

WIS 100 Corridor Study (South 108th Street and North Mayfair Road)

Layton Avenue to I-94
and
Watertown Plank Road to Silver Spring Drive
Milwaukee County
Project ID 2030-00-06



Public Involvement Meeting Handout

May 24 2016, 5 to 8 P.M.

SOUTH SECTION

Lane Intermediate School

1300 S. 109th Street

West Allis, WI

May 25 2016, 5 to 8 P.M.

NORTH SECTION

Wauwatosa Library, Firefly Room

7635 W North Avenue

Wauwatosa, WI

Welcome

Welcome to the second public involvement meeting for the Wisconsin State Trunk Highway 100 (WIS 100) Corridor Study. The Wisconsin Department of Transportation (WisDOT) is studying WIS 100 to evaluate the impacts of reconstructing the highway from Layton Avenue to I-94 and from Watertown Plank Road to Silver Spring Drive in Milwaukee County.

South Section -

This 4.8-mile section between Layton Avenue and I-94 is in the cities of Greenfield and West Allis.

North Section -

This 5.0-mile section between Watertown Plank Road and Silver Spring Drive is in the cities of Wauwatosa and Milwaukee.

The study does not include the approximate one-mile section of WIS 100 from I-94 through Watertown Plank Road that was reconstructed in 2013.

This meeting has an open house format. We invite you to view the exhibits, talk with WisDOT and consultant staff, ask questions and provide comments.

Purpose of meeting

This meeting introduces a wide range of preliminary alternatives to address project needs. Public input is essential to help WisDOT determine the alternatives that should continue to be considered.

Information at this meeting

- Various displays show project purpose and corridor needs.
- Mainline Alternatives are shown on the aerial maps of the corridor. The potential “footprint” of each mainline alternative is color-coded to a detailed corresponding description.
- Intersection Alternatives are shown on maps located across from the relevant corridor section.

Project staff is on hand to answer questions and accept comments for both sections.

Share your comments

We appreciate your verbal or written comments. For written comments, please complete the form provided and leave it with us, mail it to us in one of the postage-paid envelopes provided, or email your comments to Vida.Shaffer@dot.wi.gov.

Website

www.wisconsin.gov/Pages/projects/by-region/se/100wau/default.aspx



WIS 100 Study Corridor Map

Contact information

Vida Shaffer, P.E.
WisDOT Project Manager
 141 NW Barstow Street
 Waukesha, WI 53187
 Phone: (262) 548-6766
 Email: Vida.Shaffer@dot.wi.gov

Why is WisDOT conducting the WIS 100 corridor study?

WIS 100: an important transportation corridor

- WIS 100 is part of the National Highway System, is a state highway and a principal arterial.
- WIS 100 serves as a state long truck route.
- 75,000 jobs and 2,600 businesses are within a 1-mile radius of the corridor.
- Over 90% of those workers commute from outside the area.
- Of the 37,000 employed people who live within a 1-mile radius, over 85% work outside the area.



76,000 people

Approximately 4% of people who live within the 7-county region live within one mile of the State Highway 100 project.



75,000 jobs

Approximately 8% of jobs within the 7-county region are located within one mile of the State Highway 100 project.



2,600 businesses

Over 6% of businesses within the 7-county region are located within one mile of the State Highway 100 project.

Purpose of project

Provide a safe and efficient transportation system in the WIS 100 corridor that sustains economic viability and meets long term mobility and access needs.

Needs of the corridor

Replace aging pavement

- The underlying pavement is 40 to 50 years old and has outlived its useful life. Further maintenance and resurfacing efforts are not cost-effective.

Address roadway deficiencies

- Six of the ten bridges within the north and south sections are classified as either not meeting current design standards (too narrow) or may not be able to carry heavy loads and replacement should be considered.

