

Madison Beltline Planning and Environment Linkages (PEL) Study

Larry Barta Larry.Barta@dot.wi.gov

Tom Lynch Tom.Lynch@Strand.com

<http://www1.wisconsin.gov/Pages/projects/by-region/sw/madisonbeltline/default.aspx>



Beltline is vital for Dane County

1. Beltline provides access to homes, schools, jobs, businesses.
2. Beltline is experiencing problems.
3. WisDOT is studying long range solutions.

1. Beltline provides access to homes, schools, jobs, businesses

WisDOT conducted comprehensive Origin and Destination study for Beltline



Bluetooth
Technology
TADI/Traffax,
Inc.



Aerial Time
Lapse
Photography
Skycomp, Inc.

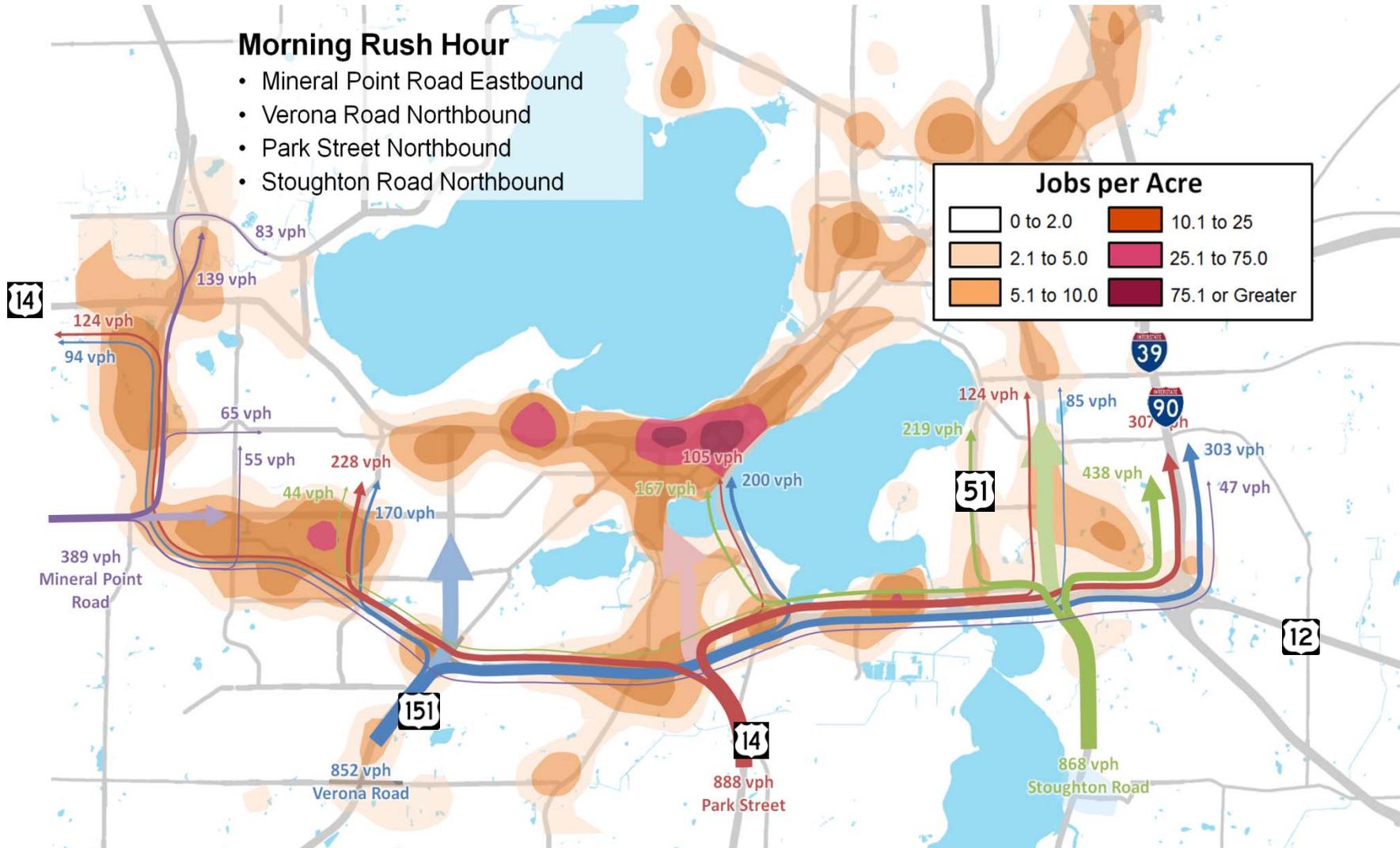


Volume Data
WisDOT/TADI

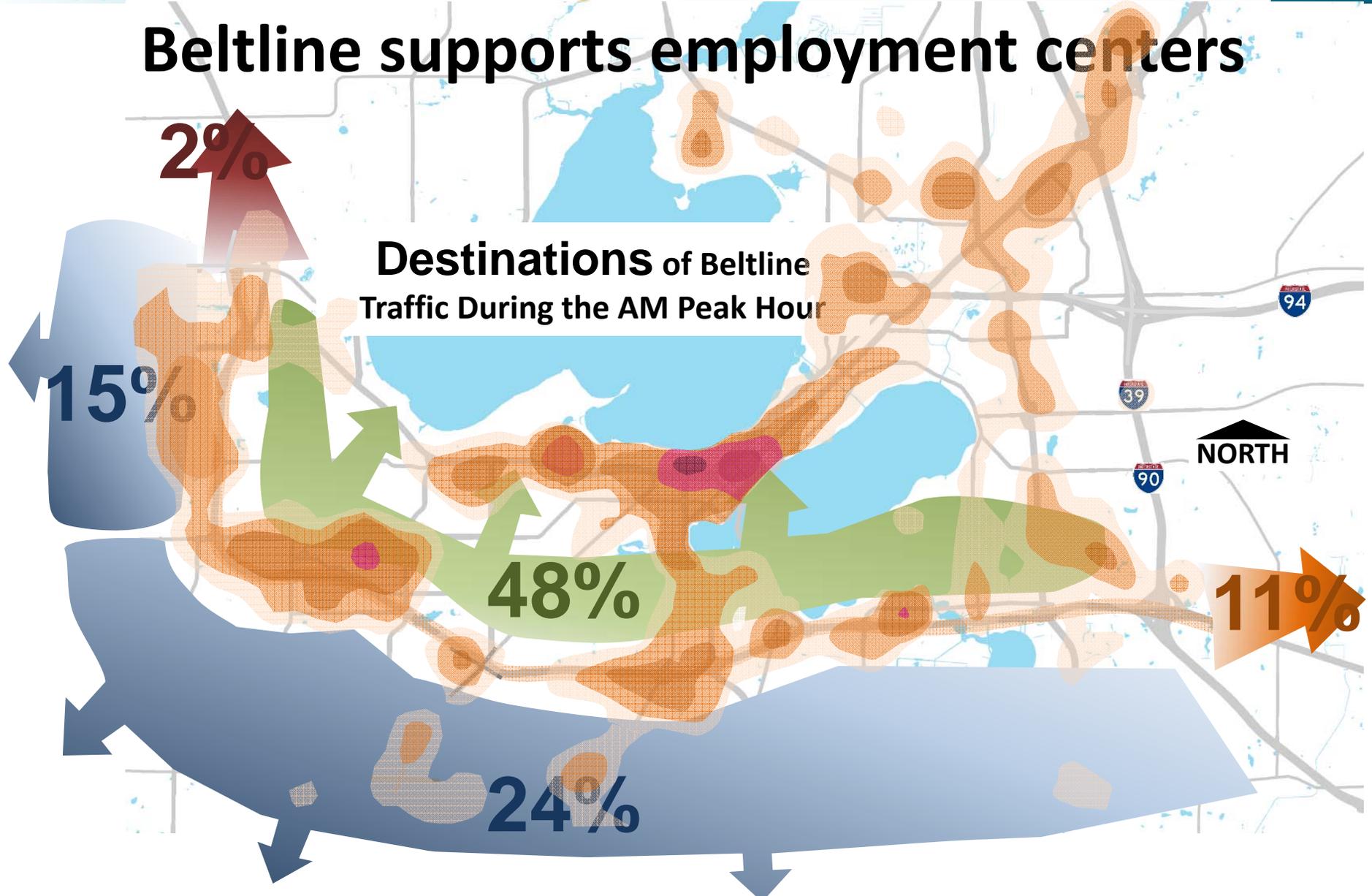
Helicopter fleet used time-lapse photography



