



POPLAR AVENUE SAFETY AND MOBILITY PLAN

FINAL REPORT



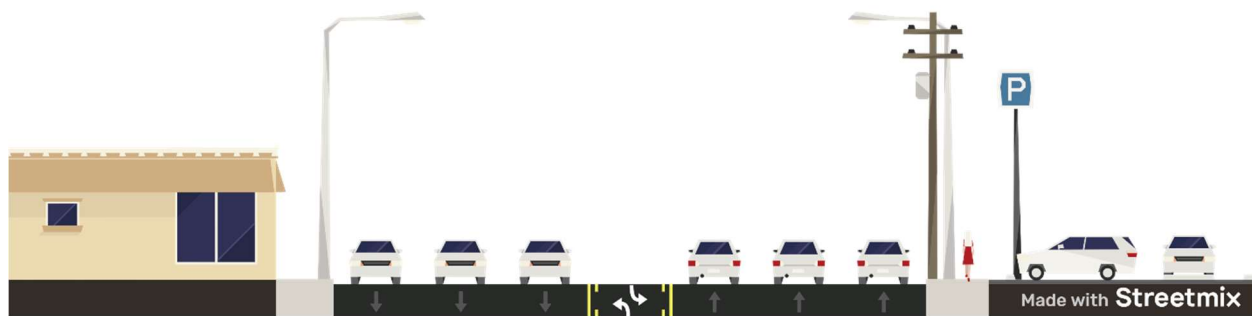
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Introduction

The City of Memphis received a Transportation Planning Grant (TPG) from the Tennessee Department of Transportation (TDOT) to develop the Poplar Avenue Safety and Mobility Plan. The project limits are Poplar Avenue from Highland Street to I-240. This 4.6-mile section of Poplar Avenue is a seven-lane principal arterial with sidewalks. The right-of-way (ROW) width is generally 80' along the corridor, with vehicle lane widths less than 10' and little to no buffer between the travel way and sidewalks. **Figure 1** shows the existing seven-lane typical section for the corridor within the project limits.

Figure 1: Existing Typical Section



The existing annual average daily traffic (AADT) along the corridor ranges from 27,600 to 55,300 vehicles per day with about 9% trucks. The Memphis Area Transit Authority (MATA) Route 50 operates along this section of Poplar Avenue with some of the highest ridership in their system.

In the past, resurfacing without milling the existing roadway surface has led to drainage issues and depressions in the pavement near drainage inlets. Because of these drainage issues and the narrow through lanes, motorists tend to avoid the right lane of travel along this section of Poplar Avenue.

The objectives of this plan were to:

- Determine the desired conceptual street cross section for all parties with a primary focus on safety for all modes of traffic, given current and forecasted travel demand.
- Develop a defined multimodal access plan that effectively ties into the local bus routes identified in the Memphis 3.0 Transit Vision Plan.
- Identify recommended improvements for multimodal access for cyclists, pedestrians, and transit.

Existing Conditions

Existing Plans and Programs

The following plans and programs were reviewed during this project:

- Memphis 3.0 Comprehensive Plan
- Memphis 3.0 Transit Vision
- Walk & Roll: Memphis Region Pedestrian and Bicycle Plan

- Moving Together: 2050 Regional Transportation Plan (RTP)
- Transportation Improvement Program (TIP) FY 2023-2026
 - Memphis Innovation Corridor – Bus Rapid Transit (5309-2017-01)
 - Bike Share: Installation and Promotion of Campus Smart Bike Share (CMAQ-2018-06)
- Bus Stop Design and Access Guide
- Greater Memphis Regional Freight Plan
- Poplar Avenue Southern Corridor Study

More detail is provided below for the plans and programs that directly influence the goals and objectives of the Poplar Avenue Safety and Mobility Plan.

Memphis 3.0 Comprehensive Plan

Adopted in 2019 and amended in 2021, Memphis 3.0 is the City of Memphis's first Comprehensive Plan since 1981 and is a roadmap for how the City can grow over the next 20+ years. Memphis 3.0 advocates for redevelopment and reinvestment in activity areas identified as anchors; connectivity of people, jobs, businesses, and infrastructure; and expanding equity and opportunity throughout the City. The overall growth strategy in Memphis 3.0 is Build Up, Not Out.

During public outreach, community members and stakeholders identified the need for walkable neighborhoods, with infrastructure improvements designed to promote safer walkability to transit options, neighborhoods, schools, and parks. With a focus on local activity centers, or anchors, Memphis hopes to create a built environment in which multimodal transit options are widely considered and integrated into the city culture. There are five anchors directly adjacent to the Poplar Corridor: Poplar and Highland, the University of Memphis, Oak Court, Poplar and Mendenhall, and Poplar and Truse. In addition, the Highland Street anchor is within a half mile of the Corridor.

Memphis 3.0 describes three different types of change to inform potential actions and projects throughout the City. The first degree of change is Nurture, meaning to stabilize existing patterns of development with the hope that incremental change can occur in the future. The second degree is Accelerate, meaning to push opportunities to intensify current patterns of development. The final degree is Sustain, meaning to support the existing neighborhood without driving major changes in development. Along the Poplar Corridor, the Poplar and Highland and the Oak Court anchors fall into the Sustain category, while the University of Memphis, Poplar at Mendenhall, and Poplar and Truse anchors are categorized as Accelerate.

Figure 2: Memphis 3.0 Comprehensive Plan



Memphis 3.0 Transit Vision

The Transit Vision Plan was developed in 2019 through the Memphis 3.0 comprehensive planning process to guide future transit improvements. The primary objective of the plan is to reinvest in transit service and promote transit-oriented development and land use. The Transit Vision Plan developed both a Short-Term Recommended Network and a 2040 Transit Vision Plan that increase bus frequency and service, revise existing routes, create new routes, and increase access to jobs throughout the region. **Figure 3** and **Figure 4** below show both recommended networks zoomed in to the area around the Poplar corridor. According to the Transit Vision Plan, frequency along Poplar Avenue would increase from 30 minutes in the existing network to 15 minutes in the Short-Term Recommended Network and to 10 minutes with Bus Rapid Transit (BRT) service in the Transit Vision Plan. The Memphis Innovation Corridor BRT is currently being designed and the proposed route connects downtown and the Hudson Transit Center to the University of Memphis. The Transit Vision Plan extends this BRT service through the rest of the Poplar corridor to Germantown.

Figure 3: Short-Term Recommended Network around the Poplar Corridor

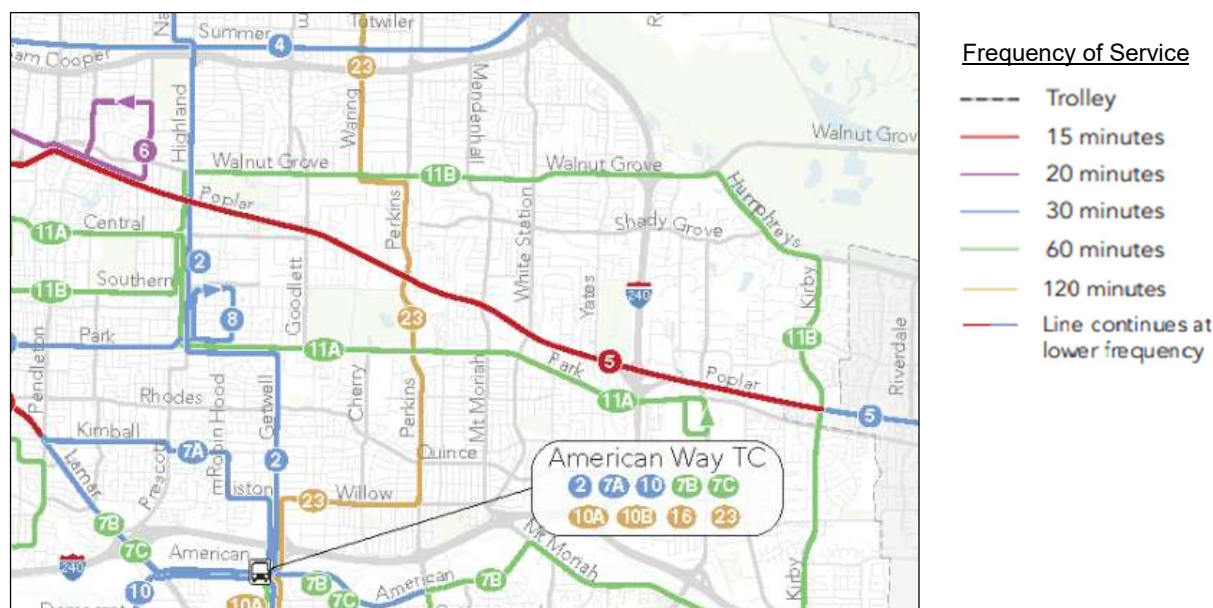
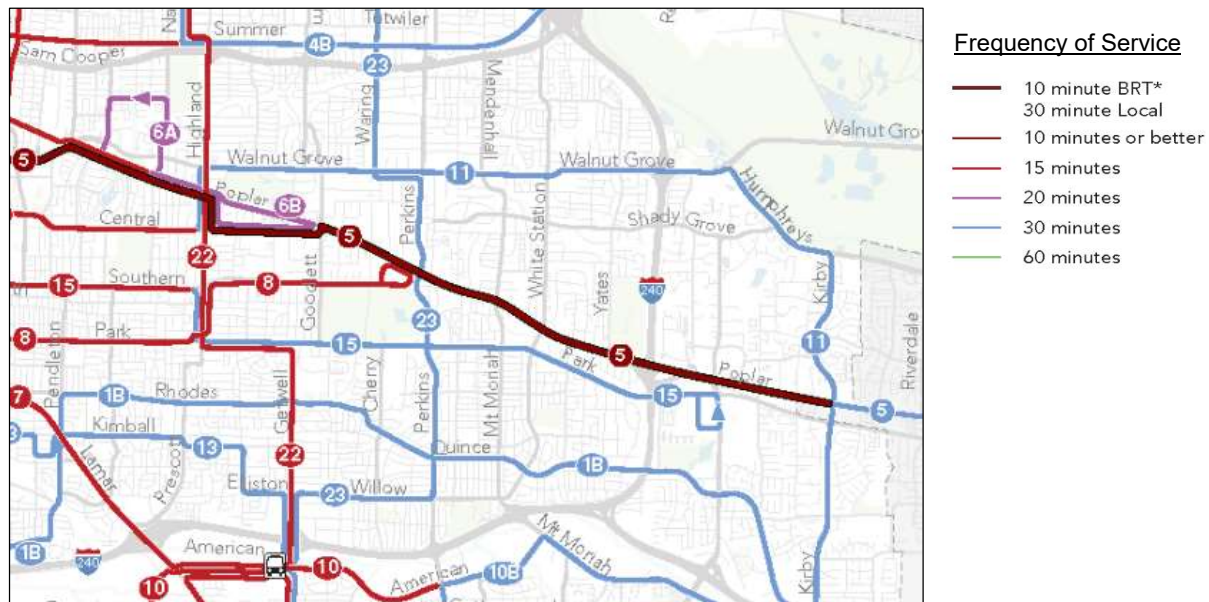


Figure 4: 2040 Transit Vision around the Poplar Corridor

Moving Together: 2050 Regional Transportation Plan (RTP) and FY 2023-2026 Transportation Improvement Program (TIP)

The Moving Together: 2050 Regional Transportation Plan (RTP) and FY 2023-2026 Transportation Improvement Program (TIP) are developed by the Memphis Metropolitan Planning Organization (MPO). The 2050 RTP was adopted in 2023 and provides a long-range transportation plan for the Memphis region. The 2050 RTP identifies both short-term and long-term investment strategies across all modes of transportation. Goals of this plan include maintaining existing transportation assets and infrastructure; increasing the safety and security of the transportation system for all users; supporting a fully integrated multimodal network while advancing the development of complete streets; improving multimodal access to residential, community, and employment resources; advancing corridor and community redevelopment opportunities to improve economic development, public health, and quality of life; ensuring the region is well positioned to remain a leader in global logistics and freight movement; reducing travel delay for people and goods; minimizing adverse impacts of transportation investment on the environment; and enhancing travel and tourism. The 2050 RTP identifies this section of Poplar Avenue as a Livability Corridor, meaning that there should be an emphasis on multimodal enhancements with future investments to the corridor.

