posted speed limit. This is partially attributed to the general lack of congestion, but also to the roadway design characteristics, which include straight, flat pavement and wide motor vehicle travel lanes. In an effort to enhance safety and better accommodate both motorized and non-motorized transportation modes, workshop participants supported the idea of roadway rebalancing or "road diets". Road diets are achieved by reducing the number of motor vehicle lanes or narrowing lane widths. Fewer or narrower travel lanes typically results in reduced vehicle travel speeds and would address this primary safety concern—excessively high travel speeds.



EDGEWOOD AVENUE/NEW KINGS ROAD INTERSECTION

In addition to high vehicle speeds, workshop participants expressed concerns that the overall environment of the corridor creates unsafe conditions for pedestrians and bicyclists. For example, along the Edgewood Avenue corridor there are no dedicated bicycle facilities, and given the roadway characteristics and traffic speed it is dangerous for bicyclists to ride in the road. These unsafe conditions encourage bicyclists to operate in the sidewalk, which creates additional safety concerns in term of conflicts with pedestrians and lack of visibility to turning motor vehicles. Workshop participants supported the idea of providing dedicated space for bicycling through the installation of standard, buffered, and/or separated bike lanes along the corridor.

The primary concern regarding pedestrian safety was the need for more frequent crosswalks, including at mid-block locations. Along Edgewood Avenue there are significantly long distances between signalized pedestrian crossing opportunities and there are no un-signalized crossing opportunities. Therefore pedestrians often create a substantial safety concern by crossing the roadway, which has five lanes of high-speed traffic, at unmarked mid-block locations. The danger of these conditions was repeatedly observed during site visits and voiced by workshop participants. The provision of safe and frequent crossings that minimize out-of-direction travel and delay for pedestrians is an important component of walkable places and is strongly supported by the community.

Workshop participants also expressed the need to install pedestrian lighting, also an important element in making an area walkable and enhancing personal safety and security. Lighting helps pedestrians safely navigate sidewalks, provides visibility at all hours, improves access to transit, and increases the activity and hours of use along a corridor. This increased activity in turn brings about more "eyes on the street" or pedestrian surveillance and crime prevention in a community.



PEOPLE CROSSING EDGEWOOD AVENUE MID-BLOCK

Beautification

The importance of providing beautification and enhancing the corridor's character was another issue identified during site visits and echoed throughout the public input process. Currently, the Edgewood Avenue corridor has a somewhat barren right-of-way, lacking streetscape elements such as street trees, landscaping, pedestrian lighting, and site furnishings that can help define the character of an area. In most places along Edgewood Avenue there is a small three-foot grass strip separating the sidewalk from the adjacent motor vehicle travel lanes. While this right-of-way may not be adequate for planting street trees, it provides an opportunity to install pedestrian lighting. Lighting is not only an important element to increase safety, it can also help define the character of an area. When paired with other streetscape amenities such as benches, bicycle racks, bus stop shelters, news racks, trash bins, and wayfinding signage, it can provide a recognizable image to the corridor. These site furnishings also accommodate the diverse needs of corridor users, including older adults, persons with disabilities, and children. Additionally, workshop participants expressed an interest in providing public spaces and gateway features along the corridor to better serve the neighboring community and to help create a memorable district.



EDGEWOOD AVENUE AT MONCRIEF ROAD

Ideas on corridor beautification also included providing street trees and center landscaped medians. Trees can greatly transform the aesthetics and overall experience along a corridor. Currently much of the Edgewood Avenue corridor has wide travel lanes and a center turn lane; providing an opportunity to reconfigure the roadway to include a raised, landscaped median. Some areas already have grass medians that are wide enough for installing trees. The addition of trees along the corridor can create a more aesthetically pleasing environment as well as provide a defined edge that visually narrows the roadway which encourages people to drive at slower speeds.

Access Management

Access management is a set of techniques used to control vehicle access to land parcels adjacent to the roadway. These techniques often include traffic signal spacing, driveway spacing, turning lanes, median treatments, and street connections. By properly balancing roadway functions and property access, implementing access management can result in improved traffic flow and reduced crashes by decreasing vehicle-vehicle, vehicle-pedestrian, and vehicle-bicycle conflicts.

The importance of addressing access management along the corridor was observed during site visits and expressed by residents and business owners in the community. While business owners voiced the importance of preserving the existing access to their properties, they also acknowledged the need to increase safety along the corridor. The primary access management issue identified during the workshop was the opportunity to provide raised medians with left turn pockets throughout the corridor. As previously noted, much of the Edgewood corridor has wide travel lanes and a center turn lane. There is an opportunity to convert this center turn lane into a raised, landscaped median with left turn pockets. When these medians are integrated with pedestrian crossing treatments, businesses maintain desired access to their property, but the needs of all street users are better balanced. Pedestrian refuge islands in the medians also provide protected areas where people can wait while crossing the street, so gaps in traffic only need to be found in one direction at a time. In addition, islands enhance awareness of the crosswalks and provide resting areas for the elderly, persons with disabilities, and children who may have difficulty crossing the street in one stage.

4: RECOMMENDATIONS

After gathering the corridor data, completing field reviews, and understanding the community's vision for the future, the project team had a detailed understanding of the issues and opportunities along the Edgewood Avenue corridor. Various conceptual designs were explored and prompted the division of the corridor into seven segments based on the existing roadway character and potential improvements. While the goal for each segment is to create a roadway and roadside environment that enables safe and enjoyable access for all users, including pedestrians, bicyclists, and motorists, the specific recommendations reflect the unique context of the corridor segment. These seven segments serve as the basis of development for individual strategies for improvement and their limits are detailed below:

- Cassat Avenue to Ina Street
- Ina Street to New Kinds Road (Rail Overpass)
- New Kings Road to Lem Turner Road
- Lem Turner Road to I-95 (Bunker Hill Boulevard)
- I-95 Interchange
- I-95 (Valley Forge Road) to Lorain Street
- Lorain Street to Main Street

Cassat Avenue to Ina Street **(Figure 5)**

The Edgewood Avenue corridor's southern boundary is at its intersection with Cassat Avenue. This intersection is part of the Normandy / Cassat / Lenox Mobility Corridor and was recommended for a major aesthetic gateway treatment. The intersection is seen by many as the entrance to the "Westside" if traveling south and the entrance to the "Northside" when traveling north. Three varying recommendations for this intersection gateway were developed, but they all provide an identifiable point of entry into the corridors. The creation of a gateway feature at this intersection will significantly help define the sense of place and character developed by the recommended improvements along both

FIGURE 5: EDGEWOOD AVENUE: CASSAT AVENUE TO INA STREET



corridors. This project is recommended as a long term project, but the potential improvement should be taken into account, as connecting to this gateway feature provides a significant opportunity to define the character of the Edgewood Avenue corridor.

From Cassat Avenue to Ina Street, Edgewood Avenue has a 20-foot raised center median with left turn pockets, and in both direction of travel has two travel lanes, one 12-foot and one 11-foot, and a 7-foot parking lane bordered by a 3-foot grass strip and 5-foot sidewalk **(Figure 6 & Figure 8)**. Input from the public coupled with observations of the corridor revealed that the parking lanes are rarely utilized and widely considered unsafe. These unused parking lanes provide an opportunity to transform the lanes into a 5-foot bike lane with a 2-foot protected buffer **(Figure 7 & Figure 9)**. The improvement would greatly increase the safety of cyclists along the roadway and is supported by bicycle activists in the community. Providing a dedicated space for bicycle travel also has benefits for drivers and pedestrians. Bike lanes promote increased predictability

FIGURE 6: EDGEWOOD AVENUE NORTH OF 12TH STREET (EXISTING)



FIGURE 7: RENDERING OF EDGEWOOD AVENUE BIKE LANE



of bicyclists which decreases stress for people driving, and in this case will provide a continuous 7-foot buffer between fast-moving cars and people walking. It is recommended that this restriping project be completed when resurfacing.

FIGURE 8: EXISTING TYPICAL SECTION FOR EDGEWOOD AVENUE : CASSAT TO INA

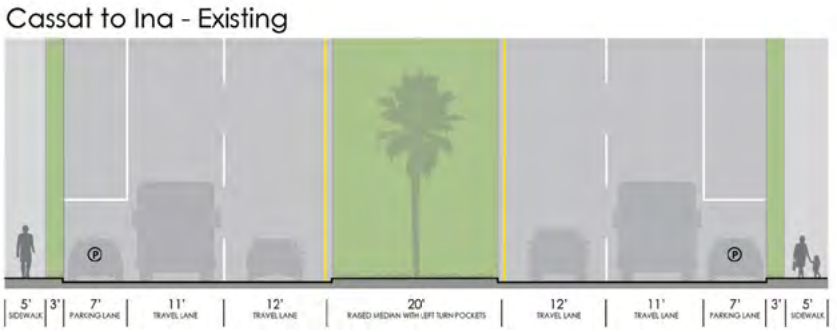
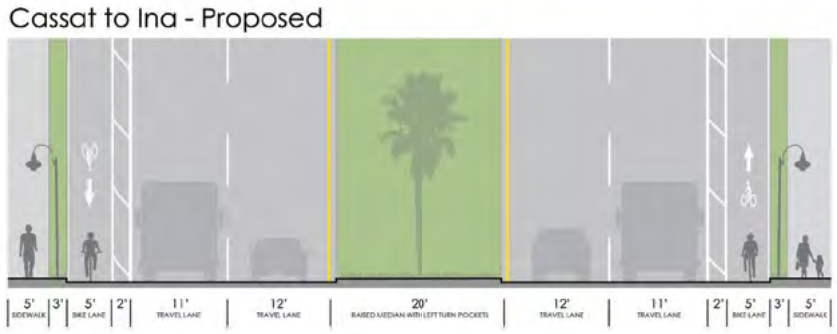


FIGURE 9: PROPOSED TYPICAL SECTION FOR EDGEWOOD AVENUE: CASSAT TO INA



In addition to the restriping project, it is recommended that pedestrian scale lighting be installed, as well as shade trees where possible. Shade trees create a more comfortable micro-climate for pedestrians and lighting enhances personal safety and security. These improvements also provide an aesthetic appeal, enhancing the character of the Edgewood Avenue corridor.

As previously discussed, throughout the Edgewood Avenue corridor there are significantly long distances between marked crosswalks. As pedestrians try to minimize out-of-direction travel, they cross the roadway at unmarked mid-block locations, creating a considerable safety concern. In an effort to provide convenient and safe crossing opportunities, it is recommended that mid-block crossings be installed at:



EDGEWOOD AVENUE LOOKING SOUTH TO RAILROAD OVERPASS



NORFOLK SOUTHERN RAIL LINE UNDER EDGEWOOD AVENUE

Ina Street to New Kings Road (Rail Overpass)

The second segment of the Edgewood Avenue corridor extends north from Ina Street to New Kings Road, and encompasses the rail overpass. Improvements to this short segment of Edgewood Avenue are somewhat constrained by the right-of-way and the nature of the overpass structure. Currently there is only a sidewalk in the northbound direction of travel. In the or southbound direction, the sidewalk stops at Ina Street and resumes after the overpass at North Edgewood Drive. However, construction of a sidewalk across the bridge, with lighting, is scheduled to begin in the summer of 2016. The addition of these facilities is needed along the overpass and will help create a safe environment for pedestrians.

New Kings Road to Lem Turner Road

FIGURE 10: EDGEWOOD AVENUE CORRIDOR: NEW KINGS ROAD TO LEM TURNER ROAD



From New Kings Road to Lem Turner Road, **(Figure 10)** Edgewood Avenue has a 12-foot center turn lane and in both directions of travel has two, 12-foot travel lanes bordered by a 6-foot planting strip and a 5-foot sidewalk. It is recommended that the roadway in this segment be rebalanced to include a 16-foot raised, landscaped median with left turn pockets and two, 11-foot travel lanes in both directions of travel **(Figure 11)**. The addition of a landscaped median has the potential to transform the aesthetics of the now barren right-of way and the overall experience along the corridor by creating a safer environment for all users **(Figure 12)**. The roadway rebalancing addresses concerns regarding excessively high travel speeds because reduced lane widths typically result in slower travel

FIGURE 11: EXISTING TYPICAL SECTION FOR EDGEWOOD AVENUE : NEW KINGS ROAD TO LEM TURNER ROAD

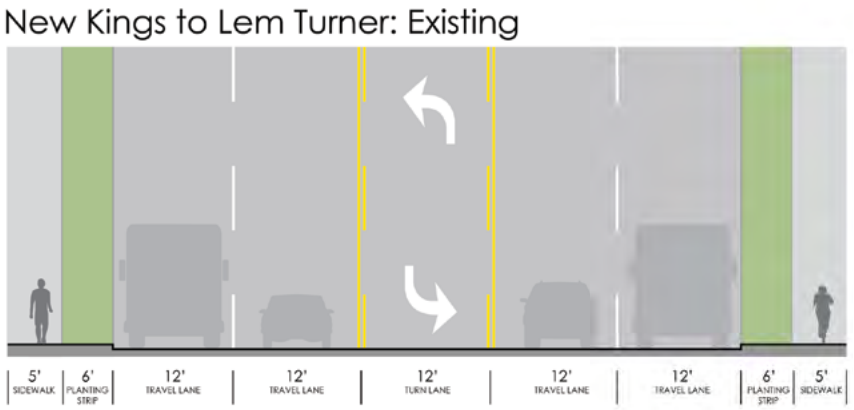


FIGURE 12: PROPOSED TYPICAL SECTION FOR EDGEWOOD AVENUE : NEW KINGS ROAD TO LEM TURNER ROAD



speeds and trees provide a defined edge that visually narrows the roadway which also encourages people to drive at slower speeds.

As detailed in the previous segments, pedestrians with an origin or destination at a mid-block location, typically cross the existing five lanes of high-speed traffic at unmarked locations. Therefore, mid-block crossings are need to provide pedestrians convenient and safe crossing opportunities. It is recommended mid-block crossings be installed at the following locations:

- Edgewood Avenue in the vicinity of Bagley Road (Tiger Academy)
- Edgewood Avenue in the vicinity of the Save-A-Lot bus stop
- Edgewood Avenue east of Green Place / Foradale Drive intersection
- Edgewood Avenue in the vicinity of Iris Boulevard
- Edgewood Avenue between Diamond Street and Scott Street
- Edgewood Avenue northeast of Reed Street (Edgewood Nursing Center)
- Edgewood Avenue in the vicinity of Oriole Street (relocate Lake Park bus stop)
- Edgewood Avenue in the vicinity of Orlando Avenue

These crossing should also utilize Rectangular Rapid Flash Beacons with raised pedestrian crossing refuge islands and high visibility crosswalks, to enhance pedestrian visibility and safety **(Figure 13)**. In addition to these mid-block crossing locations, it is recommended that a new traffic signal be installed at the intersection of Edgewood Avenue and Raines Viking Way.

FIGURE 13: MID-BLOCK CROSSING RENDERING (HILLSBOROUGH COUNTY)



To further enhance the pedestrian environment, it is recommended that additional lighting be installed, as well as shade trees where possible, along this segment of Edgewood Avenue. These enhancements create a more comfortable and safe environment for pedestrians and a more aesthetic roadway.

Unfortunately on this segment of Edgewood Avenue, and the following segment to the north/east, the right-of-way and traffic characteristics limit the feasibility of providing a dedicated bicycle facility. Due to this roadway character, it is recommended that an alternate bike route be developed on parallel facilities to best serve cyclists. The alternative route identified is just south of Edgewood Avenue and follows the following streets: Edgewood – New Kings – 45th – Castellano – Rowe – Grant – Lila – Linda – Kenard – Bunker Hill – Edgewood. These roadways minimize out-of-direction travel and either have dedicated bicycle lanes or are residential streets with very low traffic volumes. This bike route can be identified and enhanced with wayfinding signage, pavement markings, and traffic calming devices, as needed.



EDGEWOOD AVENUE WEST OF MONCRIEF ROAD

FIGURE 14: EDGEWOOD AVENUE CORRIDOR: LEM TURNER ROAD TO I-95



Lem Turner Road to I-95 (Bunker Hill Boulevard)

Edgewood Avenue from Lem Turner Road to I-95, **(Figure 14)** has two 12-foot travel lanes, a 7-foot parking lane, a 3-foot grass strip, and a 5-foot sidewalk in both directions of travel **(Figure 15)**. It is recommended that the roadway in this segment be rebalanced to include a 16-foot raised, landscaped median with left turn pockets and two, 11-foot travel lanes in both directions of travel **(Figure 16)**. As in the southern segments of Edgewood Avenue, input from the public and observations of the corridor revealed that these parking lanes are not heavily utilized. However, in areas where the parking is needed to serve the businesses along the corridor, it should be maintained. The continuation of the median treatment from the southern segments will maintain a consistent aesthetic character and also provide the safety benefits of reduced travel speeds. It is recommended for consideration as a long term project in coordination with the New Kings Road to Lem Turner Road rebalancing project. It is recommended for consideration as a long term project in coordination with the New Kings Road to Lem Turner Road rebalancing project.

This segment of Edgewood Avenue is also in need of a pedestrian crossing opportunity at Calvin Street. To enhance pedestrian safety and visibility, this mid-block crossing should have the features previously recommended for other corridor segments, including Rectangular Rapid Flash Beacons with a raised pedestrian refuge island and a high visibility crosswalk. It is recommended that the installation of pedestrian scaled lighting and shade trees also continue throughout this segment of Edgewood Avenue where possible.

FIGURE 15: EXISTING TYPICAL SECTION FOR EDGEWOOD AVENUE: LEM TURNER ROAD TO I-95

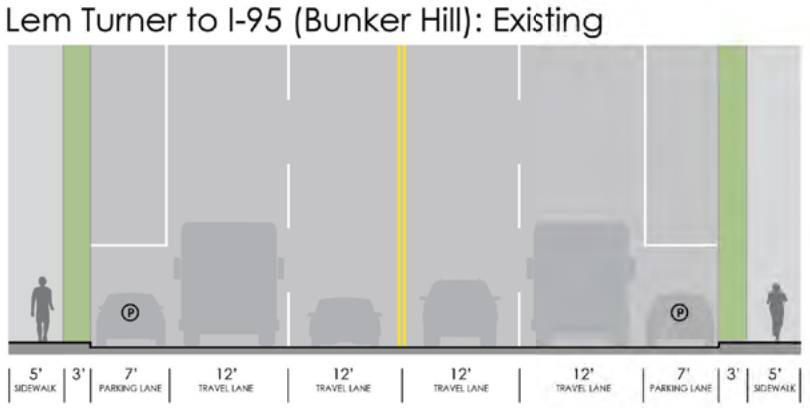


FIGURE 16: PROPOSED TYPICAL SECTION FOR EDGEWOOD AVENUE: LEM TURNER ROAD TO I-95



FIGURE 17: EDGEWOOD AVENUE WEST OF I-95 (EXISTING)



FIGURE 18: RENDERING OF POTENTIAL MEDIAN ON EDGEWOOD AVENUE WEST OF I-95



Lake Forest Elementary School is located in this segment of the corridor, and at the school there is a pedestrian overpass bridge that crosses Edgewood Avenue (Figure 17). This overpass provides an opportunity to create an aesthetic gateway feature. A gateway treatment at the overpass can help define the character being developed by the recommended improvements and highlight the multi-modal transportation considerations along the corridor. (Figure 18). While this project will help to develop the corridor's sense of place, because it does not address a safety or circulation concern, it is recommended for consideration as a long term project.

I-95 Interchange (Bunker Hill Boulevard to Valley Forge Road)

This short segment of Edgewood Avenue extends from Bunker Hill Boulevard to Valley Forge Road and encompasses the I-95 interchange. As with the rail overpass segment, improvements are constrained by the right-of-way and the character of the interchange facility. However, it is recommended that the existing sidewalk on the southern side of Edgewood be widened to a multi-use path. This multi-use path provides a safe option for bikers, and connects with the alternate route designed earlier.

I-95 (Valley Forge Road) to Lorain Street

This segment of the corridor extends from I-95 (Valley Forge Road) to Lorain Street, where Edgewood Avenue becomes Tallulah Avenue and crosses Moncrief Creek (Figure 19). The segment is a four-lane undivided roadway and has lower traffic volumes than the western segments. The character of the roadway changes in this segments as it begins to transition into a more residential context. It is recommended that the segment be reconfigured from an undivided 4-lane roadway to a 3-lane divided roadway. This rebalancing has the potential to transform the aesthetics of the corridor and create a more safe and comfortable environment for pedestrians, without compromising vehicular mobility. This recommendation is considered the corridor's "keystone project" as it will showcase the benefits of providing a multi-modal transportation system and can be implemented in the near-term. In keeping with the other segments, pedestrian scale lighting and shade trees should also be installed where possible, and are recommended for installation in the next several years.

The Moncrief Bridge also presents an opportunity to create a gateway feature on the Edgewood Avenue corridor. This gateway can provide a means of orientation along the corridor and help create a memorable district. Gateways significantly help define the sense of place and character of an area, but because it does not address pressing safety concerns, it is recommended as a long for consideration term project.

FIGURE 19: TALLULAH AVENUE CORRIDOR: I-95 TO LORIAN STREET



Lorain Street to Main Street

The north-eastern most segment of the corridor is Tallulah Avenue from Lorain Street to Main Street **(Figure 20)**. The roadway character in this segment is dramatically different from the other segments of Edgewood Avenue, as it is surrounded by a residential neighborhood and has reduced traffic speeds and volumes. From Lorain Street to Main Street the roadway has a 10-foot center turn lane and 12-foot travel lane and a 3-foot striped shoulder, bordered by a 3-grass strip in each direction of travel **(Figure 21 & Figure 23)**. It is recommended that the roadway be rebalanced to better serve all users by reducing the lane widths to a 10-foot center turn lane and a 10.5' travel lane in each direction of travel. With this lane width reduction, a 4.5-foot marked bike lane can be provided in both directions **(Figure 22 & Figure 24)**. While the existing roadway dimensions do not allow for the installation of the preferred buffer protected bike lane, the inclusion of this 4.5-foot bike lanes still significantly enhances bicyclist safety and it supported by the local cyclist community.

For much of this segment of the corridor there is only a sidewalk on the north side of Tallulah Avenue. Because the existing right-of-way limits the feasibility of adding a sidewalk on the south side of the street, it is recommended that marked crosswalks are provided throughout to allow users to safely traverse three lanes of traffic and reach their destinations. These marked crosswalks are an important safety enhancement and should also be installed in the near-term in the following locations:

FIGURE 20: TALLULAH AVENUE CORRIDOR: LORIAN STREET TO MAIN STREET



- Tallulah Avenue in the vicinity of Lorain Street
- Tallulah Avenue in the vicinity of 67th Street
- Tallulah Avenue in the vicinity of 66th Street
- Tallulah Avenue in the vicinity of 62nd Street
- Tallulah Avenue in the vicinity of Barberie Street
- Tallulah Avenue in the vicinity of Drayton Street

In an effort to create a more walkable residential district, pedestrian scale lighting and shade trees should also be installed where possible. The final recommendation for the Tallulah Avenue segment is to install wayfinding signage for North Shore Park and the S-Line Trail. As previously mentioned, this segment of the corridor runs through a residential neighborhood with local parks and it is also near the S-Line Urban Rail-Trail Greenway. These parks and trails are a natural draw for cyclists and pedestrians, and when paired with the other recommendations, provision of wayfinding signage will enhance the walkability of the neighborhood and corridor.

FIGURE 21: EXISTING TYPICAL SECTION FOR TALLULAH AVENUE: LORAIN STREET TO MAIN STREET



FIGURE 22: PROPOSED TYPICAL SECTION FOR TALLULAH AVENUE: LORAIN STREET TO MAIN STREET

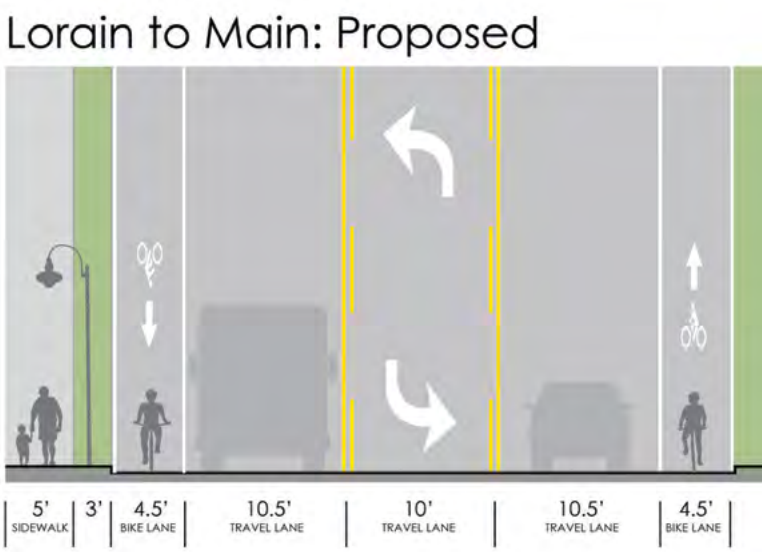


FIGURE 23: TALLULAH AVENUE EAST OF DRAYTON STREET (EXISTING)



FIGURE 24: RENDERING OF TALLULAH AVENUE EAST OF DRAYTON STREET WITH BIKE LANES



FIGURE 25: CONCEPT RENDERING FOR TALLULAH AVENUE ROAD DIET FROM I-95 TO MONCRIEF CREEK BRIDGE



Prioritization

Following the charrette, the project team conducted further analyses and additional coordination regarding the corridor recommendations. From that, a prioritization plan was developed. Projects identified have been classified as **Keystone Projects, Operational/Safety Enhancements, or Long-Term Vision Projects**.

KEYSTONE PROJECTS

These showcase the immediate effect the Complete Streets program can have on a corridor. They are relatively substantial projects that can be implemented in the near term. For the Edgewood Avenue corridor the Keystone Project is the Tullulah Avenue road diet east of I-95 **(Figure 25)**.

OPERATIONAL/SAFETY ENHANCEMENTS

These are "quick fix" projects that can provide immediate operational and safety improvements at a reasonable low cost. Within the Edgewood Avenue corridor, these enhancements include the following:

- Enhance lighting and add shade trees (entire length of corridor)
- Re-stripe parking lane as bike lane (Cassat Avenue to Ina Street, New Kings Road to I-95)
- New signal at the intersection of Edgewood Avenue and Raines Vikings Way
- Install pedestrian crossings and appropriate signage at:
  - Edgewood Avenue in the vicinity of Rockwood Drive (at relocated bus stop)
  - Edgewood Avenue in the vicinity of Poinsettia Street and Acacia Street
  - Edgewood Avenue in the vicinity of Edwards Avenue
  - Edgewood Avenue in the vicinity of Chenago Boulevard
  - Edgewood Avenue in the vicinity of Bagley Road (Tiger Academy)
  - Edgewood Avenue in the vicinity of the Save-A-Lot bus stop
  - Edgewood Avenue east of Green Place / Foradale Drive intersection
  - Edgewood Avenue in the vicinity of Iris Boulevard
  - Edgewood Avenue between Diamond Street and Scott Street
  - Edgewood Avenue northeast of Reed Street (Edgewood Nursing Center)
  - Edgewood Avenue in the vicinity of Oriole Street (relocate Lake Park bus stop)
  - Edgewood Avenue in the vicinity of Orlando Avenue
  - Edgewood Avenue in the vicinity of Calvin Street
  - Tallulah Avenue in the vicinity of Lorain Street
  - Tallulah Avenue in the vicinity of 67th Street
  - Tallulah Avenue in the vicinity of 66th Street
  - Tallulah Avenue in the vicinity of 62nd Street
  - Tallulah Avenue in the vicinity of Barberie Street
  - Tallulah Avenue in the vicinity of Drayton Street
- Narrow Tallulah Avenue lanes to 10.5', Widen shoulders to 4.5' bike lanes, Add 6 marked crosswalks on Tallulah
- Wayfinding – Between S-Line Urban rail trail Greenway and North Shore Park

LONG-TERM VISION PROJECTS

Finally there are Long-Term Vision Projects that are often bold, relatively costly projects that will take many years to be fully implemented. The Long-Term Vision projects within the Edgewood Avenue Corridor are as follows:

- Reduce lanes to 11' with 16' raised median from New Kings Road to I-95
- Develop alternate bike route between New Kings Road to Lem Turner Road (bike route would utilize Edgewood - New Kings - 45th – Castellano – Rowe – Grant – Lila – Linda – Kenard – Bunker Hill – Edgewood)
- Construct a Gateway feature at pedestrian overpass near I-95
- Construct a Gateway feature at Moncrief Creek Bridge

The realization of this long-term vision would remake this automobile-dominated area into a fully inclusive multimodal and mixed-use hub for the westside and northside of Jacksonville.

KINGS ROAD

EXECUTIVE SUMMARY

As a part of the JTAMobilityWorks Complete Streets Program, Kings Road (SR 15/US 23) has been examined to identify how improvements can be made to the corridor that not only accommodate the vehicular traffic that uses US 23 to travel to and from downtown Jacksonville, but also enriches the communities along the corridor by increasing opportunities for bike and pedestrian connectivity to key destinations and transit routes. An assessment of the study area reveals five important needs that were evident along the corridor.

1. Manage vehicle speeds near Edward Waters College for pedestrian safety
2. Enhance multi-use path crossings through elements such as pavement markings, signage, and flashing beacons
3. Create and expand a regional bike and pedestrian network
4. Redesign deficient intersection(s) for the freight traffic
5. Connect transit stops with sidewalk by filling in gaps

The first need is addressed by a site evaluation process that looks at four signalized intersections near the campus of Edward Waters College. This is specifically to determine which locations would be most feasible and beneficial to convert into a modern roundabout. The preferred locations that came out of this evaluation were Kings Road at Tyler Street and Kings Road at Fairfax Street, although a more detailed study and concept design are recommended to understand the impacts to property owners and traffic flow through the intersection.

The second need is addressed by a recommendation to upgrade the existing S-Line Rail Trail crossing east of Myrtle Avenue by installing Rectangular Rapid Flashing Beacons (RRFBs) at the crosswalk. These types of beacons have a much higher compliance rate for drivers when compared to the traditional flashing warning beacon. Improvements to the crosswalk striping in the form of short stripes within and perpendicular to the crosswalk edge striping, or a complete fill of the crosswalk with green colored marking, are also recommended.

A proposed campus bicycle route/trail with a connection on W 8th Street to the existing S-Line Rail Trail would help connect the vibrant collegiate area to other local destinations and would serve as another step in creating a connected city network for alternative modes of traffic.

The shipping depot off Kings Road at Flora Street is a focal point for truck traffic that is moving freight on US 23. This skewed intersection currently does not provide the necessary pavement width for a WB-67 tractor trailer to complete a westbound left turn movement without tracking into the opposing lane of traffic. Widening the northbound approach is recommended to remove this deficiency.

1. CONTEXT

EXISTING CONDITIONS

Kings Road (SR 15/US 23) is a major arterial which connects the northern parts of Downtown Jacksonville with I-95 and continues to the northwest, providing direct connectivity to suburban residential areas and I-295. West of I-95 and downtown Jacksonville, the road bisects the campus of Edward Waters College, a private college and the oldest historically black college in Florida. The College serves as a primary source of pedestrian crossings at all times of day between campus housing on the south side of Kings Road and the student center and lecture halls on the north side. Kings Road is also a major activity corridor for other modes of traffic; JTA buses on Route 4, pedestrians and cyclists who use the sidewalks along Kings Road as well as multi-use trails that cross it, and freight vehicles traveling to and from major depots. See Figure 1 for a project location map.

FIGURE 1: KINGS ROAD (SR 15/US23) STUDY AREA



median, and sidewalk on both sides. Auxiliary turn lanes are present at major intersections. In 2014, average daily traffic (ADT) was approximately 12,500 vehicles per day in the area near the college. The Florida Department of Transportation has determined that, being a US and State Route, the capacity associated with the four-lane typical section is necessary for mobility purposes on this corridor and has deemed that a road diet, or lane reduction, is not appropriate. Kings Road has a posted speed limit of 30 miles per hour. The road is built with limited horizontal curvature, which does tend to lead to increased speeds and makes pedestrian crossings at unsignalized locations difficult.

There is a need to manage vehicular speeds along Kings Road near Edward Waters College through design to improve the safety of pedestrians walking between campus facilities. Campus housing is located on the south side of Kings Road, while most of the campus lecture halls are on the north side. A pedestrian signal is in place at the George Collins Student Center that stops vehicular traffic when the crosswalk button is pushed by a pedestrian, but there is a need for more measures elsewhere, especially near campus housing. Roundabouts at critical locations can act as traffic calming measures and can also improve traffic operations and area aesthetics.

A popular multi-use path known as the S Line Rail Trail crosses Kings Road southeast of Myrtle Avenue at a mid-block crosswalk, and further enhancements are needed for pedestrian safety at this location. Enhanced signage through the use of Rectangular Rapid Flashing Beacons (RRFBs) can improve driver visibility and awareness resulting in a reduction in crash and injury risk. In addition to this, improvements to pedestrian and cyclist mobility are needed due to the proximity of transit stops, Edward Waters College, community facilities on Myrtle Avenue to the east, and the existing S Line Rail Trail.

A large freight depot is located on Flora Street, northwest of Edward Waters College. The intersection of Kings Road and Flora Street/Kings Park Drive is signalized and the side-street approaches are offset by a distance of approximately 50 feet. Trucks entering the facility from the southeast must make a left turn onto Flora Street, and current design requires some overlap between a truck's turning path and the northbound vehicular lane. Some geometric improvements to the northbound approach would create the necessary room needed for a typical WB-67 truck to make a left turn without colliding with vehicles queued at the signal on Flora Street northbound.

Assessed Needs on Kings Road

- Manage vehicle speeds near Edward Waters College for pedestrian safety
- Enhance multi-use path crossings through elements such as pavement markings, signage, and flashing beacons
- Create and expand a regional bike and pedestrian network
- Redesign deficient intersection(s) for the freight traffic
- Address gaps in sidewalk, and other needs at New Kings Road bus stops

2: PROCESS

STAKEHOLDER MEETINGS

Our team met with multiple stakeholders for this portion of Kings Road in order to focus our efforts and to obtain pertinent information about the corridor. These stakeholders included the City of Jacksonville, Florida Department of Transportation, Edward Waters College and local neighborhood businesses and residents. The timing of the FDOT resurfacing project on Kings Road dictated the schedule and opportunities to include complete street solutions within the corridor. From the stakeholder meetings we concluded that the following options could be explored in the future; intersection improvements at Tyler Street, Pearce Street, Powhattan Street and Spires Avenue; bicycle lanes or a bicycle route from the College area to the S-Line; enhanced bus shelters; and S-Line crossing pedestrian safety measures.

These meetings were very instrumental in shaping our recommendations and we found great value in understanding the needs of the community and the stakeholders involved.

3. CONCEPTS

DESIGN CONCEPTS

As part of a preliminary inspection of the Kings Road corridor, four signalized intersections were identified as potential roundabout locations within the vicinity of Edward Waters College. Those intersections are listed below and are shown in Figure 2.

- Kings Road at Spires Avenue
- Kings Road at Fairfax Street
- Kings Road at Pearce Street
- Kings Road at Tyler Street

FIGURE 2: POTENTIAL ROUNDABOUT LOCATIONS NEAR EDWARD WATERS COLLEGE CAMPUS



volumes, existing green space, upstream and downstream traffic signals, and geometric conditions can all be challenges when determining the appropriateness of a roundabout as a traffic solution. Benefits of roundabouts include their traffic calming function, the aesthetic enhancements that a well-landscaped interior island provides, low maintenance costs, and traffic operation improvements. These locations were compared in a quantitative and qualitative exercise to determine which locations, if any, sufficiently met the following design criteria.

- Level of Service (LOS) and delay benefits
- Accommodates current bicycle and pedestrian crossing needs
- Minimizes impacts to adjacent property, including building structures
- Provides traffic calming benefits in appropriate areas
- Aesthetic enhancement potential

Level of Service and Delay Analysis

The first step to determining the feasibility of a roundabout is to analyze the traffic operations under existing, design-year no-build, and design-year build conditions. The standard approach to defining intersection operations is the use of Level of Service (LOS), a quantifiable measure of congestion that is correlated to the delay experienced by the average vehicle. LOS is measured on a letter grade scale from A to F, with LOS A indicating free-flow conditions and LOS F indicating severe congestion. Typically, LOS D or better is considered satisfactory, with LOS E or F considered failing. The HCM 2010 defines LOS at signalized intersections in terms of average control delay per vehicle, which is composed of initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. At unsignalized intersections and roundabouts, the LOS and delay measures are generally similar, but the threshold ranges are lower than at signalized intersections.

For signalized intersections and roundabouts, the Highway Capacity Manual 2010 edition (HCM 2010) defines LOS thresholds by the delay ranges shown in Table 1.

TABLE 1
LEVEL OF SERVICE CRITERIA

LEVEL OF SERVICE	SIGNALIZED AVERAGE DELAY (SEC/VEH)	UNSIGNALIZED/ ROUNDABOUT AVERAGE DELAY (SEC/VEH)
A	≤10.0	≤10.0
B	>10.0 and ≤20.0	>10.0 and ≤15.0
C	>20.0 and ≤35.0	>15.0 and ≤25.0
D	>35.0 and ≤55.0	>25.0 and ≤35.0
E	>55.0 and ≤80.0	>35.0 and ≤50.0
F	>80.0	>50.0

To understand the change in intersection LOS from current conditions to proposed conditions, a baseline "existing conditions" analysis was conducted. For the purposes of this study, existing conditions delay and LOS values have

been taken from a 2014 traffic study conducted by Kimley-Horn and Associates for the Florida Department of Transportation (FDOT). All existing condition delay and LOS values are reported in Table 2. This study also makes use of the 2014 Kimley-Horn study's forecasting methodology, opening-year and design-year traffic volumes. The projected growth rate for the corridor is estimated to be 1% growth per year.

The tool that is utilized in this study to analyze and identify the LOS and delay values with proposed roundabout geometry is known as the SIDRA Standard Capacity model. A companion software known as SIDRA Intersection 9 is used to conduct roundabout analysis in this study. The SIDRA Standard Capacity model utilizes "gap acceptance theory", which is a predictive method that quantifies driver behavior when faced with a decision to enter a traffic stream or wait for larger gaps, to estimate approach capacity. This method estimates other key parameters used in determining capacity and average delay by taking into consideration actual geometric conditions like approach speed, angle of approach, and inscribed diameter. The SIDRA Standard Capacity model used in this study reports Level of Service using the average delay thresholds for unsignalized intersections and roundabouts found in Table 1.

Each intersection's existing delay and LOS values are reported in Table 2. Also included in Table 2 are the design-year "no-build" and "build" comparisons for delay and LOS.

TABLE 2 COMPARISON MATRIX

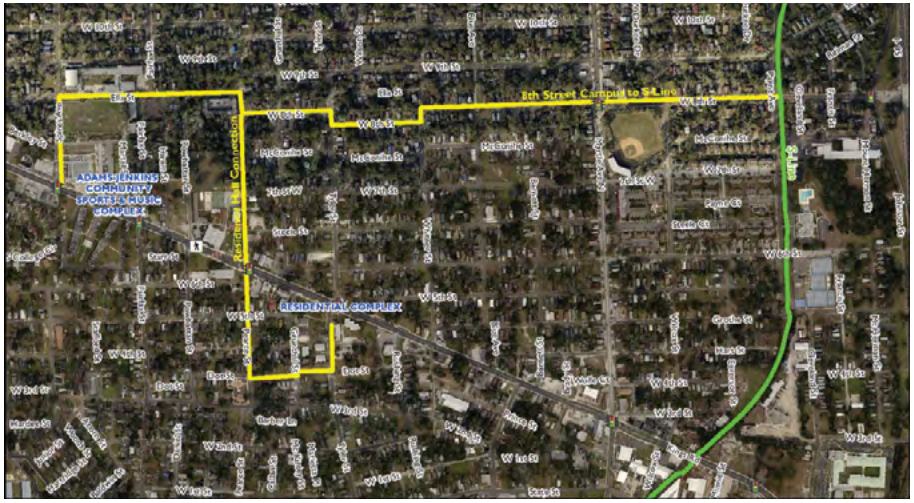
INTERSECTION	2014 EXISTING CONDITIONS				2034 NO BUILD CONDITIONS				2034 BUILD CONDITIONS			
	AM PEAK		PM PEAK		AM PEAK		PM PEAK		AM PEAK		PM PEAK	
	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS
Kings Road at Spires Avenue	6.8	A	4.7	A	6.3	A	5.4	A	5.7	A	3.1	A
Kings Road at Fairfax Street	17.8	B	10.6	B	20.1	C	16.6	B	7.8	A	7.8	A
Kings Road at Pearce Street	8.1	A	4.9	A	4.4	A	5.0	A	5.2	A	5.7	A
Kings Road at Tyler Street	22.2	C	23.7	C	24.5	C	28.1	C	2.9	A	3.0	A

Table 2 indicates that installation of a roundabout at any of the four locations will have an overall improvement on intersection operations. Notably, the two intersections that see the largest improvement are Kings Road at Fairfax Street and Kings Road at Tyler Street because those locations experience the most vehicle delay in current conditions.

Bicycle and Pedestrian Crossing Needs

Roundabouts can provide several benefits through design that make crossing safer and easier for pedestrians. Roundabouts will reduce vehicle speeds upon approach, giving pedestrians more time to gauge a vehicle's intentions, while also improving reaction time for drivers approaching a pedestrian crosswalk. Splitter islands also offer a refuge space for pedestrians to wait, allowing for crossing of one direction of traffic at a time. While roundabouts can benefit pedestrians in many ways, they can be somewhat difficult for cyclists to navigate, requiring use of a shared space for bikes and pedestrians surrounding the intersection. With Edward Waters College being located nearby, a proposed Campus bicycle and pedestrian route which could connect to the S Line Trail on 8th Avenue could be constructed in the area. This proposed bike and pedestrian route is discussed in greater detail in another section of this report, however, the overall proposed route is illustrated in Figure 3.

FIGURE 3: PROPOSED CAMPUS BICYCLE ROUTE/TRAIL SYSTEM WITH W 8TH STREET CONNECTION TO S-LINE



Ideally, this bicycle route/trail would cross Kings Road at one or two of the currently signalized intersections, and to reconfigure those signals into roundabouts may make the bicycle route/trail crossing more difficult to achieve. As seen in Figure 3, the proposed campus bicycle route/trail could potentially cross Kings Road at Pearce Street, making this intersection less favorable than others as a potential roundabout location. This criteria is included in the comparison matrix at the end of this section (Table 3).

Property Impacts

A roundabout footprint can be larger than that of a traditional signalized intersection. This footprint is affected by several variables including the size of the interior island, the width and number of circulating lanes, the inclusion of right-turn bypass lanes, and the angle of each approach. Kings Road is a four-lane highway which requires the roundabouts to accommodate two circulating lanes. For the primary movement, the design speed and design vehicle on the road determine the overall design, and requires a large interior island and truck apron. With the US Route 23 designation, roundabouts on Kings Road should accommodate a large tractor trailer truck known as a WB-67 class.

A roundabout with a large footprint will most likely impact adjacent property in various ways. If buildings are setback from the edge of pavement by several yards or more, the placement of a roundabout can limit property impacts to right-of-way acquisition. If building pads are located close to the edge of pavement, as some buildings are on Kings Road, the likelihood that the entire building will need to be obtained and demolished increases. In some instances, a structure may not be directly impacted, but supporting elements such as parking and access can be reduced, which indirectly effect businesses and property owners. Figure 4 below illustrates potential building pad and property impacts at each location along Kings Road where a roundabout could potentially be constructed. Figure 4 is provided for illustrative purposes and is intended to provide the reader with a reference to the scale of a modern roundabout when compared to a signalized intersection. A more detailed design is necessary to understand the true impacts to adjacent buildings and property.

FIGURE 4: POTENTIAL ROUNDABOUT FOOTPRINTS



Traffic Calming Effects

One benefit to the installation of roundabouts on the Kings Road corridor is to provide an element of design that requires vehicles to reduce speed through the campus area of Edward Waters College. With the high volume of pedestrian crossings that take place each day between campus dormitories and lecture halls, one pedestrian signal has been installed between Powhattan Street and Pearce Street. Lecture halls, recreational facilities, the student center, and the campus library are located on the northern side of Kings Road, while the main campus dormitories are located several blocks to the southeast, on the opposite side of the road. Some of the important campus destinations for pedestrian trips are illustrated in Figure 5.

FIGURE 5: EDWARD WATERS COLLEGE RESIDENCE HALLS AND OTHER KEY DESTINATIONS



Installing roundabouts near the highest concentration of students provides a means to control vehicle speeds on Kings Road where the risk of crash between vehicle and pedestrian is elevated. The four potential roundabout locations were given a qualitative rating in the comparison matrix at the end of this section (Table 3) with a higher preference towards those located nearest to the dormitories and campus proper.

Based on proximity to residence halls and other campus destinations, the intersections on Kings Road at Tyler Street and at Pearce Street are more preferable than the intersections at Fairfax Street and Spires Avenue. However, the proximity of Pearce Street to the existing pedestrian traffic signal somewhat diminishes the traffic calming effect and could result in operational concerns if traffic stopping for the pedestrian crossing backs up into the roundabout. Conversely, a roundabout located at Fairfax Street could present an opportunity to reduce the speed of southeast bound traffic a few hundred feet in advance of the pedestrian signal and, if paired with a roundabout at Tyler Street, could "bookend" the campus with traffic calming elements.

PEARCE STREET AERIAL



PEARCE STREET ROUNDABOUT CONCEPT



Aesthetic Enhancements

Roundabouts can bring light landscaping to a generic regional highway. The center islands can be planted with low vegetation that doesn't impair driver sight distance, or the interior islands can be constructed with brick pavers or stamped concrete to provide a unique aesthetic. Since these roundabouts are located within the general campus of Edward Waters College, there is an opportunity to incorporate collegiate colors, signs, or other gateway features at the roundabouts to enhance the area while also improving traffic operations and safety. Landscaping that includes the placement of anything within that interior island that could obscure a driver's field of view or that could become a crash hazard for entering and circulating vehicles should be avoided. Ideally, the placement of a roundabout with respect to its ability to act as a gateway feature should consider locations at or near the campus boundaries rather than within the campus to provide a feeling of "entering" the campus area. With this in mind, the intersection of Kings Road at Pearce Street may be somewhat less effective at providing that benefit when compared to the other three locations.

PEARCE STREET AT KINGS ROAD



ROUNDABOUT CONCEPT AT PEARCE STREET AT KINGS ROAD



Final Comparison Matrix

A comparison of each potential roundabout location, with respect to the criteria outlined in previous sections of this report, is summarized in Table 3 below.

TABLE 3

Potential Roundabout Location	Benefit to 2034 Level of Service AM/ (PM)	Satisfies Bicycle and Pedestrian Crossing Needs	Potential Property Impacts	Traffic Calming Effectiveness	Gateway to the College
Kings Road at Spires Avenue	A/(A) to A/(A)	No significant ped/bike demand expected	would likely impact existing structures	Limited effectiveness due to distance from campus	serves as gateway to campus
Kings Road at Fairfax Street	C/(B) to A/(A)	No significant ped/bike demand expected	would potentially only impact ROW	effective calming in proximity to residences and campus	serves as gateway to campus
Kings Road at Pearce Street	A/(A) to A/(A)	Conflicts with potential campus trail route	would likely impact existing structures	effective calming on campus; less effective due to ped signal	located within campus
Kings Road at Tyler Street	C/(C) to A/(A)	No significant ped/bike demand expected	would likely impact existing structures	effective calming in proximity to residences and campus	serves as gateway to campus

From Table 3, it becomes apparent that the two most preferred locations for roundabouts are at Fairfax Street and at Tyler Street. These locations would receive the most benefit, operationally, from a roundabout, and would also achieve the desired traffic calming element. The downside to installation of a roundabout at either location is that the general size of a roundabout would require the acquisition of new right-of-way by Florida DOT. At Tyler Street, it is possible that one or possibly both of the buildings on the northern side of the intersection would be impacted. It is also possible that the corner of the green lawn on the southwest quadrant that is nearest to the intersection at Tyler Street would need to be used for the roundabout's footprint.

Enhance Multi-Use Path Crossings

Multi-use paths are dedicated, paved spaces that are reserved for bicycle and foot traffic. These trails are typically 10-12' wide, but can be much larger depending on the amount of users that are expected. Multi-use paths can be for recreational purposes, but they are also an important link in connecting:

- Transit riders to bus stops
- Individuals who don't own a car to everyday destinations
- Neighborhoods to community amenities

An existing trail known as the S-Line Rail Trail is located nearby. This trail generally runs in a north-south direction parallel to Payne Avenue along an abandoned railroad alignment. Just east of the intersection of Kings Road at Myrtle Avenue, the S-Line crosses Kings Road. The stream of major-street traffic that pedestrians must cross is free-flowing; pedestrian and cyclist warning signs with supplemental "Trail Xing" signs are present at a striped crosswalk striped across Kings Road. Advanced pedestrian and cyclist warning signs are also present for traffic approaching from either direction. The cross section is a four-lane, undivided road, which does not offer any form of refuge space for pedestrians once they have entered the crosswalk.



One method of improving driver awareness to the presence of pedestrians at a busy trail crossing is to employ Rectangular Rapid Flashing Beacons (RRFBs). These are pole-mounted beacons that can be actuated by a pedestrian through a push button that is located at pedestrian level. The beacons are placed in the shoulder of the road at the crosswalk. A warning sign is mounted on the pole as well to indicate to drivers that there is a potential for pedestrians and cyclists to enter the roadway.

The RRFB is designed to enhance driver awareness and acts as a cue to drivers that someone has pushed the button and may be attempting to cross. These RRFBs have been studied in various locations, and have been found to have very high compliance rates when compared to traditional flashing beacons.

There is some guidance provided by the Federal Highway Administration (FHWA) on the use of crosswalk enhancements at uncontrolled locations. This guidance is dependent upon the number of vehicle travel lanes, the volume of traffic on the crossed street, and the speed limit of the roadway. Table 4 below is taken from the FHWA publication, Safety Effects of Marked Versus Unmarked Crosswalks at Uncontrolled Locations.

TABLE 4: RECOMMENDATIONS FOR INSTALLING MARKED CROSSWALKS AND OTHER NEEDED PEDESTRIAN IMPROVEMENTS AT UNCONTROLLED LOCATIONS

Roadway Type (Number of Travel Lanes and Median Type)	Vehicle ADT ≤ 9,000			Vehicle ADT >9,000 to 12,000			Vehicle ADT >12,000–15,000			Vehicle ADT > 15,000		
	Speed Limit**											
	≤ 48.3 km/h (30 mi/h)	56.4 km/h (35 mi/h)	64.4 km/h (40 mi/h)	≤ 48.3 km/h (30 mi/h)	56.4 km/h (35 mi/h)	64.4 km/h (40 mi/h)	≤ 48.3 km/h (30 mi/h)	56.4 km/h (35 mi/h)	64.4 km/h (40 mi/h)	≤ 48.3 km/h (30 mi/h)	56.4 km/h (35 mi/h)	64.4 km/h (40 mi/h)
Two lanes	C	C	P	C	C	P	C	C	N	C	P	N
Three lanes	C	C	P	C	P	P	P	P	N	P	N	N
Multilane (four or more lanes) with raised median***	C	C	P	C	P	N	P	P	N	N	N	N
Multilane (four or more lanes) without raised median	C	P	N	P	P	N	N	N	N	N	N	N

* These guidelines include intersection and midblock locations with no traffic signals or stop signs on the approach to the crossing. They do not apply to school crossings. A two-way center turn lane is not considered a median. Crosswalks should not be installed at locations that could present an increased safety risk to pedestrians, such as where there is poor sight distance, complex or confusing designs, a substantial volume of heavy trucks, or other dangers, without first providing adequate design features and/or traffic control devices. Adding crosswalks alone will not make crossings safer, nor will they necessarily result in more vehicles stopping for pedestrians. Whether or not marked crosswalks are installed, it is important to consider other pedestrian facility enhancements (e.g., raised median, traffic signal, roadway narrowing, enhanced overhead lighting, traffic-calming measures, curb extensions), as needed, to improve the safety of the crossing. These are general recommendations; good engineering judgment should be used in individual cases for deciding where to install crosswalks.

** Where the speed limit exceeds 64.4 km/h (40 mi/h), marked crosswalks alone should not be used at unsignalized locations.

*** The raised median or crossing island must be at least 1.2 m (4 ft) wide and 1.8 m (6 ft) long to serve adequately as a refuge area for pedestrians, in accordance with MUTCD and American Association of State Highway and Transportation Officials (AASHTO) guidelines.

C = Candidate sites for marked crosswalks. Marked crosswalks must be installed carefully and selectively. Before installing new marked crosswalks, an engineering study is needed to determine whether the location is suitable for a marked crosswalk. For an engineering study, a site review may be sufficient at some locations, while a more indepth study of pedestrian volume, vehicle speed, sight distance, vehicle mix, and other factors may be needed at other sites. It is recommended that a minimum utilization of 20 pedestrian crossings per peak hour (or 15 or more elderly and/or child pedestrians) be confirmed at a location before placing a high priority on the installation of a marked crosswalk alone.

P = Possible increase in pedestrian crash risk may occur if crosswalks are added without other pedestrian facility enhancements. These locations should be closely monitored and enhanced with other pedestrian crossing improvements, if necessary, before adding a marked crosswalk.

N = Marked crosswalks alone are insufficient, since pedestrian crash risk may be increased by providing marked crosswalks alone. Consider using other treatments, such as traffic-calming treatments, traffic signals with pedestrian signals where warranted, or other substantial crossing improvement to improve crossing safety for pedestrians.

A Florida Department of Transportation AADT count from Station #725065 on Kings Road to the west of the intersection with Myrtle Avenue reveals a daily two-way volume of 20,000 vehicles per day (vpd). The posted speed limit on Kings Road is 30 miles per hour. From the FHWA table, it can be concluded that the existing treatment at the crossing is not sufficient and that there is an elevated risk of pedestrian crashes if other measures are not taken to improve the visibility and safety of the trail crossing.

The signage and striping at the crossing are adequate, however, an RRFB should be installed on the poles that hold the warning signs on either side of the road. The RRFB should be activated by a pole-mounted push button at the edge of the trail in advance of both ends of the crosswalk. In addition, a raised median should be constructed between the opposing travel lanes. The preferred width of a median that is to be used for refuge purposes is 8'. Within the median, a third RRFB should be installed and the pedestrian cut-through should be designed in a Z-crossing manner. The Z-crossing concept forces pedestrians to turn within the median and face the oncoming traffic that they are preparing to cross. It gives pedestrians an opportunity to clearly see oncoming traffic and it makes them more visible to drivers.

To accomplish this, a combination of widening and lane narrowing to 10' lanes should be used to achieve the minimum additional 8' for the raised median. The existing curb line would need to be reconstructed on either side of the road and the lanes should be narrowed through the crossing area. Advanced warning of the lane narrowing should be conducted through additional signage on each approach.

Create and Expand Regional Bike and Pedestrian Network

The development of a regional bike and pedestrian network is important to any community for many reasons. There is a definite benefit to a viable and useful biking and walking network. Citizens tend to be more active and healthy; access to transit is improved; economic growth can be linked to robust trail systems; and residents who either cannot afford to own a car or who choose not to use a car have expanded access to destinations. Edward Waters College, and the surrounding neighborhood, is less than a mile away from the existing S-Line but currently is not connected by any actual biking and walking facilities. Also within this approximate one-mile distance lies several churches and the James P. Small baseball field.

There is an opportunity to create a connection between the college and this existing "rail trail" which would be another step towards achieving a regional bike and pedestrian network. The proposed alignment for the bicycle route/trail would connect the residence halls on the south side of Kings Road with the north side of campus; this also includes a connection on the one-way W 9th Street to the Adams-Jenkins Sports and Music Complex. This connection could reduce the number of one-way vehicular through lanes on W 9th Street from two to one, which would make room for a contra-flow bike lane on the north side of the road and a second bike lane that flows with traffic on the south side. The crossing of Kings Road could take place at the signalized intersection of Pearce Street and Kings Road, or it could occur at the existing pedestrian traffic signal. If the bicycle route/trail crossing occurred at the signal of Kings Road and Pearce Street with a multi-use trail section, the crosswalk would need to be widened to a full 10' and pedestrian warning signs would need to be updated to include bicyclists as well.

To connect to the S-Line trail, a 0.75 mile long, east-west connection along 8th Street would be needed. This alignment would pass right by James P. Small ballpark as well. There are multiple opportunities to create this connection. One potential improvement for this segment would be to install sharrow lane markings within the pavement to indicate that the lane should be shared between cyclists and vehicles. There is also a 12' typical grassed buffer between the edge of pavement and the sidewalk that could be reconverted into a paved multi-use path adjacent to W 8th Street if an uninterrupted multi-use path is desired. See Figure 6 for the proposed trail alignment.

EXISTING S-LINE CROSSING AT KINGS



PROPOSED GATEWAY S-LINE CROSSING




S-Line
S-Line "gateway"
S-Line bike crossing w/ special paving
bike crossing warning signal (all sides)
Kings Rd.
S-Line
S-Line Mid-block bike crossing @ Kings Rd.

FIGURE 6: PROPOSED CAMPUS BICYCLE ROUTE/TRAIL WITH W 8TH STREET CONNECTION TO S-LINE

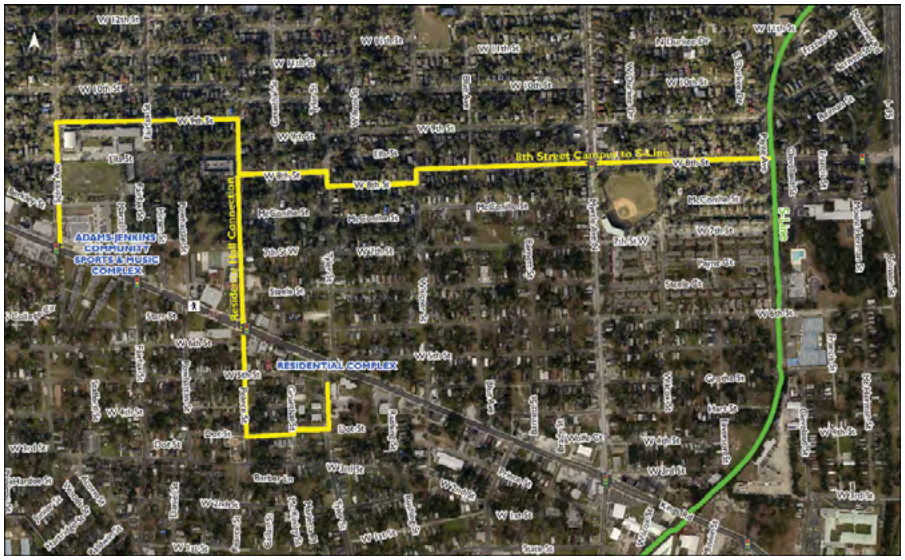


FIGURE 7: SIGNALIZED INTERSECTION OF KINGS ROAD AT FLORA STREET LOCATION



Assessed Needs at Kings Road at Flora Street

Northwest of Edward Waters College on Kings Road is a large shipping depot that sees high volume of truck traffic throughout the day. See Figure 7 for a location map. The type of trucks accessing this site are large; often they are tractor trailers with three or more axles. The turning paths of a truck pulling a trailer can be broad and intersections with tight turning radii can be inadequate. This make the turning maneuvers very difficult for truck drivers as they navigate the intersection and can also result in angled or sideswiping collisions with other cars present at the intersection.

The entrance to the depot lies on Flora Street, south of Kings Road. The intersection with Kings Road is controlled by a traffic signal. Traffic volume on the side street is low but largely comprised of heavy vehicles. The centerlines of the side-street approaches are offset by a distance of approximately 55'. This may present some minor problems during the side street operation if vehicles have queued on both approaches and drivers are unsure of the opposing traffic's intended actions. The more significant deficiency at this intersection lies in the skewed alignment of the major street with the side street. In this case, the westbound left turn movement is made up of some tractor trailers and the turning path for a large truck of this nature is in conflict with northbound vehicles that are queued at the stop bar on Flora Street. Observations of the intersection suggest that northbound traffic is very familiar with the intersection and the deficiency, and drivers have begun to stop well in advance of the striped stop bar to prevent a collision with a turning truck. See Figure 8 for an aerial image of the intersection and the estimated turning path of a WB-67 tractor trailer.

FIGURE 8: WB-67 TRACTOR TRAILER TURNING PATH



Design Recommendation

The southeast quadrant of this intersection is currently undeveloped green space while the southwest quadrant is occupied by a single one-story brick building. The building is set back from the edge of pavement by several feet. The green space is occupied by several large trees that are also set back by several feet. To avoid taking the existing structure, additional pavement width should be added to the northbound approach by reconstructing the eastern curb and gutter and sidewalk. The northbound shared left-through-right turn lane should shift to the east and the space between this lane and the southbound lane on Flora Street should be striped out as a median area that will also be used by trucks to complete the westbound left turn. This would also help align the two side street approaches by reducing the offset distance.

4: RECOMMENDATIONS

The following recommendations for the Kings Road corridor have been made based on technical assessment, observations, and discussions with stakeholders such as the Florida Department of Transportation and Edward Waters College. These recommendations are conceptual and should be studied in greater detail to determine the feasibility, impacts, design challenges, and public opinion of any proposed improvement project.

KEYSTONE PROJECTS

- A multi-lane roundabout located at Kings Road at Tyler Street would improve traffic operations at the intersection, serve as a means to reduce vehicle volume in a high-pedestrian traffic area, and serve as a gateway entrance to the Edward Waters College from the southeast. Construction of a roundabout here would most likely impact at least one building on the north side of Kings Road and the green space in the southwest quadrant. A more detailed design should be conducted to determine exact impacts to property and structures.

- A multi-lane roundabout located at Kings Road at Fairfax Street would improve traffic operations at the signalized intersection, serve as a means to reduce vehicle volume in a high-pedestrian traffic area, and serve as a gateway entrance to the Edward Waters College from the northwest. The construction of a roundabout at this location could potentially be completed without demolishing any existing building structures along Kings Road, but acquisition of right-of-way to accommodate the expected footprint is necessary. A more detailed design should be conducted to determine exact impacts to property and structures.

- The existing S-Line multi-use trail crossing on Kings Road should be enhanced to provide more visibility and refuge space for pedestrians. Adding RRFBs on each approach at the crossing will serve to enhance driver awareness. The RRFBs should be actuated by push buttons at either end of the crosswalk. In addition, the road should be widened at the crossing and the travel lanes should be narrowed to 10' to make space for an 8' raised median refuge space. The pedestrian cut-through should be a Z-crossing to position pedestrians with a clear view of oncoming traffic and to make them more visible to drivers. A third pole-mounted RRFB should be installed in the median. Advanced warning of the lane narrowing should be achieved through signage.

- A proposed campus bicycle route/trail along Pearce Street, W 9th Street, Spire Avenue, and W 8th Street would serve to connect the campus in a more regional capacity. A 10' trail on Pearce Street would give pedestrians and cyclists a way to walk or bike to class on the north side of Kings Road. Crossing Kings Road should take place either at the existing pedestrian crosswalk or, as an alternative, the signal at Pearce Street at King Road should be enhanced to include striping of a 10' wide trail crossing and pedestrian warning signage should be updated to include bicycles.

  On W 9th Street, a combination of a bike lane in the same direction as traffic and a contra-flow bike lane could be constructed within the existing pavement, if the one of the one-way eastbound lanes between Spires Avenue and Fairfax Street were removed.

  On W 8th Street, between Tyler Street and Myrtle Avenue, the typical section of the road is a 25', two-lane section with 5' sidewalk on both sides. One potential improvement for this segment would be to install sharrow lane markings within the pavement to indicate that the lane should be shared between cyclists and vehicles. There is also a 12' typical grassed buffer between the edge of pavement and the sidewalk that could be reconverted into a paved multi-use path adjacent to W 8th Street.

OPERATIONAL/SAFETY ENHANCEMENTS

- Overall sidewalk connectivity on the corridor should be improved. There are several short gaps between otherwise long, continuous stretches of existing sidewalk. With new sidewalk filling in gaps, pedestrian access along the road could be easily improved.
- Improved lighting would also enhance the pedestrian environment. Pedestrian-scale lighting would add safety to pedestrians and transit riders who must walk outside of daylight hours, and would communicate a more inclusive environment for all roadway users.

LONG-TERM VISION

- The northbound approach of Flora Street at the signalized intersection with Kings Road should be widened to the east. A striped median area should be installed between the northbound shared left-through-right lane and the southbound lane to accommodate the turning path of a WB-67 tractor trailer making a westbound left turn. This would require the use of some of the existing green space to the east of Flora Street, reconstruction of the curb and gutter, and sidewalk. No above-ground utilities are present in the immediate vicinity of the expected construction area, although some trees would likely be removed.

- The three bus stops located on New Kings Road, south of the I-295 interchange at Richardson Road, Soutel Drive, and Moncrief Road should be enhanced to provide accessibility for all users. Gaps in sidewalk should be filled in and ramps at curb cuts, crosswalks, and side streets should all satisfy ADA guidelines. At Richardson Road and Soutel Drive, the existing right-of-way is wide enough to accommodate the construction of a loading/unloading zone where buses can pull off New Kings Road, come to a full stop without impacting traffic, and passengers can board and unload in a calm and safe location. The pavement at these loading and unloading zones should be designed with full depth sections. Amenities such as shelters, trash cans, and benches should be considered for comfort. See Figures 9-11 for concept drawings.

- Over time, land use patterns near Edward Waters College could encourage college-serving development, including restaurants, convenience stores, and student-focused services. Changes should be enacted to develop a growing "College Town" around the campus.

Keystone Projects **These are projects that JTA would use to showcase complete streets for immediate effect. These should be reasonably substantial projects and something that could be implemented in the near term.**	**Operational/Safety Improvements** **These are "quick fix" improvements that can provide immediate safety and operational improvements at a lower cost**	**Long Term Vision** **These are complete projects for the corridor or corridor segment. These are bolder more costly investments that would be included in a long range plan.**
Construct roundabout at intersection of Kings Road and Tyler Street **Construct roundabout at intersection of Kings Road and Fairfax Street** **Improve S-Line crossing to be an "S-Line Gateway" with Rectangular Rapid Flashing Beacon (RRFB), speed table, and other bike- and pedestrian-focused elements** **Create campus bicycle route/trail along Pearce Street, 9th Street, Spire Avenue, and 8th Street**	**Upgrade lighting to current standards, including pedestrian-scale lighting** **Fill sidewalk gaps and improve intersections to comply with ADA along Kings Road, especially from Edward Waters College east, including the intersections with Myrtle Avenue and the S-Line crossing**	**Improve the intersection of Kings Road and Flora Street by widening Flora Street to the east and adding a striped median** **Encourage college-serving developments near Edward Waters College to create a "College Town" around the campus**


LEM TURNER

EXECUTIVE SUMMARY

A study of the Lem Turner corridor from the Downtown to I-295 was conducted as part of the JTAMobilityWorks Complete Streets Program. The corridor runs primarily north and south from the Downtown along Broad and Boulevard Streets, and connects with Norwood Avenue along Golfair Boulevard. The corridor continues north across the interchange with I-95 where the road becomes Lem Turner until it reaches I-295.

The corridor travels through several residential areas as well as several nodes of commercial development. Lem Turner is one of the few roads that crosses the Trout River, Ribault River, and Moncrief Creek, necessitating the use of the road by the surrounding community.

Bus Rapid Transit (light) began service along the Lem Turner corridor in December 2015. In addition, an effort to make all bus stops along the Lem Turner route ADA compliant is underway. Implementation of these upgrades in the Downtown portion of the Lem Turner corridor, along Broad and Boulevard Streets, has already occurred. Sidewalks are being repaired under Martin Luther King Jr. Parkway. Also, new concrete platforms that make bus stops compliant with ADA standards are currently being studied and will begin implementation soon.

Dangerous by Design is a report that was published in 2014 which ranks cities and regions according to their pedestrian fatalities. Lem Turner Road has four reported pedestrian deaths from between 2008 to 2012 grouped by one of the I-95 crossings. The high speeds of cars coming off the interstate continue their high speeds due to the auto-oriented environment along Lem Turner.

To better understand the conditions and concerns along the corridor the community was invited to participate in an interactive design charrette held August 24-28, 2015 at the Gateway Town Center along Norwood Avenue.

Safety and placemaking were themes expressed by the community. Lighting, crosswalks near bus stops, and slower traffic along with concerns for bus operations were noted. It was also noted that the roadways are not the only thing that makes a place. The roadways along with the surrounding properties need to be thought of in coordination in order to find a solution for creating places and not just areas to pass through.

Recommendations for Lem Turner can be separated into four general segments due to the varying configurations and street widths. The segments include downtown, Norwood Avenue (60' street section), Lem Turner Road (80' street section), and Lem Turner Road (110' street section).

The Lem Turner intersections with Bassett Road and Prospect Street were identified as high priority areas to improve additional signage, striping, lighting, and pedestrian crossing features due to previous pedestrian and vehicular accidents. Additional intersections identified for improvements included Lem Turner Road at Lila Avenue, Leonid Road, Broward Road, Trout River Boulevard, Soutel Drive, Clyde Drive, Palmdale Street, Lake Forest Boulevard, Edgewood Avenue, and Rowe Avenue. In other parts of the corridor the intersections of Norwood Avenue at Carrolton Road, Crestwood Street, Gateway Town Center, 44th Street, Alder Street, and Golfair Boulevard along with Boulevard Street at 21st Street and 8th Street need intersection improvements as well.

A few key demonstration projects were identified, particularly within the Norwood Avenue section of the corridor. I-95 touches this corridor in the south by Golfair Boulevard and then crosses Norwood Avenue further south. Due to this configuration, the segment in between along Norwood Avenue is primarily used by local traffic allowing the roadway to be reconfigured to better benefit the surrounding community. Primarily, this segment of roadway could benefit from a lane conversion to accommodate a dedicated bus and bike lane to better facilitate Bus Rapid Transit now online. In addition, JTA owns property at the intersection of Norwood Avenue and Golfair Boulevard which is slated to become a transfer station for the BRT in the future. This intersection could become a roundabout to facilitate the movement of traffic and the JTA property could be developed into a neighborhood center.

Several long-term visions were identified. These include:

- Norwood Avenue (Golfair Boulevard to I-95
- Redevelop JTA owned property at Norwood Avenue & Golfair Boulevard.
- Work with Gateway Town Center on redevelopment opportunities.
- Enhance intersection treatments as needed to coincide with redevelopment.
- Lem Turner Road (I-95 to Basset Road)
- Add a median where turn lane is not needed.
- Add buffered bike lane with new wider standards.
- Alternate: Continue the Bus/Bike only lane.
- Lem Turner Road (Bassett Road to I-295)
- Use excess pavement to create a buffered bike lane.
- Longer Term Vision: Create protected bike lanes with a tree lined median.

Additional study and design development will be needed for all of these recommendations. Coordination with other agencies and stakeholders will also be necessary in order to carry out all of the recommendations.

1: CONTEXT

The Lem Turner corridor is located in the northwest quadrant of Jacksonville. The corridor runs primarily north and south from the Downtown along Broad and Boulevard Streets, and connects with Norwood Avenue along Golfair Boulevard. The corridor continues north across the interchange with I-95 where the road becomes Lem Turner until it reaches I-295.

The corridor travels through several residential areas as well as several nodes of commercial development. Lem Turner is one of the few roads that crosses the Trout River, Ribault River, and Moncrief Creek, necessitating the use of the road by the surrounding community.

Lem Turner can be separated into four general street sections:

- Downtown
- Norwood Avenue - 60' street section
- Lem Turner Road - 80' street section
- Lem Turner Road - 110' street Section

JTA'S FIRST COAST FLYER BUS RAPID TRANSIT (BRT)

Bus Rapid Transit (light) began service along the Lem Turner corridor in December 2015. The service will include branded premium transit service, frequent headways (approximately every 10 minutes during peak times and 15 minutes during off-peak times), new low-floor energy efficient buses, limited stops, real time travel information, and intersection improvements. This will result in shorter wait times, improved travel times, enhanced schedule reliability, easier transfers, and greater customer satisfaction. Downtown portions of the route will feature dedicated bus and bike lanes while other portions of the route will have buses mixed in with traffic.

UPGRADED STOPS

An effort to make all bus stops along the Lem Turner route ADA compliant is underway. As a result, all bus stops are anticipated to have at a minimum a 10' by 5' concrete platform with numerous stops receiving a 30' by 10' concrete platform with new bus shelters, trash cans, and bike loops. In addition, areas with broken sidewalks are being repaired.

Implementation of these upgrades in the Downtown portion of the Lem Turner corridor, along Broad and Boulevard Streets, has already occurred. Sidewalks are being repaired under Martin Luther King Jr. Parkway. Also, new concrete platforms that make bus stops compliant with ADA standards are currently being studied and will begin implementation soon.

DANGEROUS BY DESIGN

Dangerous by Design is a report that was published in 2014 which ranks cities and regions according to their pedestrian fatalities. Lem Turner Road has four reported pedestrian deaths from between 2008 to 2012 grouped by one of the I-95 crossings. The high speeds of cars coming off the interstate continue their high speeds due to the auto-oriented environment along Lem Turner.

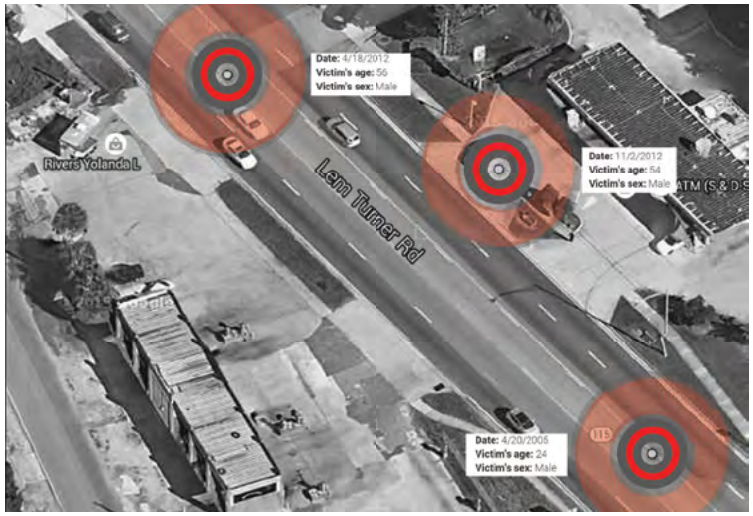
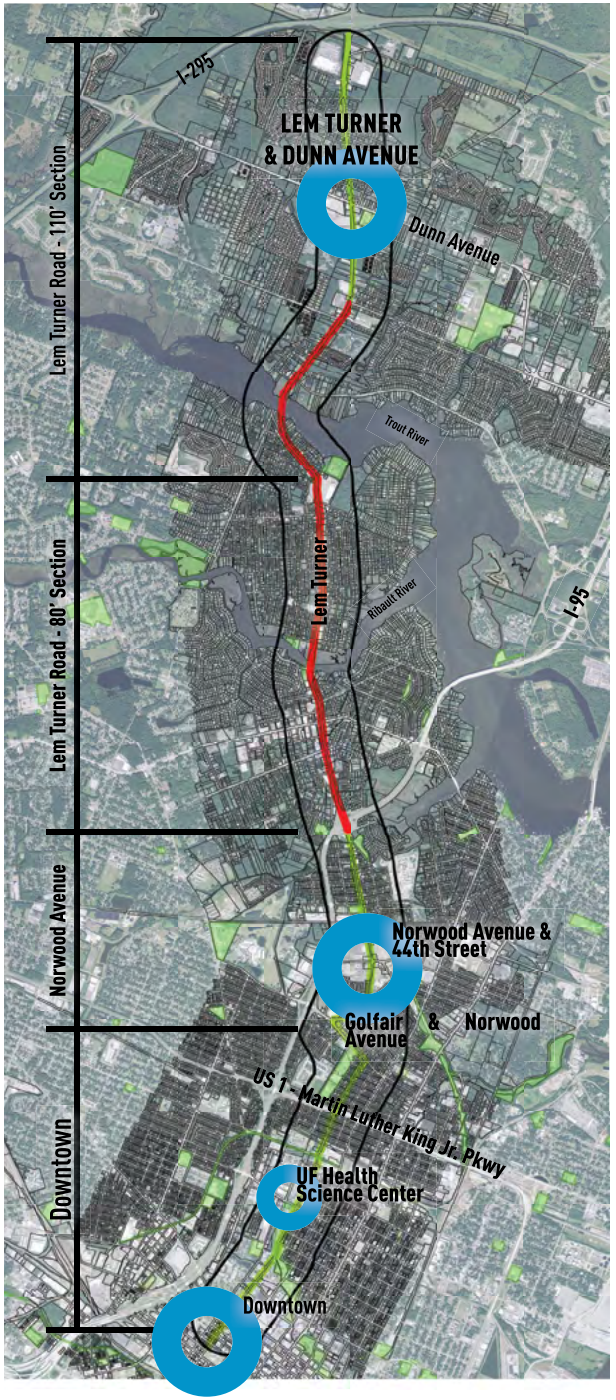


FIGURE 1: PEDESTRIAN FATALITIES ON LEM TURNER ROAD

ACTIVITY NODES

There are several natural nodes of activity along the Lem Turner corridor. These nodes include the Downtown, the University of Florida Health Science Center, the transfer center at Norwood Avenue and 44th Street, and the intersection of Lem Turner Road and Dunn Avenue. These nodes of activity should be considered as key locations for bus stops or transfer centers. When thinking about the roadways, the land use and what is occurring around the corridor is important to consider.



AVERAGE DAILY TRAFFIC

There is a national trend in the reduction of vehicle miles driven and the Lem Turner corridor follows this trend. The annual average daily traffic (AADT), or average vehicles per day), has been consistently declining along the corridor. In general, traffic volumes of 15,000 Vehicles Per Day (VPD) are considered acceptable for a three lane street section (two travel lanes with a center turn lane), while traffic volumes between 15,000 and 25,000 VPD are worth analyzing to determine the street design. Traffic counts over 25,000 VPD typically require 4 or 5 travel lanes.[1]

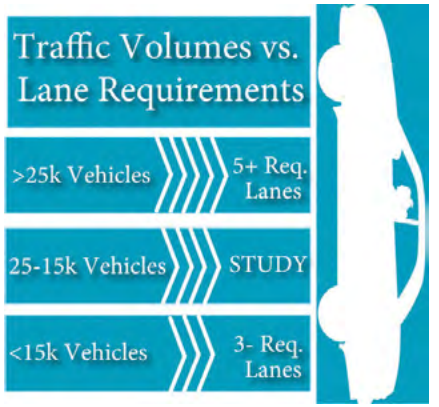


FIGURE 2: TRAFFIC VOLUMES VS. LANE REQUIREMENTS

The Average Daily Traffic (ADT) counts for the Lem Turner corridor were mapped; areas in green mark where the ADT counts are below 20,000 cars a day, and the areas marked in red denote where the ADT is more than 20,000 cars a day.

There are portions of Lem Turner that have traffic volumes below 15,000 VPD (as shown on the map on this page). This includes Norwood Avenue between Golfair Boulevard and I-95, and Lem Turner Road between Leonid Avenue and I-295. These sections have at a minimum of four travel lanes; the majority of these roadways have at least five lanes, and, therefore, have excess capacity according to the traffic volumes.

This section of the Lem Turner corridor is not typically used by people moving through the area, but by people accessing the area. Given the current traffic volumes, a reallocation of the roadway space can be implemented and a bus and bike only lane would be an ideal early demonstration project. With this section of road slated to begin First Coast Flyer service in December 2015, it would help to increase the flow of buses in this part of the city and give riders a better BRT service by not having buses in the same flow of traffic as other vehicles.

> 20,000 ADT
< 20,000 ADT
ACTIVITY NODES
APPROXIMATE PROJECT BOUNDARY

FIGURE 3: LEM TURNER CORRIDOR PROJECT AREA AND AVERAGE DAILY TRAFFIC VOLUMES

1 Road Diets Information Guide. Chapter 3.3.5 Average Daily Traffic. FHWA. http://safety.fhwa.dot.gov/info_guide/

2: PROCESS

One of the most important steps in the planning process is providing a platform to engage the community and an opportunity to receive meaningful feedback that can be incorporated into the final outcome. This allows residents in the area to voice their opinion and stay informed regarding developments that will potentially impact them.

For both the Lem Turner and Dunn Avenue corridors, Michael Baker, in collaboration with Dover, Kohl & Partners, engaged community stakeholders through an interactive design charrette held August 24-28, 2015 at the Gateway Town Center along Norwood Avenue. A charrette is a series of community engagement events spanning a week that included the Hands-On Design Workshop, Open Design Studio, an Open House, and a Work-In-Progress Presentation. It was important to hold all of the meetings within the study area to allow easier access to residents.

HANDS –ON DESIGN WORKSHOP

In the evening of August 24 and in the afternoon of August 25 the community was invited to an evening Hands-on Design Workshop where participants were given the opportunity to voice, describe, and draw how they would like to see the corridor and its surrounding areas to be in the future.

The evening began with a brief presentation that highlighted the Lem Turner and Dunn Avenue corridors and presented some of the concerns with each corridor including a food-for-thought presentation about "complete streets" introduced participants to the what has been done in other communities.

COMPLETE STREETS

Complete Streets are typically defined as streets designed and operated to enable safe access for all users, including pedestrians, bicyclists, motorists, and transit riders of all ages and abilities. Rather than just defining a street from within its curbs, Complete Streets also incorporate land uses, from building facade to building facade, which includes outdoor dining, street furniture, landscaping, art, and lighting (as well as others).

In progressive transportation engineering projects, the important role that the public right-of-way plays in moving and connecting people is essential for communities to truly thrive. A roadway is not only a place for cars to move efficiently, it is a place for people. A lot of roadways have been built where success is defined solely by the Level of Service (LOS) for motorists. If we define success by LOS, the full potential of a corridor has almost certainly lost many (if not all) of the things that make a roadway, city, or town a great place to be.

To implement a successful Complete Streets project, it has to be a project that makes people feel, see, do, and say something because of their experience. We have to continue to explore the community values and align them with the built environment so the potential of Jacksonville--a unique place--can truly be experienced.

Complete streets do not have a "one size fits all" approach. How a roadway fits into the overall network and the purposes it serves, can change the function and makeup that the right-of-way has. Complete streets may not necessarily need to be implemented everywhere and some places may want to continue to be and operate as auto-oriented, drive to and drive through locations--and that makes sense. A variety of street types is essential. Where there is a priority on creating places, or investments are being made to upgrade public transit, complete streets need to be a priority.

ATTENDEE POLLING

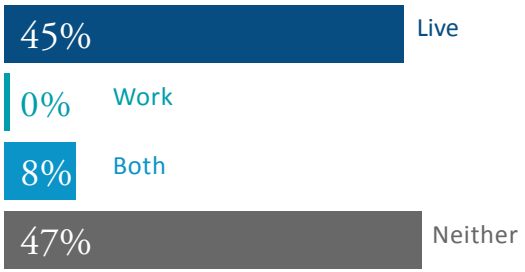
Real time polling was utilized as an interactive part of the presentation in order to gather information about the project area. Attendees were asked a series of questions about themselves and how they use the corridors. The answers were tallied and the results were shown to those participating as a way of conveying information back to the stakeholders and residents during the presentation. Polling was used at several different points throughout the discussion.

The following page shows some of the questions asked along with the participants results.

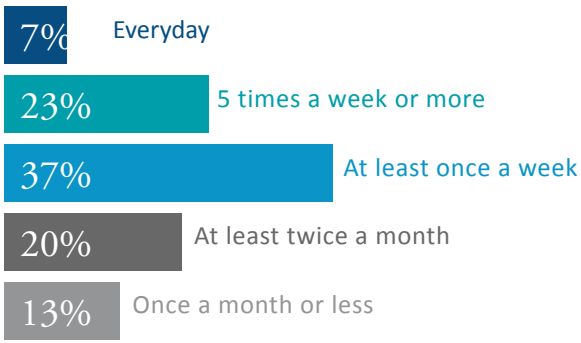
HOW DO YOU FEEL ABOUT THE LEM TURNER AND DUNN AVENUE CORRIDORS?



DO YOU LIVE AND /OR WORK IN THE LEM TURNER OR DUNN AVENUE CORRIDORS?



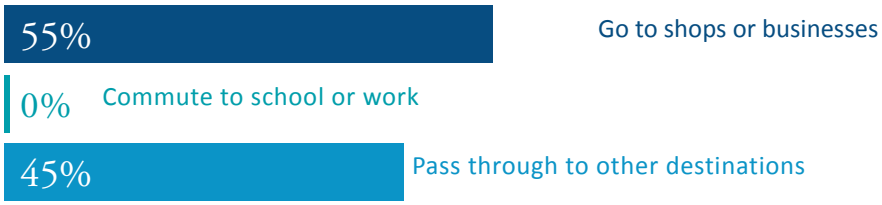
HOW OFTEN DO YOU TRAVEL ALONG THESE CORRIDORS?



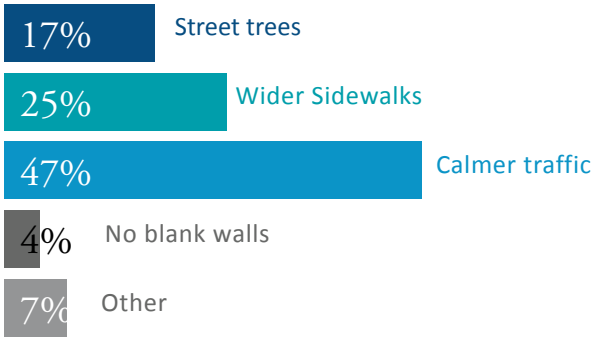
THE PRIMARY WAY I MOVE ABOUT THE CORRIDORS IS BY:



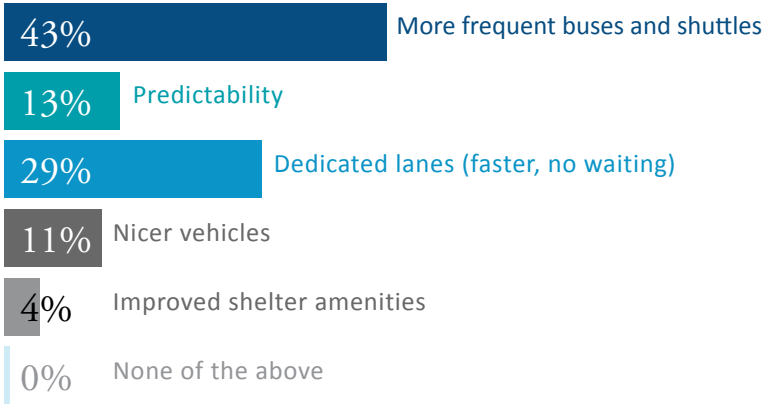
I MOST OFTEN TRAVEL ALONG THE LEM TURNER OR DUNN AVENUE CORRIDORS TO:



WHICH OF THESE FEATURES WOULD MOST AFFECT YOUR DESIRE TO WALK OR BIKE?



WHICH OF THESE FEATURES WOULD MOST AFFECT YOUR DESIRE TO USE A BUS OR SHUTTLE?



DESIGNING WITH THE COMMUNITY

Following the presentation participants were asks to discuss the corridors and draw their ideas or areas of concern on maps. To help facilitate the conversation participants were asked to a series of questions to consider when imagining the areas future. These questions included:

- What is missing in the area? Where would it belong?
- Is it easy enough to walk or ride a bike in this area? What improvements would you suggest?
- Should there be new squares, plazas, green space(s)? Where?
- What can we do to help existing businesses in the area?

The meeting ended with a representative from each table presenting their map to the other tables and recapping the big ideas discussed at their table. This allowed everyone to have a sense of the other conversations happening around the room.

The workshop was an interactive exercise to gather ideas from the workshop attendees. The intention was to encourage them to think of the area as a whole, focusing more on what was needed and less about how to implement it. The exercise was an extremely visual one, with participants asked to draw their ideas and "argue with their pencils." This allowed people to participate in the design process and see how their ideas related to those of other people around the room.

