IMPLEMENTATION

Successful implementation of the recommendations laid out in this plan and an improvement of general bicycle and pedestrian conditions in the Memphis MPO study area requires action on multiple fronts. These fronts consist of the so-called “Five E’s”:

- **Engineering** – Tangible infrastructure or facilities and the corresponding planning, design, and construction.
- **Education** – Dissemination of knowledge regarding safe bicycle and pedestrian practices, traffic laws, and opportunities.
- **Encouragement** – Strategies or programs that promote bicycle and pedestrian activity as well as designs conducive to such activity.
- **Enforcement** – Execution of laws related to bicycle and pedestrian traffic and facilities.
- **Evaluation and Planning** – Use of metrics such as user counts, reduction in health disparities, or economic activity to verify a facility’s return on investment.

This section provides policy and program recommendations related to all of the Five E’s. Achieving the plan’s vision for bicycle and pedestrian facilities in the Greater Memphis region depends on the MPO jurisdictions adopting the following actions.

**Primary Actions**

Since 2011 many jurisdictions of the Memphis MPO have adopted some of the actions listed below, while others have not. Despite the mixed response, each of these actions remains a priority in the development of the plan’s vision. Early-adopting jurisdictions should continue to pursue each of the following items and follow through in their commitments. Those that have yet to act should follow the example from the others. The primary actions towards realizing the goals of this plan are:

- **Adopt the Memphis MPO Regional Bicycle and Pedestrian Plan.** City and county staffs should be familiar with the plan’s recommendations. Bicycle and pedestrian planning should be integrated into the overall planning process for all affected jurisdictions. All development plan submittals and future transportation plans should be reviewed for compliance with the plan.
- **Create and adopt a local comprehensive bicycle and pedestrian plan and continue to close gaps in the cycling and pedestrian network.** Expanding the encouragement, education, and enforcement recommendations in this plan, coupled with a set of ambitious, attainable goals will help increase the percentage of trips made by bicycle or walking in the region.
- **Adopt a Complete Streets policy offering implementation guidance and a framework for insuring that decisions regarding the planning, engineering, and construction of roadways include adequate facilities for bicyclists and pedestrians.** Every effort should be made to create a consistent, connected transportation network that accommodates bicyclists, pedestrians, motorists, and transit users of all ages and abilities.
- **Institute policies that increase the number of arterial and collector streets with bicycle and pedestrian facilities that increase the visibility of bicyclists and pedestrians in the right-of-way.** As these major roads serve as crosstown and regional connections, they are vital components to a more connected, accessible regional bicycle and pedestrian network.
- **Expand the bicycle and pedestrian network and increase network connectivity through the use of the facility types presented in this plan.** This is essential to maintaining a balanced transportation system. On-street improvements coupled with the expansion of the off-street system will continue to increase use and promote safety. These improvements will also increase the effectiveness of encouragement efforts by providing a broader range of facility choices for users of various abilities and comfort levels.
- **Retrofit existing roadways when appropriate to accommodate bicycle and pedestrian facilities.** This may involve the application of so-called “road diets” to replace excess lanes or space within a
roadway with bicycle and pedestrian facilities. Such re-designing of the street can occur during regularly scheduled maintenance or re-paving work to minimize the associated costs.

- Expand public education campaigns promoting awareness of the rights and responsibilities of all road users, including the shared use of roadways by automobiles and bicycles and the right-of-way of cyclists and pedestrians. Jurisdictions should ensure that bicycle and pedestrian safety education is a routine part of the educational curriculum. Jurisdictions and their school boards should implement a Safe Routes to School program which emphasizes bicycling and walking, and encourage all schools to become involved.

- Expand encouragement efforts, particularly during the month of May, which is widely recognized around the country as “Bicycle Month.” Actions that could be taken include an official declaration of May as “Bicycle Month” and promotional events such as community rides or commuter challenges. October is “Walk Month” and contains International Walk to School Day.

**Bicycle Recommendations**

In addition to the primary actions listed above, the following additional actions specific to bicycle facilities are recommended to local jurisdictions:

- Design and construct the bicycle facilities identified in the plan in accordance with the prioritization plan.

- Provide bicycle parking at recommended facilities described in the End-of-Trip Facilities section of this plan.

- Enact bicycle parking requirements within development guidelines or zoning policies that encourage developers to provide bicycle parking as a part of all new developments.

