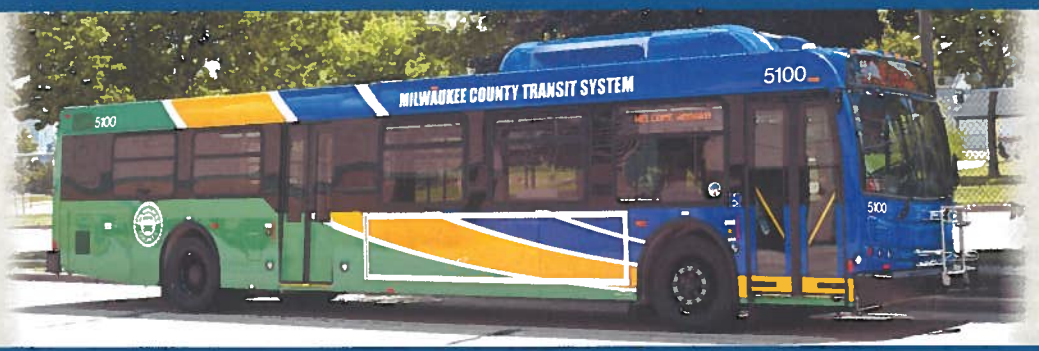
SPECIAL ISSUE—BUS RAPID TRANSIT

REGIONAL PLANNING NEWS



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BRT–BUS RAPID TRANSIT

Interest has been building on implementing a bus rapid transit (BRT) line in the east-west corridor paralleling IH 94 in the greater Milwaukee area. Milwaukee County Executive Chris Abele announced in June that Milwaukee County would explore the development of BRT in the heavily traveled corridor between downtown Milwaukee and the Milwaukee Regional Medical Center in Wauwatosa. The Commission staff will be assisting Milwaukee County in this effort, at the request of the Milwaukee County Department of Transportation. Some months ago the Public Policy Forum issued a report urging Milwaukee area leaders to consider making significant transit travel improvements by providing one or more BRT routes, focusing in particular on the need to enhance transit travel from the City of Milwaukee to outlying Milwaukee and Waukesha County job centers. The Commission welcomes this renewed interest in pursuing implementation of long-standing Commission regional plan recommendations proposing the development of a system of express bus, or BRT, lines.

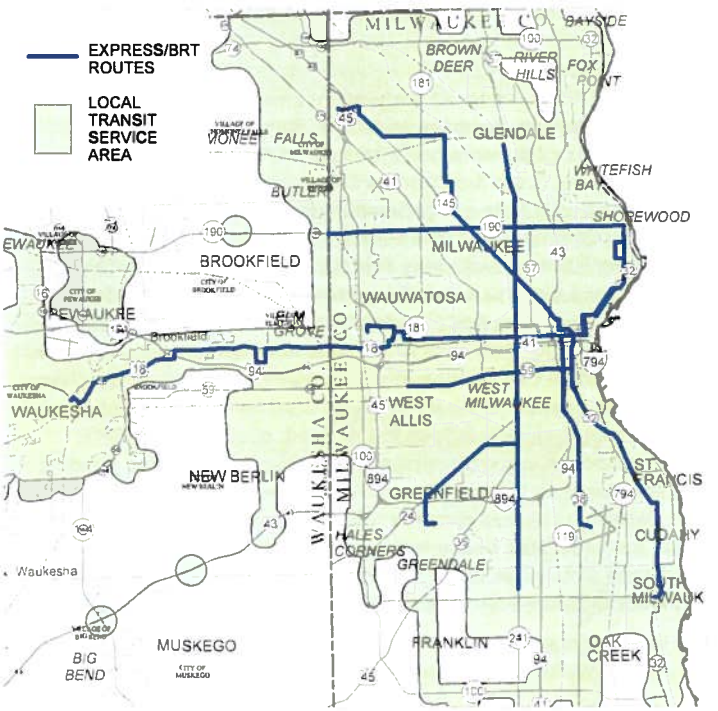
This newsletter is devoted entirely to the BRT topic. What follows are sections on: 1) current and long-standing SEWRPC plan recommendations attendant to BRT; 2) a discussion of the elements of BRT lines; and 3) a preview of what is being prepared for consideration in the Commission's VISION 2050 planning work with respect to BRT.

SEWRPC BRT RECOMMENDATIONS

The Commission's most recent regional transportation system plan completed in 2006 recommended development of a BRT line in the east-west corridor,[1] consistent with the initiative announced by Milwaukee County Executive Abele. The plan envisioned bus service, with express stop spacing, operating over reserved lanes, with traffic signal preferential treatment, real-time bus arrival information, and other service amenities. A network of connecting BRT lines was also recommended in the plan, as shown on ***Map 1***.

