

Bluemound Corridor

Transit Enhancement Study

Community Assistance Planning Report No. 344

ACKNOWLEDGMENTS

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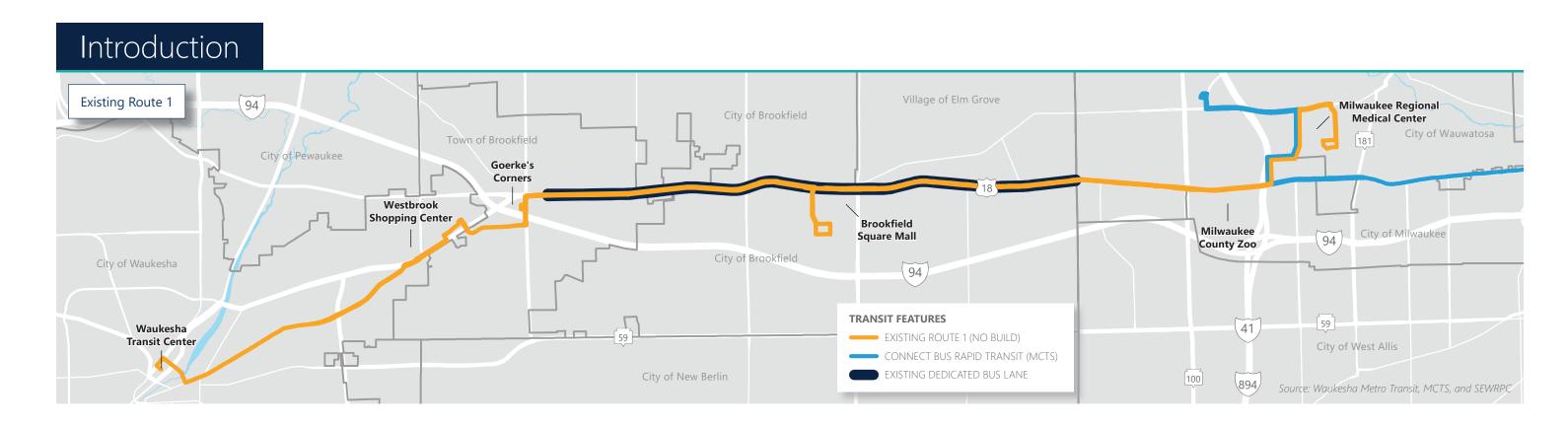
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Waukesha County requested SEWRPC to prepare a transit enhancement study with recommendations for a phased approach to transit investments on Waukesha Metro's Route 1. The following pages provide recommendations relating to route alignment, bus stop locations and amenities, bus frequency and running times, pedestrian improvements, including the ridership projections, cost estimates, and a recommended schedule of incremental investments with potential funding sources. Other improvements that were identified to be considered in the study include bus rapid transit features, a mobility hub, and the option of a pedestrian bridge.

Why Enhance Transit on Metro Route 1?

Route 1 provides a crucial economic and mobility connection between Waukesha and Milwaukee Counties, running primarily along W. Bluemound Road and, as of June 2023, offers a direct transfer to Milwaukee County Transit System's CONNECT 1—the Region's first bus rapid transit (BRT) route. There are more than 52,000 jobs (*InfoGroup*, 2019) and about 15,700 residents (*U.S. Census Bureau*, 2020) within one-quarter mile of the route. The route includes approximately five miles of dedicated bus-only lanes in each direction, provides service every 20 minutes during weekdays, and has stops located approximately every one-quarter mile.

