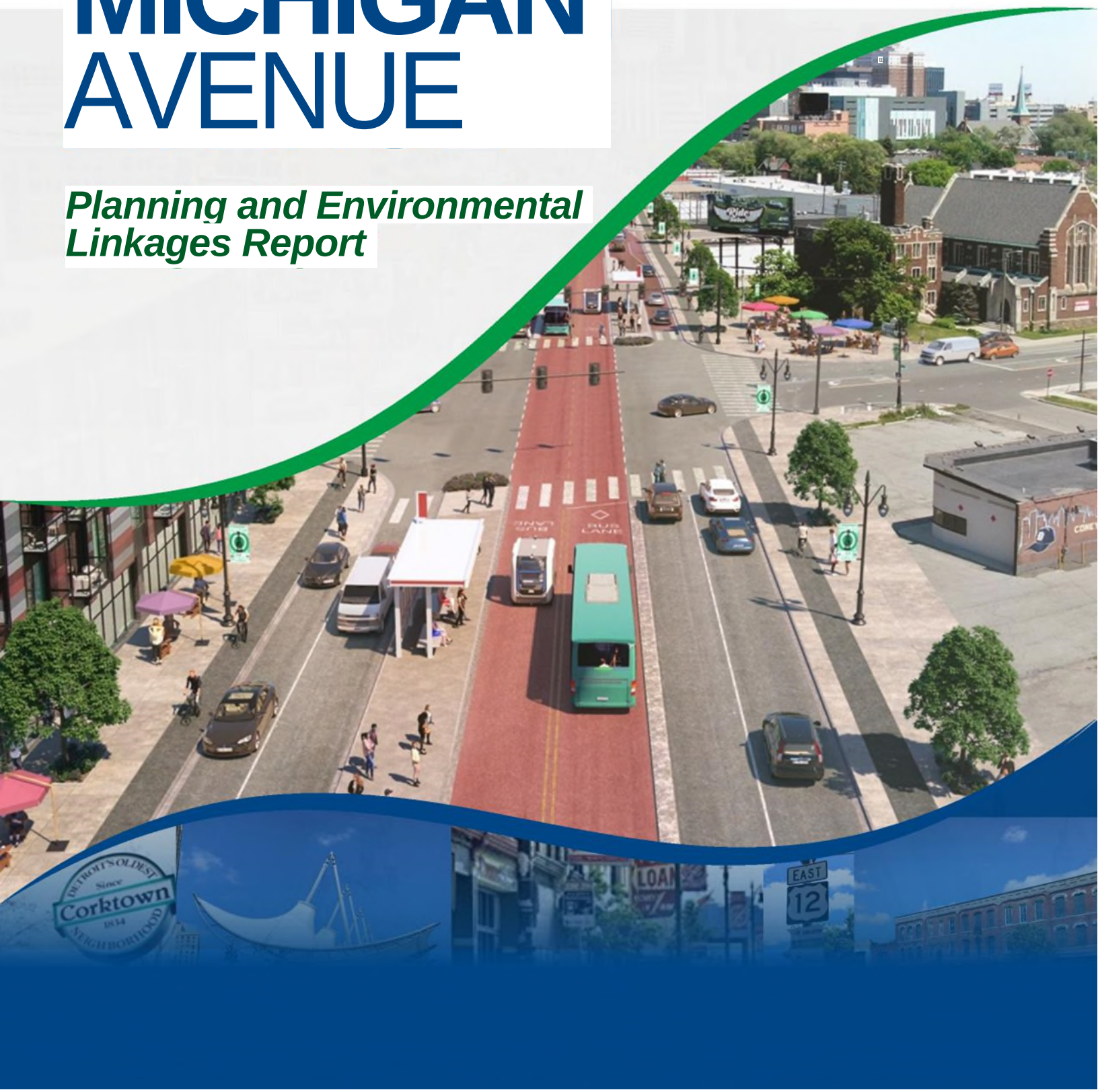
MICHIGAN AVENUE

Planning and Environmental Linkages Report



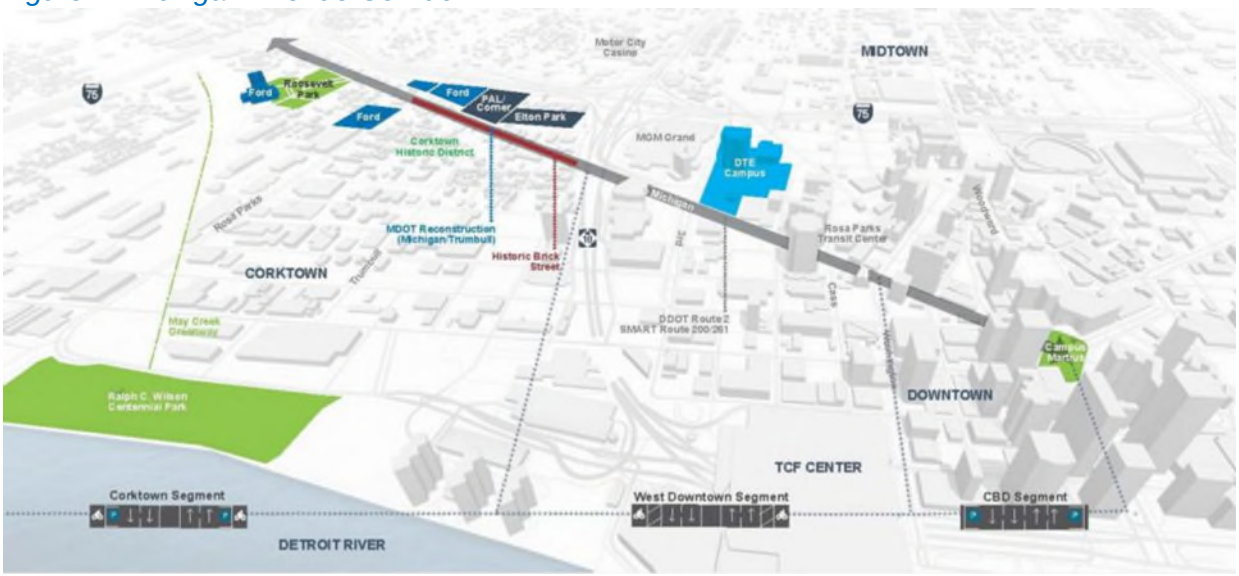
This planning and environment linkages (PEL) report for the Michigan Avenue corridor was completed in accordance with the Federal Highway Administration's (FHWA) PEL process. It was a collaborative effort between the Michigan Department of Transportation (MDOT), the City of Detroit, FHWA, stakeholders, and the community.

Contents

Introduction

The Michigan Avenue planning and environmental linkages (PEL) study was a process to identify transportation improvements in the Michigan Avenue corridor between Campus Martius Park at Woodward Avenue and the I-96 overpass. The corridor passes through two Detroit neighborhoods, downtown and Corktown, and is a major link to the communities west of Detroit. The jurisdiction of Michigan Avenue changes from MDOT ownership (US-12) to city ownership at Cass Avenue in downtown.

Figure 1: Michigan Avenue Corridor



The PEL process was used because it allowed MDOT to consider the environmental, community and economic goals and impacts of the project early in the transportation planning process and to use the information, analyses and products developed during planning to inform the subsequent National Environmental Policy Act (NEPA) environmental review process. This includes elements such as developing the purpose and need (P&N) statement, identifying the range of alternatives, and eliminating unreasonable preliminary alternatives. Streamlining the planning and NEPA phases of this project will allow MDOT to expedite design and construction to align with continued development in the area, keep pace with changing dynamics along the corridor, and honor the unique identity of the corridor's neighborhoods.

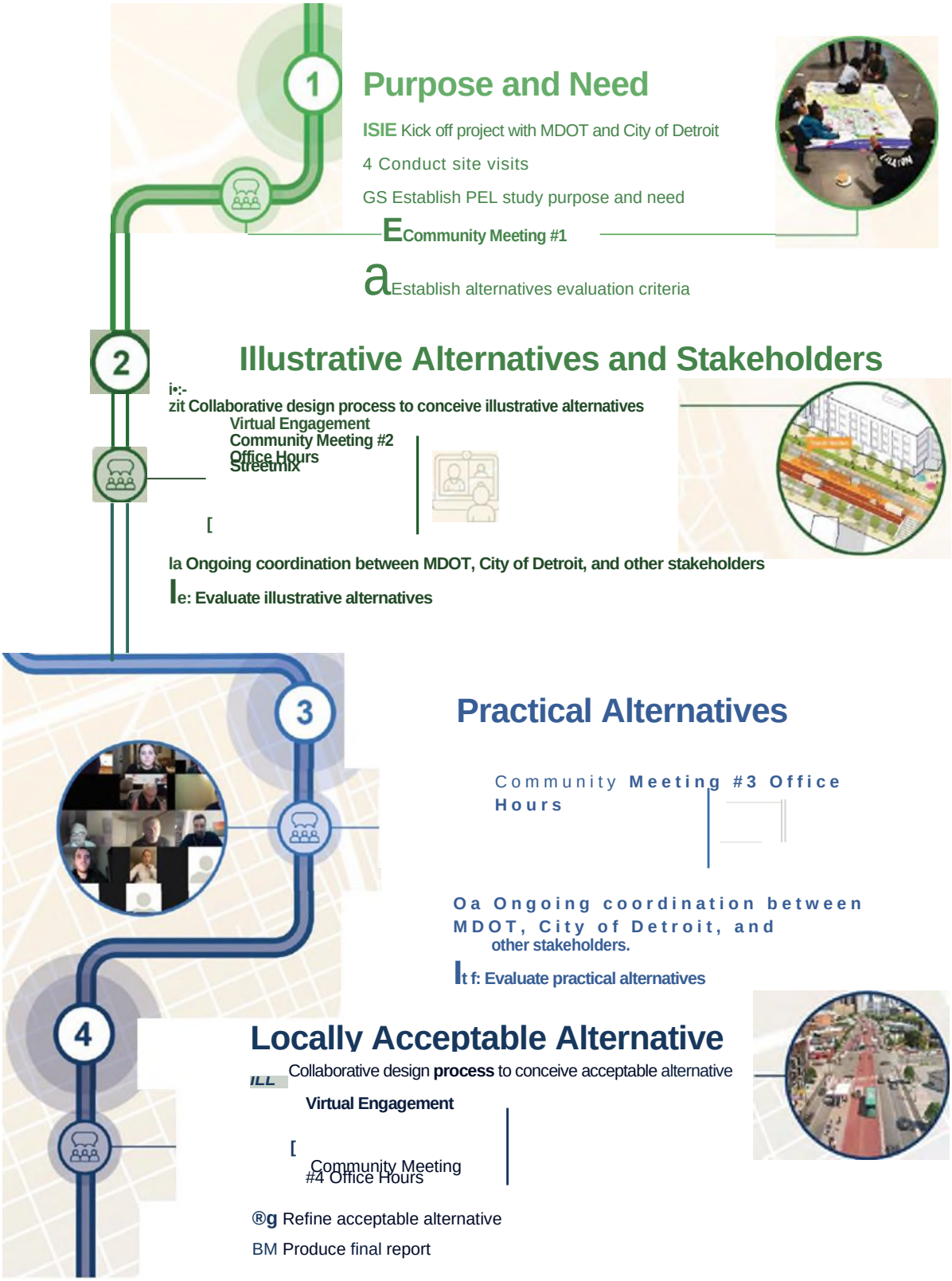
The benefits of using PEL study for Michigan Avenue will allow MDOT to realize a number of efficiencies when it comes to accelerating project delivery, including:

