

Planning and Environment Linkages (PEL) Process

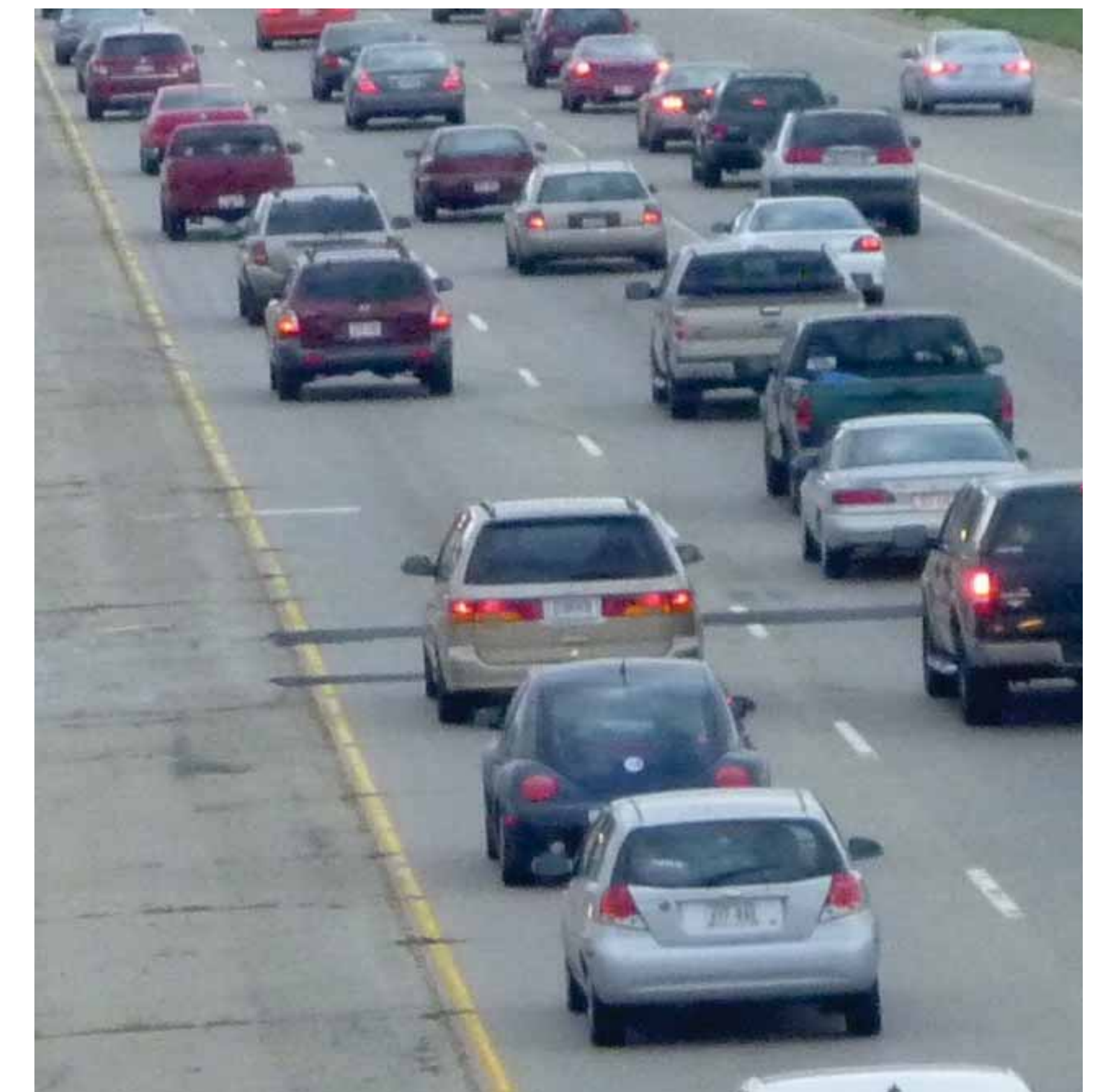
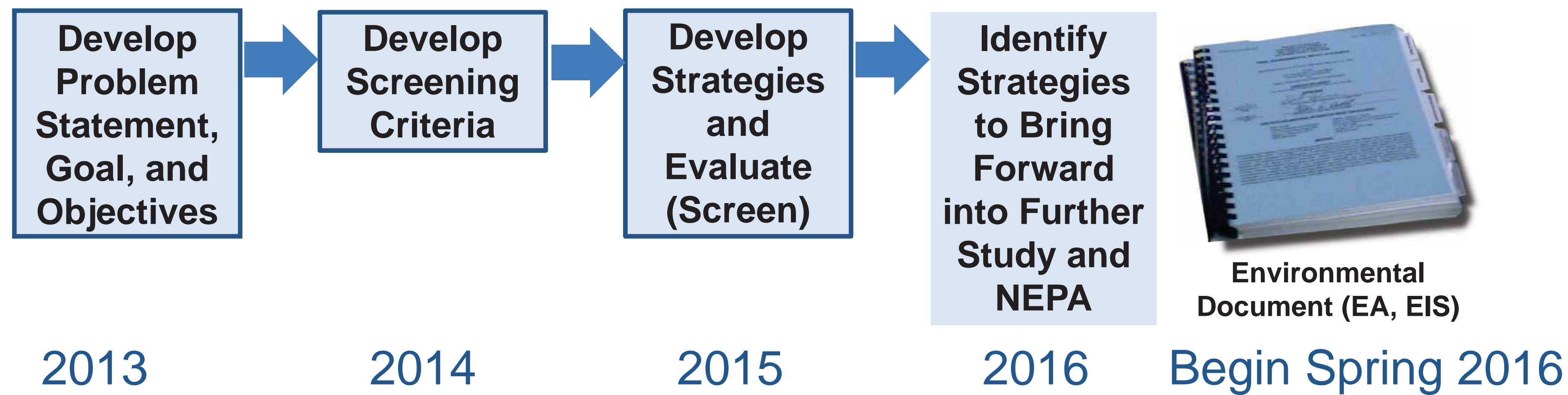
A PEL study is one of FHWA's "Every Day Counts" initiatives and is part of MAP-21 (Moving Ahead for Progress in the 21st Century) Act legislation.

The PEL process is an efficient way to integrate early planning into the highway development process and reduce delays in meeting transportation needs.

PEL study results, will form the foundation for the National Environmental Policy Act (NEPA) environmental analysis, such as environmental impact statements.



Planning and Environment Linkages Process



The graphic above summarizes the PEL process. Currently the study team is evaluating strategies. Strategies that show promise in addressing Beltline issues will be brought forward into the future NEPA environmental study and documents.

PEL stakeholder outreach in 2013-2015

The PEL project team has met extensively with neighborhood groups, interest groups, and government committees to provide and receive information regarding. The list below summarizes the group interaction as of September of 2015

Neighborhoods

- East Madison Monona Rotary Club
- Meadowood Neighborhood Association
- Waunakee Rotary Club
- Madison South Rotary
- Greater Madison Convention & Visitors Bureau-Community Relations Committee
- Greater Madison Convention & Visitors Bureau (GMCVB)
- YWCA – Construct U Class
- Arbor Hills Neighborhood
- Rotary Club of Madison – West Towne
- Town of Verona
- Latino Academy
- Orchard Ridge Neighborhood Association
- Madison West Rotary Club
- Dunn's Marsh Neighborhood Association
- Wisconsin Energy Institute
- Optimist Breakfast Club of Madison
- Madison Horizons Rotary
- Leopold Neighborhood Assoc.
- Realtors Assoc. of South Central Wisconsin–Government Affairs Committee
- UW Arboretum
- University Research Park
- YWCA
- Downtown Madison Rotary
- National Active Retired Feral Employees Association

Committees

- Policy Advisory Committee (PAC)–10 meetings
- Technical Advisory Committee (TAC)–9 meetings
- Agency Meetings–3 meetings
- Transit Focus group–2 meetings
- Bike/Pedestrian Focus Group–6 meetings

Government

- City of Madison – Department of Civil Rights
- Village of Cottage Grove
- South Metropolitan Planning Council
- Village of Oregon
- Dane County Executive's Office
- Village of DeForest
- City of Madison PBMVC
- City of Madison LRTPC
- City of Madison Planning Commission
- City of Middleton Council
- Village of Maple Bluff
- City of Fitchburg Public Works
- City of Fitchburg Council
- Village of Waunakee
- City of Stoughton
- Local Government Briefings–3 meetings

Groups

- Network of Black Professionals
- Greater Madison Chamber of Commerce (GMCC)-Public Policy Committee
- Madison Region Economic Partnership (MADREP)
- Smart Growth Greater Madison
- John Muir Sierra Club
- State Smart Transportation Initiative
- Centro Hispano
- Urban League of Greater Madison
- Allied Area Taskforce
- Downtown Madison Inc.- Trans. & Parking Committee- Bicycle subcommittee

160+ Meetings



Public Involvement Meetings (PIMs)–13 meetings

Why is the Beltline being studied?

Congestion

- Current daily traffic volumes are up to 127,000 vehicles per day. Up to a 40% traffic increase is anticipated by 2050 based on projected Dane County population growth.
- Beltline regularly operates at very congested levels (Level of Service F) during the morning and evening rush hours.



Congestion

Safety

- Sections of the Beltline, particularly between Seminole Highway and John Nolen, have crash rates that greatly exceed the state average.



Safety

Regional Importance

- Beltline connects the Madison metropolitan area to the state and national transportation systems.
- 14,950 businesses are within 5 miles of the Beltline and employ over 297,000 employees 2010 ESRI Business Locations (using Reference USAGov, a division of Infogroup, an internet-based database).
- In 2011, 12.2 million tons of freight valued at \$14.2 billion dollars traveled on the Beltline. WisDOT report, Multimodal Freight Network-2012 Interim Activities Report

Livability and Alternate Modes

- Built originally as a rural bypass, the Beltline connects the west metropolitan area with the east metropolitan area, yet separates neighborhoods.
- Opportunities to cross the Beltline as a pedestrian, cyclists, or transit user are limited and typically congested.



Livability

Infrastructure

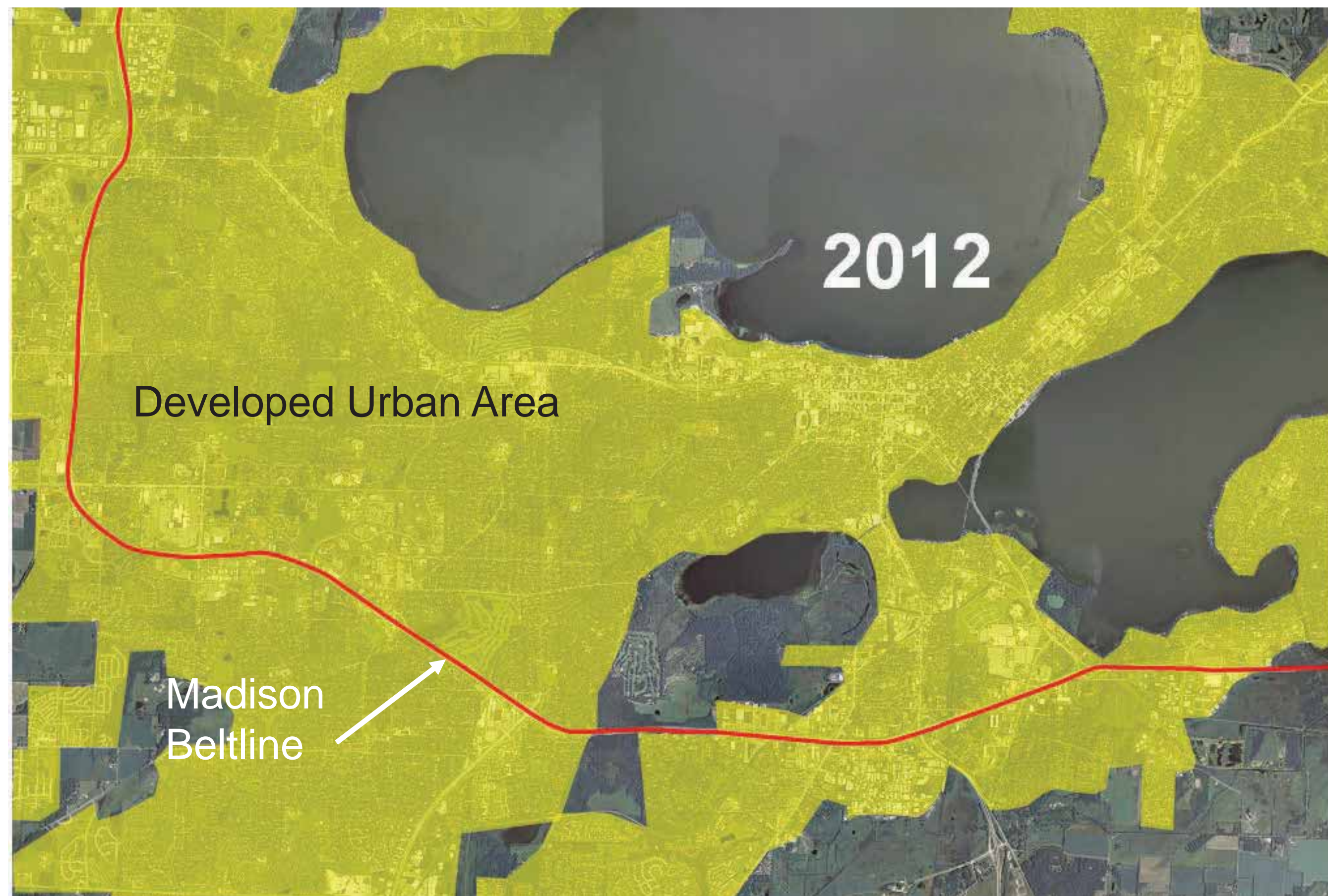
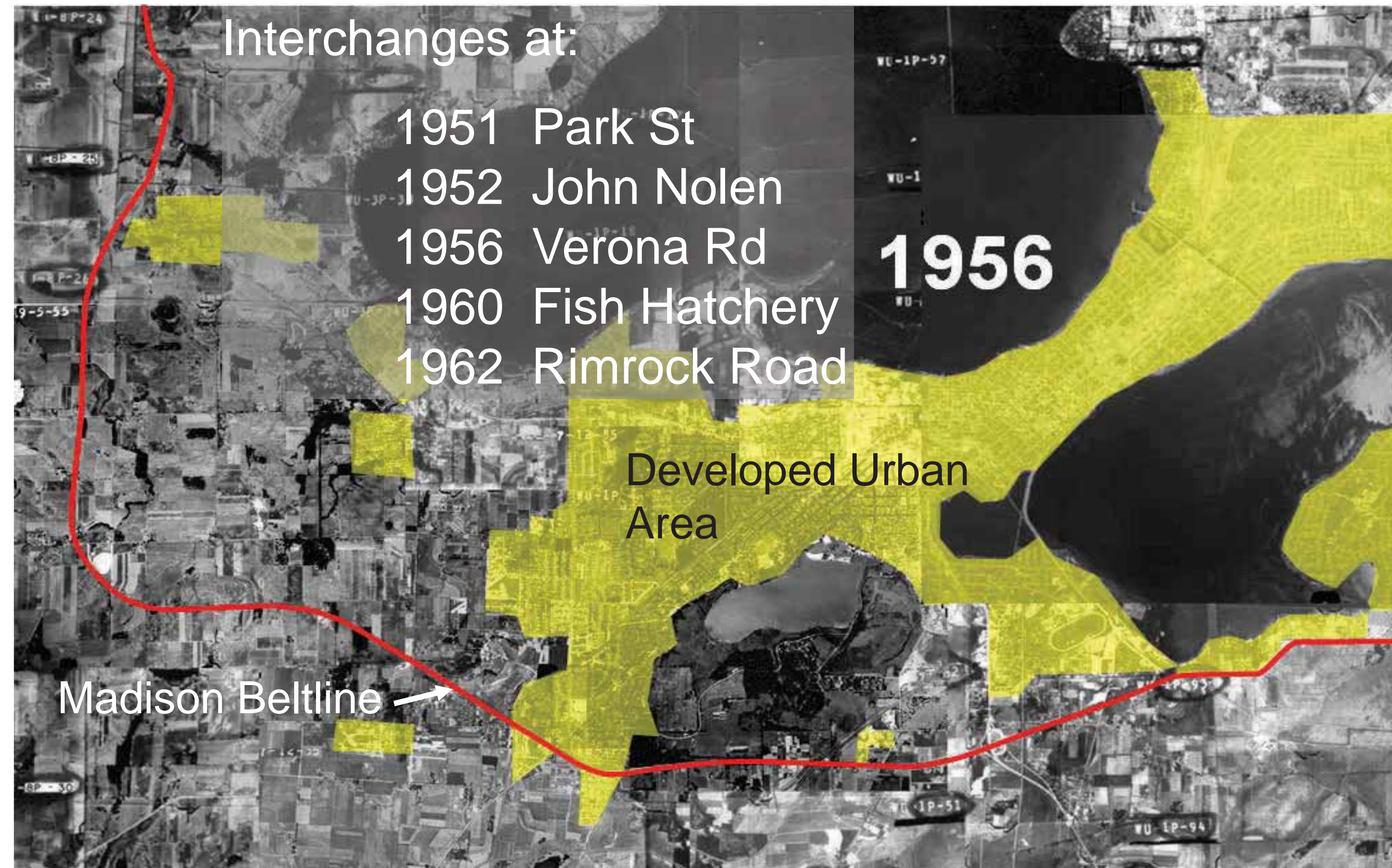
- Much of the Beltline pavement is over 25 years old and is nearing the end of its useful life.



Infrastructure

Beltline history

The Madison Beltline was constructed in the early 1950s as a rural ring road that bypassed the city of Madison. It now carries much more traffic than it was originally designed for.

