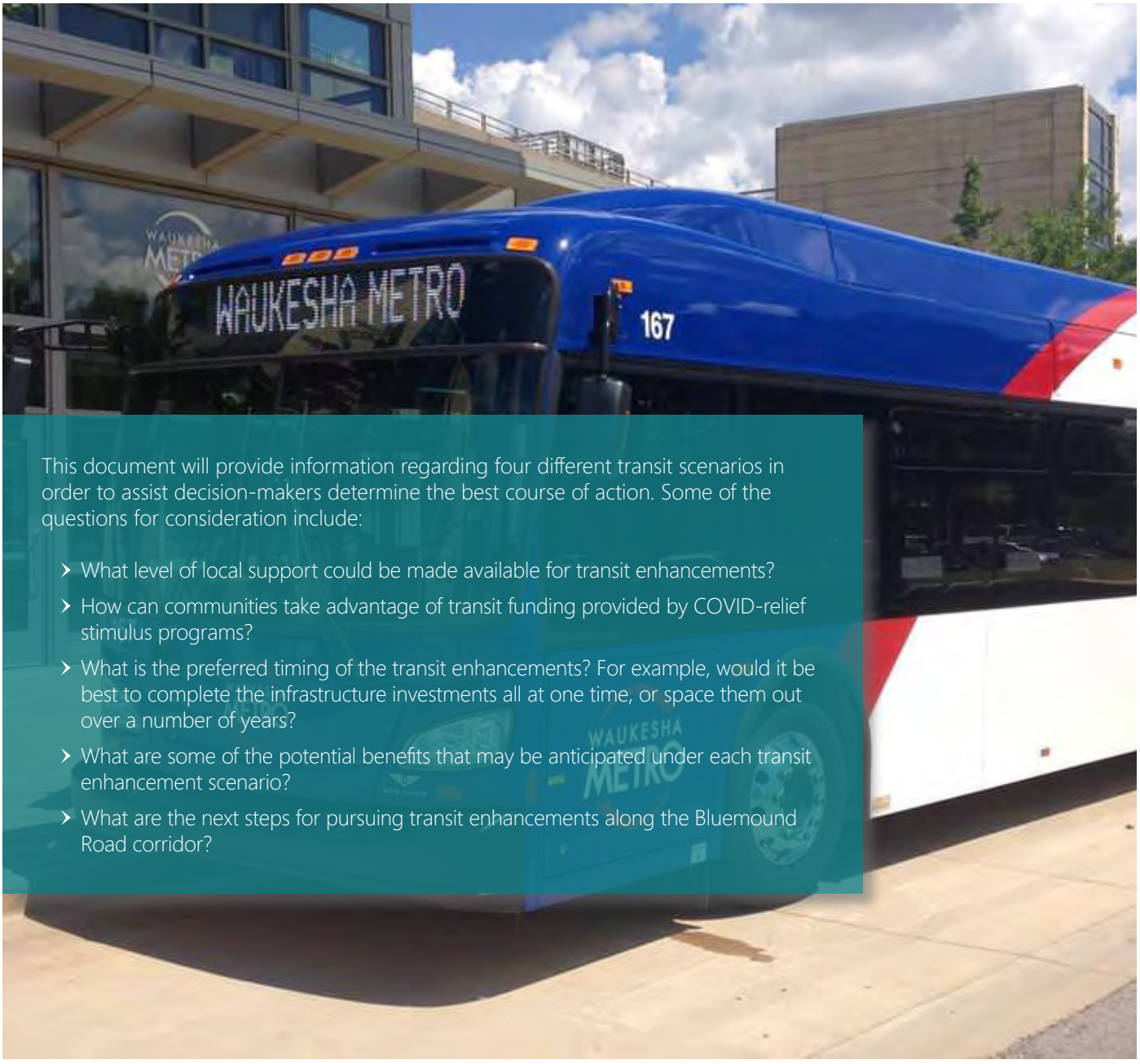
Bus Rapid Transit Concept Plan for the **Bluemound Road Corridor**

CONTENTS

INTRODUCTION

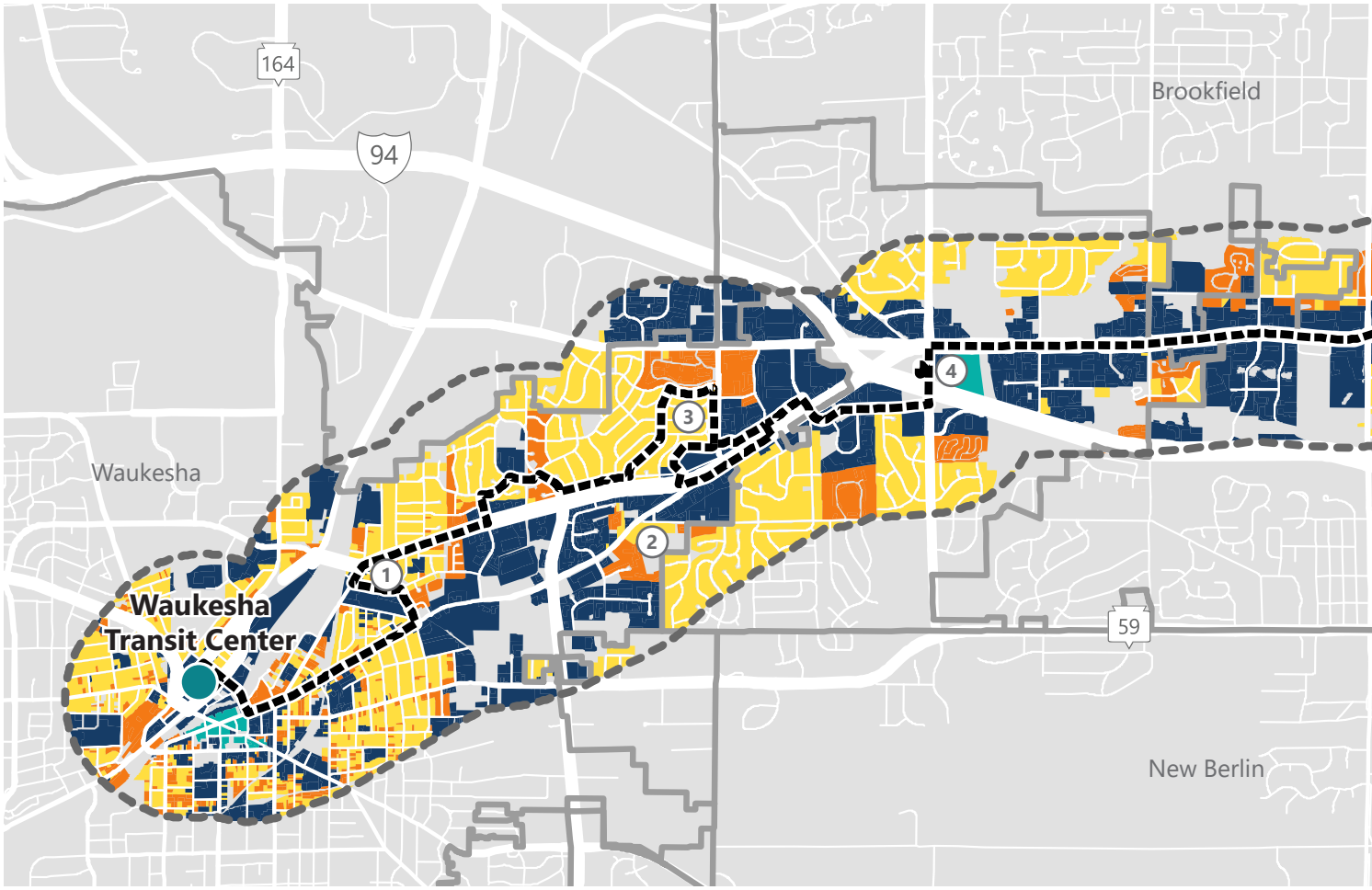
At the request of the City of Waukesha and City of Brookfield, Commission staff developed this overview of potential transit enhancements from downtown Waukesha to the Milwaukee Regional Medical Center (MRMC). The purpose of this document is to generate discussion and provide details that help the communities determine if and how to move forward with transit enhancements or bus rapid transit (BRT) along the corridor, including the extent of improvements, the potential benefits of such improvements, potential funding sources, and next steps.

As currently planned, the existing Waukesha Metro Route 1 will be extended to serve the MRMC beginning in Fall 2022, to match the anticipated start of revenue service for Milwaukee County's East-West BRT. At that time, Milwaukee County plans to replace the current GoldLine service with the East-West BRT service. It is expected that if any of the improvements included in this document are pursued, they would be implemented after the planned extension of Route 1 in Fall 2022.



This document will provide information regarding four different transit scenarios in order to assist decision-makers determine the best course of action. Some of the questions for consideration include:

- What level of local support could be made available for transit enhancements?
- How can communities take advantage of transit funding provided by COVID-relief stimulus programs?
- What is the preferred timing of the transit enhancements? For example, would it be best to complete the infrastructure investments all at one time, or space them out over a number of years?
- What are some of the potential benefits that may be anticipated under each transit enhancement scenario?
- What are the next steps for pursuing transit enhancements along the Bluemound Road corridor?

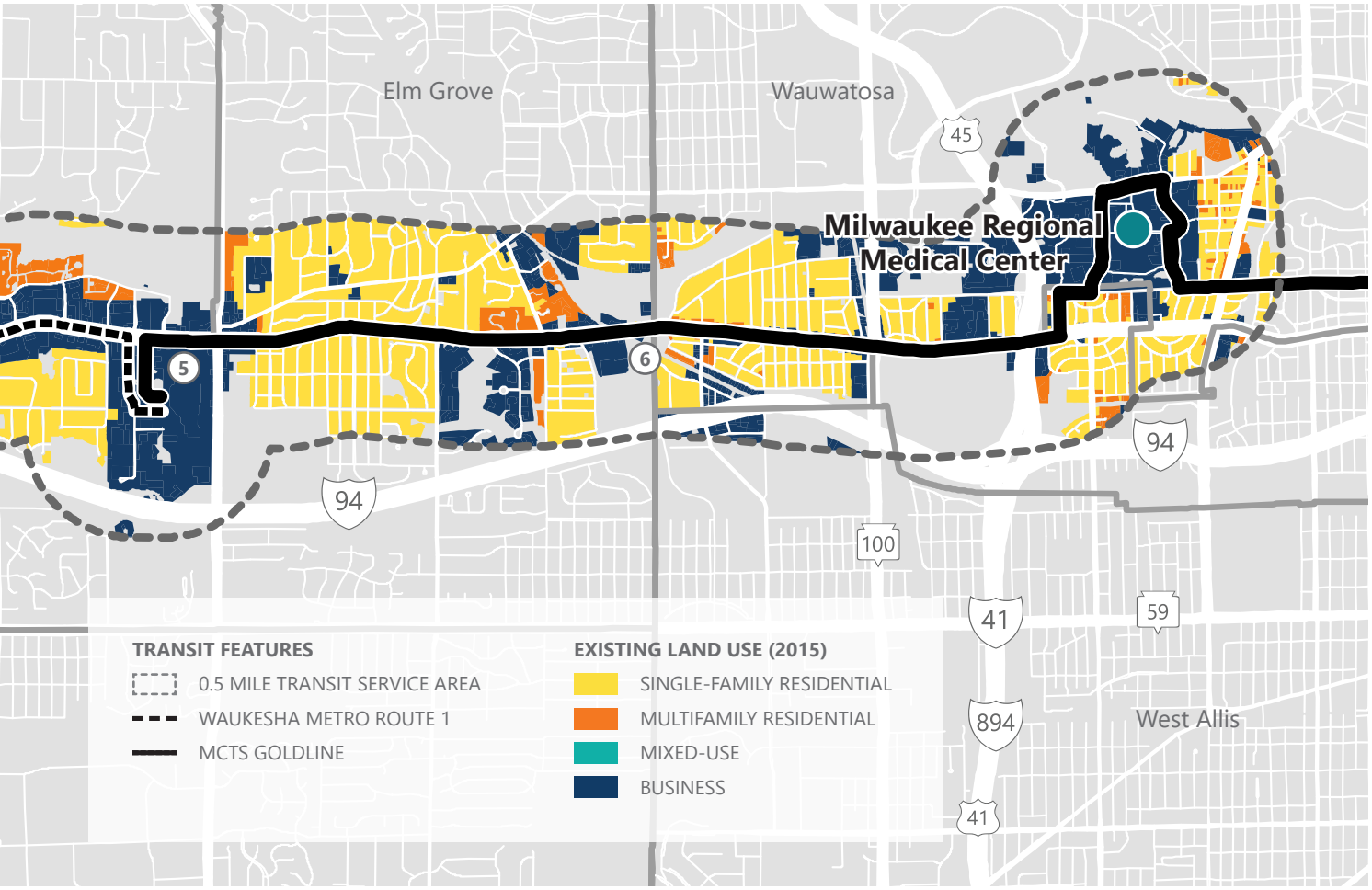


Source: Waukesha Metro Transit, MCTS, and SEWRPC

EXISTING CONDITIONS

The corridor reviewed as part of this BRT Concept Plan is comprised of a half-mile buffer along the major roadways connecting the downtown Waukesha Transit Center to the MRMC. For the sake of simplicity, the entire study area highlighted above will be referred to as the Bluemound Road Corridor, or the corridor, throughout the remainder of the plan. The approximately 13-mile corridor connects Brookfield, Elm Grove, and Waukesha to Milwaukee County, and contains over 70,000 jobs, 35,000 people, and 60 major employers within one-half mile of the corridor.