- Minimizing duplication of effort in planning and NEPA processes.
- Ensuring that analyses or decisions made in the planning process do not conflict with future permitting or environmental requirements by federal, state, or local agencies.
- Stimulating the development of tools to link the planning and environmental processes, which can increase the efficiency of project development.

- Building relationships among transportation agencies, resource agencies, regional entities, and the local community.
- Enabling non-transportation agencies to engage more effectively in the transportation decision-making process through a focus on building interagency relationships.
- Identifying stakeholders early in the process and encouraging community engagement, which can lead to projects that better serve the community.
- Creating better real-world transportation, environmental and community outcomes.
- Improving planning products, ultimately resulting in better information/data collection, documentation, tools, communication, and decisions.

The graphic on the next page details the process MDOT used during this PEL study to realize the benefits outlined above, specifically through engaging with stakeholders and the community to develop the P&N, develop and evaluate alternatives, and determine elements for consideration in the NEPA and design phases of the project.

Figure 2: Michigan PEL Process



Michigan Avenue History

Michigan Avenue in Detroit is the eastern end of the Great Sauk Trail that linked Detroit to what is now Chicago. The trail was taken by the United States as a military road that became commonly referred to as the Chicago Road. Michigan Avenue is designated as US-12 and is part of the US-12 Heritage Trail, which runs from the Indiana border in Berrien County to Campus Martius in Detroit.

Beginning in the mid-19th century, Detroit began paving its major streets, starting from the more populous downtown and working outward. Early paving efforts included cobblestones, medina stone (a durable sandstone quarried in Medina, NY), brick, creosoted wood blocks, asphalt, and, starting in the early 1910s, concrete. Walking has always been an important mode of travel in Detroit, with bicycling becoming prominent in the late-19th century.

Travel on Michigan Avenue transitioned from horse-powered to motor-powered in the early 20th century. Transit emerged as a mode of transportation in the 1860s with horse-drawn streetcars, which were replaced by electric streetcars by the turn of the century. Streetcar service on Michigan Avenue was replaced with buses in September 1955 and the center-running tracks were paved over.

State, county and local officials targeted three major thoroughfares for critical widening projects: Woodward, Gratiot, and Michigan avenues. Michigan Avenue would be widened from 66 feet to 120 feet from Livernois Avenue to Fifth Street beginning in 1937 and ending in 1941. The travel lanes for the segment running from Livernois Avenue to W. Grand Boulevard were paved in sheet asphalt with brick parking strips. The segment from W. Grand Boulevard east would be paved in a custom non-skid vitrified brick, which the Michigan State Highway Department believed would hold up better under the heavy truck and bus traffic that used the corridor. City officials requested that the segment from Sixth Street to Fifth Street be paved like the Livernois Avenue-W. Grand Boulevard segment (planners were already anticipating building a new high-volume north-south road that would cut through the area between Sixth and Fourth streets). Much of the original brick is still in place between Rosa Parks Boulevard and Sixth Street.

Widening occurred on the north side of Michigan Avenue from W. Grand Boulevard to Fourteenth Street and on the south side from W. Grand Boulevard to Fifth Street. Residents had pushed the city to widen the road on the south side from W. Grand Boulevard to Fourteenth Street in the hope this would include the removal of the meat packing and associated industries. The city declined the request due to the additional cost and the reality that the unwanted businesses might not relocate anyway.

The widening project required considerable right of way. Roughly 190 businesses were demolished or partially demolished to make way for the wider Michigan Avenue. Right of way acquisition for the project cost $2,492,596.

Several historic resources dating from the 19th century to mid-20th century can be found along the Michigan Avenue corridor, which includes the National Register of Historic Places and locally

listed Corktown Historic District (between Trumbull Street and Brooklyn Street) and a locally recognized Corktown Historic District Western Extension, between Fourteenth and Vermont streets. The Michigan Central Railroad Station, currently being restored by the Ford Motor Co., is one of the iconic historic buildings in the corridor.

Existing Conditions

At the onset of the PEL study process, an analysis of existing conditions along Michigan Avenue was completed.

Land Use

Michigan Avenue passes through two neighborhoods in the city: downtown and Corktown. Downtown Detroit, at the easternmost edge of Michigan Avenue, is the employment and activity center of the region, home to the central business district, a growing residential community, major retail activity, and some of the region's most visited cultural and recreational assets. Toward the western edge of downtown near M-10, land use along Michigan Avenue shifts to largely institutional uses that do not promote as much pedestrian and social activity on the street. Corktown is a predominantly residential neighborhood but includes a strong business district along Michigan Avenue comprised of shops, restaurants, bars, and neighborhood services. Corktown is branded as Detroit's Oldest Neighborhood and includes well-known residential and commercial historic districts. Major redevelopment, such as Ford's renovation of Michigan Central Station and the city's replacement of the Clement Kern Gardens apartments, continue to build upon the strength of this historic neighborhood.

Existing Right of Way

Michigan Avenue from Campus Martius to I-96 is a main thoroughfare through the city and is one of five spoke roads that emanate out from Campus Martius. Regionally, Michigan Avenue continues past Corktown and travels through Dearborn, western Wayne County and through Ann Arbor in Washtenaw County. Nationally, Michigan Avenue extends west to Chicago.

Michigan Avenue currently consists of three different cross sections. From Campus Martius to Cass Avenue (owned by the city), there are four general purpose lanes, on-street parking in select areas, sidewalks, and bus layover areas near Rosa Park Transit Center. From Cass Avenue to M-10, there are four general purpose lanes, a center turn lane, on-street parking in select areas, and buffered bike lanes. From M-10 to I-96, there are four general purpose lanes, a center turn lane, on-street parking, and parking-protected bike lanes.

Pedestrian Facilities

Sidewalks are present along the entire Michigan Avenue corridor from M-1 (Woodward Avenue) to I-96. Along the length of the corridor, the streets that intersect Michigan Avenue also have sidewalks that vary in width and condition depending on the land uses along the street. Regardless of the width and condition, the nearly complete sidewalk network feeding into Michigan Avenue allows pedestrians to walk to their destinations using a dedicated facility.

Street crosswalks and dedicated crossing areas are restricted to a few intersections along the corridor, including Woodward Avenue, Griswold Street, Shelby Street, Washington Boulevard, Cass Avenue, Third Street, Sixth Street, Trumbull Street, Rosa Parks Boulevard, and Fourteenth Street. Through the Corktown neighborhood, signalized and marked pedestrian crossings are

spaced approximately one-quarter mile apart, making safe crossings difficult and time-consuming. Between these crossings, pedestrians tend to cross mid-block to reach their destinations.

Bike Facilities

Bike lanes currently exist along much of the corridor, specifically between I-96 and Cass Avenue. From Cass Avenue west to Sixth Street, Michigan Avenue has a buffered bike lane with intermittent flexible plastic bollards to help delineate the bike lane from vehicle lanes. West of Sixth Street, where the right of way expands, on-street parking is added between the bike and vehicle lanes. This parking-protected bike lane allows for a protective barrier of vehicles separating cyclists from vehicles. Bike lanes on Cass Avenue, Trumbull Street, and Rosa Parks Boulevard connect to the bike lanes on Michigan Avenue.

Traffic Conditions

The posted speed limit on Michigan Avenue is 35 mph from I-96 to Cass Avenue, and 25 mph from Cass Avenue to Campus Martius Park. Weekday morning, midday, and evening peak hours were analyzed in Synchro 10 to determine the theoretical control delay and level of service (LOS) by movement, by approach and for the entire intersection. The LOS is based on the amount of delay experienced by drivers traveling along the roadway through an intersection. Synchro evaluates intersection performance by calculating the LOS using methodologies as defined in the Highway Capacity Manual (see LOS thresholds in the figure below). Detailed Synchro analysis reports are provided in Appendix B.

Figure 3: Level of Service Thresholds

LOS	Brief Description	Delay per vehicle (seconds)	
		Unsignalized Intersection	Signalized Intersection
A	Represent excellent operation with minimal or no delays.	0-10	0-10
B		>10-15	>10-20
C	Typical operating levels when some delays occur.	>15-25	>20-35
D		>25-35	>35-55
E	Congested situations and improvements are usually considered at these levels.	>35-50	>55-80
F		>50	>80

Typically, LOS D or better is considered acceptable in urban areas. During the weekday off-peak and evening peak hour, all intersections operate at an acceptable level of service. However, during the morning peak hour, the Michigan Avenue intersection at southbound Washington Boulevard operates at a LOS E along with the following approaches/movements that experience longer delays due to capacity constraints:

Michigan Avenue at northbound I-75 off ramp:

- Northbound left-turn movement during the morning peak hour results in a LOS F, 52.3 s/veh delay.

