MILWAUKEE NORTH SOUTH Transit Enhancement

VOLUME 3

PURPOSE AND NEED

Milwaukee County **North-South**
Transit Enhancement Study

Southeastern Wisconsin **Regional Planning Commission**

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COMMUNITY ASSISTANCE PLANNING REPORT
NUMBER 340

MILWAUKEE NORTH SOUTH Transit Enhancement

MILWAUKEE COUNTY NORTH-SOUTH TRANSIT ENHANCEMENT STUDY

VOLUME 3: PURPOSE AND NEED

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U.S. Department of Transportation
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Chapter 2

INTRODUCTION 1

The Purpose and Need Report is the second in a series of reports initiating the North-South Transit Enhancement Study. This report presents the purpose statement for the project; provides detailed descriptions of each need, including supporting data; presents the project goals and objectives, which address the project needs; and outlines evaluation criteria, which are consistent with the FTA Capital Investment Grant Program evaluation criteria and will be used to define a recommended alternative for transit enhancement in this corridor.

1.1 OVERVIEW

The Southeastern Wisconsin Regional Planning Commission (SEWRPC) is assisting Milwaukee County with the North-South Transit Enhancement Study, which will evaluate options to enhance transit in the corridor along and near 27th Street in Milwaukee County. The study will evaluate a range of transit investment alternatives, including consideration of both rail and bus options, and recommend an alternative for implementation within the study corridor. The Existing Conditions Report for this study includes a description of the existing transit route in the corridor, Milwaukee County Transit System's (MCTS) PurpleLine route, with details about population (including demographic information), jobs, the existing transportation network, and land use in the area within 0.5 miles of the PurpleLine. Map 1.1 shows the existing PurpleLine route.

Regional and local planning work has previously identified recommendations for enhanced, rapid transit service in the corridor and supports a locally preferred transit investment alternative that will meet the needs set forth in this document. These needs generally include providing safe, efficient, and expanded levels of mobility in an environmentally sustainable way; focusing on underserved residents in the corridor; supporting the local commitment to racial equity and social justice investments for people of color, low-income populations, and people with disabilities within the study corridor; and to improve connectivity between residents in the corridor and jobs and other destinations.

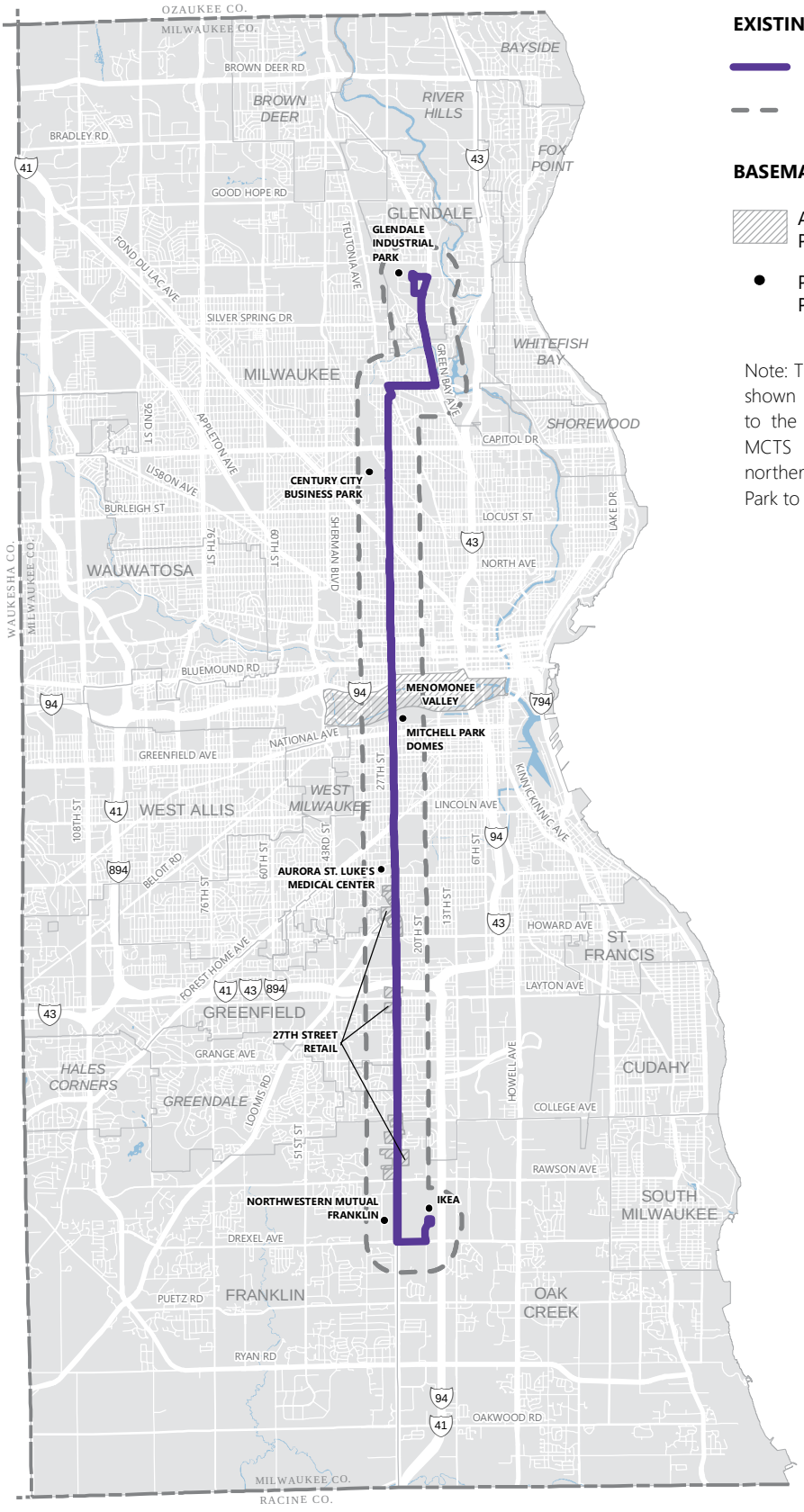
Throughout the study, a three-phased, iterative alternative development and evaluation process, described in Chapter 4 of this report, will compare various options for transit enhancement in the corridor. Extensive public and stakeholder engagement throughout these three phases is a priority for this study and will also be considered in the evaluation process. Outreach efforts are focused on directly engaging residents and other stakeholders in the corridor. Feedback will also be collected through the study's Community Advisory Committee, which includes business improvement districts, community organizations, and local other stakeholders; and Technical Advisory Committee, which includes officials from municipalities with jurisdiction in the corridor, the Wisconsin Department of Transportation (WisDOT), the Federal Transit Administration (FTA), and the Federal Highway Administration (FHWA).

At the conclusion of the evaluation process, a recommended route alternative will be finalized and included in a letter to the Federal Transit Administration (FTA) requesting to enter project development. If approved, Milwaukee County will enter the next phase of this project, which will include design and engineering as well as additional public involvement The next phase will help to further refine the route alignment, location of dedicated lanes, and detailed station siting.

1.2 PRELIMINARY ROUTE ALTERNATIVES

The study corridor, defined as the area within a 0.5-mile buffer around the preliminary route alternatives, spans nearly the entire length of Milwaukee County from the north to the south, with route alternatives running primarily along 27th Street with variations in route alignment options on the northern and southern ends of the corridor. The longest route alternative spans a length of nearly 23 miles, and the study corridor covers an area of 30 square miles—approximately 12 percent of the land area in Milwaukee County. The study corridor and preliminary route alternatives are shown on Map 1.2. In addition to these preliminary route alternatives, a no build option will also be considered in the evaluation, which would entail making no changes to existing transit in the corridor.

Map 1.1
Existing MCTS PurpleLine Transit Route



EXISTING TRANSIT ROUTE

EXISTING PURPLELINE

EXISTING PURPLELINE CORRIDOR (0.5 MILES AROUND EXISTING ROUTE)

BASEMAP

AREAS OF INTEREST NEAR PURPLELINE CORRIDOR

POINTS OF INTEREST NEAR PURPLELINE CORRIDOR

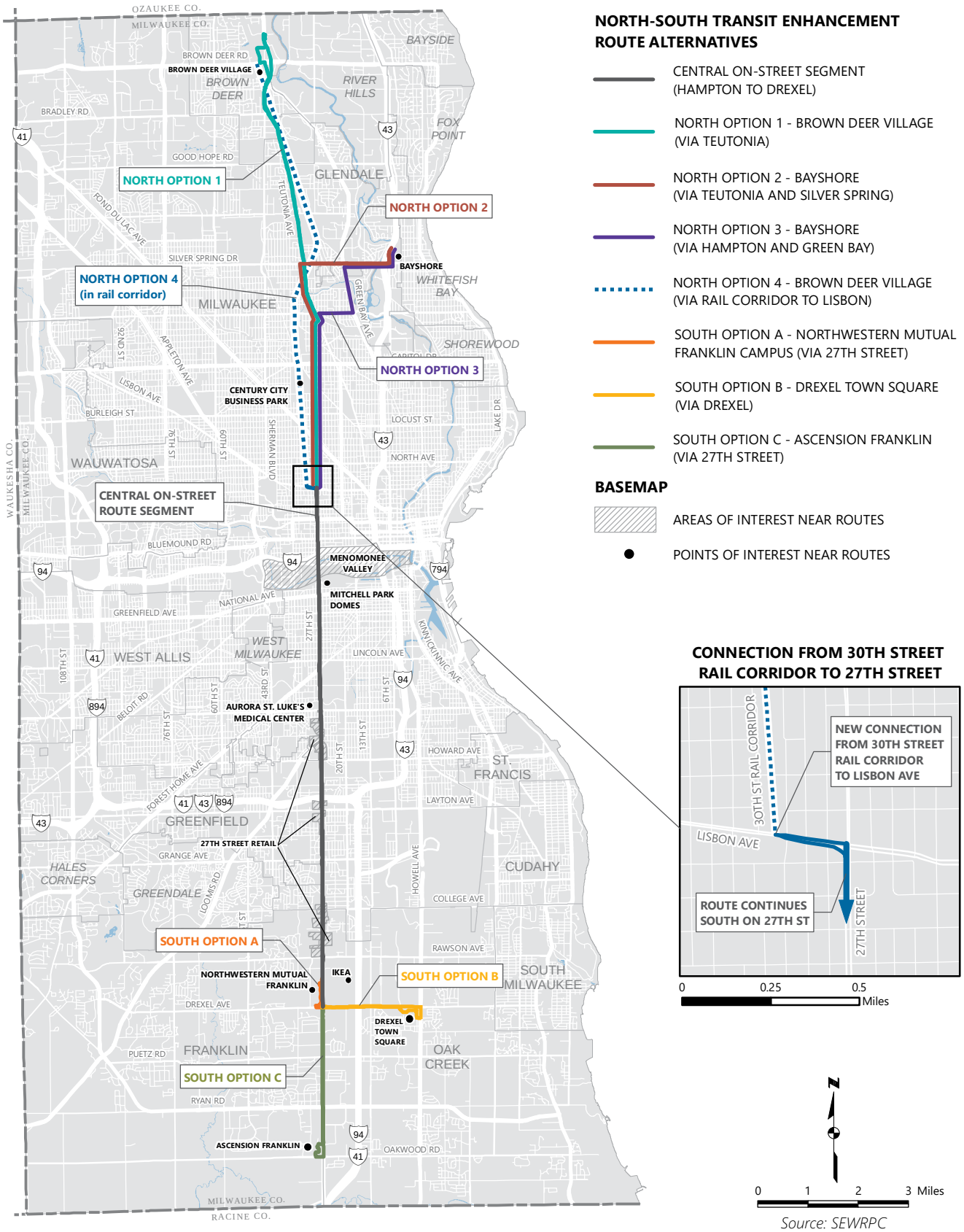
Note: This map reflects the PurpleLine route as it is shown in the Existing Conditions report. Changes to the PurpleLine were implemented as part of MCTS NEXT in June 2021, which changed the northern route terminus from Glendale Industrial Park to Bayshore in Glendale.

N

0 1 2 3 Miles

Source: Milwaukee County Transit System and SEWRPC

Map 1.2
Preliminary Route Alternatives



Source: SEWRPC

The preliminary route alternatives include options that run within the existing roadway (on-street) and one alternative that runs partially within a rail corridor. In this phase of the study, bus rapid transit (BRT), light rail, or streetcar service are all being considered as potential service technologies for use on any of the preliminary route alternatives. A commuter rail option, which would run on existing rail, is not included in the preliminary route alternatives because existing rail does not continue south of Menomonee Valley in the corridor. The evaluation process described in Chapter 4 of this report, will analyze and eventually refine route and technology alternatives for consideration for a transit investment in this corridor.

