ARLINGTON EXPRESSWAY CORRIDOR STUDY
Context Sensitive Solutions to address the changing needs of a community
INTRODUCTION

SR 10A SR 115 Arlington Expressway was constructed in 1953 and combined with the opening of the SR 115 Mathews Bridge resulted in development that changed the landscape of Jacksonville. The corridor was developed as an alternate route to US 1 to provide access to downtown from emerging Arlington communities. Arlington Expressway served as Jacksonville’s first major suburban commercial corridor and developments included the Town and Country Shopping Center, Arlington Plaza and Regency Square Mall. Between 1950 and 1960, 50,000 new residents made Arlington home.

By the 1980’s, this area changed again as new suburban development shifted to the east resulting in many long-time businesses along the corridor closing or relocating elsewhere. This once vibrant corridor needs renewal.

Due to the relocation of businesses and aging of the population within the area, the demand for mobility is changing. Automobile use in the corridor has been stagnant since the early 1990’s. The volumes over the last 25 years have been more consistent with the demand for an urban principal arterial than a freeway. The expressway created a barrier between communities for pedestrians and local traffic. Pedestrians must walk one-mile between the interchanges of University Boulevard, Cesery Boulevard or Arlington Road to cross the expressway. Local traffic to businesses located along the corridor use service roads that require drivers to exit at the interchanges and travel circuitously to their premises.

PURPOSE

This study evaluates context sensitive solutions to reconstruct the Arlington Expressway from a freeway to an urban boulevard.

The limits of the project are from University Boulevard to the Southside Connector ramps. The project study area is shown in Figure 1.
FIGURE 1. CORRIDOR MAP
**NEED FOR THE PROJECT**

**SAFETY**

Crash data between May 2010 and May 2015 was analyzed. The data was downloaded from the University of Florida Signal Four Analytics crash mapping and analysis system and includes crash histories for the Arlington Expressway mainline and the service roads.

Four hundred and sixty seven (467) crashes occurred within the analysis period. Three (3) were fatal crashes, 141 involved injuries and 323 were limited to property damage only crashes. On the expressway lanes, 55 crashes were reported including one fatality involving a pedestrian. The remaining 412 crashes occurred along the service roads. The average crash rate was 2.12 crashes per million vehicle miles traveled. Table 1 on the next page shows the summary of crashes by severity within the study area.

During the five-years the most frequent crashes were rear end collisions (171 crashes) followed by sideswipe same-direction collisions (73 crashes) and off road collisions (56 crashes). Table 2 summarizes the types of crashes within the study area.

Rear end collisions represent nearly 37 percent of the total crashes occurring along the corridor for the five-year period analyzed. Sixty-nine percent (118 crashes) were rear end collisions occurring during daylight lighting conditions. Approximately 58 percent (99 crashes) occurred during “clear” weather conditions. The number of rear end collisions are attributable to congestion during peak periods.

Fourteen (14) pedestrian crashes occurred during the analysis period and as noted previously, one crash involved a pedestrian fatality. Ten crashes occurred along the service roads and four occurred when pedestrians attempted to walk across the expressway. These crashes occurred in areas where fencing was installed in the median to discourage pedestrians from crossing.

Figure 2 on page 5 shows the locations of the crashes by severity type.

**Safety Need for this Project**

Additional alternatives are needed to meet the needs of pedestrians and bicyclists for persons wishing to travel along the corridor or to cross it.
### Table 1 - Crash Severity Summary

<table>
<thead>
<tr>
<th>Crash Severity</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatal</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Injury</td>
<td>22</td>
<td>20</td>
<td>19</td>
<td>29</td>
<td>36</td>
<td>15</td>
<td>141</td>
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<tr>
<td>Property Damage Only</td>
<td>28</td>
<td>19</td>
<td>69</td>
<td>91</td>
<td>76</td>
<td>40</td>
<td>323</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>50</td>
<td>39</td>
<td>89</td>
<td>120</td>
<td>113</td>
<td>56</td>
<td>467</td>
</tr>
</tbody>
</table>

*Partial year 2010 beginning May 24 and ending December 31.*
*Partial year 2015 beginning January 1 and ending May 25.*

### Table 2 - Crash Event Summary

<table>
<thead>
<tr>
<th>Harmful Event</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>Total</th>
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<tr>
<td>Backed Into</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Bicycle</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Head On</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>Left Entering</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>5</td>
<td>2</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Left Leaving</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Left Rear</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>4</td>
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<tr>
<td>Off Road</td>
<td>15</td>
<td>5</td>
<td>7</td>
<td>10</td>
<td>13</td>
<td>6</td>
<td>56</td>
</tr>
<tr>
<td>Opposing Sideswipe</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>3</td>
<td>9</td>
<td>18</td>
<td>8</td>
<td>3</td>
<td>45</td>
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<tr>
<td>Parked Vehicle</td>
<td>1</td>
<td>0</td>
<td>7</td>
<td>14</td>
<td>6</td>
<td>4</td>
<td>32</td>
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<td>Pedestrian</td>
<td>0</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td>14</td>
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<td>Rear End</td>
<td>21</td>
<td>15</td>
<td>32</td>
<td>30</td>
<td>46</td>
<td>27</td>
<td>171</td>
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<tr>
<td>Right Angle</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Right/Through</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Rollover</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Same Direction Sideswipe</td>
<td>4</td>
<td>4</td>
<td>17</td>
<td>20</td>
<td>19</td>
<td>9</td>
<td>73</td>
</tr>
<tr>
<td>Single Vehicle</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td>Unknown</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>50</td>
<td>39</td>
<td>89</td>
<td>120</td>
<td>113</td>
<td>56</td>
<td>467</td>
</tr>
</tbody>
</table>