Michigan Avenue at Fourteenth Street:

- Northbound approach during the morning hours results in a LOS F, 97.5 s/veh delay.

Michigan Avenue at Rosa Parks Boulevard:

- Southbound through-movement during the morning peak hour results in a LOS E, 56.6 s/veh delay.

Michigan Avenue at southbound Washington Boulevard:

- Eastbound approach during the morning peak hour results in a LOS F, 88.6 s/veh delay.

Michigan Avenue at Griswold Street:

- Northbound left-turn movement during the morning peak hour results in a LOS E, 67.8 s/veh delay.

Parking

The availability of on-street parking in the Michigan Avenue corridor varies depending on the block. Through much of the corridor, on-street parking is available; however, between M-10 and Third Street, no parking is available. East of Cass Avenue, pockets of on-street parking exist, but it is not consistently available. The majority of on-street parking can be found in the Corktown neighborhood as protection for the bike lane.

Currently, there are 26 on-street parking spaces along Michigan Avenue in the downtown segment of the corridor from M-10 to Campus Martius. In the Corktown segment of the corridor (from I-96 to M-10), 174 on-street parking spaces are currently striped. In total, 200 parking spaces are available along the corridor.

Transit

Michigan Avenue is a major transit corridor in southeast Michigan. Both the Detroit Department of Transportation (DDOT) and Suburban Mobility Authority for Regional Transportation (SMART) use the corridor to service the west side of Detroit and western Wayne County. There are a total of 25 stops within the corridor, some of which are shared between DDOT and SMART. The Rosa Parks Transit Center is also located along the corridor at Cass Avenue with most of the DDOT buses servicing Michigan Avenue using this facility. The following SMART and DDOT routes travel along the Michigan Avenue corridor:

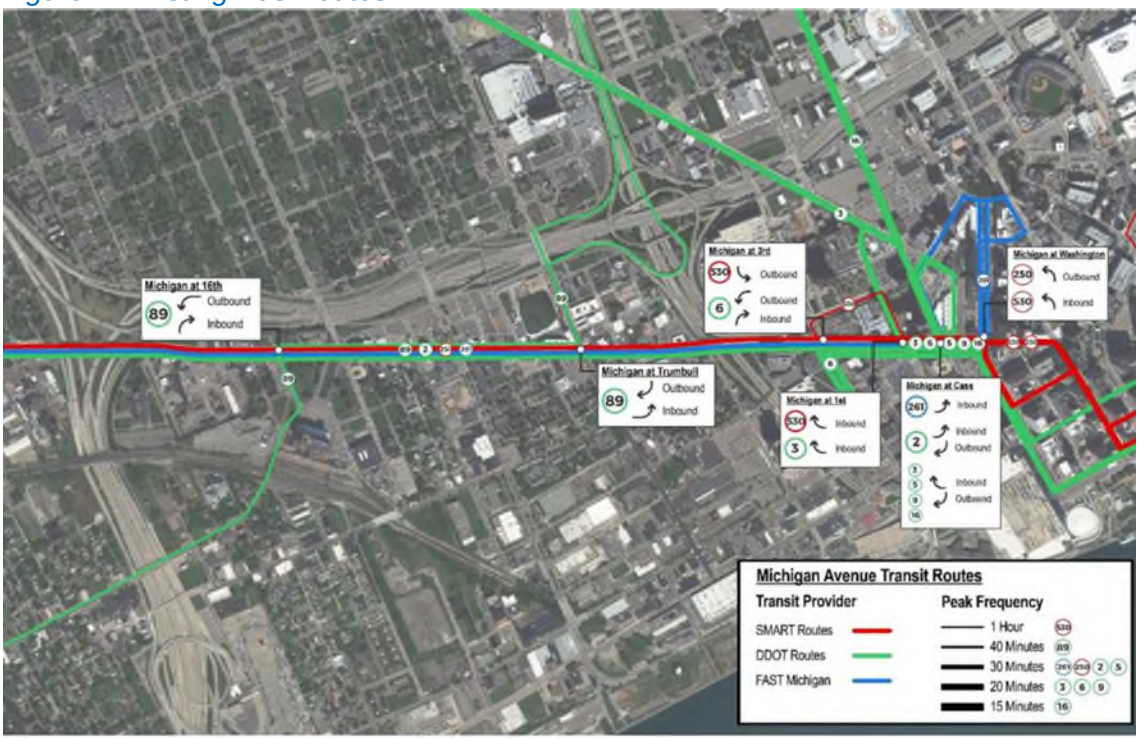
DDOT

- Route 2 – Michigan
- Route 3 – Grand River
- Route 5 – Van Dyke-Lafayette
- Route 6 – Gratiot
- Route 9 – Jefferson
- Route 16 – Dexter

SMART

- Route 200/210 – Michigan Avenue Local
- Route 255 – Ford Road Express
- Route 261 – FAST Michigan
- Route 530 - Schoenherr

Figure 4: Existing Bus Routes



Historic Assets

The Michigan Avenue corridor through downtown and Corktown is one of the oldest areas of the city. The Corktown segment of the corridor travels through the historic district that includes both the commercial district and residential areas of the neighborhood. Most of the historic district consists of residential streets. However, two small segments of Michigan Avenue are included in the district: from Eight Street to Trumbull Street and from Vermont Street to Fourteenth Street. Beyond the many historic properties present within this area, the presence of historic brick pavers within the roadway between Sixth Street and Rosa Parks Boulevard represent an additional layer of historic sensitivity that was evaluated as part of this process. Appendix D includes a summary of the historic properties present within the area.

Safety and Areas with Challenging Geometrics

Safety for all users was one of the central purposes that this PEL study was undertaken by MDOT, and that theme was reiterated during the engagement process. A review of crash history along Michigan Avenue indicated several hotspots, most commonly occurring at signalized intersections with the most severe hotspots occurring at the intersections of Michigan Avenue and Fourteenth Street, Wabash Street, Rosa Parks Boulevard, Trumbull Street, and Third Street. See Appendix C

for the crash memo. A field review indicated that these areas include wide distances for pedestrians to cross, challenging geometrics, vehicles traveling faster than the posted speed limit of 35 mph, and significant commercial activity.

Michigan Avenue is oriented on an angle compared to the north/south streets, which causes some intersections to have more challenging conditions than others. Intersecting streets with large medians can also cause issues with vehicle turning movements, pedestrian crossings and bicycle visibility. The following areas along the Michigan Avenue corridor have challenging geometric designs that will be considered in the design phase.

Michigan Avenue at Griswold Street/Lafayette Boulevard

- Five-way intersection.
- Hard to turn from Lafayette Boulevard onto Michigan Avenue.
- Pedestrian crossing distances are long and is a high-traffic intersection for pedestrians.

Michigan Avenue at Washington Boulevard

- The Washington Boulevard median is wide enough to require stops between either side of Michigan Avenue; hard for buses to complete the left turn onto Michigan Avenue.
- There is no crosswalk on the inside of the intersection between median areas.

Michigan Avenue at Third Avenue

- The wide median makes turning left difficult for vehicles coming from Third Avenue to Michigan Avenue.
- Wide crossing distance for pedestrians.
- Entrance to northbound M-10; can get congested with vehicles turning left from Third Avenue onto the entrance ramp.
- Buses have limited stopping area on either side of the intersection and can block bike lanes.

Michigan Avenue at M-10 Service Drive/Sixth Street

- Sixth Street and the M-10 service drive are not aligned with each other.
- There are two different signal phases for Sixth Street and the M-10 service drive.
- The pedestrian crossing distance at Sixth Street is very long due to large turning radii.

Michigan Avenue at Leverette Street/Brooklyn Street

- Leverette Street and Brooklyn Street converge to create a three-way intersection at Michigan Avenue, resulting in multiple conflict points for pedestrians.
- It is hard for vehicles to turn left from Leverette Street onto Michigan Avenue.
- The bus stop just before Leverette Street can obscure views onto Michigan Avenue.

Michigan Avenue at Trumbull Street/Church Street

- Church Street ends at Michigan Avenue, creating a small island between St. Peter's Episcopal Church and Michigan Avenue.
- Adds additional crossing areas for pedestrians and additional conflict points for vehicles traveling on Church Street between Trumbull Street and Michigan Avenue.

Michigan Avenue at Rosa Parks Boulevard

- Wide median on the north side of the intersection makes left turns difficult for vehicles coming from Rosa Parks to Michigan Avenue.
- Southbound Rosa Parks lane drop not clearly signed.

Michigan Avenue at 14th Street/Vernor Highway/I-75 Service Drive

- Seven-way intersection with three one-way streets.
- Left turns from Michigan Avenue onto 14th Street and Vernor are prohibited.
- There are two entrances onto the service drive, creating a potential conflict point.

Michigan Avenue at 19th Street

- Wide crossing of 19th Street makes pedestrian crossings difficult.
- Triangle diverter limits left turns onto Michigan Avenue from 19th Street.

Related Transportation/Planning Initiatives

Cavnue

Cavnue is a company helping to develop and integrate technologies that will power the world's most technologically connected roads ("cavnues"). Their approach is centered around creating a digital model of a roadway that analyzes and optimizes road conditions in real-time, shares information, and provides proactive guidance to vehicles and drivers. This supports enhanced safety, efficiency and road operating environments.

Cavnue allows owners and operators of roads and transportation systems to prepare for and take advantage of the upcoming revolution in connected and autonomous vehicles (CAV). The technology will power next-generation autonomous mobility systems for passenger and freight transportation by developing the infrastructure technologies required for dedicated CAV laneways. The vision of Cavnue is to develop a first-of-its-kind roadway that enables self-driving vehicles along Michigan Avenue and I-94.

MDOT worked closely with Cavnue throughout the PEL process to determine how the alternatives developed could accommodate "cavnue" infrastructure. Several focused meetings were held to workshop how the specific geometric and technology needs of Cavnue could align with MDOT's community-driven vision for the corridor.