The Bluemound Road Corridor includes a range of land uses that typically generate transit ridership, such as major commercial and service centers, higher density housing, and mixed-use development. Examples of existing transit-supportive land uses can be found in and near the Westbrook Shopping Center area, The Corners development, and the Brookfield Square Mall area. Additional development is anticipated throughout the corridor based on each community's land use plans. The map illustrates generalized land uses and key locations where additional transit-supportive development is planned.



City of Waukesha

1. **White Rock Avenue:** Higher-density and medium density residential development has occurred or is planned between White Rock Avenue and Cleveland Avenue, with over 70 new affordable housing units recently developed near White Rock Avenue and Moreland Boulevard
2. **Hillcrest:** The area along Main Street generally between Les Paul Parkway and Moreland Boulevard is anticipated to have higher-density residential development
3. **Westbrook Shopping Center:** Higher-density development is planned along Springdale Road, north of the Westbrook Shopping Center

Town of Brookfield

4. **West End:** Expanded mixed-use development is anticipated for the area immediately west of The Corners, with a 140-room hotel planned to open in 2024

City of Brookfield

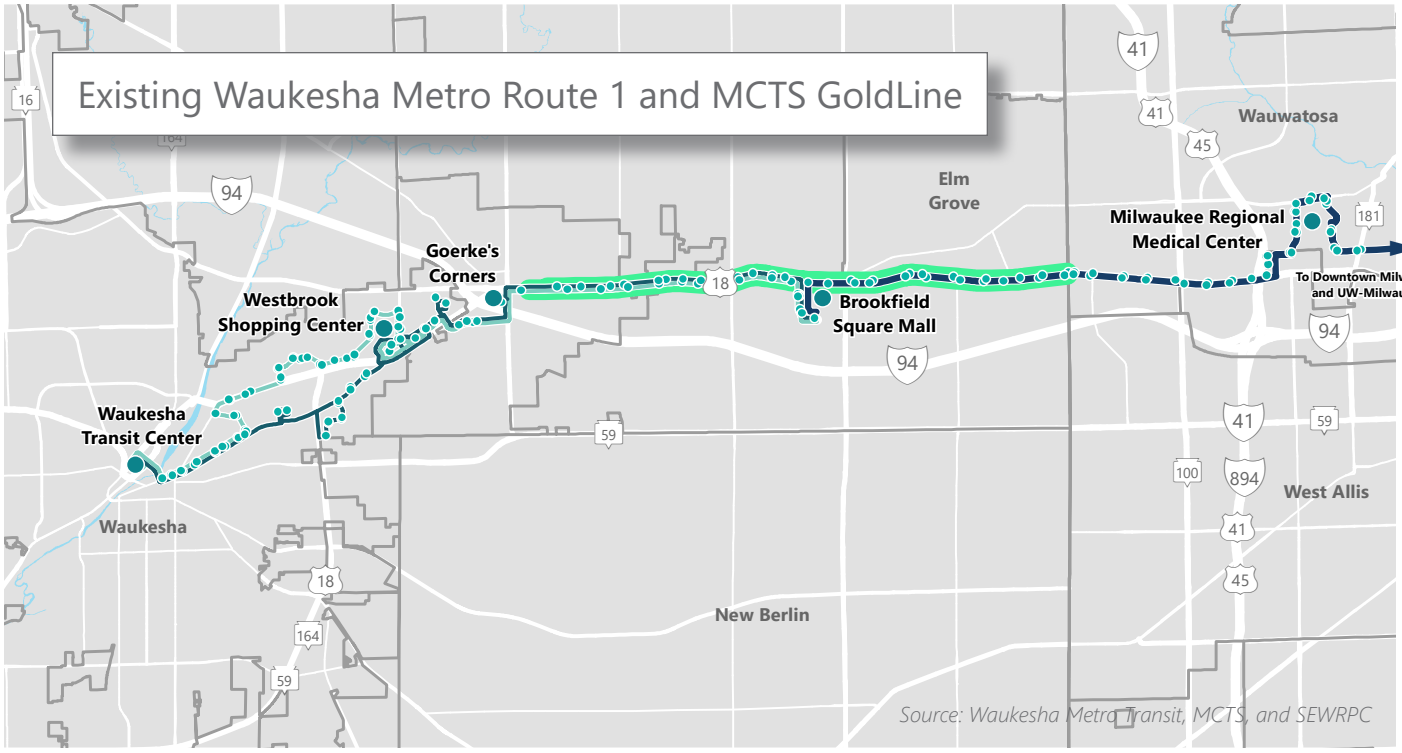
5. **Brookfield Square:** A high degree of change is anticipated along the segment of Bluemound Road between Brookfield and Moorland Roads including higher-density mixed use around Brookfield Square Mall and The Corridor developments
6. **124th Street:** Higher-density shopping and services are envisioned

EXISTING TRANSIT SERVICES

The current Waukesha Metro Route 1 travels from the downtown Waukesha Transit Center to Brookfield Square Mall, where passengers can transfer to the MCTS GoldLine. Route 1 currently serves destinations such as the Westbrook Shopping Center, Woodman's grocery store, and Goerke's Corners Park & Ride Lot. It also traverses just north of East Moreland Boulevard, serving Horning Middle School and residential neighborhoods. On weekdays, Route 1 operates approximately every 35 minutes from 5:35 a.m. until 10:40 p.m. On Saturdays and Sundays, Route 1 operates every 30 minutes with service from 8:20 a.m. to 10:15 p.m. and 9:20 a.m. to 7:15 p.m., respectively. The route currently requires 3 buses and the travel time between the downtown Waukesha Transit Center and Brookfield Square Mall is approximately 35 minutes on weekdays and Saturdays, and approximately 40 minutes on evenings and Sundays. East of Brookfield Square, the Bluemound Road corridor is served by the MCTS GoldLine, which travels east to downtown Milwaukee and then north to the University of Wisconsin-Milwaukee's main campus.

These two routes currently use dedicated bus-only lanes for approximately five miles between The Corners development in the Town of Brookfield and 124th Street at the border of Waukesha County and Milwaukee County as shown below.

Currently, bus stops are located approximately every one-quarter mile along Route 1 and the existing GoldLine extension.



WAUKESHA METRO TRANSIT

- ROUTE 1 - LOCAL SERVICE
- ROUTE 1 - EVENING AND SUNDAY ROUTE

MILWAUKEE COUNTY TRANSIT

- GOLDLINE

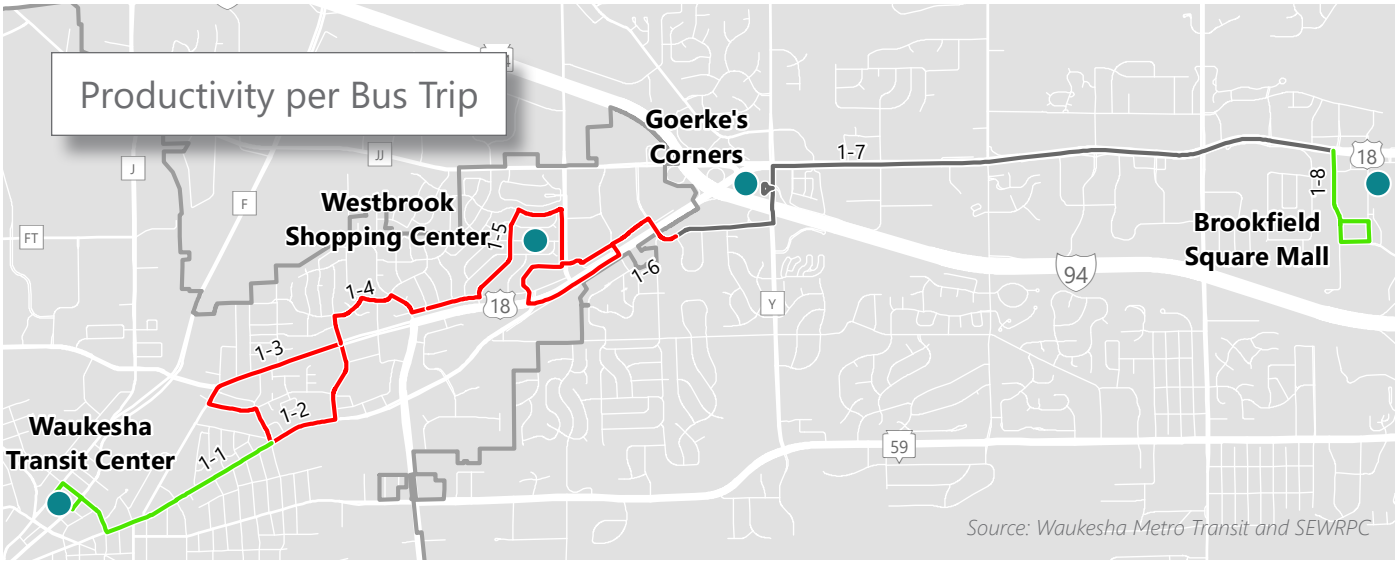
TRANSIT FEATURES

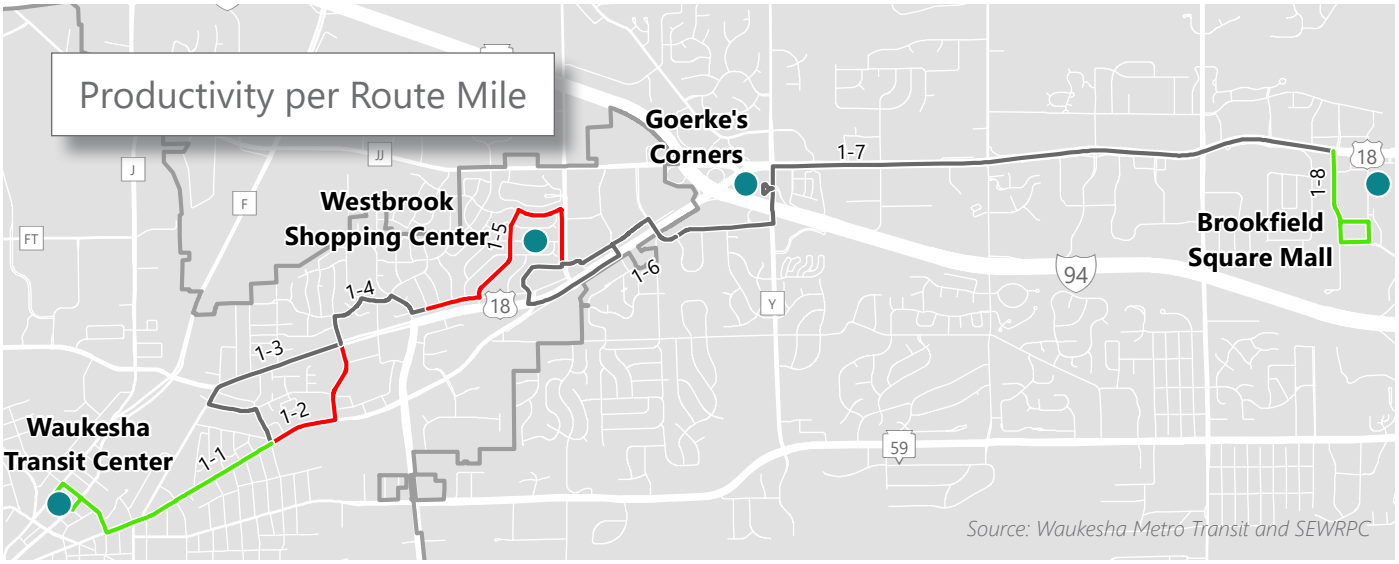
- BUS STOP
- DEDICATED BUS LANE

Existing Route Productivity

Commission staff reviewed passenger counts to assess locations where Route 1 could be straightened. The maps focus on Metro Route 1 (rather than the GoldLine) since this is the route where route path changes could reduce travel time by making the route more direct. The most productive and least productive segments per bus trip and per route mile for Route 1 are shown on the maps below. Route segments that ranked in the top one-third in boardings and alightings per trip across the entire Waukesha Metro system are considered the "most productive" segments, and the route segments that ranked in the bottom third across the transit system are considered the "least productive" segments. Similarly, route segments across the system were ranked and then split into the same three categories by boardings and alightings per route mile.

