

MEMORANDUM

December 21, 2021

To: Jessica Wineberg and Therese Gripentrog, and members of the Community Advisory Committee

From: Sonia Haeckel, Sara Schooley, Jacob Stein

Project: Northwest Trails Connections Plan

Re: Existing Conditions and Context Memorandum (Revised)

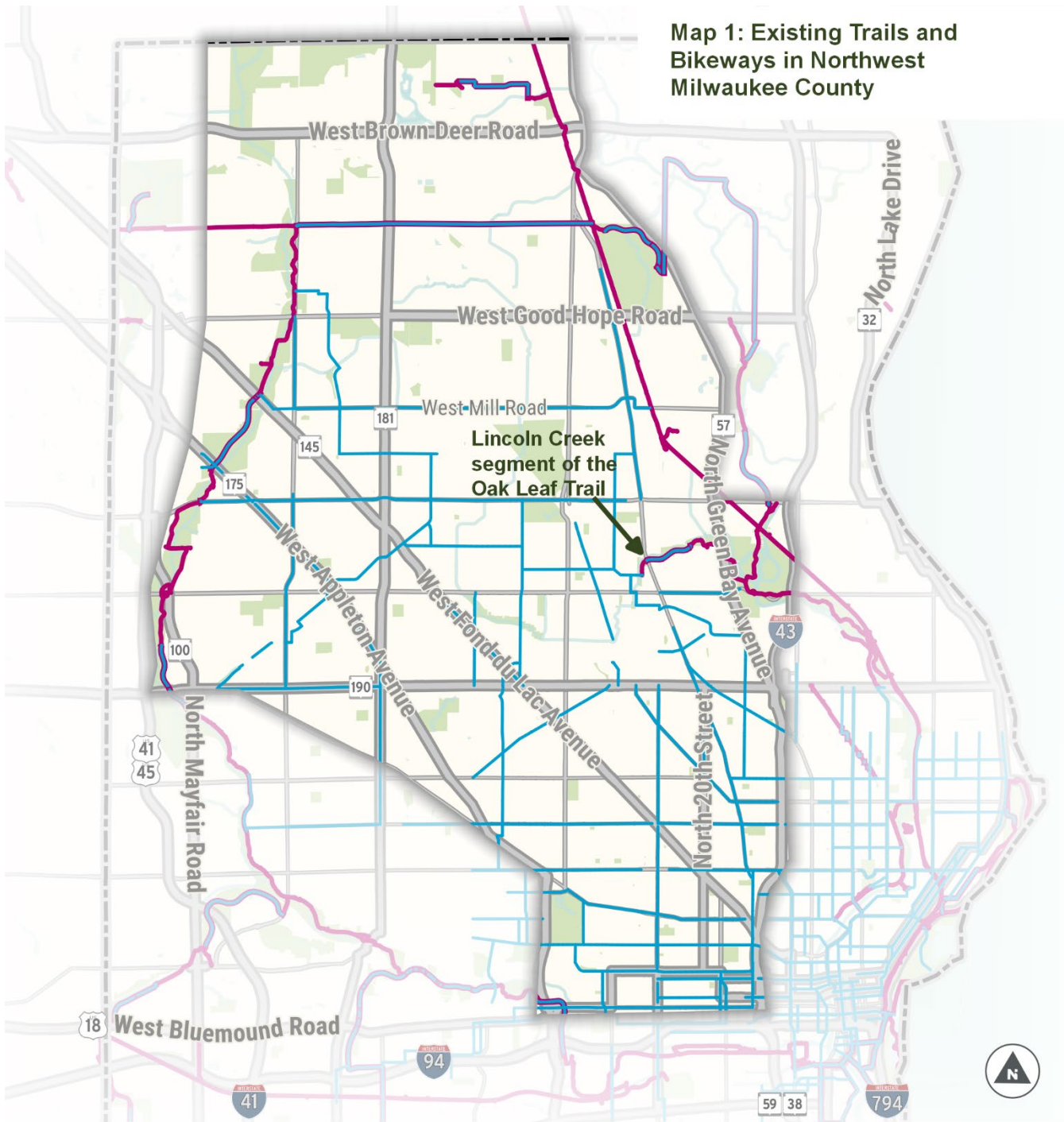
This memorandum provides an introduction to the Northwest Trails Connection Plan (Plan), an overview of Milwaukee County's (County) existing trails and previous trail planning efforts, and the political and social context for this effort. Next, this memo looks at potential opportunities for future trails along Lincoln Creek and throughout the northwest side of the County, and concludes with a toolbox of some of the biking and walking facilities that the final Plan will likely include.

Introduction to Northwest Trails Connections Plan

The Milwaukee County Park System is one of Wisconsin's crown jewels – a network of over 150 parks encompassing 15,000 acres spread throughout Milwaukee County and along the Lake Michigan shoreline. The 135 mile Oak Leaf Trail—a system of paved trails, park drives, and municipal streets—ties together many of these parks and dozens of neighborhoods, villages, and cities throughout the County. Supplemented by local municipal trails like City of Milwaukee's Beerline, the trail network is easily accessible to and heavily used by tens of thousands of Milwaukee County residents. However, many neighborhoods, particularly majority-Black neighborhoods, are not directly connected to the trail network, and, as a result, many of these residents cannot easily and safely access the trails or take advantage of the amenities they connect to. The Lincoln Creek segment of the Oak Leaf Trail is short—extending approximately from Lincoln Park to Teutonia Avenue—and it is currently not well connected to the other Oak Leaf Trail lines. Map 1 displays the existing trails and bikeways in northwest Milwaukee, and a black dashed line showing the focus area for this planning effort.

The Northwest Trails Connections Plan will begin to address the inequitable access to trails and identify future trails and connections in northwest Milwaukee and surrounding areas. During the planning process, we will work with residents and stakeholders to better understand how to improve the trail system in the area and how to better connect residents to parks, employment and commercial areas, trails, and other nearby amenities. The final Plan will present a vision for walk and bike connectivity in northwest Milwaukee and the surrounding area and prioritize specific projects for implementation based on equity considerations, input from the public, feasibility, and other factors.