- Review all future road projects not shown in the Memphis MPO Regional Bicycle and Pedestrian Plan to determine their appropriateness for bicycle facilities. This plan should be a starting point for the development of bicycle facilities, not the final guiding document. Each community has unique character and needs that must be addressed in a more personal manner at the local level.

- Increase the amount of way-finding signage around the community.

- Establish and maintain an up-to-date “local bicycle routes” page on the local jurisdictions’ web sites. These websites should provide route maps and descriptions of the routes as well as points of interest.

**Pedestrian Recommendations**

The following actions are recommended for providing pedestrian facilities in the study area and rely heavily on the gathering of additional data:

- Prioritize the implementation of pedestrian facilities within ½ mile of schools, parks, and other popular attractors and generators.

- Identify a limited number of highest priority crosswalk problem locations, and implement appropriate upgrades to striping, signage, curb ramps and/or signaling.

- Local jurisdictions should develop an inventory of Americans with Disabilities Act (ADA) compliance problems and a plan for addressing these issues.

- Increase the amount of way-finding signage around the community.

**Bicycle & Pedestrian Coordinators**

Many land use, development, and transportation decisions can impact one’s decision to bicycle or walk for transportation. Planning departments should evaluate the proposed site design of new projects to verify that all travel modes, including bicycling, walking, transit, and driving, are integrated into transportation and residential/commercial development projects. Only six jurisdictions in the Memphis MPO region reported having someone officially in charge of managing bicycle and pedestrian programs. Of those six, four municipalities reported that the manager of those programs spent less than 10% of their total work time dedicated to bicycle and pedestrian matters.

It is recommended that the local jurisdictions hire a bicycle/pedestrian coordinator to deal solely with bicycle/pedestrian issues or increase the time allocated by existing employees to the needs of bicyclists and pedestrians. The coordinator’s responsibilities would include the coordination of bicycle and pedestrian facility implementation with various government agencies and departments within the MPO’s jurisdiction. The coordinator would also assist local governments on bicycle and pedestrian issues, be responsible for providing input on future
projects, and coordinate and conduct promotional and educational initiatives.

**Promoting Bicycle- and Pedestrian-Friendly Development**

When developers design new projects, they must understand that bicycling and walking are important considerations in the approval process. An area’s land use pattern and density have proven to have a significant influence on a person’s decision to bicycle or walk for non-recreational travel. In general, development patterns over the last 50 years have discouraged bicycling because they have resulted in segregated uses with long distances between destinations. Recommended actions to ensure that future land development patterns are conducive to cycling and walking are:

- Encourage and promote the development of a highly connected street network by adopting guidelines for minimum levels of connectivity based on other commonly used standards such as the Connected Node Ratio or Block Length Analysis.
- Encourage and promote higher density development patterns with a greater mix of land uses.
- Interconnect land uses with off-road facilities.

**Benchmarks**

The 2011 Regional Bicycle and Pedestrian Plan created benchmarks to help monitor the progress of the plan’s implementation and measure success. These benchmarks signified considerable progress on improving conditions for bicycling and walking within the Memphis MPO region. The Memphis MPO will continue to monitor these benchmarks, which are:

- Reduce perceptions of unsafe or dangerous conditions for bicycling to 10% or less by 2015 and 5% or less by 2020.
- Reduce perceptions of unsafe or dangerous conditions for walking to 5% or less by 2020.
- Improve expert-level knowledge of local cycling and pedestrian ordinances to 30% by 2015 and 75% by 2020.
- Increase the mode share of work commute trips made by bicycling, walking, or transit within the Memphis MPO region to 5% by 2015 and 10% by 2020.

**Harahan Bridge Project/Big River Crossing Initiative**

Bicycle and pedestrian advocates of the Greater Memphis region dreamed for years of a safe path across the Mississippi River, literally bridging the gap that divides the Memphis metropolitan area. Around 2010 this fanciful dream started to inch more towards a tangible reality when private citizens came together with public officials to discuss retrofitting a portion of the historic Harahan Bridge. This crossing, built in 1916, had featured cantilevered roadways in its past. The roadway’s surface had long since been lost, but the steel support structure remained. In 2012 perseverance won out when a team of local and state officials as well as private stakeholders announced that the project had been selected to receive significant Federal funding. This financial support, combined with additional funding from local and state sources and private donations, allowed the project to move forward. Construction on the bridge portion should begin by 2015.