Michigan Avenue BRT Project

In 2016, the Regional Transit Authority of Southeast Michigan (RTA) embarked on a regional master planning and corridor planning process to prepare for the possibility of additional transit funding for the region. Part of this planning effort included a rapid transit feasibility project along the three main transit corridors, Woodward Avenue, Gratiot Avenue, and Michigan Avenue. The Michigan Avenue corridor studied extends from downtown Detroit to Ann Arbor, including service to Detroit Metro Airport.

The Michigan Avenue project identified bus rapid transit (BRT) operating in a dedicated lane through most of the Michigan Avenue corridor as the most feasible transit option. Through the downtown Detroit and Corktown segments, a center-running BRT with a dedicated lane was recommended.

MDOT consulted this project as a critical "past initiative" given how the corridor was a focal point of the effort, both in how stakeholders were engaged and how the most feasible option included a multimodal corridor that closely aligned with the P&N for this project. Many of the components of the BRT project's most feasible option were carried forward into the PEL.

RTA Commuter Rail

Part of the RTA's planning efforts is the consideration of regional commuter rail between Detroit and Ann Arbor. The feasibility of the service, station locations and estimated operating costs were explored as part of the Michigan Avenue BRT Project. Subsequent planning efforts have been completed to update the cost estimates and feasibility of commuter rail. With the redevelopment of the historic Michigan Central Station by Ford, the opportunity to reconnect the train station with train service now exists. Dedicated RTA funding will be needed to operate the service.

MDOT consulted this project as a critical "past initiative" given its correlation and connectivity to any future mobility options on Michigan Avenue. Furthermore, this project was referenced during collaboration with Ford and other stakeholders in the area to determine how potential train service would align with the overall vision for the area.

Joe Louis Greenway

The Joe Louis Greenway is a 27.5-mile planned biking and walking trail that extends from the Detroit Riverfront to Highland Park, Dearborn, and Hamtramck. It also includes connectors along Livernois Avenue and McNichols Road. The Joe Louis Greenway will include the Dequindre Cut and segments of the Detroit Riverwalk, as well as segments of the planned Iron Belle Trail and Southwest Greenway.

The southwest segment of the Joe Louis Greenway will travel through Corktown along Bagley Street, a new greenway trail, and the Detroit Riverwalk. Although it will not directly connect to Michigan Avenue, cyclists and pedestrians on Michigan Avenue or the Joe Louis Greenway may travel between the facilities.

MDOT consulted this project and the city's Joe Louis Greenway team to determine if any considerations should be identified that would link the Joe Louis Greenway to a reimagined Michigan Avenue.

Streets for People

The city recently completed Streets for People, a transportation plan with a singular focus: to make it easier and safer for all Detroiters to move around the city. The plan seeks to knit together diverse neighborhoods, prioritize safety of the most vulnerable road users, and identify clear

implementation and design strategies for roadways improvement. Most importantly, it was rooted in an inclusive planning process that gives a voice to the city's residents who are most impacted by the transportation system. The plan was completed by the city in partnership with MDOT, the Southeast Michigan Council of Governments (SEMCOG), and other partner agencies.

MDOT consulted this project and the city's Streets for People team to determine how the goals and policies developed as part of the process could be integrated with a future vision for Michigan Avenue. MDOT's focus on safety and accessibility along Michigan Avenue closely aligned with the tenets of Streets for People, and the department will continue to coordinate with the city as the project advances.

Regional Nonmotorized Planning

In 2020, SEMCOG completed its most recent Bicycle and Pedestrian Mobility Plan for Southeast Michigan. The plan establishes a common vision for bicycling and walking in the region, and provides guidance on how to increase the connectivity, use and safety of the system for all residents. This plan ensures that the region's nonmotorized system meets the transportation, quality of life, health and accessibility needs of its residents and visitors, as well as the economic development priorities and goals of the region and local communities. Plans for new bicycle infrastructure through Corktown and downtown are included in the plan, including adding bicycle infrastructure along Michigan Avenue from Cass Avenue to Campus Martius.

MDOT consulted this project and SEMCOG's planning team to ensure that the alternatives developed as part of the PEL would align with regional goals established by SEMCOG and its partners. SEMCOG remained a core stakeholder throughout the PEL process and will continue to serve in this capacity as the project advances.

Greater Corktown Planning Framework

The city launched the Greater Corktown Planning Framework in spring 2019. The project was an initiative that engaged residents in creating a plan that promotes inclusive growth of Detroit's oldest established neighborhood while preserving the community's unique character, cultural heritage and integrity. Greater Corktown is the name of the planning area, primarily comprised of the North Corktown and Historic Corktown neighborhoods with a portion of the Core City and Hubbard Richard neighborhoods as well. The city engaged with residents, identifying challenges and opportunities, and developed practical strategies under the guiding principles of (a) Corktown for everyone, (b) history and heritage, (c) sustainable and resilient, and (d) safe streets. Key recommendations within the plan include:

- Ensure zero residential displacement occurs.
- There is an ample amount of vacant land that presents an opportunity for both development and preservation.
- Maintaining and advancing housing affordability is a key driver of the development objectives.
- Streets offer improved connectivity (for vehicles, pedestrians, bicyclists) by improving roadway design, extending sidewalks.

- Building off of catalysts and existing investments, including the Ford Land investments in Michigan Central Station and adjacent real estate, the Police Athletic League Ballpark, the Southwest Greenway (part of the Joe Louis Greenway), and (even though it is not in the project area) the nearby planned Wilson Centennial Park.
- Addressing the funding realities through partnership and collaboration amongst community, private, nonprofit, and philanthropic entities utilizing this plan as a shared vision for the future.

Building immediately off of the framework plan, the city submitted an application to the United States Department of Housing and Urban Development (HUD) to help deliver recommendations of the project, including replacement of the Clement Kern Gardens apartments. The city was selected as a winner of its highly competitive and coveted Choice Neighborhoods grant program, which will enable the city to bring more than 500 new units of affordable housing to the rapidly developing Corktown neighborhood. Detroit, which is among just five cities nationally to be selected, will receive a $30 million HUD grant, the largest amount offered under the Choice Neighborhoods program.

MDOT consulted this project and the city's team closely throughout the PEL process. The first community meeting held for the PEL was conducted jointly with the city's team to indicate the alignment of these projects to the community and to garner comprehensive input on transportation challenges within the larger neighborhood project area. The city's team remained a core stakeholder throughout the PEL process and will continue as a joint partner as the project advances.

Downtown Detroit Transportation Plan
The Downtown Detroit Transportation Plan was completed by the city and SEMCOG in 2018 as a framework to support downtown's growth, improve safety and convenience of travel, improve walkability in downtown Detroit, and incorporate the individual transportation pieces into a safe and efficient system. Recommendations were developed for the whole downtown area, including Michigan Avenue. Specific Michigan Avenue recommendations include:

- Making Michigan Avenue a transit priority street.
- Extend the Michigan Avenue bike lane to Campus Martius.
- Completing the PEL study with MDOT to explore a future streetscape design.
- Implement pilots for bus boarding.
- Develop streetscape designs and implement projects.
- Develop designs for enhancements over M-10.
- Improve the operations and design of the Lafayette Street/Griswold Street/Michigan Avenue and Washington Boulevard/Michigan Avenue intersections.

MDOT consulted this project as a critical past initiative given its focus on Michigan Avenue within downtown and the specific recommendations that would impact the corridor. Many of the recommendations included in this project were incorporated into the PEL alternatives.

Community Engagement and Agency Coordination

Agency Coordination

Coordination with local agencies and the community is an essential part of the PEL process. Agency coordination consisted of meetings with the broader MDOT team, the Local Advisory Committee (LAC), the Governmental Advisory Committee (GAC), and various resource agencies. The table below shows the meetings and specific dates the coordination meetings were held.

Figure 5: Michigan Avenue PEL Coordination Meetings

Meeting Name	Date of Meeting
Kickoff Meeting	Aug. 23, 2019
Safety Field Meeting	Sept. 26, 2019
Community Meeting #1	Oct. 9, 2019
LAC/GAC Meeting #1	Dec. 3, 2019
LAC/GAC Meeting #2	Nov. 19, 2020
Community Meeting #2	Dec. 2, 2020
LAC/GAC Meeting #3	Feb. 25, 2021
Community Meeting #3	March 3, 2021
SHPO Meeting #1	March 26, 2021
SHPO Meeting #2	Aug. 11, 2021
Corktown Historical Society	Sept. 1, 2021
LAC/GAC Meeting #4	Sept. 9, 2021
Community Meeting #4	Sept. 15, 2021
SHPO Meeting #3	Feb. 4, 2022

LAC and GAC Meetings

Representatives of the LAC and GAC were engaged throughout the PEL process to obtain advisory input regarding direction and decisions made. Both the LAC and GAC were integral elements of this PEL study as its progression was dependent upon engaging members and gathering important feedback. Four meetings of the LAC and GAC were held, the first in-person and the last three virtually. Members were selected by MDOT and the City of Detroit. The LAC

was composed of major stakeholders along the corridor, with business and residential participants selected based on geographical location, as well as participation in community meeting #1 and the ongoing Greater Corktown Planning Framework Study. A list of LAC and GAC member organizations are shown in the tables below.

Figure 6: LAC Member Agencies and Organizations

Bedrock	DTE Energy
Cavnue	Elton Park Development
Corktown Business Association	Ford
Corktown Historical Society	General Services Administration
Corner Development	Local business owners
Detroit Riverfront Conservancy	Local residents
Downtown Detroit Partnership	

Figure 7: GAC Member Agencies and Organizations

City of Detroit Department of Neighborhoods	Detroit People Mover
City of Detroit Department of Public Works	Michigan Department of Environment, Great Lakes, and Energy
City of Detroit Mayors Office	FHWA
City of Detroit Municipal Parking Department	Michigan Economic Development Corporation
City of Detroit Planning and Development Department	Michigan State Housing Development Authority
U.S. Rep. Brenda Lawrence	RTA
U.S. Rep. Rashida Talib	SEMCOG
DDOT	State Sen. Stephanie Chang
Detroit Economic Growth Corp.	SMART
Detroit City Council	Wayne County
Detroit Police and Fire Department	

Community Engagement

MDOT coordinated with the community to obtain input on potential issues and receive feedback on proposed alternatives. Four community meetings were held in-person and virtually. As the PEL study began prior to the COVID-19 pandemic, it allowed MDOT an early chance to work with the community on the vision for Michigan Avenue. Community meeting #1 was held jointly with the city's ongoing Greater Corktown Planning Framework. Subsequent meetings were held virtually to work within social distancing parameters and created a safe way for the community to provide input to the PEL.