In some cases, segments that performed poorly utilizing the per trip method, due to the higher amount of service provided on Route 1 (compared to the rest of the system), showed improvement when performance is measured independent of the amount of service. Nonetheless, route segments that are considered "least productive" under one or both evaluation methods would be good candidates for removal or modification if transit enhancements focused on improving transit rider travel times and service reliability are being considered.





ROUTE SEGMENT PRODUCTIVITY

MOST PRODUCTIVE — LEAST PRODUCTIVE — OTHER

WHAT IS BUS RAPID TRANSIT?

Bus Rapid Transit (BRT) is typically characterized by the use of exclusive transit lanes and signal priority preemption, with stations spaced every one-half to one mile. It is typically considered more reliable, convenient, and faster than regular bus services and can avoid delays that slow regular bus services.

Exclusive travel lanes that are painted or otherwise separated from general travel lanes. The transit lanes can be center running or curb running. For Federal Transit Administration funding purposes, Full BRT/Fixed-Guideway BRT requires exclusive travel lanes on at least 50 percent of the route.

Transit Signal Priority extends green lights to decrease the chances that a bus will have to stop for a red light. It uses the same technology as Emergency Vehicle Signal Preemption systems that are already installed at many intersections along the corridor.

High quality stations spaced every one-half to one mile would include amenities such as raised platforms for level boarding, off-board fare payment kiosks, real-time bus arrival information, and an information and help box. Stations can be designed to complement the surrounding development.

Branded vehicles that are easily identifiable let passengers know that the service is different and better. The new vehicles provide increased passenger comfort.

Pedestrian enhancements, such as additional crosswalks, bulb outs at intersections, pedestrian refuge islands, and improved street lighting would increase safety and access.

Potential Benefits of BRT

In addition to improved amenities, transit enhancements can also improve livability and expand economic development potential by complementing a healthy, multimodal transportation system that connects people to jobs, and businesses to their customers. Some transit enhancements can also lead to increased ridership and expand employers' access to a larger pool of potential workers due to improved service speed, frequencies, and reliability. Higher transit ridership results in lower per-passenger costs for transit due to improved operating efficiencies.

Each transit improvement level is anticipated to have a different mix of amenities and features based on the level of investment. The following table lists benefits and, as applicable, summarizes the specific amenities that particularly generate a given benefit.

Benefit	System Performance Results
Increased Reliability	BRT's use of exclusive transitways, level boarding, improved fare collection, and automated vehicle location technologies allow for greater reliability.
Improved Accessibility	Level boarding at stations, digital and responsive passenger information systems, and fare collection options can greatly improve accessibility to mobility-impaired and other passengers.
Increased Safety and Security	Modern technologies and facilities, particularly enhanced lighting, camera systems, and passenger call boxes, increase perceived and real safety when compared to local bus service.
Increased Ridership	The integration of system elements has demonstrated that BRT can attract choice riders and greatly increase ridership in the corridor. Ridership gains of 20 percent to 96 percent have been noted in practice.
Increased Access to Opportunity and Workers	BRT service with enhanced features and greater frequency could expand employers' access to potential employees. Enhanced transit service could also expand employment opportunities for workers seeking to access jobs along and near the corridor.
Improved Environmental Quality	Attracting new passengers and using vehicles with cleaner propulsion systems and emissions controls, may improve air quality and noise levels, while reducing overall traffic congestion.
Improved Operating Cost Efficiency	Transit performance metrics such as passengers per revenue hour, subsidy per passenger mile, and subsidy per passenger can improve when BRT is introduced in a corridor.
Transit-Supportive Land Development	Investments in BRT infrastructure and related streetscape improvements can result in land development around stations and in the corridor.

Potential Transit Service Concepts

As outlined below, there are three alternative service concepts that are the focus of the remainder of this document. These concepts are not necessarily the only paths forward, but are described to show the range of likely potential improvements that could be considered if an investment is made in the transit service in this corridor. Information on the features included in each alternative, the potential alignments associated with each alternative, the people and jobs served along each alignment, and other details are described in the following pages.

Service Concept	General Characteristics
 No Build	› Stops approximately every 0.125 mile › Minor bus stop improvements as needed › Similar operating characteristics as current route
 ***Alternative 1:*** Enhanced Local Service	› Stops approximately every 0.125 to 0.25 mile › Transit and pedestrian improvements conducted when WisDOT or local governments schedule roadwork › Potential pedestrian enhancements could include crosswalks, bulbouts at intersections, pedestrian refuge islands, and improved lighting
 ***Alternative 2:*** Corridor BRT	› Stops between every 0.25 and 0.5 mile › Greater emphasis on pedestrian improvements › Corridor BRT means defined stations, traffic signal priority for buses, robust amenities, all day transit service with headways between 15-20 minutes, and limited stop service › Could offer some dedicated lanes for buses, but less than 50% of route would have dedicated lanes for buses
 ***Alternative 3:*** Fixed-Guideway/Full BRT	› Stops approximately every 0.5 to 1 mile › 50% or more of route required to have dedicated lanes for buses › Fixed-Guideway BRT means additional improvements such as level boarding platforms, enhanced stations at key locations including real-time arrival information, off-bus fare payment, branded vehicles

Comparison of Characteristics Between Alternatives

Each transit alternative has a range of transit amenities and service characteristics that impact the quality of service and potential ridership.

As the number of transit improvements increase, the distance that passengers are willing to walk to access the transit service increases. As a result, higher levels of transit improvements can expand the areas served by transit and thereby increasing access to jobs, shopping, and services.

	Alternative 1	*Alternative 2*	*Alternative 3*
Pedestrian Improvements			
Improved Crosswalks	?	✓	✓
Bulb Outs	?	✓	✓
Refuge Islands	?	✓	✓
Improved Street Lighting	?	✓	✓
Route Improvements			
More Direct Routing	✓	✓	✓
Additional Dedicated Bus Lanes	X	?	✓
Center Running Lane	X	X	?
Station Amenities			
Level Boarding Platforms	X	?	✓
Enhanced Shelters	?	✓	✓
Real-Time Arrival Information	?	✓	✓
Off-Bus Fare Payment	?	?	✓
Transit Priority			
Bus Signal Priority	?	?	✓
Queue Jump Lanes	X	?	?
Vehicles			
Specially Branded Vehicles	?	?	✓
Articulated Buses	X	X	?
Operating Characteristics			
Arrival Every 15-20 Minutes	?	✓	✓
Limited Stop Service	?	✓	✓

POTENTIAL ALIGNMENTS

As stated earlier, the alignment of Route 1 in the City of Waukesha could be straightened based on the presence of poorly performing segments north of Moreland Boulevard. In addition, further time savings could be realized if the route utilizes Main Street in the City of Waukesha. Not all alignments make sense for all service alternatives, as a fixed-guideway BRT with dedicated lanes makes the most sense if the most direct alignment between major destinations is selected. The figure and table below show which alignments make sense to consider and analyze for each service concept alternative.

Potential Service Concept	Potential Alignments
No Build	*Existing*
Enhanced Local Service	*Moreland Boulevard*
Corridor BRT	*Moreland Boulevard*
	Main Street
Fixed-Guideway/Full BRT	*Main Street*

Comparison of Potential Alignments

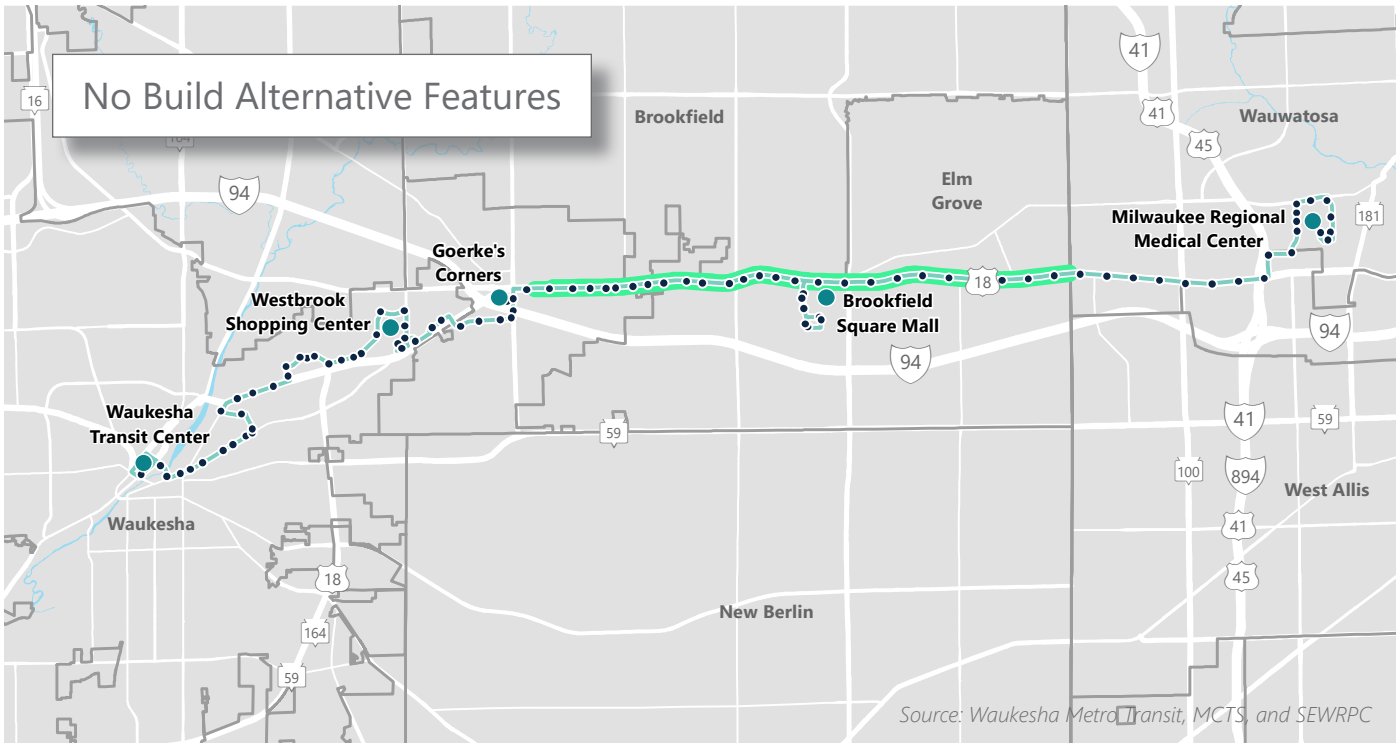
For purposes of the analysis, Commission staff reviewed the alignments as summarized below. There are two alignment options associated with improvements, in addition to the existing alignment.

Alignment Options and General Description
Existing Alignment › Routing from the downtown Transit Center to Main Street, White Rock Avenue, to East Moreland Boulevard and proceeding east to Goerke's Corners Park & Ride Lot and then on to MRMC › Would serve Westbrook Shopping Center and residential areas north of East Moreland Boulevard
Moreland Boulevard Alignment › Routing on Moreland Boulevard with an option to serve existing and future residential and commercial development, proceeding east to Goerke's Corners Park & Ride Lot to MRMC › Similar to the routing over the Existing Alignment except there could be more direct route along East Moreland Boulevard › If a more direct routing is selected, may not serve Westbrook Shopping Center and residential areas north of East Moreland Boulevard where ridership has been relatively high at certain stops. May require other local routes to serve these destinations
Main Street Alignment › Routing on Main Street with option to continue to serve nearby destinations , such as Woodman's Market › The Main Street alignment would provide a more direct route, which could offer travel time savings for passengers › The Main Street alignment would not provide service to White Rock Avenue/Moreland Boulevard, where existing and future residential and commercial development is located

The next section compares the jobs, population, and planned development served by each alignment. The estimates included are conceptual and focus on the distance that an individual would walk in order to access various levels of transit service. For example, if the transit service operates every 10-15 minutes, is considered more reliable, and operates during a longer time period, it may attract additional riders. If a feasibility study is pursued, these numbers will be refined with greater detail. The jobs, population, and planned development served by alignments with multiple potential service concepts represent an average of the expected area that the applicable service concepts would serve.