Map 1: Existing Trails and Bikeways in Northwest Milwaukee County



Existing Trails and Bikeways

- Off-Street Trail
- On-Street Segment of Oak Leaf Trail
- Other On-Street Bikeways

Plan Study Area
(Shown on this Map Only)

0 1 2 mi

TOOLE
DESIGN



Sources: Milwaukee County Parks; SEWRPC; and City of Milwaukee

Why Trails Are Important: The Case for Investing in Trail Connections in Northwest Milwaukee

Trails improve the health and well-being, quality of life, economic growth, and economic and social accessibility for people who live near them. Relatively modest investments in trails can bring significant payoffs for the community, especially if they are planned and prioritized with equity in mind.

Health and Well-Being

Access to trails has numerous impacts on health. According to the Centers for Disease Control and Prevention (CDC), having access to places for physical activity, such as parks and trails, encourages community residents to participate in physical activity and do so more often. The closer you live to a park, the more likely you are to walk or bike to those places and use the park for exercise.¹ Many health organizations recommend walking for physical activity because it is widely accessible and relatively low impact. Daily exercise, such as walking, has been shown to help people maintain weight, manage chronic diseases, strengthen bones and muscles, improve mental health and mood, and increase life expectancy.² In the City of Milwaukee, 29% of adults report no leisure time physical activity in 2018.³

Trails can also reduce community healthcare costs. A report by the Greater Washington Partnership into the benefits of finishing construction of the Baltimore Greenway Trails Network states that increase in walking and biking trips that the finished greenway would create as well as the lowering of vehicle miles driven as a result of the new car trips, could potentially lower the healthcare costs to Baltimore residents by \$2.4 million annually.⁴ A 2010 University of Wisconsin study of the economic impacts of bicycling found that replacing 20 percent of short car trips with bicycle trips in the cities of Madison and Milwaukee would result in \$85.8 million in benefits from reduced fine particulates.⁵

Indirectly, off street trails, such as much of the Oak Leaf Trail system, prevent injuries to people walking and biking by providing a safer facility than streets. People walking are the most vulnerable users of the street and are at the highest risk for injury in a crash involving a motor vehicle. Off-street trails can nearly eliminate conflicts between people walking and biking and those in vehicles.

Disparities in Trail Access in Northwest Milwaukee

The COVID-19 pandemic has further exposed and exacerbated the racial disparities for both health and economic mobility in Wisconsin, and especially in Milwaukee. Milwaukee County Executive David Crowley has placed a high priority on improving health and well-being, and reducing Milwaukee's racial disparities. He recently set a County goal to make Milwaukee the "Healthiest County in Wisconsin."⁶ The County Board of Supervisors also passed a resolution on July 13th, 2021 supporting trail equity in north central Milwaukee, stating that the Board encourages the development of the 30th Street Corridor, and investing in trail extensions as identified in this planning effort because "a large portion of residents in north-central Milwaukee County tend to be persons of color

¹ Center for Disease Control and Prevention. *Parks, Trails and Health*. Retrieved August 18, 2021 from <https://www.cdc.gov/healthyplaces/healthtopics/parks.htm>

² Center for Disease Control and Prevention. *Physical Activity and Health: The Benefits of Physical Activity*. 2011

³ Center for Disease Control and Prevention. *PLACES: Local Data for Better Health* (2018 estimates). Retrieved August 18, 2021 from <https://www.cdc.gov/places/>

⁴ Greater Washington Partnership. *Economic and Social Benefits of Completing the Baltimore Greenway Trails Network*. 2020. Retrieved 19 August 2021, from https://greaterwashingtonpartnership.com/wp-content/uploads/2020/11/Baltimore-Greenway-Report_Final_Digital.pdf.

⁵ Grabow, M., M. Hahn, and M. Wited. *Valuing Bicycling's Economic and Health Impacts in Wisconsin*. 2010. The Nelson Institute for Environmental Studies Center for Sustainability and the Global Environment at University of Wisconsin-Madison.

⁶ Crowley, David. *Achieving Racial Equity*. Milwaukee County Executive Priorities. Retrieved August 18, 2021 from <https://county.milwaukee.gov/EN/County-Executive/Priorities/Achieving-Racial-Equity>

and lack access to a dedicated bicycle trail...to address trail inequities and to support the development of trails on the northwest side of Milwaukee County."

Currently, there are large disparities in proximity to trails between neighborhoods in Milwaukee. The Rails to Trails Conservancy released a report in 2017 called *Reconnecting Milwaukee* that drew attention to this disparity. They identified neighborhoods on the northwest and south side of Milwaukee that had the highest rates of population under the poverty, unemployed population, low level of education, high percent of zero-car households, and high African-American and Hispanic population. Only three percent of Milwaukee residents in those neighborhoods live within a half-mile of a trail.⁷

For this Plan, we will be mindful of the disparity in trail access, and measure them for the existing trails and the final recommended trail network. The existing racial and socioeconomic disparities in trail access are shown in Table 1. There are about 278,000 people living the study area, based on the 2010 Census; most (68%) are Black.

- **Walking Distance to Trails.** Only 7% of the people in the study area live within walking distance (1/2 mile) of a trail access point, and only 33% of the people in the study area live within biking distance of a trail access point. White residents are almost three times more likely to live within walking distance than Black residents in the study area.
- **Biking Distance to Trails.** Only 33% of the people in the study area live within biking distance (1.5 miles) of a trail access point. White residents are also more likely to live within biking distance than Black residents in the study area.