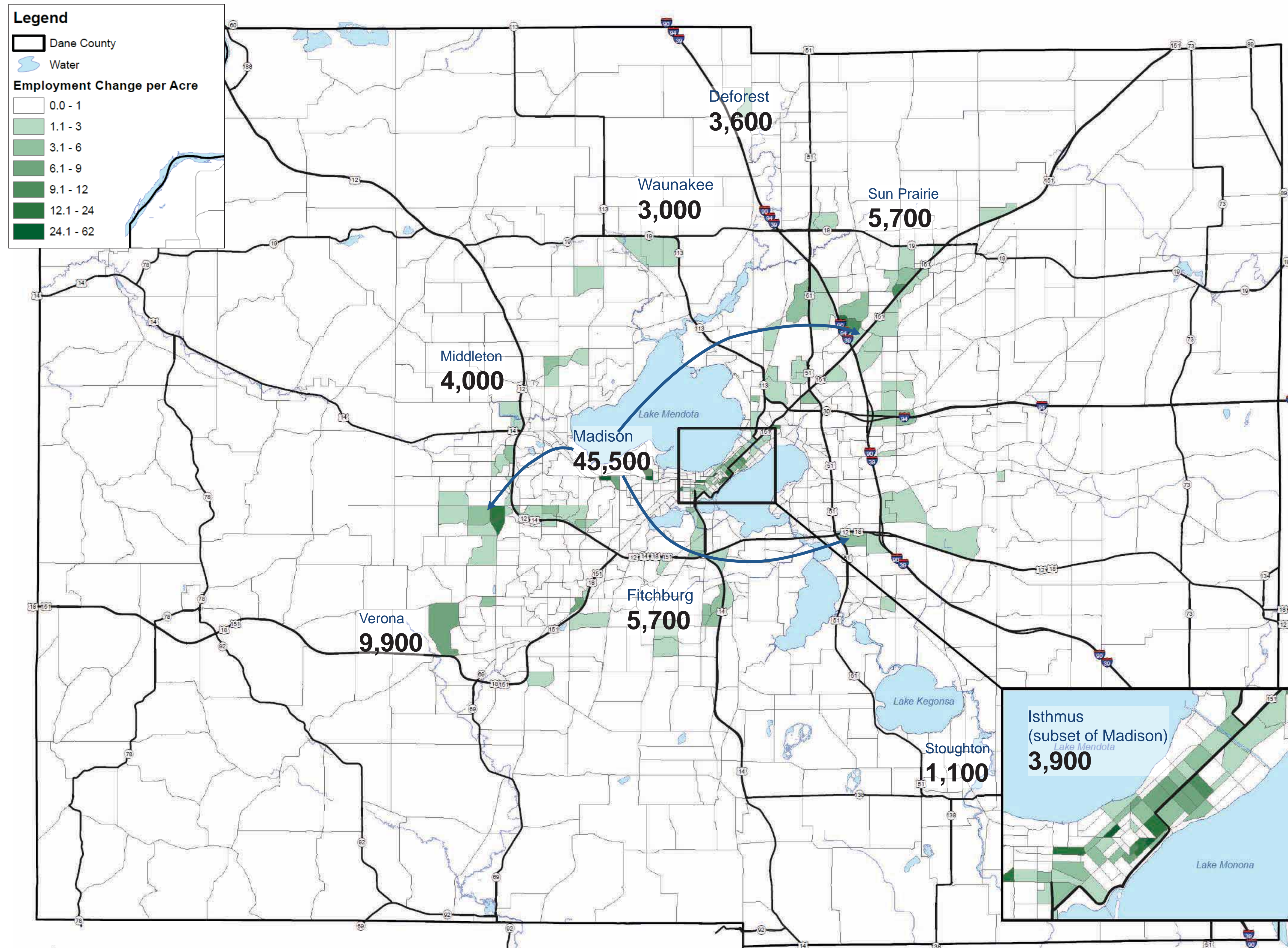


Summary of Beltline Projects

Light Green Signifies Legislative		Light Yellow signifies Planning	Orange signifies Construction
Date	Project Type	Activities	
1944	Legislative	State Highway Commission approves concept of Beltline around Madison.	
1949	Construction	Construction begins on south Beltline and east Beltline (Stoughton Road).	
1951	Construction	Park Street crossing converted to an interchange.	
1952	Construction	John Nolen crossing converted to an interchange.	
1956	Construction	Beltline expanded to four lanes from Park Street west.	
1956	Construction	US 51 crossing converted to an interchange.	
1957-58	Construction	Nakoma Road (Verona Road) interchange opened.	
1960	Construction	Fish Hatchery Road crossing converted to an interchange.	
1962	Construction	Rimrock Road crossing converted to a partial interchange.	
1968	Plan	WisDOT unveils 10-yr plan to upgrade Beltline to 6-lane freeway.	
1972	Construction	Beltline expanded to 6-lanes east of Fish Hatchery Road.	
1972	FEIS & ROD	Final Environmental Impact Statement. Approval for 6-lane South Beltline from South Towne Dr (Broadway).	
1976	Referendum	Referendum stops South Beltline project due to wetland concerns with Mud Lake.	
1979	Construction	Verona Road interchange expanded.	
1981	NEPA	NEPA (Environmental Impact Statement) process restarted for South Beltline from South Towne Dr to I-90.	
1984	FEIS & ROD	Final Environmental Impact Statement. Approval for South Beltline from South Towne Dr to I-90.	
1989	Construction	South Beltline from South Towne Dr to I-90 constructed.	
1999	Needs Assessment	Operational and safety needs of Beltline identified in report.	
2000	Alternatives Analysis	Reviewed a series of alternatives for the West Beltline and Verona Road.	
1999	Construction	Triple left turn lane added on Verona Road WB off-ramp.	
2000	NEPA Process Started	Developed and evaluated alternatives for Beltline corridor, Beltline crossings, Verona Road corridor.	
2000	Construction	Auxiliary lanes added on Beltline. Ramp meters.	
2004	DEIS	Draft Environmental Impact Statement released for West Beltline and Verona Road corridors.	
2005	Construction	Agricultural Drive overpass constructed.	
2005-6	Construction	Middleton bypass constructed.	
2006	Construction	Improvements to Todd Drive portion of Beltline.	
2008	Study	Report - Beltline Safety and Operational Needs Study	
2010	SDEIS	Verona Road Supplemental DEIS released for only Verona Rd. Corridor.	
2011	FEIS & ROD	Verona Road Record Of Decision obtained for single point interchange and jug-handle intersection.	
2011	Authorization	Transportation Projects Commission authorizes study of the Beltline	
2012	Construction	Park Street interchange reconstructed.	
2013	Construction	Fish Hatchery interchange reconstructed.	
2013	Construction	Verona Road interchange reconstruction started.	

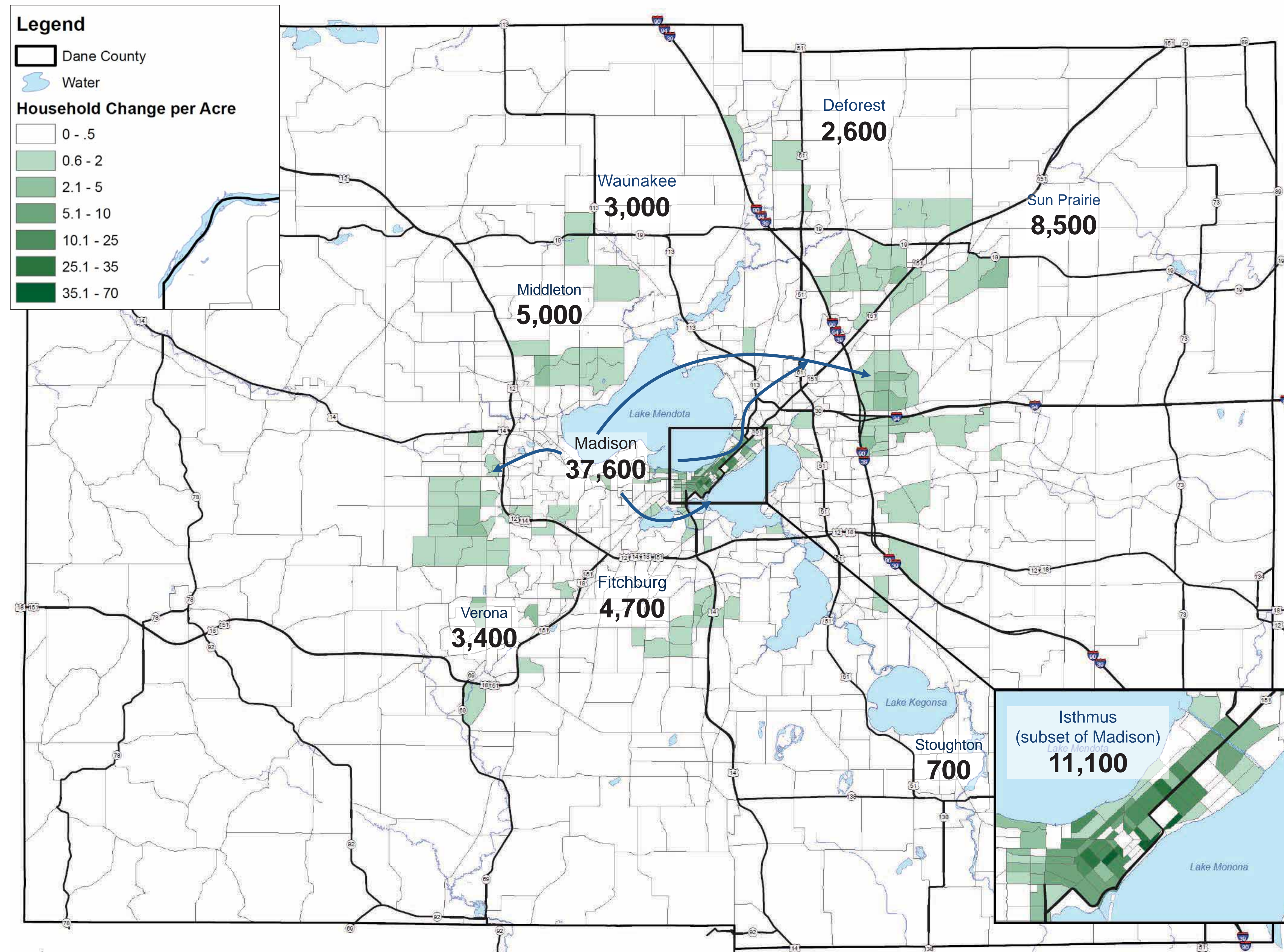
Projected Dane County 2050 employment growth

According to data from the Capital Area Regional Planning Commission (CARPC), which is based on a forecast of labor/worker supply in Dane and adjacent counties, Dane County is projected to add almost 87,000 new jobs between 2010 and 2050. This represents a 28 percent increase over the number of 2010 jobs. The following graphic shows where much of this job growth is anticipated to occur, in jobs per acre, based on existing land use plans and discussions with community planners.



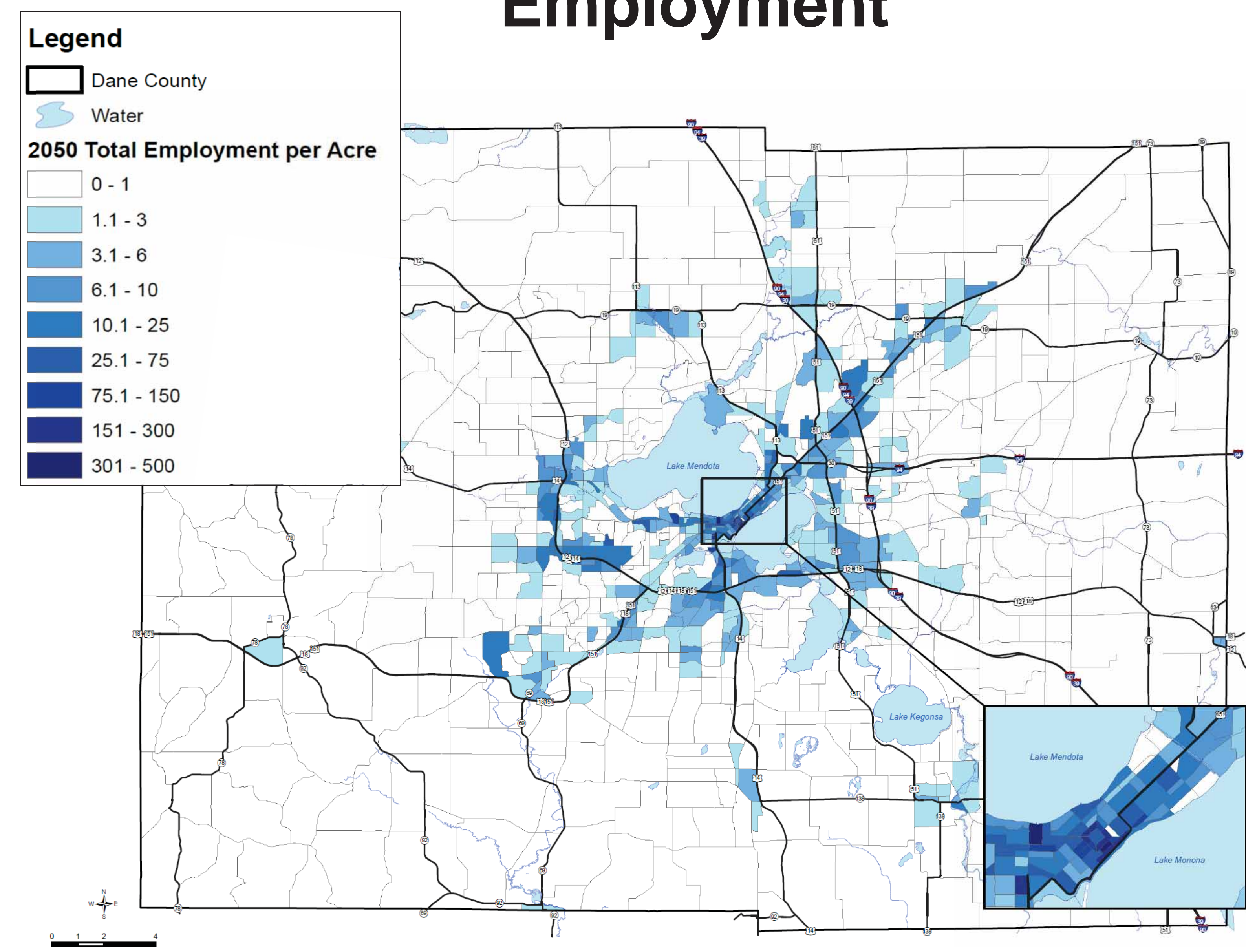
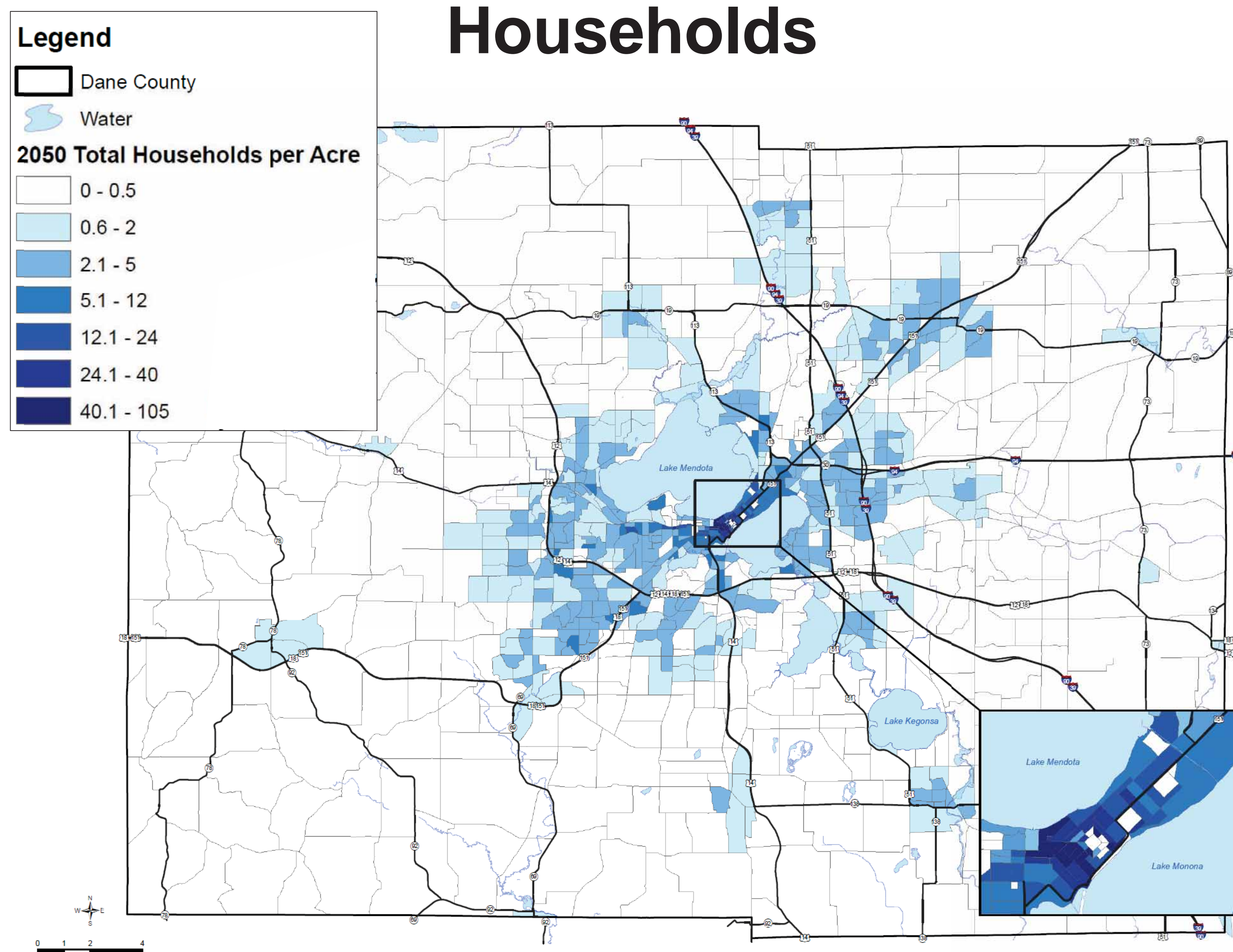
Projected Dane County 2050 household growth

According to data obtained from Wisconsin's Department of Administration Dane county is projected to add almost 81,000 new households (over 150,000 residents) between 2010 and 2050. This represents a 40 percent increase over the number of households in 2010. Many factors influence the increase in households, including rising Dane County population and the gradual decrease in household size. The following graphic shows where much of this household growth is expected to occur, in households per acre, based on existing land use plans and discussions with community planners. The area growth forecasts were developed by staff members of the Madison Area Transportation Planning Board.