Improve safety, traffic operations, and multimodal accommodations

- Crash rates are a problem with rates higher than the statewide average for similar highways along 75-80% of the corridor. Crashes involving injuries are also above the statewide average for most of the corridor.
- Projected traffic volumes range from 35,000-41,800 vehicles per day (vpd) in the south section and from 12,800-47,000 vpd in the north section (volumes drop north of Mayfair Mall). Commercial freight (truck traffic) makes up about 14 percent of the total traffic. More detailed information on existing and forecasted traffic volumes is on page 11.
- Traffic modeling of future forecasted traffic volumes (for the year 2045 in the south section and 2050 in the north section) indicates several major intersections will have increasing delays and backups during the morning and evening commuting times.
- Multimodal accommodations that provide for all modes of transportation (cars, trucks, buses, bicycles, and pedestrians) along WIS 100 are lacking. People need to access many destinations along WIS 100 to reach jobs, schools, parks, hospitals, churches, and businesses. Modern standards strive to incorporate transportation choices and provide for motor vehicles, bikes and pedestrians.

Corridor study schedule

Fall 2016	PIM #3 (refine alternatives)
Early 2017	PIM #4 (refine alternatives)
Summer 2017	Public Hearing
2018	Study completed

Wide range of alternatives being developed to address WIS 100 needs

■ No Build Alternative (Maintenance)

- Future improvements would consist only of routine maintenance to keep the driving surface in adequate condition. Safety concerns would be addressed at spot locations.
- The No Build Alternative serves as a baseline for comparison to the build alternatives.
- Maintenance projects to repair the surface would need to occur every 8-10 years due to the poor condition of the underlying concrete pavement.

Build Alternatives

■ Reconstruct in Kind Alternative (Minimal operational improvements).

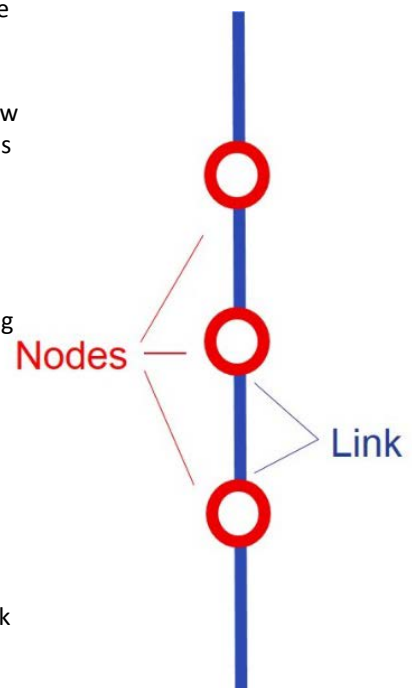
- Roadway would be reconstructed to the same “footprint” that exists today.
- Would include minimal operational improvements, where possible (e.g., extend turn lanes, evaluate closure of median openings to reduce conflicts).
- This alternative would require a major, disruptive construction project, possibly two seasons long. In the future, minimum acceptable Level of Service (LOS) D operational goals will not be met at key intersections.
- Existing congestion and delays would remain and would increase as traffic volumes increase in the future.