The preliminary on-street route alternatives share a central route segment that runs along 27th Street from W. Hampton Avenue to W. Drexel Avenue. The alternatives that include the northern rail corridor option, near N. 30th Street, share much of that central segment—connecting from the existing rail corridor to the on-street central route segment at W. Lisbon Avenue.

There are four route alignment alternatives in the northern segment of the corridor, and three route alignment alternatives in the southern end of the corridor, all branching off of the central on-street route segment. These options are shown on Map 1.2 and described below:

North Route Options

- North Option 1 would extend from the northern end of the central on-street segment at the intersection of W. Hampton Avenue and N. Teutonia Avenue and terminate in Brown Deer's Original Village neighborhood near the intersection of W. Brown Deer Road (STH 100) and N. Green Bay Road (STH 57) in the Village of Brown Deer.

- North Option 2 would extend from the northern end of the central on-street segment north along N. Teutonia Avenue to W. Silver Spring Drive, then turn east on W. Silver Spring Drive before turning north again onto N. Port Washington Road, terminating at Bayshore, the open-air, mixed use center in the City of Glendale.

- North Option 3 would extend from the northern end of the central on-street segment, turning east on W. Hampton Avenue, before turning north on N. Green Bay Avenue (STH 57), east on W. Silver Spring Drive, and then north again onto N. Port Washington Road, also terminating at Bayshore in the City of Glendale. This option is the same route that the existing PurpleLine bus route will follow with the MCTS NEXT system update.

- North Option 4 would extend the on-street route from N. 27th Street, west onto W. Lisbon Avenue for approximately two-tenths of a mile before connecting to the existing 30th Street Rail Corridor. The route would then continue north on the rail corridor, terminating in Brown Deer's Original Village neighborhood. Transit service in the rail corridor could be implemented as rail service, utilizing existing railroad tracks (operating on tracks shared with freight lines), or in a new transit (bus or rail) thruway within the railroad right-of-way. Making the connection from the 30th Street Rail Corridor to W. Lisbon Avenue would require that the route traverse a grade change and turn east to connect with W. Lisbon Avenue and then turn south onto 27th Street.

South Route Options

- South Option A would terminate the route at the southern end of the central on-street segment, at the intersection of S. 27th Street (STH 241) and W. Drexel Avenue in the City of Oak Creek on the east and the City of Franklin on the west.

- South Option B would extend east from the intersection of S. 27th Street (STH 241) and W. Drexel Avenue along W. Drexel Avenue, terminating at Drexel Town Square, a mixed-use retail, residential, and civic development on the corner of W. Drexel Avenue and S. Howell Avenue (STH 38) in the City of Oak Creek.

- South Option C would extend south from the southern end of the central on-street segment along S. 27th Street (STH 241), terminating at the Ascension Medical Center at the intersection of S. 27th Street and W. Oakwood Road in the City of Franklin on the west and the City of Oak Creek on the east.

PROJECT PURPOSE AND NEED 2

2.1 SUMMARY PROJECT PURPOSE AND NEED

Below is the project purpose statement and the summarized need statements.

Purpose

The purpose of the Milwaukee North-South Transit Enhancement Study is to build upon Milwaukee's existing transit infrastructure and investment to enhance mobility along or near 27th Street and throughout Milwaukee County, focusing on underserved residents in the corridor and supporting the local commitment to racial equity and social justice investments. Racial equity is a top priority of Milwaukee County government. This study is one step toward supporting Milwaukee County's goal to identify and address policies, practices, and power structures that, whether intentionally or unintentionally, favor white people and create barriers for black, brown, and indigenous people.[1]

Needs

The needs summarized below describe why an investment in enhanced transit is necessary in this corridor. More detail, including data that supports these statements, is provided in the following sections.

1. **Provide a viable transit enhancement in the corridor along or near 27th Street.** An increase in service frequency, reduced transit travel times, and improved stops with amenities will better serve current riders and attract new riders in the corridor.

2. **Help remedy existing racial inequities and the longstanding systemic racism within the transportation network.** People of color are more likely to rely on transit than white people. As a result of this disparity, most transportation network investments—which favor car travel or that primarily serve predominantly white areas—disproportionately benefit the white, non-Hispanic population. The resulting inequities in access to jobs and education have played a role in many of the other racial disparities that exist in the Milwaukee metro area's population, including disparities in educational attainment levels, per capita income levels, and poverty rates.[2] Investing in enhanced transit in an area with a population that is 73 percent people of color would significantly improve access and amenities for that population—part of a much larger commitment by Milwaukee County to invest in projects that support racial equity and social justice.

3. **Improve access for underserved populations.** In addition to people of color, low-income families and people with disabilities are also more likely to rely on transit and are underserved by most investments in the transportation network, which favor car travel. The cost of owning a car can be prohibitive for low-income populations, while having the option to not own a car, or more than one car, can reduce transportation costs for families and provide more financial flexibility. Investing in enhanced transit in an area where a higher proportion of the population is more likely to depend on transit will significantly improve access to jobs, healthcare, education, recreation, entertainment, social activities, and other destinations for these currently underserved populations.

4. **Provide a transit solution that supports dense, equitable, and pedestrian-oriented mixed-use development and redevelopment.** Local and regional plans recommend relatively dense, mixed-use development and redevelopment along much of the corridor that accommodates bicyclists and pedestrians and that both supports and is supported by high-capacity transit. This kind of

[1] *Milwaukee County Ordinance No. 20-4 commits Milwaukee County to advancing racial equity and eliminating health disparities.*

[2] *These disparities are documented in SEWRPC Memorandum No. 221 (Second Edition),* A Comparison of the Milwaukee Metropolitan Area to Its Peers*, March 2020.*

development also results in more efficient public infrastructure and services, lower energy use per household, and encourages active transportation that can improve public health.

5. **Improve the balance of multimodal transportation options to enhance safety for all users.** Reckless driving in Milwaukee County is a significant risk to the health and safety of the community and requires multi-faceted solutions in engineering and design, public education, and accountability. Among several recommendations included in its 2020 Activities, Findings, and Recommendations Report, the City-County Carjacking and Reckless Driving Task Force recommends increasing the availability of public transit, investing in road diets, and separating vulnerable users by providing a separate and protected space for people walking, biking, and taking transit.[3] An enhanced transit investment in this corridor could improve safety by incorporating pedestrian-oriented design around stations, providing traffic calming measures through the addition of a transit-only travel lanes (reducing the width or number of travel lanes), and reducing negative perceptions related to using public transit.

6. **Invest in environmentally sustainable options that are consistent with local and regional plans.** Enhanced public transit has the potential to reduce single occupancy vehicle travel and support more compact development—which could reduce greenhouse gas (GHG) emissions and dependence on fossil fuels. An investment in enhanced transit in the corridor would also provide an opportunity to select vehicles, station amenities, and other operations equipment that further reduces the environmental impact of transit and takes advantage of the latest in transportation technology.

2.2 DESCRIPTION OF PROJECT NEEDS

Project Need 1: Provide a Viable Transit Enhancement in the Corridor Along or Near 27th Street

The existing PurpleLine route—a high-frequency local bus service operated by the Milwaukee County Transit System (MCTS)—runs from Bayshore in the City of Glendale, along 27th Street, and terminates in southern Milwaukee County at IKEA in the City of Oak Creek. The existing route is approximately 15 miles in length, utilizes 15 buses during peak travel periods, and provides nearly 7,000 rides each weekday.[4]

Despite its relatively high performance, there are significant opportunities to better serve existing transit riders and attract new users to transit service in this corridor. Most notably, travel times for transit users on the PurpleLine route are more than double that of automobile users in the corridor with an estimated trip length of approximately 1 hour and 20 minutes by transit and 35 minutes by car during the morning peak travel period from one end of the route to the other (Table 2.1). Several factors contribute to this significant difference in travel time, including the number and spacing of stops, and dwell time—a term used to describe the time the bus spends at stops as passengers board, alight, and provide payment.

Common themes from feedback collected during the first round of public involvement for this study include the need for faster travel times, higher frequencies, dedicated travel lanes, transit priority at traffic signals, better pedestrian connections, and more shelters and other accommodations at stops. Safety concerns near stops were also frequently noted.

Amenities Associated with Enhanced Transit Service

Enhanced transit, which can come in many forms including bus rapid transit (BRT), light rail, streetcar service, or commuter/regional rail, typically provides higher-frequency service with many of the features mentioned above. Travel time improvements often result from implementing several different improvements such as increased stop spacing; dedicated travel ways and traffic signal priority, which minimize traffic delay for transit service; and level boarding and off-board ticketing, which reduce dwell time.

In addition to level boarding, stations on enhanced transit routes often include additional accommodations such as more robust protection from the weather, more seating options, enhanced wayfinding or digital

[3] *Activities, Findings, and Recommendations Report, City-County Carjacking and Reckless Driving Task Force, June 2020. city.milwaukee.gov/ImageLibrary/Groups/ccCouncil/District-10-Murphy/PDFs/FINALReport6-7-2020-1.pdf.*

[4] *Data provided by MCTS based on 2019 unlinked passenger trips. Note: the PurpleLine route has been the highest ridership route since the beginning of the COVID-19 pandemic and was previously the second highest ridership route.*

Table 2.1
Estimated Travel Times on PurpleLine Route

	Travel by Transit on PurpleLine Route	Travel by Automobile on PurpleLine Route	Travel Time Difference
Northbound			
AM	1 hour 11 minutes	43 minutes	28 minutes
Midday	1 hour 15 minutes	38 minutes	37 minutes
PM	1 hour 9 minutes	38 minutes	31 minutes
Southbound			
AM	1 hour 17 minutes	40 minutes	37 minutes
Midday	1 hour 21 minutes	38 minutes	43 minutes
PM	1 hour 15 minutes	39 minutes	36 minutes

Source: SEWRPC

signage with real-time bus arrival information, designated station lighting, and other security provisions such as emergency call stations.

Recent Planning Efforts and Transit Investments Support Transit Enhancement in this Corridor

Recent planning efforts have also included recommendations for transit enhancement along this corridor. The Milwaukee County Transit System Development Plan (TDP), completed in 2010, recommended that a new express bus service be implemented in the 27th Street corridor. Since then, MCTS created the high frequency transit route, the PurpleLine, and retired local Route 27. VISION 2050—the Region's long-range land use and transportation plan which the Southeastern Wisconsin Regional Planning Commission (SEWRPC) adopted in 2016 and updated in 2020—recommends a significant improvement and expansion of public transit in Southeastern Wisconsin, including implementation of rapid transit along this corridor and commuter rail along a portion of this corridor, shown in Map 2.1. MCTS NEXT—the redesign of the County's transit system that will increase frequencies and simplify routes within current budget constraints—made some additional improvements to the PurpleLine route, including improving connections to other high frequency routes and changing the north terminus of the route from the Glendale Industrial Park to Bayshore. MCTS NEXT changes to the PurpleLine were implemented on June 6, 2021.

Both Milwaukee County and the City of Milwaukee have been working to improve and expand the transit network within the county in recent years. The City of Milwaukee began service on the first phase of its streetcar system, The Hop, in 2018 and MCTS is expected to begin service in 2022 for the East-West Bus Rapid Transit (BRT), the Region's first BRT line, from downtown Milwaukee to the Milwaukee Regional Medical Center campus in Wauwatosa. These new routes are shown relative to the study corridor in Map 2.2. A north-south transit enhancement is a logical next step in implementing the transit system recommended in the plans, building on recent investments in transit (directly connecting to the East-West BRT line) and serving a large proportion of the underserved population in Milwaukee County, much of which is more likely to rely on transit.

