

Project Purpose and Need

Layton Avenue to I-94 and Watertown Plank Road to Silver Spring Drive



Project Purpose:

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

Project Needs:

- *Replace aging pavement*
- *Address roadway deficiencies*
- *Improve safety*
- *Improve traffic operations*
- *Improve multimodal accommodations*



For more information, see the individual displays describing project.

Replace Aging Pavement

Layton Avenue to I-94 and Watertown Plank Road to Silver Spring Drive

- The majority of the corridor was last reconstructed in the late 1950s and 1960s.
- It was resurfaced or reconditioned in the 1980s through 2014.
- The one-mile section between I-94 and Watertown Plank Road was reconstructed in 2013.
- The average age of underlying concrete pavement is 40-45 years old.
- Joint failures and cracks demonstrate pavement has outlived its useful life.
- Continued overlays of the pavement are not cost effective.



WIS 100 and North Avenue

<https://www.google.com/maps>; October 2011 image from 6/5/2014



WIS 100 and Oklahoma Avenue

<https://www.google.com/maps>; July 2011 image from 6/5/2014

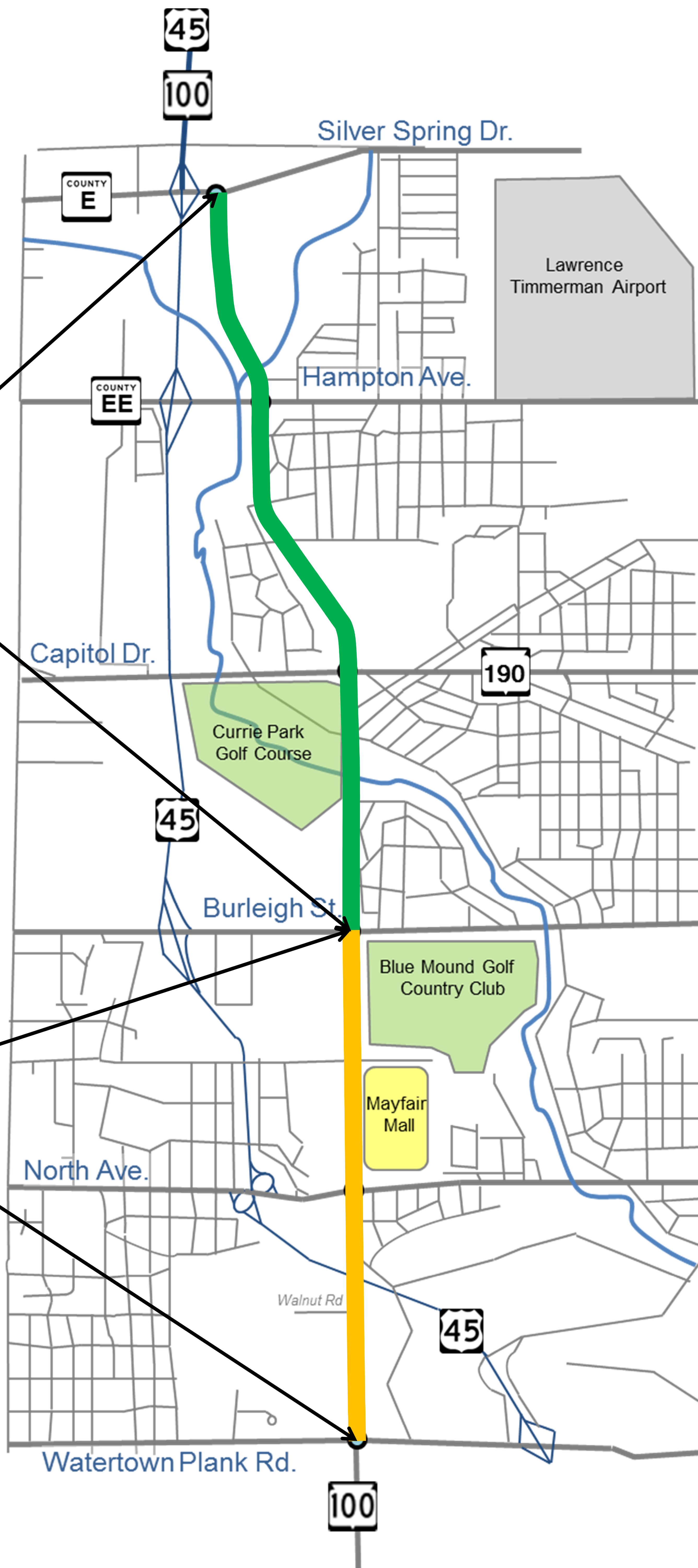
Replace Aging Pavement

North Section – Watertown Plank Road to Silver Spring Drive

**When was
WIS 100 last
reconstructed?**

1968

1957

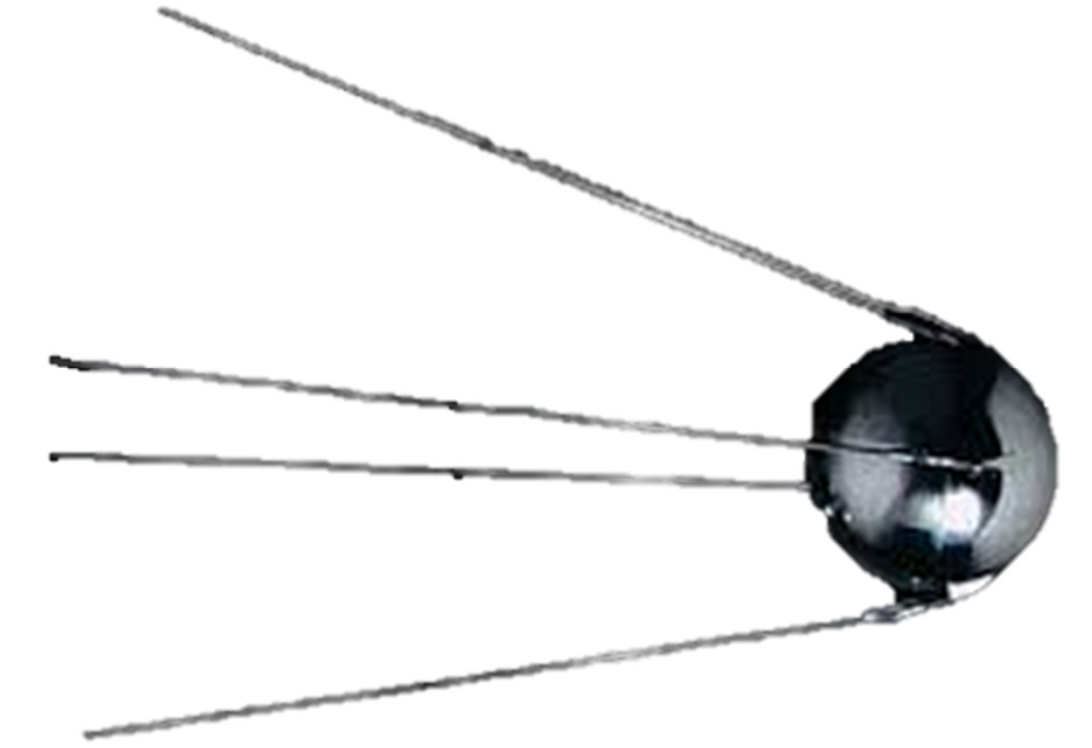


The last time WIS 100 was reconstructed...

Layton Avenue to I-94 and Watertown Plank Road to Silver Spring Drive



1957 **Russia launches Sputnik 1**, the first satellite to orbit earth. The Space Age begins.



1960 **Chevy Corvair**, Motor Trend “Car of the Year.”



1962 **Johnny Carson** becomes the host of *The Tonight Show*.



1968 **Vince Lombardi** resigns as head coach of the Green Bay Packers.



Address Bridge Needs

North Section – Watertown Plank Road to Silver Spring Drive

There are five bridges in the North Section. WisDOT uses two technical terms (“Functionally Obsolete” and “Structurally Deficient”) to describe bridges that should be reviewed for improvements. WisDOT typically inspects bridges twice a year, sometimes more depending on the condition. Functionally obsolete and structurally deficient bridges don’t necessarily mean the bridges are unsafe.

The bridge north of Watertown Plank Road is classified as “Functionally Obsolete.”



<https://www.bing.com/maps>, June 2014 image from 1/26/2015.

B-40-457, 14-span steel girder

Functionally Obsolete refers to current standards:

- Bridge is too narrow
- Doesn't meet minimum clearance
- Approach alignment is substandard
- Flooding may be a concern

The two bridges over the Little Menomonee River are classified as “Structurally Deficient.”



