Improving mobility for pedestrian and bicyclist while maintaining the current function of vehicular traffic.
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Acknowledgements

The Lose & Associates, Inc. and RPM Transportation Consultants, LLC. research and design team would like to thank all the elected officials, board members, commissioners, Arkansas State Highway & Transportation Department, North Jonesboro Neighborhood Initiative (NJNI), Jonesboro staff and citizens who participated in the development of this plan. Through your commitment and dedication to the City of Jonesboro, we were able to develop this plan to guide the delivery of recreation services to the citizens of the City of Jonesboro, Arkansas.

Special thanks to: Honorable Mayor Harold Perrin

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Council Member John Street
Mayor Darrell Kirby
Mayor Kenneth Jones
Mayor Harold Perrin
Mayor Dan Shaw
County Judge Ed Hill
Council Member Ann Williams
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North Jonesboro Neighborhood Initiative (NJNI)
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01: Introduction
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Introduction

The Jonesboro Metropolitan Planning Organization desires to improve the function of Johnson Avenue between Main Street and Caraway Road with respect to pedestrian, bicycle and vehicular traffic. The main focus of this study is to improve mobility for pedestrians and bicyclists, while at the same time, not diminishing the current function of vehicular traffic. Safety of pedestrians and bicyclists is a concern, and this study will make recommendations to improve safety within this corridor or an alternative corridor if that is felt to be a better alternative.

**Project Goals**

- Revitalize Johnson Avenue to make it an attractive corridor and gateway to the city
- Identify appropriate pedestrian crossing locations and treatments on Johnson Avenue
- Identify appropriate bicycle connection from ASU to downtown Jonesboro
- Identify appropriate measures to improve pedestrian and bicycle safety in the corridor
PURPOSE AND NEED STATEMENT

PURPOSE
The purpose of this project is to evaluate alternatives and develop recommendations for the Johnson Avenue study area that can be implemented to improve mobility conditions for pedestrians and cyclists along and across this major east-west corridor. A review of crash data will be supplemented with on-site observations to determine the locations of highest need. Recommendations will be developed using both traditional and state-of-the-art countermeasures for non-motorized and traffic safety. Alternative parallel streets with lower traffic volumes will be evaluated to determine the preferred bicycle route connecting Arkansas State University to Downtown Jonesboro.

This study will evaluate potential impacts of the alternatives considered. Impact evaluations will inform the recommended alternatives. The study area encompasses Johnson Avenue from Caraway Road to Main Street, but shall also include possible alternate bicycle routes between Arkansas State University and downtown Jonesboro.

This project was developed by the Jonesboro MPO, city and local officials in response to broad public interest from neighborhood, university and business community stakeholder groups in improving pedestrian and bicycle safety and accommodations along and across the Johnson Avenue corridor. Officials sensed a general interest from the public in improving conditions for current and future pedestrians and cyclists connecting Arkansas State University to downtown Jonesboro and the neighborhoods on the north and south side of Johnson Avenue. The primary problems this project seeks to address are the barriers for safe bicycle and pedestrian travel in the City of Jonesboro by recognizing downtown and ASU as primary destinations and points of bicycle and pedestrian trip origination.

NEED
Johnson Avenue today is a five-lane arterial designated as a state route. Lane widths are approximately 11 feet wide for the length of the study area and curb and gutter are present. Sidewalks of five to six feet wide are present for the entire length of the study area; however, there are frequent interruptions in the sidewalk by commercial driveway access. Some properties have continuous access in excess of 35 feet in width for the majority of the roadway frontage. In some cases, businesses along the corridor are parking in the right-of-way further complicating pedestrian movement in the corridor. Based on bicycle and pedestrian counts gathered by volunteers in the fall of 2014, significant bicycle and pedestrian activity is occurring along and across the Johnson Avenue corridor. However, observations of the existing conditions and testimony of existing users along the corridor indicate there is at least a perception of danger for bicycles and cyclists in the area. Crash data will be analyzed to determine the level of actual injury to cyclists and pedestrians within the study area. A broadly held conception of the public seems to be that Johnson Avenue is a dangerous place for cyclists and pedestrians due to the speed and volume of vehicular traffic and the lack of accommodations for cyclists and pedestrians. Public officials and citizens they believe it is currently desirable, yet difficult, and perhaps dangerous to bike or walk between the ASU campus and downtown Jonesboro within the Johnson Avenue corridor.

The desired conditions would be for Johnson Avenue to become a multi-modal corridor that is equally safe, attractive and accommodating for all users.
EXISTING PLANNING EFFORTS

As part of the planning team’s effort to gain an understanding of existing conditions and allied planning efforts that could impact the recommendation of this study, existing planning documents were reviewed. A listing of the resources that were gathered and reviewed are listed below.

- ASU Campus Bicycle Master Plan
- Pedestrian and Bicycle Crash Data for the City of Jonesboro
- Johnson Avenue Traffic Counts
- 2035 Metropolitan Transportation Plan
- 2014 Jonesboro Area Traffic Report
- 2014 Jonesboro MPO Community Values Survey Final Report
- Jonesboro Downtown Action Agenda Updated 2013

Some interesting findings in these reports that reveal preference include the following.

**ASU Campus Bicycle Master Plan**
The ASU plan calls for Aggie Road to be the primary connector to downtown. Aggie Road has far less traffic and continues in an east-west direction across campus all the way to University Boulevard.

**Pedestrian and Bicycle Crash Data for the City of Jonesboro**
High percentages of all pedestrian and bicycle crashes in the city occur on Johnson Avenue. Refer to Section 2 of this study for more detailed discussion.

**Johnson Avenue Traffic Counts**
Johnson Avenue is one of the busiest streets in the city. Refer to Section 2 of the study for more detailed discussion.

**2035 Metropolitan Transportation Plan**
Jonesboro Area MPO developed the 2035 Metropolitan Transportation Plan (MTP) in 2011. The vision of the plan is stated as:

“Develop and maintain a safe, efficient, well-integrated, and environmentally compatible transportation system that fosters livable communities and provides convenient choices for accessing destinations throughout the Jonesboro Metropolitan Planning Area”.

In forwarding the vision, the Metropolitan Planning Organization developed several goals and priorities. Following priorities of the MTP are relevant to the goals of this project.

Priority 1.02 – Enhance mobility and support the use of alternate transportation modes by encouraging improved access to public transportation, carpooling, bicycling and walking.
Section 1

Priority 5.01 – Encourage the construction of sidewalks to facilitate non-motorized transportation.

Priority 5.02 - Provide and maintain a continuous network of safe and convenient bikeways connected to other transportation modes and to the regional and state bikeway system consistent with future local street design standards.

Priority 5.04 - Recognizing that automobile, transit, and bicycle users are also pedestrians at either end of every trip, provide aesthetically pleasing and diverse experiences for pedestrians.

Priority 7.01 - Develop a list of needed transportation improvements that are eligible for federal funding - including highways, transit, and non-motorized travel facilities - for inclusion in the Transportation Improvement Programs (TIPs).

The analyses and recommendations of the Downtown Jonesboro Pedestrian/Bike Safety Study are in line with the priorities listed above.

2014 Jonesboro Area Traffic Report
The 2014 Jonesboro Area Traffic Report complies the average daily traffic on various streets in the Jonesboro MPO area. Several of these locations are within the study area. The ADT published in the report, in addition to the counts conducted by City of Jonesboro, were used in conducting the existing conditions analysis.

2014 Jonesboro MPO Community Values Survey Final Report
Home, Neighborhood and Community
The reasons that residents rated as the most important in deciding where to live, based upon the combined percentage of “very important” and “important” responses were: high quality public schools (87%), privacy from neighbors (86%), being within an easy commute to work (66%), and easy access to the highway (61%).

Neighborhood Recreational Opportunities
Fifty-eight percent (58%) of residents prefer to live in a neighborhood where parks and recreational opportunities are within driving distance, but not walking distance, compared to 42% who prefer to live in a neighborhood where some parks and recreational opportunities are within walking distance.

Neighborhood Transportation Options
Sixty-one percent (61%) of residents prefer to live in a neighborhood where virtually all trips into and out of the neighborhood are made by automobile, compared to 39% who prefer to live in a neighborhood that is accessible by pedestrians, bicycles and transit, as well as automobiles.

The items that residents rated as the most important in improving the quality of life in the area where they live, based upon the combined percentage of “very important” and “important” responses were: maintaining local streets and roads (97%), improving and constructing highways (82%), and adding and maintaining sidewalks (52%).
**Jonesboro Downtown Action Agenda Updated 2013**

Downtown would be safe and feel safe, especially for pedestrians. This would include “slowing down traffic” on Main Street, improving crosswalks and adding police foot patrols. And, Downtown would accommodate and be safe for those riding bicycles.