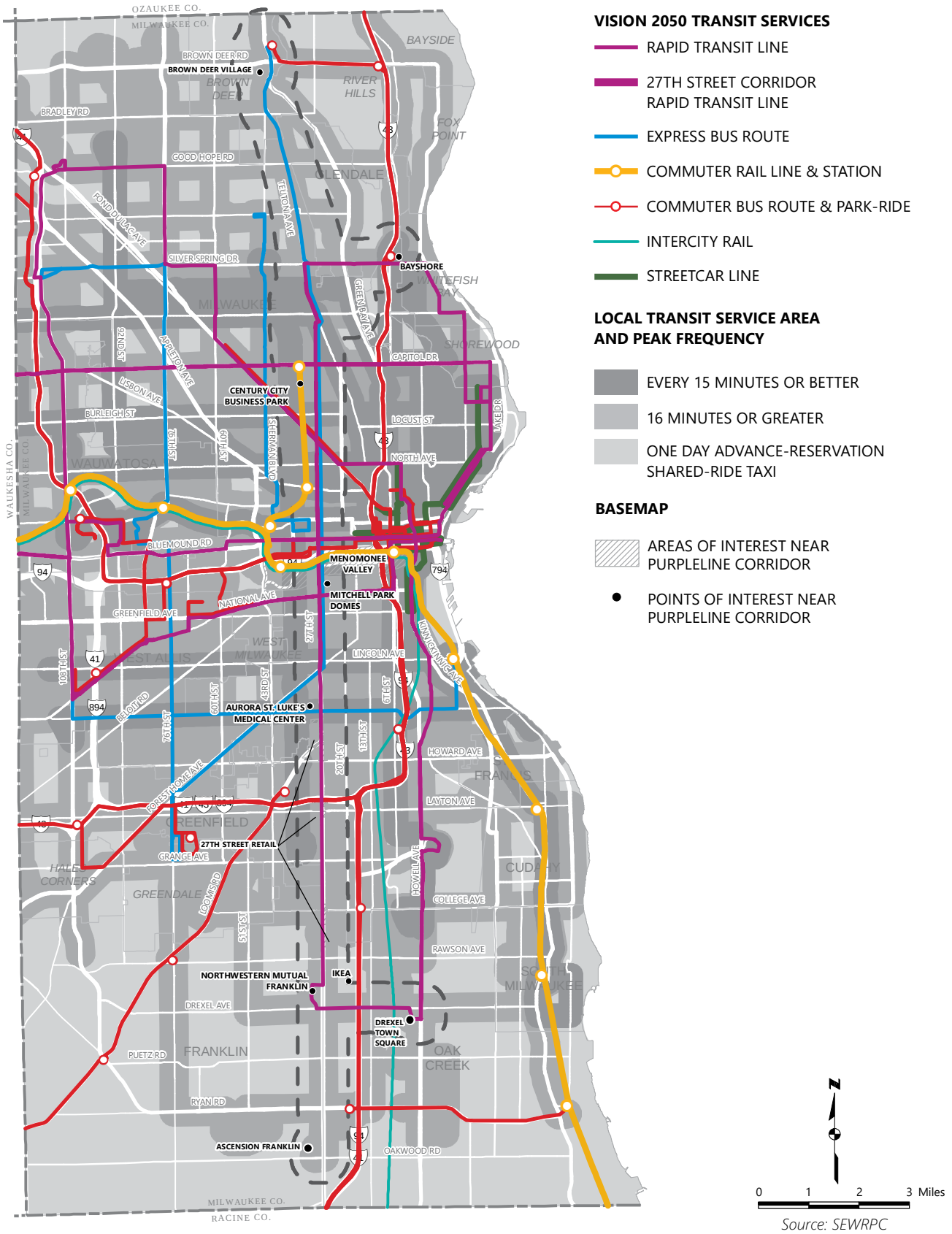
Investment in Enhanced Transit Service must be Technically Feasible and Financially Viable

Embedded in the evaluation process described further in Chapter 4 is the need to identify a recommended alternative that is viable for Milwaukee County to implement from both a technical and financial perspective. The evaluation process will include high-level capital, maintenance and operating cost estimates that consider costs associated with infrastructure or technology that will be necessary to implement each alternative. Therefore, the recommended alternative that is selected must be financially viable based on reasonably expected revenue available from local, state, and federal funding sources.

Project Need 2: Help Remedy Existing Racial Inequities and the Longstanding Systemic Racism Within the Transportation Network

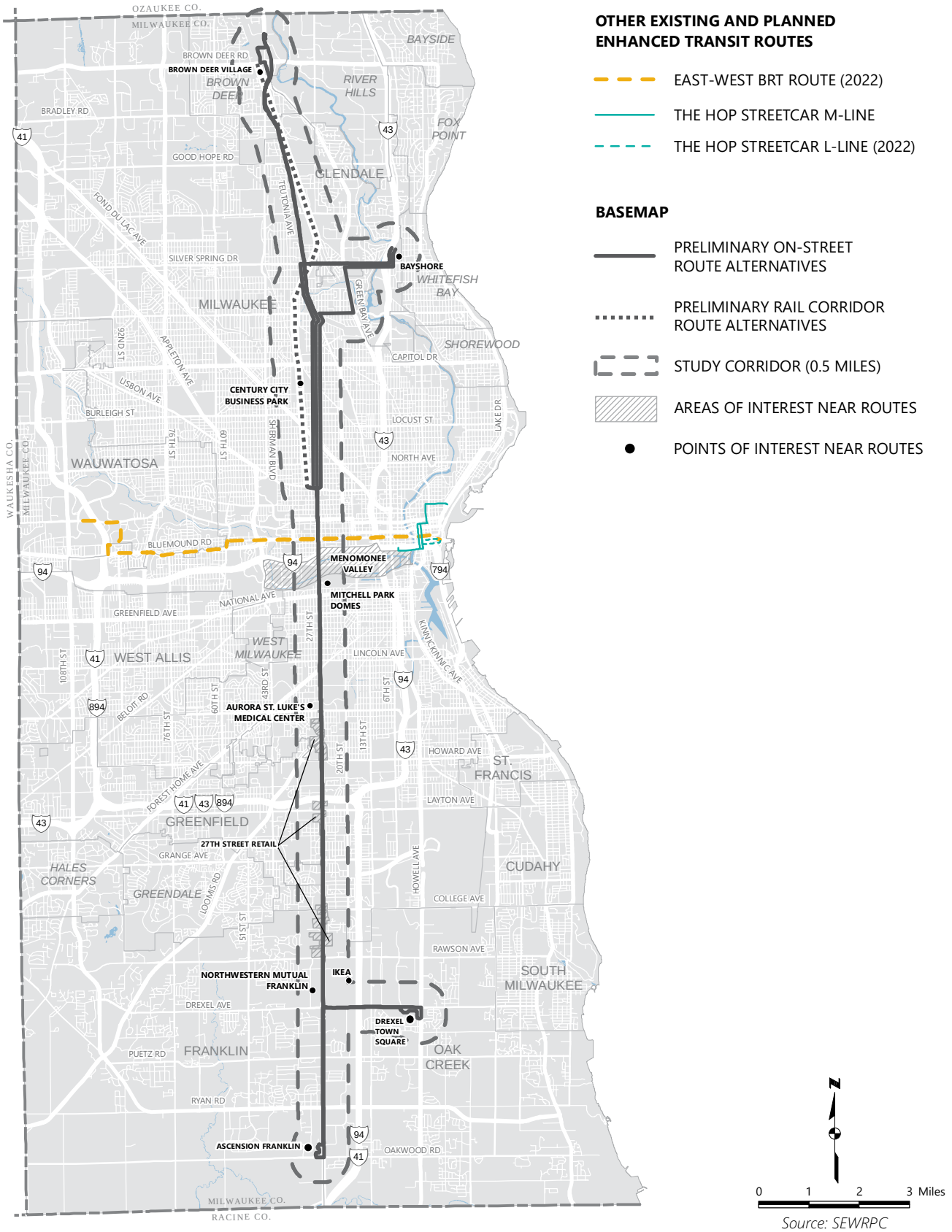
Longstanding systemic racism in transportation policy, planning, and investment has played a significant role in building a transportation network that favors car travel and predominately white, suburban communities, and has supported historic patterns of racial segregation that continue to exist in Milwaukee County and

Map 2.1
VISION 2050 Recommended Transit Services near the Study Corridor



Source: SEWRPC

Map 2.2
Other Existing and Planned Enhanced Transit Routes in Milwaukee County



Source: SEWRPC

many other places around the country.[5, 6, 7] The resulting inequities in access to jobs and education have played a role in many of the racial disparities that exist in the Milwaukee metro area's population, including disparities in educational attainment levels, per capita income levels, and poverty rates.[8] In addition, although the recent investments in enhanced transit in Milwaukee County, referenced in the description of Project Need 1, improve access to major employers and other significant destinations, the investments are not directly located in predominantly Black/African American and Hispanic neighborhoods.

As shown in Map 2.3 and Table 2.2, people of color comprise approximately 73 percent of the population in the corridor, with Black/African Americans making up 43 percent of the population and people of Hispanic or Latino ethnicity making up 22 percent of the population.

In Milwaukee County, minority households are less likely to have access to a car than white, non-Hispanic households. The most recent American Community Survey estimates indicate that 26 percent of Black/African American households, 13 percent of American Indian and Alaska Native households, 10 percent of Hispanic, and 11 percent of households of another minority race do not have access to a car compared to 8 percent of white, non-Hispanic households (shown in Figure 2.1). The Milwaukee area also has one of the largest racial disparities in incidence of poverty in the country, with people of color more than four times more likely to experience poverty than whites.[9]

Access to Jobs by Automobile and by Transit in Milwaukee County

In Southeastern Wisconsin, individuals who rely on transit have access to just 10 to 20 percent of the jobs within 30 minutes when compared with those who have access to an automobile.[10] As described above, these households are substantially more likely to be experiencing poverty or be people of color, and experience disparities in educational attainment and access to jobs, medical services, grocery stores, and other essential services.

Investing in enhanced transit in an area with a population that is made up of 73 percent people of color would significantly improve access and amenities for that population—part of a much larger commitment by Milwaukee County to invest in projects that support racial equity and social justice.

Project Need 3: Improve Access for Underserved Populations

People of color, families in poverty, and people with disabilities are all population groups that are underserved by the existing transportation network, which favors car travel. In Milwaukee County, 35 percent of families in poverty do not have access to a car, compared to 9 percent of families not in poverty. About 10 percent of people with disabilities utilize transit for travel to and from work.[11]

Underserved populations comprise a comparatively higher proportion of the population in the study corridor than in the County as a whole. In the corridor, 21 percent of households do not have access to a car (compared to 14 percent in the county), 25 percent of families have incomes at or below the Federal poverty

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[5] *Alex Karner, Deb Niemeier,* Civil rights guidance and equity analysis methods for regional transportation plans: a critical review of literature and practice, *Journal of Transport Geography, Volume 33, 2013, Pages 126-134, ISSN 0966-6923, doi.org/10.1016/j.jtrangeo.2013.09.017.*

[6] *Bullard, R. D., Johnson, G. S., & Torres, A. O. (2004).* Highway Robbery: Transportation Racism & New Routes to Equity. *Cambridge, MA: South End Press.*

[7] *Rothstein, R. (2018).* The Color of Law: A Forgotten History of How Our Government Segregated America (pp. 188-189). *New York: Liveright Publishing Corporation, a division of W. W. Norton & Company.*

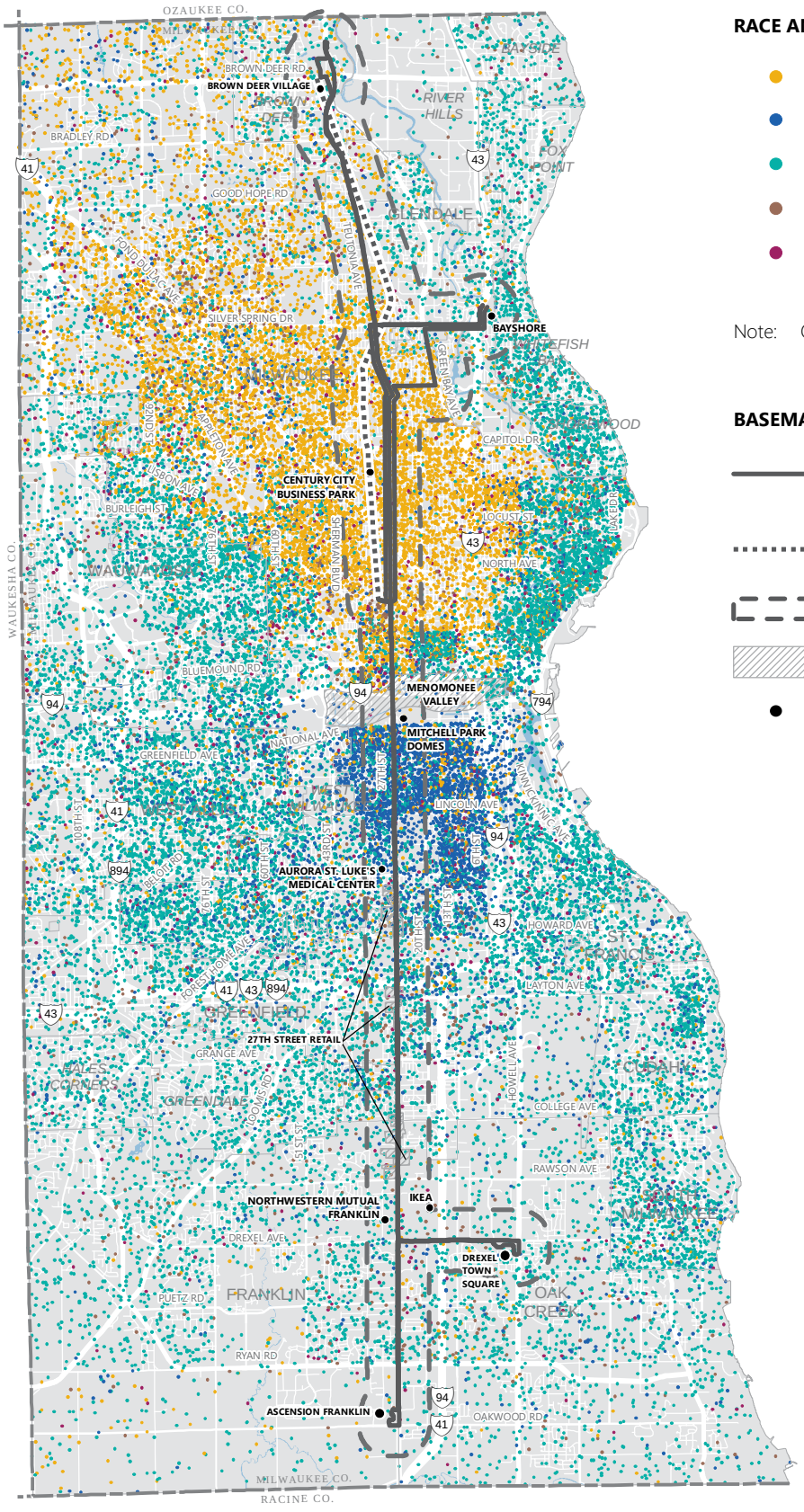
[8] *These disparities are documented in SEWRPC Memorandum No. 221 (Second Edition),* A Comparison of the Milwaukee Metropolitan Area to Its Peers*, March 2020.*