This Study Includes Recommendations Relating To:



Workforce Development and Transit Connections



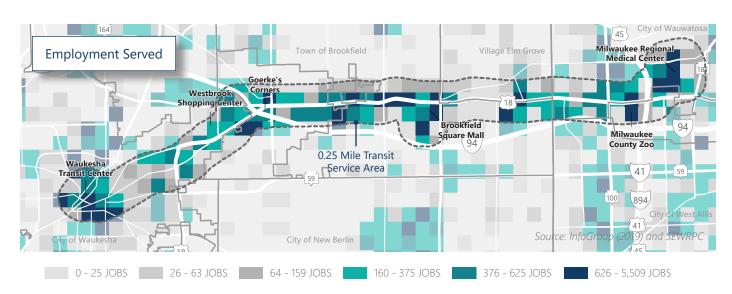






The City of Waukesha and Waukesha County requested SEWRPC to provide specific recommendations for improving transit in this corridor, building off recommendations in the Waukesha Area Transit Development Plan, (www.sewrpc.org/WaukeshaTransit) to address the difficulty local employers were having in attracting workers to the Bluemound Corridor and the potential benefits related to improved transit access. According to the U.S. Bureau of Labor Statistics, there are 1.37 jobs for every one home in Waukesha County, which is the lowest job to home ratio in Wisconsin. (U.S. Bureau of Labor Statistics) In the existing Route 1 service area, the job-home ratio is more than five times higher than Waukesha County, with 7.12 jobs for every one home. Route 1 connects workers in Milwaukee County and in other parts of Waukesha County to jobs in the corridor.

The map below shows the concentration of jobs within one-quarter mile of the existing Route 1. Enhancing service and adding additional amenities would make Route 1 faster and more convenient, and the CONNECT 1 service will attract more transit riders on W. Bluemound Road while expanding Waukesha County's labor pool into Milwaukee County.





Feedback from Businesses

The Waukesha County Business Alliance hosted a meeting with SEWRPC for its members in November 2022 to discuss how Route 1 could improve to better serve workers in the Bluemound Corridor. The needs to the right were identified from the discussion with businesses.

concerns about how much transportation solutions would address needs, citing broader challenges that have led to ongoing workforce shortages

Expanded service hours to accommodate restaurant, retail, healthcare, and manufacturing workers

Faster travel times and better coordinated transfers to and from Milwaukee County

The addition of lighting and shelters at stops to improve safety and comfort while waiting for the bus

Improved pedestrian crossings

On-demand service options for emergency ride home needs or to provide access to businesses beyond the Route 1 service area