Figure 5: 2050 RTP and FY 2023-2026 TIP Logos

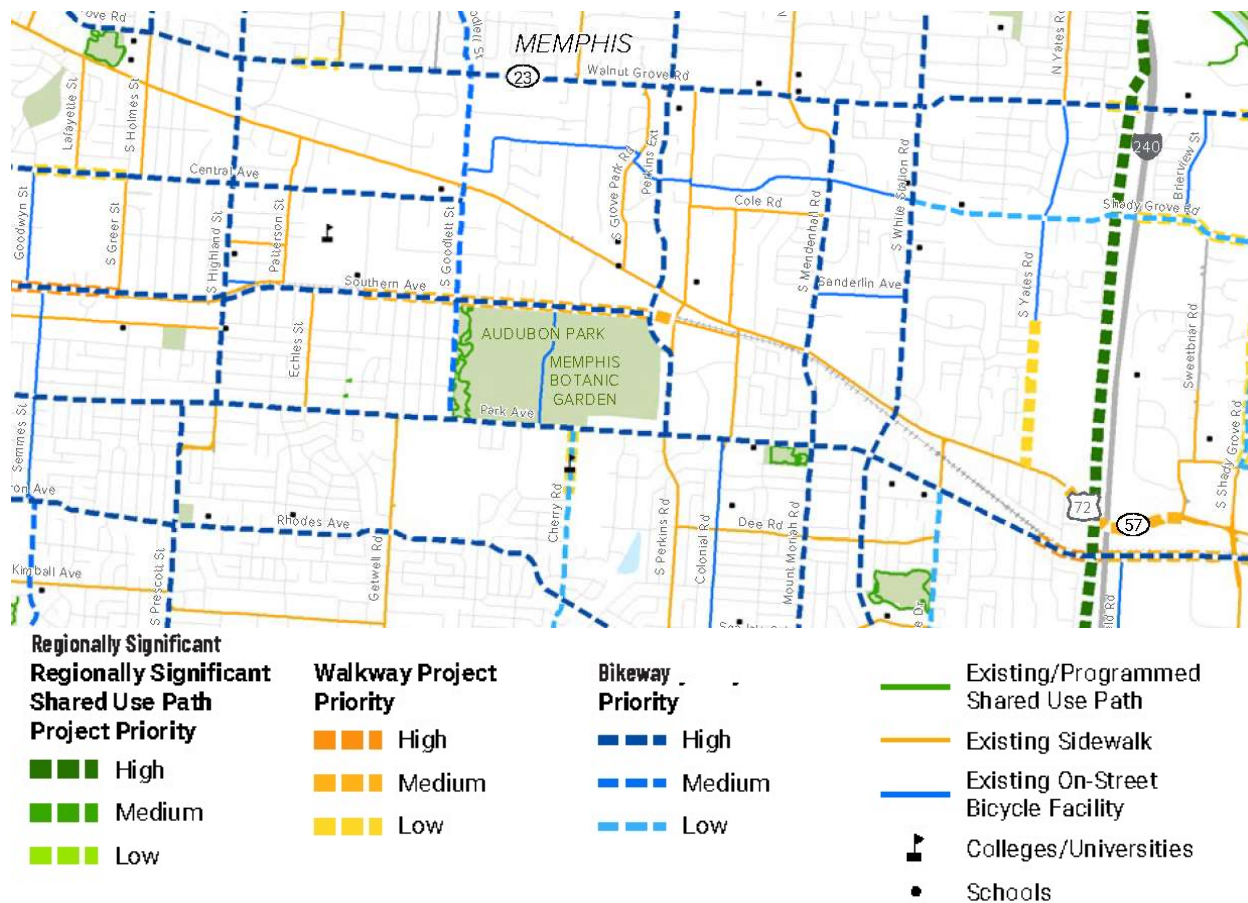
The FY 2023-2026 TIP was adopted in 2022 and is a subset of the 2050 RTP. The TIP serves as a short-term plan for transportation improvement across the MPO region and supports the goals and visions of the 2050 RTP by providing an overview of how transportation revenue will be invested by state and local agencies in the region. There are currently two projects in the TIP that are located on or adjacent to the corridor: the Memphis Innovation Corridor Bus Rapid Transit project (5309-2017-01) and a bike-share program at the University of Memphis (CMAQ-2018-06). Both projects aim to promote and provide access to multimodal transportation along the corridor.

Walk & Roll: Memphis Region Pedestrian and Bicycle Plan

The Walk & Roll: Memphis Region Pedestrian and Bicycle Plan was developed in 2020 by the MPO and sets a clear and comprehensive vision for the future of recreation and active transportation. During the 2050 RTP development, a transportation needs assessment was completed to help identify focus areas for potential multimodal infrastructure projects. This Plan used the needs assessment to inform plan recommendations. The guiding principles of the Walk & Roll Plan include prioritizing safety in projects, policies, and programs; prioritizing investment in high demand areas; creating bicycling and pedestrian opportunities fit for all; embracing shared mobility; and connecting the Memphis MPO region. During public engagement, Poplar Avenue was labeled as a difficult, uncomfortable, and dangerous corridor for bicyclists and pedestrians, but was also noted for its highly desired shopping and dining destinations.

The Walk & Roll Plan developed a prioritized project list and associated map, which is shown in **Figure 6**. For the Poplar corridor between Highland Street and I-240, no bicycle or pedestrian projects are identified. However, multiple cross streets are identified for bikeway projects including Highland Street, Goodlett Street, Perkins Extended, Mendenhall Road, and White Station Road. Some of these roadways have existing facilities either across Poplar Avenue or ending/starting just north or south of the corridor. There is also a shared use path identified along the utility easement adjacent to I-240 that can tie into the Poplar corridor.

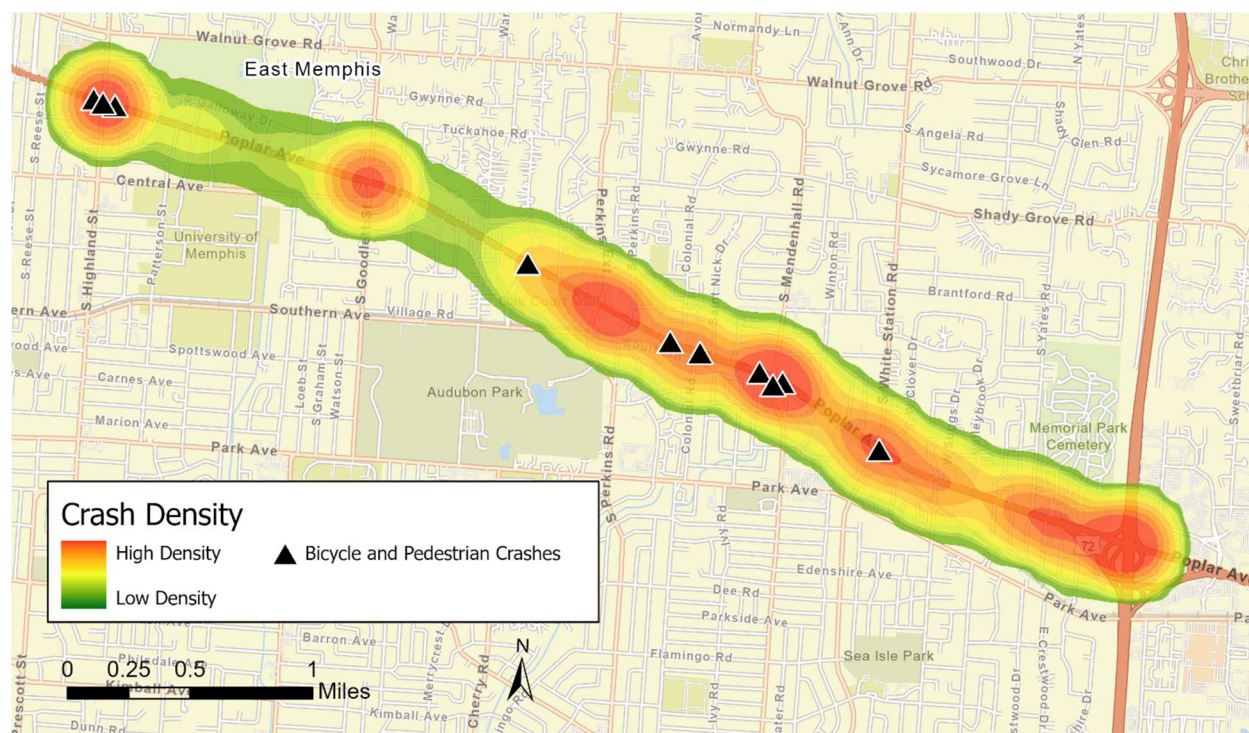
Beyond the list of prioritized projects, Walk & Roll includes a discussion on the need for seamless and convenient transitions between various transportation modes and potential catalyst projects. Mobility hubs are identified in the plan to create a physical space for these transitions to occur and could include amenities such as a transit stop, trip planning information on kiosks, passenger pick up and drop off areas for rideshare, short term bike storage, and designated e-scooter parking/charging stations. The section of Poplar Avenue from Mendenhall Road to White Station Road was identified in Walk & Roll as a possible catalyst project for this type of facility. Walk & Roll does acknowledge that existing traffic volumes and a lack of available space make this a challenging and expensive project.

Figure 6: Memphis Region Pedestrian and Bicycle Plan Proposed Projects

Safety

Historical crash data was obtained from TDOT through the Enhanced Tennessee Roadway Information Management Systems (ETRIMS) for the most recent three full years (2020-2022). A total of 1,591 crashes were reported along the corridor during this three-year period. The density of crashes along this segment of Poplar Avenue is highest at its intersections with major roadways, particularly Highland Street, Perkins Road, and Mendenhall Road, as well as the section between Yates Road and I-240. Of the 1,591 crashes, ten of these were reported as a pedestrian or bicycle related crash. The corridor's intersections with Highland Street and Mendenhall Road each have a concentration of three pedestrian or bicycle related crashes, indicating a need for pedestrian and bike related safety improvements at these locations. **Figure 7** displays the crash history along the corridor with a heat map showing overall crash density and approximate locations of bicycle and pedestrian related crashes occurring along the corridor during this three-year period.

Figure 7: Crash History



An overall crash rate for the corridor was calculated to compare the corridor to other similar roadways throughout Tennessee. Crash rates consider the volume of vehicles using the facility and report the number of crashes per million vehicle miles traveled (VMT). The crash rate along the corridor during this 3-year period is 5.97 crashes per million VMT. This rate is approximately 1.8 times higher than the Tennessee statewide average of 3.22 crashes per million VMT on similar roadways. Crash statistics for manner of collision, crash severity, time of crash, lighting conditions, and weather conditions are summarized in **Figure 8** through **Figure 12**, respectively.

Figure 8: Manner of Collision

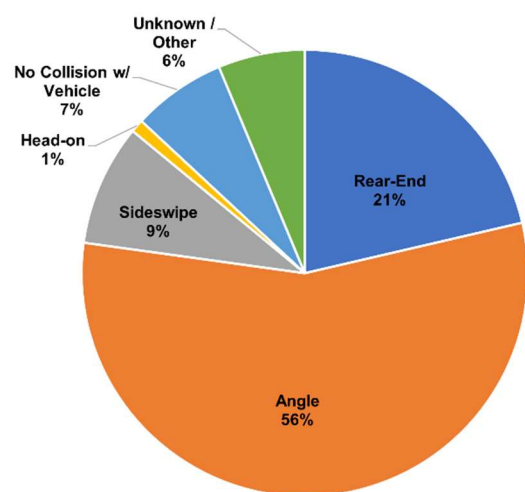


Figure 9: Crash Severity

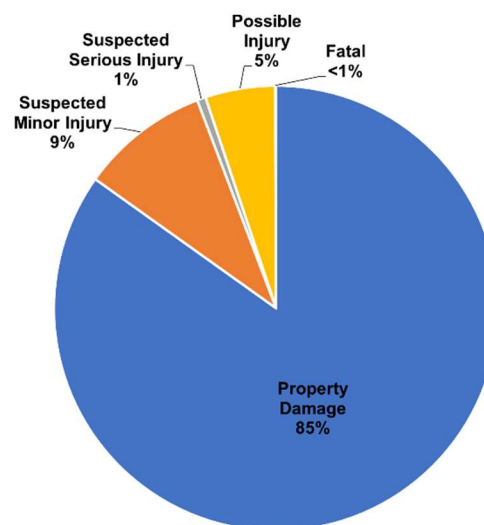


Figure 10: Time of Crash

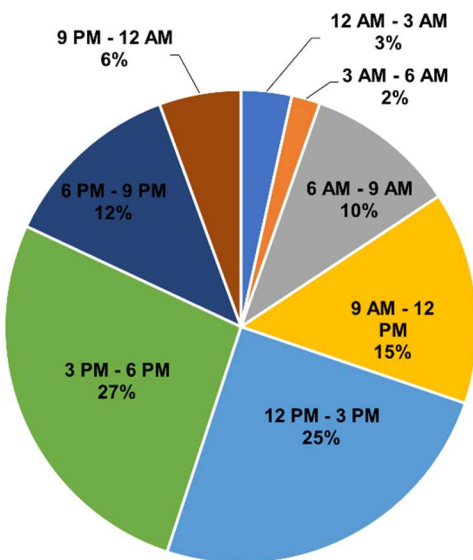


Figure 11: Lighting Conditions

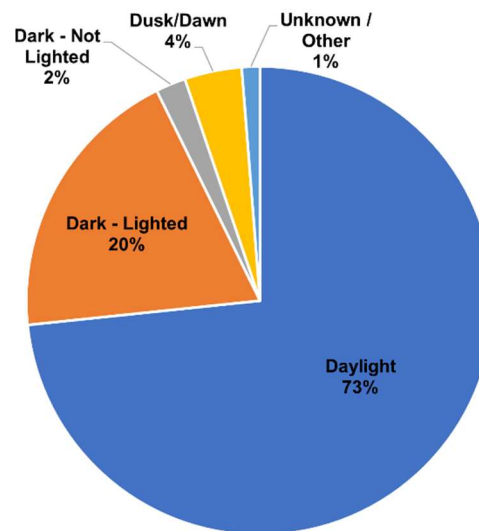
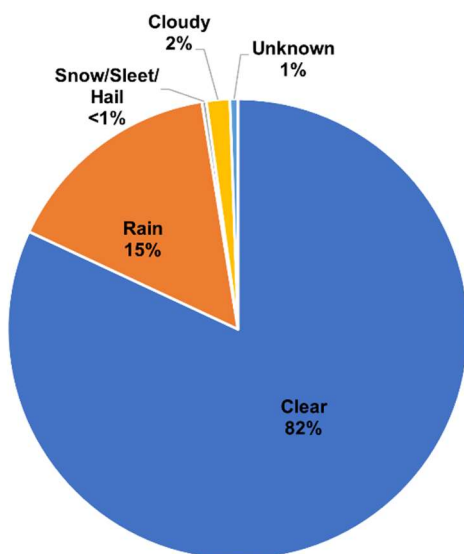