[9] *Ibid.*

[10] *Disparities in access to jobs and activity centers by transit are included in the Second Edition of SEWRPC Planning Report No. 55,* VISION 2050 – Volume III: Recommended Regional Land Use and Transportation Plan, *Appendix N*, Equitable Access Analysis of the VISION 2050 Transportation Component, *June 2020. www.sewrpc.org/SEWRPCFiles/LUTranSysPlanning/pr-55-vol-3-2nd-Ed-app-n-final.pdf.*

[11] *Ibid.*

Map 2.3
Population by Race and Ethnicity



RACE AND ETHNICITY

- BLACK/AFRICAN AMERICAN
- HISPANIC
- WHITE
- ASIAN
- OTHER RACES, OR TWO OR MORE RACES

Note: One dot equals 25 people

BASEMAP

- PRELIMINARY ON-STREET ROUTE ALTERNATIVES
- PRELIMINARY RAIL CORRIDOR ROUTE ALTERNATIVES
- STUDY CORRIDOR (0.5 MILES)
- AREAS OF INTEREST NEAR ROUTES
- POINTS OF INTEREST NEAR ROUTES

Source: U.S. Census Bureau American Community Survey, 2014-2018 and SEWRPC

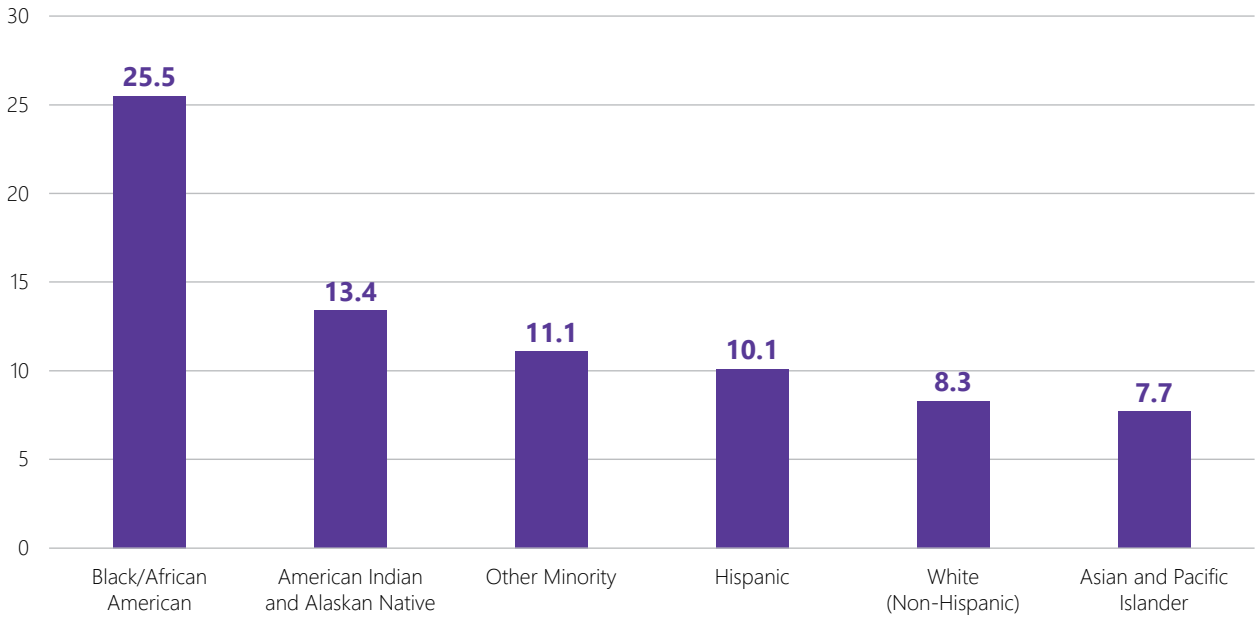
Table 2.2
Population by Race and Ethnicity

Location	Population by Race (not of Hispanic or Latino Ethnicity)								Hispanic or Latino Ethnicity of Any Race		Total Population
	White Alone		Black/African American Alone		Asian Alone		Other Races, or Two or More Races				
	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	
Study Corridor[a]	42,001	27.2	66,214	42.8	6,804	4.4	4,906	3.2	34,651	22.4	154,575
Milwaukee County	493,723	51.7	249,011	26.1	40,443	4.2	30,457	3.2	140,575	14.7	954,209
Wisconsin	4,711,038	81.5	361,909	6.3	158,198	2.7	161,470	2.8	385,779	6.7	5,778,394
United States	197,181,177	61.1	39,715,917	12.3	17,367,169	5.4	11,120,832	3.4	57,517,935	17.8	322,903,030

[a] *Study Corridor defined by 0.5 mile buffer around preliminary route alternatives.*

Source: U.S. Census Bureau American Community Survey, 2014-2018 and SEWRPC

Figure 2.1
Percent of Households Without a Car by Race and Ethnicity in Milwaukee County



Source: U.S. Census Bureau American Community Survey, 2014-2018 and SEWRPC

level (compared to 15 percent in the county), and 15 percent of the population has a disability (compared to 13 percent in the county). Maps 2.4, 2.5, and 2.6 and Tables 2.3, 2.4, and 2.5 show the location, number, and percent of these underserved population groups—households without a vehicle, families in poverty, and people with disabilities—with respect to the study corridor.

The cost of owning a car can be prohibitive for low-income populations. Taking into account a car payment, insurance, gas, registration fees, the cost of a City of Milwaukee monthly parking permit, and average monthly maintenance and repair costs, the average monthly cost to own a used car is approximately $470.[12] In comparison, an Adult Regular 31-day Pass for MCTS is $72, making car ownership nearly 7 times as costly as transit use. In areas where high quality transit is available, the option to not own a car, or not more than one car, can significantly reduce transportation costs for families.

Enhanced transit in the corridor will provide faster, more convenient access to the nearly 84,000 jobs, 94 major employers (employers with 100 or more employees), 75 K-12 schools, 38 grocery stores, 16 community resource centers (which includes community service centers, job centers, social security offices, food pantries, and youth centers), and 5 major medical facilities in the corridor, in addition to improving access for recreation, entertainment, and social activities for these currently underserved populations. Map 2.7 shows the location of jobs in the corridor and Map 2.8 shows the location of other activity centers.

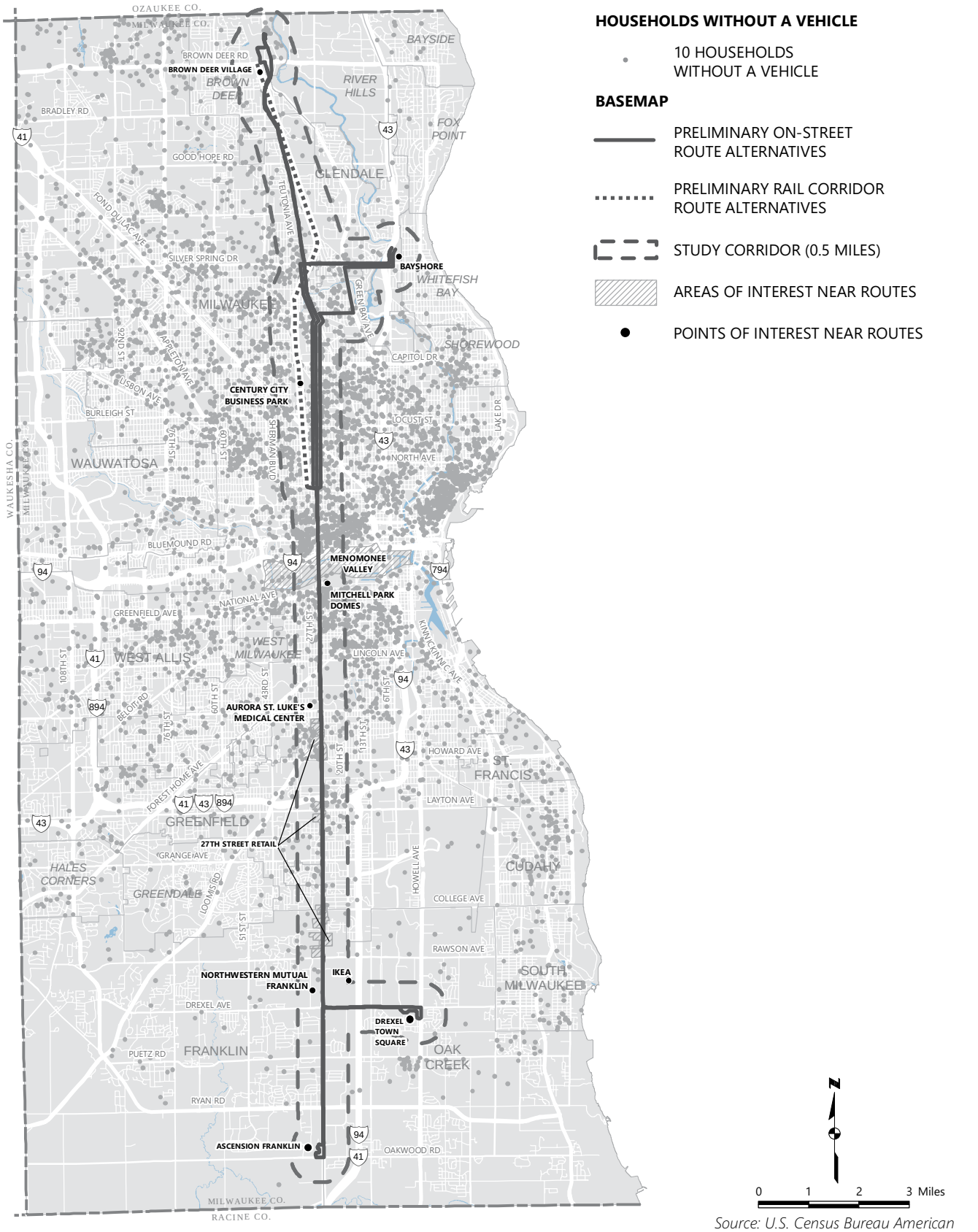
Investing in enhanced transit in an area where a higher proportion of the population is more likely to depend on transit will significantly improve access to jobs, healthcare, education, recreation, entertainment, social activities, and other destinations for these currently underserved populations.