Some of the initial feedback, concerns, and comments received at the table maps includes the following:

Overall Lem Turner Corridor:

- Bus stops too far apart
- Need Signals at key intersections for pedestrians
- Mont Creek Village – Needs bus to Dunn Avenue
- Mont Creek Bus – Discourage people hanging out and not taking the bus, feels dangerous
- Narrow travel lanes
- Beautification needed
- Repair Sidewalks
- Need Sidewalks
- Signage for walking distances
- Bus stops near hospitals need shelters
- No trees – sidewalks
- Need new trees
- Trolleys – Springfield, Jefferson St. , Sugar Hill
- It's dark, needs more lighting
- Add bike lane
- Dedicated bike lane





FIGURE 4: HANDS-ON DESIGN SESSION. PARTICIPANTS FROM THE SURROUNDING COMMUNITY ATTEND THE HANDS-ON DESIGN SESSION AND PROVIDE IDEAS FOR THE FUTURE OF THE CORRIDOR TO THE DESIGN TEAM.

- Wayfinding signs & signals
- Incubator Businesses
- Services & doctor offices needed
- 64% of people in the area own their homes
- Buses are employment opportunity - gets people to jobs
- Traffic calming needed
- Shade needed to walk

Gate Town Center Area:

- Make Sustainable - Housing, Bring Alive, Work, Play
- Improve business fronts
- More restaurants – chains & locals
- Restaurants, eatery's, retail
- Family Restaurants – Golden Corral
- Needs something for kids – Chucky Cheese
- Anchor stores – Pennys, Belks, Stein Mart (to give a new face to the area; change the face to change the culture)
- KOI ponds are peaceful to sit by, should be added by the transfer station
- More inviting park benches
- Add trees & sidewalks
- Smaller scale
- Focus energy
- Apartment complexes
- Inviting frontage/green
- Extend bike facilities – bike to the beach
- Real bike trail up to Dunn
- Balance community & local needs
- Sit in restaurant needed
- Community center needed
- No transfers – should have transfers
- Predictability needed
- Hard to get to bus stops
- More shelters
- More safe parks

Avenue

- Street feels narrow when your car is next to the bus
- Brighter lights
- Safety, lighting, sidewalks
- No organic food or baby carts
- Bad attitudes & less quality
- Bus routes needed in the neighborhoods
- Change the mind-set of the people
- Crosswalks near bus stops are needed
- Downtown is a safe place to walk
- Shuttle Hub
- Walking connection
- Fountains
- Movie Theatre
- Bank
- Small park maintained

OPEN DESIGN STUDIO

Throughout the week the design team worked in an Open Design Studio that was open for members of the community to drop-in and discuss the design concepts that were in progress. Technical meetings, focused on transportation, land use, and the vision for the future of the corridor were also occurring during the Open Design Studio.

OPEN HOUSE & WORK-IN-PROGRESS PRESENTATION

Mid-way through the charrette week, an Open House occurred. Designers and engineers pinned up initial design concepts and reviewed them with JTA staff members and different stakeholders from the community. On the final day of the design charrette, the design team led a Work-in-Progress presentation to discuss the plan ideas that were generated throughout the week.



FIGURE 5: WORK-IN-PROGRESS PRESENTATION

3: CONCEPTS

NORWOOD AVENUE - 60' STREET SECTION

Currently, Norwood Avenue suffers from poor lighting, a lack of identifiable crosswalks, little to no curb cuts for ADA accessibility and very little shade for transit users. It is a corridor mainly designed for motorists without enough safety provisions for pedestrians and cyclists.

The current right-of-way provides two lanes in each direction for motorized vehicles and only minimal sidewalks for pedestrians. Crosswalks are intermittent and sometimes are no longer visible even when they do exist. Old bus shelters are being replaced with upgraded shelters over time, while others may have no shelters or benches at all.

Generally, better lighting, trees for shade, and crosswalks are needed, while also providing necessary protections for other types of mobility and streetscape improvements along the corridor. This could encourage redevelopment along this roadway.

A transfer station is currently located at the Gateway Town Center, by the Publix Grocery and Walgreen's at 44th Street. Several buses come into the station, but others continue north or south along Norwood Avenue, dropping passengers off at other stops along Norwood Avenue. Some passengers are dropped off on the northbound side of Norwood Avenue where there is no crosswalk within 100 feet, making it unlikely that someone would walk that far to a crosswalk and more likely that they would jaywalk, putting their own safety in jeopardy in order to get to businesses and neighborhoods on the other side of the street.

STREETSCAPE IMPROVEMENTS

Planting trees along both sides of the corridor will provide necessary shade to further encourage people to use public transit and encourage cyclists to ride their bikes along the corridor. Pedestrian scaled lighting, especially at bus stops, should also be increased.

Crosswalks at all intersections should be remarked, and opportunities for mid-block crossings, particularly near heavily utilized bus stops, should be considered.



FIGURE 6: EXISTING NORWOOD AVENUE STREETSCAPE CONDITIONS



FIGURE 7: POTENTIAL NORWOOD AVENUE STREETSCAPE IMPROVEMENTS

BUS & BIKE LANE ONLY

An alternate street configuration for this street section (given the lower ADT and the addition of the BRT route), keeps two travel lanes for general vehicular traffic and converts the other two lanes into bus and bike only lanes. This scenario balances the needs of transit users, motorists, pedestrians, and cyclists alike an is a street configuration currently being installed and used in the Downtown. Since the Lem Turner Corridor is one of the first First Coast Flyer routes to come on-line, this lane reconfiguration will help increase the amount of bus only lanes along this route and make the BRT route more popular since it will not be delayed by traffic.

DEMONSTRATION PROJECT

Converting Norwood Avenue, from the intersection with Golfair Boulevard in the south to I-95 in the north, into a bus and bike only lane would be an ideal early demonstration project. This section of the Lem Turner corridor is not typically used by people moving through the area, but by people accessing the area. With this section of road slated to begin First Coast Flyer service in December 2015, it would help to increase the flow of buses in this part of town and give riders a better BRT service by not having buses in the same flow of traffic as other vehicles.

FIGURE 8: POTENTIAL BUS AND BIKE LANE ONLY ON NORWOOD AVENUE



Norwood Avenue & Golfair Boulevard

Imagining the future of the intersection of Norwood Avenue and Golfair Boulevard as a gateway along the Lem Turner corridor involves connecting it to the adjacent neighborhoods and establishing a sense of place.

Norwood Avenue used to perpendicularly join with Golfair Boulevard. Both streets were adjusted to create a continuous swing to better facilitate vehicles getting to and from the interchange directly to the west of this intersection. As a result the intersection is wide and primarily only facilitates vehicular traffic making it difficult to navigate as a pedestrian or cyclist.

The property immediately north of the intersection is owned by JTA The site is slated to be one of the future stops along the First Coast Flyer route. A property that is a remnant from the road realignment sits directly to the east of the intersection is also currently vacant.

A series of phased improvements to this intersection and to these surrounding vacant and underutilized properties will begin to create an iconic gateway while also strengthening the neighborhood character. These enhancements will complement the already planned First Coast Flyer Bus Rapid Transit (BRT) route that has a future stop at this destination.

<u>Step 1: Streetscape Improvements</u>

The first series of improvements would include urban design upgrades, such as lighting and street trees planted along Norwood Avenue and along Golfair Boulevard as it approaches the intersection. The pavement should be reallocated, as suggested previously, to a bus and bike only lane in the outer lanes and the inner lanes would remain travel lanes for cars.

<u>Step 2: Streetscape Improvements</u>

Additional street and streetscape improvements could continue to knit the community together by reconnecting the fabric of the adjacent neighborhoods. 44th Street can be extended up to this intersection, which will offer drivers, cyclists, pedestrians, and transit users another route option for connecting to the neighborhoods.



FIGURE 9: NORWOOD AVENUE & GOLFAIR BOULEVARD EXISTING CONDITIONS



FIGURE 10: NORWOOD AVENUE & GOLFAIR BOULEVARD DESIGN SCENARIO STEP 1: STREETSCAPE IMPROVEMENTS

Street-oriented buildings should front Norwood Avenue and a new street extending into the property can create a pedestrian-oriented enclave adequate for the BRT stop. These improvements are essential for nurturing a sense of place in an otherwise auto-dominated location. An architectural feature on the building that is on axis with the roundabout will create a terminated vista that attracts interest along the new street connection.

New development should include design elements that promote pedestrian, cyclist, and transit activity. Awnings or arcades (which provide shade and shelter), building façades (that are mostly transparent on the ground floor), and a scale of development that is consistent with the form and character of the surrounding areas, are all essential.

The expansion of an existing neighborhood park and the relocation of a water catchment area from its current location along Norwood Avenue to be located adjacent to the interstate on-ramp, are additional phased enhancements that strengthen the transportation network as one moves toward the residential areas to the north.

Step 3: Modern Roundabout

The next phase of suggested development involves the reconfiguration of the intersection of Norwood Avenue and Golfair Boulevard into a modern roundabout. A modern roundabout could facilitate a continuous flow of traffic while at the same time providing a safer facility for pedestrians and cyclists to navigate the intersection by slowing speeds and creating a sense of place.

The implementation of a roundabout would enable both Brick Road to be connected to the intersection and Norwood Avenue to reopen its leg directly straight to Golfair Boulevard, further enhancing the connectivity of the street network. Reconnecting Norwood Avenue would also create an opportunity for the site with the currently empty building to the east of the intersection. This site could either be revitalized or utilized as a public park. The park would have adequate lighting and tree canopy to serve as an amenity and dignified place for people to wait for the bus.

The BRT stop in the northbound direction may also be situated on the edge of a new the park along the reconnected portion of Norwood Avenue. This reinstated street connection would allow buses in the northbound direction, along with any other cars, to bypass the new roundabout.



FIGURE 11: NORWOOD AVENUE & GOLFAIR BOULEVARD DESIGN SCENARIO STEP 2: JTA PROPERTY DEVELOPMENT



FIGURE 12: NORWOOD AVENUE & GOLFAIR BOULEVARD DESIGN SCENARIO STEP 3: MODERN ROUNDABOUT

Step 4: Continued Development

A subsequent series of enhancements and development on the JTA property should include street-oriented buildings that blend with the residential neighborhood to the north by transitioning from larger buildings, that are appropriate along Norwood Avenue, to townhomes and single family homes adjacent to the existing single family neighborhood.

At the core of the development, mixed-use buildings with a combination of small retail uses, office spaces, apartments and townhomes will establish a place where people can live, work, and have access to transit and other daily needs like a small corner grocery store or transit office. The nature of development can shift as it transitions to the adjacent single-family neighborhood.



FIGURE 13: NORWOOD AVENUE & GOLFAIR BOULEVARD DESIGN SCENARIO STEP 4: CONTINUED DEVELOPMENT

Step 5: Neighborhood Development

Finally, adjacent properties may redevelop. Street connections, the implementation of a roundabout, a natural buffer next to the highway, and buildings that are inviting to the pedestrian will breath new life into this part of the city. Also, by connecting the surrounding neighborhoods together, all areas become more walkable, bikable, and sustainable.

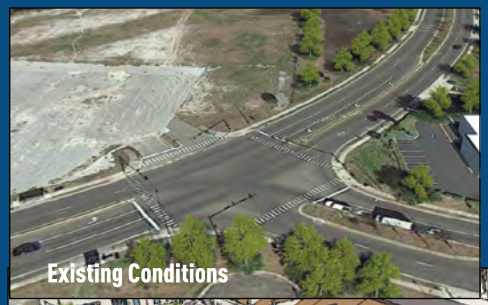


FIGURE 14: NORWOOD AVENUE & GOLFAIR BOULEVARD DESIGN SCENARIO STEP 5: NEIGHBORHOOD DEVELOPMENT

Modern Roundabout

A modern roundabout accommodates traffic flow and capacity while creating a greater sense of place and allowing safer conditions for pedestrians. Walkability at a roundabout is increased because traffic speeds are lower as vehicles approach and exit the roundabout, and pedestrians have fewer lanes of traffic to cross at one time. Roundabouts provide a greater sense of place because of their distinctive design and greater opportunities for urban design. Statues, fountains, or landscaping can be placed in the center of the roundabout, although care must be taken to preserve adequate sight lines.

FDOT has expressed an interest in creating a roundabout in every district by the end of 2016. Based on traffic volumes, a single-lane roundabout could be utilized at this location.





However, with the installation of bus and bike only lanes and the proximity to I-95 just to the west, a two lane roundabout may be warranted. Each approach must have a splitter island that turns the entering vehicles to the right, thus assuring lower entry speed.

Pedestrians

Roundabouts are designed to achieve a consistent, low vehicle speed (15 to 25 mph) to minimize crash potential; this by nature renders them pedestrian friendly. The pedestrian crosswalks should occur one car length back (approximately 20 feet) from the yield line to place the pedestrian safely in view of the second waiting vehicle's driver. When traffic volumes are light, many gaps are available for pedestrian crossing. When vehicle volumes are high, more vehicles pause at the yield line, allowing pedestrians to cross safely behind the first vehicle. Again, an appropriately low speed is the key pedestrian safety element of roundabout design.

Bicyclists

Bicyclists are sometimes concerned about traveling through a roundabout, especially if they have experience with the much larger and faster traffic circles. In fact, modern roundabouts are much safer for bicyclists than traffic signals. This is due to the slower traffic speeds found in a roundabout. Entering and circulating at 25 mph or less, automobiles can easily share space with bicycles traveling through a roundabout. To traverse the roundabout, the cyclist simply travels through in the vehicle lane just like an automobile. Cyclists who are uncomfortable sharing the road with automobiles may, alternatively, go around the roundabout using the sidewalk system as a pedestrian.

FIGURE 15: MODERN ROUNDABOUT: EXISTING AND PROPOSED CONDITIONS

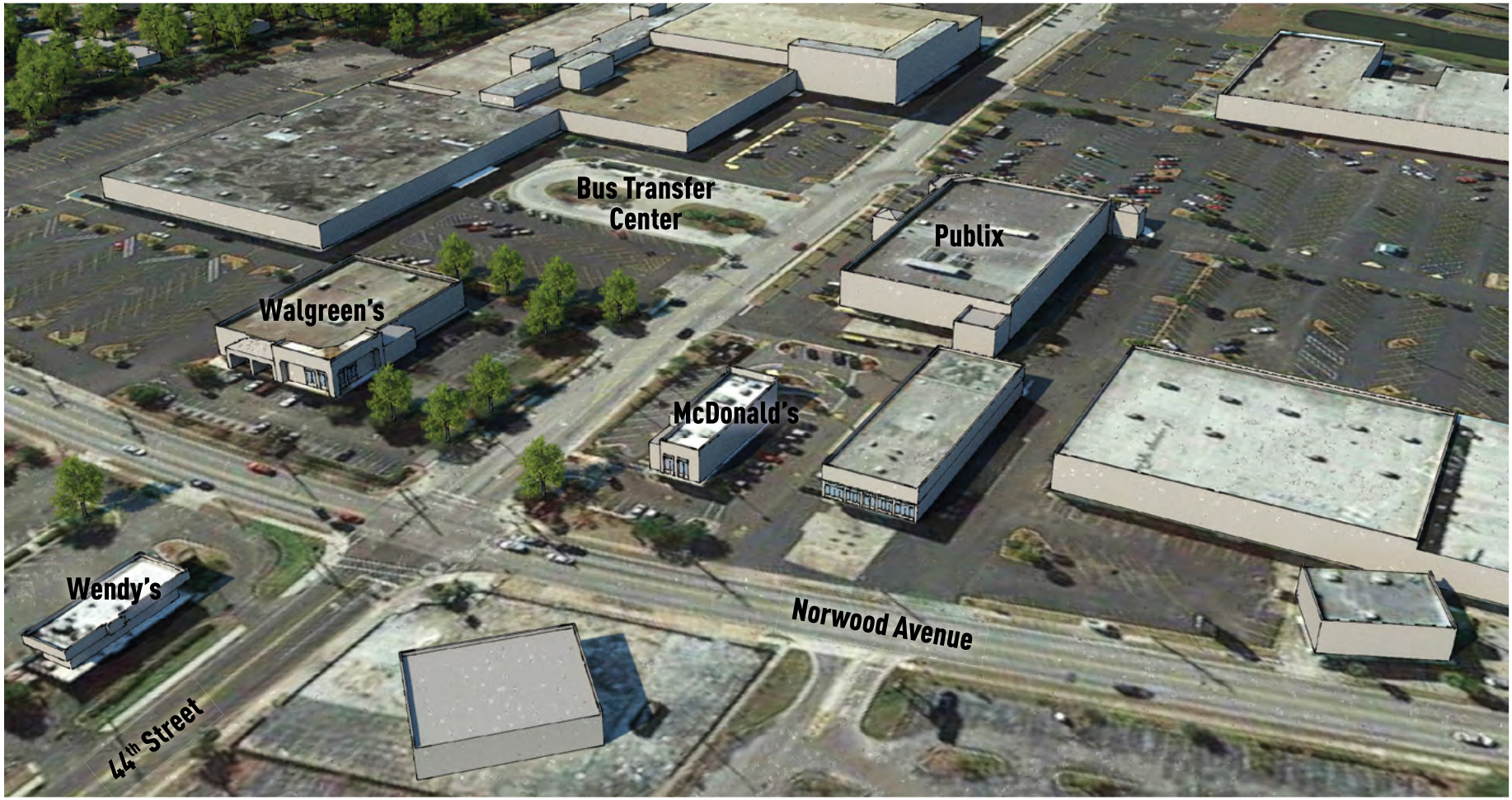
Norwood Avenue & 44th Street

The intersection of Norwood Avenue and 44th Street was once a thriving shopping destination built at a time of suburban expansion in the 1950s and 60s. As one of the first auto-oriented shopping centers in the area, it attracted customers from a large area, thus helping to create a vibrant retail environment. Over time however, newer, larger shopping centers opened in other parts of the city, siphoning customer demand away. Eventually key anchors left for other centers and Gateway Town Center and the other shopping plazas were left with aging, mostly vacant retail space.

Revitalization efforts have been aimed at attracting more neighborhood serving uses to this area of town, most notably the Publix grocery store and a major JTA bus transfer station.

Despite changing demographics and a regional landscape that favors far-flung destinations, the physical layout of the area including Gateway Town Center remains decidedly auto-oriented, at the expense of walking, biking, and transit. Unlike driving, however, walking, biking, and transit are forms of mobility that draw from close-in neighborhoods, and can be catalysts for higher density redevelopment.

FIGURE 16: NORWOOD AVENUE & 44TH STREET EXISTING CONDITIONS



An important opportunity exists to transform the entire area surrounding the intersection of Norwood Avenue and 44th Street into a mixed-use, pedestrian-friendly environment with the potential to reconnect adjacent neighborhoods and reposition itself as a next generation transit-oriented neighborhood center. An incremental process can help revitalize and reimagine this area.

Step 1: Streetscape Improvements

Norwood Avenue is currently a four lane road with fast moving traffic. The first step in the transformation of the area is the reconfiguration of Norwood Avenue as an urban street that better accommodates walking, biking, and transit. Street trees are added between the sidewalks and streets in order to provide shade for pedestrians and encourage slower speeds along Norwood Avenue. The outer two lanes of traffic should become shared bus and bike lanes as previously noted in the street section.



FIGURE 17: NORWOOD AVENUE & 44TH STREET DESIGN SCENARIO STEP 1: STREETSCAPE IMPROVEMENTS



Step 2: Upgraded Transfer Station

The first round of redevelopment can occur in conjunction with an updated bus transfer center. A reconfigured transit square provides for both a bus station and an adjoining public square. Urban, multi-story, street-oriented buildings face the new square. Mixed-use buildings with active ground floor uses sit next to multi- family residential and community focused buildings. The new public square is anchored by a new community center on one end, and the existing Publix grocery store on the other.



FIGURE 18: NORWOOD AVENUE & 44TH STREET DESIGN SCENARIO STEP 2: UPGRADED TRANSFER CENTER



Step 3: Gateway Town Center Redevelopment

Large underused retail spaces can be replaced with an interconnected network of streets with a diverse mix of residential buildings. New streets can reconnect to the adjacent neighborhood to the south where they were once closed off from the retail only environment of the Gateway Town Center.

Parking lots in front of retail buildings facing Norwood Avenue should be reconfigured into pedestrian friendly access drives that accommodate both parking and wide connected sidewalks that are shaded and have street trees. Additional retail and mixed-use buildings can take advantage of the reconfigured and valuable addresses along Norwood Avenue.





FIGURE 19: NORWOOD AVENUE & 44TH STREET DESIGN SCENARIO STEP 3: GATEWAY TOWN CENTER REDEVELOPMENT

Step 4: Redevelopment along Norwood Avenue

Over time the newly established pattern of streets and mixed-use development that fronts the pedestrian-friendly access drives can extend along both sides of Norwood Avenue. Underutilized parking lots farther away from Norwood Avenue are filled in with new residential buildings that provide a wide range of unit types and price points. New buildings are built to face narrow streets with on-street parking and street trees, while small intimate public spaces are created where these intersect.





FIGURE 20: NORWOOD AVENUE & 44TH STREET DESIGN SCENARIO STEP 4: REDEVELOPMENT ALONG NORWOOD AVENUE

Step 5: Redeveloped Neighborhood

As redevelopment occurs and the transit system matures, single use retail sites, such as McDonald's, will become too valuable for their current auto-oriented configuration. The redevelopment of sites along Norwood Avenue create a pedestrian first strategy of investment and development. Norwood Avenue is the natural corridor for new retail uses to concentrate, while sites away from the corridor might be better suited for residential, civic, and service uses.



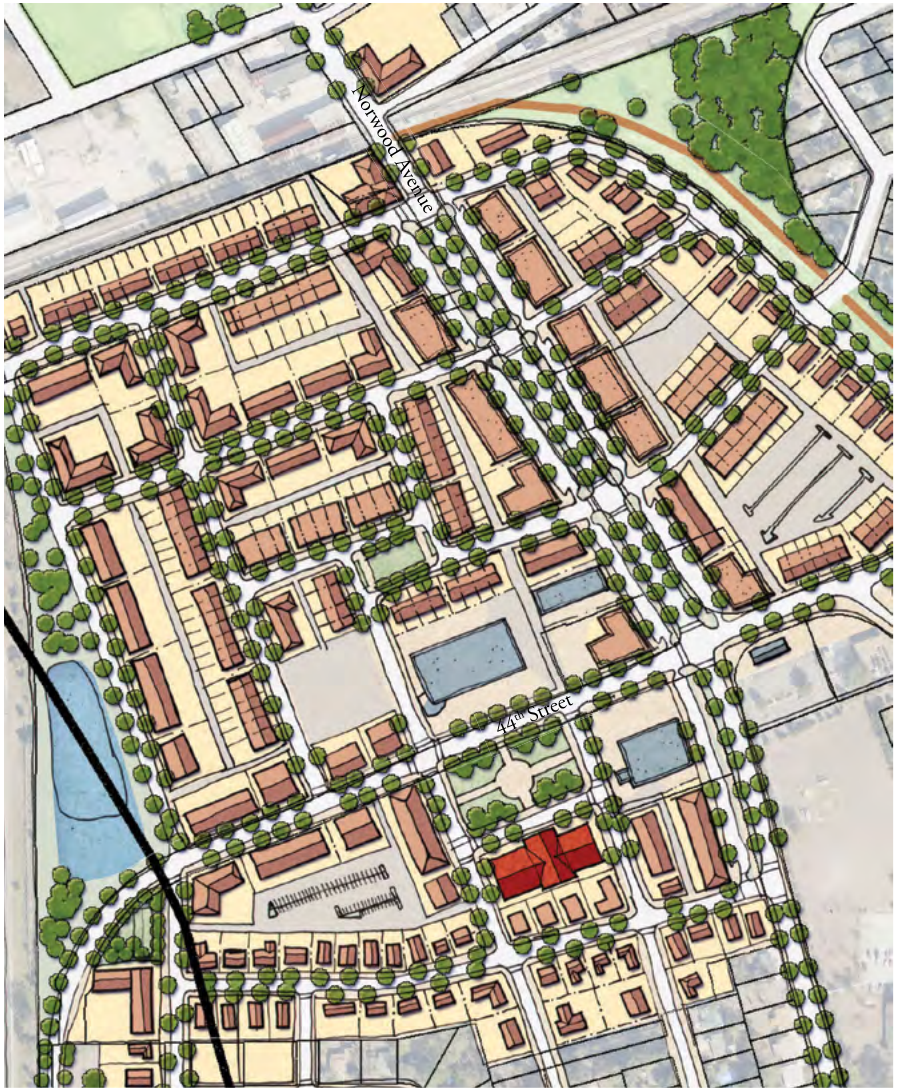


FIGURE 21: NORWOOD AVENUE & 44TH STREET DESIGN SCENARIO STEP 5: REDEVELOPED NEIGHBORHOOD

Sample Change-Over-Time Along a Portion of Norwood Avenue

Norwood Avenue is the heart of the surrounding neighborhood, but is aging and in need of revitalization. The existing street grid, from Carlton Street to Shore Drive, provides a good network. The existing commercial building fabric along Norwood Avenue through this stretch of road is modest, but it is well configured to aid the transition to a newly walkable environment.

The shopfronts have plentiful transparent glass to display merchandise and "provide eyes on the street". The fronts of buildings are aligned closely to the back of the sidewalk to shape the space. Space has been provided above the shopfronts for well-placed and visible signage. Commercial buildings are interspersed with community uses, such as The New Life in Christ Church, which provides a great civic anchor.

Over time, however, this portion of the street has become more devoted to automobile movement. The curb-to-curb dimension has become too wide, and sidewalks have become very narrow. The planting of street trees has been neglected and there is little shade provided for pedestrians. At night, lighting is harsh and scaled for auto traffic, rather than for pedestrians.

Strategies to improve the street to become a more pedestrian and bike-friendly thoroughfare should focus on first improving the public right-of-way, which will help to catalyze private investment on individual properties.



FIGURE 22: EXISTING CONDITIONS



FIGURE 23: STEP 1: REALLOCATION OF PAVEMENT

Step 1: Reallocation of Pavement:

A street section that utilizes the existing curb-to-curb dimensions takes the outside vehicular lanes and transforms them into dedicated bus /bike lanes, which can only be used for cars making turns. The two interior lanes continue to be reserved for car movement.

Step 2: Streetscape Improvements:

As a next step, the planting of regularly spaces shade trees in the green strips located between the sidewalk and pavement can be added. The tree species must be carefully chosen to have a large enough canopy spread that provides substantial shade for pedestrians on the sidewalk (while not growing so tall they interfere with the overhead power lines). Street trees will increase pedestrian comfort by providing shade, and also by forming spatial separation of the sidewalk from nearby moving cars. Street trees also visually soften the street scene and add the warm presence of nature.



FIGURE 24: STEP 2: STREETSCAPE IMPROVEMENTS

Pedestrian-scaled street lights should also be added amongst the lines of street trees. These street lights should be frequent enough that the illumination from individual fixtures would not need to be overly bright, and the globes of these lights should be fairly low to the ground, no more than twelve feet high.

Step 3: Buildings Refurbished

Improvements to the public right-of-way can help to catalyze private investment on adjacent properties. Street trees, pedestrian-scaled lighting and a multi- modal lane configurations will help to improve the quality of these addresses. It then becomes more feasible to envision, for example, a new coffee shop occupying and refurbishing an existing building. Perhaps outdoor café tables fill the space between buildings. Landscaping, flower planting and new signage can create vibrancy. Painting and cleaning and other property improvements will also help Norwood Avenue.

While many improvements, both big and small, are needed to fully transform Norwood Avenue, making the street match the current and future needs of the community can spark refurbishment of older buildings which in turn can build momentum and begin to transform customers' view of this area – making it once again a place for people.



FIGURE 25: STEP 3: BUILDING REFURBISHED

Lem Turner Road - 80' Street Section

Lem Turner Road's right-of-way broadens from 60' to 80', with five travel lanes, including two northbound lanes, two southbound lanes, and a center turn lane that travels from I-95 in the south to the Basset Road in the north. On the northern end of this section of Lem Turner Road, the center turn lane is occasionally covered by medians. The width of the road is an invitation for drivers to travel at excessive speeds. There are few protections for pedestrians and cyclists in such a wide street with minimal sidewalks.

More Medians

Medians should be extended wherever possible along the corridor. These create a physical barrier between the opposing sides of the street. The medians can provide a place of refuge for pedestrians at mid-block crossing points. Planting shade trees along the median would provide shade for pedestrians and improve the visual quality of the corridor.



FIGURE 26: LEM TURNER ROAD 80' STREET SECTION: MORE MEDIANS



FIGURE 27: LEM TURNER ROAD 80' STREET SECTION: EXISTING CONDITIONS



FIGURE 28: LEM TURNER ROAD 80' STREET SECTION: ALTERNATIVE A

Alternative A: Bike Lane

Current oversized lanes could be narrowed from 12 feet to 10 or 11 feet. Narrow travel lanes naturally reduce the speed of motor vehicle traffic, making the corridor safer for all users. A bike lane can be implemented on both sides of the road with the gained asphalt.

Alternative B: Wider Sidewalks

Physically relocating the curbs can reinforce a slow speed environment and provide extra space for street trees to be planted along the wider sidewalks, providing shade for pedestrians and cyclists. Cyclists would share the wider sidewalks, or multi-use path, with pedestrians.



FIGURE 29: LEM TURNER ROAD 80' STREET SECTION: ALTERNATIVE B

Alternative C: BRT & Bike Lane

Although the existing amount of traffic through this portion of Lem Turner is enough for four lanes of vehicular traffic (partly due to the limited number of river crossings available), a continuation of nationwide trends could see significant mode shift to walking, biking, and transit in the coming years. This would allow for the creation of a dedicated bike and bus lane along on either side of the corridor through this section of the Lem Turner corridor as well and allow for the creation of a mature Bus Rapid Transit system.



FIGURE 30: LEM TURNER ROAD 80' STREET SECTION: ALTERNATIVE C

Lem Turner - 110' Street Section

The Lem Turner Road right-of-way is 110' at its widest, representing seven lanes, with one lane dedicated as a median or left turn lane, two lanes of vehicular traffic in each direction and a right turn lane that becomes a wide shoulder between intersections with minimal sidewalks. This condition currently provides more space than necessary for motorized vehicles and minimal protection for pedestrians and cyclists. Especially with the presence of the wide paved shoulder there are opportunities to reallocate the existing asphalt to create a more multi-modal street.



FIGURE 31: LEM TURNER ROAD 110' STREET SECTION: EXISTING CONDITIONS

Alternative A: Buffered Bike Lane

One alternative would make a bike lane out of the paved shoulder. If the travel lane width were reduced from 12 feet to 10 or 11 feet, then a safer buffer can be established between the bike lanes and the vehicular travel lanes. There would be enough room for a three foot buffer and five foot bike lane.

The addition of more street trees and pedestrian scaled lighting would improve the streetscape and provide shade and light for pedestrians.



FIGURE 32: LEM TURNER ROAD 110' STREET SECTION: ALTERNATIVE A

Alternative B: Protected Bike Lane

An alternative or future phase would make the bike lane permanent and safer by making it into a cycle track by adding curbs and an additional row of trees planted between the travel lanes and the bike lanes. This creates an optimal environment for bicyclists to ride in--a protected and attractive space flanked by shade trees on either side of the bike lane. Pedestrians would also separated from bikes by the outer row of street trees.



FIGURE 33: LEM TURNER ROAD 110' STREET SECTION: ALTERNATIVE B

Alternative C: BRT & Protected Bike Lane

The creation of a dedicated bus lane for Bus Rapid Transit completes the reallocation of space from auto dependent to multi-modal. This creates a corridor that comprehensively serves the needs of all road users. Such a scenario provides the environment necessary to make pedestrian and bike travel an attractive option, and improves the speed of public transit, creating real alternatives that suit the needs of Jacksonville's suburban residents.



FIGURE 34: LEM TURNER ROAD 110' STREET SECTION: ALTERNATIVE C

4: RECOMMENDATIONS

The street and development concepts developed during the charrette have been sorted into a series of project recommendations. Projects have been described previously in the concepts section of this report. Recommendations fall into three categories:

- **Keystone Projects**
  Projects JTA would use to showcase "complete streets" for immediate effect. These should be reasonably substantial projects that could be implemented in the near term.

- **Operational/Safety Enhancements**
  These are "quick fix" improvements that can provide immediate safety and operational improvements at a lower cost.

- **Long-Term Vision Projects**
  These are complete projects for the corridor or corridor segment. These are bolder, more costly investments, which would be included in a long range plan.

KEYSTONE PROJECTS

NORWOOD AVENUE (GOLFAIR BOULEVARD TO I-95)

- Roundabout at the intersection of Norwood Avenue and Golfair Boulevard.

- Lane conversion along Norwood Avenue from Golfair Boulevard to I-95 to accommodate a dedicated bus and bike lane to better facilitate Bus Rapid Transit.

OPERATIONAL /SAFETY ENHANCEMENTS

Priority intersection locations (with Bus Stops) that will require a range of signing, striping, lighting, minor traffic signal updates and pedestrian features: (estimated costs $50k - $100k)

Major priority operational and safety enhancements:

- Lem Turner and Bassett Road intersection improvements to include signage, striping, lighting, and pedestrian crossing features.

- Lem Turner and Prospect Street intersection improvements to include signage, striping, lighting, and pedestrian crossing features.

Secondary priority operational and safety enhancements:
Lem Turner Road at:

- Lila Avenue (pedestrian fatality)
- Leonid Road
- Broward Road
- Trout River Boulevard
- Soutel Drive
- Clyde Drive
- Palmdale Street
- Lake Forest Boulevard
- Edgewood Avenue
- Rowe Avenue

Norwood Avenue at:

- Carrolton Road
- Crestwood Street
- Gateway Town Center
- 44th Street
- Alder Street
- Golfair Boulevard

Boulevard Street at:

- 21st Street
- 8th Street

LONG-TERM VISION

NORWOOD AVENUE (GOLFAIR BOULEVARD TO I-95)

- Redevelop JTA owned property at the intersection of Norwood Avenue and Golfair Boulevard.
- Work with Gateway Town Center on redevelopment opportunities.
- Enhance intersection treatments as needed to coincide with redevelopment.

LEM TURNER ROAD (I-95 TO BASSETT ROAD)

- Add a median where turn lane is not needed.
- Add buffered bike lane with new wider standards.
- Alternate: Continue the Bus/Bike only lane.

LEM TURNER ROAD (BASSETT ROAD TO I-295)

- Use excess pavement to create a buffered bike lane.
- Long Term Vision: Create a protected bike lanes with a tree lined median.

MAIN STREET

EXECUTIVE SUMMARY

As part of the JTAMobilityWorks Complete Streets Program, a study of the Main Street North (State Highway 17) corridor begins on State Street in downtown 5 miles to the Trout River. The corridor and extends another 6 miles to connect with the Jacksonville International Airport.

The physical landscape along the corridor changes with the times of its historic development pattern north from downtown. Older historic residential neighborhoods are found in the southern portion with tree-lined streets, parks and mixed-use buildings. And, early to mid-century residential suburbs are found in the northern portion lining the Trout River. With the rise of city dwellers, the neighborhoods are experiencing an influx of new residents to stem disinvestment. Likewise, traffic volumes have been dramatically declining since 1988 and now appear stable on the corridor from11-14,000 cars a day. JTA operates several transit routes on the corridor today.

In order to better understand the issues and concerns of the community, an interactive "Main Street Mobility Community Workshop and Open House" on Thursday, October 22nd, 2015 at Westside Church Of Christ. Members of the public attended the charrette, and additional meetings were held with several area stakeholders better understand the revitalization occurring in the area. The project team also held in-house design reviews before and during the charrette to obtain more information and assist in developing and refining potential mobility concepts. Importantly, it was well-understood that this thoroughfare is over-engineered, too wide, with too much side friction (driveways, angled intersections, mid-block crossings) to provide a safe walking and biking environment.

Because of the strong emotional connection between long-time residents and Main Streets historic resources, visual preference boards were developed for each segment of the corridor. Preferred enhancements identified by the public for Main Street were bike lanes, midblock crossings, improve bus station shelters, signage, lighting, cycle tracks, and wide sidewalks. With the rise in young families and children moving into the area with established, older residents, the need for enhanced safety for pedestrians and bicyclists was a strong theme of the charrette. The total number of pedestrian and automobile conflicts is more than double the nation average. Slowing vehicles down by narrowing lane widths and/or reducing speed limits were mentioned as ways to address the problem. Additional ideas included providing bike lanes, installing midblock crossings with pedestrian refuge islands, implementing high visibility crosswalks, and providing better lighting in many areas. Some of these facilities have already been installed, but the mid-block crossings are still precarious on this high-speed street. Finally, urban design and placemaking was a strong theme expressed by charrette attendees, with a desire for decorative lighting, culturally relevant gateways and signage with aesthetic treatments in several locations on the corridor.

A series of concepts and recommendations were developed for various points along the corridor. They were developed with the intention that they be used at any point where it was deemed appropriate throughout the corridor, but the recommendations may not be applicable for all areas:

- Median Adaptation (including reopening the medians in the Springfield Area)
- Buffered Bicycle Lanes
- Wayfinding Elements

These main issues were raised during the community workshops by residents and business owners in the area. These elements create a more walkable environment by increasing pedestrian circulation options, and would increase safety in the area by slowing vehicular traffic. Bicycle crossing improvements are included with lane reductions or other measures needed to create the space required to add these elements.

In addition, the potential for branding or wayfinding elements are important for creating a sense of place within the corridor through district identification or kiosks. Similarly, there is the potential to implement other wayfinding measures, such as increased signage on the ground or walls, throughout the rest of the corridor as well.

Many of these projects are minor and relatively easy to implement, yet will greatly enhance safety and mobility. Major catalyst projects for the area include decorative lighting under the Martin Luther King Jr. Parkway overpass, and add multi-use trail near 15th Street and reconstruction of the Trout River wharf.

Finally, several long-term vision projects were identified that can help reshape automobile- dominated Main Street into a comprehensive mixed-use, Complete Street corridor. Further development and analysis of all the concepts and recommendations outlined in this study is essential. Moreover, continued coordination with stakeholders and other agencies may afford partnership opportunities for funding that could affect the prioritization and/or implementation of projects.

1: CONTEXT

The Main Street North corridor (State Highway 17) is located in the northern quadrant of Jacksonville. This historic corridor runs due north from the Downtown to the east/west Martin Luther King Jr. Parkway interchange, and terminating at the Trout River Bridge. North of the bridge Main Street connects with West Beltway 295 and services the Jacksonville International Airport and related industrial areas.

Between Downtown and the Trout River, Main Street transverses several historic communities and splits their streets addresses between East and West. For example, West 10th Street is west of Main Street and East 10th Street is east of Main Street. Beginning with Springfield, a historic neighborhood established in 1869 that experienced its greatest growth from the early 1880s through the 1920s. Its neighborhoods are located between 1st street to MLK Jr. Parkway. Brentwood is located on the western edge of Main Street from MLK Jr. to the train tracks crossing after 35th Street. Those community's Main Street is configured as a Boulevard with a planted median. The northern most community is Tullulah North Shore and Panama Park, near where Tullulah Avenue connects Main Street to I-95 Freeway and lacks the planted median on Main Street.

Several prominent civic spaces are directly accessible from Main Street beginning with Hogans Creek at Confederate Park, which connects with Henry J. Klutho Park. About the study area's mid-point, Main Street fronts onto Cemetery Park. Established in 1880, the Cemetery deeded the land for the park to the City in 1921, and Cemetery Park with nearby May Mann Jennings Park were originally known together as Long Branch Park. And, the Trout River Fish Pier at the study area's terminus. Main Street also connects Mattie V Rutherford Alternative Education Center, Kirby-Smith Junior High, Andrew A. Robinson Elementary School, North Shore Elementary School, JEA Electric and Water utility company, and the Commercial Diving Academy at the foot of the Trout River bridge.

For this purposes of this study area, Main Street can be separated into two (2) general street segments:

- Lower Main Street (w/Medians) – 100' Street Section
- Upper Main Street (w/out Medians) – 100' Street Section

COMPLETE STREETS

Main Street had undergone improvements in the early 2000's that included landscaped medians, mid-block crossings, upgraded bus station facilities, sidewalks, concrete pavers, crosswalks, and segments of bike lanes in Lower Main Street. In addition a number of "super blocks" were created when the medians were connected blocking the cross street through movements. These designs while intended to accommodate some pedestrian movements resulted in a street that is over-engineered for high-speed autos creating conflict between fewer but higher speed cars with new pedestrian and bike facilities. The street has changed from its traffic congested days in the late 1980s when it was filled with those wanting to avoid paying new bridge tolls.

Today, the 100' wide thoroughfare has the ability to accommodate autos, buses, bicycle lanes, pedestrian facilities, turning lanes, and landscaped medians, with the mode splits shifting from single-occupancy automobiles to transit, biking and walking to share in more of the city's mobility options. A truly complete street. And, lower speed, 30 mph streets carry a higher volume of cars, as they are able to travel closer together and stack more autos onto the same facility that can handle 45 mph + cars traveling further distances from each other to accommodate for the excess speed. A Complete Street program will narrow and remove the excess high-speed travel lanes provide more bicycle and bus facilities at regular intervals, and reconnect Main Street to downtown, the airport and the region.

UPGRADED STOPS

An effort to make all bus stops along Main Street be compliant with American Disabilities Act (ADA) is underway. As a result, all bus stops are anticipated to have at a minimum a 10' by 5' concrete platform with numerous stops receiving a 30' by 10' concrete platform with new bus shelters, trash cans, and bike loops. In addition, areas with broken sidewalks are being repaired. Also, new concrete platforms that make bus stops compliant with ADA standards are currently being studied and will begin implementation soon.

DANGEROUS BY DESIGN

A 2014 report by Smart Growth America and the National Complete Street Coalition identified Jacksonville as the third most dangerous area to walk in the United States, behind Orlando and Tampa-St. Petersburg, with a Pedestrian Danger Index as 182. The index gives an indication of the likelihood of a person on foot being hit by a vehicle and killed, and the national average is 52, or equal

to annual fatalities of 1.56 persons per 100,000 people walking each day. This equates to 2.48 fatalities per 100,000 people walking (359 fatalities from 2003 to 2012). The report states that "Overwhelmingly, children, older adults and people of color suffer disproportionately from traffic violence."

ACTIVITY NODES

There are several historic nodes of activity along Main Street. These nodes of activity should be considered as key location for bus stops, bus transfer centers, bicycle facilities, pedestrian orientation, and land use considerations within a 5-minute walk of these People-Activated Nodes. When considering modifying a thoroughfare, the land use and what is occurring around the corridor is an important decision. The following nodes are identified at major opportunity sites:

- Hogan's Creek and Parks Gateway
- 8th Street
- S-Line Bicycle Trail
- Vacant Lot Redevelopment Opportunities
- Tallulah Avenue
- Trout River Pier

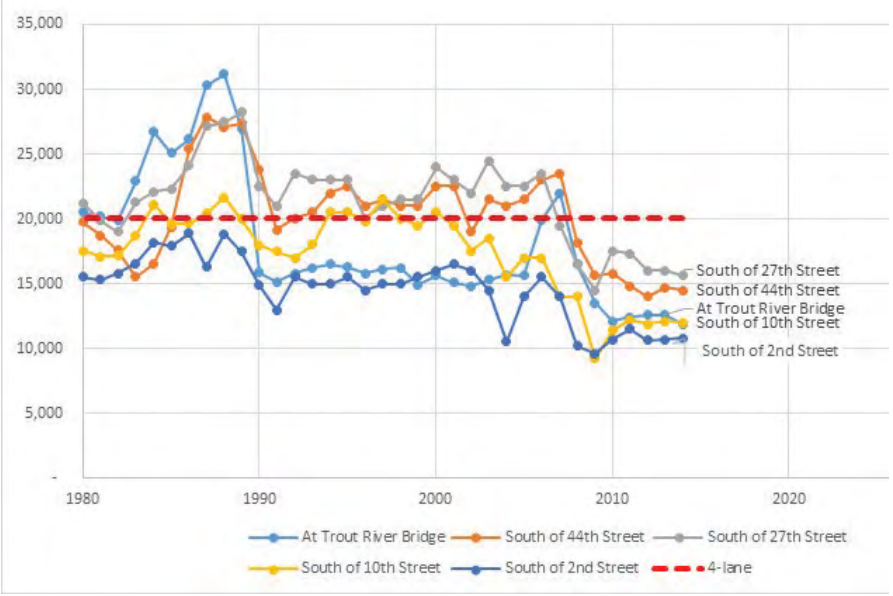


FIGURE 1: HISTORICAL TRAFFIC VOLUMES ON MAIN STREET

AVERAGE DAILY TRIPS

There is a national trend in the reduction of vehicle miles traveled (VMT) and the Main Street follows this trend. The annual average daily traffic (AADT – or average vehicle trips per day from each household), has been consistently declining along the corridor. In general, traffic volumes of 15,000 Vehicles Per Day (VPD) are considered acceptable for a three-lane section (two travel lanes with a center turn lane), while traffic volumes between 15,000 and 25,000 VPD are worth analyzing to determine the street design. Traffic counts over 25,000 VPD typically require 4 to 5 lanes[1].

The Average Daily Traffic (ADT) counts for Main Street have dramatically reduced since the Duval County citizens voted to close I-95's tollbooths over the Trout River Bridge with a 1988 referendum when traffic counts reached their zenith at 31,000 ADT on Main Street. The tolls were removed the following year and the corridor has steadily reduced trips every since. These appear to remain stable today at 12,000 ADT. This stability is mostly due to Main Street being typically access by people in the area, and not used as much by people moving through the area, as the free flowing I-95 has shifted this regional dynamic.

Given that the current traffic volumes for the past 28 years have exceeded its functional design, thereby increasing traffic speed on this now over-engineered thoroughfare, a reallocation of the roadway from a 4 to 5 lane Boulevard can be implemented with continuous bus and bike only lane as an ideal early demonstration project. As a Complete Street, the buses and bike lanes have the opportunity to directly access riders in the community and further reduce traffic trips on the thoroughfare.

2: PROCESS

One of the most important steps in any planning process is providing a platform to engage the community and receive meaningful feedback that can be incorporated into the final outcome. A hands-on process allows residents and other stakeholders to provide ideas, voice their opinion and stay informed. For the Main Street JTA Complete Streets project, community members were invited to participate in an interactive "Main Street Mobility Community Workshop and Open House" on Thursday, October 22nd, 2015 .

The community workshop for Main Street was organized in an open house format with a series of "stations", including a background presentation and focus area tables where participants could help develop short-term improvement projects and generate some longer term visions and big ideas. Attendees who participated were able to participate in design activities, speak one-on-one with members of the Project Team and ask questions, identify concerns, and learn more about complete streets.

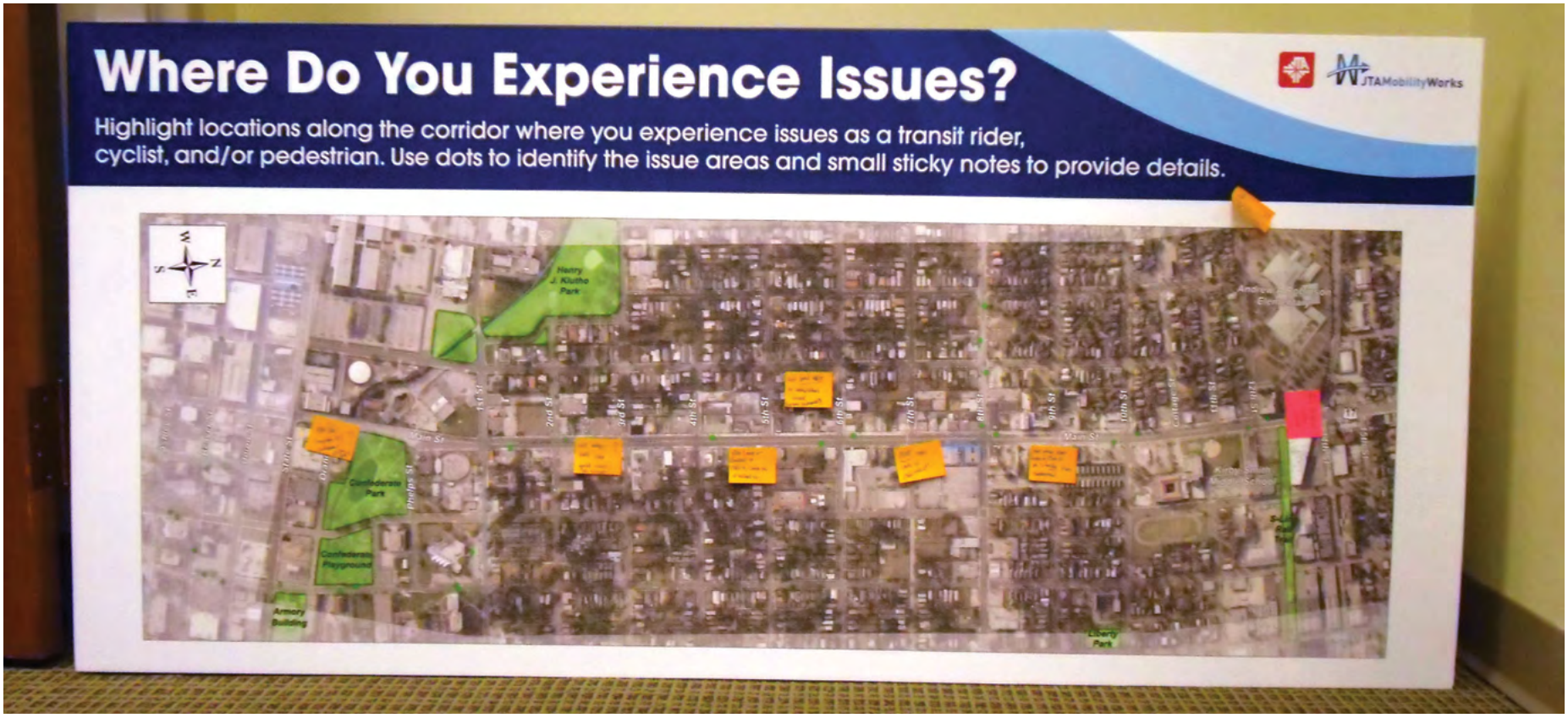


FIGURE 2: MOBILITY WORKSHOP DISCUSSION BOARD



FIGURE 3: MOBILITY WORKSHOP GROUP DISCUSSION



FIGURE 4: OVERALL STUDY AREA

The five stations available were:

1. Introduction: Project Overview and Background
   PowerPoint presentation providing background information on the project and area.
2. Visioning: Explore Treasures, Challenges, Ideas
   Provided the opportunity for stakeholders to contribute to the vision of Main Street
3. Design A: Hands-on Designing of South Main Areas
   Opportunity for stakeholders to explore specific design ideas and improvements with a focus on South Main from Downtown to MLK Expy.
4. Design B: Hands-on Designing of North Main Areas
   Opportunity to explore specific design ideas and improvements with a focus on North Main from MLK Expy. to the Trout River.
5. Dialogue: Open Forum with Tabletop Discussions
   Allowed stakeholders to meet each other and discuss topics of their choice.

STATION 1 | INTRODUCTION: PROJECT OVERVIEW AND BACKGROUND

Station 1 provided participants with information on the project funding, history, and the study area. Additionally, it described the concept of complete streets through a combination of visuals and text while also providing basic data and statistics related to the City of Jacksonville's pedestrian, bicycle, and transit environment.

STATION 2 | VISIONING: EXPLORE TREASURES, CHALLENGES, & IDEAS

At Station 2, stakeholders were invited to participate in a visioning exercise by recording their thoughts about the project area directly onto Post-it Notes that were placed on the wall. They were also able to identify areas of concern or areas of opportunity directly on project base maps.

STATIONS 3 & 4 | HANDS-ON DESIGNING

DESIGN A - SOUTH MAIN STREET

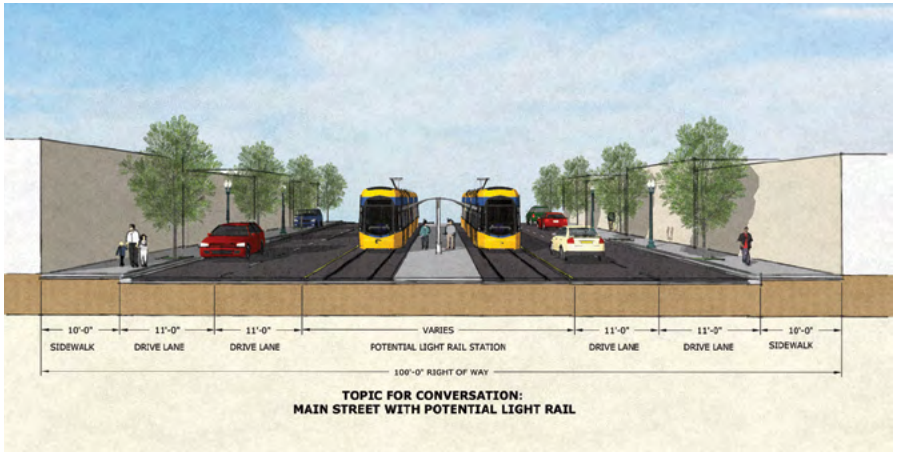
This design station included a hands-on activity for participants to explore specific design ideas and improvements, and provided the opportunity to work alongside the urban design team. Station 3 including the following focus area Main Street from Downtown to MLK Expy.

DESIGN B - NORTH MAIN STREET

Similarly, Station 4 included a hands-on activity for participants to explore specific design ideas and improvements, and the opportunity to work alongside the urban design team for North Main from MLK Expy. to the Trout River, including the school/park recreation area and key redevelopment opportunities.

STATION 5 | DIALOGUE: OPEN FORUM – TABLETOP DISCUSSIONS

The final station was provided to allow attendees to have an open forum to discuss the project or specific ideas with their fellow community members and/or members of the project team.



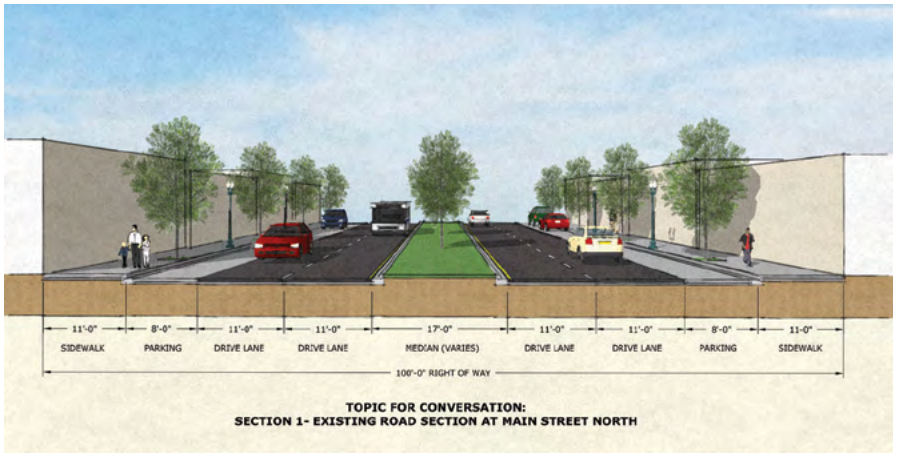




FIGURE 5: SAMPLE STREET SECTIONS FOR WORKSHOP DISCUSSION

DESIGN TABLE EXERCISES

Design Table A focused "hot spot" areas located between Downtown Jacksonville (East State Street) to Martin Luther King, Jr. Expressway

FOCUS AREAS:

1) HOGAN'S CREEK/PARKS -
   Located between Hogan's Creek and 2nd Street
2) MAIN STREET COMMERCIAL -
   Located between 6th and 9th streets
3) BICYCLE TRAILS AND PARKS -
   Located between 10th and 15th streets
4) MLK EXPRESSWAY -
   Located between 19th and 22th streets

Design Table B focused "hot spot" areas located between Martin Luther King, Jr. Expressway to Trout River Drive.

FOCUS AREAS:

5) S-LINE BIKE TRAIL -
   Located past 35th Street
6) REDEVELOPMENT OPPORTUNITY -
   Located between 45th & 53rd streets
7) TROUT RIVER PIER -
   Located just past Lawton Avenue

Workshop participants were able to provide comments on the large scale maps of the focus areas. The team presented an image discussion board that allowed the public to see photos of built infrastructure projects that could be applied to Main Street. These images showed revitalized "Main Streets" from across North America and included images of mixed-use urban developments with active uses at the ground floor ,supported by wide sidewalks, street trees, with lots with people walking and shopping. Other images showed physical improvements directly applicable to Main Street, such as gateways, district identification, wayfinding improvements, enhanced crosswalks, striped bicycle lanes and enhanced public transit.

The design team also presented conceptual sections of Main Street with multiple iterations of BRT lines, bike lanes, (with and without the median) or at a reduced width, and lastly, widen sidewalks with café areas. Over 14 cross-sections were developed in advance of the workshop to visually articulate how Main Street could accommodate pedestrians, transit and cyclists. Workshop attendees had the opportunity to make suggestions, select their preferred option and even create their own street section.



FIGURE 7: OPEN HOUSE WORKSHOP STATION



FIGURE 6: FOCUS AREA LOCATIONS SHOWN DURING THE "WORKSHOP STATIONS" (DESIGN TABLES A & B)

COMMUNITY FEEDBACK FROM WORKSHOP ATTENDEES

As noted, participants provided input by talking directly to team members, writing on post-its, or commenting on design concepts. The following paragraphs summarize the key feedback provided by the stakeholders.

SAFETY on and around Main Street was an important topic. Residents noted multiple instances of unsafe conditions. One condition involved pedestrians running across the road to reach Kirby-Smith elementary. On Phelps Street, lack of crossings results in pedestrians running across to street to get to Confederate Park. Residents were also concerned about the long median, which prevents pedestrians from safely crossing the street.

MEDIANS along Main Street were a recurring topic for workshop participants. Several indicated that businesses do not like the long medians because the landscaping prohibits visibility and does not allow pedestrians to cross at intersections. Most workshop participants favored keeping parts of the median, but with landscaping that would not obscure visibility, but strongly supported opening the medians at all intersections to allow for pedestrian and vehicular cross traffic. One individual addressed utilizing the medians as a way to mitigate stormwater.

MOBILITY along Main Street was another component that residents spoke about. Bike lanes along the corridor were favored. Pedestrian safety was an important part along Main Street, and speed tables were suggested at key intersections to control vehicular speed while allowing for safer crossings. Utilizing a striped bicycle buffer between bikes and cars was recommended by many participants.

COMMUNITY BRANDING is important for Main Street. Residents were drawn to the image board with examples of gateways, kiosks and district identification signage that gave a sense of identity to an area. Many saw Main Street has having a rich history and identity but currently is lacking a visible indicator of such. Similarly, wayfinding elements provide character and highlight unique components of Main Street.

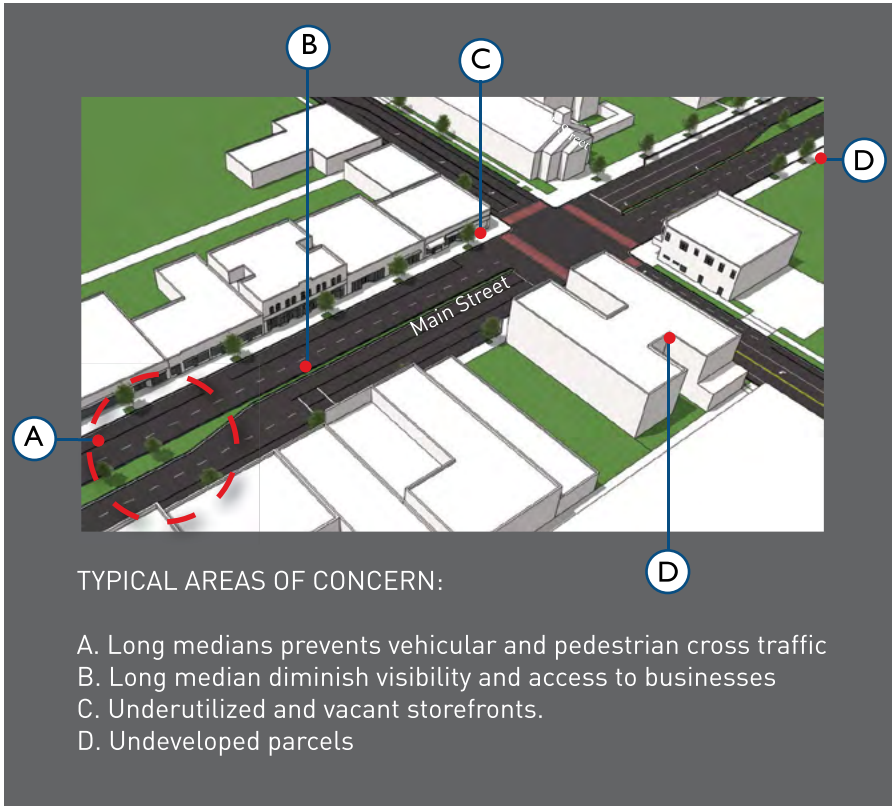


FIGURE 8: TYPICAL AREAS OF CONCERN

REVITALIZATION was another topic brought up by workshop participants. According to residents, it is important to provide consolidated development efforts in the form of anchors, instead of spacing out sparse improvements. Two example locations, 20th & Main and 8th & Main might act as starting anchor points along Main Street, with future development filling in between them.

3: CONCEPTS



Looking north on Main Street, just past 2nd Street

HOGAN'S CREEK/PARKS

New pedestrian crosswalk to enhance pedestrian safety and connect the two sides of Hogan's Creek and the adjacent parks, would also be emphasized with a Gateway structure announcing entry into the historic neighborhood of Springfield as one proceeds down Main Street.



Examples:
A. Wayfinding – kiosks with maps and information on local amenities, banners indicating districts
B. Gateways – architectural elements defining entry to Main Street and downtown
C. Lighting – Increases pedestrian safety while adding architectural character to the streetscape
D. Infill Development – densifying the existing street fabric through the reuse of existing land parcels for renovated residential and commercial use



Looking west on Main Street, just past 8th Street

MAIN STREET COMMERCIAL

Reconstruct the street median to allow for more pedestrian and vehicular circulation at all intersections, and with landscaping that allows for greater visibility to the businesses. Promote infill redevelopment at vacant lots and especially at intersections, emphasizing important corners and edges to Main Street.



Examples:
A. Infill Development – new development that is compatible with the existing development pattern, emphasizing mixed-use compact development and articulated frontages.
B. Streetscape Improvements – street trees, outdoor café spaces and wider sidewalks for pedestrians
C. Bicycle Parking – a place to store bicycles near businesses



FIGURE 9: HOGAN'S CREEK/PARKS RENDERING



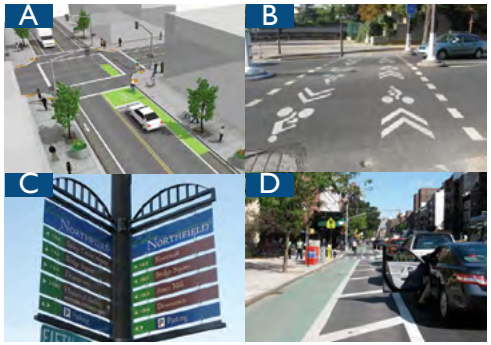
FIGURE 10: MAIN STREET COMMERCIAL RENDERING



Looking east on Main street towards the bike trail, just past 12th Street

BICYCLE TRAILS AND PARKS

Existing bicycle trails intersect Main Street in multiple locations, but those crossings can prove difficult and unsafe for cyclists. Creating gateway elements integrated with crossing signage can help distinguish important bicycle nodes along Main Street.



Examples:

A. Bicycle Boxes – crossings that improve safety and visibility for cyclists at intersections

B. Roadway Striping – Clear makers for pedestrians and cyclist crossings

C. Wayfinding – kiosks with maps and information on local amenities, banners indicating districts

D. Bike Buffer Lanes – dedicated bike lanes painted for visibility. Buffer zone between vehicles and cyclists allows for safe opening of car doors



Looking north on Main street towards the MLK Expressway

MLK EXPRESSWAY

Reconstruct the street median to allow for more pedestrian and vehicular circulation at all intersections, and with landscaping that allows for greater visibility to the businesses. Promote infill redevelopment at vacant lots and especially at intersections, emphasizing important corners and edges to Main Street.



Examples:

A. Streetscape Improvements – wide sidewalks, striped and lit crossings, planting.

B. Decorative Lighting – underpass lighting creates a focal point and gateway element to existing bridges

C. Bulb Outs – curb bulb-outs with seating and where possible add space and opportunities for kiosks and wayfinding elements

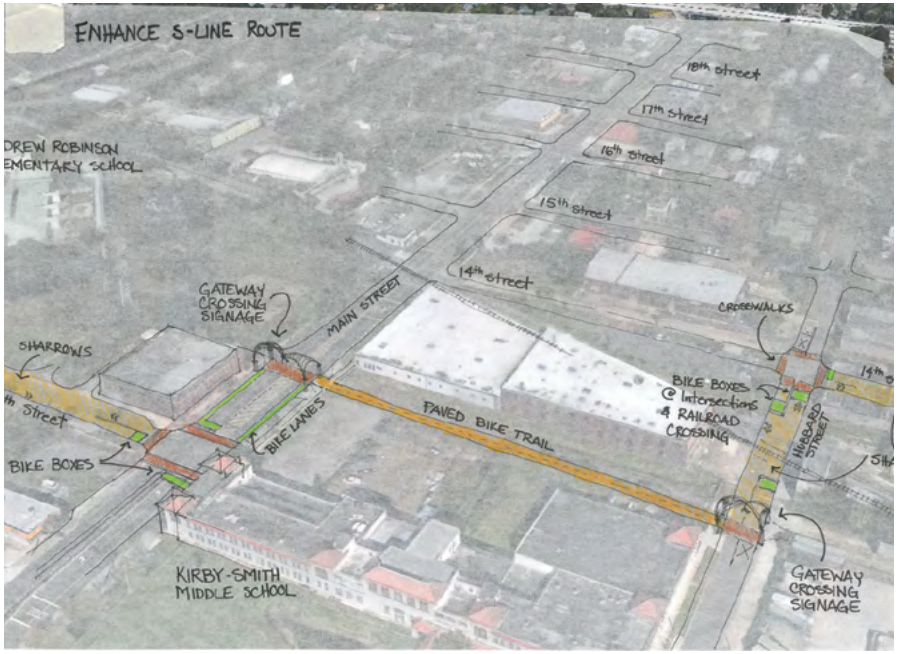


FIGURE 11: BICYCLE TRAILS AND PARKS RENDERING

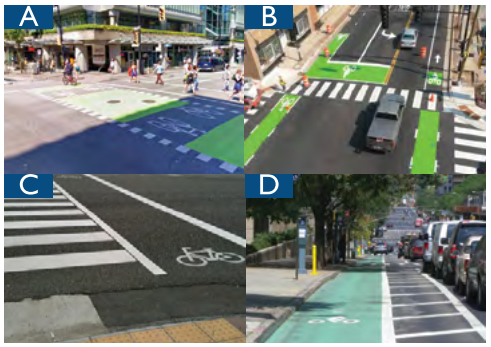


FIGURE 12: MLK EXPRESSWAY RENDERING



S-LINE BICYCLE TRAIL

The existing S-Line bicycle trail alignment at the intersection of Main Street and Winona Drive is dangerous for cyclists to pass through due to the irregular zigzag crossing. A reconfigured intersection could calm traffic and create a safe, direct crossing for cyclists. There is the potential to add wayfinding elements to the S-Line Trail.



Examples:

A. Wayfinding – kiosks with maps and information on local amenities, banners indicating districts

B. Bicycle Boxes – crossings that improve safety and visibility for cyclists at intersections

C. Roadway Striping – Markings at pedestrians and cyclist crossings

D. Bike Buffer Lanes – dedicated bike lanes painted for visibility. Buffer zone between vehicles and cyclists allows for safe opening of car doors.



REDEVELOPMENT OPPORTUNITY

Redevelopment of vacant and underutilized parcels, located between 45th and 53rd streets into a compact mixed-use development neighborhood concept is achieved by extending the existing residential street block grid into the project area. The new development would incorporate neighborhood parks and open space, and engage the public realm by providing "eyes on the street."



Examples:

A. Compact Development – development that emphasizes streetwall modulations and corners at street intersections, with active uses at ground level.

B. Walkability – consistent sidewalks that incorporate a cafe seating zone, a pedestrian thru zone and a landscape/street tree zone.

C. Public Space – incorporation of public space within large -scale master plan development



FIGURE 13: S-LINE BICYCLE TRAIL RENDERING

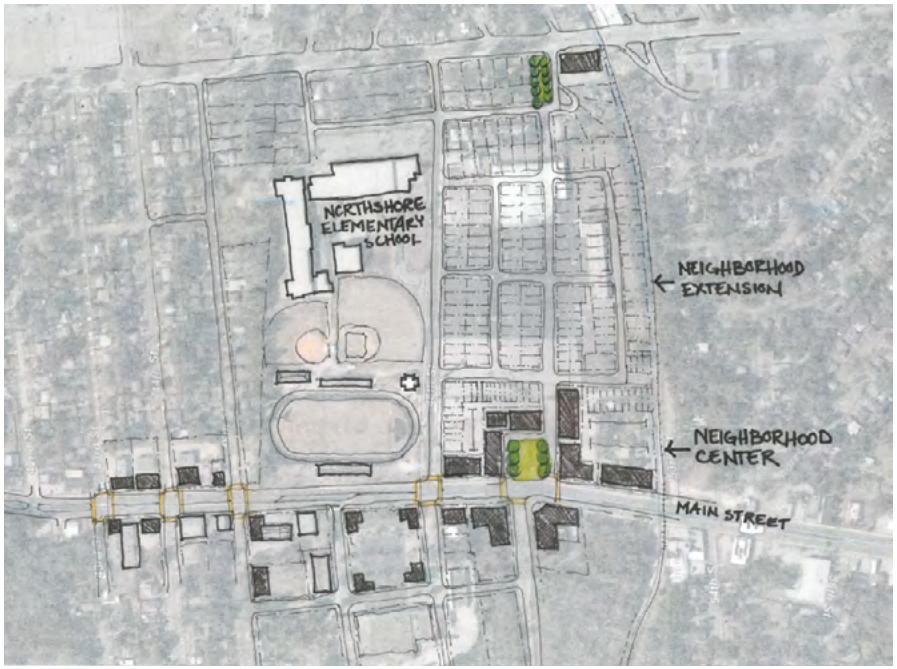


FIGURE 14: REDEVELOPMENT OPPORTUNITY RENDERING



TROUT RIVER PIER

Trout River Pier, located on the northern part of Main Street, has potential for dense infill development. The location could serve as a northern anchor for main street, turnaround for bus rapid transit, and as the first gateway into downtown through Main Street. Proximity to the water invites recreation and pedestrian space.



Examples:

A. Pedestrian Crossings – signalized crossings, roadway striping, and lighting to create a safe place for pedestrians

B. Gateway – architectural elements defining entry to Main Street and downtown

C. Infill Development – Redeveloping existing parcels in the pier and wharf areas has opportunity to bring commercial use and pedestrian-friendly spaces to walk.



FIGURE 15: TROUT RIVER PIER RENDERING

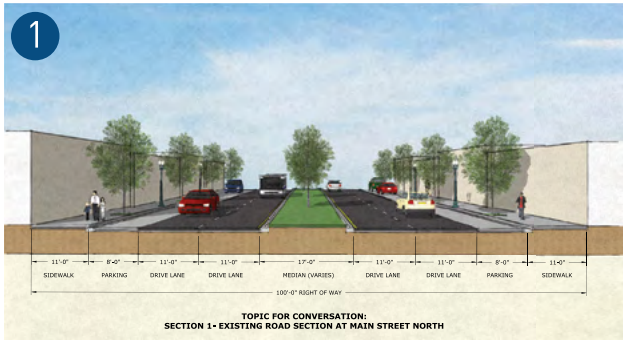


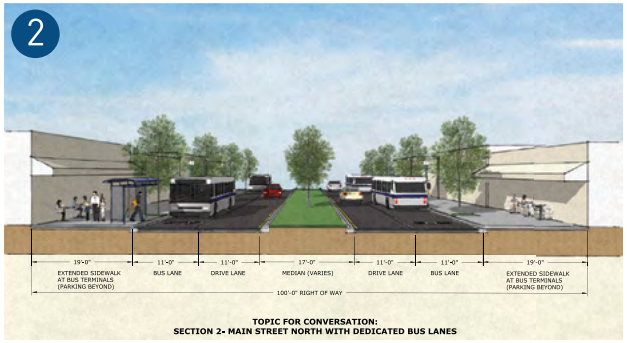


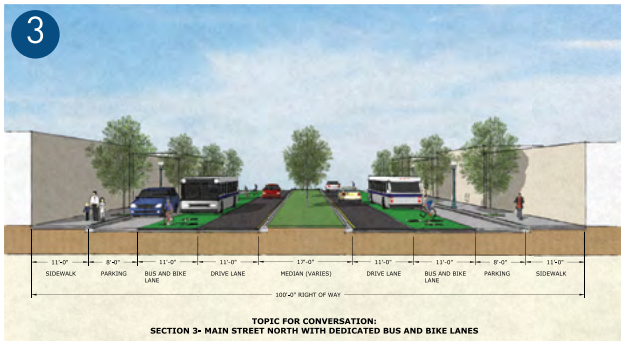


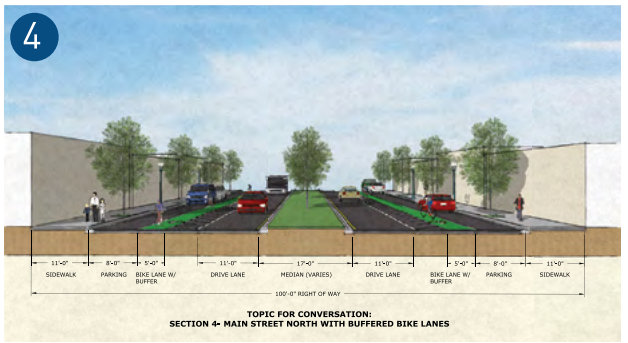


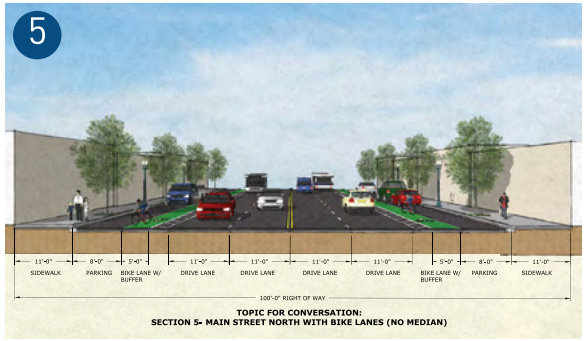
MAIN STREET SECTION DESCRIPTIONS	
OPTION	DESCRIPTION
1	Existing: 11' sidewalks, (1) parking lane each direction, (2) drive lanes each direction, median remains
2	19' sidewalks, (1) dedicated bus lane per side, (1) drive lane per side, median widened
3	11' sidewalks, (1) parking lane each direction, (1) shared bus/bike lane each direction, (1) drive lane each direction, median remains
4	11' sidewalks, (1) parking lane each direction, (1) bike lane with buffer each direction, (1) drive lane each direction, median remains
5	11' sidewalks, (1) parking lane each direction, (1) bike lane with buffer each direction, (2) drive lanes each direction, median removed
6	19' sidewalks, (1) parking lane each direction, no bike lanes, (2) drive lanes each direction, median removed
7	19' sidewalks, (1) parking lane each direction, no bike lanes, (2) drive lanes each direction, median removed
8	15' sidewalks, (1) parking lane each direction, no bike lanes, (2) drive lanes each direction, median narrowed
9	16' sidewalks with parking beyond, (1) streetcar track each direction, no bike lanes, (2) drive lanes each direction, median removed
10	10' sidewalks, angled parking each side , no bike lanes, (2) drive lanes each direction, median removed
11	17' sidewalks, two-way bike lane on one side, (2) drive lanes each direction, median removed
12	10' sidewalks, (1) curb abutted bike lane with buffer each direction, (1) parking lane each direction, (1) drive lane each direction, median narrowed
13	10' sidewalks, (1) curb abutted bike lane with buffer each direction, (1) streetcar track each direction, (1) parking lane each direction, (1) drive lane each direction, median removed
14	10' sidewalks, (2) drive lanes each direction, light rail station with (1) streetcar track each direction
15	11' sidewalks, (1) parking lane each direction, (1) bike lane each direction, (2) drive lanes each direction, median narrowed to 6'
16	Ideal Sidewalk: 4' cafe zone, 6' pedestrian walking zone and 5' landscaping and street tree zone. Total sidewalk width: 14'



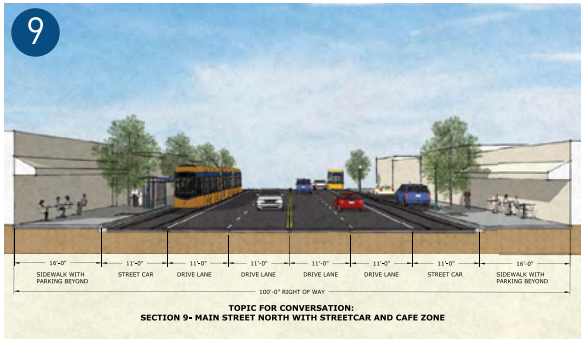




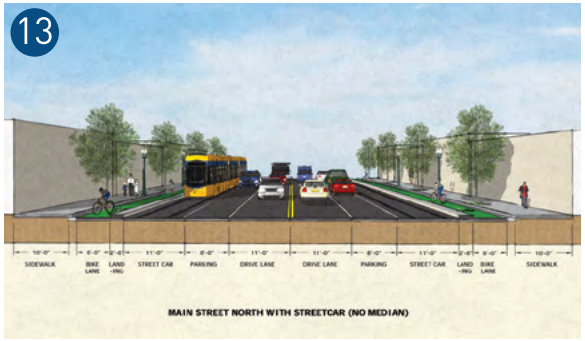




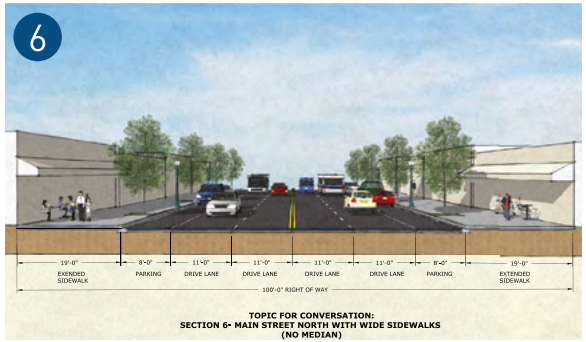
TOPIC FOR CONVERSATION:
SECTION 5- MAIN STREET NORTH WITH BIKE LANES (NO MEDIAN)



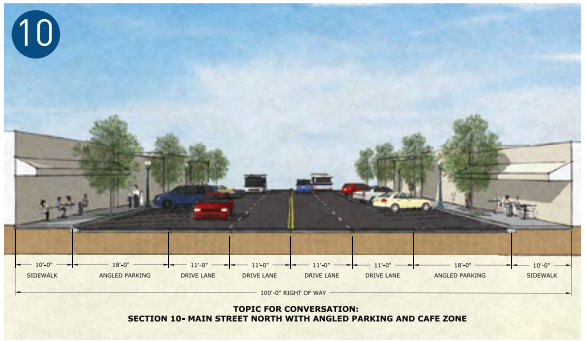
TOPIC FOR CONVERSATION:
SECTION 9- MAIN STREET NORTH WITH STREETCAR AND CAFE ZONE



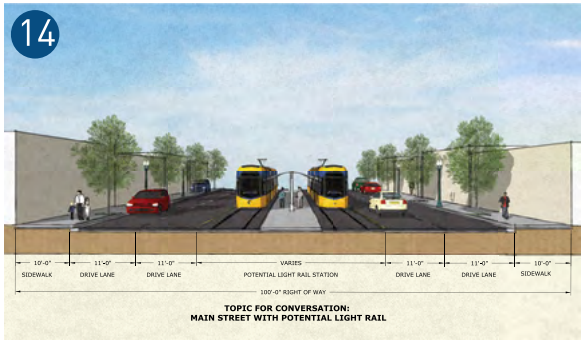
MAIN STREET NORTH WITH STREETCAR (NO MEDIAN)



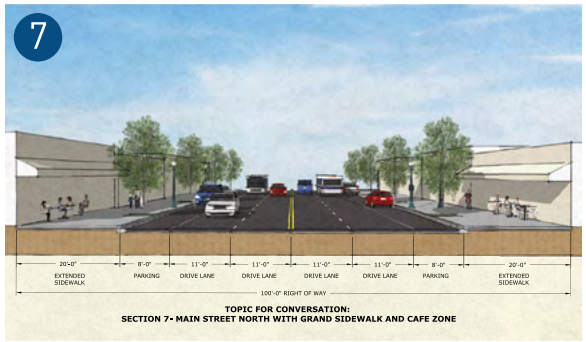
TOPIC FOR CONVERSATION:
SECTION 6- MAIN STREET NORTH WITH WIDE SIDEWALKS (NO MEDIAN)



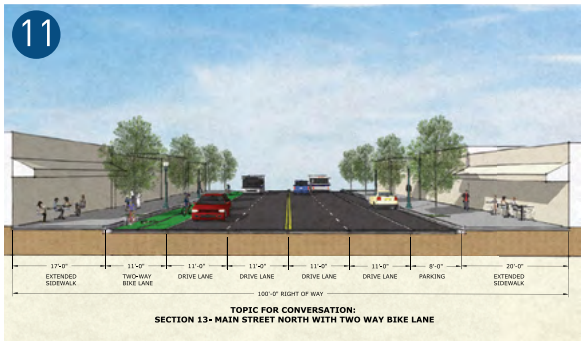
TOPIC FOR CONVERSATION:
SECTION 10- MAIN STREET NORTH WITH ANGLED PARKING AND CAFE ZONE



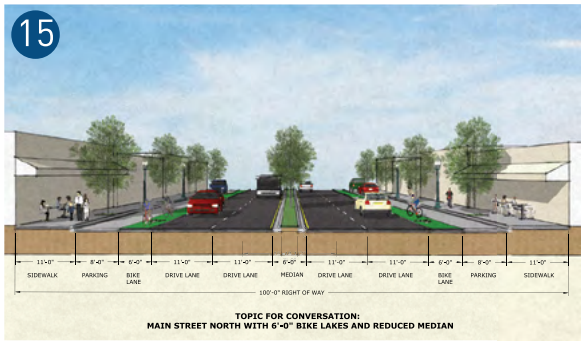
TOPIC FOR CONVERSATION:
MAIN STREET WITH POTENTIAL LIGHT RAIL



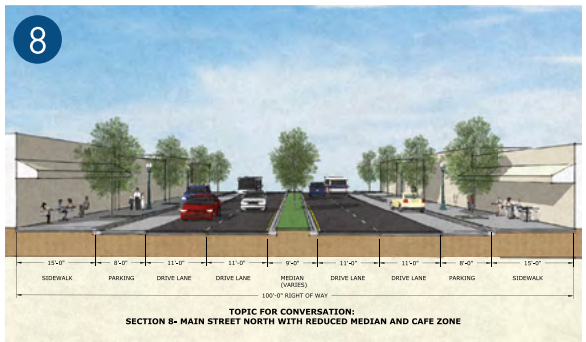
TOPIC FOR CONVERSATION:
SECTION 7- MAIN STREET NORTH WITH GRAND SIDEWALK AND CAFE ZONE



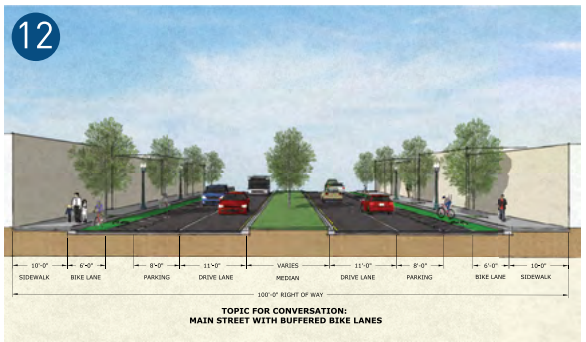
TOPIC FOR CONVERSATION:
SECTION 13- MAIN STREET NORTH WITH TWO WAY BIKE LANE



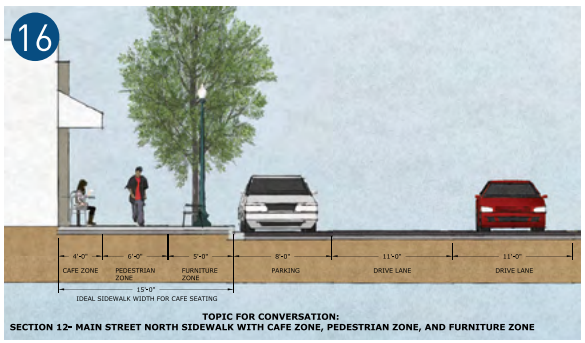
TOPIC FOR CONVERSATION:
MAIN STREET NORTH WITH 6'-0" BIKE LAKES AND REDUCED MEDIAN



TOPIC FOR CONVERSATION:
SECTION 8- MAIN STREET NORTH WITH REDUCED MEDIAN AND CAFE ZONE



TOPIC FOR CONVERSATION:
MAIN STREET WITH BUFFERED BIKE LANES



TOPIC FOR CONVERSATION:
SECTION 12- MAIN STREET NORTH SIDEWALK WITH CAFE ZONE, PEDESTRIAN ZONE, AND FURNITURE ZONE

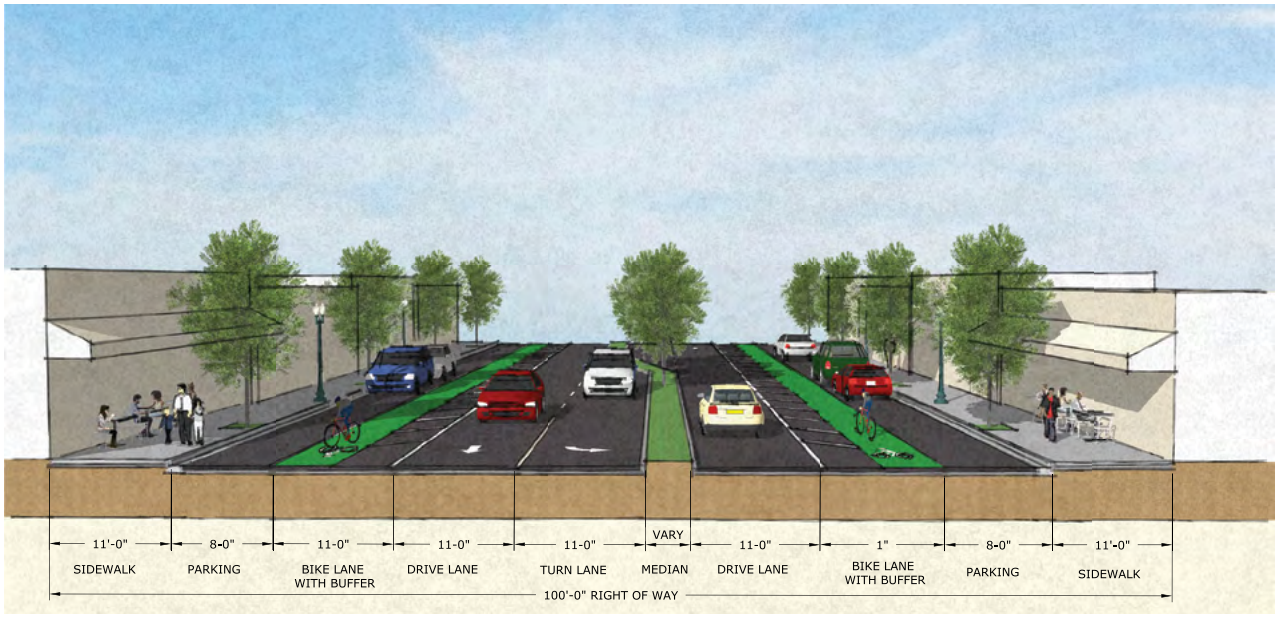
PREFERRED SECTION OPTION #1

OPTION 1 - DEDICATED BICYCLE LANE WITH BUFFER - OPEN MEDIANS AT INTERSECTIONS.