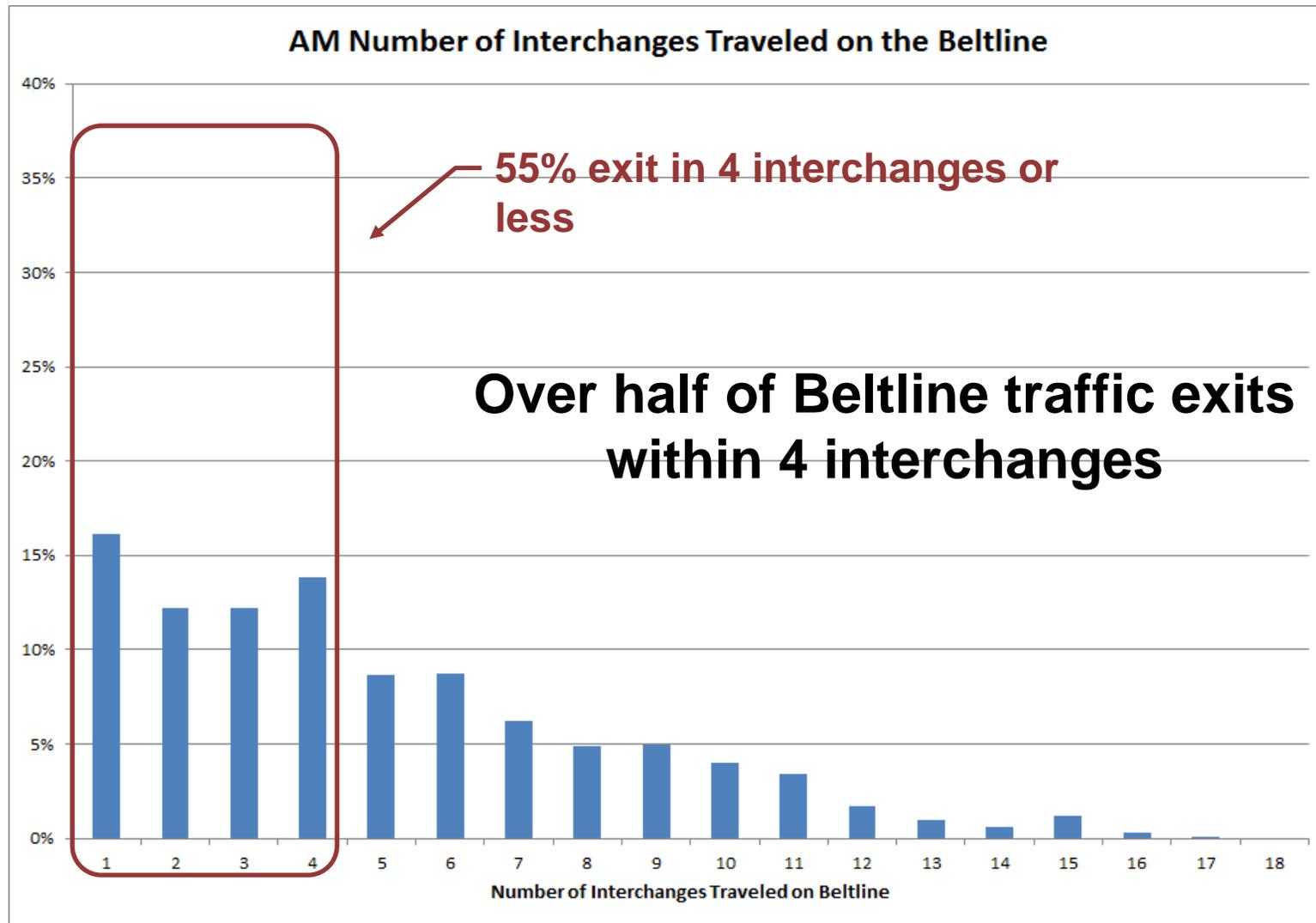
Beltline supports employment centers



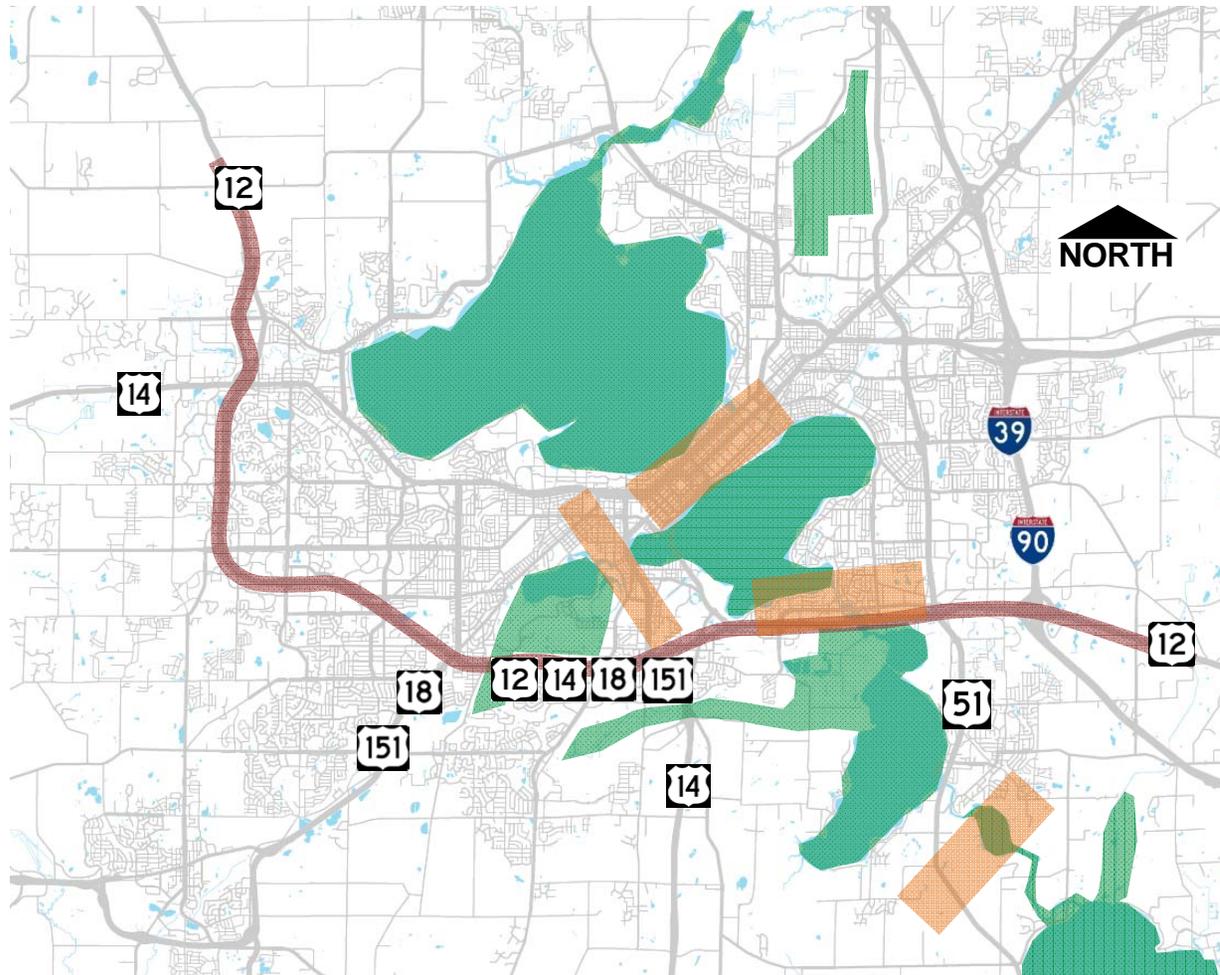
Beltline supports employment centers



Much of the Beltline Traffic is Local

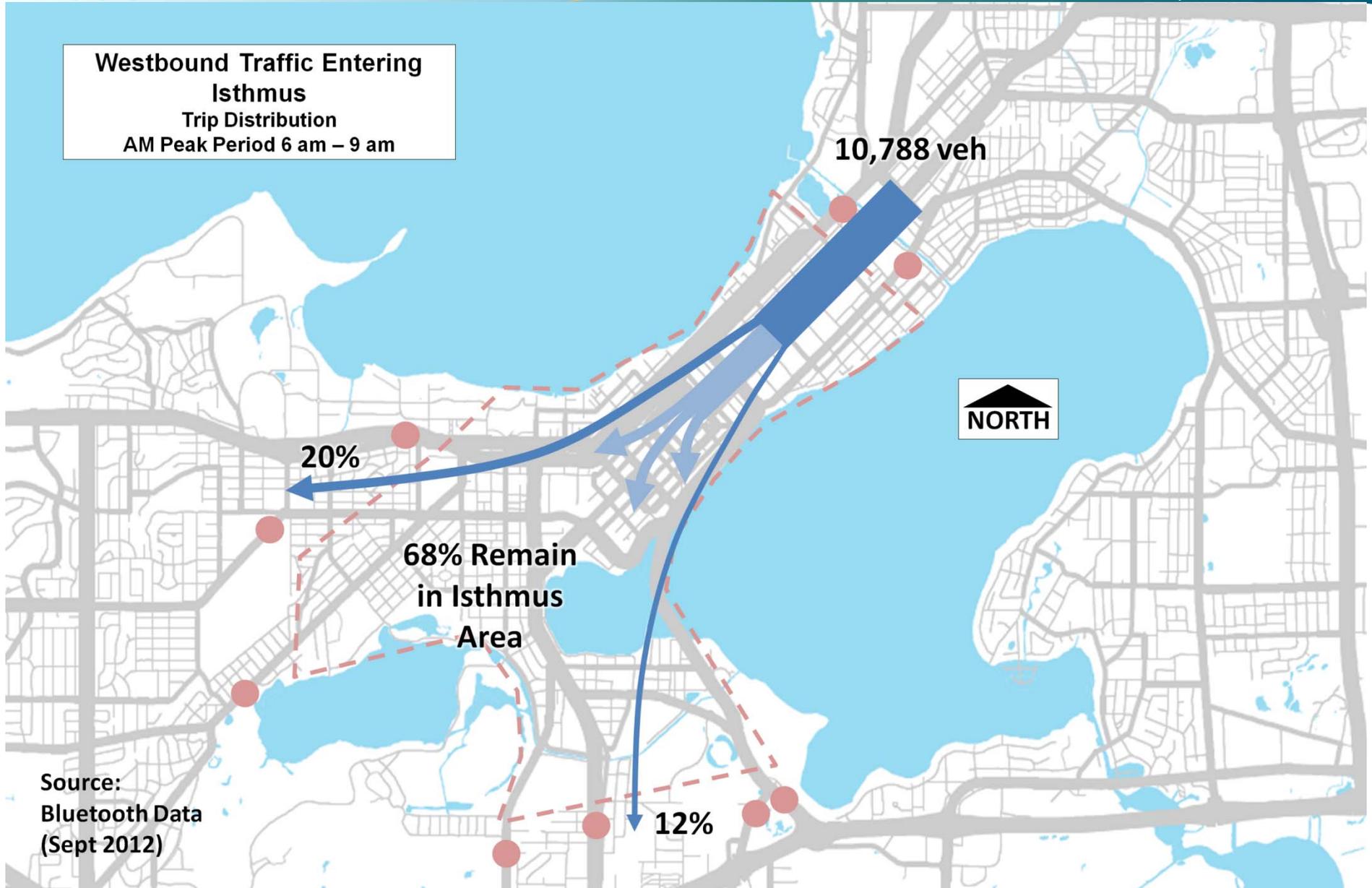