Project Need 4: Provide a Transit Solution That Supports Dense, Equitable, and Pedestrian-Oriented Mixed-Use Development And Redevelopment

Local and regional plans recommend relatively dense, mixed-use development and redevelopment along much of the corridor that accommodates bicyclists and pedestrians and that both supports and is supported by high-quality transit—also called transit-supportive development. This kind of development also results

[12] *Average monthly car costs estimated using the monthly car cost calculator provided by NerdWallet. Estimate based on data from Experian, AAA, the Bureau of Labor Statistics and the National Conference of State Legislators. www.nerdwallet.com/article/loans/auto-loans/total-cost-owning-car.*

Map 2.4
Households Without a Car



HOUSEHOLDS WITHOUT A VEHICLE

10 HOUSEHOLDS WITHOUT A VEHICLE

BASEMAP

PRELIMINARY ON-STREET ROUTE ALTERNATIVES

PRELIMINARY RAIL CORRIDOR ROUTE ALTERNATIVES

STUDY CORRIDOR (0.5 MILES)

AREAS OF INTEREST NEAR ROUTES

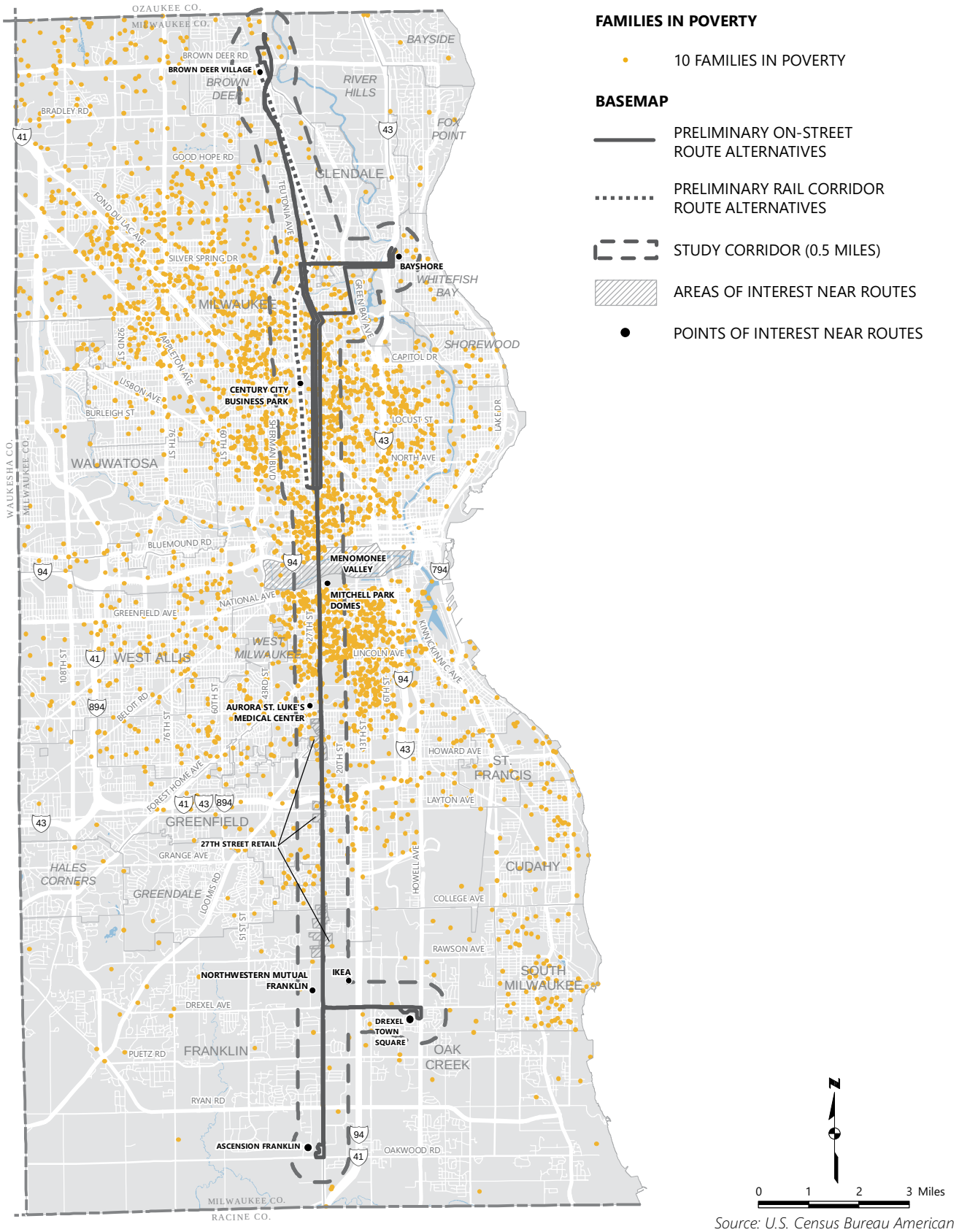
POINTS OF INTEREST NEAR ROUTES

N

0 1 2 3 Miles

Source: U.S. Census Bureau American Community Survey, 2014-2018 and SEWRPC

Map 2.5
Families in Poverty



FAMILIES IN POVERTY

- 10 FAMILIES IN POVERTY

BASEMAP

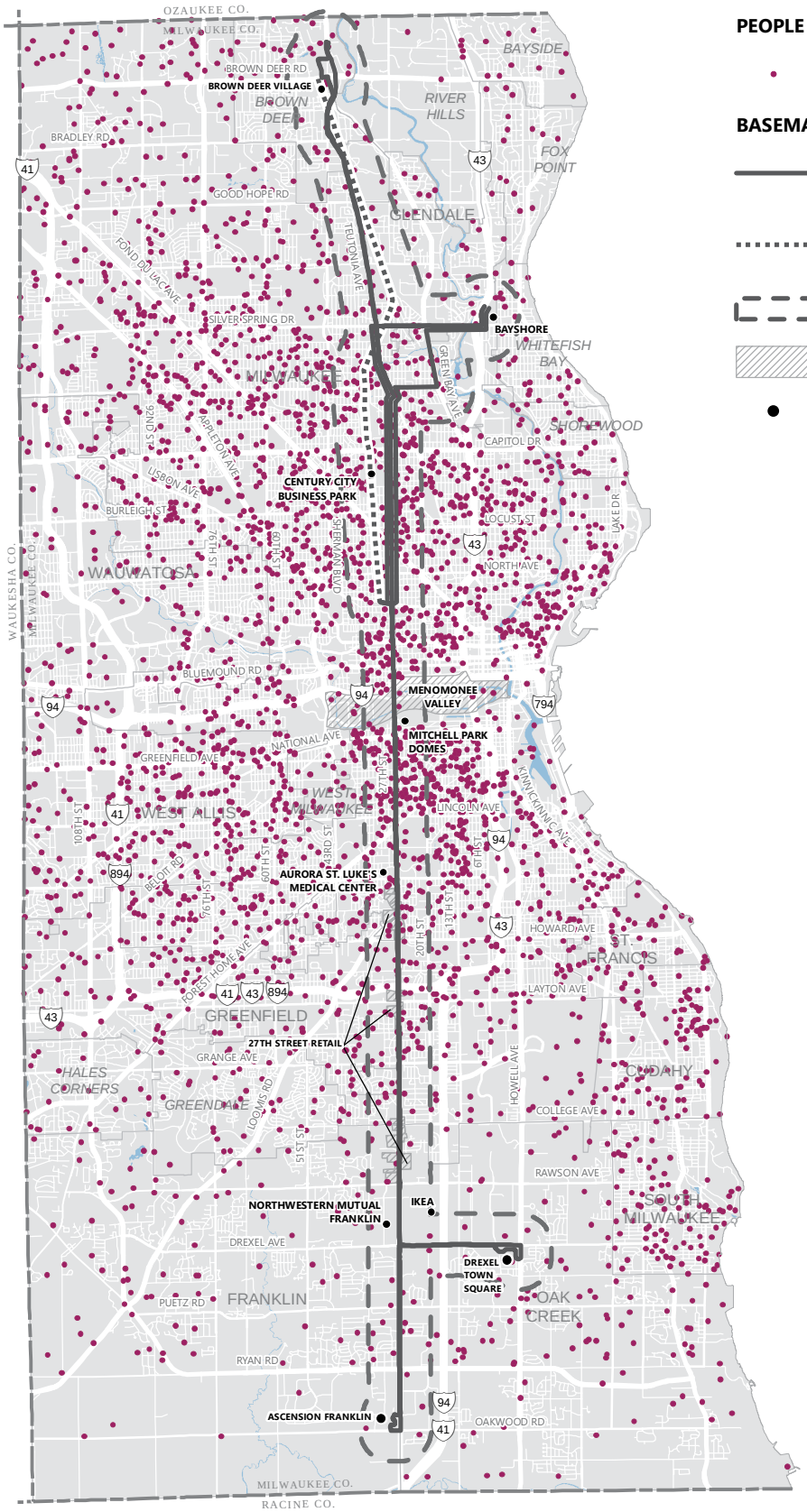
- PRELIMINARY ON-STREET ROUTE ALTERNATIVES
- PRELIMINARY RAIL CORRIDOR ROUTE ALTERNATIVES
- STUDY CORRIDOR (0.5 MILES)
- AREAS OF INTEREST NEAR ROUTES
- POINTS OF INTEREST NEAR ROUTES

N

0 1 2 3 Miles

Source: U.S. Census Bureau American Community Survey, 2014-2018 and SEWRPC

Map 2.6
People with Disabilities



PEOPLE WITH DISABILITIES

- 25 PEOPLE WITH DISABILITIES

BASEMAP

- PRELIMINARY ON-STREET ROUTE ALTERNATIVES
- PRELIMINARY RAIL CORRIDOR ROUTE ALTERNATIVES
- STUDY CORRIDOR (0.5 MILES)
- AREAS OF INTEREST NEAR ROUTES
- POINTS OF INTEREST NEAR ROUTES

N

0 1 2 3 Miles

Source: U.S. Census Bureau American Community Survey, 2014-2018 and SEWRPC

Table 2.3
Households Without a Car

	Total Households	Households Without a Car	Percent of Households Without a Car
Study Corridor[a]	58,417	12,214	21.1
Milwaukee County	382,070	52,231	13.7
Wisconsin	2,343,128	158,139	6.7
United States	119,730,128	10,424,934	8.7

[a] *Study Corridor defined by 0.5 mile buffer around preliminary route alternatives.*

Source: U.S. Census Bureau American Community Survey, 2014-2018 and SEWRPC

Table 2.4
Families in Poverty

	Total Families	Families in Poverty	Percent of Families in Poverty
Study Corridor[a]	34,003	8,620	25.3
Milwaukee County	215,024	32,691	15.2
Wisconsin	1,484,455	176,650	11.9
United States	322,903,030	45,529,327	14.1

[a] *Study Corridor defined by 0.5 mile buffer around preliminary route alternatives.*

Source: U.S. Census Bureau American Community Survey, 2014-2018 and SEWRPC

Table 2.5
People with Disabilities

	Total Population	People with Disabilities	Percent of People with Disabilities
Study Corridor[a]	153,575	22,958	14.9
Milwaukee County	954,209	121,326	12.7
Wisconsin	5,778,394	672,096	11.6
United States	322,903,030	40,071,666	12.4

[a] *Study Corridor defined by 0.5 mile buffer around preliminary route alternatives.*

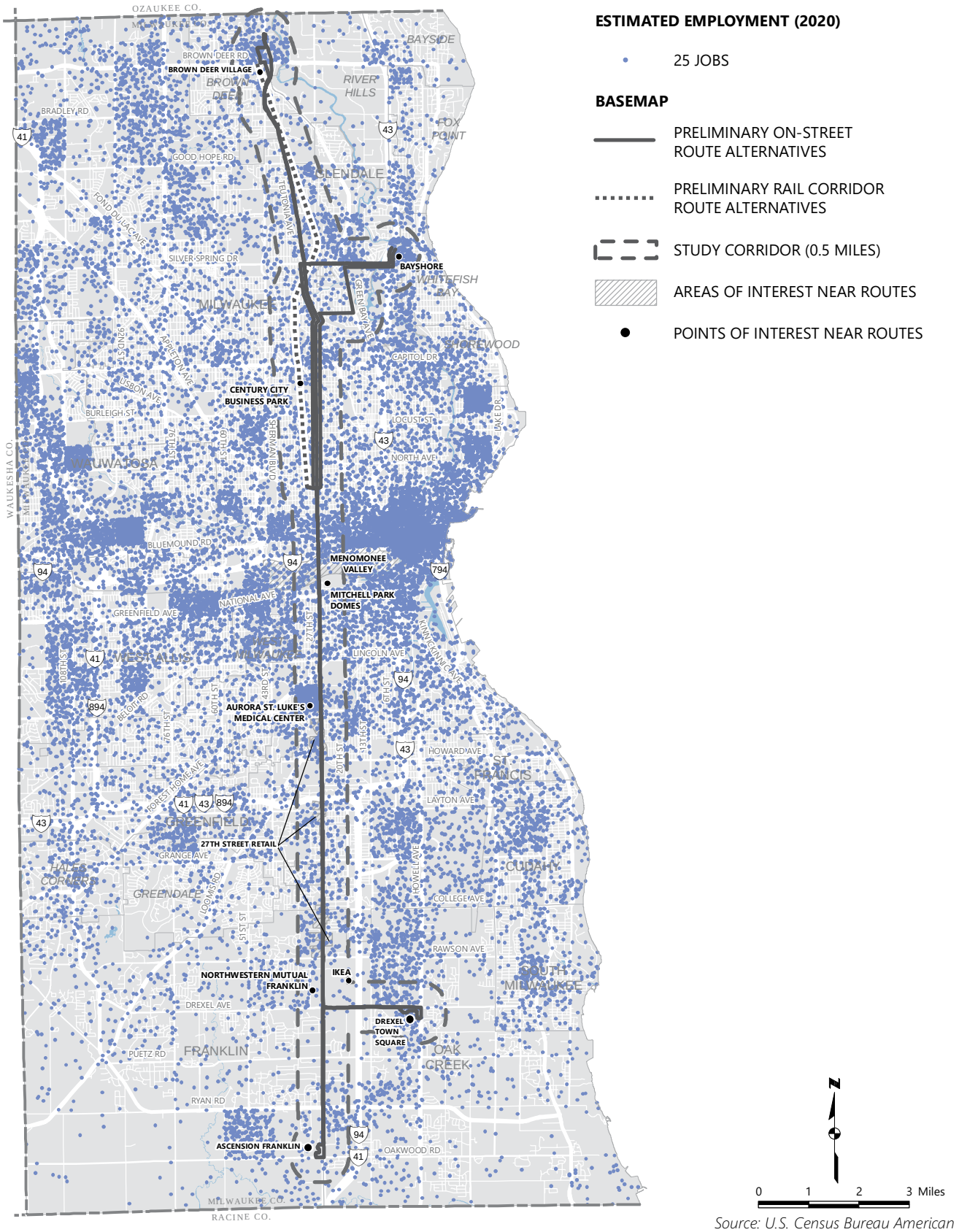
Source: U.S. Census Bureau American Community Survey, 2014-2018 and SEWRPC