Figure 12: Weather Conditions



Capacity

Within the project study area, the existing traffic volumes along the corridor range from 27,600 to 55,300 vehicles per day. A capacity analysis was performed to determine the qualitative operating conditions along the corridor by assigning level of service (LOS) to each of its major intersections. LOS describes a roadway's operating conditions from the traveler's perspective. The shortest average travel delays are represented by LOS A, while the longest average travel delays are represented by LOS F. The analysis considered traffic volumes for the base year of 2023 and horizon year of 2043 to assess the expected change in LOS over the next two decades. Intersection turning movement counts were collected at each signalized intersection

along the corridor and were used for the base year analysis. Future 2043 volumes were developed by using a combination of trend line growth from historical AADT values collected from the TN TIMES Transportation Data Management System for all three stations along the corridor and future traffic volume growth from the Memphis MPO Travel Demand Model (TDM). Utilizing historical and future traffic volumes from the TDM resulted in an estimated growth rate of 0.6% per year along the corridor.

The results indicate that LOS is expected to worsen from 2023 to 2043 if no improvements are implemented along most of the corridor in the AM and PM peak periods. The corridor's intersections at Highland Street, Mendenhall Road, White Station Road, and Yates Road are expected to experience poor operating conditions (LOS F) during the PM peak period in the horizon year of 2043. The corridor's intersection at Estate Drive is expected to experience poor operating conditions (LOS F) during the AM and PM peak periods in the horizon year of 2043. **Figure 13** show the base year 2023 LOS along the corridor in the study area. **Figure 14** shows the horizon year 2043 LOS expected to occur along the corridor in the study area.

Figure 13: Base Year 2023 LOS

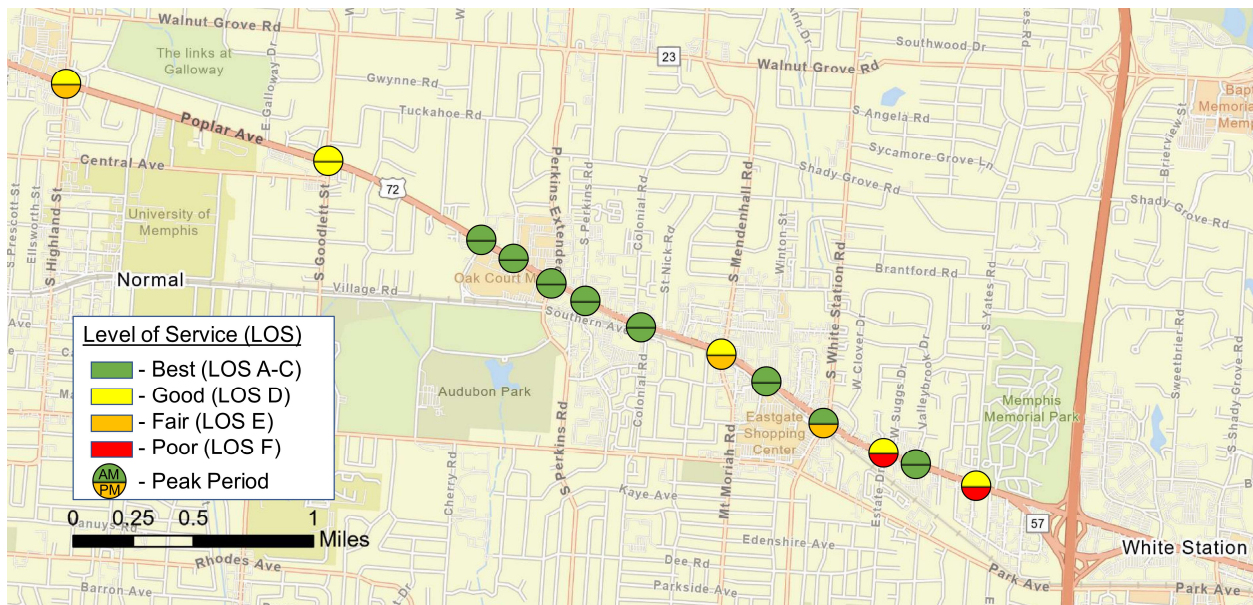
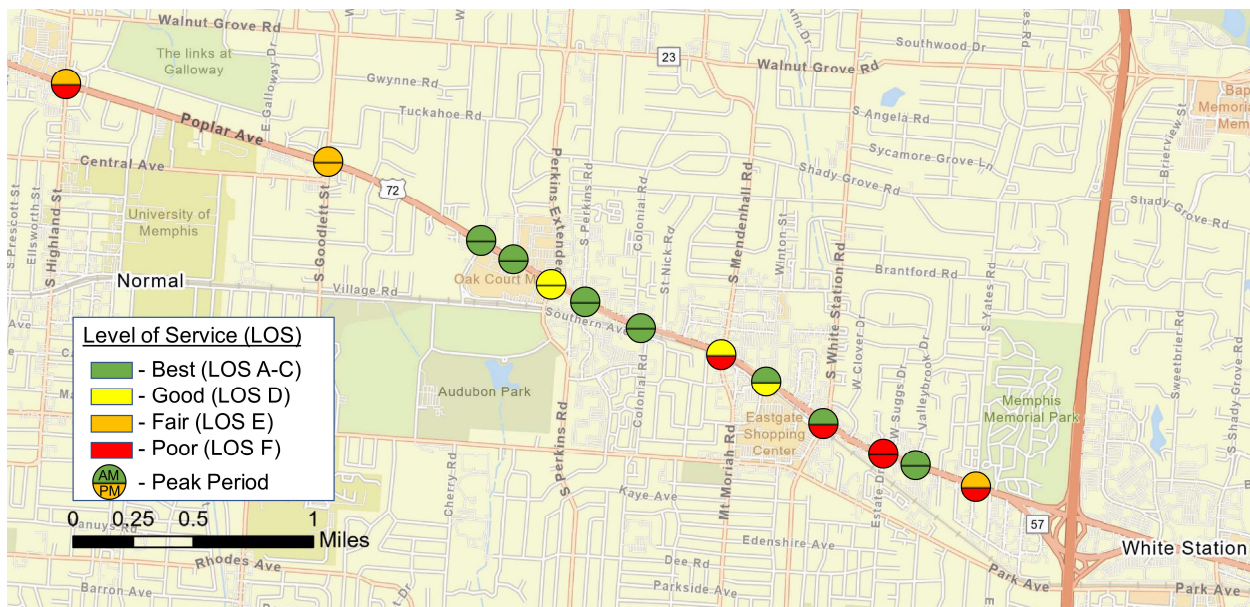


Figure 14: Horizon Year 2043 LOS



Transit

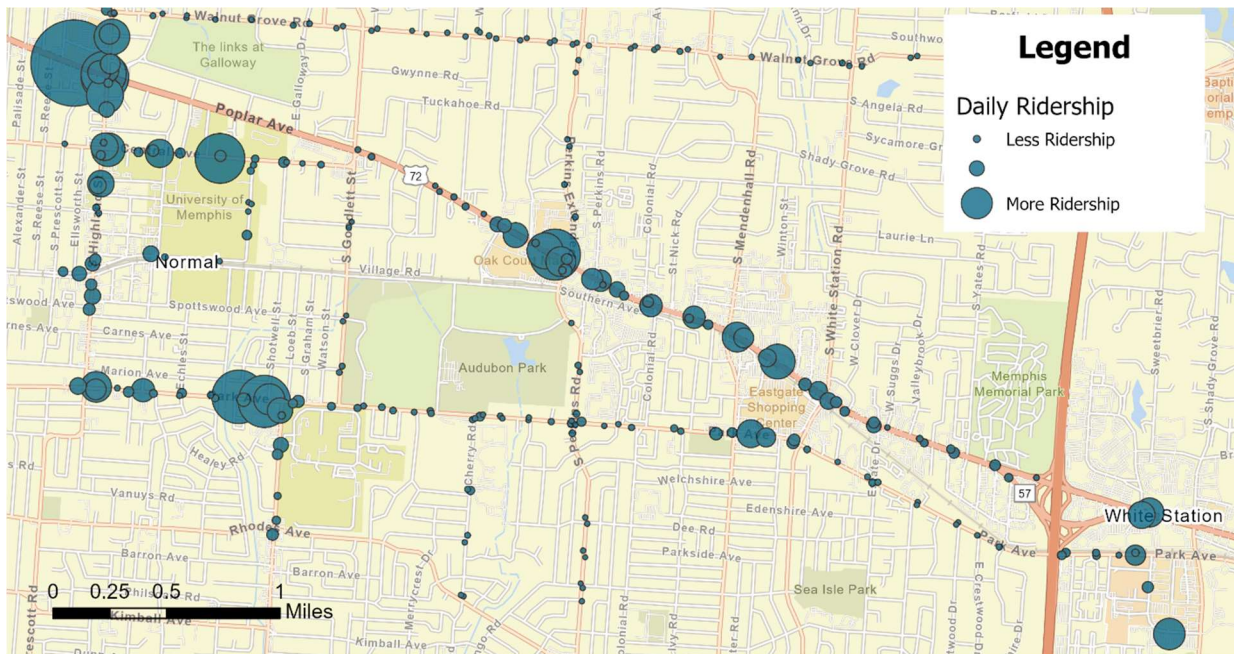
The Memphis Area Transit Authority (MATA) currently operates fixed route service along the corridor with the Route 50 bus that connects downtown Memphis to Germantown. This bus operates daily with a weekday frequency of 30 minutes and a weekend frequency of 1 hour. Routes 8, 34, and 37 also serve the corridor along the cross streets of Highland Street and Perkins Road with lower frequency service. The existing service around the corridor is shown in Figure 15.

Figure 15: Existing MATA Service Around Corridor



MATA average daily ridership at stops around the corridor is shown in **Figure 16**. Poplar Avenue at Highland Street is a key transfer point and the location along the corridor with the highest daily ridership. Other hotspots for ridership include the University of Memphis, Poplar Avenue at Perkins Extended, and the area along Poplar Avenue between Mendenhall Road and White Station Road.