Residents favored opening the existing medians at all intersections to improve circulation, accessibility and most importantly, increase visibility to nearby businesses. It was reiterated by the attendees that Main Street is a destination, not a place where people just drive through. Opening the medians would provide drivers the ability to stop and shop.

Each street intersection would have striped pedestrian crosswalks. Some intersections would be signalized, with countdown timers at crosswalks where there are a concentration of commercial and pedestrian activity.

The landscaping in the median would remain, but at a reduced width that would allow for a travel and turn lane, wider sidewalks, continuous on-street parking and a dedicated bike lane with buffer.





Preferred Option Items:

A. Intersections – opened median, wide pedestrian crossings
B. Improved Streetscape – 11-foot sidewalks with cafe zones and street trees
C. Dedicated Bike Lanes – bike lanes with buffer along Main Street
D. Modified Medians –medians opened at intersections, inclusion of turn lanes and tree plantings
E. Infill Development - opportunities for redevelopment

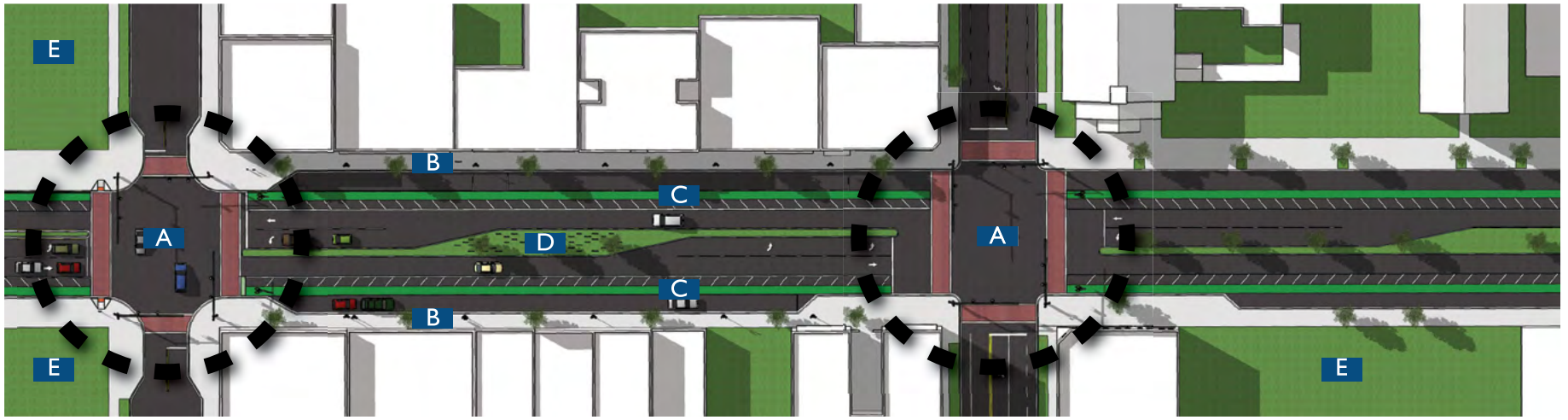


FIGURE 16: OPTION 1 PLAN VIEW



FIGURE 17: OPTION 1: PERSPECTIVE AT TYPICAL INTERSECTION



FIGURE 18: RENDERING OF BIKE LANE CONCEPT AT 7TH STREET

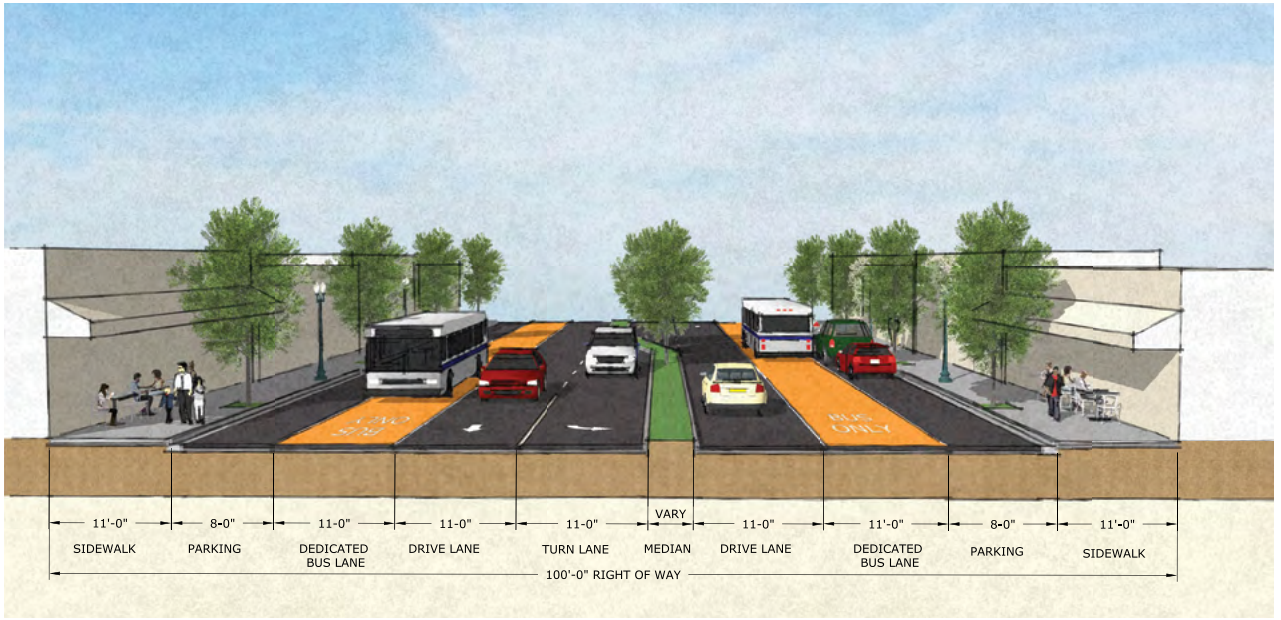
PREFERRED SECTION OPTION #2

OPTION 2 - DEDICATED BUS LANE WITH OPEN MEDIANS AT INTERSECTIONS

Option 2 accommodates a dedicated bus rapid transit (BRT) lane, with one lane of travel and a turn lane in each direction. On-street parking is maintained. Like Option 1, the medians at all intersections would be opened to improve circulation, accessibility and most importantly, increase visibility to nearby businesses.

Each street intersection would have striped pedestrian crosswalks. Some intersections would be signalized, with countdown timers at crosswalks where there are concentration of commercial and pedestrian activity.

The landscaping in the median would remain, but at a reduced width that would allow for a travel and turn lane, wider sidewalks, continuous on-street parking and a dedicated bus lane.





Preferred Option Items:

A. Intersections – opened median, wide pedestrian crossings
B. Improved Streetscape – 11-foot sidewalks with cafe zones and street trees
C. Dedicated Bus Lane – dedicated and colored bus lane
D. Modified Medians –medians opened at intersections, inclusion of turn lanes and tree plantings
E. Infill Development - opportunities for redevelopment

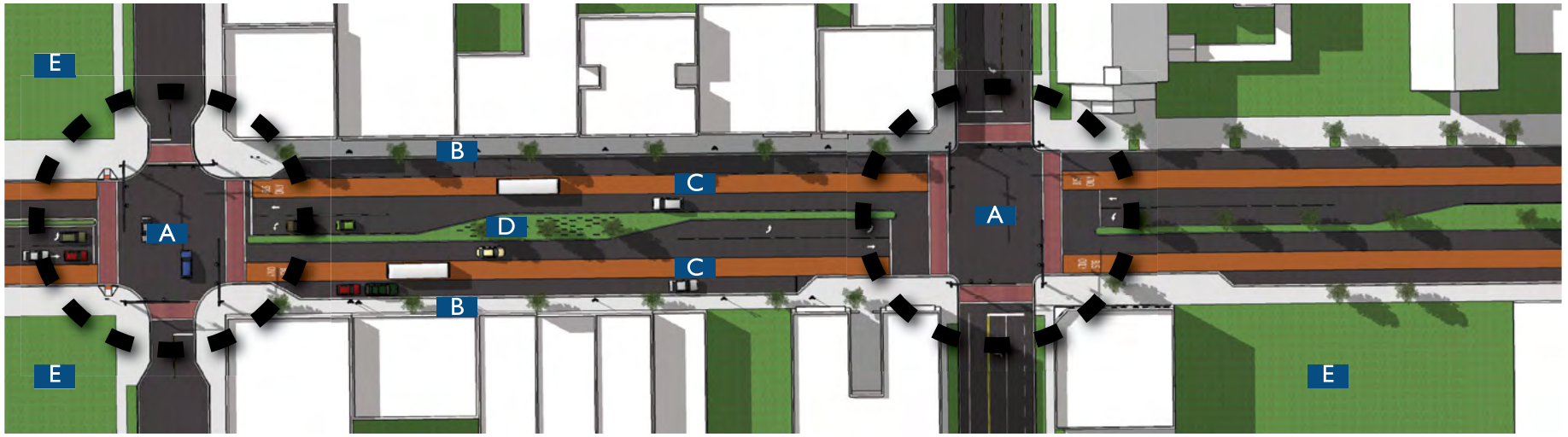


FIGURE 19: OPTION 2 PLAN VIEW



FIGURE 20: OPTION 2: PERSPECTIVE AT TYPICAL INTERSECTION

4: RECOMMENDATIONS

The following recommendations are made with the goal in mind of creating a vibrant, safe, and active corridor along Main Street. Some recommendations are relevant to the project area as a whole, while others are more specific to certain focus areas. Both are represented here and can be found in the appropriate section.

STUDY-AREA WIDE RECOMMENDATIONS

Recommendations in this section are intended to be broad, overarching principles that could apply to various points along the corridor. They were developed with the intention that they be used at any point where it was deemed appropriate throughout the corridor, but the recommendations may not be applicable for all areas.

MEDIAN ADAPTATION

This was one of the main issues raised during the community workshops by residents and business owners in the area. Altering the current medians opens up the opportunity for mid-block street crossings. This decreases the scale by creating a more walkable environment that gives residents shorter distances to walk before being able to cross the street. There is also the potential that by increasing pedestrian circulation options, businesses in the area could see increased foot traffic. Introducing median breaks and crosswalks along the corridor would also increase safety in the area by slowing vehicular traffic. Additional traffic studies would need to be completed in order to assess the peak hour impact to traffic congestion along the corridor, as it is a main thoroughfare through the region.





BUFFERED BICYCLE LANES

Bicycle crossing improvements are included in the mid-term focus area recommendations, but residents at the community workshops expressed a lack of bicycle infrastructure throughout the corridor. There is the potential along the corridor for the addition of buffered bicycle lanes, either by striping or physical barriers. Similar to the addition of median breaks, implementation of buffered bicycle lanes would be contingent on additional analysis to determine where in the corridor there is the potential for lane reduction or other measures needed to create the space required to add these elements.

WAYFINDING ELEMENTS

The short-term recommendations identify several locations along the corridor where there is the potential for branding or wayfinding elements. These are important for creating a sense of place within the corridor through district identification or kiosks. Similarly, there is the potential to implement other wayfinding measures, such as increased signage on the ground or walls, throughout the rest of the corridor as well. These added elements will help create an easily identifiable space that residents can take pride in.

IMPROVEMENTS BY FOCUS AREA

As discussed earlier, some recommendations should be implemented throughout the corridor, but others are in responses to unique existing conditions and community vision. These concepts have been sorted into a series of project recommendations. Projects have been described previously in the concepts section of this report. Recommendations fall into three categories:

- **Keystone Projects**
  Projects JTA would use to showcase "complete streets" for immediate effect. These should be reasonably substantial projects that could be implemented in the near term.

- **Operational/Safety Enhancements**
  These are "quick fix" improvements that can provide immediate safety and operational improvements at a lower cost.

- **Long-Term Vision Projects**
  These are complete projects for the corridor or corridor segment. These are bolder, more costly investments, which would be included in a long range plan.

KEYSTONE PROJECTS

PRIORITY PROJECT:

Main Street Median

- Open the median along Main Street to allow for cross traffic (with striped crosswalks) at the following locations: 3rd Street, 5th Street, 7th Street, 9th Street, Cottage Avenue and 11th Street and lane conversion

SECONDARY PROJECT:

Main Street Identification Gateway

- Add district identification elements, announcing entry into Main Street from Downtown, the Springfield Neighborhood and Hogan's Creek/ Confederate Park. Other branding elements could include neighborhood banners on utility poles and kiosks between 7th and 9th streets

OPERATIONAL/SAFETY ENHANCEMENTS

PRIORITY PROJECTS:

New Crosswalks

- Add protected mid-block crossing at Hogan's Creek/Confederate Park

S-Line Completion

- Completion of the S-Line with (1) Bicycle striping at 12th Street intersection, (2) a signalized intersection with striped pedestrian crosswalks and bicycle striping at Winona Drive, and S-Line signage at both locations

SECONDARY PROJECTS:

New Crosswalks

- Add signalized and enhanced crosswalk at Phelps Street
- Add signalized and enhanced crosswalks at Orange street
- Add signalized and enhanced crosswalks at 17th Street

Signalized Intersections

- Add signalized intersections with enhanced crosswalks at:
  - 9th Street
  - 20th Street
  - 22 Street
  - 23rd Street
  - 24th Street
  - 25th Street

LONG-TERM VISION PROJECTS

Main Street Streetscape Master Plan

- Building from the current City's Streetscape Program between 1st and 9th streets, establish sidewalk treatments with street trees and pedestrian street lights for all of Main Street. Develop priority phasing that could start at W. State Street to E 1st Street.

Roadway Plan

- In conjunction with a Streetscape Master Plan, restripe Main Street to include: (1) the elimination of one-lane of traffic in both directions along Main Street, with the implementation of a striped buffered bicycle lane, (2) bicycle boxes at key intersections, and bicycle racks at locations at destinations with large volumes of pedestrians, (3) reduction of landscaped medians, with plantings that would allow for cross-street visibility and (4) maximizing on-street parking, where possible.

Redevelopment

- Promote the revitalization of prime parcels along Main Street:
  - Southwest corner of 2nd and Main streets
  - Southwest corner of 3rd and Main streets
  - Westside properties between 43rd to 53rd streets
  - Trout River Pier at Custer Street to Trout River Drive

MANDARIN ROAD/PLUMMER COVE

EXECUTIVE SUMMARY

As part of the JTAMobilityWorks Complete Streets Program, a study of the Mandarin Road and Plummer Cove Road corridor was conducted. The portion of Mandarin Road studied is approximately 6 miles long, and loops from San Jose Boulevard (SR 13) to San Jose Boulevard just north of the Julington Creek Bridge. The portion of Plummer Cove Road studied is approximately 0.6 miles long, and extends from Scott Mill Road to San Jose Boulevard.

The Mandarin Road corridor is a unique residential road with two narrow travel lanes, roadside ditches, and an extensive tree canopy along much of the corridor. The corridor serves approximately 1400 homes within its loop and provides access to two noteworthy public parks, located at the north and south ends of Mandarin Road – Walter Jones Historical Park and Mandarin Park. In addition, Brady Park/ Alberts Field, which draws significant community activity, with tennis and ball fields, is located between Mandarin Road and Orange Picker Road.

Mandarin Road does not have a shoulder; therefore it is designated as a "Share the Road" facility, or "sharrow" for bicycle use. However, the corridor is deficient of pedestrian facilities, often requiring pedestrians to utilize the road during all times of the day, for residents of all ages. This incomplete network of sidewalks has been identified as a potential safety issue, as pedestrians routinely walk within the travel lanes. There are short segments of existing sidewalk at the northern and southern termini of the study corridor that are a primary focus of potential enhancements.

In order to better understand the issues and concerns of the community, a public workshop was held at the Mandarin Community Club from 6 p.m. to 8 p.m. on October 19, 2015, which was attended by approximately 75 members of the community. Workshop attendees had the opportunity to view numerous maps of the corridor and listen to a presentation by the project team. The presentation outlined the deficiencies in sidewalk connectivity throughout the corridor and also discussed the feasibility of extending the sidewalk that currently terminates at Bolton Abbey Road on the southern terminus of the corridor. Participants at the workshop conveyed the importance of sidewalk connectivity and safety, but also expressed concern for tree preservation, as the trees contribute to the unique character for the corridor. Workshop attendees also identified the need to address the increased travel speeds along the corridor.

As a result of the evaluation and community input, the priority project for the corridor recommends the extension of sidewalk from Bolton Abbey Road to Orange Picker Road. The sidewalk would be constructed on the north side, or inner loop side of the road. The design of sidewalk along this corridor will require extensive design and drainage analysis taking into consideration numerous roadside constraints including driveways, mailboxes, ditches and tree preservation.

Additionally, other segments along the corridor were reviewed for potential sidewalk construction as part of the ongoing operational and safety improvement program. The recommended sections include:

- Flynn Road/Westberry Road to San Jose Boulevard (from just south of Flynn Road/Westberry Road intersection near the intersection with San Jose Boulevard, and along San Jose Boulevard, expanding the sidewalk that currently exists to the south across the Julington Creek Bridge);
- Plummer Cove Road, and
- along Mandarin Road from Orange Picker Road to Rivergate Drive.

In the future, consideration should also be given to extending the sidewalk network around the Mandarin loop road. Specifically connecting sidewalk from Walter Jones Historic Park to Brady Road; and Brady Road to Riverplace Drive.

Further development and analysis of all the concepts and recommendations outlined in this study is essential. Moreover, continued coordination with stakeholders and other agencies may afford partnership opportunities for funding that could affect the prioritization and/or implementation of projects.

1: CONTEXT

CORRIDOR ASSESSMENT

The Mandarin Road and Plummer Road corridors were evaluated for bicycle and pedestrian connectivity as part of the JTA MobilityWorks Complete Streets initiative. Roadway segments currently lacking sidewalk include 0.4 mile along Plummer Cove Road between Scott Mill Road and San Jose Boulevard and 3.8 miles along Mandarin Road between Loretto Road and Bolton Abbey Drive. The abrupt termination of sidewalk along Mandarin Road in the vicinity of its southern terminus near San Jose Boulevard was also noted. The following sections review the existing conditions.

FIELD REVIEW

On Tuesday, August 25, 2015 a field review of the Mandarin/ Plummer Cove Road Corridors was performed by driving through the corridor while intermittently pausing to review sections in more detail on foot. The purpose of the field review was to obtain photographs and field measurements while gaining a better understanding of the corridor and the issues associated with developing a Complete Street on Mandarin Road and Plummer Cove Road. A second field review was performed on Tuesday, September 1, 2015 in order to gain additional information about the corridor. Figures 1 and 2 demonstrate the rural nature of the corridor, particularly the existing tree cover and close proximity to the roadway.

CORRIDOR OVERVIEW

The Mandarin/Plummer Cove Mobility Corridor includes two roads: Mandarin Road and Plummer Cove Road located in southeast Duval County immediately east of the St. Johns River. The Mandarin Road corridor begins at its intersection with San Jose Boulevard (SR 13) and terminates at its junction with San Jose Boulevard just north of the Julington Creek Bridge. The segments of Loretto and Westberry Roads that diverge from Mandarin Road are also included within the study area. The Plummer Cove Road portion of the corridor begins at Scott Mill Road and terminates at San Jose Boulevard just south of I-295. There is no public transit on Mandarin Road or Plummer Cove Road. Figure 3 displays the study area, which is highlighted in yellow, and identifies the major road network in this corridor.

FIGURE 1: EXISTING CONDITIONS



FIGURE 2: EXISTING CONDITIONS



FIGURE 3: LOCATION MAP



The primary deficiency of Mandarin Road and Plummer Cove Road is the lack of pedestrian accommodations. The corridor segments lacking sidewalk serve approximately 1,400 homes which have direct or indirect access via a dead-end or neighborhood roads. In addition to the high number of homes, two noteworthy recreational destinations are located at the north and south ends of Mandarin Road – Walter Jones Historical Park and Mandarin Park. In addition, Brady Park/Alberts Field, which draws significant activity, with tennis and ball fields, is located between Mandarin Road and Orange Picker Road. The following photographs (Figures 4 through 10) summarize the major considerations for the project corridor:

FIGURE 4: PATRIARCH OAKS THROUGHOUT THE CORRIDOR



FIGURE 5: CONNECTIVITY TO PARKS



FIGURE 6: CONNECTIVITY TO PARKS



FIGURE 7: EXISTING TYPICAL SECTION



FIGURE 8: BICYCLE LANES SHARE THE ROAD SIGNS ALONG CORRIDOR



FIGURE 9: EXISTING ROAD CONDITIONS (SWALE SECTIONS)



FIGURE 10: EXISTING ROADWAY CONDITIONS (MAILBOXES)

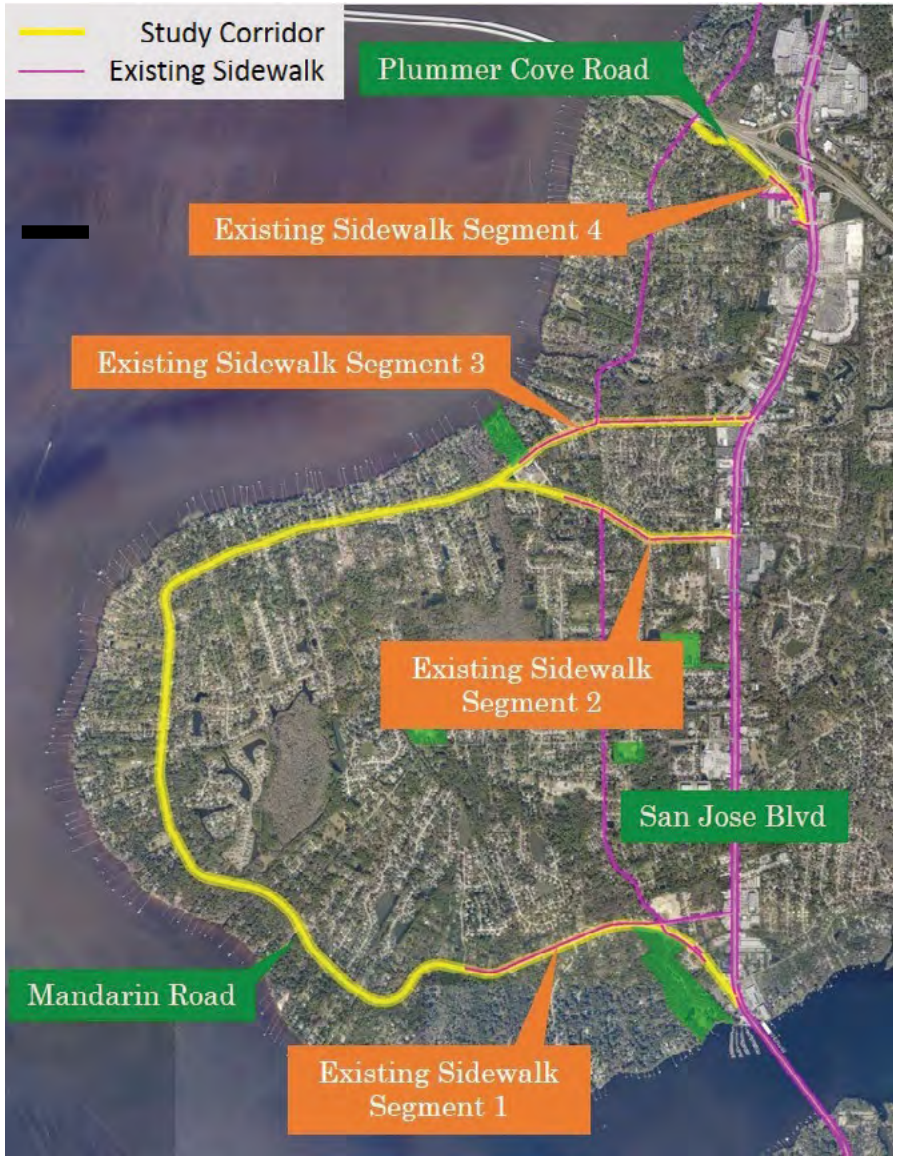


In general, existing sidewalk in the Mandarin community west of San Jose Boulevard can be characterized as sporadic and lacking connectivity between pedestrian generators and destinations, such as commercial centers on San Jose Boulevard, the Julington Creek Bridge, or the two community parks on the north and south sides of the Mandarin peninsula. Existing sidewalks are located along San Jose Boulevard, Westberry Road, Flynn Road, and Scott Mill Road. Locations of sidewalk in the project corridor include:

- On the south side of Mandarin Road, concrete sidewalk begins approximately 1,000 feet northwest of San Jose Boulevard and extends to the Mandarin Road / Westberry Road intersection. Existing sidewalk is located on the north side of Westberry Road and continues on Mandarin Road to its current terminus at Bolton Abbey Drive.
- On the north side of Mandarin Road, asphalt sidewalk begins at the San Jose Boulevard / Mandarin Road intersection and extends westward to its current terminus at Walter Jones Historical Park (approximately 600 feet east of the Mandarin Road / Loretto Road junction);
- On Loretto Road, concrete sidewalk begins at the Loretto Road / San Jose Boulevard intersection and extends to its current terminus at County Dock Road. This asphalt sidewalk also intersects with a similar asphalt sidewalk located along the west side of Scott Mill Road; and
- On Plummer Cove Road, concrete sidewalk begins approximately 500 feet west of the Plummer Cove Road / San Jose Boulevard intersection and extends to 600 feet northwest of the intersection of Scott Mill Road and Plummer Cove Road.

This incomplete network of sidewalks has been identified as a potential safety issue, as pedestrians routinely walk within the travel lanes on Mandarin Road. Mandarin Road lacks a shoulder or bike lane and therefore is a "share the road" facility. Sharrows and "Share the Road" signs are located intermittently along Mandarin Road to remind motorists that bicyclists are expected to ride within the travel lane. The dense tree canopy comprised of numerous patriarch oaks, which are a source of community pride, complicate the ability to widen Mandarin Road to accommodate a bicycle lane or pedestrian accommodations. These trees also add to line of sight limitations along winding Mandarin Road, thereby increasing safety concerns and adding to discomfort for runners, bicyclists and pedestrians. Hence, the narrow lanes and incomplete sidewalk network are concerning with respect to accommodating pedestrians in particular. Figure 11 shows the location of the existing sidewalk in the corridor. The study area is highlighted in yellow, the dark pink lines display the locations of existing sidewalk, and existing parks are shown in green.

FIGURE 11: EXISTING SIDEWALK CONDITIONS



Within the Mandarin Road and Plummer Cove Road corridors, four major gaps of sidewalk are present. These gaps are shown in Figure 12, beginning at the south end of the project and moving in a clockwise direction:

- The first gap in the sidewalk occurs on the southern-most segment of Mandarin Road near San Jose Boulevard. The existing sidewalk terminates approximately 0.25 miles north of the San Jose intersection. Completing this gap connects pedestrians to St. Johns County via the dedicated sidewalk envelope on the Julington Creek Bridge.
- The second gap in the sidewalk occurs along Mandarin Road from Bolton Abbey Drive to Walter Jones Historical Park. Closing this gap of approximately 3.8 miles connects sidewalk on the north and south ends of Mandarin Road while serving nearly 1,400 households.
- The third gap in the sidewalk occurs on Loretto Road from County Dock Road to Mandarin Road. Closing this gap of 1,400 feet connects Loretto Road to Mandarin Road and facilitates access to Walter Jones Historical Park and the riverfront.
- The fourth gap in the sidewalk occurs along Plummer Cove Road between Scott Mill Road to 1,200 feet northwest of San Jose Boulevard. Closing this gap of approximately 2,000 feet connects San Jose Boulevard with Scott Mill Road via Plummer Cove Road. A short (approximately 500 feet) section of sidewalk also needs to be constructed in the vicinity of the San Jose Boulevard / Plummer Cove Road intersection to complete the pedestrian network connectivity.

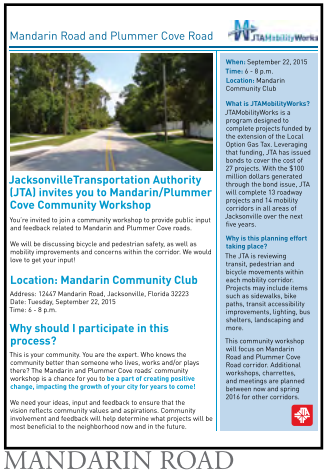
FIGURE 12: EXISTING SIDEWALK GAPS



2: PROCESS

COMMUNITY WORKSHOP

A two-hour community workshop was used to inform residents about the JTAMobilityWorks Complete Streets Program, as well as obtain comments on potential sidewalk extensions, transit, lighting, bicycle paths and landscaping in the Mandarin community. Soliciting comments from local residents assisted with the prioritization of potential construction projects should funding become available.


Mandarin Road and Plummer Cove Road

JTAMobilityWorks

When: September 22, 2015
Time: 6 - 8 p.m.
Location: Mandarin Community Club

What is JTAMobilityWorks?
JTAMobilityWorks is a program designed to complete projects funded by the extension of the Local Option Gas Tax. Leveraging that funding, JTA has issued bonds to cover the cost of 27 projects. With the $100 million dollars generated through the bond issue, JTA will complete 13 roadway projects and 14 mobility corridors in all areas of Jacksonville over the next five years.

Why is this planning effort taking place?
The JTA is reviewing transit, pedestrian and bicycle movements within each mobility corridor. Projects may include items such as sidewalks, bike paths, transit accessibility improvements, lighting, bus shelters, landscaping and more.

This community workshop will focus on Mandarin Road and Plummer Cove Road corridor. Additional workshops, charrettes, and meetings are planned between now and spring 2016 for other corridors.

Jacksonville Transportation Authority (JTA) invites you to Mandarin/Plummer Cove Community Workshop

You're invited to join a community workshop to provide public input and feedback related to Mandarin and Plummer Cove roads.

We will be discussing bicycle and pedestrian safety, as well as mobility improvements and concerns within the corridor. We would love to get your input!

Location: Mandarin Community Club

Address: 12447 Mandarin Road, Jacksonville, Florida 32223
Date: Tuesday, September 22, 2015
Time: 6 - 8 p.m.

Why should I participate in this process?

This is your community. You are the expert. Who knows the community better than someone who lives, works and/or plays there? The Mandarin and Plummer Cove roads' community workshop is a chance for you to be a part of creating positive change, impacting the growth of your city for years to come!

We need your ideas, input and feedback to ensure that the vision reflects community values and aspirations. Community involvement and feedback will help determine what projects will be most beneficial to the neighborhood now and in the future.

MANDARIN ROAD OUTREACH FLYER

COMMUNITY FEEDBACK/KEY ISSUES

The Community Workshop was held on October 19, 2015 from 6 to 8 p.m. at the Mandarin Community Club (see Figure 13) located on Mandarin Road. Full size exhibits (1 inch=100 feet) of the corridor were displayed on exhibit boards supported by tripods, while half-size plots were displayed on tables. Additional tripods included flip charts to accommodate post-it notes containing comments from the public. Attendees were provided an opportunity to place a circle sticker on a flip chart next to their preference for sidewalk on various segments of Mandarin Road. The public was encouraged to complete and submit comment forms at the meeting or send to the JTA via e-mail.

FIGURE 13: MANDARIN COMMUNITY CLUB LOCATION



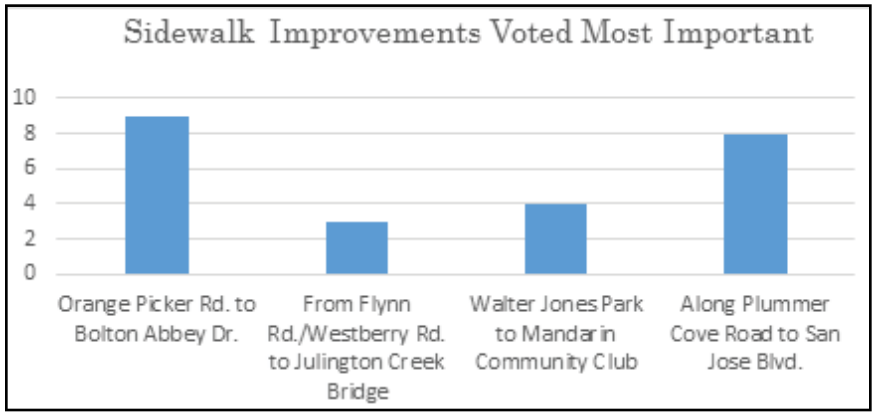

MANDARIN ROAD WORKSHOP PRESENTATION

A formal presentation began shortly before 6:30 p.m. and continued to 7:30 p.m. The presentation addressed the purpose of the JTAMobilityWorks program and the Complete Streets initiative followed by an analysis of the corridor characteristics, possible sidewalk segments, challenges to accommodating sidewalks, and methods of minimizing impacts to the historic trees and root zone. Numerous questions were asked by the audience. Councilman Matt Schellenberg and Fred Jones, JTA, addressed many of the questions and comments. The presentation concluded at approximately 7:30 p.m. and the participants were encouraged to view the exhibits, provide comments, or speak to the professionals in attendance.

Approximately 77 members of the public signed the attendance register at the front table of the workshop. In addition to Councilman Shellenberg, the elected officials in attendance included Councilman Tommy Hazouri. Former Councilwoman Sharon Copeland was also in attendance, as were eight members of the Mandarin Community Club.

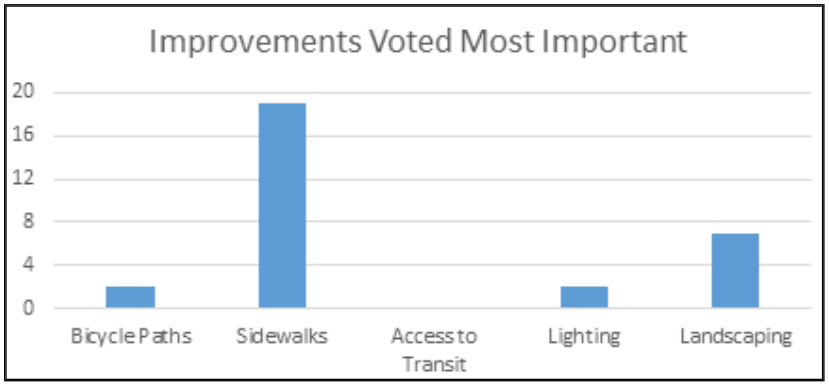
Participants were asked to rank sidewalk segment improvements in order of personal importance. The segments that were rank as "1" were tallied below in Figure 14.

FIGURE 14: COMMUNITY INPUT MOST IMPORTANT SIDEWALK IMPROVEMENTS



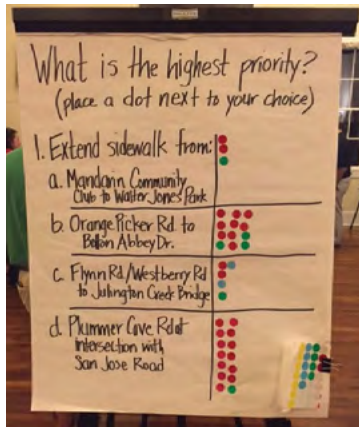
Participants were also asked to rank their personal improvement priorities. The improvements that were ranked as "1" were tallied below as illustrated in Figure 15.

FIGURE 15: COMMUNITY INPUT MOST IMPORTANT IMPROVEMENTS



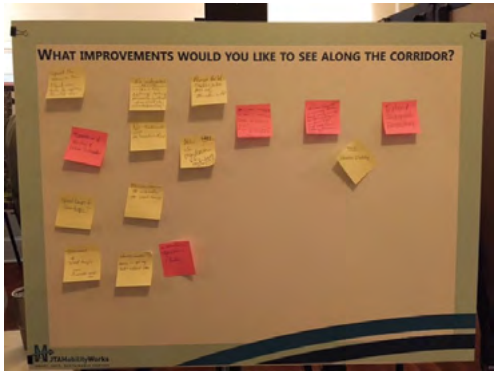
The prevalent themes identified by the workshop attendees include the following:

- Speed through the corridor is too fast – slow it down;
  - Speed humps / Speed bumps
- Preservation of trees is critical;
  - Cut dead limbs over road;
  - Plant new oaks to replace old ones;
  - Trimming trees for overhead power lines is killing trees;
  - Preserve tree canopy;
- Safety – All of Mandarin Road needs sidewalks and bike paths;
- Sidewalks are needed to get pedestrians out of the road;
  - Alternative sidewalk material should be considered;
  - More trail-like than sidewalk (natural/permeable);
  - Consider a boardwalk to minimize impacts to trees; (Figure 16)
  - Put sidewalks behind trees on dedicated easements;
  - Maintenance of existing and future sidewalks;
  - No sidewalks - preserve trees;



MANDARIN ROAD WORKSHOP INPUT

- Connect existing neighborhoods with sidewalks to Mandarin Road;
- Need additional pedestrian crossings at Walter Jones and Presbyterian Church;
- Mandarin Road is historic with a rural feel – no additional sidewalks;
- Improve drainage on Mandarin Road;
  - Bury pipes to replace drainage ditches on Mandarin Road to increase usable pathway
- Need additional lights on Plummer Cove Road; and
- Aesthetics of the corridor should be considered.



MANDARIN ROAD WORKSHOP INPUT

FIGURE 16: BOARDWALK PERSPECTIVE RENDERING



3: CONCEPTS

DESIGN CONCEPTS

Based on the existing conditions, gaps in the sidewalk, and public input, five segments were analyzed for consideration as potential future projects along the corridor:

- Plummer Cove Road;
- Flynn Road/Westberry Road intersection to San Jose Boulevard (includes 0.2 miles near southern terminus at Mandarin Road/San Jose Boulevard intersection lacking sidewalk);
- Bolton Abbey Drive to Orange Picker Road;
- Orange Picker Road to Riverplace Drive; and
- Riverplace Drive to Walter Jones Historic Park.

Although a sidewalk gap currently exists on Loretto Road connecting to Mandarin Road, this segment is not included as a potential project because the roadside conditions including large swale sections would complicate the addition of sidewalk. Many residents in the area currently use the Mandarin Presbyterian Church parking lot to connect to Mandarin Road and Walter Jones Historical Park. Although completing this sidewalk segment is desirable, the alternate route through the Mandarin Presbyterian Church campus allows this segment to be a low priority and not recommended for carrying forward at this time given the higher priorities along Mandarin Road.

As previously discussed, the design will need to consider significant roadside constraints including numerous trees, driveways, as well as ditches and gaps in sidewalk. During the design and construction phase, attention will be given to drainage requirements and the potential to fill in portions of the roadside ditches, constructing a continuous culvert or identifying other design practices to address the drainage needs. While some sections of Mandarin Road currently lack a ditch and may not require inlets, a detailed drainage analysis is required to refine these assumptions. A detailed design survey and drainage analysis will allow the stormwater plan to be optimized.

Planning-level preliminary cost estimates are in development to help understand funding needs and requirements for the recommended projects. Due to the potential high cost of adding sidewalks to all of the segments studied, an analysis was also performed to determine the number of households served in the various sections. Using the estimated households served as an additional criteria, the termini of the various sidewalk projects may be optimized. Using parcel lines from the Duval County Property Appraiser, the number of residential parcels currently abutting Mandarin Road or located on a dead-end side road or neighborhood with direct access to Mandarin Road were considered. The assessment by segment is as follows.

Plummer Cove Road

Plummer Cove Road is one of the five potential sidewalk projects recommended for further study because the roadway is currently a narrow two-lane facility with no bicycle or sidewalk accommodations. Moreover, pedestrians wishing to access San Jose Boulevard must walk to either Oak Bluff Lane or Claire Lane, two connections to San Jose Boulevard located approximately 0.6 mile (3,200 feet) north and south of Plummer Cove Road. By extending the existing Plummer Cove sidewalk approximately 0.38 mile (2,000 feet) to the west, pedestrians along Scott Mill Road, as well as the 16 households along Plummer Cove Road will have access to San Jose Boulevard. Figure 17 shows the project area and the potential sidewalk extension in green.

FIGURE 17: PLUMMER COVE ROAD POTENTIAL SIDEWALK EXTENSION - SCOTT MILL ROAD

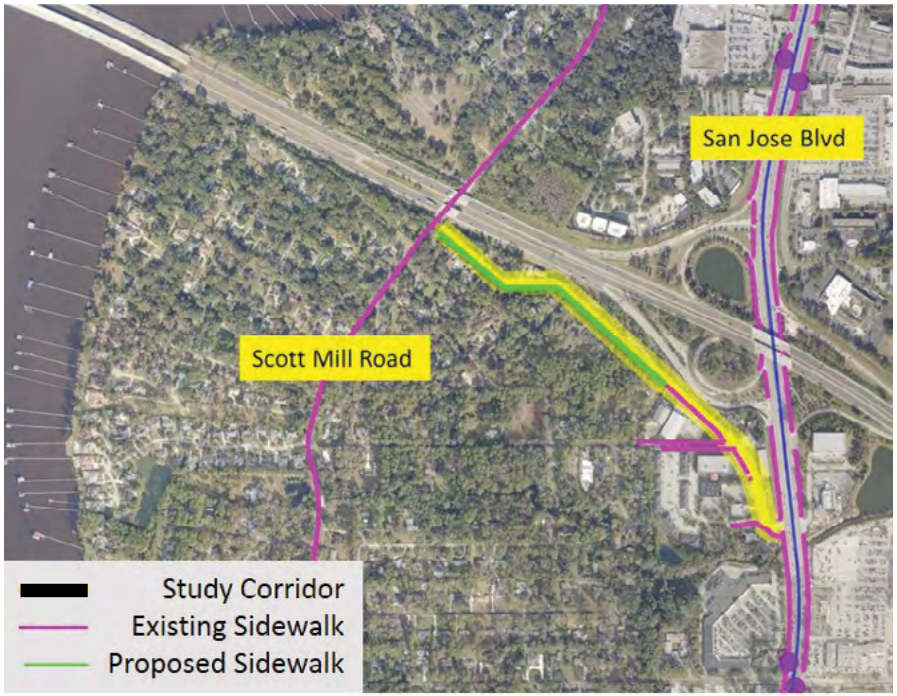


FIGURE 18: PLUMMER COVE ROAD POTENTIAL SIDEWALK EXTENSION - FLYNN/WESTBERRY TO SAN JOSE BOULEVARD



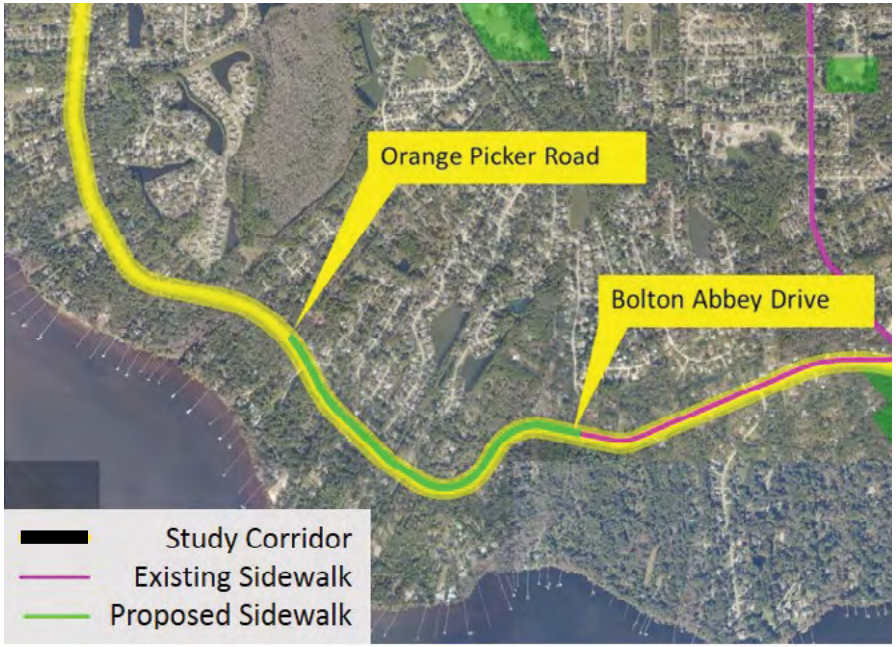
Flynn / Westberry Intersection to San Jose Boulevard

This segment of Mandarin road features sidewalk along the west side of Mandarin Road for approximately 0.2 miles (1,000 feet) south of the intersection. The existing sidewalk terminates abruptly at a JEA pump station and stops short of San Jose Boulevard by approximately 0.18 mile (950 feet). Extending the sidewalk in this location accommodates pedestrians safely to San Jose Boulevard, which includes a dedicated, barrier-protected sidewalk envelope on the Julington Creek Bridge. This sidewalk connection also facilitates pedestrian travel to the Julington Creek Marina and various restaurants and shops along San Jose Boulevard. A noteworthy point regarding sidewalk accommodation is that the west side of Mandarin Road in this section has wide ditches and relatively little tree canopy featuring large trees within the existing right-of-way. Figure 18 shows the project area and the potential sidewalk extension in green.

Bolton Abbey Drive to Orange Picker Road

This segment of Mandarin Road was identified by the community for potential improvements based on input from local residents, including a 400-signature petition. This segment of sidewalk extension connects the south end of Mandarin Road to a prominent local roadway (Orange Picker) and serves approximately 460 households along Mandarin Road or on adjacent dead-end side streets. This proposed sidewalk extension is approximately 0.9 mile (4,600 feet) in length and occurs along a segment of Mandarin Road with a less dense tree canopy within the existing right-of-way in comparison to the north side. While some tree removal will be required, placing the sidewalk along the east side of the roadway appears to be feasible if the existing ditch is filled and replaced with a continuous pipe culvert with ditch bottom inlets placed at various locations. One possible alteration to this corridor is to extend the limits northward to a more logical pedestrian generator, as Orange Picker Road is a narrow two-lane road with no bicycle or sidewalk accommodations. Figure 19 shows the project area and the potential sidewalk extension in green.

FIGURE 19: MANDARIN ROAD POTENTIAL SIDEWALK EXTENSION - BOLTON ABBEY DRIVE TO ORANGE PICKER ROAD



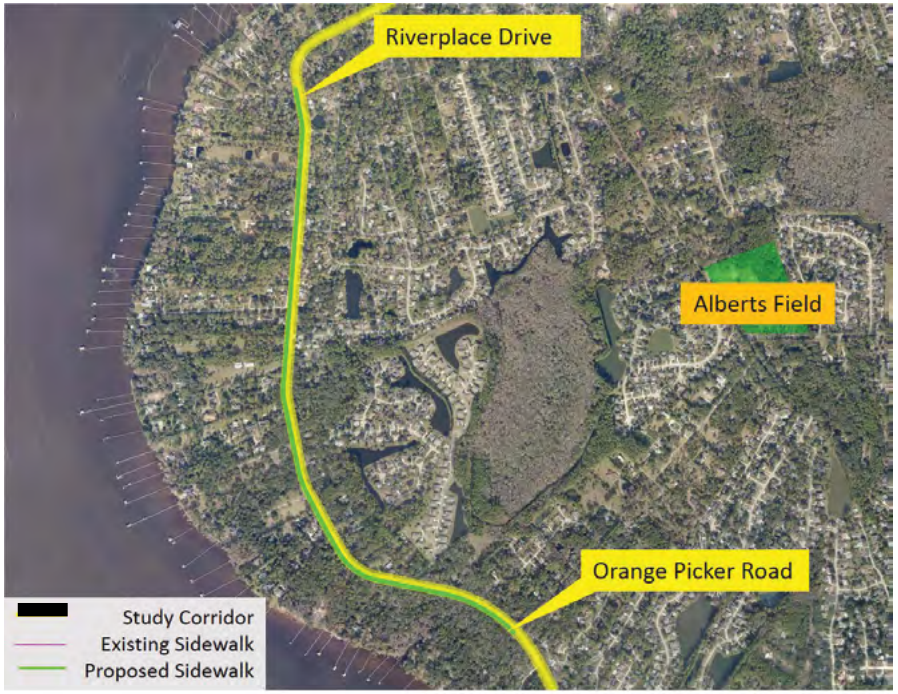
Orange Picker Road to Riverplace Drive

The segment between Orange Picker Road and Riverplace Drive is one of the sidewalk segments recommended as a potential project because of the numerous neighborhoods bordering this segment of Mandarin Road. In fact, sidewalk along this heavily populated segment of Mandarin Road serves approximately 560 households. As with the segment to the south, this approximately 1.4-mile (7,500-foot) segment is characterized by less dense tree canopy and a clearer roadside, potentially facilitating the installation of sidewalk and reducing the possibility of tree damage. Again, much of the existing ditch requires filling and replacing with an enclosed drainage system. Figure 20 shows the project area and the potential sidewalk extension in green.

The addition of this segment as measured from Bolton Abbey Drive would create a total sidewalk length of approximately 2.3 miles, which may be cost-prohibitive in the short term. If funding allows, extending the northern terminus from Orange Picker Drive to Rivergate Drive (an extension of 0.9 mile) would provide access to three major neighborhoods: Long Cypress, Red Cypress, and Rivergate.

These three communities comprise approximately 477 of the 563 (85%) households along this roadway segment between Orange Picker Road and Riverplace Drive. Instead of extending the sidewalk 2.3 miles from Bolton Abbey Drive, consideration should be given to extending sidewalk approximately 1.8 miles to Rivergate Drive in order maximize the return on the limited funds. Figure 21 displays this potential alternate terminus.

FIGURE 20: MANDARIN ROAD POTENTIAL SIDEWALK EXTENSION - ORANGE PICKER ROAD TO RIVER PLACE DRIVE



Riverplace Drive to Walter Jones Historic Park

The sidewalk extension from Riverplace Drive to Walter Jones Historic Park is the most controversial of the three primary segments along Mandarin Road because of the dense tree canopy, patriarch oaks, utilities, and a sharp curve located in the northwest corner of the segment. This sidewalk extension is approximately 1.5 miles (8,000 feet) and likely needs to switch sides of the road in order to minimize impacts to the patriarch oak trees. In order to further minimize impacts to the oaks and root zones, alternate sidewalk materials should be considered including wooden boardwalks, crushed stone, or coquina as an alternative to concrete or asphalt sidewalk.

FIGURE 21: MANDARIN ROAD POTENTIAL SIDEWALK EXTENSION - ORANGE PICKER ROAD TO RIVERGATE DRIVE

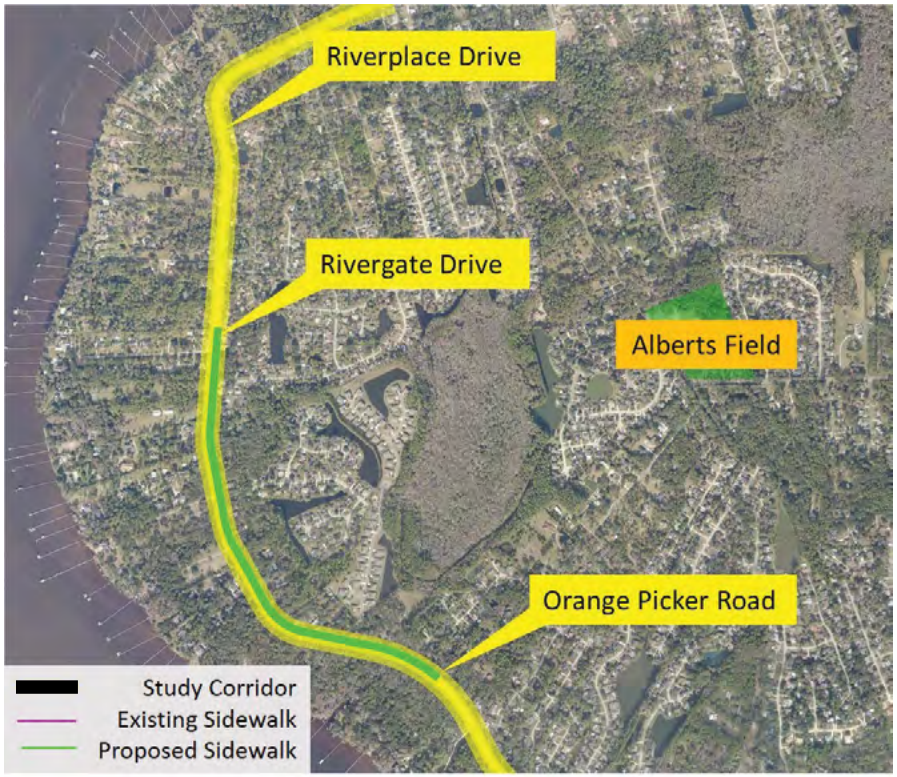


Figure 22 shows the project area and the potential sidewalk extension in green. Due to this length of this segment and the added difficulty of accommodating a sidewalk within the constrained roadside, a smaller segment is recommended for consideration as a potential short term project. Extending the existing sidewalk by approximately 0.85 mile (4,500 feet) westward from its current terminus at Walter Jones Historical Park to the Mandarin Community Club at Brady Road yields a connection between the park with the Mandarin Community Club and historic post office. This sidewalk extension accommodates pedestrians during the various festivals at the Mandarin Community Club, including the art festival held every Easter weekend. Moreover, Mandarin Presbyterian Church allows parking for the festival, and sidewalk facilitates travel between parking and the festival site. However, this segment is characterized by some of the largest oaks on the project, many of which are located just beyond the white edge line on the roadway.

Alternate sidewalk materials are strongly recommended for consideration during subsequent project phases. Consultation with the city arborist during development of design plans is encouraged for all segments of Mandarin Road, but especially for this segment. Figure 23 shows the project area and the potential sidewalk extension in green.

FIGURE 22: MANDARIN ROAD POTENTIAL SIDEWALK EXTENSION - RIVERPLACE DRIVE TO WALTER JONES HISTORIC PARK

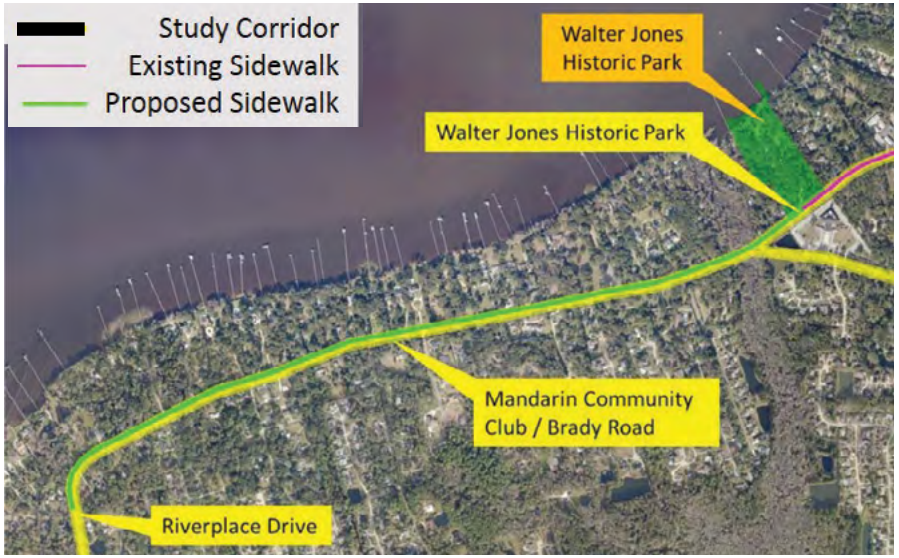
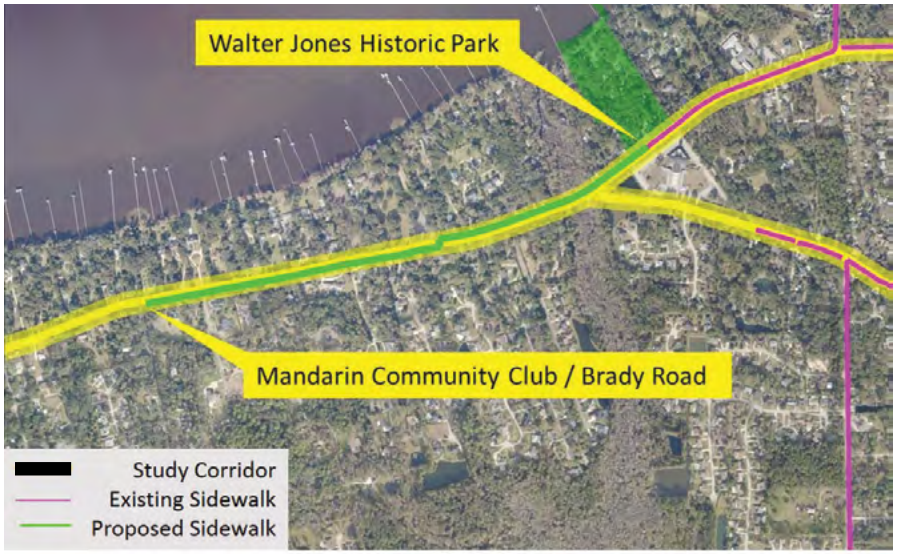


FIGURE 23: MANDARIN ROAD POTENTIAL SIDEWALK EXTENSION - MANDARIN COMMUNITY CLUB TO WALTER JONES HISTORIC PARK



4: RECOMMENDATIONS

Based on the consideration of engineering judgment, public input, preliminary cost estimates, and number of households served, the Mandarin Road and Plummer Road corridor segments, the following potential keystone, operational and safety or long term vision projects are summarized below.

KEYSTONE PROJECTS

The segment that provides the potential greatest benefit to pedestrian mobility is the 0.9-mile section between Bolton Abbey Drive to Orange Picker Road. In order to maximize number of households served, consideration should be given to extending the sidewalk an additional 0.9-mile to Rivergate Drive. If sidewalk is extended from Bolton Abbey Drive to Rivergate Drive, an estimated 940 (68%) of the total of 1,378 parcels within the Mandarin Road loop, will have either direct sidewalk access or access from their neighborhood road. Figure 24 illustrates the recommended sidewalk extensions.

The segment from Bolton Abbey Drive to Orange Picker Road was identified by the community as the most desirable for enhancing pedestrian connectivity. The proposed sidewalk would be constructed along the north side of the road, on the interior of the Mandarin Loop Road. For the purposes of developing preliminary construction cost estimates, it is assumed that the sidewalks will be concrete. Proposed design for the sidewalks will take into consideration tree preservation, roadside ditches, and access to driveways.

FIGURE 24: RECOMMENDED MANDARIN ROAD SIDEWALK EXTENSIONS



OPERATIONAL/SAFETY ENHANCEMENTS

All the five project segments identified for sidewalk connectivity within the Mandarin community were also analyzed for short term operational and safety improvements; and additional sidewalk extensions to build upon the keystone project identified above.

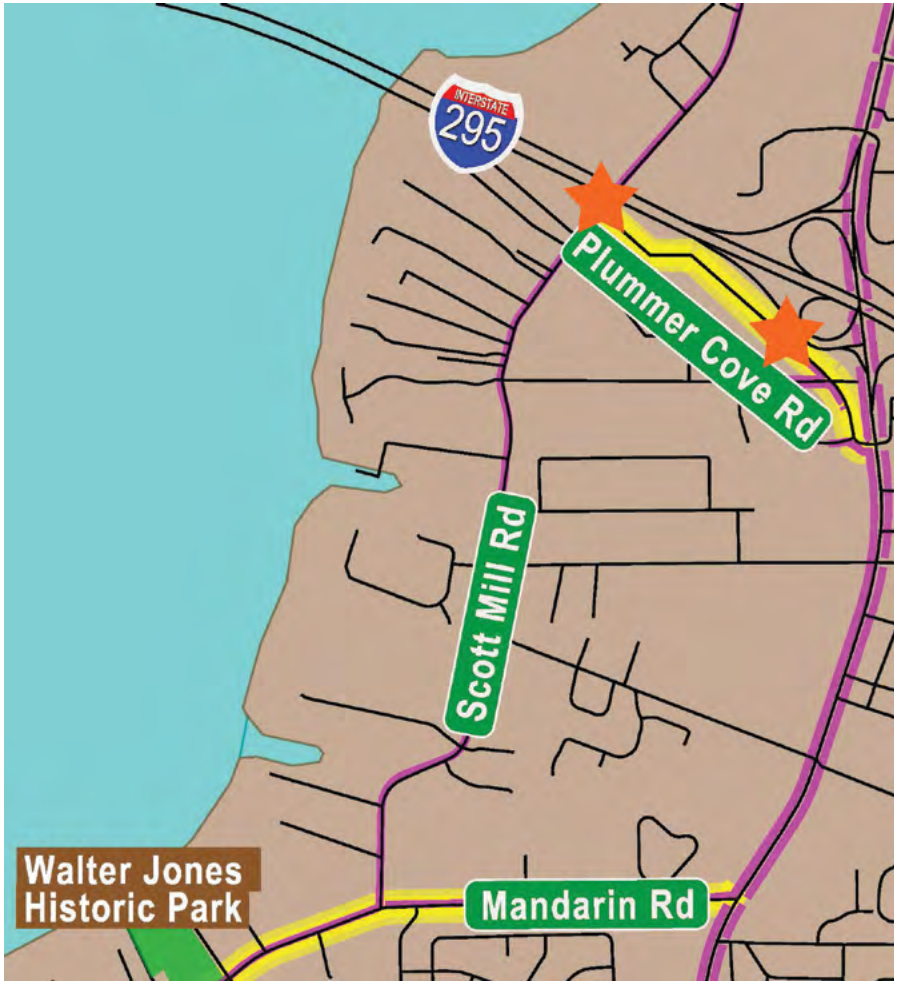
- **Flynn Road/Westberry Road to San Jose Boulevard:** Priority should be given to complete the 0.2 mile of sidewalk near the southern terminus of Mandarin Road, from just south of Flynn Road/Westberry Road intersection near the intersection with San Jose Boulevard, and along San Jose Boulevard. The completion of this sidewalk gap would connect an extensive sidewalk system extending into St. Johns County with the existing and future sidewalk system in the Mandarin community west of San Jose Boulevard.
- **Plummer Cove Road:** Completing sidewalk along Plummer Cove Road for approximately 0.4 miles, serving approximately 16 households. Figure 25 illustrates the recommended Plummer Cove Road sidewalk extension.
- **Orange Picker Road to Rivergate Drive:** If sidewalk is extended from Orange Picker Road to Rivergate Drive; the additional connectivity to Riverplace Drive will serve an additional estimated 81 households.

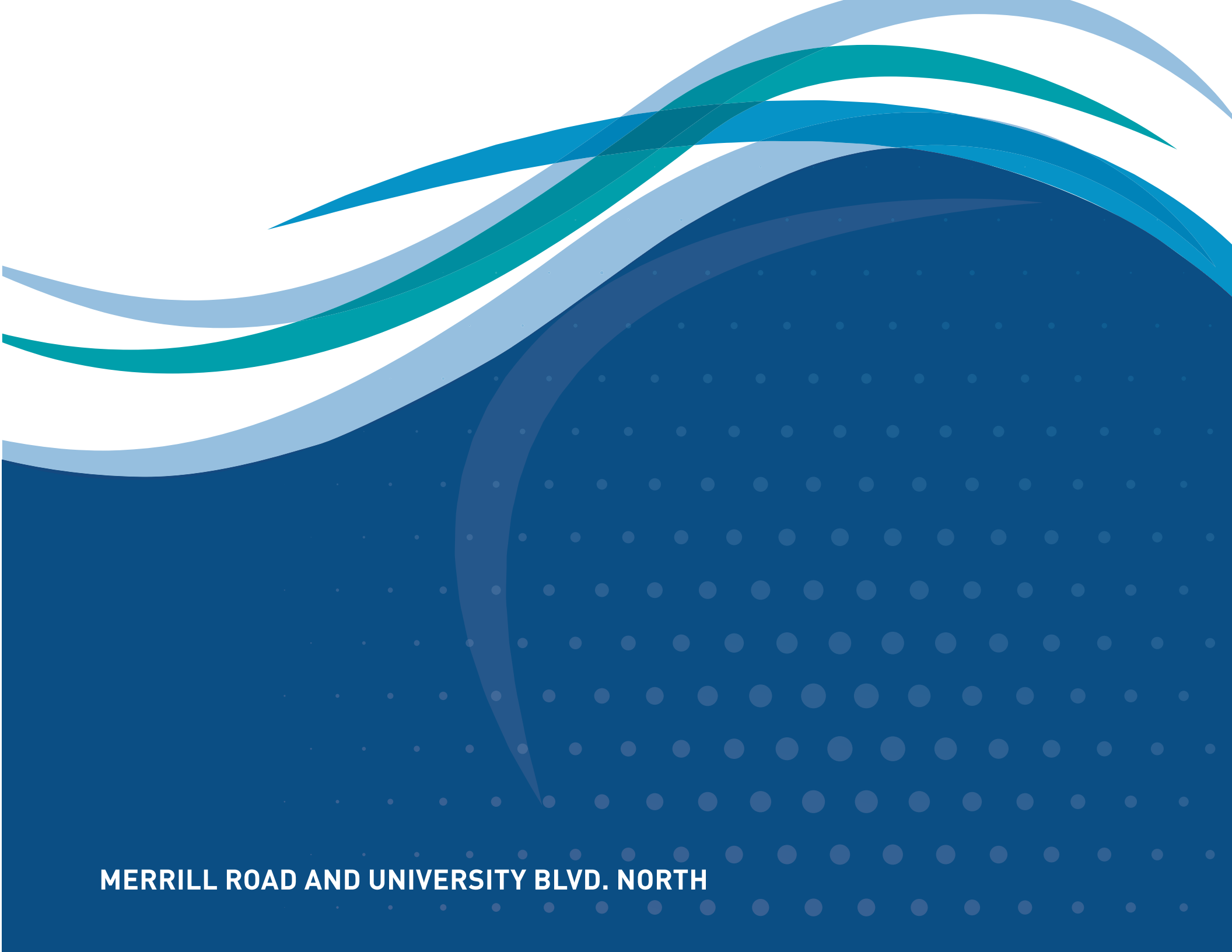
LONG TERM VISION

The long term vision projects for Mandarin Road include completing sidewalk connections along Mandarin Road's north segment, from Brady Road to Walter Jones Historic Park and Riverplace Drive to Brady Road, where the greatest challenge with respect to tree preservation will be encountered. These are identified as long term vision projects because of the design preparation work required for these projects. Preservation of the Patriarch Oaks is essential to the Natural Scenic Drive designation for Mandarin Road and serves as a vital part of the Mandarin community.

Therefore, further detailed analysis, engineering, and design work is necessary to ensure the sidewalk connectivity from Riverplace Drive to Brady Road is completed with tree preservation as a major goal and emphasis. This initiative would provide the Mandarin community with long term vision that preserves trees and provides safety and operational improvements along the corridor.

FIGURE 25: RECOMMENDED PLUMMER COVE ROAD SIDEWALK EXTENSION




MERRILL ROAD AND UNIVERSITY BLVD. NORTH

EXECUTIVE SUMMARY

The Jacksonville Transportation Authority (JTA) is committed to developing a multimodal transportation system in Jacksonville along key transit routes which also have significant pedestrian and bicycle travel needs. The JTA approach to addressing these corridors is to provide Complete Streets that address all travel modes within the context of the corridor and with consideration to potential redevelopment that is planned or envisioned.

Merrill Road and University Boulevard, in the Arlington neighborhood, serve a mixture of needs, including residents, commercial developments, civic services, and Jacksonville University. Both roadways serve significant bus routes and traffic from pedestrians and cyclists alike. This report presents an examination of potential complete street-focused improvements to University Boulevard from south of Arlington Road through Fort Caroline Road and to Merrill Road from Townsend Boulevard to University Boulevard and provides specific recommendations to make visions for the two corridors a reality.

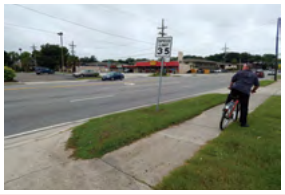
CORRIDOR ASSESSMENT

The design team performed a field review of the corridors on foot. The team noted several issues related to the physical design of and spatial conflict between travel modes. Collectively, these issues create an environment that is challenging for bicyclists, pedestrians, and transit riders. Observed issues and opportunities include:

Issues:

- High motor vehicle speeds
- Excessive and unnecessary curb cuts
- Large curb radii
- Inadequate accommodations for persons with disabilities
- Sidewalk obstructions
- Limited transit waiting facilities
- Lack of pedestrian buffer
- Lack of crossing opportunities
- Lack of bicycle facilities







Opportunities:

- Proximity to Jacksonville University
- Mix of land uses
- Right of way availability
- Bus stop improvements
- Trail connectivity
- Walking distance
- Building frontage along corridor

DESIGN CHARRETTE

The design team used a public "charrette" process to develop a vision and plan for the corridors. The team kicked off the charrette with an all-day open workshop session at Jacksonville University's River House on August 5-7, 2015 . Participants were invited to identify transportation challenges related to automobile travel, transit, walking, and biking within the study area. They were also asked to indicate their personal improvement priorities along each corridor.

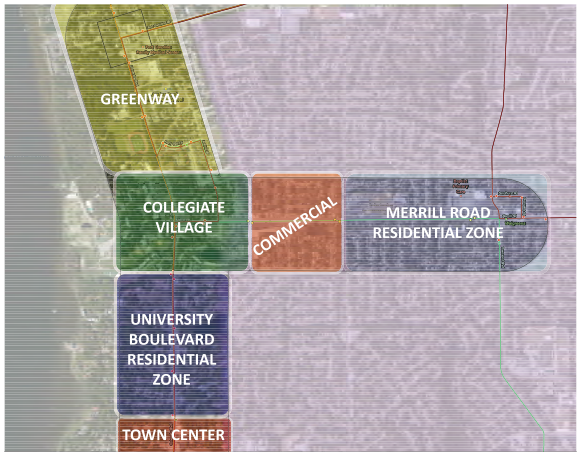
With this information, the design team began an intensive two-day work session to identify conceptual strategies to transform University Boulevard and Merrill Road into Complete Streets. Following this work session, the team once again invited the public back to hear their proposals, which are shown in this report.











CONTEXT ZONES

The team organized the study area into six notably distinct sub-areas. These "context zones" differ from each other in their land uses, levels of activity and/or transportation characteristics.

COLLEGIATE VILLAGE ZONE

The Collegiate Village Zone is home to Jacksonville University, a private university with an enrollment of over 3,700 students. The zone is also home to a handful of apartment complexes, single-family homes, and a few commercial developments to the east, at the edge of the Commercial Zone. The vast majority of these uses do not currently serve the adjacent student population at JU. This zone is envisioned as a notably more active node that mixes activities which serve the student population as well as other residents of nearby neighborhoods.

GREENWAY ZONE

The Greenway Zone is primarily home to single- and multi-family residences, as well as a public library, in addition to a commercial node at the intersection of University Boulevard and Fort Caroline Road. As a primarily residential area with limited connections and lower traffic volumes, this zone is imagined as a less intensive, more recreation-focused area than others. The "greenway" in its name is a reference to the large amount of unused roadside right-of-way along University Boulevard in this zone that could potentially be used as a linear multi-use trail. Connections southward into the active Collegiate Zone and commercial nodes are important, as is maintaining a safe and enjoyable environment for residents and visitors to the area's recreational facilities.

UNIVERSITY BOULEVARD RESIDENTIAL ZONE

Between the Collegiate Village Zone and Arlington Road, University Boulevard becomes predominantly residential again. This section of University Boulevard is dotted with small businesses, but predominantly serves through traffic and nearby residents. This segment of University Boulevard could be reconfigured into one that encourages lower speeds, and promotes connections to nearby neighborhoods, encouraging residents to frequent the shops and other facilities along University Boulevard.

TOWN CENTER ZONE

South of the University Boulevard Residential Zone, University Boulevard becomes increasingly commercial in nature as it approaches Arlington Road, with many businesses immediately adjacent to the sidewalk. This zone is envisioned as a more walkable commercial destination. A better roadside environment could help transform the street into one where residents and visitors comfortably interact with adjacent businesses, while still serving as an effective corridor for motor vehicle mobility.

COMMERCIAL ZONE

Starting at Rogero Road and continuing west through Cesery Boulevard, Merrill Road is home to numerous commercial developments. This context zone sees much more activity (including walking and biking) than the Merrill Road Residential Zone to the east. Immediately behind commercial development, the area transitions to primarily single-family homes. The Commercial Zone is already an active commercial node, but substandard facilities make it an unattractive and uncomfortable place for pedestrians and cyclists. This zone is envisaged as a more welcoming space for residents and commercial patrons alike, with improved facilities for pedestrians, bicyclists, and transit riders who are visiting the area. It is also envisioned as a transitional section, providing gradual change from the more built-up Collegiate Village Zone to the neighborhood-oriented Residential Zone.

MERRILL ROAD RESIDENTIAL ZONE

The area east of the Commercial Zone, between Rogero Road and Townsend Boulevard, is home to many neighborhood amenities, including two churches, an elementary school, and a supermarket. In this zone, Merrill Road is envisioned as a more residential street that still supports the heavy traffic volumes that pass through it. Facilities for both bikes and pedestrians could complement existing neighborhood-focused buildings and services, encouraging students to walk to school, parents to bike with their kids to school, and all residents to use non-vehicular modes for everyday travel.

CONTEXT ZONE THEMES

The community's vision for Merrill Road and University Boulevard varies between context zones, but all share a central theme: lively, economically viable places where pedestrians, cyclists, and transit riders can flourish while maintaining mobility for motor vehicles. In essence, the desire is to create a multi-modal context where all users feel safe and comfortable regardless of mode. In order to make the vision of more accommodating, safe, and comfortable environments along University Boulevard and Merrill Road a reality, the design team recommends a number of improvements.

STUDY AREA-WIDE RECOMMENDATIONS

Currently, lane widths vary from 12 to 13 feet on Merrill Road and 10.5 to 13 feet on University Boulevard. For both corridors lane widths between 10 and 11 feet for travel lanes and 11 feet for center turn lanes are recommended. Reduced lane widths encourage appropriate motor vehicle speeds and any extra pavement can be used to create dedicated bicycle facilities.

Currently both Merrill Road and University Boulevard have excessively wide curb radii at most street intersections, ranging from 25 to 30 feet to as high as 75 feet. In most cases, a curb radius of 15 feet at cross-streets and 5 feet at driveways is appropriate. Reduced curb radii encourage appropriate motor vehicle speeds, increase pedestrian visibility, and reduce the amount of time crossing the street.

- Mid-block crossing opportunities are proposed on both corridors. For roads that have more than two lanes and traffic volumes greater than 15,000 vehicles per day (such as Merrill Road and University Boulevard), raised median refuges are required. A raised median crossing has several benefits, including:
- Creating a safe refuge for pedestrians,
- Breaking one long, complex crossing into two shorter ones,
- Encouraging appropriate motor vehicle speeds through horizontal deflection, and
- Providing an opportunity for landscape enhancement.

LAND DEVELOPMENT REGULATIONS

The creation of site design guidelines will help guide new development and redevelopment to support proposed Complete Streets concepts. Site design guidelines can include:

- Site layout, including maximum setbacks for the placement of buildings and placement of parking;
- Standards and requirements for pedestrian linkages between buildings, the street and transit stops;
- Placement of amenities, such as bike racks and transit shelters; and
- Building and signage design guidelines consistent with the context area.

Over the long term, the roadside environment can effectively be expanded through land development regulations that incentives the creation of new amenities. New developments and redevelopments could build a wider sidewalk or add on-street parking as part of site development.

A number of excessively wide and/or unnecessary driveways were noted on Merrill Road and University Boulevard. This could be improved with the use of access management guidelines. Access management provides a framework for balancing the access needs of businesses with the safety and mobility needs of roadway users. Spacing standards could prescribe minimum distances between driveways, cross-streets and traffic signals. Cross and rear access strategies could also preserve access to developments while reducing the number of driveway openings onto the main road.

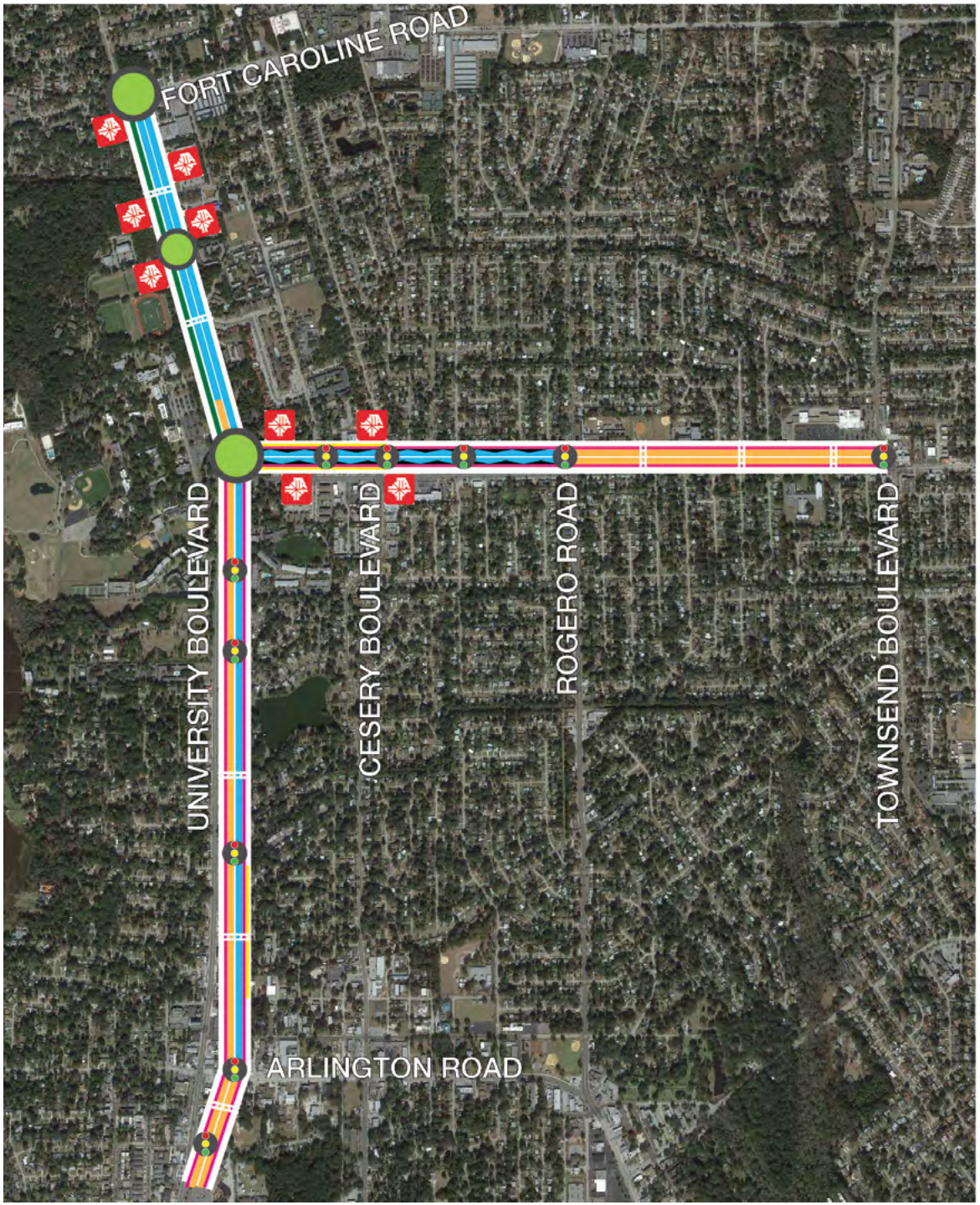
Site design guidelines, the creation of on-site amenities and access management strategies can all be implemented through the creation of an overlay zone. One general overlay can be created and then customized for each of JTA's Complete Streets corridors.

SPECIFIC ROADWAY IMPROVEMENTS

A number of specific improvements were identified within these two corridors. A diagram of many of these improvements is shown on the facing page.

Additional recommended improvements not shown on the graphic include:

- Upgrade crossings at signalized intersection to current ADA standards and provide pedestrian countdown timers
- Include landscaping in added raised median
- Upgrade lighting to current standards and/or add pedestrian scale lighting
- Upgrade and consolidate overhead utility lines or place utilities underground
- Construct bus pull-off areas
- Various modified signals including Merrill Road at Rogero Road and University Boulevard at Burdette Road/Lake Lucina Drive



Legend

- Lane widths reduced, raised median added
- Lane widths and number of lanes reduced, raised median added
- Chicanes on roadway
- Existing traffic signal
- New bus pull-off
- New on-street parking
- New bike lanes
- New multiuse path
- New roundabout
- New midblock pedestrian crossing

1: CONTEXT

PLANNING PROCESS AND PHILOSOPHY

The Jacksonville Transportation Authority (JTA) is committed to developing a multimodal transportation system in Jacksonville along key transit routes which also have significant human scale transportation needs via pedestrian and bicycle travel modes. This combination of uses is frequently present along transit routes where lower automobile ownership occurs. In these areas, the main travel corridors frequently serve multiple purposes:

- Automobile travel though the community
- Automobile and truck travel to and from the community
- Transit travel for long distance commuter trips and shorter local trips
- Pedestrian and bicycle travel within the community to accommodate everyday needs

Along many of these corridors, the transportation network is designed to move automobile traffic through the area. These corridors are not oriented towards pedestrian and bicycle travel or local automobile access.

The JTA approach to addressing these corridors is to provide Complete Streets that address all travel modes within the context of the corridor and with consideration to potential redevelopment that is planned or envisioned. This report documents the community outreach, technical analysis and concept development that has been performed for the Merrill Road and University Boulevard north corridors.

COMMUNITY ENGAGEMENT

The process of developing Complete Streets recommendations included significant input from the community regarding transportation needs, as well as safety and operational concerns related to all travel modes. Even more important than identification of existing problem areas was the input received on the future vision for the community. A charrette process was used to solicit input from community stakeholders, transportation agencies, and the public. This process began with a walk through of the corridors by the consulting team and JTA to identify current conditions and issues related to multimodal transportation. This was combined with input from stakeholders and the public over a four day period as the consulting team examined problem areas and developed concepts for solutions that are built on the community's vision for the future.

The charrette process provided extensive input and prompted the development of five distinct context zones which were used throughout the charrette and were the basis for development of individual strategies for improvement of the Merrill and University corridors.

CONCEPT DEVELOPMENT

This report contains recommendations to the roadway and roadside environment to develop Complete Streets along the Merrill Road and University Corridor. The report contains concept schematics and typical cross sections to illustrate non-traditional recommendations along the corridors.



ASSESSMENT

In order to make sound recommendations for the transformations of the University Boulevard and Merrill Road corridors, the charrette team worked diligently to understand and assess current conditions. This occurred through both a gathering of existing data sources as well as a walk of the corridor.

REVIEW OF EXISTING PLANS AND DATA

In advance of the charrette, the team reviewed several existing reports and datasets. This was performed to familiarize the team with a well-informed understanding of the context in which these streets exist and to provide a basis from which they could develop and analyze potential solutions. Reviewed documents include, but are not limited to the following:

- Path Forward 2040Long Range Transportation Plan from the North Florida Transportation Planning Organization
- City of Jacksonville 2030 Mobility Plan
- City of Jacksonville 2030 Comprehensive Plan
- Transit Enhancements Corridor Report Merrill Road from the Jacksonville Transportation Authority (JTA)
- Overview crash data for both streets from the City of Jacksonville
- Bus stops and ridership data from JTA
- Vehicular traffic counts from the Florida Department of Transportation (FDOT)
- Greater Arlington/Beaches Vision Plan



FIELD REVIEW

On Tuesday, August 4, 2015 the charrette team performed a field review of the corridors. Rather than simply drive the streets, the entire team covered the length of both corridors on foot.

The walking approach has a dual purpose:

1. Team members gained extensive corridor access to take photographs and field measurements.
2. Team members got to experience the corridor from the perspective of a pedestrian.



TEAM MEMBERS ASSESS CONDITIONS ON THE MERRILL ROAD CORRIDOR DURING THE FIELD REVIEW.

Corridor Assessment

After completing the field review, the charrette team gathered to assess their findings. Generally speaking, the findings fall into two distinct categories:

- Issues: These are characteristics of the corridors that represent barriers to Complete Streets and should be addressed. Issues could include lack of adequate facilities or poor design.
- Opportunities: In some cases, the team observed characteristics about the corridors that could serve as a positive or asset to Complete Streets. These are opportunities that should be taken advantage of.

The charrette team's focus was on making recommendations on how to transform Merrill Road and University Boulevard into Complete Streets. What follows is a brief summary of the corridor issues and opportunities used to inform the eventual recommendations.

Issues

The team noted several issues during the field review related to the physical design and sharing of space between travel modes. Collectively, these issues create an environment that challenging for bicyclists, pedestrians, and transit riders. The higher speed design of these corridors is inconsistent with the use of these roads by many as pedestrian and bicycle oriented Main Streets.

High Motor Vehicle Speeds

Vehicles routinely exceed the posted 35 mile per hour (mph) posted speed. This is particularly obvious when experienced from the perspective of a pedestrian at the roadside. High vehicle speeds are likely the result of road design characteristics, including straight, flat and wide pavement, as well as traffic signal timing and spacing.



LONG, FLAT STRETCHES OF ROADWAY, WIDE PAVEMENT AND SIGNAL SPACING ALL CONTRIBUTE TO HIGHER MOTOR VEHICLE SPEEDS.

Excessive and Unnecessary Curb Cuts

In many locations along the corridor, there is excessive use of driveways and curb cuts, often in locations where access is no longer necessary. Each additional driveway disrupts traffic flow, creates safety issues for rear end and head on collisions and creates conflicts between turning vehicles and bicycles and pedestrians. Excessive driveways are especially prevalent on the section of Merrill Road between Rogero Road and University Boulevard and on University Boulevard south of River Road.



BOTH CORRIDORS INCLUDE MANY UNNECESSARY CURB CUTS AND DRIVEWAYS.

Large Curb Radii

Curb radii measures the distance at which the curb begins to turn to an oncoming street at an intersection. The larger the curb radii, the higher the speeds at which vehicles will make turns, and thus the less visible pedestrians become to turning vehicles and the longer the distance required to cross the street.

Large curb radii exist throughout both corridors, both at major intersections and on side streets. In some locations, pedestrians must cross over 90 feet of pavement at simple two-lane cross streets.



LARGE CURB RADII INCREASE THE AMOUNT OF PAVEMENT PEDESTRIANS MUST WALK TO CROSS THE STREET.



Inadequate Accommodations for Persons with Disabilities

Persons with disabilities, specifically those that require mobility aids such as wheelchairs and motorized scooters, require special accommodations to be able to move along a roadside. Design standards for such accommodations were legislated by the Americans with Disabilities Act (ADA) of 1990 (revised in 2010).

The charrette team noted a number of instances, particularly on Merrill Road, where the sidewalk conditions did not meet ADA standards. Issues include obstructions such as signage, landscaping, and utilities in the sidewalk and a lack of or inadequate curb ramps at intersections.



MISSING CURB RAMP THAT DOES NOT MEET ADA STANDARDS.

Sidewalk Obstructions

Beyond ADA considerations, sidewalk obstructions create an awkward environment for pedestrians and send a subtle message that one shouldn't really be walking here.



SIDEWALK OBSTRUCTION ON MERRILL ROAD.

Limited Transit Waiting Facilities

JTA provides fixed route transit service on both Merrill Road and University Boulevard. Some locations have expanded waiting areas, but many have only a bus stop sign. Riders must stand in the sidewalk or the grass buffer to wait for a bus.



BUS STOP ON UNIVERSITY BOULEVARD WITH A BENCH FOR WAITING.

Lack of Pedestrian Buffer

In most places along Merrill Road, there is either no buffer or a small (two feet or less) grass strip separating the sidewalk from the adjacent motor vehicle travel lane. Being in such close proximity to high speed vehicles creates a very uncomfortable environment for pedestrians.