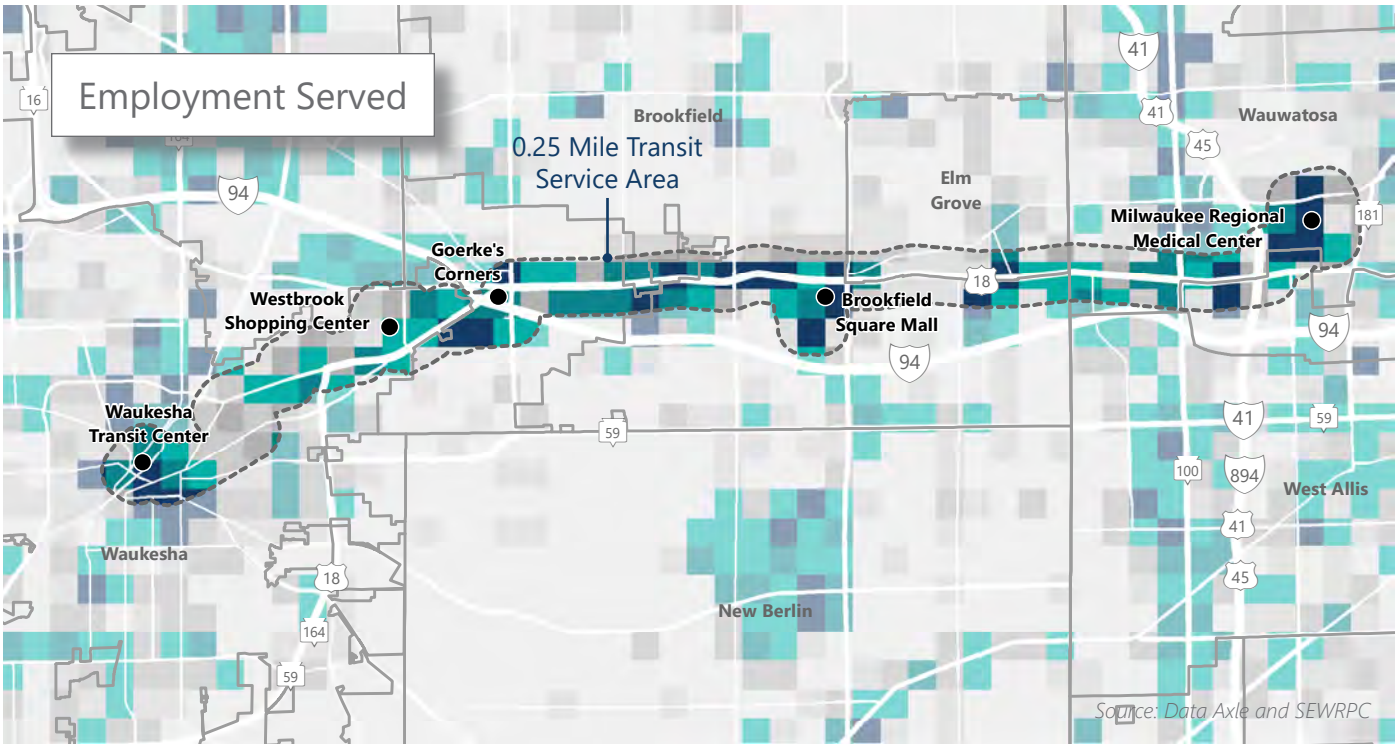
No Build Alternative

The No Build alternative would involve continuing the existing Route 1 alignment and service levels as determined by City of Waukesha, Waukesha County, and Milwaukee County. It is anticipated that transit service on an extended Route 1 would begin in Fall 2022, when the East West BRT is expected to begin service.



TRANSIT FEATURES

- EXISTING ALIGNMENT
- BUS STOP
- DEDICATED BUS LANE

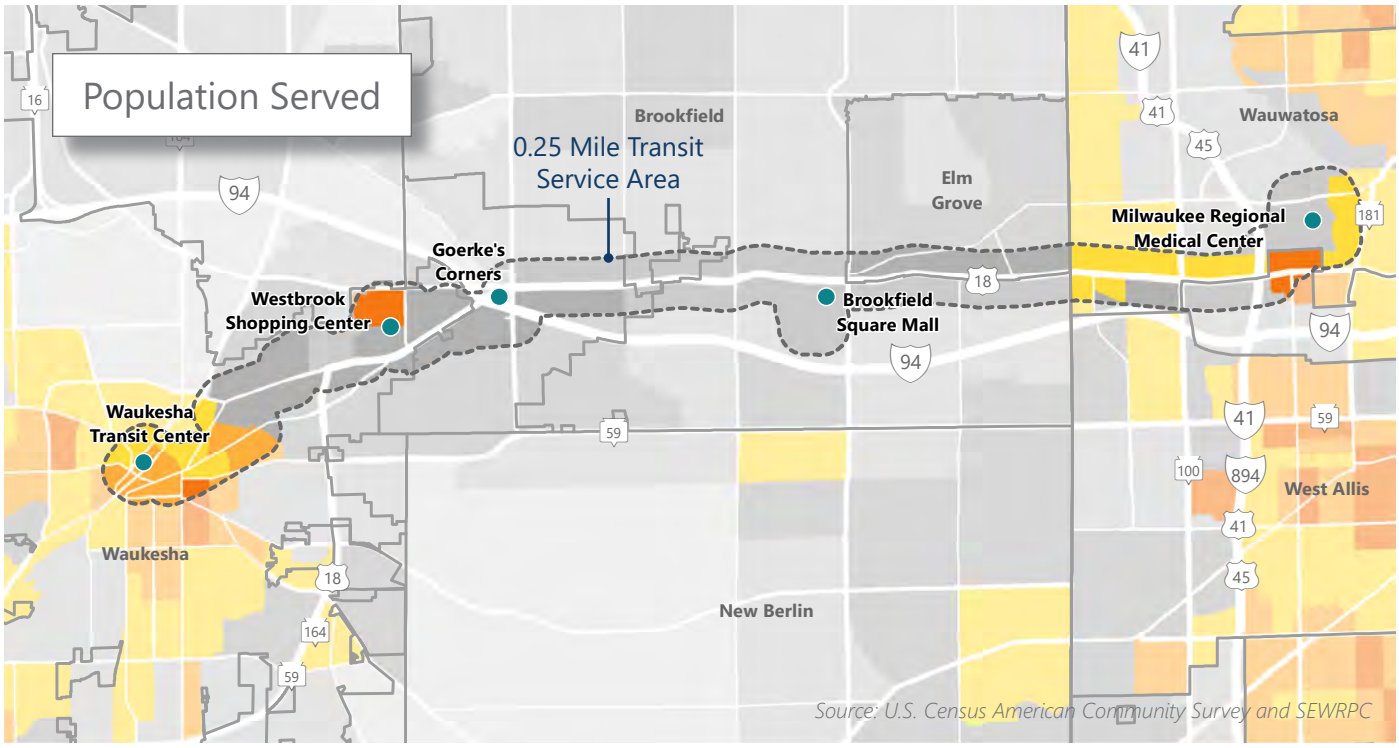


EMPLOYMENT BY SUB-QUARTER SECTION: 2019

0 - 25	160 - 375
26 - 63	376 - 625
64 - 159	626 - 5,509

The No Build alternative is expected to have similar levels of service as the current Route 1 and Goldline Extension with updates to reflect the agreed upon service levels anticipated to start in fall of 2022, with an extension to the MRMC. The No Build alternative would use the existing alignment, which serves areas with a high concentration of jobs including downtown Waukesha, Goerke's Corners in the Town of Brookfield, Brookfield Square in the City of Brookfield, and connecting to MRMC in the City of Wauwatosa. The number of jobs within one quarter mile of the existing alignment is approximately 54,000, based on 2019 employment data.

No Build Alternative

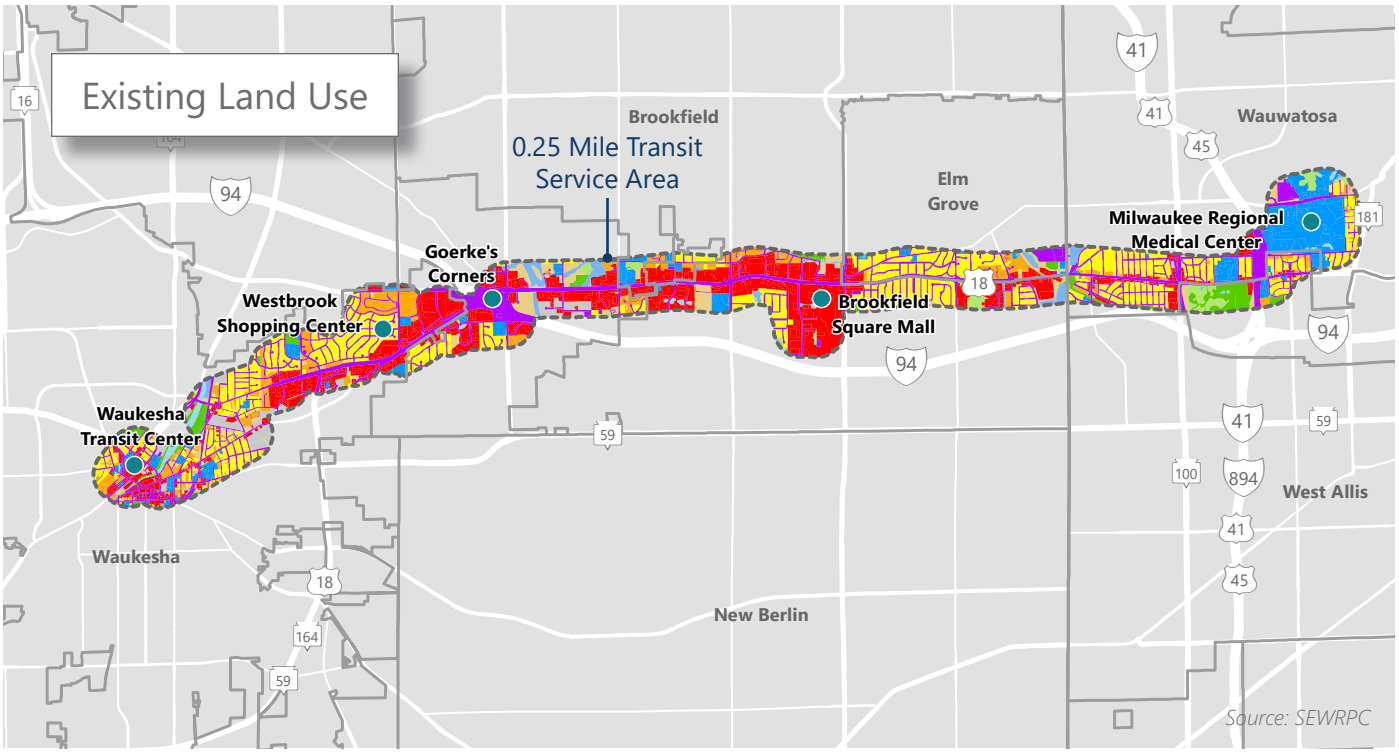


POPULATION DENSITY BY CENSUS BLOCK GROUP (PEOPLE PER SQUARE MILE): 2019

- 0 - 500
- 501 - 1,500
- 1,501 - 3,000
- 3,001 - 6,000
- 6,001 - 9,000
- 9,001 OR HIGHER

The existing alignment serves residential areas north of East Moreland Boulevard and medium to high-density housing north of Westbrook Shopping Center. In addition, the potential extension of service to the MRMC would connect to areas of higher residential density along Bluemound Road in Milwaukee County. It is estimated that about 19,000 people would be within one quarter mile of the existing alignment, based on 2019 U.S. Census data.

The land uses within one-quarter mile of the existing alignment include higher concentrations of commercial uses throughout much of the corridor. There are areas of single-family residential in areas north of Moreland Boulevard in the City of Waukesha, and along portions of the route east of Brookfield Square Mall. Under the no build alternative associated with this alignment, it is not anticipated that the transit service levels would support additional land use development. In general, transit-supportive land uses, such as high-density housing and jobs, can further enhance ridership, which may in turn increase the economic development potential along a corridor.