Bluemound Corridor Transit Enhancement Study

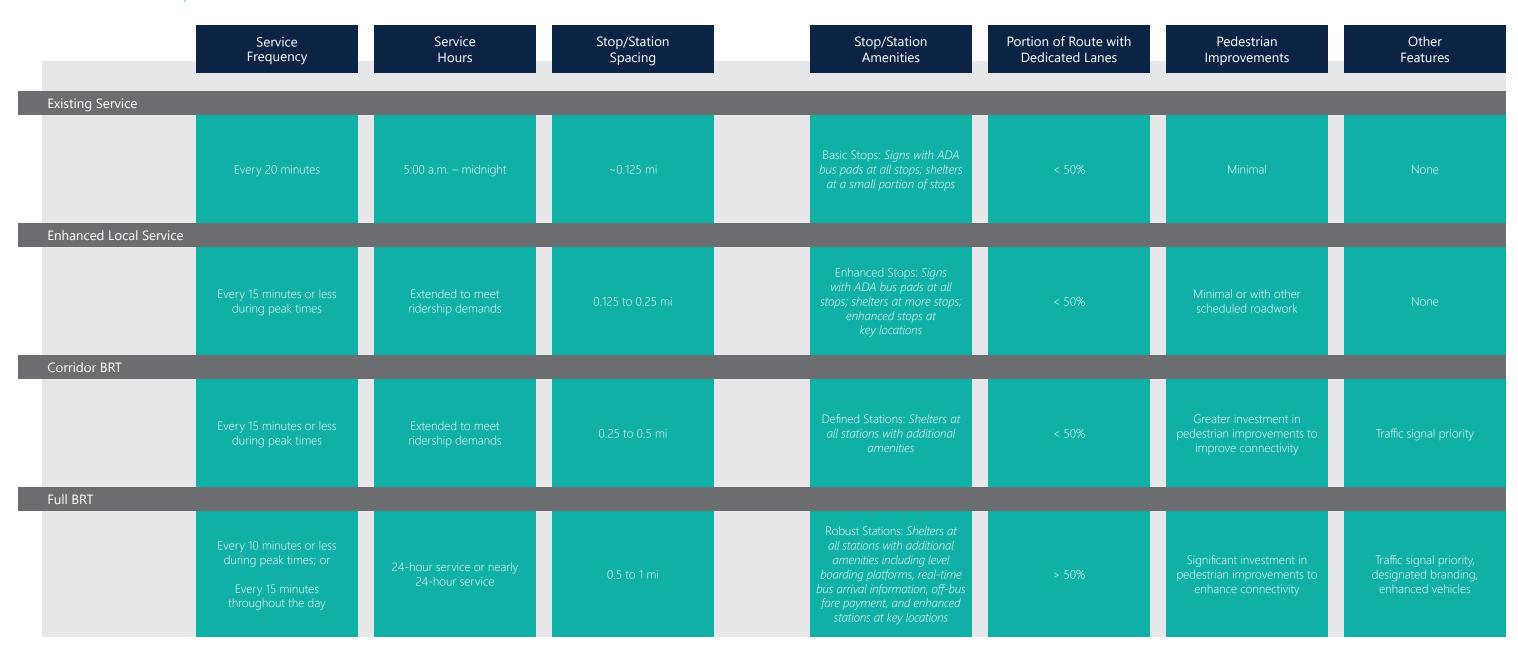
The Waukesha County Business Alliance supports innovative and cost-effective transportation solutions that connect workers to jobs in Waukesha County. The Alliance has identified the workforce shortage as the number one issue facing our employers. There are hundreds if not thousands of job openings in our region, including many along the Bluemound Road corridor.

Background

SEWRPC completed the Waukesha Area Transit Development Plan (TDP) for the City and County of Waukesha in December 2022. The TDP proposed a system-wide route restructuring, which took effect in June 2023. Additionally, the plan suggested considering further improvements to Route 1. During the planning process, the City of Waukesha and the City of Brookfield requested that SEWRPC develop a more in-depth analysis of potential transit enhancements from downtown Waukesha to the Milwaukee Regional Medical Center (MRMC).

In response, SEWRPC developed a Bus Rapid Transit Concept Plan for the Bluemound Road Corridor (www.sewrpc.org/ WaukeshaBRTConceptPlan.pdf). This plan presented three service alternatives, including considerations for BRT service, and explored various alignment options, along with other suggested enhancements for the Route 1 service area. Changes to Waukesha Metro's Route 1 were implemented in Spring 2023 as part of the TDP with a recommendation for more detailed study of the Bluemound Corridor from the downtown Waukesha Transit Center to the Milwaukee Regional Medical Center. Updates in June 2023 included expanded hours, extended service and greater frequency of service.

Transit Service Concepts Considered



Summary of Recommendations

The Bus Rapid Transit Concept Plan for Bluemound Road presented different transit service types to be considered in the corridor including transit service similar to the existing Route 1, Enhanced Local Service, Corridor BRT, and Full BRT.

This study evaluated features of the various service types and recommends that select features from the Enhanced Local Service and Corridor BRT transit service options be implemented in the corridor, in addition to retaining some features of the existing local service. Given existing and projected ridership, land use, and projected population and job growth in the corridor, these options maximize the transit operating benefits and minimize additional capital costs that are not currently warranted. More details about the recommended route alignment are included on the following pages.