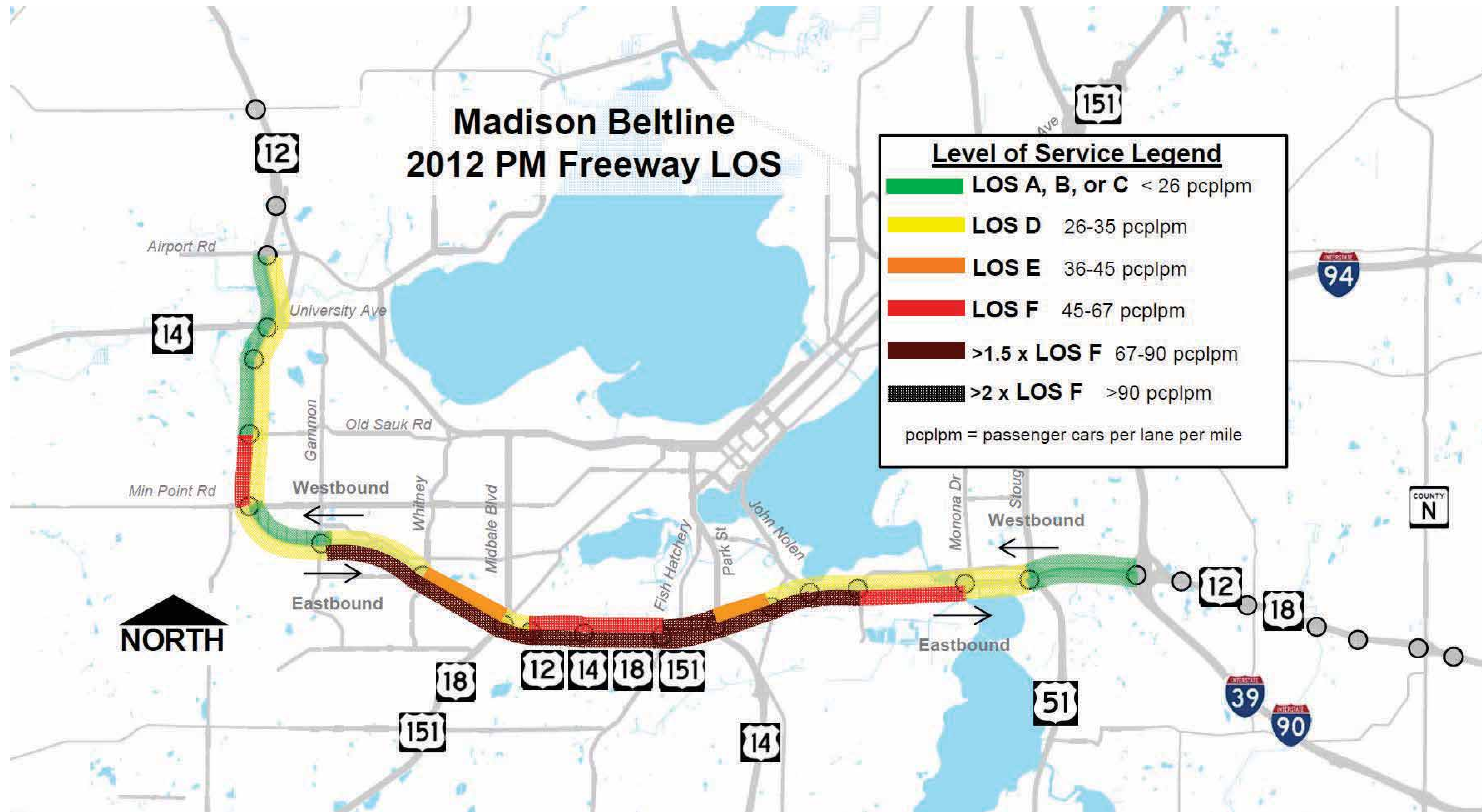
Projected Dane County 2050 households and employment

The graphics below show the anticipated 2050 household and employment densities. The household density forecasts were developed by staff members of the Madison Area Transportation Planning Board based on DOA projections, land use plans, and discussions with local planners. The employment densities were developed by Capital Area Regional Planning Commission (CARPC), which is based on a forecast of labor/worker supply in Dane and adjacent counties. The employment allocation was performed by staff members of the Madison Area Transportation Planning Board based on land use plans and discussions with local planners.



Madison Beltline PM Peak motor vehicle congestion

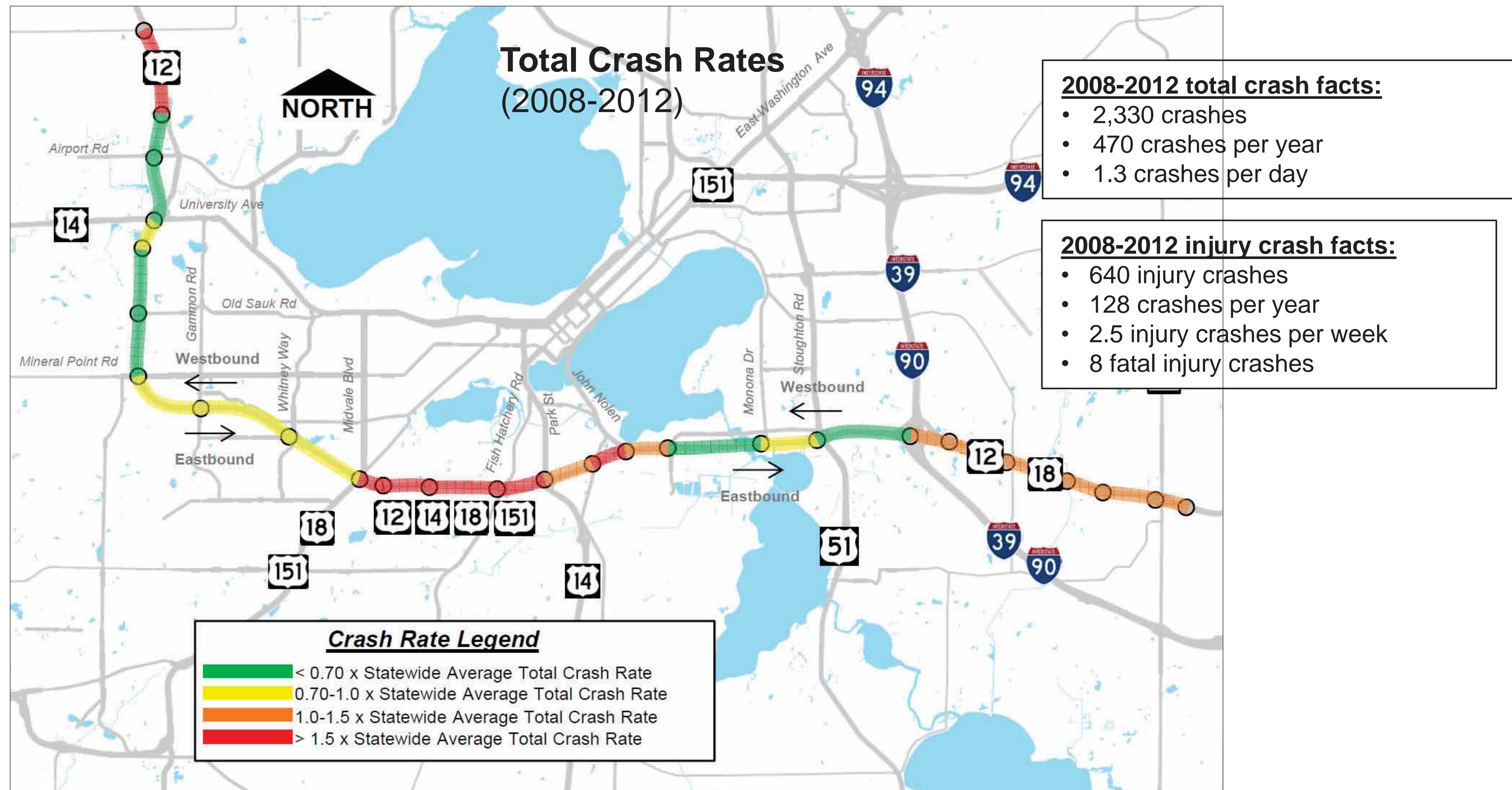
Congestion is described by Level of Service (LOS), which ranges from A (excellent) to F (poor). The graphic below illustrates the LOS for the evening rush hour. Several sections of the Beltline operate at LOS F by several factors.



Safety

Highway safety is evaluated by comparing the highway's crash rate with other similar highways within the state. Crash rates are typically measured in crashes per million vehicle miles traveled.

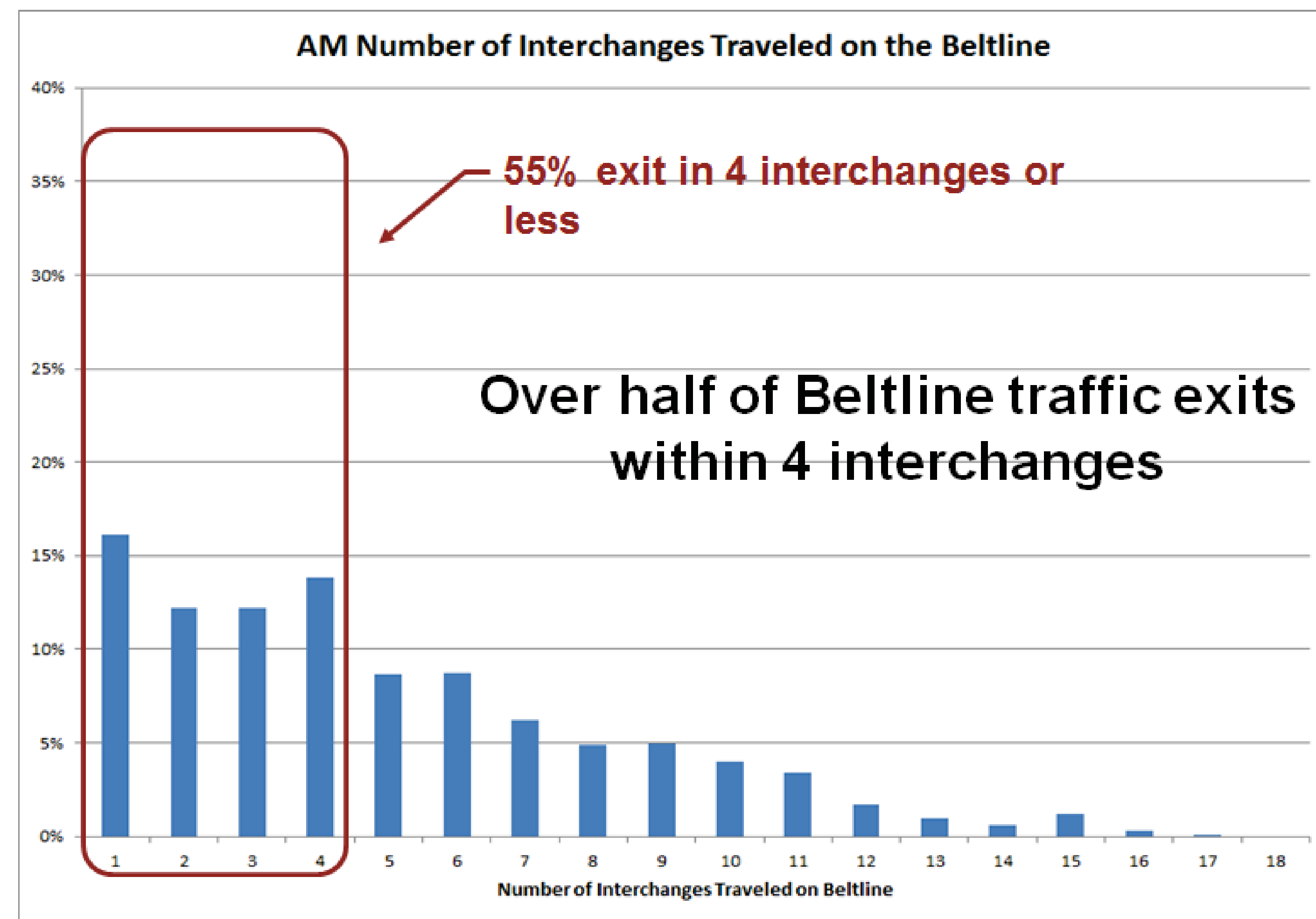
From 2008-2012 several portions of the Beltline had crash rates higher than the state average. These areas include the portion from Verona Road to South Towne Drive, and the section east of the Interstate from I-39/90 to County N.



Beltline origins and destinations

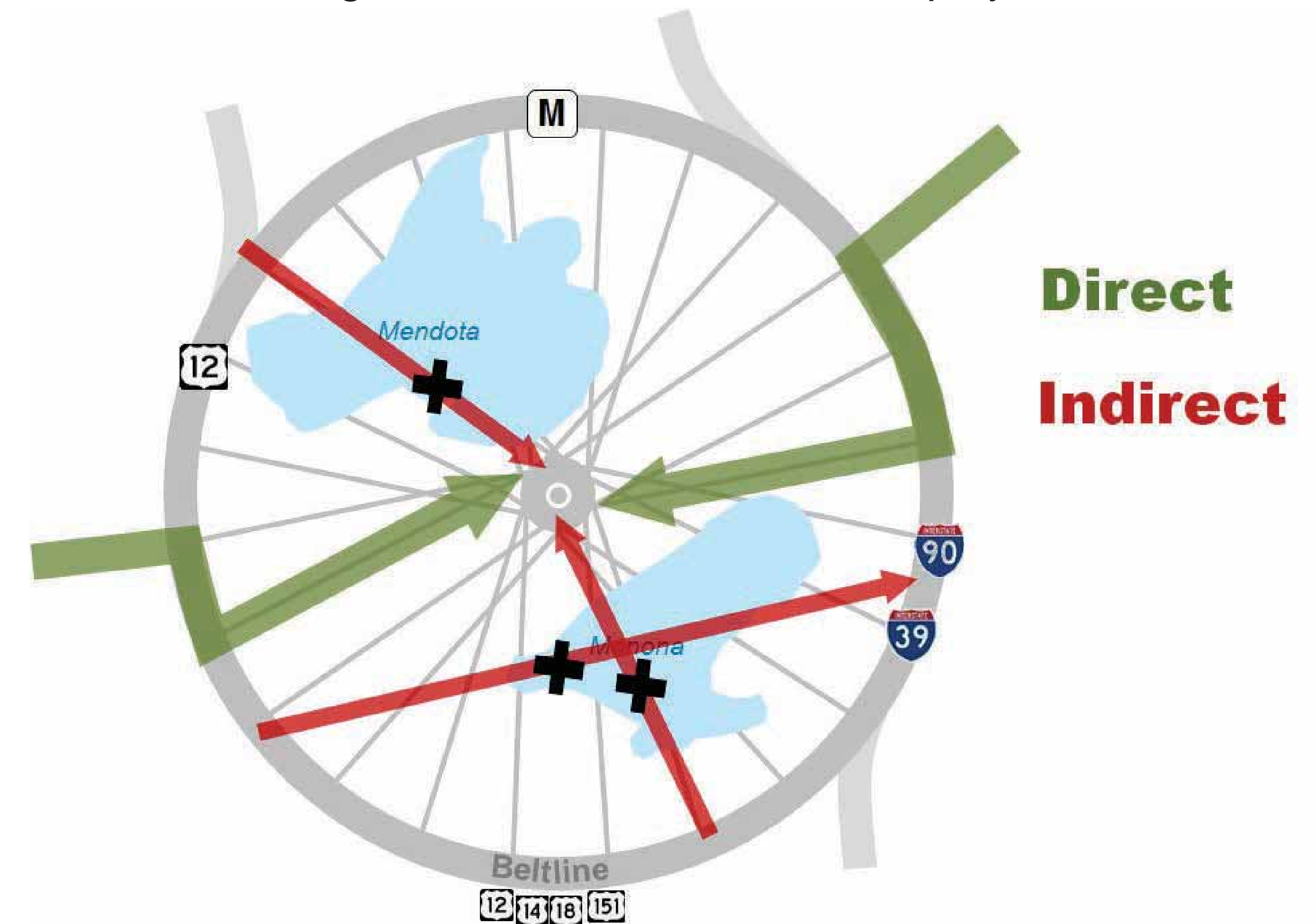
Travelers are on the Beltline for short distances

WisDOT performed an origin-destination study of the Beltline using time-lapse aerial photography. Over half of traffic entering the Beltline exits within 4 interchanges.



Madison transportation is different

Because of the lake geography, Madison has a radial network of roadway arterials that serve the main employment centers. Because the lake prevents a full grid network, the Beltline must distribute traffic to the arterials leading to the central and radial employment centers.



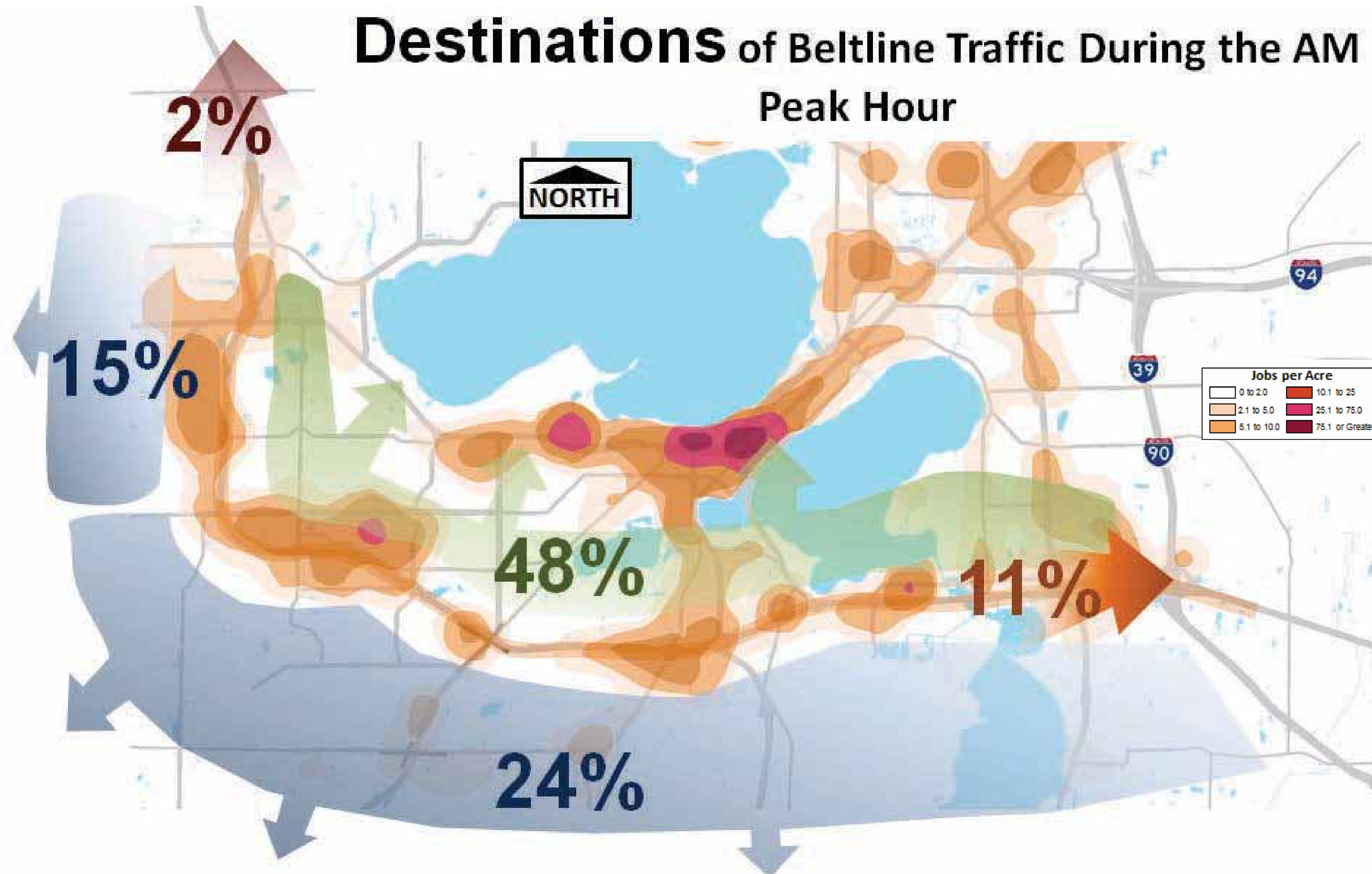
Madison transportation is radial

Beltline origins and destinations

Beltline serves employment centers

The bottom left graphic shows the destinations of traffic using the Beltline during rush hour. The orange and red shading designates jobs per acre and shows employment centers in the Madison metropolitan area. Almost half of the morning peak hour traffic is destined for inside the Beltline, while only 11 percent of the traffic is destined for the interstate or US 12/18.