*Partial year 2010 beginning May 24 and ending December 31.*
*Partial year 2015 beginning January 1 and ending May 25.*
Figure 2. Crash Location Map

Source: Florida Department of Transportation
Traffic

Existing Traffic Conditions

The traffic volumes on the Arlington Expressway have declined or remained consistent depending on the segment since the 1990s. The volumes reported from the FDOT Traffic Online database are shown in Figure 3 on the next page. These volumes have not grown due to

- Relocating of businesses to outlying suburbs reducing traffic demand
- Aging population within the area who travel less

The Arlington Expressway has four expressway lanes (two in each direction) and two two-way, one-lane in each direction service roads. Along some segments the service roads are one-way. The ability for traffic to travel on the expressway is restricted at each end. Table 3 summarizes the existing Annual Average Daily Traffic (AADT) volumes for the year 2014 and the resulting Level of Service (LOS). The LOS standard for state highways in urban areas is LOS D. The existing expressway is operating better than the standard.

Table 3. Existing Traffic Counts and LOS

<table>
<thead>
<tr>
<th>Roadway</th>
<th>AADT</th>
<th>LOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathews Bridge</td>
<td>62,500</td>
<td>C</td>
</tr>
<tr>
<td>East of University Boulevard</td>
<td>42,000</td>
<td>B</td>
</tr>
<tr>
<td>East of Cesery Boulevard</td>
<td>50,500</td>
<td>C</td>
</tr>
<tr>
<td>East of Arlington Road</td>
<td>51,000</td>
<td>C</td>
</tr>
</tbody>
</table>

Based on observations of the corridor during peak periods, the only significant bottleneck is the southbound University Boulevard to westbound Arlington Expressway on ramp. The on-ramp queues as a result of the limited merge capacity at the on ramp.

Since the Mathews Bridge does not provide shoulders sufficient to remove a vehicle from the travel lanes during an incident, the incident-related delays are significant and vehicles frequently queue beyond University Boulevard during a crash or other lane closure.

In addition to analyzing the mainline traffic volumes, more detailed assessments at the signalized intersections on the service roads at Cesery Boulevard and Arlington Road were performed using SYNCHRO. Table 4 summarizes the LOS at the intersections during the AM and PM peak hours. The traffic counts and the SYNCHRO analysis reports are provided in Appendix A.

Table 4. Existing LOS at Service Road Intersections

<table>
<thead>
<tr>
<th>Facility</th>
<th>Location</th>
<th>AM</th>
<th>PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cesery Boulevard</td>
<td>North</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>South</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>Arlington Road</td>
<td>North</td>
<td>C</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>South</td>
<td>B</td>
<td>C</td>
</tr>
</tbody>
</table>
The Mathews Bridge closed from September 26, 2013 through October 2013. The AADTs were adjusted to eliminate the impacts of the closure. The decline in 2012 volumes are not related to the closure.
Multimodal LOS

Intermittent sidewalks exist on portions of the corridor and are located at the back of curb along the service roads. The sidewalk widths vary from 4 feet to 6 feet. If sidewalks are separated from the curb by a buffer, the current standard width is 5 feet. If the sidewalk is located at the back of the curb, the current standard width is 6 feet. The existing pedestrian LOS is shown in Table 5.

There are no bicycle lanes along the Arlington Expressway service roads or the Arlington Expressway. The result is a bicycle LOS F. The minimum LOS standard is LOS D for state roads.

Because of the limited accessibility for transit from a lack of sidewalk connections and the 30 mph operating speed along the service roads, the result is a transit LOS F. The minimum LOS is LOS D for state roads.