A downtown hotel, or consistent transportation to and from hotels, would allow visitors to enjoy downtown’s art, entertainment, shops and restaurants. Downtown would also be better connected to Arkansas State University, making it easier for students to go to and from downtown.

Neighborhoods adjacent to downtown would be improved with sidewalks, more lighting and repaired lighting. Residents would feel safe walking to and from Downtown.

**Connectivity**

There is a great desire locally to connect the following portions of the city:

- Downtown
- North Jonesboro
- Johnson Avenue
- Matthews Medical Mile
- Arkansas State University (ASU)

**CONCLUSIONS OF EXISTING PLANNING EFFORTS**

A review of existing planning documents presents two widely held difference in community preference. When it comes to transportation improvement relating to vehicular movement, there is widespread support for roadway improvements with little thought of bicycles. The 2014 Jonesboro MPO Community Values Survey Final Report clearly documents a citizen desire for good roads that provide an easy commute to work. It also shows support for improved sidewalks. What is not clear from the survey is whether or not there is a desire for more mobility options, such as bicycle lanes or greenways, as part of the transportation system. The neighborhood comments in the survey show a much closer balance between preferences to be close to parks and recreation opportunities that are reachable by walking as opposed to driving. This trend is in alignment with communities across the country that are striving to encourage citizens to walk more and drive less.

A review of downtown preference creates a totally different set of preferences. Improving walkability and connectivity of downtown to surrounding neighborhoods is clearly a high priority and one that is equally as important as safe driving. There is a desire in the downtown area for improved lighting and overall connectivity with ASU in order to make downtown a destination for both students and prospective students.

One of the biggest obstacles articulated in the various studies is the railroad crossings. The need for improved north to south transportation movements for all modes of transportation is hampered by the cost of grade-separated crossing over the railroad. Exiting bridges over the railroad are functioning at or beyond capacity, and there is also the need to expand rights-of-ways at new or proposed crossing to provide safe multi-modal bridges.
The current north-south traffic patterns utilize Main Street as a major one-way arterial street to reach the bridge over the railroad. This creates unsafe parking, pedestrian and bicycle movements on Main Street. This creates a less than ideal downtown shopping environment, as noted in several of the studies. As the main north-south access route to Johnson Avenue, increased traffic volumes and similar pedestrian and bicycle conflicts are also created as documented in the bicycle and pedestrian crash data found in this study.

With the desire for easy commutes from residential areas, improving traffic flow to Johnson Avenue will be an important consideration for this and future studies. Also important moving forward is the need to improve connectivity between surrounding neighborhoods, ASU and downtown. As downtown continues to grow as a commercial destination and as additional medical facilities move into the area, alternatives to all trips being vehicular trips will be needed.
02: Evaluation of Existing Conditions
JOHNSON AVENUE EXISTING CONDITIONS

CROSS-SECTION
Running east-west along the northern edge of Jonesboro, Johnson Avenue (US 49 within the study area) is one of two major routes connecting Arkansas State University (ASU) and downtown. Within the study limits between Caraway Road and Main Street, Johnson Avenue is a standard five-lane urban arterial having two travel lanes in each direction, separated by a continuous center left turn lane. The typical lane width is 11 feet, giving the road a total gutter-to-gutter width of 55 feet. Standard curb-and-gutter drainage is lowered for the numerous driveways along Johnson Avenue. Some of the driveways are extended length and generally serve as open frontage in front of these businesses. A 45 mph speed limit is posted on Johnson Avenue.

TRAFFIC VOLUMES AND CRASHES
The study segment of Johnson Avenue has an average daily traffic (ADT) volume of approximately 18,000 vehicles per day. Recent historic counts have been over 20,000 vehicles per day at some locations (see Figure 2.1). The five-lane cross-section will comfortably accommodate this much and more traffic so traffic capacity is not an issue. However, this traffic volume is heavy enough that a reduction in the number of traffic lanes to accommodate better pedestrian and bicycle infrastructure (i.e. “road diet”) is not recommended.
Section 2

2.2 Section 2: Evaluation of Existing Conditions

On an urban arterial roadway such as Johnson Avenue, signalized intersections often affect overall operation as much or more than mainline roadway capacity. The signalized intersections on Johnson Avenue within the study area are as follow: Main Street, Bridge Street, Fisher Street, Patrick Street, Marion Berry Parkway, and Caraway Road. This results in an average signal spacing of 1/3 mile, which is an effective signal spacing for traffic. However, the signal spacing between Patrick Street and Marion Berry Parkway is almost 3/4 mile. Thus, there is no means for a pedestrian to cross Johnson Avenue with the aid of a traffic control signal within that extended segment.

Traffic volumes also have a proportional impact on crashes in a corridor. The Jonesboro Police Department provided crash information for the time period 2003-2014 which showed that the study segment of Johnson Avenue had 21 recorded crashes involving a pedestrian, and 10 recorded crashes involving a bicyclist. As is typical, crash locations were usually intersections.

Figure 2.1: Historic Average Daily Traffic on Johnson Avenue

On an urban arterial roadway such as Johnson Avenue, signalized intersections often affect overall operation as much or more than mainline roadway capacity. The signalized intersections on Johnson Avenue within the study area are as follow: Main Street, Bridge Street, Fisher Street, Patrick Street, Marion Berry Parkway, and Caraway Road. This results in an average signal spacing of 1/3 mile, which is an effective signal spacing for traffic. However, the signal spacing between Patrick Street and Marion Berry Parkway is almost 3/4 mile. Thus, there is no means for a pedestrian to cross Johnson Avenue with the aid of a traffic control signal within that extended segment.

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Figure 2.2: Crash Locations on Johnson Avenue 2003-2014
PEDESTRIAN AND BICYCLIST CONDITIONS

Johnson Avenue currently has adequate pedestrian accommodations but is not a particularly friendly street to non-motorized users. The six foot wide sidewalks are in good condition and appear to be in compliance with requirements of the Americans with Disabilities Act. The sidewalk network is largely complete with few gaps remaining; however, few to no businesses have sidewalks connecting their doors to the street. The latest rebuild of the sidewalks included all driveway ramps, as well as curb ramps. Signalized intersections have marked crosswalks, pedestrian pushbuttons and pedestrian signal heads, as well. No exclusive bicycle accommodations exist.

The primary factor attracting pedestrians in the corridor is land use. The mixture of land uses around Johnson Avenue is attractive to a relatively high volume of pedestrians. The corridor would generally be described as commercial, with several properties having significant walk-up patronage (convenience stores, fast food restaurants, etc.). While some single and multi-family residential land use does exist directly on the corridor, most residences are just off the corridor, situated directly behind the businesses that front Johnson Avenue.

The most significant property holder along the corridor is ASU, located at the eastern end of the study segment. The University is primarily located on the south side of Johnson Avenue. However, a significant amount of student-oriented housing has been developed on the north side of the corridor, creating a strongly desired linkage between student housing and campus proper.

One other contributor to pedestrian and bicyclist activity in the corridor is transit service. Transit service is often a good indicator of non-motorized activity in an area and transit stops themselves can be critical areas to target for improved accommodations. The Jonesboro Economic Transit System maintains three routes on portions of Johnson Avenue within the study area (Routes 17, 37, and 57). All three routes service the segment in between Caraway Road and Marion Berry Parkway; only Route 37 serves portions of Johnson Avenue on the western end of the study area including Main Street.

To better understand the volume and nature of non-motorized users in the study segment, and in particular the number and location of pedestrians crossing Johnson Avenue, counts were made. These counts were organized by Jonesboro MPO staff and conducted by volunteers during September 2014 at multiple locations along the study segment. During these counts, it was discovered that during the six peak travel hours of the day, there were 776 crossings of Johnson Avenue between Caraway Road and Main Street.

<table>
<thead>
<tr>
<th>Crossing Locations</th>
<th>Percent</th>
<th>TOTAL</th>
<th>AM</th>
<th>Midday</th>
<th>PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signalized Intersections</td>
<td>50.6%</td>
<td>393</td>
<td>93</td>
<td>131</td>
<td>169</td>
</tr>
<tr>
<td>Unsignalized Intersections</td>
<td>19.2%</td>
<td>149</td>
<td>60</td>
<td>32</td>
<td>57</td>
</tr>
<tr>
<td>Midblock</td>
<td>30.2%</td>
<td>234</td>
<td>33</td>
<td>64</td>
<td>137</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>776</strong></td>
<td><strong>186</strong></td>
<td><strong>227</strong></td>
<td><strong>363</strong></td>
<td></td>
</tr>
</tbody>
</table>
As shown in Table 1, approximately one-half of these crossings occur at signalized intersections and represent the safest and most desired type of crossing. The least desirable type of crossing, uncontrolled midblock crossings, were found to occur 30% of the time.

