

MEMPHIS AREA TRANSIT AUTHORITY

# Midtown

## Alternatives Analysis

TECHNICAL MEMORANDUM: **1**  
Previous and Related Studies



July 2014

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## Section 1|

# Introduction

The following section provides an inventory and abstracts of prior studies completed with relevance to the transportation alternatives in the Memphis area. These studies encompass a wide range of topic areas and subject matter, including regional plans, economic development studies, as well as related transportation planning documents. The synthesis of these documents provides a solid foundation for understanding the context within which the Midtown Alternatives Analysis project is being developed, as well as a summary of the planning efforts that have been completed to date in advance of this analysis.

The following documents were reviewed and summarized below:

1. MATA Short Range Transit Plan (2012)
2. MATA On-board Survey (2013)
3. Mid-South Regional Greenprint & Sustainability Plan (2013)
4. Bus Transit to Workplace Study (2013)
5. Memphis Aerotropolis Airport City Master Plan (2014)
6. Poplar Southern Corridor Study (2010)
7. 2014-2017 Transportation Improvement Program (2014)
8. A Coordinated Human Services Transportation Plan for the Memphis Area (2007)
9. Regional Bicycle and Pedestrian Plan (2011)
10. Memphis MPO Public Participation Program (2011)
11. Sustainable Shelby Implementation Plan (2008)
12. Long Range Transportation Plan "Direction 2040" (2012)
13. Transit Signal Priority – Poplar Ave. and Bellevue Blvd./Elvis Presley Blvd (2012)
14. Memphis STP Pedestrian Sidewalk Project – Pedestrian Crash Analysis & Safety Analysis (2014)
15. Other Data Sources

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### MATA Short Range Transit Plan (2012)

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The Short Range Transit Plan (SRTP) includes a detailed review of MATA's existing transit services; identified strengths and weaknesses in the system; and, developed a series of recommendations to correct weaknesses and strengthen assets.

The transit needs assessment includes collecting a set of ideas and input, as well as analysis to determine the system's current strengths and weaknesses. The assessment found that MATA provides a highly efficient service with a strong market for riders. This market appears to be sustainable in the future. However, funding, reduction of service, reliability, and route structure were identified as issues.

Based on the needs assessment, three optimal alternatives were developed for improving the bus network. These alternatives include developing a grid system; transit hubs and centers; and, modification of the existing network. Through evaluation of these alternatives and refinement of the preferred alternative, a system was designed that included the following features<sup>1</sup> :

- Key Corridor Routes;
- Emerging Key Corridor Routes;
- Mainline Routes;
- Feeder Routes;
- Express Routes;
- Flex Route Demonstration Project; and,
- Airport Shuttle

Each of these categories was developed based on demand, funding availability and location and is based on the initial transit hubs and centers alternative with input from stakeholders and the public. The preferred alternative simplifies the routing system; provides more frequent and user-friendly service; addresses gaps in the network; and aims to increase ridership by 15 percent.

In addition to recommended route structure modifications, the SRTP also included high level policy recommendations such as vision statements, agency goals, and performance measures. The SRTP provides a 5 year schedule for implementing the preferred alternative and planning for further service improvements including BRT corridors throughout the system.

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## MATA On-board Survey (2013)

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The latest on-board survey was completed for MATA in 2013. The process included designing a survey instrument; developing a sample plan; collecting, processing, and geocoding the data; weighting and expanding the data; analyzing the data; and reporting results. The survey provided detailed information on average rider profiles, trip characteristics, and evaluation of service.

The rider profile shows that the average MATA rider had a household income of \$18,000. The mean household size was 3.2 people. There was an equal distribution of men and women riding the system, and 89 percent of passengers were African American. Over 60 percent of riders were in a household without a private vehicle available, confirming that MATA is serving a very heavily transit-dependent population.

The majority of riders on the system were work based trips, with 56 percent either going to or coming from work. Over 80 percent of riders walk to or from their origin and final destination from the first and last stop, respectively. 57 percent of riders made their trip without requiring a transfer.

The service evaluation found that the majority of passengers were satisfied with most aspects of MATA service. The greatest dissatisfaction came with the timeliness of service, although only 6 percent of riders strongly disagreed that buses arrived on time.

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<sup>1</sup> Nelson\Nygaard Consulting Associates, "MATA Short Range Transit Plan," (2012), p.ES-5.