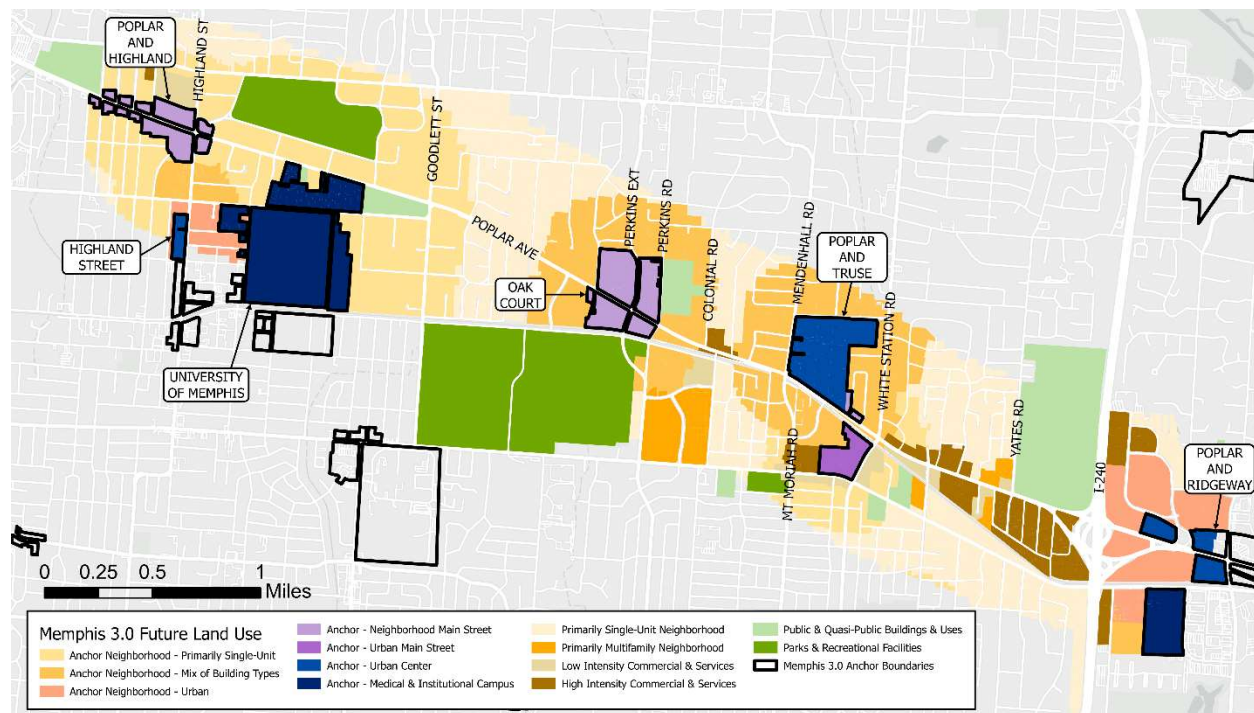
Figure 16: MATA Average Daily Ridership



Land Use

The Memphis 3.0 Comprehensive Plan includes a Future Land Use Planning Map aimed at guiding the City of Memphis on decisions concerning land use with a focus on identified community and Citywide Anchors to impact the largest number of people. **Figure 17** shows the Memphis 3.0 Future Land Use and Anchor locations along the project corridor.

Figure 17: Memphis 3.0 Future Land Use and Anchor Locations



Public and Stakeholder Engagement

Throughout the Poplar Avenue Safety and Mobility Plan development process, local stakeholders and community members were consulted on challenges, needs, and opportunities along the Poplar Avenue Corridor. There was one in-person public workshop held midway through the project. The stakeholder group met virtually two times throughout the project timeline, and additional one-on-one stakeholder meetings were held as needed.

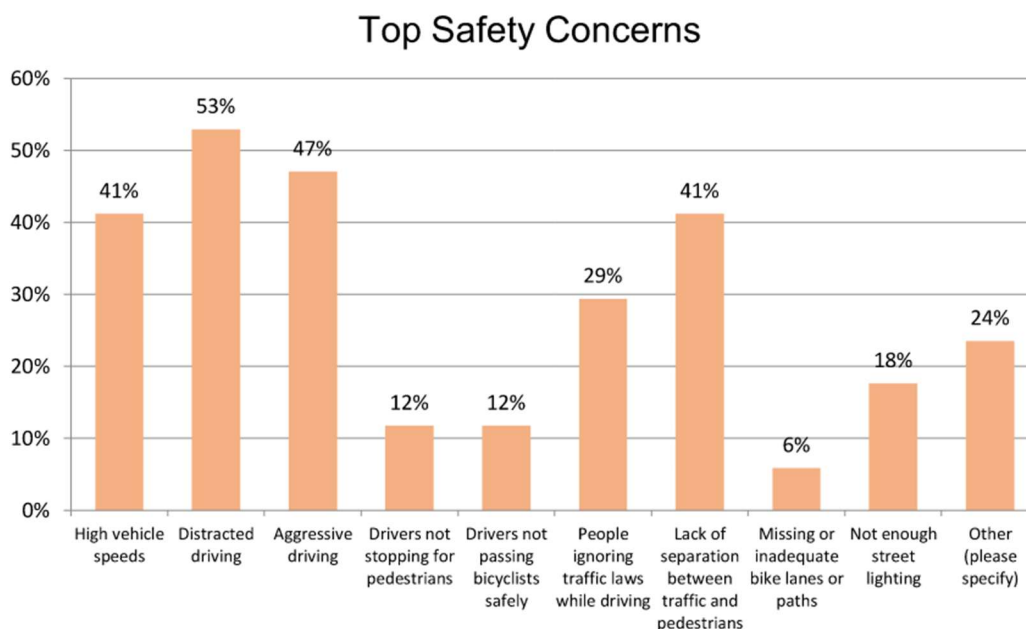
Representatives from the following organizations made up the stakeholder committee:

- Tennessee Department of Transportation (TDOT)
- City of Memphis
- Memphis City Council
- Memphis Metropolitan Planning Organization (MPO)
- Memphis Area Transit Authority (MATA)
- Memphis Police Department (MPD)
- Memphis Fire Department (MFD)
- Memphis Light Gas and Water (MLGW)
- Poplar Plaza Shopping Mall
- University Center Shopping Mall
- Oak Court Mall
- Laurelwood Shopping Center
- Poplar Commons Shopping Mall
- Poplar Collection Shopping Mall
- Erinway Shopping Center
- I-Bank Tower
- Clark Tower
- Eastgate Shopping Center
- Poplar Pointe Shopping Center
- Poplar Corridor Business District
- University of Memphis
- Presbyterian Day School and Second Presbyterian Church
- Christ Methodist Day School / Christ Church
- White Station High School
- Memorial Park / Memphis Funeral Home
- Norfolk Southern Railroad
- Red Acres Neighborhood Association
- Belle Meade Neighborhood Association
- The Village Neighborhood Association
- Colonial Acres Neighborhood Association

Stakeholder Meeting #1

The kickoff stakeholder meeting took place virtually on August 9, 2023. The purpose of the meeting was to discuss the purpose and goals of the Poplar Avenue Safety and Mobility Plan, present existing conditions of the corridor, collect feedback on stakeholder priorities, and gather input on developing recommendations for improvements along the corridor, including roadway capacity, drainage issues, and multimodal needs. A questionnaire was distributed to the stakeholders prior to the meeting to collect initial feedback on existing conditions of the corridor. The responses to the questionnaire helped to influence the discussion during the meeting. A sample response to the first question of the questionnaire is shown in **Figure 18** and a summary of the questionnaire and responses is provided in the Appendix.

Figure 18: Sample Response from Stakeholder Questionnaire



During the meeting, the project team shared the project scope and description of the corridor, including project corridor length, existing transit service and ridership analysis, existing plans and program review, and active congestion work happening on the corridor. Preliminary study findings were then presented to the stakeholders. This included crash history and statistics, bicycle and pedestrian crash locations, and an existing and future capacity analysis of the corridor.

The following items were identified as potential improvements that were considered during the plan development:

- Traffic signal timing and phasing
- Improved transit and transit signal priority
- Transportation systems management (TSMO)
- Intelligent transportation systems (ITS)
- Travel demand management (TDM)
- Multimodal network improvements
- Access management

Stakeholders were asked for feedback on the concerns they have for the existing state of the corridor. There were concerns about the capacity of the area around I-240 where the conditions will only get worse and create a pinch point, especially for westbound Poplar Avenue. Stakeholders requested statistics on crashes that involved utility poles, the expectation for service capacity at intersections, and how intersection/train stoppage improvements will be made. Stakeholders expressed concern about the safety of multimodal improvements and inquired about the impact of any decisions on school traffic. Stakeholders also communicated concerns about visual clutter and the removal procedures for on-premise signage and suggested that access management be included on the list of potential improvements.

Figure 19: Prompt from Stakeholder Questionnaire

* 7. Rank the following **safety** and **mobility improvements** for this segment of Poplar Ave. in order of your priorities.

Lower speed limits	^	v
Highly visible crosswalks	^	v
Education campaign for driver, cyclist, and pedestrian rules of the road	^	v
Stricter traffic law enforcement	^	v
Improving road maintenance	^	v
Repairing sidewalks	^	v
Adjusting crosswalk signal timing	^	v
Add more crosswalks	^	v
Add bike lanes or paths	^	v
Accessibility improvements	^	v
Improve street lighting	^	v

Public Workshop

The Poplar Avenue Safety and Mobility Study and Plan Public Workshop was held on August 24, 2023, at the Benjamin Hooks Central Library. Attendees included the general public and representatives from the City of Memphis, TDOT, and the project team. The material presented to the public included many of the same topics that were discussed during the first stakeholder meeting including an overall project description, preliminary study findings, and improvement priorities.

Attendees at the public workshop provided feedback during the presentation through discussion and live polling. After the presentation, the meeting shifted to maps where the public shared various thoughts and ideas with the members of the project team. Feedback was provided on a variety of safety concerns, including the need for alternate bike routes, safer bike lanes, and improved sidewalks and crosswalks. Feedback from the public included:

- Consider alternate routes for cyclists off Poplar Avenue.
- Make bike lanes safer by lowering speeds and providing physical protection from vehicles.
- Add pavement markings and signals to crosswalks.
- Consider countdown signals for drivers.

- Talk to schools along the corridor about congestion and multimodal users.
- Improve knowledge tests for new drivers to ensure they are adequately prepared for the road.

Figure 20: Live Polling Results from the Public Workshop



Figure 21: Breakout Discussions at the Public Workshop



Questions were also raised about the relationship between LOS and crash hotspots, as well as the potential for guardrails in high-crash areas. Other questions included:

- Has there been a study on speeding and law enforcement?
- Are there any plans to install guardrails in areas with high crash rates?
- Was any analysis done on the relationship between LOS and crash hotspots?

The project team reviewed the feedback and questions from the public workshop and incorporated them into the draft plan.

Stakeholder Meeting #2

The second stakeholder meeting was held virtually on October 24, 2023. The project team provided a quick review of the existing conditions that were discussed in the first meeting, including narrow lanes, multimodal use, access management challenges, safety concerns, and mobility issues. The Memphis Region Pedestrian and Bicycle Master Plan and the Transit Vision Plan were also discussed, as they will be used to guide the plan's solutions.

A variety of multimodal solutions, including pedestrian signalization, pedestrian hybrid beacons, mid-block crossings, enhanced sidewalks and crosswalks, bus-rapid transit (BRT), transit signal priority, shelters and accommodations, level boarding, access management, geometric improvements, traffic signal phasing, timing, and coordination, TSMO, ITS, and TDM were presented to the stakeholders. Potential roadway drainage improvements were also discussed, such as increasing channel areas, adding underground storage/detention areas, cleaning or creating new channels, and adding inlets to the existing system.

Conceptual solutions for various intersections and segments along the corridor were presented to the stakeholders for initial feedback. Stakeholders were also able to provide feedback on the initial improvements through a live Mentimeter (results in parentheses). There was also an opportunity for stakeholders to ask questions, which are also shown below in **Figure 23**. More than half of attendees also responded that they would likely use the facilities once improvements are made. Attendees were also asked which improvements would have the biggest impact with responses including less speeding, separation between traffic and sidewalks, transit priority, PHB crossing with pedestrian refuge island, and improvements to specific intersections.

Figure 22: Sample Pedestrian Improvements from the Stakeholder Meeting



Pedestrian Improvements

Figure 23: Mentimeter Poll Results

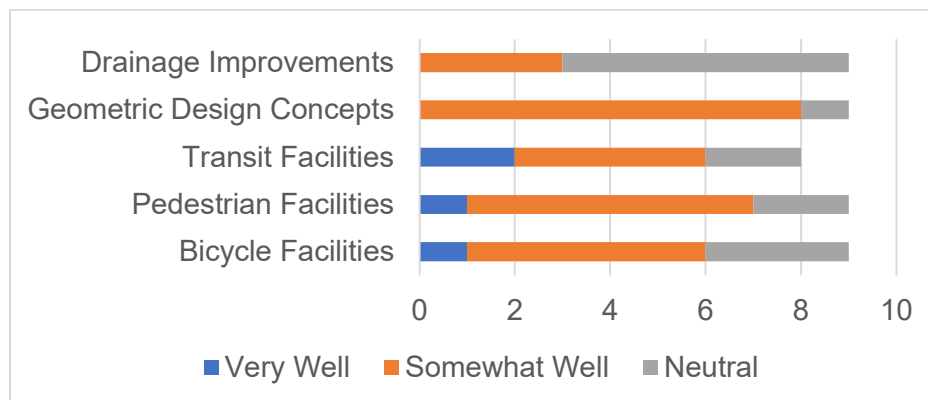
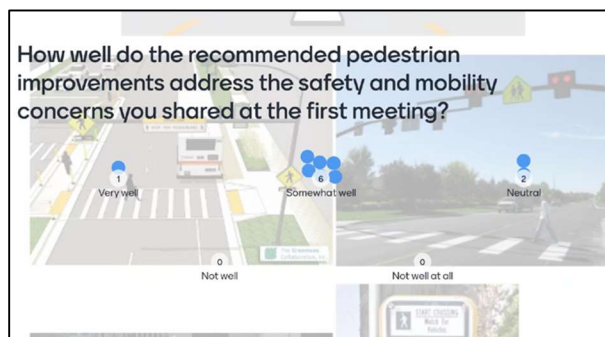


Figure 24: Sample Mentimeter Polling Question

Recommendations

Overview of Improvement Types

There are four main categories that the recommendations of this plan fall into: Safety, Multimodal, Capacity/Demand, and Drainage. Recommendations for each of the categories are discussed in the following sections. In many cases, recommendations may overlap into multiple categories.