Not to stop short at a mere crossing, however, planners have linked the Harahan Bridge project to a handful of other major bicycle and pedestrian improvements. Local officials have combined the bridge work with construction of new sidewalks, bicycle facilities, and shared-use trails on the Memphis and West Memphis sides of the river, including substantial enhancements along Main Street in Downtown Memphis. On a more regional scale, the bridge will link to proposed shared-use paths on top of the Mississippi River levee system in Arkansas. These levees, and one day the paths themselves, traverse 600 miles between St. Louis and New Orleans.
• Reduce the average number of bicyclist and pedestrian fatalities by 10% by 2015 and by 25% by 2020.

FINANCING

Implementing all of the facilities and programs recommended in this plan will require an extensive amount of financial resources. The financial burden associated with these projects can be lessened, and in some cases eliminated, through a variety of sources that are available for bicycle- and pedestrian-related projects. MPO jurisdictions should coordinate their bicycle and pedestrian goals and projects with the MPO to enhance their opportunities to receive Federal or State funding.

Local Funding Sources

Many of the projects recommended in this plan will presumably be implemented by the local governments in which they are located. This is not to say that the local governments will bear the full financial responsibilities of the projects. In many cases, federal assistance programs can provide up to 80 percent or 100 percent of a project’s cost. These assistance programs are described in the Federal Funding Sources section of this appendix. There are also various local sources that can provide funding to help implement the projects. These sources are described below.

New Developments

New developments provide an excellent opportunity to implement bicycle and pedestrian facilities. Local developers can incorporate these facilities into their development projects. Because new developments create a new need for bicycle and pedestrian facilities, new developments should include bicycle and pedestrian facilities where feasible, regardless of whether or not the facilities are recommended in this plan. To enhance this effort, local governments need to include considerations for bicycle and pedestrian facilities in their plan review processes.

Routine Roadway Maintenance Programs

Incorporating the recommended bicycle facilities with routine roadway maintenance projects, such as repaving projects, can be an efficient method for implementing the facilities. For roadways that are currently wide enough to accommodate a bicycle facility, the facility’s markings and signage can be easily incorporated in the roadway re-striping that occurs during a repaving project.

Madison Avenue Bicycle Lanes

In 2011 the City of Memphis proposed performing a “road diet” to a 1.5-mile section of Madison Avenue in the Midtown area. A road diet is a method to retrofit existing roads with surplus space to better accommodate all modes of transportation – walking, bicycles, transit, and cars – typically by replacing all or part of existing vehicle lanes with space for these other modes. Though this method had been successfully demonstrated in communities across the United States, this was the first such major proposal in Greater Memphis. Furthermore, given the community’s high familiarity with Madison Avenue, this project would act as one of the most prominent examples of new bicycle lanes in the City of Memphis.

Having completed a series of public meetings and a favorable traffic impact study, the City moved forward with the road diet. The bicycle lanes and the surrounding discussion initiated renewed interest in the Madison Avenue corridor. Around the time the bicycle lanes were completed, businesses along the street were beginning or nearing the end of façade improvements or the construction of outdoor patios along the sidewalk. Three years later, with numerous new restaurants and stores, Madison Avenue is leading the resurgence of Midtown as an entertainment, dining, and retail destination for the region. Bicycle lanes have become commonplace in Midtown and, furthermore, Greater Memphis has adopted the road diet concept as a means to reimagine and revitalize a street or neighborhood.
For roadways that need extra width to accommodate a bikeway, repaving projects can provide an excellent opportunity to achieve more width to accommodate a bicycle lane or shared lane by reallocating lane widths.

**Transportation Improvement Program (TIP)**

The TIP for the Memphis MPO region is a four-year program for transportation system development. This program allocates available Federal funding to the highest priority recommendations of the Regional Transportation Plan (RTP) and other key projects that will serve the region’s transportation needs as established in the RTP. Bicycle and pedestrian facilities can be incorporated into these projects or solicited as standalone projects. While the funding sources for the TIP are Federal (these are described below), the document is created locally by the Memphis MPO.