Even more important is the location at which these crossings occurred. As shown in Figure 2.3, several hotspots exist for midblock crossing activity. Two spots in particular are noteworthy, one just east and west of State Street and one just to the east of Dean Street. Figure 2.4 shows pedestrian crossing volumes for signalized and unsignalized intersections in the study segment.
In addition to the pedestrian counts, the volunteers also collected bicycle volume crossing Johnson Avenue in the study area. Table 2.2 shows the number of bicycle crossing at signalized intersections, unsignalized intersections and mid-block locations.

<table>
<thead>
<tr>
<th>Crossing Locations</th>
<th>Percent</th>
<th>TOTAL</th>
<th>AM</th>
<th>Midday</th>
<th>PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signalized Intersections</td>
<td>45.4%</td>
<td>35</td>
<td>6</td>
<td>10</td>
<td>19</td>
</tr>
<tr>
<td>Unsignalized Intersections</td>
<td>36.4%</td>
<td>28</td>
<td>8</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>Midblock</td>
<td>18.2%</td>
<td>14</td>
<td>2</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>77</td>
<td>16</td>
<td>16</td>
<td>45</td>
<td></td>
</tr>
</tbody>
</table>

Table 2.2: Number of Johnson Avenue Bicycle Crossings by Type

As shown in the table, while the total number of bicycle crossings are lower than pedestrian crossings, a significant portion (36.4%) of the bicycle crossing occur at unsignalized intersection which does not provide adequate protection for the bicyclists. Similar to the pedestrian crossing, a vast majority of the crossing occur during the p.m. peak hour, which is also the time when the vehicular traffic volume is high. As a result, the potential for pedestrians and bicyclists crashes is high during the p.m. peak hour, especially at unsignalized and mid-block crossing locations.

Figure 2.5 shows the location of the bicycle crossing at the signalized and unsignalized intersection. As shown in the figure, the traffic signal at Caraway Road has the highest number of bicycle crossing at 27 crossings during the six-hour period. The second highest bicycle crossing is at the unsignalized intersection of State Street and Johnson Avenue with 11 crossings during the six-hour period. As the State Street/Johnson Avenue intersection has the highest pedestrian and bicycle crossings at any unsignalized intersection in the study area, it is a preferred location to improve pedestrian and bicycle safety.
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03: Public Input
A kickoff meeting was held on July 18, 2014 with representatives from the Jonesboro MPO and Jonesboro Engineering Department. At this meeting, planning team members had the opportunity of reviewing the project scope with staff members and gaining a better understanding of opportunities and challenges associated with this study. Some of the key points discussed at this meeting included:

- Revitalize Johnson Avenue to make it an attractive corridor and gateway to the city
- Identify appropriate pedestrian crossing location and treatment on Johnson Avenue
- Identify appropriate bike connection from ASU campus to downtown Jonesboro
- Identify appropriate measures to improve pedestrian and vehicular safety in downtown Jonesboro

Traffic patterns on Johnson Avenue were also discussed. Johnson Avenue is viewed as a major east-west corridor in the city and one of the primary roads which serves both downtown Jonesboro and ASU. It is a viable commercial district with a diverse array of business. Within the corridor there is a significant amount of housing on the north side of the street, which results in increased pedestrian activity between downtown businesses and students attending ASU. Because of the heavy traffic volumes entering Jonesboro on the north side of the city, Johnson Avenue is also a gateway to the city and needs visual enhancements.
Safety of all user groups should be looked at as part of the study. There is a desire for improved pedestrian and bicycle flows on the north side of the city, particularly between the ASU campus and downtown. If Johnson Avenue is the best alternative for connectivity, what improvements will be needed? The topic of a road diet was then discussed. Concerns were expressed that Johnson Avenue is a state highway and gaining support from the Arkansas State Highway & Transportation Department would be desirable, as it has only been a few years since the road was widened.

Several other challenges and opportunities that exist along Johnson Avenue were discussed.

- City transportation staff would not like to see additional traffic lights on Johnson Avenue
- Johnson Avenue is a main thoroughfare with lots of moderate generators and truck traffic
- NEA Baptist new location - could be more traffic on Johnson Avenue
- Access management or controlling curb cuts has been identified as a tool for several years, but has not been implemented. It will be difficult to implement it as property owners want as many accesses as they can get
- ASU classes start on August 18th – 19th. Data collection should occur after that
- Trains stopped blocking at-grade crossing at Fisher Street impact access to Johnson Avenue
- Potential roundabout at Aggie Road / Marion Berry Parkway
- ASU redeveloping area south of Aggie Road, west of Marion Berry Parkway
- ASU Campus Master Plan may have had different ideas for Johnson Avenue
- City is buying property in NE quadrant of Aggie Road/Patrick Street
- City acquired Wolverine property May located on Aggie Road
- St. Bernard is developing properties along Washington Avenue
- City transportation staff is open to HAWK and other mid-block crossing

STAKEHOLDER GROUPS
The discussion then moved to groups that were active in the community and who would be good to serve on a stakeholders group for this study as well as the allied study, known as the Downtown Jonesboro Pedestrian/Bicycle Safety Study.

- North Jonesboro Neighborhood Initiative (desire safe crossing of Johnson Ave.)
- ASU International Students
- ASU bicycle user groups both student and faculty
- ASU campus landscape architect
- North Jonesboro Redevelopment Incentive Group
- Chamber of Commerce
- Downtown Jonesboro Group
- St. Bernard’s / St. Bernard’s Foundation
- Ridge Riders
- NEA Baptist Hospital
- NEA Bicycle Coalition
Ark. Health Department
Riceland
Gear Head Bicycle shop owner
City Youth Ministries (on Union)
Andy Shatley - endurance cyclist
Mark Enos local architect may remember about streetscape on main

There were other discussions that focused more on the Downtown Jonesboro Pedestrian/Bicycle Safety Study that are provided in the public input section of that report.

STAKEHOLDER MEETING

The first stakeholder meeting was held September 18, 2014, at the downtown public library. The meeting focused on both the Downtown Jonesboro Pedestrian/Bicycle Safety Study and the Johnson Avenue Bicycle Study. A summary of this meeting is provided in the following paragraphs.

MEETING OVERVIEW

The meeting was very well attended by stakeholder committee members and interested citizens. Lose and Associates staff members began the meeting by providing an overview of the two projects and the agenda for the meeting activities.

Planning team members from RPM Transportation then provided an overview of recently completed pedestrian crossing counts on Johnson Avenue. These counts had been collected between North Caraway Road and Main Street.

Lose & Associates staff then presented some concept sketches that had been developed for improvements on Johnson Avenue, connectivity concepts between the ASU campus and downtown and potential options for rerouting traffic in the downtown district.

Following the presentation, participants were given the option of going to one of three tables to provide ideas and discuss opportunities and concerns for making pedestrian and bicycle improvements in the study area while enhancing vehicular traffic flows and safety for all forms of transportation.

Refer to Figures 3.1 to 3.3 for proposed Johnson Avenue improvements.

GROUP ONE – DISCUSSION OF JOHNSON AVENUE IMPROVEMENT

Concerns/Opportunities
- Limit open left turns using medians to improve safety
- Use median to restrict left turns at small intersections
- Mid-block cross walks are a good idea to improve safety
- HAWK signal at mid-block crosswalks are preferred
- Consider difference in cyclist's confidence and ability. Johnson Avenue needs to be safe for all users groups
Section 3

- Mid-block crosswalks limit vehicular / pedestrian conflict with turning cars
- Restrict truck traffic on Johnson Avenue
- Street lighting needs to be improved some lights out, others flicker
- Generally, people did not like the concept in Figure 3.3 which takes a car lane on Johnson Avenue to make room for a bike lane
- Question: Can sidewalks be made wider to accommodate a bike lane?
- Rogers Street intersection: bring median across to prevent left turn and improve safety

Refer to Figures 3.1 to 3.3.

GROUP TWO – CONNECTIVITY BETWEEN ASU CAMPUS AND DOWNTOWN

Concerns/Opportunities
- Aggie Road best option to connect campus with downtown district. Also extends through campus and on east side of campus there is adequate room for bike lanes. Matches up with proposed bike paths on ASU campus plan.
- Prefer separate bicycle and pedestrian systems on Aggie Road.
- Potential to add park on old plant property purchased by the city.
- If new railroad bridge crossing is developed at South Patrick Street, old bridge at South Bridge Street could become dedicated greenway/bikeway crossing.
- Provide improved bicycle and pedestrian crossing at North Fisher Street. Consider closing this crossing to cars to get railroad to stop blocking track to discourage vehicles from using the crossing.
- Create downtown loop by providing bike lanes along East Washington Avenue and connect to campus over Marion Berry bridge. Would transition to shared road condition on bridge.
- East Washington Avenue also connects to new bus station so would provide multi-model access for students and visitors to downtown.
- Trains parking on track cause a problem at Fisher Street crossing.
- Bridge Street bridge is narrow and no room for bicycle lanes.
- Aggie Road and Marion Berry Parkway intersection is very busy and currently not safe. This intersection is to be upgraded from four way stop to signalized intersection in near future.
- Ambulances use East Washington as route to St. Bernard’s Medical Center.
- Creating a safe pedestrian and bicycle railroad crossing will be a challenge.