People use the Beltline to get around resources and facilities



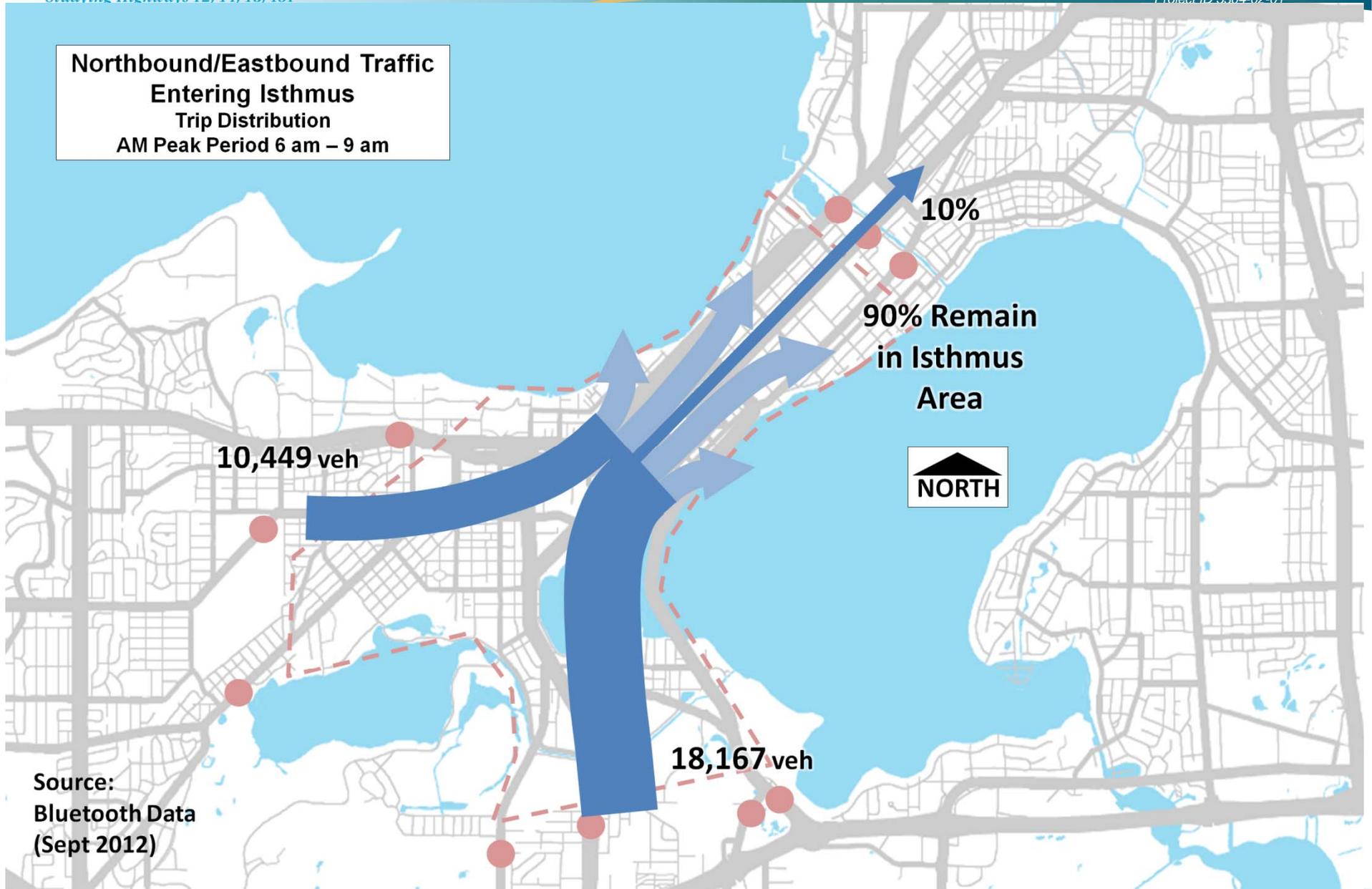
 isthmus

Westbound Traffic Entering Isthmus
Trip Distribution
AM Peak Period 6 am – 9 am



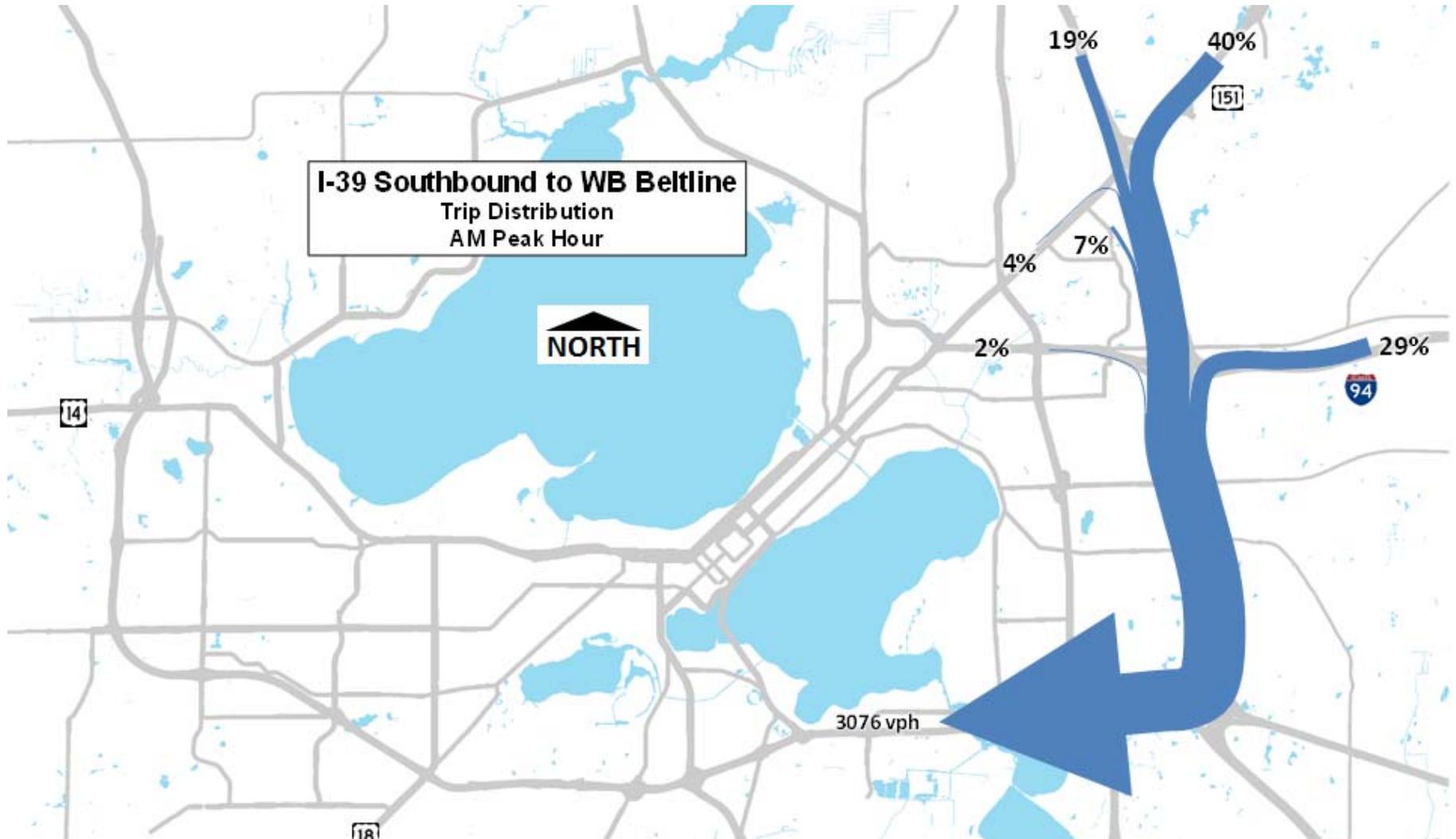
Source:
Bluetooth Data
(Sept 2012)