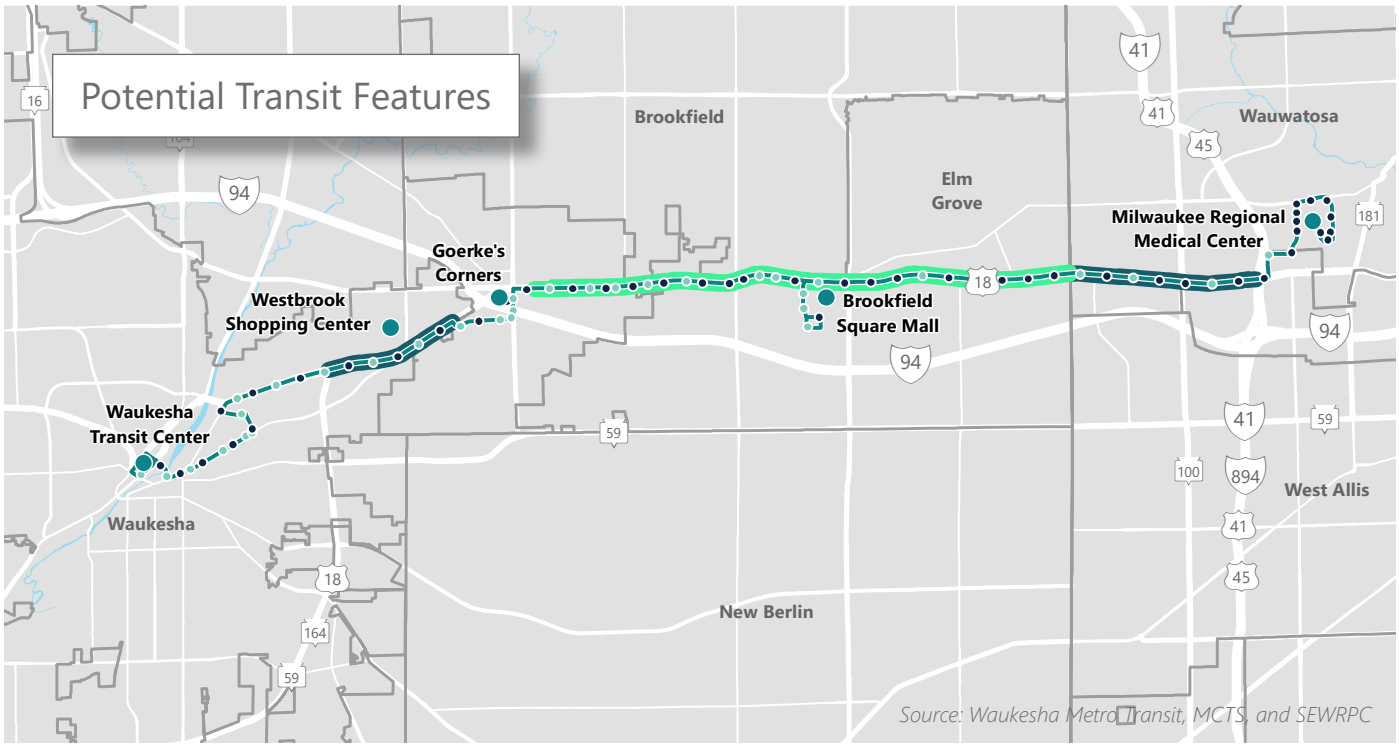
EXISTING LAND USE: 2015

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

Moreland Boulevard Alignment Performance

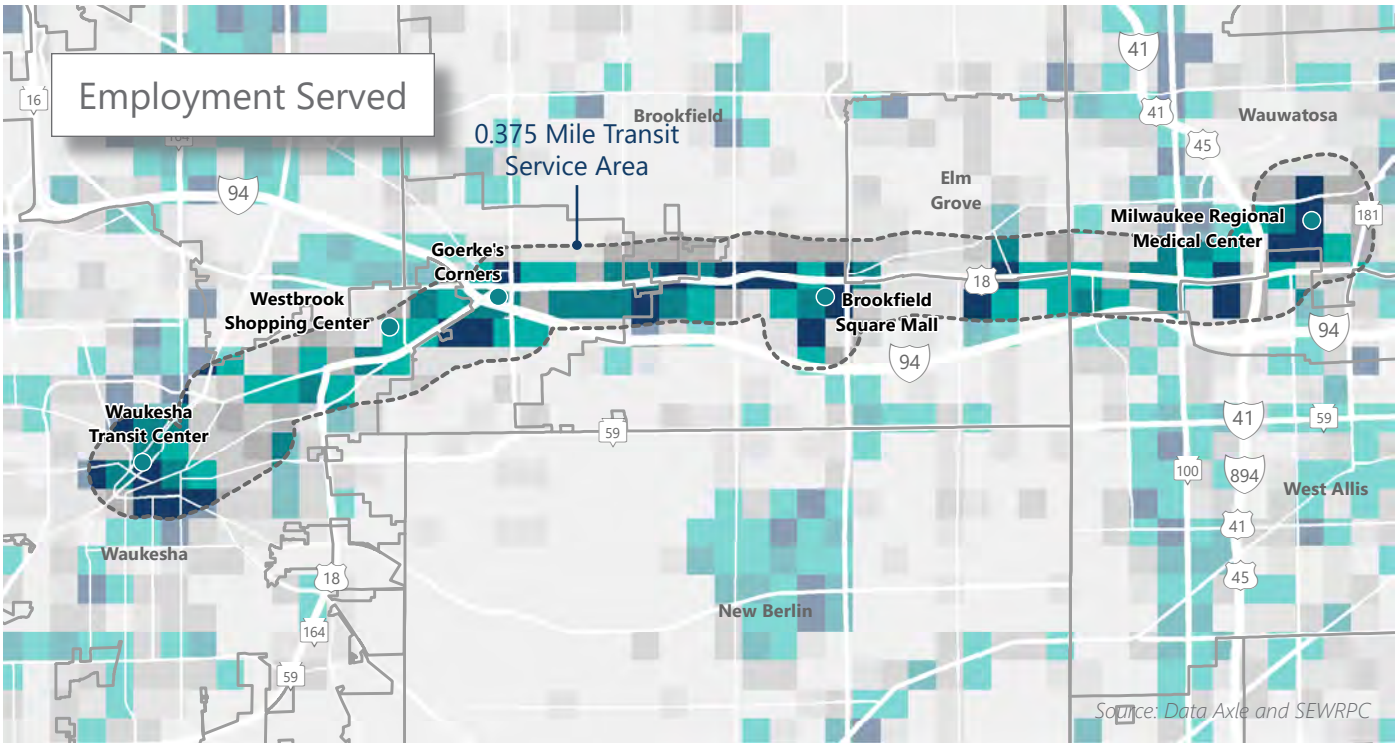
Enhanced Local Service/Corridor BRT Service

This alignment is would continue to use Moreland Boulevard in the City of Waukesha but would straighten the routing to increase travel speed. If changes to Route 1 are considered, changes to other Waukesha Metro Routes will likely be needed to continue transit service to areas east and southeast of downtown Waukesha. If the Corridor BRT alternative is pursued, several bus stops could be removed to further increase travel speed along this alignment.



TRANSIT FEATURES

- MORELAND BOULEVARD ALIGNMENT
- BUS STOP
- BUS STOP POTENTIALLY REMOVED UNDER CORRIDOR BRT
- DEDICATED BUS LANE
- POTENTIAL DEDICATED BUS LANE EXTENSION



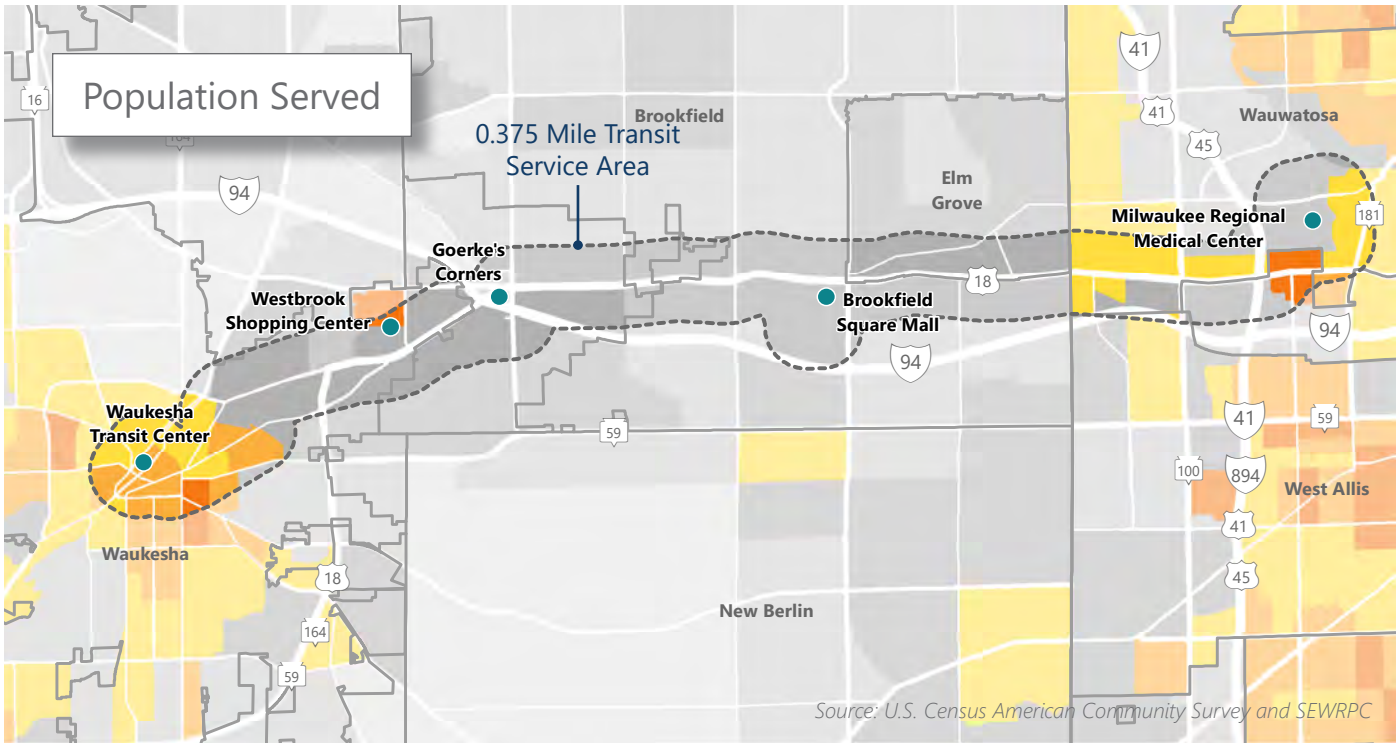
EMPLOYMENT BY SUB-QUARTER SECTION: 2019

0 - 25	160 - 375
26 - 63	376 - 625
64 - 159	626 - 5,509

It is anticipated that a transit route with enhanced service and amenities would increase the distance individuals are willing to walk to and from the service provided under these alternatives. As shown on the map, the buffer shown is expanded to just over one-quarter mile. Therefore, it is estimated that these service concepts with an alignment on Moreland Boulevard could increase access to additional jobs in the corridor from approximately 54,000 jobs under the No Build option to 63,000 jobs under the Enhanced Local Service/Corridor BRT alternatives. It should be noted that the number of existing jobs accessible from the Main Street alignment would be higher under the Corridor BRT alternative than under the Enhanced Local Service alternative.