<https://www.google.com/maps>, Oct 2011 image from 6/6/2014.

WIS 100 Bridges over Little Menomonee River

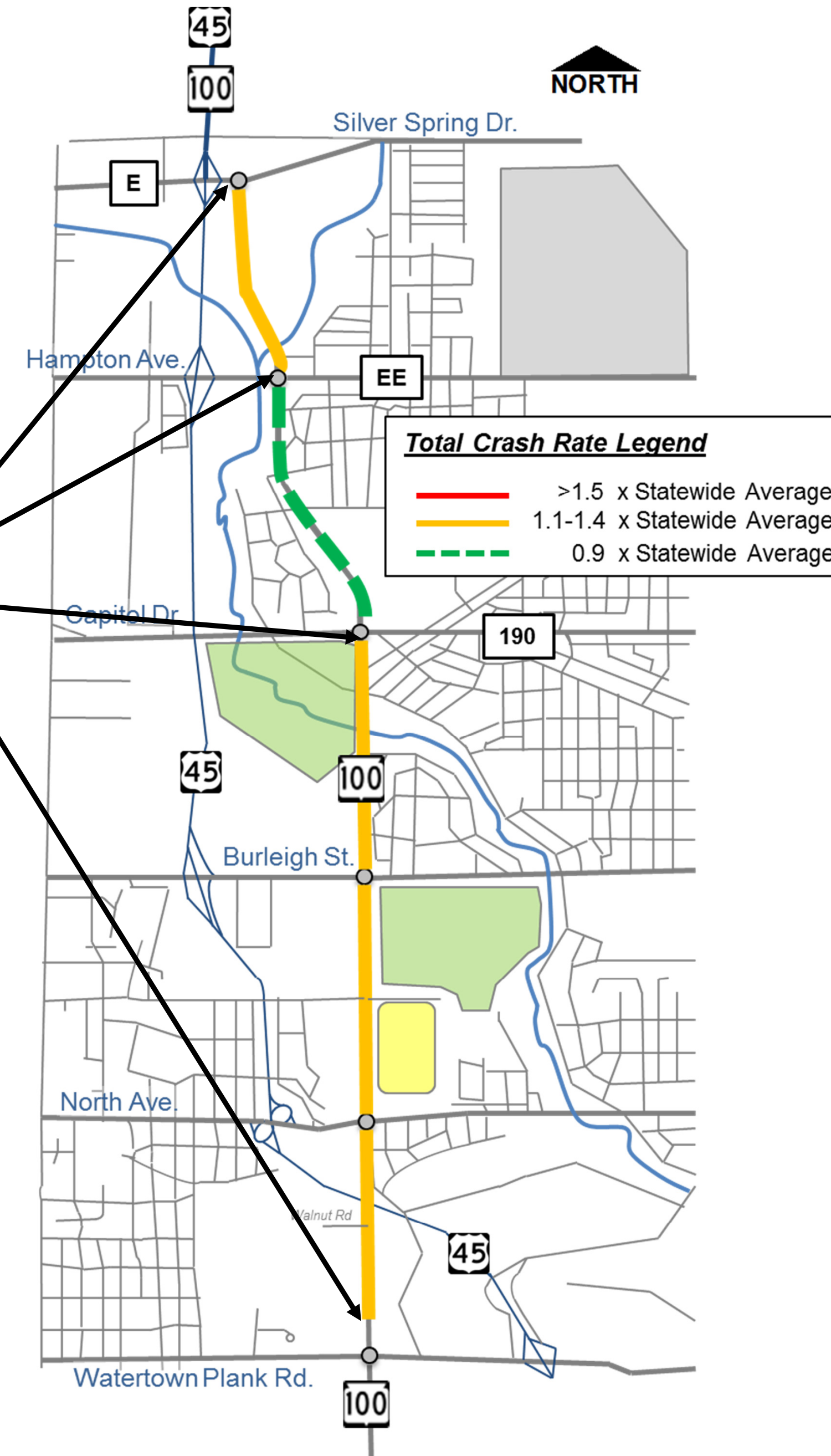
Structurally Deficient refers to bridges that may not be able to carry heavy loads.

Improve Safety – Crashes

North Section – Watertown Plank Road to Silver Spring Drive

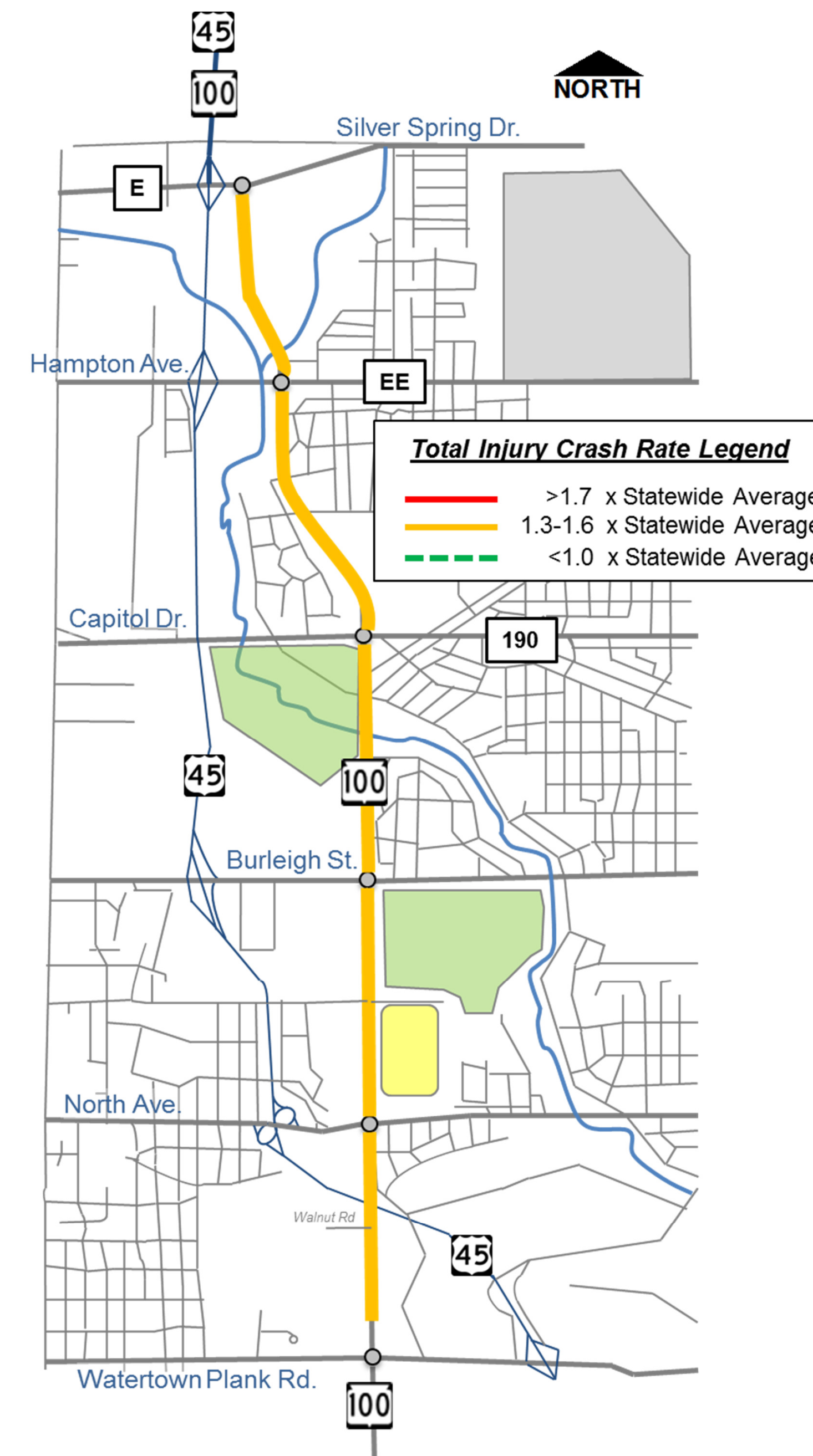
- 5 years of crash data (2008-2012) was analyzed by the study team.
- 617 crashes occurred, including 1 fatality.
- 75% of the 4.9-mile corridor exceeds the statewide average total crash rate for similar roads classified as “Large Urban Divided Highways.”
- Existing access points = 202 (160 driveways, 9 signalized/12 unsignalized intersections, 21 median openings).