Safety

Safety improvements were identified based on the types of crashes observed in the review of the crash data. The types of safety improvements were geometric/roadway realignment, signing and pavement markings, reconstructing traffic signals, elimination of slip right turn lanes, elimination of roadside obstructions, and provisions for bicycles and pedestrians. Safety improvements also included access management treatments along the corridor.

Multimodal

Multimodal recommendations cover three main areas: pedestrian, bicycle, and transit. Pedestrian improvements consisted of construction of buffer space from vehicle traffic, ADA improvements at intersections, traffic signal enhancements, mid-block crosswalks, and multiuse paths. While bicycle paths are not recommended along Poplar Avenue itself, bicycle lanes and striping are recommended for cross streets to connect planned and existing facilities consistent with the MPO's Walk and Roll Bicycle and Pedestrian Plan. There is also the potential to expand the Explore Bike Share network in this area. Consistent with MATA's Transit Vision Plan, high-capacity transit is recommended for implementation. BRT stations are also included in the plan recommendations. These stations include amenities such as covered waiting areas, level boarding, ticket vending machines, emergency call buttons, bike and/or scooter racks, and the potential for Explore Bike Share infrastructure. With BRT along the corridor, it is recommended that Transit Signal Priority (TSP) be implemented.

Capacity and Demand

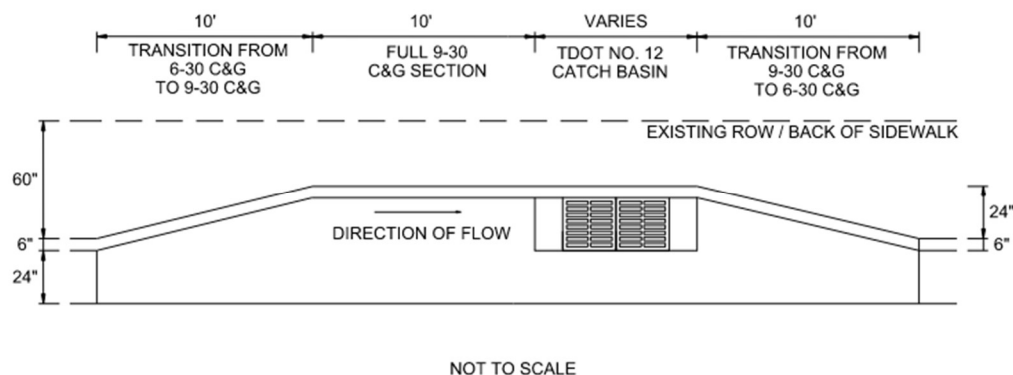
It is recommended that existing span wire mounted traffic signals along the corridor be reconstructed as mast arm traffic signals. It is recommended that coordinated signal timing be updated through the Congestion Management Program (CMP), and that an Advanced Transportation Management System (ATMS) be implemented along the corridor. Geometric improvements are recommended at a couple locations along the corridor and are anticipated to

improve roadway capacity. Access management improvements were identified along the corridor to improve traffic flow and roadway capacity.

Drainage

Drainage improvements consisted of reconstructing curb, gutter, and inlet structures to increase the inlet capacity at locations where there are areas of inundation on the roadway. These areas are on Poplar Avenue east of Highland Street, between Mendenhall Road and White Station Road, and at Yates Road. One option to increase the inlet capacity with minimal impact to the existing right-of-way is shown in **Figure 25**. As with the other improvements, a more detailed engineering evaluation should be conducted with development of the construction plans.

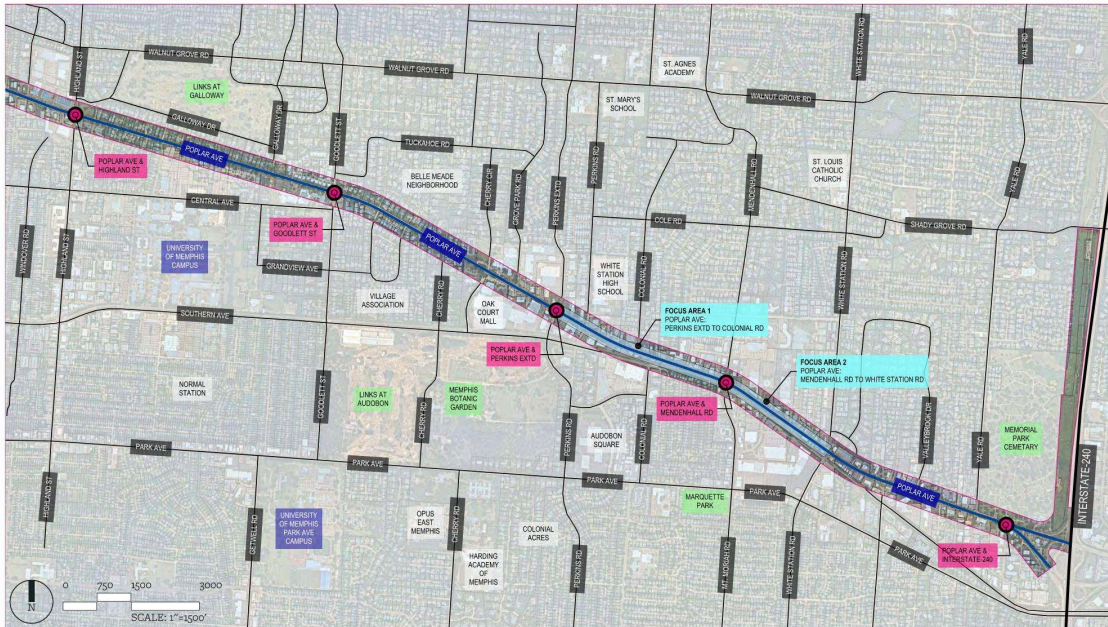
Figure 25 - Planned Curb, Gutter, and Inlet Improvements



Overall Study Limits and Focus Areas

The Poplar Avenue Safety and Mobility Plan recommendations reflect existing conditions, previous planning efforts, and the stakeholder and public engagement feedback gathered during the planning process. **Figure 26** shows the extents of the study area for this plan. The existing conditions and land use mix fronting Poplar Avenue throughout the study area directly influences the planning solutions proposed in this document.

Figure 26: Project Study Area



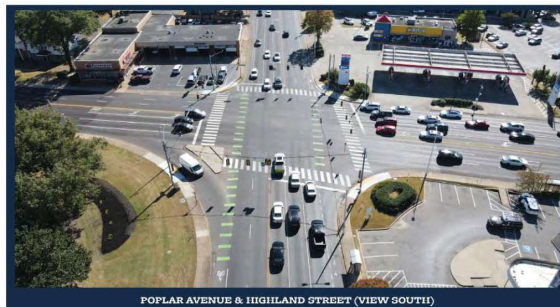
The plan above illustrates the various improvement types being proposed at the conceptual level. To further define the recommended improvements, the corridor was broken down into seven focus areas to provide a more detailed planning approach at key planning areas.

Focus Area 1 – Poplar Avenue @ Highland Street

This intersection currently has bike lanes on northbound and southbound Highland Street with sidewalks and delineated crosswalks present at the intersection. Proposed improvements within this focus area include:

- Close the slip lane from westbound Poplar Avenue onto northbound Highland Street to decrease crossing distances and limit points of conflict between vehicles and pedestrians.
- Upgrade the existing traffic signal to mast arms with pedestrian signals.
- Separate the sidewalk from the roadway with a landscape strip where feasible.
- Implement the planned Innovation Corridor BRT Station

Figure 27: Poplar Avenue at Highland Street Existing Conditions



Kimley»Horn

POPLAR AT HIGHLAND ST | EXISTING CONDITIONS

POPLAR MOBILITY PLAN | MEMPHIS, TENNESSEE

Figure 28: Poplar Avenue at Highland Street Existing Aerial and Concept Plan



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POPLAR AT HIGHLAND ST | EXISTING CONDITIONS

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POPLAR AT HIGHLAND ST | CONCEPT PLAN

POPLAR MOBILITY PLAN | MEMPHIS, TENNESSEE

Focus Area 2 – Poplar Avenue @ Goodlett Street

In addition to being the intersection of two heavily traveled roads, it should be noted that Central Avenue terminates to the south and this intersection allows for vehicles to continue traveling east. The existing right turn slip lane is proposed to remain to help facilitate northbound right hand turns onto Poplar Avenue. Proposed improvements within this focus area include:

- Upgrade the existing traffic signal to mast arms with pedestrian signals.
- Narrow the travel lanes to allow for planned, north/south bike lanes along Goodlett Street.
- Install pedestrian and bicycle crossing markings through the intersection.
- Expand and separate the sidewalk from the roadway with a landscape strip where feasible.
- Reduce the width of the existing slip lane.
- Add hardscape material and ADA improvements within the right-of-way.

Figure 29: Poplar Avenue at Goodlett Street Existing Conditions



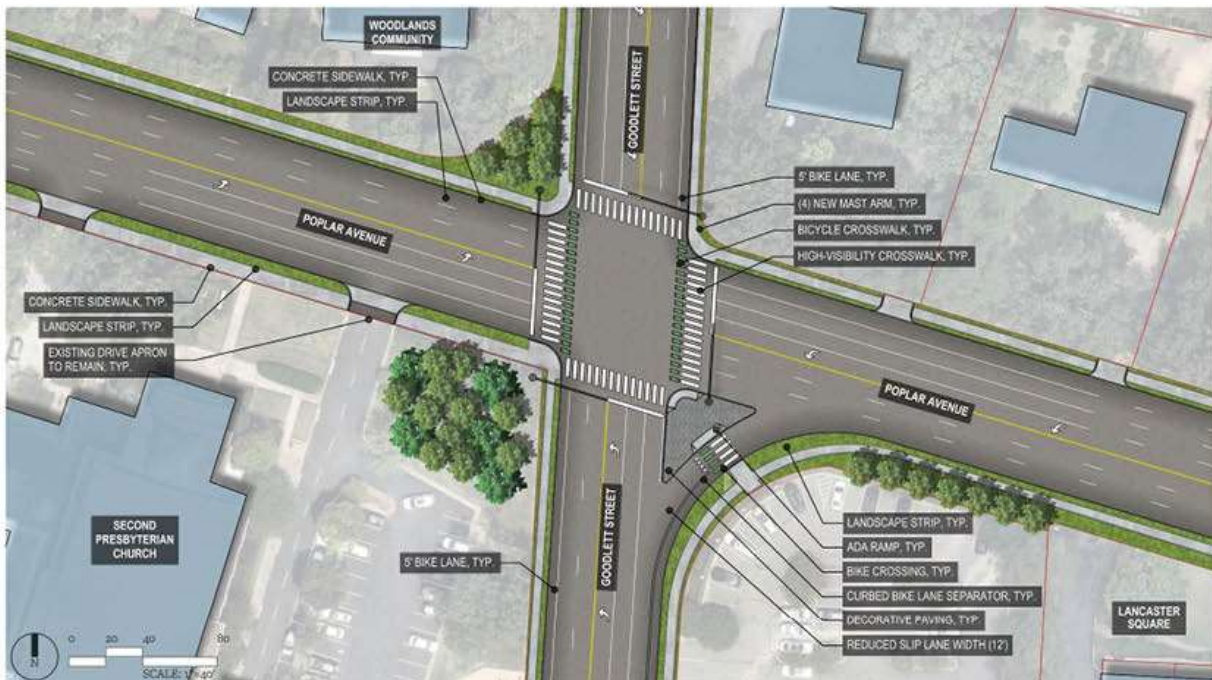
Figure 30: Poplar Avenue at Goodlett Street Existing Aerial and Concept Plan



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POPLAR AT GOODLETT ST | EXISTING CONDITIONS

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POPLAR AT GOODLETT ST | CONCEPT PLAN

POPLAR MOBILITY PLAN | MEMPHIS, TENNESSEE

Focus Area 3 – Poplar Avenue @ Perkins Extended

The Poplar Avenue at Perkins Extended intersection marks the transition of the corridor from more residential and institutional land uses to more commercial land uses. This intersection currently has a span wire signal, excess curb cuts into adjacent properties, and some variation in travel lane width on Perkins Extended. Proposed improvements within this focus area include:

- Upgrade the existing traffic signal to mast arms with pedestrian signals.
- Narrow the travel lanes to allow for planned, north/south bike lanes along Perkins Extended.
- Install pedestrian and bicycle crossing markings through the intersection.
- Expand and separate the sidewalk from the roadway with a landscape strip where feasible.
- Remove the existing slip lane from westbound Poplar Avenue to northbound Perkins Extended to reduce crossing distance and add a possible public space amenity.
- Implement the proposed expansion of the planned BRT system.