Table 1: Racial Disparities in Access to Existing Trails in Study Area

Population Categories	Study Area	
Total Population (2010 Census)	278,000	(100%)
Racial Composition of City and Study Area		
Asian	15,000	(5%)
Black	188,000	(68%)
American Indian & Pacific Islander	1,000	(0%)
Other Race	8,000	(3%)
White alone, not Hispanic	52,000	(19%)
Hispanic	14,000	(5%)
Population in Poverty in Study Area	77,000	(28%)
Walking Distance to Existing Trails		
All residents living within ½ mile of existing trail access point	19,600	(7%)
Black (% of all Black pop.)	10,000	(5%)
White alone, not Hispanic (% of all White pop.)	7,000	(14%)
People living in poverty (% of pop. in poverty)	3,000	(4%)
Biking Distance to Existing Trails		
Residents living within 1.5 miles of existing trail access point	92,000	(33%)
Black (% of all Black pop.)	56,000	(30%)
White alone, not Hispanic (% of all White pop.)	24,000	(47%)
People living in poverty (% of pop. in poverty)	20,000	(26%)

⁷ Rails to Trails Conservancy. *Reconnecting Milwaukee: A BikeAble™ Study of Opportunity, Equity and Connectivity*. 2017 Retrieved August 18, 2021 from <https://www.railstotrails.org/our-work/trailnation/route-of-the-badger/reconnecting-milwaukee/>

Economic Development

Trails positively impact the economy by providing a greater return on investment than other kinds of transportation investments. A study commissioned by the American Association of State Highway and Transportation Officials found that investments in trails, walking and biking facilities create more jobs than any other transportation investment per million dollars spent. Figure 1 shows the breakdown of job creation from the report.⁸ In fact, an examination of the economic and social benefits of finishing construction of the Baltimore Greenway Trails Network showed that the \$28 million dollars they were spending on the trails would produce \$48 million dollars in terms of work in the community, the equivalent of 248 full time jobs for a year. It would also produce 1,163 jobs worth of local business activity (\$113 million dollars).⁹

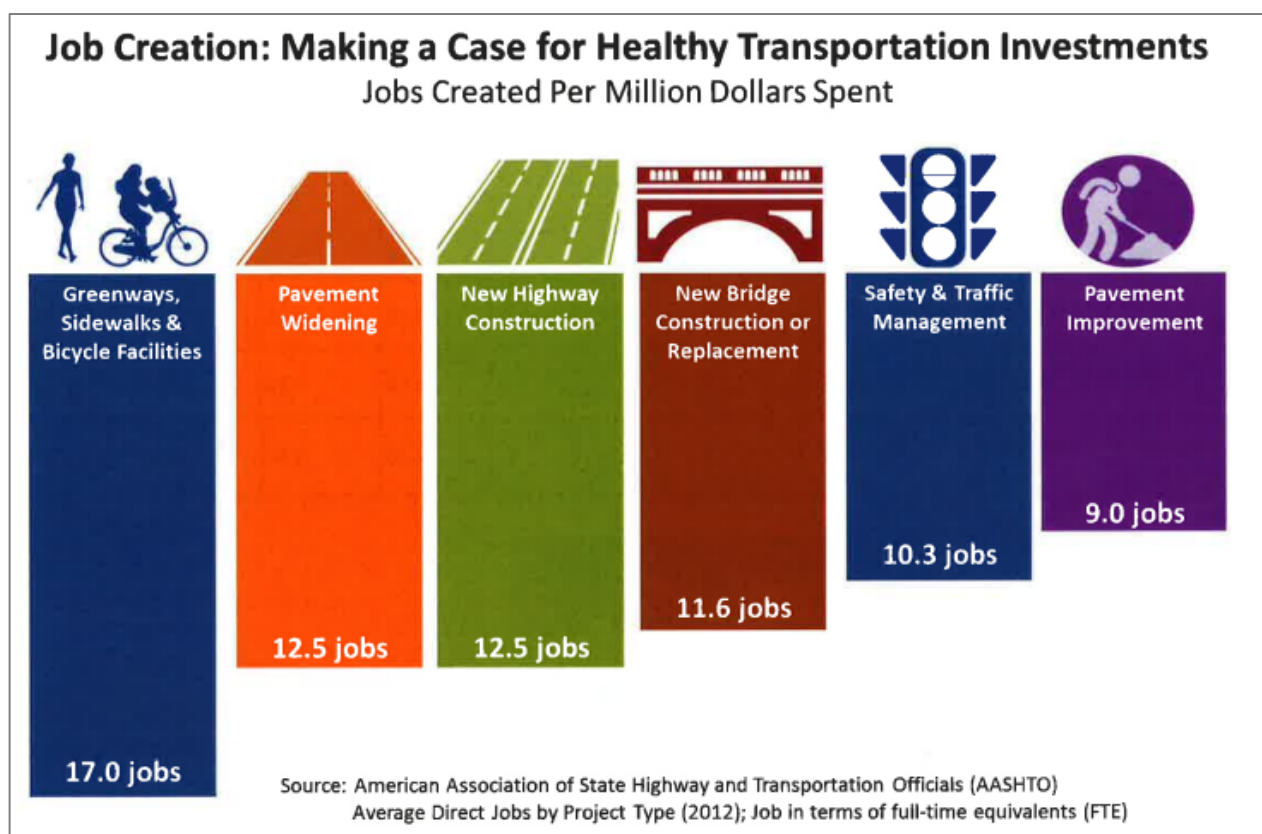


Figure 1: Number of Jobs Created per Million Dollars of Transportation Investments

⁸ The League of American Bicyclists. "Bicycling and Walking Projects Create More Jobs Per Million Dollars" Retrieved 19 August 2021, from https://bikeleague.org/sites/default/files/NBS17_Job_Creation_Fact_Sheet.pdf

⁹ Greater Washington Partnership. *Economic and Social Benefits of Completing the Baltimore Greenway Trails Network*. (2020). Retrieved August 19, 2021, from https://greaterwashingtonpartnership.com/wp-content/uploads/2020/11/Baltimore-Greenway-Report_Final_Digital.pdf.

Travel Choices to Jobs, School, or other Destinations

Improving active transportation infrastructure helps widen choice and access to jobs and destinations. About 41% of Milwaukee County households have only one vehicle.¹⁰ Improved bicycle and pedestrian conditions give people greater options, and reduces reliance on vehicle ownership as essential to getting around safely.

Additionally, 13% of County households lack any vehicle at all. While such households comprise a smaller proportion of the population, they have limited access to jobs and destinations. Providing alternative transportation options for these households will help them find and keep jobs while also ensuring that businesses keep workers.

What about Gentrification and Displacement?