■ Reconstruct with operational improvements

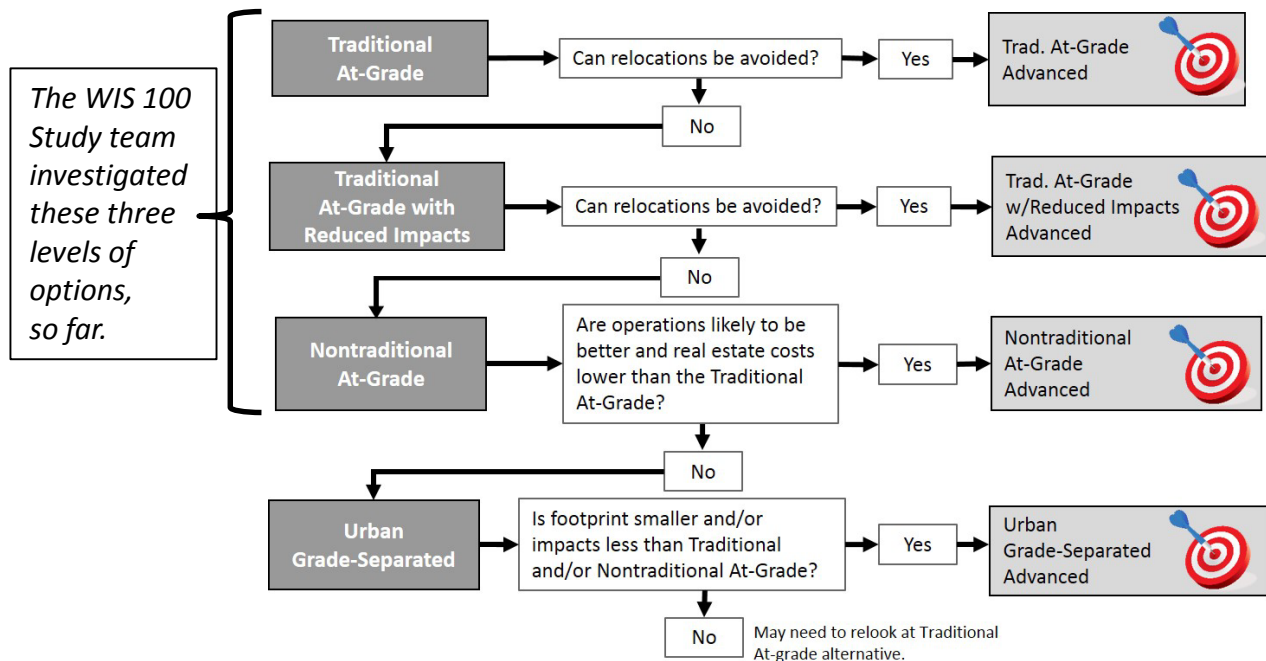
- Intersection alternatives – Alternatives meet the minimum acceptable level of service (LOS) operational goals for urban arterial roadways, which is LOS D. Specifics on the allowable congestion and delay for LOS D are provided on the exhibits.
- Mainline alternatives – These alternatives consider multiple objectives for the roadway cross section between the key intersections, see below.

Reconstruct with operational improvements is based on “nodes” and “links”

- A simple way to think about a principal urban arterial like WIS 100 is shown in the graphic at right, where the highway is similar to a series of nodes and links. The “nodes” are the major intersections and a “link” is a connecting roadway segment between nodes.
- The nodes are the most critical because the intersection operations dictate how well the entire corridor operates. Meeting the required intersection operations dictates the number and function of lanes.
- Each major intersection on WIS 100 was analyzed separately (in most cases) when developing alternatives.
- Depending on the size of the “footprint” for intersection alternatives and mainline alternatives, there could be impacts to properties and resources along WIS 100 and the side streets near the corridor.
- The “footprint” size is affected by multiple objectives and decisions about:
 - Multimodal requirements, desires and constraints
 - How are bikes, pedestrians and transit accommodated?
 - Truck-turning
 - Use of desirable or minimum design standards
 - Affects the width of the median and travel lanes.
 - Maintenance requirements
 - Reducing or eliminating the grass terrace between curb and sidewalk to reduce the “footprint” would impact maintenance, snow storage, space for signs, etc.



What is the intersection alternative development process?



Intersection alternatives defined

Intersection alternatives investigated to date are briefly defined below. See exhibit boards for maps of alternatives.

Traditional At-Grade Alternatives

(Developed for all major intersections).

Intersection alternatives may require additional turn and/or travel lanes to meet the LOS D requirement.

Traditional At-Grade with Reduced Impacts Alternatives

(Developed for all major intersections).

If impacts with the Traditional At-Grade Alternative are substantial, a “Reduced Impacts” alternative was developed to reduce parking or relocation impacts. Typically, the widths of median and terrace are reduced where necessary to avoid impacts.

South Section: The Traditional At-Grade with Reduced Impacts alternatives eliminate relocations at 7 of the 10 intersections: Layton, Coldspring, Beloit, Oklahoma, Lincoln, Lapham St., and Theodore Trecker Way. There are 3 intersections that still have relocations (National Avenue, Cleveland Avenue, and Greenfield Avenue) and require further alternative development to see if impacts can be reduced.