Figure 8: Community Meeting #1

To augment community meeting #2, MDOT developed a customized Streetmix™ design tool that allowed participants to design their own cross-section for Michigan Avenue and submit their design to MDOT for consideration, remaining live online for the month of December 2020. This tool was developed to replicate a typical in-person workshop that MDOT would conduct with the community on an urban corridor of this nature, allowing participants to consider the spatial constraints of the street, how various elements fit within those constraints, and trade-offs to consider as those elements are placed within the street. Participants were able to easily drag-and-drop these elements into a digital template of Michigan Avenue and submit their design to MDOT when complete. MDOT summarized the results of this exercise by categorizing how each submission utilized the different elements within the tool.

In addition to the community meetings, several smaller meetings were held with residents, businesses and other stakeholders to tackle specific issues, including the Downtown Detroit

Partnership, the State Historic Preservation Office (SHPO), the Corktown Historical Society, and the Corktown Business Association.

Summaries of the community's input can be found in the illustrative alternatives, practical alternatives, and locally acceptable alternatives sections of this document. The community engagement sessions completed as part of the Michigan Avenue PEL study are shown in the table below.

Figure 9: Community Engagement Sessions

Meeting	Date
Community Meeting #1	Oct. 9, 2019
Community Meeting #2	Dec. 2, 2020
Virtual Office Hours, Round 1	Dec. 2020
Streetmix™ Interactive Street Design Activity	Dec. 2020
Community Meeting #3	March 3, 2021
Virtual Office Hours, Round 2	March 2021
Community Meeting #4	Sept. 15, 2021

Purpose and Need

The Purpose and Need (P&N) for the Michigan Avenue PEL was developed to define the trajectory of the project. Community meeting #1 and LAC/GAC meeting #1 allowed MDOT to receive input on what elements should be included in the P&N. The P&N was developed from this input and shared in all subsequent meetings with no new comments or concerns.

At community meeting #1 and LAC/GAC meeting #1, a number of themes emerged. The pavement condition is generally in poor condition and warrants reconstruction. Safety along the corridor is a big issue that many residents and business owners were concerned about. Related to safety was the issue of access, specifically ensuring that the new design for Michigan Avenue prioritizes access for the most vulnerable road users.

Providing space for all modes along Michigan Avenue is another important aspect to redesigning the road to be more functional to the community. The density of restaurants, shops and entertainment venues necessitates safe and comfortable walking and biking facilities to ensure access. These same businesses rely on delivery vehicles and visitors from outside the neighborhood, so adequate vehicle parking is needed. Finally, Michigan Avenue is a major transit corridor in the Detroit region, with long-term plans for additional transit investment. Enhanced transit facilities are needed to continue to build ridership on the corridor.

With the forthcoming move of Ford Motor Co. into the Michigan Central Station building, Michigan Avenue is becoming a hub of mobility in southeast Michigan. With up to 5,000 more employees anticipated to be working in the neighborhood, a greater emphasis on mobility is needed to ensure that residents, workers, business owners, and visitors can coexist along the streets in the neighborhood. Mobility is evolving to include a variety of transportation modes, including driving, walking, biking, shared mobility devices (such as scooters and bikeshare), rideshare, ride hailing, and autonomous vehicles. As new technology emerges, Michigan Avenue can have the ability to accommodate changing mobility preferences.

Finally, Michigan Avenue travels through Corktown, "Detroit's Oldest Neighborhood," and consists of many historic aspects that make the corridor unique. Most visible are the historic brick pavers from Sixth Street to Rosa Parks Boulevard. The historic buildings located on the north side of the street through Corktown are important to the community and contribute significantly to the character of the neighborhood. The redesign of Michigan Avenue should serve to enhance these assets.

These needs from the community were used to develop the P&N for the project:

"To create a corridor that promotes safe and equitable access to all forms of mobility and emerging technology along Michigan Avenue, while preserving the area's unique character."

The P&N served as the foundation for the development of evaluation criteria that were used to analyze each alternative developed as part of this PEL study. The evaluation criteria can be found in the following section.

Development of Alternatives

Michigan Avenue has a variety of different contexts and neighborhood characteristics to consider between the east and west ends of the corridor. The factors listed below detail the specific challenges that would need to be addressed through the alternatives process within the overall corridor and within each distinct segment.

Corridor-Wide Factors

When developing alternatives, the following factors were considered to ensure that the designs meet the goals of residents:

- Provide safe and convenient travel conditions for all types of travel.
- Improve transit travel time reliability and convenience.
- Improve walkability, including more convenient pedestrian crossings.
- Bicycle facilities for all ages and abilities.
- Reduce vehicle speeds while maintaining reasonable travel times from end to end.
- Provide flexibility for testing new mobility technology/options for all users.
- Provide design elements to complement the distinct character of different segments.

Corktown Factors

Due to the significant differences between Corktown and downtown, each segment of the corridor has specific design factors to meet the PEL and community goals. The factors specific to the Corktown segment center on walkability and historic preservation:

- Facilitate safe, shorter, more frequent pedestrian crossings to reconnect the neighborhoods (tie into the Greater Corktown Planning Framework).
- Desire for ground floor uses like bars and restaurants to be accommodated with space for sidewalk cafes.
- Strategically conserve and reuse historic brick pavers that are a trademark of the Corktown Historic District.

Downtown Factors

Factors for the downtown area are focused more on right-sizing the street to ensure all users of Michigan Avenue can travel safely through the corridor:

- Extend bicycle facilities to Campus Martius.
- Shrink oversized intersections.
- Better accommodate transit operations, including turns on and off Michigan Avenue.

These factors, information from previous studies, and community input on the P&N allowed MDOT to develop three illustrative alternatives that represented minimal, moderate and significant modifications to the corridor. Through the engagement process, the illustrative alternatives were consolidated into two practical alternatives that incorporated the most desired elements of the illustrative alternatives. Through additional engagement with the community and stakeholders,

one locally acceptable alternative was selected to advance that responded well to the evaluation criteria and closely aligned with community and stakeholder desires.

Development of Evaluation Criteria

The evaluation criteria were created based on community and stakeholder engagement, as well as MDOT's commitment to providing safe and efficient mobility options for all users throughout the corridor. The criteria are a mix of qualitative and quantitative measures scored by how they would compare to the existing conditions along the corridor.

The evaluation criteria were used to screen the illustrative and practical alternatives to ultimately arrive at a locally acceptable alternative, as illustrated in the process graphic in the Introduction section above. The table below shows each of the evaluation criteria and how the design alternatives were evaluated.

Figure 10: Evaluation Criteria

Evaluation Criteria	How Alternatives Were Evaluated	Quantitative or Qualitative Measure
Provide safe and equitable access for pedestrians	Alternatives with a higher number of design elements that benefit safe pedestrian travel (i.e., width of sidewalk, buffer from travel lanes, number of crossings) received a higher score.	Quantitative
Provide safe and equitable access for bicyclists	Alternatives with a higher number of design elements that benefit safe bicycle travel (i.e., level of bike protection) received a higher score.	Quantitative
Provide a quality environment and experience for transit users	Alternatives with a higher number of design elements (i.e., enhanced stations, signal priority, dedicated lanes, introduction of new service) received a higher score.	Quantitative
Provide flexibility to respond to new mobility options (i.e., scooters, Uber/Lyft, autonomous vehicles, etc.)	Rating of good, fair, poor on dimensions of flexibility.	Qualitative

Provide acceptable level of vehicle operations	Alternatives with shorter vehicle travel time received a higher score.	Quantitative
Minimize conflict points and challenging geometrics	Alternatives with a lower number of potential of impacts (i.e., number of driveways, level of intersection geometric improvements), received a higher score.	Quantitative
Provide design of right of way that complements the intended character of the corridor	Alternatives with more design elements to improve the look and feel of the corridor (i.e., sidewalk width, space for amenities, materials, number of street trees), received a higher score.	Qualitative
Minimize impacts on historic districts, properties, and brick pavers	Alternatives with a lower number of historic impacts received a higher score.	Quantitative
Minimize impacts on on-street parking and loading	Alternatives with a lower number of parking impacts received a higher score.	Quantitative
Provide design that supports green stormwater infrastructure	Alternatives with a higher square footage of impervious surfaces received a lower score.	Quantitative
Total estimated capital cost	Alternatives with a higher cost received lower score	Quantitative

Illustrative Alternatives

Community and Stakeholder Engagement

The illustrative alternatives were informed by input from community meeting #1. Participants were asked to rate the level of importance of various design characteristics for Michigan Avenue. Visioning sessions held at community meeting #1 explored the different ways that the redesign could prioritize bicycle and micromobility travel, pedestrian safety and convenience, transit operations, and autonomous vehicle technology testing.

The same factors discussed at community meeting #1 were included in survey #1 and the results were used to inform the illustrative alternatives. The survey was distributed in paper form to all attendees upon arrival at community meeting #1 with 45 completed copies returned to MDOT at the conclusion of the meeting. The survey asked participants to rate the importance of

elements for Michigan Avenue with 1 being least important and 5 being most important. Participants were also asked to provide an explanation for their ratings and to provide additional comments, if desired.

As the responses illustrate, this corridor is utilized by the community for a variety of uses and improvements around most of these elements is almost equally desired. For example, the survey results indicate that safe and accessible transportation is key for nearly all modes, including pedestrians, bicyclists and transit users. Respondents placed less emphasis on vehicular travel but did note the importance of safe driving conditions and readily available on-street parking. Additionally, respondents emphasized placemaking as a key component to consider by making the sidewalk more multi-functional and by honoring the historic character of the corridor, specifically through maintaining or reusing the historic brick pavers within the roadway. The table below aggregates the responses of survey #1.