Total Crash Rates



Portions that exceed statewide average total crash rate for similar roadways.

Injury Crash Rates



Entire North Section exceeds statewide average injury crash rate for similar roadways.

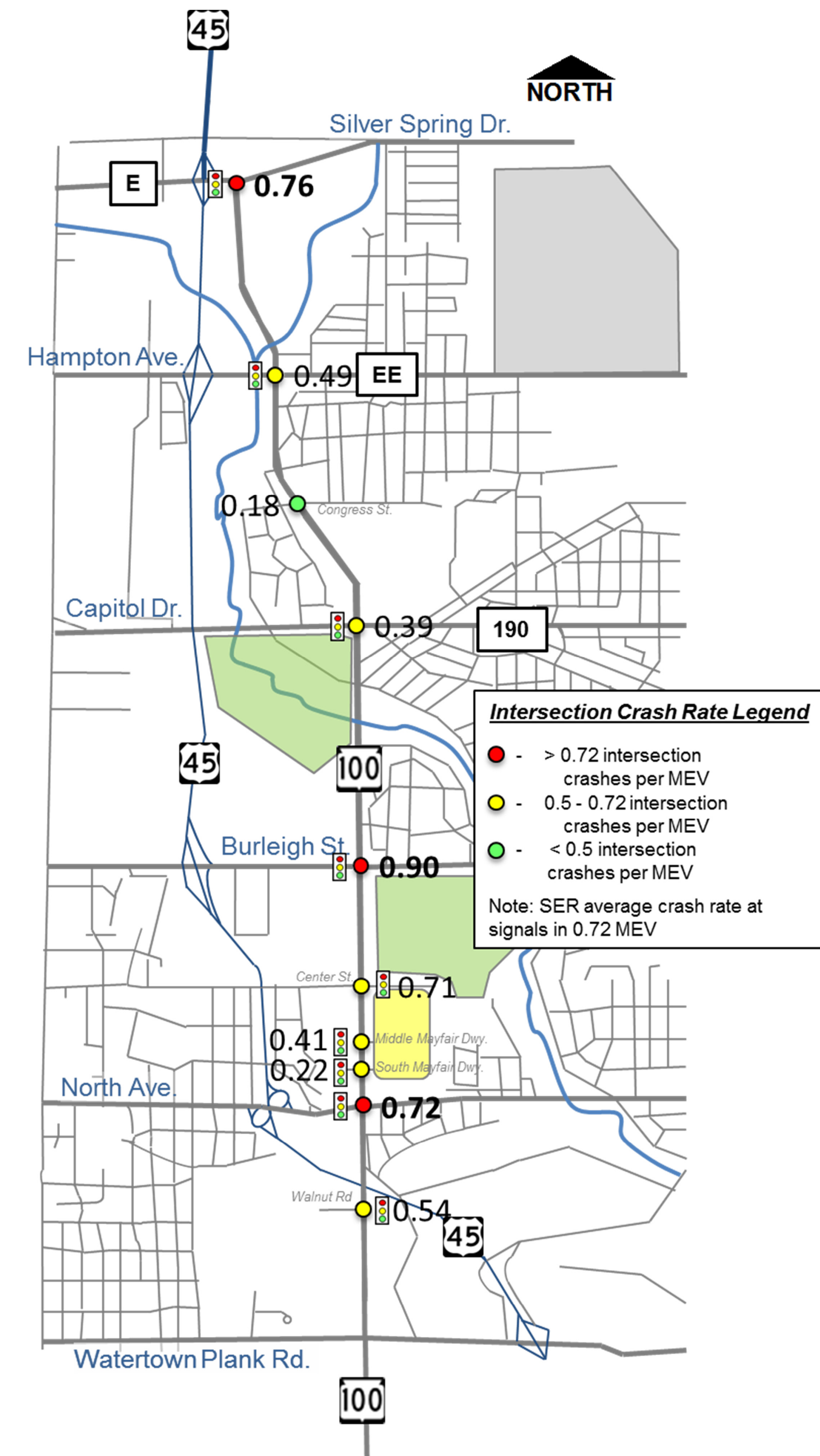
Improve Safety – Intersection Crashes

North Section – Watertown Plank Road to Silver Spring Drive

- Intersection crash rates are calculated as the number of crashes per million entering vehicles (MEV).
- WisDOT's Southeast Region average crash rate at a signalized intersection is 0.72 MEV.
 - 3 of the 9 signalized WIS 100 intersections meet or exceed 0.72 MEV.



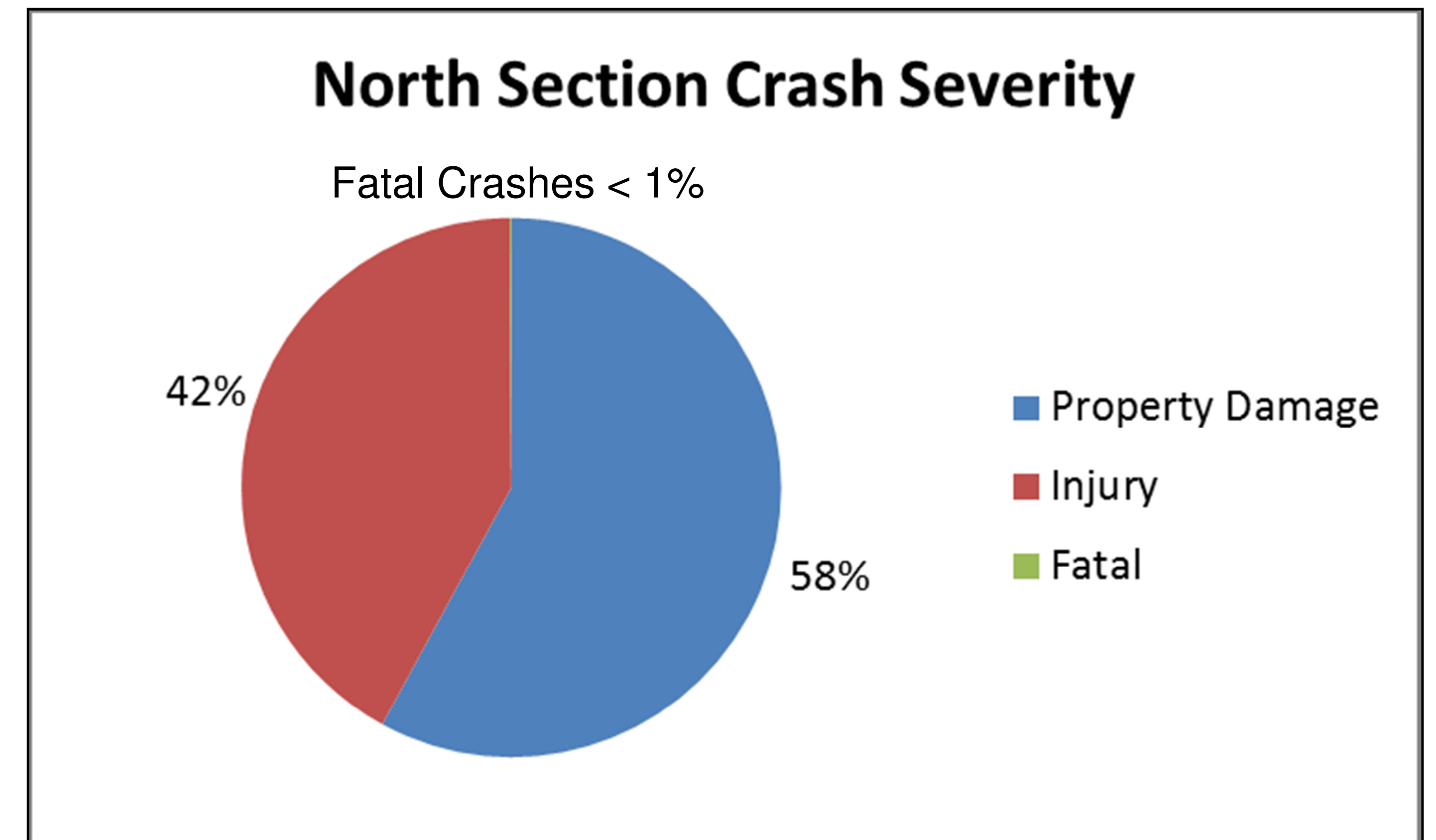
WIS 100 North Section Intersection Crash Rates