When trails are proposed or built that could increase property values in hard-hit communities, community leaders should ensure the benefits of trails are distributed equitably. In Atlanta, the BeltLine has been lauded for the creation of 22 miles of trails and linear parks. However, rising home prices, coupled with minimal efforts to maintain housing affordability and limited access to affordable housing nearby, have priced many people out of the area as the BeltLine is developed.¹

The primary negative effect of this gentrification is the displacement of residents, especially those in under-resourced areas that could gain the most from investments. Tools that help mitigate this displacement include:

- *Creating cultural corridors.* Cultural corridors incorporate permanent and temporary art installations that uplift the cultural heritage of the surrounding area. This tool will not prevent physical displacement but addresses the cultural erasure that can occur with gentrification.
- *Require Community Benefits Agreement (CBA) for new development.* A CBA is a legally binding agreement negotiated between a developer and the surrounding community. It is specific to each community and benefits from a strong coalition of organizations representing a variety of stakeholders. If the CBA negotiations are led by the local government, it is important to ensure it is instituted early in the development process and the community organizations maintain a strong voice.
- *Building coalitions to combat gentrification.* Inclusive planning is important to ensure that projects have the input of the community and therefore are more likely to include elements that will help stop displacement, such as financial support of community organizations. If the implementing agency has an existing working partnership with community groups prior to any trails or park development project, then a larger plan to address not just the direct effects of the trail but also the potential changes in housing costs or business development can be crafted. Partnerships can be grown by supporting community organizing, identifying mutual goals and values, and compensating community leaders for their time.

Trails and Bicycle Facilities Proposed in Previous Plans

The Northwest Trails Connections Plan builds upon existing work that has identified trail corridors and bikeways throughout northern Milwaukee County. This section summarizes these existing plans and efforts that were developed by the Milwaukee County Parks Department, the City of Milwaukee, the City of Glendale, the City of Wauwatosa, the Southeastern Wisconsin Regional Planning Commission (SEWRPC), and the Rails to Trails Conservancy's *Route of the Badger Initiative*. Map 2 shows recommended trails and bikeways that currently exist, as well as those proposed within these plans.

¹⁰ United States Census Bureau. "Tenure by Vehicles Available: 2015-2019 American Community Survey 5-Year Estimates." American Fact Finder, 2021

Milwaukee County Parks Plans and Initiatives

Milwaukee County Trails Network Plan (adopted 2007)

Online at: county.milwaukee.gov/County-Files/Parks-Department/Photo-Gallery/Explore/Trails/FinalTrailsNetworkPlan2007.pdf

This plan provided a roadmap for the County to expand and build its network of shared use path trails, mountain bike trails, river trails, and hiking, skiing, and nature trails. It included a recommendation to extend the Oak Leaf Trail several miles west along Lincoln Creek, and develop hard-surface trails next to the drainage creeks in Noyes Park and connect to the Menomonee River segment of the Oak Leaf Trail.

RAISE Grant applications for Lincoln Creek Extension and Noyes Park Extension (submitted 2021)

Milwaukee County, in collaboration and with support from the City of Milwaukee, Milwaukee Metropolitan Sewerage District, and the Southeastern Wisconsin Regional Planning Commission, submitted a Federal RAISE grant application to cover the planning, design, and engineering costs of the following two trail projects:

- The Lincoln Creek Extension would extend the current Lincoln Creek trail by 2.85 miles and would improve 0.75 miles of existing trail to better connect it to the Milwaukee River segment of the Oak Leaf Trail system.
- The Noyes Park Extension would provide a 7.8 mile path in northwestern Milwaukee to the Menomonee River segment of the Oak Leaf Trail network, connecting Noyes Park, Wyrick Park, and Havenwoods State Forest.

Kohl Park Trail CMAQ Grant

Milwaukee County was recently awarded a nearly \$2 million Congestion Mitigation Air Quality (CMAQ) grant to construct an extension of the Oak Leaf Trail connection through Kohl Park on the County's northern boundary. The proposed trail is 2.4 miles and would help close the gap in the Oak Leaf Trail between the Zip Line segment and the Menomonee River Line.

Milwaukee County Parks and Open Space Plan (in progress)

Milwaukee County Parks is in the process of developing a *10-year Parks System Master Plan* and a *2050 Park & Open Space Plan*. The *Parks System Master Plan* will provide recommendations for facilities, programs and services, maintenance and operation, and management of the County park system. The *Park & Open Space Plan* will address long-range considerations including the preservation of environmental corridors, conservation lands, and recreational use of water bodies. The plans are being prepared by the Southeastern Wisconsin Regional Planning Commission.

