

Minutes of the Tenth Joint Meeting of the

**ADVISORY COMMITTEES ON REGIONAL LAND USE PLANNING
AND REGIONAL TRANSPORTATION SYSTEM PLANNING**

DATE: February 25, 2015

TIME: 9:30 a.m.

PLACE: Tommy G. Thompson Youth Center
640 S. 84th Street
Milwaukee, Wisconsin

Members Present

Committee on Regional Land Use Planning

Julie Anderson Director of Public Works and Development Services, Racine County
Chair
Robert J. Bauman Alderman, City of Milwaukee
Andy M. Buehler Director of Planning Operations, Kenosha County
David Cialdini (alternate for Teig Whaley-Smith) Milwaukee County Economic Development
Harlan E. Clinkenbeard City Planner, City of Pewaukee
Michael P. Cotter Director, Walworth County
Land Use and Resource Management Department
Brian Dranzik Director, Department of Transportation, Milwaukee County
Daniel F. Ertl Director of Community Development, City of Brookfield
Jason Fruth Planning and Zoning Manager, Waukesha County
Douglas J. Koehler (alternate for Jennifer Andrews) Planner, City of Waukesha
Vanessa Koster Planning Manager,
City of Milwaukee Department of City Development
Jeffrey B. Labahn Director, Community Development and Inspections, City of Kenosha
Mark Piotrowicz City Planner/Operations Manager, City of West Bend
Matthew Sadowski Assistant Director, City of Racine Department of City Development
Jennifer Sarnecki Urban and Regional Planning Supervisor,
Southeast Region, Wisconsin Department of Transportation
Douglas Seymour Director of Community Development, City of Oak Creek
Debora Sielski Deputy Planning and Parks Administrator,
Manager of Planning Division, Washington County
Casey Steinke (alternate for Charles Erickson) Community Development, City of Greenfield
Todd Stuebe Director of Community Development, City of Glendale

Committee on Regional Transportation System Planning

Brian Dranzik Director, Department of Transportation, Milwaukee County
Chair
Fred Abadi Director of Public Works, City of Waukesha
Julie Anderson Director of Public Works and Development Services, Racine County

Committee on Regional Transportation System Planning (continued)

Bruce Barnes (alternate for Gary Evans) Traffic Engineer,
Waukesha County Department of Public Works
Scott Brandmeier Director of Public Works and Village Engineer, Village of Fox Point
Kevin M. Brunner Director of Central Services, Walworth County Public Works Department
Peter Daniels (alternate for Michael Lewis) Principal Design Engineer, City of West Allis
Michael Friedlander (alternate for Bart Sponseller) Bureau of Air Management,
Wisconsin Department of Natural Resources
Michael M. Lemens Director of Public Works and City Engineer, City of Kenosha
Jeff Polenske City Engineer, City of Milwaukee
Jay Saunders (alternate for Michael Mayo Sr.) Public Information Assistant,
Milwaukee County
Matthew Schreiber (alternate for Don Gutkowski) Urban and Regional Planner,
Division of Transportation Investment Management,
Bureau of Statewide Planning & Economic Development, Wisconsin Department of Transportation
Bill Wehrley (alternate for William Porter) City Engineer, City of Wauwatosa
Amanda Williams (alternate for Nik Kovac) Legislative Assistant, City of Milwaukee
David Windsor (alternate for Ghassan Korban) Department of Public Works, City of Milwaukee
Dennis Yaccarino Senior Budget and Policy Manager, Budget and Management Division,
Department of Administration, City of Milwaukee

Guests and Staff Present

Ann Dee Allen Senior Public Involvement and Outreach Specialist, SEWRPC
Michael G. Hahn Deputy Director, SEWRPC
Andrew Levy Urban and Regional Planner – Freight Transportation,
Southeast Region, Wisconsin Department of Transportation
Eric D. Lynde Principal Transportation Planner/Engineer, SEWRPC
Benjamin R. McKay Principal Planner, SEWRPC
Kevin J. Muhs Principal Transportation Planner, SEWRPC
Xiao Qin Associate Professor, Civil and Environmental Engineering, UW-Milwaukee
David A. Schilling Chief Land Use Planner, SEWRPC
Jeff Sponica Transit Planner, Milwaukee County Transit System
Kenneth R. Yunker Executive Director, SEWRPC

CALL TO ORDER

Ms. Anderson called the joint meeting of the Advisory Committees on Regional Land Use Planning and Regional Transportation System Planning to order at 9:30 a.m., welcoming those in attendance. Ms. Anderson stated that roll call would be accomplished through circulation of a sign-in sheet.

REVIEW AND APPROVAL OF MINUTES OF THE JOINT MEETING OF THE ADVISORY COMMITTEES ON REGIONAL LAND USE PLANNING AND REGIONAL TRANSPORTATION SYSTEM PLANNING HELD ON DECEMBER 17, 2014

Ms. Anderson asked if there were any questions or comments on the December 17, 2014, meeting minutes. There were none. Ms. Anderson asked for a motion to approve the meeting minutes. On a motion by Mr. Clinkenbeard seconded by Mr. Lemens the December 17, 2014, meeting minutes were approved unanimously.

DISCUSSION OF SCHEDULE AND LOCATION OF FUTURE JOINT ADVISORY COMMITTEE MEETINGS

Ms. Anderson noted that members of the Committees were provided with a tentative schedule for future meetings in their meeting packets. She stated that the next Joint Advisory Committee meeting is scheduled for April 22, 2015, at 9:30 a.m. She noted the location will be in the West Allis Common Council Chambers. Mr. Yunker noted additional meetings may need to be added and Commission staff will notify members of the Committees of additional dates to minimize schedule conflicts.

CONSIDERATION OF PRELIMINARY DRAFT OF COMMISSION STAFF MEMORANDUM REPORT "A COMPARISON OF THE MILWAUKEE METROPOLITAN AREA TO ITS PEERS"

Ms. Anderson asked Commission staff to provide an overview of the draft memorandum report. Mr. Muhs noted the draft report was prepared in response to requests by the Advisory Committees for data regarding how the Milwaukee metropolitan area compares to other large metropolitan areas in a number of key measures, such as population growth and characteristics, economy, and transportation (the report is available on the [SEWRPC website](#)). He noted a companion handout to the memorandum report was distributed at the meeting (see Attachment 1). The companion handout includes additional items that could be included in the memorandum report that were considered by Commission staff or suggested by members of the Committees after the draft report was mailed to members in their meeting packets. He noted including additional data for principal cities of metropolitan statistical areas was also suggested to staff and would be examined following the meeting. Mr. Muhs then reviewed the draft report and companion handout. The following comments and discussion points were made during the review:

1. Ms. Koster asked how the data will be applied to the VISION 2050 alternative plans. Mr. Muhs responded that the data can be used as a reference as the Committees evaluate the alternative plans. Mr. Bauman praised the effort in presenting the data and suggested preparing as many comparisons for principal cities as data sources allow. Mr. Muhs noted that the principal city comparisons will likely be limited to those based on U.S. Census data.
2. Mr. Bauman stated that the tables regarding travel time delay and congestion for auto commuters show the Milwaukee area does not have a congestion problem compared to other metropolitan areas. He suggested that previous planning efforts have addressed vehicle congestion problems and improving public transit service should be the focus of the VISION 2050 planning effort. He noted Table 51 shows travel time delay for auto commuters increased less in the Milwaukee area between the years 1982 and 2011 compared to nearly all other metropolitan areas. He stated this statistic is an indicator that area freeway expansion now being considered is not needed. Mr. Bauman also noted the Milwaukee area's low ranking in change in public transit service hours shown in Table 56 seems to be counterintuitive when compared to the Milwaukee area's high rankings in revenue vehicle hours of public transit per square mile and per capita presented in the companion handout.

Mr. Yunker responded that three alternative plans will be evaluated for VISION 2050. The first is an extension of trends from the last 20 years to the plan design year 2050. The Trend is intended to be used as a basis of comparison for Alternative Plans I and II, which both will include extensive increases in public transit investment. Mr. Yunker noted that Alternative Plans I and II will be evaluated with and without arterial street and highway capacity expansion. He added that

the arterial street and highway element recommendations of the year 2035 regional plan have been implemented over the last 10 years while the public transit element recommendations have not been implemented, and public transit service has actually declined in contrast to those recommendations.

He also noted staff has questioned including the metropolitan area comparison of revenue vehicle hours of public transit per square mile in the report due to the unique geographies of several metropolitan statistical areas (MSAs), such as those MSAs with large areas unsuitable for urban development.

Mr. Yunker then noted the data added for principal cities could include a comparison of the principal cities to their MSAs. Mr. Bauman agreed with adding that comparative data. Mr. Ertl noted the Milwaukee area compares well in level of congestion to other large MSAs; however, the regional plan design year is 2050 and the need for additional highway improvements should be considered in the planning process. He stated the regional plan should continue to consider a balance between all modes of transportation.

3. Mr. Clinkenbeard suggested adding the metropolitan areas report as an appendix to the VISION 2050 plan report. Mr. Yunker noted Commission staff envisioned publishing the metropolitan areas report as a companion memorandum report; however, it can also be added as an appendix to the VISION 2050 plan report. Mr. Clinkenbeard also suggested that text be added to the report to provide context for data that was and was not included.
4. Mr. Daniels asked for clarification regarding Milwaukee County's portion of Milwaukee County Transit System (MCTS) funding. Mr. Muhs responded that Milwaukee County's contribution is funded through the County property tax levy. Mr. Muhs noted that only about one-third of the transit systems included in the metropolitan areas report do not have dedicated local funding.

[Secretary's Note: All of the peer metropolitan transit systems across the nation which like Milwaukee do not have dedicated funding offer substantially less transit service than in Milwaukee. Their revenue vehicle hours of transit service per capita range from one-half to one-fifth the service in the Milwaukee area.]

5. Mr. Saunders noted the Milwaukee area has an extensive grid system of arterial streets and highways which in addition to the freeway system may result in less congestion compared to other large metropolitan areas. He asked if the Commission has previously studied the relationship of the street and highway pattern to congestion in the Milwaukee area compared to other large metropolitan areas. Mr. Yunker responded that the Commission has not compared the street pattern of Southeastern Wisconsin to other metropolitan areas. He added the regional plan has historically recommended that urban density development be served by a grid of arterial streets and that this grid should be extended as portions of the Region transition from rural to urban densities.
6. Mr. Friedlander suggested adding a comparison of the other metropolitan areas in the report in terms of their ozone and fine particulate matter non-attainment status.

Ms. Anderson asked if there were any further questions or comments on the metropolitan areas report. There were none. Mr. Yunker noted that no action by the Committees is needed at this time on the report. He stated that staff will incorporate comments made by members of the Committees and present a revised draft at the next meeting.

UPDATE ON DEVELOPMENT AND EVALUATION OF DETAILED ALTERNATIVE LAND USE AND TRANSPORTATION PLANS FOR VISION 2050

Ms. Anderson noted there will be two updates under this agenda item, including an update on the fixed-guideway stations for Alternative Plans I and II and an update on plan objectives and alternative plan evaluation criteria.

Preliminary Draft of Fixed-Guideway Stations for Alternative Plans I and II

Ms. Anderson asked Commission staff to provide an update on the development of fixed-guideway stations for Alternative Plans I and II. Mr. Muhs noted members of the Committees received a handout in their meeting packet that includes maps and station locations for the rapid transit and commuter rail services proposed for Alternative Plans I and II (see Attachment 2). Mr. Muhs then provided an overview of the proposed fixed-guideway corridors and stations for Alternative Plans I and II as follows:

- Alternative Plan I: One commuter rail corridor and three rapid transit corridors will be included in Alternative Plan I, with the rapid transit corridors taking the form of bus rapid transit (BRT). BRT station spacing will be about one-half to one mile and commuter rail station spacing will be about two to five miles.
- Alternative Plan II: Two commuter rail corridors and ten rapid transit corridors will be included in Alternative Plan II, with the rapid transit corridors taking the form of light rail and BRT. Light rail and BRT designations in the alternative plans are primarily for long-range planning cost estimate purposes and detailed corridor feasibility studies would be required to determine the appropriate technology for each corridor. Station spacing for rapid transit (BRT and light rail) and commuter rail will be the same as Alternative Plan I.

Mr. Muhs stated major destinations and public input were considered in the stop spacing along the fixed-guideway corridors. He also noted the Milwaukee Streetcar and Kenosha Streetcar are considered committed projects and will be included in both Alternative Plans I and II as well as the Trend. The following comments and discussion points were made during the update:

1. Mr. Bauman noted there are no fixed-guideway corridors shown in northern Milwaukee County on either Alternative Plan map. He asked if this precludes consideration of these corridors. Mr. Muhs responded that it does not necessarily preclude these corridors from consideration. Mr. Muhs noted the 30th Street Industrial Corridor is served by the proposed BRT line along 27th Street.

Ms. Koster recalled the year 2035 regional transportation system plan included fixed-guideway corridors in northern Milwaukee County. Mr. Yunker noted the year 2035 plan recommended extensive bus service improvement, including express and rapid bus routes. The year 2035 plan also identified several express and rapid bus routes that could potentially be upgraded to rail transit or bus guideways. Mr. Yunker then noted the Washington County and Ozaukee County commuter rail corridors—which extended commuter rail service to northern Milwaukee

County—shown during the scenario planning phase of VISION 2050 had significantly lower performance than the two commuter rail corridors included in Alternative Plan II, and did not receive extensive support during the scenario planning phase. Mr. Yunker suggested considering the strongest performing corridors during the alternative plan phase and the other corridors could still be identified as potential corridors as part of the recommended plan for VISION 2050.