Route Improvements

- ✓ More Direct Routing
- Extended Dedicated Bus Lanes
- Transit Signal Priority for Buses
- Queue Jump Lanes/Signals

Service Improvements and Amenities

- ✓ Extended Service Hours
- ✓ Weekday 15-Minute Frequency

Pedestrian Improvements

- ✓ Mid-Block Crosswalks
- ✓ Sidewalk Improvements: Curb Ramps
- ✓ ADA Bus Pads

Stops and Shelters

- ✓ Reduced Number of Stops/ Increased Stop Spacing
- ✓ Added Shelters on Route
- ✓ Lighting in Shelters
- → Off-Board Ticketing
- Off-Board Fare Validation
- Enhanced Shelters/Stations
- Real Time Arrival Information at Shelters
- Level Boarding Platforms

Vehicles

- Specially Branded Vehicles
- Enhanced Vehicles (including Electric Buses)
- → WiFi on Buses



✓ Recommended ⊗ Not Recommended at This Time ⊖ Included in Other Efforts

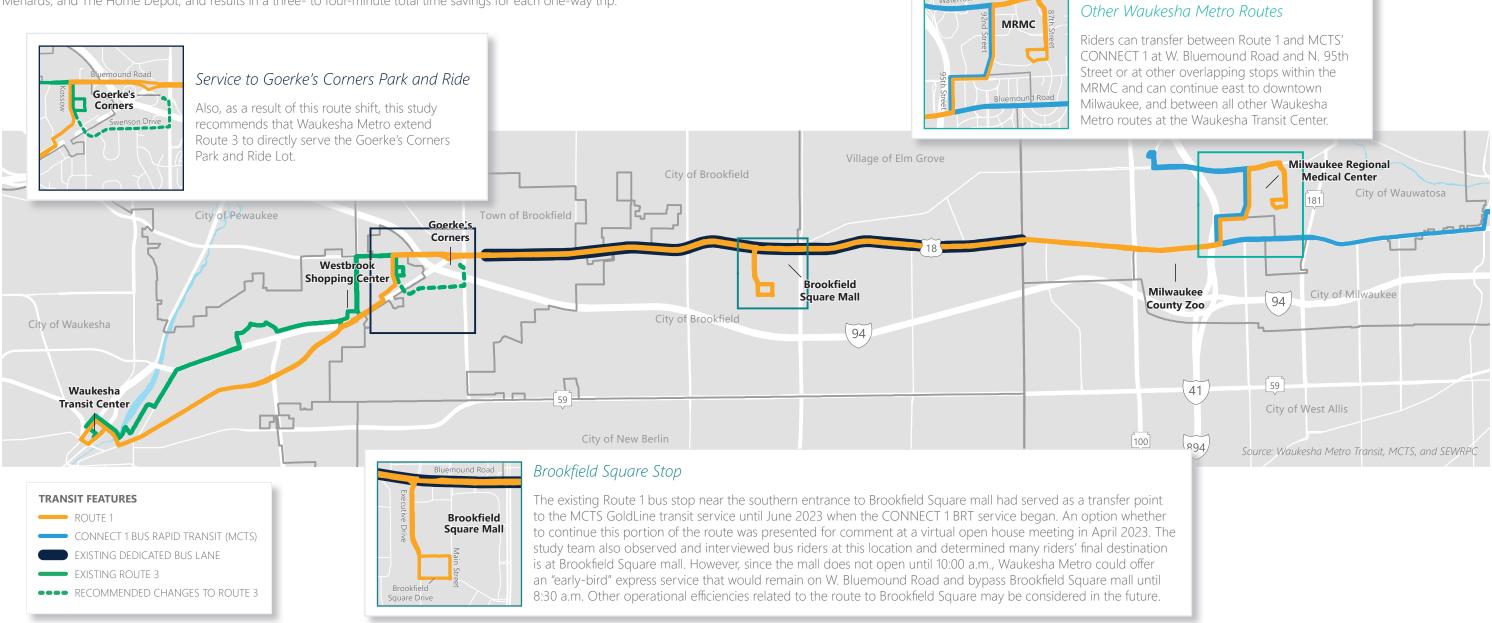


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Recommended Route Alignment

At the beginning of this study, Waukesha Metro chose the option to streamline existing Route 1 along W. Main Street, W. Moreland Boulevard, and W. Bluemound Road. The map on pages 2 and 3 shows the existing Route 1 alignment that is the basis for the study based on ridership and activity centers.