## Mid-South Regional Greenprint and Sustainability Plan – Vision Plan (2013)

The Mid-South Regional Greenprint is a consortium established as a result of a \$2.6 million Housing and Urban Development (HUD) Sustainable Communities Regional Planning Grant. The grant was awarded to Shelby County and is administered by the Memphis and Shelby County Office of Sustainability. The consortium consists of several working groups staffed by local non-profit organizations. The plan arose from the lack of coordinated planning within the region between aspirations, plans, and strategies for a comprehensive approach to improving quality of life, economic competitiveness, and environmental sustainability.

The purpose of the plan is to enhance livability and sustainability within the region through a unified vision of an interconnected system of parks and greenways with bicycle and pedestrian-friendly streets throughout the Mid-South/Memphis region.

The plan documents the visioning process which brought stakeholders and members of the public together to provide input on the future of the community, and identify a process to make the vision a reality. Through a consensus building process, a set of goals and proposed outcomes were established, which serve as the basis for the final recommendations in the plan. The goals and outcomes formulated during the planning process led to a series of strategic directions which are reinforced by providing the regional context of each direction; understanding why each is needed; and, identifying the leadership and resources to implement change. The six strategic directions are<sup>2</sup>:

- A Regional Interconnected Network of Parks, Greenways and Open Spaces
- Equitable Participation and Community Ownership
- Enhanced Access and Transportation Choices
- Healthy and Safe Communities
- Improved Neighborhoods and Fair Housing Choices
- Sustainable Resources and a Quality Environment
- A Productive Workforce and Economy
- Effective Long-Term Regional Planning

Each strategic direction contains several objectives and specific action items required for implementation. All six strategic directions are interrelated and strive to improve mobility and access throughout the region; however, this review focuses on the transportation and mobility aspects and how they relate to the Midtown area.

The major objectives identified to provide enhanced access and transportation choices are<sup>2</sup>:

- Connect communities and neighborhoods across the region through the multimodal transportation network and green infrastructure.
- Increase transportation choices and modal connections for all users.
- Connect people to jobs, schools, goods and services, and natural areas.

<sup>2</sup> Mid-South Regional Greenprint and Sustainability Plan, "Vision Plan," (2013) p. 41.

- Improve transportation system impacts on the built environment, natural environment, and regional quality of life.

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## Bus Transit to Workplace Study (2013)

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The Bus Transit to Workplace Study is a subset to the Mid-South Regional Greenprint Sustainability plan. This study arose from some of the initial Sustainability Plan findings regarding lack of transportation access for many in the Mid-South region. This study looks at the accessibility of current and future major employment centers relative to the region's population centers. It also analyzes how employment centers are distributed and how well they are served by current transportation infrastructure, including transit routes, bike lanes, and pedestrian facilities. The study found that employment in the region is decentralizing and creating further mobility challenges for the transit-dependent population. As a result of this evaluation, recommendations were made to improve transit, but other solutions were also examined, including Transportation Demand Management (TDM) policies.

The first step in the study was to accurately capture commuting patterns in the region through an employer and commuter survey. 700 commuters and 96 employers were surveyed. The majority of commuters drive to work; however, one third of employers indicated that some of their employees have transportation challenges getting to work. The majority of employers provide free parking for employees, but few provide other transportation incentives. Most of the employees surveyed indicated they worked traditional working hours; however, there are many employers which have overnight and weekend shifts.

The next phase of the study was the preparation of State of Employment Report. The report reviewed population and employment patterns in the region. It found that population and employment growth within the City of Memphis is slowing, while growth is occurring in the surrounding suburbs. Many of the low wage jobs are located outside of the downtown and are poorly served by transit, meanwhile the lower income, transit dependent population generally resides in the urban core.

The recommendations included developing a TDM Toolkit which provides a series of strategies to increase awareness of different transportation options within the region. The main objective in presenting these strategies is to increase accessibility to employment. Strategies include<sup>3</sup>:

- Employer shuttles
- Employer-subsidized transit passes
- Commuter bus service
- Parking cash-out option
- On-site bicycle facilities
- Universal transit passes
- Vanpools and rideshares
- Guaranteed Ride Home Program

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<sup>3</sup> Mid-South Regional Greenprint and Sustainability Plan, "Transportation Demand Management Strategies," (2013). p 8.

A case study approach was taken to further identify which transit and TDM strategies would best be applied in a given environment. The case studies were different areas in the Memphis region including the airport; Medical District; suburbs of Collierville, TN and Southaven, MS; and, the industrial area of President's Island.