This exists to a much lesser extent on University Boulevard. Most locations have on-street parking, a striped shoulder or a large grass strip (greater than 10 feet) separating the sidewalk from the adjacent motor vehicle travel lane.



SIDEWALK ALONG MERRILL ROAD.

Lack of Crossing Opportunities

Both Merrill Road and University Boulevard include long stretches of roadway in between signalized pedestrian crossing opportunities. Often, the space between signalized crossing opportunities exceeds 1,000 feet. In some cases the distance is closer to 4,000 feet (between Rogero Road and Townsend Boulevard on Merrill Road and between Fort Caroline Road and Merrill Road on University Boulevard).

There are no unsignalized crossing opportunities on either corridor. Pedestrians with an origin or destination at mid-block location must cross five lanes of fast-moving traffic in both directions. Similarly, bus riders with a mid-block stop on the opposite side of the street from their origin/destination must do the same.



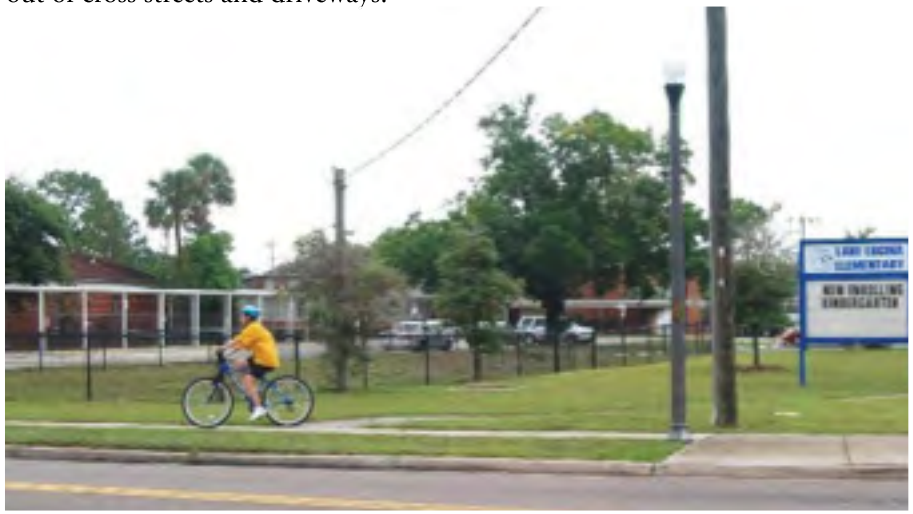
BOTH CORRIDORS CONTAIN LONG STRETCHES WITH NO SIGNALIZED CROSSING. PEDESTRIAN CROSS FIVE LANES OF TRAFFIC AT RANDOM MIDBLOCK LOCATIONS.

Lack of Bicycle Facilities

There are no dedicated facilities, which could include bicycle lanes, cycle tracks or parallel trails, for cyclists on either Merrill Road or University Boulevard. The outside lane on both facilities is 11 or 12 feet wide. On Merrill Road, there is no shoulder between the outside lane and curb face. On University Boulevard, there are several locations with a striped shoulder or on-street parking.

Given the speed and traffic characteristics of both roads, neither is appropriate for shared-lane bicycle use even for more experienced cyclists. The sections of University Boulevard with on-street parking are even less appropriate, as cyclists must contend with both fast-moving motor vehicles as well as car doors.

The lack of dedicated facilities or accommodations for bicycles means that cyclists often operate in the sidewalk. This is a less than ideal situation because of conflicts with pedestrians as well as a lack of visibility to vehicles turning in and out of cross streets and driveways.



BOTH CORRIDORS LACK DEDICATED BICYCLE FACILITIES OR ACCOMMODATIONS. MOST CYCLISTS RIDE IN THE SIDEWALK.

OPPORTUNITIES

The study team noted a number of opportunities during the course of the field review. These are items that could potentially serve to the advantage of the Merrill Road and University Boulevard corridors.

Proximity to Jacksonville University

The Jacksonville University campus is at the epicenter of the two corridors. At present, there is a walled perimeter surrounding the campus, with limited interaction to the surrounding community. The ability to enhance and strengthen connections to the community could be a benefit to the creation of a University Village atmosphere.

The university represents a great opportunity to help transform the character of the Merrill Road and University Boulevard corridors. The students can provide life and energy and the school itself can offer resources. Re-establishing interaction between JU and the surrounding community should be a priority.



JACKSONVILLE UNIVERSITY REPRESENTS A GREAT OPPORTUNITY TO HELP TRANSFORM THE CHARACTER OF THE MERRILL ROAD AND UNIVERSITY BOULEVARD CORRIDORS.

Mix of Land Uses

Both corridors contain a mix of retail, institutional, and civic uses in close proximity to residential neighborhoods. Having complementary uses in such close proximity to each other creates a built-in demand for walking and cycling activity.

Right of Way Availability

The section of University Boulevard north of Merrill Road contains large amounts of excess right of way, both in terms of large grass strips adjacent to the roadway and motor vehicle travel lanes that are obviously no longer necessary. This excess right of way represents an opportunity to provide enhancements for cyclists, pedestrians and transit riders without sacrificing other elements of the road.

Bus Stop Improvements

JTA has designed improvement for bus stops at five locations along Merrill Road between University Boulevard and Townsend Boulevard. These include bus stops/shelters and waiting area amenities.



UNIVERSITY BOULEVARD CONTAINS LARGE AMOUNTS OF EXCESS RIGHT-OF-WAY SUCH AS LARGE GRASS STRIPS AND OBSOLETE MOTOR VEHICLE TRAVEL LANES.

Trail Connectivity

The Blue Cypress multi-use trail is located off of University Boulevard not far from the northern terminus of the study area. The trail is a natural draw for cyclists. In addition, the North Florida TPO is studying a proposed greenway that would link Downtown Jacksonville to the Beaches, via the Arlington area and Wonderwood Expressway corridor. Providing connectivity to these trails through bicycle facilities on or adjacent to University Boulevard is a great opportunity for expanding the cycling network throughout the area and enhancing the attractiveness of the corridor for cycling enthusiasts.

Walking Distance

The section of Merrill Road where the primary pedestrian and bicycle activity currently exists is contained within an area that is accessible within a reasonable time via walking and cycling. The image below shows a 10 minute walking distance centered on the intersection of Merrill Road at Rogero Road, approximately half way along the study area of the corridor.



Building Frontage Along Corridor

In most locations along the corridor, buildings are located relatively close to the road. With some exceptions, buildings are set back no greater than 100 feet from the road. On University Boulevard near Arlington Road, buildings are located less than twenty feet from the road or immediately adjacent to the back of the sidewalk.

Having buildings with such relatively close relationships to the road provides a great opportunity to create active street life, assuming the necessary roadside conditions are in place.



MANY BUILDINGS ARE SITUATED CLOSE TO THE STREET IN BOTH CORRIDORS.

2: PROCESS

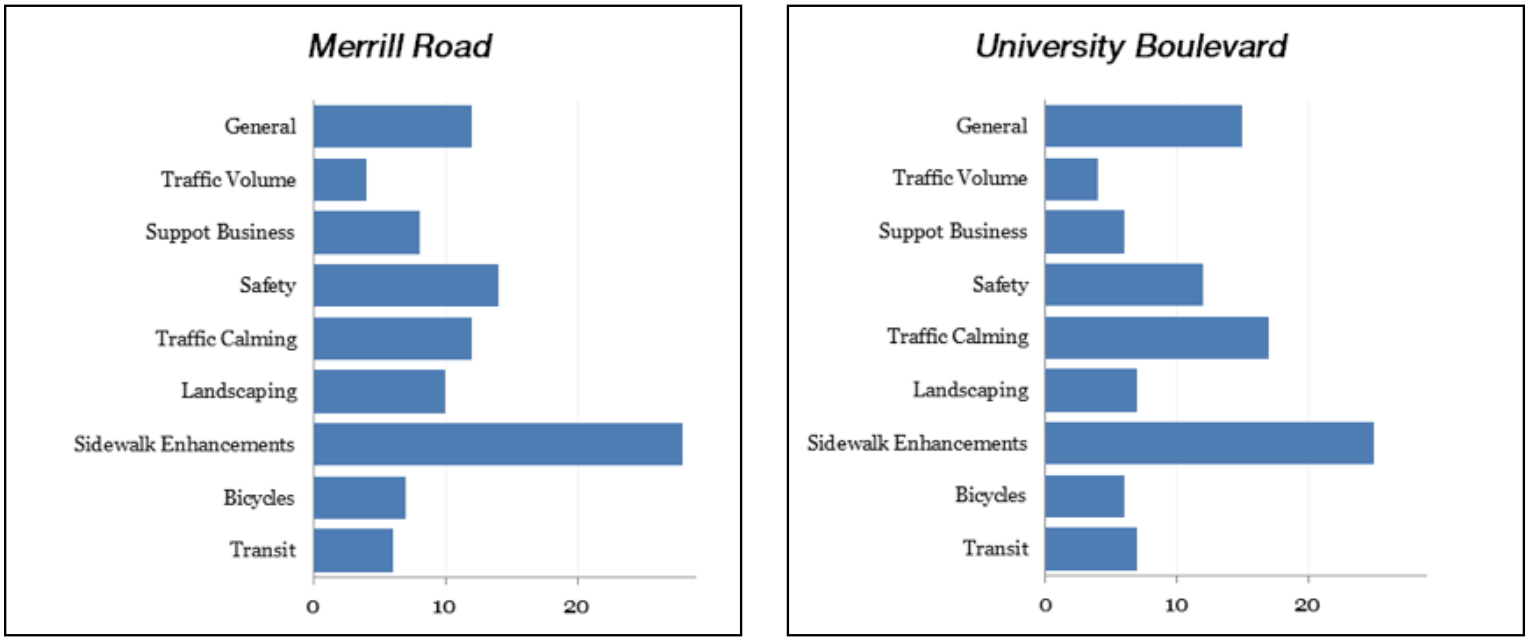
A three-day open "charrette" or workshop session with the public initiated the conceptual design effort for improvements within the Merrill Road and University Boulevard corridors. The charrette was conducted on campus at Jacksonville University's River House August 5-7, 2015. This allowed the team to get input from the community, which was then used to begin developing preliminary concepts for improvements to these corridors.

COMMUNITY INPUT

In this charrette, separate tables with aerial images were available for each street so that participants, including interested citizens, business owners, community representatives, city representatives, bicycle advocates, and other professionals, could easily navigate the issues of the two streets. Participants were encouraged to identify transportation challenges related to automobile travel, transit, walking, and biking 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. The number of responses in each category within each street can be seen below in Figure 1. Along both corridors, sidewalk enhancements were shown to be in-demand improvements. This contrast is especially strong on Merrill Road, where sidewalk enhancements were noted twice as often as the second most popular category, safety. Along University Boulevard, attention was more evenly spread between categories, with traffic calming, general, and safety also receiving a significant number of votes.

In the second, participants were asked to list their particular items of concern on note cards, which were then posted behind their respective streets. A collection of comments gained from this exercise and throughout the charrette process is included in Appendix A. Additionally, participants used colored dots to indicate areas they thought of as problematic areas or transitional areas that may need attention.

FIGURE 1: CHARRETTE PARTICIPANTS' RESPONSES TO IMPROVEMENT NEEDS BY STREET



The design team used these 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 charrette process revealed many important areas along both corridors. One key area is at the intersection of Merrill Road and University Boulevard, which occurs at the main entrance to Jacksonville University (JU). The university is very interested in its neighborhood, not only the safety of its students, but for the entire community. JU has the potential to be a catalyst for change along its University Boulevard frontage, especially at its main campus entry point, Merrill Road. Therefore, it was imperative for the design team to spend individual time with JU's President, Tim Cost, to understand the University's goals and objectives, and how they integrate with those of JTA's Complete Streets initiative. President Cost discussed his thoughts about the "front door" to JU, the safety of his students and the university's desire to integrate into the community through opportunities for dining, entertainment and shopping. In addition, the importance of aesthetics was discussed as part of the vision to make Jacksonville University and its surrounding community one of our City's, and our region's, greatest assets. Utilizing the strength of JU's presence, the intersection of University Boulevard and Merrill Road is a prime target for a JTA pilot project, emphasizing the safety, not only of the students, but of the community who walk these areas, and for de-emphasizing vehicular throughput at a critical junction within the community.





CONCEPT DEVELOPMENT

The team then embarked upon a full day of conceptual design, vetting numerous creative ideas within the extents of the corridor's boundaries. Identification of "context zones" along the corridors became a core component, identifying different areas to reflect community enhancement opportunities. A plan was developed to provide a transportation framework to support community preservation in some context zones and facilitate community redevelopment in others. This plan focuses on enabling great communities and on the ability of streets to become multi-functional corridors for all users including pedestrians, bicyclists and motorists.

The design team formulated an approach to best illustrate Complete Streets alternatives for areas in need of change. This approach was to present concept sketches of segments along each corridor. Each sketch illustrates a specific possibility for a section of existing roadway. These sketches also represent the diversity of opportunities that were brought to the existing physical environment. They are intended to initiate thought and to provoke ideas and alternatives to the common mistakes made when designing community streets.





3: CONCEPTS

The Merrill Road and University Boulevard corridors serve a variety of transportation needs. They serve regional traffic traveling through the area during both morning and evening rush hours by automobile and transit. They provide service to traveling to and from designations along the corridors themselves including retail businesses and Jacksonville University. Additionally, they serve as the main street for corridor residents who use the businesses and commercial amenities along these roads daily for everyday shopping and services. Many of these residents to not have access to an automobile or choose not to drive because the corridors are well served by transit. This results in heavy pedestrian and bicycling traffic along the roads. In addition, plans to enhance and redevelop the area near the intersection of University Boulevard and Merrill Road to create a collegiate village have been previously envisioned by the community and the university.

The dual role of these corridors as major commuting routes and as local neighborhood streets have resulted in conflicts in the use of limited space, with narrow sidewalks frequently accommodating both pedestrian and bicycle traffic, while also serving as areas for transit waiting and boarding. The high speed design of the roadways is not compatible with the human-scale transportation use, creating significant safety concerns.

This study includes portions of Merrill Road and University Boulevard, in the Arlington region of Jacksonville. An overview of the study area is shown in Figure 2.



FIGURE 2: OVERALL STUDY AREA



Merrill Road is a city-maintained east-west arterial with five lanes. This road provides access from I-295 to the east towards the St. Johns River to the west, before ending at University Boulevard. This study examined the section of this road extending from Townsend Boulevard west to University Boulevard.

University Boulevard is State Road (SR) 109, and is a north-south arterial that connects the Arlington Expressway (SR 115) to the Arlington and Charter Point areas. This study examined the section of this road between its intersections with Arlington Road to the south and Fort Caroline Road to the north.

These two roads support three bus lines. Route 50 travels along University Boulevard within the study area, and connects this northern section of Arlington to Southside and the Deerwood Village transfer point. Route 23 travels along Townsend Boulevard north before turning west along Merrill Road. It turns around along University Boulevard, and continues south through Arlington and Windy Hill to also connect at the Deerwood Village transfer point. Route 19 travels along University Boulevard within the study area, as part of its overall route connecting downtown to the Regency area through northern Arlington.

This study area is anchored not only by the intersection of these two major streets, but also by Jacksonville University and significant commercial nodes along both Merrill Road and University Boulevard. While the study area includes substantial transit service, the roadways do not currently have the pedestrian or cycling infrastructure needed to support trips to and from transit, or to make the area appealing and comfortable for pedestrians and cyclists. Sidewalks are interrupted by utility poles and numerous, wide driveways. Intersections are frequently missing curb ramps and have low-visibility crosswalk markings. Bus stops rarely offer riders a place to sit or to avoid inclement weather. Wide travel lanes encourage high vehicular speeds which promote an uncomfortable environment for all roadway users. These roads lack any type of dedicated cycling space or infrastructure, contributing to cyclists' tendency to ride on the sidewalk instead of in the road.

The communities that use these streets are comprised of people who primarily drive and those who use transit for longer trips, while walking and cycling for their daily needs.

Both of these roads have been noted for their high rates of pedestrian crashes. According to data from the City of Jacksonville, between 2011 and 2013, Merrill Road (as a whole) saw nine pedestrian crashes, including one fatality, which placed it as the second worst local roadway in the city of Jacksonville. Over the same time period, University Boulevard ranked as the third worst state route in the city, with thirty-nine pedestrian crashes (none of these were fatal).

This study envisions a future in which University Boulevard and Merrill Road are improved to be "Complete Streets". A Complete Street is one which serves all types of its users, which may include pedestrians, cyclists, transit riders, transit vehicles, individual drivers, and freight. A Complete Street is context sensitive, and provides the appropriate levels and types of accommodations for each type of user based on the intensity and nature of the use.

In this study area, a complete University Boulevard and Merrill Road would feature improved facilities and spaces for pedestrians and cyclists as well as transit riders. These Complete Streets would become safe, attractive places to walk, bike, and ride transit for residents, employees, shoppers, and other visitors.

Roadway improvements that better serve alternative transportation users could be used as a tool to encourage redevelopment and economic growth in this area. With these types of improvements, University Boulevard and Merrill Road could become home to more on-street businesses that serve local residents and students. These streets could serve new townhomes or apartments in addition to established residents in nearby neighborhoods. These businesses and residents may have different needs and desires than those that currently exist along these corridors. When designing any improvements along these streets, the needs and desires of future users should also be taken into consideration.

TARGET SPEED

The most influential element of street design is speed, and was therefore the first decision point reached by the charrette team. Research demonstrates a clear relationship between motor vehicle speeds and pedestrian safety. Pedestrian crash rates increase significantly from 20 to 30 mph and again from 30 to 40 mph.

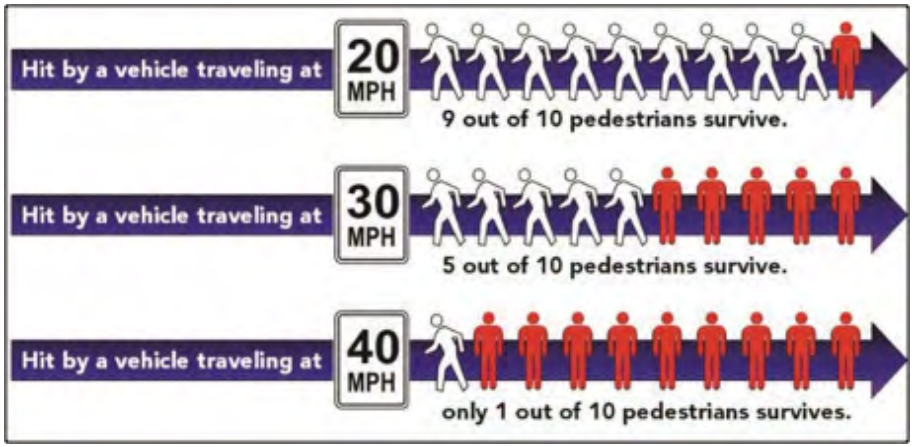
Despite the posted 35 mph speed limits for most of the University Boulevard and Merrill Road corridors, actual vehicle speeds were observed to be significantly higher, because the current design and signal operations are consistent with and encourage higher speeds.

In order to create the pedestrian-scale context envisioned by stakeholders during the charrette process, vehicle operating speeds must be lower. Target speed is a concept in which the desired context determines the vehicle speeds, which in turn establishes the design parameters. Target speed is a different concept than design speed, which is a speed that governs certain geometric features of the road.

This will enable the creation of a safe environment for bicycles and pedestrians without compromising vehicular mobility. This is important to facilitate pedestrian safety through lower effective speeds in the more active areas of the corridor. The benefits of lower speeds in pedestrian crashes is illustrated in Figure 3.

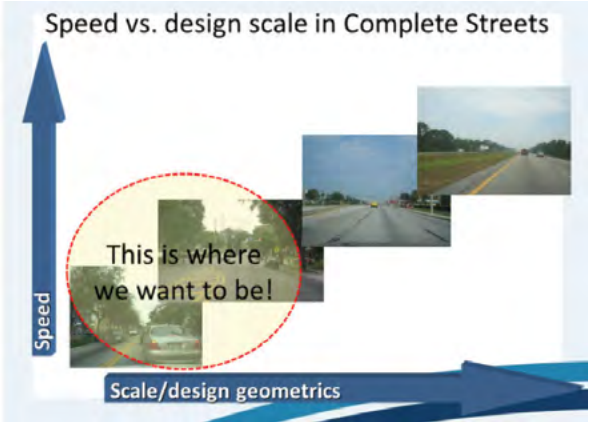
All design parameters, including lane widths and curb radii, should be consistent with the target speed.

FIGURE 3: PEDESTRIAN CRASH SEVERITY BY SPEED



The proposed target speed for Merrill Road from Rogero Road to University Boulevard and University Boulevard north of Merrill Road is 25 mph.

The proposed target speed for University Boulevard south of Merrill Road is 35 mph except in the vicinity of the Arlington Road intersection, where the target speed is 25 mph.



CONTEXT ZONES

The study area is composed of six notably distinct areas. These "context zones" differ from each other in their land uses, in their levels of activity, and in their roadway network layouts. The context zones provide a framework for developing Complete Streets transformation solutions for the Merrill Road and University Boulevard corridors.

In this study area, the following six context zones were identified based on their functional contribution to the study area:

- Collegiate Village
- Greenway Zone
- University Boulevard Residential Zone
- Town Center Zone
- Commercial Zone
- Merrill Road Residential Zone

These context zones are shown on a map of the area in Figure 4. Each zone and proposed solutions are described in the following sections.

FIGURE 4: CONTEXT ZONES



COLLEGIATE VILLAGE ZONE

The Collegiate Village context zone surrounds the intersections of University Boulevard and Merrill Road. It extends east to the intersection of Cesery Boulevard (SR 109A), south to the intersection of River Road and north to the intersection of Green Street. This zone is home to Jacksonville University, a private university offering varied majors across several colleges. JU fills the western portion of the context zone, as it is bounded by University Boulevard. East of the university, the zone is home to a handful of apartment complexes, single-family homes, and a few commercial developments to the east, at the edge of the Commercial Zone.

This zone is envisioned as a notably more active node that mixes activities which serve the student population as well as residents of nearby neighborhoods. A commercial or mixed-use node built around the intersection of University Boulevard and Merrill Road could act as a shared space between residents and students, encouraging interactions between the two, and creating an environment in which a diverse set of businesses could be viable.

In order to reduce excessive vehicular speeds, both streets were envisioned with a reduction in the number of lanes, as well as lane widths. Merrill Road was envisioned with only two through lanes, while University Boulevard was envisioned with two southbound lanes and a single northbound lane in this zone. A 25 mph target speed is recommended for this zone. The southbound lanes are maintained in order to preserve efficient access to Arlington Road and Arlington Expressway (SR 115) as well as to accommodate vehicular queuing at Arlington Expressway in the morning peak period. The northbound lanes can be reduced because traffic coming from these streets has opportunities to utilize alternate routes before it reaches this zone.

During the visioning process, right-of-way gained by reducing vehicular lane width and the number of vehicular lanes was re-purposed for other users. Along Merrill Road, buffered bike lanes were added, continuing lanes also drawn through the Commercial and Residential Zones. University Boulevard could support either a continuation of these buffered bike lanes, which could continue south through the Residential and Town Center Zones, or a buffered cycle track. A center median would replace the existing two way left turn lane in some sections. This could be done either in areas with few driveways or as part of an access management program, and would be an extension of median islands that already exist on University Boulevard south of Merrill Road.



In order to stimulate the Collegiate Village Zone as an active, commercial hub, on-street parking was recommended on Merrill Road. In addition to adding space for shoppers and visitors, on-street parking creates a buffer between pedestrians and vehicles which makes walking safer and more appealing and further slows down motorists along the roadway. To continue to make walking more appealing, this section of both University Boulevard and Merrill Road could be redeveloped with wider sidewalks, as part of an integrated streetscape program. In order to continue to manage the speeds of cars along the street, chicanes could be added. Chicanes are a tool for slowing traffic in which a roadway is shifted from one side or another. This introduces small turns along otherwise straight roads, which typically slow drivers. The cross section for Merrill Road in the Collegiate Village Zone is shown in Figure 5. University Boulevard's proposed cross section change is shown in
Figure 6.

These changes, and other changes to the neighborhood, could spur redevelopment in the area. This redevelopment could offer additional opportunities for transforming the streetscape, with even wider sidewalks, sidewalk cafes, on-street retail, or other uses. One possible future for this intersection is shown in Figures 7A and 7B.

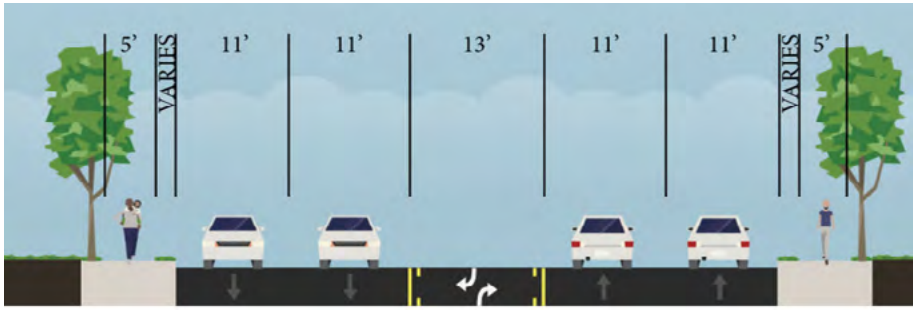


EXISTING INTERSECTION

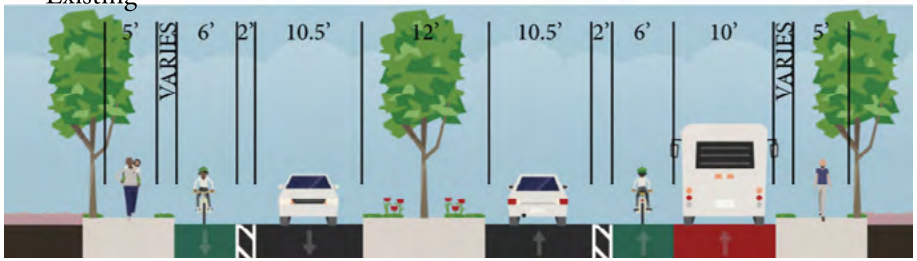
FIGURE 7A: RENDERING LOOKING EASTWARD FROM PROPOSED ROUNDABOUT AT UNIVERSITY BOULEVARD AND MERRILL ROAD WITH POTENTIAL REDEVELOPMENT.



FIGURE 5: EXISTING AND PROPOSED CROSS SECTIONS FOR MERRILL ROAD IN THE COLLEGIATE VILLAGE ZONE



Existing



Proposed – with Bus Pull-off (This area also provides on-street parking)

Merrill Road at University Boulevard

In order to maintain efficient vehicular movement on these roadways while also encouraging appropriate motor vehicle speeds, a roundabout is proposed for the intersection of University Boulevard and Merrill Road. In addition to its effects on traffic, this roundabout would serve as the main gateway to Jacksonville University.

As the transition continues along the Merrill Road corridor approaching Jacksonville University, this intersection currently has little sensitivity to the pedestrian and student environment. Expansive crosswalks create a foreboding experience for the pedestrian and there exists no visual focal point at the entrance to the University other than the columns within the campus' boundary. Along both roadways, sidewalks are unattractive, there are no bike lanes, and five wide lanes of traffic along Merrill Road make walking or cycling uncomfortable. There is no consistent integrity between the JU campus environs and the pedestrian environment.

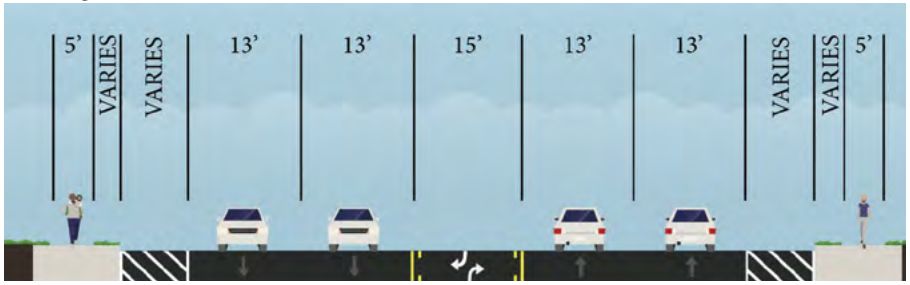
With the addition of a prominent roundabout at this intersection, a number of extremely important elements become pedestrianized. The intersection becomes less complex by eliminating the traffic control lights and infrastructure. The roundabout celebrates the fact that this is a significant intersection and creates an opportunity to create a prominent focal feature at the entrance to Jacksonville University. Enhanced with perimeter landscaping, and colors this location could become a landmark for the university and the community for years to come. This would create a more humanized environment for pedestrians crossing University Boulevard, in conjunction with other roadway improvements. All of these components would contribute to the environment along the Merrill Road corridor while approaching the JU campus entrance. A plan view conceptual drawing of this roundabout is included at the end of this section.

FIGURE 7B: RENDERING LOOKING WESTWARD TO PROPOSED ROUNDABOUT AT UNIVERSITY BOULEVARD AND MERRILL ROAD WITH POTENTIAL REDEVELOPMENT

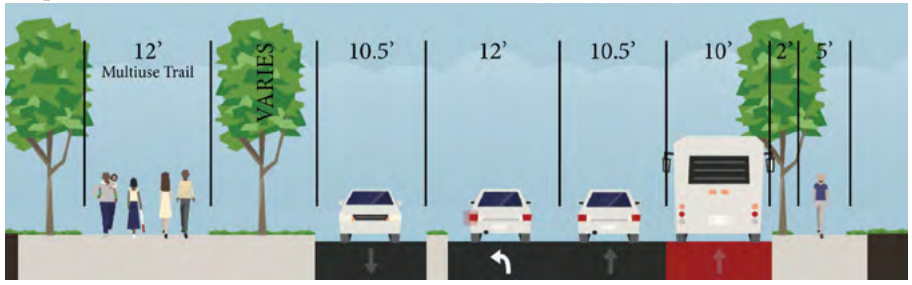


FIGURE 6: EXISTING AND PROPOSED CROSS SECTIONS FOR UNIVERSITY BOULEVARD IN THE COLLEGIATE VILLAGE ZONE AND UNIVERSITY BOULEVARD RESIDENTIAL ZONE

Existing



Proposed



Merrill Road and Justina Road

Chosen as an example because of its challenging pedestrian environment, wide traffic lanes, and lack of any human scale, this intersection could be transformed into an environment that can begin to transition traffic into a slower pattern towards the intersection of University Boulevard and Merrill Road. Currently, older multi-family dwellings and retail are present with seas of parking extending to the sidewalk. As with other sections of the corridor, large travel and turn lane widths contribute to high motorist speeds.

Pedestrians could be given higher priority through the enhancement of the intersection with colored pavers. Landscaped "bulb-outs", narrower lanes, wider sidewalks, pedestrian scaled lighting with colorful banners (JU colors for example), bike lanes, on-street parking, and streetscaping, could all contribute to a calmer traffic flow, more aware drivers, and increased safety and comfort for pedestrians and cyclists. This would be part of a gradual calming effect as roadway users approach the critical Merrill Road and University Boulevard intersection. Speeds would slow as the environments, both on the roadway and on the roadside, transition to a more pedestrian friendly.





GREENWAY ZONE

North of the Collegiate Village Zone is the Greenway Zone. This zone starts near Green Street and continues to the northern extent of the study area at Fort Caroline Road. In addition to some commercial developments near the intersection of University Boulevard and Fort Caroline Road, this zone is primarily home to single and multi-family residential use, as well as a public library. Fort Caroline Road features bike lanes which are the western extent of a continuous cycling corridor connecting the neighborhood east to the beaches. Currently, these bike lanes end one block east of University Boulevard.

As a more residential zone with limited connections and lower traffic volumes, this zone is imagined as a quieter, more recreation focused area. Connections southward into the active Collegiate Zone and commercial nodes are important, as is maintaining a safe and enjoyable environment for residents and visitors to the area's recreational facilities.

In this residential and recreation-focused area, University Boulevard could be reduced from four travel lanes to two, with one in each direction along with left turn lanes with a raised median, where necessary. This would make the street's cross-section consistent with what exists to the north. Compounded with the lane width reduction, this would reduce vehicular speeds to a more appropriate pace. A 25 mph target speed is recommended for this zone.

By reducing the total width of the pavement, additional space is available for other facilities. To complement the less intense development of the area, a multi-use trail could be built in a linear park to the west of the new roadway, adjacent to Jacksonville University. This type of facility would provide local residents and students a path for walkers, runners, and cyclists that is completely separated from the roadway. In order to reduce strain on the existing stormwater drainage system, this park, as well as the landscaped median and buffers, could be designed as bioretention areas. These bioretention areas would use combinations of Florida native vegetation able to acclimate to various wet conditions that act as a natural filtration system, rather than forcing all water into a traditional stormwater sewer system. The total change to University Boulevard's typical cross section can be seen in Figure 8, which shows a representation of the street's existing cross section and the cross section if these proposed changes are implemented.

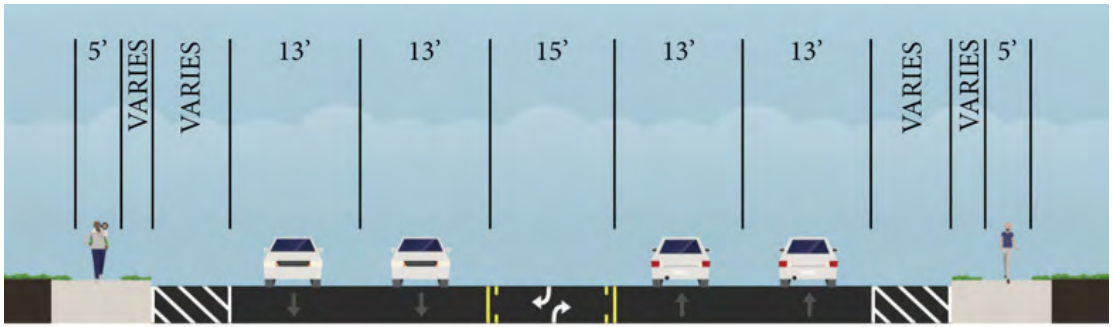


A midblock pedestrian crossing is recommended near at the public library near existing JTA bus stops to enable safe crossing of University Boulevard from the new trail to the other side of the street. At the northern entrance of Jacksonville University, the intersection of University Boulevard and Alumni Drive, a roundabout could accommodate vehicles while also slowing traffic and creating another strong gateway for the University. An additional roundabout was envisioned at the intersection of University Boulevard and Fort Caroline Road. A conceptual plan view of this roundabout is included at the end of this section.

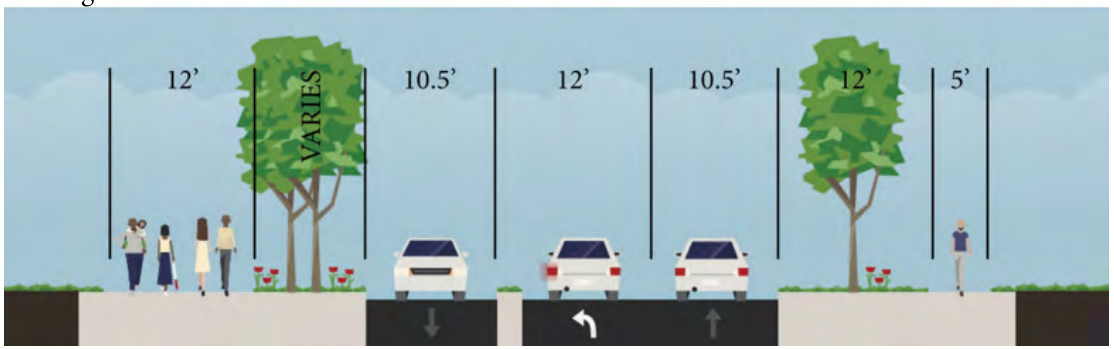
In this context zone, as with all zones that envision a lane reduction, bus pull-outs would be necessary to preserve effective vehicular movement. Currently, when a bus stops on the curb, traffic can use a different lane to bypass it. However, with the removal of a lane in each direction, this will no longer be possible. Buses can create significant delays during boarding and deboarding. A bus pull-off creates a dedicated place for buses to stop while passengers load and exit. However, they can be harmful to transit operations because transit vehicles must wait for a gap in traffic to reenter the travel lane. In order to minimize this impact, all bus pull-offs should be placed on the far side of intersections. This placement would allow vehicles to use gaps made by the intersection and its traffic control to reenter the general travel lane.

The existing walk within the wide right of way along the west side of University Boulevard could be expanded and converted into a meandering multi-purpose trail, enhanced by Florida's native vegetation, creating a pleasant experience while "naturalizing" this particular route. Narrowing the travel lanes will calm traffic along University Boulevard, and the addition of landscaped medians creates an opportunity to carry the natural setting across the roadway. The multiuse path would serve both pedestrians and cyclists. Additionally, elements within this section, such as bus shelters and existing mature vegetation, among others, could all be utilized as assets along this high quality path. Special lighting, seating, and paver patterns could all be incorporated into the path/linear park to present a special community space and destination.

FIGURE 8: EXISTING AND PROPOSED CROSS SECTIONS FOR UNIVERSITY BOULEVARD IN THE GREENWAY ZONE



Existing



Proposed





UNIVERSITY BOULEVARD RESIDENTIAL ZONE

South of the Collegiate Village Zone, University Boulevard becomes predominantly residential. Between intersections with River Road and Wiltshire Street/Gable Lane, the road includes a small set of businesses, but predominantly serves through traffic and nearby residents. Even though the traffic to and from the development along this segment is relatively low, University Boulevard is still a five lane road with high-speed traffic. Excess pavement already exists, which has either been striped as a shoulder or contributes to unnecessarily wide outside lanes.

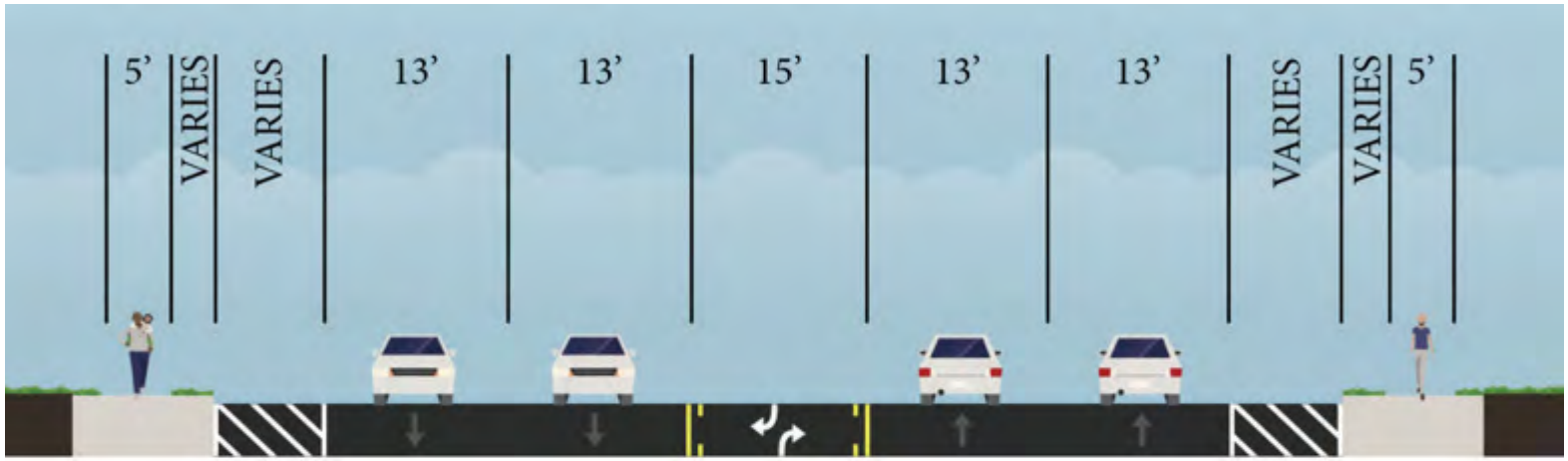
This segment of University Boulevard is envisioned as a street that is more in keeping with the land uses around it. While the needs of non-residents must still be considered, this segment of University Boulevard could be reconfigured into one that encourages lower speeds, and promotes connections to nearby neighborhoods, encouraging residents to frequent the shops and other facilities along University Boulevard. A 35 mph target speed is recommended for this zone.

University Boulevard has more lanes and width than it needs. However, due to increased demand for access southward to Arlington Expressway during peak periods, two southbound lanes should be maintained. Conversely, in this area, recent traffic data suggests that one northbound lane may be adequate. By narrowing the remaining lanes, additional width can be used for a cycle track or bike lanes. In addition, portions of the center two-way left turn lane could be replaced with a landscaped median. The existing cross section and cross section with these changes would be very similar to those seen in the Collegiate Village Zone, shown in Figure 9. The Residential Zone would have less demand for on-street parking than the Collegiate Village Zone.

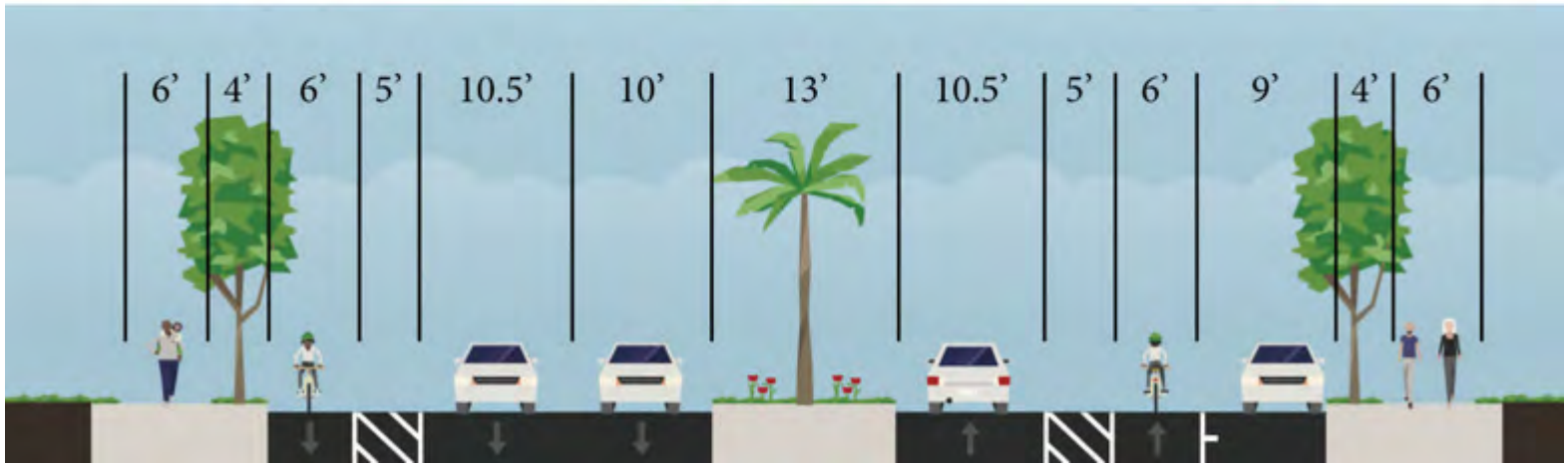
In addition to these longitudinal changes, the traffic signal at the intersections of Burdette Road and Lake Lucina Drive could be modified to be easier and more accessible for both motorists and other users. Currently, the signal serves both roads, which intersect University Boulevard approximately 100 feet apart. This creates a very large intersection with long clearance times that is challenging to navigate as a pedestrian, and encourages speeding by motorists who are unsure about the unconventional intersection's operation. Both Burdette Road and Lake Lucina Drive are connected to developed roadway networks with other access points to University Boulevard and other major roads in the area. This traffic signal could be modified to serve only one of the two cross streets, creating a more predictable environment for motorists, and a more accessible crossing for pedestrians.



FIGURE 9: EXISTING AND PROPOSED CROSS SECTIONS FOR UNIVERSITY BOULEVARD IN THE COLLEGIATE VILLAGE ZONE AND UNIVERSITY BOULEVARD RESIDENTIAL ZONE



Existing



Proposed

TOWN CENTER ZONE

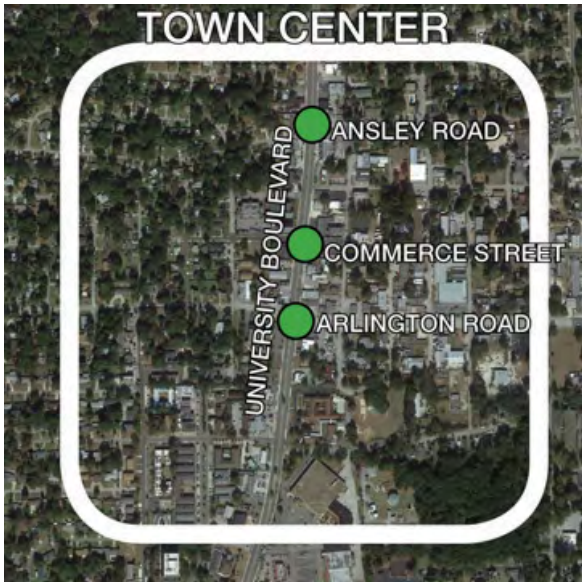
South of the Residential Zone, frontage along University Boulevard is frequently held by businesses, increasing in frequency and intensity to Arlington Road and the Arlington Expressway (SR 115) to the south. The zone also hosts schools, churches, and homes along University Boulevard and in the neighborhoods around it. This section of University Boulevard is a busy route with four travel lanes and a center left turn lane. In addition, some sections have on-street parking on the west side of the road.

This section is envisioned as a more walkable commercial destination. Improved pedestrian facilities and different development styles could transform the street into an accommodating street where residents and visitors can shop, while the street still serves as an effective corridor for vehicular traffic. A 35 mph target speed is recommended for this zone with a 25 mph target speed recommended in the vicinity of Arlington Road.

As University Boulevard leaves the Residential Zone and becomes more developed southward towards Arlington Road and Expressway, the needs of the roadway change. Two southbound and one northbound lanes are still needed for effective traffic movement north of Arlington Road, while a full four travel lanes are needed to the south. The transition from two northbound lanes to one could be made in this area, at Arlington Road. With the reductions in the number of lanes and their widths, the buffered bike lanes or cycle track in the Residential Zone can be continued southward into the commercial hub. In addition, any bus stops on the northbound side of the road would need bus pull-offs to remove buses from travel lanes while loading and unloading. In order to support the commercial developments in this area, on-street parking could be included along this segment. This parking could be incorporated on one side of the road. To further identify and develop this area as a commercial area, this segment of University Boulevard could be built with wide sidewalks which encourage outdoor seating at dining restaurants or sale racks to attract customers. Due to the need to retain four travel lanes south of Arlington Road, incorporation of wide sidewalks or bicycle facilities would likely require right of way acquisition or could be accomplished with redevelopment. Figure 10 shows the existing and envisioned cross sections of University Boulevard in this zone.

<u>University Boulevard at Arlington Road</u>

This particular intersection has a strong architectural framework already contributing to a "main street" style of environment. The scale of the existing buildings could lend itself to an opportunity for small shops, sidewalk cafes, and other similar scaled developments. Conversely, the environment for the pedestrian is greatly stressed due to many of the same problems that exist along both corridors. The wide lanes, lack of street trees, and many vehicular turning movements all contribute to the reduced aesthetics and safety of this location. By utilizing the existing architectural character as a basis for improvements, this miniature "town center" could become an active pedestrian environment providing small shops, retail, and cafes. Streetscaping could shade walkways and accent the scale of the corner, contributing to a new outlook for stale, stagnating infrastructure. Crosswalks could be made more manageable by providing more durable, distinct materials to accent the area's theme. Center medians could help create a special place within the community through the use of accent landscaping. This sketch includes a cycle track which initiates the transition to a multi-use corridor. Along the edge of the cycle track are raised reflectors, acting to remind drivers that this lane is a special provision for cyclists only. Adding a distinct color to the track contributes to the quality for bikers and raises drivers' awareness. Paver accents throughout continue to suggest a special character for this critical intersection.

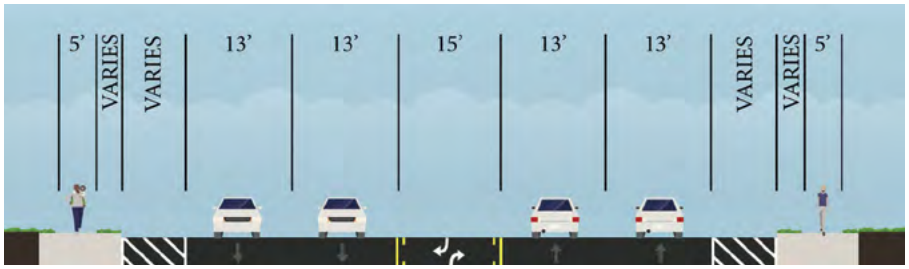


This intersection features structures with a good scale and wide sidewalks. These can serve as cornerstones for overall creative thinking. The roadway could easily incorporate on-street parking, streetscaping, and traffic calming practices.

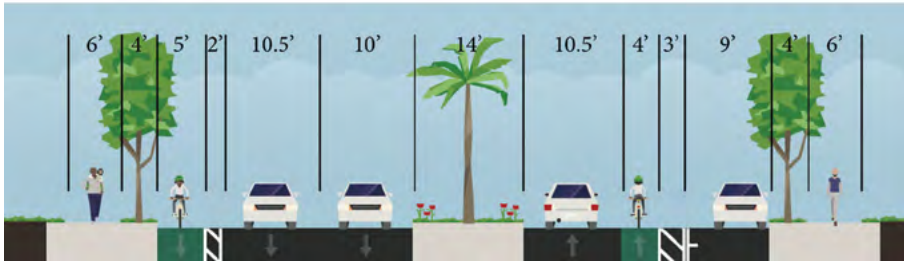


FIGURE 10: EXISTING AND PROPOSED CROSS SECTIONS FOR UNIVERSITY BOULEVARD NORTH OF ARLINGTON ROAD IN THE TOWN CENTER ZONE

Existing



Proposed



This sketch begins to define the positives in sidewalk improvements, pedestrian scaled lighting, banners, street trees, paver patterns, planters, and building façade improvements. All add expressive opportunities for a true community town center. The street improvements follow the Complete Street standards of calming through landscaped medians, narrow travel lanes, on-street parking and a defined bike lane. Bus stops offer additional branding opportunities for JTA as benches, shelters, pavers, and other elements, could all be considered additional components used to brand this unique and cohesive place. These contributing details emphasize the positives created by the existing infrastructure.



University Boulevard at Commerce Drive

Along University Boulevard, north of the Arlington Road intersection, the intersection of University Boulevard and Commerce Drive provides similar existing land uses that contribute to the town center theme. This reinforces an emphasis on sidewalk and building façade improvements, in addition to the opportunities a Complete Street would offer.

Corner dining establishments could be enhanced through sidewalk improvements which could fundamentally change the character of the area. The streets could become catalysts for change benefiting pedestrians.

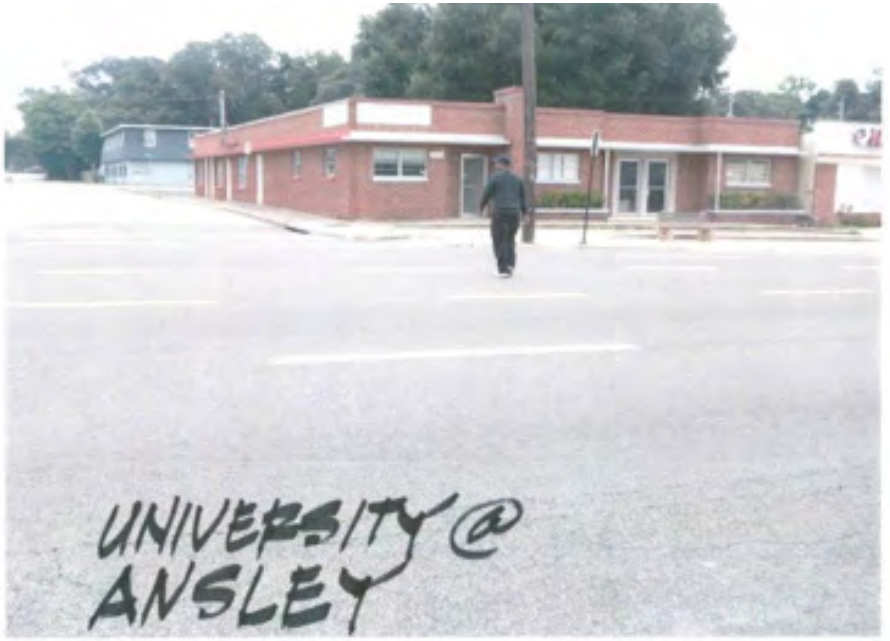
The sketch below illustrates the drastic improvements possible to the sidewalk café culture by utilizing the existing buildings as foundations to more creative thinking. The building becomes a destination, adding vitality through outdoor dining areas, tables, chairs, colorful umbrellas, landscaping, and other elements of a town center destination. Bike lanes, on-street parking, lighting and banners add to the area's vibrancy. An existing anchor location like this could transform a corner into an outstanding community asset with the aid of Complete Streets improvements, including on-street parking, currently limited in this area, could be added to supplement additional parking at the rear of buildings.



University Boulevard at Ansley Road

A reccurent issue throughout the study area is the fact that pedestrians regularly cross midblock. Regardless of road widths, traffic patterns, and lack of pedestrian protection, people are regularly seen crossing at dangerous locations. There is a need for a strategic plan to locate potential mid-block crossings at places that maximize pedestrian safety through medians, bulb-outs, and refuges. These could decrease vehicular-pedestrian conflict and create a more aesthetic roadway as well.

The following sketch illustrates an area and a design that will provide a safe, aesthetically pleasing opportunity for pedestrians to cross. The crossing could be worked into an overall landscaped median with paving patterns within the travel lanes identified through a different material, in this case color pavers, to give the pedestrian crossing point an added identity, and as the pedestrian gets to the median, they are oriented towards the oncoming traffic pattern by the offset design of the median walk. Some type of entrance feature at the crossing can also bring prominence to this as an identifiable place to cross the street.





COMMERCIAL ZONE

Starting at Rogero Road and continuing west through Cesery Boulevard, Merrill Road is home to numerous commercial developments. This context zone sees much more activity (including walking and biking) than the Merrill Road Residential Zone to the east. Immediately behind commercial development, the area transitions to primarily single-family homes.

The Commercial Zone is already an active commercial node, but substandard facilities for alternative users make it an unattractive, uncomfortable place for pedestrians and cyclists. Merrill Road has frequent, wide driveways interrupting its sidewalks. There is no space for cyclists, and the wide, underutilized lanes of Merrill Road encourage drivers to speed, creating an uncomfortable and unsafe environment for bicyclists and pedestrians. This zone is envisaged as a more welcoming space for residents and commercial patrons alike, with improved facilities for pedestrians, bicyclists, and transit riders who are visiting the area. It is also envisioned as a transitional section, providing gradual change from the more built-up Collegiate Village Zone to the neighborhood-oriented Residential Zone. **A 25 mph target speed is recommended for this zone.**

In order to improve this segment of Merrill Road, a lane reduction was envisioned that would reconfigure the street with two through lanes. Where appropriate, sections of the center two-way left turn lane would be replaced with landscaped medians. Roadway width that was no longer being used for vehicular movement was repurposed for buffered bike lanes on both sides of the road. The change in Merrill Road's cross section is shown in Figure 11, which includes a bus pull-off that would be present at intersections with bus stops.



Merrill Road at Cesery Boulevard

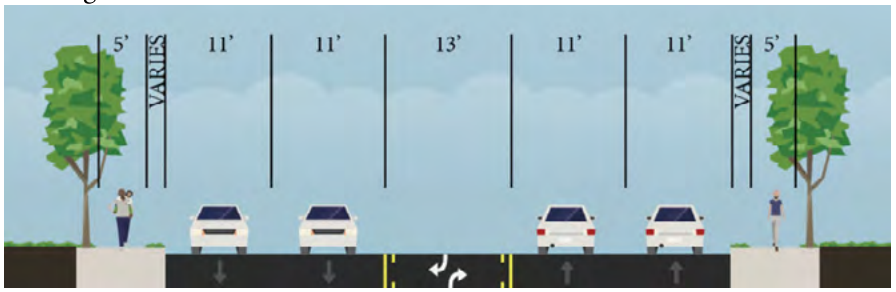
A few blocks east of the Jacksonville University Campus, at the intersection of Merrill Road and Cesery Boulevard, numerous elements detracting from the pedestrian environment are present, including power poles within the sidewalk, a lack of pedestrian scaled lighting or any type of streetscape, wide traffic lanes with no accommodation for cyclists, and concrete barriers between the pedestrian and an existing elevated parking lot. This area could begin to define the area surrounding the intersection of Merrill Road and University Boulevard. It can be used as a definitive starting point for a more humanized approach to the corridor, using streetscaping, screening, lighting, and other elements. The creation of a more protected pedestrian environment could be the catalyst for a reinvention of Merrill Road as it approaches Jacksonville University. By addressing these issues with a comprehensive streetscaping plan, the pedestrian space begins to create an improved level of comfort while walking the corridor. In the sketch below, a planter area at the edge of the elevated parking lot diverts the pedestrian's view from cars to green vegetation. Travel lanes could become narrower, creating space for buffered bike lanes on either side of the roadway. Landscaped medians could increase sense of place and reduce motorists' temptation to speed. The roadways atmosphere would change drastically with additional landscaping which reinforces the use of a more person-oriented building scale. Paving patterns within the walkways could be used as an element of branding within the neighborhood and also relate to crosswalks and other paver installation areas. This area is important as the entrance to the neighborhood around JU.



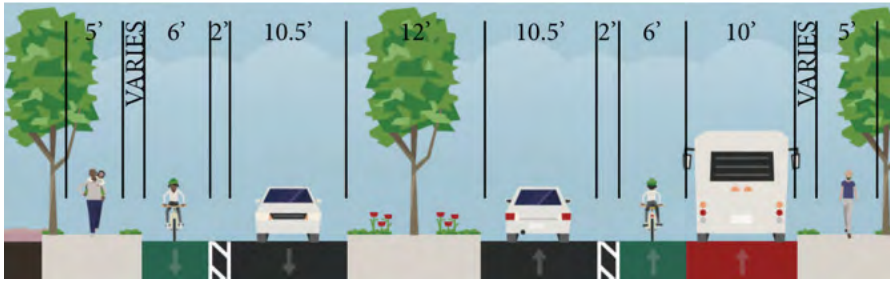


FIGURE 11: EXISTING AND PROPOSED CROSS SECTIONS FOR MERRILL ROAD IN THE COMMERCIAL ZONE

Existing



Proposed – with bus pull-off



MERRILL ROAD RESIDENTIAL ZONE

The area east of the Commercial Zone, between Rogero Road and Townsend Boulevard, is home to many neighborhood amenities, including two churches, an elementary school, and a supermarket. Frontage along Merrill Road is shared by these developments, single family homes, and entrances to neighborhoods.



This zone is envisioned as a more residential street that still supports the heavy traffic volumes that pass through it. Facilities for both bikes and pedestrians could complement these neighborhood-focused buildings and services, encouraging students to walk to school, parents to bike with their kids to school, and residents to use non-vehicular travel for everyday errands. **A 35 mph target speed is recommended for this zone.**

By narrowing the lanes, additional space is available for bike lanes, continuing those included in the Commercial Zone, but without buffers. In the vision created, the center two-way left turn lane is replaced by a landscaped median, with turn lanes at intersections only. This median is used to facilitate mid-block crossings, added at strategic locations near heavily used amenities. The existing and envisioned cross sections of Merrill Road in this zone are shown in Figure 12.

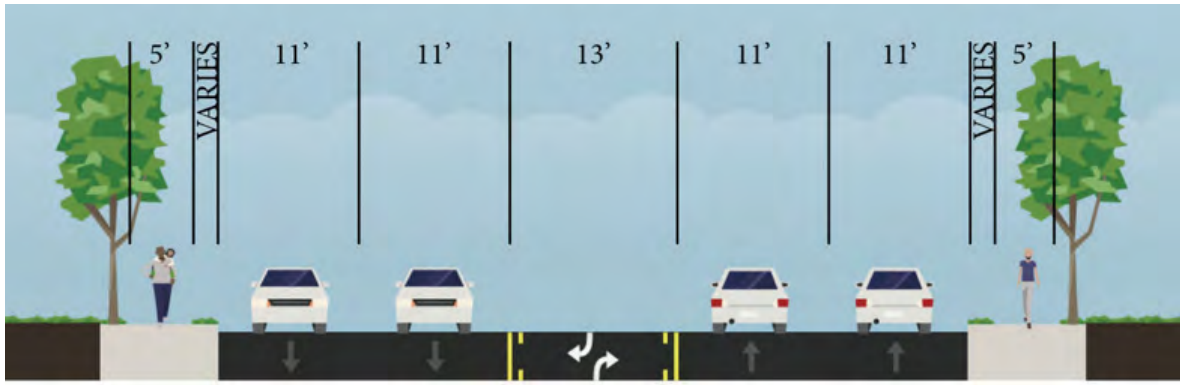
Similar to what was shown in the Town Center Zone, the Residential Zones is are prime candidates for a midblock pedestrian crossing. While a more thorough examination should be performed, a midblock crossing would make the most sense at the midblock bus stops near Publix, immediately west of Townsend Boulevard. A typical midblock crossing can be seen in the image below, and is similar to the sketch shown in the Town Center Zone.



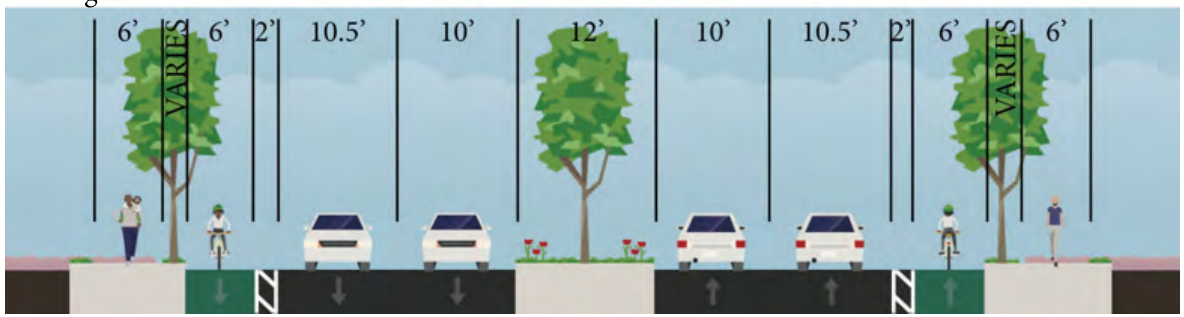


SOURCE: HILLSBOROUGH COUNTY, FLORIDA, HTTP://HILLSBOROUGHCOUNTY.ORG/INDEX.ASPX?NID=3587

FIGURE 12: EXISTING AND PROPOSED CROSS SECTIONS FOR MERRILL ROAD IN THE MERRILL ROAD RESIDENTIAL ZONE



Existing



Proposed

PRELIMINARY CONCEPTS FOR NON-TRADITIONAL FEATURES

Non-traditional geometric features and cross sections have been recommended for implementation along Merrill Road and University Boulevard. The following pages contain images to illustrate some of these features in more detail in plan view.

FIGURE 13 SHOWS A PRELIMINARY CONCEPT FOR A ROUNDABOUT AT THE INTERSECTION OF UNIVERSITY AT MERRILL ROAD.



FIGURE 14A SHOWS A PRELIMINARY CONCEPT FOR A ROUNDABOUT AT THE INTERSECTION OF UNIVERSITY BOULEVARD AND FT. CAROLINE ROAD

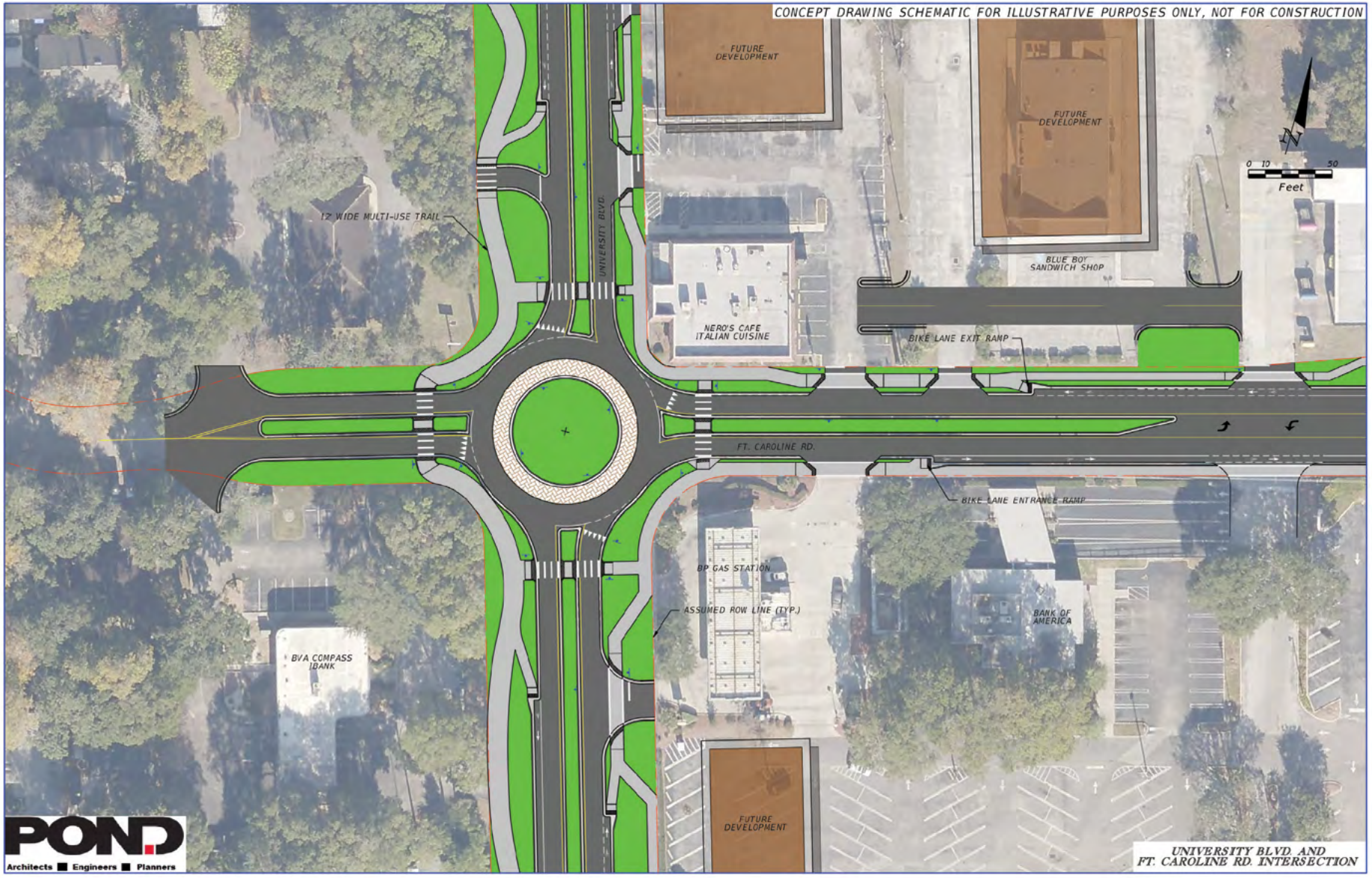


FIGURE 14B SHOWS A PRELIMINARY CONCEPT OF MERRILL ROAD IMMEDIATELY EAST OF ITS INTERSECTION WITH UNIVERSITY BOULEVARD, IN THE COLLEGIATE VILLAGE AND COMMERCIAL CONTEXT ZONES

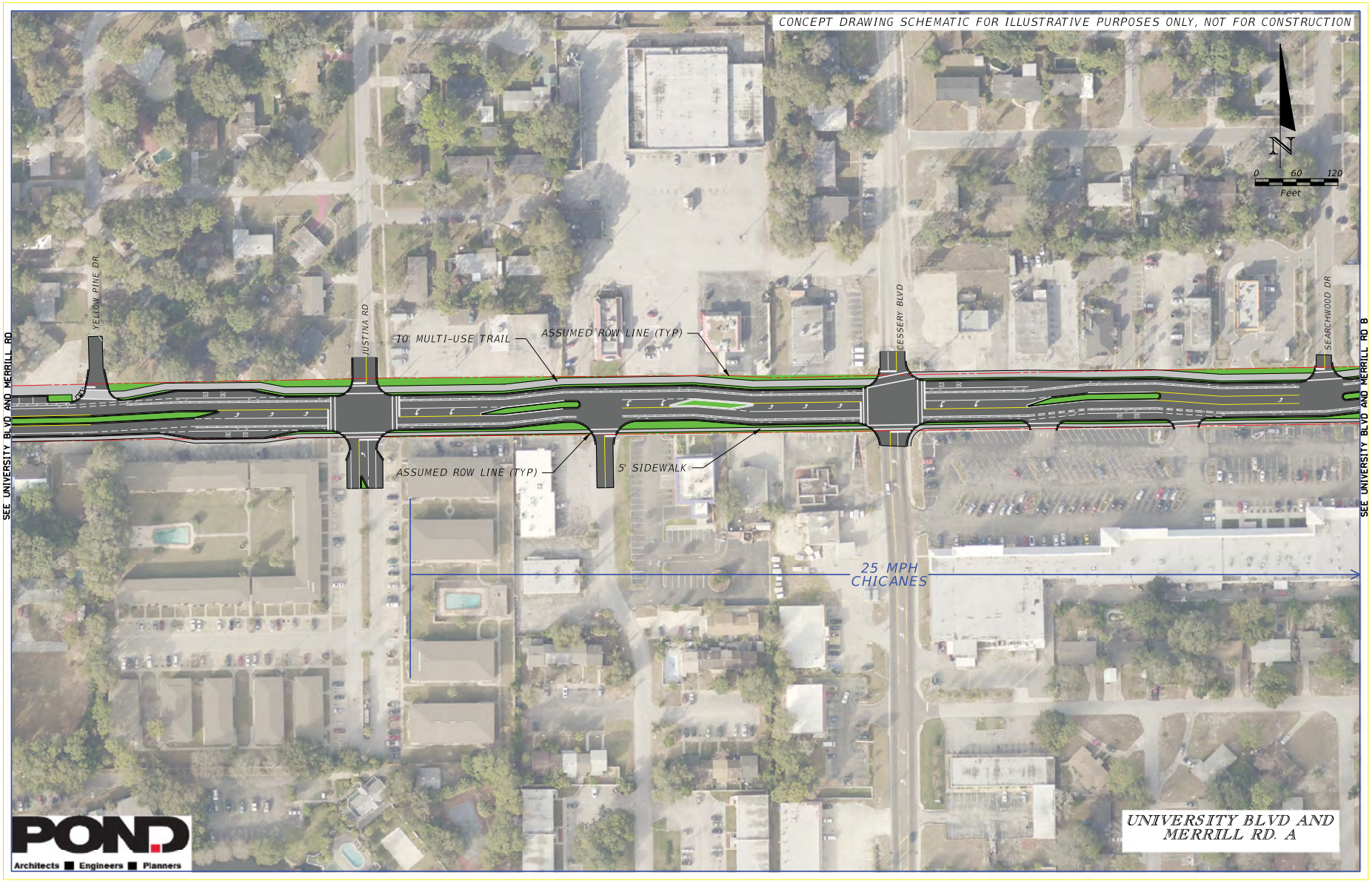


FIGURE 14C SHOWS A PRELIMINARY CONCEPT OF MERRILL ROAD IN THE COMMERCIAL CONTEXT ZONE



FIGURE 15 SHOWS A PRELIMINARY CONCEPT FOR THE INTERSECTION OF UNIVERSITY BOULEVARD AT ARLINGTON ROAD



VALIDATION OF CONCEPTS

These improvement ideas were initiated during a public charrette process which engaged residents and stakeholders in an interactive format to encourage idea sharing without constraints. The results of the charrette were later validated and refined to create recommendations that achieve the vision while maintaining a functional roadway network for all users.

As shown in Figure 16, typical weekday evening rush hour congestion in the area is not as significant as what occurs along other corridors in the city, even those nearby.

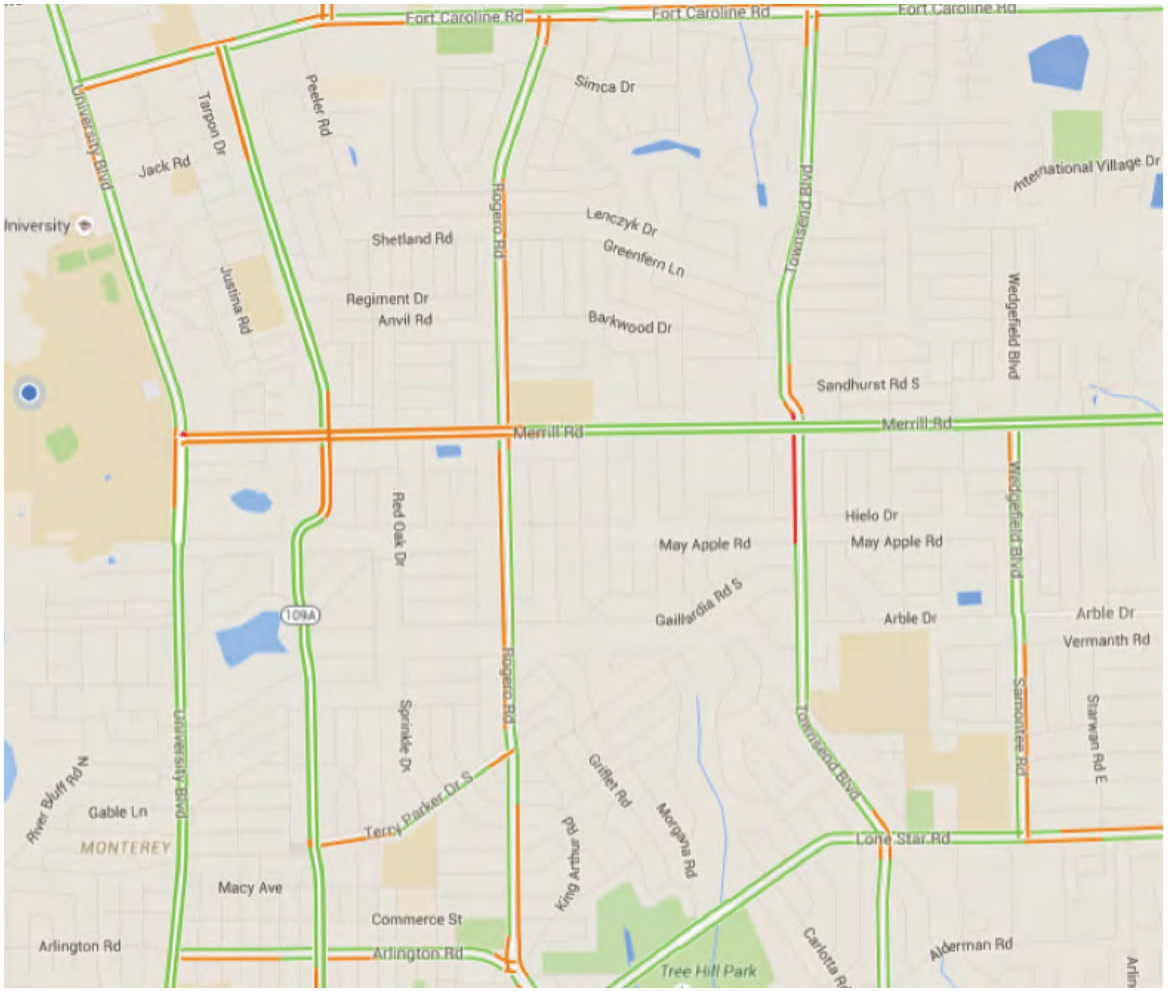
In order to ensure that these improvements, which include major modifications to these two major roadways, will maintain efficient movement, a preliminary analysis of key intersections with existing traffic volumes was conducted.

Morning and evening peak period traffic counts were taken on September 16, 2015 at the following locations:

- Merrill Road at Rogero Road
- Merrill Road at Cesary Boulevard
- University Boulevard at Fort Caroline Road
- University Boulevard at Merrill Road
- University Boulevard at Arlington Road

Peak hour traffic volumes for these intersections are shown in Figure 17. These volumes were then used to estimate whether or not the proposed changes intersections and the segments between them would operate well under existing traffic conditions.

FIGURE 16: STUDY AREA CONGESTION AT 5:30PM ON A TYPICAL FRIDAY



Analysis results are discussed in their respective sections, while detailed outputs for all scenarios are included in Appendix B. All signalized intersections were analyzed using Synchro 9.0, using the 2010 methodology from the Highway Capacity Manual (HCM), with the exception of the intersection of University Boulevard and Merrill Road. Due to limitations with HCM 2010 methodology, this intersection was analyzed with HCM 2000 methodology in the existing scenarios. All roundabouts were examined using SIDRA Intersections 6, using standard model parameters.

MERRILL ROAD AT ROGERO ROAD

At this intersection, the charrette proposed lane reductions along Merrill Road that would reduce Merrill Road to a single shared through-right lane and a left turn lane in each direction to the west, while preserving its configuration to the east. This transition would be accomplished with a right turn lane drop on the westbound approach of this intersection. No modifications to the lane geometry of the Rogero Road approaches were proposed. The intersection delay and level of service (LOS) with the existing and proposed lane configurations is shown in Table 1. With these changes, average delay in the morning peak increases modestly and average delay in the evening peak increases significantly. In order to reduce this delay, a second through lane is needed on the eastbound approach.

This through lane would begin a few hundred feet west of Rogero Road. An analysis was performed on this scenario, which is identical to the charrette vision except for the inclusion of a second through lane in the eastbound direction. The results from this analysis are shown in Table 2. This additional lane reduces delay in the evening peak a level within accepted limits and much closer to what is currently experienced.

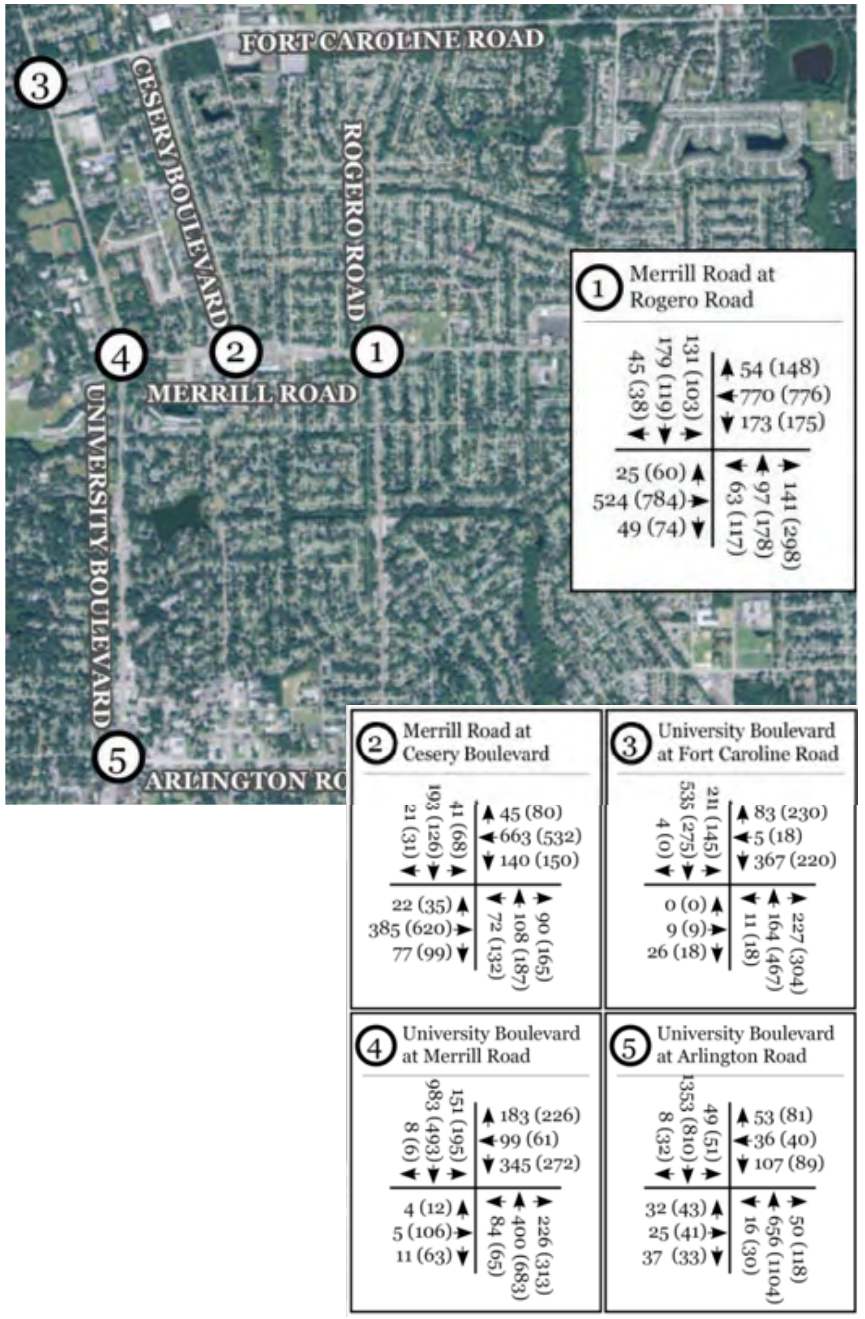
TABLE 1: DELAY AND LEVEL OF SERVICE AT MERRILL ROAD AT ROGERO ROAD WITH FULL LANE REDUCTION

	Existing		Proposed	
	Delay (s)	LOS	Delay (s)	LOS
AM	31	C	39	D
PM	37	C	68	E

TABLE 2: DELAY AND LEVEL OF SERVICE AT MERRILL ROAD AT ROGERO ROAD WITH ADDITIONAL EASTBOUND LANE

	Existing	
	Delay (s)	LOS
AM	35	D
PM	45	D

FIGURE 17: EXISTING PEAK HOUR TRAFFIC VOLUMES



MERRILL ROAD AT CESERY BOULEVARD

At this intersection, a similar lane reduction along Merrill Road was suggested, leaving each approach along Merrill Road with a single shared through-right lane and a left turn lane. No modifications were proposed for Cesery Boulevard. The impact of this lane reduction on overall delay and intersection LOS are shown in Table 3. Delay is increased only slightly during each peak period, suggesting that this lane reduction would have a minimal impact on vehicular traffic.

TABLE 3: DELAY AND LEVEL OF SERVICE AT MERRILL ROAD AT CESERY BOULEVARD

	Existing		Proposed	
	Delay (s)	LOS	Delay (s)	LOS
AM	32	C	35	D
PM	37	D	48	D

UNIVERSITY BOULEVARD AT FORT CAROLINE ROAD

Charrette participants envisioned this intersection reconstructed as a roundabout, with reduced lanes along University Boulevard, as shown in a conceptual drawing included immediately before this section. As shown in Table 4, this change could be expected to reduce vehicular delay at the intersection, while also enhancing the pedestrian environment.

TABLE 4: DELAY AND LEVEL OF SERVICE AT UNIVERSITY BOULEVARD AT FORT CAROLINE ROAD

	Existing		Proposed	
	Delay (s)	LOS	Delay (s)	LOS
AM	28	C	22	C
PM	27	C	14	B

UNIVERSITY BOULEVARD AT MERRILL ROAD

At this intersection, the reconstruction of the existing traffic signal to a roundabout was proposed. Modifications to University Boulevard would likely alter the way people travel throughout Arlington. With one fewer northbound lane, some drivers may choose an alternate route. The neighborhood has a well-connected grid of major roads which provides many route options. It can be reasonably expected that some drivers would divert along Arlington Road and use the Cesery Boulevard and Rogero Road corridors for connections to Merrill Road or Fort Caroline Road. Assuming that approximately one fourth of vehicles traveling north on University Boulevard from south of Arlington Road choose an alternate route, delay analysis was performed. The results of this analysis are shown in Table 5. It can be seen that delay at this intersection was estimated to be better than what currently exists. The impact of this rerouting would be spread between many other intersections, each of which would likely feel slight increases in delay. However, because this impact would be spread between multiple intersections, it is unlikely to have any significant effect on any single intersection.

TABLE 5: DELAY AND LEVEL OF SERVICE AT UNIVERSITY BOULEVARD AT MERRILL ROAD WITH ASSUMED REROUTING OF SOME NORTHBOUND TRAFFIC

	Existing		Proposed	
	Delay (s)	LOS	Delay (s)	LOS
AM	55	E	20	C
PM	48	D	24	C

UNIVERSITY BOULEVARD AT ARLINGTON ROAD

This intersection was envisioned as the site of a lane reduction, with two northbound lanes approaching the intersection, but only one leaving it. No changes were suggested for Arlington Road. The impact of these changes can be seen in Table 6. This change would create additional vehicular delay, but increases would be modest and the intersection would still perform well within accepted limits. Additionally, some northbound traffic can be expected to reroute at this intersection by turning right along Arlington Road. This redistribution would decrease delay at this intersection, making the intersection perform better than shown in these results.

TABLE 6: DELAY AND LEVEL OF SERVICE AT UNIVERSITY BOULEVARD AT ARLINGTON ROAD

	Existing		Proposed	
	Delay (s)	LOS	Delay (s)	LOS
AM	29	C	32	C
PM	24	C	36	D

SUMMARY OF RESULTS

A summary of the impacts of these modifications is shown in Table 7. These analysis results suggest that all lane reductions and intersection modifications envisioned in the charrette would operate with acceptable delay. Increases in delay are generally modest and may be more pronounced in the analysis that they would be in implementation as motorists use alternate routes to get to their destination.

TABLE 7: SUMMARY OF LEVEL OF SERVICE IMPACTS CREATED BY INTERSECTION MODIFICATIONS

Intersection	Existing LOS (AM/PM)	LOS After Modifications (AM/PM)
Merrill Road at Rogero Road	C/C	D/E
Merrill Road at Cesery Boulevard	C/D	D/D
University Boulevard at Fort Caroline Road	C/C	C/B
University Boulevard at Merrill Road	E/D	C/C
University Boulevard at Arlington Road	C/C	C/D

4: RECOMMENDATIONS

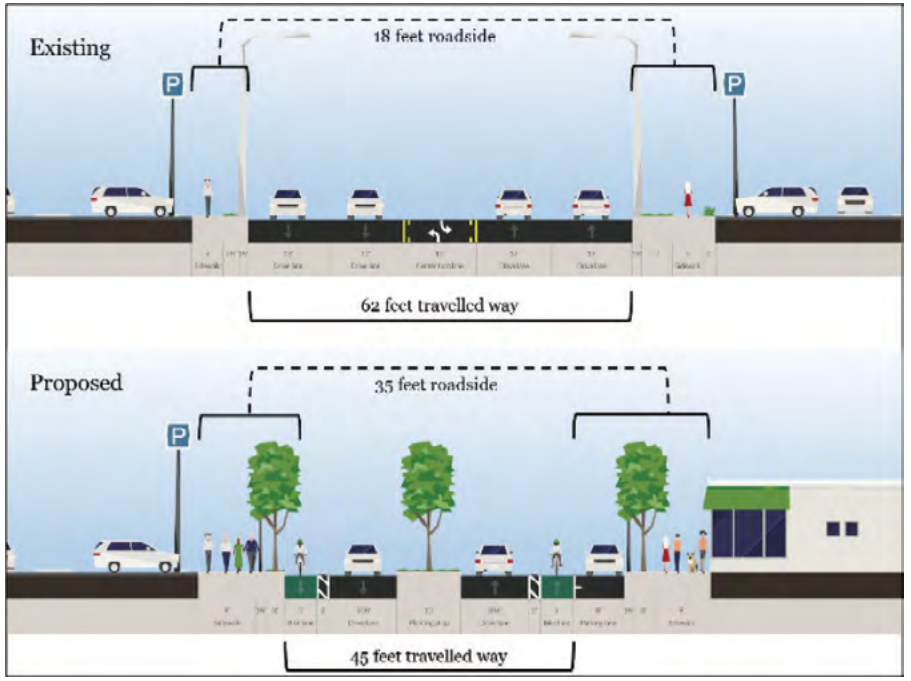
In order to make the vision of more accommodating, safe, comfortable environments along University Boulevard and Merrill Road, a number of improvements will be necessary. An overview of all recommendations and their locations is included at the end of this section.