in more efficient public infrastructure and services, lower energy use per household, and encourages active transportation that can improve public health. Common themes from feedback collected during the first round of public involvement for this study include the need for better pedestrian connections and land development patterns that are more conducive to walking and using transit.

Existing land use in the corridor is varied and diverse. Residential housing makes up just over one-third of the land area with about 10 percent multi-family and the remaining 25 percent single-family housing. The next four most common land use types in the corridor are transportation, communication, and utilities (23 percent), agricultural and other open lands (11 percent), commercial (8 percent), and industrial (7 percent). Map 2.9 shows the existing land use patterns. Commercial development, governmental, and institutional uses are located along a good portion of 27th Street, concentrated around intersections. Notable large developments in the corridor include:

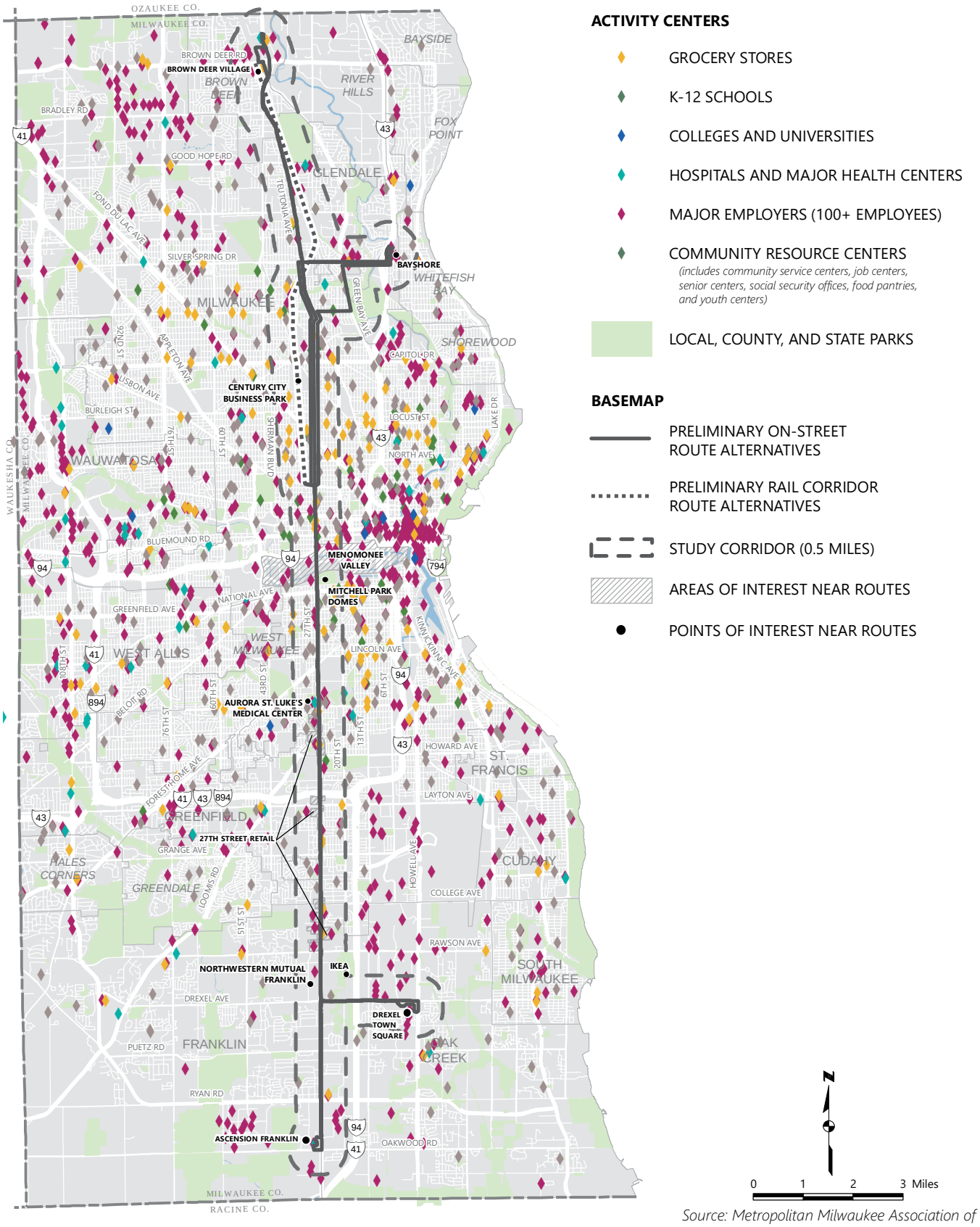
- Bayshore
- The Century City Business Park
- The Menomonee Valley industrial area, which, due to elevation differences, is not currently directly accessible from 27th Street

Map 2.7
Total Employment in the PurpleLine Corridor: Estimated 2020



Source: U.S. Census Bureau American Community Survey, 2014-2018 and SEWRPC

Map 2.8
Activity Centers



ACTIVITY CENTERS

- GROCERY STORES
- K-12 SCHOOLS
- COLLEGES AND UNIVERSITIES
- HOSPITALS AND MAJOR HEALTH CENTERS
- MAJOR EMPLOYERS (100+ EMPLOYEES)
- COMMUNITY RESOURCE CENTERS
  (includes community service centers, job centers, senior centers, social security offices, food pantries, and youth centers)
- LOCAL, COUNTY, AND STATE PARKS

BASEMAP

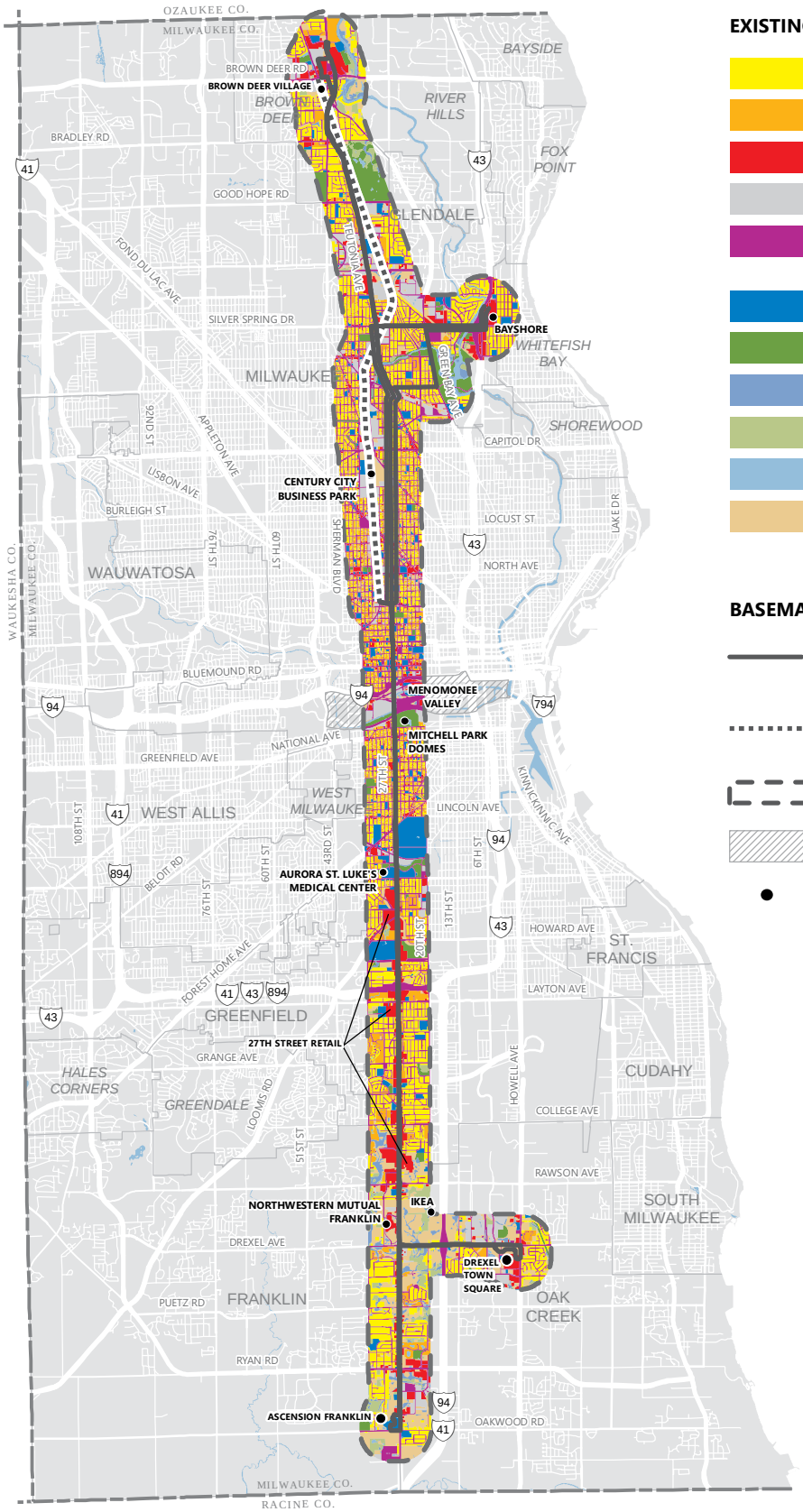
- PRELIMINARY ON-STREET ROUTE ALTERNATIVES
- PRELIMINARY RAIL CORRIDOR ROUTE ALTERNATIVES
- STUDY CORRIDOR (0.5 MILES)
- AREAS OF INTEREST NEAR ROUTES
- POINTS OF INTEREST NEAR ROUTES

N

0 1 2 3 Miles

Source: Metropolitan Milwaukee Association of Commerce, Milwaukee County, and SEWRPC

Map 2.9
Existing Land Use



EXISTING LAND USE (2015)

- SINGLE-FAMILY RESIDENTIAL
- MULTI-FAMILY RESIDENTIAL
- COMMERCIAL
- INDUSTRIAL
- TRANSPORTATION, COMMUNICATIONS, AND UTILITIES
- GOVERNMENT AND INSTITUTIONAL
- RECREATION
- WETLANDS
- WOODLANDS
- SURFACE WATER
- AGRICULTURAL, UNUSED, AND OTHER OPEN LANDS

BASEMAP

- PRELIMINARY ON-STREET ROUTE ALTERNATIVES
- PRELIMINARY RAIL CORRIDOR ROUTE ALTERNATIVES
- STUDY CORRIDOR (0.5 MILES)
- AREAS OF INTEREST NEAR ROUTES
- POINTS OF INTEREST NEAR ROUTES

N

0 1 2 3 Miles

Source: SEWRPC

- Aurora St. Luke's Medical Center, the largest hospital in Wisconsin and the largest employer in the corridor
- Commercial retail along both sides of 27th Street between W. Oklahoma Avenue and W. Rawson Avenue
- Northwestern Mutual's Franklin campus, another major employer in the area
- IKEA
- Drexel Town Square
- Ascension Southeast Wisconsin Hospital – Franklin Campus

Commercial development along 27th Street becomes more auto-oriented further south in the corridor beginning near W. Forest Home Avenue, with development becoming more suburban and exurban south of W. College Avenue, eventually having a rural development pattern south of W. Drexel Avenue.

