Madison Beltline Planning and Environment Linkages (PEL) Study MPO Transportation Planning Board Presentation

January 7, 2015
Agenda

- Beltline Study Background
- UW Survey Results
- Strategy Development and Results
- PIM Feedback
- Next Steps
Beltline Study Background
Study Corridor Limits

Study Limits
(University Avenue/US 14 to County N)
Why is the Beltline being studied?

- Motor vehicle congestion
- Too many crashes
- Complex Regional traffic patterns
- Bike/ped accommodations needs
- Transit needs
- Few alternate routes
- Deteriorating physical conditions
People use the Beltline to get around resources and facilities
Much of the Beltline traffic is local

55% exit in 4 interchanges or less

Over half of Beltline traffic exits within 4 interchanges
Madison transportation is different

Direct
Indirect
Part 1: O/D Study
Data Collection = Summer/Fall 2012
Analysis = 2013/14
Completed Report = Fall 2014

Part 2: PEL Study
Work Plan = Fall 2012
Completion = Late 2015

Part 3: Environmental Impact Statement
Begin = Winter 2016
ROD = 2020
PEL Process

- Develop Problem Statement, Goals, and Objectives
- Develop Screening Criteria
- Develop Strategies and Evaluate (Screen)
- Identify Strategies to Bring Forward into NEPA

Bus Rapid Transit
Stakeholder meetings since start of PEL

- City of Madison – Dept of Civil Rights
- East Madison Monona Rotary Club
- Meadowood Neighborhood Association
- Village of Cottage Grove
- South Metropolitan Planning Council- Village of Oregon
- Waunakee Rotary Club
- Madison South Rotary
- Greater Madison Convention & Visitors Bureau- Community Relations Committee
- Allied Area Taskforce
- Greater Madison Convention & Visitors Bureau (GMCVB)
- YWCA – Construct U Class
- Arbor Hills Neighborhood
- Rotary Club of Madison – West Towne
- Town of Verona
- Latino Academy
- State Smart Transportation Initiative
- Orchard Ridge Neighborhood Association
- Madison West Rotary Club
- Dunn's Marsh Neighborhood Association
- Greater Madison Chamber of Commerce (GMCC)-Public Policy Committee
- Madison Region Economic Partnership (MADREP)
- PAC – 8 meetings
- TAC – 7 meetings
- Public Involvement Meetings (PIMs)–6 meetings
- Local Government Briefings–3 meetings
- Agency Meetings–3 meetings
- Bike/Pedestrian Focus Group–2 meetings
- Transit Focus group–2 meetings
- Urban League of Greater Madison
- Centro Hispano
- Madison Horizons Rotary
- Leopold Neighborhood Assoc.
- City of Stoughton
- Realtors Assoc. of South Central Wisconsin–Government Affairs Committee
- Downtown Madison Inc.- Trans. & Parking Committee- Bicycle subcommittee
- Village of DeForest
- UW Arboretum
- City of Middleton
- University Research Park
- Village of Maple Bluff
- City of Fitchburg
- Smart Growth Greater Madison
- John Muir Sierra Club
- Village of Waunakee
PEL Objectives

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

2050 is the planning horizon year

Construction could start by mid-2020’s
Where household growth will occur

2050

81,000 more homes
150,000 more people

Verona 3,400
Middleton 5,000
Madison 37,600
Waunakee 3,000
Deforest 2,600
Sun Prairie 8,500
Isthmus 11,100
Stoughton 700
Fitchburg 4,700
Where employment growth will occur

Legend

- Dane County
- Water

Employment Change per Acre

- 0.0 - 1
- 1.1 - 3
- 3.1 - 6
- 6.1 - 9
- 9.1 - 12
- 12.1 - 24
- 24.1 - 62

2050

28% increase

- Madison: 45,500
- Sun Prairie: 5,700
- Verona: 9,900
- Waunakee: 3,000
- Deforest: 3,600
- Middleton: 4,000
- Fitchburg: 5,700
- Stoughton: 1,100
- Isthmus: 3,900
UW Survey Center
Mailed Survey
Selected Results

Stand-alone Strategies
UW Survey Center Responses w/ Urban Area subset
1. What is your primary mode of transportation for getting to and from work or to other activities you do regularly?

Of all responses
3. Which one of the following best describes how often you drive on the Beltline?

- Daily
- Several times a week
- 2 or 3 times a month
- Once a month or less

Of all responses

Dane County Residents Surveyed
Percentage that use the Beltline

- 38% several times a week or more
- 62% 2 or 3 times a month or less
8. Do you ever use alternate routes to avoid Beltline congestion during rush hour?

9. Which alternate routes do you use to avoid Beltline congestion during rush hour?

Of those driving on the Beltline during rush hour, percentage that sometimes use alternate routes

Commonly listed routes:
- Through downtown – 29
- Broadway – 21
- University Ave – 17
- County PD – 29
- Mineral Pt Rd – 12
- Frontage Rds - 11

Responses of those driving on the Beltline during rush hour

- Yes: 69%
- No: 31%
12. If changes were necessary to reduce future congestion on the Beltline, would you support each of the following types of road improvements?