**Public-Private Partnerships**

Partnerships formed by local governments and local private companies can also be a successful method for funding bicycle and pedestrian projects. Partnerships can create a spirit of cooperation and can enhance community pride. However, private companies will often not be willing to become involved unless the project is well planned and the benefits to the companies are clear. The local governments should target the major employers in the region and should market specific bicycle and/or pedestrian routes that connect these companies to other destinations. In exchange for financial support, the participating companies could receive publicity for their cooperation. Also, the companies’ names could be recognized through signage along the new bicycle/pedestrian routes that they fund.

Local governments should also target utility companies since these organizations can often provide corridors for bicycle and pedestrian facilities. Utility corridors are typically wide and make direct connections to other destinations. These qualities make utility corridors especially suitable for greenways. Although utility companies own some of their utility corridors, many of their corridors are located within easements on properties that are owned by other individuals or entities. Therefore, when partnering with a utility company, it is important to verify ownership of the subsurface, surface, and air rights of the corridor to ensure that the greenway is feasible.

**Taxes and Bonds**

Many communities throughout the country have used self-imposed increases in sales taxes, gas taxes, and bonds to fund bicycle and pedestrian projects. For example, residents in Pinellas County, Florida raised $5 million dollars through a self-imposed one percent sales tax increase to fund the Pinellas Trail. Other areas, such as Alleghany County, Pennsylvania and Boulder, Colorado have also successfully funded open space projects through sales tax increases.

**Impact Fees**

Many communities obtain land and funding for public improvements, such as bicycle and pedestrian facilities, through impact fees that are imposed on new developments. Impact fees are typically assessed based on the size of the new development. The resulting fee may be allocated to a particular bicycle or pedestrian project in the jurisdiction if the fee is held in a dedicated account that has been established for such a project.

**Non-Profit Grants**

There are several nonprofit organizations that provide assistance for bicycle and pedestrian-related projects. Some of these organizations and their assistance programs are summarized below.

The Kodak American Greenways program, a partnership of Kodak, The Conservation Fund, and the National Geographic Society, provides small grants to stimulate the planning and design of greenways in communities throughout the country. The grants may be used for the following activities:

- Mapping, ecological assessments, surveying, conferences, and design activities
- Developing brochures, interpretative displays, audio-visual productions, and public opinion surveys
- Hiring consultants, incorporating land trusts, building a foot bridge, planning a bicycle path, or other creative projects
- Grants may not be used for academic research or general institutional support. Lobbying and political activities are also ineligible for funding. Grant applicants are typically local, regional, or statewide nonprofit organizations. Public agencies may apply. However, preference is given to community organizations. Most grants range between $500 and $1,000, although they may
reach as high as $2,500.

The Robert Wood Johnson Foundation is the largest U.S. foundation that is devoted to improving the health and health care of all Americans. It provides grants for projects and programs that meet following goal criteria:

- To assure that all Americans have access to quality health care at a reasonable cost
- To improve the quality of care and support for people with chronic health conditions
- To promote healthy communities and lifestyles
- To reduce the personal, social and economic harm caused by substance abuse involving tobacco, alcohol, and illicit drugs.

To accomplish these goals, the Foundation supports training, education, research, and projects that demonstrate the effective delivery of health care services. The Foundation does not fund ongoing general operating expenses or existing deficits, endowment or capital costs, basic biomedical research, international programs and institutions, direct support for individuals, or lobbying. Conferences are not eligible unless they clearly relate to the Foundation’s goals. Also, publications and media projects are not eligible unless they result from one of the grant programs. Grant preference is given to applicants that are public agencies or that are tax-exempt under Section 501(c)(3) of the Internal Revenue Code.

The Trust for Public Land is a nonprofit organization that works to protect land as parks and open space. It helps communities and government agencies identify land for protection, and it helps to identify funds that may be used to protect that land. The Trust sometimes helps to raise those funds through charitable campaigns and legislative or voter initiatives. It also retains real estate and legal staff to help complete the land transaction, and often optioning for purchasing a property temporarily until the land can be permanently protected by a government or community land trust.