North Section: The Traditional At-Grade with Reduced Impacts alternatives eliminate relocations at 5 of the 8 intersections: Walnut, Mayfair Driveways, Center Street, Hampton Avenue and Silver Spring Drive. There are 3 intersections that still have relocations (North Avenue, Burleigh Street and Capitol Drive) and require further alternative development to see if impacts can be reduced.

Intersection alternatives defined (continued)

Intersection alternatives investigated to date are briefly defined below. See exhibit boards for maps of alternatives.

Nontraditional At-Grade Alternatives

Nontraditional At-Grade intersections differ from “traditional” intersection improvements because they relocate left turns away from the main intersection. This reduces the footprint at the center of the intersection.

Three kinds of Nontraditional alternatives are being investigated. “Restricted Left-Turns” or “Restricted Left-Turns with U-turns Added” are options used at the closely-spaced Cleveland and National Avenue intersections that form a triangle with WIS 100. The other kind of Nontraditional alternative being considered is the “Quadrant Roadway.” Quadrant Roadway alternatives construct a new roadway in one of the four quadrants of the main intersection where left turn movements can be serviced. Quadrant roadway alternatives meet the LOS D operational goal. Impacts differ depending on where the quadrant roadway is considered.

Locations of Nontraditional At-Grade Intersection Alternatives

South Section

Cleveland Avenue and National Avenue:
(Restricted left-turns; U-turns added)
Greenfield Avenue (3 Quadrant options)

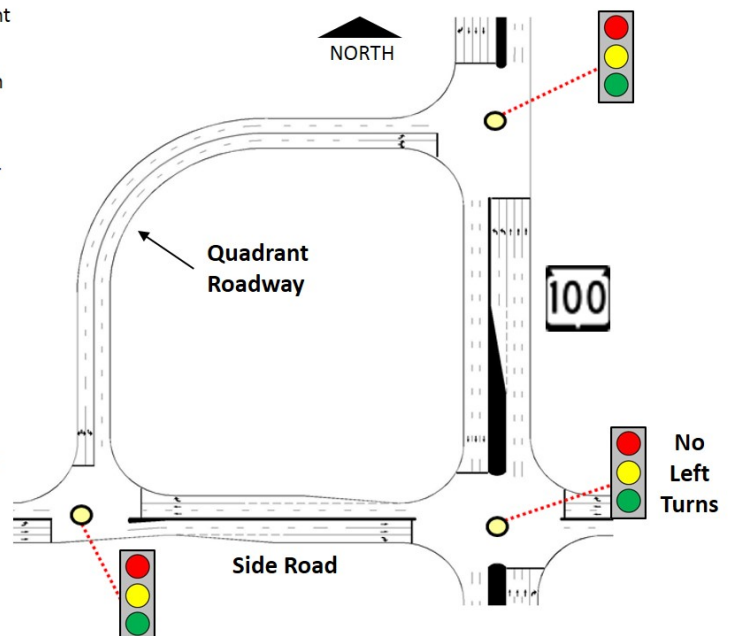
North Section

North Avenue (1 Quadrant option)
Burleigh Street (2 Quadrant options)
Capitol Drive (1 Quadrant option)

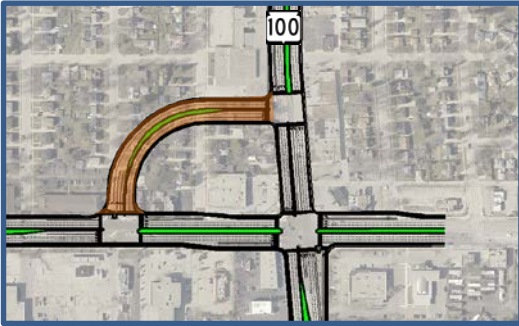
See pages 7 and 8 for details.