The Medical District case study pertains to proposed solutions within the Midtown AA Study Area. Proposed transit recommendations include BRT and improved amenities at major stops and mobility hubs. TDM strategies include vanpools, employer-subsidized transit passes and a Transportation Management Association (TMA). The TMA would coordinate shift times, arrange vanpools, and be used as a clearinghouse for transit-related information for commuters and residents.

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## Memphis Aerotropolis Airport City Master Plan (2014)

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The Airport City Master Plan is a framework for ensuring that the 50 square mile area around Memphis International Airport maintains its economic competitiveness in future years. The airport is North America's largest cargo airport and home to FedEx, Memphis' largest employer. The plan addresses concerns about the Airport City losing its competitive edge due to economic downturns, competition, and lack of infrastructure upgrades. It is intended to support reinvestment and guide future airport area development in order to maintain existing business, attract additional business, create employment opportunities, and address deficiencies.

The visioning process for the plan focused on four development principles: building community, strengthening connections, increasing competitiveness, and promoting collaboration. The plan lays out a development framework which sets the stage for development. The framework layers include<sup>4</sup>:

- Activity Nodes Gateways
- Transportation Corridors and Terminals
- Green Network
- Neighborhood Advancement Zones
- Economic Development Districts

The specific elements of the Master Plan provide the required policies and strategies to translate the framework layers and development principles into action items. The plan elements are<sup>4</sup>:

- Land Use and Urban Form
- Transportation
- Infrastructure and Environment
- Housing and Community Resources
- Economics and Real Estate

The synthesis of the framework and the plan elements led to an implementation plan that includes organizational recommendations, trigger projects, and a phased development plan to guide the full revitalization process.

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<sup>4</sup> Memphis Aerotropolis, "Airport City Master Plan Executive Summary," (2014), p. 7.

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## Poplar Southern Corridor Study (2010)

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This corridor study analyzes the impact of crossing improvements along the Norfolk-Southern Railroad corridor from Midtown Memphis and points east. The Norfolk Southern Railroad corridor runs parallel to Southern Avenue within the Midtown AA study area. Beyond the limits of the Midtown area, the Poplar Southern study corridor continues eastward and parallels Poplar Avenue. The goals of the study are to<sup>5</sup>:

- Increase accessibility and mobility for users of the transportation system.
- Increase the safety of the transportation system for motorized and non-motorized users.
- Promote efficient and sustainable land use and development patterns to meet existing and future transportation needs.
- Encourage improvements to and the expansion of freight facilities.
- Encourage conservation of energy resources and minimize the negative community and environmental impacts.

These goals were formulated to ensure they were consistent with the goals of the Memphis Urban Area Long Range Transportation Plan (LRTP).

The study identified all at-grade rail crossings within the project area and included a comprehensive public outreach process to identify known issues within the corridor and to discuss and evaluate potential solutions.

A matrix of all grade crossings within the study area was developed to rank the crossings in terms of congestion relief, economic opportunities, safety issues, public support, environmental issues, and cost feasibility. Additional evaluation on the crossings was based on adjacent land use and vertical geometry. From the evaluations, two crossings were selected to develop alternative solutions: Mendenhall Road and Houston Levee Road.

While outside of the Midtown study area, these two crossings were determined to be representative of all crossings along the corridor.

The alternatives considered for each crossing included grade separation by adjusting the elevation of either the road or rail; safety improvements; or, no improvement. The alternatives analysis includes construction impacts, community impacts, estimated construction cost, and cost/benefit analysis.

In both cases grade separation was recommended. For the Mendenhall Road crossing, it was recommended that the road be lowered to pass underneath the railroad, which would be left at its current elevation. For the Houston Levee Road crossing, it was recommended to raise the rail and lower the road to create the grade separation.

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## 2014-2017 Transportation Improvement Program (2014)

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The 2014-2017 Transportation Improvement Program (TIP) provides a prioritized list of transportation projects within the Memphis Urban Area Metropolitan Planning Organization (Memphis MPO) area.

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<sup>5</sup> Memphis MPO, "Poplar Southern / Corridor Study," (2010) p. 5.



The TIP is a four year program of fiscally constrained multimodal projects, and is required if federal funds are being spent.

The TIP was reviewed to determine if any projects may have direct or indirect impacts within the Midtown study area.