(source 2012 aerial time lapse photography)



Problem Statement and Goals

The Study Problem Statement, Goals, and Objectives were developed cooperatively with local officials, stakeholders and resource agencies.

Problem Statement

A 2008 Madison Beltline Needs Assessment Report documented a number of deficiencies associated with this freeway corridor. They have grown to a level that in November of 2011 Wisconsin's Transportation Projects Commission authorized the study of long-term solutions for the Madison Beltline from US 14 in Middleton to County N in Cottage Grove. Solutions are needed to address the following Beltline issues:

- Increasing travel demand and congestion.
- Roadway safety concerns.
- Limited or insufficient accommodations for alternate travel modes.

These issues lead to high crash rates, unreliable travel times, higher travel costs, and negative economic and environmental consequences for area residents, commuters, businesses, and freight movements.

Goals

Improve multimodal travel and safety along and across the Madison Beltline corridor in a way that supports economic development, acknowledges community plans, contributes positively to the area's quality of life, and limits adverse environmental and social effects to the extent practicable.

Beltline PEL Objectives

The study is investigating the ability of multiple strategies and corridors to satisfy the Beltline Study Problem Statement, Goals, and Objectives. Specific, measurable objectives for the Beltline include the following:

1. Improve safety for all travel modes.
2. Address Beltline infrastructure condition and deficiencies.
3. Address system mobility (congestion) for all travel modes.
 - a) Pedestrian
 - b) Bicycle
 - c) Transit
 - d) Local and regional passenger vehicles
 - e) Freight
4. Limit adverse social, cultural, and environmental effects to the extent practicable.
5. Increase system travel time reliability for regional and local trips.
6. Improve connections across and adjacent to the Beltline for all travel modes.
7. Enhance efficient regional multimodal access to Madison metropolitan area economic centers.
8. Decrease Beltline traffic diversion impacts to neighborhood streets.
9. Enhance transit ridership and routing opportunities.
10. Improve pedestrian and bicycle accommodations.
11. Complement other major transportation initiatives and studies in the Madison area.
12. Support infrastructure and other measures that encourage alternatives to single occupancy vehicle travel.

Screening questions

The 12 PEL objectives were condensed to 7 root objectives to reduce duplication and repetition. Then WisDOT worked with advisory committees to develop questions that determine how well a strategy package satisfies an objective. Because the questions were developed for fully assembled strategy packages, they may or may not be applicable to an individual component.

1. Improve Safety for all modes

Bike A Does the component or package potentially decrease bicycle-motor vehicle crashes (or conflicts) near the alignment and Beltline Corridor?

Ped B Does the component or package potentially decrease ped-motor vehicle crashes (or conflicts) near the alignment and Beltline Corridor?

Motor Vehicle C Can the component or package decrease crashes on the Beltline?

2. Address Beltline infrastructure condition and deficiencies.

D Does the component or package have the potential to address Beltline pavements, structures, and substandard elements?

3. Improve system mobility (congestion) for all modes

Ped E Does the component or package provide pedestrian facilities?

F Does the component or package provide the opportunity to complete the pedestrian network near and across the Beltline Corridor?

Bike G Does the component or package provide bicycle facilities?

H Does the component or package have the potential to address bike network gaps (deficiencies) along and across the Beltline?

I Can the component or package provide convenient bike mode transfers?

Transit J Can the component or package improve routes for transit?

K Does the component or package have the potential to provide measures that make transit more competitive with auto?

L Can component or package provide convenient transit mode transfers?

Motor Vehicle M Does the component or package have the potential to address conditions that lead to unstable traffic flow on the Beltline?

N Does the component or package provide a substantial traffic volume reduction on the Beltline Corridor, a substantial Beltline capacity increase, or a combination of these?

O Does the component or package provide more attractive/viable alternative routes to the Beltline for local trips?

P Does the component or package provide better opportunities for mode transfers? Will the strategy reduce motor vehicle trips?

4. Limit impacts to a responsible level of social, cultural, and environmental effects.

Q Listing or probable impact types.

5. Enhance efficient multimodal access to economic centers.

R Does the component or package acknowledge capacity limitations in the connecting municipal arterial network (near the Beltline)?

S Does the component or package connect economic centers for all modes?

T Can the component or package improve Beltline interchange operation?

6. Decrease Beltline diversion impacts to neighborhood streets

U Does the component or package create traffic volumes on streets/roads that are compatible with their functional classification, adjacent land use, and available capacity?

7. Complement other major transportation initiatives and studies in the Madison area.

V Is the component or package consistent with the implementation of other regional plans?

Analysis procedure

A high level review of **Stand-alone Strategies** was performed to see if they could satisfy PEL objectives. These Strategies include:

Roadway Strategies

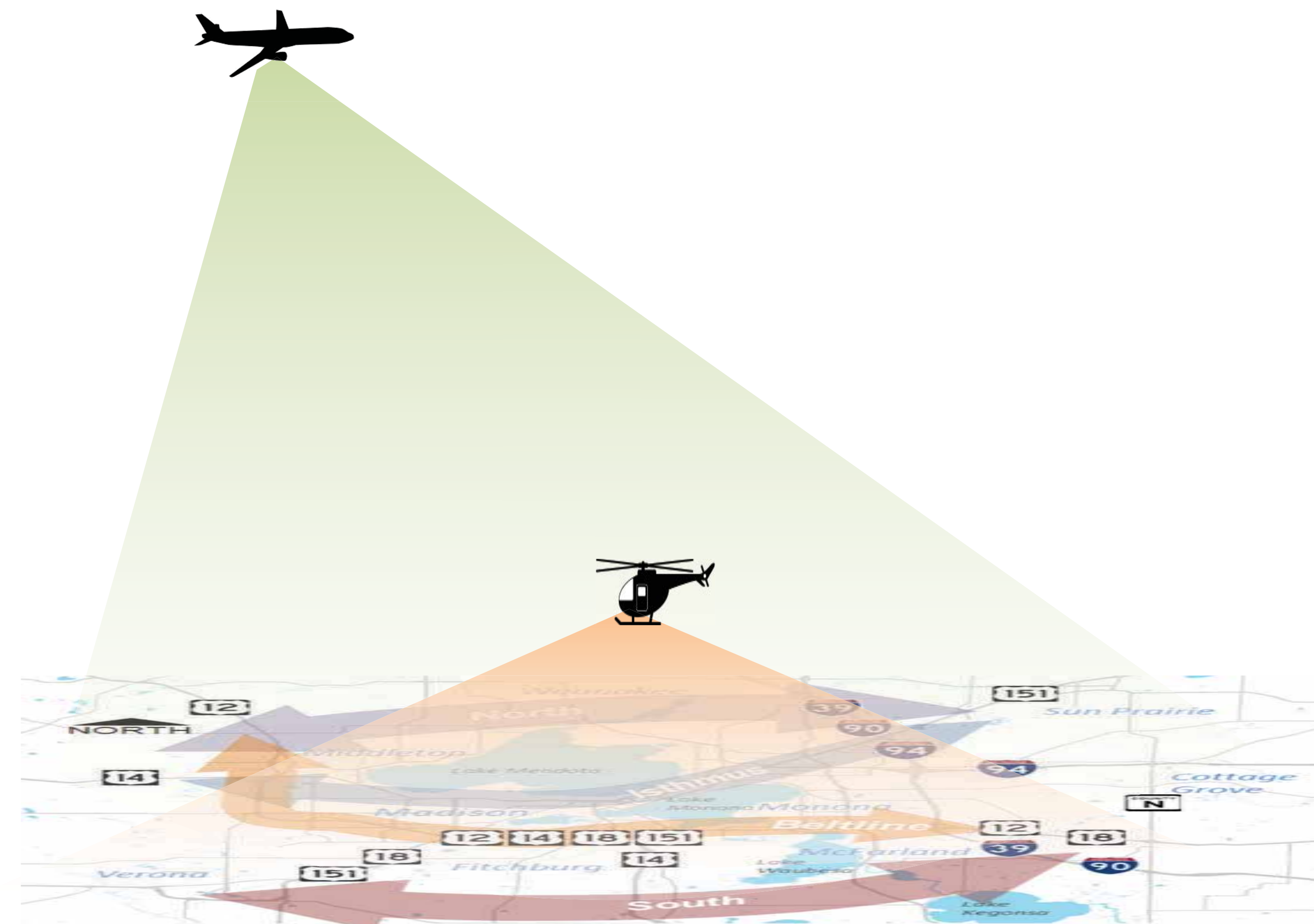
- North Mendota Parkway
- South Reliever
- Beltline Expansion

Alternate Mode Strategies

- Beltline Buses
- Bus Rapid Transit
- Transport 2020 (Rail)

Different Scenarios

- Compact land use
- Triple bike and transit usage



A more detailed look at individual modal **components** are being evaluated and have been assembled into Strategy Packages. These modal components include:

- **Beltline Roadway Expansion**
- **Bicycle and Pedestrian Connections**
- **Local Road Connections and Crossings**
- **Transit Priority Through Signals**
- **Park and Rides**

Stand-alone roadway strategies

Different roadway corridors were investigated to see if they would provide enough relief to the Beltline to reduce the need for improvements. The evaluation found the following:

North Mendota Parkway Corridors

North Waunakee Corridor

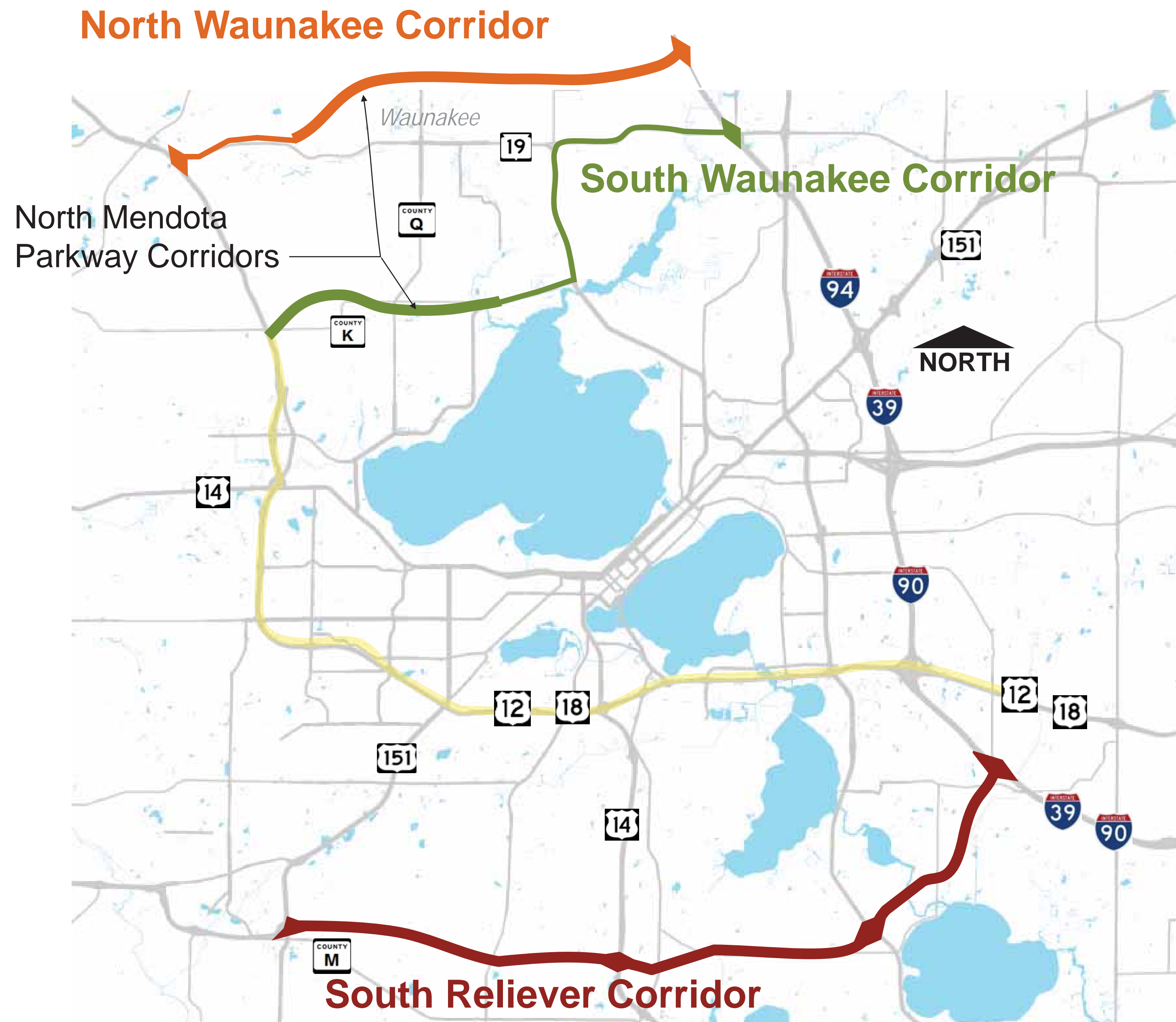
- The North Waunakee Corridor would attract up to 23,900 vpd in the 2010 base year and 46,300 vpd in the 2050 design year.
- The North Waunakee Corridor has no effect on Isthmus traffic volumes.
- The North Waunakee Corridor has essentially no effect on Beltline traffic volumes

South Waunakee Corridor

- The South Waunakee Corridor would attract up to 25,800 vpd in the 2010 base year and 42,200 vpd in the 2050 design year.
- The South Waunakee Corridor has essentially no effect on Isthmus traffic volumes.
- The South Waunakee Corridor has essentially no effect on south Beltline traffic volumes and increases west Beltline traffic volumes by up to 16 percent.

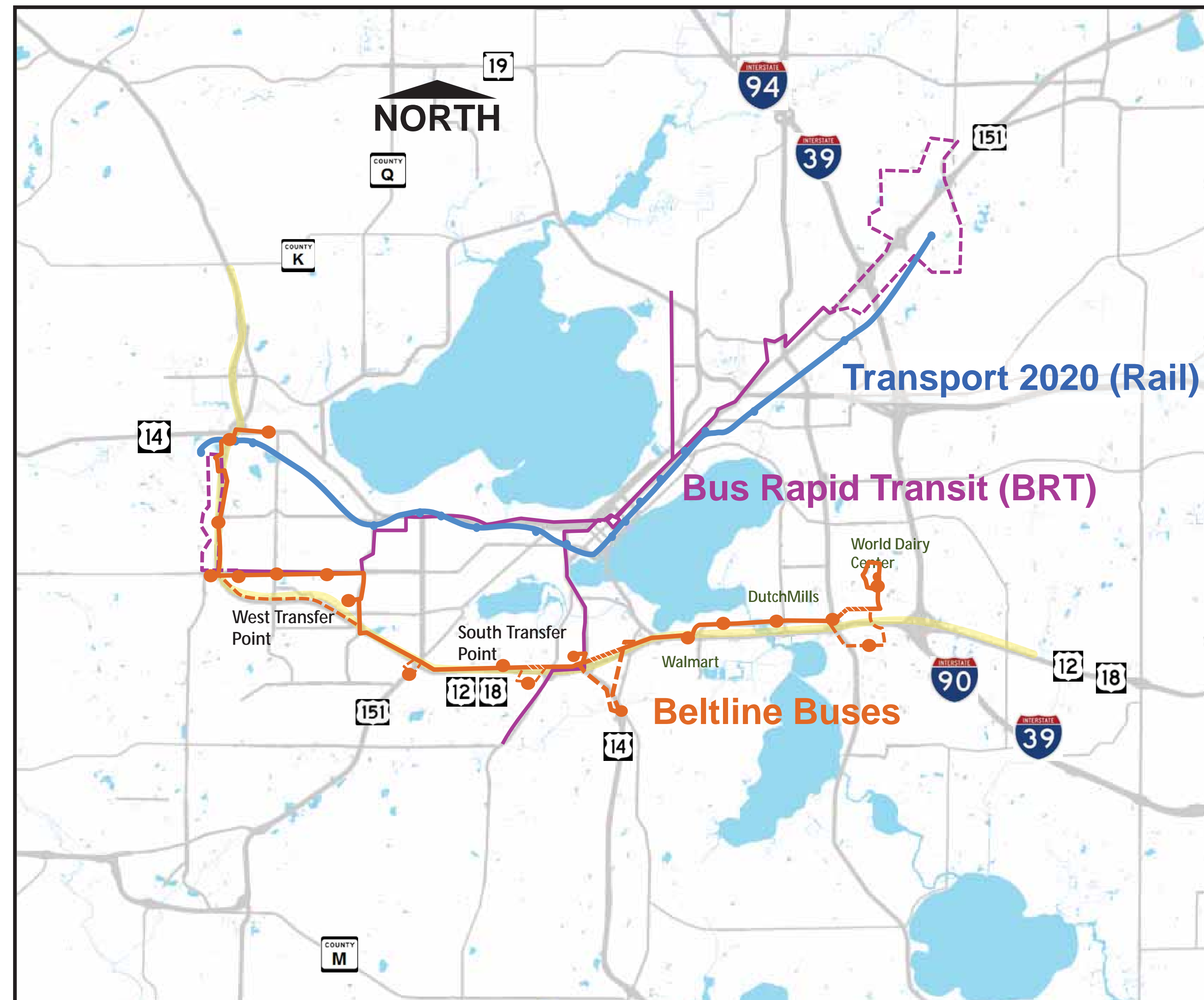
South Reliever Corridor

- The South Reliever would attract between 11,000 to 23,000 vpd in 2010 and 28,000 to 39,000 vpd in 2050 (depending on location).
- The South Reliever would reduce Beltline traffic volumes by 2,000 to 11,000 vpd (depending on location) in 2010. But that reduction is reduced to 1,000 to 8,000 vpd by 2050.
- The South Reliever would require 15.5 miles of new roadway and over 1,000 acres of new right of way (based on 2009 WisDOT report).