Features of a Nontraditional “Quadrant Roadway” intersection

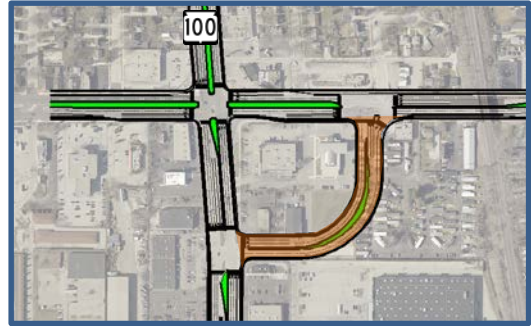
- No left-turns allowed at the main intersection.
- Left-turning vehicles use the newly constructed quadrant road.
- Removing left-turns allows more green-time for through vehicles, pedestrians and bicycles at the main intersection.
- Quadrant intersections result in fewer lanes and shorter crossing distances at the main intersection.
- Typically, commercial impacts at the main intersection are reduced (less widening required). Where the quadrant roadway is located off of WIS 100, residential and/or business impacts increase.
- One quadrant roadway is needed per intersection.
- A new signalized intersection is created at each end of the quadrant roadway (two total).
- Each new quadrant intersection is located 400-600 feet from main intersection.
- In this example, the quadrant roadway is in the northwest quadrant. The actual location would be determined based on evaluating impacts and costs.
- Access to the quadrant roadway from adjacent properties is allowed, typically as right turns only.



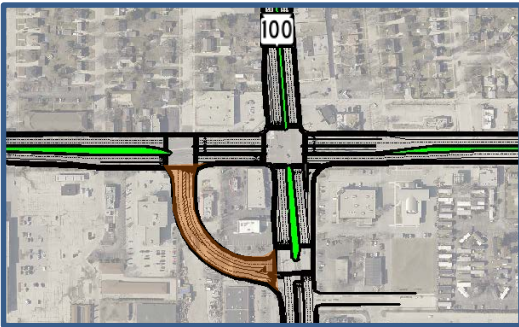
Quadrant Roadway Intersection alternatives being considered



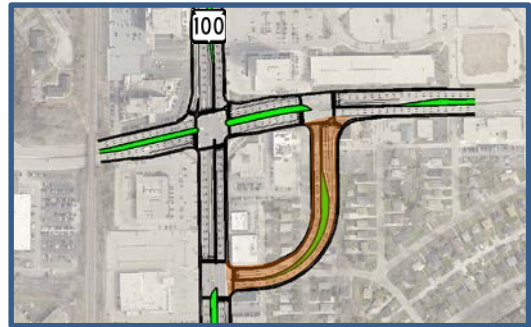
Greenfield Ave NW Quadrant



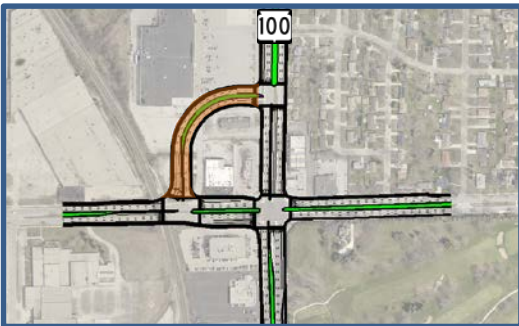
Greenfield Ave SE Quadrant



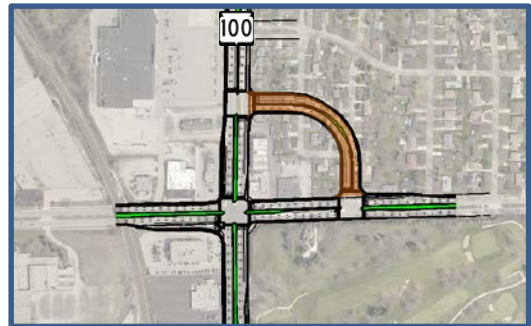
Greenfield Ave SW Quadrant



North Ave SE Quadrant



Burleigh St NW Quadrant



Burleigh St NE Quadrant



Capitol Dr NW Quadrant

Nontraditional At-Grade Intersection Alternatives (continued)

WIS 100/National Avenue and WIS 100/Cleveland Avenue. These two intersections are located 500 feet apart. Because of this close spacing, and the close spacing of the adjacent National/Cleveland intersection, all three need to be evaluated as a single location for any nontraditional alternative.