Crowdsourcing

Digital technology and the Internet have revolutionized fundraising with the concept of crowdsourcing. In short, this term refers to collecting funds from a large audience as opposed to a few donators. Crowdsourcing typically involves the use of an Internet donation website that allows a funding cause to reach a large amount of people in a community. Individual donations may be relatively small, unlike traditional fundraising efforts, but collectively the result can be substantial due to the extent of the Internet’s reach. Unlike a general tax increase or new fee, this funding method inherently limits the financial burden on supporters of a project. One such crowdsourcing website heavily active in the Greater Memphis region is Ioby.org, which was instrumental in raising funds for the City of Memphis’ Hampline cycle track project.

State Funding Sources

States are responsible for administering Federal funds to the MPOs and local governments for a variety of projects, including bicycle and pedestrian projects. States also provide funds through their own programs. The Federal funding programs that are available for bicycle and pedestrian projects are summarized in the Federal Funding Sources section that follows this one.

**TDOT Multimodal Access Grant (TMAG)**

The MMAF provides funding for bicycle, pedestrian, or transit projects along or within a specified distance of Tennessee state routes. Funds may be used for any phase of a project’s development. The MMAF is awarded on an annual basis following a competitive application process. Sponsoring agencies submit applications to their appropriate MPO or Rural Planning Organization (RPO), which select two applications from their planning areas to submit to TDOT for consideration. TDOT then selects projects from a state-wide pool of applications. Local governments must provide a 5% match. This grant program is available only to Tennessee jurisdictions within the Memphis MPO study area.

**Local Park and Recreation Funds (LPRF)**

The LPRF provides grants to all eligible government entities for the purchase of lands for parks, natural areas, greenways, and recreation facilities. The funds may also be used for trail development and capital projects in parks, natural areas, and greenways.

**Natural Resources Trust Fund (NRTF)**

The NRTF provides grants to all eligible local governments and state areas for outdoor recreation, historical sites, and archaeological sites. It also provides grants for the acquisition of lands or waters and interests in lands and waters.
Federal Funding Sources

As previously mentioned, there are a variety of federal assistance programs that are available for bicycle and pedestrian-related projects and programs. Federal surface transportation law provides tremendous flexibility to states and MPOs to fund bicycle and pedestrian improvements from a wide variety of programs. Virtually all the major transportation funding programs can be used for bicycle and pedestrian-related projects. In addition to this list, the Federal Highway Administration (FHWA) provides guidance on Federal funding sources for bicycle and pedestrian projects on its website.

National Highway Performance Program (NHPP)

In general, NHPP funds may be obligated only for a project on an “eligible facility” that is a project, part of a program of projects, or an eligible activity supporting progress toward the achievement of national performance goals for improving infrastructure condition, safety, mobility, or freight movement on the National Highway System (NHS). Bicycle or pedestrian projects could be included as improvements to facilities or new design features at overpasses and onramps. Shared-use paths along interstate corridors, but outside the main travelway, are eligible for the use of NHPP funds, as are bicycle lanes, shoulder and sidewalk improvements on major arterial roads that are part of the NHS, and bicycle and/or pedestrian bridges and tunnels that cross NHS facilities.

Surface Transportation Program (STP)

STP funds are eligible to be spent on a wide variety of improvements for bicycling and walking including, but not limited to, on- and off-road facilities, bicycle parking, planning studies, state and local bicycle and pedestrian coordinator positions, spot improvement programs, sidewalks, crosswalks, and traffic calming projects. As the category of funding with probably the broadest eligibility, the STP should be considered by states and MPOs as a primary source of funds for both independent and incidental bicycle and pedestrian projects, as well as non-construction projects.

Transportation Alternative Program (TAP)

The MAP-21 Federal transportation legislation merged a handful of previous funding programs (i.e. Safe Routes to School, Transportation Enhancements, and Recreational Trails) into TAP. These funds are eligible for any phase in the development of bicycle, pedestrian and other traffic-responsive facilities.

Shelby Farms Greenline

By the end of the 1990s, the CSX Railroad corridor in central Shelby County largely sat abandoned, aside from the occasional adventurous trail runner. The corridor’s potential as a recreational and transportation asset was not lost on all members of the community, however, especially not on the members of Greater Memphis Greenline, Inc. and the Shelby Farms Park Conservancy. These groups partnered with Shelby County to acquire the right-of-way and construct a 6.7-mile paved shared-use path from Shelby Farms Park to Midtown, Memphis.