Moreland Boulevard Alignment Performance

Enhanced Local Service/Corridor BRT Service

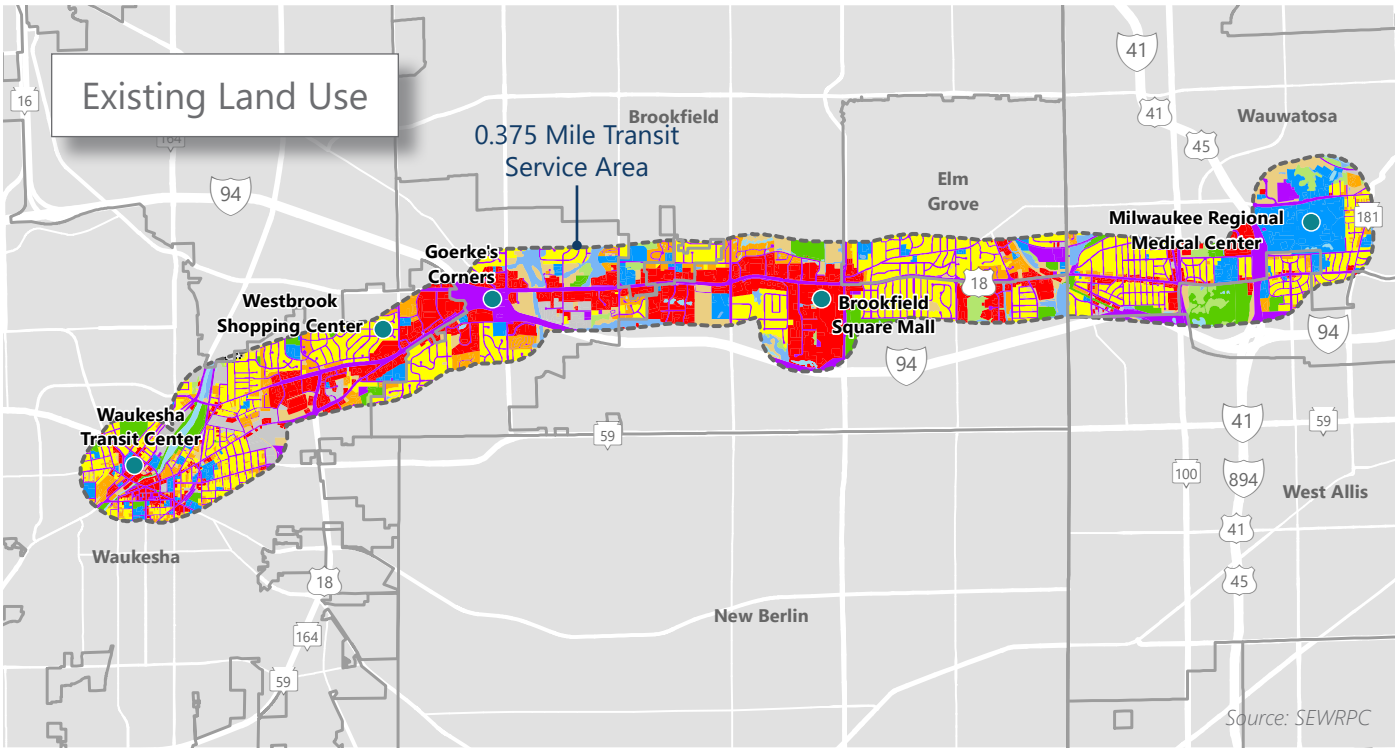


POPULATION DENSITY BY CENSUS BLOCK GROUP (PEOPLE PER SQUARE MILE): 2019

- 0 - 500
- 501 - 1,500
- 1,501 - 3,000
- 3,001 - 6,000
- 6,001 - 9,000
- 9,001 OR HIGHER

These service concepts could include a moderate range of transit enhancements, such as pedestrian improvements, station amenities, and increased frequencies. Given these enhancements, the distance that individuals are willing to walk to the route would increase slightly when compared to the No Build service concept alternative on the existing alignment. As a result, the number of people considered served by this option would increase to approximately 26,000. The alignment shown on the map includes straightening the route on Moreland Boulevard near the Westbrook Shopping Center. Although some of the residential areas north of Moreland Boulevard would fall outside of the service area for this alignment, it is possible that other Waukesha Metro routes would replace local service in these locations.

Additional amenities and increased frequency could make the transit service more attractive to potential riders, and therefore increase the distance individuals are willing to walk to access the transit service along the Bluemound Corridor. The areas served by this alignment include Westbrook Shopping Center, Goerke's Corners, Brookfield Square Mall, and the MRMC, which include commercial, multi-family residential, and institutional land uses. In addition to a review of existing land uses, Commission staff reviewed each community's land use plans for locations where additional development is anticipated in the future. In the City of Waukesha, additional development is anticipated along this alignment and the Moreland Boulevard alignment, with greater commercial and high-density residential development anticipated along Moreland Boulevard. However, the Main Street alignment is anticipated to include some higher-density residential and industrial uses in the future. Discussions of routing options in the City of Waukesha should continue to include consideration of planned development of transit-supportive land uses and opportunities for enhanced pedestrian connectivity.



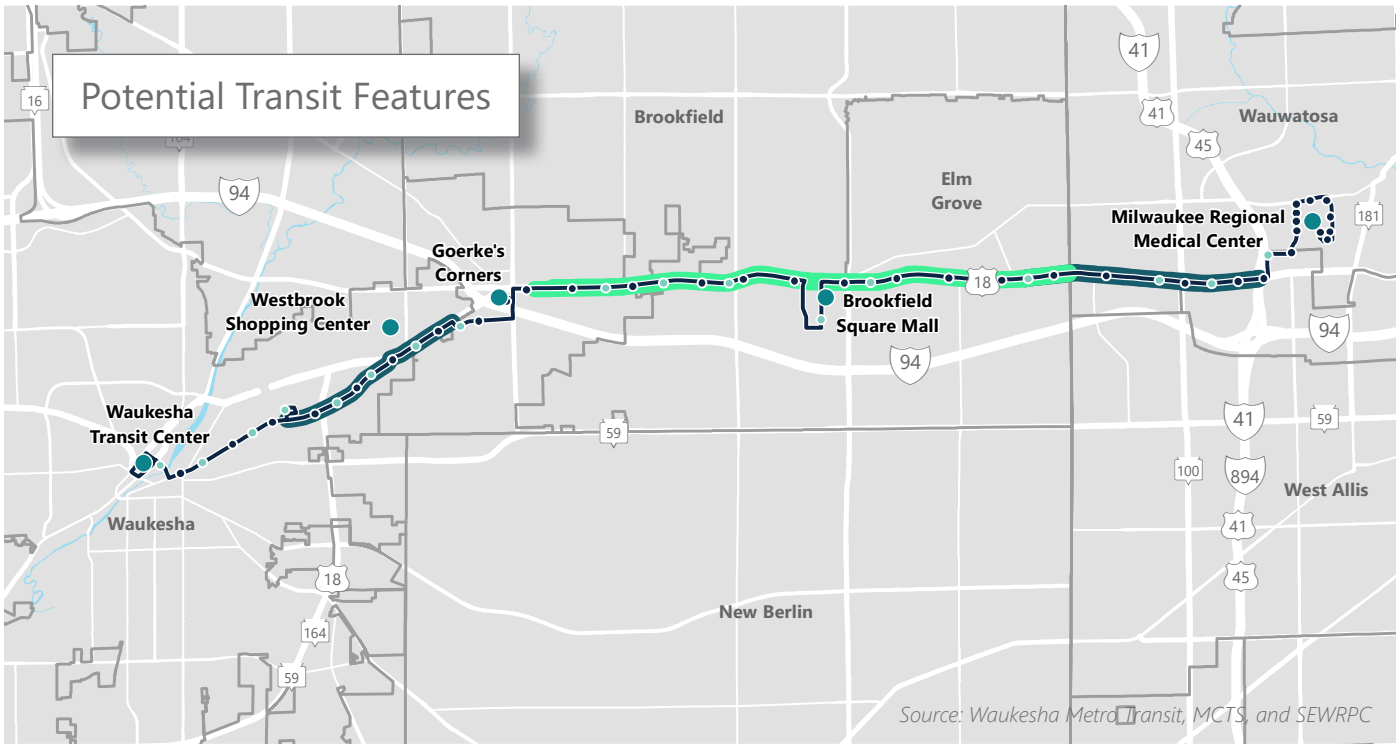
EXISTING LAND USE: 2015

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

Main Street Alignment Performance

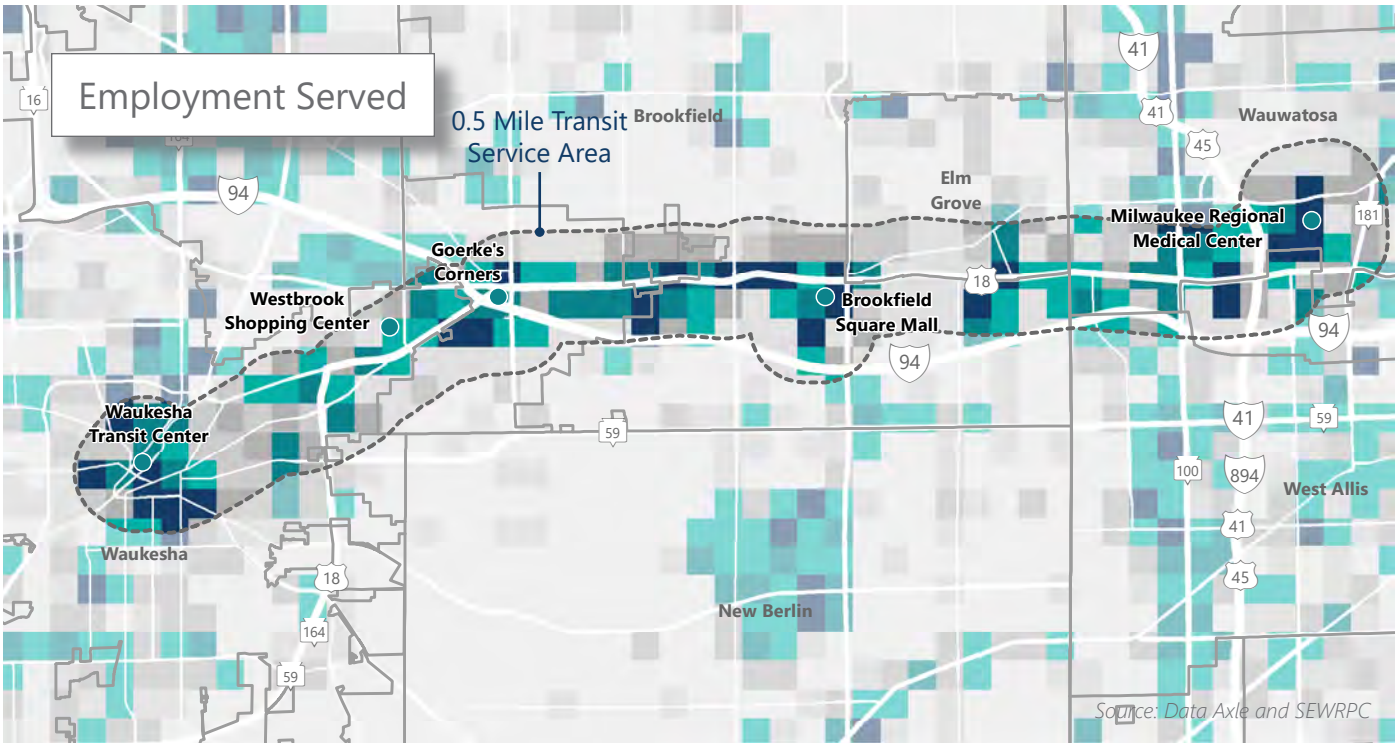
Corridor BRT/Fixed-Guideway BRT Service Al

This alignment would be routed along Main Street in the City of Waukesha and could include (especially under the Fixed-Guideway BRT alternative) additional dedicated transit lanes beyond the approximately five miles of exclusive lanes currently located between The Corners retail development and 124th Street. Bus stops would be located approximately every one-quarter to one-half mile (under the Corridor BRT alternative) or one-half to one mile (under the Fixed-Guideway BRT alternative).



TRANSIT FEATURES

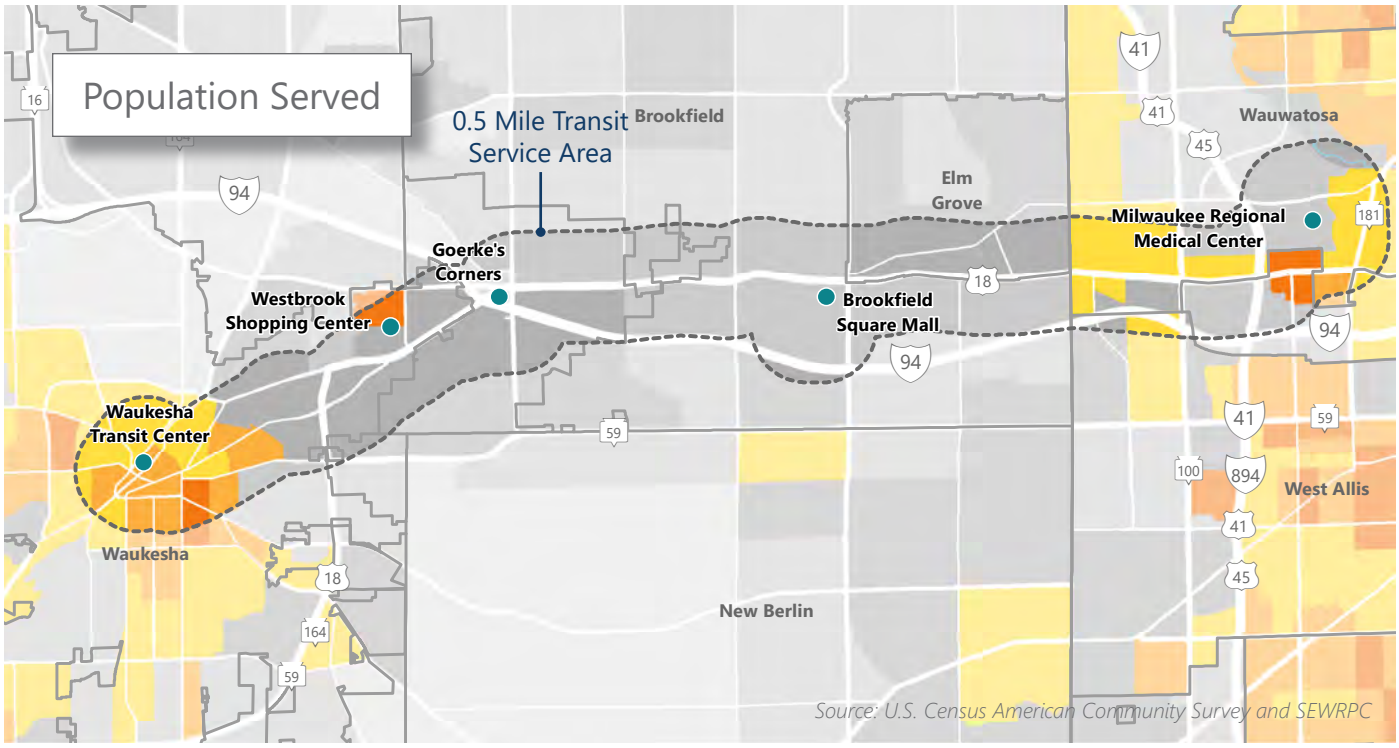
- MAIN STREET ALIGNMENT
- BUS STOP
- BUS STOP POTENTIALLY REMOVED UNDER FIXED-GUIDEWAY BRT
- DEDICATED BUS LANE
- POTENTIAL DEDICATED BUS LANE EXTENSION