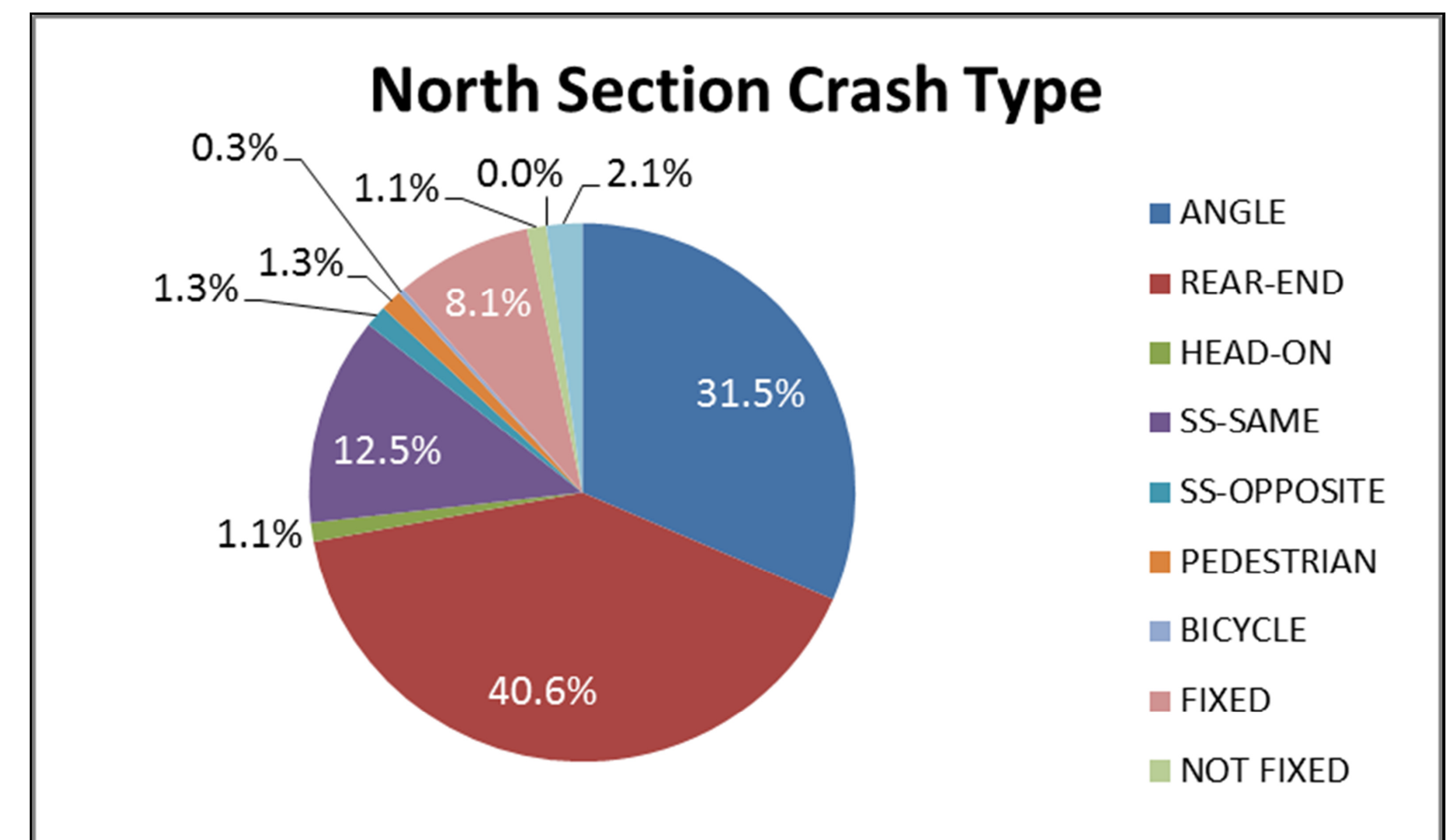
Improve Safety - Crashes

North Section – Watertown Plank Road to Silver Spring Drive

- 42% of crashes involved injuries
- On average, there was 1 injury crash per week from 2008-2012.
- 1 fatal crash



- 72% of the crashes were rear-end or angle crashes (red and dark blue on chart), indicating problems with vehicles making turns.
- 0.5% of the crashes involved bicycles
- 1.5% of the crashes involved pedestrians



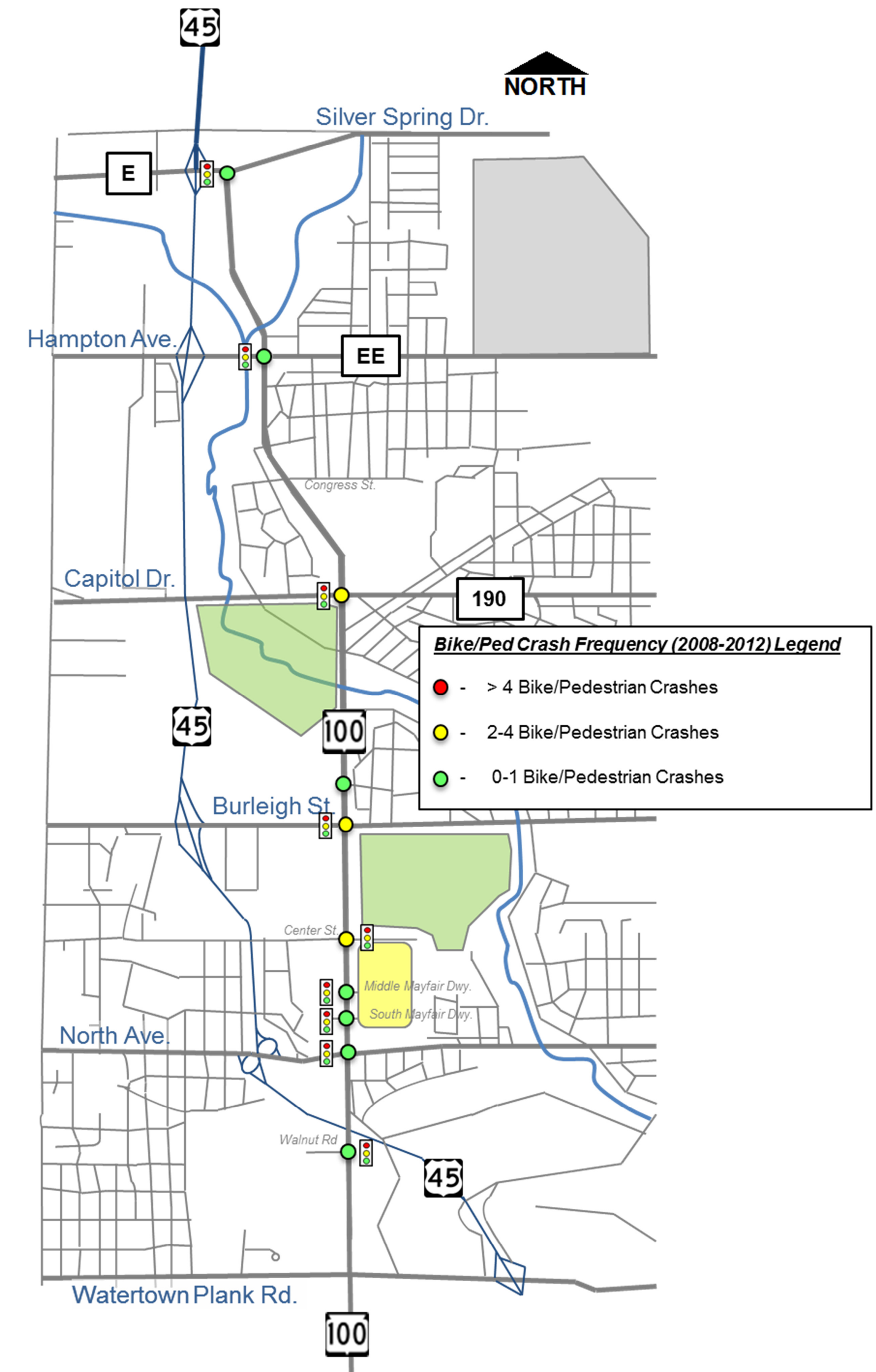
Improve Safety - Bicyclists & Pedestrians

North Section – Watertown Plank Road to Silver Spring Drive

During the crash study period (2008-2012):

- 2 crashes involving bicycles occurred. Both involved injuries with one crash having incapacitating injury.
- 8 crashes involving pedestrians occurred. All involved injuries with three crashes having incapacitating injuries.
- 3 of the crashes involving a bike or pedestrian occurred at the intersection of WIS 100 and Center Street.