This study recommends a slight change to the Main Street route alignment previously identified in the Concept Plan. Ridership data from April 2023 showed that activity at existing stops on Swenson Drive and at the Goerke's Corners Park and Ride was relatively low, averaging just two riders per day using the Swenson Drive stops, and eight riders per day using the Goerke's Corners stop during the month-long data collection period. As a result, the study team introduced an alignment shift to continue the route north on Kossow Road connecting E. Moreland Boulevard with W. Bluemound Road as shown on the map below. This alignment provides more convenient access to nearby businesses including Target, Blain's Farm & Fleet, Menards, and The Home Depot, and results in a three- to four-minute total time savings for each one-way trip.



Connections to CONNECT 1 and

Recommended Stops and Shelters



*The existing shelter at the Executive Drive stop is located on the northbound side of the road and is utilized by trips in both directions.

The recommendation for the stop locations and shelters is shown in the map above. Stop and shelter recommendations are based on existing and projected ridership, existing land use, and are prioritized in locations with signalized intersections that include designated pedestrian crossings. Bus pads compliant with the Americans with Disabilities Act (ADA) are recommended at 11 additional stops where they currently do not exist to allow a safe and flat surface from which passengers board and alight the bus. The study recommends stops be located between one-quarter and one-half mile apart, utilizing existing stops wherever possible.

■ WESTBOUND BUS STOP
■ EASTBOUND SHELTER

EXISTING SHELTER SHELTER RECOMMENDED \(\square\) NO SHELTER EXISTING OR RECOMMENDED AT THIS TIME

The study team confirmed that walk signal cycles at intersections along the corridor met the standard minimum cycle length of three feet per second, and also identified signal locations where longer walk signal cycles may be needed, such as near senior living facilities, to accommodate populations that require additional time to cross. The precise location where the recommended shelters, bus pads, and signs will be placed, will be determined by Waukesha Metro prior to installation.

The recommendation to install a bus shelter at certain bus stop locations in the corridor was generally determined by using a threshold of 15 riders per day per stop based on existing route ridership in April 2023, or in areas where increases in ridership would be expected. Each shelter is recommended to have motion-activated solar-powered lights. In the future, when ridership and budgets warrant, shelters can be added at additional stops along the route and other shelter amenities may be considered.





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^{**}The shelter recommended at Brookfield Square would serve trips in both directions.

Pedestrian Improvements Watertown Plank Road Village of Elm Grove 94 City of Wauwatosa Town of Brookfield City of Pewaukee R2 Kossow Road R3 Executive Drive City of Milwaukee 94 **Brookfield Square** Abbott Drive Springdale Road City of Brookfield City of Waukesha 94 TRANSIT FEATURES 59 Woodman's Market R1 41 ROUTE 1 City of West Allis Waukesha CONNECT 1 BUS RAPID TRANSIT (MCTS) Transit Center East Avenue Source: Waukesha Metro Transit, MCTS, and SEWRPC

Existing Pedestrian Crossing Infrastructure

- Signalized Intersection with Marked Crosswalk, Curb Ramps, and Refuge Island
- Signalized Intersection with Marked Crosswalk and Curb Ramps
- Pedestrian Crossing with HAWK Signal
- Redestrian Crossing with Pedestrian Bridge
- Unmarked Crossing with Curb Ramps
- Unmarked Crossing without Curb Ramps



A survey of current bus riders in the corridor indicated that pedestrian safety and comfort is a challenge, even where pedestrian crossing infrastructure exists.

The study team inventoried the existing pedestrian crossing infrastructure along the existing Route 1. For the most part, pedestrian crossings near proposed bus stops meet design guidelines and are ADA compliant. Most crossings near stops on Bluemound Road are signalized with a marked crosswalk, curb ramps, and a refuge island. However, in many cases, transit riders must cross roadways that are 6 to 8 lanes wide to walk to and from bus stops. The map above shows the existing pedestrian crossing infrastructure in the corridor and where pedestrian improvements are recommended and planned.