STUDY AREA-WIDE RECOMMENDATIONS

The community's vision for Merrill Road and University Boulevard varies between context zones, but all share a central theme: lively, economically viable places where pedestrians, cyclists, and transit riders can flourish while maintaining mobility for motor vehicles. In essence, the desire is to create a multi-modal context where all users feel safe and comfortable regardless of mode.

Key elements that are important to creating this context on Merrill Road and University Boulevard include:

- Lower motor vehicle operating speeds: Lower operating speeds increase safety for cyclists and pedestrians and are consistent with design elements that support a walkable corridor.
- An evenly balanced streetscape: There should a balance between the area where motor vehicles operate and the roadside
- Dedicated facilities for cyclists: Merrill Road and University Boulevard will always function as arterials. Shared-lane use is not appropriate for most cyclist skill levels. Dedicated bicycle facilities, such as lanes or parallel paths, are necessary.
- Wide sidewalks: Especially within the commercial areas along these corridors, sidewalks should be wider than the bare minimum. They should provide for adequate spacing from adjacent buildings and permit individuals to comfortably pass each other walking in opposite directions.
- Sidewalk buffer: There should be a physical buffer between the sidewalk and the traveled way, whether it be on-street parking, street trees or a planting strip.
- Building placement: Buildings should be oriented toward the street with minimal setbacks. Large parking areas between buildings and the street should be avoided.



HIGHLY WALKABLE, MULTI-MODAL ENVIRONMENTS PUT TRAVELED WAY AND ROADSIDE ELEMENTS IN BALANCE WITH EACH OTHER.



DEDICATED BICYCLE FACILITIES, WHETHER BICYCLE LANES, BUFFERED BICYCLE LANES (PICTURED), CYCLE TRACKS OR PARALLEL TRAILS ARE A MUST FOR ARTERIALS. SOURCE: LASTREETSBLOG.ORG

SUPPORTING ROADWAY AND INTERSECTION DESIGN

There are certain design elements that are critical to creating a multi-modal context. The design suggestions provided here are consistent with state and national standards, including the American Association of State Highway Officials' (AASHTO) "A Policy on Geometric Design of Highways and Streets" (commonly called the "Green Book"), ITE's "Designing Walkable Urban Thoroughfares" and FDOT's "Plans Preparation Manual". Minimal truck traffic and a target speed of 25 to 35 mph are assumed, as discussed in Chapter 4.

Lane Width

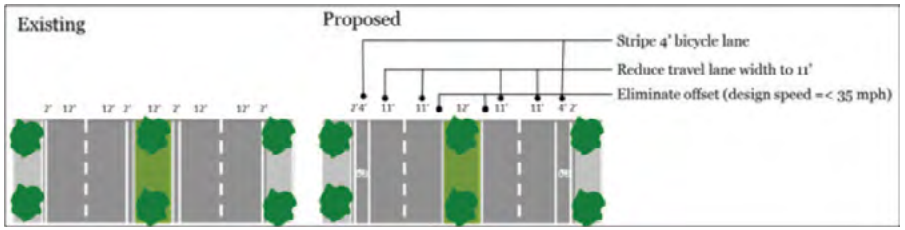
Currently, lane widths vary from 12 to 13 feet on Merrill Road and 10.5 to 13 feet on University Boulevard. For both corridors lane widths between 10 and 11 feet for travel lanes and 11 feet for center turn lanes are recommended. Lane widths of 10 feet are appropriate given the target speed of 35 miles per hour and less. However, minimum outside lane widths of at least 10.5 feet are recommended in locations to accommodate JTA bus operations and any freight movement.

This narrowing of lane widths achieves two purposes:

- Encourages appropriate motor vehicle speeds (in this case 25 to 35 mph);
- Frees up additional right-of-way for other design elements, such as bicycle lanes, on-street parking, wider sidewalks, etc.

An example of how lane width reductions can be used to create new facilities is shown in Figure 18.

FIGURE 18: LANE WIDTH REDUCTIONS USED TO CREATE NEW FACILITIES



Curb Radii

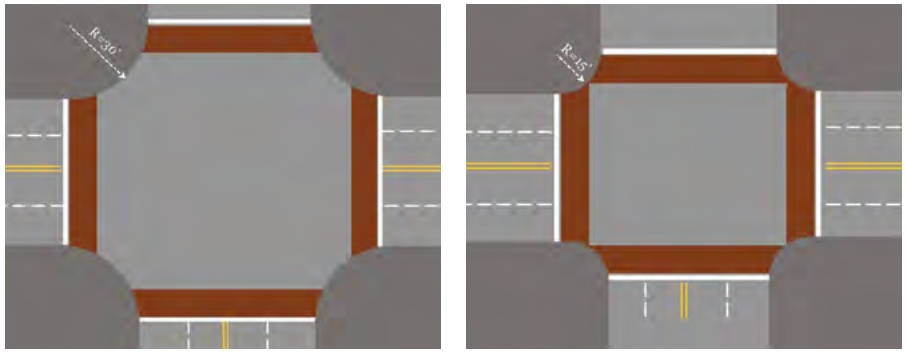
The size of curb radii has a direct influence on the character of a roadway. Currently both Merrill Road and University Boulevard have excessively wide curb radii at most street intersections, ranging from 25 to 30 feet to as high as 75 feet.

When reconstructing curbs in the corridor, the smallest practical curb return radii is recommended. This will encourage cars to turn at appropriate speeds, increase pedestrian accessibility and reduce the amount of pavement that must be crossed on foot. A visualization of the difference curb radius can make is shown in Figure 19.

In most cases, a curb radius of 15 feet at cross-streets and 5 feet at driveways is appropriate. However, in locations where large vehicles, such as JTA buses, turn frequently, a radius of 25 feet may be used, unless such vehicles are turning into a roadway with multiple receiving lanes into which they can safely encroach. In this situation, a radius of 15 feet is recommended.

In locations where a bicycle lane is located between the outside motor vehicle

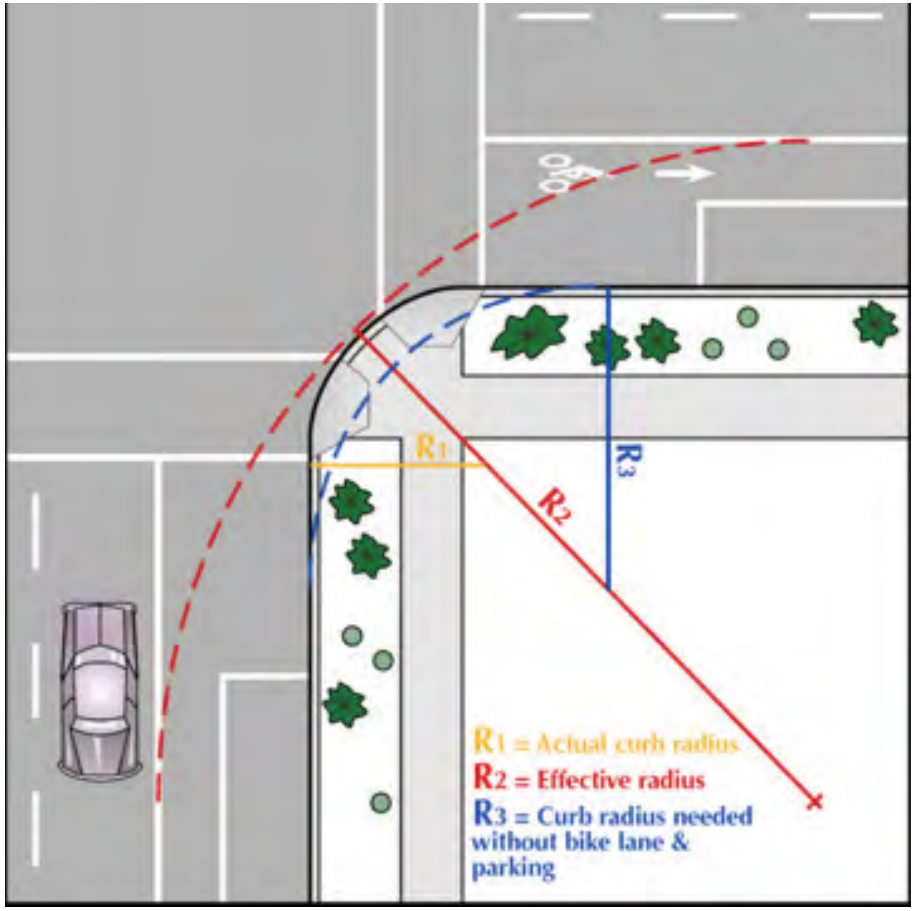
FIGURE 19: SIMILAR INTERSECTIONS WITH DIFFERENT CURB RADII



A SMALLER CURB RADIUS CREATES COMPACT INTERSECTIONS, SHORTER CROSSING DISTANCES AND APPROPRIATE MOTOR VEHICLE TURNING SPEEDS.

travel lane and the curb, the "effective radius" should be used. This is the distance from edge of outside lane to edge of outside lane, not the physical curb, which can have a much smaller radius. This effect is shown in Figure 20.

FIGURE 20: ACTUAL CURB RADIUS AND EFFECTIVE RADIUS COMPARED



EFFECTIVE RADIUS IS LARGER THAN BUILT RADIUS IF TRAVEL LANES ARE OFFSET FROM CURB WITH PARKING AND/OR BIKE LANE
IMAGE SOURCE: OREGON DOT

Mid-block Crossing

The corridor assessment noted that both Merrill Road and University Boulevard have long stretches with no signalized crossing, forcing pedestrians to cross five lanes of traffic.

Mid-block crossing opportunities are proposed on both corridors. For roads that have more than two lanes and traffic volumes greater than 15,000 vehicles per day (such as Merrill Road and University Boulevard), raised median refuges are required.

A raised median crossing has several benefits, including:

- Creating a safe refuge for pedestrians,
- Breaking one long, complex crossing into two shorter ones,
- Encouraging appropriate motor vehicle speeds through horizontal deflection, and
- Providing an opportunity for landscape enhancement.

Raised medians should be placed at strategic locations, with consideration given to sight distance.



MID-BLOCK ISLANDS BREAK ONE LONG COMPLEX CROSSING INTO TWO SHORTER ONES.

LAND DEVELOPMENT REGULATIONS

Land development regulations can be an important tool for implementing the proposed Complete Streets concepts for Merrill Road and University Boulevard. An overlay district could be created to serve this purpose. Specifically, such a district could control site design, as well as expand the roadside streetscape.

Site Design Guidelines

The creation of site design guidelines will help guide new development and redevelopment to support proposed Complete Streets concepts. Site design guidelines can include:

- Site layout, including maximum setbacks for the placement of buildings and placement of parking;
- Standards and requirements for pedestrian linkages between buildings, the street and transit stops;
- Placement of amenities, such as bike racks and transit shelters; and
- Building and signage design guidelines consistent with the context area.

These considerations should supplement guidelines that are included in the City's Design Guidelines and Best Practices Handbook

Streetscape/Roadside Expansion

The charrette recommendations include changes to Merrill Road and University Boulevard that must be accomplished within the existing right-of-way. In order to accommodate this restriction, there must be tradeoffs and compromise when choosing design elements. For example, sections of the sidewalk may not be as wide as originally envisioned in constrained areas.

Over the long term, the roadside environment can effectively be expanded through land development regulations that incentives the creation of new amenities. New developments and redevelopments could build a wider sidewalk or add on-street parking as part of site development. Because the traveled way cannot change, this would be implemented incrementally over time, effectively expanding the roadside environment without any right-of-way acquisition.

Access Management

The Chapter 2 corridor assessment noted a number of excessively wide and/or unnecessary driveways on Merrill Road and University Boulevard. Each driveway disrupts traffic flow, creates safety issues, including rear end and head on collisions, and creates conflicts between cyclists, pedestrians, and turning vehicles.

Access management provides a framework for balancing the access needs of businesses with the safety and mobility needs of roadway users. Access management strategies can be implemented through an overlay district. Key access management strategies include spacing standards, driveway consolidation, and alternative access strategies.

Spacing Standards

Spacing standards prescribe minimum distances between driveways, cross-streets and traffic signals. Specific spacing standards reflect a balance between desired mobility and access and activity levels of adjacent land use.

FDOT assigns an access management category, ranging from 1 (most restrictive) to 7 (least restrictive) to all state maintained roads. FDOT's "Plans Preparation Manual" defines, among other things, minimum spacing for driveways. These standards are shown in Table 8. University Boulevard, as a state route, is currently subject to classification 6. However, as part of the street's reconfiguration to a lower speed, more pedestrian and cyclist friendly street, it is recommended that this segment of University Boulevard use classification 3 standards instead. The standards related to classification 3 should also be adopted for Merrill Road.

TABLE 8. FDOT ACCESS MANAGEMENT CLASSIFICATIONS AND SPACING CRITERIA

Classification	Description	Minimum Connection Spacing (feet)	
		Greater than 45 mph	45 mph or less
1	Interstate	NA	NA
2	Limited Access	1,320	660
3	**Surface Arterial with Restrictive Median**	**660**	**440***
4	Surface Arterial with Non-restrictive Median	660	440
5	Surface Arterial with Restrictive Median	440	245
6	Surface Arterial with Non-restrictive Median	440	245
7	Surface Arterial with Restrictive or Non-restrictive Median	125	125

*RECOMMENDED FOR MERRILL ROAD AND UNIVERSITY BOULEVARD
SOURCE: CHAPTER 14-97 FAC (FDOT ACCESS MANAGEMENT STANDARDS)

Driveway Consolidation

In order to reduce the total number of driveways in the corridors and to meet proposed spacing standards, driveways must be consolidated. Proactive driveway closure can be a very contentious and costly proposition. To reduce these effects, consolidation should occur incrementally over a long term concurrent with redevelopment.

Cross Access and Rear Access

To support the consolidation and elimination of driveways and reduce continued dependence on direct driveway access to the corridor, alternative access should be provided.

Alternative access strategies include:

- Cross Access: Cross-access easements require adjacent properties to connect to each other through internal driveways or streets. This reduces the need for direct driveway connections and allows vehicles to travel laterally without accessing the main road.
- Rear Access: Rather than provide front access to properties that front Merrill Road or University Boulevard, streets/driveways that run along the back edge of properties can instead provide rear access. In some cases, such streets may already exist, or they be built concurrent with new development or redevelopment (see Figure 21).

FIGURE 21: REAR ACCESS EXAMPLE



REAR ACCESS, EITHER THROUGH CONNECTED DRIVEWAYS OR A CROSS-STREET, CAN PRECLUDE THE NEED FOR DIRECT DRIVEWAYS ON MERRILL ROAD AND UNIVERSITY BOULEVARD.

IMPROVEMENTS BY CONTEXT ZONE

	Keystone Projects These are projects that JTA would use to showcase complete streets for immediate effect. These should be reasonably substantial projects and something that could be implemented in the near term.	**Operational/Safety Improvements** These are "quick fix" improvements that can provide immediate safety and operational improvements at a lower cost	**Long Term Vision** These are complete projects for the corridor or corridor segment. These are bolder more costly investments that would be included in a long range plan.
Merrill Road Residential		Intersection improvements at all intersections, including upgrade of crossings at signalized intersections to current ADA standards and provide pedestrian countdown timers.	Road Diet on Merrill Road, including: • Add landscaped median sections where not needed for left turns • Reduce lane widths and add bike lanes Midblock crossing on Merrill University, with specific location to be determined Upgrade lighting to current standards Place utilities underground
Commercial		Intersection improvements at all intersections, including upgrade of crossings at signalized intersections to current ADA standards and provide pedestrian countdown timers.	Road Diet on Merrill Road, including: • Restripe two outer travel lanes as buffered bike lane • Reduce lane width • Add chicanes to control speed (30 mph design) • Construct bus pull-off areas • Add landscaped median sections where not needed for left turns Upgrade lighting to current standards Place utilities underground
Collegiate Village	Roundabout at intersection of Merrill Road and University Boulevard, including appropriate sections of multiuse path Road Diet on University Boulevard, including: • Reduce lane width • Restripe two outer travel lanes as buffered bike lanes • Construct bus pull-off areas	Upgrade crossings at signalized intersections to current ADA standards and provide pedestrian countdown timers Intersection improvements at all intersection along Merrill Road, including improving intersections to comply with ADA along the corridor, Fill sidewalk gaps, especially in areas adjacent to Jacksonville University, such as the intersections of University Boulevard and River Road/River City Landing Apartments, and Merrill Road and Justina Road/Stardust Court	Road Diet on Merrill Road, including: • Restripe two outer travel lanes as buffered bike lane • Reduce lane width • Add chicanes to control speed (30 mph design) • Construct bus pull-off areas • Add landscaped median sections where not needed for left turns • Add on-street parking; either parallel on angle back-in Lane use changes create University Village Widen sidewalks with streetscape Add pedestrian scale lighting Place utilities underground
Greenway	Road Diet on University Boulevard, including: • Remove two outer travel lanes • Reduce lane width • Construct bus pull-off areas • Add landscaped median sections where not needed for left turns	Roundabout at intersection of Ft. Caroline Road and University Boulevard Widen existing sidewalk along University Boulevard, adjacent to Jacksonville University between Merrill Road and Fort Caroline Road to multi-use path Construct midblock crossing between Hurley Manor Apartments and Jacksonville University	Construct roundabout at north entrance of Jacksonville University Upgrade lighting to current standards Place utilities underground
University Boulevard Residential	Road Diet on University Boulevard, including: • Remove one northbound lane • Construct bus pull-off areas for northbound direction • Reduce lane width • Add bike lanes	Upgrade crossings at signalized intersections to current ADA standards and provide pedestrian countdown timers Add midblock crossing Add landscaped median sections where not needed for left turns Modify signals on University Boulevard at Lake Lucina Drive and Burdette Road	Modify signal at Burdette Road/Lake Lucina Drive Upgrade lighting to current standards Upgrade and consolidate overhead utility lines
Town Center	Road Diet on University Boulevard, including: • Remove one northbound lane • Construct bus pull-off areas for northbound direction north of Arlington • Reduce lane width • Add buffered bike lanes or cycle track	Reconfigure intersection of University Boulevard at Arlington Road Upgrade crossings at signalized intersections to current ADA standards and provide pedestrian countdown timers Add on-street parallel parking on north side of road near Arlington Road intersection	Add landscaped median sections where not needed for left turns Widen sidewalks with streetscaping Add pedestrian scale lighting Upgrade and consolidate overhead utility lines

MONCRIEF/MYRTLE/8TH STREET

EXECUTIVE SUMMARY

The Jacksonville Transportation Authority (JTA) is committed to developing a multimodal transportation system in Jacksonville along key transit routes which also have significant pedestrian and bicycle travel needs. The JTA approach to addressing these corridors is to provide Complete Streets that address all travel modes within the context of the corridor and with consideration to potential redevelopment that is planned or envisioned.

8th Street, Myrtle Avenue, and Moncrief Road serve a variety of needs and communities. 8th Street connects downtown Jacksonville with a large hospital complex and I-95 before passing through a low-density neighborhood. Myrtle Avenue supports homes, small businesses, civic spaces, and school. Moncrief Road provides access from northwest Jacksonville into downtown while connecting schools, businesses, and neighborhoods. This report presents analysis of all three roadways and examines potential improvements to them that would create Complete Streets from New Kings Road to the west of Moncrief Road south to Kings Road at Myrtle Avenue and east to Main Street at 8th Street.

CORRIDOR ASSESSMENT

The design team performed a field review of the corridors on foot. The team noted several issues related to the physical design of and spatial conflict between travel modes. Collectively, these issues create an environment that is challenging for bicyclists, pedestrians, and transit riders. Observed issues and opportunities include:

Issues:

- High motor vehicle speeds
- Large curb radii
- Inadequate accommodations for persons with disabilities
- Lack of pedestrian buffer
- Lack of crossing opportunities
- Lack of bicycle facilities







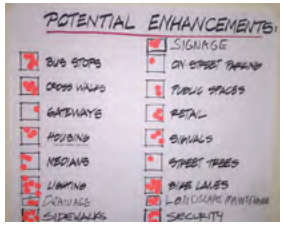
OPPORTUNITIES:

- Mix of land use
- Trail connectivity
- Building frontage along corridor

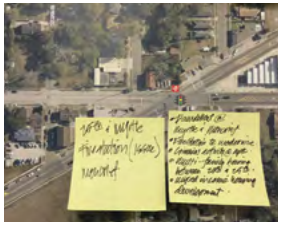
DESIGN CHARRETTE

The design team used a public "charrette" process to develop a vision and plan for the corridors. The team kicked off the charrette with a three-day open workshop session on January 12-14, 2016 at the Emmett Reed Community Center. Participants were invited to identify transportation challenges related to automobile travel, transit, walking, and biking within the study area. They were also asked to indicate their personal improvement priorities along each corridor.

With this information, the design team began an intensive multi-day work session to identify conceptual strategies to transform each of the three roadways into Complete Streets. Following this work session, the team once again invited the public back to hear their proposals, which are shown in this report.









CONTEXT ZONES

This large study area can be subdivided into five unique sections. These "context zones" feature different designs and different contexts. The context zones provide a framework for developing context-sensitive complete streets transformation solutions along all three corridors. The following five context zones were identified based on their functional contributions to the study area:

MEDICAL CENTER

The Medical Center context zone extends along 8th Street from Main Street west to the I-95 interchange. This section serves many educational and medical buildings. East of Boulevard, the area features more small-scale residential- and civic-focused buildings. This context zone sees a notably high level of pedestrian and cyclist use already. This area could become one that is more accommodating to cyclists and pedestrians and 8th Street is seen as a street that could provide connections across I-95 rather than just access to and from the freeway.

S-LINE CONNECTION

Between Myrtle Avenue and the I-95 interchange, 8th Street is predominately occupied by single-family detached homes, as well as a school to the east, and James P. Small Park. In this area, 8th Street is approximately forty feet wide, but with only two lanes and no designated space or other indicators for cyclists. This segment of 8th is envisaged as a continuation of the connection across I-95 in the Medical Center zone and as a neighborhood-oriented street, providing specifically for the needs of residents, students, and the attendees of recreation facilities.

MONCRIEF RESIDENTIAL

This section of Moncrief Road is almost exclusively home to residences, with notable exceptions at the intersection of Soutel Drive, which has commercial development, and at Raines Avenue, which has a high school. Moncrief Road already provides regional connectivity for motorists, but could be improved to provide regional connectivity for pedestrians and cyclists as well. However, the high-volume, high-speed nature of the roadway will provide a barrier.

MONCRIEF URBAN TRANSITIONAL

As Moncrief Road approaches the center of Jacksonville, it remains primarily residential, but more businesses, schools, and civic institutions area included and the overall feeling of the corridor becomes more dense. This area maintains higher traffic volumes, but is envisaged as an area that provides mobility for vehicles while better protecting cyclists and better connecting the more urban areas to the south with the less dense areas to the north.

COMMERCIAL/CIVIC

The Commercial/Civic context zone signals the transition of the corridor to decidedly more urban character and includes both Moncrief Road and Myrtle Avenue. Within this zone the surrounding street network and development become much more dense. The intersection of Moncrief Road and Myrtle Avenue is an important intersection because of the heightened level of activity that currently exists and the level or current and potential private investment in the surrounding properties. In the future, the intersection could be better integrated, making it a focal point of the community, allowing for safe vehicular and pedestrian movement, and facilitating continued private investment.

THEMES

The community's vision for the study area varies between context zones, but all share a central theme: enhanced safety, accessibility, and connectivity for cyclists and pedestrians, while still enabling the movement of cars and trucks. In essence, the desire is to create a multi-modal context where all users feel safe and comfortable regardless of mode. In order to make the vision of more accommodating, safe, and comfortable environ¬ments along 8th Street, Myrtle Avenue, and Moncrief Road a reality, the design team recommends a number of improvements.

STUDY AREA-WIDE RECOMMENDATIONS

Lane widths on the three corridors vary from 10 feet to 20 feet. For areas with a posted speed limit of less than 45 miles per hour (mph), which includes 8th Street, Myrtle Avenue, and a portion of Moncrief Road, lane width between 10 and 11 feet for travel lanes and 11 feet for center turn lanes are recommended. For the portion of Moncrief Road with a 45 mph speed limit, lane widths of 11 to 12 feet are recommended, with 12 foot center turn lanes. Reduced lane widths encourage appropriate motor vehicle speeds and extra pavement can be used to create dedicated bicycle facilities, or other amenities for non-motorists.

With the exception of Myrtle Avenue and some portions of 8th Street, this study area is largely devoid of pedestrian-scale lighting. In almost all areas, highway-scale lighting is provided, but this type of lighting commonly creates areas along the sidewalk that are dark and unsafe, and also provides light that is often too dim for non-motorists.

LAND DEVELOPMENT REGULATIONS

The creation of site design guidelines will help guide new development and redevelopment to support proposed Complete Streets concepts. Site design guidelines can include:

- Site layout, including maximum setbacks for the placement of buildings and placement of parking;
- Standards and requirements for pedestrian linkages between buildings, the street and transit stops;
- Placement of amenities, such as bike racks and transit shelters; and
- Building and signage design guidelines consistent with the context area.

Over the long term, the roadside environment can effectively be expanded through land development regulations that incentives the creation of new amenities. New developments and redevelopments could build a wider sidewalk or add on-street parking as part of site development.

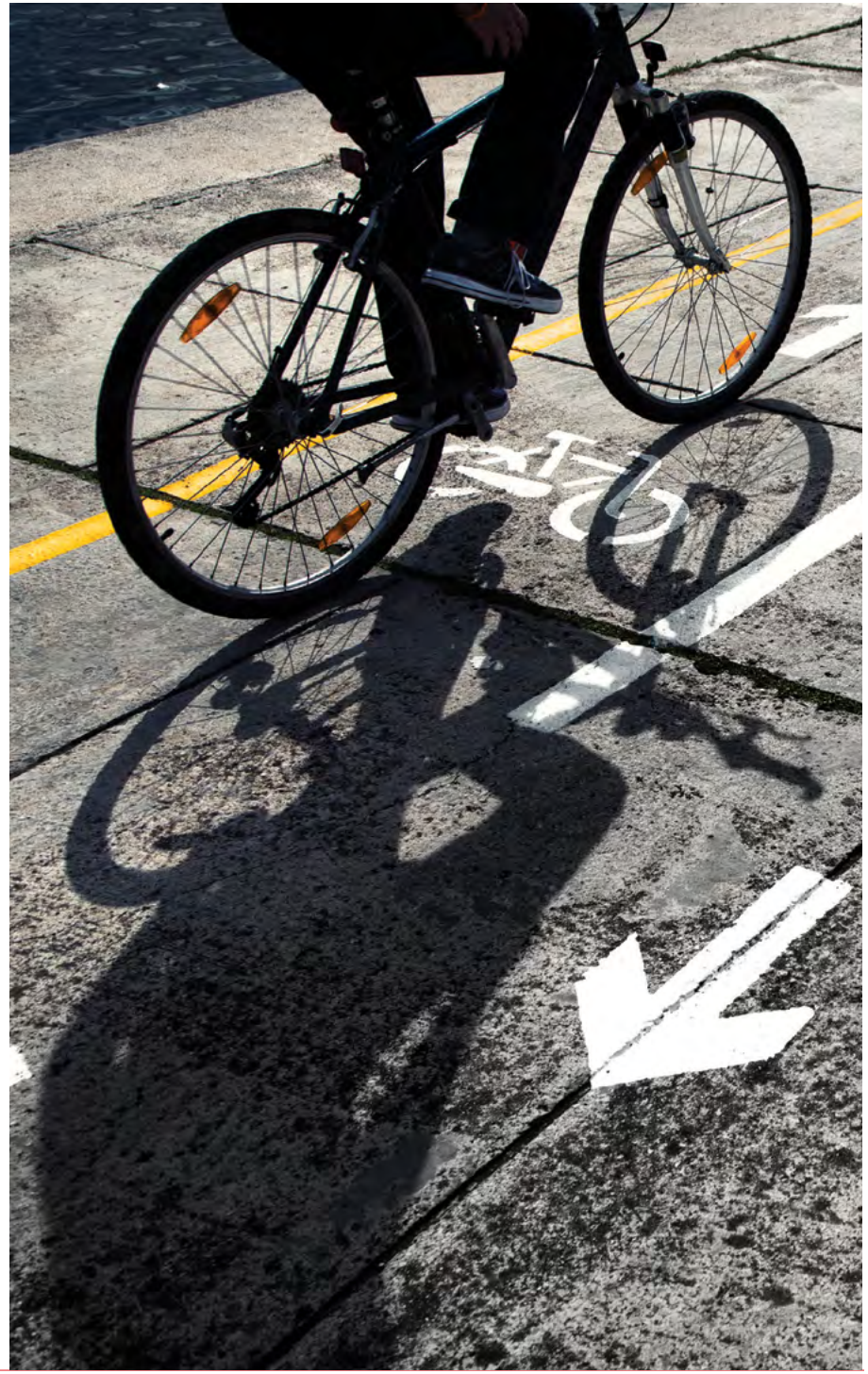
Site design guidelines, the creation of on-site amenities, and other similar improvements could all be implemented through the creation of an overlay zone. One general overlay can be created and then customized for each of JTA's Complete Streets corridors.

SPECIFIC ROADWAY IMPROVEMENTS

A number of specific improvements were identified within these corridors. These include the following:

Create a road diet on 8th Street east of I-95 by removing the auxiliary right turn lanes, narrowing the other travel lanes, adding buffered bike lanes, widening medians, and planting medians wherever possible.

- Use excess pavement on 8th Street west of I-95 for on-street parking and buffered bike lanes
- Narrow lanes on Moncrief Road to provide buffered bike lanes
- Construct a roundabout at the intersection of Moncrief Road and 45th Street
- Create a 4-to-3 road diet on Moncrief road to provide a center turn lanes and Construct a roundabout at the intersection of Myrtle Avenue, Moncrief Road and 26th Street
- Improve pedestrian-scale lighting along all corridors
- Upgrade crossings to current ADA standards and provide pedestrian countdown timers
- Improve nearby bus stops on New Kings Road at Richardson Road, Soutel Drive, and Moncrief Road



1: CONTEXT

In order to make sound recommendations for the transformations of Moncrief, Myrtle & 8th Street Corridors, the charrette team worked diligently to understand and assess current conditions. This occurred through both a gathering of existing data sources as well as a walk of the corridor.

EXISTING CONDITIONS

The improvement effort was initiated by a team corridor visit, in which the team walked and drove through the corridors to gather first-hand knowledge of the physical environment. This enabled the team to assess priority areas, take field measurements (such as lane and sidewalk widths), assess the need for bike lanes, and identify important elements such as high pedestrian traffic areas, areas of vehicular and pedestrian conflict, intersection issues, vehicular speeds, traffic control, lighting, safety, traffic generators, schools, and other notable destinations.

Priority areas were tentatively identified by the team to establish areas of focus for improvements. These areas were later confirmed through a variety of conversations with the public during the open house section of the charrette, discussed later.

PREVIOUS PLANS AND STUDIES

In advance of the charrette, the team reviewed several existing reports and datasets. This was performed to familiarize the team with a well-informed understanding of the context in which these streets exist and to provide a basis from which they could develop and analyze potential solutions. Reviewed documents include, but are not limited to the following:

- Path Forward 2040 Long Range Transportation Plan (LRTP) from the North Florida Transportation Planning Organization
- City of Jacksonville 2030 Mobility Plan
- City of Jacksonville 2030 Comprehensive Plan
- Overview crash data for all streets from the City of Jacksonville and the Florida Department of Transportation (FDOT)
- Bus stops and ridership data from JTA
- Vehicular traffic counts from the FDOT
- Urban Core Vision Plan COJ

ISSUES AND OPPORTUNITIES

After completing the field review, the charrette team gathered to assess their findings. Generally speaking, the findings fall into two distinct categories:

- Issues: These are characteristics of the corridors that represent barriers to Complete Streets and should be addressed. Issues could include lack of adequate facilities or poor design.
- Opportunities: In some cases, the team observed characteristics about the corridors that could serve as a positive or asset to Complete Streets. These are opportunities that should be taken advantage of.

The team's focus was on making recommendations on how to transform all three corridors into Complete Streets. What follows is a brief summary of the corridor issues and opportunities used to inform the eventual recommendations.

CHALLENGES

The team noted several issues during the field review related to the physical design and sharing of space between travel modes. Collectively, these issues create an environment that is challenging for bicyclists, pedestrians, and transit riders. The character of these corridors, which encourages higher motor vehicle speeds, is inconsistent with the observed use of these roads by pedestrians and bicyclists.

<u>High Motor Vehicle Speeds</u>

Motor vehicles were observed routinely exceeding the posted speed limits, which range from 30 miles per hour (mph) to 45 mph. This is particularly obvious when experienced from the perspective of a pedestrian at the roadside. High vehicle speeds are likely the result of road design characteristics, including straight, flat and wide pavement, as well as traffic signal timing and spacing.

Vehicles routinely exceed the posted 35 mile per hour (mph) posted speed. This is particularly obvious when experienced from the perspective of a pedestrian at the roadside. High vehicle speeds are likely the result of road design characteristics, including straight, flat and wide pavement, as well as traffic signal timing and spacing.

Large Curb Radii

Curb radii measures the distance at which the curb begins to turn to an oncoming street at an intersection. The larger the curb radii, the higher the speeds at which vehicles will make turns, and thus the less visible pedestrians become to turning vehicles and the longer the distance required to cross the street. Additionally, large curb radii result in large expanses of pavement at intersections and driveways, increasing the crossing distance and exposure for pedestrians.

Large curb radii exist throughout all corridors, both at major intersections and on side streets. Pedestrians frequently must cross over 40 feet of pavement at simple two-lane cross streets.

Inadequate Accommodations for Persons with Disabilities

Persons with disabilities, specifically those that require mobility aids such as wheelchairs and motorized scooters, require special accommodations to be able to move along a roadside. Design standards for such accommodations were legislated by the Americans with Disabilities Act (ADA) of 1990 (revised in 2010).

The charrette team noted a number of instances where the sidewalk conditions did not meet ADA standards. Issues include obstructions such as signage, landscaping, and utilities in the sidewalk, and a lack of, or inadequate curb ramps at intersections.

INADEQUATE ACCOMMODATIONS FOR PERSONS WITH DISABILITIES



Lack of Pedestrian Buffer



On Moncrief Road and 8th Street there are small to moderately sized buffers (typically between three and ten feet wide) between the sidewalk and the adjacent motor vehicle travel lane. On Moncrief Road especially, being in such close proximity to high speed vehicles creates a very uncomfortable environment for pedestrians.

In most places along Myrtle Avenue between Moncrief Road and Martin Luther King Jr. Parkway, there is no buffer separating the sidewalk from the adjacent motor vehicle travel lane. However, the character of Myrtle Avenue creates reduced traffic speeds. While this could be further improved with the introduction of a buffer, this creates a less significant problem that what is present on Moncrief Road.

Lack of Crossing Opportunities

All three corridors include long stretches of roadway in between signalized pedestrian crossing opportunities. This is most notable on Moncrief Road and the western portion of 8th Street. Often, the space between signalized crossing opportunities exceeds 1,000 feet. In some cases the distance is closer to 3,000 feet (for example, between Cleveland Road and Richardson Road on Moncrief Road).

There are very few unsignalized crossing opportunities in the study area. Pedestrians with an origin or destination at mid-block location must cross up to five lanes of fast-moving traffic. Similarly, bus riders with a mid-block stop on the opposite side of the street from their origin/destination often must do the same.

Lack of Bicycle Facilities

LACK OF CROSSING OPPORTUNITIES



There are very few dedicated facilities, which could include bicycle lanes, cycle tracks or parallel trails, for cyclists in the study area. There are bike lanes on far northwestern segment of Moncrief Road and on the easternmost segment of 8th Street, but these facilities do not cross through the study area. The outside lane on all facilities is between ten and twenty feet wide.

Given their speed and traffic characteristics, neither Moncrief Road nor the section of 8th Street immediately east of I-95 are appropriate for shared-lane bicycle use even for more experienced cyclists.

The lack of dedicated facilities or accommodations for bicycles means that cyclists often operate in the sidewalk. This is a less than ideal situation because of conflicts with pedestrians as well as a lack of visibility to vehicles turning in and out of cross streets and driveways.



OPPORTUNITIES

The study team noted a number of opportunities during the course of the field review. These are items that could potentially serve to the advantage of the study area as a whole.

Mix of Land Uses

All corridors contain a mix of retail, institutional, and civic uses in close proximity to residential neighborhoods. This is most notable from the intersection of Myrtle Avenue with Moncrief Road south and east to 8th Street east of I-95. Having complementary uses in such close proximity to each other creates a built-in demand for walking and cycling activity.

Trail Connectivity

The S-Line multi-use trail intersects 8th Street in the study area and terminates on Myrtle Avenue further south. The trail is a burgeoning urban amenity that connects varying neighborhoods in a safe, comfortable environment. The S-Line is part of a vision for central Jacksonville's "Emerald Necklace", a series of greenways and paths circling downtown, with focus on the St. Johns River and other local waterways. Providing connectivity to these trails and greenway through bicycle facilities on or adjacent to 8th Street and neighboring routes is a great opportunity for expanding the cycling and pedestrian network throughout the area and enhancing the attractiveness of the surrounding neighborhoods.

Building Frontage Along Corridor

In the more urban sections of the study area, beginning at West 45th Street on Moncrief Road, buildings are located relatively close to the road. With some exceptions, buildings are set back no greater than 20 feet from the road. Along Myrtle Avenue and some parts of 8th Street, buildings are frequently located immediately adjacent to the back of the sidewalk.

Having buildings with such relatively close relationships to the road provides a great opportunity to create active street life, assuming the necessary roadside conditions are in place.



2: PROCESS

To start the process of conceptualizing improvements to make 8th Street, Myrtle Avenue, and Moncrief Road Complete Streets, a charrette process was held January 12-14, 2016 at the Emmett Reed Community Center. After the aforementioned site visit, an open house was held, followed by a more formal public workshop. Input received at these meetings formed the basis on which potential improvements were created and selected for recommendation.

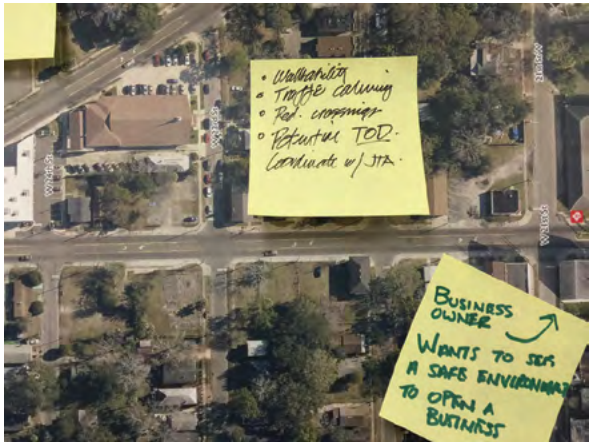
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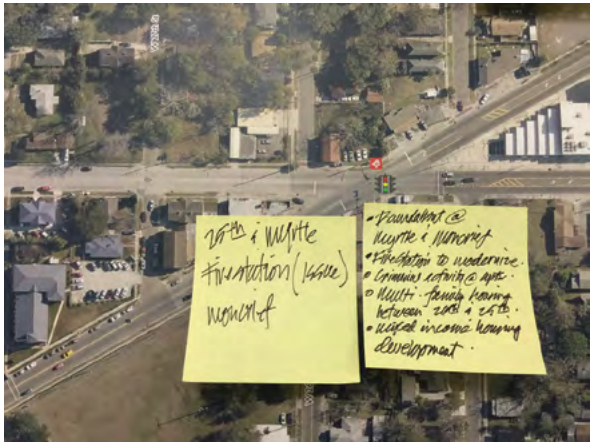
During the initial all day stakeholder open house, a series of community representatives, local politicians, interested neighbors, law enforcement officers, City of Jacksonville representatives and bicycle enthusiasts were able to voice their preferences, visions, desires, and needs for the study corridors.
While meeting with various members of the design team, whether in small groups or as individuals, the public posted their comments on the sections of the corridors that were of their concern. This began to verify concerns and observations noted during the team's previous field observations.

This community wall became the central point for references made by participants. As the day progressed, the patterns in the tagged areas began to reveal critical community needs.

CHARRETTE PARTICIPANTS' RESPONSES TO IMPROVEMENT NEEDS BY STREET







CHARRETTE

As part of the charrette process, a formal public workshop was also conducted by the team to receive comments from typical residents, daily users, and interested community members. The initial conversation centered on a list of potential enhancements that the participants could score. The results of this exercise are shown in Table 1



TABLE 1: POTENTIAL ENHANCEMENTS BY TOTAL VOTES

IMPROVEMENT TYPE	NUMBER OF VOTES
Bike lanes	7
Lighting	6
Security	5
Sidewalks	5
Crosswalks	5
Bus-stops	5
Signage	3
Signals	3
Medians	3
Housing	3
Landscape Maintenance	3
Retail	3
Public Spaces	2
Drainage	2
Street trees	1
On-street Parking	1
Gateways	1

PUBLIC INPUT/KEY ISSUES

Upon the completion of the stakeholder input process, the design team began to combine the public's input and their observations into a series of sketches and plans that highlight the public's areas of concern. The team worked on a number of items to ensure that the most critical areas identified by the design team, the public, and the stakeholders were addressed.

Multiple solutions such as roundabouts, streetscaping, signage, enhanced crosswalks, upgraded intersections, bike facilities, and aesthetic improvements were explored as conceptual plans moving forward.

These ideas were then blended with physical site constraints and opportunities, analyzed as to their practical application, prioritized into categories of most need, and are presented in this conceptual report.







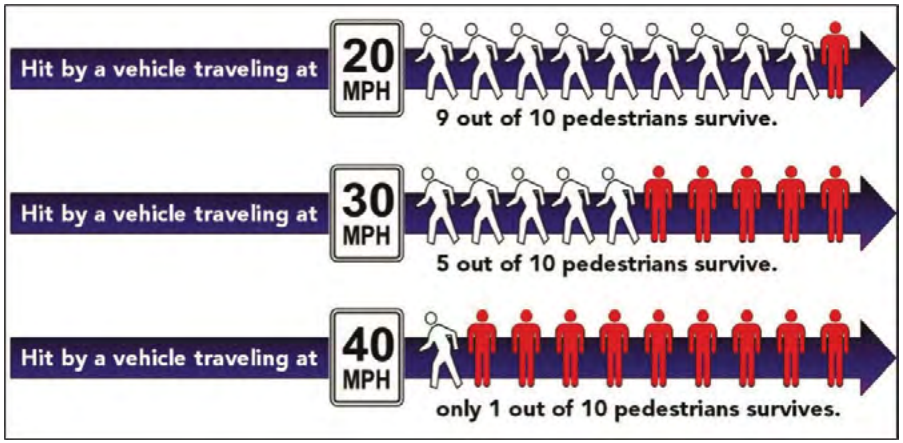
3: CONCEPTS

TARGET SPEED

The most influential element of street design is speed. Research demonstrates a clear relationship between motor vehicle speeds and pedestrian safety. Pedestrian crash rates increase significantly from 20 to 30 mph and again from 30 to 40 mph.

The posted speed limit on Moncrief Road within the study area varies from 45 mph at the north end from New Kings Road to Avenue B to 35 mph between Avenue B through Myrtle Avenue. Posted speed limits on Myrtle Avenue and 8th Street within the study area are 30 mph.

In many locations along each of the roads within the study area motor vehicles were observed consistently exceeding the posted speed. This is because the current road designs are consistent with and encourage higher speeds.



PEDESTRIAN FATALITIES INCREASE SIGNIFICANTLY WITH HIGHER MOTOR VEHICLE OPERATING SPEEDS.

PARAMETER	DESCRIPTION	PROPOSED
Target Speed	The speed at which vehicles should operate, consistent with the level of multi-modal activity generated by adjacent land uses to provide both mobility for motor vehicles and a safe environment for bicycles and pedestrians.	30 mph*
Design Speed	The speed that governs certain geometric features of the road.	30 mph*

*IN LOCATIONS WHERE THE CURRENT POSTED SPEED IS 45 MPH, THE PROPOSED DESIGN AND TARGET SPEEDS ARE 45 MPH.

In order to create the pedestrian-scale context envisioned at several key locations along the corridor, vehicle operating speeds must be lower. "Target Speed" is a concept in which the desired context determines the design speed, which in turn establishes design parameters.



Lower design speeds enable the creation of pedestrian scale design features.

In locations where the current posted speed is 30 or 35 mph, the proposed target speed is 30 mph, with an expectation that the posted speed limit be decreased with the improvements. In locations where the current posted speed is 45 mph, the proposed target speed is 45 mph. This will still provide an improvement because these locations are currently built in a way that provides for and encourages motorists to travel faster than the posted speed limit. In areas with these elevated speed limits and target speeds, there is a heightened need to provide a safe environment for pedestrians due to the increased risk they face in a collision.

Design according to these speeds will contribute to the creation of a safe environment for bicycles and pedestrians without compromising vehicular mobility. All design parameters, including lane widths and curb radii, will be consistent with the target speed.

MAJOR CONTRIBUTING FEATURES ALONG CORRIDOR

James P. Small Memorial Park

James P. Small Memorial Park is located on the southeast corner of the intersection of Myrtle Avenue and 8th Street. It is an essential community asset, not just because of its history, but because of the potential it holds.

The park is Jacksonville's last remaining historic ballpark. It counts among its past tenants one of the first African American baseball teams, several minor league teams, and a few major league clubs who used the facility for spring training. Hank Aaron once played there as a member of the Class A Jacksonville Braves, one of the first integrated ballclubs in the South.

Major renovations in 1980 and 2006 have rendered the facility in good shape. In 2013, the park was added to the National Register of Historic Places.
The park's condition and history give it interesting potential as a community focal point. While the stadium doesn't currently host teams on a regular basis, teams do play at the venue from time to time. Other special events, such as concerts, rallies and fairs could be held there, too, drawing visitors in from outside of the community.

Moncrief Road and Myrtle Avenue

The intersection of Moncrief Road and Myrtle Avenue represents a critical juncture in the study area, both literally and figuratively. The intersection includes some of the only recent development activity experienced in the corridor in the last several decades. The southern corner, which resembles a pointed wedge because of the way that Moncrief Road and Myrtle Avenue intersect each other, recently experienced the construction of North Point Town Center, a mixed-use development that houses retail, restaurants, community services and the offices of the Northwest Jacksonville Community Development Corporation (CDC). The project was completed in partnership with the CDC.

While North Point Town Center can be considered a success for the community, there remain a number of challenges with its surroundings. The inherent design of the Moncrief/Myrtle intersection makes it a barrier in the community. The two roads intersect at an extreme skew, resulting in a large amount of pavement, long distances separating businesses from each other and resulting confusion and uncertainty.

If this node is to continue the redevelopment and revitalization started by the North Point Town Center, a more user-friendly design must be achieved. The private development community has already signaled an interest in redeveloping some of the surrounding blocks. This Complete Streets project represents an opportunity to cast a vision for the evolution of Moncrief Road and Myrtle Avenue as a strong focal point in the community.

S-Line

The S-Line is a 4.8 mile rail-to-trail path connecting neighborhoods with a continuous series of greenways and roadside multi-use paths built in an abandoned rail right of way. An existing 1.5 mile greenway crosses 8th Street approximately halfway between Myrtle Avenue and I-95 immediately east of Payne Avenue. This greenway travels north before going under I-95 to connect to Boulevard north of the University of Florida (UF) Health complex. South from 8th Street, the S-Line parallels Payne Avenue before crossing Kings Road and ending on Myrtle Avenue between Kings Road and Beaver Street.

The greenway is planned to be extended across Myrtle Avenue to Beaver Street in the southwest. The S-Line is an important component of the vision of Jacksonville's "Emerald Necklace", a ring of connected paths, trails, and greenways that would encircle the Downtown area of Jacksonville and surrounding neighborhoods. Additional components of this vision include facilities along Beaver Street and Myrtle Avenue to the west and south connecting the S-Line to the McCoy's Creek Greenway. An additional facility in the east could connect the S-Line to the Hogans Creek Greenway through the UF Health campus. With or without these extensions and coordinating facilities, the S-Line has the potential to become a major urban amenity. By providing separate, non-motorized access across I-95, it could create a strong connection for cyclists and pedestrians between parts of the city that have been divided by the freeway. With connections to nearby greenways, it could also extend the reach of the river and other recreational resources into longstanding urban neighborhoods.



SOME OF THE TRAILS AND GREENWAYS INCLUDED IN THE CONCEPT OF AN "EMERALD NECKLACE" AROUND DOWNTOWN JACKSONVILLE. THE STUDY AREA IS HIGHLIGHTED IN WHITE NEAR THE CENTER-TOP OF THE MAP.

CONTEXT ZONES

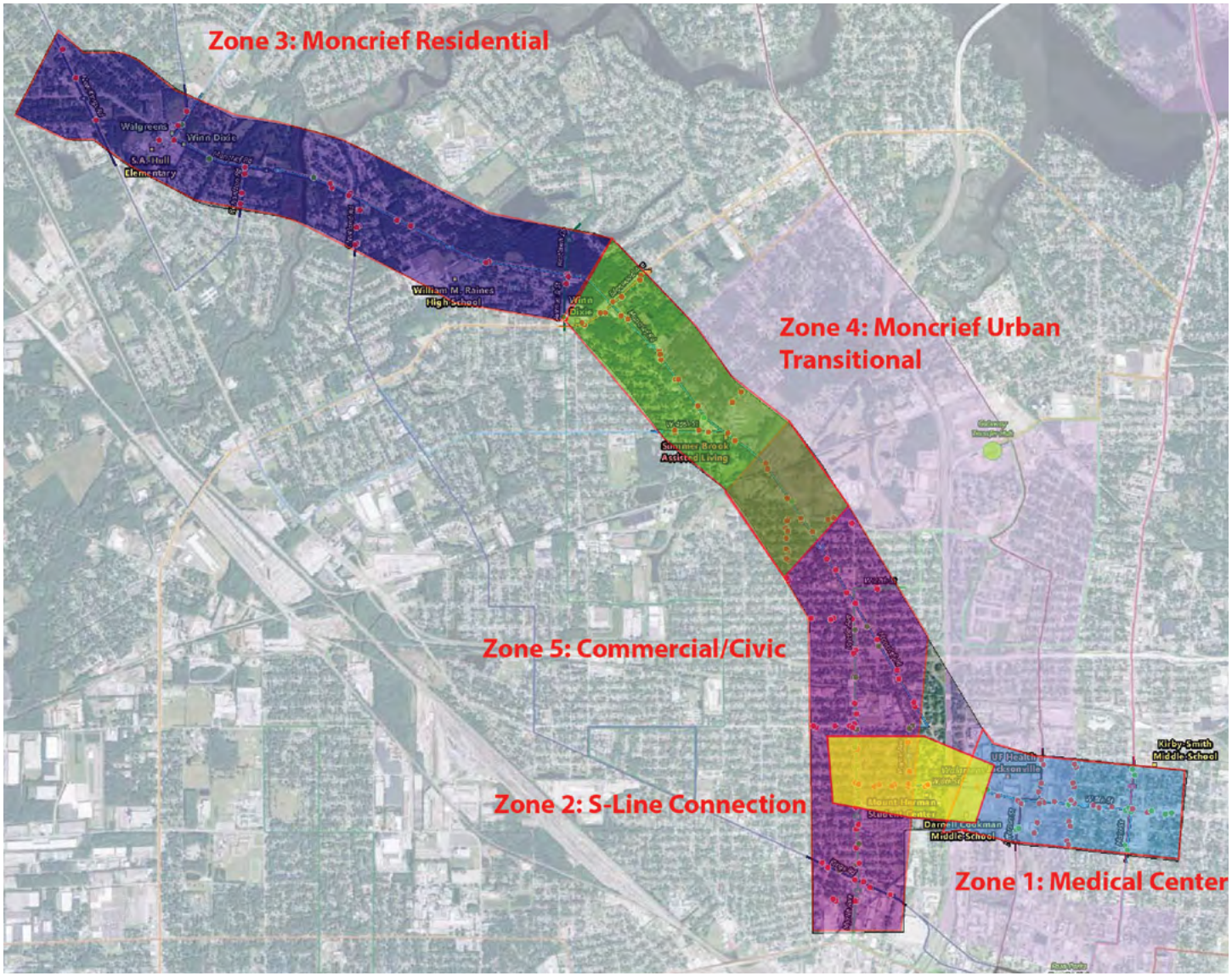
This large study area can be subdivided into five unique sections. These "context zones" feature different roadway configurations and networks, land uses, levels of activity, and types of activities. The context zones provide a framework for developing context-sensitive complete streets transformation solutions along all three corridors.

In this study area, the following five context zones were identified based on their functional contributions to the study area:

- Medical Center
- S-Line Connection
- Moncrief Residential
- Moncrief Urban Transitional
- Commercial/Civic

These context zones are shown on a map of the study area as a whole in Figure 1. Each zone, its current condition, a vision set for it, and concepts for achieving that vision are described in the following sections.

FIGURE 1: OVERVIEW OF STUDY AREA AND IDENTIFIED CONTEXT ZONES



ZONE 1: MEDICAL CENTER

The Medical Center Zone extends along 8th Street from Main Street west to the I-95 interchange. This section serves many educational and medical buildings, including the UF Health Jacksonville (formerly Shands Jacksonville) and Darnell-Cookman School of the Medical Arts, a magnet middle and high school. East of Boulevard, the roadway transitions to smaller scale residential- and civic-focused buildings. This context zone sees a notably high level of pedestrian and cyclist use already. People working in and visiting the medical facilities were seen walking and waiting for buses along the street during multiple site visits.

8th Street is a wide roadway from the I-95 interchange through Jefferson Street, with two or three through lanes and nearly continuous right turn lanes in each direction in addition to a center raised median and left turn lanes at some key intersections. Between Jefferson Street and Boulevard the roadway narrows. East of Boulevard, 8th Street features one vehicular lane and a bike lane in each direction with a center median that has left turn lanes at significant intersections.

The section of 8th Street west of Boulevard provides no facilities for cyclists and has an incredibly wide roadway that makes crossing difficult for pedestrians. However, to the east, 8th Street does have bike lanes and a much narrower cross section.

While 8th Street does serve a higher amount of traffic than other nearby roadways, the amount of traffic present does not necessitate the number of lanes present. For the most part, the outside travel lanes terminate as right turn lanes within a short distance. As a result, they don't serve a useful purpose as travel lanes.

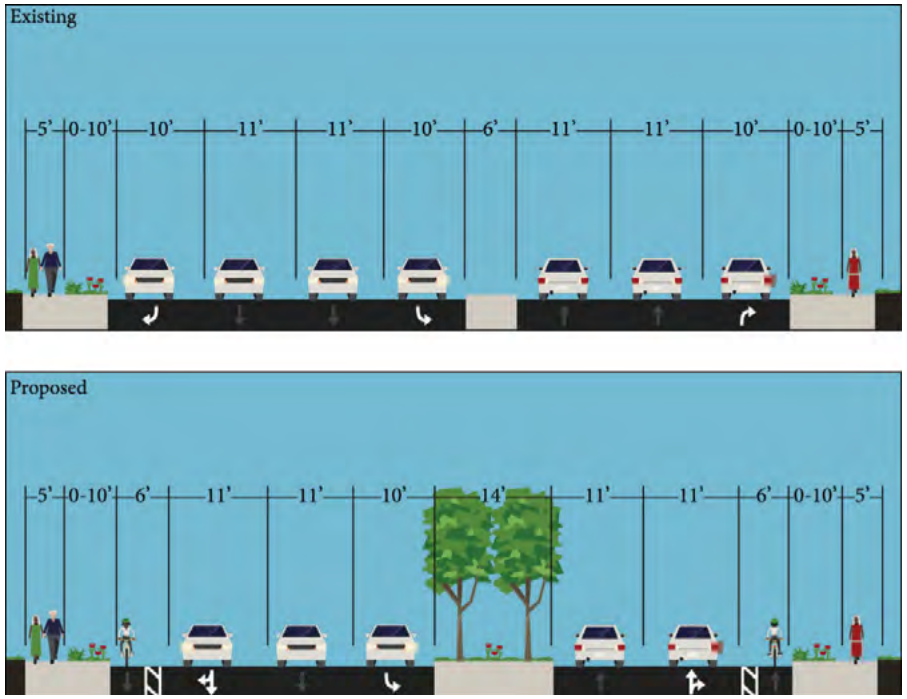
Based on existing traffic levels and patterns, 8th Street could continue to adequately serve traffic with two travel lanes in either direction and left turn lanes at key intersections. The space currently used for the underutilized lanes could instead be used to provide buffered bike lanes, extending the existing lanes in the east further west. However, the bike lanes would not require the full width of the existing lanes. Any additional width left could eventually be used to widen the existing medians so that they could be converted from concrete or painted medians to planted medians. Trees and other plants make a roadway feel less open and encourage drivers to drive more slowly. Wider medians also serve as crosswalk refuges, letting pedestrians cross one direction of the roadway at a time. The changes proposed to a sample cross-section of 8th Street are shown in Figure 2.

It should be noted that extra care will need to be taken to integrate the bicycle lanes with all adjacent bus stops in order to reduce the conflicts between cyclists, bus riders, and buses themselves. If these conflicts are not considered, buses may stop in the bike lane, creating a dangerous situation for cyclists. Passengers boarding and exiting buses may find themselves in conflict with a string of cyclists, which would slow the transit service in addition to being dangerous for all parties involved. One solution is to create a "floating bus stop" in which a bus stop is built between the bike lane and the roadway, giving passengers a place to access the bus while not in conflict with cyclists and giving cyclists a way to safely bypass stopped buses without needing to enter traffic.



PHOTO SOURCE: ADAM COPPOLA PHOTOGRAPHY

FIGURE 2: 8TH STREET CROSS-SECTION IN MEDICAL CENTER CONTEXT ZONE; EXISTING AND WITH PROPOSED MODIFICATIONS



When passing under I-95, 8th Street has only two through lanes and auxiliary left turn lanes. Traffic volumes do necessitate that these lanes remain available for vehicular travel. In this section it is recommended that the existing sidewalks be widened as much as possible into a multi-use path. The bike lanes would then be transitioned off of the roadway onto the paths through the interchange before being returned to on-street bike lanes on either side.

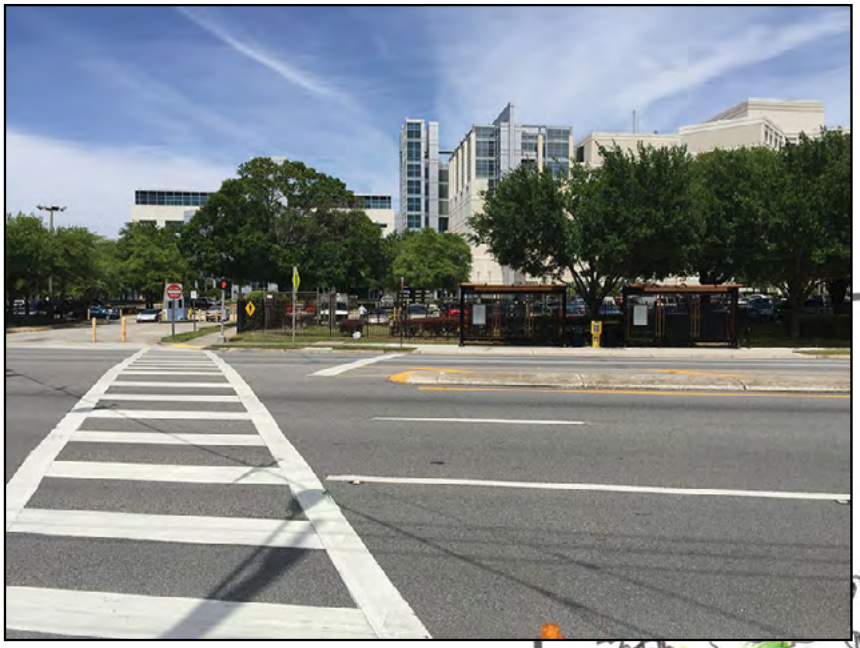
At key intersections, opportunities to improve pedestrian crossings are also available by moving crosswalks, extending medians, and adding additional pedestrian visibility. At the intersection of 8th Street and James Hall Drive, there is only one crosswalk across 8th Street. However, this intersection provides access between two significant bus stops, and connects both the UF Health Campus and the Darnell-Cookman School of the Medical Arts. In addition, this crosswalk is at an abnormally high angle to the roadway, which creates a longer walking path for pedestrians than a crosswalk perpendicular to the roadway. The southbound approach of the intersection, which provides access from the UF Health Campus, has space for a northbound lane, but this lane is inaccessible due to bollards placed at the entryway, indicating that this is no longer used for access into the campus.

At this intersection, some geometric changes could create a notably improved environment for pedestrians. As shown in Figure 3, the east crosswalk could be adjusted such that it is nearly perpendicular to 8th Street, which would also make it pass through the median. This median is currently a thin concrete median and a wider painted median, but could provide more benefit to the roadway as a fully planted median. Placing the crosswalk through the median rather than around the end of it gives pedestrians a safe place to wait during crossing. By reducing the southbound approach to the two lanes that are currently utilized and reducing the curb radii on both sides, a much shorter crossing distance can be created. A new crosswalk across the intersection's western leg would also provide more direct access between the bus stops, the school, and the hospital campus.

FIGURE 3: INTERSECTION OF 8TH STREET AND JAMES HALL DRIVE EXISTING AND WITH PROPOSED MODIFICATIONS



Modifications were also proposed for the intersections of 8th Street with Jefferson Street and Boulevard, and the segment between them. This section of roadway currently carries the transition between the seven lane section to the west and the three lane section to the east. In the proposed condition, the existing westbound auxiliary left turn lane is replaced with a planted median. This new median is extended across the crosswalk to add protection for pedestrians. This crosswalk has also been slightly modified to be a more direct path across 8th Street. Between Jefferson Street and Boulevard, there is currently a wide striped area on the south side of the roadway that is not used for traffic. South of the roadway is a small park and the northernmost above-ground section of Hogan's Creek. This currently non-utilized section of roadway would be occupied by the aforementioned buffered bike lanes. The reduction of lane widths and the replacement of the outer lanes would allow for wider medians, which could be planted. These changes are shown in Figure 4.



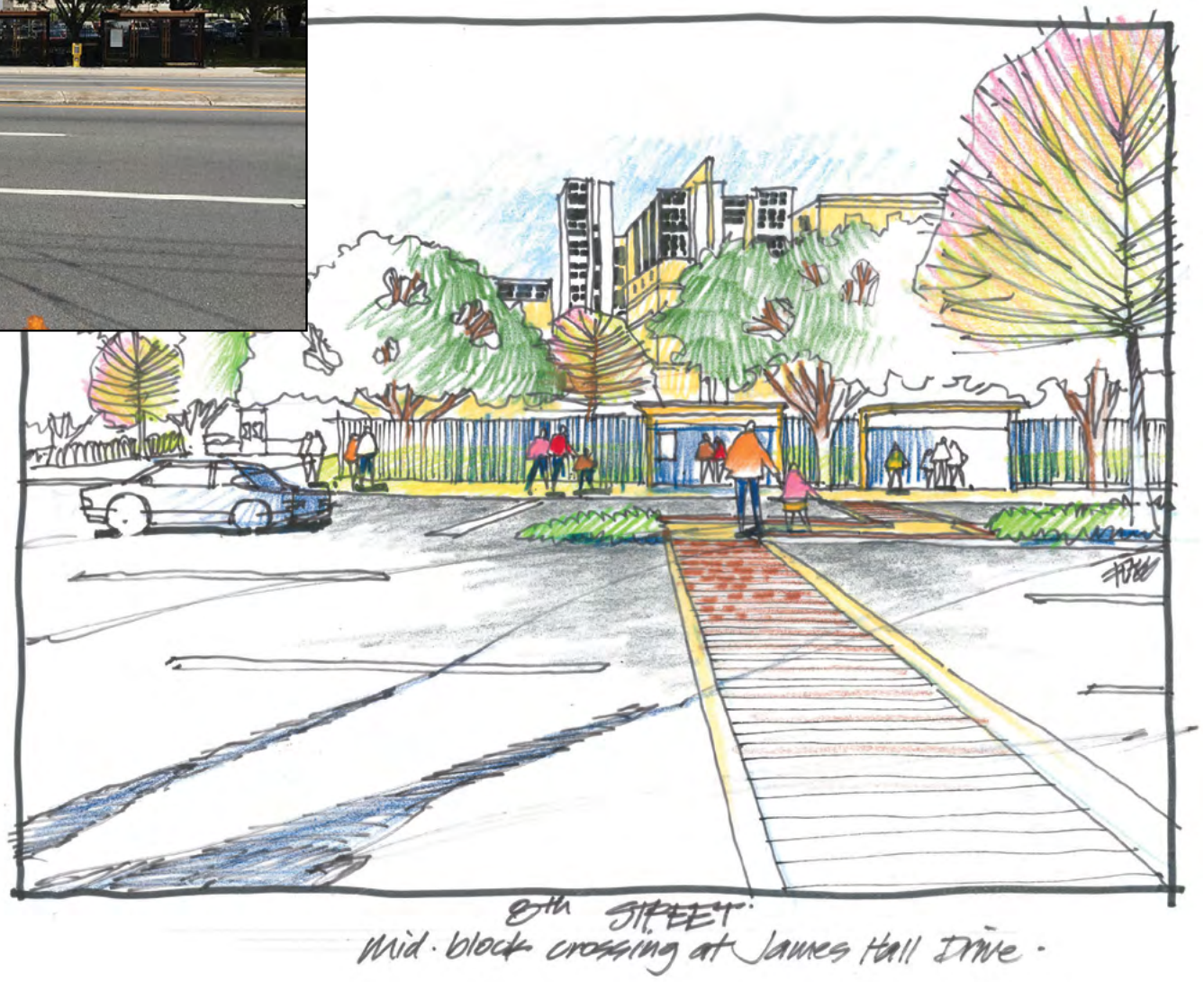

8th STREET
Mid-block crossing at James Hall Drive.

FIGURE 4: INTERSECTIONS OF 8TH STREET WITH JEFFERSON STREET AND BOULEVARD; EXISTING AND WITH PROPOSED MODIFICATIONS



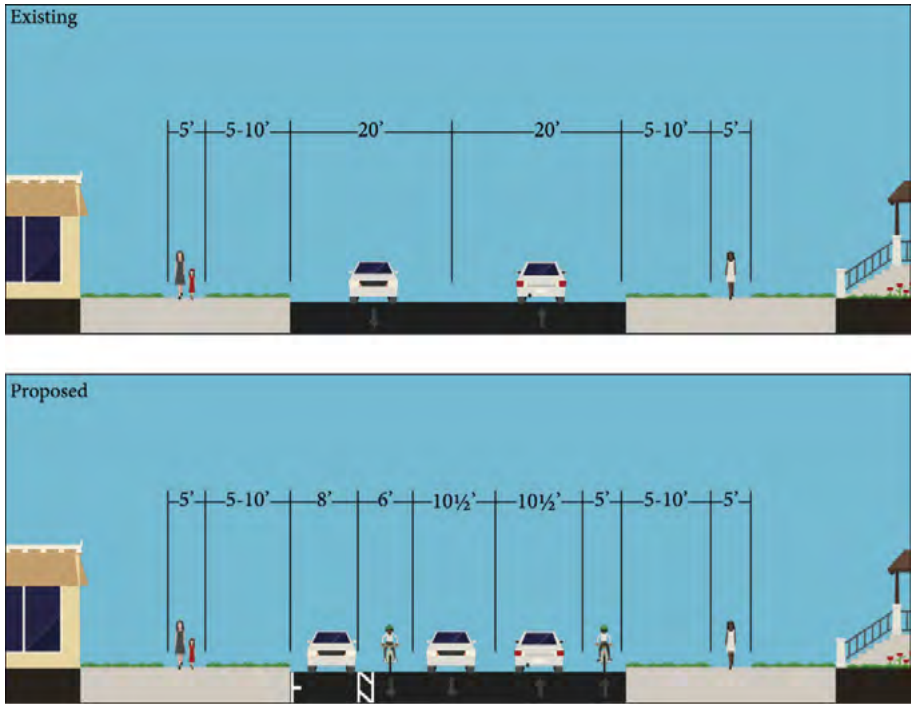
ZONE 2: S-LINE CONNECTION

The segment of 8th Street between Myrtle Avenue and the I-95 interchange has a notably different character from the Medical Center context zone. This area is predominately occupied by single-family detached homes, with access to the Mt. Herman Exceptional Student Center (a Duval County public school) to the east and James P. Small Park. In this area, 8th Street is approximately forty feet wide, but with only two lanes and no designated space or other indicators for cyclists.

The S-Line trail crosses 8th Street near the middle of this zone, just east of Payne Avenue. Unfortunately, the connection is not well defined. A passerby may not realize that it's more than a normal intersection's crosswalk. It is important to highlight this crossing in a distinct way to bring attention to the S-Line itself, but more importantly to alert drivers to the increased levels of pedestrian activity that may be present. Similarly, pedestrian safety should be a top priority in the vicinity of the crossing, with marked crosswalks at intersections and improved streetlights for both motorists and pedestrians. A Rectangular Rapid Flashing Beacon (RRFB) could also be an appropriate treatment to improve pedestrian visibility at this key crossing.

In order to better provide for all users in this area, vehicular lane widths could be reduced from the existing 20 feet to a more appropriate 10-1/2 feet, in keeping with the Target Speed concept. On-street parking could be added to one side of the road, while also providing for unprotected bike lanes. This section of 8th Street has fairly low traffic volumes, which make it reasonable to provide bike lanes without a buffer. As shown in Figure 5, a small buffer could be provided between the bike lane and parked cars to prevent crashes with open car doors or cars pulling out of their parking spots.

FIGURE 5: 8TH STREET CROSS-SECTION IN S-LINE CONTEXT ZONE; EXISTING AND WITH PROPOSED MODIFICATIONS



ZONE 3: MONCRIEF RESIDENTIAL

Moncrief Road is an arterial road which connects neighborhoods with New Kings Road to the west and I-95 and Downtown Jacksonville to the east. This section of Moncrief Road is almost exclusively home to residences, with notable exceptions at the intersection of Soutel Drive, which has commercial development, and at Raines Avenue, which has a high school.

Between New Kings Road and Soutel Drive, Moncrief Road has one travel lane in each direction along with a center two-way left turn lane. From New Kings Road to Bronson Lane/Hull Street (just west of Soutel Drive), Moncrief Road also has an unprotected bike lane on each side of the road. From Soutel Drive east to Edgewood Avenue, Moncrief Road has two travel lanes in each direction along with a center two-way left turn lane. Lanes in this zone are typically between 11 and 13 feet wide.

Due to its focus on mobility, this part of Moncrief Road has many long stretches of continuous, wide roadway with no opportunities for pedestrian crossings. This forces pedestrians to cross the road in illegal and unsafe ways to move between shops, bus stops, schools, and their homes. Unfortunately, this section of roadway carries high traffic volumes moving at high speeds, increasing the danger posed to all non-motorists.

As a long, continuous road, Moncrief Road could be improved to provide regional connectivity for pedestrians and cyclists as well as motorists. However, the high-volume, high-speed nature of the roadway will provide a barrier. This barrier could be overcome while still maintaining vehicular mobility with dedicated cycling facilities.

In order to create a safer, more inclusive roadway environment, simple changes to Moncrief Road can be made. In order to reduce speeds in keeping with the new target speed concept, lane widths can be reduced from between 12 and 14 feet to between 10 and 11 feet. By reducing lane widths, space formerly used for traveling vehicles can be used for alternative uses. At the design charrette, three options for the use of this space were proposed.

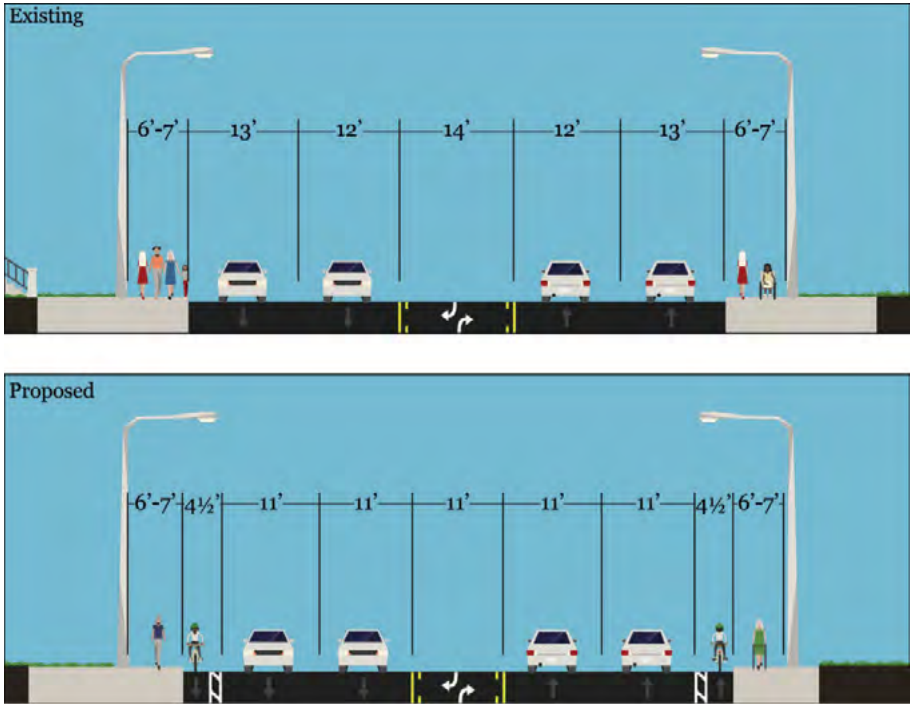


In the first, the space was used for parked cars and transit bulb-outs. In this concept, one side of the roadway would be occupied by parallel parking spaces, which would sometimes be removed for a bus stop bulb-out, allowing passengers space to board adjacent to the roadway in addition to the sidewalk. The other concepts instead used the newfound space for bicycle facilities. In the second concept, buffered bike lanes were included on each side of the roadway, while in the third concept, a cycle track (which provides for bike travel in both directions on a single side of the road) was included on one side of the roadway.

Due to low demand for on-street parking along this section of Moncrief Road, and safety concerns related to cycle tracks, the second concept was chosen as the preferred option. As shown in Figure 6, reduced lane widths allow for the addition of 5-1/2 foot bike lanes on either side. This could be used for a 1-1/2 foot buffer protecting a 4 foot bike lane on each side. The buffer could be simply striped on the pavement, but would be most useful if it featured some kind of physical barrier, such as bollards, to protect cyclists from other roadway traffic. The addition of these bike lanes would not only create a dedicated space for cyclists, but it would make the pedestrian environment more comfortable by slowing vehicle travel and creating a wide buffer between traffic and pedestrians.

Just south of the western end of Moncrief Road is New Kings Road, which has several high-use bus stops. Generally, these stops are characterized as being unconnected to existing sidewalks, lacking amenities such as trash receptacles and benches, and lacking any loading/unloading zone where buses can pull off to the side of New Kings Road. Future improvement projects involving pedestrian facilities and/or transit stops should make use of ADA guidelines to ensure that designs are suited for all individuals, including those who may require the use of a wheelchair, and those with hearing, seeing, or other disabilities.

FIGURE 6: MONCRIEF ROAD CROSS SECTIONS IN THE MONCRIEF ROAD RESIDENTIAL CONTEXT ZONE; EXISTING AND WITH PROPOSED MODIFICATIONS



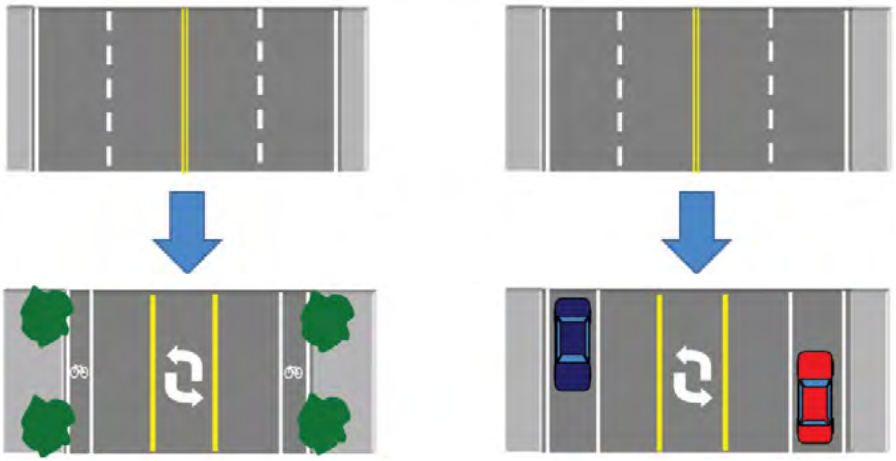
ZONE 4: MONCRIEF URBAN TRANSITIONAL

The Moncrief Urban Transitional Context Zone begins at Edgewood Avenue and continues southeast to the intersection of 33rd Street/Golfair Boulevard.

This section is characterized by higher vehicular speeds with very few pedestrian crossing opportunities. Numerous cyclists were observed in and near the corridor despite the absence of dedicated facilities. This section includes two travel lanes in each direction but lacks a center turn lane.

The current four-lane configuration of Moncrief Road within this context zone makes it an excellent candidate for a classic "road diet". A classic road diet replaces the two inside travel lanes with a single center turn lane.

A CLASSIC ROAD DIET REPLACES THE TWO INSIDE TRAVEL LANES WITH A SINGLE CENTER TURN LANE.



A road diet provides benefits for all users. The additional right-of-way created by the lane elimination can be used for wider sidewalks, bicycle lanes or on-street parking. The center turn lane provides a safety and mobility benefit by taking left turning vehicles out of the flow of traffic. Current and projected traffic volumes on Moncrief Road fall within acceptable ranges for a road diet.

On Moncrief Road south of Edgewood Drive, two road diet options were considered. The first option replaces the two inside travel lanes with a center turn lane and protected bike lanes (5 feet wide bike lanes and a one foot wide striped separator).

The second option trades out the protected bike lanes for a single, ten-foot parking lane and replaces the five-foot sidewalk with a multi-use trail on one side of the street. The parking (and trail) could alternate on either side of the street on a block-by-block basis.

The second option may be more desirable for less experienced cyclists. However, it will be more costly to construct the second option compared to the first option, which will entail simply restriping the road.

Ultimately, the configuration with buffered bike lanes was chosen. The buildings along Moncrief Road are largely residential or recreational and have off-street parking. However, the high speeds and long-distance travel on the road make it uninviting for bicyclists so the bike lanes would create a real benefit to cycling. The existing and proposed roadway cross-section in this context zone are shown in Figure 7.

THREE LANE ROADS CAN PROVIDE A SAFETY ADVANTAGE OF FOUR LANE ROADS BY TAKING TURNING VEHICLES OUT OF TRAFFIC FLOW.

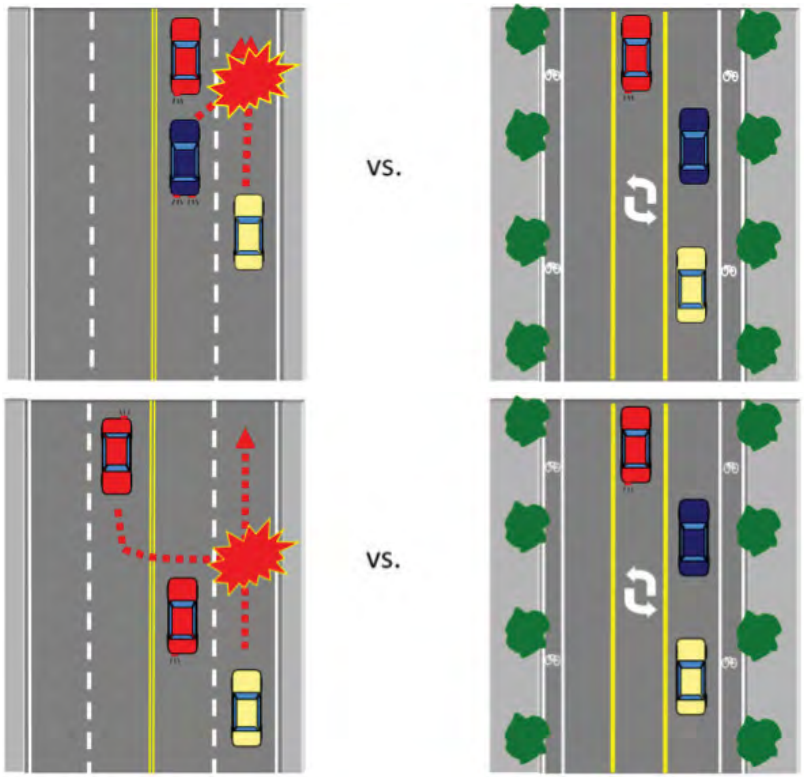
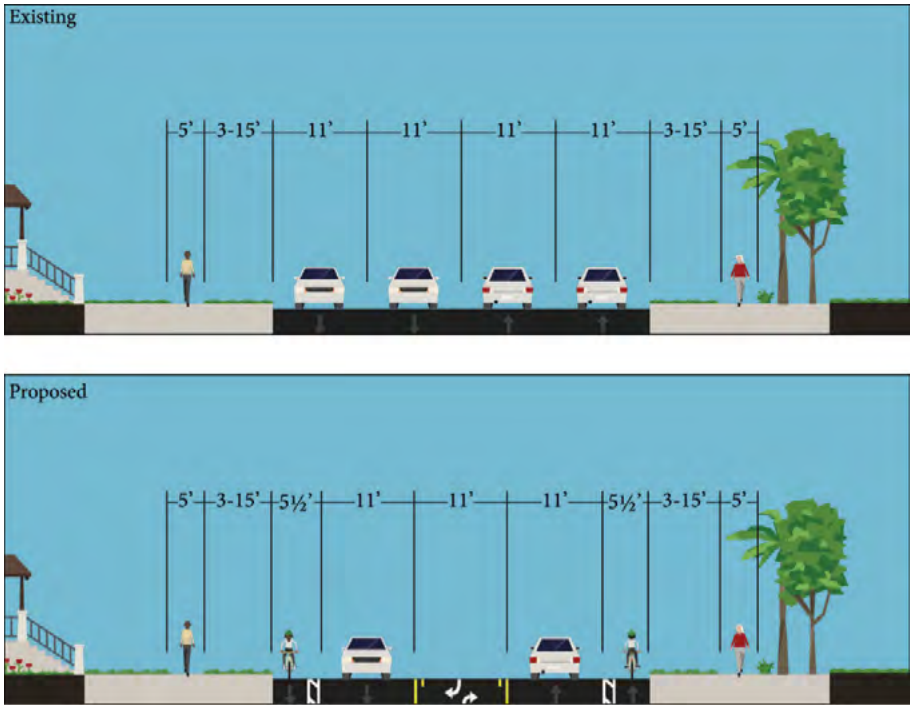


FIGURE 7: MONCRIEF ROAD CROSS SECTIONS IN THE MONCRIEF ROAD URBAN TRANSITIONAL CONTEXT ZONE; EXISTING AND WITH PROPOSED MODIFICATIONS



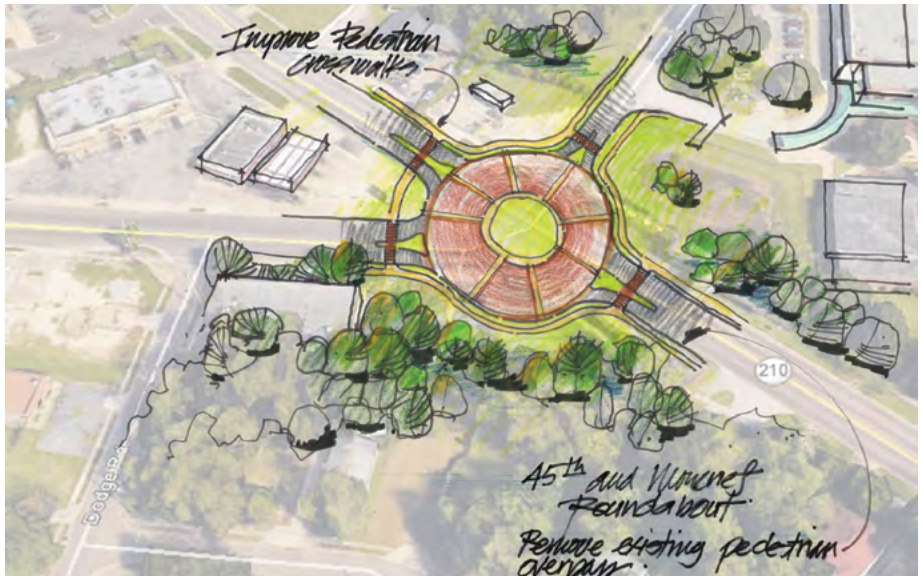
The introduction of a center turn lane also gives the opportunity to include raised median refuge islands at strategic locations. Compared to a flush median or no median, raised medians provides a safer crossing experience for pedestrians, reduce vehicular conflicts, encourage appropriate motor vehicle speeds and provide an opportunity for aesthetic enhancement, such as plantings.

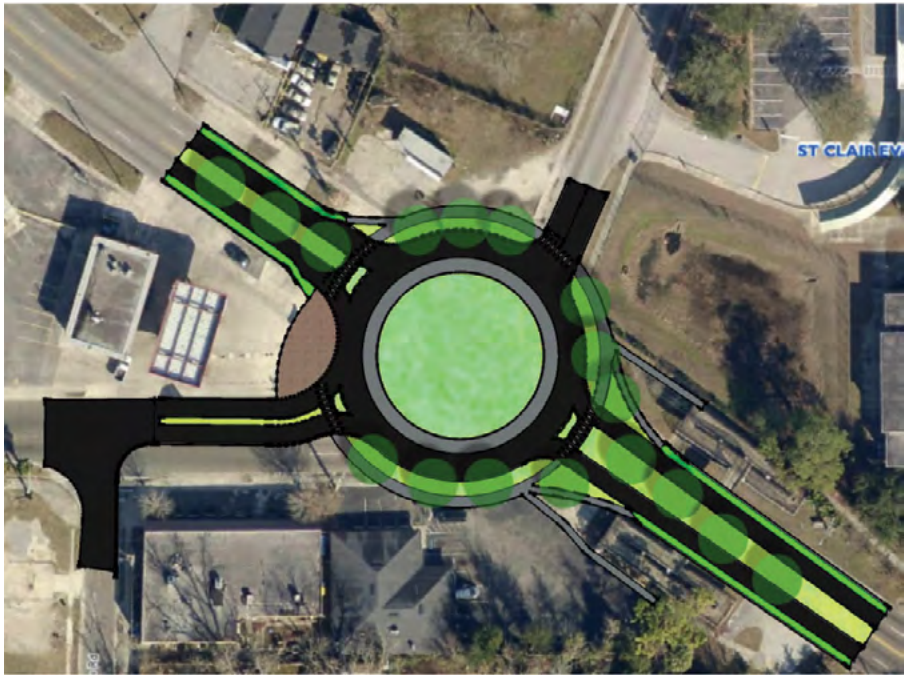
Within this stretch of the Moncrief Urban Transitional context zone, the intersection at 45th Street is particularly challenging. This signalized intersection includes several uses, including convenience retail, an elementary school, nearby residences and busy JTA bus stops. On field visits, many pedestrians were observed attempting to cross between these complementary activities. West 45th Street approaches Moncrief Road at a skew, resulting in large stretches of pavement that must be crossed and visibility issues from the odd geometry.