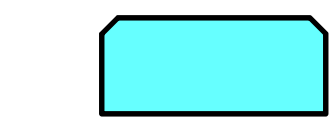

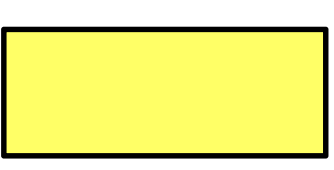
Intersection Bike/Pedestrian Crash Frequency



Improve Safety – Access Points

North Section – Watertown Plank Road and Silver Spring Drive



	Driveways
	Bus Stops
	Median

Item	North Corridor
Residential Driveways	68
Commercial Driveways	92
Total Driveways	160
Median Openings	21
Signalized Intersections	9
Unsignalized Intersections	12
Total Access Points	202

$202 \div 5.0 \text{ miles} = 40.4 \text{ access points/mile}$

Traffic Volumes

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%

Commercial freight (trucks) percentages on the highway reach approximately 14%.

The design year AADT traffic forecasts include an additional lane of traffic on I-894 in each direction.

AADT = Average Annual Daily Traffic
vpd = vehicles per day

Traffic Operations – Level of Service

Layton Avenue to I-94 and Watertown Plank Road to Silver Spring Drive



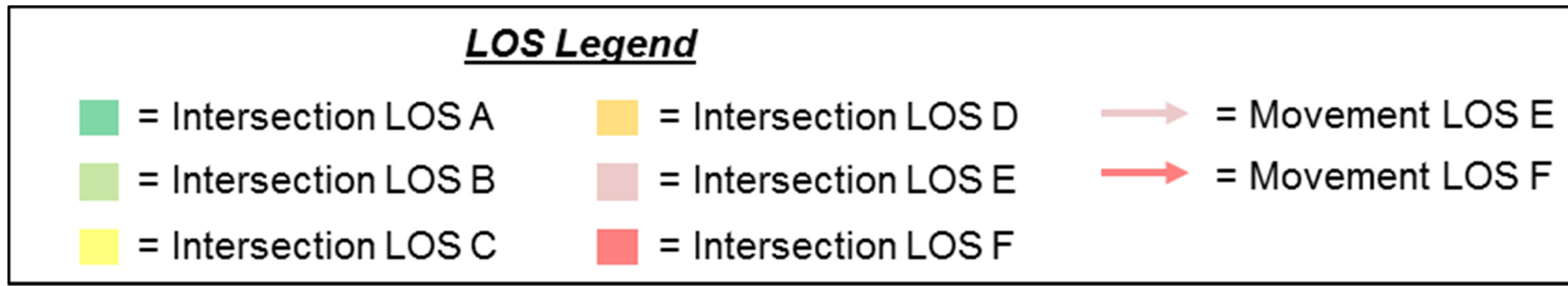
Description of Motor Vehicle Levels of Service

Level of Service	Signalized Delay (sec)	Unsignalized Delay (sec)	Typical Roadway Conditions
A	< 10	< 10	Primarily free-flow operations. Control delay at intersections is minimal.
B	10 to 20	10 to 15	Ability to maneuver in traffic is slightly restricted. Delay at intersections is not significant.
C	> 20 to 35	> 15 to 25	Stable operations with ability to maneuver in traffic being restricted. Delay at intersections may contribute to congestion.
D	> 35 to 55	> 25 to 35	Small increases in traffic volumes may cause substantial increases in delay. Congestion at intersections is apparent.
E	> 55 to 80	> 35 to 50	Significant delay and poor travel speeds can be expected. Intersections experience significant delay and queuing.
F	> 80	> 50	Delays are at unacceptable levels for most drivers. Roadway network capacity has been exceeded.

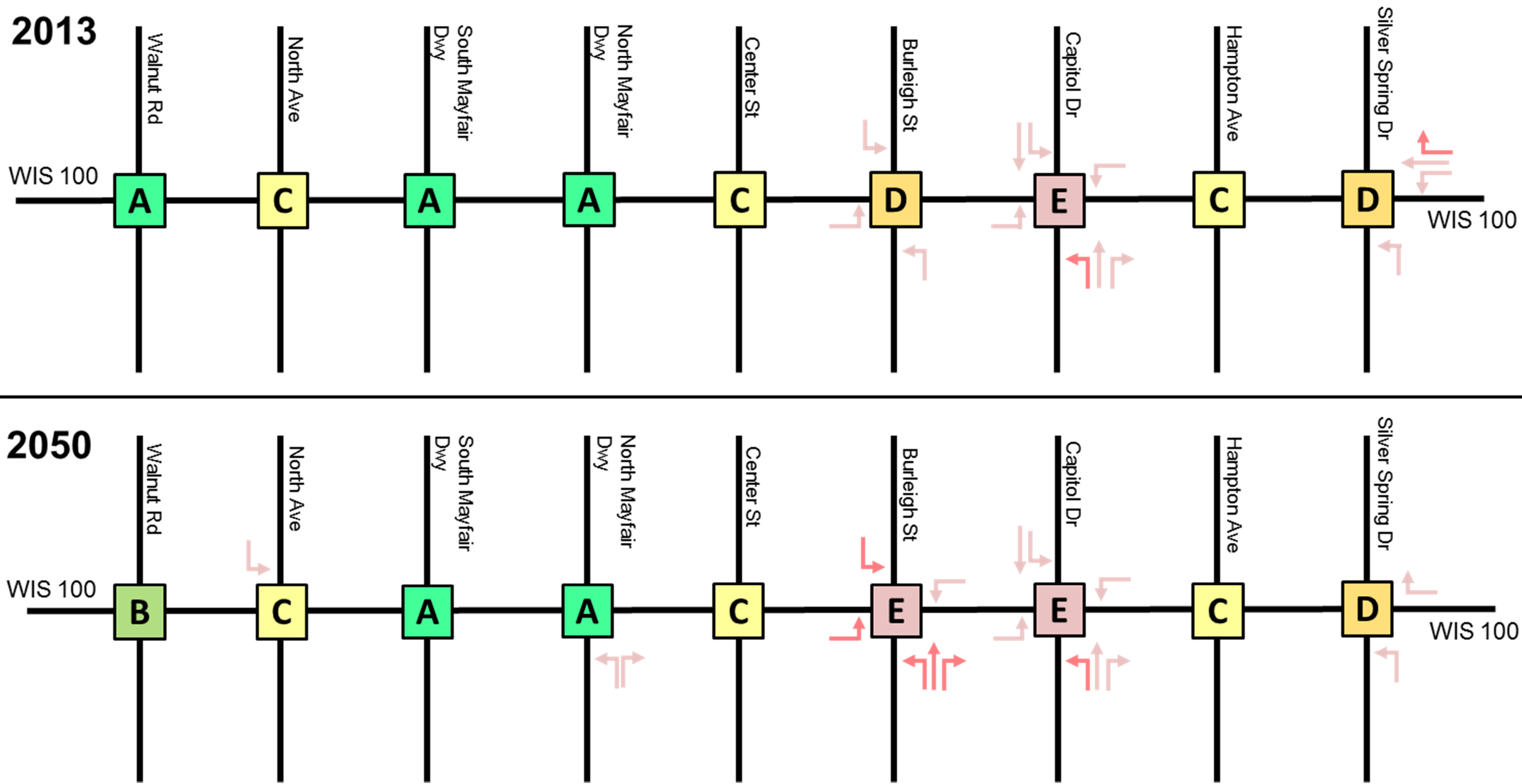
Improve Traffic Operations

North Section – Watertown Plank Road to Silver Spring Drive

WisDOT Goal: LOS D or better for intersection and all movements.