Pedestrian Bridge

In addition to the recommended pedestrian improvements, a pedestrian bridge over Bluemound Road connecting The Corners of Brookfield to the recently constructed residential development to the north was considered. A pedestrian bridge provides a grade separated crossing, allowing pedestrians to cross wide, high-volume roadways without interference from traffic. However, an elevated pedestrian bridge was not determined to be a feasible option at this time due to the cost, estimated at over \$9M, elevation and grade issues, and the amount of real estate required for ADA-compliant bridge access. In addition, the bus stops that would serve the area are located near signalized intersections with at-grade marked crosswalks. Therefore, the pedestrian bridge was not considered a transit-specific enhancement and was removed from consideration.

Enhanced Service and Amenities

Enhanced service on Route 1 would include:

- Shorter waiting times for the bus from 20 to 15 minutes between buses
- > Expanded hours of service
- > Fewer stops
- > Shelters
- > Wi-Fi
- > Live bus location information
- Off-board ticketing on the existing UMO/WisGo application
- > Free bus transfers between the Waukesha Metro and MCTS systems
- Direct access to the CONNECT 1 BRT line

Existing Service

Effective June 2023

Wait Time Between Buses

Weekdays: 20 Minutes
Saturdays: 20 Minutes
Sundays: 35 Minutes

Service Hours

Weekdays: 5:15 a.m. – 11:55 p.m. Saturdays: 6:10 a.m. – 11:44 p.m. Sundays: 7:05 a.m. – 10:14 p.m.

Riders Transfer to/from Milwaukee County Transit System's CONNECT 1 BRT line at the Milwaukee Regional Medical Center

Recommended Enhancements

Wait Time Between Buses

Weekdays: 15 Minutes
Saturdays: 20 Minutes
Sundays: 30 Minutes

Service Hours

M-Th: 5:15 a.m. – 11:55 p.m.
Fridays: 5:15 a.m. – 12:30 a.m.
Saturdays: 6:10 a.m. – 12:45 a.m.
Sundays: 7:00 a.m. – 11:00 p.m.

Riders Transfer to/from Milwaukee County Transit System's CONNECT 1 BRT line at the Milwaukee Regional Medical Center

Dedicated Transit Lanes

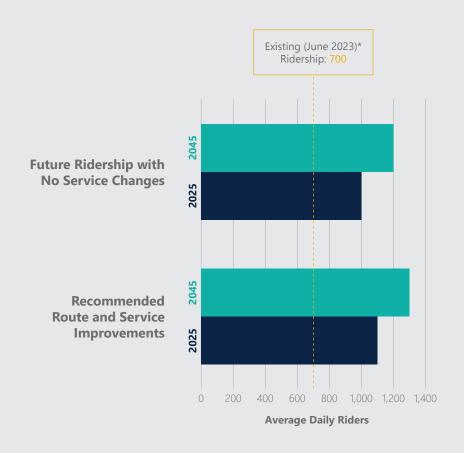
Dedicated transit lanes provide travel time reliability because transit is not affected by traffic incidents or congestion. In the future, the dedicated bus lane on W. Bluemound Road from approximately N. Barker Road to Underwood Creek could be extended east into Milwaukee County. The study team also looked at converting a general-purpose travel lane to a dedicated bus lane in the corridor west of N. Barker Road, but closely spaced traffic lights on E. Moreland Boulevard would reduce time savings a dedicated transit lane would provide.

The City of Wauwatosa is currently working on an area plan for the Bluemound Road corridor that considers various future improvements to W. Bluemound Road including potential bicycle lanes and extension of the dedicated bus lane east 1.75 miles from Underwood Creek near N. 124th Street to the I-41 overpass on W. Bluemound Road. In addition, WisDOT is planning to resurface W. Bluemound Road from N. 106th Street to N. 66th Street in 2029, and at that time could re-stripe the pavement marking to include a dedicated transit lane. If a dedicated transit lane is not considered with the resurfacing project, a dedicated bus lane could also be implemented when W. Bluemound Road is redesigned and reconstructed.