The Commission has recommended for decades in its long-range regional plans that BRT should be implemented in the Milwaukee area. SEWRPC's first regional plan completed in 1966 with a future design year of 1990 proposed BRT on an exclusive bus-only

MAP 1 - Express and Local Transit Service Recommended in the Regional Transportation System Plan: 2035



guideway in the east-west corridor paralleling IH 94.[2] Milwaukee County advanced the project into preliminary engineering, but following the preliminary engineering determined not to implement the BRT.[3] This BRT project--because it had completed preliminary engineering and was considered by the Federal Highway Administration (FHWA) as an addition to IH 94--resulted in a $289 million allocation of FHWA Interstate Cost Estimate (ICE) funds to the Milwaukee area in 1991 when the construction of interstate highway expansion was ended by FHWA, and the costs to complete remaining sections of the interstate highway system were credited to each State for the original project or a substitute project. Through Federal, State, and City and County of Milwaukee agreements in 1999 and Federal legislation in 2009, these funds were spent or committed on substitute projects including the rebuilding of the

[1] Southeastern Wisconsin Regional Planning Commission Planning Report No. 49, *A Regional Transportation System Plan for Southeastern Wisconsin: 2035*, 2006. (http://www.sewrpc.org/SEWRPCFiles/Publications/pr/pr-049_regional_transportation_system_plan_for_se_wi_2035.pdf)

[2] Southeastern Wisconsin Regional Planning Commission Planning Report No. 7, Volume III, *The Regional Land Use-Transportation Study, Volume Three, Recommended Regional Land Use Transportation Plans--1990*, 1966. (http://www.sewrpc.org/SEWRPCFiles/Publications/pr/pr-007_vol-03_reg_lu_tran_study.pdf)

[3] Milwaukee County Expressway and Transportation Commission, *Milwaukee Area Transit Plan*, 1971.

Marquette interchange, the replacement of the Sixth Street viaduct over the Menomonee River, the tear-down of the Park Freeway East, the purchase by Milwaukee County of much needed buses, and the Milwaukee Streetcar line.

Subsequent SEWRPC regional transportation plans in the 1970s[4] and 1990s[5], and as noted earlier, the most recent plan completed in 2006, have continued to recommend a system of express bus lines, and proposed the incremental improvement of those lines to BRT through reserved street lanes, traffic signal preferential treatment, real-time bus arrival information, and other service amenities. Implementation of these express bus and BRT recommendations have been limited.

In January 1992, Milwaukee County implemented an all-day express bus service in the Northwest corridor. This service, branded Metrolink Northwest Express, was basically overlaid on existing local routes and offered some time savings over the local routes when heading to or from downtown Milwaukee. The service was discontinued in December 2002, owing to the Milwaukee County Transit System's need to reduce service due to funding shortfalls. The local routes serving this corridor were retained.

Beginning in 2012, Milwaukee County began implementing new express bus service. The service was initiated in key corridors by converting local bus service to express bus service, and in so doing, making the service eligible for FHWA Congestion Mitigation and Air Quality (CMAQ) funding. At the present time there are five such routes in existence. Branded by colors, these include: 1) the Gold Line which runs between the University of Wisconsin-Milwaukee (UWM) and the Brookfield Square Shopping Center; 2) the Red Line which runs from UWM along Capitol Drive to the Milwaukee-Waukesha County line; 3) the Purple Line which runs along 27th Street from Rawson Avenue in Franklin to Bender Road in Glendale; 4) the Green Line which runs from the Bayshore Town Center via Milwaukee downtown and Bayview to General Mitchell International Airport; and 5) the Blue Line which runs from Milwaukee's Northwest side on Fond du Lac Avenue through downtown and then Southwest on National Avenue to the former Allis Chalmers site. The alignment of these routes closely follows the network of express, or BRT, routes proposed in the Commission's 2035 plan. The stop spacing on the Milwaukee County Transit System routes is somewhat closer than desirable express stop spacing. Only one of these routes--the Gold Line--operates over a reserved curb lane, that being in Waukesha County between the Milwaukee-Waukesha County line and Moorland Road for a distance of about two miles.

The implementation of BRT has, at least in part, been hindered by the unique method of funding transit in Southeastern Wisconsin, with State and Federal funding providing over 80 percent of Milwaukee County Transit System (MCTS) annual public operating funding. State funding is particularly significant, providing over 60 percent of combined Federal, State, and Local annual public operating funding. In a recent comparison to 26 other metropolitan areas in the Nation, only one other metropolitan area exceeded Milwaukee's dependence on State funding.[6] However, in that metropolitan area (Minneapolis-St. Paul) the State funding is not merely an allocation of funding, but is a dedicated source of funding which is directly apportioned to the State's transit operators.