Figure 11: Survey #1 Results:

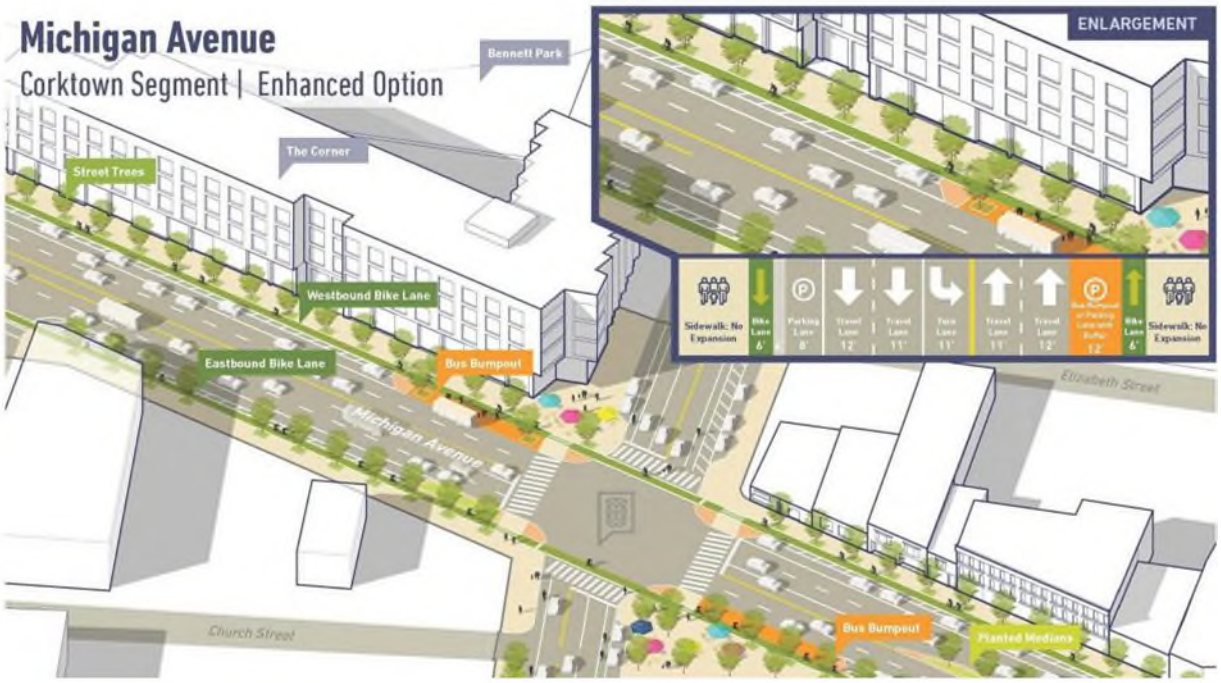
Characteristic	Average "Level of Importance" Rating
Pedestrian Experience and Safety (numerous pedestrian crossings)	4.6
Placemaking Opportunities (café seating)	4.4
Historic Character (brick pavers)	4.4
Historic Character (overall)	4.4
Bicycle Experience and Safety	4.3
Transit Experience and Access	4.2
Vehicular Safety	3.9
On-Street Parking	3.6
Future Mobility Options	3.4
Circulation/Congestion (left-turn access)	2.0

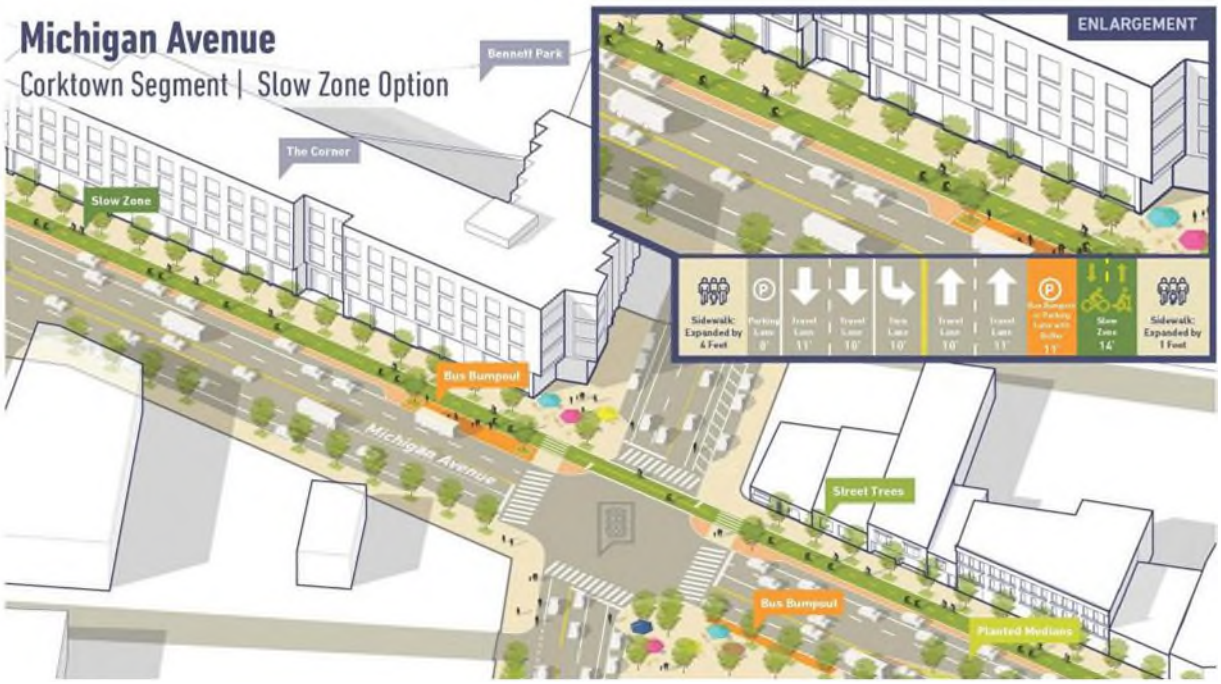
In addition to community input on the illustrative alternatives, in community meeting #2, MDOT presented the Cavnue public-private partnership and the vision for dedicated autonomous vehicle lanes between Detroit and Ann Arbor. The dedicated lanes for transit could also be used by autonomous vehicles. This use fit with the community desire to support emerging technology and mobility innovation in the corridor.

Summary of Illustrative Alternatives

Building from the input gathered from the community engagement session and the existing conditions, three illustrative alternatives were developed that attempted to meet the goals for the corridor. Alternatives were developed in plan-view with accompanying illustrations to visually communicate how the design would look in typical Corktown and downtown street segments.

Figure 12: Illustrative Alternatives






Michigan Avenue
Corktown Segment | Transit Option
Bennett Park
The Corner
Planted Medians
Slow Zone
Transit Station
Michigan Avenue
Church Street
Elizabeth Street
Street Trees
Transit Station
Transit & Autonomous Vehicles
ENLARGEMENT

Figure 13: Summary of Illustrative Alternatives

Illustrative Alternative	Description	Corktown Segment	Downtown Segment
Enhanced Alternative	● Cost effective option, traffic operations remain the same. ● Bus bumpouts and intersection bumpouts. ● Improved intersection geometries. ● No sidewalk	● Parking-protected bike lanes are improved with permanent protection.	● New protected bike lanes. ● Lane reduction from Woodward Avenue to Griswold Street.
Slow Zone Alternative	● Two-way, sidewalk-level "Slow Zone" bike/micromobility lane on north side of the street. ● Bus bumpouts, pedestrian refuge island between Slow Zone and moving traffic.	● Traffic operations remain the same. ● Minor sidewalk expansion.	● Slow Zone continues to Campus Martius. ● Travel lane reduction to one lane in each direction with left-turn pockets.
Transit/AV Alternative	● Exclusive lanes for transit vehicles and autonomous vehicle testing. ● Illustrated with Slow Zone on north side but these are not mutually exclusive. ● Includes planted medians islands and pedestrian refuge islands.	● Center lanes exclusive for transit and AVs. ● One general travel lane in each direction with left-turn pocket at signalized intersections. ● Parking eliminated on south side of the street. ● Minor sidewalk expansion.	● Transit/AV lanes on north side, travel lanes on south side separated by a planted median. ● Slow Zone continues to Campus Martius. ● On-street parking and loading eliminated. ● Transit/mobility plaza between Woodward Avenue and Griswold Street (no private vehicles).

Illustrative Alternatives Evaluation

The illustrative alternatives were subjected to the evaluation criteria with the goal of determining those that best met the goals of the PEL. MDOT conducted the scoring, with a score of 0

indicating negative or no improvement, a score of 1 indicating moderate improvement, a score of 2 indicating considerable improvement, and a score of 3 indicating significant improvement.

The transit/autonomous vehicle (AV) alternative, which was also most popular among the community and stakeholders, also scored the highest of the three alternatives. The design elements that led to high scores in all of the illustrative alternatives were incorporated into two practical alternatives.

Figure 14: Illustrative Alternatives Evaluation

Evaluation Criteria	Enhanced Alternative	Slow Zone Alternative	Transit/AV Alternative
Safe and equitable access for pedestrians	1	1	2
Safe and equitable access for bicyclists	1	2	2
Quality environment and experience for transit users	1	1	3
New mobility flexibility	0	0	3
Acceptable level of vehicle operations	1	1	0
Minimize conflict points and challenging geometrics	1	2	1
Complement intended character	0	1	2
Minimize impacts on historic resources	0	0	0
Minimize impacts on on-street parking and loading	1	1	0
Provide design that supports green stormwater infrastructure	1	1	2
Total estimated capital cost	3	2	1
Total Scores	**10**	**12**	**16**

Practical Alternatives

Community and Stakeholder Engagement

The practical alternatives were informed by input from community meeting #2 in December 2020. Participants were asked to indicate their preference on a variety of design features presented within the illustrative alternatives, including the type of bike lanes, willingness to walk further to enhanced bus stops, interest in including connected and autonomous vehicles, and how the historic brick pavers could be reused.

These elements were included in survey #2, completed by participants during the virtual meeting, with the results used to inform the practical alternatives. The survey was integrated with the digital presentation with attendees entering their responses on-screen in real time.