Ridership

Estimated Average Daily Ridership on Route 1

The study team used a transit ridership model provided by the Federal Transit Administration to estimate future ridership on the route if the recommended improvements are made. Estimates are provided for the near-term (2025) and the long-term (2045) given expected population and job changes in the area.



The recommended enhancements are estimated to attract an additional **100**+ riders per day in 2025

*The 2023 ridership numbers were reported during the first weeks after the change of Route 1 to serve east to the MRMC in Milwaukee County. As transit riders discover and adapt to the change to Route 1 and to the route changes on intersecting routes that were implemented on Waukesha Metro and MCTS routes, ridership may increase at higher intervals than is shown above.

Daily ridership on Waukesha Metro's Route 1 from downtown Waukesha to the MRMC was 700 in June 2023. The Federal Transit Administration's Simplified Trips-on-Project Software STOPS ridership forecasting software, a tool used to estimate future transit ridership, shows that ridership on the current route would increase to 1,000 in 2025. With the additional improvements recommended in this study, ridership is expected to increase to 1,100 per day in 2025 and to 1,300 in 2045.

Recommended improvements would save

15 minutes round trip

These enhancement are expected to increase ridership because service would be faster and more convenient.

Operating Costs

Operating costs are those expenses that are associated with labor and benefits, bus costs including fuel and other bus maintenance activities. The Route 1 annual operating costs are expected to increase approximately 20%, based on a 2025 cost comparison, with the schedule and route changes that are recommended.

Estimated Annual Operating Cost Increase: \$760K



Capital Costs

Capital costs are those costs related to construction of the improvements and equipment. As ridership increases in future years, additional capital investments can be made. All costs are inflated to the year of expenditure and include a 15% contingency cost increase. Future shared costs and maintenance agreements with local or state entities may apply to the improvements.

Capital costs were determined for the recommended improvements for the corridor with a total cost of approximately \$332,000

2023-2024 (\$0)

- Safety signage along Bluemound Road (part of WisDOT project)
- Adjustments to pedestrian signal cycle changes, if necessary, on Bluemound Road
- Use of Waukesha Metro system UMO App (provides off-board ticketing & real-time bus arrival information)
- Coordinate with Milwaukee County Zoo to reduce operational concerns during hig zoo visitor days

2025 (\$332K)

- ➤ Bus shelters where warranted (by ridership) and sidewalk to bus from shelter
- > Solar, motion-activated lightin
- Pedestrian crossing at Woodman's grocery store on Main Street and Executive Drive

After 2025 (Potential Future Investments)

- > Transit signal queue jumps
- Level boarding platforms with snowmelt system
- > Off-board fare collection
- Additional high-quality shelters
- Specialized logo and route branding for enhanced transit shelters and buses
- Next bus arrival information signs at high ridership shelters
- Additional amenities at mobility hub

Funding for Shelters and Shelter Amenities

The following Federal grant programs could be utilized to cover the recommended improvements:

- > FTA 5337 State of Good Repair (20% local match): Grant funds that could be used for capital costs for maintenance or rehabilitation of assets including vehicles, equipment, signals, stations, security systems, and computer hardware and software. These funds could also be used to fund shelter improvements in the segment of the corridor with dedicated lanes.
- > 5339 Bus and Bus Facilities (20% local match): Grant funds that could be used for the capital cost of bus shelters
- > Coronavirus Aid, Relief, and Economic Security (CARES) ACT: Grant funds that could be used for capital improvements*
- > Coronavirus Response and Relief Supplemental Appropriations Act of 2021(CRRSAA): Grant funds that could be used for capital improvements*

*Preferred funding options with no local match and no lapse dates

Public and Stakeholder Involvement

Public and stakeholder involvement efforts helped identify transit improvement needs in the corridor and garner feedback on draft recommendations. Early in the study, a bus rider survey was conducted and a meeting with businesses—hosted by the Waukesha County Business Alliance—was held to identify needs and inform draft recommendations.