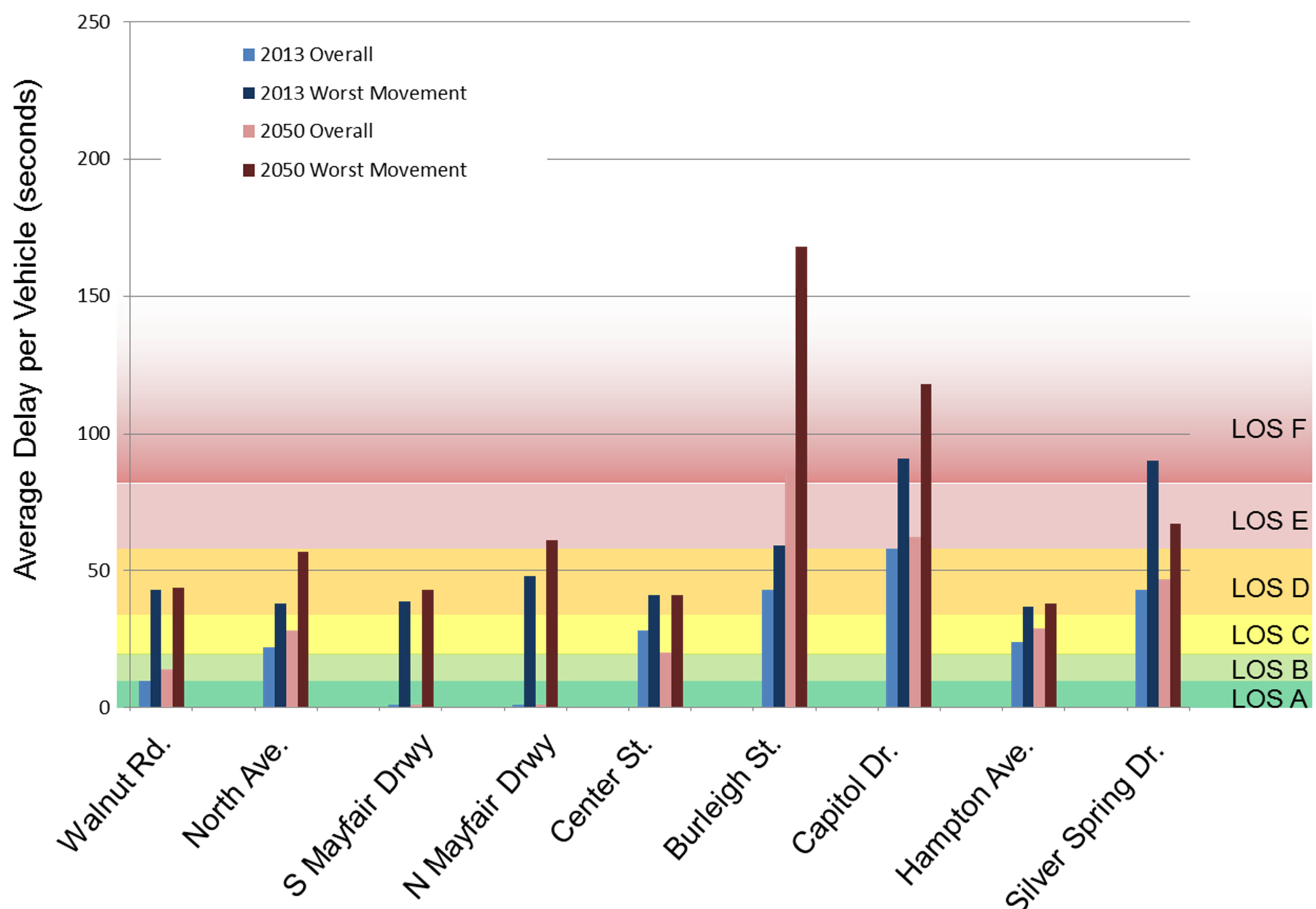


AM Peak Hour



15 existing vs. 20 future criteria below WisDOT goal

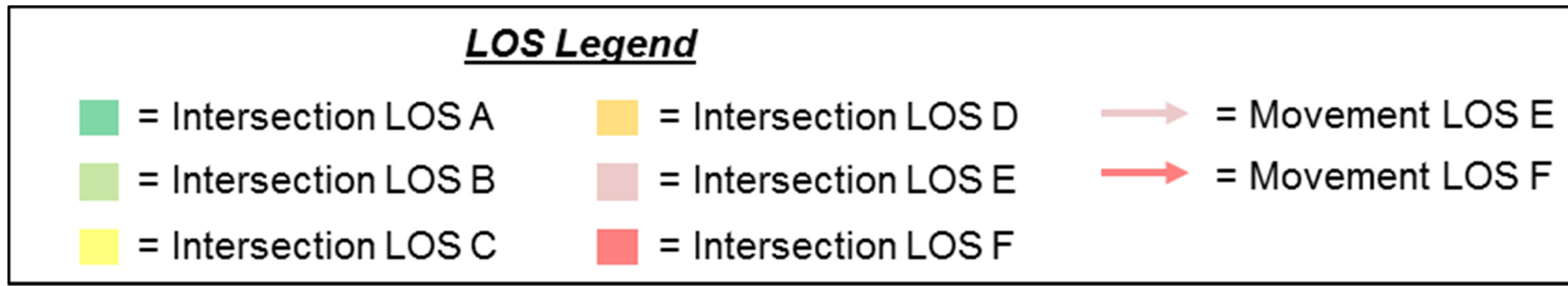
AM Peak Hour Operations in 2013 and 2050