Refer to Figures 3.4 to 3.8.
Figure 3.1: Johnson Avenue – Typical Mid-Block Crosswalk Concept
Figure 3.2: Johnson Avenue - Typical Intersection Crosswalk Concept

EXISTING PLAN VIEW

CONCEPT PLAN VIEW

EXISTING CROSS-SECTION

CONCEPT CROSS-SECTION

JOHNSON AVENUE
INTERSECTION CROSSWALK CONCEPT ILLUSTRATION
JONESBORO, CRAIGHEAD COUNTY, ARKANSAS

FEBRUARY 6, 2015

LAF 13128

LAP Associates, Inc.
1314 3RD AVENUE NORTH, SUITE 200
NASHVILLE, TN 37208
615.242.5040
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Figure 3.3: Johnson Avenue – Typical Bike Lane & Parking Concept

EXISTING PLAN VIEW

CONCEPT PLAN VIEW

EXISTING CROSS-SECTION

CONCEPT CROSS-SECTION

JOHNSON AVENUE
BIKE LANE & PARKING CONCEPT ILLUSTRATION
JONESBORO, CRAIGHEAD COUNTY, ARKANSAS
FEBRUARY 6, 2015
Section A

AGGIE ROAD / FRONT STREET
BIKEWAY OR MULTI-USE PATH CONCEPT ILLUSTRATION
JONESBORO, CRAIGHEAD COUNTY, ARKANSAS

FEBRUARY 6, 2015
LAF 1312B

SCALE: 1” = 60’ - 0”

EXISTING PLAN VIEW

EXISTING CROSS-SECTION

CONCEPT PLAN VIEW

CONCEPT CROSS-SECTION

Figure 3.4: Aggie Road / Front Street Concept
Figure 3.5: Castle Avenue Concept

SECTION B
CATE AVENUE
BIKE LANE CONCEPT ILLUSTRATION
JONESBORO, CRAIGHEAD COUNTY, ARKANSAS

FEBRUARY 6, 2015
LAF 13128

EXISTING PLAN VIEW

EXISTING CROSS-SECTION

CONCEPT PLAN VIEW

CONCEPT CROSS-SECTION
Figure 3.6: Marion Berry Parkway Narrow Concept

EXISTING PLAN VIEW

CONCEPT PLAN VIEW

EXISTING CROSS-SECTION

CONCEPT CROSS-SECTION

SECTION C
MARION BERRY PKWY. NARROW
BIKE LANE CONCEPT ILLUSTRATION
JONESBORO, CRAIGHEAD COUNTY, ARKANSAS

FEBRUARY 6, 2015
LAF 13128
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Figure 3.7: Marion Berry Parkway Wide Concept

SECTION D
MARION BERRY PKWY. WIDE
BIKE LANE CONCEPT ILLUSTRATION
JONESBORO, CRAIGHEAD COUNTY, ARKANSAS
FEBRUARY 6, 2015
LAF 13128
Figure 3.8: Washington Avenue Concept

SECTION E
WASHINGTON AVENUE
BIKE LANE CONCEPT ILLUSTRATION
JONESBORO, CRAIGHEAD COUNTY, ARKANSAS

FEBRUARY 6, 2015
LAJ-13128
GROUP THREE – DOWNTOWN PEDESTRIAN/BICYCLE SAFETY IMPROEMENTS

We presented the three concepts and received following comments:

- Reduce Vehicular Speed - Participants did not believe that reducing speed would be effective even if the signal timing is changed to slow traffic. They believe that people will still drive fast in downtown. As such, this concept was not favored in the group.
- Remove on-street parking - Participants were in favor of removing on-street parking to make the corridor safer. They showed openness for back-in parking. Participants would like to see bike lanes provided on Main Street.
- Re-direct northbound traffic to Church Street.
  - Participants were strongly in favor of this concept. They felt this concept will allow Main Street to be utilized for community events and made more walkable.
  - Of the options presented, the participants favored converting Main Street to two-way traffic, while maintaining direct access from Union and Church Street (Option 2 for both North and South End).
  - Participants liked the idea of providing bike lanes on Union and Church Street, but would like to see bike lanes on Main Street, as well.
  - Certain section of Church Street may not be wide enough for bike lanes. Hence, curbs may need to be moved.
  - Oak Street / Church Street and Union / Oak Street are safety concerns.
  - Pedestrian cross Church Street, just north of Buffalo Avenue between the medical center and parking lot. Pedestrian crossing accommodation at this location may be needed.

ASU CAMPUS STAFF INPUT MEETING

On December 8, 2014 a meeting was held on the Campus of Arkansas State University to discuss the Johnson Avenue Bicycle/Pedestrian Safety Study, the Downtown Jonesboro Pedestrian Safety Traffic Study and to seek input from university officials.

MEETING MINUTES

The planning team began the meeting by giving an overview of the two projects and history of the studies; particularly the change in focus from accommodating bicycles on Johnson Avenue to identifying alternative bicycle and pedestrian connections between ASU and downtown Jonesboro. This overview was based on the September stakeholders meeting. The other key issue of discussion was the focus on improving pedestrian safety at critical crossing locations along Johnson Avenue. Beautification of Johnson Avenue was also discussed.

KEY COMMENTS

- ASU officials were in agreement that reducing vehicular capacity on Johnson Avenue would not be a preferred alternative, and they were interested in ways to improve pedestrian crossing of Johnson Avenue.
- The concept of mid-block pedestrian crosswalks and/or improved pedestrian signalization at intersections was discussed. The team shared data collected by volunteers earlier this year depicting where pedestrians are crossing Johnson Avenue, both at intersections and at mid-block locations.
The data seemed to confirm ASU official’s observations for crossing locations along Johnson Avenue bases on their knowledge and observations of students who live north of Johnson Avenue that walk to campus.

The campus officials’ primary concern is pedestrian safety along Johnson Avenue. If mid-block crossings are proposed, they feel like signals of some kind need to be added at the crossings to alert motorists to the presence of pedestrians.

The group discussed potential connections between ASU and downtown.

The Campus officials generally liked the idea of using Aggie Road as the primary connection to downtown. East Washington Avenue could also be useful as a second route, but they felt it was too far from campus to be in their sphere of influence and they felt the East Washington Avenue corridor would be better discussed with the hospitals, residents and business owners, so they offered no opinion other than general approval if corridor stakeholders liked that option, as well.

DOWNTOWN STAKEHOLDERS MEETING

On January 15, 2015 a meeting was held in the first floor conference room of the Municipal Center, at 300 S. Church Street, to discuss the Johnson Avenue Bicycle/ Pedestrian Safety Study and the Downtown Jonesboro Pedestrian Safety Traffic Study to seek input from downtown Jonesboro business owners/representatives.

MEETING MINUTES

Planning team members began the meeting by giving an overview of the two projects and history of the studies; particularly the change in focus from accommodating bicycles on Johnson Avenue to identifying alternative bicycle and pedestrian connections between ASU and downtown Jonesboro and a focus on improving pedestrian safety at critical crossing locations along Johnson Avenue. Beautification of Johnson Avenue was also a priority.

Team members explained options for connecting ASU to downtown, including a crossing at Fisher Street. It was noted that it is highly probable that Fisher Street will be closed to vehicular traffic in the future and the city and railroad are looking at options to make this happen.

The existing crossing is in a location where trains from opposite directions area able to pass. Approximately 35 trains per day pass through this area. It was estimated that the tracks are blocked approximately 60% of the time. It was noted by the planning team that the city should try to retain the rights to a pedestrian and bicycle crossing at this location.

After discussion of links between ASU and Downtown, planning team members initiated a presentation on the various options for downtown traffic circulation. Five options for rerouting traffic were presented. See the Downtown Jonesboro Pedestrian / Bicycle Safety Study for figures described in this section.

Audience Comments and Questions

The question was raised by a member of the audience, if East Street had been considered as an alternate route. Planning team members explained that the study area was contained to Main Street, Union Street to the west and Church Street to the east.
• Comment was given that some would like to see 4 or 5 blocks of Main Street closed and used like an outdoor plaza with no vehicular traffic. Blytheville and Batesville, Arkansas were two locations that were given as examples where this has been done successfully.