- **NC-4 (Restricted Left-Turns) Alternative:** Uses the principles of a quadrant roadway by moving pairs of left turns away from the main intersections.
- **NC-5 (U-turns Midblock) Alternative:** Uses the concept of median U-turns to move left turns away from the main intersections.

NC-4 (Restricted Left-Turns)



NC-5 (U-turns Midblock)



Comparison of Preliminary Real Estate Costs for Nontraditional At-Grade Intersection Alternatives

Intersection	Traditional (Million \$)	Traditional - Reduced Impacts (Million \$)	Nontraditional	
			(Million \$)	Type/Location
National/ Cleveland	\$9.2	\$2.0	\$0.7 - \$1.5	NC-4 and NC-5
Greenfield Ave (and Lapham)	\$13.8	\$9.0	\$1.1 - \$3.7	NW, SE, and SW Quadrants
North Ave	\$13.5	\$4.5	\$4.5	SE Quadrant
Burleigh St	\$6.2	\$5.6	\$1.3 - \$5.2	NE and NW Quadrants
Capitol Dr	\$5.7	\$5.5	\$0.8	NW Quadrant

Mainline alternatives

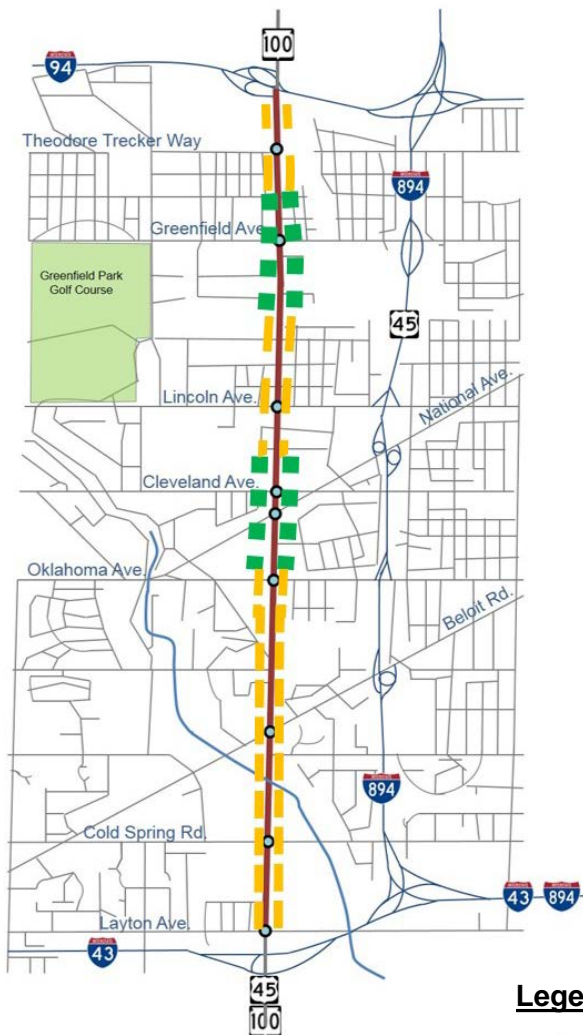
The mainline typical sections considered are located between the major intersection areas. Multiple design options for a “typical” roadway cross section were evaluated. Each considered:

- Provision of multimodal accommodations
 - Transit on wide shoulder vs in travel lane
 - Bike and pedestrian accommodations
- Desirable vs minimum standards for widths of lanes, median, terrace and other roadway cross section elements
- Provision for on-street parking, where it exists today (north of Hampton Avenue)