The North Mendota Parkway corridors did not provide Beltline traffic volume relief. The Beltline traffic reduction a South Reliever would provide was not great enough to eliminate the need for Beltline improvements.

Stand-alone alternate mode strategies



Different modes were investigated to see if they would provide enough relief to the Beltline to reduce the need for improvements. This included looking at the 2007 Transport 2020 Rail Initiative, the 2013 Bus Rapid Transit Study, and a Beltline Buses alternative. The evaluation found the following:

Transport 2020 (Rail)

- The Transport 2020 rail initiative could draw 6,600 daily riders in 2010, and 9,500 daily riders in 2050.
- Essentially no change in Beltline volumes.

Bus Rapid Transit (BRT)

- The Bus Rapid Transit system could draw 16,500 riders in 2010, and 18,600 riders in 2050.
- The BRT system would reduce Beltline daily traffic volumes by only 400 vpd.

Beltline Buses

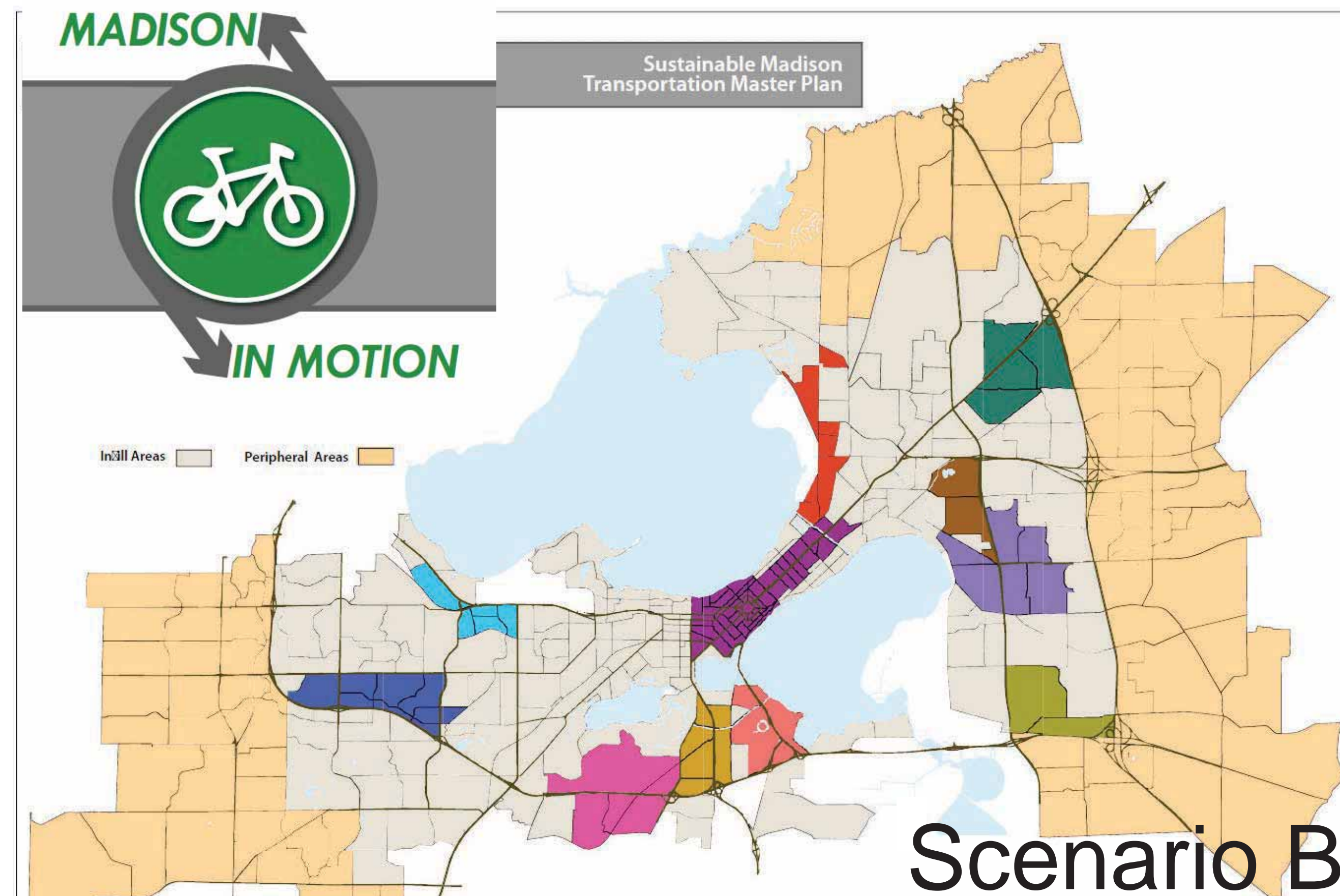
- Depending on the routing, providing bus service on the Beltline could attract between 1,000 to 2,000 daily riders in 2010, and between 2,000 and 5,000 daily riders in 2050.
- Bus service on the Beltline create no measureable traffic reductions on the Beltline.

None of the Stand-alone alternate mode strategies provided enough traffic volume relief to the Beltline to eliminate the need for Beltline improvements. Some of these alternate mode strategies have other merits that will be considered with Beltline improvements.

Different scenarios

Scenario planning is a way to evaluate the effects of alternatives under different base variables. Land use is a variable often altered in scenario planning, but other variables, such as mode split or economics, also can be used. The Beltline PEL evaluated the effects of using different land use assumptions and different mode split assumptions to understand the effect on Beltline traffic volumes.

More Compact Land Use



Madison is in the process of developing a sustainable transportation plan, Madison in Motion. The plan evaluated the effects of focusing new development into existing urban areas, called Scenario B. The redevelopment activity nodes are shown in the colored areas in the above map. Traffic models showed that:

- Scenario B land use patterns support Bus Rapid Transit, increasing ridership in 2050 by 22%.
- Scenario B land use patterns actually increase Beltline volumes by 2.5% to 5% depending on location.
- More compact urban development does not eliminate or reduce Beltline's transportation role.

Triple Bike/ Transit Ridership



People could make different travel mode choices in the way they get to destinations. If they did, it could affect traffic volumes on city streets and the Beltline. The study analyzed this possibility by modeling what increasing transit and bike ridership by a factor of 3 would do to area transportation. Tripling transit and bike ridership:

- Substantially reduces traffic volumes through the isthmus (~13%) over what would otherwise occur.
- Has limited effect on Beltline volumes (eg <3%).
- Does not eliminate or reduce Beltline's transportation role.

Components and Strategy Packages

To satisfy all PEL objectives, an improvement will need to have multiple components that include improvements for motor vehicles, bicycles and pedestrians, local road connections, transit, and transportation demand measures. The PEL study analyzed components individually to understand their effectiveness. The study then grouped the components into strategy packages..

Components

Beltline Motor Vehicle Components

- Shoulder running for autos or buses
- Added lanes, HOV, HOT, or other

Bike and Pedestrian Components

- Added grade separated crossing of the Beltline
- New connections between paths

Local Roads/Connections Components

- Added grade separated crossing of the Beltline
- New connections between streets or interchanges

Transportation Demand Management

- New park and ride locations
- Policy measures that reduce single occupancy vehicle usage, or shift traffic demand to less congested time periods.

Transit Components

- Transit priority through interchanges (provide buses a time advantage)
- (Note, components in other categories, such as HOV lanes, local road Beltline crossings, and park and ride lots also aid transit.)

Note, that while an improvement type may be in a certain component category, it may provide benefits for other categories. For instance, an HOV lane is in the motor vehicle component category, but would also provide benefits to transit.

Strategy Packages

Able to meet PEL objectives

Root Objective	Desired Outcome (what represents success?)
1. Improve Safety for All Modes	
Bicycles	<i>Reduce bicycle-motor vehicle crashes (rates/severities)</i>
Pedestrians	<i>Reduce pedestrian-motor vehicle crashes (rates/severities)</i>
Motor vehicle	<i>Decrease crashes (rates/severities) (in areas of high crash frequency)</i>
2. Address Beltline infrastructure condition and deficiencies.	<i>Critical pavement and geometric deficiencies addressed.</i>
3. Improve system mobility (congestion) for all modes	<i>Mobility - the ability of the transportation system to facilitate the efficient and comfortable movement of people and goods (along and across).</i>
Pedestrian	<i>Comfortable and convenient access near, across, and along the Beltline Corridor.</i>
Bicycle	<i>Direct and comfortable routes across and along Beltline</i>
	<i>Provide convenient alternate mode choices/transfers (Duplicate)</i>
Transit	<i>Enhance rider access to transit facilities and vehicles. Enhance transit routing opportunities.</i>
Motor vehicles (including passenger and freight)	<i>Provide better travel time reliability (reduce nonrecurring congestion)</i>
	<i>Decrease/reduce recurring congestion</i>
	<i>Provide convenient alternate route choices</i>
	<i>Reduce motor vehicle trips during peak periods.</i>
4. Limit adverse social, cultural, and environmental effects to extent practicable.	<i>Consideration of strategies that balances transportation need and protection of environmental and community resources.</i>
5. Enhance efficient multimodal access to economic centers.	<i>Ramp terminals and connecting roadways operate at satisfactory service levels.</i>
	<i>Convenient and comfortable access to economic centers for all travel modes</i>
6. Decrease Beltline diversion impacts to neighborhood streets	<i>Diverted traffic uses roadways classified as collectors or above</i>
7. Complement other major transportation initiatives and studies in the Madison Area.	<i>Concept complements other transportation initiatives</i>

Motor vehicle component

In addition to reconstructing the existing Beltline pavement, there are many ways the people carrying capacity of the Beltline could be increased. This shows some of the motor vehicle components that are being evaluated as part of the Beltline PEL study.



1. Hard Shoulder Running

Allows all vehicles to use one of the two shoulders as a travel lane during the morning and evening rush hours.



3. Bus Only Lane

A dedicated bus lane, typically located on the inside.



4. High Occupancy Vehicle (HOV) Lane (option for tolling - HOT lane - could be examined)

An HOV lane is a dedicated lane for vehicles with 2 or more occupants. Can be implemented throughout the day, or only during rush hours. Typically located on the inside. Static or dynamic tolling could be examined as part of this component. (often called High Occupancy Toll lane, or HOT lane).



2. Bus on Shoulder

Allows buses to use shoulder under certain conditions. The typical operating rules allow buses to travel up to 15 mph faster than traffic in the adjacent general-purpose lanes, up to a maximum of 35 mph. If traffic is flowing at 35 mph or faster, the buses simply stay in the general-purpose lanes.



5. Conventional Lane

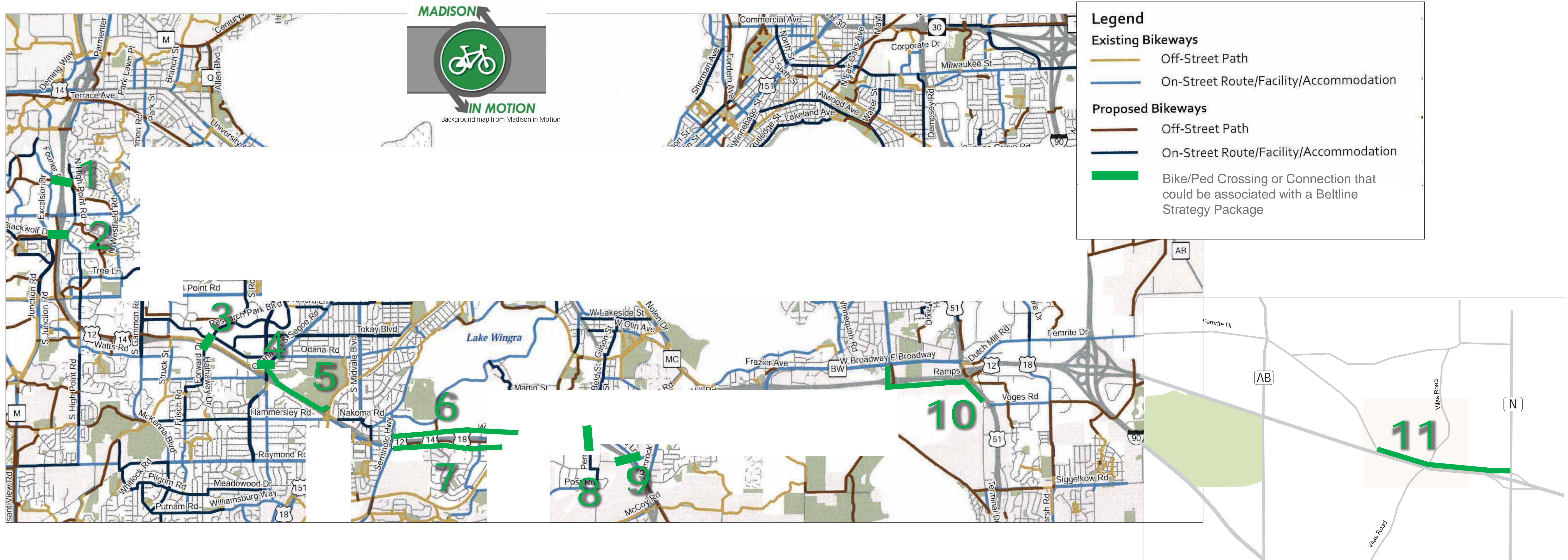
General purpose lane(s) for all vehicles.

Motor vehicle component screening

Individual Component Screening	Beltline Mainline Motor Vehicle Component Screening (Screening terminology-No, Somewhat, Yes)				
	1. Hard Shoulder Running	2. Bus on Shoulder	3. Bus Only Lane	4. High Occupancy Vehicle Lane <small>(option for tolling - HOT lane - could be examined)</small>	5. Conventional Lane
Description/Screening Question	Allows all vehicles to use one of the two shoulders as a travel lane during the morning and evening rush hours.	The typical operating rules of bus on shoulder use allow buses to travel up to 15 mph faster than traffic in the adjacent general-purpose lanes, up to a maximum of 35 mph. If traffic is flowing at 35 mph or faster, the buses simply stay in the general-purpose lanes.	A dedicated bus lane, typically located on the inside.	An HOV lane is a dedicated lane for vehicles with 2 or more occupants. Can be implemented throughout the day, or only during rush hours. Typically located on the inside. Static or dynamic tolling could be examined as part of this component. (often called High Occupancy Toll lane, or HOT lane).	General purpose lane(s) for all vehicles.
COMPONENT SCREENING SUMMARY					
1. Improve Safety for all Modes - this component addresses only motor vehicles and transit					
C Does the component provide the opportunity to decrease motor vehicle crashes on the Beltline Corridor?	Undetermined	No	No	Somewhat	Somewhat
2. Address Beltline infrastructure condition and deficiencies					
D Does the component have the potential to address Beltline pavements, structures, and substandard elements?	Yes	Yes	Yes	Yes	Yes
3. Improve system mobility for all modes - this component addresses only motor vehicles and transit					
J Does the component provide the opportunity to increase or improve routes for transit service?	Somewhat	Yes	Yes	Yes	Somewhat
K Does the component have the potential to provide measures that make transit more competitive with auto? (Transit Priority)	No	Yes	Yes	Yes	No
M Does the component have the potential to address conditions that lead to unstable traffic flow on the Beltline?	Somewhat	No	No	Yes	Yes
N Does the component improve operations by providing a substantial traffic volume reduction on the Beltline Corridor or a substantial Beltline capacity increase?	Somewhat	No	No	Yes	Yes
O Does the component provide more attractive/viable alternative routes to the Beltline for local trips?	No	No	No	No	No
P Will the strategy provide a reduction in motor vehicle trips?	No	Somewhat	Somewhat	Yes	No
4. Limit impacts to a responsible level of social, cultural, and environmental effects. - See detailed screening sheets					
5. Enhance efficient multimodal access to economic centers.					
R Does the component acknowledge capacity limitations in the connecting municipal arterial network (near the Beltline)?	Somewhat	Somewhat	Somewhat	Somewhat	Somewhat
6. Decrease Beltline diversion impacts to neighborhood streets					
U Does the component create traffic volumes on streets/roads that are compatible with their functional classification, adjacent land use, or available capacity?	Somewhat	No	No	Somewhat	Somewhat
7. Complement other major transportation initiatives and studies in the Madison area					
V Is the component consistent with, not contradictory to, or an impediment to implementation of a proposal by another project?	Undetermined	Undetermined	Undetermined	Undetermined	Undetermined
Draft Recommendation					
X Should the component be eliminated from further consideration at this stage or carried forward into the Environmental Impact Statement?	Carry Forward	Carry Forward	Eliminate	Carry Forward	Carry Forward

Bicycle-pedestrian component

To satisfy PEL objectives, a strategy package should address all transportation needs along the Beltline corridor. The graphic below illustrates some of the bicycle and pedestrian connections and crossings that are being evaluated as part of this study.