**Northbound/Eastbound Traffic
Entering Isthmus
Trip Distribution
AM Peak Period 6 am – 9 am**

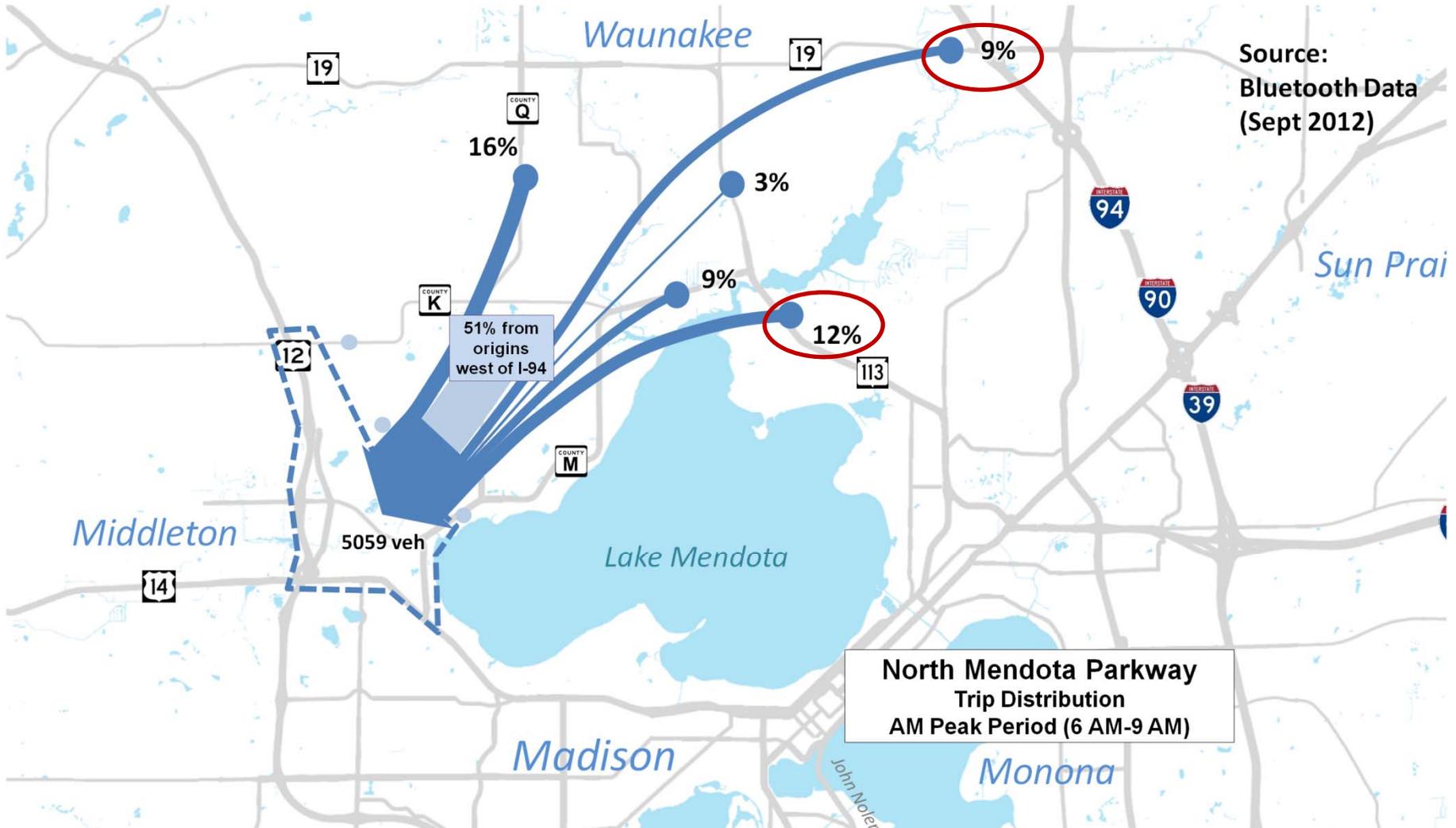


Source:
Bluetooth Data
(Sept 2012)

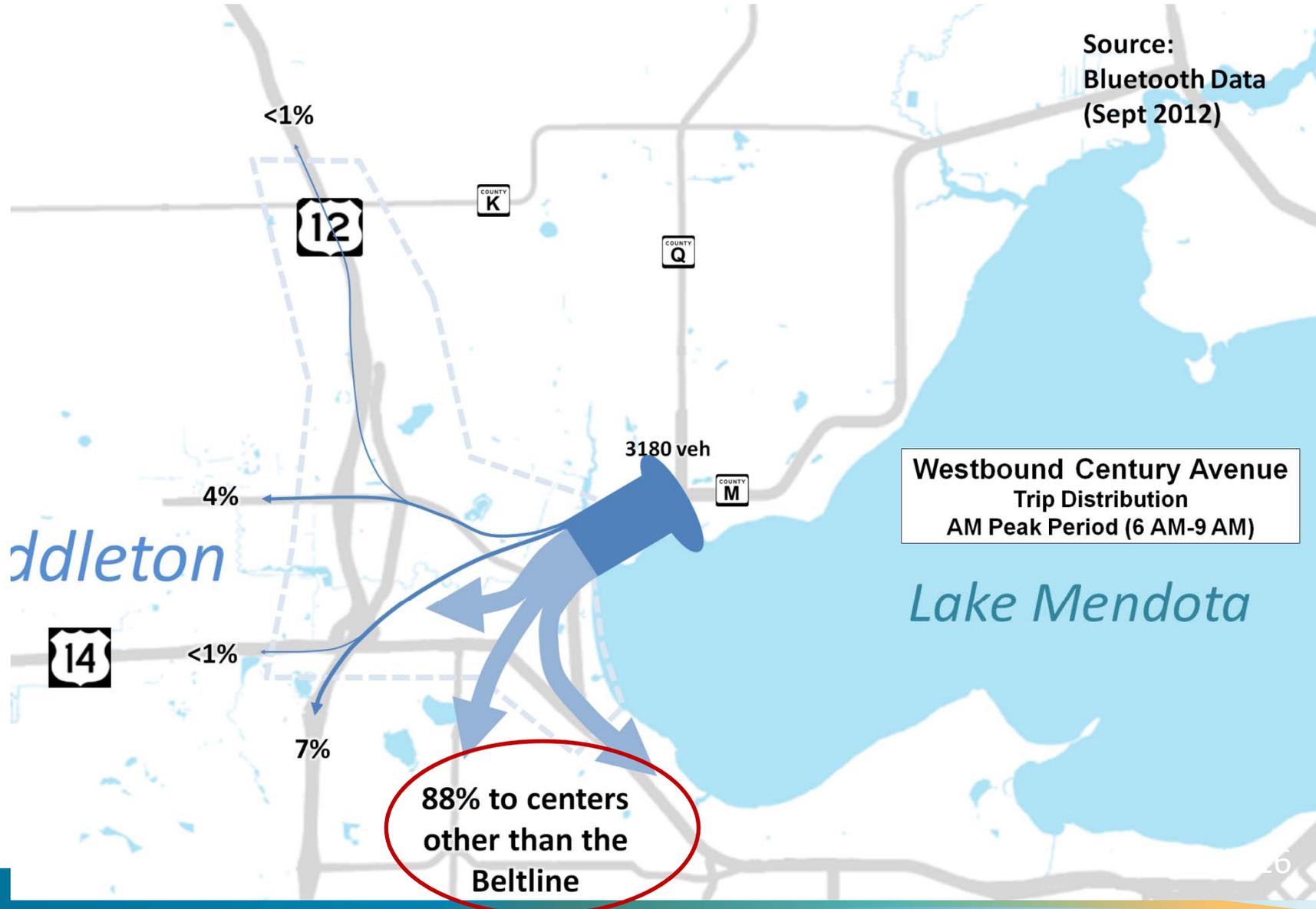
Much of I39/90/94 traffic destined for Beltline