<table>
<thead>
<tr>
<th>Table 5. Existing Pedestrian Level of Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Segment</td>
</tr>
<tr>
<td>University Boulevard to Cesery Boulevard</td>
</tr>
<tr>
<td>Cesery Boulevard to North Street</td>
</tr>
<tr>
<td>North Street to Arlington Road</td>
</tr>
<tr>
<td>Arlington Road to Kings Inn</td>
</tr>
<tr>
<td>Kings Inn to Strawberry Creek Bridge</td>
</tr>
<tr>
<td>Near Roundabout</td>
</tr>
<tr>
<td>Strawberry Creek Bridge to Southside Connector</td>
</tr>
<tr>
<td>Overall</td>
</tr>
</tbody>
</table>
Future Conditions (No Build Alternative)

Forecasts of the traffic volumes to 2040 were prepared using the Northeast Florida Regional Planning Model Activity Based Model (NERPM-AB) to evaluate the conditions if no improvements were made to the corridor by 2040. Volumes are anticipated to increase by 15 percent by 2040. With no changes, the expressway and the service road intersections will operate at an acceptable LOS. The traffic volumes and LOS are summarized in Table 6. By 2040, the portion of Arlington Expressway west of the Mathews Bridge will still operate one LOS better than the standard.

Table 7 summarizes the LOS at the service road intersection in 2040 under the No Build Alternative.

FDOT programmed a project to construct and improve sidewalks along the service roads and the Jacksonville Transportation Authority has programmed projects to improve transit mobility and accessibility which will likely include constructing sidewalks within the corridor. These projects will improve the pedestrian LOS, but it is unknown if bicycle lanes will be constructed at this time.

Mobility Needs for this Project

The project is not needed to reduce road congestion. The needs for bicycles, pedestrians and transit are not fully addressed. Vehicles operate at an acceptable LOS today and through 2040. However, bicycle, pedestrian and transit LOS are failing or near failing conditions today.
URBAN DESIGN AND REDEVELOPMENT

Greater/Arlington Beaches Vision Plan

The Greater Arlington area includes neighborhoods and distinctive characteristics. Mixed use commercial and first generation suburbs are located adjacent and near the Arlington Expressway. The area is largely built out with development that can be characterized as urban sprawl.

In 2010, the City of Jacksonville prepared the Greater Arlington/Beaches Vision Plan which included an extensive public involvement process to define a vision of community character, land use growth and development, transportation, economic growth, open space and recreation. The future of the Arlington Expressway corridor was a key component of the vision plan. The following summarizes some of the major themes.

Throughout this Vision Plan, one significant concern communicated from our citizens was the loss of neighborhood identity and negative change. This fear has been festering for many years as disinvestment and negative growth has become commonplace in the older, historic neighborhoods. The Steering Committee has taken great pains to emphasize the preservation of neighborhood character and the promotion of growth in appropriate locations throughout this vision document. The concerns mentioned most during this process were the need to protect established neighborhoods from commercial intrusion; the overwhelming need for redevelopment at the Town and Country Shopping Center, the Regency Square Mall and Gazebo Shopping Center.

Several concerns surfaced during the process that are not appropriate for this vision plan but are worthy of examination. The city needs to further address these critical concerns in a comprehensive manor:

1. Emergency evacuation for the district and most areas east of the St. Johns River continues to be an issue. The City must work with the State of Florida to expedite a resolution to this problem.

2. Issues of code enforcement violations are rampant in the District as in most of the city. The code enforcement staff works hard to keep up with the problem; however, the violations are too many. The City must work toward a resolution and deal with the larger issue of city and community pride.

3. Neighborhood safety is a major concern in all of Jacksonville. The City must work with the community to promote safe and cohesive neighborhoods.

The following summarizes the resulting community guiding principles that were recommended as part of the study:

Guiding Principle One - COMMUNITY CHARACTER: Identify, Preserve, Protect, Promote and Enhance the Assets and Character of Greater Arlington/Beaches Communities

- Sub-Principle 1.1: Identify, Preserve, Protect, Promote and Enhance the Neighborhood Assets and Character of Greater Arlington/Beaches Communities
- Sub-Principle 1.2: Identify, Preserve, Protect, Promote and Enhance the Natural Assets and Character of Greater Arlington/Beaches Communities
- Sub-Principle 1.3: Advance the Mayport Village Concept and Protect the Historic and Scenic Assets of the Entire District

Guiding Principle Two - LAND USE, GROWTH AND DEVELOPMENT: Protect and Promote Community Through Land Use, Revitalization, and Development Patterns

- Sub-Principle 2.1: Promote Greater Density/Diversity of Land Uses in Appropriate Locations
- Sub-Principle 2.2: Revitalize and Redevelop, While Safe Guarding and Advancing Neighborhood Character
- Sub-Principle 2.3: Create/Implement Land Use Regulations and Design Standards for Non-Residential and Residential Development
- Sub-Principle 2.4: Non-Residential Land Development Regulations Shall Advance Affected Neighborhoods

Guiding Principle Three - TRANSPORTATION: Improve Mobility While Advancing Neighborhood Character
Sub-Principle 3.1: Connect Neighborhood Parks and Commercial Centers when Appropriate
Sub-Principle 3.2: Use Natural Buffers and Roadway Design to Protect Neighborhood Character
Sub-Principle 3.3: Improve Transit and Transportation Systems
Sub-Principle 3.4: Provide New Transit Options/Provide Regional Transit and Connectivity

Guiding Principle Four - ECONOMIC GROWTH: Provide Economic Growth which Advances Neighborhood Character