State transit funding--particularly over the last 15 years--has not increased with inflation and there is no ability for transit operators to replace these funds with local property taxes. To make up for this lagging State funding, public transit operators have deferred capital projects, allocated nearly every Federal funding dollar they received to operating funding, drastically reduced public transit service, and increased fares at a rate well beyond inflation.

Photographer: LA Urban Soul
Source: https://www.flickr.com/photos/la_urbansoul/4313089642

THE ELEMENTS OF BUS RAPID TRANSIT (BRT)

What makes bus transit on surface arterial streets truly rapid and thereby attractive for longer trips? What kinds of improvements would it take to convert one of Milwaukee's express transit routes to a BRT route? These questions can best be answered by examining the functional elements of BRT. Overall, these bus service improvements combine to offer substantial benefits to transit riders in terms of speed, reliability, and accessibility.

Greater Cleveland Regional Transit Authority in Cleveland, OH

Running Ways

The type of running way chosen for a bus line has an important bearing on bus speed, reliability, identity, and passenger attraction. Dedicated curbside lanes, like those on Bluemound Road in Waukesha County, can provide some benefits. A better alternative is to use center lanes along a median. Center-based lanes provide the highest type of BRT service in terms of travel speeds, service reliability, BRT identity, and passenger attraction. Center lanes allow buses to avoid right-turning vehicles, including those accessing driveways. Establishing a median-based busway, however, effectively precludes left-turning vehicles except at intersections with left-turn signals. Moreover, such busways can be costly and can be difficult to build. Indeed, some major transit corridors may not have medians available for that use. The picture above, shows a median-based BRT in Cleveland.

[4] Southeastern Wisconsin Regional Planning Commission Planning Report No. 25, Volume II, *A Regional Land Use Plan and a Regional Transportation Plan, Volume Two, Alternative and Recommended Plans*, 1978. (http://www.sewrpc.org/SEWRPCFiles/Publications/pr/pr-025_vol-02_reg_lu_plan_and_reg_tran_plan_2000.pdf)

[5] Southeastern Wisconsin Regional Planning Commission Planning Report No. 41, *A Regional Transportation System Plan*, 1994. (http://www.sewrpc.org/SEWRPCFiles/Publications/pr/pr-014_regional_transportation_system_plan_2010.pdf)

[6] See Southeastern Wisconsin Regional Planning Committee Memorandum Report No. 221, *A Comparison of the Milwaukee Metropolitan Area to Its Peers*, 2015. (http://www.sewrpc.org/SEWRPCFiles/Publications/mr/mr-221-comparison-milwaukee-area-to-peers.pdf)

Stops and Stations

Limiting the number of stops on an express bus route increases travel speed while decreasing accessibility. **Ideally, stops should be spaced from one-half to one mile apart along the route in order to achieve true BRT service.** In the Milwaukee central business district, some stops could be spaced less than one-half mile apart. Stations need to be placed at transit supportive large activity centers such as office and retail complexes, educational institutions, and hospitals; at major intersecting transit lines; and at major arterial street intersections. Pedestrian and bicycle access and connections to local transit routes are essential. At some locations, park-ride access also would be desirable.

Stations provide an important link between passengers and the BRT system. The type of station can range from a simple stop with a well-lit shelter, to a more complex facility with amenities and features. **Ideally, stations would provide for level boarding and alighting, include passenger amenities such as benches and drinking fountains, and provide such features as real-time vehicle arrival displays and ticket vending machines.**

Vehicles

For maximum impact, specialized vehicles should be used for true BRT service. Typically, these vehicles are longer than a standard bus to increase passenger capacity, and have several doors to permit faster boarding and alighting. Vehicles used on BRT systems should be uniquely identifiable as part of a branding program. Pictured at the bottom of this page is a BRT vehicle used in Eugene, OR.

Fare Collection

A true BRT service would have off-board fare collection requiring passengers to purchase tickets or fare cards before boarding. When combined with bus vehicles that have several doors, off-board fare collection significantly reduces the amount of time a vehicle dwells in the station, and thus, decreases overall trip time.

Technological Considerations

A number of advanced technologies are available to improve bus speed and operations on a BRT line. These include transit signal priority systems that extend green signals so buses are less likely to have to wait at traffic lights, and precision vehicle docking systems that facilitate safe, level boarding of vehicles. **True BRT systems take full advantage of these capabilities to help decrease travel times and enhance travel safety.**

Branding

It is important that BRT operations are clearly distinguished from local transit operations, thus conveying a significant sense of differential operational characteristics. Accordingly, the BRT system and vehicles should be designed to provide a unique identity. This would include a distinctive BRT system name and logo that is applied to vehicles, stations, and schedules. It is helpful to secure vehicles that have a special styling and paint scheme. It is also possible to brand BRT running ways by using special paving materials, colors, and markings. Branding conveys a system identity that may translate into increased ridership over the long run.