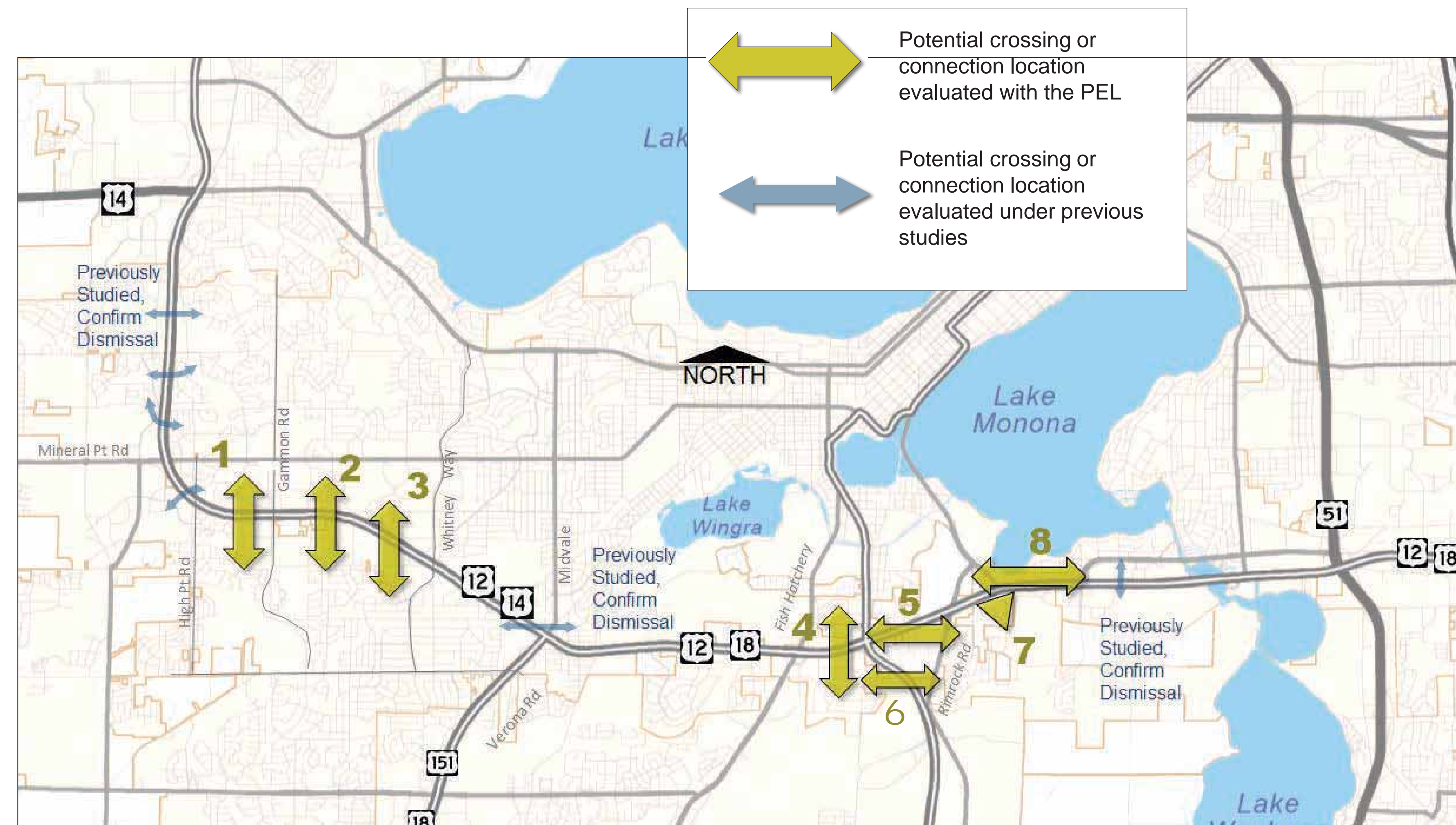
- Grade separation north of Old Sauk Rd.
- Grade separation south of Old Sauk Rd.
- Grade separation west of Whitney Way
- Grade separation across Whitney Way north of the Beltline
- Path connecting Whitney Way to the SW Path north of the Beltline
- Path connecting SW Path to Cannonball north of the Beltline
- Path or Cyclotrack connecting SW Path to Cannonball south of the Beltline
- Grade separation west of Park Street (bike/ped only)
- Grade separation of US 14 near Stewart St. (bike/ped only)
- Path connecting Monona Dr. to Tower Dr.
- Path connecting Femrite Rd. to County N

Bike-ped component screening

Individual Components Screening	Bike and Pedestrian Component Screening (Screening terminology-No, Somewhat, Yes)										
Screening Question	1. Grade Separated Crossing North of Old Sauk	2. Grade Separated Crossing South of Old Sauk	3. Grade Separated Crossing West of Whitney Way	4. Grade Separated Crossing of Whitney Way, North Side	5. Path Connection, Whitney Way to SW Path	6. Path Connection SW Path to Cannonball, North Side	7. Path Connection SW Path to Cannonball, South Side	8. Grade Separated Crossing, West of Park (Bike/ped only)	9. Grade Separated Crossing of US 14, Near Stewart St (Bike/ped only)	10. Path Connection Monona Dr to Terminal Dr.	11. Path Connection Femrite to County N
COMPONENT SCREENING SUMMARY											
1. Improve Safety for all modes											
A Does the component provide the opportunity to decrease bicycle-motor vehicle crashes (or conflicts) near the alignment and Beltline Corridor?	Somewhat	Somewhat	Yes	Yes	Somewhat	Somewhat	Somewhat	Somewhat	Somewhat	Somewhat	Somewhat
B Does the component provide the opportunity to decrease pedestrian-motor vehicle crashes (or conflicts) near the alignment and Beltline Corridor?											
2. Address Beltline infrastructure condition and deficiencies. NOTE: None of the bike/ped components directly address Beltline pavements, structures, or other substandard elements.											
3. Improve system mobility (congestion) for all modes											
E Does the component provide corresponding pedestrian facilities?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
F Does the component provide the opportunity to complete the pedestrian network near and across the Beltline Corridor?	Yes	Yes	Yes	Somewhat	Somewhat	Somewhat	Yes	Yes	Yes	No	No
G Does the component provide corresponding bicycle facilities?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
H Does the component have the potential to address bike network gaps (deficiencies) along and across the Beltline?	Somewhat	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Somewhat	Yes
I Does the component provide the opportunity for convenient auto to bicycle mode transfers?	No	No	Somewhat	Somewhat	Somewhat	No	No	Somewhat	No	No	No
L Does the component provide the opportunity for convenient transit mode transfers?	Somewhat	Somewhat	Yes	Somewhat	Yes	Somewhat	Somewhat	Yes	Somewhat	No	No
P Will the strategy provide a reduction in motor vehicle trips?	Somewhat	Somewhat	Somewhat	Somewhat	Yes	Somewhat	Somewhat	Somewhat	Somewhat	No	No
4. Limit impacts to a responsible level of social, cultural, and environmental effects. NOTE: See the following sheets for details.											
5. Enhance efficient multimodal access to economic centers.											
R Does the component acknowledge capacity limitations in the connecting municipal arterial network (near the Beltline)?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Somewhat	Yes	Somewhat	Yes
S Does the component provide connections to economic centers for all modes?	Somewhat	Somewhat	Yes	Somewhat	Yes	Somewhat	Somewhat	Yes	Yes	Yes	No
6. Decrease Beltline diversion impacts to neighborhood streets. NOTE: See the following sheets for details.											
7. Complement other major transportation initiatives and studies in the Madison area.											
V Is the component consistent with other neighboring plans/initiatives/ projects?	Yes	Yes	Yes	Somewhat	Yes	Somewhat	Yes	Yes	Somewhat	Somewhat	Somewhat
Draft Recommendation											
Should the component be eliminated from further consideration at this stage or carried forward into the Environmental Impact Statement?	Carry Forward	Carry Forward	Carry Forward	Carry Forward	Carry Forward	Carry Forward	Carry Forward	Carry Forward	Carry Forward	Carry Forward	Carry Forward

Local road crossings and connections

Some people travel on the Beltline, or through Beltline interchanges, simply because there are few other local roadways that get them to their destination. The graphic below illustrates some of the Beltline crossings, or connections, that are being considered as part of the PEL study.



Modeled vehicles per day (vpd) and % daily traffic removed

1. Grade separation of the Beltline, west of Gammon Road

- Would attract 7,100 vpd in 2010 and 5,400 vpd in 2050
- Minimal Beltline traffic reduction
- Would remove 5,100 to 5,400 vpd (10-15%) from Gammon Rd interchange

2. Grade separation of the Beltline, east of Gammon Road

- Would attract 9,300 vpd in 2010 and 10,500 vpd in 2050
- Minimal Beltline traffic reduction
- Would remove 5,300 vpd (10-15%) from Gammon Rd interchange in 2010 and 5,400 vpd (10-15%) in 2050

3. Grade separation of the Beltline, west of Whitney Way

- Would attract 11,600 vpd in 2010 and 11,400 vpd in 2050
- Minimal Beltline traffic reduction
- Would remove 7,800 vpd (15-20%) from Whitney Way interchange in 2010 and 6,800 vpd (15-20%) in 2050
- Would provide alternate route for 8 or more bus routes from West Transfer Point

4. Grade separation of the Beltline, west of Park Street

- Would attract 5,500 vpd in 2010 and 7,300 vpd in 2050
- Minimal Beltline traffic reduction
- Would remove 2,000 vpd (5-10%) from Park Street interchange in 2010 and 2,400 vpd (5%) in 2050
- Would provide alternate route for 2 to 3 bus routes from South Transfer Point

5. Grade separation of the Beltline, west of Rimrock (extension of Badger)

- Would attract 7,700 vpd in 2010 and 9,500 vpd in 2050
- 4,000 vpd Beltline traffic reduction (0-5%) in 2010 and 4,300 vpd (0-5%) in 2050
- Would remove 1,100 vpd (0-5%) from Park Street interchange in 2010 and 800 vpd (0-5%) in 2050

6. Grade separation of US 14, connecting Stewart Street with Novation Parkway

- Would attract 4,700 vpd in 2010 and 6,500 vpd in 2050
- 800 vpd Beltline traffic reduction (<1%) in 2010 and 1,500 vpd (1%) in 2050
- Would remove 700 vpd (0-5%) from Park Street interchange in 2010 and 800 vpd (0-5%) in 2050
- Connects two isolated business areas

8. Connect West Broadway to John Nolen Drive

- Would attract 7,000 vpd in 2010 and 8,500 vpd in 2050
- 7,000 vpd Beltline traffic reduction (5%) in 2010 and 5,000 vpd (3%) in 2050
- Would remove 2,300 vpd (10-15%) from West Broadway interchange in 2010 and 3,200 vpd (15-20%) in 2050

7. Connect John Nolen interchange with Nob Hill Road

- Would attract 5,100 vpd in 2010 and 5,800 vpd in 2050
- 1,300 vpd Beltline traffic reduction (1%) in 2010 and 500 vpd (<1%) in 2050

Note: sometimes modeled 2050 traffic reductions are less than 2010 modeled traffic reductions because of traffic using available increased capacity and/or increased trips in redevelopment areas

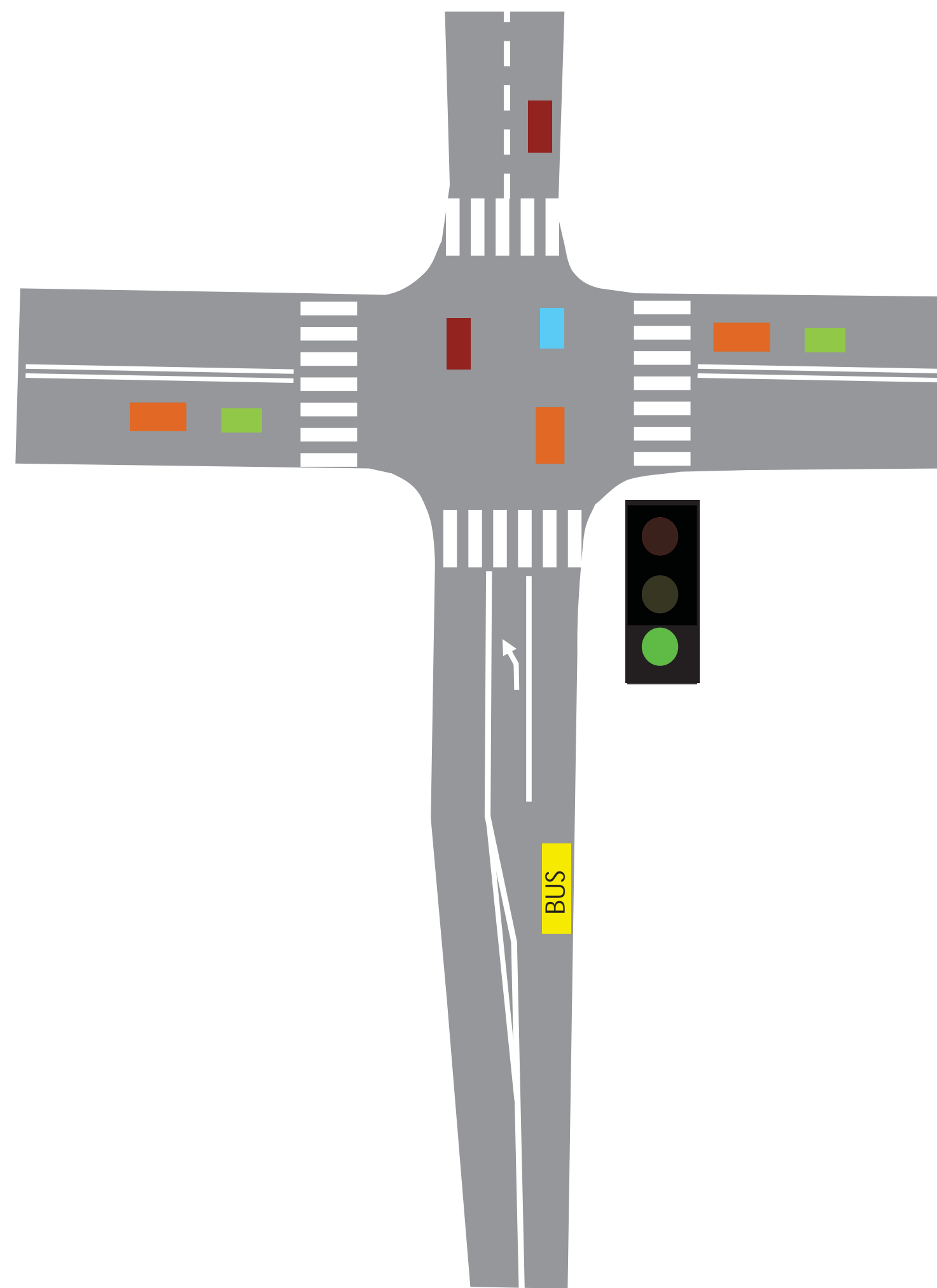
Local road crossings and connections component screening

Individual Components Screening	Connections and Grade-Separated Crossings							
Component Screening	1. Local Road Beltline Crossing West of Gammon	2. Local Road Beltline Crossing of Beltline East of Gammon	3. Local Road Beltline Crossing of Beltline West of Whitney Way	4. Local Road Beltline Crossing West of Park	5. Local Road Beltline Crossing west of Rimrock (eg - extending Badger)	6. Local Road Beltline Crossing of US 14 Near Stewart Street	7. Local Road Connection to John Nolen via Nob Hill Road (John Nolen interchange)	8. Connection between West Broadway and John Nolen (North of Beltline)
(Screening terminology-No, Somewhat, Yes)								
COMPONENT SCREENING SUMMARY								
1. Improve Safety for all modes.								
A Does it provide the opportunity to decrease bike-motor vehicle crashes near the alignment and Beltline Corridor?	Somewhat	No	Yes	Somewhat	No	No	No	No
B Does it provide the opportunity to decrease pedestrian-motor vehicle crashes near the alignment and Beltline Corridor?	Somewhat	No	Yes	Somewhat	No	No	No	No
C Does it provide the opportunity to decrease motor vehicle crashes on the Beltline Corridor?	No	No	No	No	No	No	No	Somewhat
2. Address Beltline infrastructure condition and deficiencies.								
3. Improve system mobility (congestion) for all modes. None of the local road crossing and connection components directly address Beltline pavements, structures, or other substandard elements.								
E Does it provide pedestrian facilities?	Yes	Somewhat	Yes	Yes	Yes	Yes	Yes	Somewhat
F Does it provide the opportunity to complete the ped network near and across the Beltline?	Somewhat	No	Yes	Somewhat	No	Somewhat	Somewhat	Somewhat
G Does it provide bicycle facilities?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
H Does it have the potential to address bike network gaps (deficiencies) along and across the Beltline?	Somewhat	No	Yes	Yes	No	Somewhat	No	No
I Does it provide the opportunity for convenient auto to bicycle mode transfers?	No	Somewhat	Somewhat	Somewhat	No	No	No	No
J Does it increase or improve routes for transit service?	Somewhat	Somewhat	Yes	Yes	Yes	Somewhat	Yes	No
K Does it have the potential to provide measures that make transit more competitive with auto? (Transit Priority)	No	No	Yes	Yes	Somewhat	Somewhat	Somewhat	No
L Does it provide the opportunity for convenient transit mode transfers?	No	No	Somewhat	Somewhat	No	No	No	No
M Does it have the potential to address unstable traffic flow on the Beltline?	No	No	No	No	Somewhat	No	Somewhat	Somewhat
N Does it provide a substantial traffic volume reduction on the Beltline Corridor, a substantial Beltline capacity increase, or a combination of these?	No	No	No	No	Somewhat	No	Somewhat	Somewhat
O Does it provide more attractive/viable alternative routes to the Beltline for local trips?	Somewhat	Somewhat	Somewhat	Yes	Somewhat	Yes	Somewhat	Yes
P Will it provide a reduction in motor vehicle trips?	No	No	No	No	No	No	No	No
4. Limits impacts to a responsible level of social, cultural, and environmental effects. (see detailed screening sheets)								
5. Enhance efficient multimodal access to economic centers.								
R Does it acknowledge capacity limitations in the connecting municipal arterial network (near the Beltline?)	Somewhat	Somewhat	Somewhat	Somewhat	Somewhat	Somewhat	Somewhat	No
S Does it provide connections to economic centers for all modes?	Yes	Yes	Yes	Somewhat	Somewhat	Yes	Somewhat	Somewhat
T Can this component improve Beltline interchange operation?	Yes	Yes	Yes	Somewhat	Somewhat	Somewhat	No	Somewhat
6. Decrease Beltline diversion impacts to neighborhood streets								
U Does this component create traffic volumes on streets/roads that are compatible with their functional classification, adjacent land use, and available capacity?	Somewhat	Yes	Yes	Somewhat	Somewhat	Yes	Yes	No
7. Complement other major transportation initiatives and studies in the Madison area.								
Draft Recommendation								
Should the component be eliminated from further consideration at this stage or carried forward into the Environmental Impact Statement?	Carry Forward	Carry Forward	Carry Forward	Carry Forward	Eliminate	Carry Forward	Eliminate	Eliminate