2. Mr. Bauman questioned whether the Alternative Plans should consider fixed-guideway service into Waukesha County, noting that fixed-guideway service into Waukesha County was previously studied and was not supported. Mr. Ertl noted the regional plan update has a design year of 2050 and potentially viable corridors should not be dismissed at the planning stage due to lack of previous support.
3. Mr. Polenske asked for clarification regarding the need for further study of recommended fixed-guideway corridors included in the VISION 2050 plan. Mr. Yunker responded fixed-guideway transit projects could not be advanced directly from the regional plan to construction or final engineering and design. He noted that such projects would require detailed corridor planning, with alignment, service characteristics, and technology within each fixed-guideway corridor to be studied in more detail. Mr. Polenske noted rapid transit corridors shown for Alternative Plan II include both light rail and BRT, while the rapid transit corridors shown for Alternative Plan I include only BRT. Mr. Muhs noted the rapid transit corridors expected to have the strongest ridership are included in Alternative Plan I. They are shown as BRT in Alternative Plan I and light rail in Alternative Plan II. Additional rapid transit corridors expected to have comparatively lower ridership are included in Alternative Plan II as BRT.

Mr. Muhs noted the cost of light rail technology is typically between \$60 and \$70 million per mile and BRT technology is typically between \$5 and \$20 million per mile. BRT was chosen for rapid transit lines in Alternative Plan I to provide a greater contrast in cost between the Alternative Plans. Mr. Yunker noted the preliminary recommended plan will likely be a combination of the strongest performing elements of the Alternative Plans, or even additional elements not included in the Alternative Plans, based on plan evaluation and public feedback. Mr. Yunker then stated the implementing unit of government will again need to consider alternative technologies at such time that a detailed corridor alternatives analysis/planning study is undertaken in accordance with Federal requirements. Mr. Polenske suggested including a note on the Alternative Plan I and II maps indicating that fixed-guideway corridor technologies are not determined during the long-range planning process and are instead determined during the alternatives analysis phase of a corridor feasibility study.

[Secretary's Note: The following note has been added to the Alternative Plan I and II maps showing fixed-guideway corridors:

“Rapid transit corridors are labeled “Bus Rapid Transit” or “Light Rail Transit” for the purpose of estimating costs for this alternative. The actual rapid transit technology used to provide service in each corridor would need to be determined in a subsequent corridor study, which would be necessary prior to construction.”]

Ms. Anderson asked if there were any further questions or comments on the preliminary draft fixed-guideways and stations for Alternative Plans I and II. There were none. Ms. Anderson asked for a

motion to approve the fixed-guideway stations for Alternative Plans I and II. Mr. Clinkenbeard moved and Mr. Dranzik seconded to approve the preliminary draft fixed-guideways and stations for Alternative Plans I and II. The motion was approved unanimously.

Preliminary Draft of Plan Objectives and Alternative Plan Evaluation Criteria

Mr. Yunker noted a preliminary draft of plan objectives and alternative plan evaluation criteria will be reviewed to give the Committees an opportunity to provide comments. Staff will not be seeking approval of the objectives and evaluation criteria at this meeting. Mr. Yunker then asked Mr. Lynde to review the plan objectives and evaluation criteria. Mr. Lynde noted members of the Committees received a preliminary draft of the plan objectives and evaluation criteria and a preliminary draft of evaluation criteria descriptions in their meeting packets (see Attachment 3). The two handouts will be reviewed simultaneously. The following comments and discussion points were made during the review:

[Secretary's Note: See Attachment 4 for plan objective and alternative plan evaluation criteria as revised in response to comments from the Committees noted below.]

1. Mr. Yaccarino referred to Objective 1.1 and suggested including an estimate of the percentage of the Region considered walkable. Mr. Brandmeier suggested clarifying the term walkable in the criterion description. Ms. Koster suggested including the minimum score for an area to be considered walkable in the description.
2. Mr. Friedlander referred to Criterion 1.4.3 and asked how energy use will be measured for residential buildings. Mr. McKay responded that staff has obtained energy use by residential structure type data expressed in Btus from the U.S. Energy Information Administration. Mr. Ertl asked why commercial buildings are not included in the Criterion and noted that LEED certified commercial office buildings may impact energy use. Mr. McKay responded that non-residential building energy use is not included because it would be determined by job type at this point in the planning process, the totals for which will not vary between the alternative plans. He noted that discussion regarding LEED certified commercial office buildings can be included under the Environmental Sustainability Discussion Item. Mr. Yunker stated that "mobile sources" will be changed to "transportation" in the Criterion description.
3. Mr. Polenske asked how the Benefits and Impacts to Public Health Discussion Item will be measured. Mr. Lynde responded that several criteria may relate to the discussion item, which will be further described as plan evaluation progresses.
4. Mr. Lynde noted a handout further describing Criterion 2.1.1 was distributed to members at the meeting (see Attachment 3). Mr. Bauman suggested revising Objective 2.1 to call for reducing the disparities between white and minority populations. Mr. Yaccarino stated it is important for the evaluation criteria to compare the benefits and impacts of transportation investments between areas with concentrations of minority populations and areas without concentrations of minority populations. Mr. Yunker agreed the evaluation will need to include assessment of whether minority and low-income populations receive a proportional share of any plan benefits and also whether they would receive a disproportionate share of any plan costs or negative impacts. He added that staff would review the objective and attempt to include Mr. Bauman's suggestion.

5. Mr. Bauman referred to Objective 2.3 and suggested revising it to “Reduce job-worker mismatch” in order to be clearer about the goal. Mr. Yunker responded that staff would review the objective, and indicated that the suggested objective of reducing job-worker mismatch may be easier to understand rather than the balance between housing and jobs (see Attachment 4). Mr. Bauman suggested the VISION 2050 objectives should recognize the history of inequity in the Region, which is represented in the statistics included in the peer metropolitan areas report. Mr. Yunker noted the transit element of the regional transportation system plan has not been implemented. Mr. Brandmeier referred to the rapid transit and commuter rail corridor maps for Alternative Plan II and noted that the plan would significantly improve public transit, and link Milwaukee City and County residents to jobs. Mr. Polenske stated implementation of the plan is the key. Mr. Ertl noted that developing sound objectives to provide the basis for evaluating alternative plans should be the focus of the Committees at this point in the planning process.
6. Mr. Bauman referred to Criterion 3.3.1 and asked for clarification regarding private transportation costs. Mr. Lynde responded that private costs are the full costs of owning, operating, and maintaining a vehicle for auto travel and public transit fares for transit travel. Mr. Yaccarino asked if public costs are included in Criteria 3.3.2 and 3.3.3. Mr. Lynde responded that public capital and operating costs are included in Criterion 3.2.1. Mr. Yunker noted that Criteria 3.3.2 and 3.3.3 would measure the amount and estimated value of transportation delay reduction.
7. Mr. Ertl referred to Objective 3.4 and Criterion 3.4.1 and indicated they could be interpreted by some as suggesting that some compact development maybe costly. Mr. Yunker responded that the intent was not to infer that some compact development is costly to local governments. He stated that staff will make appropriate revisions (see Attachment 4).
8. Mr. Yaccarino referred to Criterion 4.2.3 and suggested adding “facilities.” Mr. Lynde responded that staff would make this revision.
9. Mr. Bauman referred to Criterion 4.4.1 and asked if varying degrees of congestion will be reported for the evaluation. Mr. Yunker responded that moderate, severe, and extreme congestion will be identified for arterial streets and highways under each alternative plan. This will permit individuals to consider the implications of the alternative plans on all three levels of congestion, or to only consider extreme congestion.
10. Mr. Lemens referred to Objective 4.6 and asked whether the intent of this Objective was to only address the reliability of freight travel. Mr. Lynde responded that the movement of people is included in the Objective, because the Objective is intended to address the reliability of the regional transportation system with respect to both freight and personal travel.
11. Mr. Yaccarino referred to Criterion 4.5.1 and asked if transit service frequency will be evaluated under this criterion. Mr. Lynde responded that transit service frequency will be evaluated under Criterion 4.5.3.
12. Ms. Koster asked how the alternative plans relate to the scenarios that were presented during the scenario planning stage of the VISION 2050 process. Mr. Lynde responded that the alternative plans are a refinement of the scenarios, based on consideration of public input and input from the Advisory Committees, Environmental Justice Task Force, and VISION 2050 Task Forces on key

areas of interest. Mr. Lynde noted the alternative plans are more detailed than the scenarios, which allows for a more detailed evaluation than was possible for the scenarios.

13. Mr. Polenske referred to Objective 4.1 and suggested incorporating “integrated” into the Objective to reflect the importance of connections between transportation modes. Mr. Lynde responded that staff would make this revision.
14. Mr. Lynde noted that Table 2 describes a number of discussions that would be prepared as part of the alternative plans. The discussions will address alternative plan impacts that may be difficult to quantify, and as well that may use several of the evaluation criteria to form the discussion. Mr. Yunker noted many of these are important topics that cannot be measured by a single criterion. Mr. Yaccarino referred to the discussion regarding fuel prices and suggested revising “rising” to “changing.” Mr. Clinkenbeard referred to the discussion regarding the impacts of technology changes and suggested the impacts of increased future working at home on travel should be included. Mr. Lynde indicated that staff would incorporate these revisions.

Ms. Anderson asked if there were any further questions or comments on the preliminary draft plan objectives and alternative plan evaluation criteria. There were none. Mr. Yunker noted that staff will incorporate comments from the Committees and attach the revisions to the meeting minutes (see Attachment 4).

PUBLIC COMMENTS

Ms. Anderson asked if there were any public comments. There were none.

ADJOURNMENT

Ms. Anderson noted the next Joint Advisory Committee meeting is scheduled for 9:30 a.m. on April 22, 2015. She noted the location will be in the West Allis Common Council Chambers. Ms. Anderson then thanked everyone for attending and asked for a motion to adjourn the meeting. Mr. Brandmeier moved and Mr. Lemens seconded the motion to adjourn. The meeting was adjourned at 11:30 a.m.

Respectfully submitted,

Benjamin R. McKay
Recording Secretary

OTHER POSSIBLE DATA FOR METRO AREA COMPARISON REPORT

Presented below is a listing of additional possible data that could be obtained to include in the Commission staff memorandum report “A Comparison of the Milwaukee Metropolitan Area to Its Peers”. The additional comparisons include those considered by Commission staff or suggested by Committee members. Tables are included below for those data that have already been obtained by Commission staff.

PERCENT OF HOUSEHOLDS WITH NO VEHICLES OR ONE VEHICLE IN METRO AREA Percent of Total Households: 2013

MIDWEST METRO AREAS			
	Percent of Households with No Vehicles	Percent of Households with One Vehicle	Total
Buffalo	12.9	37.9	50.8
Pittsburgh	11.2	35.9	47.1
Chicago	11.7	35.2	46.9
Cleveland	10.4	36.3	46.7
Milwaukee	9.8	35.8	45.6
Detroit	8.2	35.8	44.0
Louisville	7.9	33.6	41.5
St. Louis	7.6	33.8	41.3
Columbus	6.9	33.9	40.8
Cincinnati	8.3	31.3	39.6
Indianapolis	5.6	33.7	39.2
Kansas City	6.0	32.5	38.5
Minneapolis	7.4	31.1	38.4
Nashville	5.2	31.7	37.0

OTHER METRO AREAS			
	Percent of Households with No Vehicles	Percent of Households with One Vehicle	Total
Milwaukee	9.8	35.8	45.6
Memphis	8.3	36.6	44.9
Providence	9.4	35.4	44.8
Jacksonville	6.2	35.6	41.8
San Antonio	7.3	34.3	41.7
Portland	8.2	32.6	40.8
Denver	6.5	33.3	39.8
Charlotte	5.9	33.1	39.0
Oklahoma City	5.2	33.7	38.9
Sacramento	6.3	32.1	38.4
Birmingham	6.2	31.9	38.1
Richmond	6.9	30.2	37.1
Raleigh	4.8	31.5	36.3
Salt Lake City	5.2	28.5	33.7

Source: U.S. Bureau of the Census American Community Survey

RACIAL/ETHNIC MINORITY POPULATION IN METRO AREA'S PRINCIPAL CITY Percent of Total Population: 2013

MIDWEST METRO AREAS		
1	Detroit	91.1
2	Chicago	68.0
3	Cleveland	66.2
4	Milwaukee	63.1
5	St. Louis	56.6
6	Buffalo	55.4
7	Cincinnati	49.8
8	Kansas City	48.3
9	Nashville	43.7
10	Indianapolis	43.0
11	Minneapolis/St. Paul	42.6
12	Columbus	41.6
13	Pittsburgh	34.1
14	Louisville	32.4

OTHER METRO AREAS		
1	Birmingham	78.3
2	San Antonio	73.9
3	Memphis	72.7
4	Sacramento	65.0
5	Providence	63.8
6	Milwaukee	63.1
7	Richmond	60.1
8	Charlotte	57.1
9	Raleigh	47.4
10	Denver	46.7
11	Jacksonville	45.8
12	Oklahoma	44.5
13	Salt Lake City	34.8
14	Portland	28.6

Source: U.S. Bureau of the Census American Community Survey

Attachment 1 (continued)

ADULTS WITH A DEGREE BEYOND HIGH SCHOOL IN METRO AREA'S PRINCIPAL CITY Percent of Total Adult Population: 2013