• A comment was made that consideration should be given to making everything downtown 2-way.
• Participants would like downtown to be an arts and entertainment destination location.
• Delivery hours for downtown businesses should be during controlled times like it is done in other cities.
• There are 786 parking spaces in the downtown area, so losing on-street parking should not be a major issue to business owners.
• There is a perception that it is a long walk from parking areas to businesses. Improving pedestrian connections between parking lots and downtown businesses would help with this perception.

Preference Survey
At the conclusion of the meeting, a two-question survey was given to participants to see which of the five options were preferred. The results were as follows:

Q1. Which potential solution do you prefer for Downtown Jonesboro?

<table>
<thead>
<tr>
<th>Responses</th>
<th>Choices</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Reduce Vehicular Speed</td>
</tr>
<tr>
<td>2</td>
<td>Remove On-Street Parking</td>
</tr>
<tr>
<td>13</td>
<td>Re-Direct NB Thru traffic to Church Street and re-purpose Main Street</td>
</tr>
<tr>
<td>1</td>
<td>Other</td>
</tr>
</tbody>
</table>

Q2. If you choose 3rd solution in Q1, which Main Street revitalization option do you prefer?

<table>
<thead>
<tr>
<th>Responses</th>
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<tr>
<td>0</td>
<td>Option A: Maintain existing layout</td>
</tr>
<tr>
<td>3</td>
<td>Option B: Reduce to one 1-way + cycle track</td>
</tr>
<tr>
<td>7</td>
<td>Option C: Angled parking + one 1-way + bike lane</td>
</tr>
<tr>
<td>2</td>
<td>Option D: Convert to 2-way traffic</td>
</tr>
<tr>
<td>4</td>
<td>Option E. Convert to 2-way traffic + bike lane</td>
</tr>
<tr>
<td>2</td>
<td>Other: Close Main Street</td>
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</tbody>
</table>

Write in Comments Included:
• Attract destination type uses first, then do Option E.
• Angled parking and biked lanes create a pedestrian friendly Main Street for better commerce.
• Why not remove traffic all together on Main Street?
• Main Street (1st 5 blocks) seen as an open pedestrian-friendly shopping mall. Also would function as town square. If this is not an option, then I choose Option C for question 2.
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04: Development of Improvement Recommendations
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JOHNSON AVENUE IMPROVEMENT RECOMMENDATIONS

IMPROVEMENT CONCEPTS
Several options exist when providing infrastructure to allow pedestrians to safely cross major roadways like Johnson Avenue. Some of these, in order of increasing cost and impact, are shown below. These treatments are often combined as site conditions warrant to produce the most effective balance of safety for pedestrians, impact to traffic operations and feasible cost.

- Pedestrian warning signing
- Signs with marked crosswalks at intersections
- Signing/marking along with flashing beacons
- Channelization of pedestrians to existing signals
- Construction of midblock refuge island
- Signalization of an existing intersection
- Pedestrian Hybrid Beacon
- Road diet
- Pedestrian over/underpass
- Street lighting

Through the course of this study, only the construction of a grade-separated overpass was not seriously considered. A structure such as this would receive little use given the land use
conditions on Johnson Avenue and cost, constructability and maintenance issues would be considerable.

A road diet had also been discussed locally prior to the beginning of this study. A road diet is where the pavement width in between the existing curbs is reassigned. This often results in the provision of better accommodations for non-motorized users, as bike lanes are often added and the effective street width gets shorter and easier to cross. This alternative was considered, but recent historic counts have been over 20,000 vehicles per day at some locations. With this volume of traffic, (and especially the traffic growth trends in the corridor over the past 15 years), reducing the traffic capacity as required by a road diet is not recommended for Johnson Avenue.

All of the other improvement concepts listed above appear to be feasible alternatives and are discussed further in the following sections.

SIGNING, MARKING, AND BEACONS
These are the most basic improvements and should likely be used in conjunction with any other improvement in the corridor. W11-1 (bicycle warning) and W11-2 (pedestrian warning) signs may be included in the engineering design for corridor improvements. Posting the W11-2 to face drivers as they enter into the study segment of Johnson Avenue is recommended as is refreshing the crosswalk markings.

Flashing beacons should be reserved in this corridor to locations where pedestrian crossing activity is the most common. If flashing beacons are used, they should be rectangular rapid flash beacons. These are amber LED beacons which flash in a pattern similar to emergency vehicles and have been shown to have greater compliance rates that traditional yellow flashing beacons. It is also recommended that, if beacons are used at pedestrian crossing locations, they be pushbutton activated.

CHANNELIZATION OF PEDESTRIANS TO EXISTING SIGNALS
The safest location for which pedestrians to cross Johnson Avenue is at a signalized intersection where pedestrian signals exist. The channelization improvement strategy would discourage midblock crossings by installing a physical barrier to prevent crossings, except at the closest signalized intersection. The physical barrier can be railing, fencing, landscaping, etc., but must be placed in between the sidewalk and the roadway. In the Johnson Avenue corridor, the sidewalk is constructed immediately on the back of the curb; therefore, this barrier cannot be implemented in most of the corridor. One potential location for pedestrian channelization is on the ASU campus on the south side of Johnson Avenue, in between Dean Street and Caraway Road.
CONSTRUCTION OF MIDBLOCK REFUGE ISLAND
Short of providing regulatory traffic control (i.e. red lights where traffic is required to stop) to allow pedestrian crossings, construction of one or more midblock crossings is the most effective solution. This allows the pedestrian to cross in two phases, crossing one direction of traffic at a time. The median refuges also narrow the street visually and provide a protected place for signing, lighting, landscaping or other safety and aesthetic features. Placed strategically, the islands should not restrict turning movements or turn lanes along the corridor.

SIGNALIZATION OF AN EXISTING INTERSECTION
Pedestrians who desire to cross the street at a signalized intersection have six opportunities within the study segment: Main Street, Bridge Street, Fisher Street, Patrick Street, Marion Berry Parkway, and Caraway Road. Based on the locations of the signals already on the corridor, two intersections appear to have both good spacing for new signals and a pedestrian crossing need to justify signalization. These are the intersections of Johnson Avenue and State Street and Johnson Avenue and Dean Street.

The addition of traffic signals on a corridor can have a detrimental impact on traffic capacity, delay and progression. Therefore, the addition of any traffic signal should be done cautiously and within compliance of the signal warrant methods of the Manual on Uniform Traffic Control Devices (MUTCD).

The MUTCD sets nine (9) different warrants that have been developed by the traffic engineering profession to facilitate the determination of whether a signal is warranted. These warrants include minimum conditions that normally indicate when a traffic signal is justified at a particular location. The MUTCD states that, "Traffic control signals should not be installed unless one or more of the signal warrants in the manual are met." Four of the nine warrants are known to be applicable to the study intersection. These are the three volume-based warrants (#1, 2, and 3) and the pedestrian warrant (#4).

Johnson Avenue has enough major approach traffic to meet the volume thresholds for warrants 1, 2, 3 and 4. However, at a minimum, the minor street approach would need to have 53 vehicles per hour for eight hours to meet warrant 1. Warrants 2 and 3 would be more difficult to meet. A 24-hour volume count made by the city showed the average eight hour volume on State Street is 42 vehicles per hour, just shy of the 53 required to meet the warrant. However, it should be noted that the traffic volume counts were conducted for two days in the first week in December 2014. Due to the seasonal variation of traffic through-out the year, the traffic volume on State Street can be anticipated to meet signal warrant during high traffic volume months. The traffic volume on Dean Street is unknown. The pedestrian warrant requires a minimum of
75 pedestrians per hour to cross the major approach for each of any four hours of the day. Crossing data at State Street showed 100 crossings in four hours, and Dean Street had 63 crossings in four hours.

Both intersections failed to meet the pedestrian warrant and were significantly under the threshold number of pedestrians to do so. State Street was very close to meeting warrant 1 for eight hour traffic volumes (using 70% of Condition B – interruption of continuous traffic). Condition B is intended to be used where, “the traffic volume on a major street is so heavy that traffic on a minor intersecting street suffers excessive delay or conflict in entering or crossing the major street.” In this case, pedestrians experience the same delay as traffic at the intersection. Adding pedestrian volumes to the minor approach volume, it is likely that warrant 1 would be met if full vehicle and pedestrian movement volumes were available. Hence, the study recommends a traffic signal at the Johnson Avenue/State Street intersection for the following reasons:

▪ Even though the traffic volume collected in December 2014 did not meet the MUTCD signal warrant, during other months of the year when traffic volume is high, especially when ASU classes are in full session, the traffic volume on State Street is anticipated to be higher than recorded in December. Hence, State Street is anticipated to meet the MUTCD signal warrant.

▪ A number of pedestrian crossings were documented at the State Street intersection. A median crossing island, as is being recommended elsewhere in the Johnson Avenue corridor, is not appropriate at State Street because of the need for left turn storage for turning movements both into State Street and adjacent driveways.