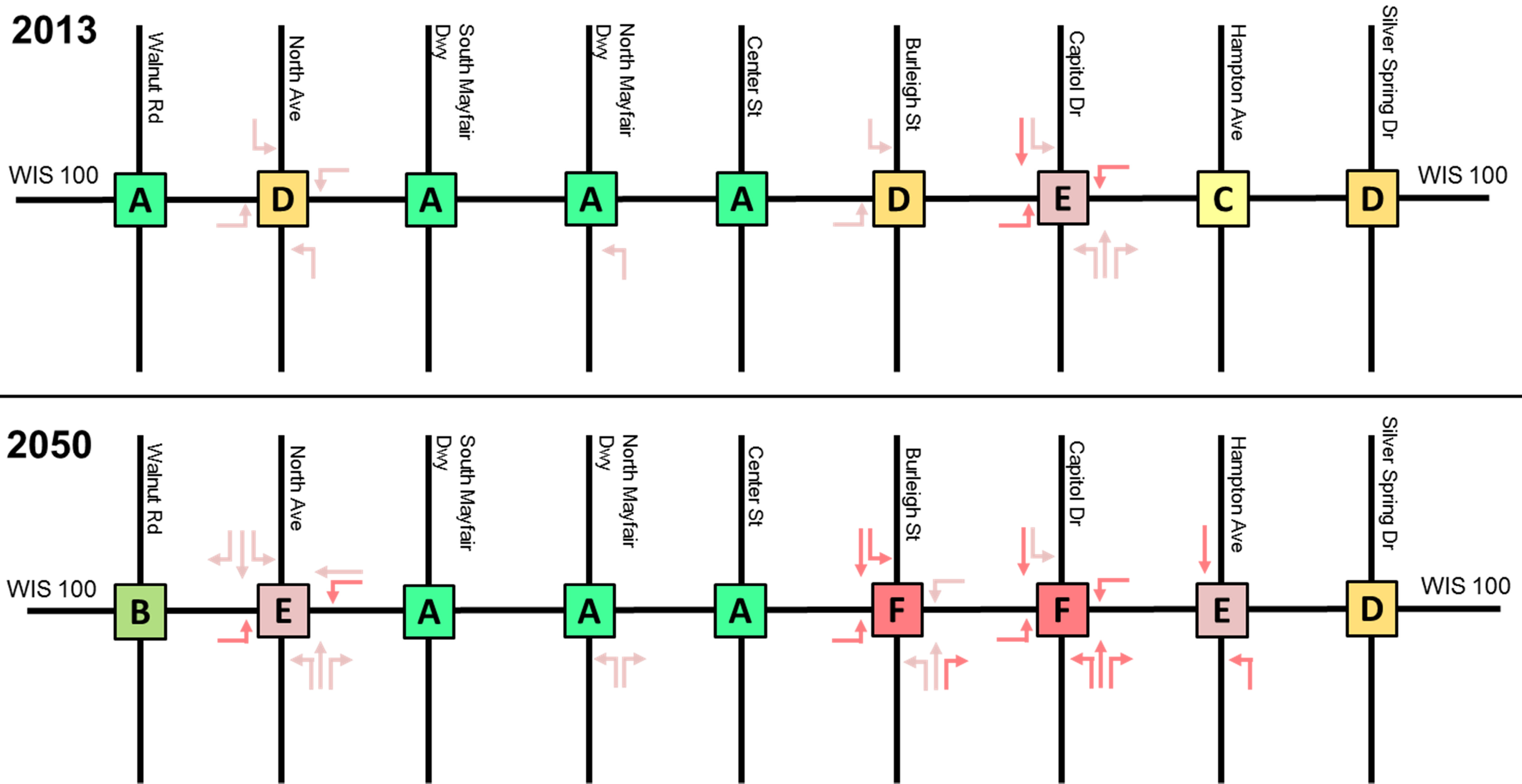
Improve Traffic Operations

North Section – Watertown Plank Road to Silver Spring Drive

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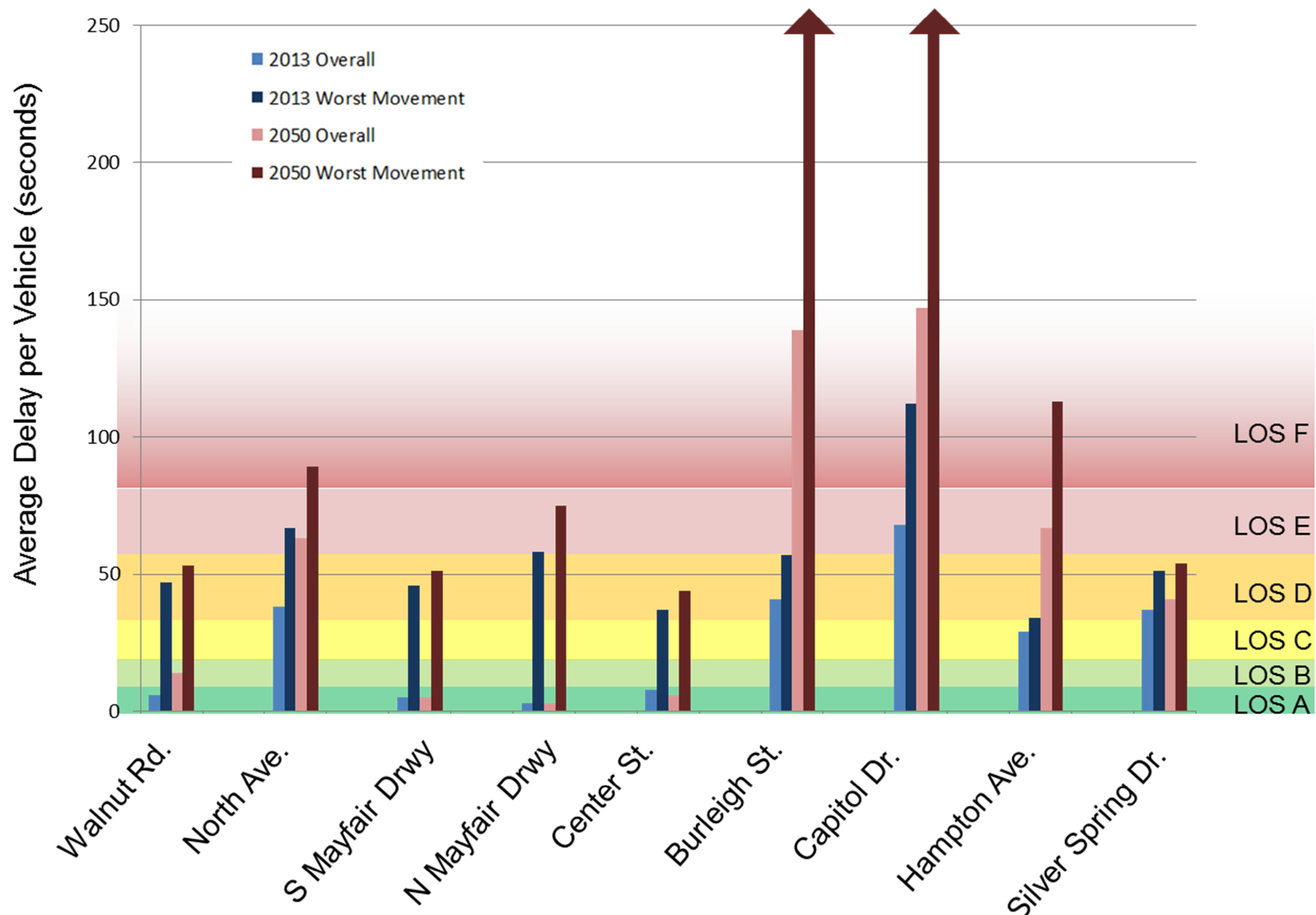


PM Peak Hour



15 existing vs. 31 future criteria below WisDOT goal

PM Peak Hour Operations in 2012 and 2050



Improve Multimodal Accommodations

North Section – Watertown Plank Road to Silver Spring Drive

What are Multimodal Accommodations?

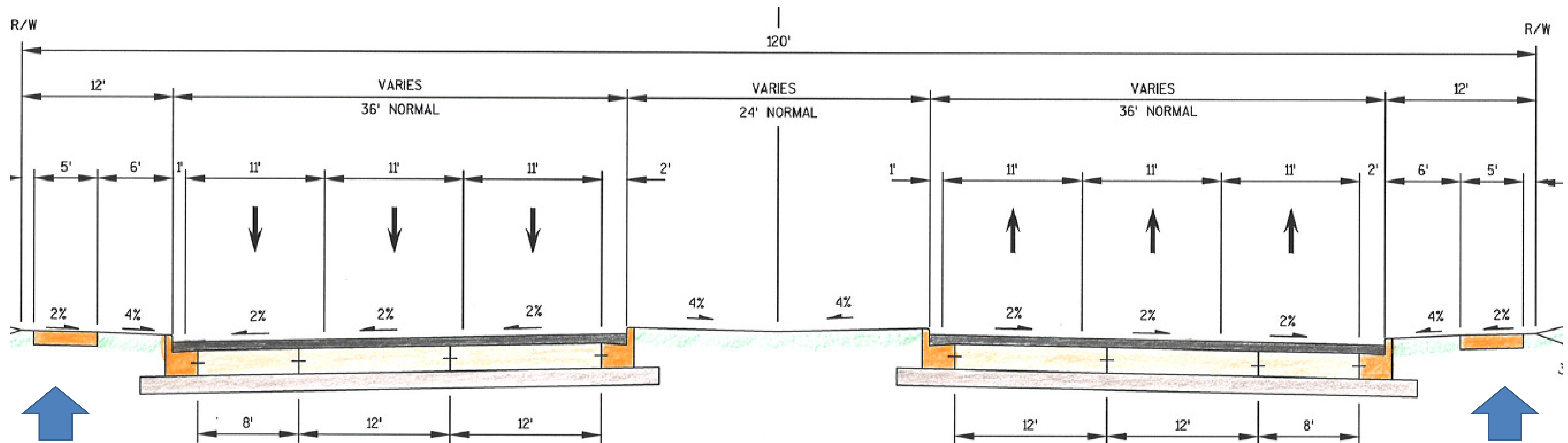
Multimodal accommodations are the inclusion of facilities for all modes of transportation (cars, buses, trucks, bicycles, and pedestrians) along a transportation corridor such as WIS 100.



In the North Section area, WIS 100 serves 16 schools, 9 parks, 5 churches, 1 hospital, and numerous employment centers. Citizens should have multiple transportation choices available to them to access these destinations.

Improve Multimodal Accommodations

North Section – Watertown Plank Road to Silver Spring Drive



Sidewalk is not continuous

**EXISTING TYPICAL SECTION
(WATERTOWN PLANK ROAD – SILVER SPRING DRIVE)**

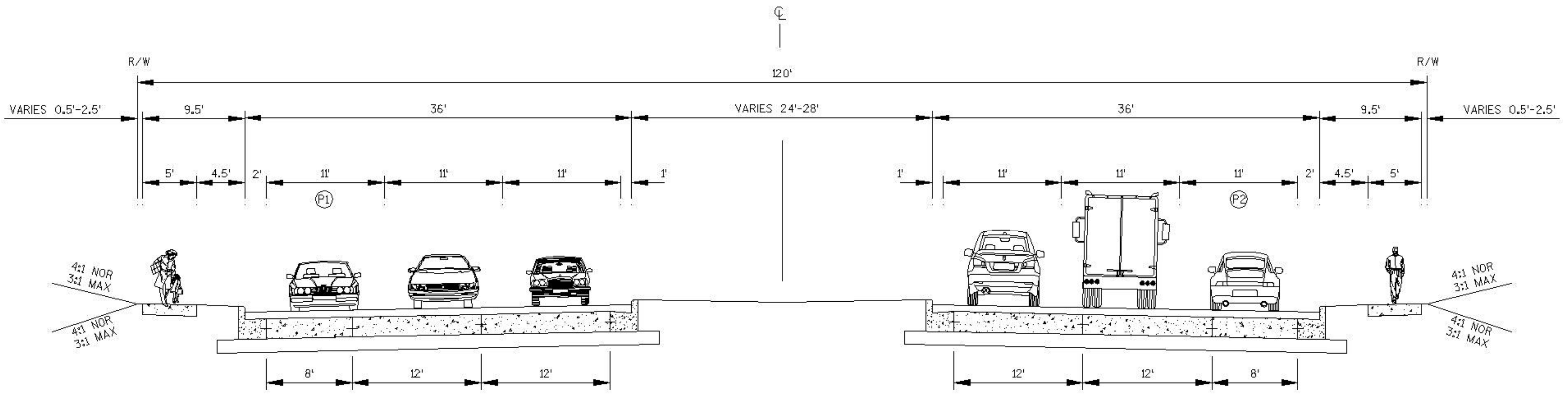
Sidewalk is not continuous

- WIS 100 has no on-street bicycle accommodations north of Watertown Plank Road.
- Sidewalk is not present along WIS 100 at the following locations:
 - East side – North Avenue to Burleigh Street (1 mile)
 - West side – Townsend Street to Capitol Drive (0.6 mile)
 - East side – Capitol Drive to Hampton Avenue (1 mile)
- Transit uses the outside driving lane; there are no bus pull-outs at bus stops.