MIDWEST METRO AREAS			OTHER METRO AREAS		
1	Minneapolis/St. Paul	50.6	1	Raleigh	56.1
2	Pittsburgh	48.2	2	Portland	53.2
3	Nashville	43.3	3	Denver	49.6
4	Chicago	41.0	4	Salt Lake City	49.5
5	Columbus	40.2	5	Charlotte	48.0
6	St. Louis	38.8	6	Richmond	39.7
7	Cincinnati	38.6	7	Sacramento	37.6
8	Louisville	35.3	8	Jacksonville	37.0
9	Kansas City	35.0	9	Providence	34.4
10	Indianapolis	34.6	10	Birmingham	34.2
11	Buffalo	34.5	11	Oklahoma	33.7
12	Milwaukee	30.0	12	San Antonio	33.0
13	Cleveland	22.6	13	Memphis	31.2
14	Detroit	19.4	14	Milwaukee	30.0

Source: U.S. Bureau of the Census American Community Survey

REVENUE VEHICLE HOURS OF PUBLIC TRANSIT PER SQUARE MILE IN METRO AREA: 2013

MIDWEST METRO AREAS			OTHER METRO AREAS		
1	Chicago	1728.9	1	Milwaukee	857.1
2	Milwaukee	857.1	2	Providence	380.4
3	Cleveland	684.6	3	Denver	380.4
4	Buffalo	560.5	4	Portland	322.7
5	Detroit	338.1	5	San Antonio	209.0
6	Pittsburgh	306.7	6	Salt Lake City	205.1
7	Minneapolis	286.1	7	Jacksonville	191.3
8	St. Louis	205.8	8	Charlotte	167.7
9	Columbus	175.4	9	Sacramento	147.1
10	Cincinnati	172.2	10	Raleigh	100.1
11	Louisville	160.4	11	Richmond	82.3
12	Indianapolis	113.4	12	Memphis	79.9
13	Kansas City	80.0	13	Birmingham	41.2
14	Nashville	66.2	14	Oklahoma City	29.7

Source: Federal Transit Administration National Transit Database and U.S. Bureau of the Census American Community Survey

REVENUE VEHICLE HOURS OF PUBLIC TRANSIT PER CAPITA IN METRO AREA: 2013

MIDWEST METRO AREAS			OTHER METRO AREAS		
1	Chicago	1.30	1	Salt Lake City	1.38
2	Milwaukee	0.79	2	Denver	1.18
3	Buffalo	0.77	3	Portland	0.93
4	Pittsburgh	0.69	4	Milwaukee	0.79
5	Cleveland	0.66	5	San Antonio	0.67
6	Minneapolis	0.63	6	Jacksonville	0.44
7	St. Louis	0.58	7	Providence	0.38
8	Louisville	0.45	8	Charlotte	0.36
9	Columbus	0.43	9	Sacramento	0.34
10	Cincinnati	0.34	10	Richmond	0.30
11	Detroit	0.31	11	Memphis	0.30
12	Kansas City	0.28	12	Birmingham	0.19
13	Indianapolis	0.25	13	Raleigh	0.17
14	Nashville	0.24	14	Oklahoma City	0.12

Source: Federal Transit Administration National Transit Database and U.S. Bureau of the Census Annual Estimates of Population

Attachment 1 (continued)

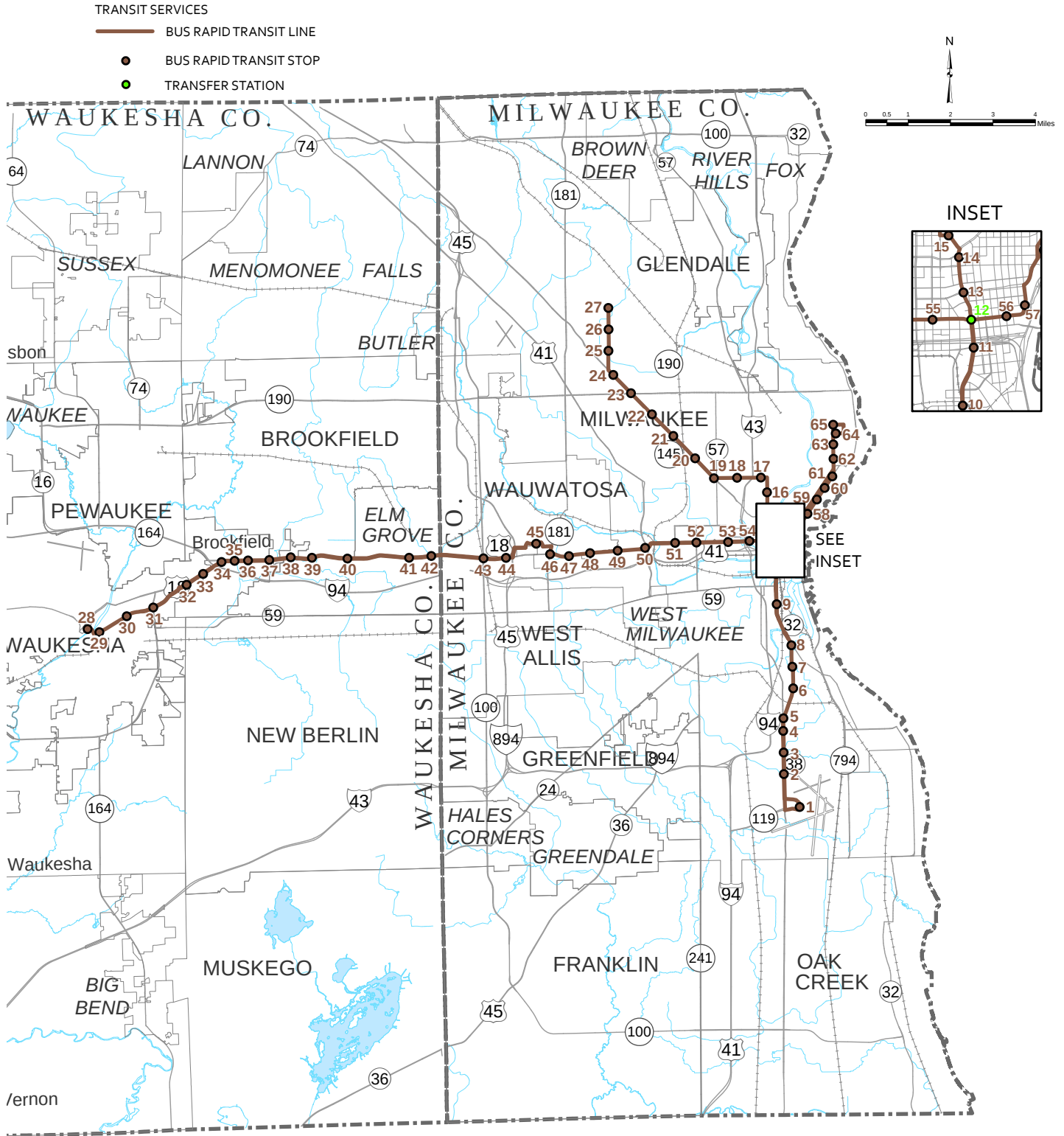
Additional Possible Data:

- Percent of Minorities in No Vehicle or Single Vehicle Households in Metro Area
- Ratio of Metro Area to Principal City for Adults Without a High School Diploma
- Ratio of Metro Area to Principal City for Adults With a Bachelor's Degree or Higher
- Ratio of Metro Area to Principal City for Per Capita Income
- Ratio of Metro Area to Principal City for Persons Below the Poverty Level

* * *

PRELIMINARY DRAFT

ALTERNATIVE PLAN I RAPID TRANSIT LINES AND STATIONS

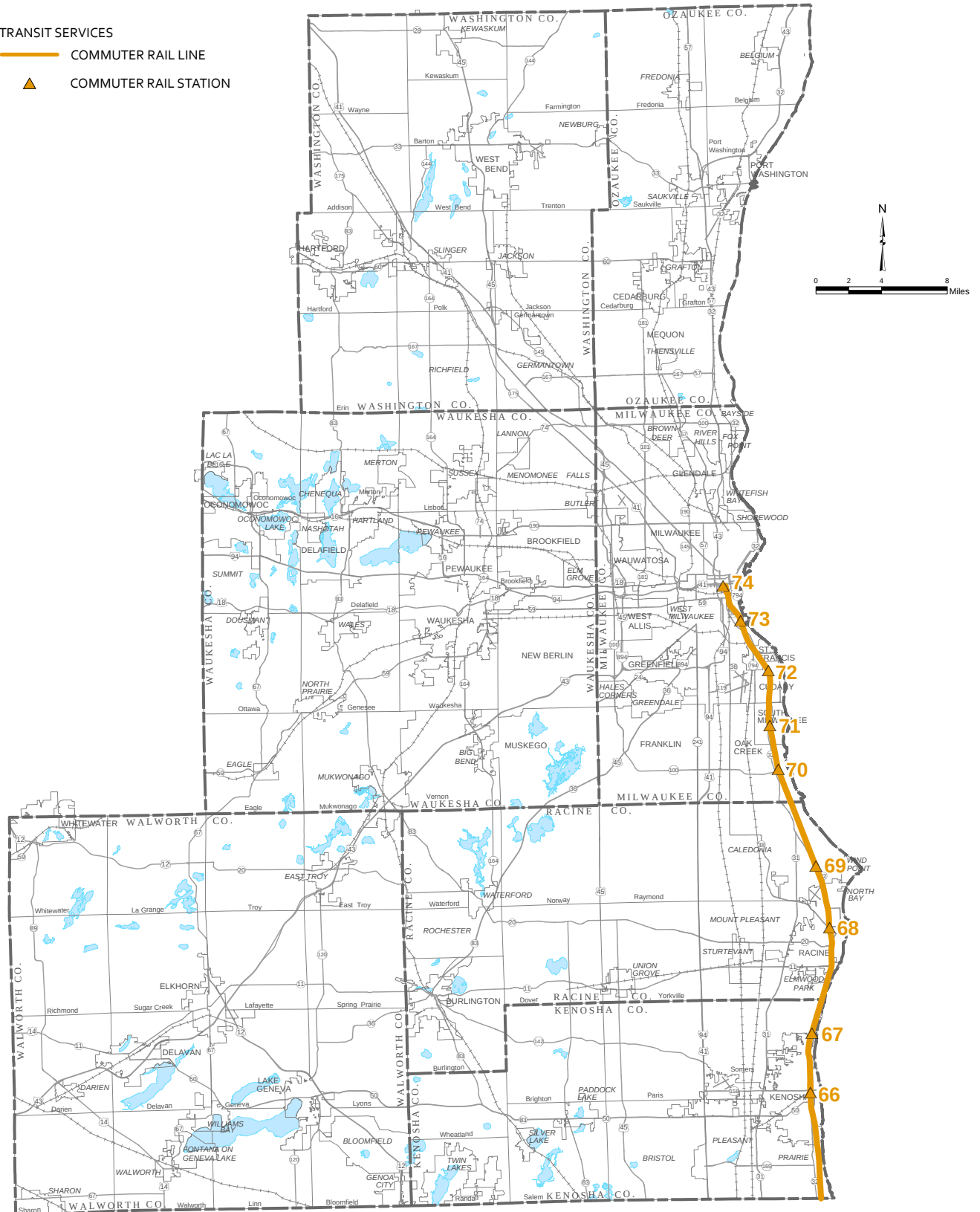


PRELIMINARY DRAFT

ALTERNATIVE PLAN I COMMUTER RAIL LINE AND STATIONS

TRANSIT SERVICES

- COMMUTER RAIL LINE
- ▲ COMMUTER RAIL STATION



Attachment 2 (continued)