Proposed Regional Trail Networks

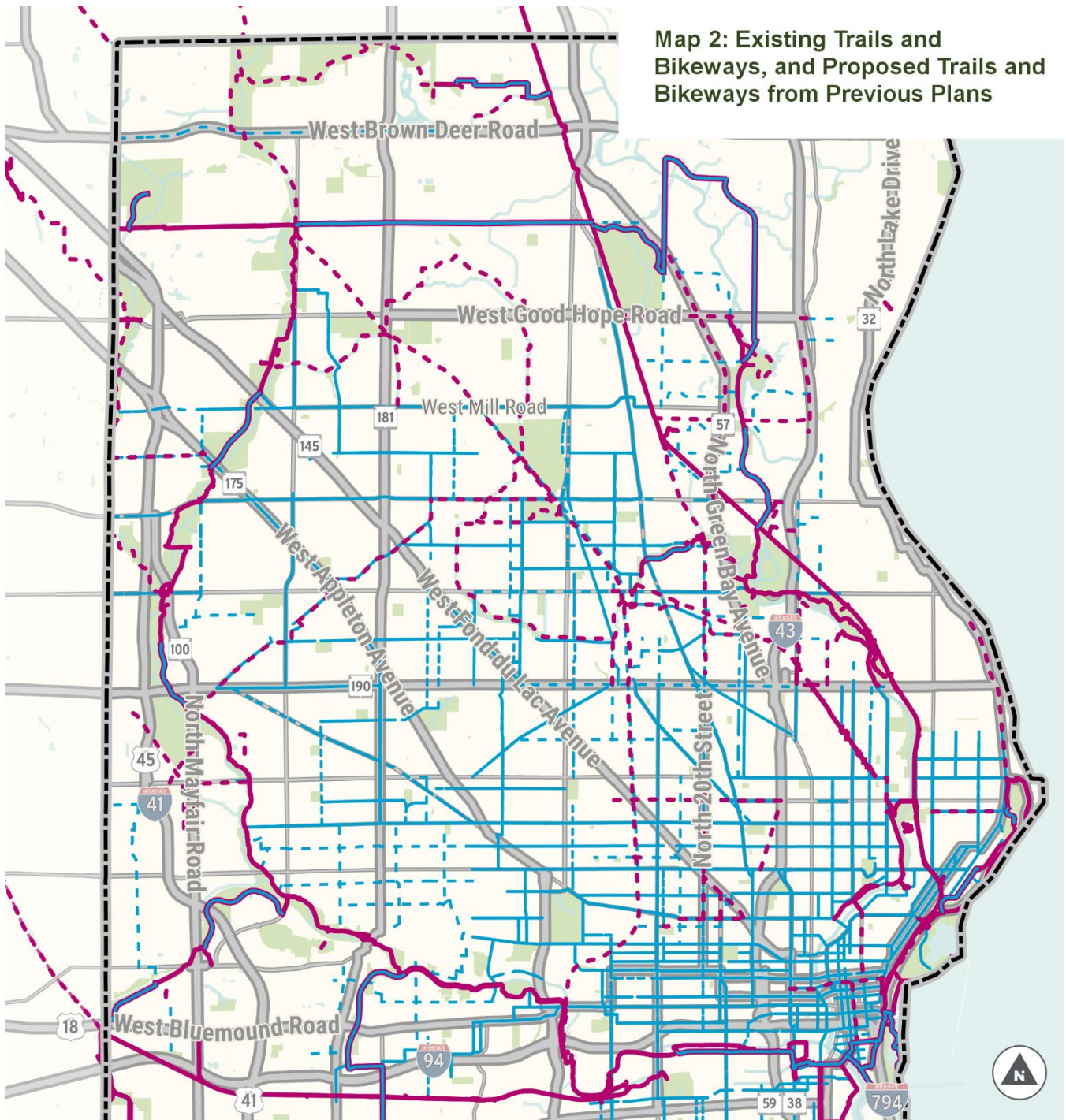
There are two important proposals for a regional network of low-traffic and off-street paths that should be considered for this Plan. Both are included on Map 2.

Vision 2050 (adopted 2016)

Online at www.sewrpc.org/SEWRPC/VISION_2050/2050RegLandUseTranspPlan.htm

Vision 2050 is a long-range plan by the Southeastern Wisconsin Regional Planning Commission (SEWRPC). It provides thorough analysis and recommendations for land-use and transportation networks for the seven-county region. The trails element focuses on connections between cities and villages over 5,000 in population. The recommended trail corridors have been modified in recent years in coordination with the Route of the Badger initiative (described below).

Map 2: Existing Trails and Bikeways, and Proposed Trails and Bikeways from Previous Plans

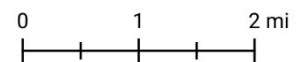


Existing Trails and Bikeways

- Off-Street Trail
- On-Street Segment of Oak Leaf Trail
- Other On-Street Bikeways

Proposed Trails and Bikeways

- - - Off-Street Trail
- - - On-Street Bikeway



TOOLE
DESIGN



Sources: Milwaukee County Trail Network Plan (2007); Milwaukee By Bike (2010); Vision 2050: SEWRPC Regional Plan (2016); Route of the Badger; Glendale 2020 Bicycle and Pedestrian Plan (2021); Connecting the Corridor (2021); and Fond du Lac & North (2021)

Route of the Badger

Online at www.railstotrails.org/our-work/trailnation/route-of-the-badger/

The Route of the Badger is a proposed regional path network in southeastern Wisconsin promoted by the Rails to Trails Conservancy, a national organization that advocates for and provides resources to help construct more paths and trails. The Route of the Badger aims to link southeastern Wisconsin's 340 miles of existing paths into a connected regional 500-mile network. In Milwaukee County, many of the connections have been modified or expanded in coordination with municipalities and other planning efforts described below.

Relevant City and Corridor Bike or Trail Plans

Other proposed bikeways or trails shown on Map 2 are from the following efforts and plans:

- *Milwaukee by Bike* (adopted 2010) includes many miles of facility recommendations including bike routes, bike lanes, and bike boulevards, and creating an “all ages and abilities” network throughout the City.
- *Glendale 2020 Bicycle and Pedestrian Plan* (adopted 2020) adds more shared use paths and on-street bikeways throughout the suburb of Glendale that connect to the Oak Leaf Trail, extend segments of the Oak Leaf Trail, and provide better connections across the city.
- *Wauwatosa Bicycle and Pedestrian Facilities Plan* (adopted 2014) and *Wauwatosa Neighborhood Greenway Implementation Guidance* (2020) include a network of proposed bike lanes, bike routes, trail connections, and neighborhood greenways (also known as bike boulevards) throughout Wauwatosa .

Connecting the Corridor Strategic Action Plan (adopted 2020)

Online at city.milwaukee.gov/AreaPlans/NearNorth/Connecting-the-Corridor.htm

The 30th Street Corridor, bounded on the north by W. Custer Avenue, and on the south by W. Burleigh Street, has been a focus of economic development, public investment, and community organization initiatives. For more than a decade, the City of Milwaukee and its partners have been working to bring new jobs and modern manufacturing to the area, following some of the same strategies it utilized during the redevelopment of the Menomonee Valley.

One of the lessons learned from the Menomonee Valley redevelopment effort was that economic development cannot succeed in isolation. It must be accompanied by community development and improved trails, public spaces, connections to neighborhoods, and stormwater management. With so much activity going on in the area, the *Strategic Action Plan* helped formalize priorities and identify responsible parties for each of these efforts. The projects in the plan include several recommendations for parks and public space, mobility and streets, off-street trails, and stormwater management.