EMPLOYMENT BY SUB-QUARTER SECTION: 2019

0 - 25	160 - 375
26 - 63	376 - 625
64 - 159	626 - 5,509

Under these service concepts, it is anticipated that there would be faster, more convenient service with many transit amenities such as exclusive travel lanes, high quality transit stations, and multiple transit enhancements. Therefore, the service area is expanded to include jobs within one-half mile of the route. Based on this analysis, approximately 72,000 jobs would be considered served by the route, an increase of over 18,000 jobs compared to the No Build service operating over the existing alignment.



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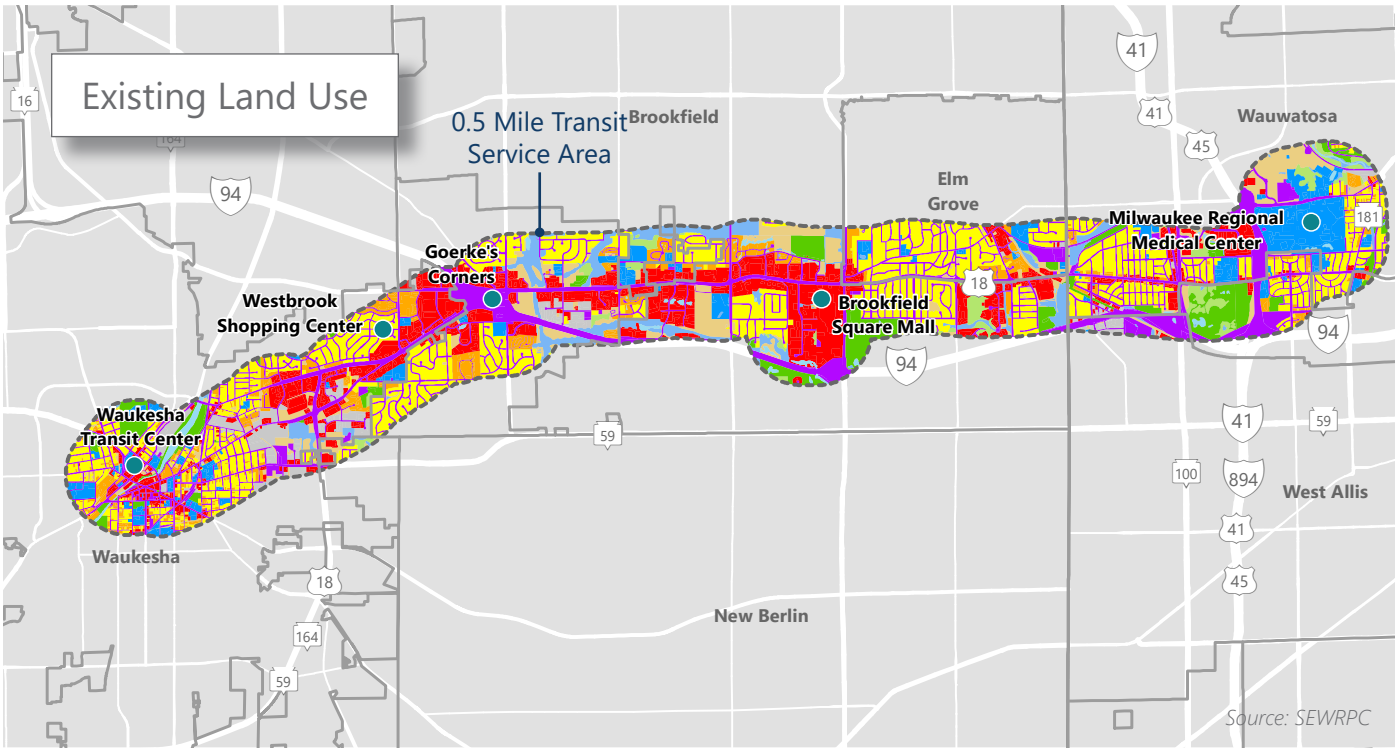
- 9,001 OR HIGHER

These service concepts would be expected to include a high level of transit service and amenities. As a result, the number of people considered served by this option would increase to approximately 35,000. The service alternatives associated with the alignment shown on the map would expand the areas considered served near downtown Waukesha and the Westbrook Shopping Center, which include higher densities of population.

In addition to expanding the extent of areas considered served by these service concepts, implementing a more robust transit service has been shown to encourage additional land use development. Commission staff reviewed each communities' land use plans to identify locations where additional development is anticipated in the future. Additional uses anticipated along the Bluemound Corridor include commercial development, mixed-use, and higher density shopping or services. Specifically, the Town of Brookfield anticipates additional commercial development to the west of The Corners and the City of Brookfield's Comprehensive Plan identifies various locations where higher density shopping and mixed-use development is anticipated near Brookfield Square Mall and 124th Street. Under these service concepts, more robust transit services and associated pedestrian improvements would be implemented. As additional development is proposed, sidewalks, curb ramps, crosswalks, and median refuge islands should be considered to enhance pedestrian connections and safety throughout the corridor. Consideration of the pedestrian environment could encourage land development around the stations and in the corridor.



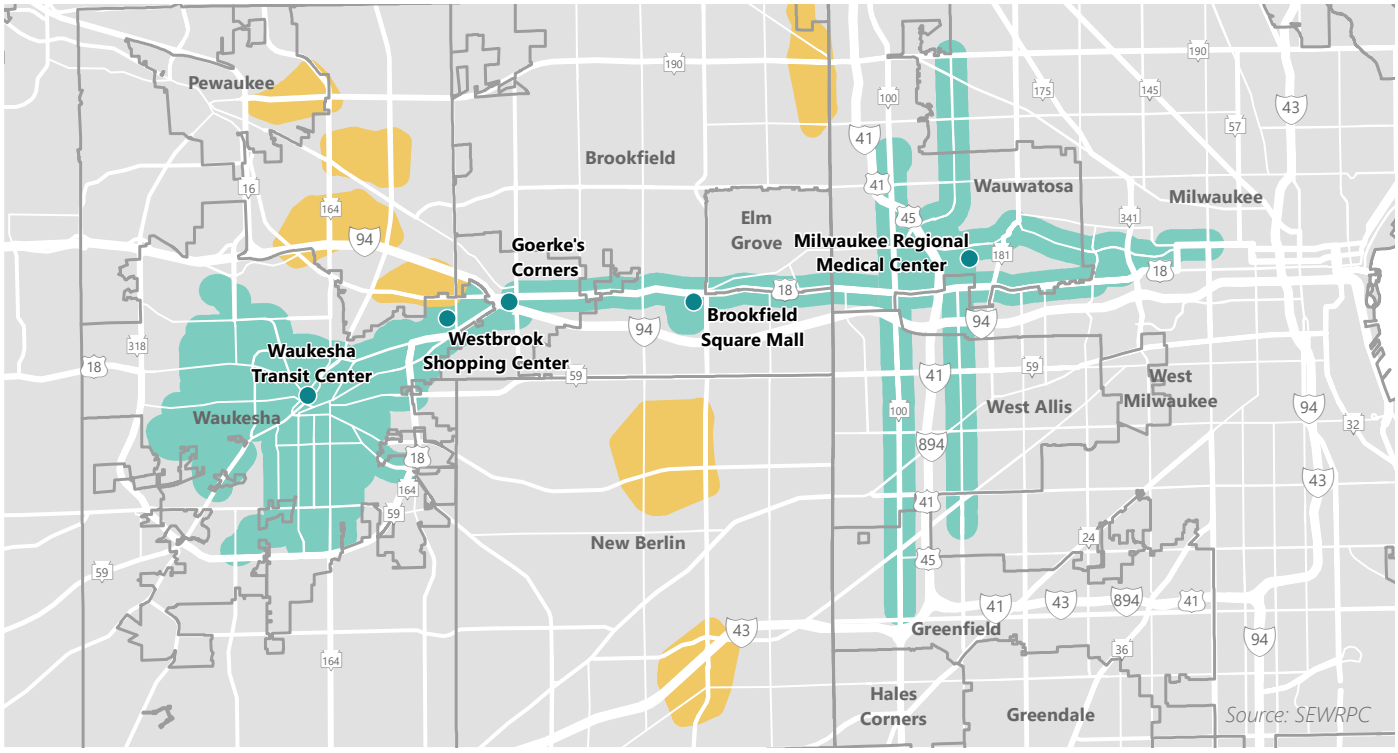
EXISTING LAND USE: 2015

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

TRANSIT CONNECTIONS

As employers in Waukesha County struggle to recruit and retain workers, enhanced services could make transit more attractive to potential employees and expand the labor pool for employers in Waukesha County. With the potential addition of shuttles and on-demand transportation, the number of potential employees with access to jobs in Waukesha County could increase. Specifically, "last mile" shuttle services could expand opportunities for commuters from the City of Waukesha and Milwaukee County to more easily reach employers in some parts of the County outside the corridor.

As shown on the map, the enhanced transit services along the Bluemound Road corridor would connect passengers to existing transit routes operated by Waukesha Metro and the Milwaukee County Transit System (MCTS) as depicted in the teal shaded areas. The teal shading contains the areas on the corridor or within a one-quarter mile walk of a brief ride (15 minutes or less) on a local route that connects to the Bluemound Corridor route. The orange shaded areas identify locations where on-demand transportation services connected to the corridor at Brookfield Square Mall and Goerke's Corners could be a viable option given the existing employment density and commercial activity. These areas include the New Berlin Industrial Park, the Westridge Business Park, Village of Butler, locations outside of the transit service area in the City and Village of Pewaukee, and areas northwest of the Goerke's Corners Park and Ride Lot. Increased access and efficiency offered by on-demand transportation could boost ridership and increase the number of potential employees available to work in Waukesha County.



TRANSIT CONNECTIONS

- EXISTING CORRIDOR ROUTE AND CONNECTING ROUTE SERVICE AREA
- POTENTIAL LOCATION FOR ON-DEMAND TRANSIT SERVICE

Note: The connecting route service area represents a one-quarter mile distance from connecting routes within a 15-minute travel time from a stop connecting to the Bluemound Road Corridor.

On-demand transportation services could be developed as a partnership between businesses, Waukesha Metro, and companies that provide dynamic scheduling software. These services offer flexibly scheduled rides, typically to or from higher-frequency transit stops on an as-needed basis. They also typically utilize a ride-matching and routing software to enable efficient on-demand, shared rides that can be arranged through a smartphone app, web-based booking software, and/or phone-based booking system. On-demand transportation services typically share these characteristics:

- Allow users to request trips on demand
- Allow for electronic payment
- Allow users to manage personal information, payment method, and ride history
- Provide users real-time vehicle location before and during trip

Examples of these types of last mile services include the City of Dublin, Ohio and their partnership with SHARE and the Central Ohio Transit Authority (COTA) to offer employees free rides from bus stops to any employer within the city limits. The SHARE app is coordinated with the COTA bus schedule to ensure a timely pick-up and drop-off for employees. A second example includes the Shuttle Bug program in the Chicago area, where a public-private partnership between employers, Metra commuter rail, PACE transit, and the Transportation Management Association (TMA) of Lake-Cook to provide last mile shuttle services to 30 companies on 13 routes.