Table A

ALTERNATIVE PLAN I FIXED GUIDEWAY NETWORK STATIONS

STATION ID	LOCATION	LINE	LINE TYPE
1	General Mitchell International Airport	Fond du Lac Ave. - Airport	Bus Rapid Transit
2	S. Howell Ave. & W. Layton Ave.	Fond du Lac Ave. - Airport	Bus Rapid Transit
3	S. Howell Ave. & W. Bolivar Ave.	Fond du Lac Ave. - Airport	Bus Rapid Transit
4	S. Howell Ave. & W. Howard Ave.	Fond du Lac Ave. - Airport	Bus Rapid Transit
5	S. Howell Ave. & S. Chase Ave.	Fond du Lac Ave. - Airport	Bus Rapid Transit
6	S. Howell Ave. & E. Oklahoma Ave.	Fond du Lac Ave. - Airport	Bus Rapid Transit
7	S. Howell Ave. & E. Russell Ave.	Fond du Lac Ave. - Airport	Bus Rapid Transit
8	S. Kinnickinnic Ave., E. Lincoln Ave., & S. Howell Ave.	Fond du Lac Ave. - Airport	Bus Rapid Transit
9	S. 1st St. & W. Greenfield Ave.	Fond du Lac Ave. - Airport	Bus Rapid Transit
10	S. 1st St. & W. Florida St.	Fond du Lac Ave. - Airport	Bus Rapid Transit
11	N. Water St. & E. St. Paul Ave.	Fond du Lac Ave. - Airport	Bus Rapid Transit
12	E. Wisconsin Ave. & N. Water St.	Transfer Station	Bus Rapid Transit
13	N. Water St. & E. Kilbourn Ave.	Fond du Lac Ave. - Airport	Bus Rapid Transit
14	N. Water St. & E. Knapp St.	Fond du Lac Ave. - Airport	Bus Rapid Transit
15	Schlitz Park	Fond du Lac Ave. - Airport	Bus Rapid Transit
16	N. Dr. M.L.K. Jr. Dr. & W. Reservoir Ave.	Fond du Lac Ave. - Airport	Bus Rapid Transit
17	Bronzeville	Fond du Lac Ave. - Airport	Bus Rapid Transit
18	W. North Ave. & N. Teutonia Ave.	Fond du Lac Ave. - Airport	Bus Rapid Transit
19	W. Fond du Lac Ave. & W. North Ave.	Fond du Lac Ave. - Airport	Bus Rapid Transit
20	W. Fond du Lac Ave., N. 27th St., & W. Center St.	Fond du Lac Ave. - Airport	Bus Rapid Transit
21	W. Fond du Lac Ave., N. 35th St., & W. Burleigh St.	Fond du Lac Ave. - Airport	Bus Rapid Transit
22	W. Fond du Lac Ave., N. Sherman Blvd. & W. Keefe Ave.	Fond du Lac Ave. - Airport	Bus Rapid Transit
23	W. Fond du Lac Ave., N. 51st Blvd., & W. Capitol Dr.	Fond du Lac Ave. - Airport	Bus Rapid Transit
24	Midtown Center	Fond du Lac Ave. - Airport	Bus Rapid Transit
25	N. 60th St. & W. Hampton Ave.	Fond du Lac Ave. - Airport	Bus Rapid Transit
26	N. 60th St. & W. Villard Ave.	Fond du Lac Ave. - Airport	Bus Rapid Transit
27	Westlawn	Fond du Lac Ave. - Airport	Bus Rapid Transit
28	Waukesha Metro Transit Center	Waukesha - UWM	Bus Rapid Transit
29	E. Main St. & N. East Ave.	Waukesha - UWM	Bus Rapid Transit
30	E. Main St. & Perkins Ave.	Waukesha - UWM	Bus Rapid Transit
31	E. Main St. & Les Paul Pkwy.	Waukesha - UWM	Bus Rapid Transit
32	E. Moreland Rd. & Springdale Rd.	Waukesha - UWM	Bus Rapid Transit
33	E. Moreland Rd. & Kossow Rd.	Waukesha - UWM	Bus Rapid Transit
34	Goerke's Corners	Waukesha - UWM	Bus Rapid Transit
35	The Corners of Brookfield	Waukesha - UWM	Bus Rapid Transit
36	W. Bluemound Rd. & N. Janacek Rd.	Waukesha - UWM	Bus Rapid Transit
37	W. Bluemound Rd. & N. Brookfield Rd.	Waukesha - UWM	Bus Rapid Transit
38	W. Bluemound Rd. & N. Corporate Dr.	Waukesha - UWM	Bus Rapid Transit
39	W. Bluemound Rd. & N. Calhoun Rd.	Waukesha - UWM	Bus Rapid Transit
40	Brookfield Square	Waukesha - UWM	Bus Rapid Transit
41	W. Bluemound Rd. & Bishop's Way	Waukesha - UWM	Bus Rapid Transit

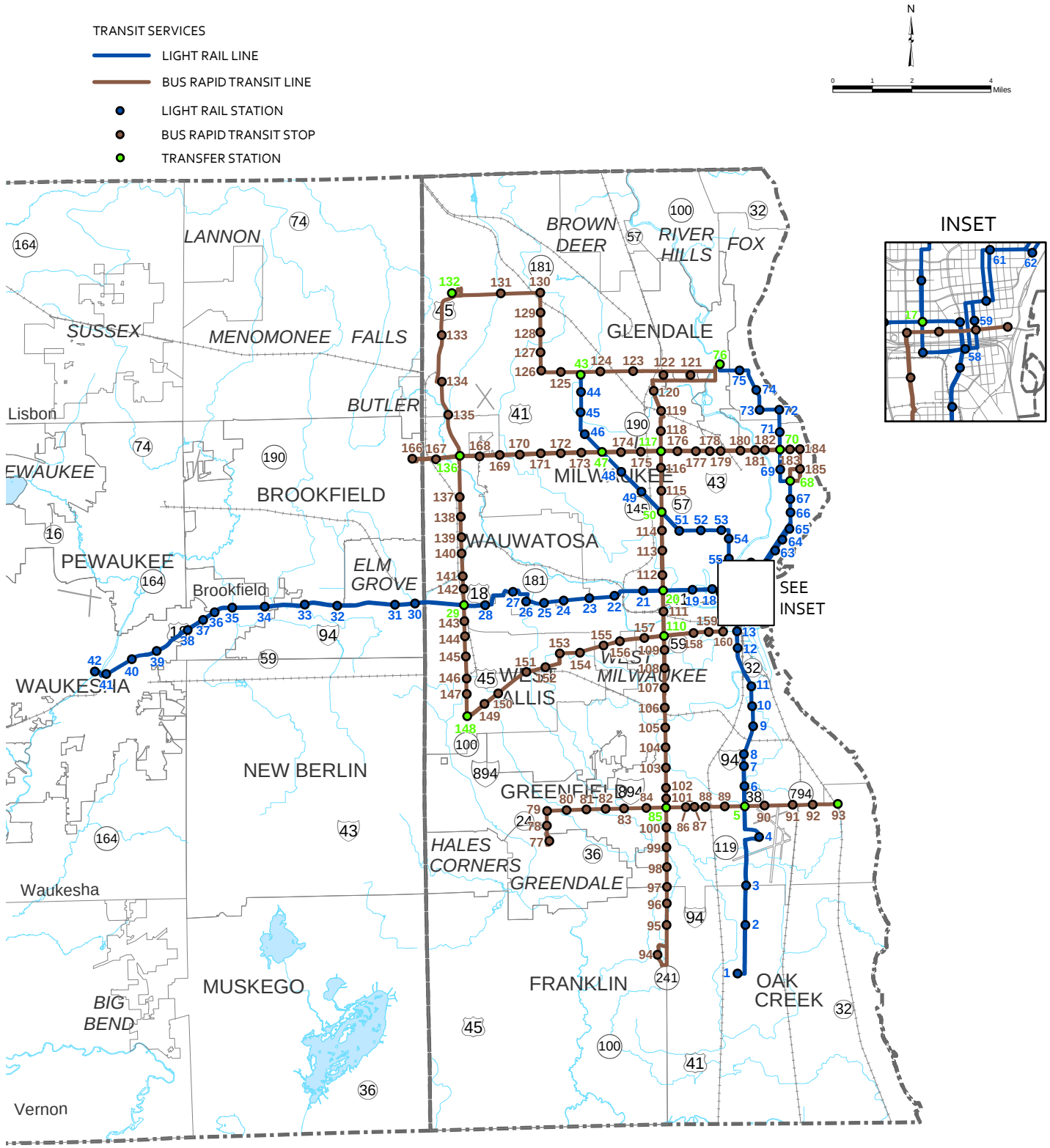
Attachment 2 (continued)
Table A (continued)

ALTERNATIVE PLAN I FIXED GUIDEWAY NETWORK STATIONS

STATION ID	LOCATION	LINE	LINE TYPE
42	Underwood Crossing	Waukesha - UWM	Bus Rapid Transit
43	W. Bluemound Rd. & Hwy 100	Waukesha - UWM	Bus Rapid Transit
44	Milwaukee County Zoo	Waukesha - UWM	Bus Rapid Transit
45	Milwaukee Regional Medical Center	Waukesha - UWM	Bus Rapid Transit
46	W. Bluemound Rd. & Glenview Ave.	Waukesha - UWM	Bus Rapid Transit
47	W. Bluemound Rd. & N. 76th St.	Waukesha - UWM	Bus Rapid Transit
48	W. Bluemound Rd. & N. 68th St.	Waukesha - UWM	Bus Rapid Transit
49	W. Bluemound Rd. & N. Hawley Rd.	Waukesha - UWM	Bus Rapid Transit
50	Miller Park/Story Hill	Waukesha - UWM	Bus Rapid Transit
51	W. Wisconsin Ave. & N. 35th St.	Waukesha - UWM	Bus Rapid Transit
52	W. Wisconsin Ave. & N. 27th St.	Waukesha - UWM	Bus Rapid Transit
53	Marquette University	Waukesha - UWM	Bus Rapid Transit
54	Central Library	Waukesha - UWM	Bus Rapid Transit
55	W. Wisconsin Ave. & N. 4th St.	Waukesha - UWM	Bus Rapid Transit
56	E. Wisconsin Ave. & N. Van Buren St.	Waukesha - UWM	Bus Rapid Transit
57	N. Prospect Ave. & E. Mason St.	Waukesha - UWM	Bus Rapid Transit
58	N. Farwell Ave., N. Prospect Ave., & E. Ogden Ave.	Waukesha - UWM	Bus Rapid Transit
59	N. Farwell Ave., N. Prospect Ave., & E. Brady St.	Waukesha - UWM	Bus Rapid Transit
60	N. Farwell Ave., N. Prospect Ave., & E. Lafayette Pl.	Waukesha - UWM	Bus Rapid Transit
61	N. Farwell Ave., N. Prospect Ave., & E. North Ave.	Waukesha - UWM	Bus Rapid Transit
62	N. Maryland Ave. & E. Bellevue Pl.	Waukesha - UWM	Bus Rapid Transit
63	N. Maryland Ave. & E. Locust St.	Waukesha - UWM	Bus Rapid Transit
64	University of Wisconsin-Milwaukee Union	Waukesha - UWM	Bus Rapid Transit
65	N. Maryland Ave. & E. Harford Ave.	Waukesha - UWM	Bus Rapid Transit
66	Kenosha	Kenosha - Milwaukee	Commuter Rail
67	Somers	Kenosha - Milwaukee	Commuter Rail
68	Racine	Kenosha - Milwaukee	Commuter Rail
69	Caledonia	Kenosha - Milwaukee	Commuter Rail
70	Oak Creek	Kenosha - Milwaukee	Commuter Rail
71	South Milwaukee	Kenosha - Milwaukee	Commuter Rail
72	Cudahy	Kenosha - Milwaukee	Commuter Rail
73	South Side Milwaukee	Kenosha - Milwaukee	Commuter Rail
74	Milwaukee Intermodal	Kenosha - Milwaukee	Commuter Rail

PRELIMINARY DRAFT

ALTERNATIVE PLAN II RAPID TRANSIT LINES AND STATIONS

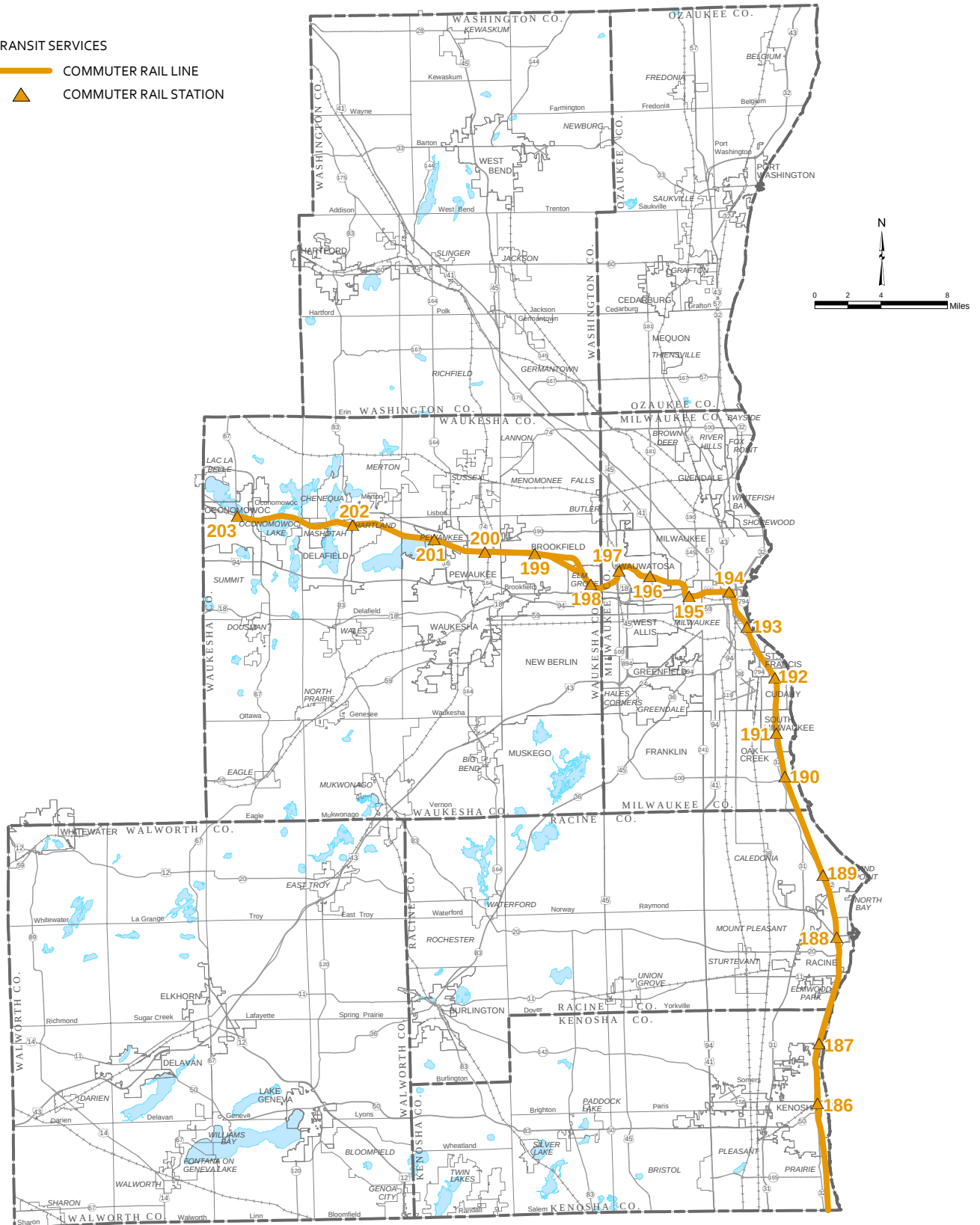


PRELIMINARY DRAFT

ALTERNATIVE PLAN II COMMUTER RAIL LINES AND STATIONS

TRANSIT SERVICES

-  COMMUTER RAIL LINE
 COMMUTER RAIL STATION



Attachment 2 (continued)