<table>
<thead>
<tr>
<th>Type of Improvement</th>
<th>Support</th>
<th>Do Not Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minor Beltline adjustments, such as modifying signals at interchanges or installing ramp metering signals on on-ramps?</td>
<td>77%</td>
<td>23%</td>
</tr>
<tr>
<td>Local road overpasses that take traffic out of Beltline interchanges?</td>
<td>84%</td>
<td>16%</td>
</tr>
<tr>
<td>Major roadway changes, such as additional lanes on the Beltline or interchange redesign?</td>
<td>74%</td>
<td>26%</td>
</tr>
<tr>
<td>New Outer Beltline Corridors such as a new corridor north of Lake Mendota, or a new Beltline south of the existing Beltline?</td>
<td>71%</td>
<td>30%</td>
</tr>
<tr>
<td>Express lanes on the Beltline that charge a toll yet allow drivers to travel faster than the adjacent traffic?</td>
<td>73%</td>
<td>27%</td>
</tr>
</tbody>
</table>

Of all responses
17. How much does each of the following factors prevent you or discourage you from using buses to get to work or to other activities you do regularly?

Of all responses
18. How much would each of the following changes encourage you to use the bus to get to work or other activities you do regularly?

<table>
<thead>
<tr>
<th>Change Description</th>
<th>Not at all</th>
<th>A Little</th>
<th>Some</th>
<th>Quite a Bit</th>
<th>A Great Deal</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. More frequent service</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Faster service</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Eliminate transfers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. More reliable service</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Bus stops closer to my home or destination</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. More bus stops with shelters or benches</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g. Lower fares</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h. Park and rides with express buses and dedicated bus lanes to improve travel time</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i. More comfortable vehicles with more seating</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Factors that would encourage transit usage

- Dane County
- Urban Area

- More frequent service: 26, 28
- Faster service: 26, 30
- Eliminate transfers: 28, 29
- More reliable service: 20, 20
- Bus stops closer to my home or destination: 31, 24
- More bus stops with shelters or benches: 17, 17
- Lower fares: 13, 15
- Park and rides with express buses and dedicated bus lanes to improve travel time: 27, 24
- More comfortable vehicles with more seating: 11, 10
23. How much does each of the following factors prevent you or discourage you from biking or walking to work or to other activities you do regularly?

<table>
<thead>
<tr>
<th>Factor</th>
<th>Not at all</th>
<th>A Little</th>
<th>Some</th>
<th>Quite a Bit</th>
<th>A Great Deal</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Distance - it would take too long</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Bad weather</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Number of bike paths/lanes from my house to work or other destination</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Health concerns</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Safety concerns</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. Needing your motor vehicle for your work or other activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g. Preference to use a motor vehicle for flexibility</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Of all responses
24. How much would you support additional funding for each of the following transportation alternatives to driving on the Beltline? How much would you support...

Of all responses
Strategy Development and Evaluation

Stand-alone Strategies
<table>
<thead>
<tr>
<th>MOTOR VEHICLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>BP 6</td>
</tr>
<tr>
<td>BP 5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BIKE - PED</th>
</tr>
</thead>
<tbody>
<tr>
<td>LS 5</td>
</tr>
<tr>
<td>LS 4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LOCAL SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>T7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TRANSIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>T7 Bus Rapid</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TRANSPORTATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEMAND</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MANAGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>T7</td>
</tr>
</tbody>
</table>
Evaluation of stand alone strategies

- Use Transportation Demand Model
- No other changes in the travel network

**Viable?**
Does the strategy capture enough riders/traffic
Ex: ridership on BRT

Yes → **Effective?**
Substantial traffic removed from Beltline?

Yes → **Challenges?**
- Substantial impacts?
- Substantial opposition?

Yes → Bring forward as a component in a Strategy package

No → **Eliminate from detailed consideration**

No → **Consider as a minor component in a Strategy package.**

Large → **Document challenge – Stop**
**Document challenges – Bring forward.**

Small
Stand-alone strategies investigated
- Largest people movers

North Waunakee Corridor
South Waunakee Corridor
Transport 2020 (Rail)
Bus Rapid Transit (BRT)
Beltline Improvements
Beltline Buses
South Reliever Corridor
Express buses routed on Beltline

Two Options – 30 minute day-long service

On Beltline with in-line stops

On and Off Beltline with on-street stops

Middleton Transfer Point

In-line Stop by City Center West

West Transfer Point

South Transfer Point

Dutch Mills

World Dairy Center

In-line Stop by WPS

In-line Stop by Todd Drive

Two Options – 30 minute day-long service

On Beltline with in-line stops

On and Off Beltline with on-street stops
Bus Rapid Transit (BRT)

- compare ridership w/previous projection
- predict affect on Beltline Volume

Figure 20: Madison BRT System – Proposed System

Routes recommended by Madison Transportation Board in 2013 Report
Transport 2020 (Commuter Rail)