POTENTIAL PEDESTRIAN ENHANCEMENTS

In Summer 2020, Commission staff conducted a bus stop inventory for Waukesha Metro Transit and Waukesha County Transit that identified the presence and condition of bus stop signage, bus pads, and pedestrian amenities such as sidewalks and curb ramps. Based on the inventory, most bus stop locations along the current or potential corridor have bus stop amenities. However, given the number of traffic lanes and wide setbacks along portions of Bluemound Road, Main Street, and Moreland Boulevard, pedestrian connectivity is limited.

Potential pedestrian enhancements such as refuge islands and bus bulb outs could make the corridor more attractive for pedestrians, passengers, and visitors. The examples shown below are intended to illustrate the range of existing conditions along the corridor and potential treatments that could improve the pedestrian environment.

Bluemound Road near The Corners *Town of Brookfield*

Main Street near Aurora

Existing

Pedestrian Crossing on W. Bluemound Road *City of Milwaukee*

Bus Bulb *City*

Potential

a Street *City of Waukesha*

Main Street north of Nike Drive *City of Waukesha*

of Portland, OR

Roadway Improvements *City of Fremont, CA*

ADDITIONAL BENEFITS OF BUS RAPID TRANSIT

Travel time savings: Service quality improvements associated with rapid transit can reduce travel time by 25 to 30 percent when compared to local bus service. The reduction in travel time depends on the extent of direct routing and range of amenities included in the service concept. The investments that can produce travel time savings include, but are not limited to, dedicated travel lanes, transit signal priority, and off-board fare collection. The reduction of travel time improves the attractiveness and reliability of transit, which can also increase ridership.

Potential ridership increases: Bus rapid transit systems have been shown to achieve a range of ridership increases depending on the investments made along a corridor. As ridership increases, performance indicators such as subsidy per passenger can also improve. Two examples of ridership increases include the City of Cleveland's Healthline, which experienced a 47 percent increase in ridership three years after it began service, and the City of Eugene's Emerald Express, which experienced a 74 percent increase in ridership after the first route began operating in 2007. However, not all rapid transit projects experience immediate ridership increases. The Red Line in the Minneapolis suburbs, which began service in 2013, expected to attract 1,600 riders per day, but actual ridership was approximately 1,000 riders per day. The Pace Pulse Rapid line, which began service in August 2019 saw ridership levels decrease from about 2,000 riders per day in 2019 to about 1,100 riders per day in June 2021, reflecting national ridership trends due to the COVID-19 pandemic. Additional strategies should be considered to improve ridership, such as an increase in marketing, integrating first/last mile mobility, and encouraging transit-supportive land uses.

	Existing No Build	Alternative 1 Enhanced Local Service
Routing		
	Similar to routing starting in Fall 2022	Moreland Boulevard
Estimated Employment Served		
	54,000	63,000
Estimated Population Served		
	19,000	26,000
Approximate Travel Time Savings Potential		
	Low	Low
Ridership Increase Potential		
	Low	Low
Land Use Improvement Potential		
	Low	Low

Land use value increases: Recent studies have found that transit projects increase nearby property values where convenient and reliable transit service with good regional connections to other transportation modes exist. In addition, appropriate zoning laws, urban design standards, and parking rules can further optimize the transit investments. Examples of land use development improvements include Pittsburgh, which experienced a $300 million increase in development near transit stations along the East Busway project, and Boston, which experienced a $650 million increase in development along the Washington Street corridor of the Silver Line.

Performance summary: The following figure indicates that additional transit investments could result in more jobs and individuals served and create conditions that improve the development potential along the transit corridor. The numbers shown are conceptual and would be further refined if additional analyses are pursued.

Alternative 2 Corridor BRT	Alternative 2 Corridor BRT	Alternative 3 Full BRT
Moreland Boulevard	Main Street	Main Street
63,000	63,000	72,000
26,000	25,000	35,000
Varies, could be up to 25% savings	Varies, could be up to 25% savings	Up to 30% savings
Varies, could be up to 20%	Varies, could be up to 20%	20% to 35% increase
Varies, depending on service and regional factors	Varies, depending on service and regional factors	Up to 20%

FUNDING OPTIONS FOR TRANSIT IMPROVEMENTS

The following section describes the funding sources available for transit improvements and next steps that could be pursued. The potential funding sources for any future transit improvements are described in greater detail below.

FTA Section 5309 Capital Investment Grant (CIG) Program is a discretionary program that requires a multi-step and multi-year process that would include an FTA project evaluation and rating process. The timeline for conducting the necessary planning, evaluation, and outreach to request entry into the FTA CIG process can be lengthy, taking approximately 12 to 24 months depending on the levels of outreach sought by the local entities and stakeholders. Additional time is then required to proceed through the process, which would include a NEPA process and extensive engineering and design. Given the potential transit improvements anticipated along the Bluemound Corridor, it is likely this project would fit best within the Small Starts category of the CIG program. Specifically, Small Starts projects have a funding threshold of $100 million or less in requested funds, and $300 million or less in total project cost. Eligible improvements include transit capital investments such as buses, transit signal priority systems, stations, and pedestrian accommodations. These funds require a 20 to 50 percent local match.

www.transit.dot.gov/CIG

FTA Section 5337 State of Good Repair Grant Program allocates funding annually based on transit service operated on dedicated lanes, which includes the reserved bus lanes operated on W. Bluemound Road in Waukesha County. Recent FTA Section 5337 funds allocated to Waukesha County have recently averaged approximately $500,000 per year. Eligible uses of these funds include capital projects that maintain the transit system in the Bluemound Corridor including vehicles, equipment, signals, stations, security systems, and computer hardware and software. These funds require a 20 percent local match.

www.transit.dot.gov/funding/grants/state-good-repair-grants-5337

FTA Section 5307 Urbanized Area Formula Program allocates funding annually based on amounts of transit service and population. Eligible activities generally include planning, engineering, design, and capital. Operating expenses are allowed in certain situations. Recent allocations to the Milwaukee Urbanized Area have been approximately $21 million per year, with the City of Waukesha and Waukesha County each receiving approximately $500,000 per year. The State of Wisconsin has indicated that Section 5307 funds are available for capital investments as COVID-related stimulus funds can "replace" 5307 funds in the State's annual distribution of operating support for transit systems. The FTA COVID-related funds allocated to Waukesha County and the City of Waukesha total approximately $6 million for each entity. The amount of Section 5307 funds available to be utilized for capital expenditures is likely less than the annual total. These funds require a 20 percent local match.

www.transit.dot.gov/funding/grants/urbanized-area-formula-grants-5307

Value Capture is a general term that refers to the practice of "capturing" a proportion of the increase in property values to pay for the infrastructure. Common tools include special assessments, tax increment financing, impact fees, and joint development agreements. Considerations for pursing value capture in transit development include identifying possible partners, reviewing financing needs, and creating selection criteria for the value capture mechanism. Locally, value capture was utilized by the City of Milwaukee as part of the funding package for their streetcar system, which relied on $59 million in tax increment financing (TIF) to fund the first phase of the system.

www.transit.dot.gov/funding/funding-finance-resources/value-capture-across-us

FHWA Congestion Mitigation and Air Quality (CMAQ) Program is a competitive program that funds transportation projects that reduce air pollution in accordance with the Clean Air Act. The Wisconsin Department of Transportation solicits projects every other year. The current CMAQ program application process is underway and it is anticipated that projects would be programmed for years 2025 and 2026. CMAQ funds can be used for new transit service, expansion, service improvements, and new vehicles. If the CMAQ program funds are used for operating assistance, the funds can be spread over a total of five years, with the expectation that the last two years of funding will be less than the initial operating costs. The local share for CMAQ is 20 percent. The Federal funding level estimated for the CMAQ funds is based on the amount made available in the State budget. The Southeastern Wisconsin Region has received approximately $11 million annually in CMAQ funding during the last two cycles of funding.

www.fhwa.dot.gov/environment/air_quality/cmaq

EXAMPLES OF TRANSIT IMPROVEMENT PROJECTS AND FUNDING SOURCES

There are national examples of rapid transit projects that utilized a range of funding sources to implement the identified transit improvements for a given corridor, such as the Pace Pulse Rapid Transit Service outside of Chicago and the Red Line BRT in the suburbs of Minneapolis, Minnesota. Specifically, the Pace Pulse service utilized funds from the Congestion Mitigation and Air Quality (CMAQ) grant and the Red Line BRT utilized CMAQ for vehicle purchases and FTA Section 5309 for infrastructure improvements.

If there is interest in pursuing fixed-guideway or corridor BRT with all improvements occurring simultaneously, funding could be pursued through the FTA's CIG Program. For example, Milwaukee County and the City of Madison pursued bus rapid transit improvements through the CIG program, conducting a multi-year evaluation and outreach process to select a locally preferred alternative and request a grant agreement with FTA.

NEXT STEPS AND CONCLUSION

As described in this document, there are three alternatives, each with their own timing, funding sources, and potential benefits. Depending on the alternative selected, it may be possible to move forward in an incremental fashion, with improvements prioritized and staged in response to changes in ridership or land use development. However, incremental improvements may reduce the likelihood of a marketing and awareness-related increase in ridership. In addition, the more incremental levels of implementation are less likely to generate the external, development-related economic benefits of a large project, at least in a rapid, coordinated fashion.

On the other hand, some of the alternatives may lend themselves to a single, simultaneous investment. Investing in all improvements simultaneously could create a marketing "splash" that encourages non-riders to consider taking transit, and may result in greater development-related economic benefits due to a single, larger, coordinated project. If funds are pursued through the CIG program, project sponsors must have a local match funding identified and reasonably secured to enter the program. It could take between 12 and 24 months to complete the FTA project evaluation and rating process, depending on levels of outreach sought by local entities and stakeholders. Lastly, securing a final grant agreement may take at least an additional 6 months (likely more), and is dependent on FTA scoring of projects and Congressionally-approved funding levels for the CIG program.

	Existing No Build	Alternative 1 Enhanced Local Service
FTA 5309 Capital Investment Grant Program (Small Starts)		
	Not eligible	Incremental transit enhancements are not eligible
FTA 5337 State of Good Repair Grant Program		
	Yes, for maintenance, rehabilitation, or replacement of existing capital assets	Maybe, must only address current or short-term service levels
FTA 5307 Urbanized Area Formula Program		
	Yes, for eligible activities	Yes, for eligible activities
Value Capture		
	Unlikely to result in significant land use redevelopment	The level of potential land use redevelopment will depend on the final package of investments in transit in the corridor
FHWA Congestion Mitigation and Air Quality Program		
	No	Yes, for eligible activities

Note: FTA Section 5307 funds are only likely to become available for capital investments if transit funding provided as part of the three COVID relief allocations can be used to support regular operations of the transit system. FTA Section 5307 funds are available for planning, capital projects, and certain operating costs within limits based on the number of buses operated.

Source: SEWRPC

Within the described alternatives, Alternative 1 is likely ineligible for CIG funding, and therefore would likely need to be accomplished incrementally using a variety of funding sources. Alternatives 2 and 3 could be accomplished incrementally or with all transit improvements occurring simultaneously. However, alternative 3 would likely be more difficult to accomplish incrementally due to the need to relocate or redo some of the previous investment as a higher level of service is pursued in some areas. In addition, the overall potential cost of Alternative 3 may lead to the CIG program being the most reasonable funding source.

This Concept Plan identifies the potential benefits and options to purse transit improvements to Waukesha Metro Route 1. Should the City of Waukesha, Waukesha County, the City of Brookfield, and other jurisdictions along the route decide to pursue transit improvements, Commission staff can further discuss the scope and schedule for an alternatives analysis and feasibility study that could include identification and prioritization of transit improvements to be conducted incrementally or to assist with the development of grant documentation to request entry into FTA's CIG Program.

	Alternative 2 Corridor BRT	Alternative 3 Fixed-Guideway/Full BRT
FTA 5309 Capital Investment Grant Program (Small Starts)		
	Eligible for Small Starts	Eligible for Small Starts
FTA 5337 State of Good Repair Grant Program		
	Not eligible	Not eligible
FTA 5307 Urbanized Area Formula Program		
	Yes, for eligible activities	Yes, for eligible activities
Value Capture		
	Moderate potential for land use redevelopment within the corridor	Moderate to high potential for land use redevelopment within corridor
FHWA Congestion Mitigation and Air Quality Program		
	Yes, new service and new vehicles are eligible	Yes, new service and new vehicles are eligible

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