The charrette team proposes that a roundabout be explored for the intersection of 45th and Moncrief. A roundabout will calm fast-approaching motor vehicles from the north on Moncrief Road (while still keeping traffic moving) and will serve as a focal point for the community. Rather than large stretches of pavement, pedestrians can more easily manage approach lanes that are simplified by raised splitter islands that serve as a refuge.

A roundabout would likely not impact existing structures, but some right-of-way acquisition may be necessary.






ST CLAIR




45th and Mercier
Roundabout

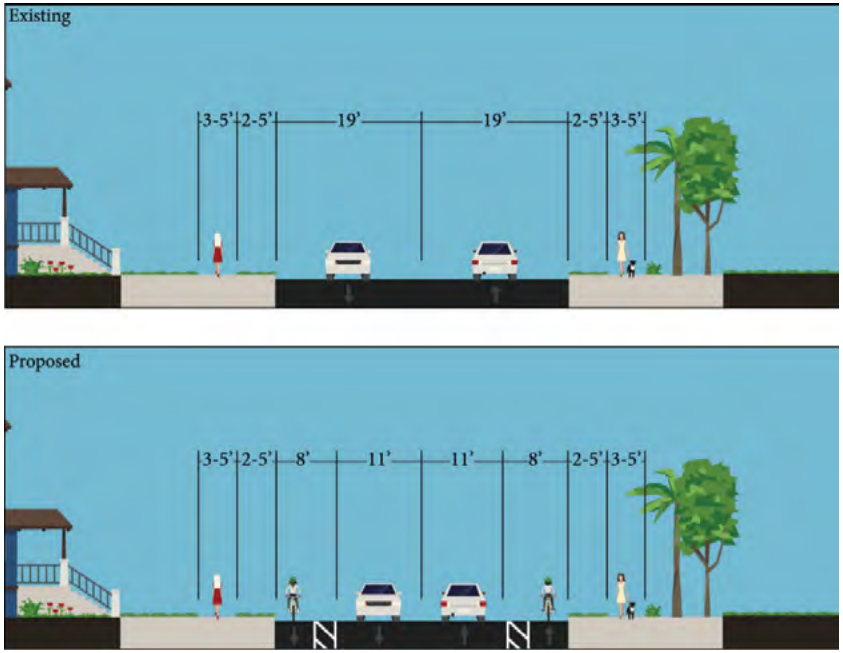
ZONE 5: COMMERCIAL/CIVIC

The Commercial/Civic context zone signals the transition of the corridor to a more urban character and includes both Moncrief Road from Golfair Boulevard/34th Street south, and Myrtle Avenue from Moncrief Road to Kings Road. There is only one travel lane in each direction on either road within this zone and the street network becomes much more dense and connected.

South of Golfair Boulevard/34th Street, Moncrief Road transitions from four to two lanes with left turn lanes provided at some intersections. The travel lanes are extremely wide (approximately 19 feet each) and a small grass buffer (2 to 3 feet wide) separates the traveled way from the narrow (3 feet wide) sidewalk. Single family homes and small free-standing businesses are located within a few feet of the right-of-way.

In order to maintain continuity with Moncrief Road to the north and to be more consistent with the character of the surrounding land uses it is proposed to narrow the travel lanes and provide protected bicycle lanes (five feet wide lanes with a two feet wide buffer). A cross-section of Moncrief Road in this context zone is shown in Figure 8.

FIGURE 8: MONCRIEF ROAD CROSS-SECTIONS IN THE CIVIC/COMMERCIAL CONTEXT ZONE; EXISTING AND WITH PROPOSED MODIFICATIONS



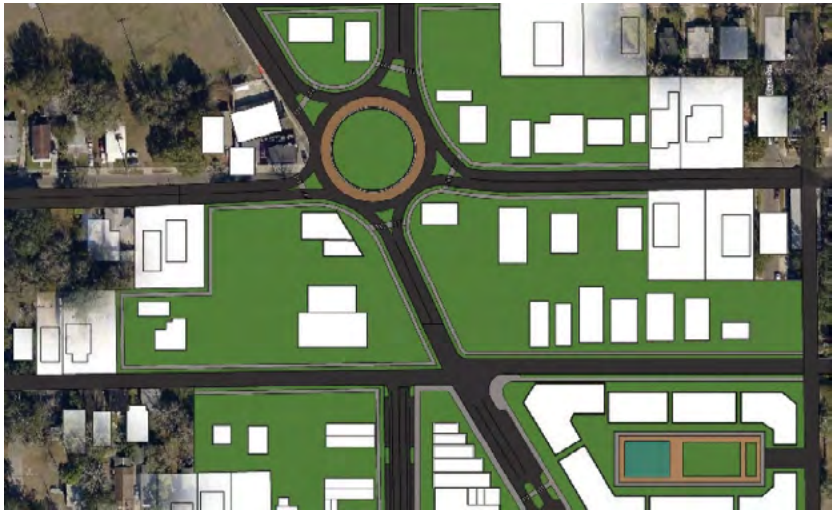
South of this section is the intersection of Moncrief Road and Myrtle Avenue. This is an important intersection because of the level of activity that currently exists and the level or current and potential private investment in the surrounding properties.

Despite its importance to the corridor, this intersection has a number of challenges. Moncrief and Myrtle intersect at a skew, resulting in a large expanse of pavement. There are essentially two disconnected places: north of the intersection and south. Pedestrian facilities are lacking, with only one marked crosswalk across one leg of the intersection.

The charrette team sought a design solution that would better integrate the intersection, make it a focal point of the community, allow for safe vehicular and pedestrian movement, and facilitate continued private investment. The team explored a number of options, but ultimately a roundabout at the northern part of the intersection was recommended. This solution eliminates the large expanse of pavement by removing the southern approach of Myrtle Road between 25th and 26th Streets while maintaining the southern leg of Moncrief Road, consistent with its State Road designation (SR 210).

This design would create a more walkable environment through manageable pavement widths at each approach while keeping motor vehicle traffic moving at a slow, steady pace. It supports the intensification of Myrtle Avenue, which has recently experienced the only major private investment in the corridor in decades.





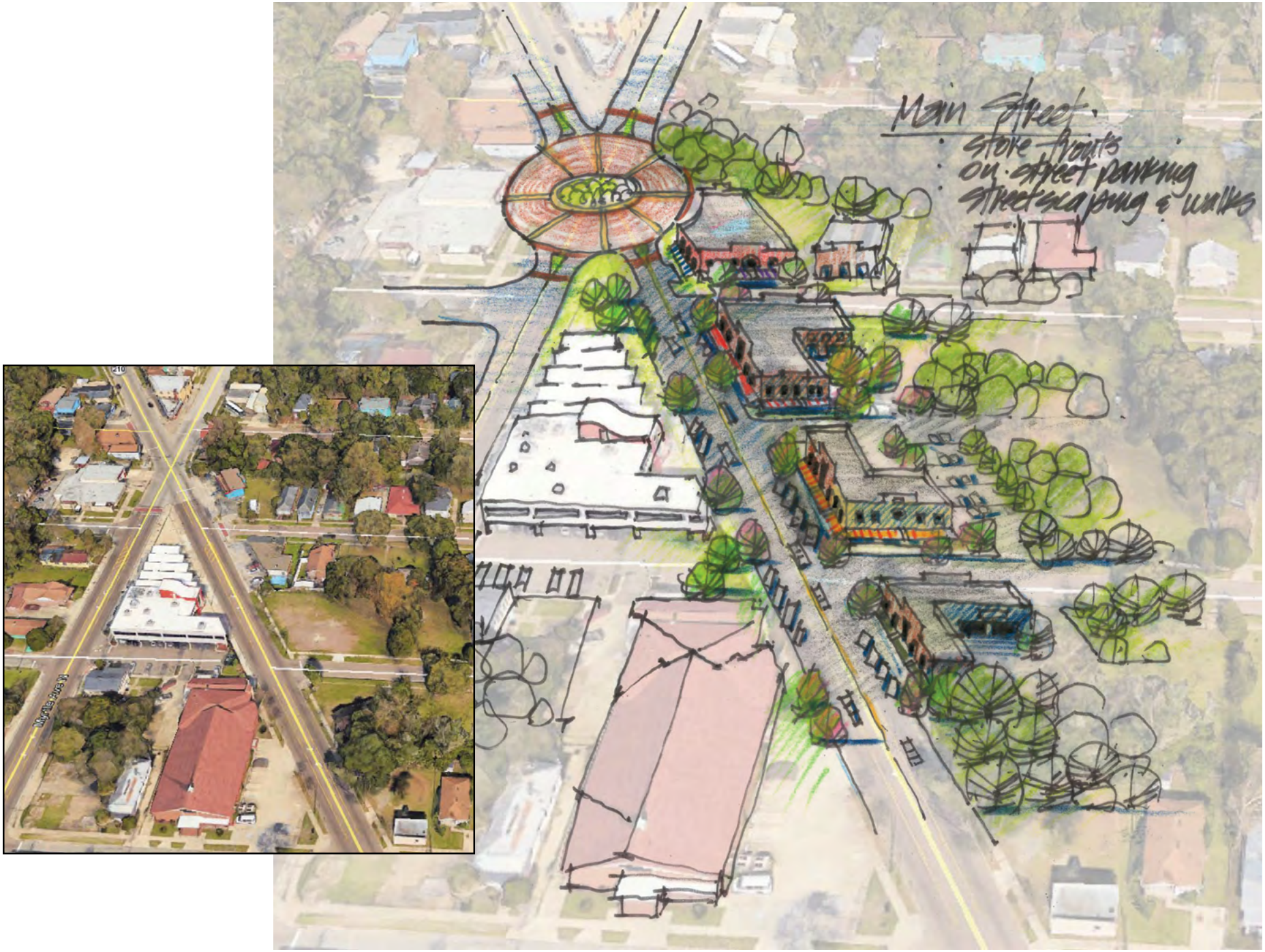
To the east of Myrtle Avenue, south of 25th Street, a new grocery store and multi-family housing have been proposed. The charrette team envisions the enhancement of Myrtle Avenue concurrent with redevelopment, including wider sidewalks, on-street parking and medians. The sidewalks and on-street parking can be constructed as part of the redevelopment of the block.



In order to construct the proposed roundabout, some property must be acquired, including the structure at the north side of the Moncrief/Myrtle intersection. Additional analysis will be necessary to determine the traffic and property impacts.

Just south of the intersection with Myrtle Avenue, Moncrief Road transitions to a very low speed three lane cross-section (two travel lanes with a center turn lane). At mid-block locations, the elimination of the center turn lane and narrowing of the travel lanes from 13 to 11 feet is proposed. The additional right-of-way is proposed to provide on-street parking on the opposite side of the street and five-foot bicycle lanes on both sides. At intersections, the on-street parking would drop off to make room for a 10 foot left turn lane and small (three feet on each side) curb-bulb-outs to help narrow the intersection.

Directly south of the intersection, Myrtle Avenue has one travel lane in each direction, a center left turn lane that is sometimes replaced with a planted median, and occasional on-street parking and bus pull-offs. This section is already appropriate for its context and serves travelers well. As a primary north-south route in this neighborhood, it is recommended that sharrows be considered for this roadway, but no other significant changes are recommended.


Main Street
store fronts
on-street parking
streetscaping & walks

VALIDATION OF CONCEPTS

These improvement ideas were initiated during a public charrette process which engaged residents and stakeholders in an interactive format to encourage idea sharing without constraints. The results of the charrette were later validated and refined to create recommendations that achieve the vision while maintaining a functional roadway network for all users.

In order to ensure that these improvements, which include major modifications to these three major roadways, will maintain efficient movement, a preliminary analysis of key intersections with existing traffic volumes was conducted.

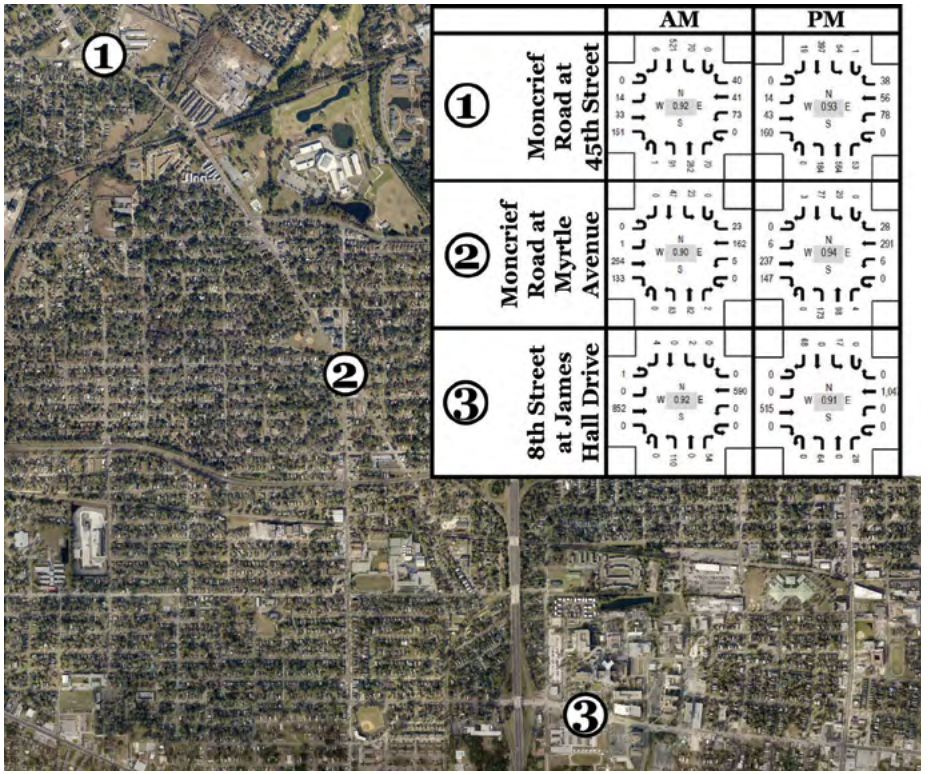
Morning and evening peak period traffic counts were taken on Tuesday, February 9, 2016 at the following locations:

- Moncrief Road and 45th Street
- Mrytle Avenue and Moncrief Road
- 8th Street and James Hall Drive
- 8th Street and Boulevard

In addition, vehicle counts were taken on segments of both 25th and 26th Streets near Myrtle Avenue and Moncrief Road.

Peak hour traffic volumes for the counted intersections are shown in Figure 9. These volumes and additional vehicle counts were then used to estimate whether or not the proposed changes intersections and the segments between them would operate well under existing traffic conditions.

FIGURE 9: OBSERVED PEAK HOUR TRAFFIC VOLUMES



Analysis results are discussed in their respective sections, while detailed outputs for all scenarios are included in Appendix A. All signalized intersections were analyzed using Synchro 9.0, using the 2000 methodology from the Highway Capacity Manual (HCM). Due to limitations with HCM 2010 methodology, it could not be used on any of the examined intersections. All roundabouts were examined using SIDRA Intersections 6, using standard model parameters.

MONCRIEF ROAD DIET

In the Moncrief Road Urban Transitional context zone, a road diet was recommended that would reduce Moncrief Road from four lanes (two lanes in each direction) to three lanes (one lane in each direction with a center left turn lane. In order to ensure that the recommended lane reduction will not negatively impact vehicular movement, the existing traffic volume on the road (as reported by FDOT) was compared to standards for Level of Service D (LOS D) presented in FDOT's 2013 Quality/Level of Service Handbook. Results are shown in Table 2. Based on these results, it can be reasonably expected that Moncrief Road will still operate at or near LOS D under the proposed configuration.

TABLE 2: TRAFFIC VOLUMES AND LOS D CAPACITIES FOR CURRENT AND PROPOSED CONDITIONS

Existing Traffic Volume *2014 AADT on Moncrief Road at Moncrief Bridge*	14,900 vehicles/day
Current Volume Capacity *Table 1, Class I, four lane, undivided with left turn lanes, LOS D*	37,810 vehicles/day
Volume Capacity with Proposed Road Diet Table 1, Class I, two lane, divided with left turn lanes, LOS D	18,585 vehicles/day

MONCRIEF ROAD AT 45TH STREET

A roundabout is proposed for the intersection of Moncrief Road and 45th Street. This roundabout was analyzed with the aforementioned the road diet. The intersection delay and LOS of the existing and proposed conditions are shown in Table 3. Based on these results, a roundabout would likely reduce overall delay at this intersection, in addition to creating an environment that better accommodates pedestrians.

TABLE 3: DELAY AND LEVEL OF SERVICE AT MONCRIEF ROAD AT 45TH STREET WITH EXISTING CONDITION AND WITH LANE REDUCTION AND ROUNDABOUT

	Existing		Proposed	
	Delay (s)	LOS	Delay (s)	LOS
AM	14	B	10	B
PM	14	B	9	A

MONCRIEF ROAD AT MYRTLE AVENUE

At this intersection, a few potential improvement configurations were considered. These include a dogbone roundabout or a dumbbell roundabout that would include approaches of 25th Street, 26th Street, Moncrief Road, and Myrtle Avenue. These were eventually considered impractical due to the high impacts to neighboring buildings that would be necessary. Single roundabouts were also considered that would include either 25th Street or 26th Street along with Moncrief Road and Myrtle Avenue. Ultimately, a roundabout that incorporates 26th Street, Moncrief Road, and Myrtle Avenue was chosen due its comparatively low impact on active, occupied buildings. This roundabout would replace the intersection of Merrill Road and Moncrief Road and would reconnect both 25th and 26 Streets through the intersection and surrounding area. As such, this improvement does not serve identical traffic patterns. Based on the delay and LOS results shown in Table 4, the roundabout performs better than the existing signal, even while improving the roadway network and serving more traffic.

TABLE 4: DELAY AND LEVEL OF SERVICE AT MYRTLE AVENUE AT MONCRIEF ROAD WITH EXISTING CONDITION AND WITH ROUNDABOUT (WHICH INCLUDES 26TH STREET)

	Existing		Proposed	
	Delay (s)	LOS	Delay (s)	LOS
AM	12	B	6	A
P	13	B	7	A

8TH STREET AT JAMES HALL DRIVE

As part of the proposed changes to 8th Street, a turn lane was removed. As such, the intersection of James Hall Drive at 8th Street would need to be altered. The intersection delay and LOS of the existing and proposed conditions are shown in Table 5. Based on these results, this intersection would still operate at an acceptable level with the proposed changes.

TABLE 5: DELAY AND LEVEL OF SERVICE AT 8TH STREET AT JAMES HALL DRIVE WITH EXISTING CONDITION AND WITH LANE REDUCTION

	Existing		Proposed	
	Delay (s)	LOS	Delay (s)	LOS
AM	11	B	11	B
PM	9	A	11	B

4: RECOMMENDATIONS

In order to make the vision of more accommodating, safe, comfortable environments along all three corridors, a number of improvements will be necessary. An overview of all recommendations and their locations is included at the end of this section.

STUDY AREA-WIDE RECOMMENDATIONS

The community's vision for 8th Street, Myrtle Avenue, and Moncrief Road varies between context zones, but all share a central theme: lively, economically viable places where pedestrians, cyclists, and transit riders can flourish while maintaining mobility for motor vehicles. In essence, the desire is to create a multi-modal context where all users feel safe and comfortable regardless of mode.

Key elements that are important to creating this context on all three corridors include:

- Lower motor vehicle operating speeds: Lower operating speeds increase safety for cyclists and pedestrians and are consistent with design elements that support a walkable corridor.
- An evenly balanced streetscape: There should a balance between the area where motor vehicles operate and the roadside
- Dedicated facilities for cyclists: 8th Street, and Moncrief Road corridors will always function as arterials. Shared-lane use is not appropriate for most cyclist skill levels. Dedicated bicycle facilities, such as lanes or parallel paths, are necessary.
- Wide sidewalks: Especially within the commercial areas along these corridors, sidewalks should be wider than the bare minimum. They should provide for adequate spacing from adjacent buildings and permit individuals to comfortably pass each other walking in opposite directions.
- Sidewalk buffer: There should be a physical buffer between the sidewalk and the traveled way, whether it be on-street parking, street trees or a planting strip.
- Building placement: Buildings should be oriented toward the street with minimal setbacks. Large parking areas between buildings and the street should be avoided.
- Improved pedestrian-scale lighting: With the exception of Myrtle Avenue, almost the entire study area is devoid of pedestrian-scale lighting. What lighting does exist is designed for vehicular traffic, but does not provide an adequate level of lighting for other roadway users which makes the roadside uncomfortable and unsafe for pedestrians.
- Install Rectangular Rapid Flashing Beacon (RRFB) and other crossing enhancements to S-Line crossing

There are certain design elements that are critical to creating a multi-modal context. The design suggestions provided here are consistent with state and national standards, including the American Association of State Highway Officials' (AASHTO) "A Policy on Geometric Design of Highways and Streets" (commonly called the "Green Book"), ITE's "Designing Walkable Urban Thoroughfares" and FDOT's "Plans Preparation Manual". Minimal truck traffic and a target speed of 25 to 45 mph are assumed, as discussed in Chapter 4.

Lane Width

Currently, lane widths vary from less than 11 feet to as high as 20 feet in the study area. For all corridors lane widths between 10 and 11 feet for travel lanes and 11 feet for center turn lanes are recommended.

This narrowing of lane widths achieves two purposes:

- Encourages appropriate motor vehicle speeds;
- Frees up additional right-of-way for other design elements, such as bicycle lanes, on-street parking, wider sidewalks, etc.

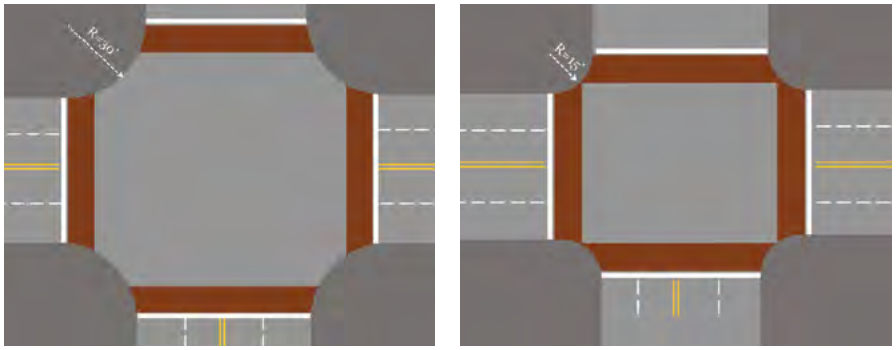
An example of how lane width reductions can be used to create new facilities can be seen in the cross-sections proposed earlier, especially Figure 6 in the Moncrief Road Residential context zone.

Curb Radii

The size of curb radii has a direct influence on the character of a roadway. Currently all corridors have excessively wide curb radii at most street intersections, ranging from 25 to 30 feet to as high as 75 feet.

When reconstructing curbs in the corridor, the smallest practical curb return radii is recommended. This will encourage cars to turn at appropriate speeds, increase pedestrian accessibility and reduce the amount of pavement that must be crossed on foot. A visualization of the difference curb radius can make is shown in Figure 10.

FIGURE 10: SIMILAR INTERSECTIONS WITH DIFFERENT CURB RADII

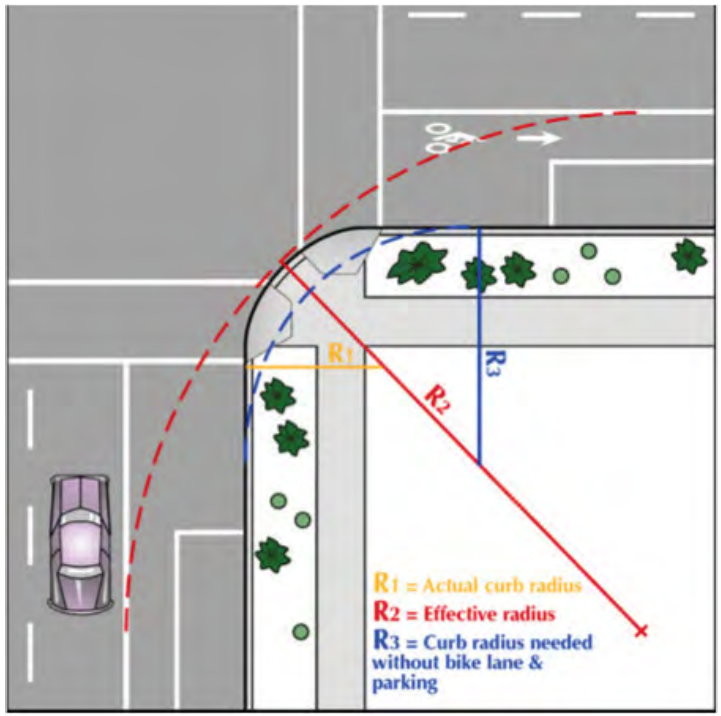


A SMALLER CURB RADIUS CREATES COMPACT INTERSECTIONS, SHORTER CROSSING DISTANCES AND APPROPRIATE MOTOR VEHICLE TURNING SPEEDS.

In most cases, a curb radius of 15 feet at cross-streets and 5 feet at driveways is appropriate. However, in locations where large vehicles, such as JTA buses, turn frequently, a radius of 25 feet may be used, unless such vehicles are turning into a roadway with multiple receiving lanes into which they can safely encroach. In this situation, a radius of 15 feet is recommended.

In locations where a bicycle lane is located between the outside motor vehicle travel lane and the curb, the "effective radius" should be used. This is the distance from edge of outside lane to edge of outside lane, not the physical curb, which can have a much smaller radius. This effect is shown in Figure 11.

FIGURE 11: ACTUAL CURB RADIUS AND EFFECTIVE RADIUS COMPARED



Mid-block Crossing

The corridor assessment in Chapter 2 noted that the Moncrief Road corridors have long stretches with no signalized crossing, forcing pedestrians to cross four lanes of traffic. In addition, both Myrtle Avenue and 8th Street have significant trail crossings which are likely to bring elevated levels of pedestrian presence to typically car-dominated roadways.

Mid-block crossing opportunities are proposed on both corridors. For roads that have more than two lanes and traffic volumes greater than 15,000 vehicles per day, raised median refuges are required.

A raised median crossing has several benefits, including:

- Creating a safe refuge for pedestrians,
- Breaking one long, complex crossing into two shorter ones,
- Encouraging appropriate motor vehicle speeds through horizontal deflection, and
- Providing an opportunity for landscape enhancement.

Raised medians should be placed at strategic locations, with consideration given to sight distance.

LAND DEVELOPMENT REGULATIONS

Land development regulations can be an important tool for implementing the proposed Complete Streets concepts. This is especially appropriate in the neighborhood surrounding intersection of Myrtle Avenue and Moncrief Road and anywhere else where significant development or redevelopment is expected. An overlay district could be created to serve this purpose. Specifically, such a district could control site design, as well as expand the roadside streetscape.

Site Design Guidelines

The creation of site design guidelines will help guide new development and redevelopment to support proposed Complete Streets concepts. Site design guidelines can include:

- Site layout, including maximum setbacks for the placement of buildings and placement of parking;
- Standards and requirements for pedestrian linkages between buildings, the street and transit stops;
- Placement of amenities, such as bike racks and transit shelters; and
- Building and signage design guidelines consistent with the context area.

These considerations should supplement guidelines that are included in the City's Design Guidelines and Best Practices Handbook.

Streetscape/Roadside Expansion

The charrette recommendations include changes to Merrill Road and University Boulevard that must be accomplished within the existing right-of-way. In order to accommodate this restriction, there must be tradeoffs and compromise when choosing design elements. For example, sections of the sidewalk may not be as wide as originally envisioned in constrained areas.

Spacing Standards

Spacing standards prescribe minimum distances between driveways, cross-streets and traffic signals. Specific spacing standards reflect a balance between desired mobility and access and activity levels of adjacent land use.

FDOT assigns an access management category, ranging from 1 (most restrictive) to 7 (least restrictive) to all state maintained roads. FDOT's "Plans Preparation Manual" defines, among other things, minimum spacing for driveways. These standards are shown in Table 5. University Boulevard, as a state route, is currently subject to classification 6. However, as part of the street's reconfiguration to a lower speed, more pedestrian and cyclist friendly street, it is recommended that this segment of University Boulevard use classification 3 standards instead. The standards related to classification 3 should also be adopted for Merrill Road.

Driveway Consolidation

In order to reduce the total number of driveways in the corridors and to meet proposed spacing standards, driveways must be consolidated. Proactive driveway closure can be a very contentious and costly proposition. To reduce these effects, consolidation should occur incrementally over a long term concurrent with redevelopment.

IMPROVEMENTS BY CONTEXT ZONE

While the previous changes should be made across all zones, wherever possible and appropriate, each context zone has unique needs. Based on the existing conditions and community vision, different specific improvements are recommended for each of the context zones.

	Keystone Projects These are projects that JTA would use to showcase complete streets for immediate effect. These should be reasonably substantial projects and something that could be implemented in the near term.	**Operational/Safety Improvements** These are "quick fix" improvements that can provide immediate safety and operational improvements at a lower cost	**Long Term Vision** These are complete projects for the corridor or corridor segment. These are bolder more costly investments that would be included in a long range plan.
Commercial/Civic	Construct roundabout at intersection of Myrtle Avenue, Moncrief Road, and 26th Street Reduce lane width on Moncrief Road; south of Myrtle Avenue, add on-street parking, north of Myrtle Avenue, continue bike lanes	Add sharrows on Myrtle Avenue from Moncrief Road to 8th Street Upgrade all crossings to current ADA standards and provide pedestrian countdown timers at signalized intersections Upgrade lighting to current standards, including pedestrian-scale lighting Fill sidewalk gaps and improve intersections to comply with ADA along the corridors, especially the intersections of 8th Street and Myrtle Avenue, and 13th Street and Myrtle Avenue	Town Center redevelopment around intersection of Moncrief Road and Myrtle Avenue
Medical Center	Reconfigure intersection of 8th Street and James Hall Drive with: • Add planted median to west leg, including pedestrian refuge • Remove excess lane from north leg, reducing curb radii • Move existing eastern crosswalk across 8th Street to be directly across roadway • Expand and plant median on east leg • Add crosswalk to east leg	Upgrade lighting to current standards, including pedestrian-scale lighting Improve signal timing, including bus priority upgrades Sharrows on Boulevard to connect S-Line with Hogan Creek Greenway	Road diet from I-95 to Jefferson Street/Boulevard, including: • Replace outer turn lanes with protected bike lanes • Narrow travel lanes and expand medians, planting where possible • Expand/add planted median to west leg of 8th Street and Jefferson Street Add multi-use path connection through I-95 interchange, tying into bike lanes on each side
S-Line Connection		Improved S-Line Crossing, including: • Add Rectangular Rapid Flashing Beacon (RRFB) and other pedestrian improvements to S-Line crossing • Upgrade all crossings to current ADA standards and provide pedestrian countdown timers at signalized intersections • Upgrade lighting to current standards, including pedestrian-scale lighting Reduce lane width, add parallel parking to south of roadway, add bike lanes to both sides of roadway	Add multi-use path connection through I-95 interchange, tying into bike lanes on each side
Moncrief Urban Transitional	Construct roundabout at the intersection of Moncrief Road and 45th Street	Fill sidewalk gaps and improve intersections to comply with ADA along the corridors, especially the intersection 36th Street and Moncrief Road Upgrade lighting to current standards, including pedestrian-scale lighting	4-to-3 road diet to add center turn lane and buffered bike lanes
Moncrief Residential	Reduce lane width and add buffered bike lanes from Soutel Drive to Edgewood Avenue	Upgrade all crossings to current ADA standards and provide pedestrian countdown timers at signalized intersections Upgrade lighting to current standards, including pedestrian-scale lighting Add midblock pedestrian crossings in areas of high pedestrian activity Add sidewalk, curb ramps, bus pads, and other improvements to bus stops on New Kings Road at Moncrief Road, Soutel Drive, and Richardson Road	

NORMANDY/CASSAT/LENOX

EXECUTIVE SUMMARY

As part of the JTAMobilityWorks Complete Streets program, a study of the Normandy Boulevard (State Road 228), Cassat Avenue (State Road 111), and Lenox Avenue corridors was conducted. The limits of the corridor study were:

- Normandy Boulevard – Interstate 295 to Cassat Avenue
- Cassat Avenue – Blanding Boulevard to Edgewood Avenue
- Lenox Avenue – Normandy Boulevard to Cassat Avenue

A multi-day charrette was held September 15th – 17th, 2015 to gather input from stakeholders in the area as well as the general public. The project team conducted field reviews of the corridors prior to the charrette, observing the physical landscape as well as traveler behavior. The charrette was held at the Potter's House International Ministries Chapel and was attended by approximately 50 people. An interactive "SWOC" Analysis was conducted on the first night, allowing participants to express thoughts on Strengths, Weaknesses, Opportunities, and Challenges for the area. Valuable insight was gained, and four major themes emerged. They include:

- Safety for all
- Economic Development
- Beautification
- Access Management
- Intersection Congestion

It was noted that crash rates along all three corridors were higher than the state average from 2009 to 2013, with Lenox Avenue being almost three times higher. Furthermore, of the 566 crashes that occurred between 2010 and 2015, 164 resulted in injuries or fatalities. In an effort to enhance safety and better accommodate all users, the ideas of reconfiguring the roadways, installing additional traffic signals and marked pedestrian crossings, reducing speed limits, and adding bike lanes, and enhancing lighting and landscaping were presented. A series of concepts were developed in support of these ideas, and presented at the closing meeting on September 17th.

The study recommends reconfiguring Lenox Avenue from a 4-lane undivided roadway to a 2-lane divided roadway with a center turn lane. This will facilitate the addition of bike lanes to the roadway, connecting with the ones already in place south of Normandy Boulevard. Lenox Avenue would also receive enhanced landscaping to beautify the area and promote redevelopment and densification of the Potter's House complex.

Normandy Boulevard presents different challenges. On the western end of the corridor near I-295, sidewalk connections are needed on the south side of the roadway. Between Lane Avenue and Lenox Avenue, striped-out shoulder areas could be converted to bike lanes. Unfortunately, there is no room to add bike lanes east of Lenox Avenue, so the concept of widening the sidewalks to multi-use paths was developed. Finally, as with Lenox Avenue, enhanced landscaping would be installed to promote redevelopment.

The underutilized on-street parking lanes along Cassat Avenue offer flexibility in utilizing the right-of-way better. The study recommends replacing them with 7' buffered bike lanes. Furthermore, there is an opportunity to address safety issues and create a gateway where Cassat Avenue merges with Edgewood Avenue. Three different concepts were developed during the charrette, and the study recommends moving forward with the realigned T-intersection. This option provides for installation of a raised median, enhanced landscaping on the east side, and a traditional intersection that is intuitive for all users. Furthermore, it affords the opportunity to downsize Edgewood Avenue, which could facilitate a future road diet of the roadway through Murray Hill.

Finally, the study honed in on the triangle area bounded by the three roadways. Stakeholders and charrette participants expressed the desire to redevelop and densify the Potter's House Complex (formerly Normandy Mall). The study envisions development of the Normandy Village Center, providing a mixed-use center for the west side of Jacksonville. The concept design is for a walkable area, with enhanced connections to the existing transportation network.

Additional data collection and analysis may lead to refinements in some of the concepts and/or the prioritization of projects. Furthermore, continued coordination and collaboration with agencies including the Florida Department of Transportation will be necessary to ensure successful implementation of the concepts identified in this study. Finally, development of community partnerships will lead to buy-in and ownership of the ideas by residents and business owners in the area.



CASST AVENUE NORTH OF NORMANDY BOULEVARD



NORMANDY BOULEVARD WEST OF CASSAT AVENUE



LENOX AVENUE WEST OF CASSAT AVENUE

1. CONTEXT

In order to solicit input from community stakeholders, transportation agencies, and the public, JTA conducted a three-day charrette at an accessible location within the community served by the Normandy/Cassat/Lenox corridors. Normandy Boulevard and Cassat Avenue are four-lane divided state roadways, while Lenox Avenue is a four-lane undivided local roadway. All three roadways have sidewalks, although not fully continuous on both sides, and none have dedicated bicycle facilities. JTA provides local bus service throughout the area, with Routes 14 and 15 traversing Normandy Boulevard, Route 34 circulating through the triangle where the three roads converge, and Route 51 providing frequent service on Cassat Avenue. Several of the highest volume transit stops on the west side are in the area, with the intersection of Normandy Boulevard and Cassat Avenue serving as a transfer point. This report documents the community outreach, technical analysis and concept development that has been performed for the Normandy/Cassat/Lenox corridors.

2. PROCESS

The Normandy / Cassat / Lenox complete streets charrette was conducted September 15th – 17th 2015, at the Potter's House International Ministries Chapel on Normandy Boulevard. The workshop included three days of intense, on-site work with approximately 50 participants. It began Tuesday morning with a walking and driving audit, examining the conditions and deficiencies along the corridor. The audit was followed by an Agency presentation to the attending public, providing an overview of information on complete streets and the JTA Mobility Works Complete Streets Program, as well as more detailed statistics and observations specific to the Normandy / Cassat / Lenox corridor, including traffic volumes, and crash types, locations, and rates.



CHARETTE ENGAGEMENT



CHARETTE ENGAGEMENT



PUBLIC COMMENTS AT CHARETTE

3. CONCEPTS

Valuable insight about the Normandy / Cassat / Lenox corridor was gained through the charrette workshop held at Potter's House International Ministries Chapel. Community members and business owners expressed their diverse perspectives and helped ensure a well-rounded understanding of the issues facing the corridor. The themes that emerged from the data collection, community input, and design process revolved around the following issues:

- safety for all
- economic development
- beatification
- access management
- intersection congestion

Safety for All

The importance of increasing safety for all users along the corridor was repeatedly voiced by the charrette participants and a well-documented need based on historic crash data. As detailed in the corridor crash rate tables **(Figure 1)**, all roadways in the corridor had higher crash rates than the state average of 4.96 from 2009 to 2013.

The crash rate is a ratio that compares the number of crashes on a roadway per 1,000,000 vehicle miles traveled. The crash rate is calculated by multiplying the total number of crashes for the project section roadway segment times 1,000,000 vehicle miles traveled. The product of the project section roadway segment times the vehicle miles traveled equation is then divided by the product of number of days in the year (365 days) times average daily traffic times project section length in miles, of which the crash rate is the product of. This number can then be compared to the statewide crash rate average for similar types of roadways to determine if the project section roadway is above or below the statewide crash rate average for that type of roadway.

Most noteworthy, the crash rate on Lenox Avenue is significantly higher than the state's average at 13.84. Over this time period there were also a substantial number of crashes at the signalized intersections in the corridor, with the most crashes, 107, occurring at the intersection of Normandy Boulevard and Cassat Avenue **(Figure 2)**. Corridor crashes were also significant from 2010 to 2015 and are detailed by type and severity in the tables. The location and frequency of these crashes are displayed in the heat maps below, where areas shaded in red represent the highest frequency of crashes.

FIGURE 1: ROADWAY CRASH RATES, 2009 – 2013

Roadway	Crash Rate
Cassat Avenue	6.81
Normandy Boulevard	7.21
Lenox Avenue	13.84
State Average	4.96

FIGURE 2: TOTAL INTERSECTION CRASHES, 2009 – 2013

Intersection	Crashes
Normandy & Cassat	107
Lenox & Cassat	39
Lenox & Normandy	13

FIGURE 3: CORRIDOR CRASHES BY TYPE, 2010 – 2015

Crash Type	Number of Crashes
Rear End	187
Left Entering	60
Parked Vehicle	55
Same Direction Sideswipe	53
Right Angle	42
Backed Into	38
Off Road	21
Other	21
Left Leaving	14
Left Rear	14
Unknown	14
Pedestrian	12
Right/Through	11
Head On	9
Single Vehicle	5
Right/Left	4
Bicycle	3
Opposing Sideswipe	2
Rollover	1
Total	566

An analysis of crash types reveals high incidences of rear end, left entering, and same direction sideswipe crashes **(Figure 3)**. These crash types are characteristic of multilane roadways such as Lenox Avenue that do not feature a center left turn lane. Also notable in the crash type table is the high number of parked vehicle crashes. The combination of on-street parallel parking and 45mph posted speeds on Cassat Avenue likely contribute to the high number of parked vehicle crashes.

FIGURE 4: CORRIDOR CRASH SEVERITY, 2010-2015

Crash Severity	Number of Crashes
Fatality	2
Injury	162
Property Damage Only	402
Total	566



PEDESTRIAN CROSSING CASSAT AVENUE MID-BLOCK

The majority of crashes along Lenox Avenue, Normandy Boulevard, and Cassat Avenue between 2010 and 2015 resulted in property damage only. However, nearly a third of all crashes along the corridors resulted in an injury, and two crashes resulted in fatalities **(Figure 4)**. In both fatal crashes, the people killed were walking. Crash heat maps **(Figures 5&6)** were developed to easily convey major areas of concern to charette participants.

Some of the ideas that emerged from discussions to enhance corridor safety included:

- reducing vehicle speeds
- reconfiguring the roadways with fewer or narrower motor vehicle lanes
- providing bike lanes
- installing high-visibility crosswalks
- optimizing pedestrian signal timing
- installing midblock pedestrian refuge islands with flashing beacons
- installing pedestrian lighting

These solutions provide for safer access along and across roadways for all modes of transportation.

FIGURE 5: HEAT MAP OF CRASHES ALONG CORRIDORS

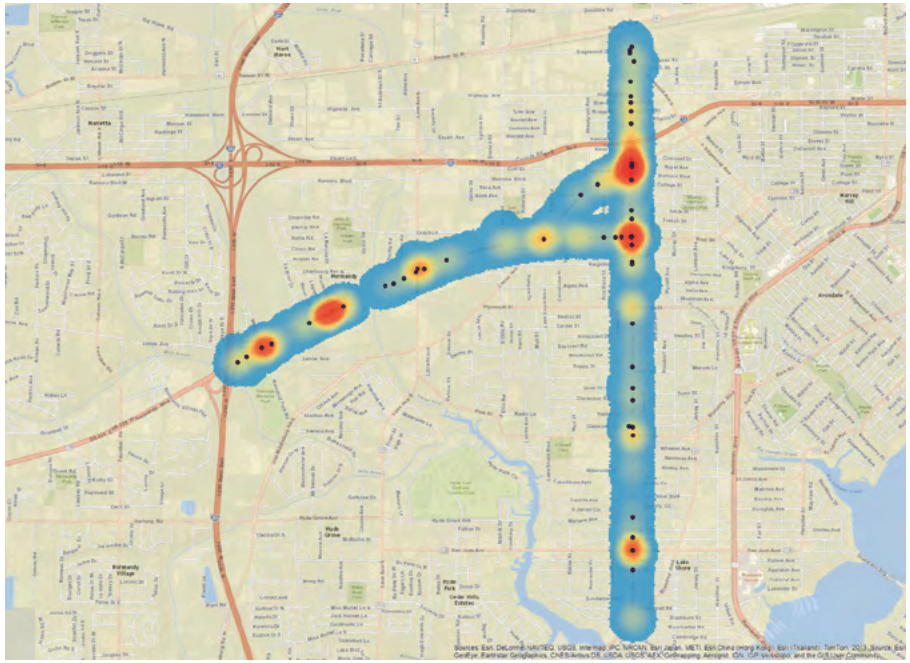


FIGURE 6: ZOOM IN OF CRASH HEAT MAP



In an effort to enhance safety and better accommodate both motorized and non-motorized transportation modes, charrette participants supported the idea of roadway configurations or "road diets". Road diets are achieved by reducing the number of motor vehicle lanes or narrowing lane widths. Fewer or narrower travel lanes typically results in reduced vehicle travel speeds and would address a primary safety concern of charrette participants—excessively high travel speeds as well as many of the key crash types on the corridor.

Multiple charrette participants noted that in addition to high vehicle speeds, overall conditions for people walking and bicycling along these corridors are unsafe. Participants supported the idea of providing dedicated space for bicycling through the installation of standard, buffered, and/or separated bike lanes along the corridors. The primary concern regarding pedestrian safety was the need for more frequent pedestrian crossings, including at mid-block locations.

The roadways along the triangle-shaped area formed where Normandy, Cassat, and Lenox intersect have high pedestrian activity and transit volumes but minimal pedestrian crossing opportunities. Along the 1.5 mile roadway triangle, crosswalks are only found at the five signalized intersections. Distances between marked crossings are long, in some cases exceeding a half mile. Due to these conditions, pedestrians often cross the roadways at unmarked mid-block locations, creating a substantial safety concern. The danger of these conditions was repeatedly observed during site visits and voiced by charrette participants.

The provision of safe and frequent crossings that minimize out-of-direction travel and delay for people walking is an important component of walkable places and is strongly supported by the community. Charrette participants also expressed the need to install pedestrian lighting, which is an important element to make an area walkable and enhance personal safety and security. Lighting helps pedestrians to safely navigate sidewalks, provides visibility at all hours, improves access to transit, and increases the activity and hours of use along a corridor. This increased activity in turn brings about more "eyes on the street" or pedestrian surveillance and crime prevention in a community.

Economic Development

The importance of economic development along the corridor was stressed by community members and business owners at the charrette. Participants noted the importance of attracting diverse businesses to the area and the potential to redevelop large unused parcels. Investment in complete streets projects can create the more balanced transportation systems and vibrant street life that spurs economic development and attracts new businesses to the area.



BICYCLIST CROSSING CASSAT AVENUE MID-BLOCK



WOMAN WITH BABY CROSSING NORMANDY BOULEVARD MID-BLOCK

At the charrette, direct input was received from Bishop and Lady McLaughlin of Potter's House Ministries, the largest landholder in the corridor. In concert with the corridor complete streets improvements, they see an opportunity for redevelopment and densification at the Potter's House International Ministries Chapel/ Winn-Dixie shopping center plaza. This plaza is within a quarter-mile or a five minute walk of surrounding residential neighborhoods, a distance that many people will walk rather than opting to drive. Therefore, as the plaza is redeveloped, there is an opportunity to improve circulation and connectivity on the Potter's house site and create a walkable, connected village.

Beautification

The importance of providing beautification and enhancing the corridor's "curb appeal" was another issue identified during site visits and echoed throughout the public input process. Currently, corridor roadways have a barren right-of-way—lacking the streetscape elements such as, landscaping, pedestrian lighting, and site furnishings that can help define the character of an area. Both Lenox Avenue and Normandy Boulevard have relatively large planting strips, which provides an opportunity to greatly transform the aesthetics and overall experience along the corridor.

Charrette participants discussed the importance of creating unified and aesthetically pleasing streetscapes along the corridors in an effort to create a recognizable and memorable district. In addition to the ideas on corridor beautification, participants noted the opportunity at the northern end of the corridor to create a gateway feature marking the beginning of the "Westside" and the district's improvements. Creating this attractive and memorable streetscape with accessible and efficient connections between residences and retail destinations can help stimulate the local economy as residents are encouraged to use local shopping areas (Figures 7-10).

Ideas on corridor beautification ranged from the importance of providing street trees, center landscaped medians, lighting, site furnishings, and bicycle and pedestrian wayfinding signage, to the installation of gateway features, as well as the need to increase code enforcement and compliance. Street trees and landscaping significantly enhance the aesthetics of an area. Shade trees in particular help create a more pleasant micro-climate and walking environment for pedestrians. Trees also provide a defined edge that visually narrows the roadway which encourages people to drive at slower speeds. Pedestrian lighting not only enhances safety, but can act as an urban design element helping define the character of an area. Site furnishings typically consist of streetscape amenities such as benches, bicycle racks, bus stop shelters, news racks, trash bins, and signage. These amenities also provide a recognizable image to the area in order to accommodate the diverse needs of corridor users, including older adults, persons with disabilities, and children. Additionally, wayfinding signage and aesthetic gateway features provide a means of orientation and help to create a memorable district.



OPEN PARKING/DRIVE ALONG NORMANDY BOULEVARD

Access Management

Access management is a set of techniques used to control vehicle access to adjacent land parcels. These techniques often include traffic signal spacing, driveway spacing, turning lanes, median treatments, and street connections. By properly balancing roadway functions and property access, implementing access management can result in improved traffic flow and reduced crashes by decreasing vehicle-vehicle, vehicle-pedestrian, and vehicle-bicycle conflicts.

The importance of addressing access management along the corridor was observed during site visits and expressed by residents and business owners in the community. While business owners voiced the importance of preserving the existing access to their properties, they also acknowledged the need to increase safety along the corridor. Three keys aspects of access management identified during the charrette include raised medians with integrated pedestrian crossing treatments, alley systems, driveway consolidation, and an enhanced street grid network in the corridor and surrounding neighborhoods.

In many locations along the corridor, primarily on Normandy Avenue, business parking runs perpendicular along the length of storefronts with very little distinction from the adjacent sidewalk. This creates a high incidence of pedestrian-vehicle conflicts, as vehicles are allowed to drive in the pedestrian realm. These narrow storefront parking lots can also create dangerous situations where vehicles must back into the roadway to exit the lot. These businesses could be more safely served if parking was moved to the rear of the building and accessed by an alley. By creating an alleyway system, businesses maintain the desired access and the needs of all street users are better balanced.

FIGURE 7: LENOX AVENUE AT RAMONA BOULEVARD (EXISTING)



FIGURE 8: RENDERING OF LENOX AVENUE AT RAMONA BOULEVARD AFTER ROAD DIET



FIGURE 9: NORMANDY BOULEVARD LOOKING WEST FROM GARTH AVENUE (EXISTING)



FIGURE 10: RENDERING OF ENHANCED LANDSCAPE ALONG NORMANDY BOULEVARD



Enhancing existing street patterns in the neighborhoods in and along the corridor to create an interconnected grid network would both disperse traffic congestion and promote walkability. Corridor vehicle traffic is concentrated onto the three major roadways; however with an interconnected street grid network, many local automobile trips can be made without utilizing the corridor arterials. Additionally, pedestrians, transit riders, and bicyclists are concerned with finding the shortest route to their destination, which is much more feasible when the street network is made up of connected, short blocks with safe and convenient crossings. By enhancing a secondary grid network in and around this corridor, quality access can be provided for these users.

Intersection Congestion

Congestion at signalized intersections in the corridor was a complaint voiced by citizens at the workshop. The two intersections consistently noted were Lenox Avenue approaching Cassat Avenue and Cassat Avenue from Lenox Avenue through Interstate-10. Complete Streets projects provide an approach to transportation planning that can improve the efficiency of transportation systems and reduce congestion on roadways and at intersections.

Complete streets provide opportunities in terms of both travel mode and travel route. By developing a network of streets that promote safe walking, bicycling, and transit use, short trips in the corridor are more likely to be made by these modes, shifting these travelers out of automobiles and reducing congestion levels. Additionally, with an interconnected street grid network, local automobile trips can be made without utilizing arterials, reducing traffic congestion by dispersing traffic among various options. In some cases, road diets that convert 4 lane undivided roadways into 3 lane roadways with bike lanes may result in increased vehicle throughput. This can be the case because the inside lanes of 4 lane roadways often function as left turn lanes in practice, so reconfiguring the street with a single dual left turn lane decreases sudden lane changes and increases predictability.

In the corridor, the highest traffic volumes are on Normandy Boulevard west of Lane Avenue and on Cassat Avenue between Normandy Boulevard and Lenox Avenue. Specific traffic volumes for the corridor are detailed in the 2014 Average Annual Daily Traffic (AADT) table **(Figures 11-14)**. These three roadways are performing at an acceptable Level of Service (LOS) according to the Florida Department of Transportation's LOS Standards. LOS is a stratification of quality of service into six letter grades, A through F. This quality of service is based on the traveler's perception of how well a roadway operates. LOS D is widely considered an acceptable condition for automobiles, and the maximum volumes for LOS D are detailed in the Generalized Service Volume table. Comparison of these volumes with the roadway AADT, shows roadways are not surpassing the maximum volumes for this LOS D standard.

FIGURE 11: 2014 AVERAGE DAILY TRAFFIC VOLUMES ALONG THE CORRIDORS

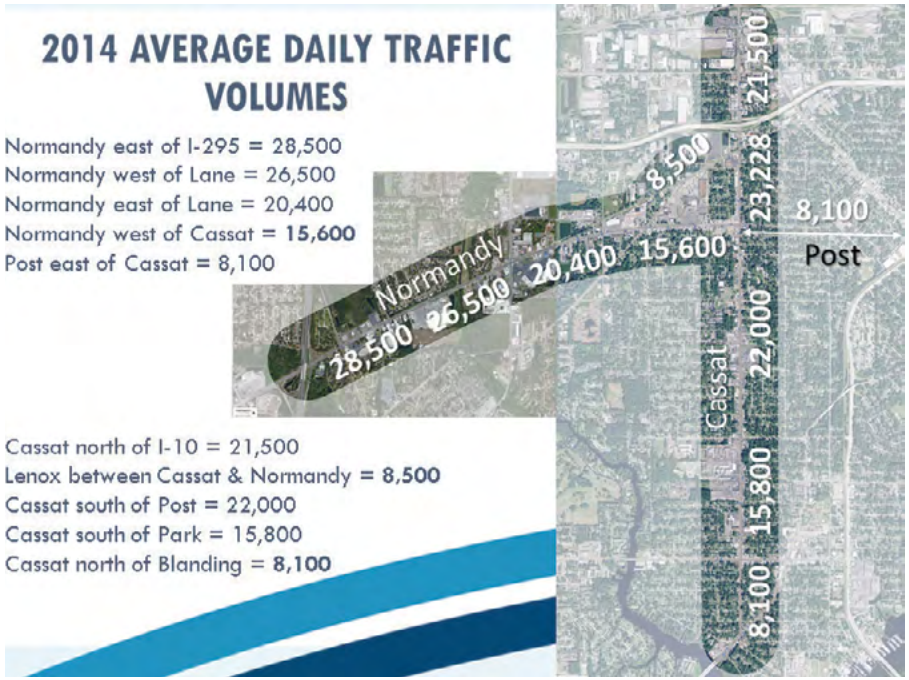


FIGURE 12: 2014 AVERAGE DAILY TRAFFIC VOLUMES ZOOM-IN

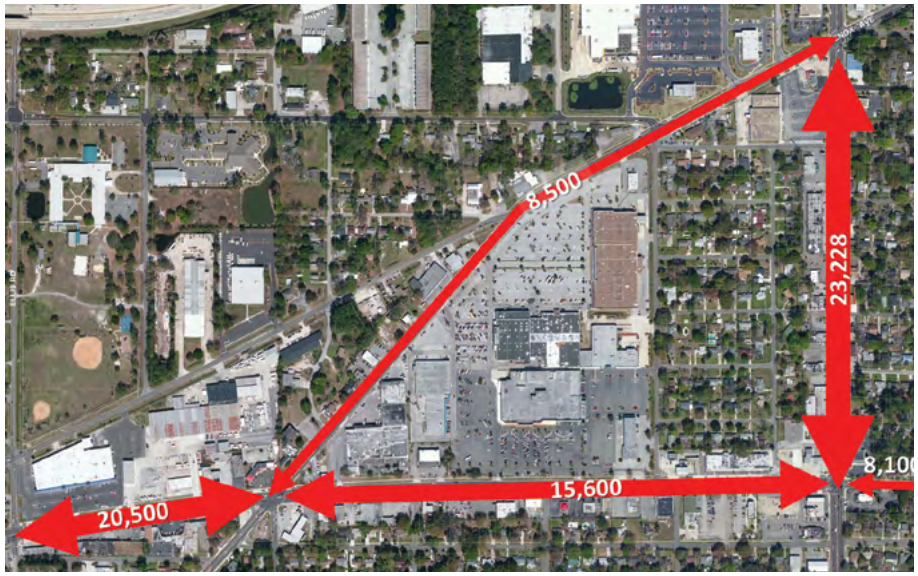


FIGURE 13: CORRIDOR AVERAGE ANNUAL DAILY TRAFFIC, 2014

Normandy Boulevard (4 Lanes at 35 mph)		
Western Limit	Eastern Limit	AADT
I-295	La Brune Dr	28,500
La Brune Dr	Lane Ave	26,500
Lane Ave	Lenox Ave	20,400
Lenox Ave	Cassat Ave	15,600
Cassat Avenue (4 Lanes at 35 mph)		
Northern Limit	Southern Limit	AADT
Beaver St.	I-10	21,500
I-10	Normandy Blvd / Post St	23,228
Normandy Blvd / Post St	Park St	22,000
Park St	San Juan Ave	15,800
San Juan Ave	Blanding	8,100
Lenox Avenue (4 Lanes at 35 mph)		
Western Limit	Eastern Limit	AADT
Normandy Blvd	Cassat Ave	8,500

FIGURE 14: GENERALIZED DAILY SERVICE VOLUMES, LOS D CAPACITY

Number of Lanes	Speed	LOS D Capacity
2	35 mph or less	15,000
2	40 mph or greater	18,000
4	35 mph or less	32,000
4	40 mph or greater	40,000

4: RECOMMENDATIONS

Recommendations for the corridor were developed for each of the three roadways—Normandy Boulevard, Cassat Avenue, and Lenox Avenue—to reflect each roadway's unique needs, character, and context. In addition, a circulation plan was developed to enhance connectivity throughout the between the corridors and surrounding neighborhoods. This circulation plan centers around the triangle-shaped area formed where the three roadways intersect, as it is also a prime location for redevelopment and densification.

FIGURE 15: EXISTING TYPICAL SECTION FOR NORMANDY BOULEVARD

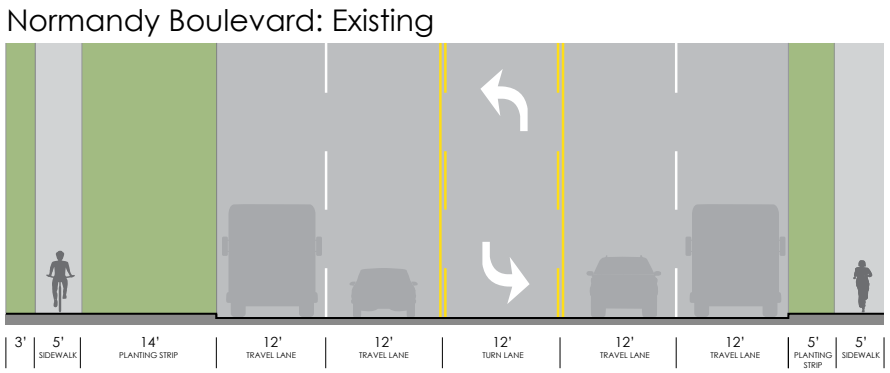
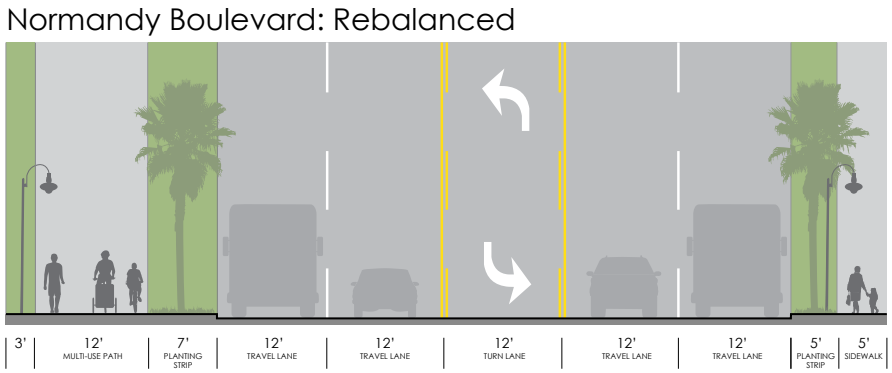


FIGURE 16: PROPOSED TYPICAL SECTION FOR NORMANDY BOULEVARD



Normandy Boulevard

Normandy Boulevard currently has two, 12-foot travel lanes in each direction and a 12-foot center turn lane **(Figure 15)**. In the east-bound direction, the right-of-way includes a 5-foot planting strip and a 5-foot sidewalk. The westbound travel lanes are bordered by a 14-foot planting strip and a 5-foot sidewalk. Normandy Boulevard is a State owned roadway and has the highest overall traffic volumes in the corridor. Between Lenox Avenue and Cassat Avenue, current traffic volumes may allow for a lane reconfiguration that would make it possible to stripe on-street bike lanes. However, FDOT's projections indicate that traffic growth may be better accommodated in the future by maintaining the current four lane cross section. Due to these conditions and the potential for future traffic growth, Normandy Boulevard is not recommended by FDOT to be considered for a "road diet" or installation of bikes lanes; however the expansive right-of-ways provide an opportunity for aesthetic and non-automobile transportation improvements.

It is recommended that in the westbound right-of-way a 7-foot planting strip with shade trees and a 12-foot multi-use path with pedestrian scale lighting be installed **(Figure 16)**. This multi-use path provides another option for cyclists, should they decide to ride along this section of Normandy Boulevard. The addition of shade trees and pedestrian lighting also creates a more comfortable and safer environment for the many pedestrians and transit riders frequenting the corridor, and provides an aesthetic appeal enhancing the sense of place developed by the improvements throughout the corridor. However, because this project requires more coordination and resources, it is recommended for consideration as a long term project. It is also recommended that the potential for a road diet be reconsidered in the future as land use and transportation conditions change. See "Corridor Circulation" (phases one and two) for more information on recommended pedestrian crossing treatments, which were identified as a high priority short term need.

FIGURE 17: EXISTING TYPICAL SECTION FOR CASSAT AVENUE



FIGURE 18: PROPOSED TYPICAL SECTION FOR CASSAT AVENUE

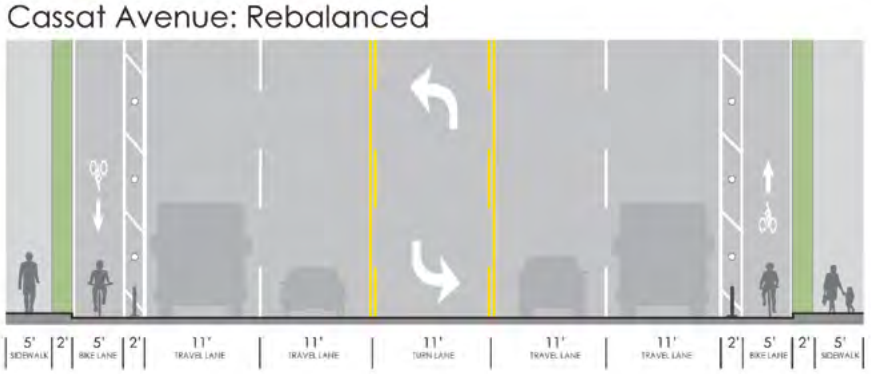
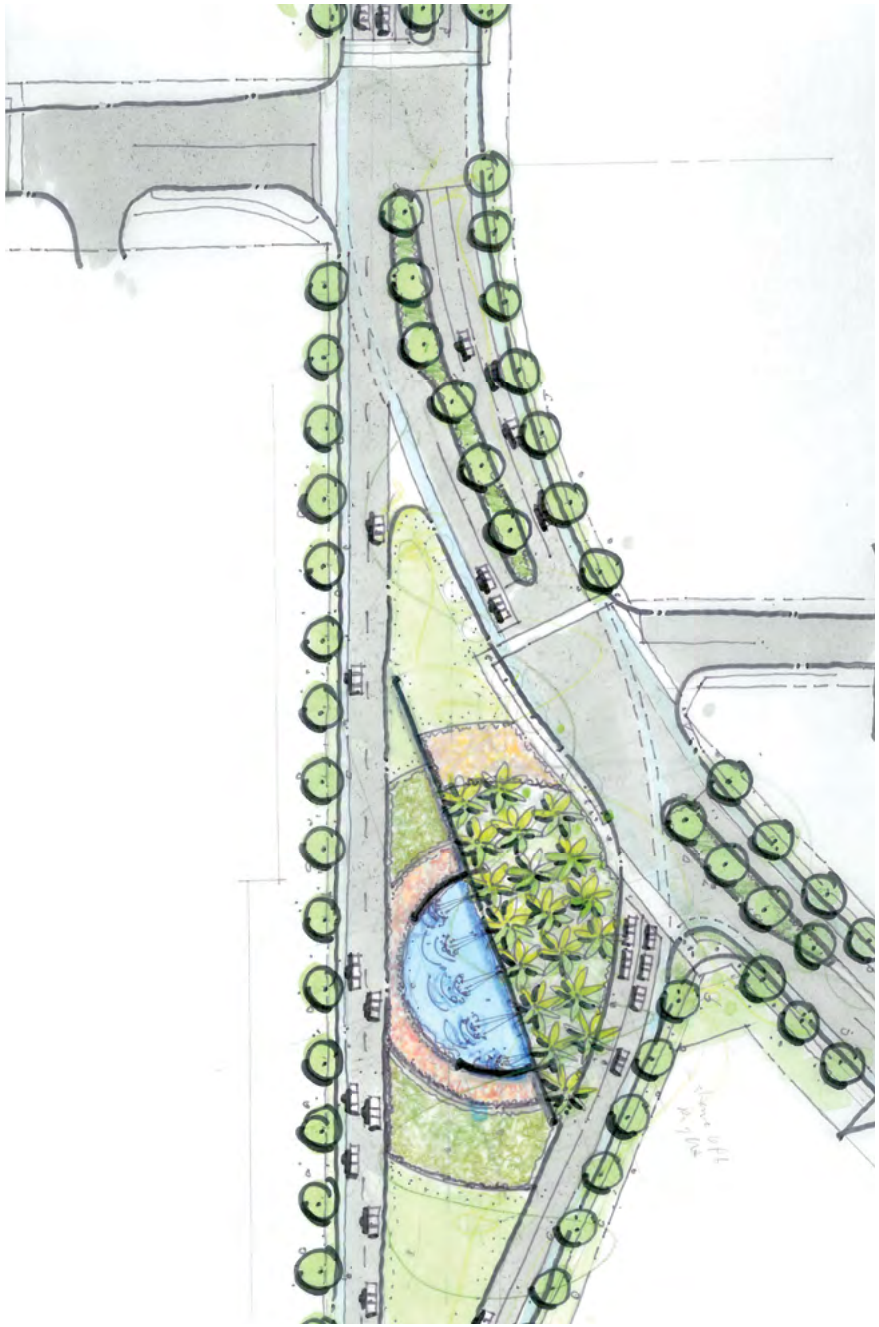


FIGURE 19: RENDERING OF ENHANCED LANDSCAPING CONCEPT AT CASSAT AVENUE/EDGEWOOD AVENUE INTERSECTION (LOW LEVEL)



Cassat Avenue

Cassat Avenue has an 11-foot center turn lane and in both directions of travel has two, 11-foot travel lanes and a 7-foot parking lane bordered by a 2-foot grass strip and a 5-foot sidewalk **(Figure 17)**. Input from the public coupled with observations of the corridor revealed that the parking lanes are rarely utilized and widely considered unsafe. These unused parking lanes provide an opportunity to transform the lanes into a 5-foot bike lane with a 2-foot protected buffer **(Figure 18)**. The improvement would greatly increase the safety of cyclists along the roadway and is supported by many bicyclists in the community. Providing a dedicated space for bicycle travel also has benefits for drivers and pedestrians. Bike lanes promote increased predictability of bicyclists which decreases stress for people driving, and in this case will provide a continuous 7-foot buffer between fast-moving cars and the pedestrian zone. It is recommended that this restriping project is done in coordination with the repaving project scheduled to occur on Cassat in the next few years At the intersection of Cassat Avenue and Edgewood Avenue on the northern end of the corridor, there is an opportunity for a major aesthetic gateway treatment. The intersection is seen by many as the entrance to the "Westside" if traveling south and the entrance to the "Northside" when traveling north. Three recommendations for this intersection were developed to provide alternatives with various levels of impact **(Figure 19-21)**. The "low level" impact recommendation is simply to transform the abandoned gas station area at the intersection into a gateway feature. As depicted, this gateway feature could incorporate various hardscape, water, and vegetative features and provide an identifiable point of entry into the corridor. The other two alternatives also provide a recognizable gateway feature, but propose realignment of Cassat and Edgewood. The "medium level" impact alternative proposes to realign Edgewood to create a "T" intersection at the abandoned gas station with the gateway feature flanking either side of the intersection. The "high level" impact alternative proposes the creation of a multi-lane roundabout at the intersection with a central gateway feature. The creation of a gateway feature at this intersection will significantly help define the sense of place and character being developed by the recommended improvements and other investments along this corridor.



EXISTING PARKING LANE ON CASSAT AVENUE

FIGURE 20: RENDERING OF REALIGNED CASSAT AVENUE/EDGEWOOD AVENUE INTERSECTION CONCEPT (MEDIUM LEVEL)

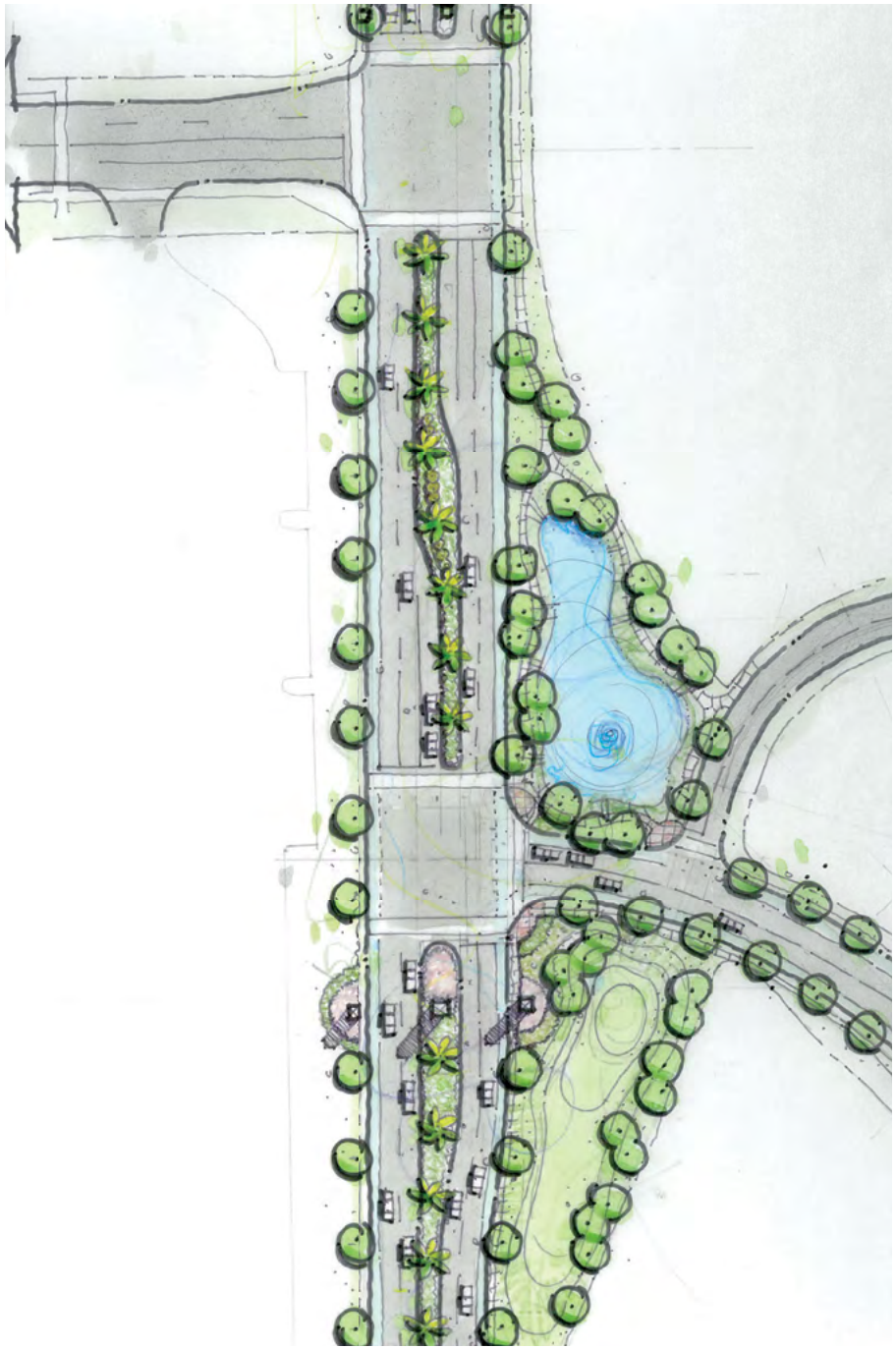
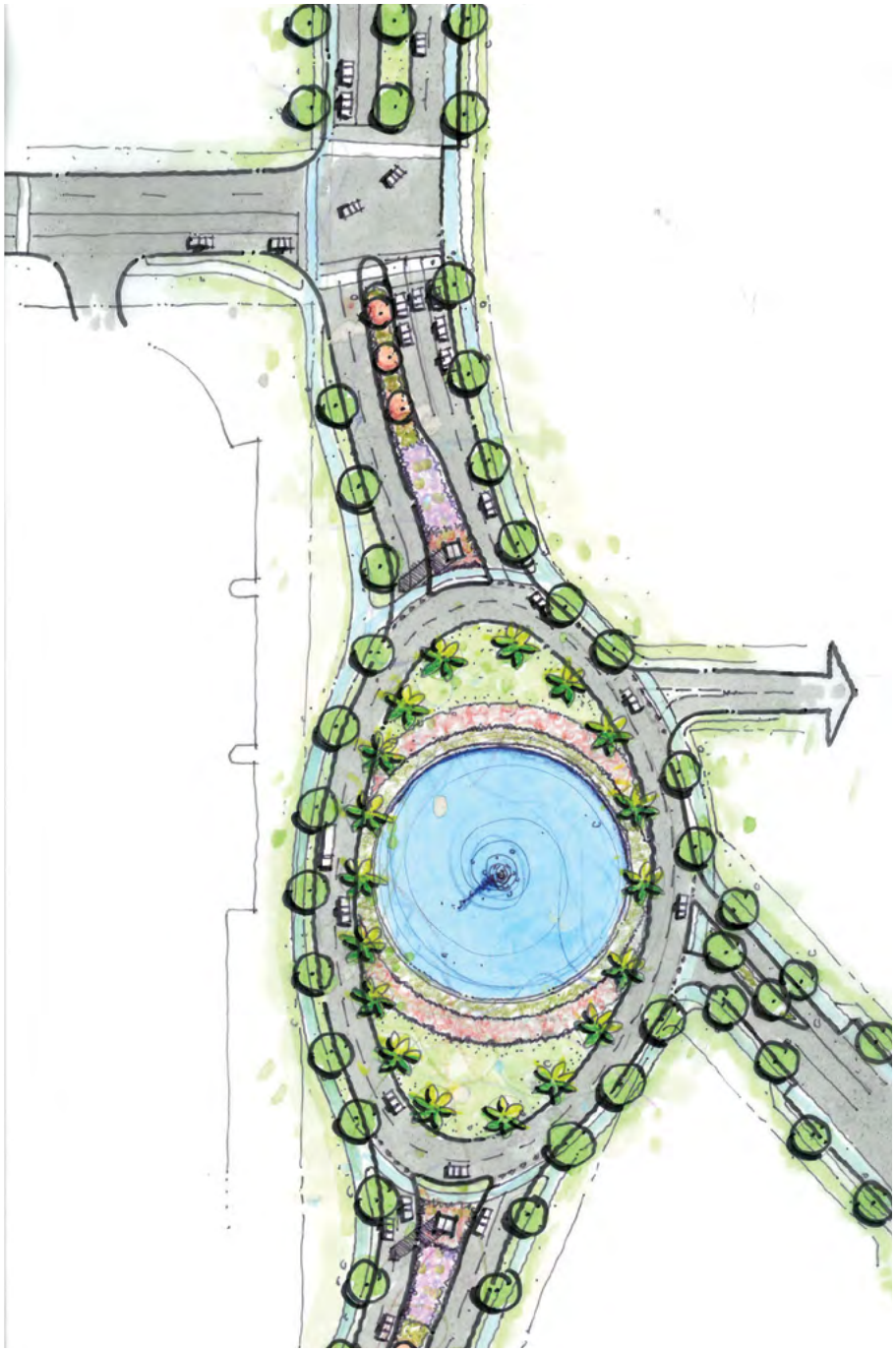


FIGURE 21: RENDERING OF ROUNDABOUT CONCEPT FOR CASSAT AVENUE/ EDGEWOOD AVENUE INTERSECTION (HIGH LEVEL)



Lenox Avenue

The characteristics of Lenox Avenue make it an ideal candidate to employ complete street principles to transform the auto-centric roadway into the facility that balances the needs of all street users. Lenox has the lowest travel volumes, with 2014 Average Annual Daily Traffic volumes at 8,500, yet has the highest incidents of crashes of the three corridors. **The crash rate of 13.84 from 2009 to 2013 is almost three times higher than the state average and approximately double the crash rates on Normandy Boulevard and Cassat Avenue.** High incidences of rear end and same direction sideswipe crashes along Lenox are characteristic of roadways that do not include center left turn lanes but have relatively high volumes of left-turning vehicles. Input from the public and observations during site visits revealed vehicles typically travel at speeds higher than the posted limit and these safety dangers are only compounded by a high number of pedestrians crossing at unmarked locations.

In both directions of travel Lenox Avenue has two, 10.5-foot travel lanes, bordered by a 14-foot planting strip and a 5-foot sidewalk **(Figure 22)**. Due to the significant number of crashes, high pedestrian volumes, and low traffic volumes, it is recommended that Lenox Avenue be rebalanced to include an 11-foot center turn lane with one 10.5-foot travel lane and a 5-foot bike lane in each direction **(Figure 23)**. Even with the reduction in travel lanes, the roadway will continue to perform at an acceptable level of service. Specifically, Lenox Avenue had a 2014 Average Annual Daily Traffic (AADT) of 8,500, while the FDOT Level of Service D capacity, widely considered an acceptable condition for automobiles, for a 2-lane road at 35 mph is almost double this volume at 14,800 vehicles. Roadway rebalancing of this type has also shown in other communities to reduce the most prevalent motor vehicle crash types experienced on this corridor.



BICYCLIST CROSSING LENOX AVENUE MID-BLOCK

FIGURE 22: EXISTING TYPICAL SECTION FOR LENOX AVENUE

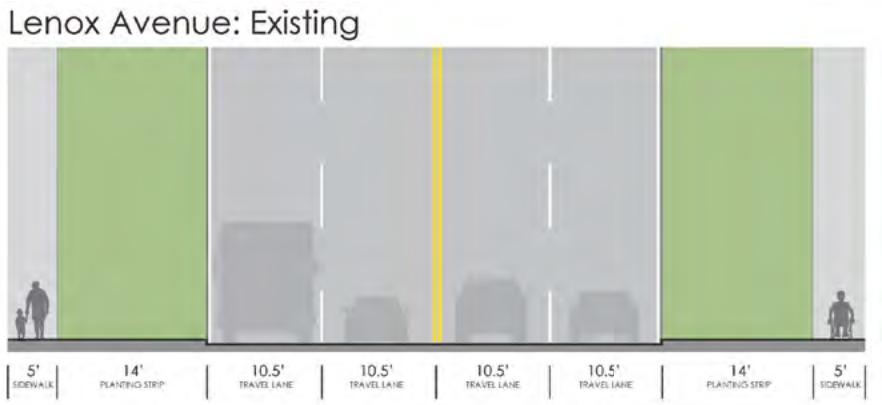
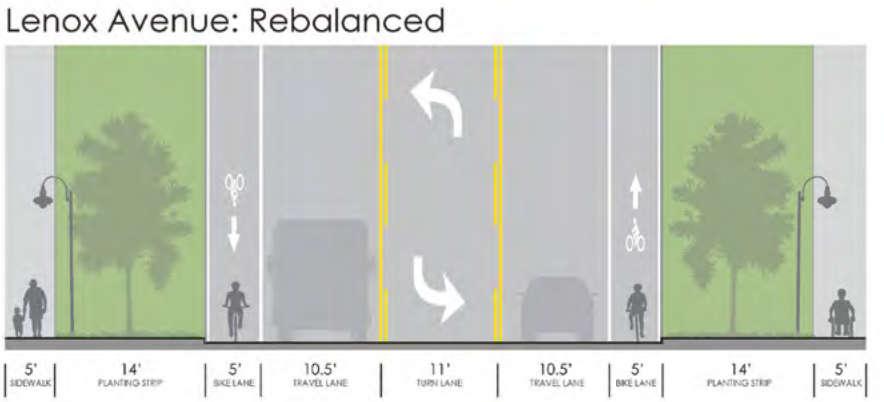


FIGURE 23: PROPOSED TYPICAL SECTION FOR LENOX AVENUE



While the existing roadway dimensions do not allow for the installation of the preferred buffer protected bike lane (as recommended on Cassat Avenue), the inclusion of 5-foot bike lanes on the roadway still significantly enhances bicyclist safety and is supported by the local cycling community. Additionally, to enhance the pedestrian environment, it is recommended that the now barren 14-foot planting strip be revitalized with shade trees and pedestrian scale lighting. Shade trees provide a more comfortable micro-climate and sense of separation from automobiles and pedestrian lighting enhances personal safety and security. The reduction of travel lanes and addition of street trees also slows the speed of vehicles traveling on Lenox Avenue by visually narrowing the street. These improvements would not only address safety along the corridor, but greatly enhance the aesthetics of the corridor and create an environment appealing to all modes of transportation. These improvements are recommended to occur in the near term due to the high safety concerns along the roadway.

Corridor Circulation: Phase One

The triangle-shaped area formed where Normandy Boulevard, Cassat Avenue, and Lenox Avenue intersect is a prime location for redevelopment and densification and therefore also the central focus of recommendations to improve circulation on the corridor. These three roadways have relatively high speed and linear circulation. There are traffic signals at each of their intersections, as well as a signalized intersections on Lenox at Verna Boulevard and on Cassat at College Street. The five signalized intersections provide the only marked crosswalks for pedestrians to traverse the multi-lane roadways. Normandy, Cassat, and Lenox also include some of JTA's high frequency transit routes, with moderately high ridership. Because of the significantly long distances between marked crosswalks and the high volumes of transit riders, pedestrians cross these roadways at unmarked mid-block locations creating a substantial safety concern. The danger of these conditions was repeatedly observed during site visits and voiced by charrette participants. The recommendations to improve circulation in this area are broken down into two phases—the more immediate safety needs identified as Phase One in and longer term projects identified as Phase Two are to be completed as the area redevelops.

The Phase One improvements **(Figure 24)** center on providing mid-block crosswalks along Normandy and Cassat and formalizing a local automobile cut-through with a signalized intersection on Lenox. It is recommended that one mid-block crossing be installed on Cassat at Kerle Street **(Figure 25)** and two mid-block crossings be installed on Normandy Boulevard at Garth Avenue and between Vincent Street and Burns Avenue. These mid-block crosswalks provide pedestrians the much needed convenient crossing opportunities.

FIGURE 24: NORMANDY VILLAGE CENTER CIRCULATION IMPROVEMENTS (PHASE I)

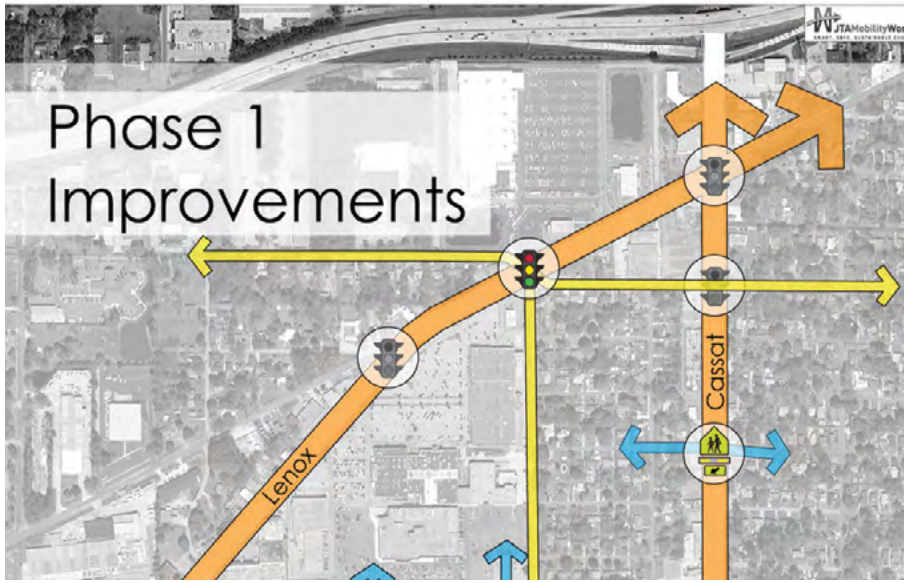
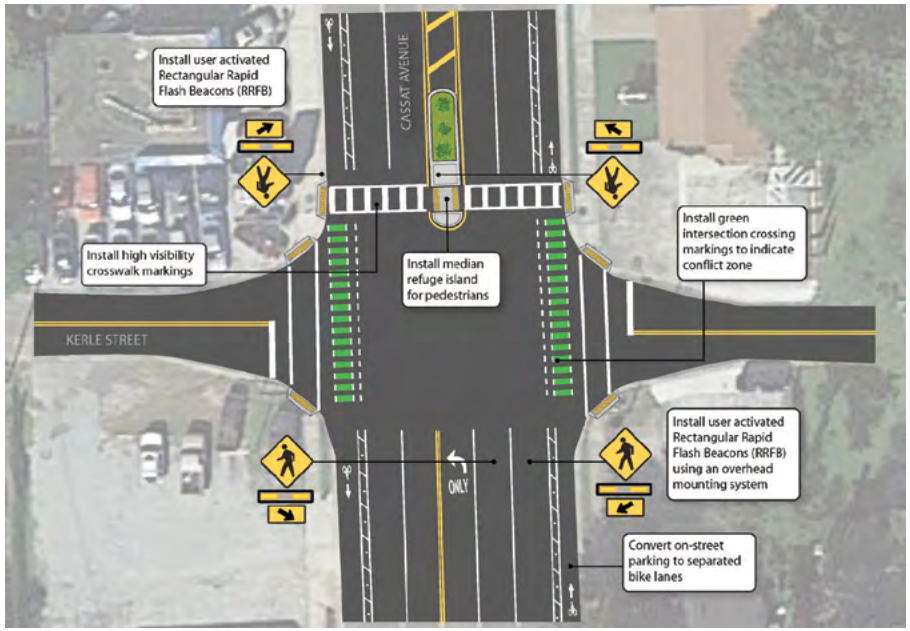


FIGURE 25: MID-BLOCK CROSSING CONCEPT FOR CASSAT AVENUE/KERLE STREET INTERSECTION (PHASE I)



In order to enhance pedestrian safety, mid-block crossings should utilize Rectangular Rapid Flash Beacons (RRFBs) with raised pedestrian refuge islands and high visibility crosswalks. RRFBs are user activated lights that use an irregular flash pattern to enhance warning signs and have shown to increase driver yielding behavior at crosswalks. Pedestrian refuge islands are also recommended in the center turn lanes; islands provide protected areas where people can wait while crossing the street, so gaps in traffic only need to be found in one direction at a time **(Figure 26)**. In addition, islands enhance awareness of the crosswalks and provide resting areas for the elderly, persons with disabilities, and children who may have difficulty crossing the street in one stage. Additionally, mid-block crossings should be striped with the high-visibility ladder or zebra style crosswalk markings.

It is also recommended that an informal local automobile cut-through at Romana Boulevard and College Street be re-aligned and formalized with a signalized intersection on Lenox—providing benefits to both pedestrians and motorists. The signalized intersection provides an additional pedestrian crossing opportunity on Lenox. The alignment also offers an alternate route to reach Cassat and Normandy from Lenox, and vice versa; therefore traffic can be dispersed among the new routes and aid in reducing roadway and intersection congestion.

Corridor Circulation: Phase Two

The Phase Two recommendations are longer term projects, which build upon the circulation improvements developed in Phase One **(Figure 27)**. It is recommended that signalized intersections be installed at the previously designated mid-block crossings on Cassat and Kerle Street **(Figure 28)** and on Normandy Boulevard between Vincent Street and Burns Ave. This mid-block crossing on Normandy should be relocated to Vincent Street, and utilize the same safety and design features.