Figure 31: Poplar Avenue at Perkins Extended Existing Conditions



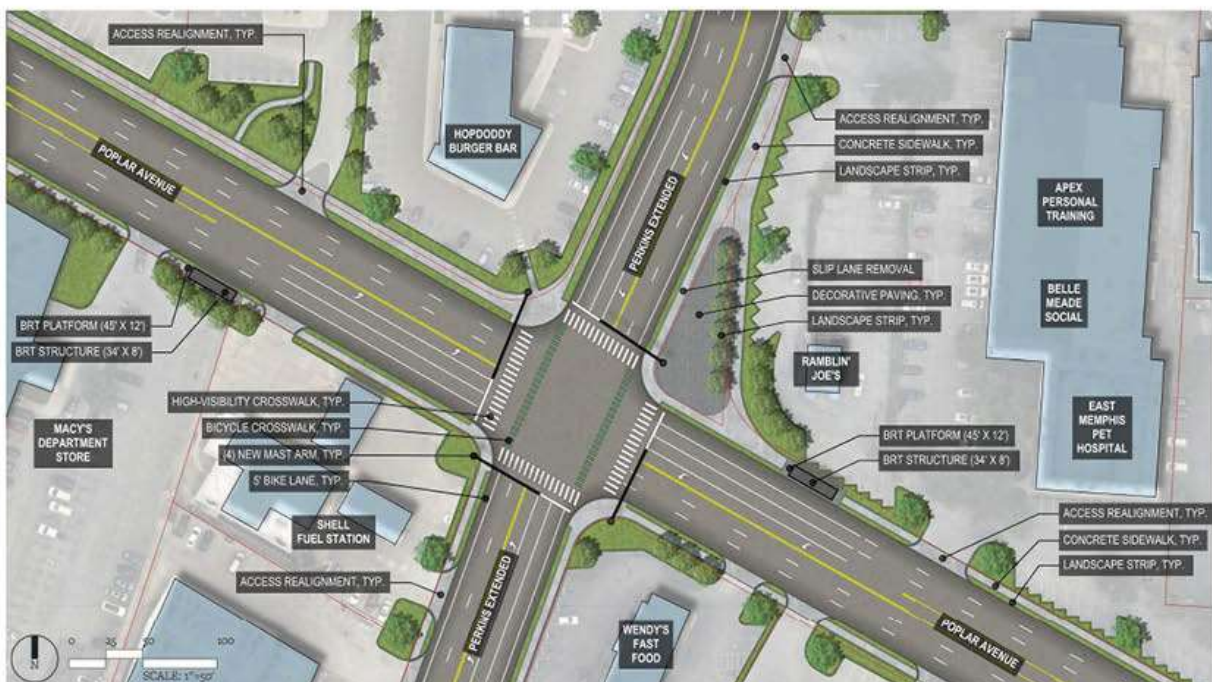
Figure 32: Poplar Avenue at Perkins Extended Existing Aerial and Concept Plan



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POPLAR AT PERKINS EXT'D | EXISTING CONDITIONS

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POPLAR AT PERKINS EXT'D | CONCEPT PLAN

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Focus Area 4 – Perkins Extended to Colonial Road

The form that development has taken within this stretch of Poplar Avenue has resulted in a surplus of commercial driveways and a segmented pedestrian/mobility network. Access management was the primary improvement proposed within this focus area to identify opportunities for the following improvements:

- Reduce the number of driveways onto Poplar Avenue to create more continuous and safer sidewalk options for pedestrians and reduce potential points of conflict between pedestrians and vehicular turning movements.
- Reduce the width of commercial driveways where feasible.
- Identify the opportunity for shared drives or circulation within the parking areas of the parcels fronting Poplar Avenue.
- Expand and separate the sidewalk from the roadway with a landscape strip where feasible.

In addition to the improvements listed above, improvements noted in other focus areas can also be applied to this segment of Poplar Avenue. This includes, but is not limited to, intersection improvements, BRT stations and amenities, geometric realignments, safety improvements, crossing enhancements, and other improvements mentioned in the Overview section.

Figure 33: Perkins Extended to Colonial Road Existing Conditions



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PERKINS EXT TO COLONIAL RD | EXISTING CONDITIONS

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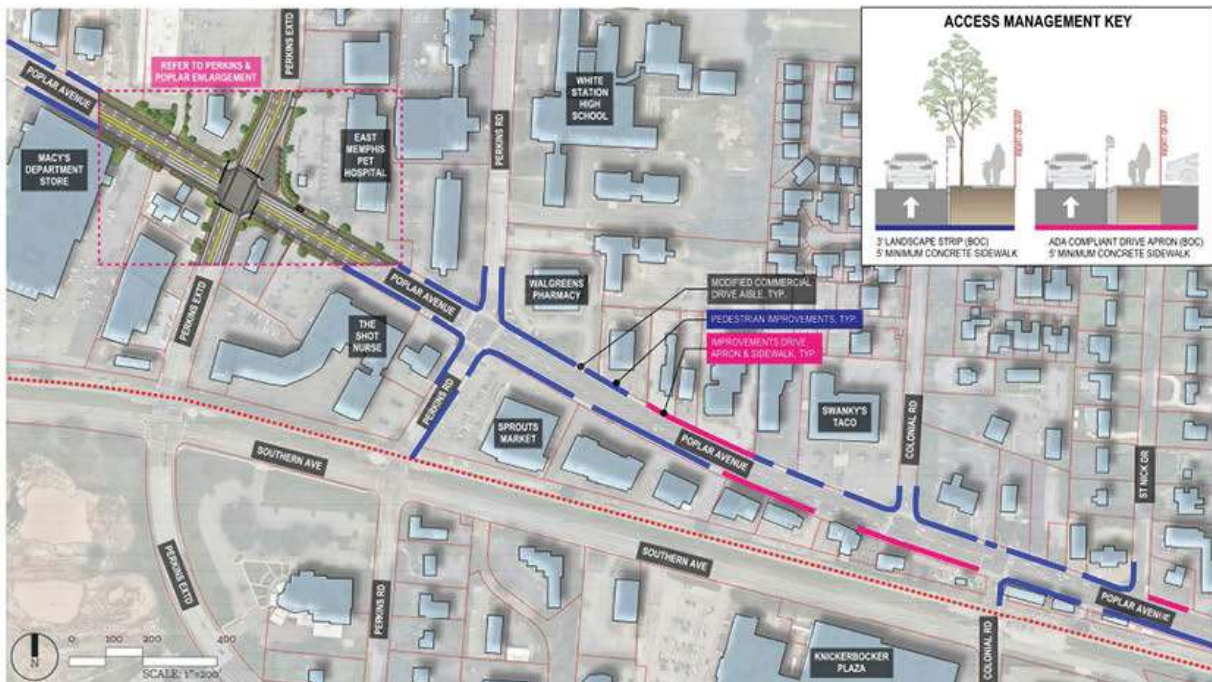
Figure 34: Perkins Extended to Colonial Road Existing Aerial and Concept Plan



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PERKINS EXTD TO COLONIAL RD | EXISTING CONDITIONS

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PERKINS EXTD TO COLONIAL RD | CONCEPT PLAN

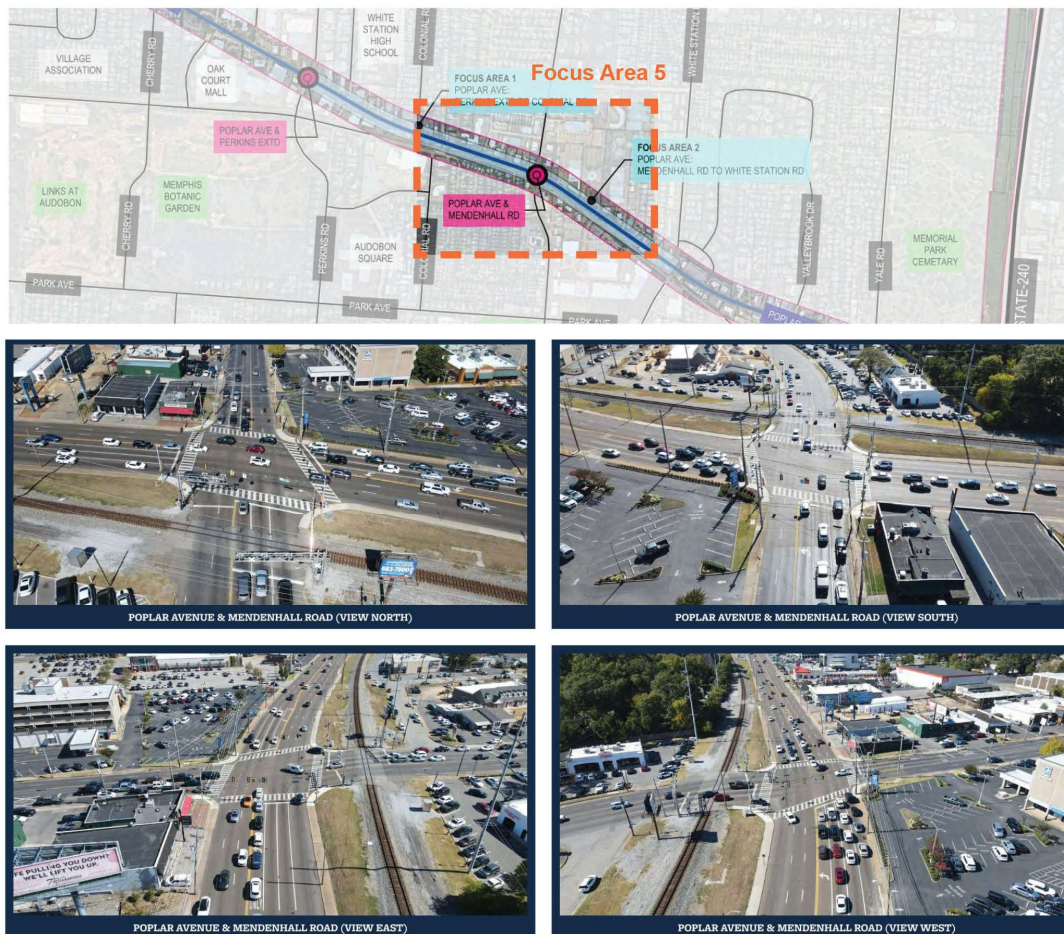
POPLAR MOBILITY PLAN | MEMPHIS, TENNESSEE

Focus Area 5 – Poplar Avenue @ Mendenhall Road

The roadway geometry along Poplar Avenue is not aligned through this intersection which creates an unsafe condition for vehicles moving east/west. There is also a skewed crosswalk which extends the crossing distance for pedestrians crossing north/south on the east side of Mendenhall Road. The improvements within the railway right-of-way would need to be coordinated with Norfolk Southern Railroad. Proposed improvements within this focus area include:

- Realign to the roadway curve geometry of Poplar Avenue to align all east/west travel lanes through the intersection.
- Narrow the travel lanes to allow for planned bike lanes along Mendenhall Road.
- Upgrade the existing traffic signal to mast arms with pedestrian signals.
- Separate the sidewalk from the roadway with a landscape strip where feasible.
- Reduce the amount and widths of driveways onto Poplar Avenue to create more continuous and safer sidewalk options for pedestrians and reduce potential points of conflict between pedestrians and vehicular turning movements.
- Close the existing vehicular crossing on Moss Road.