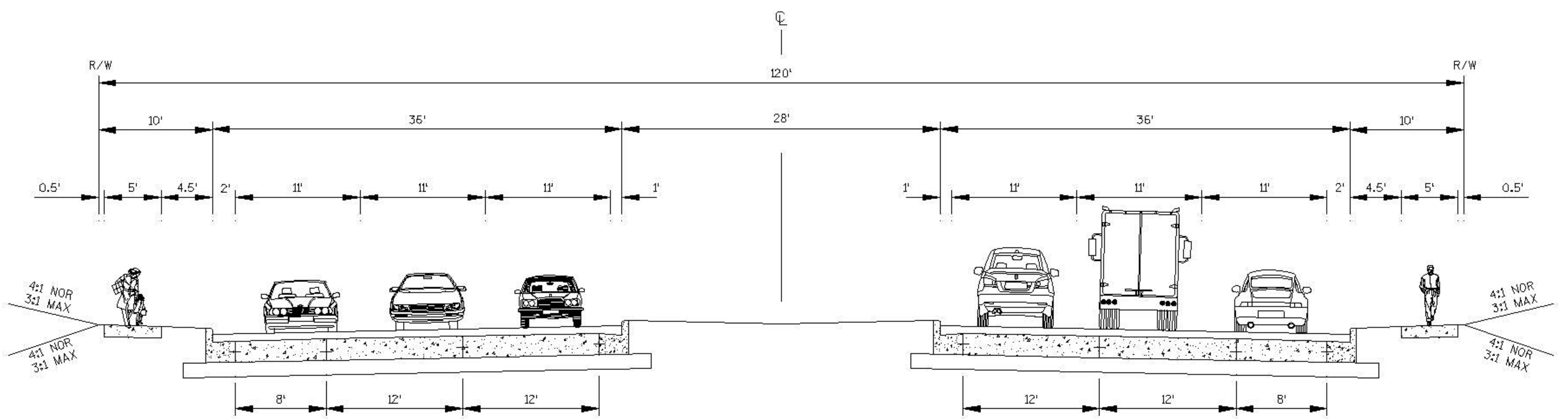
Typical Sections

Layton Avenue to I-94 and Watertown Plank Road to Silver Spring Drive

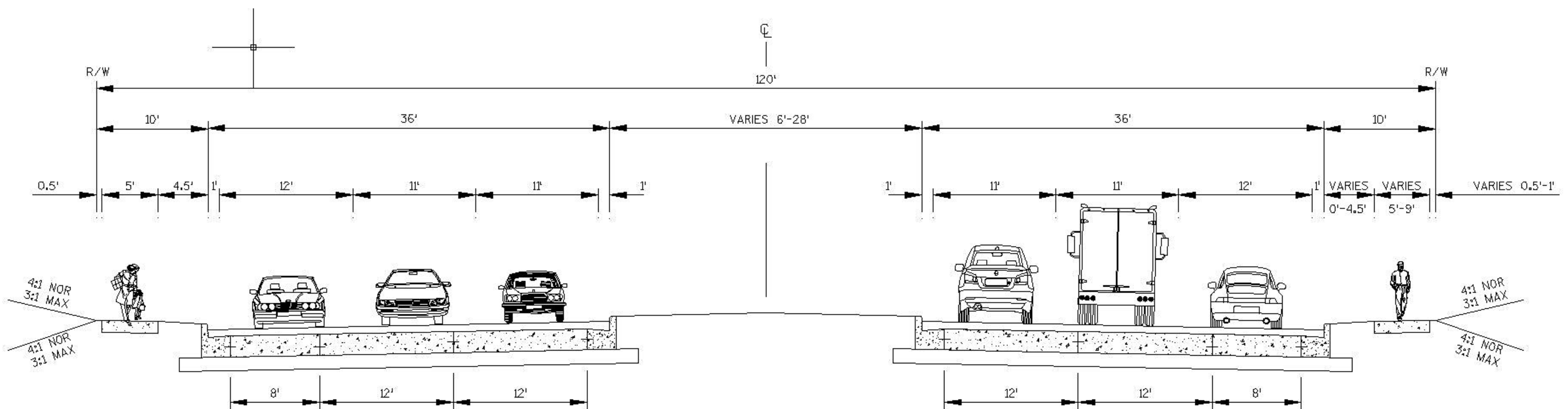
North Section Existing Typical Sections



(CAPITOL DRIVE TO SILVER SPRING DRIVE)

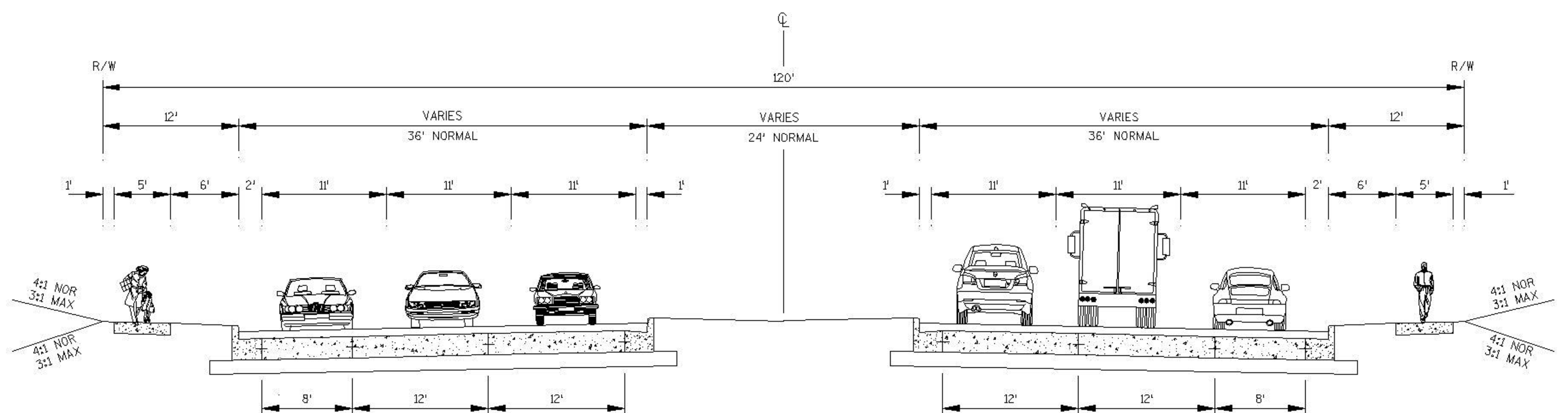


(BURLEIGH STREET TO CAPITOL DRIVE)



(WATERTOWN PLANK ROAD TO BURLEIGH STREET)

South Section Existing Typical Section



(LAYTON AVENUE TO I-94)

Project Schedule

Layton Avenue to I-94 and Watertown Plank Road to Silver Spring Drive



WIS 100 STUDY SCHEDULE	2014				2015				2016			
	Jan	April	July	Oct	Jan	April	July	Oct	Jan	April	July	Oct
Collect Data and Identify Needs	[Bar]				[Bar]							
Develop Alternatives				[Bar]								
Refine Alternatives					[Bar]							
Develop Recommendations								[Bar]				
Environmental Assessment				[Bar]								
Preliminary Design								[Bar]				
Public Involvement	[Bar]				[Star]	[Bar]		[Star]	[Star]	[Star]	[Star]	[Star]

Public involvement meetings

Public Hearing

- Reconstruction of WIS 100 has not yet been scheduled.
- Construction of the South Section is anticipated to be scheduled between 2022-2024 depending on availability of funding and coordination with other area construction projects.