As the responses illustrate, the most desired design features include wider sidewalks, bike lanes, more and safer pedestrian crossings, and dedicated space for transit and autonomous vehicles. Regarding the bike lanes specifically, participants favored sidewalk-level bike lanes but were evenly split on one-way and two-way bike lanes. Ninety percent of participants indicated they would walk further to a better bus stop, with 78 percent wanting dedicated space for transit and autonomous vehicles. Regarding the historic brick pavers, participants indicated plazas, crosswalks and the street as the desired locations for reuse.

As mentioned previously, MDOT developed a customized Streetmix™ design tool that was launched at community meeting #2 that allowed participants to design their own cross-section for Michigan Avenue and submit their design to MDOT for consideration, remaining live online for the month of December 2020. Participants submitted a total of 56 designs, which can be viewed on the project website in addition to a summary of the results. The majority of submittals included the following elements:

- 56 total designs submitted; some duplicate/incomplete.
- The vast majority of submittals included the following elements:
    - Street trees (87.5 percent)
    - Bike/micromobility lanes (90 percent), with a one-way design (62.1 percent), with buffer space (83.3 percent)
    - Reduced lane widths (100 percent)
    - Average number of lanes = 2.6
    - Transit and autonomous vehicle lanes (70.7 percent), with a side-running design (62 percent)

In addition to community input on the alternatives, in community meeting #3, MDOT presented options and precedent imagery for how the M-10 bridge could be redesigned to more seamlessly connect the Corktown and downtown segments of the corridor. Included in these options and precedent imagery were ways that the enhanced pedestrian space, bike lanes and transit lanes could be integrated into the bridge, in addition to landscape treatments, vertical elements and artwork that would serve to buffer travelers from the freeway below. Participants viewed these options favorably and were interested in exploring options further as a project to improve the bridge advances into the design phase. These improvements would not be part of the programmed road reconstruction, so they were not further developed as part of the PEL. Cavnue also shared a video on the vision for the connected corridor with autonomous vehicle lanes. Connected and autonomous vehicles could operate within a dedicated transit lane.

Figure 15: Practical Alternative #1 - Center-Running Alternative

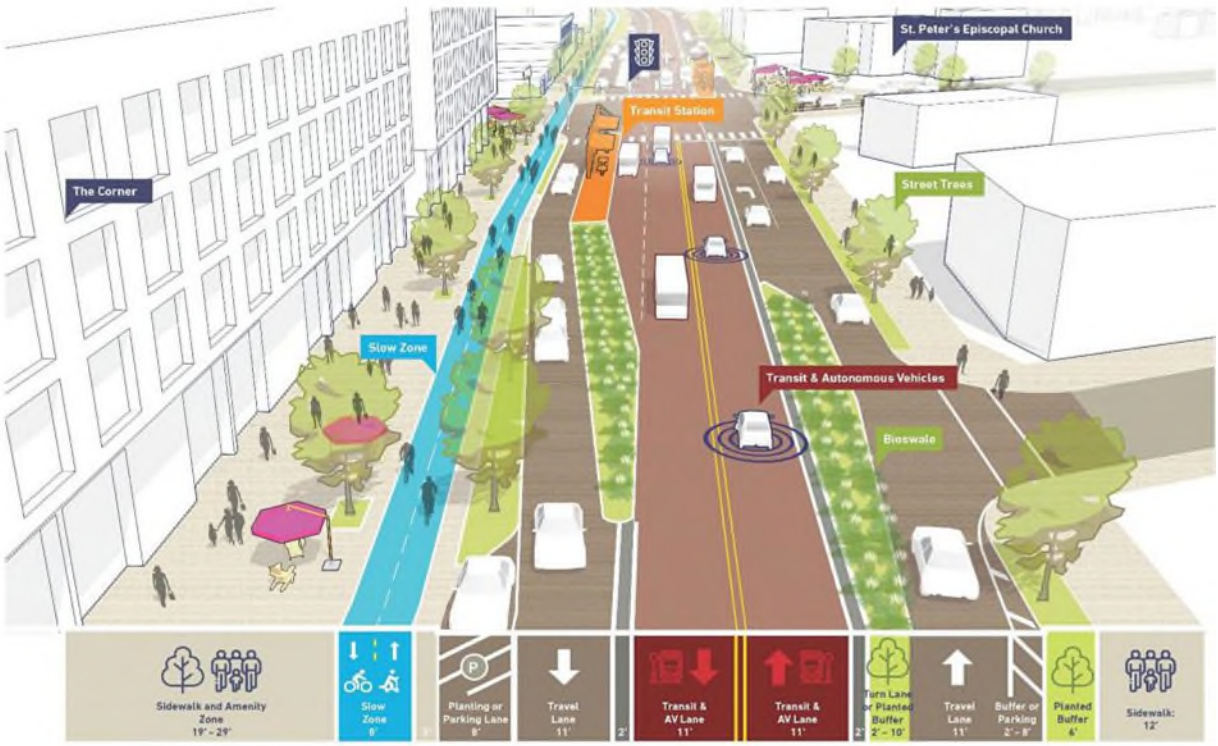


Figure 16: Practical Alternative #2 - Side-Running Alternative

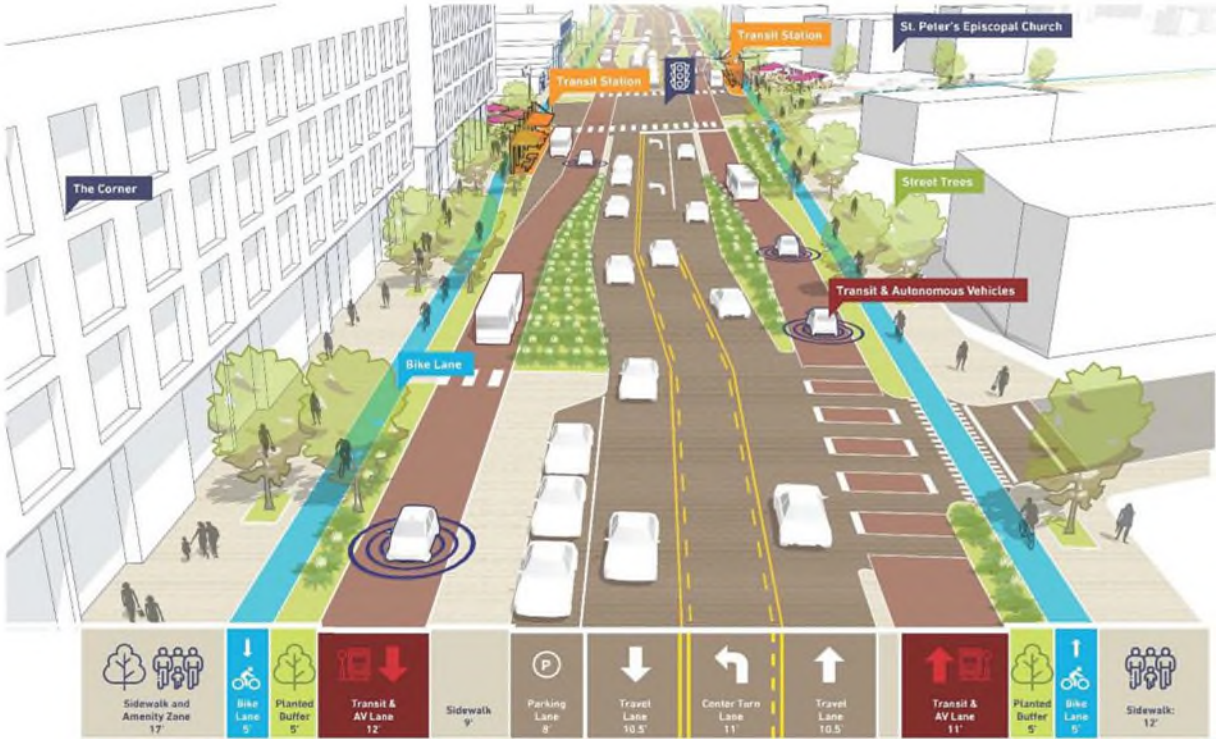


Figure 17: Summary of Practical Alternatives

Practical Alternatives	Description	Corktown Segment	Downtown Segment
Center-Running Alternative	● Mid-block crossing design includes bumpouts and refuge islands. ● Two-way Slow Zone on north side (not mutually exclusive with center-running transit/AVs). ● Includes pullout areas at transit station locations. ● Generous planted areas and green stormwater infrastructure.	● Center lanes exclusive for transit and AVs. ● One general travel lane in each direction with left-turn pocket at signalized intersections. ● Some parking is preserved. ● Wide sidewalk and amenity zone on the north side. ● Reuse historic Corktown brick outside roadway.	● Transit/AV lanes on north side, travel lanes on south side separated by a planted median. ● Slow Zone continues to Campus Martius. ● On-street parking and loading eliminated.
Side-Running Alternative	● Mid-block crossing design includes bumpouts and refuge islands. ● Opposite side sidewalk-level bike lanes (not mutually exclusive with side-running transit/AVs). ● Includes pullout areas at transit station locations. ● Generous planted areas and green stormwater infrastructure.	● Some parking preserved. ● Reuse historic Corktown brick outside roadway.	● Transit/AV operate in outside lanes, traffic in center lanes. ● Sidewalk-level bike lanes continue to Campus Martius. ● On-street parking and loading eliminated.

Practical Alternatives Evaluation

The practical alternatives were subjected to the evaluation criteria with the goal of determining those that best met the goals of the PEL. MDOT conducted the scoring, with a score of 0 indicating negative or no improvement, a score of 1 indicating moderate improvement, a score of

2 indicating considerable improvement, and a score of 3 indicating significant improvement. The center-running alternative, which was also the most popular among the community and stakeholders, also scored the highest of the two alternatives.