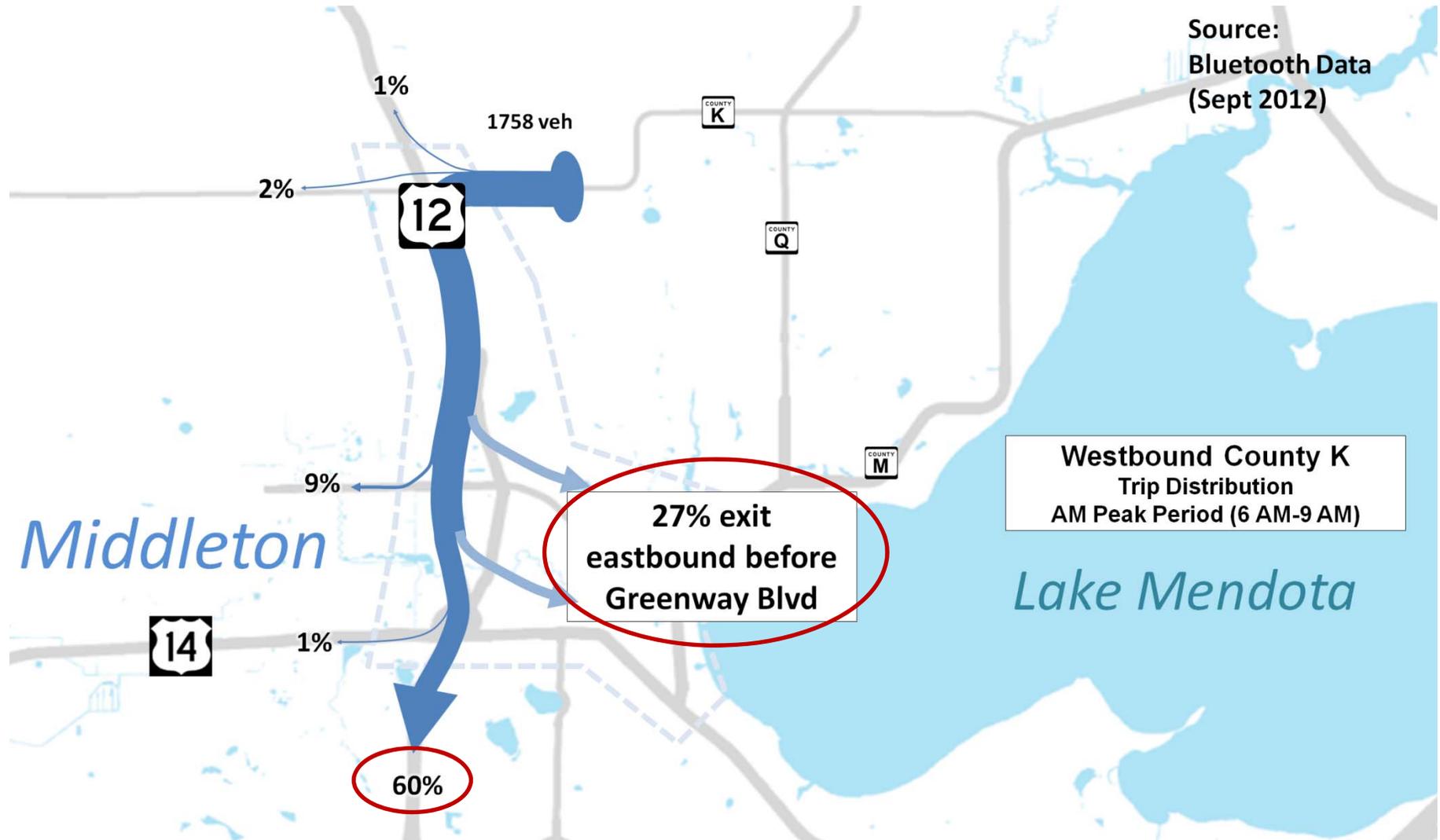
Bluetooth AM Peak 3 hours



Bluetooth AM Peak 3 hours



Bluetooth AM Peak 3 hours

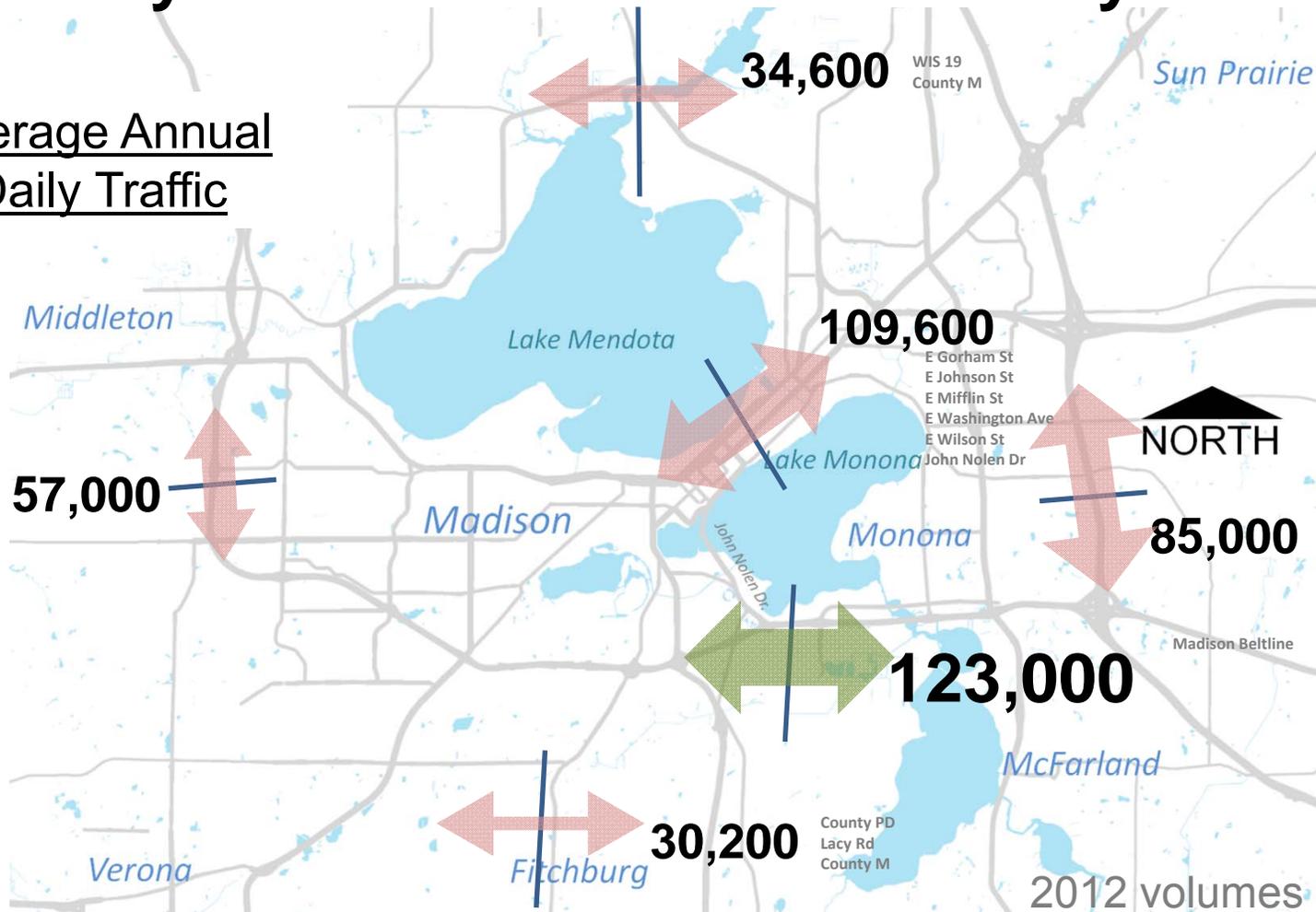


Beltline Traffic Distribution



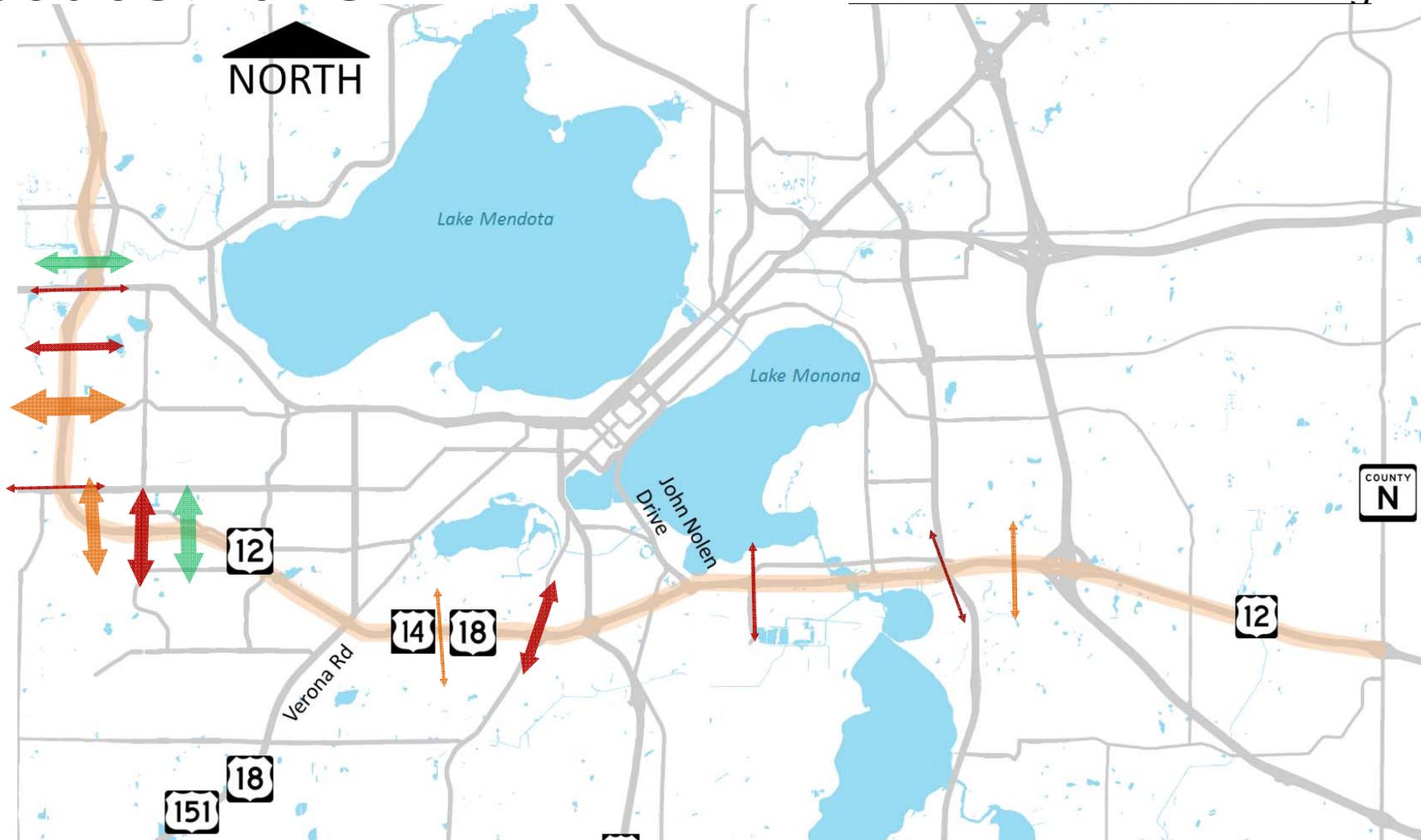
Beltline carries more people than any other roadway combination in Dane County

Average Annual Daily Traffic



Beltline can pose a challenge to bikes and pedestrians

Perceived comfort of crossing



Beltline and transit

- 8.6 percent of work trips in Madison use transit. (44th in the nation)
- Five Madison Metro routes travel on the Beltline
- 36 routes cross the Beltline through interchanges