The opening of the Shelby Farms Greenline in 2010 acted as a watershed moment for the development of pedestrian and bicycle infrastructure in Greater Memphis. The number of users along the Greenline in the first few weeks and months to follow surpassed the greatest expectations of even the path’s organizers. This groundswell of interest in the path prompted local communities to reassess and re-prioritize bicycle and pedestrian facilities. A 2014 economic impact analysis conducted by the firm Younger Associates estimated that the values of properties adjacent to the Greenline have risen 5% since 2010 as a result of the path’s construction. Boosted by such success, extension of the Greenline farther into Midtown on the west and to Cordova on the east is now slated to begin. Planners envision the path one day extending to Oakland, Tennessee.
pedestrian, or transit projects. Eligible projects must be included on the MPO’s Transportation Improvement Program (TIP). The MPO, through a competitive process, selects the projects in consultation with the State from proposed projects submitted by eligible entities. Applications are collected on an annual basis.

**Highway Safety Improvement Program (HSIP)**

HSIP funds can be used for pedestrian and bicycle safety improvements. States may obligate funds under the HSIP to carry out any highway safety improvement project on any public road or publicly owned bicycle or pedestrian pathway or trail; or as provided under Flexible Funding for States With a Strategic Highway Safety Plan, other safety projects.

States are eligible for what are known as “Section 402 funds” by submitting a Performance Plan, with goals and performance measures, and a Highway Safety Plan describing actions to achieve the Performance Plan. Funds may be used for a wide variety of highway safety activities and programs including those that improve pedestrian and bicycle safety. States are to consider highly effective programs (previously known as National Priority Program Areas), including bicycle and pedestrian safety, when developing their programs, but are not limited to this list of activities. States may determine the kinds of activities on which they spend these funds. States are encouraged to consider bicycle and pedestrian safety initiatives as these are areas of national concern where effective countermeasures have been identified.

**Recreational Trail Program (RTP)**

The RTP is a dedicated funding source provided through Federal transportation legislation that is managed at each state’s discretion. This program can be used to fund trails, both paved and unpaved, for use by persons using bicycles or pedestrian means to travel. Typically, these projects are located in public park land, and grants do not exceed $200,000 on a single project. RTP funds require a 20% local match.

**Congestion Mitigation and Air Quality Program (CMAQ)**

Projects must demonstrate a contribution to the attainment of national ambient air quality standards (or the maintenance of such standards where this status has been reached) based on an emissions analysis or be shown to provide a degree of congestion mitigation to a transportation network. The CMAQ program has funded numerous bicycle...
and pedestrian improvements including bicycleway networks in cities such as Philadelphia, Houston, and New York City, pedestrian and bicycle spot improvement programs, bicycle parking, bicycle racks on buses, sidewalks, trails, and promotional programs such as bicycle-to-work events. CMAQ funds have also been used to fund bicycle and pedestrian coordinator positions at the state and local level.

**State Planning and Research Program (SPR)**

Funding is provided for SPR by a 2% set-aside from each State’s apportionments of four programs: the National Highway Performance Program (NHPP); the Surface Transportation Program (STP); the Highway Safety Improvement Program (HSIP); and the Congestion Mitigation Air Quality Improvement Program (CMAQ) Program. Of the funds that are set aside, a minimum of 25% must be used for research purposes.

States are encouraged to use these funds to develop the non-motorized element of the Long Range Transportation Plan, either as a separate planning document or as an integral part of the overall plan. In addition, states are encouraged to fund research and technology transfer activities that will improve conditions for bicyclists and pedestrians in their State.

**Planning Funds (PL)**

Funds may be used for bicycle- and pedestrian-related plans that are part of the metropolitan transportation planning process. MPO’s are encouraged to use these funds to develop the non-motorized element of the Long Range Transportation Plan, either as a separate planning document or as an integral part of the overall plan.

PL funds are based on each State’s total Federal-aid apportionment. This funding is set aside for the State’s Metropolitan Planning through a calculation based on the size of the State’s Fiscal Year (FY) 2009 Metropolitan Planning apportionment relative to the State’s total FY 2009 apportionment.

**FTA Funds**

In some cases, funding programs from the Federal Transit Association (FTA) may be applicable towards bicycle and pedestrian projects. The sources may provide financial assistance for projects that improve pedestrian or bicycle access to transit stops and stations, or bicycle storage on transit vehicles. Furthermore, bike-share programs may be eligible for FTA funding as well.