▪ There are no controlled (i.e. signalized) pedestrian crossings from Marion Berry Parkway to Patrick Street. A traffic signal is the safest method of crossing an arterial street like Johnson Avenue, and State Street is the ideal location for such a crossing between Marion Berry Parkway and Patrick Street.

**PEDESTRIAN HYBRID BEACON**

A pedestrian hybrid beacon is intended for use where traffic control is needed to allow pedestrians to cross a street, but where a signal is not warranted or desired. These devices should not be installed at intersections, but are intended for mid-block applications. A pedestrian hybrid beacon would be well-suited to control the mid-block crossings that were observed in-between the Dean Street and Marion Berry Parkway intersections. However, these devices can be confusing for drivers who have never encountered them or have used them only rarely.

**RECOMMENDED IMPROVEMENTS**

Given the traffic volumes and speed, the land use mix and existing access conditions, and data regarding the use of the roadway by non-motorized users, uniform improvements do not appear feasible at this time. However, in the future they may be and none of the improvements recommended here will preclude any further uniform changes to the corridor in the future. More
complete, uniform improvements in the corridor might include: stricter access control (using medians, etc.), reconstruction into a more urban corridor as redevelopment occurs (introduction of on-street parking, wider sidewalks, building faces to the sidewalk, street trees and furnishings, etc.) or redistribution of lanes (if traffic were to plateau or decrease). These would be long-term changes which are possible, but do not appear desirable at this time based on input provided to this study.

Instead, based on data and observations made during field visits and provided by city and Jonesboro MPO staff, stakeholders, and volunteers, recommendations have been developed at six specific locations along the study segment of Johnson Avenue. These improvements alleviate the most pressing and consistent problem for pedestrians on the corridor, which is crossing it. Beginning on the western end of the corridor, the recommended improvements are as follow:

**Location:** Just West of Labaume Street, in front of Family Dollar  
**Challenge:** Mid-block crossings near Family Dollar  
**Recommendation:** Construct a median refuge island within the center turn lane. The island should be approximately 150 feet west of the Labaume Street intersection. The existing Family Dollar driveway should be narrowed by approximately 25 feet on the west side. ADA-compliant curb ramps should be constructed on the sidewalks and in the island. A standard 10 foot wide crosswalk should be marked. Pedestrian warning signage should be installed at the location of the crosswalk and should include rectangular rapid flash beacons facing both directions of Johnson Avenue. The beacons should be pedestrian activated with pushbuttons located on the sidewalks.

**Location:** In between Howard Street and Leggett Street  
**Challenge:** Mid-block crossings just west of Sonic restaurant and tobacco shop  
**Recommendation:** Construct a median refuge island within the center turn lane. The island should be approximately 370 feet west of the Leggett Street intersection. ADA-compliant curb ramps should be constructed on the sidewalks and in the island. A standard 10 foot wide crosswalk should be marked. Pedestrian warning signage should be installed at the location of the crosswalk and should include rectangular rapid flash beacons facing both directions of Johnson Avenue. The beacons should be pedestrian activated with pushbuttons located on the sidewalks.

**Location:** Intersection of Johnson Avenue and State Street  
**Challenge:** Crossings occurring both mid-block and at unsignalized intersection  
**Recommendation:** Signalize the intersection, including full pedestrian accommodations (crosswalks, pushbuttons, countdown heads, etc.).
Location: In between Marion Berry Parkway and Dean Street
Challenge: Mid-block crossings just east of Russell Drive
Recommendation: Construct a median refuge island within the center turn lane. The island should be approximately 110 feet east of the Russell Drive intersection. ADA-compliant curb ramps should be constructed on the sidewalks and in the island. A standard 10 foot wide crosswalk should be marked. Pedestrian warning signage should be installed at the location of the crosswalk and should include rectangular rapid flash beacons facing both directions of Johnson Avenue. The beacons should be pedestrian activated with pushbuttons located on the sidewalks. See Figure 4.2.

Location: Near Dean Street
Challenge: Mid-block crossings both east and west of Dean Street. Pedestrians walking east of Dean Street on south side of Johnson Avenue where no sidewalk exists next to roadway.
Recommendation: Construct two median refuge islands within the center turn lane. One island should be approximately 200 feet west of the Dean Street intersection. ADA-compliant curb ramps should be constructed on the sidewalks and in the island. A standard 10 foot wide crosswalk should be marked. Pedestrian warning signage should be installed at the location of the crosswalk and should include rectangular rapid flash beacons facing both directions of Johnson Avenue. The beacons should be pedestrian activated with pushbuttons located on the sidewalks.

Location: East of Main Street and west of Caraway Road
Challenge: Advise drivers of high pedestrian activity
Recommendation: Install pedestrian warning signs (W11-2) with supplemental “Next 2 Mile” plates at either end of the study segment.

DOWNTOWN TO ASU CONNECTIVITY

At the onset of this project, the initial connection that was studied for pedestrian and bicycle connections between Downtown Jonesboro and the ASU campus was the Johnson Avenue corridor. The planning team, through discussion with staff of the Jonesboro MPO and City of Jonesboro, ruled out implementing a street diet to narrow lanes to create dedicated bicycle lanes on Johnson Avenue and curb cut controls to provide more contiguous sections of sidewalks or wider sidewalks. With these improvement options eliminated, the planning team began to look at alternative routes to make bicycle and pedestrian connections between Downtown Jonesboro and the ASU campus.

AGGIE ROAD CORRIDOR

As part of the community input process, the concept of using Aggie Road as the primary connection between Downtown Jonesboro and the ASU campus gained widespread support. Citizens who attended the input meeting stated they already use Aggie Road as a bike route. See Figure 4.1. They stated the lower speeds and traffic volumes made them feel much safer
on Aggie Road, and many said they would never consider riding a bicycle on Johnson Avenue. The recommendation to use Aggie Road as the primary bicycle and pedestrian connection between Downtown Jonesboro and the ASU campus was also supported by campus representatives as it matched up to their long range plan for bicycle routes on campus. Therefore, it is the recommendation of this plan that Aggie Road becomes the primary connection route.

To facilitate Aggie Road becoming the primary connection route, physical improvements will need to be made within this corridor and several challenges will have to be overcome. While there appears to be adequate right of way within the corridor to have sidewalks and a dedicated off-road bicycle path, developing a safe crossing of the railroad could be problematic. Likewise, the intersection of Aggie Road and Marion Berry Parkway should be studied for improved safety.

Figure 3.4 shows an existing 4’ sidewalk on the north side of Aggie Road for pedestrians. A grass strip separates the sidewalk from the roadway shoulder, and this should be retained and enhanced with street trees and additional landscaping to create a buffer from traffic throughout the corridor. With two 11-foot driving lanes, there is room to provide a 12-foot two-way bike path inside a line of existing power poles. See figure 3.4 showing the cross section just described.

The two-way bike path would have two 6-foot lanes with a strip down the center of the path. The path should be developed following the ASSHTO Standards for Bicycle Facilities and signed per the MUTCD signage standards. The trail surface should be constructed of asphalt, following the Jonesboro City Standards for light duty streets. A two-foot clear shoulder is recommended for each side of the path where there is adequate right of way. It would be ideal to have a grass strip that separates the path from the roadway where right of way allows.

Starting at the ASU campus and continuing west, the bicycle path will stay on the south side of Aggie Road, beginning at the intersection with Marion Berry Parkway. This intersection should receive upgraded cross walks and signage needed to alert motorists to both the bicycle path crossing and pedestrian crossing. This could include electronic signage that is activated by bicyclist or pedestrian.

The bicycle path will continue west, crossing Faculty Circle and Academic Circle. From this point until Fisher Street there are no more street crossings. A short-term rail crossing solution at Fisher Street would be to add a bike path crossing and improved sidewalk crossing at this at-grade rail crossing. The drawback of this option is, as stated earlier in the report, trains block this rail crossing as much as 60% of the time.
**ALTERNATE CROSSINGS**
Three alternative crossings that will provide better long term solutions have been explored, and are described below.

**Alternate I Patrick Street**
The long range transportation plan calls for redeveloping Patrick Street to create a new north-south corridor to relieve traffic in the downtown district. If a new bridge is developed at Patrick Street, it should include sidewalks for pedestrians, and either dedicated bicycle lanes or a separate bicycle pathway to connect the Aggie Road facilities to Cate Avenue bicycle lanes and sidewalks. While a very good long term solution, the cost of a major new bridge for all forms of transportation may not be realistic in the near future. This option would require other improvement on Patrick Street in order to access the bridge, which will also increase the cost.