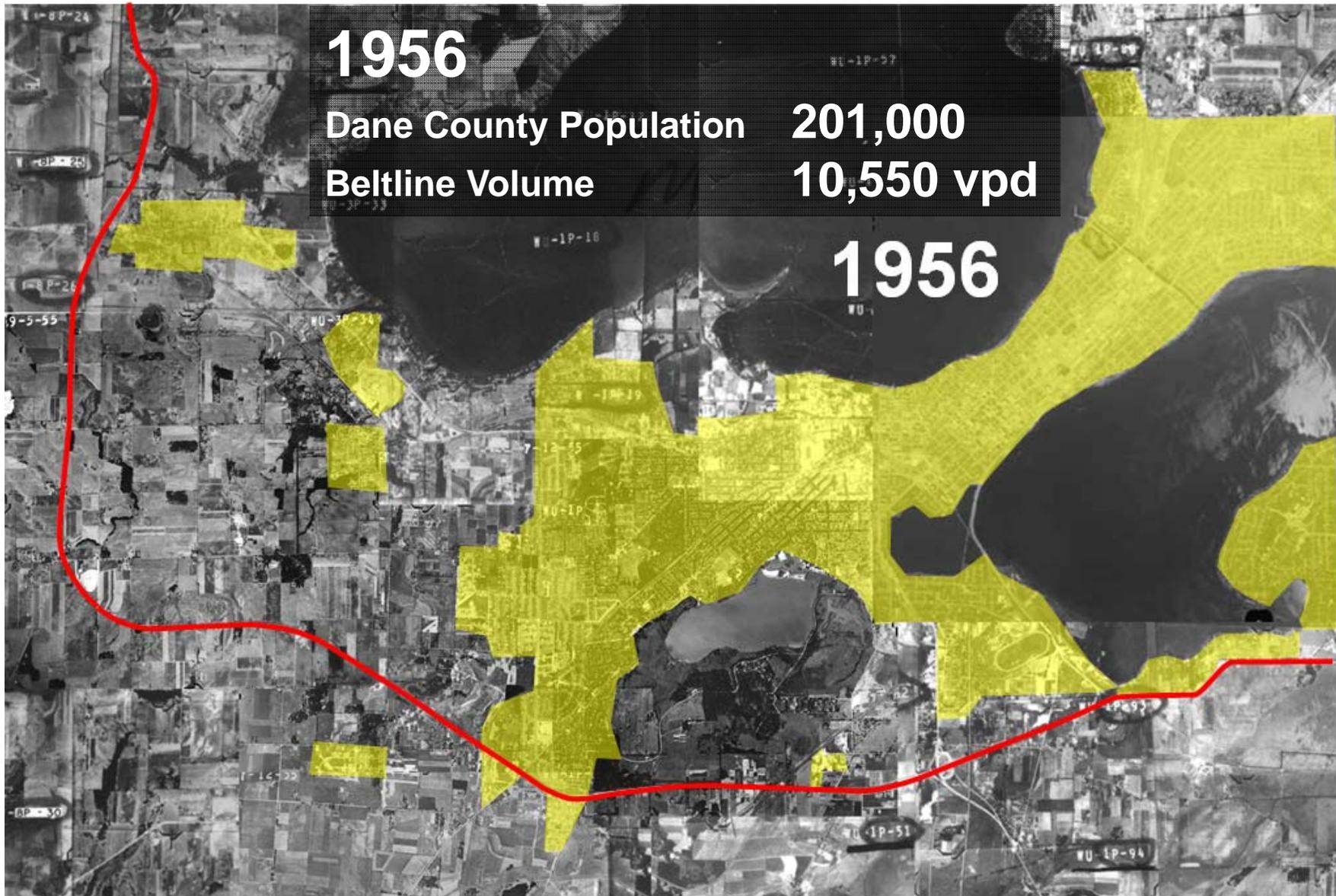


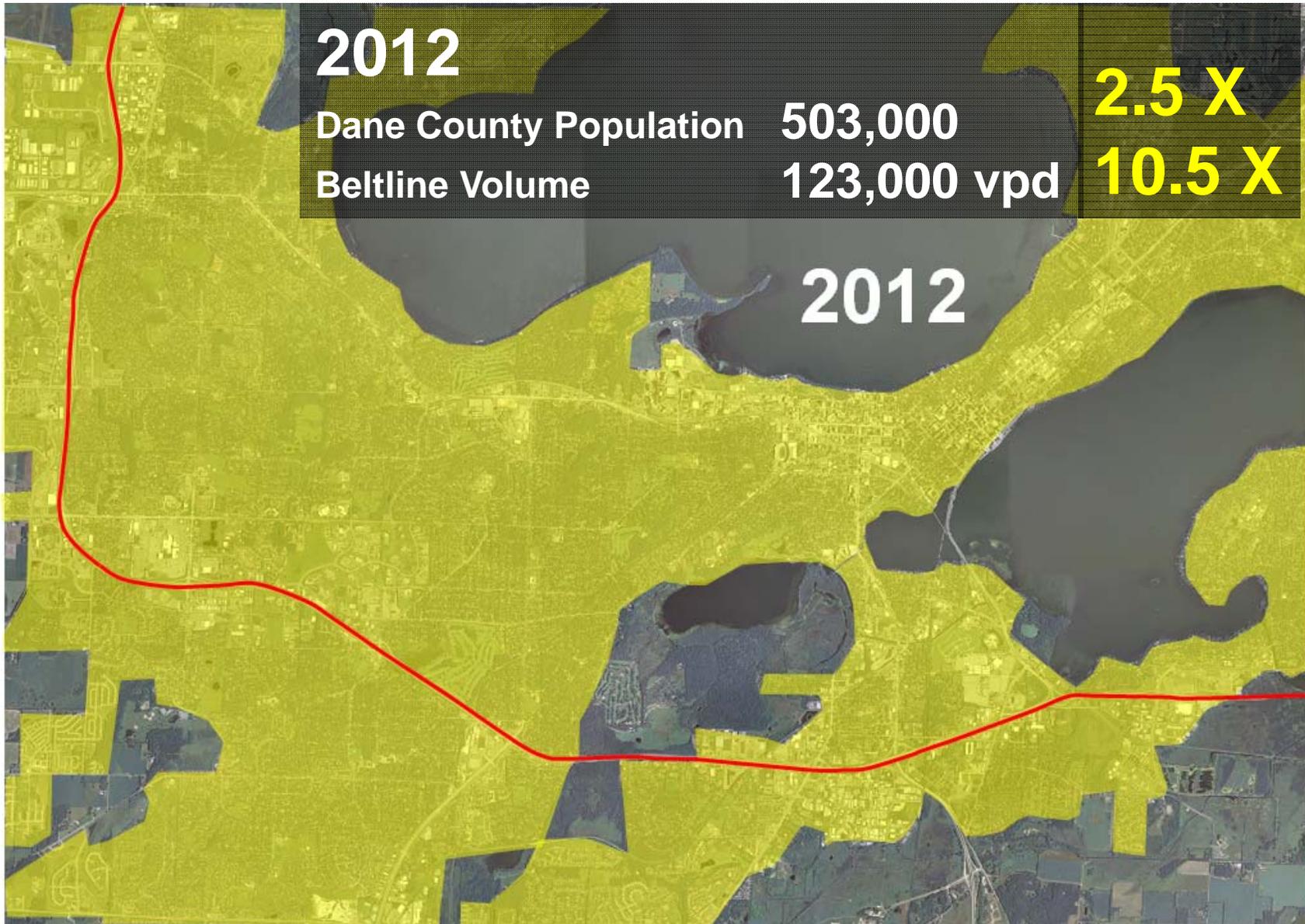
Beltline is a regional backbone for business

- **43 industrial/business parks** with over 5000 acres within 5 miles of Beltline
- **5,500** businesses within 1 mile of Beltline
- In 2011, 12.2 million tons of freight valued at **\$14.2 billion** was shipped on the Beltline
- **56%** of the freight originated in Wisconsin



2. Beltline is Experiencing Problems



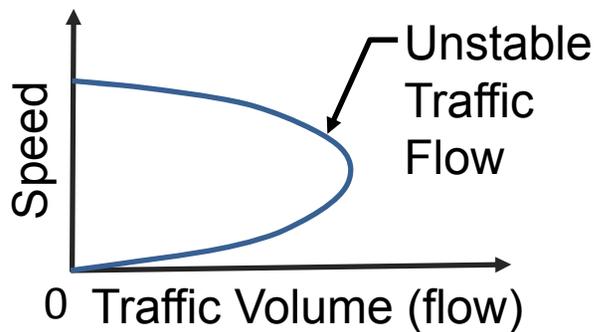


Rising traffic volumes create congestion

Freeway congestion is measured by Level of Service (LOS)

LOS A = good

LOS F = poor and unstable traffic flow.