- Sub-Principle 4.1: Neighborhood Advancement Should Guide Non-Residential Use and Design
- Sub-Principle 4.2: Expand Economic Opportunities Through the Use of Ecotourism, Educational Programs and Unique District Assets
- Sub-Principle 4.3: Promote the Arts and Provide Additional Cultural Venues

Guiding Principle Five - OPEN SPACE AND RECREATION: Enhance Conservation Areas, Parks and Recreational Opportunities

- Sub-Principle 5.1: Protect and Enhance Conservation and Natural Areas and Provide Public Access
- Sub-Principle 5.2: Enhance and Maintain the Tree Canopy on Public and Private Lands. Maintain and Enhance the Urban Forest
- Sub-Principle 5.3: Preserve Natural Resources
- Sub-Principle 5.4: Expand the Park System, Increase Park Accessibility and Increase Recreational Opportunities

Figure 4 illustrates some of the urban design concepts related to the Arlington Expressway in the Vision Plan.

As part the alternatives analysis, the redevelopment potential for the corridor was assessed. In addition to inventorying the existing land use, under-utilized parcels along the corridors and vacant parcels were inventoried. Under-utilized parcels are those where the building value is less than one-third of the total value of the property (land plus buildings). Currently 65 parcels adjacent to the corridor are vacant or underutilized.

Community Redevelopment Area

The City of Jacksonville recently approved the Renew Arlington Community Redevelopment Area (CRA), a special tax district to promote the redevelopment of the Arlington area. With the CRA, a tax base is set using the property taxes and appraisals. When property values grow, the increase in property taxes may be used for investments within the area for infrastructure, housing and redevelopment. The Renew Arlington CRA may also provide grants to small businesses that agree to relocate to this area of Arlington.

The CRA is being developed to improve and beautify access near Jacksonville University. The boundaries of the CRA are shown in Figure 6. The CRA boundaries do not include the Arlington Expressway.

Urban Development Needs for this Project

Considering the significant percent of the adjacent land uses along the corridor that are vacant or underutilized, stimulus for development is needed to revive the neighborhoods and businesses within the area to create a more vibrant, livable and economic productive community.
Figure 4. Greater Arlington/Beaches Vision Plan Concepts

Transit-oriented development at Town and Country

Transit-oriented development streetscape

Transportation context and proposed connectivity
FIGURE 5. RENEW ARLINGTON CRA

Arlington Expressway Corridor

CRA Boundaries
ENGINEERING CONSIDERATIONS

Roadway

The latest pavement condition ratings were evaluated. Two factors are evaluated: cracking and ride. Values less than 6.0 represent deficient pavement conditions indicating that pavement rehabilitation and repair are needed. The latest ratings are:

- Cracking rating ranged from 0 to 10.0
- Ride rating ranged from 5.7 to 7.8

These ratings indicate pavement repair, rehabilitation or reconstruction are needed in the near future.

The vertical clearance of Arlington Expressway at the Cesery Boulevard and Arlington Road overpasses are currently substandard. A vertical clearance of 14.8 feet is provided at Cesery Boulevard and 15.4 feet is provided at Arlington Road. The standard is a minimum clearance of 16.0 feet. The vertical alignment at the underpasses is consistent with a 45 mph design speed using 2015 standards.

The design and posted speed on Arlington Expressway is 50 mph. The design speed on the service roads is consistent with a 40 mph design speed and the posted speed on the service roads is 40 mph.

The expressway typical sections are more consistent with the current design standards for a high speed urban or suburban section than an urban freeway. The existing expressway does not fully meet these standards.

The following summarizes a comparison of existing conditions to today’s high speed suburban arterial standards:

- The current standard for a high speed urban arterial is to provide a 6.5 feet bicycle. Bicycles are not allowed to use the expressway lanes today.
- The median shoulder width varies from 3.75 feet to 4.5 feet which is less than the standard of 4 feet in some sections.
- A median traffic barrier is used versus a median being provided for high speed arterials.
- According to current design criteria, a four-lane high-speed arterial should also account for a future six-lane section, which the existing facility does not. Widening is not feasible within the underpasses without replacing the bridges.

Using freeway standards:

- The shoulder widths adjacent to the expressway lanes (6 feet to 8 feet outside and 3.75 feet to 4.5 feet median) do not meet today’s freeway standards of 12 feet outside and 8 feet median.
- Curb and gutter exist on the median and outside along the expressway lanes which does not meet current standards for a freeway. Today’s standards require freeways to provide shoulders.

The existing travel lanes on the service roads are 10 feet (the minimum) and no bicycle lanes are provided.