Table B

ALTERNATIVE PLAN II FIXED GUIDEWAY NETWORK STATIONS

STATION ID	LOCATION	LINE	LINE TYPE
1	Drexel Town Square	Waukesha - Airport	Light Rail
2	S. Howell Ave. & W. Rawson Ave.	Waukesha - Airport	Light Rail
3	S. Howell Ave. & W. College Ave.	Waukesha - Airport	Light Rail
4	General Mitchell International Airport	Waukesha - Airport	Light Rail
5	S. Howell Ave. & W. Layton Ave.	Transfer Station	Light Rail/BRT
6	S. Howell Ave. & W. Bolivar Ave.	Waukesha - Airport	Light Rail
7	S. Howell Ave. & W. Howard Ave.	Waukesha - Airport	Light Rail
8	S. Howell Ave. & S. Chase Ave.	Waukesha - Airport	Light Rail
9	S. Howell Ave. & E. Oklahoma Ave.	Waukesha - Airport	Light Rail
10	S. Howell Ave. & E. Russell Ave.	Waukesha - Airport	Light Rail
11	S. Kinnickinnic Ave., E. Lincoln Ave., & S. Howell Ave.	Waukesha - Airport	Light Rail
12	S. 1st St. & W. Greenfield Ave.	Waukesha - Airport	Light Rail
13	S. 1st St. & W. National Ave.	Waukesha - Airport	Light Rail
14	S. 1st St. & W. Florida St.	Waukesha - Airport	Light Rail
15	N. Water St. & E. Chicago St.	Waukesha - Airport	Light Rail
16	E. Wisconsin Ave. & N. Water St.	Waukesha - Airport	Light Rail
17	W. Wisconsin Ave. & N. 4th St.	Transfer Station	Light Rail
18	W. Wisconsin Ave. & N. 9th St.	Waukesha - Airport	Light Rail
19	W. Wisconsin Ave. & N. 16th St.	Waukesha - Airport	Light Rail
20	W. Wisconsin Ave. & N. 27th St.	Transfer Station	Light Rail/BRT
21	W. Wisconsin Ave. & N. 35th St.	Waukesha - Airport	Light Rail
22	Story Hill/Miller Park	Waukesha - Airport	Light Rail
23	W. Bluemound Rd. & N. Hawley Rd.	Waukesha - Airport	Light Rail
24	W. Bluemound Rd. & N. 68th St.	Waukesha - Airport	Light Rail
25	W. Bluemound Rd. & N. 76th St.	Waukesha - Airport	Light Rail
26	W. Bluemound Rd. & Glenview Ave.	Waukesha - Airport	Light Rail
27	Milwaukee Regional Medical Center	Waukesha - Airport	Light Rail
28	Milwaukee County Zoo	Waukesha - Airport	Light Rail
29	W. Bluemound Rd. & Hwy 100	Transfer Station	Light Rail/BRT
30	W. Bluemound Rd. & Elm Grove Rd.	Waukesha - Airport	Light Rail
31	W. Bluemound Rd. & Bishop's Way	Waukesha - Airport	Light Rail
32	Brookfield Square	Waukesha - Airport	Light Rail
33	W. Bluemound Rd. & N. Calhoun Rd.	Waukesha - Airport	Light Rail
34	W. Bluemound Rd. & N. Brookfield Rd.	Waukesha - Airport	Light Rail
35	The Corners of Brookfield	Waukesha - Airport	Light Rail
36	Goerke's Corners	Waukesha - Airport	Light Rail
37	E. Moreland Blvd. & Kossow Rd.	Waukesha - Airport	Light Rail
38	E. Moreland Blvd. & Springdale Rd.	Waukesha - Airport	Light Rail
39	E. Main St. & Les Paul Pkwy.	Waukesha - Airport	Light Rail
40	E. Main St. & Perkins Ave.	Waukesha - Airport	Light Rail
41	Waukesha Metro Transit Center	Waukesha - Airport	Light Rail

Attachment 2 (continued)
Table B (continued)

ALTERNATIVE PLAN II FIXED GUIDEWAY NETWORK STATIONS

STATION ID	LOCATION	LINE	LINE TYPE
42	E. Main St. & Buckley St.	Waukesha - Airport	Light Rail
43	Westlawn	Transfer Station	Light Rail/BRT
44	N. 60th St. & W. Villard Ave.	Fond du Lac Ave. - UWM	Light Rail
45	N. 60th St. & W. Hampton Ave.	Fond du Lac Ave. - UWM	Light Rail
46	Midtown Center	Fond du Lac Ave. - UWM	Light Rail
47	W. Fond du Lac Ave., W. Capitol Dr., & N. 51st Blvd.	Transfer Station	Light Rail/BRT
48	W. Fond du Lac Ave. & N. Sherman Blvd.	Fond du Lac Ave. - UWM	Light Rail
49	W. Fond du Lac Ave., W. Burleigh St., & N. 35th St.	Fond du Lac Ave. - UWM	Light Rail
50	W. Fond du Lac Ave., W. Center St., & N. 27th St.	Transfer Station	Light Rail/BRT
51	W. Fond du Lac Ave. & W. North Ave.	Fond du Lac Ave. - UWM	Light Rail
52	N. Tuetonia Ave. & W. North Ave.	Fond du Lac Ave. - UWM	Light Rail
53	Bronzeville	Fond du Lac Ave. - UWM	Light Rail
54	N. Dr. M.L.K. Jr. Dr. & W. Brown St.	Fond du Lac Ave. - UWM	Light Rail
55	Schlitz Park	Fond du Lac Ave. - UWM	Light Rail
56	W. Highland Ave. & N. 4th St.	Fond du Lac Ave. - UWM	Light Rail
57	W. St. Paul Ave & N. 4th St.	Fond du Lac Ave. - UWM	Light Rail
58	E. St. Paul Ave. & N. Water St.	Fond du Lac Ave. - UWM	Light Rail
59	N. Milwaukee St., N. Broadway, & E. Wisconsin Ave.	Fond du Lac Ave. - UWM	Light Rail
60	Cathedral Square	Fond du Lac Ave. - UWM	Light Rail
61	E. Ogden Ave. & N. Van Buren St.	Fond du Lac Ave. - UWM	Light Rail
62	N. Farwell Ave. & E. Ogden Ave.	Fond du Lac Ave. - UWM	Light Rail
63	N. Farwell Ave., N. Prospect Ave., & E. Brady St.	Fond du Lac Ave. - UWM	Light Rail
64	N. Farwell Ave., N. Prospect Ave., & E. Lafayette Pl.	Fond du Lac Ave. - UWM	Light Rail
65	N. Farwell Ave., N. Prospect Ave., & E. North Ave.	Fond du Lac Ave. - UWM	Light Rail
66	N. Maryland Ave. & E. Bellevue Pl.	Fond du Lac Ave. - UWM	Light Rail
67	N. Maryland Ave. & E. Locust St.	Fond du Lac Ave. - UWM	Light Rail
68	University of Wisconsin - Milwaukee	Transfer Station	Light Rail/BRT
69	N. Oakland Ave. & E. Edgewood Ave.	Fond du Lac Ave. - UWM	Light Rail
70	N. Oakland Ave. & E. Capitol Dr.	Transfer Station	Light Rail/BRT
71	N. Oakland Ave. & E. Lake Bluff Blvd.	Fond du Lac Ave. - UWM	Light Rail
72	E. Hampton Rd. & N. Oakland Ave.	Fond du Lac Ave. - UWM	Light Rail
73	E. Hampton Rd. & N. Marlborough Dr.	Fond du Lac Ave. - UWM	Light Rail
74	N. Marlborough Dr. & E. Henry Clay St.	Fond du Lac Ave. - UWM	Light Rail
75	W. Silver Spring Dr. & N. Santa Monica Blvd.	Fond du Lac Ave. - UWM	Light Rail
76	Bayshore Town Center	Transfer Station	Light Rail/BRT
77	S. 76th St. & W. Holmes Ave.	Layton Ave.	Bus Rapid Transit
78	Southridge Mall	Layton Ave.	Bus Rapid Transit
79	S. 76th St. & W. Layton Ave.	Layton Ave.	Bus Rapid Transit
80	W. Layton Ave. & S. 68th St.	Layton Ave.	Bus Rapid Transit
81	W. Layton Ave. & S. 60th St.	Layton Ave.	Bus Rapid Transit
82	Greenfield Library	Layton Ave.	Bus Rapid Transit

Attachment 2 (continued)
Table B (continued)

ALTERNATIVE PLAN II FIXED GUIDEWAY NETWORK STATIONS

STATION ID	LOCATION	LINE	LINE TYPE
83	W. Layton Ave. & W. Loomis Rd.	Layton Ave.	Bus Rapid Transit
84	W. Layton Ave. & S. 35th St.	Layton Ave.	Bus Rapid Transit
85	S. 27th St. & W. Layton Ave.	Transfer Station	Bus Rapid Transit
86	W. Layton Ave. & S. 20th St.	Layton Ave.	Bus Rapid Transit
87	W. Layton Ave. & I-94	Layton Ave.	Bus Rapid Transit
88	W. Layton Ave. & S. 13th St.	Layton Ave.	Bus Rapid Transit
89	W. Layton Ave. & S. 6th St.	Layton Ave.	Bus Rapid Transit
90	W. Layton Ave. & S. Pine Ave.	Layton Ave.	Bus Rapid Transit
91	W. Layton Ave. & S. Ahmedi Ave.	Layton Ave.	Bus Rapid Transit
92	W. Layton Ave. & S. Whitnall Ave.	Layton Ave.	Bus Rapid Transit
93	W. Layton Ave. & S. Kinnickinnic Ave.	Transfer Station	Bus Rapid Transit
94	Northwestern Mutual	27th St.	Bus Rapid Transit
95	S. 27th St. & W. Rawson Ave.	27th St.	Bus Rapid Transit
96	S. 27th St. & W. Sycamore St.	27th St.	Bus Rapid Transit
97	S. 27th St. & W. College Ave.	27th St.	Bus Rapid Transit
98	S. 27th St. & W. Ramsey Ave.	27th St.	Bus Rapid Transit
99	S. 27th St. & W. Grange Ave.	27th St.	Bus Rapid Transit
100	S. 27th St. & W. Edgerton Ave.	27th St.	Bus Rapid Transit
101	S. 27th St. & I-894	27th St.	Bus Rapid Transit
102	S. 27th St. & W. Bolivar Ave.	27th St.	Bus Rapid Transit
103	S. 27th St. & W. Howard Ave.	27th St.	Bus Rapid Transit
104	S. 27th St. & W. Morgan Ave.	27th St.	Bus Rapid Transit
105	S. 27th St. & W. Oklahoma Ave.	27th St.	Bus Rapid Transit
106	S. 27th St. & W. Cleveland Ave.	27th St.	Bus Rapid Transit
107	S. 27th St. & W. Lincoln Ave.	27th St.	Bus Rapid Transit
108	S. 27th St. & W. Burnham St.	27th St.	Bus Rapid Transit
109	S. 27th St. & W. Greenfield Ave.	27th St.	Bus Rapid Transit
110	S. 27th St. & W. National Ave.	Transfer Station	Bus Rapid Transit
111	S. 27th St. & W. Canal St.	27th St.	Bus Rapid Transit
112	N. 27th St. & W. Highland Ave.	27th St.	Bus Rapid Transit
113	N. 27th St. & W. Lisbon Ave.	27th St.	Bus Rapid Transit
114	N. 27th St. & W. North Ave.	27th St.	Bus Rapid Transit
115	N. 27th St. & W. Burleigh St.	27th St.	Bus Rapid Transit
116	N. 27th St. & W. Hopkins St.	27th St.	Bus Rapid Transit
117	N. 27th St. & W. Capitol Dr.	Transfer Station	Bus Rapid Transit
118	N. 27th St. & W. Atkinson Ave.	27th St.	Bus Rapid Transit
119	N. Teutonia Ave. & W. Hampton Ave.	27th St.	Bus Rapid Transit
120	N. Teutonia Ave. & W. Villard Ave.	27th St.	Bus Rapid Transit
121	N. Teutonia Ave. & W. Silver Spring Dr.	Transfer Station	Bus Rapid Transit
121	W. Silver Spring Dr. & N. Green Bay Rd.	Silver Spring Dr.	Bus Rapid Transit
123	W. Silver Spring Dr. & N. 39th St.	Silver Spring Dr.	Bus Rapid Transit

Attachment 2 (continued)
Table B (continued)