Of particular relevance, the action plan resulted in several new ideas for new bike and trail connections--shown on Map 2 in the Plan--that will be considered during the development of the recommended trail network for the northwest side:

- Potential protected bike lanes or wide sidewalks on Hampton Avenue between N. 35th Street and N. 31st Street
- Potential shared-use path on the east side of 35th Street between W. Capitol Drive to the West Basin public space
- Potential two-way protected bike lane or shared-use path on the south side of W. Capitol Drive
- Additional on-street bikeway connections to provide better connections across the highly-fragmented street network in the corridor

The *Strategic Action Plan* also provides actions and next steps for the 20th Street Corridor Trail (for which the City of Milwaukee was awarded grant funding in 2020), the Beerline Trail extension to the Lincoln Creek Trail, the Lincoln Creek Trail Parkway and Trail, and the 30th Street Corridor Rail-with-Trail.

30th Street Corridor Shared-Use Trail Preliminary Feasibility Study (adopted 2020)

Online at www.railstotrails.org/resource-library/resources/30th-street-corridor-shared-use-trail-preliminary-feasibility-study/

This study analyzes the feasibility of a shared-use trail paralleling the rail line (also known as a “rail-with-trail”) along the 30th Street rail corridor. The rail corridor is currently used as a low-traffic active freight rail line that serves businesses along the corridor and is expected to do so well into the future. The proposed trail would run along the corridor for 6.7 miles starting at Havenwoods State Forest to the north, and travel south to the Hank Aaron State Trail just north of Selig Drive near Miller Park. The infrastructure and railroad along the corridor are owned, managed, and leased by various entities including the state of Wisconsin, Wisconsin and Southern Railroad, and the East Wisconsin Counties Railroad Consortium. In addition, there are a number of public and private landowners who control private rail sidings (tracks that do not belong to the rail operator, but connect to the tracks at the private parcel). The project would bring significant benefits to the area, but there are many hurdles to overcome, including new at-grade crossings of the active rail corridor, and narrow railroad bridges over several streets and the Menomonee River. Where needed, parallel on-street routes or trails on public land would be able to provide an alternative to the railroad corridor.

Fond du Lac and North Area Plan (adopted 2021)

This district-level plan, which is bounded roughly from Burleigh Avenue to the north, I-43 to the east, Vliet and Galena Streets to the south, and the 30th Street rail corridor and 38th street to the west, includes land use and transportation recommendations. The plan includes several new ideas for trail and separated bike path connections--shown on page 17 of the Plan—that will be considered during the development of the recommended trail network for the northwest side:

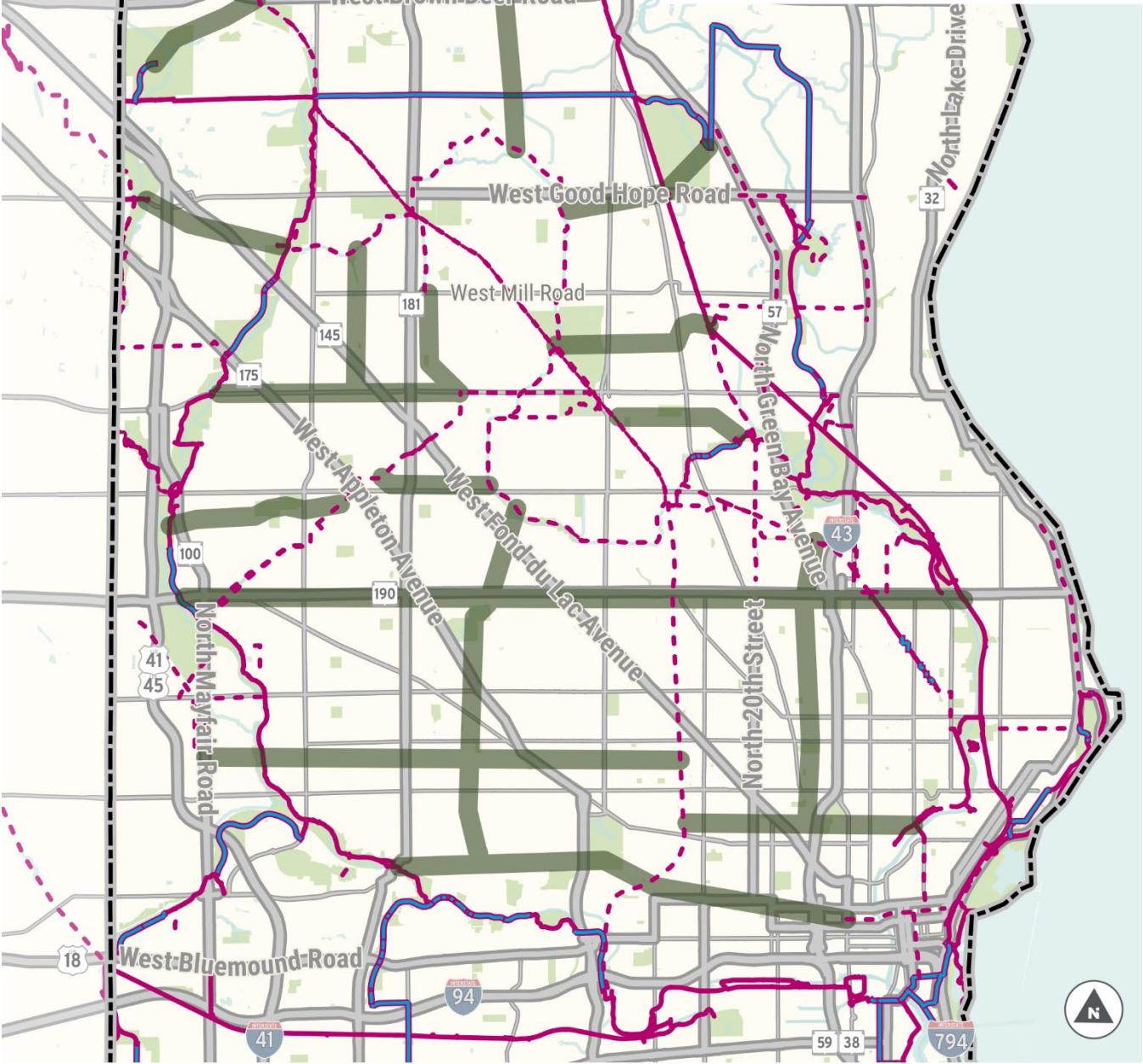
- A separated bike lane or sidepath on W. Locust Street
- A sidepath on the southwest side of W. Fond du Lac Avenue to Johnson’s Park and N. 20th Street
- Separated bike lanes or sidepaths on N. 20th Street and N. 17th Street
- A separated bike lane or sidepath on W. Walnut Street