Signalized intersections at these locations provide an opportunity to create an interconnected roadway grid network through the Potter's House International Ministries Chapel / Winn-Dixie shopping center. This grid network improves circulation and connectivity in the corridor and provides opportunities for both travel mode and travel route. By enhancing a secondary grid network, quality access is provided for pedestrians, transit riders, and cyclists. These users try to find the shortest route to their destination, which is easier when the street network is made up of connected, short blocks. As with the enhanced connectivity recommended in Phase One, provision of alternate travel routes in the corridor means local automobile trips can be made without utilizing corridor arterials, reducing traffic congestion by dispersing traffic among the various options in the travel route.

FIGURE 26: RENDERING OF POTENTIAL LENOX AVENUE MID-BLOCK CROSSING



FIGURE 27: NORMANDY VILLAGE CENTER CIRCULATION IMPROVEMENTS (PHASE II)

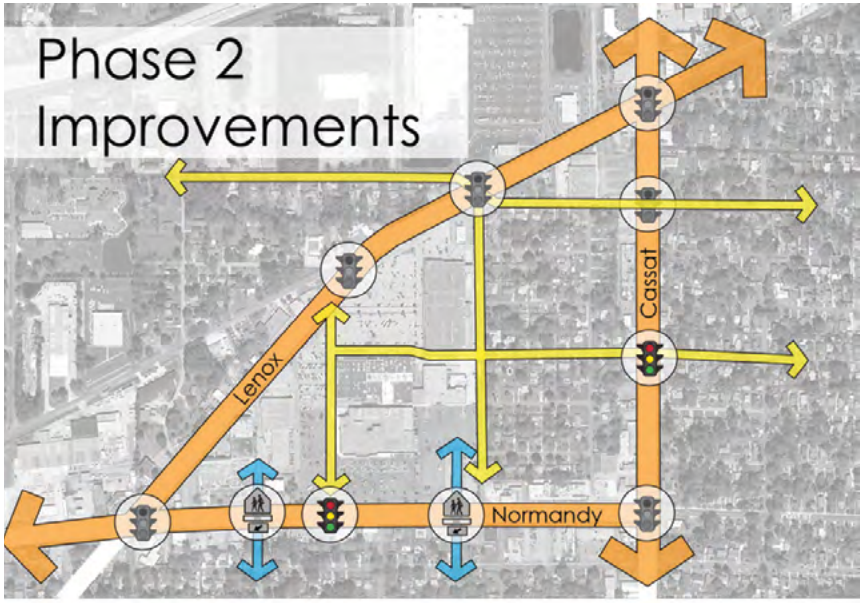
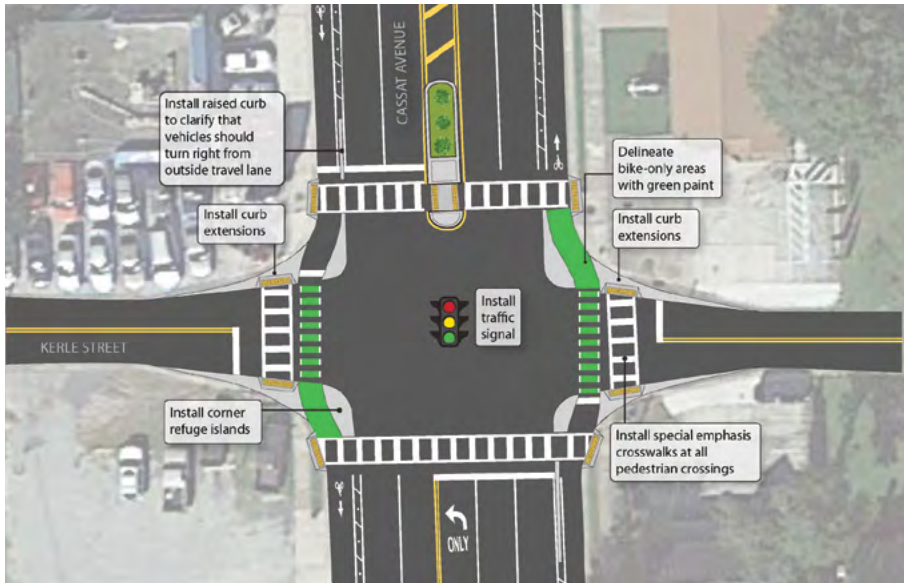


FIGURE 28: PROPOSED SIGNAL CONCEPT FOR CASSAT AVENUE/KERLE STREET INTERSECTION (PHASE II)



Redevelopment and Densification: Normandy Village Center

In addition to these circulation improvements, there is an opportunity for redevelopment and densification at the Potter's House International Ministries Chapel/ Winn-Dixie shopping center plaza **(Figure 29)**. It is recommended that Potter's House work with adjacent landowners and other public and private partners to develop a master plan for their site in coordination with the recommendations to improve circulation and connectivity. The master plan should also include a housing needs study and an economic development plan. Implementation could potentially begin within two to three years depending on landowner and developer interest.

The plaza is within a quarter-mile or a five minute walk of surrounding residential neighborhoods, a distance pedestrians are typically willing to walk, and along roadways with high frequency transit routes. This close proximity to residences and transit routes, suggests a walkable, connected village can be successful. Providing an interconnected network of complete streets makes it easier and safer for users to walk, bike, and take transit. By creating a vibrant street life with accessible and efficient connections between residences and this retail destination, residents are encouraged to use the local shopping area, which in turn spurs economic development and attracts new businesses to the area **(Figure 30)**.

FIGURE 29: EXISTING NORMANDY VILLAGE CENTER



FIGURE 30: Ddensification CONCEPT FOR NORMANDY VILLAGE CENTER



Prioritization

Following the charrette, the project team conducted further analyses and additional coordination regarding the corridor recommendations. From that, a prioritization plan was developed. Projects identified have been classified as **Keystone Projects, Operational/Safety Enhancements, or Long-Term Vision Projects.**



CASSAT AVENUE/EDGEWOOD AVENUE INTERSECTION

KEYSTONE PROJECTS

These projects will showcase the immediate effect the Complete Streets program can have on a corridor. They are relatively substantial projects that can be implemented in the near term. For the Normandy/Cassat/Lenox corridor, the keystone projects are the reconfiguration of the Cassat Avenue and Edgewood Avenue intersection and the Lenox Avenue road diet. The Cassat/Edgewood intersection is awkward, and while enhancements have recently been made by FDOT, the area is still difficult to traverse for pedestrians. The reconfigured T-intersection **(Figure 31)** provides for safe crossings and more intuitive traffic circulation. Furthermore, landscape and hardscape treatments on the eastern side of the intersection can help to define the intersection as a gateway to both the north side and west side. Finally, realigning Edgewood Avenue South will assist in de-emphasizing the roadway as a thoroughfare, allowing for a future road diet from the intersection through Murray Hill.

FIGURE 31: CONCEPT DESIGN FOR REALIGNED CASSAT AVENUE/ EDGEWOOD AVENUE INTERSECTION



As presented earlier, the Lenox Avenue road diet (or rebalancing) will address major safety issues on the roadway. While traffic volumes are relatively low, the crash rate is significantly higher than the state average for similar road types. Reducing the number of travel lanes from four to two allows for the installation of a median as well as bike lanes. The project would also be a catalyst for redevelopment and densification of the Potter's House complex into the Normandy Village Center. As noted previously and below, it is desirable to install a pedestrian crossing on Lenox Avenue at Ramona Boulevard/Garth Avenue. As redevelopment of the Potter's House complex begins to take shape, this may be modified to a traffic signal.

OPERATIONAL/SAFETY ENHANCEMENTS

Theses are "quick fix" projects that can provide immediate operational and safety improvements at a reasonably low cost. Within the Normandy/Cassat/Lenox corridors, these enhancements include the following:

- Fill-in sidewalk gaps on Normandy Boulevard (between I-295 and La Marche Drive/Walmart)
- Restripe parking lanes on Cassat Avenue as buffered bike lanes from San Juan to Edgewood (coordinate with FDOT resurfacing)
- Add a traffic signal on Lenox Avenue at Verna Boulevard / Potter's House
- Install pedestrians crossings with appropriate signage at:
  - Normandy Boulevard west of Le Brun Drive
  - Normandy Boulevard near Verna Boulevard
  - Normandy Boulevard at two locations between Cassat and Lenox
  - Cassat Avenue between Quan Drive and Ulmer Street
  - Cassat Avenue at Holycrest Drive
  - Cassat Avenue at Kerle Street
  - Lenox Avenue at Ramona Boulevard / Garth Avenue

Additional minor operational and safety improvements have been identified at intersections along these corridors, and this information is included in the appendix.

LONG-TERM VISION

These are projects that are often bold, relatively costly projects that will take many years to be fully implemented. For the Normandy/Cassat/Lenox corridors area, the major long-term vision project is the densification of the Potter's House/ Winn-Dixie area (former Normandy Mall) into the Normandy Village Center. As shown earlier, this would include establishing a new street grid, which would greatly enhance mobility and accessibility to and through the area. New traffic signals would be installed to provide safe access between the Village Center and the surrounding roadway network. Other long-term vision projects include the following:

- Repurpose shoulder areas on Normandy Boulevard west of Lane Avenue as bike lanes
- Replace center turn lane with raised median on Normandy Boulevard east of Lane Avenue
- Widen sidewalks on Normandy Boulevard (Lane Avenue to Cassat Avenue) in lieu of bike lanes
- Reconstruct Edgewood Avenue south of Cassat Avenue as three-lane facility with bike lanes
- Reduce travel lanes on Cassat Avenue south of San Juan Avenue from four to two

The realization of this long-term vision would remake this automobile-dominated area into a fully inclusive multimodal and mixed-use hub for the westside of Jacksonville.

PHILIPS HIGHWAY

EXECUTIVE SUMMARY

As part of the JTAMobilityWorks Complete Streets Program, a study of the Philips Highway (US 1) corridor was conducted. The portion of Philips Highway studied is approximately 10.5 miles long, and extends from Interstate 95 (I-95) and Atlantic Boulevard in San Marco neighborhood to Southside Boulevard (SR 115). The corridor connects I-95, San Marco, with the south side of Jacksonville. The corridor is comprised of a diversity of land uses including office park, and a mix of commercial, retail and industrial spaces. Philips Highway, also known as US 1, parallels I-95 and receives a steady flow of vehicular traffic with average annual daily traffic volumes between 28,000 and 41,000, including a significant number of trucks which enter and exit the roadway, particularly north of the JTB intersection. This corridor is also a high frequency transit corridor and in fact, JTA's First Coast Flyer bus rapid transit (BRT) service will begin operating on Philips Highway during the winter of 2016. Once completed, passengers will be able to travel the First Coast Flyer system from the Northwest are of Jacksonville to the Southeast area where for shopping or work.

Based on field observations, data reviews, and review of prior planning studies that addressed this area, it was apparent that there are mobility challenges along the corridor for pedestrians, transit passengers and bicyclists primarily due to an incomplete network of sidewalks and bike lane facilities. An assessment of crashes and incidents along the corridor also identified areas where pedestrians frequently cross the median on Philips Highway at un-signalized locations where speeds on this major arterial are posted at 45 mph.

In order to better understand the issues and concerns of the community, a public workshop was held at the Southside Assembly of God gathering room on February 2, 2016, from 4 p.m. to 7 p.m. The members of the public were able to view large aerial maps depicting the key features and pertinent analysis data and speak with the project team concerning their questions and concerns regarding mobility along the corridor.

Key concerns voiced by the public included the need for more bicycle accommodations, specifically in the vicinity of the crossing of the I-95 corridor near the Avenues Mall. The public also addressed the need for landscaping and aesthetics along the corridor in regards to possible median enhancements. The observations of pedestrians crossing mid-block, specifically near the Walmart, immediately south of Emerson Road, stresses the need to address adequate signage and visible pedestrian accommodations, particularly in areas near or connecting to transit stops.

A series of recommendations were developed to address both safety and operational improvements as well as, long term strategies to more fully address mobility along the corridor. The areas of emphasis for adding sidewalk connectivity include:

- University Blvd. to Butler Blvd. – connecting future BRT stations with retail and commercial centers.
- Butler Blvd. to Baymeadows Rd. – connecting residences and retail commercial center to existing local bus stops as well as future BRT stations at Baymeadows Rd.
- Baymeadows Rd. to Southside Blvd. – connecting transit users and pedestrians to the Avenues Mall, Regal movie theater, and other retail commercial service centers along the corridor.

Other improvements include the need to address areas of inadequate crosswalk markings and inadequate lighting along the corridor, specifically within the vicinity of transit stops. Additionally improvements to the intersection of Philips Highway and University Boulevard are necessary to enhance safety. When the BRT service is implemented, additional considerations should be given to the location the transit stops in the area of the Philips Highway, University Boulevard and Bowden Road. The intersections are closely spaced and are within close proximity to I-95, and as a result experience a lot of truck traffic maneuvering through the area. Additionally, at the University Boulevard intersection, traffic approaches the intersection from an elevated railroad bridge crossing, which lacks sufficient signage and pavement markings, thus requires motorists to focus closely as they navigate the intersection.

Finally, the study recommends the addition of bicycle facilities, specifically from Baymeadows Road to Bowden Road, as well as enhancing bicycle accommodations in the vicinity of the Avenues Mall at I-95. Moreover, continued coordination with stakeholders and other agencies may afford partnership opportunities for funding that could affect the prioritization and/or implementation of projects.

1: CONTEXT

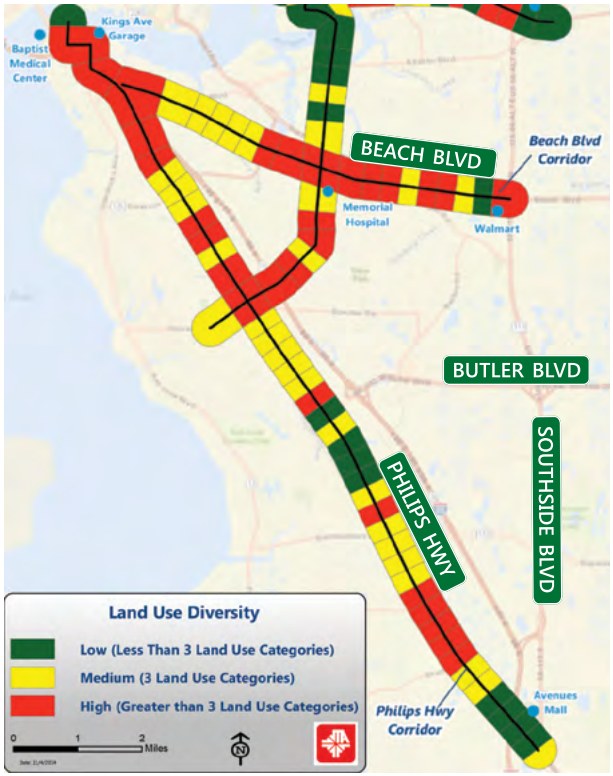
The Philips Highway (US 1) Mobility Corridor study area begins at the intersection of Philips Highway and Southside Boulevard and terminates at the three-way intersection of Philips Highway, Atlantic Boulevard, and I-95. The Philips Highway corridor is being evaluated to determine the feasibility of adding sidewalks, improving bicycle accommodations, improving lighting and landscaping, and generally enhancing the overall mobility and safety of pedestrians, bicyclists, and transit users. The Philips Highway corridor is also the future southeast Bus Rapid Transit (BRT) First Coast Flyer. Figure 1 highlights the existing land use diversity along the corridor and Figure 2 illustrates the overall Philips Highway corridor study area.

EXISTING CONDITIONS

Philips Highway is a major arterial on the south side of Jacksonville that parallels I-95 through a commercial and industrial area. The roadway consists primarily of a rural typical section with two through lanes in each direction, a 40-foot median with swale, flush outside shoulder, and roadside ditches. The corridor is punctuated with numerous sideroads and entrances, the vast majority of which are commercial. Philips Highway accommodates extensive commuter and commercial traffic but also conveys the traveling public to the numerous businesses along the corridor, including the Avenues Mall, Lowes, and WalMart. Existing sidewalk and pedestrian facilities are generally uncommon along the corridor. However, the northern portion of the project was recently improved to include curb and gutter medians along with sidewalk and pedestrian crosswalks.

Currently, existing sidewalk is sporadic and does not connect bus stops with commercial and retail centers along Philips Highway from Southside Boulevard to Bowden Road. Sidewalks are present along Philips Highway from Bowden Road north towards Atlantic Boulevard and I-95. Bike lanes are located along Philips Highway from Southside Boulevard to Baymeadows Road; and from Bowden Road to just south of Atlantic Boulevard. Bike Lanes are not located along Philips Highway from Baymeadows Road to Bowden Road. The posted speed limit along the length of the corridor is 45 miles per hour.

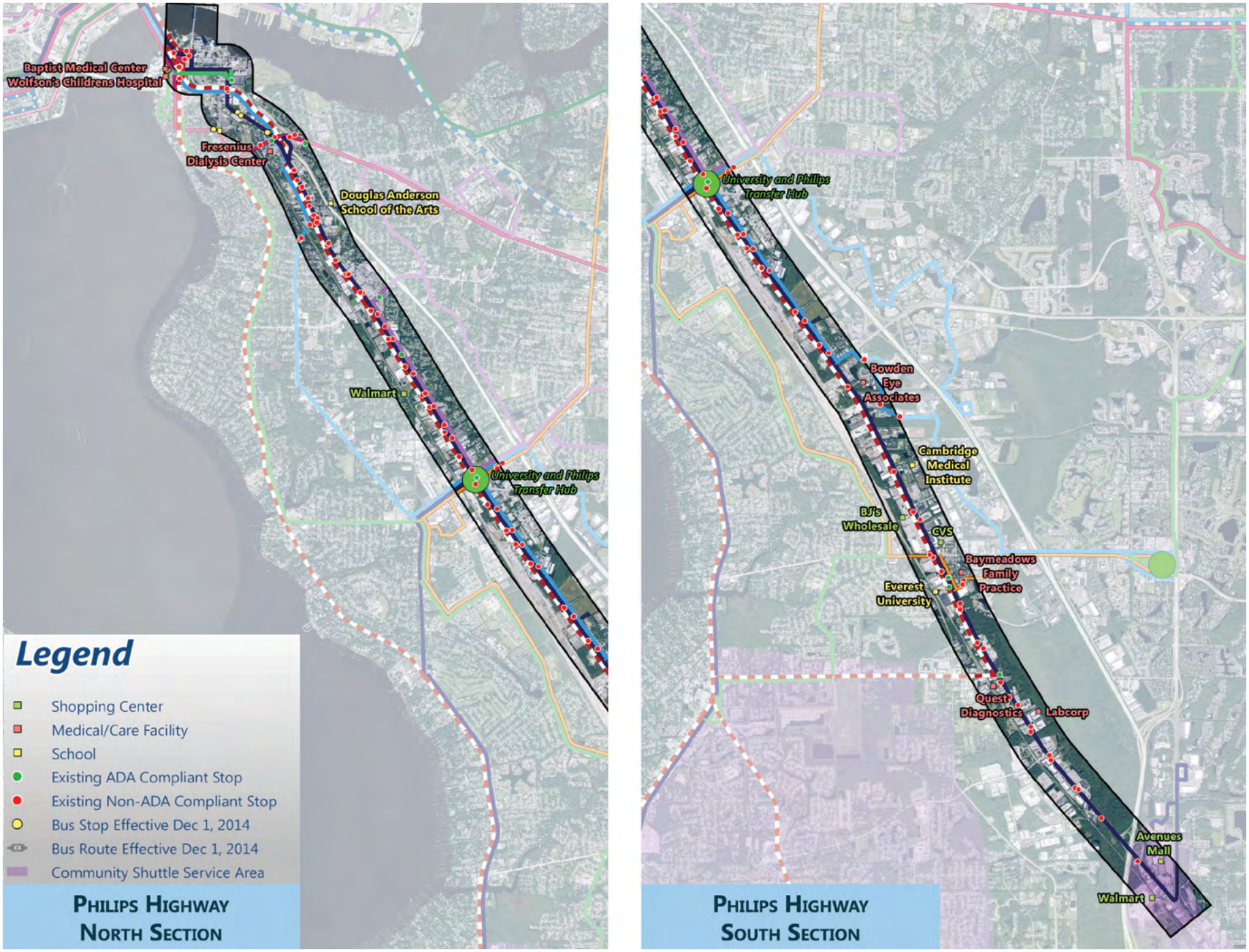
FIGURE 1: PHILIPS HIGHWAY CORRIDOR CONTEXT LAND USE DIVERSITY





JTA LOCAL BUS (ROUTE 7) ALONG PHILIPS HIGHWAY

FIGURE 2: OVERALL STUDY AREA



Philips Highway has been identified as the southeast corridor of the JTA's First Coast Flyer BRT service. The southeast corridor is the third corridor in implementation of the BRT service. The Downtown Connector service was the first phase followed by the North Corridor/Green Line BRT service along Lem Turner Road. The JTA plans to begin operations for the southeast corridor BRT service in Winter of 2016. Once completed, the combination of the three phases will allow customers to travel from I-295 area in the North (Lem Turner Road & Armsdale Park-n-Ride) to Southside/Avenues Walk (Avenues Walk Park-n-Ride Stop 1 in Figure 3) without having to make any transfers.

JTA BRT LOGO

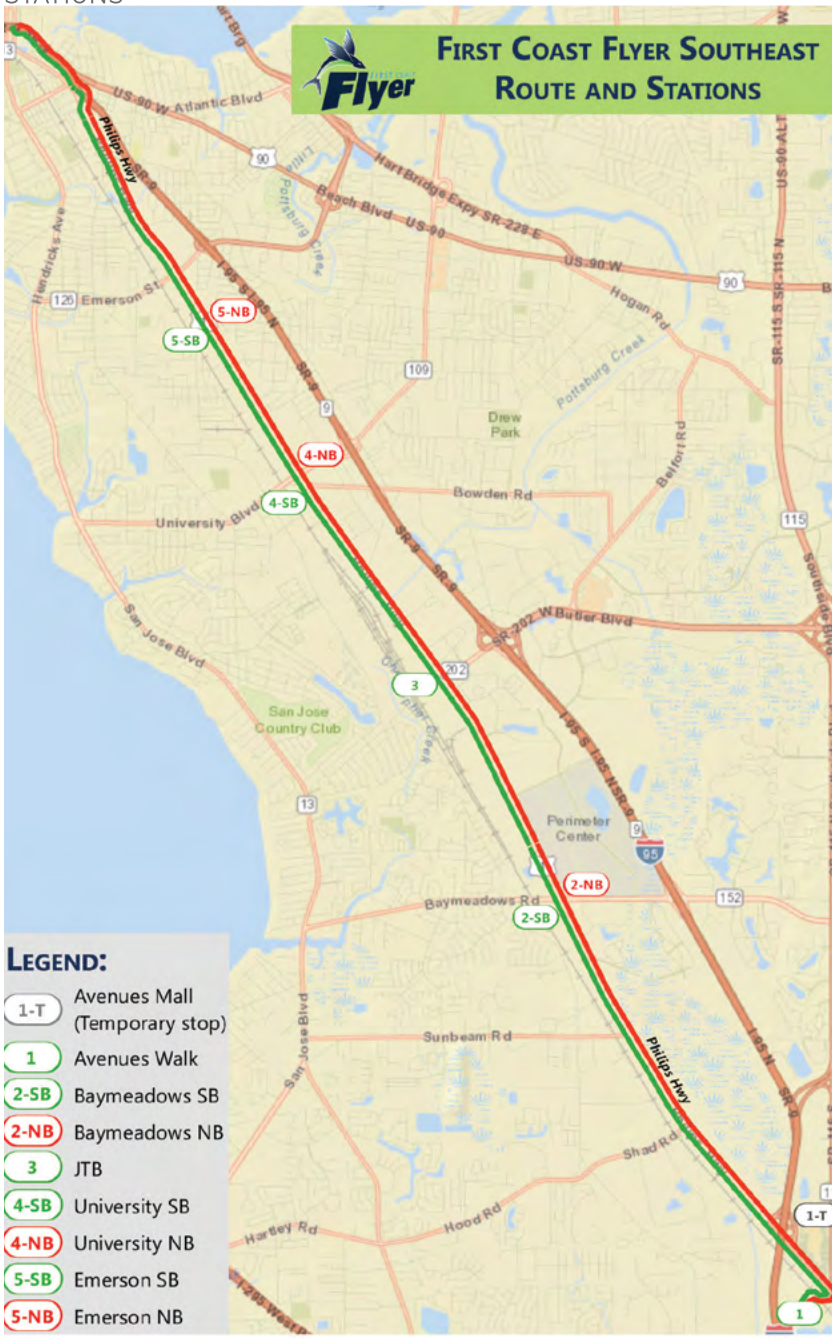
Figure 2 displays a map of the proposed Southeast corridor BRT route and proposed station locations. A total of eight stops are planned for the Southeast BRT route along Philips Highway. Baymeadows Road, University Boulevard, and Emerson Street will each have northbound and southbound stops. The J. Turner Butler (JTB) and Avenues Walk stops will serve as Park-n-Ride stops. A temporary stop at the existing Avenues Mall local bus stop is planned in the interim until the Avenues Walk Park-n-Ride facility is developed.

The presence of the BRT service along Philips Highway emphasizes the importance of the JTA MobilityWorks Complete Streets initiative and potential mobility enhancements along the corridor. The proposed BRT service will likely increase the need for pedestrian, bicyclist, and transit mobility enhancements and safety considerations.



JTA BRT CNG BUS

FIGURE 3: JTA FIRST COAST FLYER SOUTHEAST (BRT) ROUTE AND STATIONS



PREVIOUS PLANS AND STUDIES

In order to comprehensively evaluate the Philips Highway corridor, the team reviewed several existing reports, datasets, and previous/ongoing planning efforts along the corridor. The review of existing plans and data was intended to familiarize the team with the context in which the corridor exists and to develop potential solutions. This would also help insure that proposed design concepts, alternative solutions and recommendations would follow the vision of the city and the region while keeping future plans in perspective. The following documents were reviewed as a part of this process:

- JTA First Coast Flyer BRT Southeast Corridor
- City of Jacksonville Southeast Vision Plan
- City of Jacksonville US 1 Corridor Study
- Bus stops and transit ridership data from JTA
- JTA planned transit enhancements for bus stops
- Annual Average Daily Traffic (AADT) counts from the Florida Department of Transportation (FDOT)
- FDOT Crash Analysis Report System (CARS)
- Five-Year Work Program projects from FDOT

City of Jacksonville Southeast Vision Plan

In March 2010, Zyscovich Architects with direction from the City of Jacksonville Planning and Development Department developed the Southeast Vision Plan. The process for establishing the vision plan included interviews with City Council members, meetings with the Southeast Vision Plan Steering Committee, and an extensive community outreach strategy including community forums and charrettes.



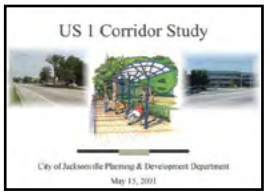
SOUTHEAST VISION PLAN COVER

The plan encompasses the greater Southeast region of the City of Jacksonville which incorporates the Philips Highway corridor. Therefore, the plan was reviewed to understand the guiding principles developed as a result of the vision plan and to highlight elements from the vision plan related to Philips Highway. Takeaways from the guiding principles from the vision study that relate to Philips Highway include:

- Promote Mixed Use/Mixed Income Redevelopment and Infill
- Provide Greater Connectivity and a Variety of Transportation Choices to Enhance Mobility
- Provide for Economic Growth

City of Jacksonville US 1 Corridor Study

The City of Jacksonville Planning and Development Department has also completed a US 1 Corridor Study which relates to the Philips Highway corridor. The US 1 Corridor Study was completed on May 15, 2001. The study was reviewed and referenced as part of this project to better understand the existing conditions as well as historic strategies and recommendations suggested for enhancing the mobility along the corridor.



US 1 CORRIDOR STUDY COVER

FDOT Five-Year Work Program Projects

The FDOT Five-Year Work Program projects in the vicinity of the Philips Highway mobility corridor were reviewed and are identified in Table 1 below. The purpose of reviewing and identifying projects within the work program was to provide an opportunity to leverage funding and identify possible solutions that could be implemented with other planned projects.

TABLE 1: FDOT FIVE-YEAR WORK PROGRAM PROJECTS WITHIN STUDY AREA

Five Year FDOT Work Program		Fiscal Year
Description	*Type of Work*	*(Phase)*
SR 5 (US 1/Philips Hwy.) from University Blvd. to I-95	Resurfacing	2016 (PE) 2016 (Construction)
SR 5 (US 1) at JTB Intersection	ROW Activities	2016 (ROW)
SR 5 from Philips Hwy. to Main St.	Resurfacing	2016 (PE) 2016 (Construction)
SR 126 (Emerson St.) from SR 13 to SR 5 (US 1)	Resurfacing	2016 (PE) 2016 (Construction)

NOTES: SOURCE: FDOT FIVE-YEAR WORK PROGRAM
PE = PRELIMINARY ENGINEERING
ROW = RIGHT OF WAY

CHALLENGES

The JTA transit user data, planned transit enhancements, FDOT crash data, and FDOT traffic data conditions for the Philips Highway corridor are explained through this section. The existing traffic conditions and infrastructure conditions are also examined within this section to identify major challenges and issue areas along the corridor. Philips Highway is a high activity mobility corridor with major intersections at I-95, University Boulevard, Butler Boulevard, Baymeadows Boulevard and Southside Boulevard. The existing traffic and infrastructure conditions in these areas provide challenges for pedestrian, bicyclists, and transit users safety.

Crash and Issue Areas

The FDOT Crash Analysis Reporting System (CARS) crash data along with the University of Florida GeoPlan Signal Four Analytics web-based system was utilized to map and identify crash incidents involving vehicles, bicycles, and pedestrians from 2012 to 2014. Table 2 below summarizes the crash data along Philips Highway within the study area and Figure 4 illustrates the hotspots and issue areas for vehicular crashes and Figure 5 displays the bicycle, and pedestrian crashes.

TABLE 2: CORRIDOR CONTEXT CRASH DATA ALONG PHILIPS HIGHWAY MOBILITY CORRIDOR

Crash Type	Fatal	Injury	Other
Vehicle Crashes	2	562	778
Transit Crashes	0	9	17
Bicycle Crashes	0	9	1
Pedestrian Crashes	2	6	1

NOTES: SOURCE: FDOT CARS AND UF SIGNAL FOUR ANALYTICS; 2012-2014

VEHICLE CRASHES INCLUDE: REAR END CRASHES, LANE DEPARTURE CRASHES, AND ANGLE CRASHES

Based on this analysis, the following crossroads and major intersections along Philips Highway were identified as challenges for vehicle, transit, bicycle, and pedestrian safety:

- Vehicle Crashes Hotspots/Issue Areas
  - Southside Blvd./I-95 at Philips Hwy.
  - Baymeadows Rd. at Philips Hwy.
  - JTB at Philips Hwy.
  - University Blvd./Bowden Rd. at Philips Highway
- Bicycle Crashes Hotspots/Issue Areas
  - Walmart before Emerson St. along Philips Hwy.
- Pedestrian Crashes Hotspots/Issue Areas
  - Baymeadows Rd. at Philips Hwy.
  - Walmart before Emerson St. along Philips Hwy.

FIGURE 4: ISSUE AREAS AND HOTSPOT LOCATIONS FOR VEHICLE CRASHES

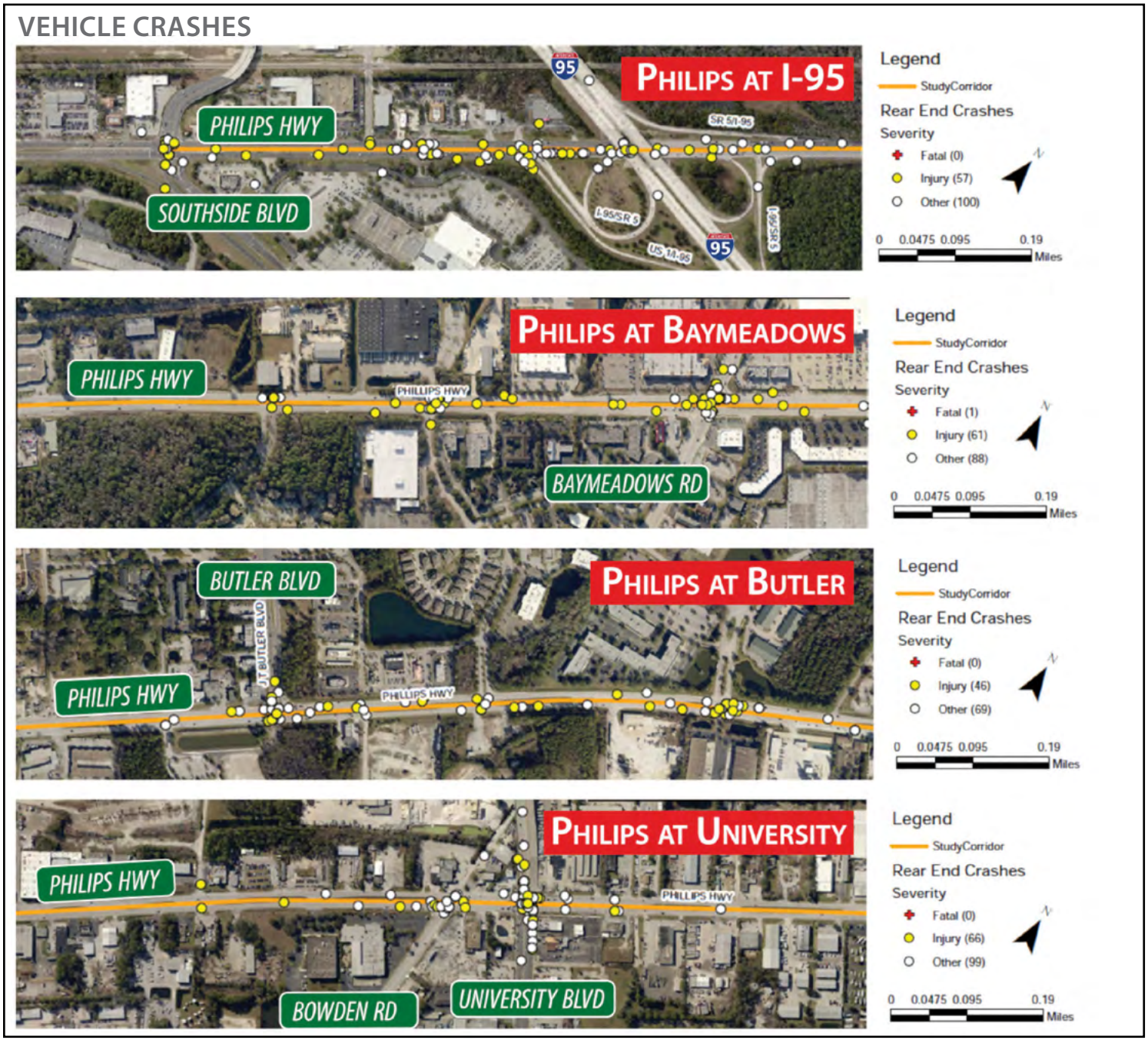
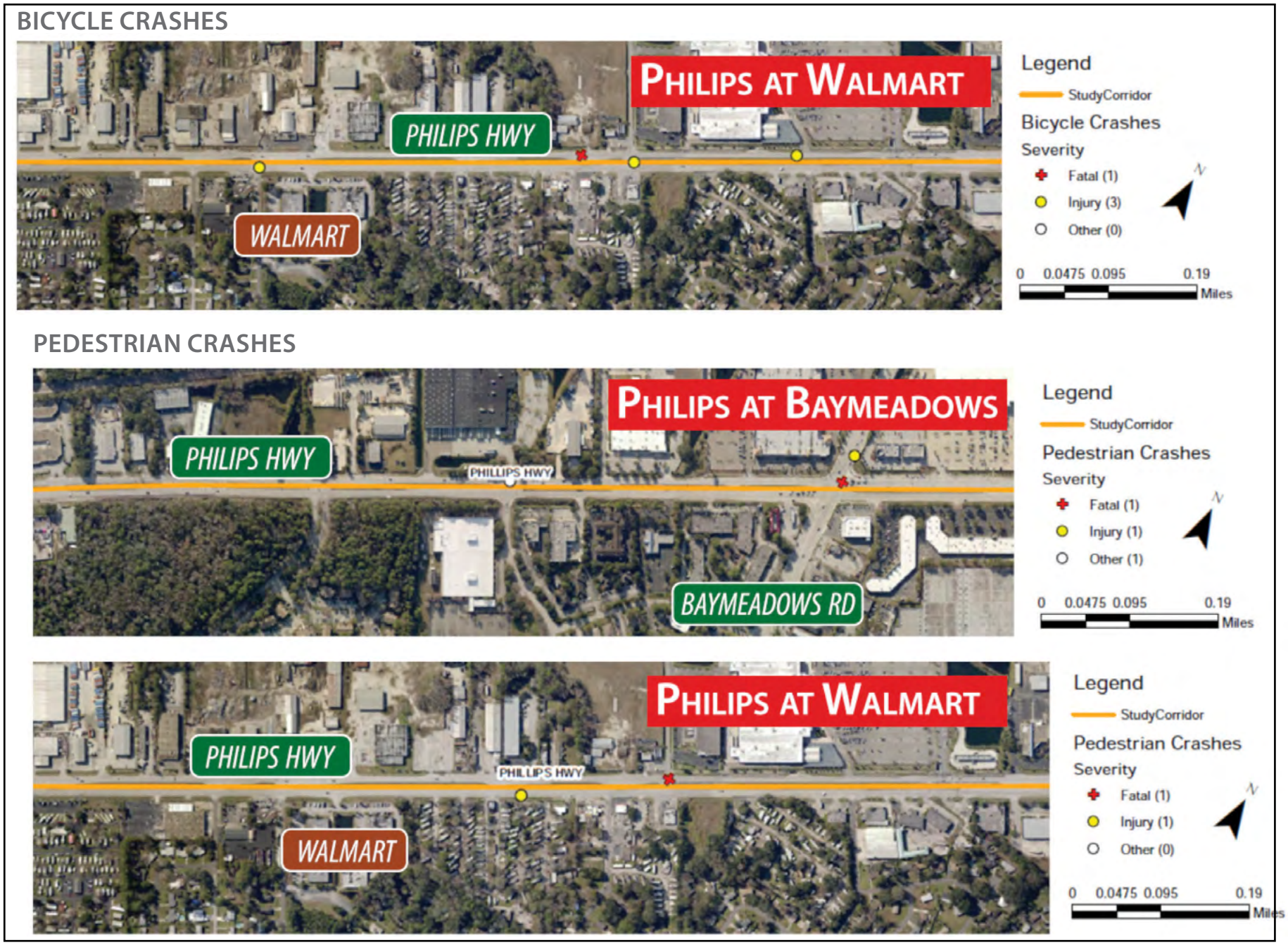


FIGURE 5: ISSUE AREAS AND HOTSPOT LOCATIONS FOR BICYCLE AND PEDESTRIAN CRASHES



Existing Infrastructure

In regards to the existing infrastructure conditions, the challenges presented along Philips Highway mobility corridor include sidewalk and bicycle lane connectivity. Specifically, on the southern section of the corridor from Southside Boulevard to Bowden Road. Figure 6 displays an overall map of the Philips Highway mobility corridor and highlights the existing infrastructure and traffic conditions.

The incomplete network of sidewalks and bicycle lanes raises safety concerns, as pedestrians and bicyclists routinely use the Philips Highway corridor to get to transit, employment, and retail centers. Figure 7 illustrates the issue areas for sidewalk and bicycle lane connectivity along the corridor.

As indicated on Figure 6, there are no continuous sidewalks along Philips Highway from Southside Blvd. North to Bowden Rd. There are some limited sidewalks around Sunbeam Rd. and Baymeadows Rd.; however these sidewalks do not connect to transit stops or other retail centers in the vicinity. Similarly, bicycle lanes are not present from Baymeadows Rd. North to Bowden Rd and there is no bicycle crossing at the Philips Hwy. and I-95 interchange. These gaps and missing connections were identified as challenges to the existing infrastructure conditions, from an access and safety standpoint.

FIGURE 6: EXISTING INFRASTRUCTURE AND TRAFFIC CONDITIONS

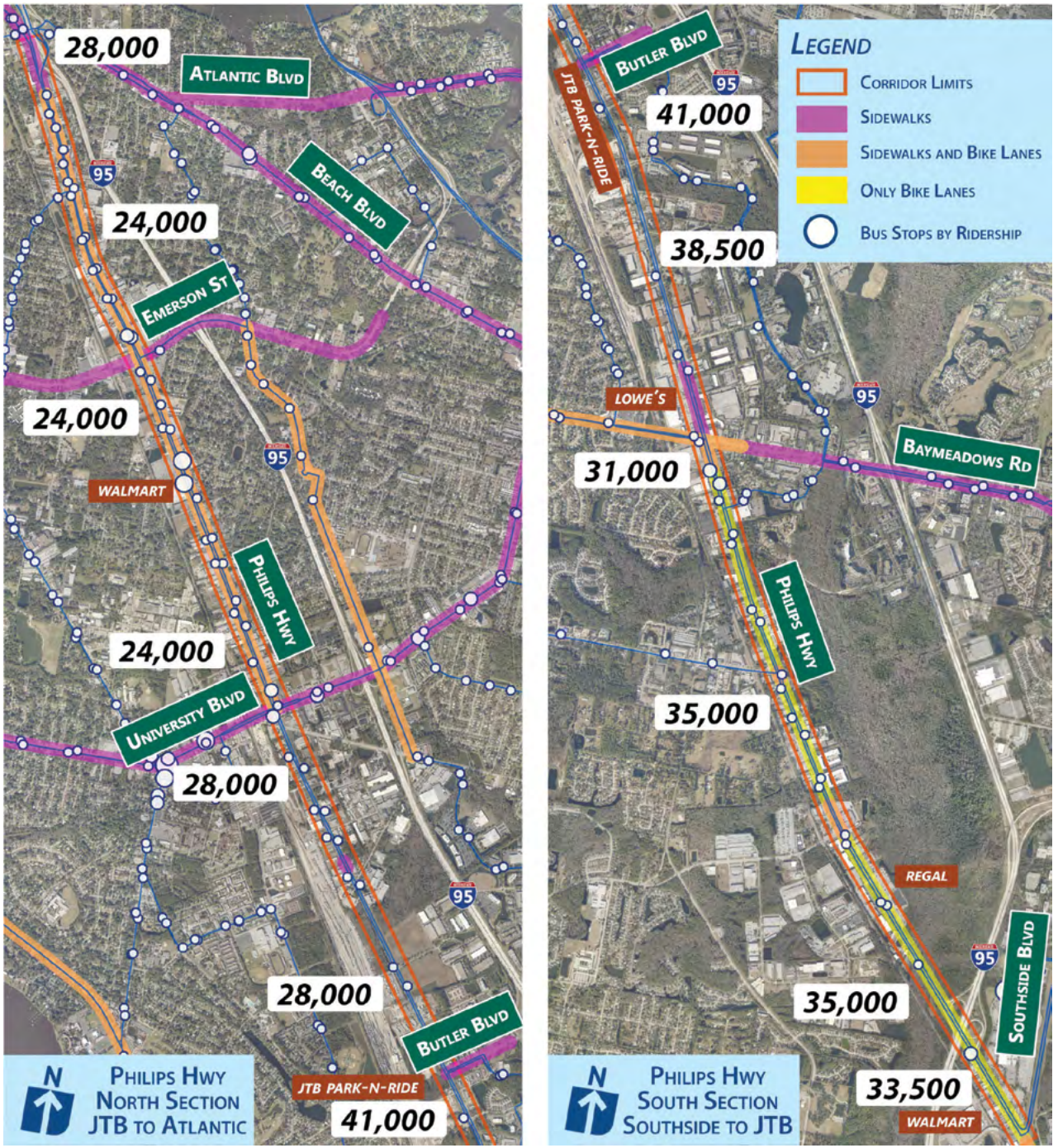
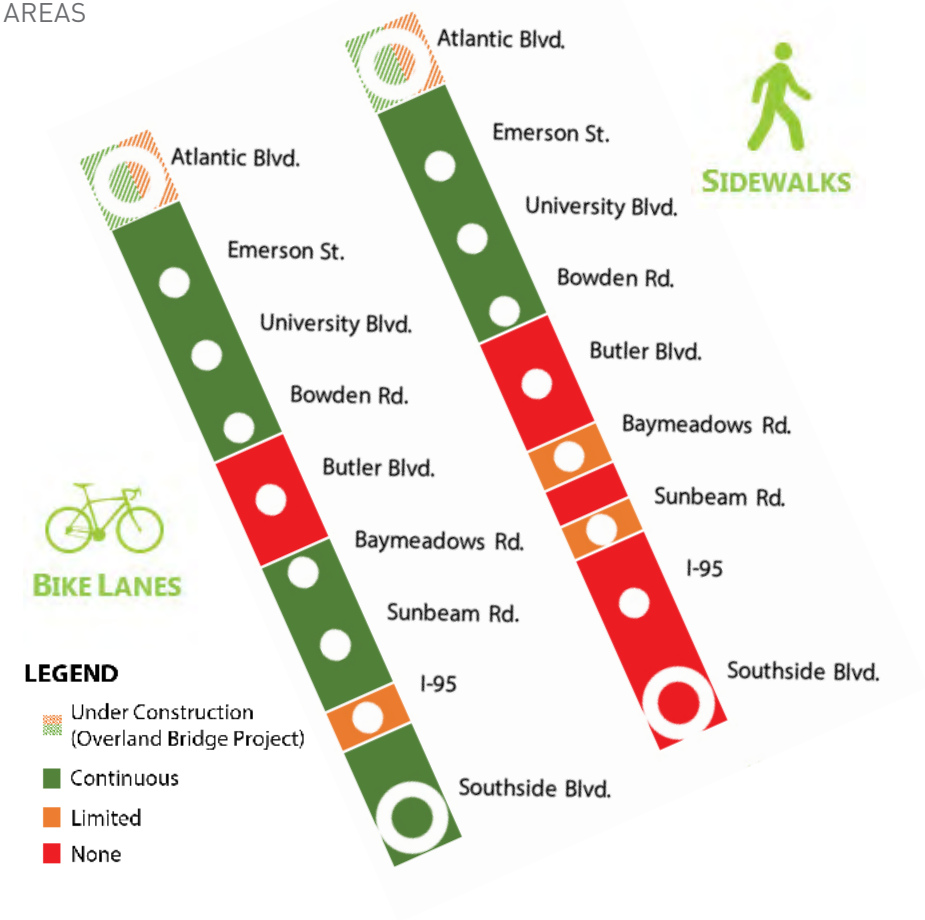


FIGURE 7: SIDEWALKS AND BICYCLE LANES HOPTSPOTS AND ISSUE AREAS



Existing Traffic Conditions

The speed limit along Philips Highway from Southside Boulevard to just south of I-95 and Atlantic Boulevard is 45 miles per hour. As Philips Highway merges to the I-95 on-ramp and Atlantic Boulevard, the posted speed limit is 35 miles per hour. The review of the existing traffic conditions also included identification of the Average Annual Daily Traffic (AADT) reported by the FDOT along the study area. Figure 6 also displays the AADT along the corridor. The AADT within the study area ranges from 28,000 vehicles a day to 41,000. The average for the existing traffic volume is highest at the intersection of JTB and Philips Highway followed by the Southside Boulevard and I-95 interchange area around the Avenues Mall.

OPPORTUNITIES

Based on the review of other plans and studies, as well as the existing conditions along the corridor, opportunities exist to enhance the safety and mobility conditions for the Philips Highway corridor. With the implementation of the Southeast BRT First Coast Flyer service and the resurfacing projects highlighted in the FDOT Five-Year Work Program there may be some agency coordination opportunities to complete the network of sidewalks and bicycle lanes along the corridor. Furthermore, the Transit Enhancements component of the JTAMobilityWorks Program also provides opportunities to improve the accessibility to the transit stops along the corridor which are currently not compliant with Americans with Disabilities Act (ADA) standards. Analysis conducted via the Transit Enhancement component will determine transit shelter needs along Philips Highway within the study area.

Other opportunities for safety and mobility enhancement include improvements to major intersections. Specifically, the concepts and alternative solutions will focus on: crosswalks, LED pedestrian signage, right turn design, and signal location improvements. Additionally, sidewalk connectivity and mid-block pedestrian enhancements also provide the greatest opportunities for corridor safety and mobility. The collection of photos below (Figure 8) exhibits the existing conditions and typical locations for these enhancement opportunities.

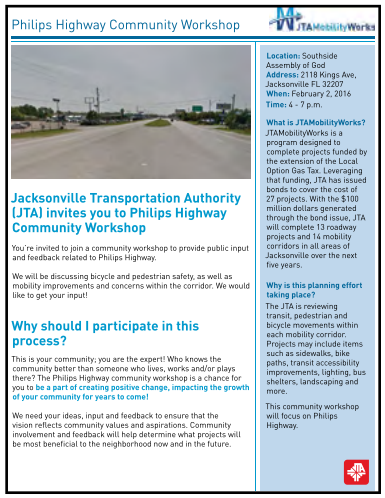
FIGURE 8: PHOTOS OF EXISTING CONDITIONS ALONG PHILIPS HIGHWAY CORRIDOR



2: PROCESS

OUTREACH

The outreach efforts for the Philips Highway corridor included reaching out to local businesses and residences within the study area. Outreach also included contacting the District 3 Southeast Community Planning Advisory Council (CPAC), the adjacent District 1 and 2 CPACs, and some of the neighborhood associations along the corridor to spread the word within the community. Additionally, the Philips Highway Community Workshop was advertised through flyer mailouts to property owners within 300 feet of the corridor and in the newspaper and JTA's website.


Philips Highway Community Workshop

JTAMobilityWorks

Location: Southside Assembly of God
Address: 2118 Kings Ave, Jacksonville FL 32207
When: February 2, 2016
Time: 4 - 7 p.m.

What is JTAMobilityWorks?
JTAMobilityWorks is a program designed to complete projects funded by the extension of the Local Option Gas Tax. Leveraging that funding, JTA has issued bonds to cover the cost of 27 projects. With the $100 million dollars generated through the bond issue, JTA will complete 13 roadway projects and 14 mobility corridors in all areas of Jacksonville over the next five years.

Why is this planning effort taking place?
The JTA is reviewing transit, pedestrian and bicycle movements within each mobility corridor. Projects may include items such as sidewalks, bike paths, transit accessibility improvements, lighting, bus shelters, landscaping and more.

This community workshop will focus on Philips Highway.

Jacksonville Transportation Authority (JTA) invites you to Philips Highway Community Workshop

You're invited to join a community workshop to provide public input and feedback related to Philips Highway.

We will be discussing bicycle and pedestrian safety, as well as mobility improvements and concerns within the corridor. We would like to get your input!

Why should I participate in this process?

This is your community; you are the expert! Who knows the community better than someone who lives, works and/or plays there? The Philips Highway community workshop is a chance for you to be a part of creating positive change, impacting the growth of your community for years to come!

We need your ideas, input and feedback to ensure that the vision reflects community values and aspirations. Community involvement and feedback will help determine what projects will be most beneficial to the neighborhood now and in the future.

PHILIPS HIGHWAY OUTREACH FLYER

COMMUNITY WORKSHOP

The Philips Highway Community Workshop was held on February 2, 2016 from 4-7 p.m. at the Southside Assembly of God. Three full size exhibits (1"=1000') of the corridor along with six major intersection exhibits (1"=200') were displayed on tripods. The major intersections included:

- Southside Boulevard;
- Baymeadows Boulevard;
- J. Turner Butler Boulevard;
- University Boulevard;
- Emerson Street;
- Atlantic Boulevard.


PHILIPS HIGHWAY WORKSHOP PUBLIC INPUT

Furthermore roll plot exhibits (1"=200') were displayed on tables and spanned the entire corridor in six different panel exhibits. Additional tripods included flip charts to accommodate post-it notes with comments from the attendees. The public was encouraged to complete and submit comment forms at the meeting or send to the JTA via e-mail.



PHILIPS HIGHWAY WORKSHOP PRESENTATION

A formal presentation began shortly before 5:30 p.m. and continued to 6:30 p.m. The presentation addressed the purpose of the JTAMobilityWorks Program and the Complete Streets initiative followed by an analysis of the corridor characteristics, possible sidewalk segments, challenges to accommodating sidewalks, and methods of enhancing pedestrian and bicyclist safety. The presentation included identification of key hotspots and issues related to pedestrian, bicyclists, and transit user environment.


PHILIPS HIGHWAY WORKSHOP PUBLIC INPUT

COMMUNITY FEEDBACK/KEY ISSUES

The workshop process built upon the review of existing conditions, previous plans, initiatives, and the vision for the Philips Highway corridor in identifying what businesses and residents in the area want to see happen along the corridor. The meeting highlighted areas along the corridor that would benefit from mobility and safety improvements. The key pedestrian enhancement areas and intersections include:

- The Walmart south of Emerson Street before University Boulevard;
- JTB and Philips intersection;
- Baymeadows and Philips intersection; and,
- Avenues Mall area at Southside Boulevard.

Bicyclists also voiced that the I-95 interchange at Philips near the Avenues Mall was dangerous since there is no crossing marked for bicyclists. The public also commented on landscaping and aesthetics along the corridor in regards to possible median improvements. The major intersections along the corridor along with number of incidents in the past year were raised as concerns by the public in attendance and were identified as key issues to be addressed.



PHILIPS HIGHWAY WORKSHOP PUBLIC INPUT



PHILIPS HIGHWAY WORKSHOP PRESENTATION



PHILIPS HIGHWAY WORKSHOP PUBLIC INPUT

3: CONCEPTS

The potential design concepts for the Philips Highway corridor were identified based on input received from the community meeting, field review of existing conditions and to identify "quick fix" improvements along the corridor that enhance safety and mobility. The overall vision for the corridor remained similar to the recommendations and outcomes from the US 1 Corridor and the Southeast Vision Plan. The design concepts and alternative solutions identified for Philips Highway include: Mid-block pedestrian enhancements; major intersection improvements; sidewalk connectivity; and lighting enhancements and median landscaping.

Mid-Block Pedestrian Enhancements

Based on the review of crash data along the corridor and field observations it was identified that mid-block pedestrian enhancements could be completed along certain high traffic areas to increase pedestrian and bicyclist safety. One of the locations identified for a signalized mid-block crossing was at the Walmart south of Emerson Street and Philips Highway intersection. Multiple pedestrian, bicycle, and vehicular crashes were identified in the area including a pedestrian fatality within the past month. Additionally, pedestrians and bicyclists were observed crossing Philips Highway mid-block at the Walmart as opposed to the signal. Figure 9 illustrates the existing conditions and a proposed design for a signalized mid-block crossing.

Major Intersection Improvements

The University Boulevard and Bowden Road intersections at Philips Highway were identified as major challenges and issue areas for transit users, pedestrians, and bicyclists. The plans for the Southeast First Coast Flyer BRT corridor include potential transit super stop at the intersection of Philips, University and Bowden. This further emphasizes the need to identify and develop design concepts that enhance safety and mobility at these major intersections. Transit shelter improvements along with sidewalks enhancements would help the existing conditions. Furthermore, many of the major intersections along the corridor have missing crosswalks, which need to be striped and some of the existing crosswalks also require restriping (outlined further in Chapter 4: Recommendations).

FIGURE 9: PROPOSED SIGNALIZED MID-BLOCK CROSSING CONCEPTUAL RENDERING















PHILIPS HIGHWAY MAJOR INTERSECTIONS

Sidewalk Connectivity

Sidewalk connectivity is also a major challenge along the southern portion of the Philips Highway corridor. The interstate creates a major barrier to pedestrian mobility. Thus, pedestrian improvements including sidewalks and appropriate crosswalk design at the interstate ramps is critical. There is intermittent sidewalk between University Boulevard and Southside Boulevard; however, it does not connect transit users, pedestrians, and bicyclists to retail and or commercial centers. Sidewalk exists sporadically in front of various retail and service plazas. Figures 10 through 12 identify the gaps within the sidewalk network and emphasize the importance of connecting sidewalk to transit stops; specifically as the plans for the Southeast First Coast Flyer BRT corridor project design plans are finalized.

The areas of emphasis for adding sidewalk connectivity include:

- University Blvd. to Butler Blvd. – connecting future BRT stations with retail and commercial centers (Figure 10)
- Butler Blvd. to Baymeadows Rd. – connecting residences and retail commercial center to existing local bus stops as well as future BRT stations at Baymeadows Rd. (Figure 11)
- Baymeadows Rd. to Southside Blvd. – connecting transit users and pedestrians to the Avenues Mall, Regal movie theater, and other retail commercial service centers along the corridor. (Figure 12)

The photos below depict the typical existing conditions for transit stations and intermittent sidewalk along the southern portion of the corridor. These conditions are present from University Boulevard to Southside Boulevard.



TRANSIT STOP SIDEWALK CONNECTIVITY ISSUES

FIGURE 10: SIDEWALK CONNECTIVITY - UNIVERSITY BOULEVARD TO BUTLER BOULEVARD

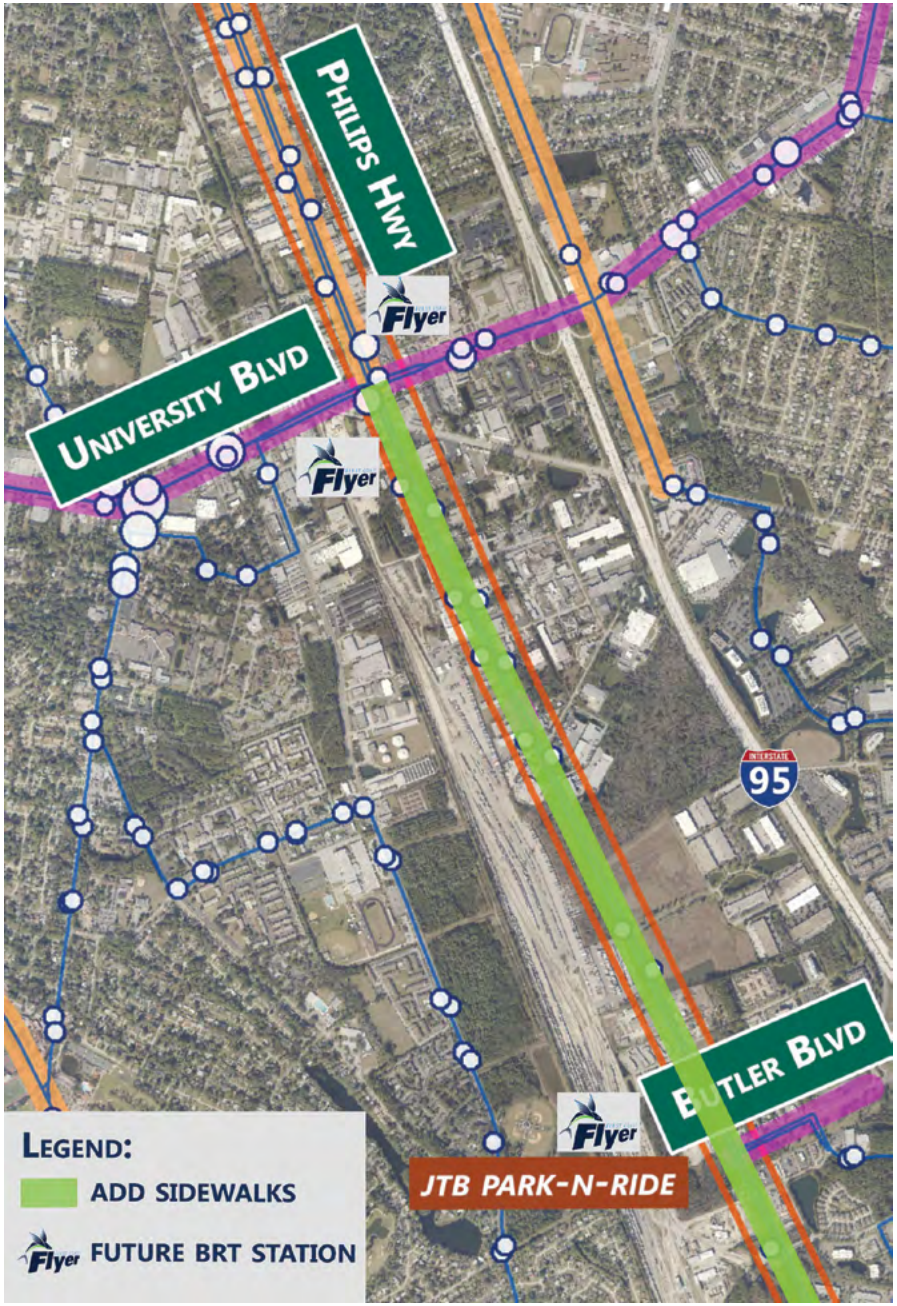


FIGURE 11: SIDEWALK CONNECTIVITY - BUTLER BOULEVARD TO BAYMEADOWS ROAD

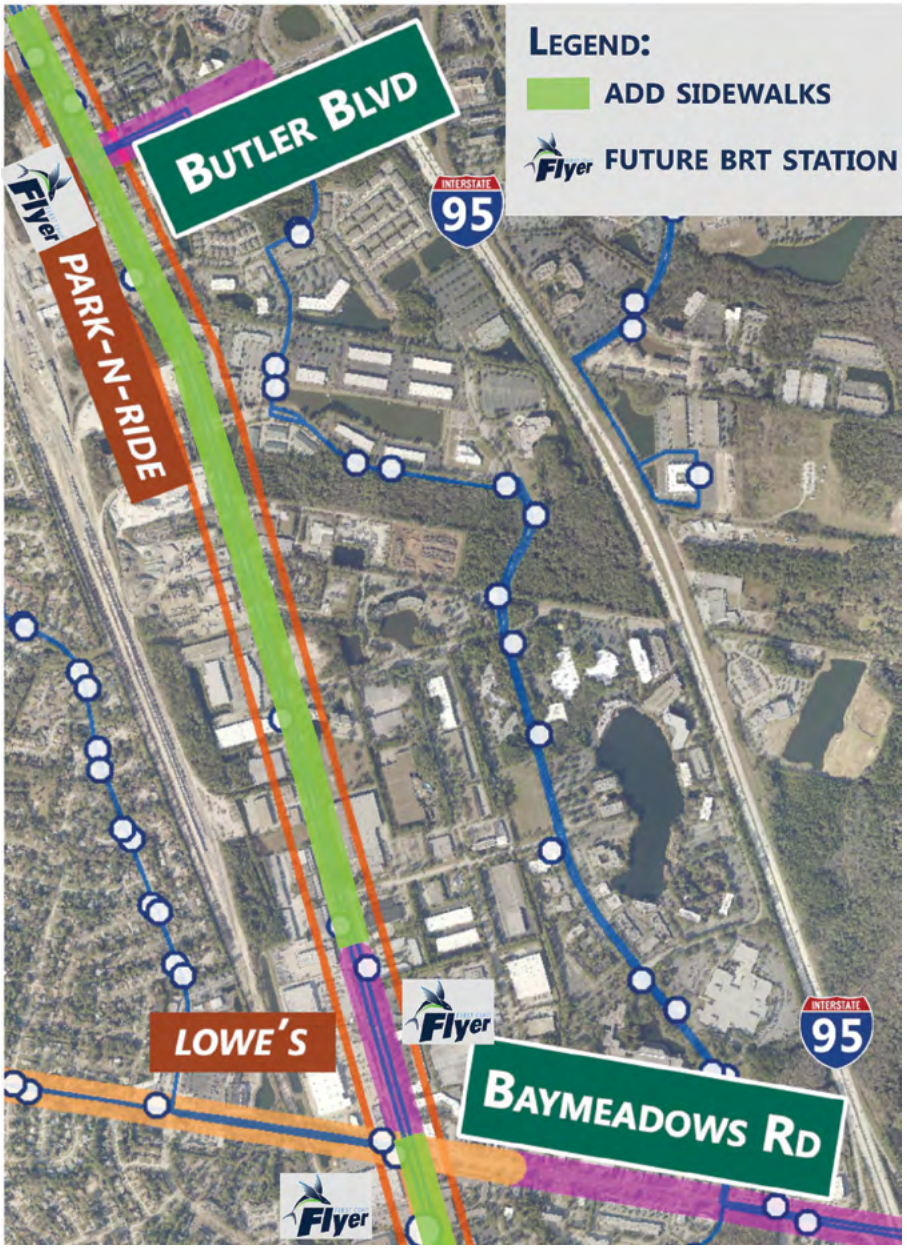


FIGURE 12: SIDEWALK CONNECTIVITY - BAYMEADOWS ROAD TO SOUTHSIDE BOULEVARD



Lighting Enhancements and Median Landscaping

Based on the community meeting input received, concerns were raised regarding inadequate lighting conditions. Specifically around the local bus stops and major activity centers. Additionally, the input received suggested that median landscaping enhancements could also help with aesthetics and would enhance the pedestrian environment. Currently, the median landscaping begins South of Kings Avenue and Atlantic Boulevard and stops South of Emerson Street approaching the high activity center at Walmart. Photos below show the existing landscaping conditions South of Atlantic Boulevard compared to the median South of Emerson Street in front of the Walmart. In regards to the lighting condition, further lighting survey analysis needs to be conducted to determine the exact locations that would benefit from lighting improvements.



PHILIPS HIGHWAY EXISTING LIGHTING CONDITIONS



PHILIPS HIGHWAY EXISTING MEDIAN CONDITIONS



PHILIPS HIGHWAY EXISTING MEDIAN CONDITIONS

Bicycle Lane Crossings

Bicycle lanes are marked from Atlantic Boulevard South to Bowden Road and from Baymeadows Road South to Southside Boulevard. Bicycle lanes added as part of the recent resurfacing project from Atlantic Boulevard to Bowden Road have markings as well as lane crossings for all major intersections. The major concern area for bicycle lane crossings was identified along the southern section of the corridor at the Philips and I-95 interchange. There are no bicycle lane crossings to help bicyclists cross the I-95 on and off ramps. Figure 13 below shows the location along Philips Highway at the on-ramps and off-ramps of I-95 that need bicycle lane crossings and continued bicycle lane markings as opposed to an observed shoulder.

FIGURE 13: PROPOSED BICYCLE CROSSING MARKINGS



4: RECOMMENDATIONS

The recommendations for the Philips Highway corridor are outlined in three categories: **Keystone Projects, Operational/Safety Enhancements, and Long-Term Vision.** The recommended projects for Philips Highway are summarized below.

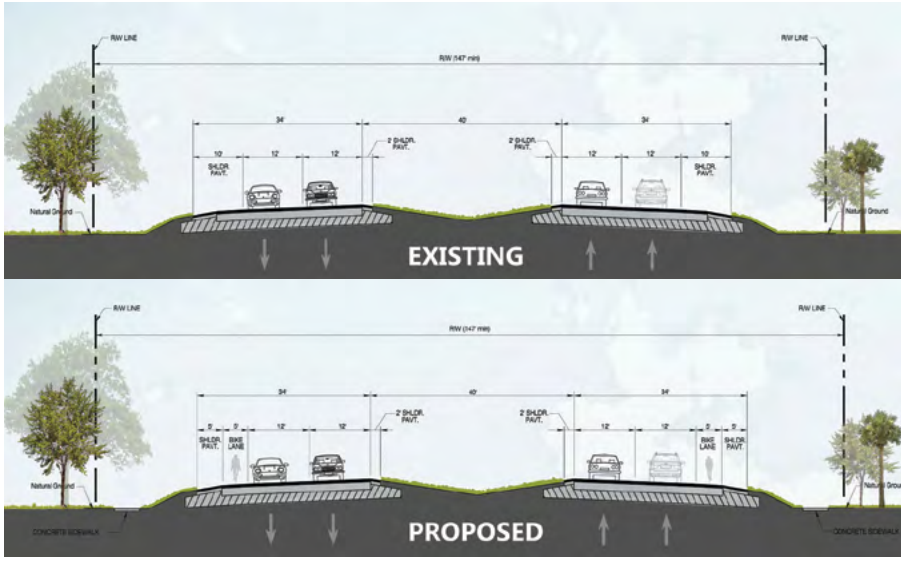
KEYSTONE PROJECTS

The major keystone projects identified for Philips Highway include:

- **Intersection improvements** at University Boulevard and Bowden Road
- Add **bicycle lanes** from Baymeadows Road to Bowden Road.

The University Boulevard and Bowden Road intersections were selected because of the identified potential transit superstop for the First Coast Flyer BRT route along Philips Highway. In order to improve the bicycle infrastructure, the long-term vision for Philips Highway includes connecting the existing bicycle lanes from Bowden Road South to the existing bicycle lanes South of Baymeadows Road. Figure 14 illustrates the existing typical sections for the segment between Bowden Road and Baymeadows Road compared with a potential typical sections that includes bicycle lanes and sidewalks.

FIGURE 14: EXISTING/PROPOSED TYPICAL SECTIONS FROM BOWDEN ROAD TO BAYMEADOWS ROAD



OPERATIONAL/SAFETY ENHANCEMENTS

The operational and safety improvements for Philips Highway include corridor wide enhanced lighting around transit stops. The "quick fix" operational and safety projects identified also include the following:

- Enhance lighting around transit stops along the entire corridor
- Add bicycle lane crossings at I-95 and Southside Boulevard
- Add sidewalks along southern portion of the corridor from Southside Boulevard to Bowden Road; specifically to connect to transit stops; (Route 7A from Avenues Mall north to University Boulevard/Bowden Road) - This would provide connection to the following sidewalk gaps:
  - Southside Boulevard to I-95 Interchange ramps (east and west sides);
  - I-95 interchange to Baymeadows Road (east and west sides);
  - Baymeadows Road to BJ's Wholesale Club (east side only); and,
  - North of BJ's Wholesale Club to Bowden Road (east and west sides).
- Restriping and add crosswalks for all major intersections along the corridor. Striping of crosswalks and re-striping was identified for the following intersections:
  - Southside Boulevard (all sides);
  - Shad Road (all Sides);
  - Sunbeam Road (north and east sides of intersection);
  - Butler Boulevard (south and west sides of intersection); and,
  - Bowden Road (north and west sides of intersection)
- Add signalized mid-block crossing at Walmart south of Emerson St. and improve intersection before the Walmart

The mid-block crossing recommendation at the Walmart south of Emerson Street is provided as three different alternatives (Figure 15-17). These include: a mid-block crossing alternative, a passive median refuge, and a median barrier alternative. The crossing would be approximately 375 feet south of the existing intersection and provides a direct connection to the transit. The three alternatives would all provide a solution to enhancing safety for this area. Numerous incidents have occurred in the vicinity of the Walmart due to the high activity levels and therefore one of the above alternatives should be studied further to determine the best solution. The mid-block crossing alternative would provide a safe and direct connection to the existing northbound stop in front of the lodge.

FIGURE 15: PROPOSED SIGNALIZED MID-BLOCK CROSSING CONCEPTUAL RENDERING



FIGURE 16: PROPOSED PASSIVE MEDIAN REFUGE CONCEPTUAL RENDERING



FIGURE 17: PROPOSED MEDIAN BARRIER CONCEPTUAL RENDERING



LONG-TERM VISION

The long-term vision projects for Philips Highway revolve around the First Coast Flyer BRT Southeast route. The Avenues Walk and JTB Park-n-Ride facilities could be developed as major transit hubs along with transit superstop enhancements for Unviersity-Bowden-Philips intersection. Median landscaping and lighting aesthetic improvements along the entire corridor are also a long term vision for Philips Highway; specifically, to continue the existing median landscaping environment from Emerson Street South towards University Boulevard, Butler Boulevard, Baymeadows Road and Southside Boulevard.

UNIVERSITY BOULEVARD SOUTH

EXECUTIVE SUMMARY

As part of the JTAMobilityWorks Complete Streets program, a study of the University Boulevard (SR 109) corridor was conducted. The southern portion of University Boulevard studied is approximately 5.6 miles long, and extends from Old St. Augustine Road north to the Arlington Expressway (SR 115). The corridor connects the Arlington area with other major transportation corridors including Atlantic Boulevard, Beach Boulevard, I-95 and Philips Highway (US 1).

The physical landscape along the corridor is diverse with residential features mixed with often intense commercial uses at the major intersection; and industrial uses at the southern terminus of the corridor, near the crossing of US 1 and Powers Ave. Other key features include an expanding medical district near Beach Boulevard, where Memorial Hospital of Jacksonville and Brooks Rehabilitation Hospital are located.

University Boulevard serves as a major transit corridor with four JTA bus routes serving various segments of the corridor, with some of the highest transit ridership occurring at St. Augustine Road and at Beach Boulevard where customers typically make transfers.

The project team conducted extensive field reviews, including walking along the corridor to examine the roadway features from multiple perspectives and to get a sense of the challenges faced by people who frequently use the corridor. To supplement the field observations and to better understand the issues and concerns of the community, a multi-day charrette, with an open house format, was held November 16 – 18, 2015 at Virginia College, adjacent to the intersection of University Boulevard and Beach Boulevard, where members of the community gathered to look at maps and data for the corridor.

Key themes based on observations and concerns expressed by the community are primarily related to the high transit ridership along the corridor, and the need for more transit shelters, as well as, more customer amenities, such as transit wayfinding and safer pedestrian access. Some of the transit stops along the corridor experience a high number of passenger transfers, often requiring passengers to quickly cross the busy road to access their connection.

There are minimal bicycle facilities along or adjacent to this corridor, requiring bicyclists to use the sidewalks. There are also a high number of pedestrians crossing mid-block, placing themselves in unsafe conditions along the congested corridor. There are several regular transit riders who are mobility impaired who experience challenges with crossing the road in a timely manner. Due to the presence of the medial facilities, there is also high use of emergency vehicles along the corridor which further complicates the mobility when combined with high transit use and vehicular traffic.

As a result, enhanced safety for pedestrians and transit customers were common themes. Addressing transit shelter capacity and accessibility, installing midblock crossings with pedestrian refuge islands, implementing high visibility crosswalks with enhanced signage at major intersections, and providing better lighting are highlighted as key recommendations to improve safety and mobility along this corridor.

In addition to operational and safety enhancements to add several mid-block crossings and enhance crosswalks at approximately six intersections, and improve right turn channelization at four intersections, the following keystone improvements are recommended.

- Create a “transit super stop” in the vicinity of University Boulevard and Beach Boulevard, potentially adjacent to Virginia College complex.
- Enhancing passenger wayfinding and pedestrian accessibility to the transit super stop.
- Installing median enhancements in vicinity of Memorial Hospital to create a sense of place oriented toward the medical arts.

In the long term, in addition to monitoring transit amenity needs due to the continuation of high transit use along the corridor, addressing bicycle use along the corridor is recommended, specifically, the installation of bicycle lanes for the Clifton Avenue to Arlington Expressway section of University Boulevard.

1: CONTEXT

The University Boulevard corridor between St. Augustine Road and Arlington Expressway was reviewed as part of the JTAMobilityWorks Complete Streets Program. This corridor was selected due to significant transit ridership and concerns relative to pedestrian and bicyclist safety. This corridor was evaluated by a multidisciplinary team and included a review of available travel demand, land use, crash data, and previously completed planning studies and engineering plans. University Boulevard is an arterial roadway with two or three thru lanes in each direction typically with a two-way left turn lane and only limited sections with a raised median. Sidewalks exist along both sides of University Boulevard between St. Augustine Road and the Arlington River Bridge. Sidewalks exist on one side of University Boulevard between the Arlington River Bridge and Grove Avenue. There are no bicycle specific facilities on University Boulevard with the exception of the newly constructed bridge north of Cesery Boulevard.

EXISTING CONDITIONS

The limits for this corridor study of SR 109/University Boulevard includes the area between St. Augustine Road to the south and Arlington Expressway to the north. Figure 1 identifies the location of the corridor with an identification of typical land uses within the study area. The land uses within the corridor include multiple sections with conditions favorable for increased pedestrian and transit activity including areas near Philips Highway, Beach Boulevard, and Atlantic Boulevard. Figure 2 highlights the diversity of land use along the corridor which highlights the potential locations for increased pedestrian and transit activities. The land uses south of SR 228/Commodore Point Expressway are characterized by commercial land uses fronting the roadway with residential areas behind the commercial uses. Activity centers include commercial nodes near Beney Road, Beach Boulevard, and Atlantic Boulevard. Memorial Hospital Jacksonville and Brooks Rehabilitation Hospital form the core of a medical district south of Beach Boulevard and represent the largest activity center along the corridor. There is also a concentration of industrial land uses along Powers Avenue and Phillips Highway at University Boulevard. North of SR 228/Commodore Point Expressway the corridor is characterized by primarily residential land uses.

FIGURE 1: CORRIDOR CONTEXT - LAND USES

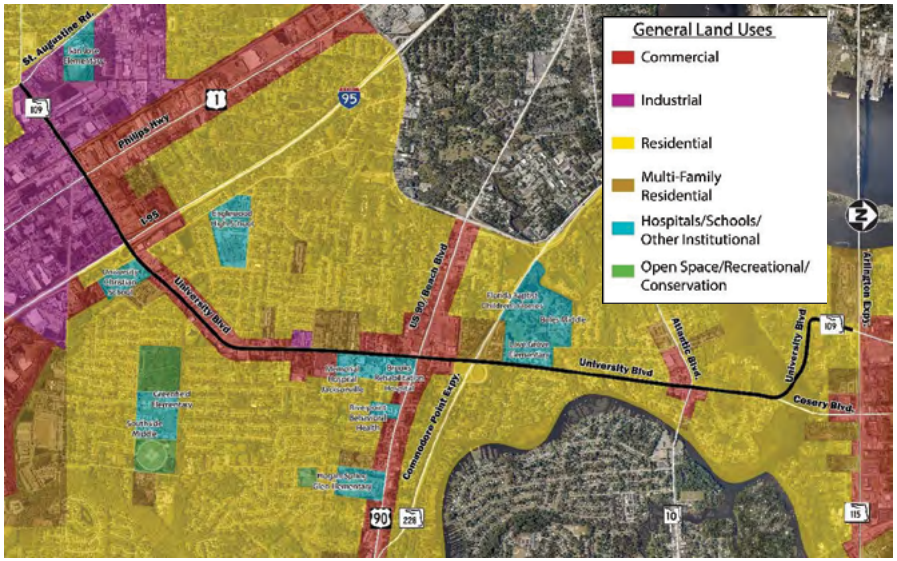
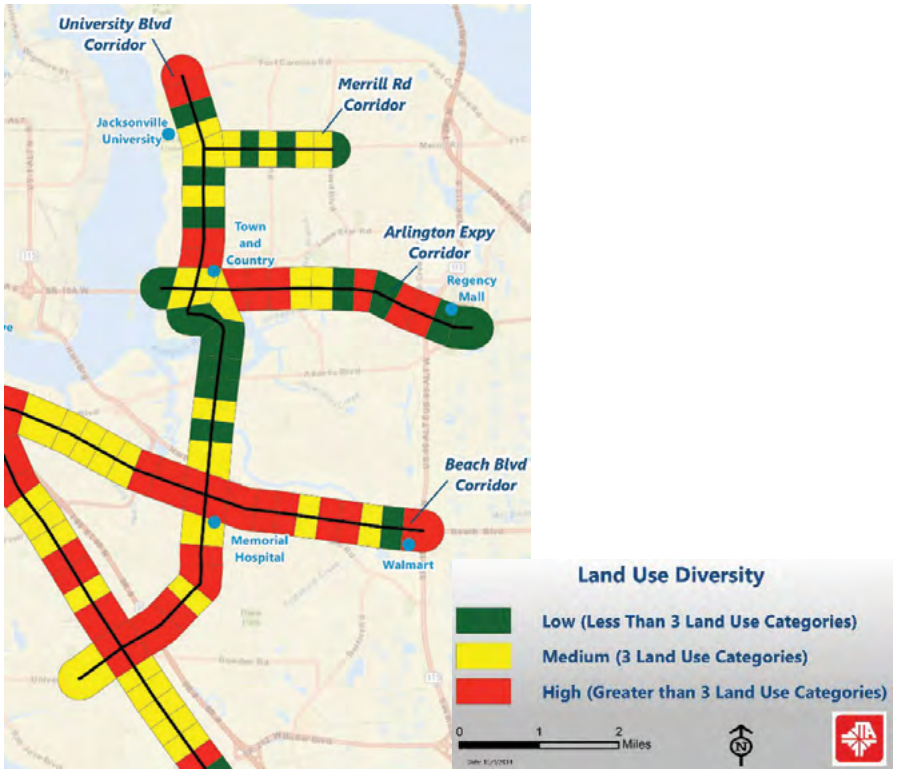


FIGURE 2: CORRIDOR CONTEXT - LAND USE DIVERSITY



Crash data from 2009 to 2013 was analyzed to identify locations meriting potential safety improvements. Figure 3 and Figure 4 identify the locations of vehicle crashes and crashes that involved bicycles or pedestrians that occurred on the study corridor. Bicycle and pedestrian crashes occur throughout the corridor with the highest concentration between Philips Highway and Beach Boulevard. Motor vehicle crashes are more concentrated at the signalized intersections which is typical for an arterial roadway such as University Boulevard. There is a relatively high level of crashes between signalized intersections likely due to the lack of a raised median within many sections of the corridor.

University Boulevard is primarily served by JTA local bus route 50. JTA local bus routes 33, 17, and 7 provide service to the southern portion of the corridor between St. Augustine Road and Terry Road.

FIGURE 3: CORRIDOR CONTEXT - VEHICLE CRASHES

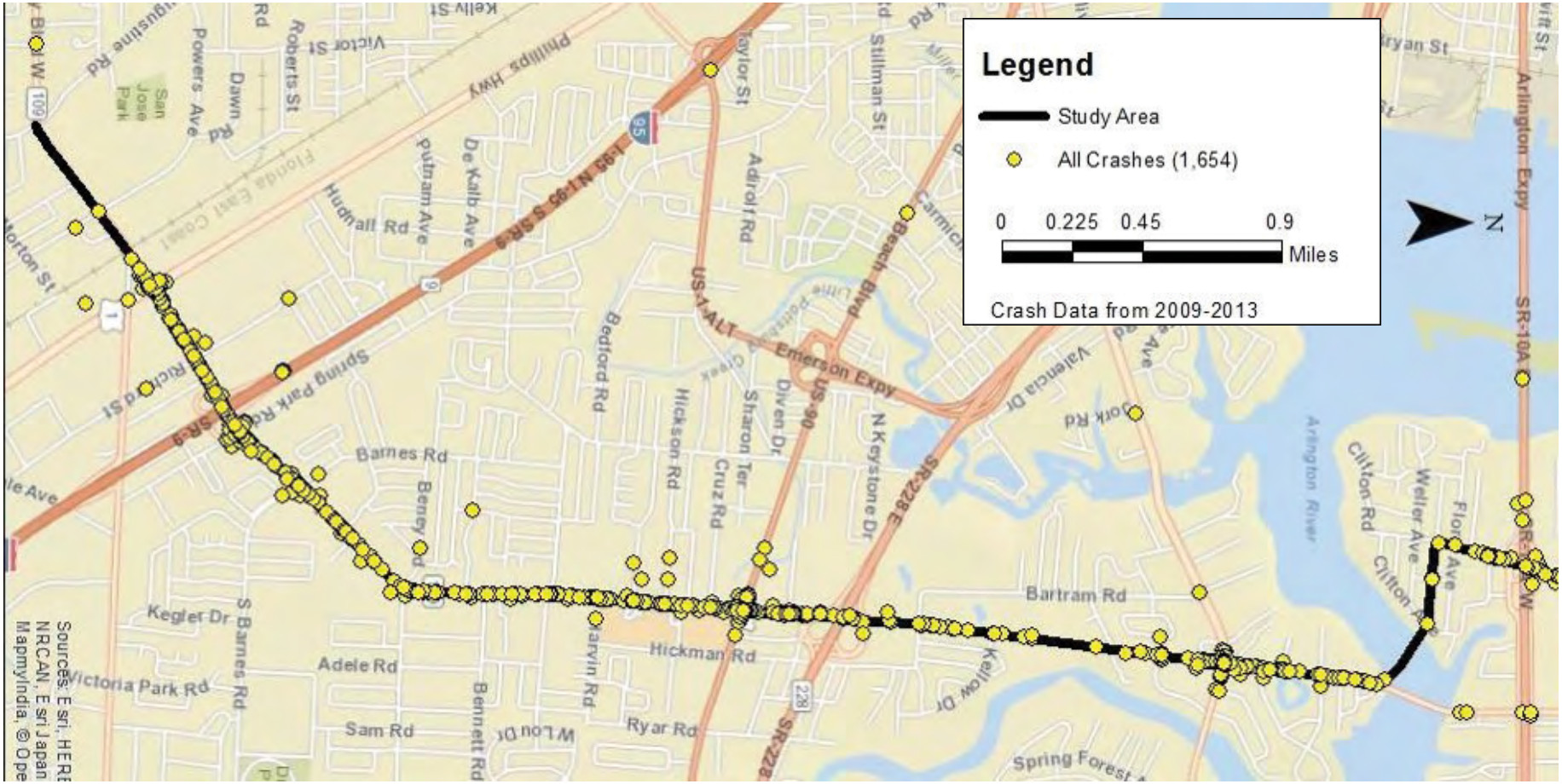
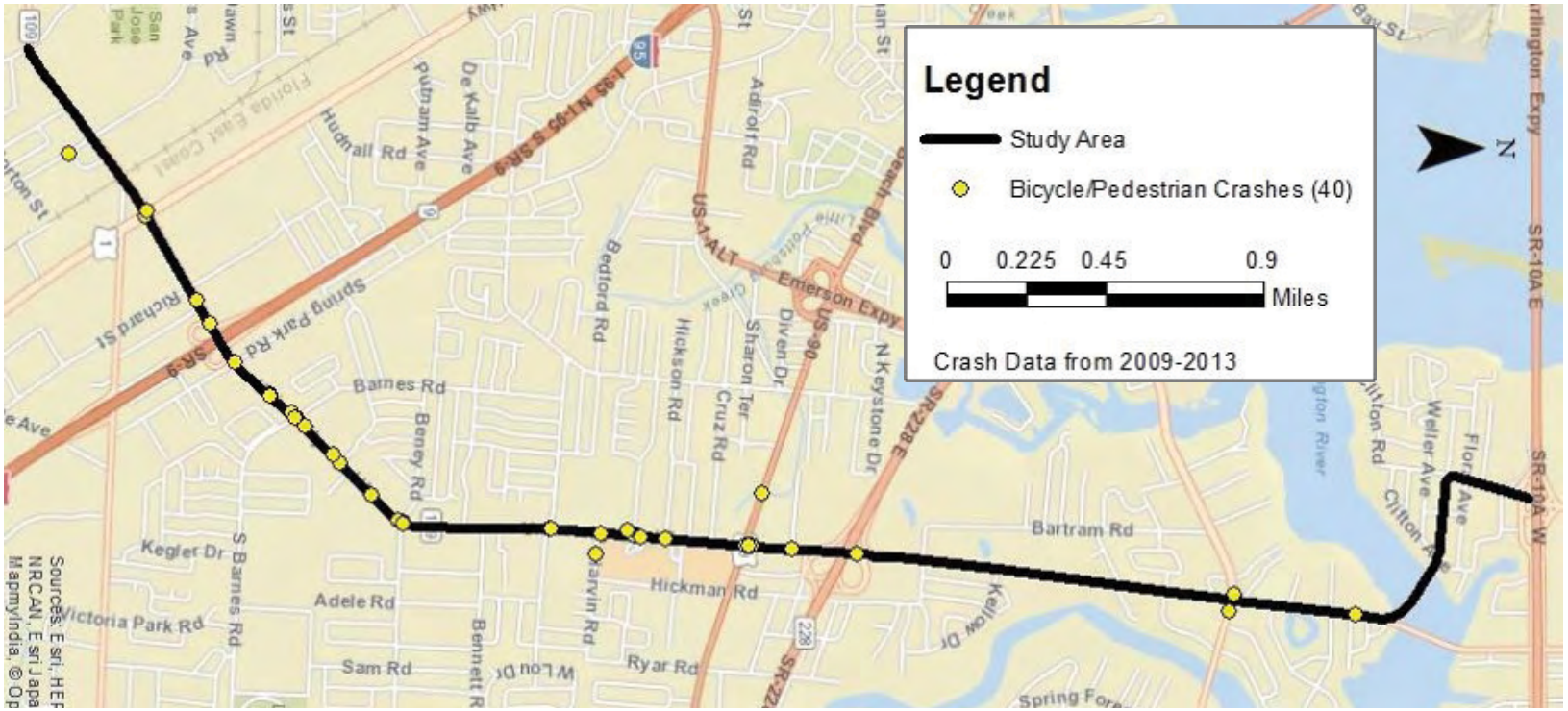


FIGURE 4: CORRIDOR CONTEXT - BICYCLE/PEDESTRIAN CRASHES



For this study, the corridor was divided into four sections as identified in Figure 5. Section 1 includes the area between St. Augustine Road and Spring Park Road. The section is characterized by high vehicle volumes shown in Figure 6 and transit ridership shown in Figure 7. Transit ridership is especially high at the St. Augustine Road bus stops as these are transfer locations between transit lines. Stop 1401 has the highest transit ridership observed on the corridor (148 riders per day).