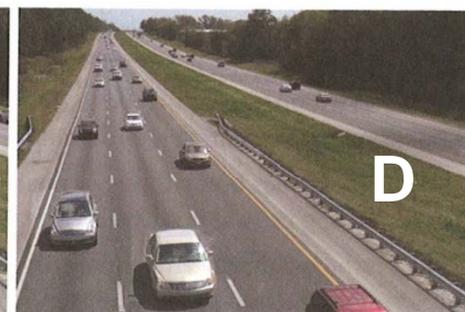
LOS A



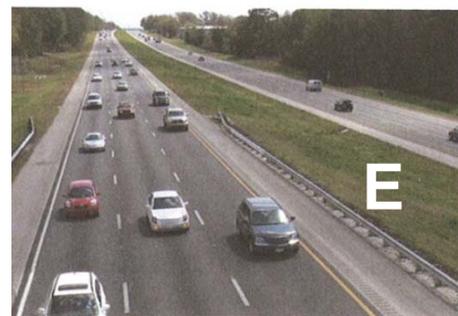
LOS B



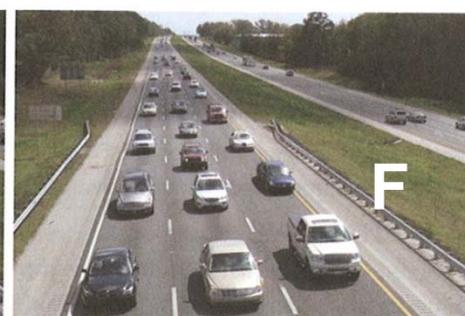
LOS C



LOS D



LOS E



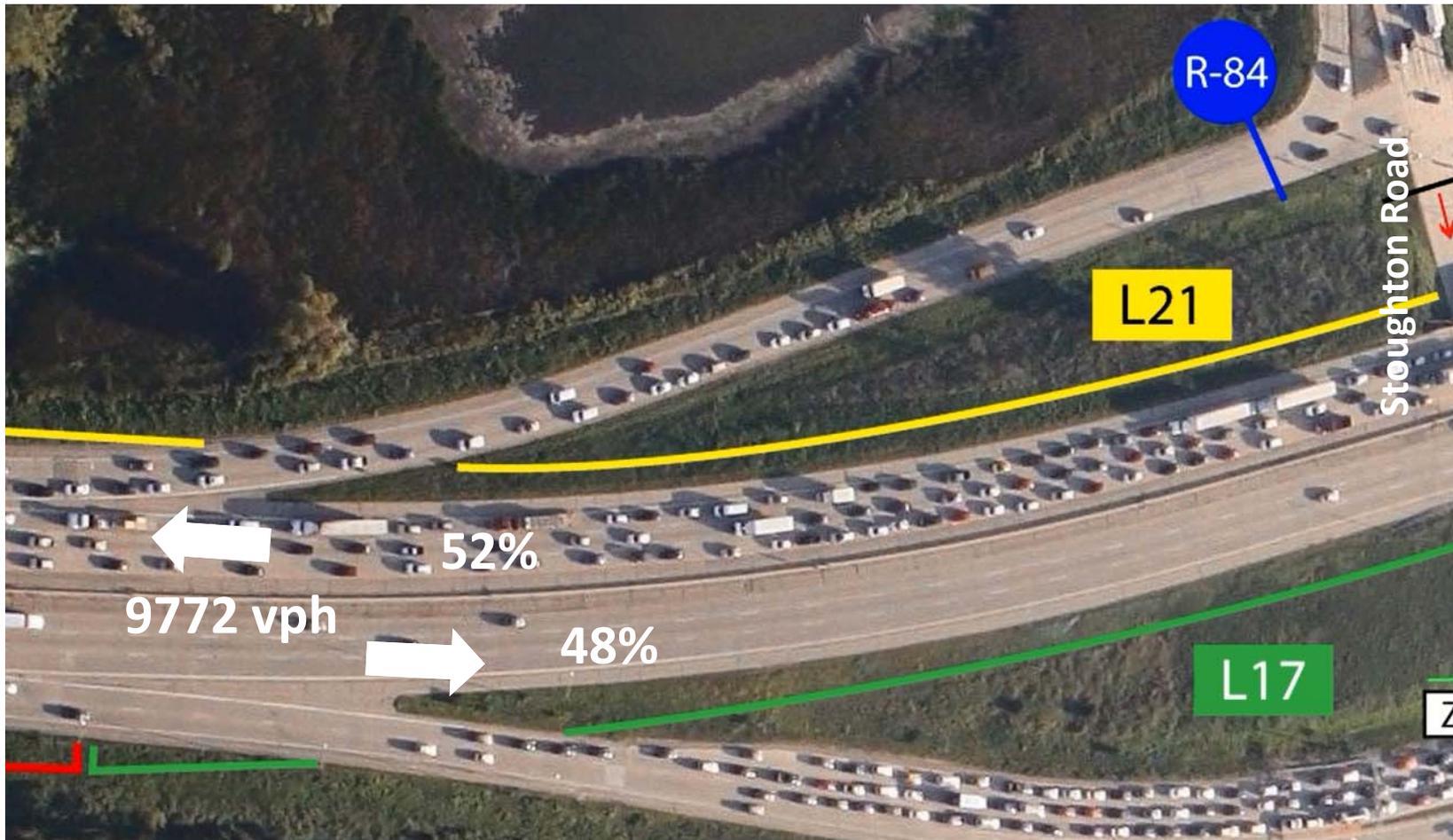
LOS F

Beltline congestion is growing

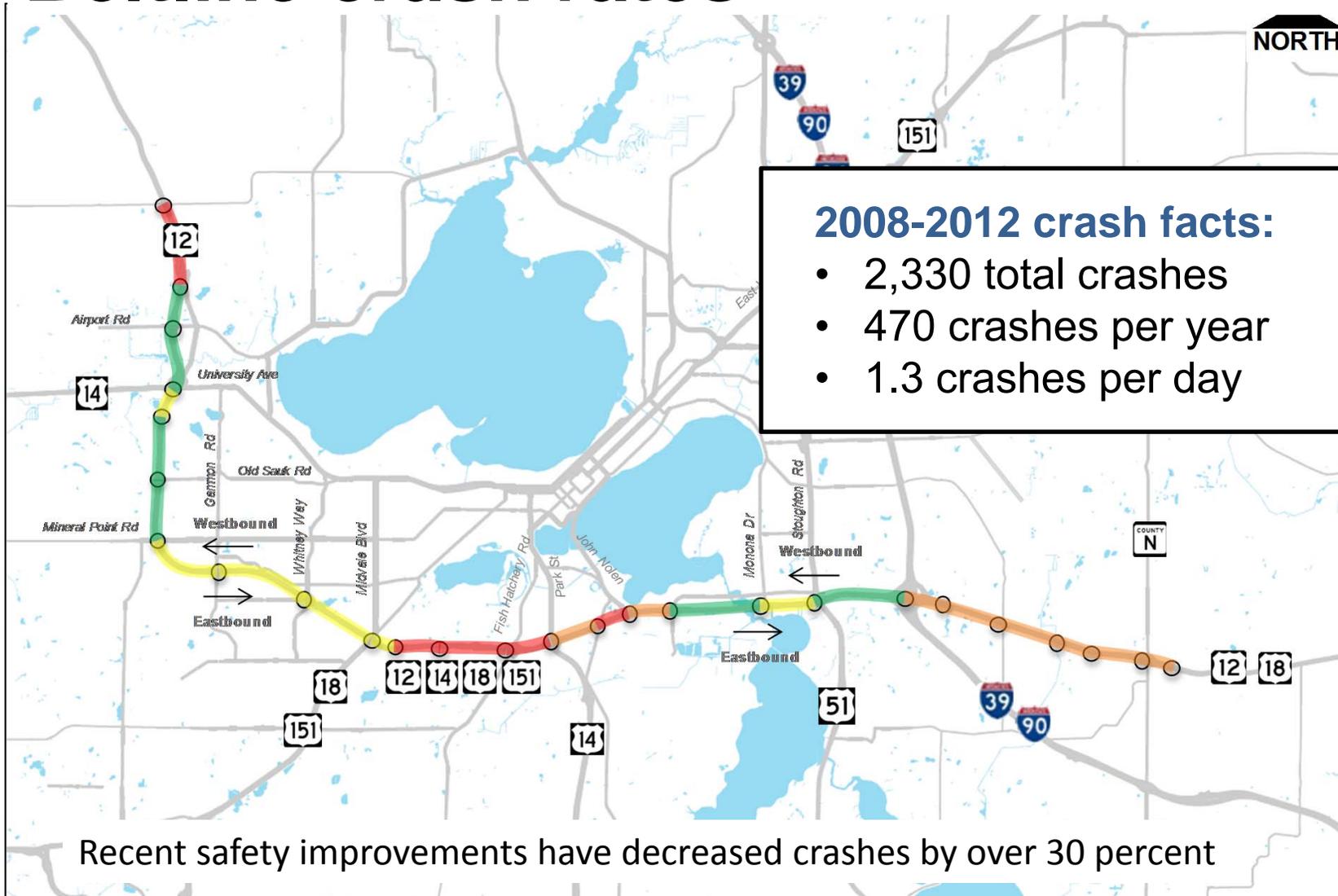


Affects autos and transit

The problem is more than just volumes



Beltline crash rates



3. WisDOT is Conducting a Study of Long Term Solutions

Planning and Environment Linkages



A Planning and Environment Linkages Study (PEL) will allow the study results to flow directly into an Environmental Impact Statement



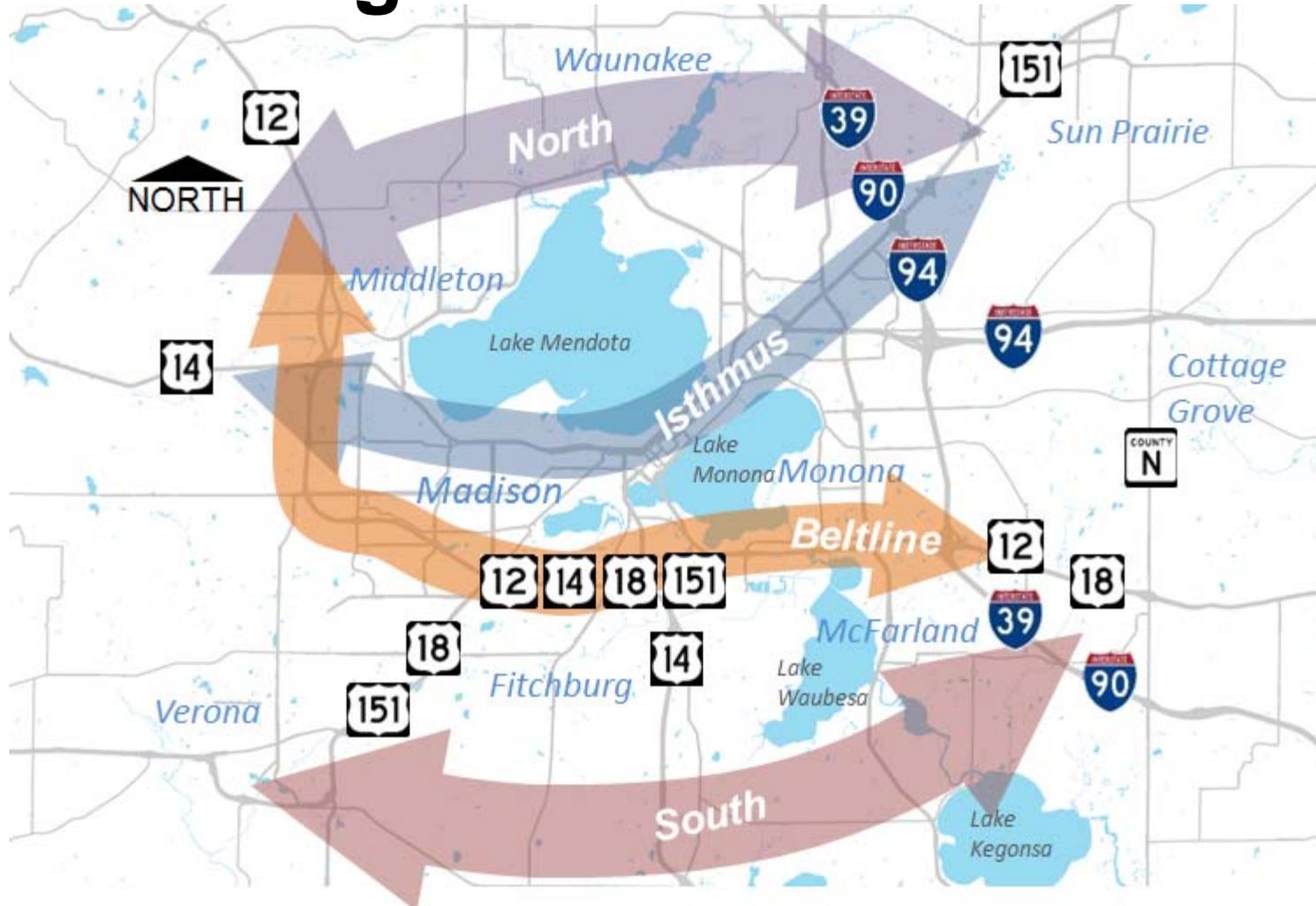
Allows streamlined and efficient project review through extensive early coordination and public involvement



What are the Benefits of a PEL Study?