Gaps and Opportunities for Further Trail Connections

Gap Analysis

In Map 3, *Gaps in the Northwest Side Trail Network*, we have reviewed the existing and previously-planned trail network and identified the gaps that would remain if that proposed trail network were built out. The gaps are shown as thick green lines. We focused on identifying gaps at one to two-mile intervals outside the study area, and at half-mile to mile intervals within the study area. The gaps would provide connections between cities (both within and outside the county) and major County Parks. There are many network gaps in the northwest side; and given the very urban, built-up area, it would be impossible to build shared-use paths in their own greenways to address these gaps. Low-stress parkways, connected bike boulevards, and shared-use paths built along streets could provide a walking and biking facility. These types of treatments are shown and described later in this memo.

Map 3: Gaps in the Northwest Side Trail Network (for both Existing and Proposed Trails)



Existing Trails and Bikeways

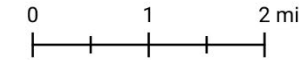
- Off-Street Trail
- On-Street Segment of Oak Leaf Trail

Trails Proposed in Previous Plans

- Off-Street Trail

Gaps

- Gaps in the Northwest Side Trail Network



Sources: Milwaukee County Trail Network Plan (2007); Vision 2050: SEWRPC Regional Plan (2016); Route of the Badger

Potential Off-Street Trail Opportunities

Map 4 highlights some potential corridors and parcels that should be examined to determine whether they might help address the gaps in the trails network shown in Map 3. Railroad corridors, waterways, land owned by utilities, parkway land, and other publicly-owned land is highlighted to display potentially available land. Each of these types of properties comes with its own set of opportunities and challenges:

- *Railways:* The map shows publicly-owned railways in pink, and inactive railways in dark blue. Active private railways are shown in black. Further research will be needed to determine if any of those lines would be feasible for a “rail with trail,” as described later in this memo.
- *Waterways:* Many of Milwaukee County’s Oak Leaf Trail lines run alongside streams and rivers, and the Lincoln Creek corridor provides an excellent opportunity for trail development. Further research is needed to determine if there are steep slopes or wetlands along the waterways that would make a trail infeasible.
- *State, County, and Municipal Parks:* Parks, forests, and open space owned by state, county and local governments provide a feasible opportunity to expand the trail network.
- *Other County, Municipal, State, or Federal Land:* The City of Milwaukee owns a number of subsidized housing developments and vacant lots or abandoned houses. These parcels are not open spaces, but because they are owned by the City, their locations could provide critical connections to off-street trail paths, or on-street connections on existing roadways through those developments. Other opportunities include land owned by the State of Wisconsin alongside major freeways in Milwaukee, such as I-43, and land owned by the Milwaukee Metropolitan Sewerage District (MMSD).

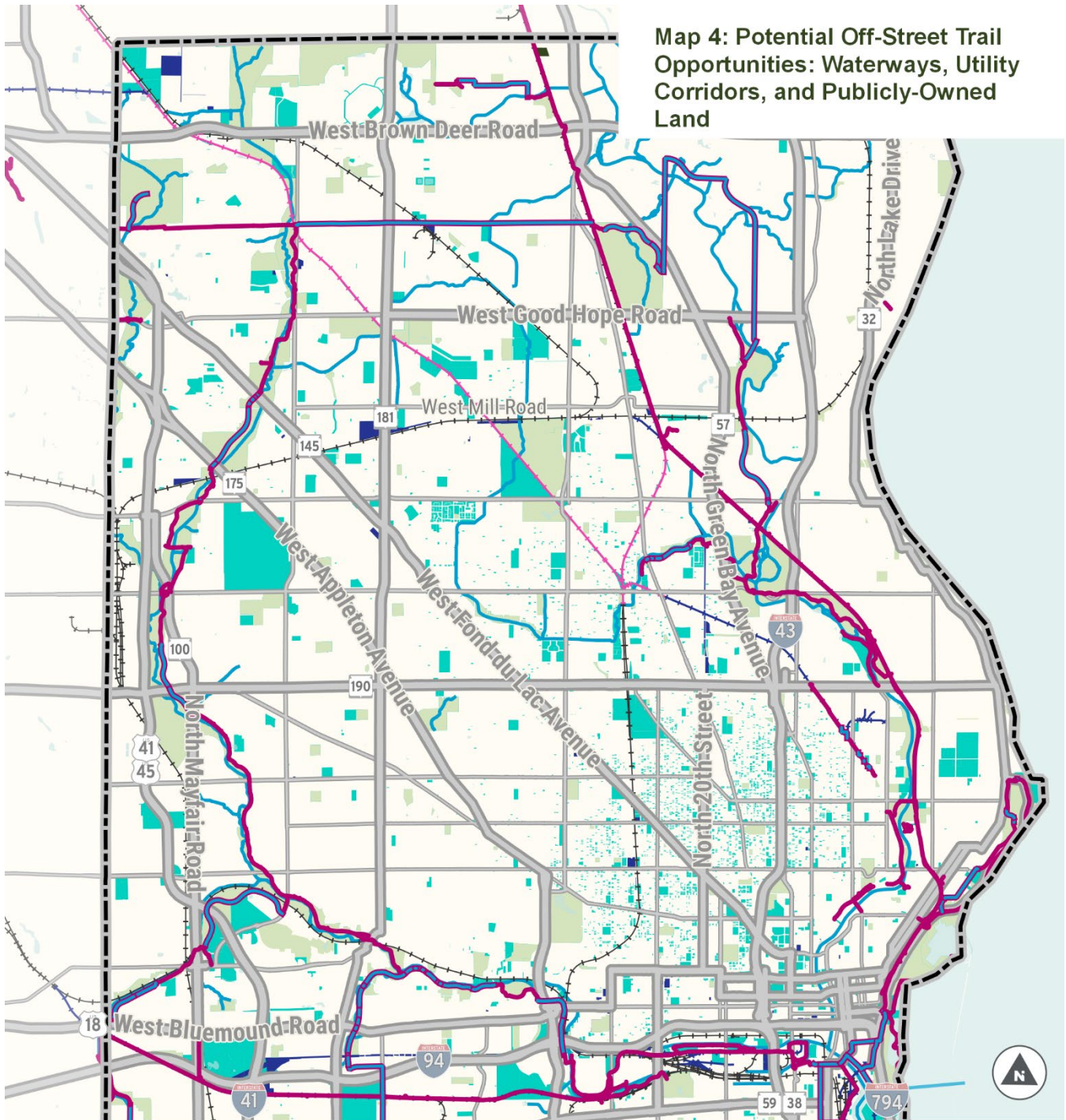
Additional Opportunity for the Trail Network: Roadways with Excess Capacity