Bridge Condition

The following summarizes the current bridge conditions at the Cesery Boulevard and Arlington Expressway bridges.
Cesery Boulevard over Arlington Expressway

- Bridge No. 720201
- Year Constructed: 1961
- Sufficiency Rating\(^2\) (%): 86.6
- Evaluation: Functionally obsolete\(^3\)
- Superstructure Type: Pre-stressed Precast Concrete Slab Panels with Bituminous wearing surface
- Substructure Type: Pre-stressed concrete pile foundation, reinforced concrete column/cap pier
- Bridge Length (ft.): 81.0
- Bridge Width (ft.): 65.9
- No. of Travel Lanes: 4 (2 thru lanes each direction)
- Inside Shoulder (ft.): none
- Outside Shoulder (ft.): none
- Min. Vertical clearance (ft.): 14.8

Arlington Road over Arlington Expressway

- Bridge No. 720152
- Year Constructed: 1961
- Sufficiency Rating: 91.8
- Evaluation: Not deficient
- Superstructure Type: Pre-stressed Precast Concrete Slab Panels with Bituminous wearing surface

\(^2\) A "bridge sufficiency rating" is a combination three factors: 55 percent on the structural evaluation, 30 percent on the obsolescence of its design, and 15 percent on its importance to the public. A score of 80 or less is required for federal repair funding, and 50 or less for federal replacement funding.

\(^3\) A functionally obsolete bridge is one that was built to standards that are not used today. These bridges are not automatically rated as structurally deficient, nor are they inherently unsafe.

Substructure Type: Pre-stressed concrete pile foundation, reinforced concrete column/cap pier
- Bridge Length (ft.): 89.9
- Bridge Width (ft.): 90.6
- No. of Travel Lanes: 6 (2 thru lanes and 1 left turn lane each direction)
- Inside Shoulder (ft.): none
- Outside Shoulder (ft.): none
- Min. Vertical clearance (ft.): 15.4

There are also bridges over Mill Creek for the service roads.

- Bridge No. 720148
- Year Constructed: 1961
- Sufficiency Rating (%): 97.9
- Evaluation: Functionally obsolete
- Superstructure Type: Pre-stressed Precast Concrete Slab Panels with Bituminous wearing surface
- Substructure Type: Pre-stressed concrete pile foundation, reinforced concrete column/cap pier
- Bridge Length (ft.): 526.9
- Bridge Width (ft.): 29.5
- No. of Travel Lanes: 2 (1 lane in each direction)
- Inside Shoulder (ft.): none
- Outside Shoulder (ft.): none

**Engineering Needs for this Project**

This project is needed to address deteriorating pavement, insufficient vertical clearances, functionally obsolete bridges and to reconstruct the roadway to meet today's design standards.
ALTERNATIVES CONSIDERED

NO BUILD
The No-Build or “do nothing” alternative was considered as part of this study to compare the alternatives to a baseline condition.

ALTERNATIVE 1 – URBAN BOULEVARD
This alternative proposes to reconstruct Arlington Expressway as a six-lane urban arterial with a 44 feet median and three 12 foot lanes, 7 feet bike lanes and 8 feet sidewalks on each side of the roadway with landscape buffers between the back of curb and sidewalks. The alternative allows for the creation of a buffer on the outside of the roadway that can be used for a linear park. A 3D rendering of this alternative is shown in Figure 6. Engineering typical sections and concept layouts are provided in Appendix B.

ALTERNATIVE 2 – URBAN PARKWAY
This alternative proposes to reconstruct Arlington Expressway as a six-lane divided urban arterial with a 98 feet median and three 12 foot lanes, 7 feet bike lanes and 8 feet sidewalks on each side of the roadway. By widening to the outside, this alternative provides a median wide enough to accommodate additional landscaping and multiuse paths to create a linear park. This approach is similar to the Central Artery project constructed in Boston as part of the “Big Dig” project. A 3D rendering of this alternative is shown in Figure 7. Figures 8 and 9 show the proposed reconstruction. Engineering typical sections and concept layouts are provided in Appendix B.
Figure 8. Alternative 1
Figure 9. Alternative 2
ALTERNATIVES EVALUATION

SAFETY

By converting an urban expressway to an urban boulevard, the number of crashes is anticipated to increase because of conflicting movements at intersections and driveways. The average crash rate for six-lane urban divided arterials in Duval County is 2.32 crashes per million vehicle miles traveled per year versus the 2.12 crashes per million vehicle miles traveled per year that currently occur on Arlington Expressway and service roads. The reconstruction may result in an increase of an additional 12 crashes per year by 2040.

MOBILITY

Automobiles

If Arlington Expressway were converted to a boulevard, traffic flow is slightly worse than if no modifications were made, but the facility will operate at an acceptable LOS. This result is not unexpected. The LOS analysis is shown in Table 8. The SYNCHRO traffic reports are provided in Appendix A.

Reconstructing Arlington Expressway will increase travel times for commuters by 3.8 minutes for Alternative 1 and 3.4 minutes for Alternative 2 as summarized in Table 9. At the intersections, a LOS E or F is acceptable as long as the overall arterial LOS is D or better.