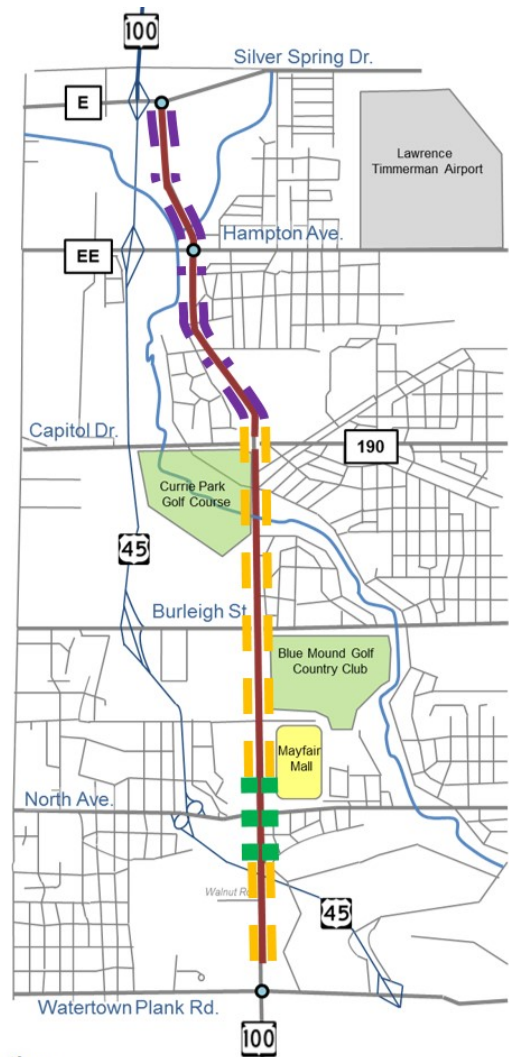
There are seven 6-lane alternatives, seven 8-lane alternatives, and four to five 4-lane alternatives (depends on where parking exists today). See meeting displays for details.

The schematic maps below show the locations where 8-lane, 6-lane and 4-lane mainline typical sections are being considered.

South Section



North Section



Legend

- — — — — 4-Lane Section
- - - - - 6-Lane Section
- • • • • 8-Lane Section

Mainline typical section alternatives (continued)

Each of the typical section alternatives has unique characteristics. They can also be compared by how much additional right of way is required, see the bottom row in each table. What characteristics do you feel are important? Let us know your thoughts on the comment form.

Much of WIS 100 requires the same 6 lanes that exists today. 8-lane alternatives are only being considered in the Cleveland/National, Greenfield, and North Avenue intersection areas. North of Capitol Drive, the existing WIS 100 has 4 travel lanes and all the alternatives maintain 4 lanes. See Page 11 for the 4-lane alternatives comparison table.

● = Yes; ○ = No

** (requires FHWA approval of alternate bike facility)

6-lane Alternatives							
Description	6-1	6-2	6-3	6-4	6-5	6-6	6-7
Has desirable widths	●	○	●	○	○	○	○
Has minimum widths	○	●	○	●	●	●	●
Wide median allows left-outs	●	○	●	○	●	●	●
Narrow median prohibits left-outs	○	●	○	●	○	○	○
Transit in travel lanes	○	○	●	●	●	●	●
Transit on separate shoulder	●	●	○	○	○	○	○
Bikes accommodated on-street	●	●	●	●	●	●	○
No shoulder, and bikes not accommodated **	○	○	○	○	○	○	●
5-ft Grass terrace	●	●	●	●	○	●	●
4-ft Grass terrace	○	○	○	○	●	○	○
Total additional R/W required (feet)	42	19	18	0	0	0	0

8-lane Alternatives							
Description	8-1	8-2	8-3	8-4	8-5	8-6	8-7
Has desirable widths	●	○	●	○	○	○	○
Has minimum widths	○	●	○	●	●	●	●
Wide median allows left-outs	●	○	●	○	●	●	●
Narrow median prohibits left-outs	○	●	○	●	○	○	○
Transit in travel lanes	●	●	●	●	●	●	●
Transit has separate shoulder	○	○	○	○	○	○	○
Bikes accommodated on-street	●	●	●	●	○	●	●
No shoulder, and bikes not accommodated **	○	○	○	○	●	○	○
Grass terrace	●	●	●	○	●	●	●
No terrace, sidewalk abuts curb	○	○	○	●	○	○	○
Outside lane integral with curb and gutter	○	○	○	○	○	○	●
Total additional R/W required (feet)	42	18	18	18	18	24	22

Mainline typical section alternatives (continued)

A 4-lane cross section on WIS 100 is only being considered where a 4-lane roadway exists today. North of Capitol Drive, existing WIS 100 has 4 travel lanes and all the alternatives maintain 4 lanes. Existing parking in specific areas will be maintained. Four-lane alternatives that include maintaining existing parking are shown as 4P.