Later in the study, draft recommendations were shared on the study website via videos and web exhibits to allow the public to review and share comments in a self-guided virtual open house format. The study team also shared information and gathered feedback from bus riders on the bus and at bus stops over a series of four mornings and afternoons on Waukesha Metro's Route 1 and MCTS' GoldLine services.

Themes from Bus Rider Survey

What would you like to see in an enhanced service?

- > Wanted more frequent service (79%)
- > Notification when the next bus will arrive (62%)
- > Shelters and lighting at stops (49%)
- > Wi-Fi on bus (46%)
- > Improved crosswalk signals, signage, and paint (65%)
- > Longer crossing times at crosswalks (57%)
- > Shorter crossing distances (50%)
- > Expand running time to 12 a.m.

Other notes about survey respondents:

- > 86% use the bus as main form of transportation
- > 50% transfer from another route and another 40% walk to/from bus stops
- > 81% of riders do not want to walk further to access a bus stop

Incorporating Public Feedback

Public feedback received throughout the study was incorporated into the recommended transit improvements, described below:

- > More frequent service continuing later in the evenings
- > Free transfers between Waukesha Mero and MCTS Buses
- > Maintain Route 1 diverting from Bluemound Road into Brookfield Square, but bypass it in the early morning hours as an express service
- > Adjust Route 1 from Swenson Drive to a Kossow Road alignment to reduce travel time by three to four minutes
- > Fewer bus stops, spaced further apart, provide a reduction in travel times
- > More bus shelters based on ridership
- > Mid-block pedestrian crosswalks at N. Executive Drive in the City of Brookfield and on E. Main Street in the City of Waukesha
- > Bus pads, curb ramps and sidewalk connections where needed for the bus service
- > Enhancements result in a seven to eight minute travel time savings in each direction

Themes from Public Comments on Draft Recommendations



Support for Transit Enhancements on Bluemound Road (22)

Many comments expressed support for the proposed transit enhancements and improved transit connectivity between Waukesha and Milwaukee Counites citing that improvements are especially important for lower-wage workers, people with disabilities, and seniors.

Specific Route and Stop Recommendations (13)

Many comments suggest specific changes to routes and stops, including some concerns about increasing walking distance if some bus stops are eliminated.

Concerns about Travel Time, Efficiency, and Sustainability (10)

Some comments raised concerns that the improvements did not go far enough. Suggestions included expanding dedicated lanes, eliminating the segment directly into Brookfield Square, further reducing the number of stops, increasing bus frequency, and implementing bus signal priority. Some comments also expressed support for incorporating electric-powered buses to reduce environmental impacts.

Job Access and Economic Impacts (9)

Several comments highlight the importance of connecting workers in Milwaukee County to job opportunities in Waukesha County.

Opposition to Changes and Funding Concerns (6)

Some comments express opposition to the recommendations, citing concerns about losing an existing stop or transfer location, negative influences from the inner city of Milwaukee, or concern about the costs and/or how improvements will be funded.

Support for Multimodal Connections (5)

Many comments expressed support for improved multimodal connections to the route, including more pedestrian improvements and integrating more bicycle enhancements to extend the reach of bus stops.

Accessibility and ADA Compliance (4)

Several comments highlighted the importance of making walking distances accessible for seniors and people with disabilities and ensuring that bus stops and vehicles are ADA compliant.



Customer Service and Rider Experience (4)

Some comments mention concerns about customer service from bus drivers, emphasizing the need for improved treatment of passengers. There are also comments regarding improving transfer times, broadening payment options—including the need for a payment system that can be used on both Waukesha Metro and Milwaukee County Transit System buses (which has since been implemented through the adoption of the UMO app), support for Wi-Fi on buses, and the overall rider experience.



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