Bicycles and Pedestrians

The corridor reconstruction includes dedicated bike lanes and sidewalk improvements. The bicycle and pedestrian LOS will be LOS A compared to the LOS F (bicycle) and LOS E/F (pedestrian) conditions that exist today. In addition, four new signalized pedestrian crossings are proposed to improve the connectivity of land uses between the north and south side of the corridors. In Alternative 1, these four new crossings will be mid-block pedestrian activated crossings. In Alternative 2, these four new crossings will be part of the U-turn signalized intersections.

Transit

By reconstructing the Arlington Expressway, the transit LOS would improve to a LOS A by providing better bicycle and pedestrian accessibility, compared to the service roads. Transit will also be enhanced through redevelopment of adjacent properties as mixed use and transit oriented development along the corridor.

Mathews Bridge

Prior studies for the Mathews Bridge recommended a four-lane bridge with shoulders and accommodations for transit such as light-rail transit or dedicated bus lanes. Since no additional capacity will be added to the bridge, no significant increases in the traffic demand along Arlington Expressway is anticipated.

<table>
<thead>
<tr>
<th>Roadway</th>
<th>AADT</th>
<th>LOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathews Bridge</td>
<td>71,900</td>
<td>D</td>
</tr>
<tr>
<td>East of University Boulevard</td>
<td>53,300</td>
<td>D</td>
</tr>
<tr>
<td>East of Cesery Boulevard</td>
<td>58,100</td>
<td>D</td>
</tr>
<tr>
<td>East of Arlington Road</td>
<td>58,700</td>
<td>D</td>
</tr>
</tbody>
</table>
Table 9. Summary of Design Year (2040) Operational Analysis of Through Traffic

<table>
<thead>
<tr>
<th></th>
<th>Period</th>
<th>Overall LOS</th>
<th>EB Thru (seconds)</th>
<th>WB Thru (seconds)</th>
<th>Additional Travel Time EB Thru (minutes)</th>
<th>Additional Travel Time WB Thru (minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Build Alternative</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arlington Expressway Lanes</td>
<td>AM</td>
<td>C</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>C</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternative 1 - Urban Boulevard</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arlington Expressway at Cesery Boulevard</td>
<td>AM</td>
<td>E</td>
<td>43.60</td>
<td>39.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>E</td>
<td>82.30</td>
<td>15.10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arlington Expressway at Arlington Road</td>
<td>AM</td>
<td>F</td>
<td>40.80</td>
<td>96.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td>F</td>
<td>146.20</td>
<td>59.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total AM</td>
<td></td>
<td></td>
<td>84.40</td>
<td>136.10</td>
<td>1.41</td>
<td>2.27</td>
</tr>
<tr>
<td></td>
<td>PM</td>
<td></td>
<td>228.50</td>
<td>74.40</td>
<td>3.81</td>
<td>1.24</td>
</tr>
<tr>
<td>Alternative 2 - Urban Parkway</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Cesery Boulevard</td>
<td>AM</td>
<td>E</td>
<td>42.30</td>
<td>49.60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arlington Road</td>
<td>AM</td>
<td>D</td>
<td>29.10</td>
<td>48.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eastbound - U-turn intersection</td>
<td>AM</td>
<td>A</td>
<td>0.20</td>
<td>8.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Westbound - U-turn intersection</td>
<td>AM</td>
<td>A</td>
<td>7.10</td>
<td>0.20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total AM</td>
<td></td>
<td></td>
<td>78.70</td>
<td>106.60</td>
<td>1.31</td>
<td>1.78</td>
</tr>
<tr>
<td>Cesery Boulevard</td>
<td>PM</td>
<td>E</td>
<td>89.70</td>
<td>23.10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arlington Road</td>
<td>PM</td>
<td>E</td>
<td>103.70</td>
<td>29.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eastbound - U-turn intersection</td>
<td>PM</td>
<td>A</td>
<td>0.10</td>
<td>7.70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Westbound - U-turn intersection</td>
<td>PM</td>
<td>B</td>
<td>12.20</td>
<td>0.20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total PM</td>
<td></td>
<td></td>
<td>205.70</td>
<td>60.30</td>
<td>3.43</td>
<td>1.01</td>
</tr>
</tbody>
</table>

Note: No additional delay was considered for the mid-block pedestrian crossings in Alternative 1. The delay that occurs at the service road intersections is not included in the No Build Alternative analysis.
ENGINEERING CONSIDERATIONS

Design Standards for Construction

The design standards selected as part of the concept development are consistent with the 2015 FDOT Plans Preparation Manual for urban arterials. The proposed design speed is 45 mph and no variations or exceptions are anticipated.

Maintenance of Traffic

With both build alternatives, the first phase of construction will require widening the existing service roads to three lanes per direction. Removing the inside curbs and gutter and placing temporary pavement and drainage will be required with both alternatives. The service roads will be converted to one direction roadways and the overpasses will continue to be open to traffic. Temporary U-turns will be needed to allow vehicles to access the businesses on both sides of the roadway. Widening of the Mill Creek bridges are needed to accommodate the additional lanes on the existing service roads. Temporary sheeting and shoring may be required in the depressed areas of the expressway to accommodate the three lane service roads. Detailed evaluations were not prepared as part of this corridor analysis.