Some streets in Milwaukee have excess capacity, or overly-wide streets with more lanes than needed by the volume of traffic that the street carries. Many streets in Milwaukee were built at a time when the population and traffic volumes were projected to increase. In fact, the city’s population has declined from its peak in 1960, but until recently, the amount of traffic lanes on most streets remained the same. Reallocating space from overly wide streets can have several benefits:

- *Slowing traffic.* Milwaukee, like many other cities, is suffering from an increase in reckless driving and speeding. Reducing the number of traffic lanes and narrowing traffic lanes helps slow traffic because it prevents reckless drivers from weaving between lanes.
- *Providing space for low-stress bicycle facilities.* Repaving or rebuilding streets with fewer lanes can provide space within the public right-of way for shared-use paths or protected bike lanes.
- *Provide space for green infrastructure.* Rebuilding streets with fewer lanes provides opportunities for planting street trees, and stormwater infrastructure such as bioretention areas or “rain gardens”.

After analyzing public input about desired trail connections, Toole Design will identify some roadways with excess capacity or space within the right-of-way that could be rebuilt to provide connections for the Lincoln Creek Parkway and the Northwest Side Trail network.

Map 4: Potential Off-Street Trail Opportunities: Waterways, Utility Corridors, and Publicly-Owned Land



Existing Trails and Bikeways

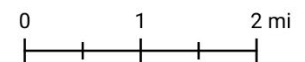
- Trail
- On-Street Segment of Oak Leaf Trail

Rails

- - - Out of service railroad
- - - In-service railroad (publicly-owned)
- - - In-service railroad (all others)

Publicly-Owned Land and Utility Corridors

- State, County, and Municipal Parks
- Other Publicly-Owned Parcels (State, County, Municipal, or School District)
- Utilities



Source: Milwaukee County Land Information Office

Next Steps

The analysis of existing conditions and context presented in this memo, including a review of past plans and the analysis of gaps and opportunities in the trail network, helped inform the development of public input questions and tools such as an interactive map survey, and pop-up engagement kits with maps that asked people where they would like to see trail connections in their community. After the public engagement phase, a draft trail and trail connections network will be developed using the trail and bicycle facilities described in the Toolbox below.

Toolbox of Trail and Bicycle Facility Types

This project will look at a variety of types of trails and bicycle facilities to assess what the most appropriate “tool” might be to connect to existing and proposed trails in the study area. We will consider both on-street and separated facilities, as described below.

Facility Type	Example Image	Description
Shared Use Paths		<ul style="list-style-type: none">• Fully separated from a street or road• Typically paved and 10-12 feet wide• Often installed along rail or utility corridors or next to rivers• Low-stress experience for many types of users (bicyclists, pedestrians, joggers)
Sidepaths/ Wide Sidewalk		<ul style="list-style-type: none">• Fully separated from a street or road• Typically paved and 10-12 feet wide• Next to and parallel to a roadway• Can be a low-stress experience for many types of users (bicyclists, pedestrians, joggers)• Paths next to urban and suburban roadways can increase hazards to bicyclists if there are numerous driveways and intersections• Typically used on medium and high-volume streets with few intersections or driveways
Rail with Trail		<ul style="list-style-type: none">• Run parallel to an active railroad• Usually have barrier separation between the path and the railroad• Open lines of communication with the railroad can make this a viable option

Facility Type

Description

Parkway



- Historically, Milwaukee County parkways consisted of multi-laned slow streets and pedestrian walkways to connect various parks
- The Oak Leaf Trail has many parkways that follow the creeks and streams, and have greenery and natural landscaping
- In some locations a shared use path is provided along the parkway; where traffic volumes are higher, this is the preferred standard

Bicycle Boulevard



- Usually used on neighborhood streets that have lower volumes and speeds
- Can include curb extensions, speed humps, neighborhood traffic circles, and pedestrian islands
- Fire departments and school bus operators may object to traffic calming treatments; they should be a part of the planning process

Marked Bike Route



- Help bicyclists navigate existing low traffic, low-stress streets
- Quick and affordable expansion of the bicycle network using existing residential and city streets
- Alert drivers that bicyclists may be present through signs
- May include destination, distance, and direction on signs

Bike Lanes



- Designate space for bicyclists on medium-to-high volume streets with markings and signs
- Usually 5 feet wide; can be wider with a painted "buffer" marking
- Located next to motor vehicle travel lanes; goes in the same direction as motor vehicle traffic
- Can be added by reconfiguring an existing shoulder, removing on-street parking, reducing the number of travel lanes, or through reconstruction

Facility Type

Buffered Bike Lane



Description

- Provide greater shy distance between motor vehicles and bicyclists
- Buffers should be at least 18 inches wide and the bike lane is usually at least 4.5 feet wide
- Located next to motor vehicle travel lanes; goes in the same direction as motor vehicle traffic
- Feasible for streets with higher travel speeds, travel volumes, and truck use than would be comfortable with traditional bike lanes
- Can be added by reconfiguring an existing shoulder or travel lanes, removing on-street parking, or through reconstruction

Protected Bike Lane



- Dedicated and protected space for bicyclists in order to improve comfort and safety
- Three feet is the desired width for a protected buffer; a one-directional bike lane is usually at least 4.5 feet wide
- Reduces risk of conflict with open doors of parked cars compared to a bike lane
- Along streets with high bicycle volumes or high motor vehicle volumes and/or speeds
- Planters, concrete medians, or other barriers provide physical separation to the protected bike lane