Truck volumes are particularly high on this section between I-95 and Philips Highway as trucks travel between Interstate 95 and the industrial land uses concentrated on Philips Highway. The typical cross section, illustrated in Figure 8, is six lanes with a two-way continuous left turn lane. However, south of Powers Avenue the typical cross section changes to four lanes with a two-way continuous left turn lane.

FIGURE 5: UNIVERSITY BOULEVARD CORRIDOR LIMITS



FIGURE 6: SECTION 1 EXISTING CONDITIONS - TRAFFIC DATA



FIGURE 7: SECTION 1 EXISTING CONDITIONS - RIDERSHIP DATA

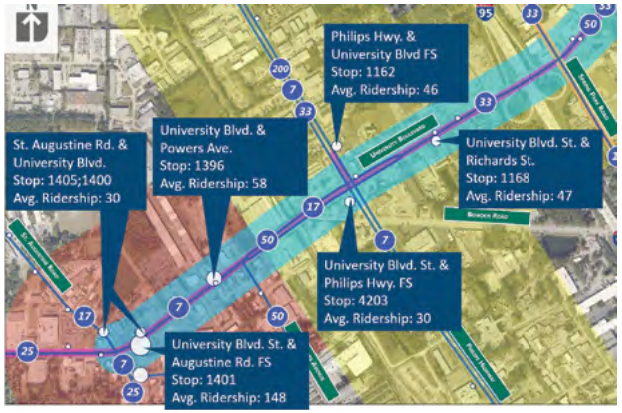


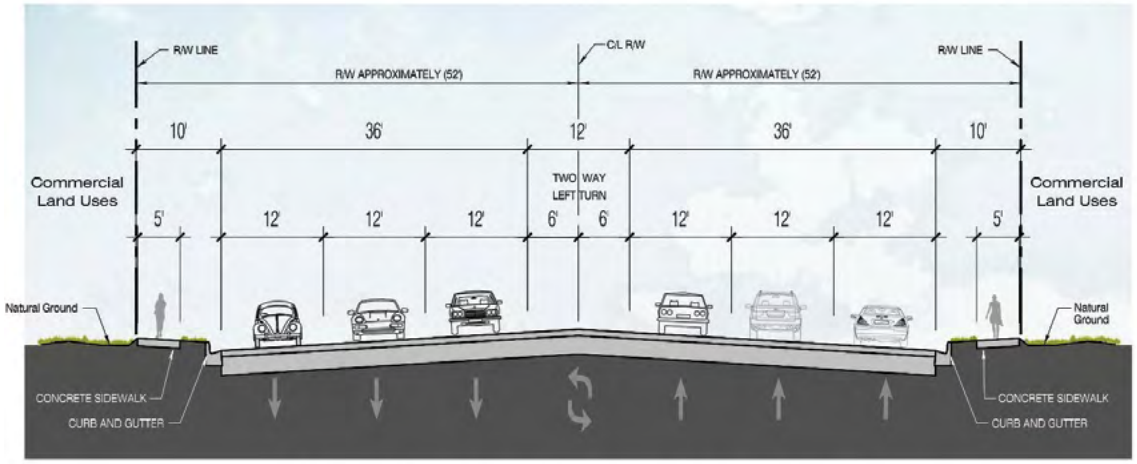
FIGURE 9: SECTION 2 EXISTING CONDITIONS - TRAFFIC DATA





FIGURE 6A: LEGEND FOR UNIVERSITY BOULEVARD CORRIDOR SEGMENT FIGURES 6, 7 & 9

FIGURE 8: SECTION 1 - TYPICAL CROSS SECTIONS



PHILIPS HWY TO I-95 @ RICHARD ST.

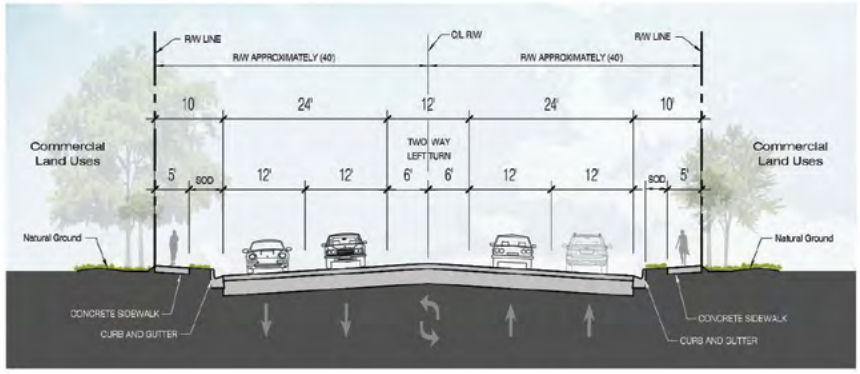
R/W = 104' (3 LANES EACH DIRECTION; MIDDLE TURN LANE; SIDEWALK EACH SIDE)

The limits of Section 2 are Spring Park Road to the south and Booth Road to the north. Vehicle volumes on this section range between 31,000 and 41,000 vehicles per day with heavier volumes on the southern portion near I-95 as seen in Figure 9. Transit ridership, as shown in Figure 10, is moderate on this section due to the lack of major attractions and transfer locations. The typical cross section, illustrated in Figure 11, is four lanes with a continuous left turn lane.

FIGURE 10: SECTION 2 EXISTING CONDITIONS - RIDERSHIP DATA



FIGURE 11: SECTION 2 - TYPICAL CROSS SECTIONS



SOUTH OF BENNETT

R/W = 80' (2 LANES EACH DIRECTION; MIDDLE TURN LANE; SIDEWALK EACH SIDE)

Section 3 includes the area between Booth Road and Kellow Drive. The Arlington Expressway acts as a divider between the commercialized portion of the corridor and the residential area. As documented in Figure 12, the traffic volumes south of the Arlington Expressway are similar to those seen in Section 2, while volumes north of the Expressway are lower.

Transit ridership, as shown in Figure 13, is very high at the intersection with Beach Boulevard due to high transfer volumes between bus routes. The four Beach Boulevard transit stops (0886, 0885, 1122, and 0884) are the busiest stops on the corridor, with the exception of one stop at St. Augustine Road, with 111, 98, 62, and 60 riders per day, respectively. Ridership is much lower north of Arlington Expressway. The cross section of Section 3 is the same as Section 2, four lanes with a two-way continuous turn lane. The cross section widens at Beach Boulevard to allow for additional turn lanes as seen in Figure 14.

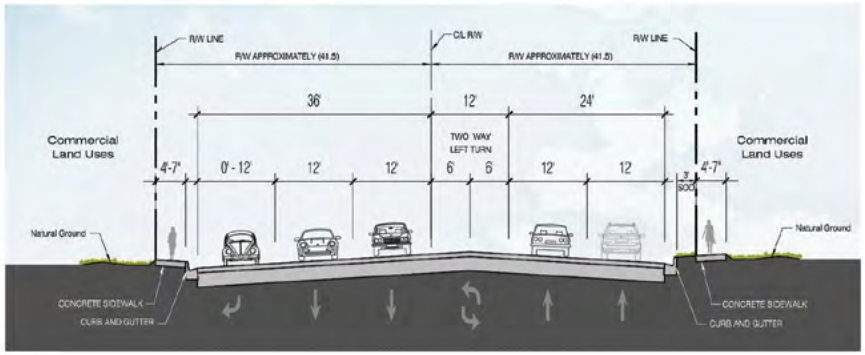
FIGURE 12: SECTION 3 EXISTING CONDITIONS - TRAFFIC DATA



FIGURE 13: SECTION 3 EXISTING CONDITIONS - RIDERSHIP DATA



FIGURE 14: SECTION 3 - TYPICAL CROSS SECTIONS



NORTH OF BEACH BLVD INTERSECTION

R/W = 83' (2 LANES EACH DIRECTION;MIDDLE TURN LANE;RIGHT TURN LANE SB SIDEWALK EACH SIDE)

Like the north part of Section 3, Section 4 is comprised mainly of residential land uses. The vehicle volumes, shown in Figure 15 are moderate on the southern portion of the section and then drop significantly after University Boulevard jogs west at the intersection with Cesery Boulevard. Transit usage, shown in Figure 16, is relatively low on this section with a transit hot spot occurring at the intersection with Atlantic Boulevard.

The cross section of the southern portion of the segment is a continuation of the four lane cross section illustrated in Figure 11. When University Boulevard turns at the intersection with Cesery Boulevard the cross section transitions to a two lane undivided cross section as illustrated in Figure 17.

FIGURE 15: SECTION 4 EXISTING CONDITIONS - TRAFFIC DATA

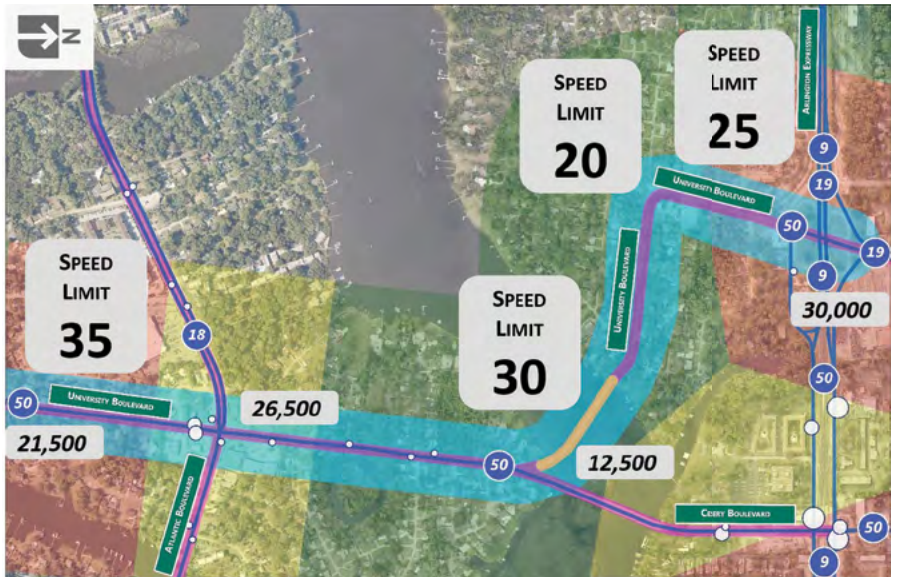


FIGURE 16: SECTION 4 EXISTING CONDITIONS - RIDERSHIP DATA

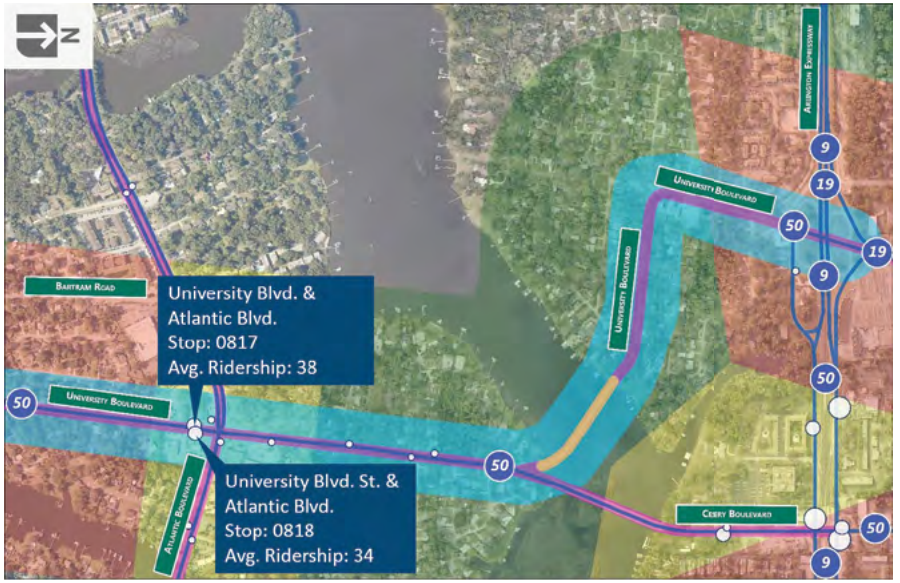
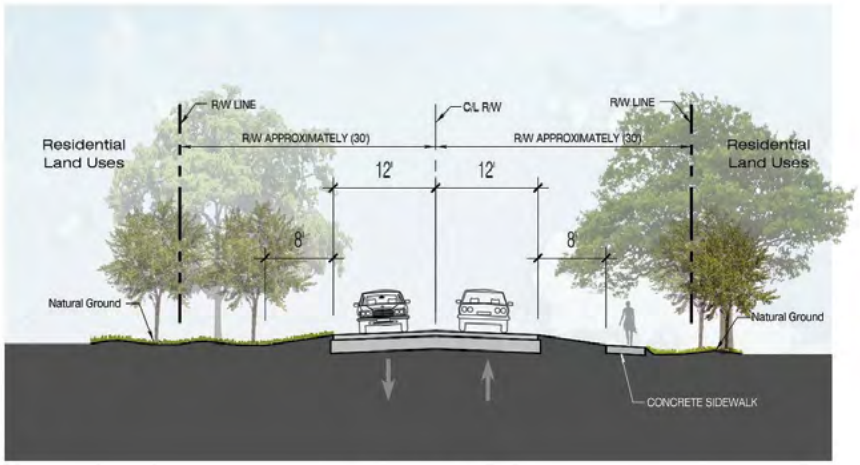


FIGURE 17: SECTION 3 - TYPICAL CROSS SECTIONS



AT HOLLY

R/W = 60' (TWO LANE ROAD; SIDEWALK ONE SIDE)

PREVIOUS PLANS AND STUDIES

There are several projects and planning initiatives which have taken place on University Boulevard prior to JTAMobilityWorks study. Projects that will begin construction in the near future include signalization upgrades at Beach Boulevard and an intersection improvement project at Atlantic Boulevard. The five year FDOT work plan, summarized in Table 1, outlines several other upcoming projects. Drainage improvements will be made between Carmel Terrace Lane and Knight's Lane starting in 2016 while intersection improvement and traffic signal update projects will begin construction on the northern portions of the corridor in 2020. Additional drainage improvements are scheduled to begin preliminary engineering and right-of-way acquisition in 2016.

TABLE 1: CORRIDOR CONTEXT - PLANNED PROJECTS

Five Year FDOT Work Program		Fiscal Year
Description	Type of Work	(Phase)
SR 109 (University Blvd.) from Carmel Terrace Ln. to Knight's Ln.	Drainage Improvements	2016 (PE) 2016 (Construction)
SR 109 (University Blvd.) from Bartram Rd. E to Cesery Blvd.	Intersection Improvements	2016 (PE) 2016 (ROW) 2017 (ROW) 2018 (ROW) 2018 (Construction) 2019 (Construction) 2020 (Construction)
SR 109 (University Blvd.) from SR 13 (San Jose Blvd.) to Cesery Blvd.	Traffic Signal Update	2016 (PE) 2016 (ROW) 2017 (ROW) 2018 (ROW) 2019 (ROW) 2020 (ROW) 2020 (Construction)
SR 109 (University Blvd.) from Spring Park Rd. & Barnes Rd. to Barnes Rd. & University Blvd.	Drainage Improvements	2016 (PE) 2016 (ROW)

NOTES: SOURCE: FDOT FIVE-YEAR WORK PROGRAM

PE = PRELIMINARY ENGINEERING

ROW = RIGHT OF WAY

The City of Jacksonville has produced planning studies, called "vision plans," for each of six sections of the city. These vision plans are created based on existing conditions, community input, and best practices in urban planning and adopted by ordinance through the City Council. The University Boulevard – South corridor spans the area of two of these vision plans: the Southeast Vision Plan (Figure 18) and the Greater Arlington/Beaches Vision Plan (Figure 19).

FIGURE 18: CORRIDOR CONTEXT - PRIOR STUDIES - SOUTHEAST VISION PLAN

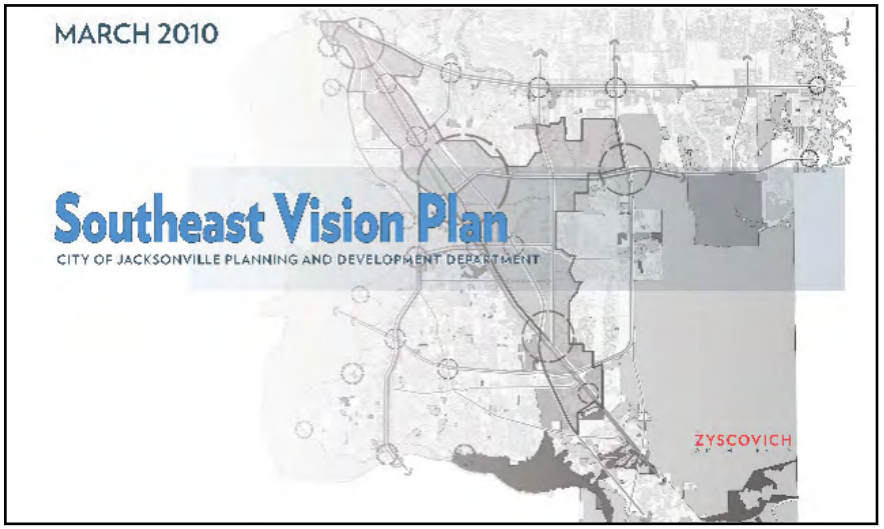


FIGURE 19: CORRIDOR CONTEXT - PRIOR STUDIES - GREATER ARLINGTON/ BEACHES VISION PLAN



CHALLENGES

The limited right-of-way available and existing traffic volumes on this corridor limits the types of improvements that are feasible without the acquisition of additional right-of-way at significant cost. Due to these roadway constraints and significant transit ridership along the corridor, transit shelter locations/capacity, transit wayfinding, hazardous mid-block crossing activities, turning vehicle conflicts, and interchange design were identified as challenges to mobility. These challenges along with additional impedements to pedestrian and bicycle mobility along the corridor are outlined in greater detail within the community feedback/input section.

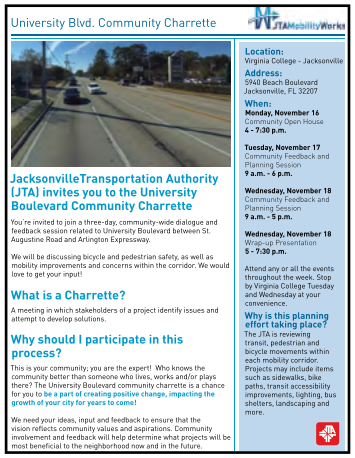
OPPORTUNITIES

This corridor represents an opportunity to quickly implement key, small scale improvements to enhance mobility, access, and safety for pedestrians and transit users. Additionally, the JTA and other local and state agencies are supportive of complete streets projects. This support creates opportunities to recommend long-term strategies that will require ongoing efforts from these parties. There are several locations along the corridor that have either a mix of land uses conducive to walking and transit modes of travel or which have significant transit boarding and alightings.

2: PROCESS

OUTREACH

The study team and the JTA outreach staff helped to coordinate communication to local stakeholders regarding this project. Outreach efforts included distributing flyers advertising dates and times that community members and stakeholders could come to discuss their concerns and priorities for the corridor. Project information was also provided on JTA's website.


University Blvd. Community Charrette

JTAMobilityWorks

Location:
Virginia College - Jacksonville

Address:
5940 Beach Boulevard
Jacksonville, FL 32207

When:
Monday, November 16
Community Open House
4 - 7:30 p.m.

Tuesday, November 17
Community Feedback and Planning Session
9 a.m. - 6 p.m.

Wednesday, November 18
Community Feedback and Planning Session
9 a.m. - 5 p.m.

Wednesday, November 18
Wrap-up Presentation
5 - 7:30 p.m.

Attend any or all the events throughout the week. Stop by Virginia College Tuesday and Wednesday at your convenience.

JacksonvilleTransportation Authority (JTA) invites you to the University Boulevard Community Charrette

You're invited to join a three-day, community-wide dialogue and feedback session related to University Boulevard between St. Augustine Road and Arlington Expressway.

We will be discussing bicycle and pedestrian safety, as well as mobility improvements and concerns within the corridor. We would love to get your input!

What is a Charrette?

A meeting in which stakeholders of a project identify issues and attempt to develop solutions.

Why should I participate in this process?

This is your community; you are the expert! Who knows the community better than someone who lives, works and/or plays there? The University Boulevard community charrette is a chance for you to be a part of creating positive change, impacting the growth of your city for years to come!

We need your ideas, input and feedback to ensure that the vision reflects community values and aspirations. Community involvement and feedback will help determine what projects will be most beneficial to the neighborhood now and in the future.

Why is this planning effort taking place?

The JTA is reviewing transit, pedestrian and bicycle movements within each mobility corridor. Projects may include items such as sidewalks, bike paths, transit accessibility improvements, lighting, bus shelters, landscaping and more.

UNIVERSITY BOULEVARD OUTREACH FLYER

CHARRETTE

The field review was a critical part of this Complete Streets project because it allowed the project designers to get a sense of the challenges faced by people who use the corridor every day. For example, Figure 20, Figure 21, and Figure 22 show a short portion of the journey of a blind woman with mobility limitations as she transfers buses at Beach Boulevard, a journey that she frequently makes.

FIGURE 20: PRE-CHARRETTE PROCESS FIELD WORK OBSERVATION



FIGURE 21: PRE-CHARRETTE PROCESS FIELD WORK OBSERVATION



FIGURE 22: PRE-CHARRETTE PROCESS FIELD WORK OBSERVATION



A design charrette was held at the study corridor in the Virginia College building at the corner of University Boulevard and Beach Boulevard from November 16th to 18th, 2015. The charrette included three days of intense, on-site work beginning on Monday afternoon with an agency presentation and kickoff meeting. An Open Studio Format from Tuesday through Wednesday functioned as an "open house" designed to gather feedback from community stakeholders. The majority of the public attendees participated in the Charrette during the open Studio Sessions. On Wednesday the design team continued the open studio session while focusing on synthesizing the existing conditions assessment and public input into design recommendations. Wednesday night served as the wrap up event with a presentation and strategy session that included an overview of the importance of a Complete Street framework and unveiled the concepts and recommendations developed over the course of the charrette.



UNIVERSITY BOULEVARD CHARRETTE PRESENTATION

COMMUNITY FEEDBACK/KEY ISSUES

The majority of the public attendees participated in the Charrette during the open Studio Sessions. Some of the key themes that emerged from the input included:

- General Transit Improvements & Comments
  - Transit shelters need more space and protective areas from the weather
  - Issues were reported on the southbound 50 Route and the ability to disembark at Phillips Highway at University
  - More transit stops were requested
  - Connections/Transfers can be problematic due to the need to cross University Boulevard or Beach Boulevard
  - Wayfinding on the bus system can be challenging
- Section 1: St. Augustine to Richard Street
  - It is difficult for pedestrians to cross Philips Highway at University Blvd
  - Better transit route connectivity further south on University, Medical Facilities (UF), etc. to support the mobility needs of local refugee populations
- Section 2: Richard Street to Terry Street
  - The interchange access to I-95 to the South is inefficient and confusing
  - The pedestrian signal actuation button in northeast quadrant of Beney Rd and University is broken
- Section 3: Terry Road to North of Beach Boulevard
  - A lot of pedestrian traffic (multiple doctor's and offices and hospital traffic)
  - Proposed expansion of Brooks Rehabilitation Hospital
  - Concerns expressed about proposed median restrictions
  - High transit ridership and pedestrian traffic
  - Closure of K-Mart has increased crime in the area
- Section 4: North of Beach Boulevard to Cesery Boulevard
  - Atlantic at University: Complaints on higher traffic and signal operations
  - If Mathews Bridge is closed, traffic increases from Arlington Expressway to Atlantic Boulevard
- Section 5: Cesery Boulevard to Arlington Expressway
  - The signage and intersection markings on the Southside of the Arlington Expressway are confusing

The following issues were identified as key issues that the design team should keep in mind when making Complete Streets recommendations for the MobilityWorks program:

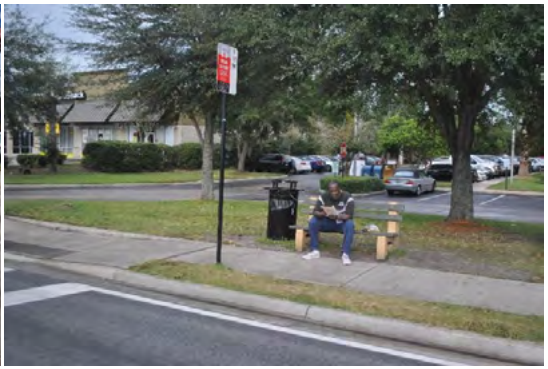
- Significant transit ridership
- Transit shelter locations and capacity/transit shelter wayfinding
- Hazardous mid-block crossing activity
- Turning vehicle conflicts and interchange designs

Significant Transit Ridership:

This corridor has a major destination, Jacksonville Memorial Hospital, in conjunction with high populations of transit dependent residents. University Boulevard also intersects several other major corridors (Beach Boulevard and Philips Highway) which are often where transit transfers take place. This issue is demonstrated in Figure 23 which shows two of the stops at the University Boulevard and Beach Boulevard intersection.

FIGURE 23: SIGNIFICANT TRANSIT RIDERSHIP





Transit Shelter Locations and Capacity:

This issue is related to the previous issue in that high ridership on this corridor due to transit transfers has created the need for safe and sheltered locations for transit users to wait for the bus to arrive. The location of several transit stops, combined with the frequency of service, volume of transit riders boarding and alighting is significantly disrupting the operations of several congested corridors. These locations also require transit riders making transfers to quickly cross one or more major intersections. This is challenging because riders must balance their safety in crossing these locations with the urgency of catching the next bus to complete their transfer. For example, the stop shown in Figure 24 is located adjacent to the congested Beach Boulevard intersection. The bus stops in the right lane of traffic which frequently constrains traffic flow. One of the intersection improvements previously identified was the addition of additional turn lanes at University Boulevard and Beach Boulevard to improve traffic operations; however the benefits of this improvement is limited by the nature of the transit operations at this location. The volume of transit rider transfers is also creating another issue in that bus stops often do not provide enough shelter for those waiting on the bus. Figure 25 shows a bus stop with dozens of people waiting for the bus with only one bench provided.

FIGURE 24: TRANSIT SHELTER LOCATIONS AND CAPACITY EXAMPLE



FIGURE 25: TRANSIT SHELTER LOCATIONS AND CAPACITY EXAMPLE



Transit Shelter Wayfinding:

It is important for transit riders to be able to plan their trip or orient themselves to the transit system using maps or other guidance provided at the stop. Figure 26 is an example where an extremely detailed system map is placed too high for an average person, much less a mobility impaired individual to be able to read and orient themselves. In some cases the transit shelters do not provide a system map (Figure 27).

FIGURE 26: TRANSIT SHELTER WAYFINDING EXAMPLE



FIGURE 27: TRANSIT SHELTER WAYFINDING EXAMPLE



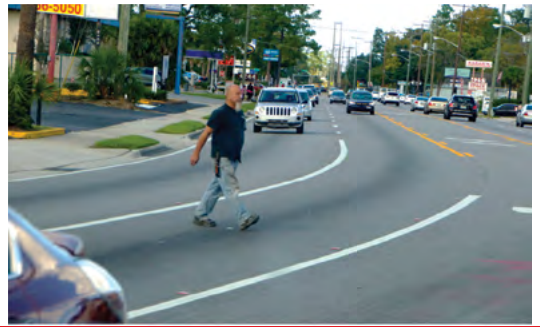
Hazardous Mid-Block Crossing Activity:

Pedestrians crossing the street at mid-block locations was the most common behavioral concern observed on the corridor. Examples of this behavior are provided in Figure 28. Mid-block crossings were observed most often at transit stop locations and in some locations where a signalized intersection is not available. Figure 29 illustrates the locations of signalized intersections and the areas of the corridor where no designated crossing location for pedestrians is provided.

FIGURE 28: HAZARDOUS MID-BLOCK CROSSINGS EXAMPLES







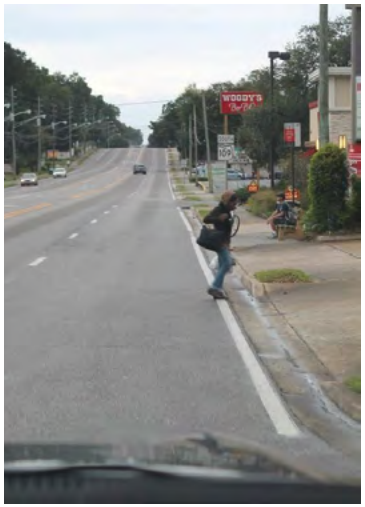
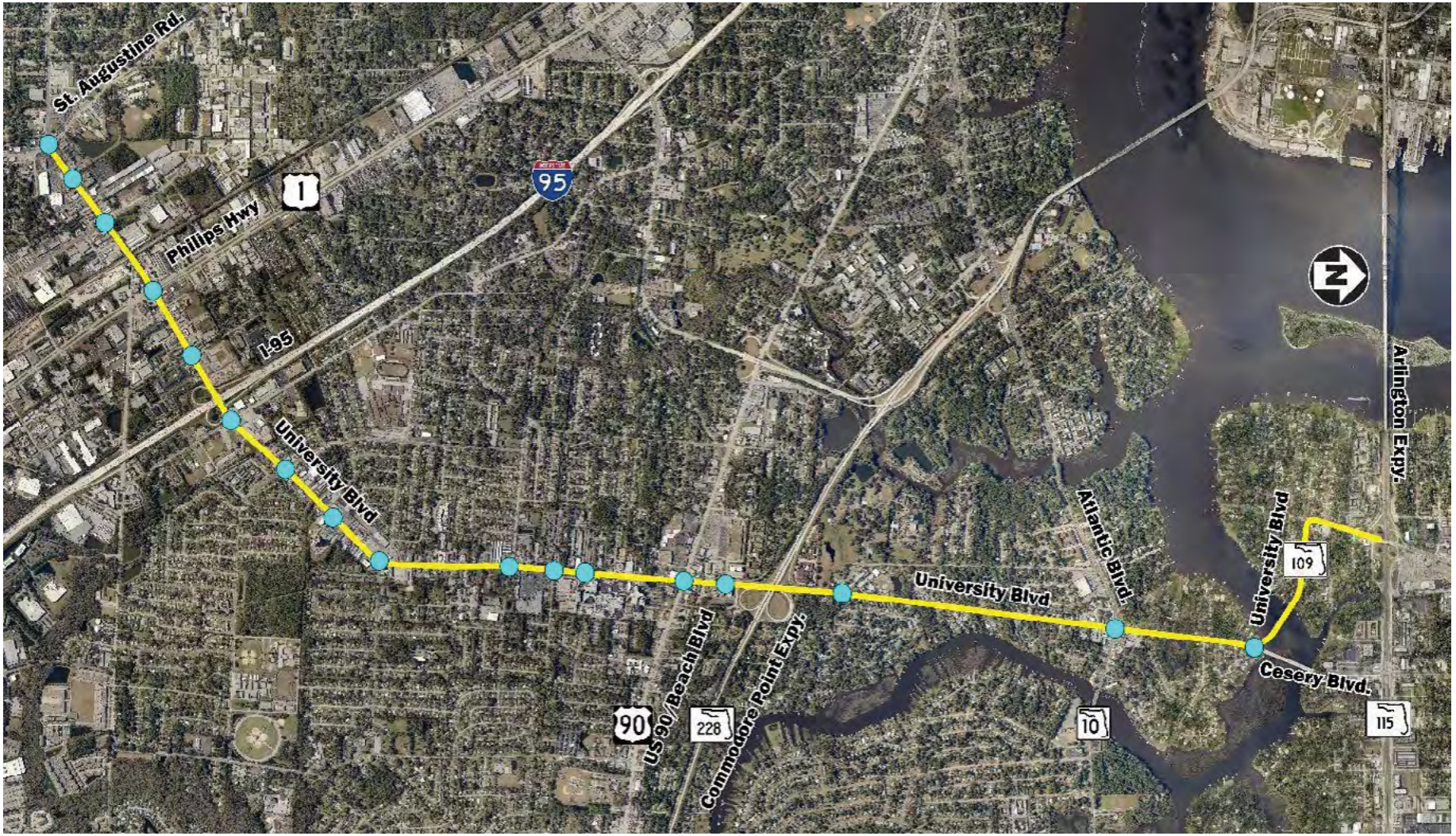


FIGURE 29: HAZARDOUS MID-BLOCK CROSSINGS LOCATIONS



Turning Vehicle Conflicts:

There are areas of conflict between pedestrians and vehicles at every intersection. It is important for the pedestrian to be visible to vehicles making turns like in Figure 30. Pedestrian conflicts with right turning vehicles are often a dangerous pedestrian to vehicle conflict because drivers trying to turn right are typically focused on potential traffic which conflicts with them to the left (opposite direction of the pedestrians) as shown in Figure 31.

FIGURE 30: TURNING VEHICLE CONFLICTS EXAMPLE

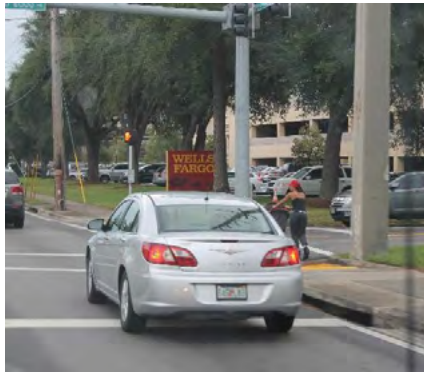




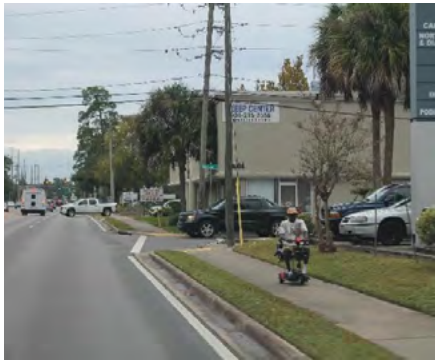
FIGURE 31: TURNING VEHICLE CONFLICTS EXAMPLE



Mobility Impaired Users:

There are a high number of mobility impaired users that travel on this corridor. It is especially important to these users that the Americans with Disabilities Act (ADA) standards are met for the sidewalks, driveways, curb cuts, and pedestrian facilities at signalized intersections. See Figure 32 and 33.

FIGURE 32: MOBILITY IMPAIRED USERS EXAMPLES



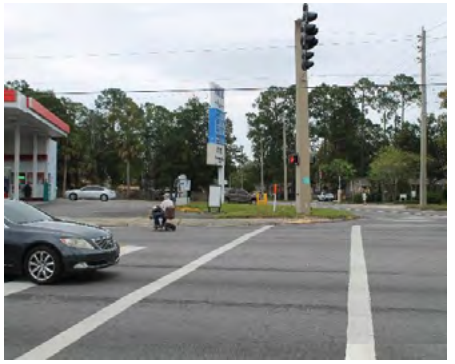
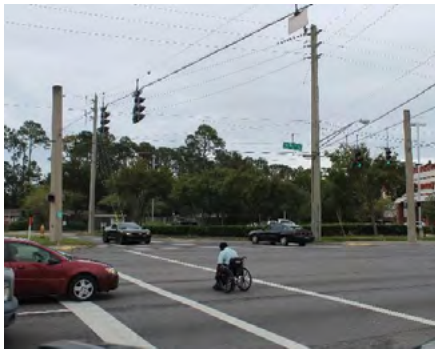
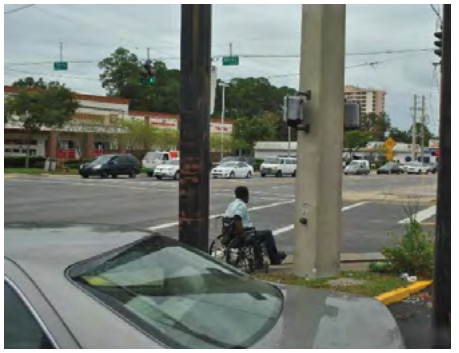


FIGURE 33: MOBILITY IMPAIRED USERS EXAMPLES





Emergency Vehicles:

It is important for emergency vehicles to be able to maneuver on all corridors. However, it is especially important on this corridor because the Jacksonville Memorial Hospital is located on University Boulevard and emergency vehicles, like the one shown in Figure 34, need easy and direct access to the hospital. For this reason and combined with the traffic volumes on University Boulevard, reducing the number of travel lanes to allow for the construction of bicycle lanes or other multimodal features is not viable.

FIGURE 34: EMERGENCY VEHICLES



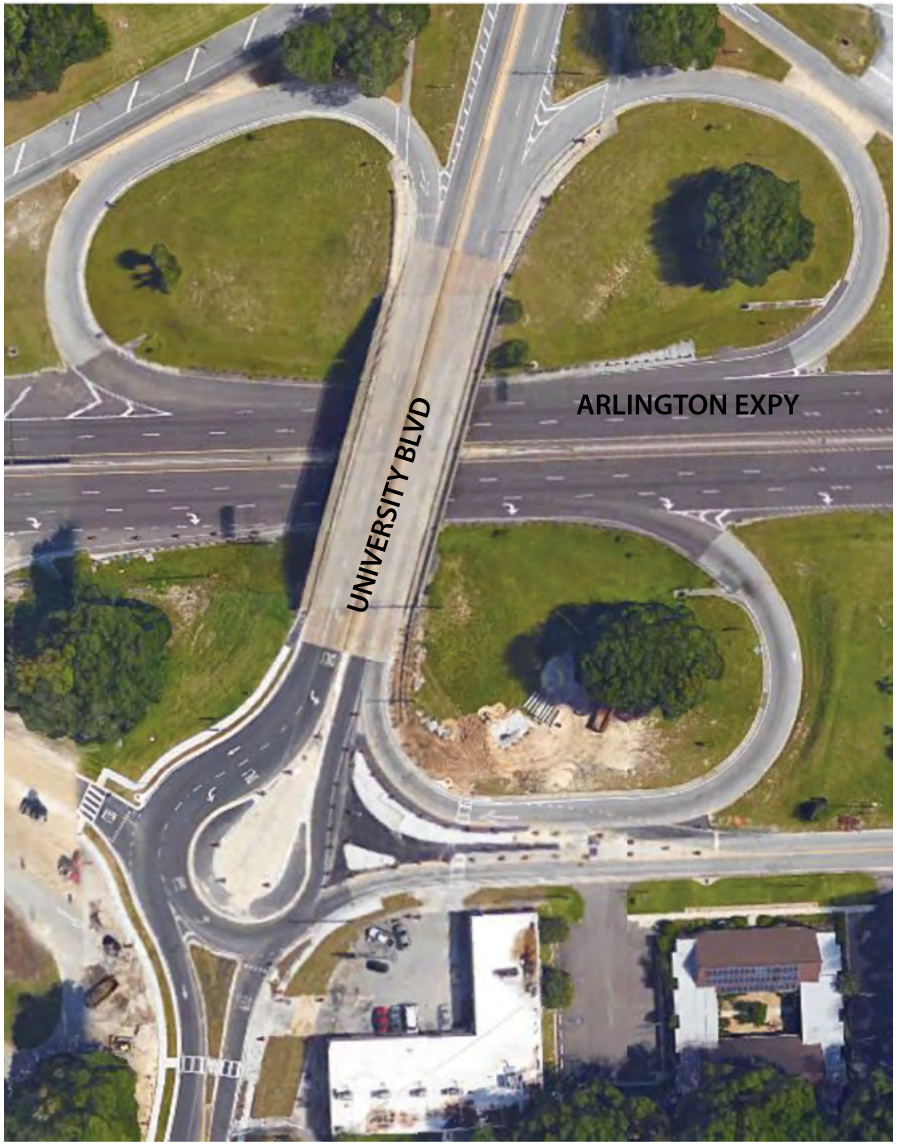
Interchange Designs:

There are two interchanges on this corridor; I-95 (Figure 35) and Arlington Expressway (Figure 36). These interchanges are designed to allow drivers to quickly complete turning movements. They often allow free flow of vehicles to dedicated receiving lanes with high to moderately high speeds or allow cars long distances to maneuver into traffic lanes so that the vehicles do not have to slow down. This creates unsafe conditions for pedestrians because vehicles are driving at high speeds at designated crossing areas. The high speeds both limits the ability for drivers to detect pedestrians and pedestrians to detect vehicles. Pedestrian crashes at these higher speeds have a higher probability to result in a fatality to the pedestrian or incapacitating injury.

FIGURE 35: UNIVERSITY BOULEVARD AT I-95 INTERCHANGE



FIGURE 36: UNIVERSITY BOULEVARD AT ARLINGTON EXPRESSWAY



Interchange Designs – Signage:

At the interchange with I-95 there are no pedestrian crossing signage, as seen in Figure 37. In addition to the lack of pedestrian warning signage, there is signage that notifies drivers that they have a dedicated receiving lane which encourages drivers to keep moving, shown in Figure 38, without the requirement to yield to any conflict. At the Arlington Expressway interchange the crosswalks have pedestrian crossing signage but the signs do not have arrows (which is the current design standard) to indicate the crossing locations, shown in Figure 39.

FIGURE 37: INTERCHANGE DESIGNS - SIGNAGE I-95

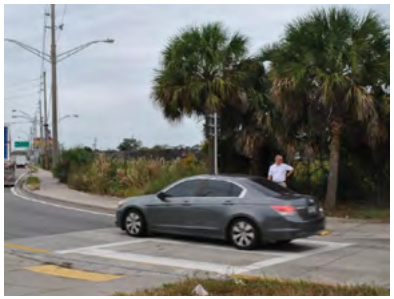


FIGURE 38: INTERCHANGE DESIGNS - SIGNAGE I-95



FIGURE 39: INTERCHANGE DESIGNS - SIGNAGE ARLINGTON EXPRESWAY



Interchange Designs – Sight Distance:

There is a significant sight distance issue at the location where vehicles enter I-95 northbound from University Boulevard. Figure 40 shows the view of a pedestrian waiting for a gap in traffic to cross the road. The pedestrian is completely invisible to the drivers at the designated crossing location. Figure 41 shows the view from the pedestrian's perspective. It is very difficult for the pedestrian to judge when to walk across the street because they cannot see oncoming traffic until it is very close to the ramp intersection. Combined with the fact that most vehicles making this movement are traveling at high speeds and making frequent lane changes coming from Spring Park Road, it is nearly impossible for pedestrians to cross at the designated location.

FIGURE 40: INTERCHANGE DESIGNS - SIGHT DISTANCE I-95



FIGURE 41: INTERCHANGE DESIGNS - SIGHT DISTANCE I-95 PEDESTRIAN PERSPECTIVE



Missing Crosswalks:

Missing crosswalks at signalized intersections create a situation where a pedestrian has to cross 3 legs of an intersection to get to the other side of a street. At a major intersection this increases the vulnerability of the pedestrian because they are exposed to an unnecessary increase in conflicts with vehicles and significantly increases the time to cross the intersection. In essence the pedestrian will take up to three full cycles of the traffic signal at the intersection in order the cross the street. This would be similar to a driver in a vehicle having to wait through three red lights before being able to cross the street. Due to the hazards and time required to cross as marked, most pedestrians will resort to crossing the leg of the intersection without the crosswalk and would do so 200 to 350 feet back from the intersection. On this corridor crosswalks are missing at Harvin Road (Figure 42), Coronet Lane (Figure 43), and Atlantic Boulevard (Figure 44). (Note the missing crosswalk at Atlantic Boulevard is proposed to be added in the FDOT intersection improvement project.)

FIGURE 42: MISSING CROSSWALKS AT UNIVERSITY BLVD. AND HARVIN RD.



FIGURE 43: MISSING CROSSWALKS AT UNIVERSITY BLVD. AND CORONET LN.

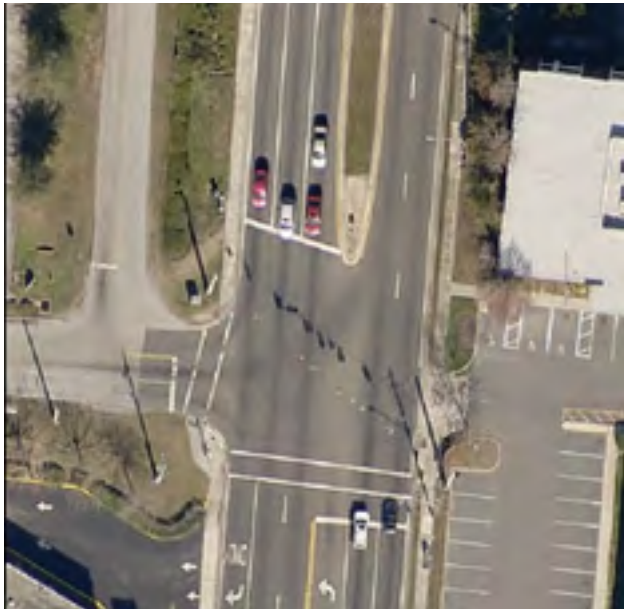


FIGURE 44: MISSING CROSSWALKS AT UNIVERSITY BLVD. AND ATLANTIC BOULEVARD



Lack of Bicycle Facilities:

Figure 45 shows the typical cross sections along University Boulevard. Bicycle facilities are missing in each of these pictures, as they are from almost the entire corridor. The only exception is the bike lanes on the new bridge between the intersections of Cesery Boulevard and Clifton Avenue. In the absence of bike lanes, bicyclists will often ride on the sidewalks, as seen in Figure 46, which can be hazardous to pedestrians on the sidewalk. The only other alternatives for bicyclists is to ride on the road, as seen in Figure 47 or on the sidewalks. Unfortunately, adding bicycle lanes is not feasible on the corridor without acquiring additional right-of-way due to the existing right-of-way and traffic volumes.

FIGURE 45: NO BICYCLE FACILITIES - TYPICAL CROSS SECTIONS





FIGURE 46: NO BICYCLE FACILITIES - BICYCLISTS ON SIDEWALKS



FIGURE 47: MISSING CROSSWALKS AT UNIVERSITY BLVD. AND ATLANTIC BOULEVARD



Curb Ramp Design/Accessibility

Ramps are required to meet ADA requirements to allow mobility impaired persons to easily and safely cross the road. The standards include provisions for the slope of the ramp, the presence of detectable warning strips, width of clear sidewalk behind a ramps, etc. Many of the ramps on this corridor do not meet the ADA standards. For example, the ramp in Figure 48 does not have a detectable warning strip to warn a visually impaired person that they are entering a roadway and the clear sidewalk width is inadequate. The ramp in Figure 49 also does not have a detectable warning strip and does not align with the marked crosswalk at the intersection.

FIGURE 48: RAMP DESIGN/ACCESSIBILITY EXAMPLE - NO WARNING STRIP



FIGURE 49: RAMP DESIGN/ACCESSIBILITY EXAMPLE - NO WARNING STRIP AND CROSSWALK ALIGNMENT



Driveway Design/Cross Slope:

On this corridor, the sidewalk is often interrupted by driveways with uneven transitions and steep cross slopes that make crossing difficult for pedestrians and mobility impaired persons as shown in Figure 50. Some of these driveways, like the one pictured in Figure 51, are very long which can make traveling along the corridor very challenging. This is also an issue for bicyclists who may choose to ride on the sidewalk at the intersection.

FIGURE 50: DRIVEWAY DESIGN/CROSS SLOPE EXAMPLE

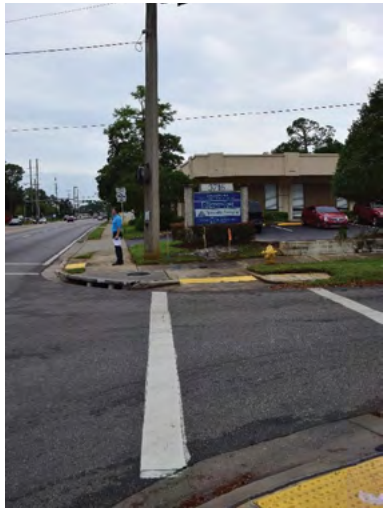


FIGURE 51: DRIVEWAY DESIGN/CROSS SLOPE EXAMPLE



Lack of Pedestrian Signalization:
There are multiple locations along the corridor where pedestrian signalization is not provided across the minor leg of a signalized intersection. This occurs at Booth Road (Figure 52) and Coronet Lane. (Note: The pedestrian signals are proposed to be added at Booth Road by a planned FDOT project.)

FIGURE 52: LACK OF PEDESTRIAN SIGNALIZATION



Maintenance of Pedestrian Signalization:
The picture in Figure 53 was taken at the intersection of University Boulevard and Terry Road where it was observed that the pedestrian detector did not activate a pedestrian phase to cross University Boulevard.

FIGURE 53: MAINTENANCE OF PEDESTRIAN SIGNALIZATION



This bridge is the location where the cross section transitions from six lanes to four lanes by dropping one lane on each side as a turn only lane as shown in Figure 54. The camber of the bridge is such that a driver cannot see the lane configuration at the signalized intersection on the other side of the bridge until they are on the other side (Figure 55) and there is not sufficient signage to give drivers advanced warning of the lane drop (Figure 55) potentially causing abrupt lane changes and/or rear end crashes.

FIGURE 54: BRIDGE (POWERS AVE. TO PHILIPS HWY.)

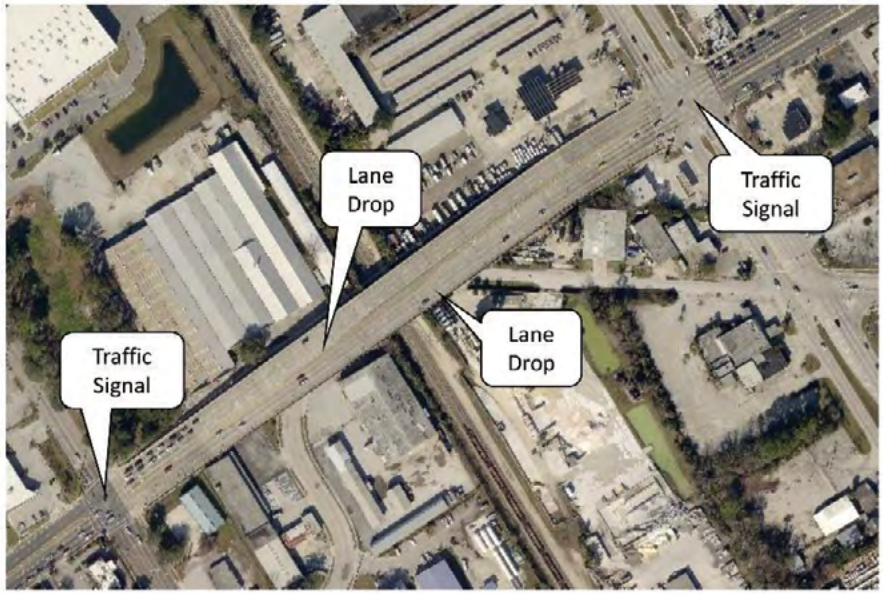


FIGURE 55: BRIDGE (POWERS AVE. TO PHILIPS HWY.) EXISTING CONDITIONS





Arlington Expressway – Pavement Markings and Signs:
The half-roundabout recently constructed at the intersection with the eastbound Arlington Expressway exit ramp uses nonstandard markings and signs to direct drivers how to navigate the intersection as shown in Figure 56. The symbols used to direct drivers is confusing and there is not enough advanced warning for drivers to react to the unusual situation.

During corridor review and the public charrette this was identified as an issue. However, at the time of publication the deficiency had been corrected.

FIGURE 56: ARLINGTON EXPRESSWAY - PAVEMENT MARKINGS AND SIGNS EXAMPLE



Street Lighting:
A light study should be undertaken to confirm that the street lighting meets the Florida Department of Transportation's (FDOT) standards. See Figure 57 and Figure 58.

FIGURE 57: STREET LIGHTING EXAMPLE



FIGURE 58: STREET LIGHTING EXAMPLE



3: CONCEPTS

The main objective of this planning study was to identify improvements to enhance safety and mobility along the study corridor. The ultimate vision for this corridor is that all users, including motorists, pedestrians, bicyclists, transit riders, etc., will be able to safely and easily use the corridor for all trip purposes. The design concepts for the corridor are summarized in three different categories:

- Corridor wide improvements;
- Intersection improvements; and,
- Mid-block crossing improvements

Additionally, design concepts and their applicability to University Boulevard corridor are further detailed in the recommendations section.

CORRIDOR WIDE IMPROVEMENTS

During the corridor review process several deficiencies were found to occur throughout the corridor. This includes inadequate street lighting, non-compliant curb cut ramps, steep sidewalk cross slopes at driveways, and insufficient capacity at transit stop shelters or a lack of shelters at high volume transit stops. Most of these improvements will require a more in-depth review of existing conditions as detailed measurements were outside the scope of this planning study.

Improved street lighting (Figure 59) is an important improvement because it will increase the safety of all pedestrians, bicyclists, and vehicles using the corridor in dark conditions by illuminating potential conflicts outside of the range of headlights. Constructing ADA compliant curb cuts (Figure 60) and driveway ramps/aprons (Figure 61) will be a significant advancement for the mobility of pedestrians who require a wheelchair or other type of assistance to get around. These improvements should include all aspects of pedestrian facilities at signalized intersections, meaning that pedestrian detectors should be placed at the appropriate height and distance from the ramp while maintaining the required clear width of sidewalk. Improved transit shelters, like the one shown in Figure 62 could be installed at as many transit stops as feasible, with priority given to high volume locations.

FIGURE 59: IMPROVED STREET LIGHTING EXAMPLE



FIGURE 60: ADA COMPLIANT CURB CUT RAMPS



FIGURE 61: DRIVEWAY RAMPS/ APRONS

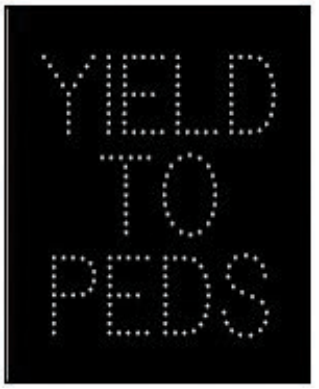


FIGURE 62: TRANSIT SHELTER IMPROVEMENTS



Another corridor wide improvement to be made in specific situations is to install pedestrian blank out signs that instruct motorists to yield to pedestrians (Figure 63). This treatment is an LED sign that illuminates when vehicles are allowed to make a right turn on red. This is a particularly dangerous movement when a pedestrian is trying to cross the intersection at the same time because drivers are looking in the opposite direction of pedestrians entering the crosswalk. This treatment should typically be installed at high volume intersections on approaches with right turn only lanes that are not channelized.

FIGURE 63: PEDESTRIAN "BLANK OUT SIGNS"



INTERSECTION IMPROVEMENTS

Many of the recommendations involve improvements at intersections which is the location of the highest proportion of vehicle/pedestrian conflicts occur. Right turn channelization islands are beneficial because it allows pedestrians to focus on crossing the right turn movement, which is not controlled by a traffic signal, separately from crossing the signal controlled movements while also reducing the crossing distance. High visibility crosswalk striping and pedestrian crossing signage serves to alert drivers to the potential presence of pedestrians at these locations. The design concepts for the intersection improvements at the following major intersections (St. Augustine Road, Philips Highway, Spring Park Road, Kennerly Road, Atlantic Boulevard, Harvin Road, Coronet Lane, Cesery Boulevard, Booth Road, Terry Road) are detailed further within the recommendations.

MID-BLOCK IMPROVEMENTS

Landscaped medians, passive refuge islands, and pedestrian crossover islands are types of mid-block improvements recommended in this report. The common theme of these treatments is that it offers pedestrians a safe place to stop while crossing a high volume roadway. This will reduce the number of conflicts that a pedestrian has to negotiate. These treatments are particularly effective at mid-block transit stops because pedestrians often do not walk to the intersection to cross the roadway. An example of a passive mid-block crossing is shown in Figure 64.

FIGURE 64: PASSIVE MIDBLOCK REFUGE ISLANDS EXAMPLE



4: RECOMMENDATIONS

The recommendations for University Boulevard – South focus on projects that will increase the safety and mobility of pedestrians and transit users on the corridor. The recommendations are categorized into keystone, operational/safety, and long term vision projects. Below is a description of some of the types of projects that have been recommended including specific locations along the corridor.

KEYSTONE PROJECTS

The major keystone projects identified for the University Boulevard – South corridor include:

- A transit **"super stop"** to be located at the intersection of University Boulevard and Beach Boulevard
- Add **median enhancements** along University Boulevard between Memorial Hospital and Beach Boulevard.
- Enhance **pedestrian access and wayfinding** to/from key generators in proximity of Beach Boulevard and University Boulevard **"superstop"**

As discussed in previous sections of this report the intersection of University Boulevard and Beach Boulevard is a heavily used transit stop that is a major transfer point for riders. The proposed transit "super stop" will provide transit riders with a single, safe location to access all transit routes that stop at the intersection. The "super stop" will have the capacity to load multiple buses at the same time which will allow buses to stick to their schedules. Additionally, vehicle traffic at the intersection will no longer be forced to wait behind a stopped bus or attempt a dangerous evasive maneuver to get around a stopped bus in heavy traffic. The concept plan for the "super stop" can be seen in Figure 65.

This University Boulevard and Beach Boulevard intersection is a major transit connection point between east-west and north-south routes that have short headways between buses. The "super stop" will enhance operation at the intersection because buses will no longer block a lane of traffic while transit riders embark or disembark. Additionally, transit riders who are transferring at this location will no longer have to cross University Boulevard or Beach Boulevard to get to the next transit stop because all the buses will come to one location.

FIGURE 65: "SUPER STOP" PLAN RENDERING AT INTERSECTION OF UNIVERSITY BLVD. AND BEACH BLVD.



Another keystone project involves upgrading the existing continuous left-turn lane to a series of landscaped medians between Memorial Hospital and Beach Boulevard. These medians will help control vehicle movements in this section of roadway provide refuge to pedestrians crossing the road. It is recommended that a mid-block crossing be designated along this section to encourage pedestrians to cross at a location where motorists are more aware of the possibility of pedestrians crossing the road. A concept plan for the placement of landscaped medians along the section of roadway can be seen in Figure 66 and a concept before and after rendering of the mid-block crossing in from of Brooks Hospital can be seen in Figure 67.

FIGURE 66:CORRIDOR MEDIAN ENHANCEMENTS CONCEPT PLAN



FIGURE 67: CORRIDOR MEDIAN ENHANCEMENTS - BEFORE/AFTER RENDERING



Before



After

OPERATIONAL/SAFETY ENHANCEMENTS

Several types of operational/safety improvements were identified for the University Boulevard – South corridor including intersection improvements, mid-block crossings, pedestrian signalization improvements, and other site specific recommendations. The following intersections were identified as being prime locations for intersection improvements:

- St. Augustine Road – construct right turn channelization island in southeast quadrant and restripe crosswalks (Figure 68).
- Philips Highway – construct right turn channelization island in southeast, southwest, and northwest quadrants and restripe crosswalks (Figure 69).
- Spring Park Road – construct right turn channelization island in southwest quadrant and restripe crosswalks (Figure 70).
- Kennerly Road – tighten radius of northwest corner and restripe affected crosswalks (Figure 71).
- Atlantic Boulevard – construct right turn channelization island in southeast and northwest quadrants and restripe crosswalks (Figure 72). These recommendations will be implemented as part of the FDOT intersection improvement project at Atlantic Boulevard.
- Harvin Road – construct crosswalk across the north leg of the intersection.
- Coronet Lane – construct crosswalk across the north leg of the intersection and provide pedestrian detectors and signalization across the minor streets.
- Cesery Boulevard – construct crosswalk across the north leg of the intersection (Figure 73).
- Booth Road – provide pedestrian detectors and signalization across the minor streets.
- Terry Road – Fix broken pedestrian detector in northeast corner.

FIGURE 68: ST. AUGUSTINE ROAD INTERSECTION IMPROVEMENTS



FIGURE 69: PHILIPS HIGHWAY INTERSECTION IMPROVEMENTS



FIGURE 70: SPRING PARK ROAD INTERSECTION



FIGURE 71: KENNERLY ROAD INTERSECTION



FIGURE 72: ATLANTIC BOULEVARD INTERSECTION IMPROVEMENTS



FIGURE 73: CESERY BOULEVARD INTERSECTION IMPROVEMENTS



Landscaped medians, passive refuge islands, and pedestrian crossover islands are types of mid-block improvements recommended in this report. The common theme of these treatments is that it offers pedestrians a safe place to stop while crossing a high volume roadway. This will reduce the number of conflicts that a pedestrian has to negotiate. These treatments are particularly effective at mid-block transit stops because pedestrians often do not walk to the intersection to cross the roadway. An example of a passive mid-block crossing is shown in Figure 64 in previous chapter. The following locations were identified as potential locations for mid-block crossings:

- North of St. Augustine Road between transit stops on opposing sides of the road
- Between Terry Road and Kennerly Road (further analysis is needed to determine best location)
- Between Coronet Lane and Atlantic Boulevard (further analysis is needed to determine best location)

The lack of adequate bridge signage between Powers Avenue and Philips Highway was discussed in the "key issues" section. The lane drops located on the bridge are not immediately apparent to drivers which can create confusion. Signage that clearly marks the through lanes that become turn only lanes should be added to the bridge as shown in Figure 74. It is also recommended that pedestrian crossing signs with a flashing beacon be installed at the intersection approaches on either side of the bridge to alert drivers to the presence of pedestrians.

FIGURE 74: BRIDGE SIGNAGE IMPROVEMENTS



I-95 was also identified as an interchange where a few quick fixes could provide many operational and safety benefits. The goal of the improvements at I-95 are to increase the visibility of the pedestrian crossing areas to motorists. The first step in this process is to eliminate the hatched area on the outside of the southbound lanes by moving the curb line and sidewalk to the edge of traveled way. This will allow the crosswalks of the adjacent ramps to be moved closer to University Boulevard and will eliminate the sight distance issue that was identified at this location. The other action at this intersection is to enhance the visibility of pedestrian crossing locations. A low cost strategy and adopted design standard to alert drivers to the potential for pedestrians to be crossing at higher speed crosswalk location is to place signage directly at the crosswalk with arrows pointing to the crossing location which is also supplemented with advance signage where sight obstructions, due to the ramp curve, are an issue. The crosswalk should also be marked using high visibility pavement markings. Pedestrian crossing signs should be placed at all crosswalk locations as shown in Figure 75. This includes an advanced pedestrian crossing sign on the exit ramps from I-95 southbound.

FIGURE 75: RAMP CROSSWALK SIGNAGE IMPROVEMENTS AT I-95 INTERSECTION

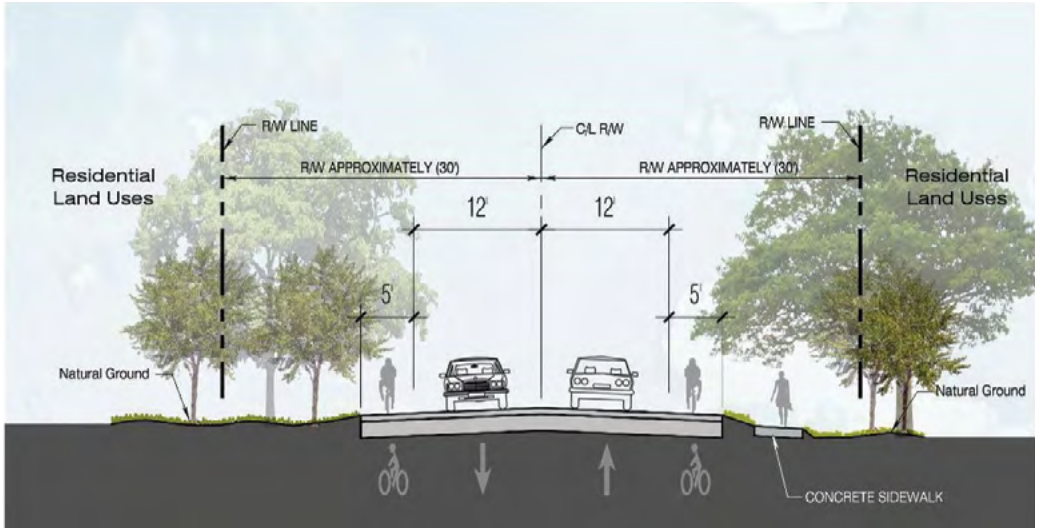


LONG-TERM VISION

A "long-term vision" project identified for the University Boulevard corridor focuses on bicycle facilities. The area of Section 4 between Cesery Boulevard and Arlington Expressway is mostly residential which provides an opportunity to improve the bicycle safety along the corridor.

The long term vision project would include construction of bike lanes on both sides of University Boulevard between Clifton Avenue and Arlington Expressway. Currently bike lanes only exist on the newly constructed bridge between Cesery Boulevard and Clifton Avenue. Therefore, it is important to provide connection to the bicycle facility on the bridge. A typical section of this segment with bikes lanes is shown in Figure 76.

FIGURE 76: ADD BICYCLE LANES IN SECTION 4 - CONCEPTUAL TYPICAL SECTION



3.0 FUNDING OPTIONS & INTER-AGENCY COORDINATION

POTENTIAL FUNDING SOURCES

As with any public infrastructure project, a dedicated revenue source will need to be identified for Complete Streets Projects The following table provides a range of potential sources of revenue from federal, state and local sources. It is unlikely that full funding will come from any one of these sources, but rather some combination therein.

Sponsor	Program Name	Description of Funding Program	How it Can Assist with Complete Streets
NEW SOURCES			
USDOT			
FHWA / FTA	**Metropolitan Planning (23 USC 104(f))**	Transportation planning in urbanized areas in accordance with 23 USC 134 and 49 USC 5303.	Transit, bicycle, and pedestrian planning as part of the metropolitan planning process.
FHWA / FTA	**Statewide Planning (23 USC 505)**	Statewide transportation planning in accordance with 23 USC 135 and 49 USC 5304.	Transit, bicycle and pedestrian planning as part of the statewide planning process.
FHWA	**National Highway System (NHS) (23 USC 103)**	Improvements to rural and urban roads that are part of the NHS or that are NHS Intermodal connectors.	Construction of pedestrian walkways and bicycle transportation facilities on land adjacent t highway on the NHS. NHS funds may also be used to fund transit improvements in NHS co
FHWA	**Surface Transportation Program (STP) (23 USC 133)**	Construction, reconstruction, rehabilitation, resurfacing, restoration, and operational improvements for highways and bridges including construction or reconstruction necessary to accommodate other transportation modes. The Surface Transportation Program (STP) (23 U.S.C. 133) provides the greatest flexibility in the use of funds. These funds may be used (as capital funding) for public transportation capital improvements, car and vanpool projects, fringe and corridor parking facilities, bicycle and pedestrian facilities, and intercity or intracity bus terminals and bus facilities. As funding for planning, these funds can be used for surface transportation planning activities, wetland mitigation, transit research and development, and environmental analysis. Other eligible projects under STP include transit safety improvements and most transportation control measures.	Construction of pedestrian walkways and bicycle transportation facilities; nonconstruction p for safe bicycle use; modify public sidewalks to comply with the Americans with Disabilities Projects do not have to be within the right-of-way of a Federal-aid highway.
FHWA	**Congestion Mitigation and Air Quality Improvement Program (CMAQ) (23 USC 149)**	Funds projects in nonattainment and maintenance areas that reduce transportation related emissions…. – The CMAQ program has the objective of improving the Nation's air quality and managing traffic congestion. CMAQ projects and programs are often innovative solutions to common mobility problems and are driven by Clean Air Act mandates to attain national ambient air quality standards. Eligible activities under CMAQ include transit system capital expansion and improvements that are projected to realize an increase in ridership; travel demand management strategies and shared ride services; pedestrian and bicycle facilities and promotional activities that encourage bicycle commuting. Programs and projects are funded in air quality nonattainment and maintenance areas for ozone, carbon monoxide (CO), and small particulate matter (PM-10) that reduce transportation-related emissions. Funds are apportioned to States based on a formula that considers the severity of their air quality problems	Capital and Operating funds for new transit service. Construction of pedestrian walkways a bicycle transportation facilities; nonconstruction projects for safe bicycle use. Projects do n to be within the right-of-way of a Federal-aid highway, but must demonstrate an air quality benefit.
USDOT	**TIGER**	The Transportation Investment Generating Economic Recovery, or TIGER Discretionary Grant program, provides a unique opportunity for USDOT to invest in road, rail, transit and port projects that promise to achieve national objectives. Since 2009, Congress has dedicated more than $4.1 billion for six rounds of TIGER to fund projects that have a significant impact on the Nation, a region or a metropolitan area. - See more at:	Funding was available to units of government - including state, tribal and local governments,transit agencies, port authorities, MPOs and multi-jurisdictional entities - for c investments in highway or bridge projects; public transportation projects; passenger and fr rail transportation projects; port infrastructure investments; and intermodal facilities. Additi TIGER solicitations are anticipated.
FHWA	**Recreational Trails Program (23 USC 206)**	Develop and maintain recreational trails and trail-related facilities for both nonmotorized and motorized recreational trail uses.	Nonmotorized or mixed use (motorized and nonmotorized) trails. Eligible categories are tra maintenance and rehabilitation, trailside or trailhead facilities, construction and maintenanc equipment, trail construction, trail assessments, and trail safety
FHWA	**National Scenic Byways Program**	Grants and technical assistance are provided to states and Indian tribes to implement projects on highways designated as National Scenic Byways, All-American Roads, America's Byways, and state scenic or Indian tribe scenic byways and to plan, design, and develop a state or Indian tribe scenic byway program. .	Funds shall be available for an activity related to the planning, design, or development of a or Indian tribe scenic byway program; development and implementation of a byway corrido management plan; safety improvements to accommodate increased traffic; improvements t enhance access; protection of resources adjacent to the byway; development and impleme of a marketing program; development and provision of tourist infrastructure; and construct bicycle and pedestrian facilities, interpretive facilities, overlooks, and other enhancements f byway travelers
FHWA	**Safe Routes to School (SRTS) (S-LU Sec. 1404)**	1. To enable and encourage children, including those with disabilities, to walk and bicycle to school; 2. To make bicycling and walking to school a safer and more appealing transportation alternative, thereby encouraging a healthy and active lifestyle from an early age; and 3. to facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools	Eligible Infrastructure Projects are planning, design, and construction of infrastructure-relat projects that will substantially improve the ability of students to walk and bicycle to school, including sidewalk improvements, traffic calming and speed reduction improvements, pede and bicycle crossing improvements, on-street bicycle facilities, off-street bicycle and pedestrian facilities, secure bicycle parking facilities, and traffic diversion improvements in the vicinity of schools. Eligible Noninfrastructure activities to encourage walking & bicycling to school, including pu awareness campaigns and outreach to press and community leaders, traffic education and enforcement in the vicinity of schools, student sessions on bicycle and pedestrian safety, he

Sponsor	Program Name	Description of Funding Program	How it Can Assist with Complete Streets
		NEW SOURCES	
			and environment, and funding for training, volunteers, and managers of safe routes to sch programs
FHWA	**Highway Bridge Replacement and Rehabilitation (HBRRP) (23 USC 144)**	Replace and rehabilitate deficient highway bridges and to seismically retrofit bridges located on any public road.	Pedestrian walkways and bicycle transportation facilities on highway bridges. If a highway deck is replaced or rehabilitated, and bicycles are permitted at each end, then the bridge p must include safe bicycle accommodations (within reasonable cost). (23 USC 217(e))
FHWA	**Highway Safety Improvement Program (HSIP) (23 USC 148)**	The overall purpose of this program is to achieve a significant reduction in traffic fatalities and serious injuries on all public roads through the implementation of infrastructure-related highway safety improvements.	Improvements for pedestrian or bicyclist safety. Construction and yellow-green signs at pe bicycle crossings and in school zones. Identification of and correction of hazardous location sections, and elements (including roadside obstacles, railway-highway crossing needs, and unmarked or poorly marked roads) that constitute a danger to bicyclists and pedestrians. H safety improvement projects on publicly owned bicycle or pedestrian pathways or trails.
FTA	**Urbanized Area Formula Grants (49 USC 5307)**	Transit capital and planning assistance to urbanized areas with populations over 50,000 and operating assistance to areas with populations of 50,000 - 200,000.	Funding can be used for planning, engineering design and evaluation of transit projects, an technical transportation-related studies. Funding can also be used for capital investments i and bus-related activities such as replacement, overhaul, and rebuilding of buses. For urba areas with populations of 200,000 or more, at least one percent of the funding apportioned each area must be used for transit enhancement activities such as historic preservation, landscaping, public art, pedestrian access, bicycle access, and enhanced access for persons disabilities.
FTA	**Urbanized Area Formula Grants Transportation Enhancements Set-aside (49 USC 5307(k))**	1% setaside of section 5307 funds for areas with population over 200,000 population for 9 specific activities included in the definition of Transit Enhancement Activities in 49 USC 5302(a)(15).	Pedestrian and bicycle access, bicycle storage facilities, and installing equipment to transpo bicycles on mass transportation vehicles.
FTA	**Paul S. Sarbanes Transit in the Parks Discretionary Grant Program**	Purpose: To enhance the protection of national parks and public lands and increase the enjoyment of those visiting the parks and public lands. Eligible project areas include any federally owned or managed park, refuge or recreational area open to the general public, including: National Parks, National Wildlife Refuges; Bureau of Land Management recreational areas; Bureau of Reclamation recreational areas; and National Forests. Eligible projects may also include the communities and land surrounding these federal lands.	Program funds may support capital and planning expenses for new or existing alternative transportation systems in the vicinity of an eligible area. Alternative transportation includes transportation by bus, rail, or any other publicly available means of transportation and inclu sightseeing service. It also includes non-motorized transportation systems such as pedestri bicycle trails. Operating costs, such as fuel and drivers' salaries, are not eligible expenses.
FTA	**Job Access and Reverse Commute Program (49 USC 5316)**	To provide transportation to connect welfare recipients and low income persons to jobs and employment support services such as child care and training.	Eligible Projects: Capital, planning and operating expenses for projects that transport low i individuals to and from jobs and activities related to employment, and for reverse commute projects.
FTA	**Major Capital Investments (New Starts & Small Starts) (5309(b)(1))**	The transit capital investment program (49 U.S.C. 5309) provides capital assistance for three primary activities: New fixed guideway systems (New Starts program and Small Starts) New and replacement buses and facilities (Bus and Bus Related Facilities program), and Modernization of existing rail systems (Fixed Guideway Modernization program). The New Starts program provides funds for construction of new fixed guideway systems or extensions to existing fixed guideway systems. The Small Starts program provides funds to capital projects that either (a) meet the definition of a fixed guideway for at least 50 percent of the project length in the peak period or (b) are corridor-based bus projects with 10 minute peak/15 minute off-peak headways or better while operating at least 14 hours per weekday. The Federal assistance provided or to be provided under Section 5309(e) must be less than $75 million and the project must have a total capital cost of less than $250 million, both in year of expenditure dollars	Eligible activities are light rail, rapid rail (heavy rail), commuter rail, monorail, automated fixed guideway system (such as a "people mover"), or a busway/high occupancy vehicle (HOV) facili extension of any of these. Projects become candidates for funding under this program by succe completing the appropriate steps in the major capital investment planning and project develop process.
FTA	**Bus and Bus Facilities (5309, 5318)**	The transit capital investment program (49 U.S.C. 5309) provides capital assistance for three primary activities: New and replacement buses and facilities (Bus and Bus Related Equipment and Facilities program). Modernization of existing rail systems (Fixed Guideway Modernization program). New fixed guideway systems (New Starts program and Small Starts).	Eligible capital projects include the purchasing of buses for fleet and service expansion, bus maintenance and administrative facilities, transfer facilities, bus malls, transportation centers, intermodal terminals, park-and-ride stations, acquisition of replacement vehicles, bus rebuilds, preventive maintenance, passenger amenities such as passenger shelters and bus stop signs, a and miscellaneous equipment such as mobile radio units, supervisory vehicles, fare boxes, com and shop and garage equipment.
FTA	**New Freedom Program (5317)**	The New Freedom formula grant program aims to provide additional tools to overcome existing barriers facing Americans with disabilities seeking integration into the work force and full participation in society. Lack of adequate transportation is a primary barrier to work for individuals with disabilities. The 2000 Census showed that only 60 percent of people between the ages of 16 and 64 with disabilities are employed. The New Freedom formula grant program seeks to reduce barriers to transportation services and expand the transportation mobility options available to people with disabilities beyond the requirements of the Americans with Disabilities Act (ADA) of 1990.	Capital and operating expenses for new public transportation services and new public transportation alternatives beyond those required by the American with Disabilities Act of 1 (ADA), that are designed to assist individuals with disabilities.
FTA	**Alternatives Analysis (5339)**	The objective of the Alternatives Analysis program (49 U.S.C. 5339) is to assist in financing the evaluation of all reasonable modal and multimodal alternatives and general alignment options for identified transportation needs in a particular, broadly defined travel corridor. The transportation planning process of Alternatives Analysis: Includes an assessment of a wide range of public transportation or multimodal alternatives, which will address transportation problems within a corridor or subarea. Provides ample information to enable the Secretary to make the findings of project justification and local financial commitment. Supports the selection of a locally preferred alternative. Enables the local Metropolitan Planning Organization to adopt the locally preferred alternative as part of the long-range transportation plan.	Funds may be used to assist State and local governmental authorities in conducting alterna analyses when at least one of the alternatives is a new new fixed guideway systems or an extensions to an existing fixed guideway system.

Sponsor	Program Name	Description of Funding Program	How it Can Assist with Complete Streets
		HUD	
HUD	**CBDG Section 108**	Section 108 is the loan guarantee provision of the Community Development Block Grant (CDBG) program. Section 108 provides communities with a source of financing for economic development, housing rehabilitation, public facilities, and large-scale physical development projects. This makes it one of the most potent and important public investment tools that HUD offers to local governments. It allows them to transform a small portion of their CDBG funds into federally guaranteed loans large enough to pursue physical and economic revitalization projects that can renew entire neighborhoods.	CDBG funds may be used for activities which include, but are not limited to: Construction of public facilities and improvements, such as water and sewer facilities, stree neighborhood centers, and the conversion of school buildings for eligible purposes;
HUD/EPA	**Sustainable Communities Regional Planning Grant**	This year's Regional Planning Grant program encourages grantees to support regional planning efforts that integrate housing, land-use, economic and workforce development, transportation, and infrastructure developments in a manner that empowers regions to consider how all of these factors work together to bring economic competitiveness and revitalization to a community. The program places a priority on partnerships, including the collaboration of arts and culture, philanthropy, and innovative ideas to the regional planning process.	• Category 1 Funds: Can be used to support the preparation of Regional Plans for sustainal development. • Category 2 Funds: Can be used to support efforts to modify existing regional plans so tha are in accordance with the Partnership for Sustainable Communities' six Livability Principles. Category 2 Funds also may be used to prepare more detailed execution plans for an adopte regional plan for sustainable development and limit predevelopment planning activities for projects.
HUD/EPA	**Community Challenge Planning Grants**	The program provides grants to enable communities in fostering reform and reducing barriers to achieving affordable, economically vital, and sustainable communities. Such efforts may include amending or replacing local master plans, zoning codes, and building codes, either on a jurisdiction-wide basis or in a specific neighborhood, district, corridor, or sector to promote mixed-use development, affordable housing, the reuse of older buildings and structures for new purposes, and similar activities with the goal of promoting sustainability at the local or neighborhood level. This Program also supports the development of affordable housing through the development and adoption of inclusionary zoning ordinances and other activities such as acquisition of land for affordable housing projects.	Funding for regulations to support community-wide Complete Streets.
HUD	**Community Development Block Grant (CDBG) - Entitlement Communities Grant & State Administered**	The program provides annual grants on a formula basis to entitled cities and counties to develop viable urban communities by providing decent housing and a suitable living environment, and by expanding economic opportunities, principally for low- and moderate-income persons.	CDBG funds may be used for activities which include, but are not limited to: Construction of public facilities and improvements, such as water and sewer facilities, streets, neighborhood centers, and the conversion of school buildings for eligible purposes;
HUD	**Brownfields Economic Development Initiative (BEDI)**	The Brownfields Economic Development Initiative (BEDI) is a key competitive grant program that HUD administers to stimulate and promote economic and community development. BEDI is designed to assist cities with the redevelopment of abandoned, idled and underused industrial and commercial facilities where expansion and redevelopment is burdened by real or potential environmental contamination. BEDI grant funds are primarily targeted for use with a particular emphasis upon the redevelopment of brownfields sites in economic development projects and the increase of economic opportunities for low-and moderate-income persons as part of the creation or retention of businesses, jobs and increases in the local tax base.	BEDI projects must increase economic opportunity for persons of low-and moderate-income or stimulate and retain businesses and jobs that lead to economic revitalization
		EPA	
USEPA	**Clean Water Act Section 319 Grants**	Under Section 319, states, territories and tribes receive grant money that supports a wide variety of activities including technical assistance, financial assistance, education, training, technology transfer, demonstration projects and monitoring to assess the success of specific nonpoint source implementation projects.	Stormwater, landscaping, and green infrastructure aspects of Complete Streets
USEPA	**Healthy Communities Grant Program**	The Healthy Communities Grant Program is a main competitive grant program to work directly with communities to reduce environmental risks to protect and improve human health and the quality of life.	May asssist with some Planning and green infrastructure
USEPA	**Brownfields Assessment Grant**	Assessment grants provide funding for a grant recipient to inventory, characterize, assess, and conduct planning and community involvement related to brownfields sites. An eligible entity may apply for up to $200,000 to assess a site contaminated by hazardous substances, pollutants, or contaminants (including hazardous substances co-mingled with petroleum) and up to $200,000 to address a site contaminated by petroleum.	Assessment and remedial planning
USEPA	**Brownfields Cleanup Grant**	Cleanup grants provide funding for a grant recipient to carry out cleanup activities at brownfield sites. An eligible entity may apply for up to $200,000 per site.	Cleanup (e.g. capping, etc.)
USEPA	**Brownfields Revolving Loan Fund Grants**	Revolving Loan Fund (RLF) grants provide funding for a grant recipient to capitalize a revolving loan fund and to provide subgrants to carry out cleanup activities at brownfield sites.	To be used for cleanups of brownfields sites. RI Economic Development Corporation has one of these grants and is always looking for other sites and applicants
USEPA	**Brownfields Area-Wide Planning Pilot Program**	EPA is piloting this area-wide planning approach to community brownfield challenges, which recognizes that revitalization of the area surrounding the brownfield site(s) is critical to the successful reuse of the property as assessment, cleanup, and redevelopment of an individual site. The area-wide planning approach will enhance EPA's core brownfields assistance programs by encouraging continued meaningful involvement in a locally-driven planning process that will result in a strategy for making brownfields site assessment, cleanup and/or redevelopment decisions for the future.	Site assessment, clean up, redevelopment

Sponsor	Program Name	Description of Funding Program	How it Can Assist with Complete Streets
OTHER FED GOV'T ORGANIZATIONS			
NEA	**Access to Artistic Excellence, "Our Town" Program (National Endowment For the Arts)**	Through Our Town, based on the availability of funding, the National Endowment for the Arts will provide a limited number of grants, ranging from $25,000 to $250,000, for creative placemaking projects that contribute toward the livability of communities and help transform them into lively, beautiful, and sustainable places with the arts at their core. The Arts Endowment plans to support a variety of diverse projects, across the country in urban and rural communities of all sizes. Projects may include planning, design, and arts engagement activities.	Predevelopment, design fees, and community planning are eligible; however, no Arts Endowment or matching funds may be directed to the costs of physical construction or renovation or toward the purchase costs of facilities or land.
DOI/NPS	**Land and Water Conservation Fund (Dep't of the Interior / National Park Service)**	For planning, acquisition and development of facilities that provide recreational opportunities.	Recreational bicycle and pedestrian facilities in parks and other outdoor recreation areas
NEFH	**America's Historic Places Grants (National Endowment for the Humanities)**	As part of the We the People initiative, NEH seeks proposals for public programs that use one or more historic sites to address themes and issues central to American history. Projects may interpret a single historic site, a series of sites, whole neighborhoods, communities or towns, or larger geographical regions. The place taken as a whole must be significant to American history and the project must convey its importance to visitors.	Provides funding for public programs related to the interpretation of historic sites such as driving or walking trails or tours, signs, and publications, that address themes central to American history. (non-construction)
PRIVATE FOUNDATIONS			
Conservation Fund	**American Greenways Program**	Provides up to $2,500 to organizations that are growing our nation's network of greenways, blueways, trails and natural areas. Preference given to non-profit organizations.	Eligible projects could include activities such as green- or blueway or trail mapping, ecological assessments, surveying, conferences, and design; developing brochures, interpretative displays, audio-visual productions or public opinion surveys; building a foot bridge, signage or other physical improvement or addition to a green- or blueway; planning a bike path; and many other creative projects. In general, grants can be used for any appropriate expense needed to complete, expand or improve a greenway including planning, technical assistance, legal and other cost.
Bikes Belong Coalition	**Grant Program**	These grants are designed to foster and support partnerships between city or county governments, non-profit organizations, and local businesses to improve the environment for bicycling in the community. Grants will primarily fund the construction or expansion of bicycle facilities such as bike lanes, trails, and paths. The grants committee will also consider advocacy projects that promote bicycling as a safe and accessible mode of transportation. In a previous grant cycle, Bikes Belong introduced Community Partnership Grants. These grants fund collaborations between non-profit organizations, businesses, and government entities on bicycle infrastructure or advocacy projects.	Fundable projects include paved bike paths, lanes, and rail-trails as well as mountain bike trails, bike parks, BMX facilities, and large-scale bicycle advocacy initiatives.

Local Options

- Local Option Gas Tax (LOGT): JTA Mobility Works is a program created to implement projects funded by the extension of the LOGT. A total of $100 in bond revenue has been leveraged by the LOGT to fund 13 road projects and projects in 14 mobility corridors over the next five years. Approximately $18 million of that total has been earmarked for Complete Streets projects. Merrill Road and University Boulevard, as mobility corridors, are eligible to receive this funding.

- Community Redevelopment Area (CRA) Funding Mechanisms: The City of Jacksonville is in the process of creating a Community Redevelopment Area for Arlington, which includes the Complete Streets study areas for Merrill Road and University Boulevard (see Figure 23). A big part of the CRA will be the establishment of a tax increment finance (TIF) district. A TIF leverages redevelopment-induced marginal property tax increases to fund capital projects. Projects emanating from the charrette vision and recommendations are eligible for funding as part of the CRA.

- Municipal Services Taxation Unit (MSTU): An MSTU is created to fund specific municipal projects or services within a defined geographic area. Funding for an MSTU is created by an ad valorem property tax on affected property owners. A municipal services benefit unit (MSBU) is a similar concept, but funding is created by a fixed assessment on property owners as opposed to an ad valorem tax. An MSTU or MSBU, which may be created through a vote of affected property owners, could be used to generate revenue for Complete Streets projects on Merrill Road and University Boulevard.

- Developer-funded: Complete Streets projects may be implemented on an ad-hoc basis through developer-funded projects. Typically developer-funding projects are generated through the establishment of design standards or incentives. For example, an overlay district may establish streetscape design standards that call for the construction of wide sidewalks. Alternatively, developers may be incentivized to provide transit or bicycle and pedestrian amenities through reduced parking requirements.



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