During phase 2, the existing expressway lanes will be reconstructed. The overpasses will remain open to traffic. Temporary pavement will be placed adjacent to the existing overpasses and temporary sheeting and shoring will be used to maintain future work zones for bridge removal. The traffic on Cesery Boulevard and Arlington Road will be shifted to the temporary detours and the bridges demolished and removed. The future lanes or temporary pavement will be placed along the new fill section to shift traffic to the median to reconstruct the service roads in the next phase. With Alternative 1, two future lanes can be constructed in the median area.

During phase 3, the Cesery Boulevard and Arlington Road traffic will be shifted to the temporary pavement constructed in phase 2. The existing overpasses will be demolished and removed. The ultimate lanes will be constructed on the outside where the existing service roads are located today.

Finally, landscaping and other enhancements will be constructed.

Drainage and Permitting

Stormwater runoff treatment was not required when the Arlington Expressway was constructed. Since there is currently no treatment of stormwater runoff, new stormwater treatment facilities may need to be constructed.

The net impervious area is less with the reconstruction than with the existing. Nutrient loading criteria will govern treatment.

Options for providing stormwater treatment include:

- Acquiring rights of way outside the existing roadway rights of way to accommodate new stormwater ponds.
- Constructing dry retention ponds or treatment swales within the roadway right of way. This option would limit the options available for creating urban parks or greenways within the corridor.
- Compensatory treatment could also be provided using runoff from roadways near the project that are currently not being treated. Off-site pond construction and right of way would be required.

Twenty percent of the impervious area was assumed to be needed for pond sites and these pond sites would be located outside the existing right-of-way to preserve the urban design elements of the project.

Right of Way

Right of way impacts will be limited to the following:

- Alternative 1 - stormwater ponds
- Alternative 2 - stormwater ponds and construction of a connection between the ramps from Southside Boulevard

---

4 Impervious areas do not absorb water. Roads, sidewalks and parking lots are impervious surfaces.
ENVIRONMENTAL CONSIDERATIONS

The following summarizes a qualitative screening of the potential environmental impacts. No detailed screening was performed through the FDOT’s Effective Transportation Decision Making Process.

Social Impacts

Both build alternatives are anticipated to enhance economic development, development of enhancements to improve community cohesion. No significant right of way or relocation impacts are anticipated. The project will also improve the bicycle, pedestrian and transit LOS.

Cultural Impacts

No impacts are known to archeological, historical or existing recreational sites. With both alternatives recreational areas are enhanced by creating linear parks either at the outside of the roadway in Alternative 1 or in the median in Alternative 2.

Natural Environment

Since the proposed roadway reconstruction will occur within the existing rights of way, no significant impacts to the natural environment are anticipated. Off-site ponds may be acquired which could impact wetlands. The area near the corridor is largely disturbed and no significant impacts are anticipated.

Physical Impacts

Reconstructing Arlington Expressway in Alternative 1 will shift traffic further away from adjacent properties and will reduce noise impacts. Reconstructing Arlington Expressway in Alternative 2 will move the traffic volumes closer to the adjacent properties and may result in a net increase in the noise levels. Noise walls may be required according to the Federal Highway Administration (FHWA) Noise Abatement Criteria. However, with any assessment of noise walls, property owners have the right to refuse construction of the noise walls. With the existing commercial development and likely redevelopment of under-utilized and vacant properties as mixed-use commercial and residential land uses, visibility is a primary concern to these land owners which would be restricted by constructing noise walls. Areas where residential development is located near the corridor may choose to construct noise walls if needed. Community involvement will need to assess implementing the noise walls.

By introducing intersections, vehicle delays will increase automobile emissions. However, these impacts are not anticipated to be significant.

Based on the historic land uses such as gas stations, automobile service, light industrial along the corridor, there is a potential for contamination to be significant within the corridor. During subsequent phases of the project a contamination screening assessment is needed which is required as part of the Project Development and Environment (PD&E) study phase.

Costs

The total program costs to construct the two alternatives are summarized in Table 10. Additional detail is provided in Appendix C.

Plan Consistency

Table 11 summarizes the consistency of these alternatives with the goals and objectives of the Greater Arlington/Beaches Vision Plan.