Figure 35: Poplar Avenue at Mendenhall Road Existing Conditions



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POPLAR AT MENDENHALL RD | EXISTING CONDITIONS
POPLAR MOBILITY PLAN | MEMPHIS, TENNESSEE

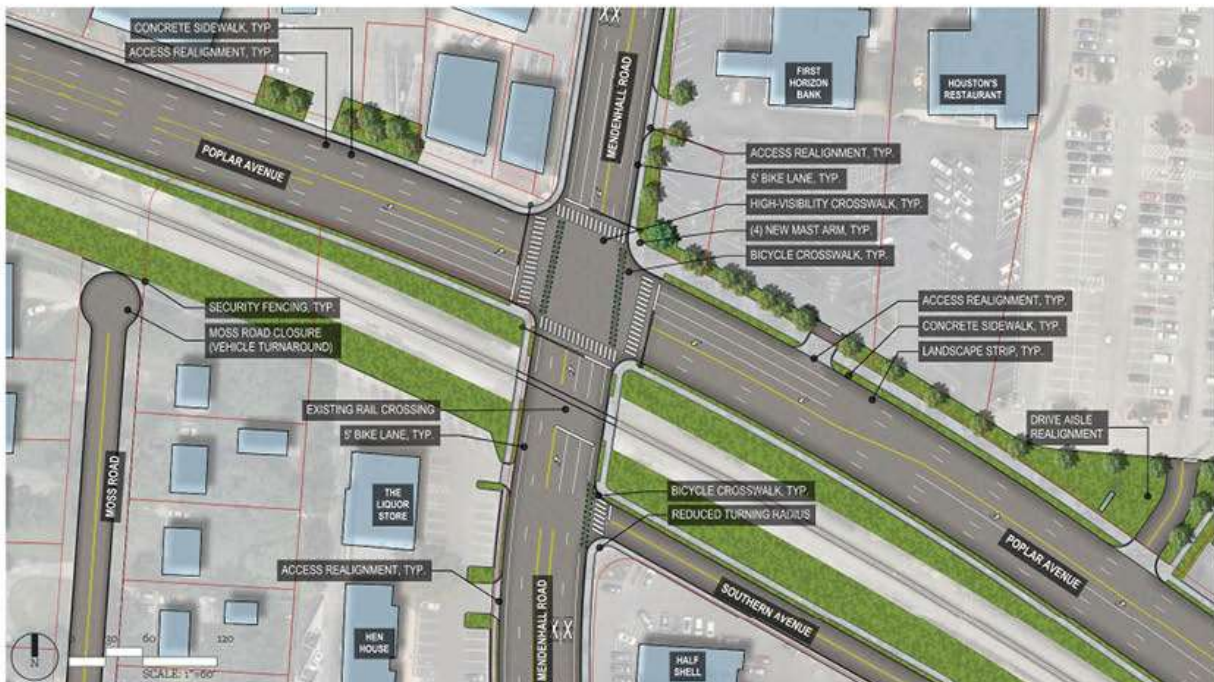
Figure 36: Poplar Avenue at Mendenhall Road Existing Aerial and Concept Plan



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POPLAR AT MENDENHALL RD | EXISTING CONDITIONS

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POPLAR AT MENDENHALL RD | CONCEPT PLAN

POPLAR MOBILITY PLAN | MEMPHIS, TENNESSEE



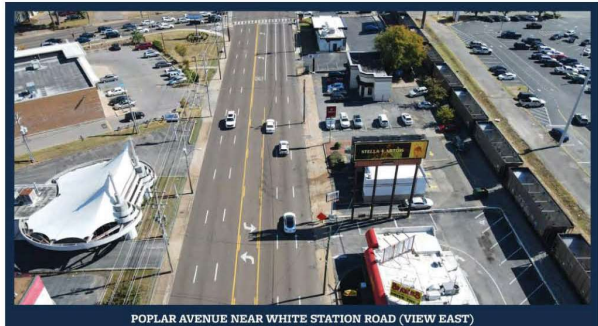
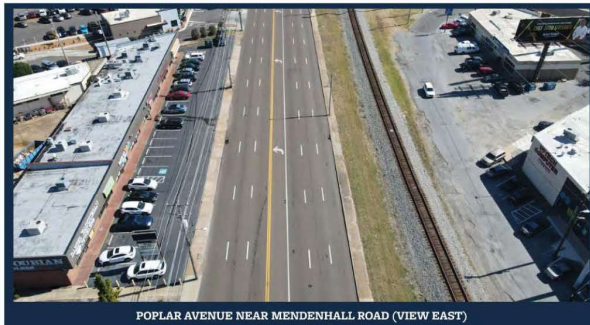
Focus Area 6 – Mendenhall Road to White Station Road

Similar to Focus Area 4, development along this stretch of Poplar Avenue has resulted in a surplus of commercial driveways and a segmented pedestrian/mobility network. Proximity of development to the Norfolk Southern Railroad has created narrow parcels with limited space for parking and unsafe ingress/egress. Access management was the primary improvement proposed within this focus area to identify opportunities for the following improvements:

- Reduce the number of driveways onto Poplar Avenue to create more continuous and safer sidewalk options for pedestrians and reduce potential points of conflict between pedestrians and vehicular turning movements.
- Reduce the width of commercial driveways where feasible.
- Identify the opportunity for shared drives or circulation within the parking areas of the parcels fronting Poplar Avenue.
- Expand and separate the sidewalk from the roadway with a landscape strip where feasible.

In addition to the improvements listed above, improvements noted in other focus areas can also be applied to this segment of Poplar Avenue. This includes, but is not limited to, intersection improvements, BRT stations and amenities, geometric realignments, safety improvements, crossing enhancements, and other improvements mentioned in the Overview section.

Figure 37: Mendenhall Road to White Station Road Existing Conditions



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MENDENHALL RD TO WHITE STATION RD | EXISTING CONDITIONS

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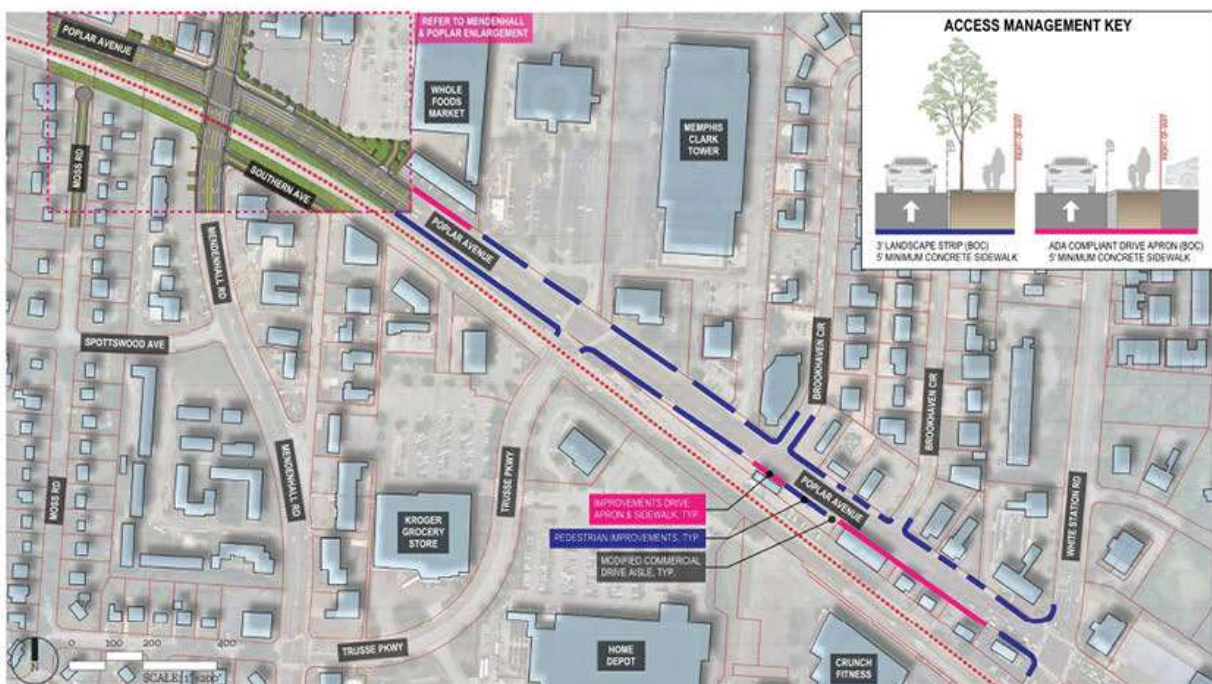
Figure 38: Mendenhall Road to White Station Road Existing Aerial and Concept Plan



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MENDENHALL RD TO WHITE STATION RD | EXISTING CONDITIONS

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MENDENHALL RD TO WHITE STATION RD | CONCEPT PLAN

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Focus Area 7 – Poplar Avenue @ Interstate-240

Improvements in this focus area are targeted to promote safer movement for vehicles entering Poplar Avenue from I-240 and adjacent side roads, as well as to provide clearly delineated pedestrian infrastructure, allowing for east/west connections and north/south movements across Poplar Avenue. Proposed improvements within this focus area include:

- Proposed 10' multi-use path within the MLGW transmission line easement that parallels I-240.
- Extend the merge lane length for vehicles entering Poplar Avenue westbound from I-240.
- Establish a sidewalk network and marked crossings for pedestrians to cross Poplar Avenue near Cresthaven Road with a signalized crossing.
- Separate the sidewalk from the roadway with a landscape strip where feasible.
- Extend the sidewalk in the median to connect the proposed pedestrian crossing with the Poplar Pointe Shopping Center.
- Realign Brookfield Road to allow for safer right-hand turns onto Poplar Avenue.
- Widen Poplar Avenue to allow for a full width two-way left-turn lane between Oakhaven Road and the end of the median.

Figure 39: Poplar Avenue at I-240 Existing Conditions



Figure 40: Poplar Avenue at I-240 Existing Aerial and Concept Plan



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POPLAR AT INTERSTATE-240 | EXISTING CONDITIONS

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POPLAR AT INTERSTATE-240 | CONCEPT PLAN

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Streetscape Section Alternatives

Throughout the length of the corridor there are various opportunities to reallocate space within the existing ROW to provide pedestrian and vehicular improvements. The land use and existing conditions immediately adjacent to the roadway will dictate what solution best fits Poplar Avenue at that location. The following three roadway section alternatives illustrate possible solutions along Poplar Avenue while considering the following factors:

1. Potential for ROW acquisition along the corridor.
2. Potential for utility relocation or full conversion to underground utilities along the corridor

The first proposed section, Alternative 1, illustrates the conversion to underground utilities throughout the corridor along with the addition of a landscape strip to separate the roadway and sidewalk. This section would require extensive utility work along the corridor as well as ROW acquisition. However, it would provide improved safety for all users of Poplar Avenue by providing a buffer for pedestrians and removing utility poles from the edge of the roadway. Alternative 1 also improves safety by allowing for better sight lines throughout the corridor and at intersections. The landscape strip buffer would also provide potential beautification of the corridor while also allocating space for proposed drainage improvements.

Proposed section Alternative 2 illustrates the relocation of utilities to the back of sidewalk with the addition of a landscape strip to separate the roadway and sidewalk. This section would require extensive utility work, although potentially less than Alternative 1. Additional ROW would be required to account for the landscape strip and utility easement behind the sidewalk. Alternative 2 provides similar safety benefits as Alternative 1, as well as the opportunity for improved beautification and drainage along the corridor. The existing section of Poplar Avenue is shown in **Figure 41**, while section Alternative 1 and Alternative 2 are provided in

Figure 42.

Section Alternative 3 illustrates the installation of a median along Poplar Avenue in place of the existing two-way left-turn lane as shown in **Figure 43**. In this figure, the median is shown along a short section of Poplar Avenue east of Goodlett Street as a conceptual example. However, this section could be implemented throughout the corridor or along smaller segments where feasible and desired. Due to the vast amount of residential and commercial driveways along Poplar Avenue, thorough planning, design, coordination, and public engagement would be required to implement this concept. A median would improve safety along the corridor by reducing the number of conflict points and could also act as a form of access management to consolidate driveways. In addition, a median provides further opportunities for drainage improvements and the potential for beautification of the corridor through landscaping.