Lane Transit District in Eugene, OR

Given all of the variables involved, it is no surprise that BRT systems that have been established across the Nation vary significantly in many respects. If all of the elements listed above are implemented correctly, BRT transit lines may be expected to decrease transit travel times by about one-third. In most cases, BRT lines generate ridership increases over local routes from 60 to 75 percent. BRT improvements come with capital costs, which may be expected to range from $5 million to $20 million per mile of running way, including the acquisition of vehicles.

BRT AND VISION 2050 PLANNING EFFORT

The major collaborative Commission regional land use and transportation planning effort now underway, known as VISION 2050, may be expected to continue to include recommendations for the establishment of a network of BRT lines in the Milwaukee area.

A potential network of routes now being evaluated as an element of alternative regional land use and transportation plans is shown on ***Map 2*** together with potential station locations along those routes. The results of these alternative plan analyses will be presented to the Commission's Advisory Committees for VISION 2050 and at public involvement meetings later this year. The final VISION 2050 plan is anticipated to include recommendations for the establishment of several BRT routes, together with cost estimates.

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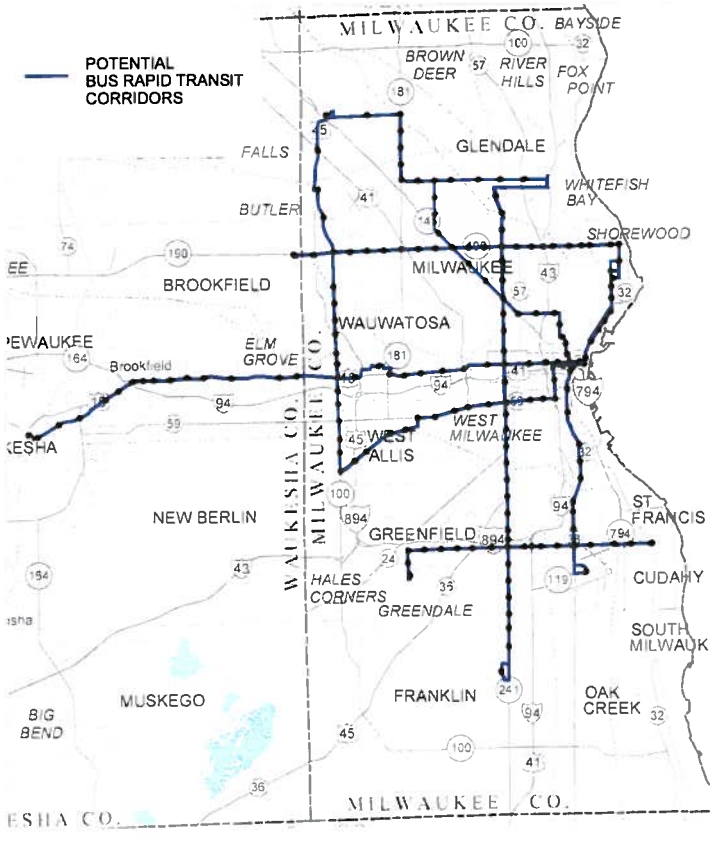
MAP 2
Potential Bus Rapid Transit Corridors Being Considered in VISION 2050



Watch for Updates

VISION 2050

One Region, Focusing on Our Future

VISION 2050 is SEWRPC's land use and transportation planning effort for Southeastern Wisconsin.

Learn about VISION 2050 at **www.vision2050sewis.org**.

Follow us on Twitter at **@vision2050sewis**.

The **Southeastern Wisconsin Regional Planning Commission** is the official advisory areawide planning agency for land use and infrastructure for the seven counties in the Region.

More information can be found at **www.sewrpc.org**.

Please contact us at **sewrpcnews@sewrpc.org**.

Photography: Oran Viriyincy *Source: https://www.flickr.com/photos/viriyincy/4544330317*

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Now is the time to advance BRT in the east-west corridor. A BRT line, if completed and put in service over the next few years, will provide needed mitigation of traffic congestion during the anticipated reconstruction of IH 94 between 70th and 16th Streets. Moreover, even upon reconstruction, this segment of IH 94 may be expected to experience among the worst congestion in the Region, and BRT will provide a desirable travel alternative. However, implementing BRT will likely require mitigation funding from the Wisconsin Department of Transportation, and the advancement of transit funding initiatives recommended for decades by the Regional Planning Commission and many others. Most recently, the Wisconsin Transportation Finance and Policy Commission recommended the restoration of funding lost due to State transit funding cuts in recent years, increasing State transit funding to address inflation and to permit transit service enhancement and expansion, and permitting local governments to put in place local dedicated transit funding.

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