Transit priority

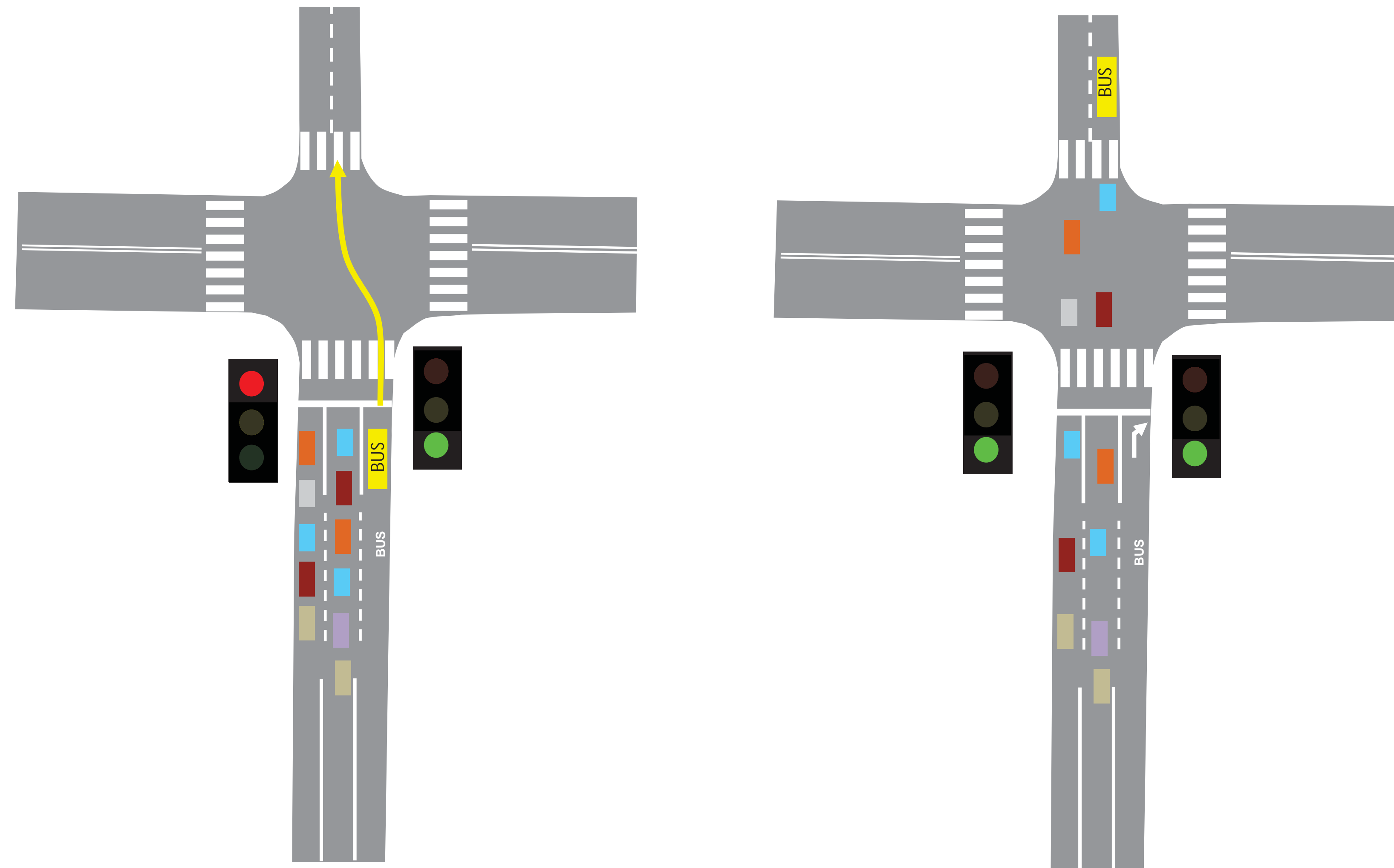
Transit priority seeks to give transit (buses) a time advantage through signalized intersections. This helps make transit more competitive with automobiles, and help buses keep on their schedules. For the Beltline PEL, implementation of transit priority would occur through interchange signals. There are essentially two ways to provide transit priority.

Transit Signal Priority Extended or Earlier Green



Bus is given an extended green light or an earlier green light so Bus can make it through intersection.

Queue Jump



Bus is given an advanced green light so Bus can get to the front of the queue.

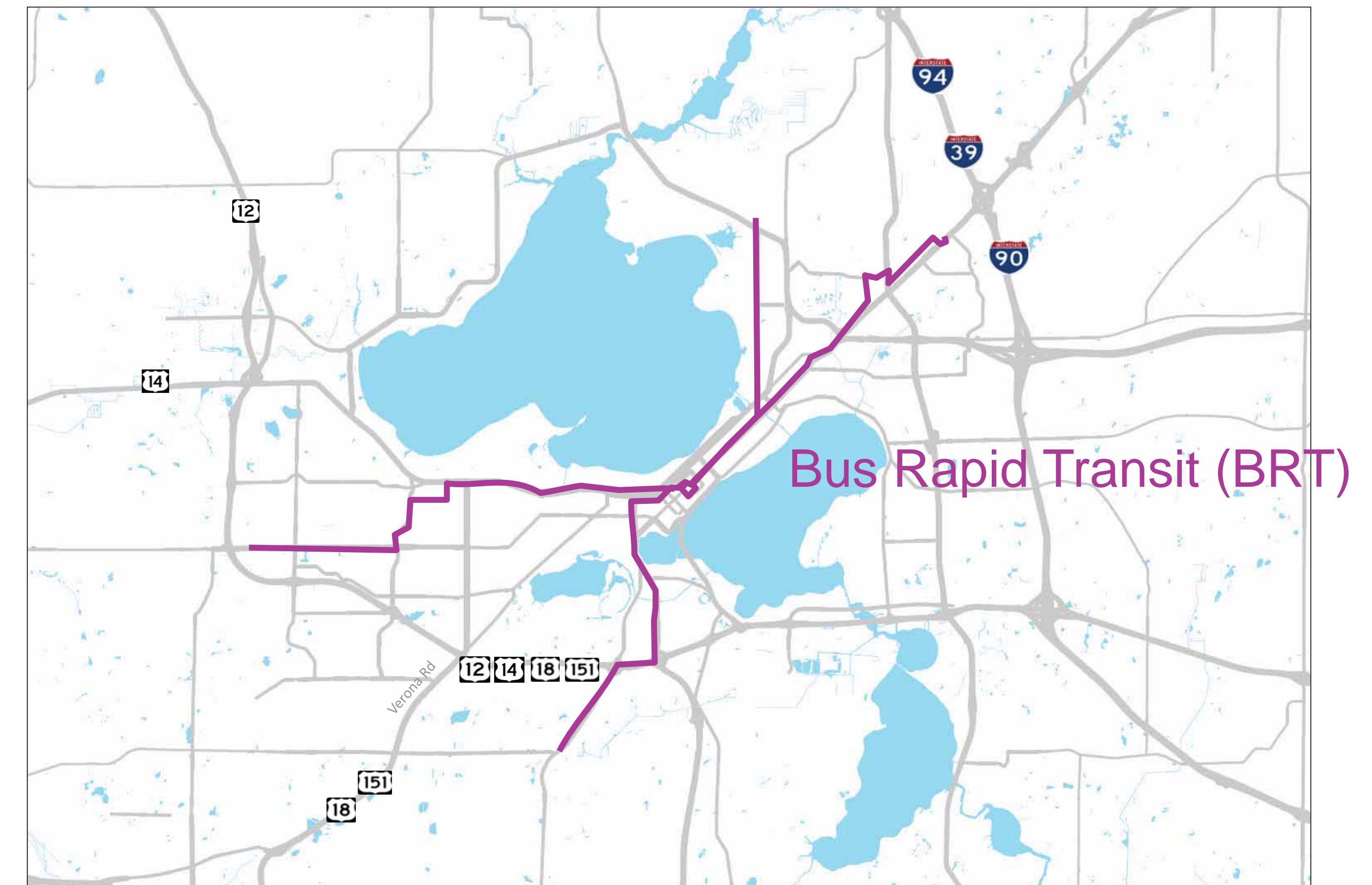
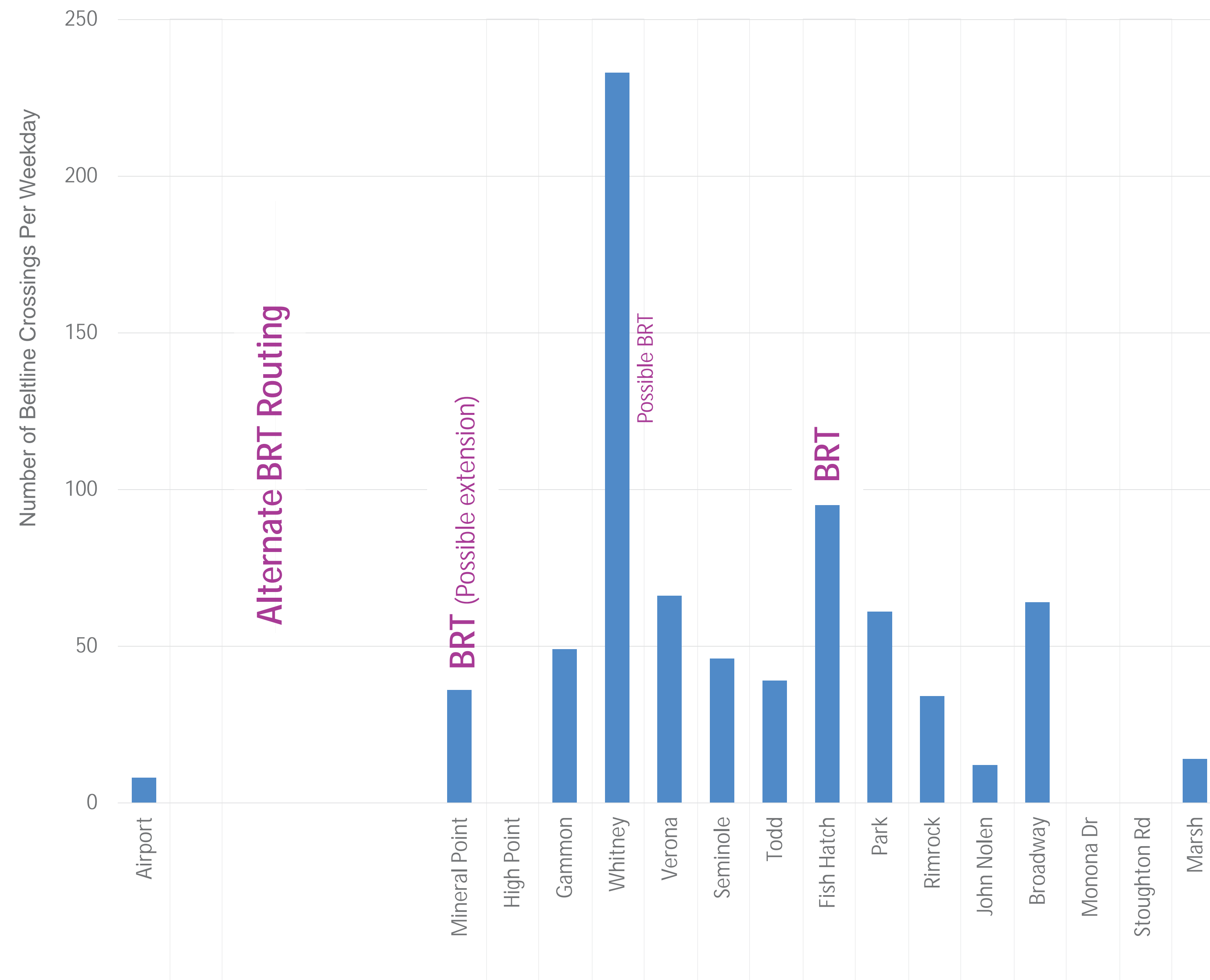
The rest of traffic is then given the green light as the bus moves in the front of traffic.

Transit priority

Transit priority would have the most beneficial effect at interchanges that are highly used by transit. The bar chart on the left shows the number of daily buses that cross the Beltline at each of the interchanges and grade separated crossings. Transit priority would also help provide a time advantage for any future Bus Rapid Transit (BRT) system. The graphic on the right shows a possible BRT system evaluated in a 2013 Madison Transportation Board report.

Estimated Daily Metro Route Beltline Crossings

Source: Madison Area MPO



BRT Routing considered in *Madison Transit Corridor Study*
Investigating Bus Rapid Transit in the Madison Area
(2013 Madison Area Transportation Planning Board)

Transit priority screening

Transit Priority Component Screening																				
(Screening terminology-No, Somewhat, Yes)																				
Screening Question	1. Stoughton Road	2. Monona Drive	3. West Broadway	4. John Nolen Drive	5. Rimrock Road	6. Park Street	7. Fish Hatchery Road	8. Todd Drive	9. Seminole Highway	10. Verona Road	11. Whitney Way	12. Gammon Road	13. Mineral Point Road	14. Old Sauk Road	15. Greenway Boulevard	16. University Avenue	17. Airport Road	18. Parmenter Street	19. County K	
1. Improve Safety for all modes. NOTE: None of the components directly addresses safety.																				
2. Address Beltline infrastructure condition and deficiencies. NOTE: None of the components directly address Beltline pavements, structures, or other substandard elements.																				
3. Improve system mobility (congestion) for all modes.																				
Pedestrian and bicycles NOTE: None of the components directly address pedestrian or bicycle conditions.																				
J	Does the component increase or improve routes for transit service?	No	No	Somewhat	Somewhat	Somewhat	Somewhat	Yes	Somewhat	Somewhat	Somewhat	Yes	Somewhat	Somewhat	Somewhat	Somewhat	Somewhat	No	No	No
K	Does the component have the potential to provide measures that make transit more competitive with auto? (Transit Priority)	No	No	Somewhat	No	Somewhat	Yes	Yes	Somewhat	Somewhat	Somewhat	Yes	Somewhat	Somewhat	Somewhat	Somewhat	Somewhat	No	No	No
Mode transfers NOTE: None of the components make mode transfers more convenient directly.																				
Motor vehicles NOTE: None of the components directly address motor vehicle conditions.																				
4. Limit impacts to a responsible level of social, cultural, and environmental effects. NOTE: See the following sheets for details.																				
5. Enhance efficient multimodal access to economic centers.																				
R	Does the component acknowledge capacity limitations in the connecting municipal arterial network (near the Beltline?)	No	Somewhat	Somewhat	Somewhat	Yes	Yes	Yes	Yes	Yes	Somewhat	Yes	Yes	No	Yes	Yes	Yes	No	Yes	No
S	Does the component provide connections to economic centers for all modes?	No	No	Somewhat	No	Somewhat	Yes	Yes	Somewhat	Somewhat	Somewhat	Yes	Somewhat	Somewhat	Somewhat	Somewhat	Somewhat	No	No	No
Interchange operations NOTE: None of the components directly improves overall interchange operations.																				
6. Decrease Beltline diversion impacts to neighborhood streets. NOTE: None of the components will have a substantial impact on traffic using other streets/roads.																				
7. Complement other major transportation initiatives and studies in the Madison area.																				
V	Is the component consistent with other neighboring plans/initiatives/projects?	No	No	Somewhat	Somewhat	Somewhat	Somewhat	Yes	Somewhat	Somewhat	Somewhat	Yes	Somewhat	Yes	Somewhat	Somewhat	Somewhat	Somewhat	No	No

Transportation demand management

Transportation demand management seeks to make better use of the existing roadway system by either reducing the number of single occupancy vehicles, or by shifting transportation demand to less congested parts of the day. Transportation demand management includes both infrastructure initiatives as well as policy measures. Note that many transportation demand measures are beyond the control of the Wisconsin Department of Transportation and/or the state of Wisconsin.