**Alternate II Fisher Street Pedestrian/Bicycle Bridge**
A cost effective, long term solution is to build a new bicycle and pedestrian bridge over the railroad within the current right-of-way of Fisher Street and close this crossing to vehicular traffic. In order to gain the necessary vertical clearance that is required, an elevated approach will have to be constructed. Both the bridge and approach ramps can be cost effectively constructed using pre-engineered bridge systems that require minimal onsite construction activities. These bridge systems also come in a variety of lengths that can easily span the railroad right-of-way.

With the construction of a dedicated pedestrian and bicycle bridge, a safe crossing will be provided and the needs of the railroad to stack trains at this location will no longer cause a separation between downtown and the ASU campus. Once users cross the railroad, bicycles will remain on the road in dedicated bicycle lanes and pedestrians will move to improved sidewalks along both Fisher Street and Cate Avenue.

**Alternate III Bridge Avenue Historic Bridge**
This alternate would call for the Aggie Road improvement to continue two blocks past Fisher Street to Bridge Avenue. At this location, there is a historic bridge that currently functions as a two-lane vehicular bridge. It is a narrow bridge that does not meet current design standards but is very attractive and does have sidewalks. In the short term, it is a safer alternative to an at-grade crossing at Fisher Street, and it has sidewalks that pedestrians are already using on the bridge. Bridge Street bridge is elevated above Aggie Road, so one of two options would be required to make this work as a shared-use bridge or a dedicated pedestrian and bicycle bridge.

Pedestrians could be routed to Johnson Avenue via North Drake Street where they would use existing sidewalk to reach Bridge Avenue and then cross the bridge to reach Cate Avenue. While not a direct route, it would be functional. For bicycles to reach the bridge, sidewalks on the south side of Johnson Avenue would need to be widened to a minimum of 8 feet to accommodate both bicycles and pedestrians. If the Bridge Street bridge is closed to vehicular
traffic, an approach ramp that would take pedestrians and bicyclists directly from Aggie Road to the bridge would be a good long term solution.

The city should look at the realistic near-term capital funding for all of these options and determine which is the most feasible. As it is important to get this corridor between downtown and the campus open with safe, user friendly facilities, a decision on the desired bridge crossing is critical to moving this project forward.

Once south of the railroad, Cate Avenue provides a good route to downtown and Main Street. Pedestrians will use existing sidewalks along Cate Avenue and dedicated bicycle lanes will be added for cyclists. The improvements on Cate Avenue should continue west to Union Street. Union Street has a wide right-of-way and traffic lanes and already has sidewalks on both sides of the street. With the addition of shared road signs, it would provide a bicycle corridor to the south through downtown. Sidewalk connections are also provided on Main Street and Church Street.

This corridor, as described, is the most direct route to campus and takes advantage of streets with sidewalk improvements in place and low traffic volumes. To be fully functional, a safe bridge crossing is needed, so alternate routes to campus were also explored. The alternate route that received the most support was the East Washington Avenue corridor.

**EAST WASHINGTON AVENUE CORRIDOR**

Three blocks south of Cate Avenue, East Washington Avenue is currently developed with two travel lanes and a center turn lane. Sidewalks are present in portions of the corridor on the north side of the road and recently constructed sidewalks on the south side of the road will complete the connection to Marion Barry Parkway. Traffic counts are higher than on Aggie Road, but much lower than East Matthews Avenue. On the east end of this corridor, a new interchange was developed at the intersection of Marion Berry Parkway. At this intersection, a new bridge over the railroad connects Marion Berry Parkway to Aggie Road and the ASU campus.

The planning team proposes to convert this corridor to a bicycle and pedestrian friendly route with dedicated 5 feet on-road bike lanes in each direction and 11 foot vehicular lanes. From the intersection at Marion Berry Parkway, existing sidewalks will provide connectivity to the ASU campus and bicycle lanes will end and transition to a shared road route. See figure 3.8.

This route has several advantages over the Aggie Road route in terms of development cost. No new pavement will be needed to provide the dedicated bicycle lanes. The Marion Berry Parkway intersection is already signalized and has pedestrian controls, and the new bridge over the railroad has sidewalks. The only new construction required will be the addition of sidewalks in missing sections, new signage and striping to reflect the lane modifications.
SIGNAGE

REGULATORY SIGNS
Regulatory signs provide operational requirements, and are used for traffic control. This category includes stop and yield signs, right-of-way signs, speed-limit signs and exclusion signs. They are normally installed where specific regulations apply. There are many types of regulatory signs for off-road bicycle pathways and roadway users that can be used. The MUTCD provides a list detailing size, color, font, etc. Most importantly for pedestrians and bicycle riders are signage at intersections or roadway crossings. Crossings that experience frequent conflicts between motorists and pedestrians or multi-lane roadways should include actuated controls, which give pedestrians and cyclists equal opportunities for a safe crossing.

WARNING SIGNALS
In addition to regulatory signs, crossings may need additional signalization. Warning signs identify existing or potentially hazardous conditions on or near crossing points for pedestrians or cyclists. Like those on roadways, warning signs on bicycle pathways identify steep grades, intersections, stop or yield signs, changes in paving materials and speed limits for bicycles. These warnings are included to provide safe conditions for all users. Warning signs function as their name implies—they identify existing or potentially hazardous conditions on or near the sidewalk, bicycle path or on road bicycle lanes, and they caution users to reduce speed or dismount a bicycle for safety reasons. They are typically used near intersections, bridges, crossings and tunnels. Following the rules and heeding the warnings identified by these signs is necessary because the interactions are unavoidable at intersections with roadways.

Along the Aggie Road and Washington Avenue corridors, electronic warning signs should be considered at the Aggie Road and Marion Barry Parkway intersection and at the Washington Avenue and Marion Barry Parkway intersection to improve safety for pedestrians and cyclists.

LIGHTING LEVELS
One of the keys to safe streets for all forms of transportation is good lighting. Within the Johnson Avenue study area and along the alternative routes previously discussed, there are various types of street lighting and lighting levels. Comments received in public input meetings and noted in the recent community survey conducted by the MPO included the concern that there is inadequate lighting for good pedestrian movement in downtown and surrounding neighborhoods. Johnson Avenue was also mentioned as needing improved lighting.

Team members made no footcandle measurements in the study area, but did make visual observations and agree with the citizen comments that additional lighting is needed to improve safety. Along Johnson Avenue, street lights are provided along some sections of the roadway, but not all sections. There is a lack of uniformity to the spacing of the street lights, thus there are numerous dark areas along the corridor. The same can be said for Aggie Road and East...
Washington Avenue. The best lighting in the entire area is along East Washington Avenue where it abuts Saint Benard’s Medical Center. In this section of the street, lighting provided for Saint Benard’s parking lots helps illuminate the street.

While improved lighting will help all forms of transportation, it is vital for improved pedestrian safety. Sidewalks should be lit to allow pedestrians to clearly see their path of travel and obstructions and grade changes along the route. On Johnson Avenue, with sidewalks on both sides of the road, street lighting will need to be provided on both sides of the street. In addition, at mid-block crossings, lighting will also be needed. Along Aggie Road, street lighting will be needed on the north side of the street in order to light the sidewalk. If there is a desire to encourage night time bicycle traffic on the bicycle path proposed on the south side of the street, street lighting will be needed. The sidewalks along East Washington Avenue change from being on both sides of the road, to a section with sidewalks only on the north side of the road and other sections with only sidewalks on the south side of the road. Street lights should be installed as needed on both sides of the road to insure safe lighting levels for the sidewalks.

In addition to improving pedestrian safety by lighting the roadways, recommended roadway lighting levels will also improve safety for motorist. One of the keys to improving safety is providing uniform levels of lighting within roadway corridors. With a posted speed of 45 mile per hour and the high traffic volumes on Johnson Avenue, improved lighting may be the most important factor in improving safety for all forms of transportation in this corridor.

Below is a summary of the lighting illuminance levels recommended by the Illuminating Engineering Society of North America. All levels are given in footcandles, unless otherwise noted.