In addition to encouraging new development, transit enhancement in the corridor has the potential to support recent investments and bolster on-going development and redevelopment efforts in the corridor that already include dense, mixed-use, and pedestrian-oriented development. Examples of these recent and on-going efforts in the corridor include:

- Redevelopment efforts in Brown Deer's Original Village neighborhood, which include multi-family housing, and pedestrian-oriented retail and commercial space.
- The continued redevelopment of Bayshore in the City of Glendale, including the addition of new multi-family apartments, a public square, and other mixed-use retail and commercial spaces.
- The on-going planning and redevelopment of the 30th Street Industrial Corridor, supported by the City of Milwaukee and led by a business improvement district (BID #37), which includes restoring the Garden Homes neighborhood (a historic, single family, dense, and walkable neighborhood), redeveloping the former A.O. Smith Campus to bring new manufacturing jobs to the area, and developing of a linear park along the 30th Street Rail Line, which will connect the inner city of Milwaukee to the Hank Aaron State Trail, the Oak Leaf Trail, and a future extension of the Beerline Trail.
- The current draft of the City of Milwaukee's Fond du Lac and North Area Plan recommends better bus shelters and waiting areas on the most highly used routes in the corridor. The plan is expected to be complete in the spring or summer of 2021.
- Pedestrian safety improvements by the City of Milwaukee along N. 27th Street, including a road diet that will add bike lanes and reduce vehicular travel lanes between W. Atkinson Avenue and W. Capitol Drive.
- Recent land purchase by the State of Wisconsin to develop a large office building on the corner of N. 27th Street and W. Wisconsin Avenue that could potentially support pedestrian-oriented retail.
- Continued revitalization of the Menomonee Valley—led by the Menomonee Valley Partners—to support existing and new industrial development in the corridor, bringing family-supportive jobs. The Menomonee Valley 2.0 Plan includes a recommendation to connect 27th Street to Canal Street via a ramp from the existing viaduct, which would create a new, accessible connection between the Valley and the study corridor.
- The City of Milwaukee's Southwest Side Plan recommends existing developments be retrofitted with accessible paths or sidewalks from the street to retail destinations and safe pedestrian crossings in the corridor.

- The City of Greenfield's Comprehensive Plan includes recommendations for retail and commercial development closer to S. 27th Street, with parking on the side or rear of buildings, improving pedestrian connectivity to transit stops; add multifamily housing in the corridor; and improve bicycle and pedestrian accommodations.

- The City of Oak Creek's Draft Comprehensive Plan includes recommendations to expand public transit, enhance bicycle and pedestrian connections to commercial areas, and create mixed-use development near the intersection of W. Drexel Avenue and S. 27th Street.

- The City of Franklin's Comprehensive Plan recommends improving transit, bicycle, and pedestrian accommodations in the corridor, and developing commercial and retail areas north of W. Rawson Avenue along S. 27th Street.

Equitable Growth and Development

While a transit enhancement could encourage development that both supports and is supported by transit, it will be important to ensure that development and redevelopment efforts are benefiting existing residents and businesses and prevent displacement due to increasing property values. The City of Milwaukee's Moving Milwaukee Forward effort provides a neighborhood framework for catalyzing equitable transit-oriented development (TOD) through the future expansion of the Milwaukee Streetcar system to the Bronzeville and Walker's Point neighborhoods.[13] The plans that have resulted from this effort include a set of strategies that could be applied to the 27th Street corridor in conjunction with future phases of this project.

Project Need 5: Improve the Balance of Multimodal Transportation Options to Enhance Safety for All Users

Reckless driving in Milwaukee County is a significant risk to the health and safety of the community and requires multi-faceted solutions in engineering and design, public education, and accountability. Common themes from public feedback collected during the first round of public involvement for this study included the need to address pedestrian safety concerns, particularly related to reckless driving. Transit users rely on pedestrian and bicycle infrastructure to get to and from stations, including the presence of frequent and safe crossing opportunities and connections to destinations. Further, investments in safe, walkable and bikeable infrastructure support transit use, can help attract new transit riders, and improve safety by shifting the primary focus of a roadway away from car travel toward multimodal travel.[14]

All transit users begin and end their trip as a pedestrian, and pedestrian safety in the study corridor is a significant concern. Between 2015 and 2019, 722 crashes involving pedestrians—25 percent of the pedestrian crashes in Milwaukee County—occurred within the study corridor, even though the corridor makes up about 12 percent of the land area in the County.[15] Of the 722 pedestrian crashes in the corridor, 32 were fatal and 109 resulted in a serious injury—representing 30 percent of the fatal pedestrian crashes and 24 percent of the serious injury pedestrian crashes that occurred in Milwaukee County during that time. Most pedestrian crashes in the corridor are located in the central segment between Silver Spring Drive and Howard Avenue—areas with the highest population density, the highest transit boardings and alightings, and the highest concentrations of people of color and low-income families. The location and severity of pedestrian crashes is shown on Map 2.10.

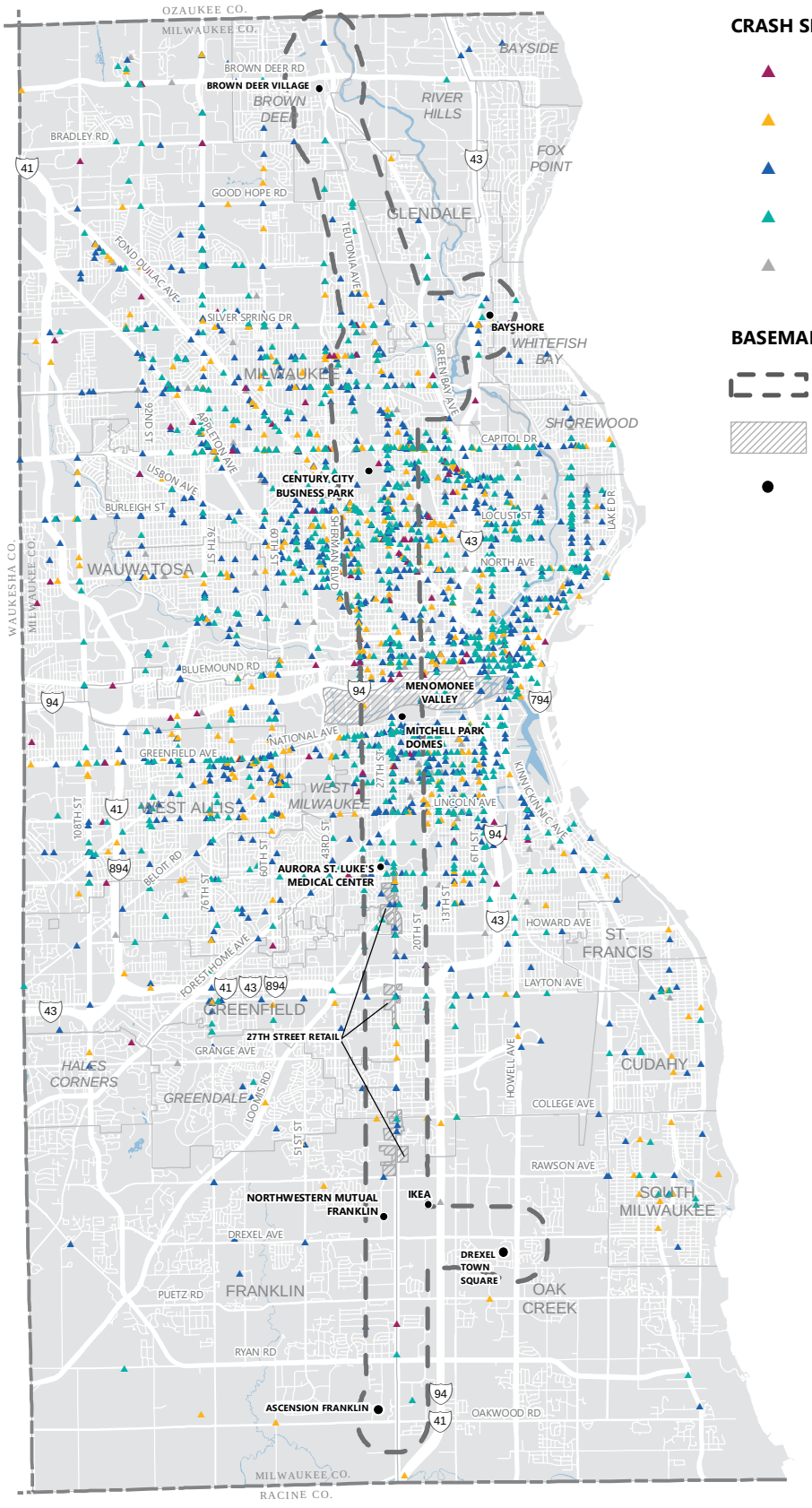
The City of Milwaukee's Pedestrian Plan, completed in July 2019, documented pedestrian volumes at intersections throughout the city, which were used to estimate counts and develop crash rates for crashes involving pedestrians. Naturally, there is a higher likelihood that crashes involving pedestrians will occur in areas where there are more pedestrians present. The analysis found that that the N. 27th Street corridor between W. Walnut Street and W. Capitol Drive had the second highest crash rate and the S. 27th Street corridor between W. National Avenue and W. College Avenue had the seventh highest crash rate of all

[13] Equitable Growth through Transit Oriented Development: A Neighborhood Plan for Historic Dr. Martin Luther King Jr. Drive *(FINAL REPORT) and* Equitable Growth through Transit Oriented Development: A Neighborhood Plan for Walker's Point (FINAL REPORT). *city.milwaukee.gov/DCD/Planning/PlansStudies/Plans/MovingMKEForward.*

[14] *Transit Street Design Guide, National Association of City Transportation Officials (NACTO), 2016.*

[15] *Pedestrian crashes defined as crashes between at least one pedestrian and one vehicle.*

Map 2.10
Pedestrian Crashes: 2015-2019



CRASH SEVERITY

- FATAL
- SERIOUS INJURY
- NON-SERIOUS INJURY
- SUSPECTED INJURY
- NON-INJURY

BASEMAP

- STUDY CORRIDOR (0.5 MILES)
- AREAS OF INTEREST NEAR ROUTES
- POINTS OF INTEREST NEAR ROUTES

Source: TOPS Lab and SEWRPC

corridors in the city between 2012 and 2016. A good portion of the study corridor was also included in the Pedestrian High Injury Network identified in the plan, which represents streets with a high concentration of severe pedestrian injuries and deaths. Figure 2.2 shows maps from the City of Milwaukee Pedestrian Plan, which display estimated pedestrian crash rates and the Pedestrian High Injury Network identified in the plan. The plan includes a series of recommendations, some of which could be incorporated into transit station design for a transit enhancement in this corridor.

Among several recommendations included in its Activities, Findings, and Recommendations Report, the City-County Carjacking and Reckless Driving Task Force recommends increasing the availability of public transit, investing in road diets, and separating vulnerable users by providing a separate and protected space for people walking, biking, and taking transit. An enhanced transit investment in this corridor could improve safety by incorporating pedestrian-oriented design around stations, providing traffic calming measures through the addition of transit-only travel lanes (reducing the width or number of general travel lanes), and addressing perceptions of safety risks related to using public transit.

Project Need 6: Invest in Environmentally Sustainable Options that are Consistent with Local and Regional Plans

Enhanced public transit has the potential to reduce single occupancy vehicle travel and support more compact development—which would reduce greenhouse gas (GHG) emissions and dependence on fossil fuels. An investment in enhanced transit in the corridor would also provide an opportunity to select no or low emission vehicles, station amenities, and other operations equipment that further reduces the environmental impact of transit and takes advantage of the latest in transportation technology.

Technology alternatives being considered for enhanced transit in this corridor include BRT, streetcar, or light rail, all of which have the potential to reduce emissions by increasing ridership and reducing single-occupancy vehicle travel and improving energy efficiency when compared to the existing PurpleLine.

Transit Vehicles and Station Amenities

Milwaukee County Board of Supervisors has already taken steps to reduce fossil fuels on the MCTS bus fleet by implementing a pilot program and purchasing up to 15 battery electric buses, 11 of which will be used on the East-West BRT line, which is expected to begin service in 2022. Streetcars used on The Hop run entirely on electric power provided by lithium-ion batteries and overhead catenary wires. Light rail vehicles are typically electric powered by overhead catenaries and can also be supported by batteries. Any of these vehicle options would likely reduce GHG emissions when compared to existing transit in the corridor.