Figure 41: Existing Street Section Along Poplar Avenue

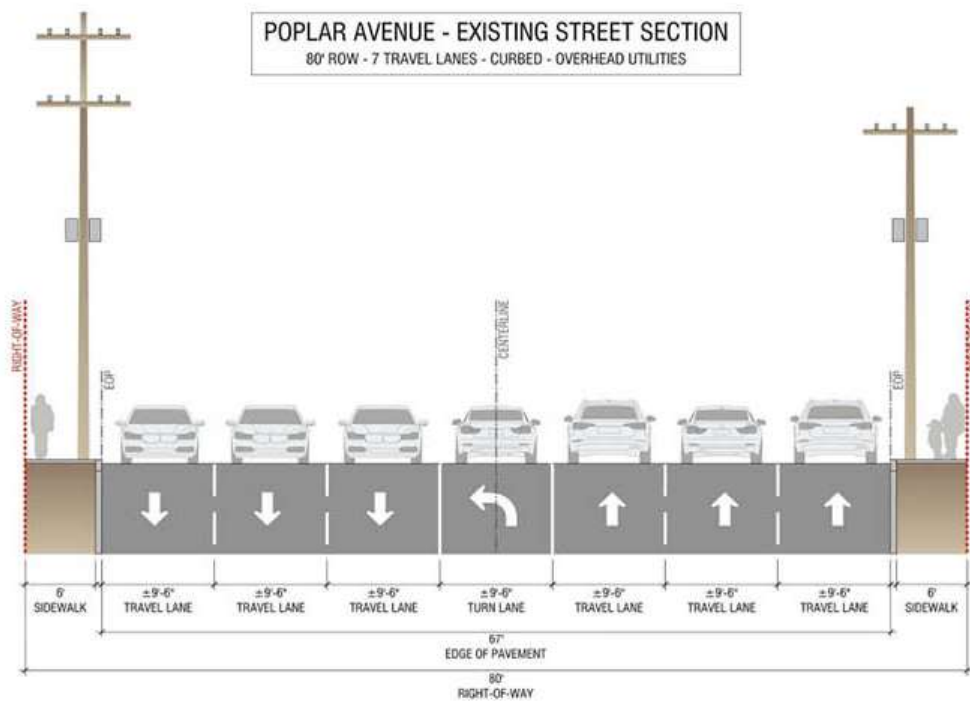
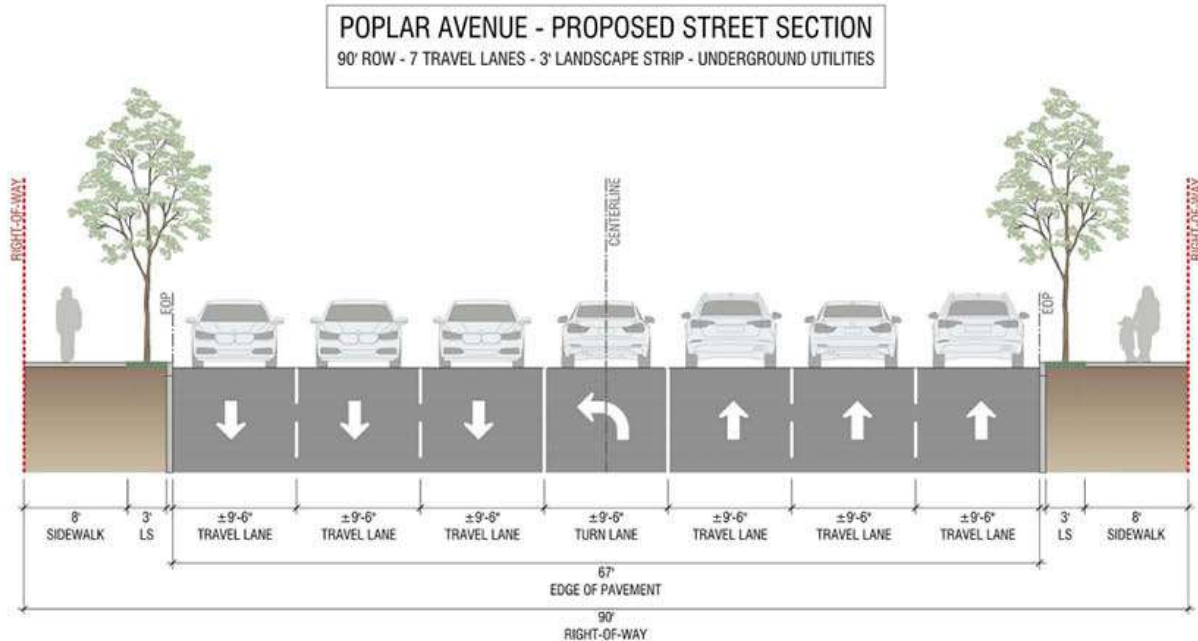




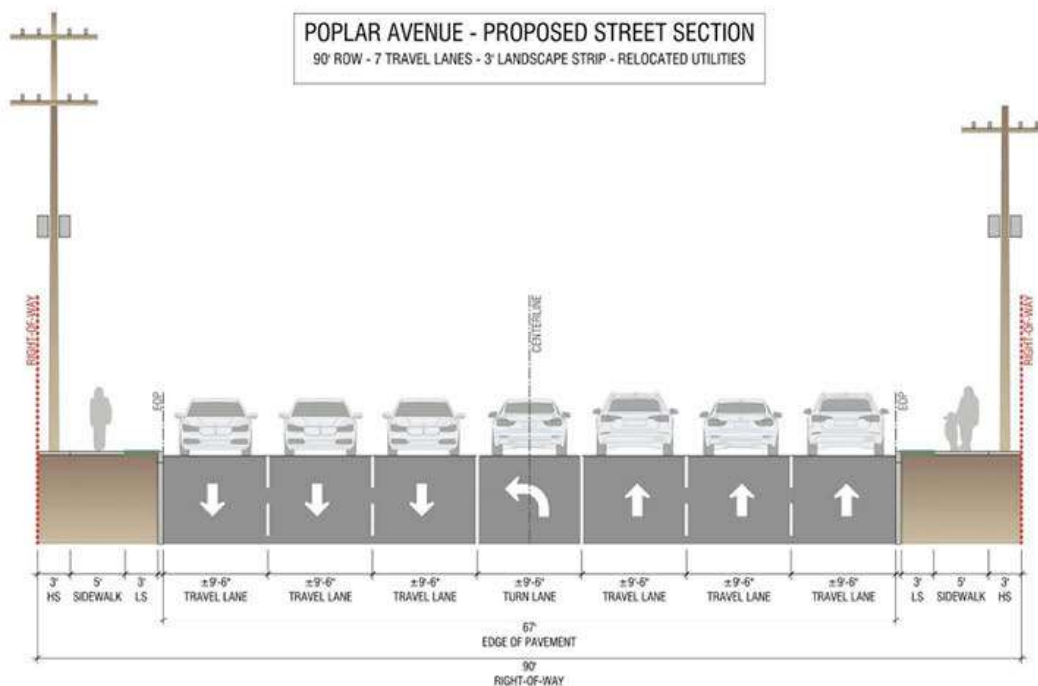
Figure 42: Proposed Section Alternatives 1 and 2



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POPLAR AVENUE STREET SECTIONS | PROPOSED ALTERNATIVE 1

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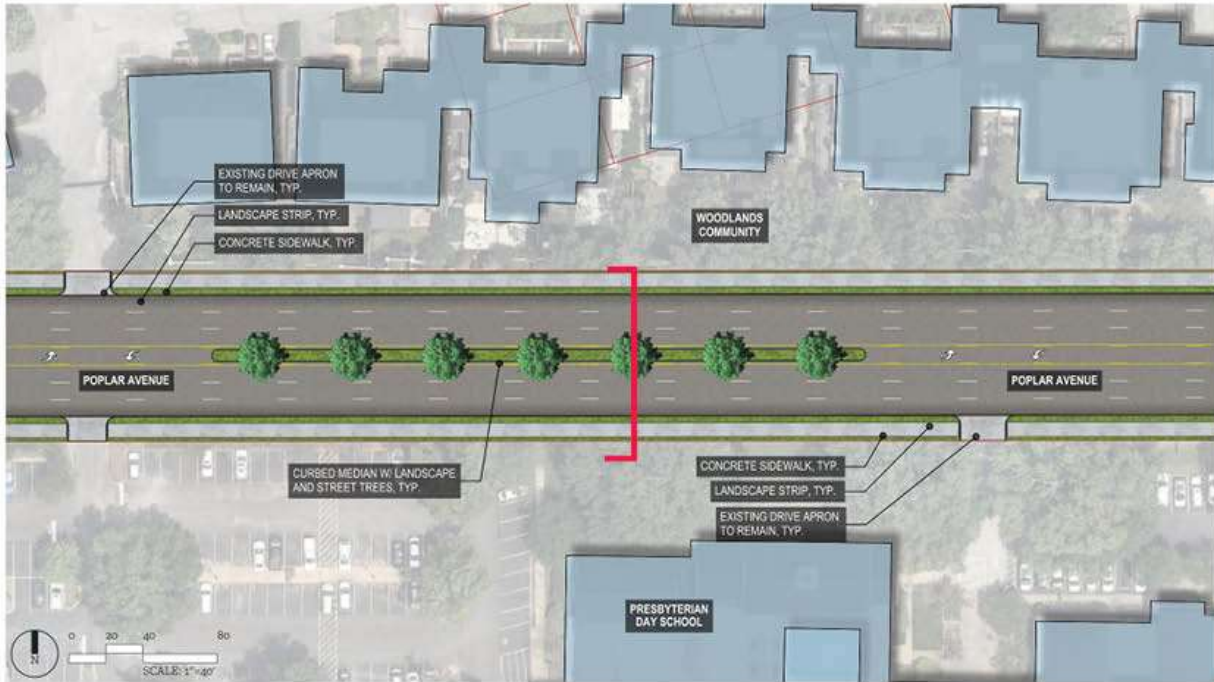


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POPLAR AVENUE STREET SECTIONS | PROPOSED ALTERNATIVE 2

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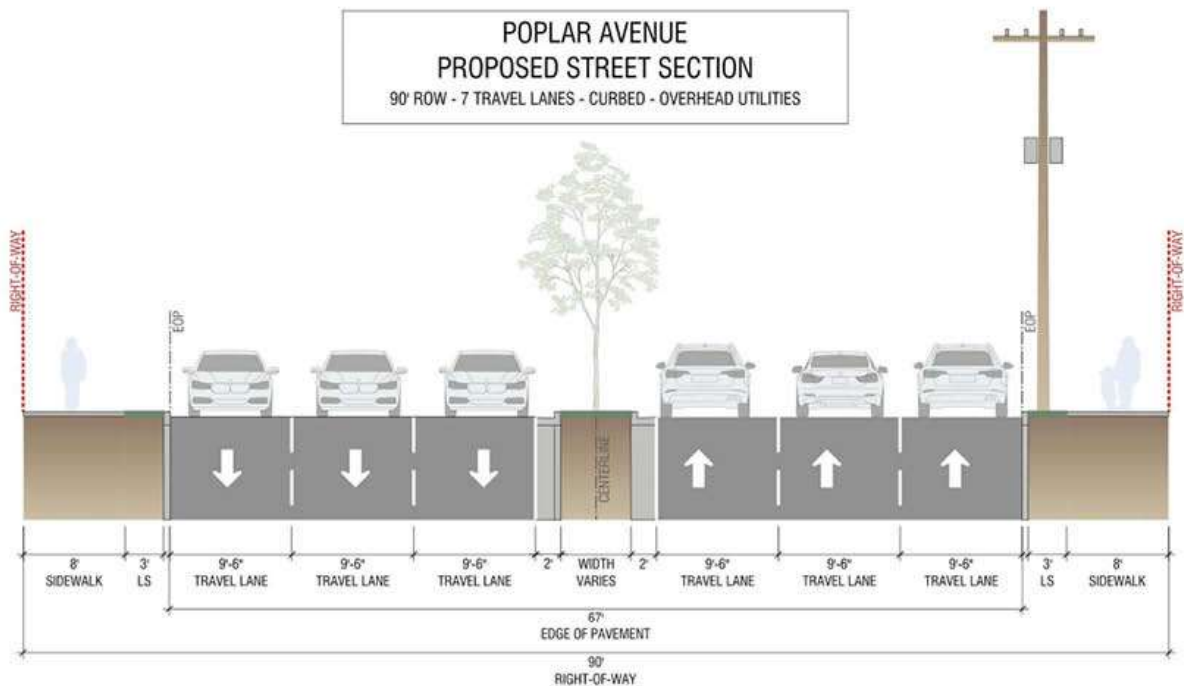
Figure 43: Proposed Section Alternative 3



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POPLAR NEAR GOODLETT ST | CONCEPT PLAN

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POPLAR AVENUE STREET SECTIONS | PROPOSED

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Cost Estimates

The Poplar Avenue Safety and Mobility Plan provides concepts and recommendations that were developed from input and feedback from the public and stakeholders. These recommendations should be implemented to improve multimodal safety and mobility along the Poplar Avenue corridor. Planning level estimates of cost were developed based on 2023 TDOT average unit prices as well as recently bid projects in the City of Memphis. The cost estimates were only developed for the improvements shown in the concepts. These cost estimates can also help to identify and inform costs for other additional similar improvements along the corridor that are not directly shown in the concepts. Costs are shown below as totals for each focus area in the plan as well as per mile for items such as utility relocation.

Table 1: Cost Estimates by Focus Area and Improvement Type

Focus Area	Location / Improvement Type	Range of Cost
1	Poplar Avenue at Highland Street	\$450,000 - \$600,000
2	Poplar Avenue at Goodlett Street	\$400,000 - \$550,000
3	Poplar Avenue at Perkins Extended	\$500,000 - \$650,000
4	Poplar Avenue from Perkins Extended to Colonial Road	\$500,000 - \$1,000,000
5	Poplar Avenue at Mendenhall Road	\$1,000,000 - \$1,500,000
6	Poplar Avenue from Mendenhall Road to White Station	\$500,000 - \$1,000,000
7	Poplar Avenue at Interstate 240	\$2,000,000 - \$3,000,000
-	Median	\$2,000,000 per mile
-	BRT Stations	\$850,000 each
-	Right of Way	\$8,800,000 per mile
-	Utilities (Relocated)	\$5,000,000 per mile
-	Utilities (Underground)	\$10,000,000 per mile
-	Drainage Enhancements	\$1,300,000 per mile

Summary and Conclusions

The Poplar Avenue Safety and Mobility Plan evaluated existing data and future year projections to identify safety and mobility deficiencies along the study corridor. Public and stakeholder meetings were held throughout the plan development to guide the analysis and development of recommendations. Specific improvements were identified for locations along the corridor corresponding to focus areas identified in Memphis 3.0, as well as improvements that could be implemented elsewhere along the corridor. These improvements included provisions for bicycle and pedestrians, transit, motor vehicles, drainage, and utilities. Planning level opinions of costs were developed based on recent bid prices. The improvements proposed in this Plan are conceptual in nature and can be used to guide potential infrastructure investments along the Poplar Avenue corridor. A prioritized list of projects can be developed from the recommendations in this Plan to determine appropriate funding sources for each project.