ALTERNATIVE PLAN II FIXED GUIDEWAY NETWORK STATIONS

STATION ID	LOCATION	LINE	LINE TYPE
124	W. Silver Spring Dr. & N. 51st Blvd.	Silver Spring Dr.	Bus Rapid Transit
125	W. Silver Spring Dr. & N. 68th St.	Silver Spring Dr.	Bus Rapid Transit
126	W. Silver Spring Dr. & N. 76th St.	Silver Spring Dr.	Bus Rapid Transit
127	N. 76th St. & W. Florist Ave.	Silver Spring Dr.	Bus Rapid Transit
128	N. 76th St. & W. Mill Rd.	Silver Spring Dr.	Bus Rapid Transit
129	N. 76th St. & W. Green Tree Rd.	Silver Spring Dr.	Bus Rapid Transit
130	W. Good Hope Rd. & N. 76th St.	Silver Spring Dr.	Bus Rapid Transit
131	W. Good Hope Rd. & N. 91st St.	Silver Spring Dr.	Bus Rapid Transit
132	Park Place	Transfer Station	Bus Rapid Transit
133	US 45 & W. Appleton Ave.	Hwy 100	Bus Rapid Transit
134	N. Lovers Lane Rd. & W. Silver Spring Dr.	Hwy 100	Bus Rapid Transit
135	N. Mayfair Rd. & W. Hampton Ave.	Hwy 100	Bus Rapid Transit
136	W. Capitol Dr. & N. Mayfair Rd.	Transfer Station	Bus Rapid Transit
137	N. Mayfair Rd. & W. Burleigh St.	Hwy 100	Bus Rapid Transit
138	Mayfair Mall	Hwy 100	Bus Rapid Transit
139	N. Mayfair Rd. & W. North Ave.	Hwy 100	Bus Rapid Transit
140	N. Mayfair Rd. & W. Walnut Rd.	Hwy 100	Bus Rapid Transit
141	N. Mayfair Rd. & W. Watertown Plank Rd.	Hwy 100	Bus Rapid Transit
142	Milwaukee County Research Park	Hwy 100	Bus Rapid Transit
143	N. Mayfair Rd. & I-94	Hwy 100	Bus Rapid Transit
144	N. 108th St. & W. Theodore Trecker Way.	Hwy 100	Bus Rapid Transit
145	N. 108th St. & W. Greenfield Ave.	Hwy 100	Bus Rapid Transit
146	N. 108th St. & W. Rogers St.	Hwy 100	Bus Rapid Transit
147	N. 108th St. & W. Lincoln Ave.	Hwy 100	Bus Rapid Transit
148	W. National Ave. & S. 108th St.	Transfer Station	Bus Rapid Transit
149	W. National Ave. & US 45	National Ave.	Bus Rapid Transit
150	W. National Ave. & W. Lincoln Ave.	National Ave.	Bus Rapid Transit
151	W. National Ave. & S. 84th St.	National Ave.	Bus Rapid Transit
152	W. National Ave. & S. 76th St.	National Ave.	Bus Rapid Transit
153	W. Greenfield Ave. & S. 70th St.	National Ave.	Bus Rapid Transit
154	W. National Ave. & W. Greenfield Ave.	National Ave.	Bus Rapid Transit
155	VA Medical Center	National Ave.	Bus Rapid Transit
156	W. National Ave. & Miller Park Way	National Ave.	Bus Rapid Transit
157	W. National Ave. & S. 35th St.	National Ave.	Bus Rapid Transit
158	W. National Ave. & S. 16th St.	National Ave.	Bus Rapid Transit
159	W. National Ave. & S. 11th St.	National Ave.	Bus Rapid Transit
160	W. National Ave. & S. 6th St.	National Ave.	Bus Rapid Transit
161	S. 6th St. & W. Canal St.	National Ave.	Bus Rapid Transit
162	N. 6th St. & W. Michigan St.	National Ave.	Bus Rapid Transit
163	W. Michigan St. & N. 2nd St.	National Ave.	Bus Rapid Transit
164	E. Michigan St. & N. Broadway	National Ave.	Bus Rapid Transit

Attachment 2 (continued)
Table B (continued)

ALTERNATIVE PLAN II FIXED GUIDEWAY NETWORK STATIONS

STATION ID	LOCATION	LINE	LINE TYPE
165	E. Michigan St. & N. Cass St.	National Ave.	Bus Rapid Transit
166	W. Capitol Dr. & N. 124th St.	Capitol Dr.	Bus Rapid Transit
167	W. Capitol Dr. & Harley Davidson Ave.	Capitol Dr.	Bus Rapid Transit
168	W. Capitol Dr. & N. 100th St.	Capitol Dr.	Bus Rapid Transit
169	W. Capitol Dr. & N. 92nd St.	Capitol Dr.	Bus Rapid Transit
170	W. Capitol Dr. & N. 84th St.	Capitol Dr.	Bus Rapid Transit
171	W. Capitol Dr., W. Appleton Ave. & N. 76th St.	Capitol Dr.	Bus Rapid Transit
172	W. Capitol Dr. & N. 68th St.	Capitol Dr.	Bus Rapid Transit
173	W. Capitol Dr. & N. 60th St.	Capitol Dr.	Bus Rapid Transit
174	W. Capitol Dr. & N. Sherman Blvd.	Capitol Dr.	Bus Rapid Transit
175	W. Capitol Dr. & N. 35th St.	Capitol Dr.	Bus Rapid Transit
176	W. Capitol Dr. & N. Teutonia Ave.	Capitol Dr.	Bus Rapid Transit
177	W. Capitol Dr. & N. 15th St.	Capitol Dr.	Bus Rapid Transit
178	W. Capitol Dr. & N. Green Bay Rd.	Capitol Dr.	Bus Rapid Transit
179	W. Capitol Dr. & N. Port Washington Rd.	Capitol Dr.	Bus Rapid Transit
180	E. Capitol Dr. & N. Richards St.	Capitol Dr.	Bus Rapid Transit
181	E. Capitol Dr. & N. Humboldt Blvd.	Capitol Dr.	Bus Rapid Transit
182	E. Capitol Dr. & N. Wilson Dr.	Capitol Dr.	Bus Rapid Transit
183	E. Capitol Dr. & N. Maryland Ave.	Capitol Dr.	Bus Rapid Transit
184	E. Capitol Dr. & N. Downer Ave.	Capitol Dr.	Bus Rapid Transit
185	N. Downer Ave. & E. Edgewood Ave.	Capitol Dr.	Bus Rapid Transit
186	Kenosha	Kenosha - Milwaukee	Commuter Rail
187	Somers	Kenosha - Milwaukee	Commuter Rail
188	Racine	Kenosha - Milwaukee	Commuter Rail
189	Caledonia	Kenosha - Milwaukee	Commuter Rail
190	Oak Creek	Kenosha - Milwaukee	Commuter Rail
191	South Milwaukee	Kenosha - Milwaukee	Commuter Rail
192	Cudahy	Kenosha - Milwaukee	Commuter Rail
193	South Side Milwaukee	Kenosha - Milwaukee	Commuter Rail
194	Milwaukee Intermodal	Transfer Station	Commuter Rail
195	Miller Park	Oconomowoc - Milwaukee	Commuter Rail
196	Tosa Village	Oconomowoc - Milwaukee	Commuter Rail
197	USH 45 in Wauwatosa	Oconomowoc - Milwaukee	Commuter Rail
198	Elm Grove	Oconomowoc - Milwaukee	Commuter Rail
199	Brookfield	Oconomowoc - Milwaukee	Commuter Rail
200	Pewaukee CTH F	Oconomowoc - Milwaukee	Commuter Rail
201	Pewaukee Village	Oconomowoc - Milwaukee	Commuter Rail
202	Hartland	Oconomowoc - Milwaukee	Commuter Rail
203	Oconomowoc	Oconomowoc - Milwaukee	Commuter Rail

PRELIMINARY DRAFT

**VISION 2050 PLAN OBJECTIVES AND
ALTERNATIVE PLAN EVALUATION CRITERIA**

Presented below are a series of VISION 2050 plan objectives and associated criteria proposed to be measured for evaluating the VISION 2050 alternative land use and transportation system plans. Plan objectives are specific goals or ends that guide the preparation and evaluation of alternative land use and transportation system plans, and would be the desired outcome of the VISION 2050 recommendations. Criteria serve as specific measures that quantify the extent to which each alternative plan meets each objective, and will be used to evaluate and compare the alternative plans.

Healthy Communities

- ▶ **Objective 1.1:** Vibrant, walkable neighborhoods that contribute to the Region's distinct character.
 - ↳ **Criterion 1.1.1:** Number of people living in walkable areas
 - ↳ **Criterion 1.1.2:** Residential density
 - ↳ **Criterion 1.1.3:** Employment density
- ▶ **Objective 1.2:** Active transportation options that encourage healthy lifestyles.
 - ↳ **Criterion 1.2.1:** Bicycle level of service
- ▶ **Objective 1.3:** Compact urban development and limited rural development that maximize open space and productive agricultural land.
 - ↳ **Criterion 1.3.1:** Remaining farmland and undeveloped land
 - ↳ **Criterion 1.3.2:** Impacts to natural resource areas
- ▶ **Objective 1.4:** Environmentally-sustainable development and transportation that minimize the use of nonrenewable resources and adverse impacts on the Region's natural environment, including biodiversity, air, and water.
 - ↳ **Criterion 1.4.1:** Preservation of areas with high groundwater recharge potential
 - ↳ **Criterion 1.4.2:** Impervious surface
 - ↳ **Criterion 1.4.3:** Energy use

Attachment 3 (continued)

- ↳ **Criterion 1.4.4:** Greenhouse gas emissions and other air pollutants
- ▶ **Objective 1.5:** A transportation system that minimizes disruption of neighborhood and community development, including adverse effects on the property tax base.
 - ↳ **Criterion 1.5.1:** Homes, businesses, land, and parkland acquired
- ▶ **Objective 1.6:** Safe and secure travel environments that minimize loss of life, injury, and property damage.
 - ↳ **Criterion 1.6.1:** Crashes by mode

Equitable Access

- ▶ **Objective 2.1:** Benefits and impacts of investments in the Region's land and transportation system are shared fairly and equitably.
 - ↳ **Criterion 2.1.1:** Benefits/impacts to minority and low-income populations
- ▶ **Objective 2.2:** Transportation and housing that meet the needs and preferences of current and future generations.
 - ↳ **Criterion 2.2.1:** Households with affordable housing + transportation costs
- ▶ **Objective 2.3:** Balance between the location of housing and jobs.
 - ↳ **Criterion 2.3.1:** Job/housing balance

Costs and Financial Sustainability

- ▶ **Objective 3.1:** A land development pattern and transportation system that support economic growth and a globally-competitive economy.
 - ↳ **Criterion 3.1.1:** Impact of the distribution of growth on property values
- ▶ **Objective 3.2:** A financially-sustainable transportation system that minimizes life-cycle capital and operating transportation costs.
 - ↳ **Criterion 3.2.1:** Average annual transportation system investment
- ▶ **Objective 3.3:** Transportation options that minimize private transportation costs.
 - ↳ **Criterion 3.3.1:** Private transportation costs per capita
 - ↳ **Criterion 3.3.2:** Per household cost savings of streets and highways delay reduction
 - ↳ **Criterion 3.3.3:** Per household cost savings of transit delay reduction

Attachment 3 (continued)

- ▶ **Objective 3.4:** Compact urban development that can be efficiently served by transportation, utilities, and public facilities.
 - ↳ **Criterion 3.4.1:** Cost of supporting new development to local governments

Mobility

- ▶ **Objective 4.1:** A balanced, well-connected transportation system that provides choices among transportation modes.
 - ↳ **Criterion 4.1.1:** Trips per day by mode
 - ↳ **Criterion 4.1.2:** Vehicle miles of travel
 - ↳ **Criterion 4.1.3:** Vehicle miles of travel per capita
- ▶ **Objective 4.2:** Reliable, efficient, and universal access to employment centers, educational opportunities, services, and other important places.
 - ↳ **Criterion 4.2.1:** Travel time to important places by mode
 - ↳ **Criterion 4.2.2:** Access to park-ride facilities
 - ↳ **Criterion 4.2.3:** Access to health care
- ▶ **Objective 4.3:** Well-maintained transportation infrastructure.
 - ↳ **Criterion 4.3.1:** Pavement condition
 - ↳ **Criterion 4.3.2:** Transit fleet condition
- ▶ **Objective 4.4:** An acceptable level of service on the transportation system.
 - ↳ **Criterion 4.4.1:** Congestion on arterial streets and highways
 - ↳ **Criterion 4.4.2:** Travel time delay
 - ↳ **Criterion 4.4.3:** Average trip times
- ▶ **Objective 4.5:** Fast, frequent, and reliable public transit services that maximize the people and jobs served.
 - ↳ **Criterion 4.5.1:** Access to transit
 - ↳ **Criterion 4.5.2:** Access to fixed-guideway transit
 - ↳ **Criterion 4.5.3:** Transit service quality
- ▶ **Objective 4.6:** Convenient, efficient, and reliable movement of goods and people.
 - ↳ **Criterion 4.6.1:** Transportation reliability
 - ↳ **Criterion 4.6.2:** Congestion on truck routes and the National Highway System

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POTENTIAL EVALUATION CRITERIA TO BE USED TO ESTIMATE THE IMPACTS AND BENEFITS OF THE VISION 2050 ALTERNATIVE REGIONAL LAND USE AND TRANSPORTATION PLANS ON MINORITY AND LOW-INCOME POPULATIONS IN SOUTHEASTERN WISCONSIN

Impacts of Arterial Street and Highway System

- **Effect of Widenings and New Facilities** – Comparison of the freeway and surface arterial street capacity expansion—new facilities and reconstruction of existing roadways with additional traffic lanes—associated with each alternative plan and areas of concentrations of minority and low-income populations to determine whether any area of the Region, including areas of minority and low-income populations, disproportionately bears the impact of the identified capacity improvement and associated property acquisition. This comparison would include an evaluation of the census blocks with estimated property acquisition as a result of the identified arterial street and highway capacity expansion for each alternative to determine whether the residences and businesses which were estimated to need to be acquired were not disproportionately located in areas with above county or regional averages of minority or low-income populations.
- **Proximity to Freeways** – Evaluation of the characteristics of the population located within a buffer (one-quarter mile) to the existing freeways and freeway segments identified for capacity expansion to determine whether there is an over-representation of minority and low-income populations in areas located in proximity to freeways proposed to be widened.
- **Air Pollution** – Assessment of whether there would be an expected disproportionate impact on minority and low-income populations with respect to transportation-related air pollution.