● = Yes; ○ = No

** (requires FHWA approval of alternative bike facility)

4-lane Alternatives									
Description	No Parking				Where Parking Exists Today				
	4-1	4-2	4-3	4-4	4P-1	4P-2	4P-3	4P-4	4P-5
Has desirable widths	●	○	●	○	●	○	○	○	○
Has minimum widths	○	●	○	●	○	●	●	●	●
Wide median allows left-outs	●	○	●	●	●	○	●	●	●
Narrow median prohibits left-outs	○	●	○	○	○	●	○	○	○
Transit in travel lanes	○	○	●	○	○	○	●	●	○
Transit on separate shoulder	●	●	○	●	●	●	○	○	●
Bikes accommodated on-street	●	●	●	○	●	●	●	●	○
Bikes not accommodated on-street**	○	○	○	●	○	○	○	○	●
Grass terrace	●	●	●	●	●	●	●	●	●
Includes on-street parking	○	○	○	○	●	●	●	●	●
Total additional R/W required (feet)	18	0	0	0	34	13	10	0	8

Existing and forecasted traffic volumes on WIS 100

North Section	Existing AADT (vpd)		Design Year AADT (vpd)	Forecasted Annual Growth Rate
	2010	2011	2050	
Hampton Ave to Silver Spring Dr	---	10,600	12,800	0.5%
Capitol Dr to Hampton Ave	14,300	---	17,400	0.5%
Burleigh St to Capitol Dr	20,600	---	26,700	0.7%
North Ave to Burleigh St	31,500	---	44,400	1.0%
Walnut Rd to North Ave	---	36,400 (2013)	47,200	0.8%

South Section	Existing AADT (vpd)		Design Year AADT (vpd)	Forecasted Annual Growth Rate
	2008	2011	2045	
Greenfield Ave to I-94	---	30,300	35,500	0.5%
Lincoln Ave to Greenfield Ave	---	37,700	44,100	0.5%
Cleveland Ave to Lincoln Ave	---	33,700	41,800	0.7%
National Ave to Cleveland Ave	---	35,000	40,900	0.5%
Oklahoma Ave to National Ave	---	35,300	41,300	0.5%
Beloit Rd to Oklahoma Ave	33,100	---	39,200	0.5%
Coldspring Rd to Beloit Rd	30,900	---	38,100	0.6%
Layton Ave to Coldspring Rd	27,800	---	34,500	0.7%

AADT = Average Annual Daily Traffic
vpd = vehicles per day

Commercial freight (truck) makes up about 14 percent of the total traffic.

Information on display at this meeting

The following exhibits are displayed around the room.

General exhibit boards

- Project Purpose and Need summary
- Public input received so far
- Need - Replace Aging Pavement (on reverse side: Map w/year of last pavement reconstruction)
- Need - Stormwater Deficiencies (South Section only)
- Need - Address Bridge Needs
- Need - Improve Safety - Crashes
- Traffic Volumes - existing and forecasted
- Need - Improve Traffic Operations - AM/PM Peak commuting hours
- Level of Service (LOS) explanation
- Need - Improve Multimodal Accommodations
- Mainline map showing 4-lane, 6-lane or 8-lane areas
- Existing typical sections
- Project Schedule

Alternatives

Displays show the range of alternatives developed to date and currently being considered:

- No Build
- Reconstruct in Kind
- Mainline Typical Section Alternatives
- Intersection Alternatives
 - Traditional LOS D
 - Traditional LOS D with Reduced Impacts
 - Nontraditional LOS D

We encourage you to fill out a Comment Form and turn it in. In addition, you may use the sticky notes available to communicate issues, needs or ideas directly on the maps.

Please note:

The May 24th meeting will display exhibits and aerial maps focused on the South Section. North Section-focused exhibits and aerials will be available for viewing.

The May 25th meeting will display exhibits and aerial maps focused on the North Section. South Section-focused exhibits and aerials will be available for viewing.