Infrastructure initiatives include:

- High occupancy vehicle lanes
- Park and ride lots
- Transit service and supporting infrastructure (eg stations)
- Bike paths and parking
- Bike parking



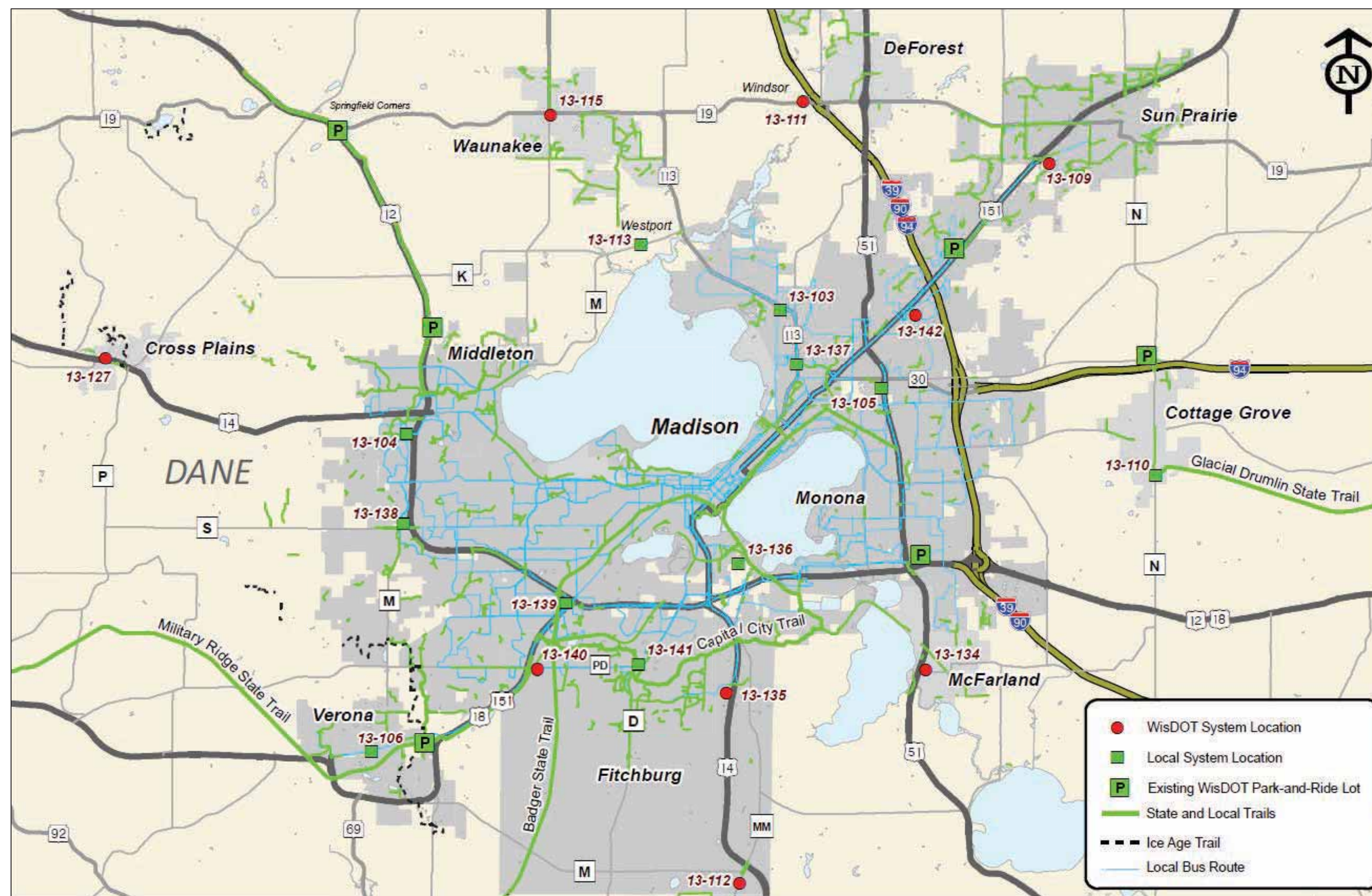
Policy measures include:

- Parking pricing
- Employer incentives
- Workplace amenities (e.g. showers, changing rooms)
- Shifting work hours
- Car pool programs
- Guaranteed ride home programs
- Free or discounted bus passes
- Congestion pricing (e.g., fares are more expensive as traffic increases)

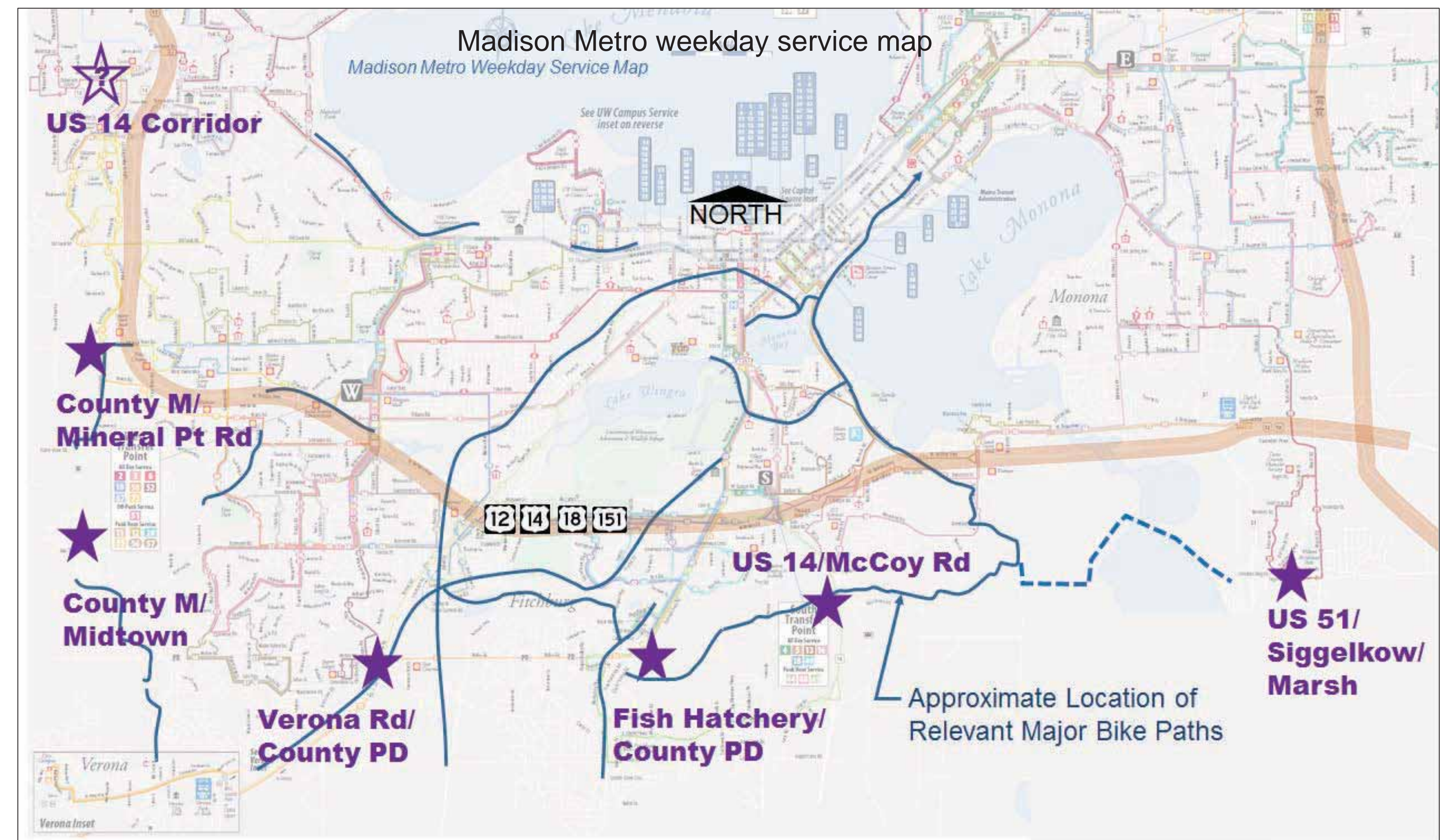


Park and rides

Park and rides support transportation demand management by encouraging ride sharing and transit ridership. WisDOT Southwest Region performed a park and ride study, and the Dane County results are shown in the graphic on the left. Some of the planned park and ride sites are somewhat distant from the metro area and do not have access to transit. Three of the planned park and ride lots coincide with locations being evaluated with the Beltline PEL study. The Beltline PEL study is evaluating 7 sites that are shown on the graphic on the right and superimposed on Madison Metro's weekday service map. They are closer to the Madison area, most have access to transit and bike/ped accommodations, and may have the potential to reduce single occupant ridership on the Beltline.



WisDOT's Park and Ride Study
Dane County Locations



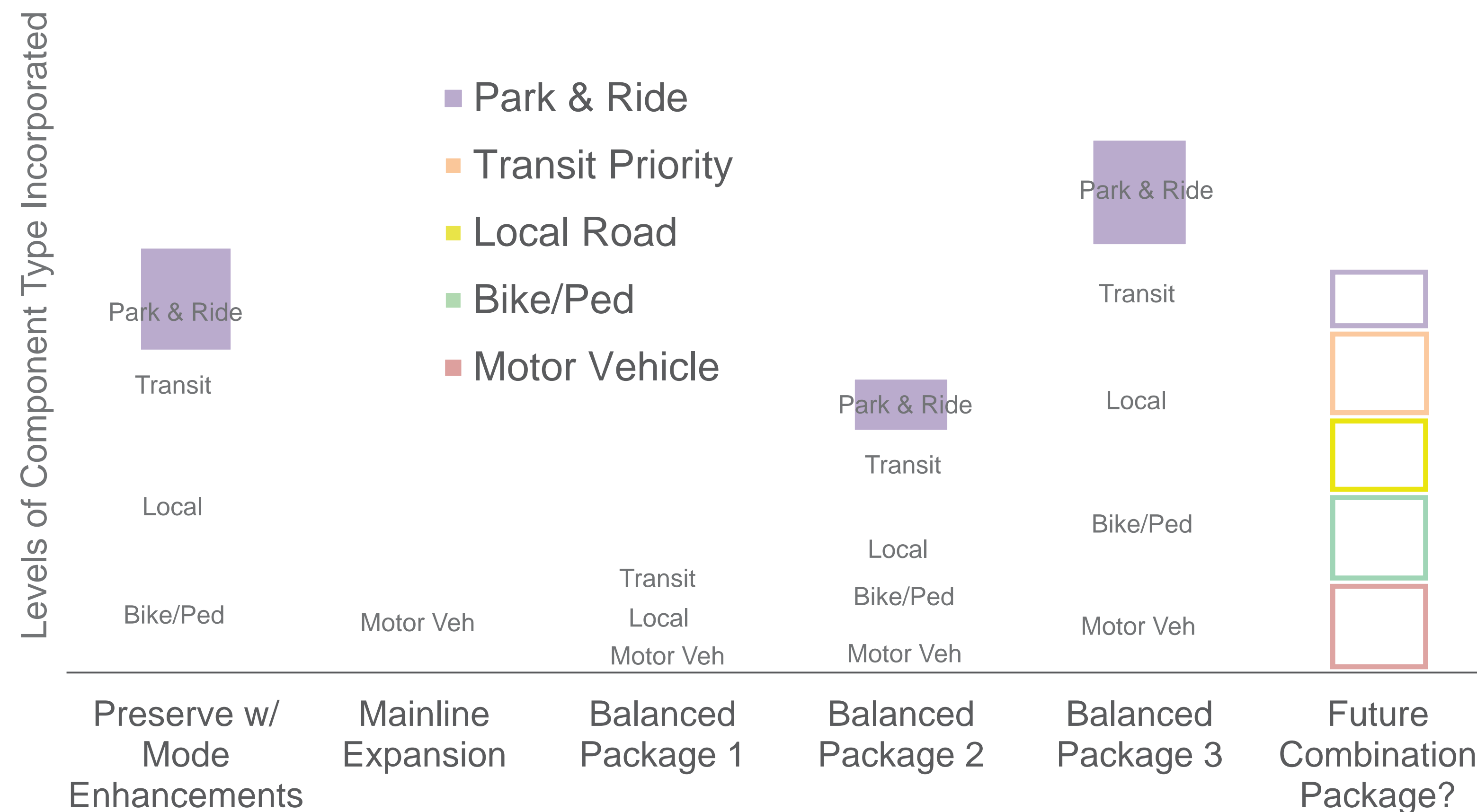
Park and Rides evaluated and part of the Beltline PEL

Park and ride component screening

Park and Ride Component Screening								
(Screening terminology-No, Somewhat, Yes)								
Screening Question	1. US 51/Siggelkow/Marsh	2. US 14/McCoy Road	3. Fish Hatchery/County PD	4. Verona Road/County PD	5. County M/Midtown	6. County M/Mineral Point	7. US 14 in Middleton	
COMPONENT SCREENING SUMMARY								
1. Improve Safety for all modes.								
Ped/Bike NOTE: Pedestrian, Bicycle, and Motor Vehicle safety would need to be addressed by other components.								
2. Address Beltline infrastructure condition and deficiencies. NOTE: None of the components directly address Beltline pavements, structures, or other substandard elements.								
3. Improve system mobility (congestion) for all modes.								
Pedestrians								
E	Does the component provide corresponding pedestrian facilities?	Yes	Somewhat	Yes	Yes	Somewhat	Yes	Somewhat
G	Does the component provide connections to bicycle facilities?	No	Somewhat	Somewhat	Somewhat	Somewhat	No	Somewhat
I	Does the component provide the opportunity for convenient bicycle mode transfers?	Yes	Yes	Yes	Yes	Somewhat	Yes	Somewhat
L	Does the component provide the opportunity for convenient transit mode transfers?	Somewhat	Somewhat	Yes	Yes	No	Somewhat	Somewhat
P	Will the strategy provide a reduction in motor vehicle trips?	Yes	Yes	Yes	Yes	Somewhat	Yes	Somewhat
4. Limit impacts to a responsible level of social, cultural, and environmental effects. NOTE: See the following sheets for details.								
5. Enhance efficient multimodal access to economic centers.								
R	Does the component acknowledge capacity limitations in the connecting municipal arterial network (near the Beltline?)	Somewhat	Yes	Somewhat	Somewhat	Somewhat	Yes	Somewhat
S	Does the component have connections to economic centers for all modes?	Somewhat	Somewhat	Yes	Yes	Somewhat	Somewhat	Somewhat
T	Can the component improve Beltline interchange operation?	No	No	No	No	No	No	No
6. Decrease Beltline diversion impacts to neighborhood streets.								
U	Does the component create traffic volumes on streets/roads that are compatible with their functional classification, adjacent land use, and available capacity?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7. Complement other major transportation initiatives and studies in the Madison area.								
V	Is the component consistent with other neighboring plans/initiatives/ projects?	Somewhat	Somewhat	Somewhat	Somewhat	Somewhat	Somewhat	Somewhat
Draft Recommendation								
	Should the component be eliminated from further consideration at this stage or carried forward into the Environmental Impact Statement?	Carry Forward	Carry Forward	Carry Forward	Carry Forward	Eliminate	Carry Forward	Carry Forward

Strategy packages

The study assembled the different components into strategy packages which, together, have the potential to satisfy PEL objectives. Five packages were assembled. The first strategy package, Preserve with Mode Enhancements, seeks to provide numerous alternate mode and local system improvements in an effort to avoid the need for Beltline capacity expansion. The second, Mainline Expansion, provides Beltline capacity expansion but provides more modest improvements to alternate modes and local system. Balanced Packages 1 through 3 are combinations of the first two, with varying levels of modal improvements. The table to the right lists the general components associated with each strategy package. The figure to the left is a graphical representation of the amount of each component type incorporated in each strategy package.



Graphic representation schematically portraying the amount of each component type included in each strategy package. Bar height generally represents the amount of the component incorporated compared to the total amount that could be incorporated.

Component Type	Strategy Package				
	Preserve w/ Mode Enhancements	Mainline Expansion	Balanced Package 1	Balanced Package 2	Balanced Package 3
Park and Ride	<ul style="list-style-type: none"> Evaluate Dane County Park and Ride locations recommended in the 2015 SW Region Park and Ride Study for possible inclusion in roadway projects, plus 2 or more additional generally closer to the Beltline corridor. 	<ul style="list-style-type: none"> Evaluate Dane County Park and Ride locations recommended in the 2015 SW Region Park and Ride Study for possible inclusion in roadway projects. 	<ul style="list-style-type: none"> Evaluate Dane County Park and Ride locations recommended in the 2015 SW Region Park and Ride Study for possible inclusion in roadway projects. 	<ul style="list-style-type: none"> Evaluate Dane County Park and Ride locations recommended in the 2015 SW Region Park and Ride Study for possible inclusion in roadway projects plus 1 to 2 additional generally closer to the Beltline. 	<ul style="list-style-type: none"> Evaluate Dane County Park and Ride locations recommended in the 2015 SW Region Park and Ride Study for possible inclusion in roadway projects plus 2 or more additional generally closer to the Beltline.
Transit Priority	<ul style="list-style-type: none"> Transit priority through 4 or more interchanges. 	<ul style="list-style-type: none"> Transit priority through 0 interchanges. 	<ul style="list-style-type: none"> Transit priority through 1 to 2 interchanges. 	<ul style="list-style-type: none"> Transit priority through 2 to 3 interchanges. 	<ul style="list-style-type: none"> Transit priority through 3 to 4 or more interchanges.
Crossings and Connections	<ul style="list-style-type: none"> 3 or more additional local road connections. Local intersection improvements if directly adjacent to an interchange that is reconstructed or expanded or if needed due to new local road connections. 	<ul style="list-style-type: none"> No additional local road connections/crossings. Local intersection improvements if directly adjacent to an interchange that is reconstructed or expanded. 	<ul style="list-style-type: none"> 1 additional local road connection/crossing. Local intersection improvements if directly adjacent to an interchange that is reconstructed or expanded or if needed due to new local road connections. 	<ul style="list-style-type: none"> 2 to 3 additional local road connections/crossings. Local intersection improvements if directly adjacent to an interchange that is reconstructed or expanded or if needed due to new local road connections. 	<ul style="list-style-type: none"> 3 or more additional local road connections/crossings. Local intersection improvements if directly adjacent to an interchange that is reconstructed or expanded or if needed due to new local road connections.
Bike and Pedestrian	<ul style="list-style-type: none"> Bike/ped facilities through all interchanges. 4 or more bike/ped path connections. 2 or more additional bike/ped grade sep crossings. 	<ul style="list-style-type: none"> Bike/ped facilities through all interchanges. No bike/ped path connections. No bike/ped grade sep crossings. 	<ul style="list-style-type: none"> Bike/ped facilities through all interchanges. No bike/ped path connections. No bike/ped grade sep crossings. 	<ul style="list-style-type: none"> Bike/ped facilities through all interchanges. 1 bike/ped path connection. 1 bike/ped grade sep crossings. 	<ul style="list-style-type: none"> Bike/ped facilities through all interchanges. 4 or more bike/ped path connections. 2 or more bike/ped grade sep crossings.
Motor Vehicle	<ul style="list-style-type: none"> No additional mainline motor vehicle capacity; designation of existing lane for HOV or Bus only and/or hard shoulder running implemented. No major interchange reconstructions. Conventional interchange reconstruction at 2 to 4 or more locations if needed to improve alternate mode accommodations. 	<ul style="list-style-type: none"> Reconstruct Beltline with 1 to 2 additional mainline Beltline lanes in each direction. 2 major interchange reconstructions. Conventional capacity expansion of the existing configuration through 6 to 10 interchanges. 	<ul style="list-style-type: none"> Reconstruct Beltline with additional mainline capacity through shoulder running only and/or Managed Lane applications. 1 major interchange reconstruction. Conventional capacity expansion of the existing configuration through 2 to 4 other interchanges. 	<ul style="list-style-type: none"> Reconstruct Beltline with 1 to 2 additional mainline Beltline lanes and/or shoulder running in each direction with or without Managed Lane applications. 1 major interchange reconstruction. Conventional capacity expansion of the existing configuration through 4 to 6 other interchanges. 	<ul style="list-style-type: none"> Reconstruct Beltline with 1 to 2 additional mainline Beltline lanes in each direction with or without Managed Lane applications. 2 major interchange reconstructions. Conventional capacity expansion of the existing configuration through 6 to 8 or more other interchanges.

Madison Beltline Study

Planning and Environment Linkages (PEL)

November, 2015

Public Involvement Meetings