### PEDESTRIAN LIGHT LEVELS

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<td>Intermediate Areas</td>
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<td>1.1</td>
</tr>
<tr>
<td>Residential Areas</td>
<td>0.2</td>
<td>0.5</td>
</tr>
<tr>
<td>Walkway Distance from Roadways and Type B Bikeways</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walkways, Bikeways and Stairways</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Pedestrian Tunnels</td>
<td>4.3</td>
<td>5.4</td>
</tr>
</tbody>
</table>

Crosswalks traversing roadways in the middle of long blocks and at street intersections should be provided with additional illumination.
## ROADWAY LIGHTING

### MAINTAINED LUMINANCE VALUES IN CANDELAS PER SQUARE FOOT

<table>
<thead>
<tr>
<th>Road Area Classification</th>
<th>Luminance (Avg)</th>
<th>Luminance Uniformity</th>
<th>Velling Luminance Ration (V/Avg.)*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Avg/Min</td>
<td>Max/Min</td>
<td></td>
</tr>
<tr>
<td>Freeway Class A</td>
<td>0.06</td>
<td>0.35/0.1</td>
<td>0.6/0.1</td>
</tr>
<tr>
<td>Freeway Class B</td>
<td>0.04</td>
<td>0.35/0.1</td>
<td>0.6/0.1</td>
</tr>
<tr>
<td>Expressway (Commercial)</td>
<td>0.1</td>
<td>0.3/0.1</td>
<td>0.5/0.1</td>
</tr>
<tr>
<td>Expressway (Intermediate)</td>
<td>0.08</td>
<td>0.3/0.1</td>
<td>0.5/0.1</td>
</tr>
<tr>
<td>Expressway (Residential)</td>
<td>0.06</td>
<td>0.35/0.1</td>
<td>0.6/0.1</td>
</tr>
<tr>
<td>Major (Commercial)</td>
<td>0.12</td>
<td>0.3/0.1</td>
<td>0.5/0.1</td>
</tr>
<tr>
<td>Major (Intermediate)</td>
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<td>0.3/0.1</td>
<td>0.5/0.1</td>
</tr>
<tr>
<td>Major (Residential)</td>
<td>0.06</td>
<td>0.35/0.1</td>
<td>0.6/0.1</td>
</tr>
<tr>
<td>Collector (Commercial)</td>
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<td>0.3/0.1</td>
<td>0.5/0.1</td>
</tr>
<tr>
<td>Collector (Intermediate)</td>
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<td>0.35/0.1</td>
<td>0.6/0.1</td>
</tr>
<tr>
<td>Collector (Residential)</td>
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<td>0.4/0.1</td>
<td>0.8/0.1</td>
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<tr>
<td>Local (Commercial)</td>
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<td>1/0.1</td>
</tr>
<tr>
<td>Local (Intermediate)</td>
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</tr>
<tr>
<td>Local (Residential)</td>
<td>0.03</td>
<td>0.6/0.1</td>
<td>1/0.1</td>
</tr>
</tbody>
</table>

*V = veiling luminance

For divided highways, where the lighting on one roadway may differ from that on the other, calculations should be made on each roadway independently. For freeways, the recommended values apply to both mainline and ramp roadways.

This information has been collected by the Illuminating Engineering Society of North America (IESNA) and summarized by the International Dark-Sky Association. Please note that these values are recommendations, not standards. Standards are set at the federal, state, county or community level. The IESNA does not set standards, though IESNA recommendations are often used by those who set standards.

There are two ways to approach lighting within the study area. Along Johnson Avenue there may be a desire to use pedestrian scale light fixtures that can also provide a visual enhancement. Pedestrian scale light fixtures are usually 18 feet or less in height. Often these fixtures also feature banner supports for seasonal and special event banners. Pedestrian fixtures are more decorative than standard street light fixtures and can be used to create visual continuity along a roadway corridor. The street light fixtures along Main Street are a good example of pedestrian light fixtures.
Spacing of fixtures is dependent upon the type of fixture selected. Because pedestrian fixtures are not as tall as standard street light fixtures, more fixtures will be needed to provide the desired light levels. The alternative to using pedestrian scale fixtures would be to use a more typical street light fixture in the 25 to 30’ range that would light both the sidewalks and the roadway. Because of the width of the Johnson Avenue corridor, street lighting will most likely be needed on both sides of the road to achieve proper roadway lighting levels. On both Aggie Road and East Washington Avenue, it may be possible to light the entire corridor from one side of the road with taller street lights.

A third approach would be to combine pedestrian scale light poles with taller street light poles to achieve proper lighting levels within the corridor. A combination of fixture types would allow for longer intervals between pedestrian fixtures and higher light levels at intersections and mid-block crossings provided with taller street lights.

**CONNECTIVITY CONCLUSIONS**

With respect to connectivity between downtown and the ASU campus, it is clear that Johnson Avenue is the least desirable route for bicycle and pedestrian traffic due to existing high traffic volumes and uncontrolled curb cuts. Aggie Road is the preferred alternative route for both pedestrians and bicycle connectivity. The only drawback to this route is resolving the railroad crossing point. The construction of a dedicated pedestrian/bicycle bridge at Fisher Street is the recommended alternative. East Washington Avenue is the least expensive alternate route and one that could be developed relatively quickly.

**PRIORITIZATION STRATEGY FOR PROJECT IMPLEMENTATION**

**Johnson Avenue**

A street lighting study should be conducted on Johnson Avenue from Stadium Boulevard to Main Street. As many of the mid-block crossings were occurring late in the day, proper street lighting would greatly enhance safety for pedestrians and motorist, as well. Additional development between North Caraway Road and Stadium Boulevard will increase pedestrian traffic outside the original study area; therefore, it is recommended that improved lighting be extended to Stadium Boulevard.

A right of way assessment is needed on the Johnson Avenue corridor. A survey should be conducted to document existing conditions within the right of way to determine where conflicts exist that would prevent or increase the development cost to create improved pedestrian and lighting improvements within the study area. The survey will also provide detailed information needed for the design of mid-block crossings and the addition of medians in the roadway.

With the completion of the lighting study, development of construction plans should proceed for the installation of lighting, mid-block crossings and other improvements, as noted in this master
plan. As a state route, coordination with the highway department will be required to secure necessary approvals prior to bidding and construction of the improvements.

**Aggie Road Corridor**

A right of way assessment is needed on the Aggie Road corridor. A survey should be conducted to document existing conditions within the right of way in order to determine where conflicts exist that would prevent or increase the development cost to create an improved pedestrian and bicycle corridor between ASU and downtown. This would also include surveying the right of way at the Fisher Street railroad crossing and Cate Avenue to Main Street. Once the survey is complete, a detailed master plan and opinions of cost can be developed for the Aggie corridor.

A necessary discussion with the railroad must be completed in order to obtain approval to close Fisher Street as a roadway crossing and convert to a grade separated pedestrian and bicycle crossing. The street should not be closed entirely until the alternate grade separated crossing is completed.

Upon the approval of the Aggie Road corridor master plan and the acquisition of any additional required right of way, construction documents for new street lighting, bicycle path and roadway improvements must be developed as needed to complete the connection between ASU and downtown.

A signalization/traffic circle study should be conducted at the intersection of Aggie Road and Marion Berry Parkway to determine the safest means of providing pedestrian and bicycle crossing at this intersection. Once the study is completed, construction documents should be developed for the intersection. This can be included in the overall corridor construction documents or as a separate stand-alone project.

**East Washington Avenue**

A right of way assessment is needed on the East Washington Avenue corridor. A survey should be conducted to document existing conditions within the right of way to determine where conflicts exist that would prevent or increase the development cost to create an improved pedestrian and bicycle corridor between ASU and downtown. Once the survey is complete, a detailed master plan and opinions of cost can be developed for the corridor.

Upon the approval of the East Washington Avenue corridor master plan and the acquisition of any additional required right of way, construction documents for new street lighting, bicycle lanes and roadway improvements must be developed as needed to complete the connection between ASU and downtown.
OPINIONS OF PROBABLE COST FOR HIGH PRIORITY PROJECTS

**Johnson Avenue**
- Pedestrian warning signing at ends of segment: $500
- Construction of median islands w/ signing and landscaping: $30,000 each
- Signalization of State Street intersection: $125,000

Improved street lighting has been recommended for the corridor. Because a detailed lighting study will be required, a cost for street lighting has not been provided. This cost will be in addition to the cost provided in this master plan.

**ASU to Downtown Connections**
- East Washington Improvements: $350,000 - $450,000
- Aggie Road Connection Improvements: $1,475,000 - $1,766,000 (Includes grade separated bridge over railroad at Fisher Street)
- Fisher Street pedestrian / bicycle bridge: $750,000 (as stand alone item)

**Additional Cost Items**
Several additional studies are needed to fully develop opinions of cost within the Aggie Road and East Washington Avenue corridors. Items that will add to the overall development cost are listed below.
- Aggie Road / Marion Berry Parkway Intersection: Signalization/Roundabout Study
- Aggie Road Right of Way Survey, Master Plan and Lighting Study
- Aggie Road Improvement Construction Documents
- Aggie Road Right of Way Acquisition
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Figure 4.1: Jonesboro Multi-Modal Master Plan Concept
Figure 4.2: Johnson Avenue – Typical Mid-Block Crosswalk Concept

EXISTING PLAN VIEW

CONCEPT PLAN VIEW

EXISTING CROSS-SECTION

CONCEPT CROSS-SECTION

JOHNSON AVENUE
MID-BLOCK CROSSWALK CONCEPT ILLUSTRATION
JONESBORO, CRAIGHEAD COUNTY, ARKANSAS

FEBRUARY 6, 2015
LA# 12128

SCALE: 1" = 60’-0"