The proposed alternatives are also consistent with the North Florida TPO’s Long Range Transportation Plan. The project is included in the Cost Feasible Plan for preliminary engineering phases.
### Table 10. Summary of Costs (millions)

<table>
<thead>
<tr>
<th>Phase</th>
<th>Alternative 1</th>
<th>Alternative 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td>$24.81</td>
<td>$26.30</td>
</tr>
<tr>
<td>Preliminary Engineering (PD&amp;E and Final Design)</td>
<td>$5.22</td>
<td>$5.50</td>
</tr>
<tr>
<td>Construction Engineering and Inspection</td>
<td>$2.48</td>
<td>$2.63</td>
</tr>
<tr>
<td>Right of Way Acquisition (Roads)</td>
<td>$0.00</td>
<td>$3.30</td>
</tr>
<tr>
<td>Right of Way Acquisition (Stormwater Ponds)</td>
<td>$5.39</td>
<td>$6.56</td>
</tr>
<tr>
<td>Subtotal</td>
<td>$37.90</td>
<td>$44.29</td>
</tr>
<tr>
<td>Unknowns and Contingency (20%)</td>
<td>$7.58</td>
<td>$8.86</td>
</tr>
<tr>
<td><strong>Program Costs</strong></td>
<td><strong>$45.48</strong></td>
<td><strong>$53.14</strong></td>
</tr>
</tbody>
</table>
### Use Natural Buffers and Roadway Design to Protect Neighborhood Character

1. Employ natural visual and noise buffers to protect residential areas from major roadway projects.

   The alternatives proposed use linear greenways and landscaping buffers to reduce noise and provide visual enhancements within the corridor.

2. Institute traffic control and calming measures to protect neighborhood character, reduce cut through and high speed traffic.

   Traffic calming is used by converting the expressway to an urban boulevard that will reduce travel speeds and provide a more pedestrian, bicycle and transit friendly corridor with improved connections between the north side and south side neighborhoods to enhance community connectivity.

### Improve Transit and Transportation Systems

1. Evaluate alternative intersection designs in locations where safety or capacity would be enhanced.

   The alternatives presented in this study will reduce the capacity of the Arlington Expressway by converting the expressway to an urban boulevard.

2. Create and implement a comprehensive bicycle facility master plan.

   These alternatives will improve bicycle quality of service by providing “in-street” bicycle lanes for higher speed cyclists and multi-use paths for recreational cyclists located at the edge of the roadways.

3. Work with JTA to improve the transit system and associated access and facilities.

   Transit accessibility is significantly enhanced with these alternatives by improving walk access to transit and accommodating future bus rapid transit.

4. Implement measures to reduce congestion on area roadways, including alternative routes, designs and management systems.

   Congestion and through travel times along the corridor will increase. This is a trade-off for creating a more bicycle and pedestrian friendly corridor.

5. Adopt policies to reduce VMT.

   Vehicle miles traveled may be reduced within the corridor by providing enhanced transit accessibility. Both alternatives provide medians wide enough to accommodate light rail transit in the future.

6. Implement measures to maintain the adopted level of service on I-295 from the Broward (Dames Point) Bridge to Beach Boulevard.

   These alternatives will not impact the I-295 corridor.
<table>
<thead>
<tr>
<th>1. Study the potential for Bus Rapid Transit, Light Rail and low impact localized shuttles.</th>
<th>Both alternatives are consistent with future bus rapid transit and future light-rail services. Both alternatives improve transit LOS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Study the potential for a water transit system.</td>
<td>Water transit was not evaluated.</td>
</tr>
<tr>
<td>3. Evaluate opportunities to link various transit modes at major activity nodes.</td>
<td>Both alternatives are consistent with creating future transit oriented development and transit hubs within or adjacent to the corridor.</td>
</tr>
</tbody>
</table>
**Potential Benefits**

Trade-offs are associated with reconstructing Arlington Expressway as an urban boulevard. Table 12 quantifies the benefits with each alternative.

The quantitative benefits were estimated using the following assumptions.

- The transportation user impacts were estimated based on the change in travel multiplied by an average cost of $18 per hour.
- Safety impacts were estimated based on the change in the number of crashes anticipated times the average economic value of crashes for suburban arterials ($186,466) as provided in the FDOT’s Roadway Plans Preparation Manual.

- The economic benefits of redevelopment were estimated assuming the under-utilized properties will achieve a higher utilization where the building value will be one-third the total value of the parcel.

The benefits evaluation is summarized in Appendix D.

In addition, the qualitative benefits were estimated as follows.

- The project will significantly improve the bicycle, pedestrian, and transit LOS.
- The project will significantly improve the accessibility to transit through sidewalk enhancements.
Table 12. Summary of Benefits and Costs

<table>
<thead>
<tr>
<th></th>
<th>No Build</th>
<th>Alternative 1</th>
<th>Alternative 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Costs</td>
<td>$0.00</td>
<td>$45.48</td>
<td>$53.14</td>
</tr>
<tr>
<td>Benefits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety</td>
<td></td>
<td>-$41.78</td>
<td>-$41.78</td>
</tr>
<tr>
<td>Travel Times</td>
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<td>-$0.92</td>
<td>-$0.80</td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td>-$42.70</td>
<td>-$42.58</td>
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<tr>
<td>Increase in Property Values</td>
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<td>$761.12</td>
<td>$761.12</td>
</tr>
<tr>
<td>Total Economic Benefit</td>
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<td>$0.00</td>
<td>$718.41</td>
</tr>
<tr>
<td>Benefit Cost Ratio</td>
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<td>15.80</td>
<td>13.52</td>
</tr>
</tbody>
</table>