#### *New Projects*

- I-240 between I-40 and I-55 – Widen from 6 to 8 lanes
- North Second Street between I-40 and US-51 – Roadway improvements including parkway design, sidewalk reconstruction, bike lanes, and landscaping.
- Highway 61 between Mississippi State Line and I-40 – Signage, art and landscaping for Blues Trail designation.

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## **A Coordinated Human Services Transportation Plan for the Memphis Area (2007)**

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The Memphis Area Coordinated Transportation Plan (MACP) is federally required for projects expecting to receive FTA assistance for human services transportation services. The plan was prepared for the purpose of assessing the needs of transit-dependent populations, including the elderly, those with disabilities and on low income. The plan serves to identify existing transportation services and identify gaps and redundancies in service. The planning process included significant data gathering and public and stakeholder involvement.

The stakeholder process involved over forty organizations from the five county area, with representatives from transportation providers, human services providers, planning organizations and transportation users. The stakeholder process was led by MATA and the Memphis MPO. An extensive public outreach process was also undertaken with public meetings, survey questionnaires, and telephone interviews.

The MACP found there were four types of transit service available in the study area: fixed route, fixed schedule; fixed route, flexible schedule; flexible route, fixed schedule; and, full demand response with flexible routes and schedules based on customer calls.

The current demand for public transit in the Memphis area comes from the following groups:

- Transit-dependent – elderly and disabled who cannot operate a private automobile.
- Low income – residents with limited income who cannot afford to own and operate a private automobile.
- Visitors to the city using transit for local trips and sightseeing.

Based on the public and stakeholder input, a number of gaps were identified in human services transportation within the Memphis area. Firstly, service is insufficient or inadequate with lack of off-peak, overnight, and weekend service. Furthermore, employment centers are not always adequately served by the existing public transportation network, and the fixed route and demand response services don't adequately reach persons with disabilities.

Other identified service gaps were attributed to lack of funding to subsidize service. This prevents low income riders from accessibility to affordable transportation to jobs, schools, or other services.

Infrastructure was also identified as contributing to service gaps. Individuals with disabilities are restricted in their use of public transit services due to the lack of sidewalks and/or curb cuts, as well as wheelchair-accessible vehicles. Finally, lack of coordination and information creates a challenge for potential users regarding service availability and qualification criteria.

The MACP identified the types of services needed to address unmet transportation needs and provided an implementation plan to organize initiatives into short-term and long-term objectives.

The short-term tasks include<sup>6</sup>:

- Establishing a committee on coordinated human services transportation for the Memphis Area.
- Selecting projects for FTA funding.
- Conducting public awareness campaign to educate elected officials and potential public transportation users about the importance of human services transportation and the benefits of using public transit services.
- Identifying sources of dedicated funding to support continuous coordinated human services transportation efforts.
- Identifying demonstration projects for meeting unmet human services transportation needs.

The long-term tasks include<sup>7</sup>:

- Forming successful partnerships among public transit providers and human services providers in the Memphis region.
- Developing a practical regional coordination model for coordinated human services transportation in the MACTP Planning Area.

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## Regional Bicycle and Pedestrian Plan (2011)

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The Regional Bicycle and Pedestrian Plan is a document which identifies opportunities for improving bicycle and pedestrian travel within the Memphis region. This plan forms the bicycle and pedestrian component of the Long Range Transportation Plan (LRTP) developed by the Memphis MPO. The plan lays out a series of goals consistent with those in the LRTP. The twelve goals identified are centered around the theme of developing and encouraging a multi-modal transportation system, with a focus on bicycle and pedestrian facilities.

The plan includes a thorough analysis of bicycle and pedestrian facilities within the region, including existing facilities and those programmed for construction, as well as an analysis of popular bike-ped origins and destinations. This inventory provided the opportunity to identify, promote, and prioritize new projects. Existing Conditions analysis also included an identification of existing constraints and opportunities to be addressed as the infrastructure is expanded. The analysis also recognizes the different needs for commuters and recreational users.

The goals developed as part of the plan were used to formulate a set of recommendations based on the “5E’s”: Engineering, Education, Enforcement, Encouragement, and Evaluation<sup>8</sup>. The recommendations

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<sup>6</sup> Memphis MPO/MATA, “Memphis Area Coordinated Transportation Plan,” (2007) p. 60.

<sup>7</sup> Memphis MPO/MATA, “Memphis Area Coordinated Transportation Plan,” (2007) p. 63.