Benefits of Arterial Street and Highway System

- **Improved Driving Accessibility to Jobs and Other Activities** – Evaluation of the accessibility provided by the arterial street and highway element of the alternative plans to employment and major activity centers to determine whether they would result in improvements, and whether minority and low-income populations would benefit from these improvements.
- **Reduced Congestion and Improved Safety** – Comparison of residual traffic congestion and the functional improvements identified for each alternative to areas of concentrations of minority and low-income populations to determine the extent to which they receive benefits—such as improved accessibility and improved safety—from the alternative plans. As part of this

Attachment 3 (continued)

comparison, select-link analysis, or other method, would be performed to determine whether minority and low-income populations would be expected to utilize the segments of arterial streets and highways identified as being functionally improved.

Benefits of Transit System

- **Populations to be Served by Transit** – Evaluation of the characteristics of the population located within the service area of each of the alternative total public transit systems to determine whether areas of concentrations of minority and low-income populations are located within the planned transit service area.
- **Improved Transit Service** – Evaluation of the characteristics of the populations that would benefit from the transit service improvement and expansion associated with each alternative, including within the service area of express and rapid transit systems, areas receiving improved frequency of transit service, and within service areas of new local transit service. This evaluation would be done to determine which areas of the Region—particularly areas having concentrations of minority and low-income populations—would be receiving the most benefit from the proposed improvements.
- **Improved Transit Accessibility to Jobs and Other Activities** – Evaluation of the accessibility provided by the public transit element of the alternative plans to employment and major activity centers to determine whether they would result in improvements, and whether the minority and low-income populations of the Region would benefit from these improvements.
- **Comparing Improved Accessibility for Transit and Driving** – Comparison of the improvements in accessibility under the transit element of each alternative plan to the improvements in accessibility under the highway element of each alternative plan to determine whether the transit element may be expected to result in more increases in transit accessibility to jobs than the highway element may be expected to result in increases in highway accessibility to jobs.

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DESCRIPTIONS OF POTENTIAL CRITERIA FOR EVALUATING VISION 2050 ALTERNATIVE PLANS

Table 1 below provides brief descriptions of the criteria proposed to be measured for evaluating the VISION 2050 alternative land use and transportation system plans. Following the table of criteria descriptions, Table 2 describes discussions of several important topic areas that would be prepared to assist in comparing and evaluating the alternative plans. These discussions, as appropriate, would draw from the results of measuring various evaluation criteria. In addition to the criteria and discussions, population and employment by subarea and residential development by unit type would be presented to aid in comparison of the alternative plans.

TABLE 1: CRITERIA DESCRIPTIONS

Healthy Communities

No.	Criterion	Criterion Description
1.1.1	Number of people living in walkable areas	Estimates of the walkability for residents of various geographies in 2050. Walkability refers to the ease by which people can walk to schools, parks, retail services, and employment in an area.
1.1.2	Residential density	Estimates of total population per square mile for the Region in 2010 and 2050 and of population per square mile for new residential development in the Region through 2050.
1.1.3	Employment density	Estimates of total jobs per square mile for the Region in 2010 and 2050 and of jobs per square mile for new commercial and industrial development in the Region through 2050.
1.2.1	Bicycle level of service	An estimate of bicyclist comfort and existing/perceived operational conditions on bicycle facilities in the Region in 2050.
1.3.1	Remaining farmland and undeveloped land	Estimates of the land that would remain as total farmland, farmland with Class I or Class II soils, farmland preservation areas identified in county farmland preservation plans, or undeveloped land in 2050.

Attachment 3 (continued)

No.	Criterion	Criterion Description
1.3.2	Impacts to natural resource areas	Estimates of the land with natural resource features that would potentially be impacted by transportation projects in the Region through 2050. Lands to include wetlands, primary and secondary environmental corridors, isolated natural areas, critical species habitats, Wisconsin Department of Natural Resources managed lands and land legacy places, and lands protected by land trusts and other non-profit natural resource conservation organizations.
1.4.1	Preservation of high quality groundwater recharge areas	An estimate of very high and high quality groundwater recharge areas overlapping with remaining farmland, undeveloped land, and very low density residential development in 2050.
1.4.2	Impervious surface	An estimate of the total impervious surface in the Region in 2050.
1.4.3	Energy use	Estimates of the average annual amounts of energy used by residential buildings and mobile sources in the Region in 2050.
1.4.4	Greenhouse gas emissions and other air pollutants	An estimate of annual greenhouse gas emissions and other air pollutants produced in the Region from mobile sources and buildings in 2050.
1.5.1	Homes, businesses, land, and parkland acquired	Estimates of the number of homes and businesses and the amount of land and parkland that would potentially be acquired for transportation projects in the Region through 2050.
1.6.1	Crashes by mode	Estimates of average annual crashes by severity (including fatalities and injuries) and by mode (including vehicle, transit, bicycle, and pedestrian crashes) in the Region in 2050.

Equitable Access

No.	Criterion	Criterion Description
2.1.1	Benefits/impacts to minority and low-income populations	Estimates of various benefits and impacts to minority and low-income populations through 2050. This will include some of the analyses that will be conducted in a future assessment of whether minority and low-income populations receive a disproportionate share of the estimated impacts—both costs and benefits—of the eventual preliminary recommended plan.

Attachment 3 (continued)

No.	Criterion	Criterion Description
2.2.1	Households with affordable housing + transportation costs	An estimate of the total number of housing units in the Region in 2050 that are affordable at the household median income, based on combined transportation costs and housing costs (45 percent of income or less is considered affordable).
2.3.1	Job/housing balance	An estimate of the balance between the number of jobs and housing units by sewer community in 2050.

Costs and Financial Sustainability

No.	Criterion	Criterion Description
3.1.1	Impact of the distribution of growth on property values	Estimates of the change in property values for various geographies under different land development patterns based on the distribution of jobs and housing units added between 2010 and 2050.
3.2.1	Average annual transportation system investment	Estimates of operating, maintenance, and capital costs (annualized and in year 2014 dollars) of arterial streets/highways, transit, and bicycle facilities in 2050.
3.3.1	Private transportation costs per capita	Estimates of the typical costs (annualized and in year 2014 dollars) to individuals of driving and using transit in the Region in 2050.
3.3.2	Per household cost savings of streets and highways delay reduction	Estimates of the cost savings (average annual and average weekday) associated with reducing delay on arterial streets and highways in the Region in 2050.
3.3.3	Per household cost savings of transit delay reduction	Estimates of the cost savings (average annual and average weekday) associated with reducing delay for transit in the Region in 2050.
3.4.1	Cost of supporting new development to local governments	Estimates of select local government operating and capital costs (annualized and in year 2014 dollars) for total development in the Region in 2050 and for new development in the Region through 2050.

Mobility

No.	Criterion	Criterion Description
4.1.1	Trips per day by mode	Estimates of personal vehicle, transit, and non-motorized trips on an average weekday in 2050.
4.1.2	Vehicle miles of travel	An estimate of the average annual vehicle miles of travel in the Region in 2050.
4.1.3	Vehicle miles of travel per capita	An estimate of the average annual vehicle miles of travel in the Region in 2050 per Region resident.

Attachment 3 (continued)

No.	Criterion	Criterion Description
4.2.1	Travel time to important places by mode	Estimates of the average travel times in 2050 from certain locations to major activity centers by automobile and by transit.
4.2.2	Access to park-ride facilities	An estimate of the accessibility of park-ride facilities in 2050.
4.2.3	Access to health care	An estimate of the accessibility of health care facilities in the Region in 2050.
4.3.1	Pavement condition	Estimates of the percentages of the arterial street and highway system that are in good condition and poor condition in 2050.
4.3.2	Transit fleet condition	An estimate of the percentage of transit vehicles in the Region exceeding expected useful life in 2050.
4.4.1	Congestion on arterial streets and highways	Estimates of the degree and duration of traffic congestion on arterial streets and highways (including freeways) in the Region in 2050, measured in centerline miles experiencing moderate, severe, or extreme congestion. Reported for peak and off-peak periods.
4.4.2	Travel time delay	Estimates of system-wide travel time delay (average annual and average weekday) for all modes and by mode in 2050.
4.4.3	Average trip times	Estimates of the average trip times in 2050 for various geographies and trip types.
4.5.1	Access to transit	Estimates of the total number of residents with access to fixed-route transit and the total number of jobs accessible by fixed-route transit in the Region in 2050.
4.5.2	Access to fixed-guideway transit	Estimates of the total number of residents with access to fixed-guideway transit and the total number of jobs accessible by fixed-guideway transit in the Region in 2050. Transit service is considered to be fixed-guideway if it has its own right-of-way (bus rapid transit, light rail, or commuter rail).
4.5.3	Transit service quality	An estimate of transit quality in the Region based on the speed, frequency, and number of routes/lines serving a particular area. Reported as a regional average for the area served by fixed-route transit service.
4.6.1	Transportation reliability	Estimates of the level of variability in travel times for personal vehicles and by transit for various geographies in 2050.
4.6.2	Congestion on truck routes and the National Highway System	Estimates of the degree and duration of traffic congestion on truck routes and the National Highway System in the Region in 2050, measured in centerline miles experiencing moderate, severe, or extreme congestion. Reported for peak and off-peak periods.

TABLE 2: DISCUSSION DESCRIPTIONS

Discussion Title	Discussion Description
Ability to accommodate demographic shifts	Discussion of the ability to accommodate expected demographic shifts based on land development and travel patterns in the Region in 2050.
Environmental sustainability	Discussion of the expected environmental sustainability of the alternative plans based on multiple environmental criteria.
Impacts to freight traffic	Discussion of impacts to freight travel of the alternative plans based on multiple travel-related criteria.
Resilience in adapting to rising fuel prices	Discussion of how each alternative plan may perform under different future fuel price assumptions.
Bicycle network connectivity	Discussion on the connectivity of and potential gaps in the Region's bicycle network.
Return on investment	Discussion of the various benefits and impacts associated with certain types of investment in each alternative plan in relation to the expected costs of those investments. Benefits and impacts expressed as estimated dollar amounts where appropriate.
Property value impact	Discussion of the change in property values associated with different land development patterns and transportation system investments.
Impacts of technology changes	Discussion of the potential for new technologies (e.g. self-driving cars, drones) to impact travel in the Region by 2050. To include identification of the likelihood and challenges related to implementation of certain technologies.
Impacts to water resources and water quality	Discussion of potential impacts of each alternative plan on the existing water resources and the quality of water in the Region.
Benefits and impacts to public health	Discussion of the potential benefits and impacts of each alternative plan on public health in the Region through 2050.
Ability to address issues related to climate change	Discussion of how each alternative plan may perform related to climate change impacts, primarily related to impacts on infrastructure due to flooding associated with more frequent heavy storm events.
Ability to connect to nearby metro areas and leverage the value of those areas	Discussion of how each alternative plan may provide better connections to nearby metro areas, such as Chicago, Madison, and the Fox Valley.
Potential for attracting residents and businesses	Discussion of how well each alternative plan would make the Region more attractive to potential residents and businesses based on multiple quality of life-related criteria.
Political feasibility	Discussion of the likelihood for certain development pattern and transportation improvement decisions to be made in the Region by 2050.

REVISED DRAFT

VISION 2050 PLAN OBJECTIVES AND ALTERNATIVE PLAN EVALUATION CRITERIA

Presented below are a series of VISION 2050 plan objectives and associated criteria proposed to be measured for evaluating the VISION 2050 alternative land use and transportation system plans. Plan objectives are specific goals or ends that guide the preparation and evaluation of alternative land use and transportation system plans, and would be the desired outcome of the VISION 2050 recommendations. Criteria serve as specific measures that quantify the extent to which each alternative plan meets each objective, and will be used to evaluate and compare the alternative plans.