- Engages broad range of stakeholders to plan for area's environmental, community, and economic future in light of transportation problems and needs
 - Improves strategies development process
 - Extensive outreach increases public involvement
- Improves process efficiency and reduces cost
 - Screens out ineffective strategies early in the study process
 - Reduces duplication of effort later in the study process
- Reduces controversy
 - Increases stakeholder understanding of outcomes
 - Evaluates potential solutions against clear and easily understood criteria

Many strategies and corridors will be investigated



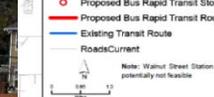
Many strategies and corridors will be investigated

Increasing the use of transit and non-motorized modes will be an important part of any strategy. High capacity transit will also be investigated

WisDOT, Dane County, and City of Madison



Bus Rapid Transit



Transport 2020

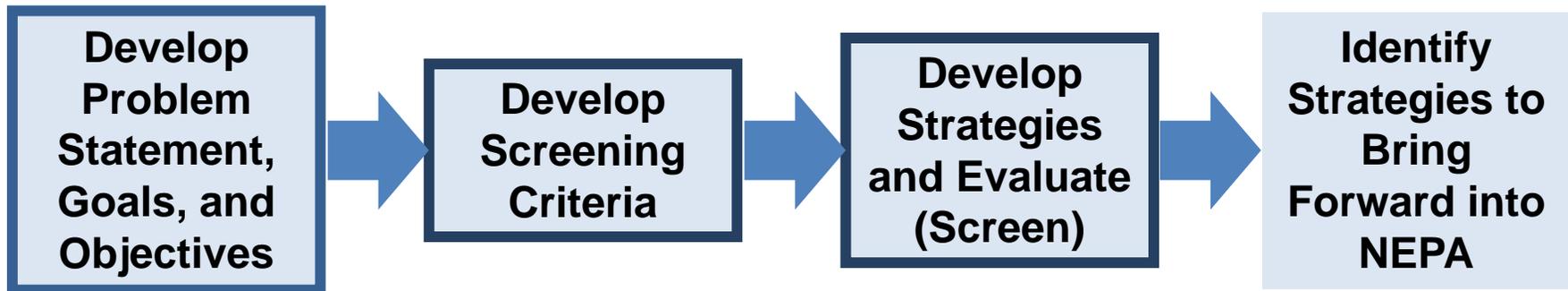
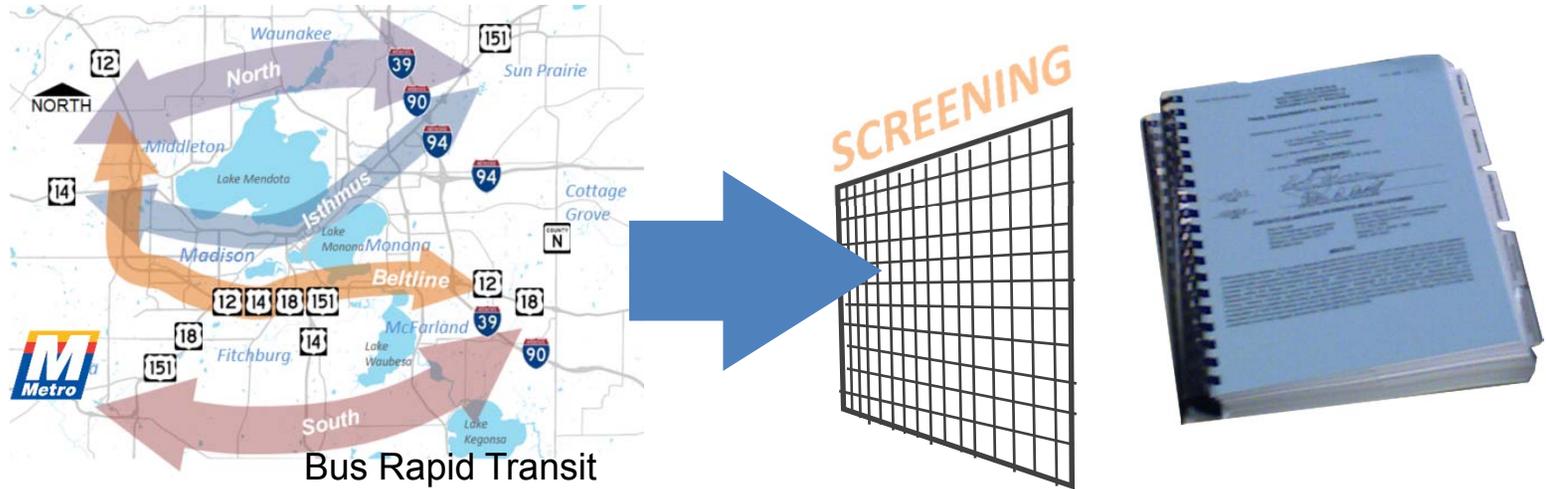
<http://www.transport2020.net/>



Cycling

<http://www.transport2020.net/>

PEL Process



Strategy will have several components to meet objectives

Objectives

1. Improve safety for all **travel modes**.
2. Address Beltline infrastructure condition and deficiencies.
3. Address system mobility (congestion) for all travel modes;
 - **Local and Regional Passenger Vehicles**
 - **Transit**
 - **Pedestrian**
 - **Bicycle**
 - **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.

Example Broad Strategy Organization

10-30-2013

Example Motor vehicle

MV 1 BASE Reconstruction – no capacity increase
This could reconstruct the Beltline with the existing capacity structure. Small modifications could be made at interchanges to improve safety/merging/diverging address deficiencies.

MV 2 Beltline capacity expansion
This could add one, two, or more lanes of capacity to the Beltline in both directions accompanied by appropriate interchange improvements and auxiliary lanes.

MV 3 Beltline congestion management pricing
This could add lane(s) of capacity to the Beltline and implement some form of congestion pricing or lane management.

MV 4 South Corridor
This could add a new four lane expressway or freeway between Verona and I 39. The expressway option would have at-grade intersections and jug-handles. The freeway option would have interchanges.

MV 5 North Mendota Corridor
This could a new four-lane expressway or freeway between US 12 and County M/WIS 19. The expressway option would have with at-grade intersections and jug handles. The freeway option would have interchanges.

MV 6 ???

MV 7 ???

Example Bike ped

BP 1 BASE Standard Bike-Ped Accommodations
This would provide pedestrian and bicycle accommodations with the proposed facility in accordance with Trans 75.

BP 2 Parallel path (new align only)
This could provide an adjacent path to new-alignment highway alternatives

BP 3 New connections
This could create new dedicated path links in areas where bicycle/pedestrian connectivity limited. Examples could include new paths and/or grade separations.

BP 4 Intersection crossing treatments
This could provide improved bicycle and pedestrian crossing of high traffic volume intersections adjacent to the Beltline. Examples could include special crossing treatments and/or grade separations.

BP 5 ????

BP 6 ????

Example Local system

LS 1 BASE
Under the Base Local System strategy, no additional connections across or perpendicular to the Beltline would be made.

LS 2 Parallel local system connections
This could make local system connections that are parallel to the Beltline.

LS 3 Perpendicular local system connections
This could make perpendicular local system connections across the Beltline.

LS 4 Interchange access modifications
This could make interchange access modifications, including removing some interchange ramps or movements onto the Beltline.

LS 5 High Capacity Isthmus
This could provide a higher capacity/speed corridor from the west side to the east side that travels through the isthmus.

LS 6 ???

Example Transit

T 1 BASE Transit
This would maintain the current Madison metro and other transit activities as they currently operate.

T 2 Bus Rapid Transit
This could:

- Implement the 2012 BRT report recommendations
- Support the BRT system by providing modal transfer stations
- Implement planned transit extensions

T 3 Commuter Rail
This could:

- Implement the full system recommended under the Transport 2020 New Starts Application (2008)
- Implement the feeder bus system recommended under the Transport 2020 study.

T 4 Dedicated Beltline Transit Lane
This could implement a dedicated transit lane (shoulder) on the Beltline with four on/line or off/line stops :

T 5 Transit Extensions
This could implement the Express Bus recommendations in the MPO's 2013-2017 Transit Development Plan, which includes extensions to:

- o Oregon
- o McFarland/Stoughton
- o Cottage Grove
- o Sun Prairie
- o DeForest
- o Waunakee

T 6 Modal centers (Park and Ride w/ Transit)
This could provide modal transfer centers for a trip to be finished by transit or bike.

T 7 ???

Example TDM

TDM 1 BASE - Voluntary TDM
This would create information and incentives for employers to encourage TDM measures, such as:

- Ridesharing
- Guaranteed Ride Home
- Sponsored Bus Passes
- Shifted work hours etc.

TDM 2 Government Policy TDM
Local and state governments policies that require employers to enact TDM measures. Examples could include:

- TDM for PUD approvals
- Parking pricing policies
- Transit sponsorship
- Etc.

TDM 3 ???

Example

Note: some transit strategies are beyond the jurisdiction of WisDOT/FHWA and would require cooperation with other federal and state agencies/funding sources for implementation.

Project Schedule



We are here!

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<http://www1.wisconsindot.gov/Pages/projects/by-region/sw/madisonbeltline/default.aspx>