<sup>8</sup> Memphis MPO, “Regional Bicycle and Pedestrian Plan,” (2011) p. 48.

are broad in nature and focus primarily on policies, legislative changes, and physical improvements. These principles were used to develop a set of proposed improvement corridors.

The corridors were prioritized into the following hierarchy: regional, primary, and secondary. Regional priorities connect various activity centers throughout the region, and are given the highest priority because they offer inter-jurisdictional connectivity across many communities in the region. Primary priorities provide more localized connectivity, but still provide main access between activity centers. Secondary priority corridors are typically along local roadways, and provide local access or connectivity to one another or to corridors of higher priority. Corridors found within areas of lower density were also given secondary priority status.

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## Memphis MPO Public Participation Program (2011)

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The Public Participation Plan (PPP) is the official public involvement policy for the transportation planning process administered by the Memphis MPO. The plan gives an overview of public involvement and its overall objectives in the planning process. The plan also documents the activities of the MPO, including its adoption and amendment processes for transportation plans, projects, and tasks. The PPP is updated every four years.

The plan provides a framework for distributing information, public notice, and input on key transportation decisions, as well as stakeholder involvement. The following principles have been identified by the MPO and are followed in the public participation process<sup>9</sup>:

- Educate and inform the public about transportation planning, projects, and issues within their communities and the region.
- Secure full and fair proactive citizen involvement in the “3-C” transportation planning process (Continuing, Cooperative, and Comprehensive).
- Ensure that information is easily accessible to all interested parties in the community.
- Prioritize Environmental Justice and Title VI of the Civil Rights Act by communicating with affected and interested parties, including special effort to include under-represented populations.
- Improve the decision making process to include the interest/needs of stakeholders through informed consent.
- Evaluate the participation processes and procedures on a periodic basis to assess and improve effectiveness.

The public participation process outlined within this document will be used to develop the plans published by the Memphis MPO, including the Long Range Transportation Plan (LRTP) and Transportation Improvement Program (TIP). Elements of the process include outreach efforts, public comment periods, accessible formats, and public meetings. The PPP also includes a public participation toolbox which includes techniques to both inform and involve the public. Techniques include media outreach, data distribution, interactive media, and advisory groups.

The plan also documents the specific guidelines for both the LRTP and TIP. The PPP outlines the public process and distribution of these documents.

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<sup>9</sup> Memphis MPO, “Public Participation Plan,” (2011) p. 14.

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## Sustainable Shelby Implementation Plan (2008)

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The Sustainable Shelby Implementation Plan is the documentation of the work undertaken with the Sustainable Shelby Initiative. The Initiative was promoted by Mayor AC Wharton as a way to address current socioeconomic issues and promote a sustainable future for the region. The Plan is the synthesis of research and ideas formulated by several technical committees and professional planners along with public input to develop a series of implementable strategies and recommendations for a sustainable future.

The strategies are grouped into five different categories<sup>10</sup>:

- Great Neighborhoods for a Great Community
  - Great Neighborhoods
  - Smart Planning
  - Capital Improvement Program
  - Community Redevelopment
  - Public Realm
  - Rethinking Transportation
  - A Leader for Green Buildings
- Protecting and Improving our Environment
  - Consumption
  - Protecting Natural Resources
- Greening our Economy
  - Green Jobs
  - Economic Development
- Learning Green Lessons
  - Public Awareness
  - Eco-Kids and Schools
- Leading by Example
  - Office of Sustainability
  - Public Purchasing
  - Public Buildings

Each of the strategies are prioritized as short, mid, and long-term, and are assigned as administrative policy changes, or local or state legislative changes. In addition, the top-ranked recommendations were assigned to the categories above.

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<sup>10</sup> Sustainable Shelby, "Sustainable Shelby Implementation Plan," p. 205.

Many of the strategies and recommendations promote enhanced connectivity and mobility as a way to support a more sustainable future. The efficiency and performance of the transit network was seen as key to sustainability as well as increasing the frequency and reliability of service.

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## Long Range Transportation Plan “Direction 2040” (2012)

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The Long Range Transportation Plan is a document used to guide federal transportation funding through the planning horizon year of 2040. The LRTP is a federally-required document and must cover a minimum of 20 years into the future. The LRTP is updated every four years, and the MPO is already beginning the update process. The purpose of the plan is to develop short and long-term strategies for investment in multimodal transportation to support regional growth. The plan is developed with support from stakeholders across the region and with input from the general public.