- 2008 New Starts Application submitted to Federal Transit Authority
- $255 million (2007 dollars)
- 11,000 ridership in 2030
Transit Observations

- **Beltline Transit**
  - Draws up to 2000 riders in 2010, 4900 in 2050
  - No noticeable affect on Beltline volumes

- **BRT**
  - EW draws up to 20,000 riders in 2050
  - NS draws up to 12,200 riders in 2050
  - Almost no affect on Beltline volumes
  - Decreasing price has little effect on ridership

- **Transport 2020**
  - Draws up to 9,500 riders in 2050
  - No noticeable affect on Beltline volumes

- **New Systems don’t reduce Beltline traffic. Enhancing existing transit system remains a study objective and is expected to be part of a solution studied in the EIS.**
Two NMP corridors investigated

North Waunakee Corridor

Existing corridor

13,900 vpd

New corridor

23,900 vpd

South Waunakee Corridor

Existing corridor

20,500 vpd

New corridor

25,800 vpd

Three Speeds Investigated

- 40 mph
- 50 mph
- 60 mph

No Effect or Negative Effect on Beltline
Overall Conclusions

- North Waunakee Corridor reduces traffic in downtown Waunakee
- South Waunakee Corridor reduces traffic on Century Avenue
- S Waunakee Corridor draws 6,000 to 25,800 vpd (depending on speed)
- N Waunakee Corridor attracts 4,000 to 23,900 vpd (depending on speed)
- Neither affects Isthmus traffic
- Neither reduces Beltline traffic
- S Waunakee Corridor adds traffic to west end of Beltline
- Neither address Beltline objectives
Measurable, yet small when compared with Beltline volumes
South Reliever traffic volumes

Forecast
2010 Daily Volume
2050 Daily Volume

11-13,000 vpd
28-30,000 vpd
13-16,000 vpd
21-23,000 vpd
17-19,000 vpd
29-31,000 vpd
21-23,000 vpd
37-39,000 vpd
South Reliever traffic volumes

Current Model
2010 Daily Vol Difference
2050 Daily Vol Difference

No Change
No Change
-2-4,000 vpd
-1,000 vpd
-9%
-9-11,000 vpd
-3-5,000 vpd
-3%
-8-10,000 vpd
-9%
-8-10,000 vpd

Some relief of Beltline traffic volumes, but at considerable cost and impact
Beltline constraints

What would happen if the Beltline could carry all the traffic that wants to use it and no other changes to system occur.
Unconstrained Beltline 2010

Amount of new traffic that would use the Beltline in 2010 if there were no capacity constraints

- 4,000 vpd or 5%
- 16,700 vpd or 12%
- 6,900 vpd or 5%

Line weight represents relative volume increase

Preliminary
Much of 2050 employment growth likely to occur in areas served by Beltline

- American Family: 13,250
- Epic: 6,400
- Univ Research Pk: 10,500
- Badger Interchange: 3,100
- Femrite Corridor: 5,800
- Isthmus: 3,900
- Park Street: 2,000
- Middleton: 2,000
Unconstrained Beltline 2050

Constrained - Beltline growth 2010 to 2050

Unconstrained - additional traffic that would use Beltline if it had capacity

24,000 vpd or 33% or Total

56,000 vpd or 42% Total

48,000 vpd or 43% Total
Consider an alternate growth scenario
2014 PIM Comments Summary

12 Comment Sheets returned, similar number of verbal comments recorded during meetings

- 20 sheets returned in 2013 (five PIMs)

- Interest in improving other modes
- Beltline improvements, crossings
- Account for Smart Cars/New Technology
- New north or south routes
- Doubts about rising volume/need for more capacity
- Rebuild/make improvements sooner
- Opposition to each of the above too
- Enforce Speeding/traffic laws
Next steps

Fall 2014  Eight Public Involvement Meetings
Winter 2014/15  Assemble improvement components into multi-modal strategy packages
Spring 2015  Evaluate strategy packages
Fall 2015  Public Involvement Meetings
Winter 2015/16  Release report
2016 – 2020  NEPA Study
Examples of improvement components

1. Grade separated crossings
2. Local Road Enhancements
3. Transit priority measures
4. Park and ride lots w/transit
5. Added bike/ped accommodations
6. Different lane arrangements/additions on Beltline
7. Interchange alterations
8. Other

Develop and Test Individual Improvement Components

Assemble Improvement Components into Strategy Packages

Options A, B, and C

Walmart to West Town

Perry St Grade Sep

Greenway Cross Extension

Badger Rd Extension

Broadway to John Nolen

John Nolen Interchange Connection

A better BELTLINE

Wisconsin Department of Transportation

Studying Highways 12, 14, 39, 151
Questions?

- www.madisonbeltline.dot.wi.gov
- www.facebook.com/WIMadisonBeltlineStudy
Contacts

WisDOT Southwest Region
www.madisonbeltline.dot.wi.gov

- Larry Barta, WisDOT Project Manager
  - (608) 246-3884

- Michael Bie, Project Communications Manager
  - (608) 246-7928

- Steven Theisen, Southwest Region Communications Manager
  - (608) 884-1230