Figure 18: Practical Alternatives Evaluation

Evaluation Criteria	Center-Running Alternative	Side-Running Alternative
Safe and equitable access for pedestrians	2	2
Safe and equitable access for bicyclists	2	3
Quality environment and experience for transit users	3	3
New mobility flexibility	3	2
Acceptable level of vehicle operations	0	0
Minimize conflict points and challenging geometrics	3	2
Complement intended character	3	2
Minimize impacts on historic assets	1	1
Minimize impacts on on-street parking and loading	1	0
Provide design that supports green stormwater infrastructure	2	3
Total Scores	**20**	**17**

Locally Acceptable Alternative

The locally acceptable alternative was developed from the center-running practical alternative. The center-running practical alternative was the highest scoring of the two alternatives and was most acceptable to the community at community meeting #3. The locally acceptable alternative differs from the center-running practical alternative and was refined based on community and stakeholder feedback.

Community and Stakeholder Feedback

The locally acceptable alternative was informed by input from community meeting #3 in March 2021. Participants were asked to indicate their preference on a variety of design features presented within the practical alternatives, including the location of dedicated transit lanes, one-way versus two-way bike lanes, impacts on on-street parking and access, traffic operations, and how the historic brick pavers could be re-used.

Participants favored split, sidewalk-level bike lanes that operate similarly to what currently exists, center-running transit lanes because they would help slow cars down and make crossing the street easier, and expressed a desire to preserve on-street parking in as many areas as possible. The side-running transit lanes were generally perceived to have limited benefits to transit and potential AV use due to the large number of conflicts with both left- and right-turning traffic in the corridor. Additionally, on-street parking impacts on the number of spots and accessibility for the side-running transit alternative were not preferred.

Participants were concerned with potential operations of the street with center-running transit lanes and favored the inclusion of "Michigan Lefts" and u-turns at signalized intersections to address circulation and access. Both practical alternatives reduced the general-purpose vehicular lanes to one lane in each direction. Initial traffic modeling results for the 2045 future year were shared that highlighted challenging intersections at Rosa Parks Boulevard, Cass Avenue, and the I-75 off ramp. These would be further mitigated through additional study. The modeling also highlighted the need for traffic to shift to other modes or use other roads during peak hours in the morning (20 to 30 percent) and afternoon (10 to 20 percent) in the future year 2045. See Appendix B for additional information. This was concerning to some but acceptable to most because the peak-hour traffic has alternate routes to move between downtown Detroit and west of I-96, including I-94, Fort Street and West Grand Boulevard. Participants also desired additional measures to preserve the character of the corridor, including ways to maintain parking, minimize impacts on the annual St. Patrick's Day parade, preserve historic brick pavers when possible, and replace the historic brick pavers in the roadway with new pavers in certain areas.

State Historic Preservation Office (SHPO) Meetings

MDOT met with SHPO to share the practical alternatives in March 2021 and gather initial feedback. SHPO was primarily concerned with the Michigan Avenue limits within the National Register of Historic Places, from Trumbull Street to just east of Eighth Street. SHPO was not opposed to replacing the historic bricks with new concrete bricks within the historic districts along the corridor and salvaging the historic bricks for use elsewhere in the right of way due to their poor condition. The new concrete bricks would be used in the roadway between 14th Street and Vermont Street and between Trumbull Street and Brooklyn Street. SHPO shared some concerns about the meandering vehicular operations associated with three transit lanes at station locations. SHPO also shared concerns about potential vegetation in the road that would affect the look and feel of the corridor if not properly maintained.

MDOT met with SHPO in August 2021 to share the locally acceptable alternative and work on the above ground historic survey of buildings 45 years and older. The locally acceptable alternative addressed SHPO's initial concerns. SHPO shared support for use of mast arms through the project limits because of their prevalence in the city. SHPO also preferred the look of the red-colored pavement for the dedicated transit lanes and bike lanes at the sidewalk level. SHPO was interested in the design of the stations. Additional consultation will occur during project design on the completed above-ground historic survey, placement of the historic brick pavers, and design of the station amenities.

Corktown Business Association (CBA) Meetings

The CBA shared particular concerns with the practical alternatives around removing mid-block left turns, maintaining brick street pavers, maintaining street parking, maintaining cultural events, and financial support to businesses during construction. These concerns were addressed through additional meetings. The mid-block left-turn removal concern was addressed through allowing for passenger vehicle u-turn movements at the signalized intersections. These u-turn movements are used in other center-running transit corridors across the country. The maintaining brick street pavers was not fully addressed through the placement of the new concrete brick pavers. CBA preference was for increased use of brick pavers in the roadway from Sixth Street all the way to Fourteenth Street. MDOT would not be able to fund and maintain the increased use of brick pavers in the roadway but would consider additional limits if the City of Detroit and a third party were willing to fund the construction and long-term maintenance of these additional improvements. Maintaining street parking was addressed through lane refinements that increased parking along the north side of the corridor and would keep the overall number of street parking spaces similar to existing. The concern about maintaining cultural events was addressed through the use of removable barriers between the dedicated transit lane and vehicle travel lanes. Cavnue would support temporary removal and replacement of the barriers so the entire eastbound direction of the corridor could be used for parades. The concern about financial support to businesses during construction was addressed by the City of Detroit through education on opportunities for self-funding solutions to support affected businesses and future support from the Detroit Economic Growth Corp. on best practices learned from recent city streetscape projects.

Corktown Historical Society Meeting

The Corktown Historical Society was presented the locally acceptable alternative with additional context on public feedback from the community meetings and SHPO meetings related to the historic brick pavers. The reuse of the historic brick pavers outside the roadway was agreeable with suggestion of a potential continuous ribbon of brick behind the back of curb and potential reuse of broken bricks for local artists to use. The group preferred the use of more new brick pavers in the roadway throughout Corktown. There was comment that the approach to use in the historic districts near the east and west sides of the neighborhood would fragment the community. MDOT has limited resources to build and maintain the expensive brick infrastructure and will need to be strategic in where new pavers are placed in the roadway. The locations provide the historic look and feel at both ends of the neighborhood where the historic frontages remain mostly intact. Additional limits of brick pavers in the roadway would not be funded by the project but would be considered if there is city and stakeholder support to fund additional construction and long-term maintenance costs associated with the improvements.

Locally Acceptable Alternative

Based on the comments and feedback received from the community, as well as from stakeholders such as the CBA and the city, the locally acceptable alternative was refined to address the community's issues with the design. As a result, the final locally acceptable alternative features a dedicated transit lane with space for autonomous vehicles, one vehicle travel lane in each direction with a left-turn/u-turn lane at signalized intersections, sidewalk-level bike lanes on both side of the

street, expanded sidewalk space, space for street trees and planting, new concrete brick road pavers in the historic districts, and historic brick pavers reused in extra sidewalk space throughout the corridor. The locally acceptable alternative meets the P&N by providing space for all users of Michigan Avenue, planning for future mobility, and complementing the character of Corktown and downtown Detroit.

Figure 19: Locally Acceptable Alternative at Fourteenth Street

Figure 20: Locally Acceptable Alternative at Trumbull Street

Figure 21: Summary of Locally Acceptable Alternative

Locally Acceptable Alternative	Description	Corktown Segment	Downtown Segment
Center-Running Alternative	● Mid-block crossing design includes bumpouts and refuge islands throughout. ● Split sidewalk-level bike lanes/slow zone. ● Removal of AV/transit pullout at stations. ● Colored pavement or paint to delineate dedicated transit lane. ● Expanded sidewalk space. ● Redesigned Fourteenth Street entrance ramp to I-75. ● Planted areas and green stormwater infrastructure.	● Center lanes exclusive for transit and AVs. ● One general travel lane in each direction with left-turn/u-turn pocket at signalized intersections. ● Most parking is preserved. ● Wide sidewalk and amenity zone on the north side. ● Reuse historic Corktown brick either at specific plaza locations or continuous bands at sidewalk-level. ● Replace street brick with new concrete pavers between Fourteenth Street and Vermont Street, and between Trumbull Street and Brooklyn Street.	● Center transit/AV lane continues to Cass Avenue. ● Bike lanes transition at Washington Avenue from sidewalk level to street level. ● Bike lanes continue to Campus Martius. ● On-street parking and loading preserved east of Cass Avenue. ● Reduction from four lanes to three.

Presentation of Locally Acceptable Alternative

The locally acceptable alternative was presented at community meeting #4 in September 2021. Visualizations of the locally acceptable alternative at key intersections of Michigan Avenue with Trumbull Street and Fourteenth Street were shared, highlighting key elements. A roll plot of the study corridor was shared as well identifying design elements and potential plaza locations for reuse of the historic brick pavers. Details on how the locally acceptable alternative addresses brick pavers, left turns, traffic, pedestrian priority, and parking were highlighted in the presentation, attached as Appendix E.

There was general acceptance of the locally acceptable alternative with a few comments and responses shared at the community meeting. Comment was made on importance of parking in

the west study limits. Most of the on-street parking is retained west of Fourteenth Street, with Michigan Central Station parking structures to provide more options in this area. Comment was made on the intersection of dedicated bike facilities and the need to have good design for these locations. These were acknowledged and will be further reviewed in project design. Comment was made of the preference to increase the use of the concrete brick pavers in the roadway. MDOT plans to place new concrete pavers in roadway limits that the department can support and address the historical context. Additional limits of brick pavers in the roadway would not be funded by the project but would be considered if there is city and stakeholder support to fund additional construction and long-term maintenance costs associated with the additional limits.

Next Steps

As indicated in the locally acceptable alternative, this project will remain within existing Michigan Avenue right of way. Thus, from a NEPA perspective, the biggest issues moving forward from the PEL are related to the historic brick pavers and traffic impacts.

MDOT will continue to coordinate with residents, stakeholders and SHPO to finalize the most appropriate path forward for the removal, replacement and reuse of brick pavers within the PEL limits. Reuse in pocket plazas at certain intersection corners received the strongest support, but there may be design considerations that present other opportunities to reuse in other locations outside of the road and traveled sidewalk.

Further consideration is likely needed regarding potential traffic impacts associated with the locally acceptable alternative. More detailed analysis of route diversion, mode shift and u-turn movements will be needed to fully project future traffic operations within the corridor. Specifically, MDOT will analyze the storage needed for left-turns and u-turns at signalized intersections, considering those areas will be woven into the design of buffer space and bus stop locations of the center-running transit facility.

MDOT will continue to consider these elements as they advance the Michigan Avenue project into environmental review, design and construction.