In developing the LRTP, an extensive stakeholder and public outreach effort was undertaken to form a vision for the region’s future. The process resulted in the following vision statement<sup>11</sup>:

“The Memphis Urban Area 2040 Long-Range Transportation Plan will provide multi-modal transportation solutions that support sustainable growth, economic vitality, and livability while maintaining the natural and urban environment.”

Through stakeholder input, a series of goals and objectives were developed to support the vision and the planning process. A substantial public involvement effort was undertaken to obtain feedback and enhance participation in the LRTP development process. Specific input was sought regarding ways to effectively and feasibly improve the transportation system in the region.

The LRTP includes a detailed land use scenario planning component where possible future growth and scenarios were identified. These scenarios are modeled to evaluate the potential regional impacts on transportation, land use, and sustainability. The preferred scenario includes initiatives that promote efficient transportation including transit-oriented development, complete streets, street connectivity, and infill development.

The plan also includes a detailed review of existing transportation conditions and assesses needs. Based on these needs, an assessment of transportation strategies was completed. This assessment of strategies includes an identification of multi-modal solutions to the existing transportation needs. A series of corridors radiating from the Midtown area were identified as high capacity transit corridors.

The LRTP examines the environmental and social characteristics of the study area in order to identify, mitigate, or avoid significant impacts as a result of potential transportation improvement projects. The identification of potential impacts helps to balance and weigh the benefits of improving transportation against preserving the environmental and social resources within a community. The screening process is designed to consider equal distribution of proposed projects across the region, ensuring that disadvantaged populations will also benefit from transportation improvements.

One of the key elements to the LRTP is the Financial and Implementation Plan. This provides a process for funding and implementing the identified transportation improvements. The financial plan is used to demonstrate how projects will be implemented based on expected sources: federal, state, and local.

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<sup>11</sup> Memphis MPO, “Direction 2040 Long Range Transportation Plan,” p. 1-7.



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## Transit Signal Priority – Poplar Ave. and Bellevue Blvd. /Elvis Presley Blvd (2012)

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MATA has recently completed Transit Signal Priority (TSP) projects along two key corridors, partially within the Midtown area. The Poplar and Bellevue/Elvis Presley corridors are two of the most heavily-traveled transit corridors within the MATA system. The TSP will allow approaching buses to receive additional green time, if available, to progress through the intersection.

The primary goal of TSP is to reduce trip times along the corridor, thereby reducing delays and increasing the reliability of the transit service. In addition, with less delay, fuel savings and a reduction in emissions can be expected. It is anticipated that with a faster, more reliable service, ridership levels will increase.

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## Memphis STP Pedestrian Sidewalk Project – Pedestrian Crash Analysis & Safety Analysis (2014)

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The Pedestrian Crash and Safety Analysis Memo provided a review of pedestrian-involved incidents for a five year period (2007-2011). The Memo also describes the safety issues identified during the analysis, as well as field observations and stakeholder interviews. The Memo also identifies potential strategies to improve safety, including infrastructure improvements, education, and enforcement.

The review of pedestrian data found that the Memphis region is one of the more dangerous metro areas in the US relative to pedestrian safety. The region experienced 1.7 deaths per 100,000 population from 2008-2012. The analysis of data found that there were 1,800 pedestrian-involved incidents, resulting in 75 fatalities, during the study period.

The analysis also categorized when and where most pedestrian crashes occur, as well as the age groups most prone to accidents. The analysis also identified prime locations for accidents, such as at signalized intersections and midblock locations. It also identified infrastructure deficiencies, such as poor sidewalks and faded crosswalks, as contributors to unsafe pedestrian conditions.

Potential infrastructure improvements include: reduction of lanes on arterials; reduction or modification of right-turn skip lanes to include a raised crossing; improve crosswalk striping and marking; and, improving the phase at traffic signals.

Other identified strategies include lowering of speed limits on arterials; enforcement of yielding to pedestrians; safety campaigns; and, driver education.

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## Other Data Sources/Projects

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A series of other data sources will be reviewed and consulted to determine their consistency with findings and recommendations in the AA. These sources include:

- FY 2015 Unified Planning Work Program (UPWP)
- Mid-South Regional Travel Survey (underway)
- MATA/MPO GIS Transit Route and Stop Data
- National Transit Database

- MPO Travel Demand Model Database
- MPO Socioeconomic Data
- MATA Bike Rack Replacement Project