Healthy Communities

- ▶ **Objective 1.1:** Vibrant, walkable neighborhoods that contribute to the Region's distinct character.
 - ↳ **Criterion 1.1.1:** Number of people living in walkable areas
 - ↳ **Criterion 1.1.2:** Population density
 - ↳ **Criterion 1.1.3:** Employment density
- ▶ **Objective 1.2:** Active transportation options that encourage healthy lifestyles.
 - ↳ **Criterion 1.2.1:** Bicycle level of service
- ▶ **Objective 1.3:** Compact urban development and limited rural development that maximize open space and productive agricultural land.
 - ↳ **Criterion 1.3.1:** Remaining farmland and undeveloped land
 - ↳ **Criterion 1.3.2:** Impacts to natural resource areas
- ▶ **Objective 1.4:** Environmentally-sustainable development and transportation that minimize the use of nonrenewable resources and adverse impacts on the Region's natural environment, including biodiversity, air, and water.
 - ↳ **Criterion 1.4.1:** Preservation of areas with high groundwater recharge potential
 - ↳ **Criterion 1.4.2:** Impervious surface
 - ↳ **Criterion 1.4.3:** Energy use

Attachment 4 (continued)

- ↳ **Criterion 1.4.4:** Greenhouse gas emissions and other air pollutants
- ▶ **Objective 1.5:** A transportation system that minimizes disruption of neighborhood and community development, including adverse effects on the property tax base.
 - ↳ **Criterion 1.5.1:** Homes, businesses, land, and parkland acquired
- ▶ **Objective 1.6:** Safe and secure travel environments that minimize loss of life, injury, and property damage.
 - ↳ **Criterion 1.6.1:** Crashes by mode

Equitable Access

- ▶ **Objective 2.1:** Benefits and impacts of investments in the Region's transportation system should be shared fairly and equitably and serve to reduce disparities between white and minority populations.
 - ↳ **Criterion 2.1.1:** Benefits/impacts to minority and low-income populations
- ▶ **Objective 2.2:** Affordable transportation and housing that meet the needs and preferences of current and future generations.
 - ↳ **Criterion 2.2.1:** Households with affordable housing + transportation costs
- ▶ **Objective 2.3:** Reduce job-worker mismatch.
 - ↳ **Criterion 2.3.1:** Areas with a job-worker mismatch

Costs and Financial Sustainability

- ▶ **Objective 3.1:** A land development pattern and transportation system that support economic growth and a globally-competitive economy.
 - ↳ **Criterion 3.1.1:** Impact of the distribution of growth on property values
- ▶ **Objective 3.2:** A financially-sustainable transportation system that minimizes life-cycle capital and operating transportation costs.
 - ↳ **Criterion 3.2.1:** Average annual transportation system investment
- ▶ **Objective 3.3:** Transportation options that minimize private transportation costs.
 - ↳ **Criterion 3.3.1:** Private transportation costs per capita
 - ↳ **Criterion 3.3.2:** Per household cost savings of streets and highways delay reduction
 - ↳ **Criterion 3.3.3:** Per household cost savings of transit delay reduction

Attachment 4 (continued)

- ▶ **Objective 3.4:** Urban development that can be efficiently served by transportation, utilities, and public facilities.
 - ↳ **Criterion 3.4.1:** Cost of supporting new development to local governments

Mobility

- ▶ **Objective 4.1:** A balanced, integrated, well-connected transportation system that provides choices among transportation modes.
 - ↳ **Criterion 4.1.1:** Trips per day by mode
 - ↳ **Criterion 4.1.2:** Vehicle miles of travel
 - ↳ **Criterion 4.1.3:** Vehicle miles of travel per capita
- ▶ **Objective 4.2:** Reliable, efficient, and universal access to employment centers, educational opportunities, services, and other important places.
 - ↳ **Criterion 4.2.1:** Travel time to important places by mode
 - ↳ **Criterion 4.2.2:** Access to park-ride facilities
 - ↳ **Criterion 4.2.3:** Access to health care facilities
- ▶ **Objective 4.3:** Well-maintained transportation infrastructure.
 - ↳ **Criterion 4.3.1:** Pavement condition
 - ↳ **Criterion 4.3.2:** Transit fleet condition
- ▶ **Objective 4.4:** An acceptable level of service on the transportation system.
 - ↳ **Criterion 4.4.1:** Congestion on arterial streets and highways
 - ↳ **Criterion 4.4.2:** Travel time delay
 - ↳ **Criterion 4.4.3:** Average trip times
- ▶ **Objective 4.5:** Fast, frequent, and reliable public transit services that maximize the people and jobs served.
 - ↳ **Criterion 4.5.1:** Access to transit
 - ↳ **Criterion 4.5.2:** Access to fixed-guideway transit
 - ↳ **Criterion 4.5.3:** Transit service quality
- ▶ **Objective 4.6:** Convenient, efficient, and reliable movement of goods and people.
 - ↳ **Criterion 4.6.1:** Transportation reliability
 - ↳ **Criterion 4.6.2:** Congestion on the WisDOT Priority Freight Network

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REVISED DRAFT

DESCRIPTIONS OF POTENTIAL CRITERIA FOR EVALUATING VISION 2050 ALTERNATIVE PLANS

Table 1 below provides brief descriptions of the criteria proposed to be measured for evaluating the VISION 2050 alternative land use and transportation system plans. Following the table of criteria descriptions, Table 2 describes discussions of several important topic areas that would be prepared to assist in comparing and evaluating the alternative plans. These discussions, as appropriate, would draw from the results of measuring various evaluation criteria. In addition to the criteria and discussions, population and employment by subarea and residential development by unit type would be presented to aid in comparison of the alternative plans.

TABLE 1: CRITERIA DESCRIPTIONS

Healthy Communities

No.	Criterion	Criterion Description
1.1.1	Number of people living in walkable areas	Estimates of the number of residents and the proportion of the Region in walkable areas in 2050. The walkability of an area is scored on a scale of 0 to 100, with greater than 50 considered "walkable". Scores are based on pedestrian friendliness metrics (such as population density, block length, and intersection density) and walking distance to amenities (such as schools, parks, retail services, and employment).
1.1.2	Population density	Estimates of total population per square mile of developed land for the Region in 2010 and 2050 and of population per square mile of developed land for new residential development in the Region through 2050.
1.1.3	Employment density	Estimates of total jobs per square mile of developed land for the Region in 2010 and 2050 and of jobs per square mile of developed land for new employment-supporting land uses in the Region through 2050.
1.2.1	Bicycle level of service	An estimate of bicyclist comfort and existing/perceived operational conditions on bicycle facilities in the Region in 2050.

Attachment 4 (continued)

No.	Criterion	Criterion Description
1.3.1	Remaining farmland and undeveloped land	Estimates of the land that would remain as total farmland, farmland with Class I or Class II soils, farmland preservation areas identified in county farmland preservation plans, or undeveloped land in 2050.
1.3.2	Impacts to natural resource areas	Estimates of the land with natural resource features that would potentially be impacted by transportation projects in the Region through 2050. Lands to include wetlands, primary and secondary environmental corridors, isolated natural areas, critical species habitats, Wisconsin Department of Natural Resources managed lands and land legacy places, and lands protected by land trusts and other non-profit natural resource conservation organizations.
1.4.1	Preservation of areas with high groundwater recharge potential	An estimate of areas with very high and high groundwater recharge potential overlapping with remaining farmland, undeveloped land, and very low density residential development in 2050.
1.4.2	Impervious surface	An estimate of the total impervious surface in the Region in 2050.
1.4.3	Energy use	Estimates of the average annual amounts of energy used by residential buildings and transportation in the Region in 2050.
1.4.4	Greenhouse gas emissions and other air pollutants	An estimate of annual greenhouse gas emissions and other air pollutants produced in the Region from mobile sources and buildings in 2050.
1.5.1	Homes, businesses, land, and parkland acquired	Estimates of the number of homes and businesses and the amount of land and parkland that would potentially be acquired for transportation projects in the Region through 2050.
1.6.1	Crashes by mode	Estimates of average annual crashes by severity (including fatalities and injuries) and by mode (including vehicle, transit, bicycle, and pedestrian crashes) in the Region in 2050.

Attachment 4 (continued)

Equitable Access

No.	Criterion	Criterion Description
2.1.1	Benefits/impacts to minority and low-income populations	Estimates of various benefits and impacts to minority and low-income populations through 2050. This will include some of the analyses that will be conducted in a future assessment of whether minority and low-income populations receive a disproportionate share of the estimated impacts—both costs and benefits—of the eventual preliminary recommended plan.
2.2.1	Households with affordable housing + transportation costs	An estimate of the total number of housing units in the Region in 2050 that are affordable at the household median income, based on combined transportation costs and housing costs (45 percent of income or less is considered affordable).
2.3.1	Areas with a job-worker mismatch	An estimate of the ratio of jobs to households in areas throughout the Region in 2050.

Costs and Financial Sustainability

No.	Criterion	Criterion Description
3.1.1	Impact of the distribution of growth on property values	Estimates of the change in property values for various geographies under different land development patterns based on the distribution of jobs and housing units added between 2010 and 2050.
3.2.1	Average annual transportation system investment	Estimates of operating, maintenance, and capital costs (annualized and in year 2014 dollars) of arterial streets/highways, transit, and bicycle facilities in 2050.
3.3.1	Private transportation costs per capita	Estimates of the typical costs (annualized and in year 2014 dollars) to individuals of driving and using transit in the Region in 2050.
3.3.2	Per household cost savings of streets and highways delay reduction	Estimates of the cost savings (average annual and average weekday) associated with reducing delay on arterial streets and highways in the Region in 2050.
3.3.3	Per household cost savings of transit delay reduction	Estimates of the cost savings (average annual and average weekday) associated with reducing delay for transit in the Region in 2050.
3.4.1	Cost of supporting new development to local governments	Estimates of select local government operating and capital costs (annualized and in year 2014 dollars) for total development in the Region in 2050 and for new development in the Region through 2050.

Attachment 4 (continued)

Mobility

No.	Criterion	Criterion Description
4.1.1	Trips per day by mode	Estimates of personal vehicle, transit, and non-motorized trips on an average weekday in 2050.
4.1.2	Vehicle miles of travel	An estimate of the average annual vehicle miles of travel in the Region in 2050.
4.1.3	Vehicle miles of travel per capita	An estimate of the average annual vehicle miles of travel in the Region in 2050 per Region resident.
4.2.1	Travel time to important places by mode	Estimates of the average travel times in 2050 from certain locations to major activity centers by automobile and by transit.
4.2.2	Access to park-ride facilities	An estimate of the accessibility of park-ride facilities in 2050.
4.2.3	Access to health care facilities	An estimate of the accessibility of health care facilities in the Region in 2050.
4.3.1	Pavement condition	Estimates of the percentages of the arterial street and highway system that are in good condition and poor condition in 2050.
4.3.2	Transit fleet condition	An estimate of the percentage of transit vehicles in the Region exceeding expected useful life in 2050.
4.4.1	Congestion on arterial streets and highways	Estimates of the degree and duration of traffic congestion on arterial streets and highways (including freeways) in the Region in 2050, measured in centerline miles experiencing moderate, severe, or extreme congestion. Reported for peak and off-peak periods.
4.4.2	Travel time delay	Estimates of system-wide travel time delay (average annual and average weekday) for all modes and by mode in 2050.
4.4.3	Average trip times	Estimates of the average trip times in 2050 for various geographies and trip types.
4.5.1	Access to transit	Estimates of the total number of residents with access to fixed-route transit and the total number of jobs accessible by fixed-route transit in the Region in 2050.
4.5.2	Access to fixed-guideway transit	Estimates of the total number of residents with access to fixed-guideway transit and the total number of jobs accessible by fixed-guideway transit in the Region in 2050. Transit service is considered to be fixed-guideway if it has its own right-of-way (bus rapid transit, light rail, or commuter rail).
4.5.3	Transit service quality	An estimate of transit quality in the Region based on the speed, frequency, and number of routes/lines serving a particular area. Reported as a regional average for the area served by fixed-route transit service.

Attachment 4 (continued)

No.	Criterion	Criterion Description
4.6.1	Transportation reliability	Estimates of the level of variability in travel times for personal vehicles and by transit for various geographies in 2050.
4.6.2	Congestion on the WisDOT Priority Freight Network	Estimates of the degree and duration of traffic congestion on the WisDOT Priority Freight Network in the Region in 2050, measured in centerline miles experiencing moderate, severe, or extreme congestion. Reported for peak and off-peak periods.

TABLE 2: DISCUSSION DESCRIPTIONS

Discussion Title	Discussion Description
Ability to accommodate demographic shifts	Discussion of the ability to accommodate expected demographic shifts based on land development and travel patterns in the Region in 2050. To include discussion on accessibility for people with disabilities.
Environmental sustainability	Discussion of the expected environmental sustainability of the alternative plans based on multiple environmental criteria. To include discussion on sustainable building practices.
Impacts to freight traffic	Discussion of impacts to freight travel of the alternative plans based on multiple travel-related criteria.
Resilience in adapting to changing fuel prices	Discussion of how each alternative plan may perform under different future fuel price assumptions.
Bicycle network connectivity	Discussion on the connectivity of and potential gaps in the Region's bicycle network.
Return on investment	Discussion of the various benefits and impacts associated with certain types of investment in each alternative plan in relation to the expected costs of those investments. Benefits and impacts expressed as estimated dollar amounts where appropriate.
Property value impact	Discussion of the change in property values associated with different land development patterns and transportation system investments. To include discussion of how compact development in built out areas can increase property tax revenues.
Impacts of technology changes	Discussion of the potential for new technologies (e.g. self-driving cars, drones, ability to work from home) to impact travel in the Region by 2050. To include identification of the likelihood and challenges related to implementation of certain technologies.
Impacts to water resources and water quality	Discussion of potential impacts of each alternative plan on the existing water resources and the quality of water in the Region.

Attachment 4 (continued)

Discussion Title	Discussion Description
Benefits and impacts to public health	Discussion of the potential benefits and impacts of each alternative plan on public health in the Region through 2050.
Ability to address issues related to climate change	Discussion of how each alternative plan may perform related to climate change impacts, primarily related to impacts on infrastructure due to flooding associated with more frequent heavy storm events.
Ability to connect to nearby metro areas and leverage the value of those areas	Discussion of how each alternative plan may provide better connections to nearby metro areas, such as Chicago, Madison, and the Fox Valley.
Potential for attracting residents and businesses	Discussion of how well each alternative plan would make the Region more attractive to potential residents and businesses based on multiple quality of life-related criteria.
Political feasibility	Discussion of the likelihood for certain development pattern and transportation improvement decisions to be made in the Region by 2050.