Station design also offers the opportunity to select environmentally sustainable options, such as solar powered lighting, the use of environmentally friendly materials, and trash and recycling receptacles.

Operational Impacts to Energy Use

Enhanced transit operation in the corridor will likely include several operational improvements that have the potential to improve energy efficiency, including:

- Signal priority, which will reduce idling at signals
- Dedicated travel ways, which will reduce idling and acceleration due to congestion
- Fewer stops, reducing energy expended to accelerate
- Off-board ticketing and level boarding, which will reduce dwell time (idling) at stops

Enhanced service would also attract new riders, increasing ridership and reducing energy use per rider especially when compared to single occupancy automobile travel.

Environmental impacts will be evaluated in the alternatives analysis, including comparing each alternative's effect on vehicle miles traveled (VMT) and associated air pollutants, greenhouses gases and energy usage.

Figure 2.2
Maps Showing Pedestrian Crash Rates and the Pedestrian High Injury Network from the City of Milwaukee Pedestrian Plan

Figure 9. Estimated pedestrian crash rates in the City of Milwaukee, 2012-2016

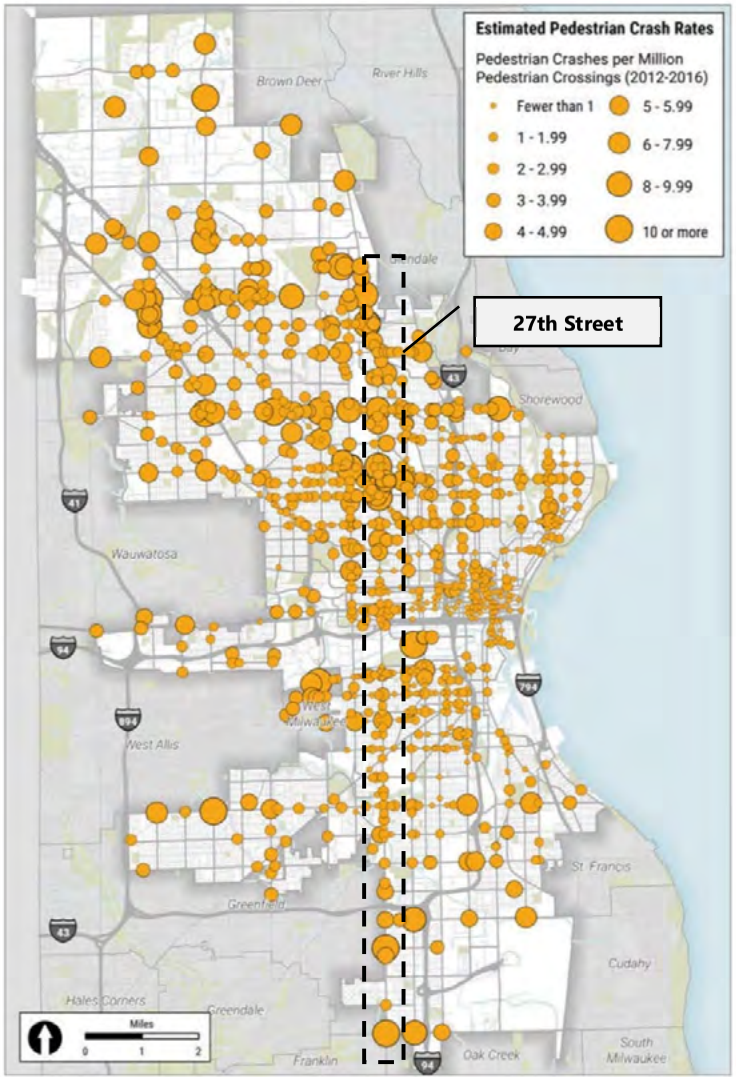
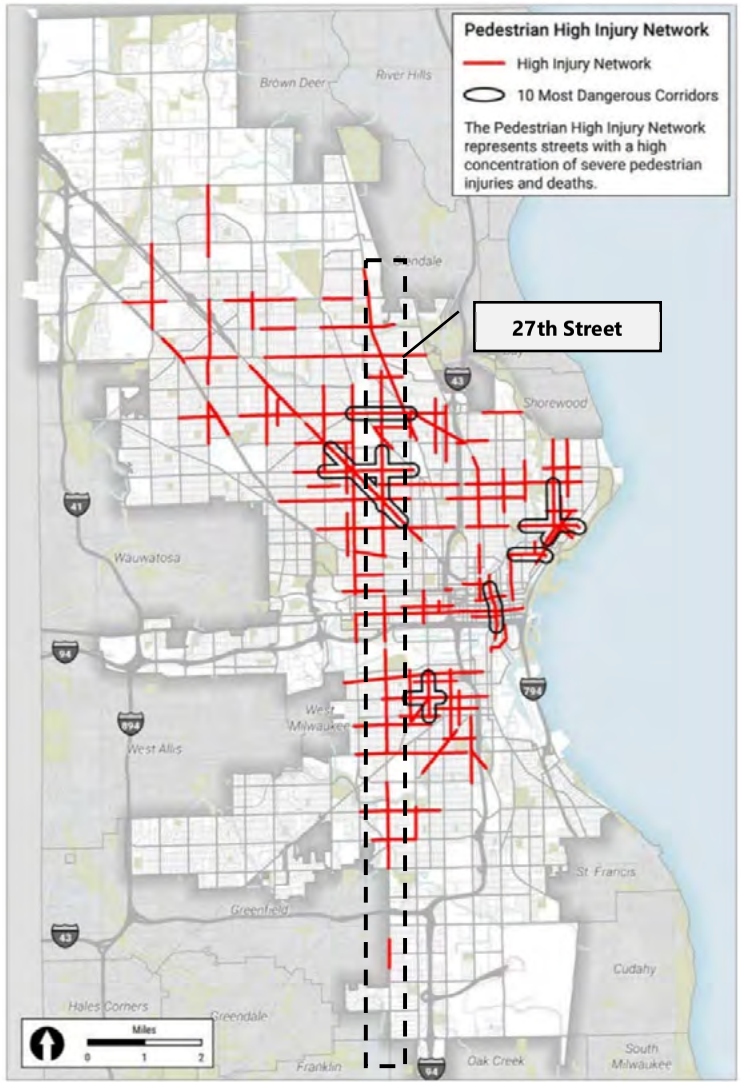


Figure 10. Pedestrian high-injury network



Source: City of Milwaukee Pedestrian Plan, July 2019.

GOALS AND OBJECTIVES 3

Figure 3.1 shows the goals and objectives established for the North-South Transit Enhancement Study. Goals describe the desired outcome to achieve the project needs, and the objectives describe the specific actions required to meet the goals. Goals and objectives guide the evaluation criteria used in comparing the alternative transit investment options for the corridor.

Figure 3.1
Project Goals and Objectives

Goals	Objectives
Provide improved access to underserved residents in the corridor with an enhanced, efficient, and convenient transportation option. *(Refer to needs 1, 2, 3, 4)*	1. Provide transit service with routes and stations that prioritize access to jobs, essential services, and activity centers 2. Provide enhanced transit service to maximize the number of underserved residents who live within 0.5 miles of stations 3. Provide a transportation option that is more affordable than car travel with relatively competitive travel times 4. Provide more frequent service to reduce wait time at stations 5. Provide safe pedestrian connectivity to stations, especially in areas with high pedestrian crash rates
Provide transit that is a viable, attractive alternative to driving. *(Refer to needs 1, 4, 5, 6)*	Decrease transit travel times and improved reliability in the following ways: 1. Implement transit signal priority (TSP) and reduce the number of stops to decrease transit travel time 2. Provide dedicated transit travel lanes where possible 3. Provide off-board ticketing 4. Build stations that provide level boarding for faster on-boarding of mobility devices, strollers, carts, and bicycles Increase attractiveness and ridership in the following ways: 1. Improve transit service amenities to retain current riders and attract new riders 2. Accommodate first and last mile connections via other modes, such as roll-on bike storage infrastructure, at-station bike share services, and transfers to employment shuttles 3. Improve stations with amenities such as weather protection, seating, and safety provisions
Develop a preferred alternative that will be supported by the community and that is financially sustainable within the expected transit funding. *(Refer to needs 1, 6)*	1. Select an alternative with public and stakeholder support 2. Ensure capital costs can be funded with existing or reasonably expected local, state and federal resources 3. Ensure operating costs fit within the anticipated transit budget and do not negatively impact the ability to operate existing transit service
Deliver an environmentally sustainable transportation option that will increase ridership and reduce single occupancy vehicle trips. *(Refer to needs 4, 6)*	1. Consider alternative fuels and efficient vehicles/locomotives that will reduce greenhouse gas emissions in the corridor 2. Implement operational improvements—such as TSP, dedicated transit travel lanes, off-board ticketing, and level boarding—that will reduce energy use through more consistent vehicle speed and reduced transit vehicle dwell time

Source: SEWRPC

EVALUATION CRITERIA 4

The evaluation criteria provide the metrics by which the alternative investment options will be compared. An incremental evaluation process, following three steps, will progress to the final phase of the analysis of a recommended alternative. This evaluation is consistent with the FTA's Capital Investment Grant Program evaluation criteria.

- The first step (Tier 1 Evaluation) will define the alternatives to be evaluated, including the transit technology and the identification of alignment options.

- The second step (Tier 2 Evaluation) will further evaluate the alternative alignments defined in step one and define station locations along the alignments, using the evaluation criteria outlined in the table below. This evaluation step may result in the elimination of some of the alternatives considered.

- The third step builds upon the/those alternative(s) that remain(s) under consideration after the second step. Any remaining alternative(s) will be evaluated against federal criteria for transit projects to determine if refinements should be made. At the conclusion of the further refinement in the third step (Tier 3), the recommended alternative(s) will be identified.

The evaluation criteria associated with each step above involve a combination of quantitative and qualitative analyses.

- The Tier 1 Evaluation will apply fewer and broader measures, including information from previous corridor/area studies. The analysis will largely rely on order-of-magnitude estimates and the outcomes of similar transit projects from around the country.

- The Tier 2 Evaluation will apply more detailed and alternative-specific evaluation results.

- The Tier 3 Evaluation will evaluate the preferred alternative(s) against federal criteria to identify and refine the recommended alternative.

This three-step process will result in the identification of an recommended alternative that not only meets locally-identified project purpose and needs, but is also competitive for federal funding. Figure 4.1 defines the criteria at each step of the three-phased evaluation process.

Figure 4.1
Phased Evaluation Criteria

Project Goals	Tier 1 Evaluation *(qualitative)*	Tier 2 Evaluation *(qualitative and quantitative)*	Tier 3 Evaluation *(qualitative and quantitative)*
Provide underserved residents in the corridor with an improved, efficient, and convenient transportation option. *(Refer to needs 1, 2, 3, 4)*	• Typical Ridership Capacity • Service Reliability	• Ridership • Transit Travel Times	• Mobility Improvements[a]
Improve access for underserved neighborhoods. *(Refer to needs 2, 3, 4)*	• Demographics of Areas Served • Employment	• Demographics • Employment • Ridership	• Mobility Improvements
Provide transit that is a viable, attractive alternative to driving. *(Refer to need 1)*	• Commute Times • Service Reliability • Per Mile Capital Cost	• Ridership • Transit Travel Times • Capital, Operating and Maintenance Costs • Cost Effectiveness	• Cost Effectiveness • Mobility Improvements
Manage travel demand in the corridor. *(Refer to needs 4, 5, 6)*	• Connectivity Between Population and Employment Centers	• Parking Impacts • Potential Right-Of-Way Impacts • Bicycle and Pedestrian Impacts	• Mobility Improvements
Develop a recommended alternative that will be supported by the community and that is financially sustainable within the expected transit funding. *(Refer to needs 1, 6)*	• Per-Mile Capital Cost • Supported by Community Public Comments	• Capital, Operating and Maintenance Costs • Cost Effectiveness • Community Support	• Financial Capacity Analysis • Cost Effectiveness
Deliver an environmentally sustainable transportation option. *(Refer to needs 4, 6)*	• Environmental Impacts and Benefits	• Land Use • Environmental Impacts and Benefits • Bicycle and Pedestrian Impacts	• Land Use • Environmental Impacts and Benefits

[a] *Mobility Improvements defined as estimated annual trips (trips by non-transit dependent persons plus trips by transit dependent persons multiplied by 2) per the* Final Interim Policy Guidance, Federal Transit Administration Capital Investment Grant Program, *June 2016. www.transit.dot.gov/sites/fta.dot.gov/files/docs/FAST_Updated_Interim_Policy_Guidance_June%20_2016.pdf.*

Source: SEWRPC

Prepared for: