

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

South Section – Layton Avenue to I-94

When was WIS 100 last reconstructed?

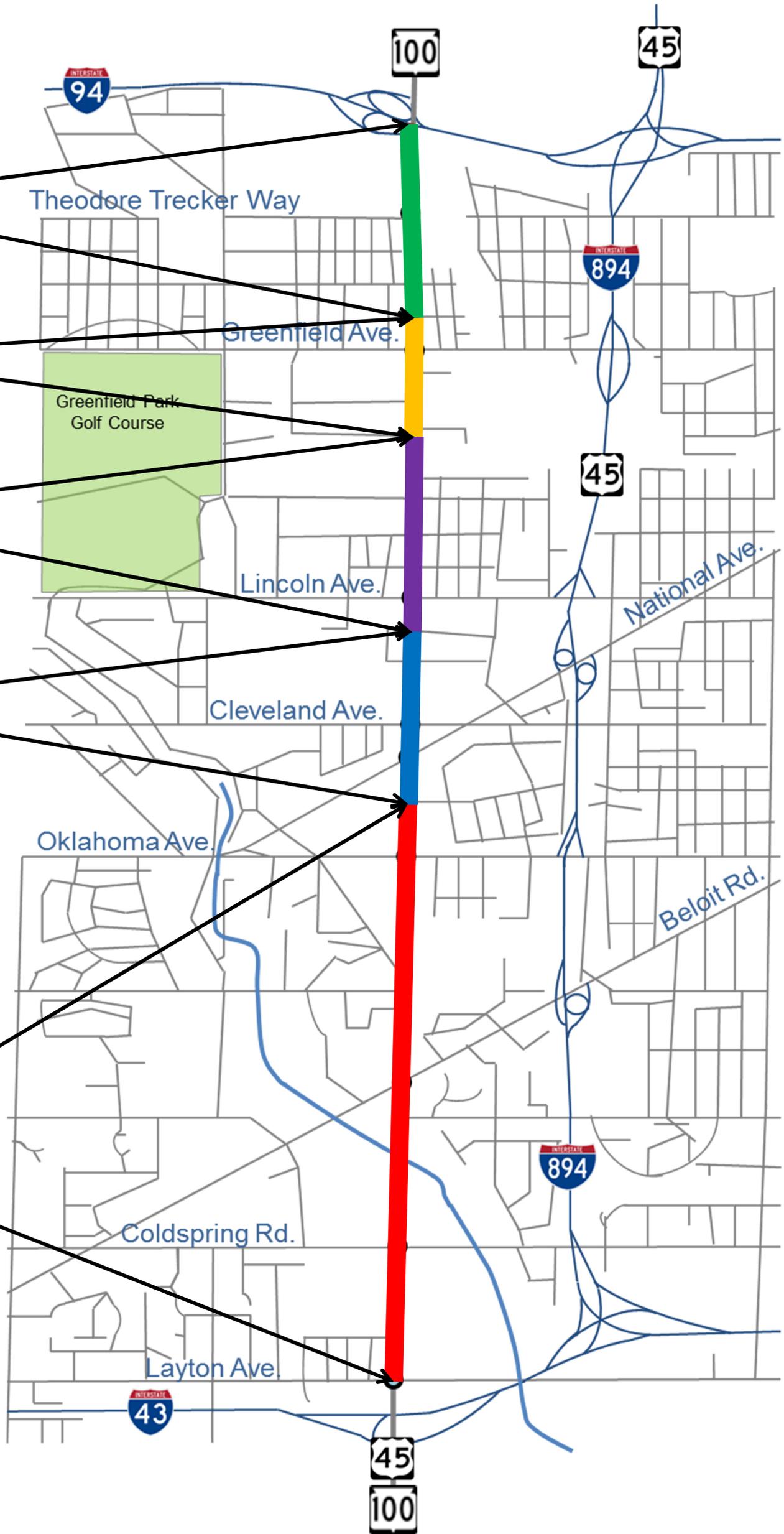
1960

1957

1962

1959

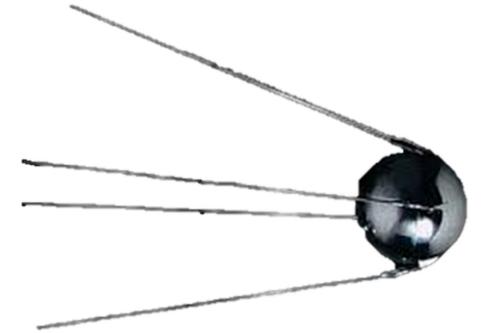
1968



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 earth-orbiting satellite. 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 Stormwater Deficiencies

South Section - Layton Avenue to I-94



Exhibit 1

Wildcat Creek
Tributary Drainage
Area

Legend

- Watershed Boundary
- County Line
- Wildcat Creek
- 10' Contours



A study completed in 2010 recommends upsizing the culvert to reduce the risk of flooding.



Address Bridge Needs

South Section - Layton Avenue to I-94

There are five bridges in the South 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 SB WIS 100 bridge over the Hank Aaron State Trail is classified as “Functionally Obsolete.”



Structure B-40-107, Google Earth, Oct 2011 image from 11/15/2014.

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 Root River are classified as “Functionally Obsolete.”



Structure B-40-318, Google Earth, Oct 2011 image from 11/15/2014.

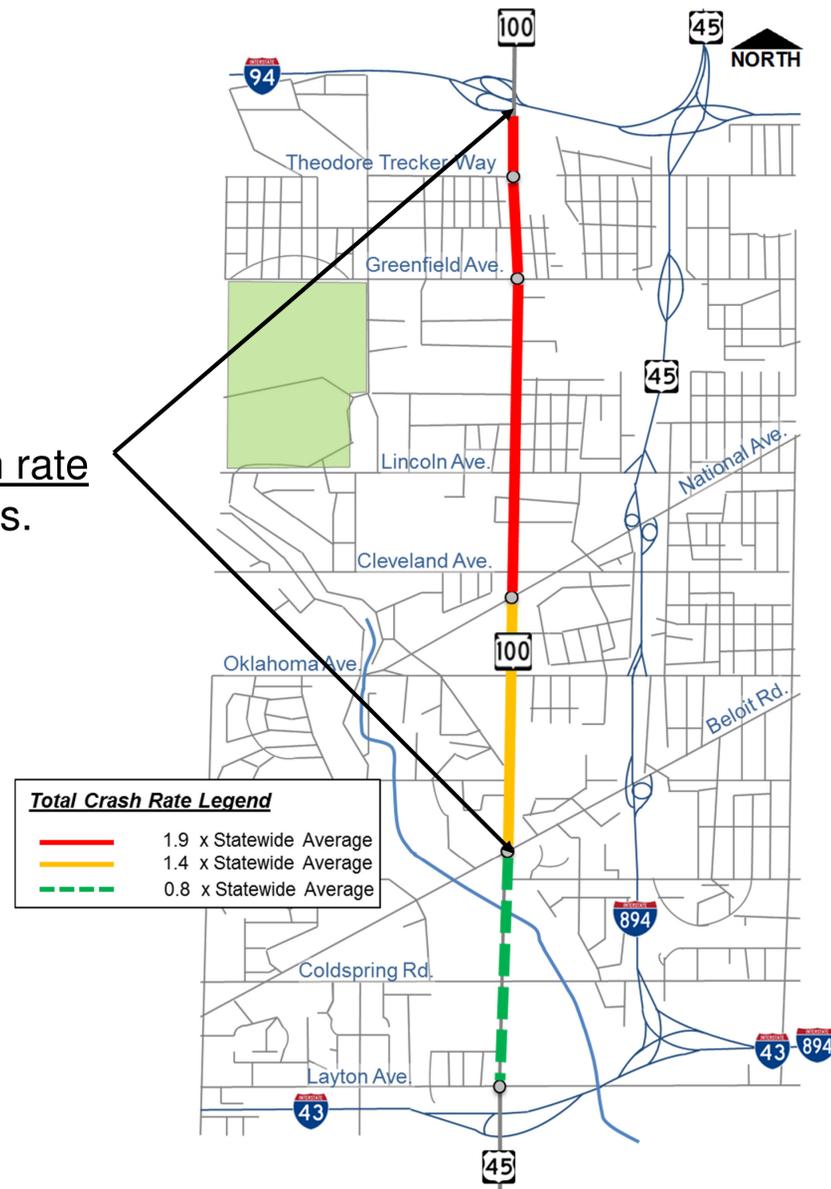
Structurally Deficient refers to bridges that may not be able to carry heavy loads.

Improve Safety - Crashes

South Section - Layton Avenue to I-94

- 5 years of crash data (2008-2012) was analyzed by the study team.
- 1,423 crashes, including 1 fatality.
- 80% of the 4.7-mile corridor exceeds the statewide average total crash rate for similar roads classified as “Large Urban Divided Highways.”
- Existing access points = 232 (189 driveways, 10 signalized/22 unsignalized intersections, 11 median openings).

Total Crash Rates



Injury Crash Rates



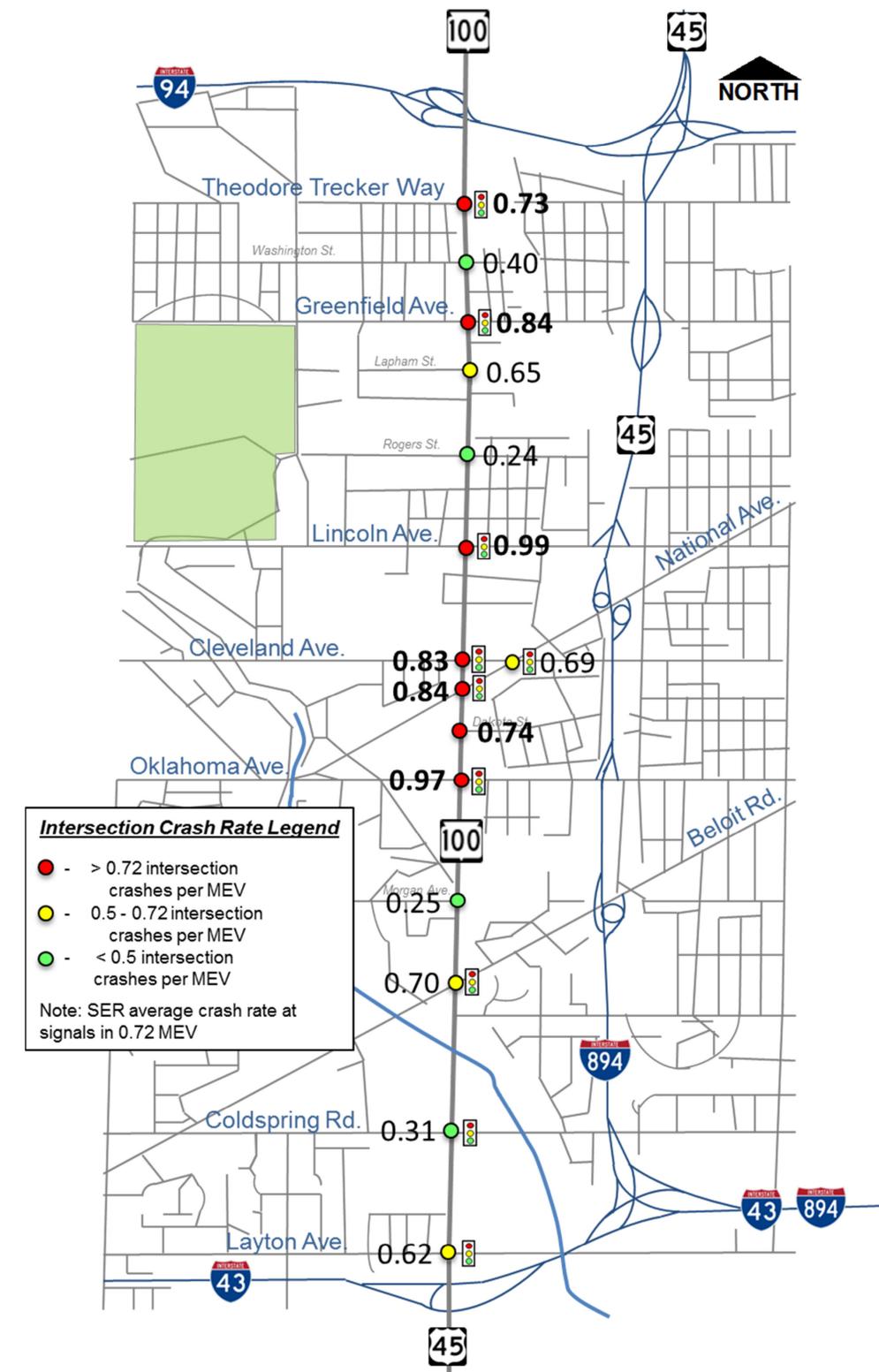
Improve Safety – Intersection Crashes

South Section - Layton Avenue to I-94

- 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.
 - 6 of the 9 signalized WIS 100 intersections meet or exceed 0.72 MEV.



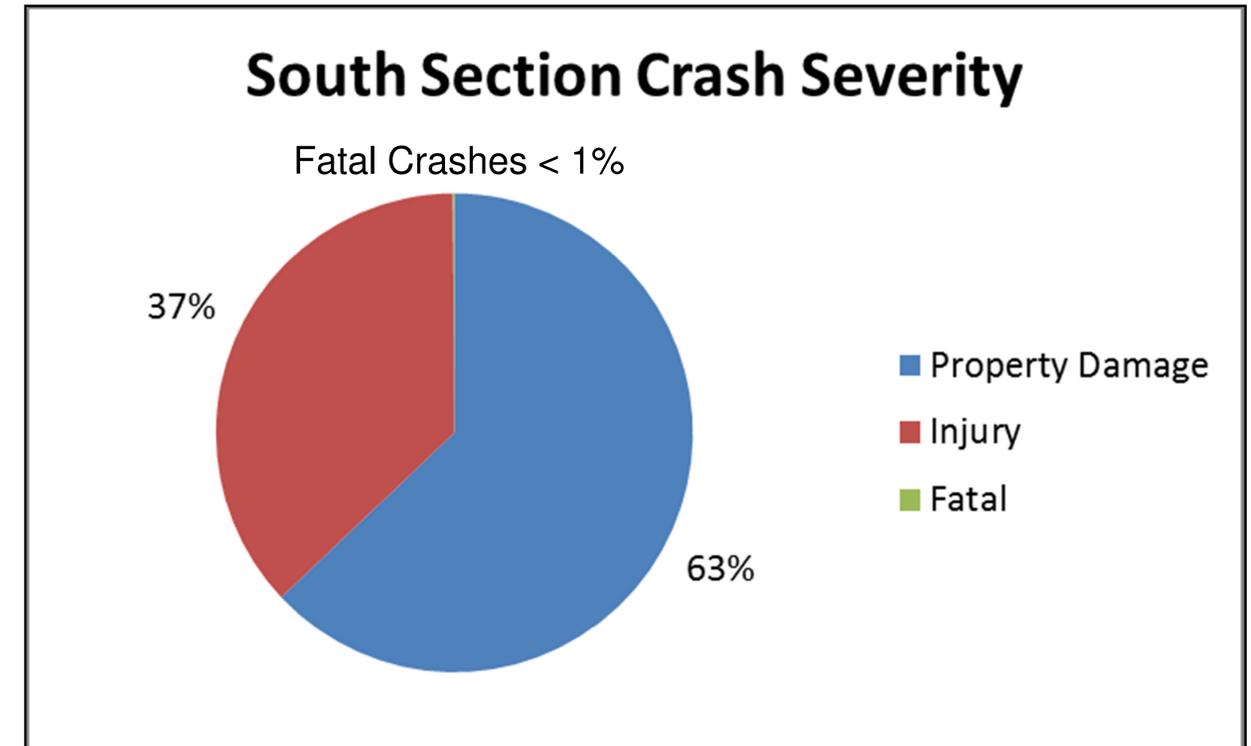
WIS 100 South Section Intersection Crash Rates



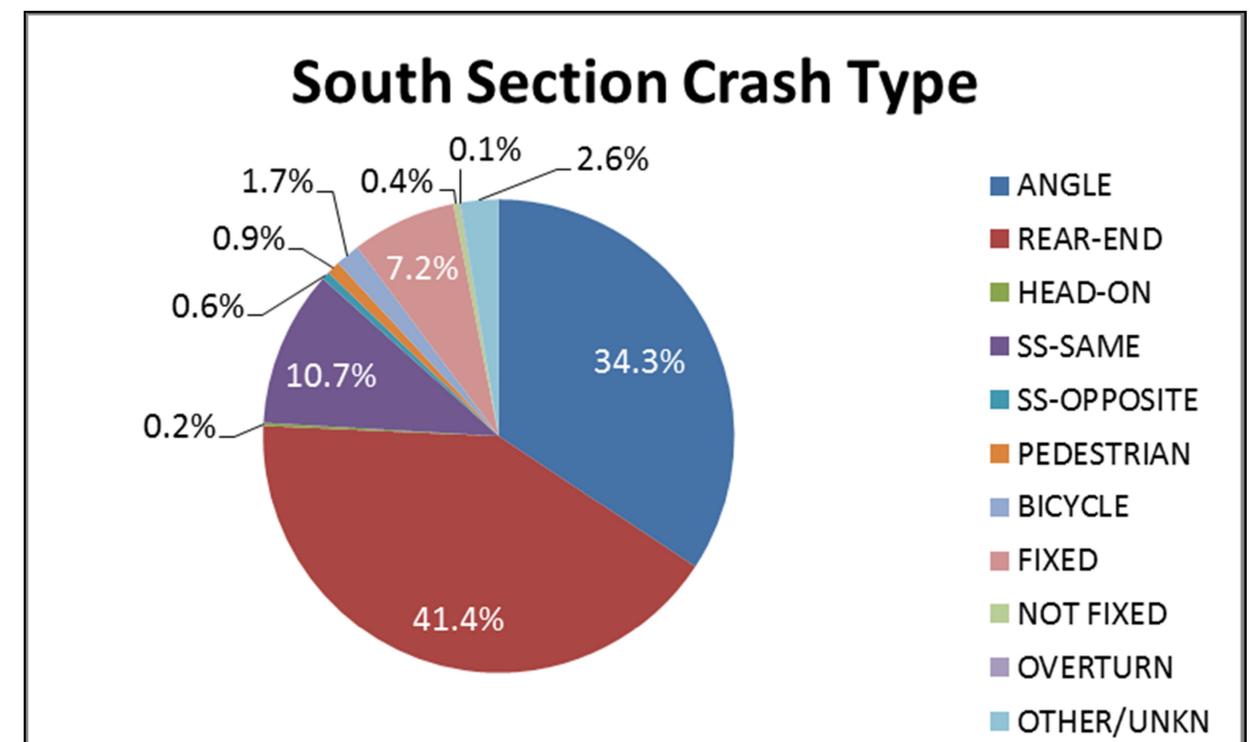
Improve Safety - Crashes

South Section - Layton Avenue to I-94

- 37% of crashes involved injuries
- On average, there were 2 injury crashes per week from 2008-2012.
- 1 fatal crash



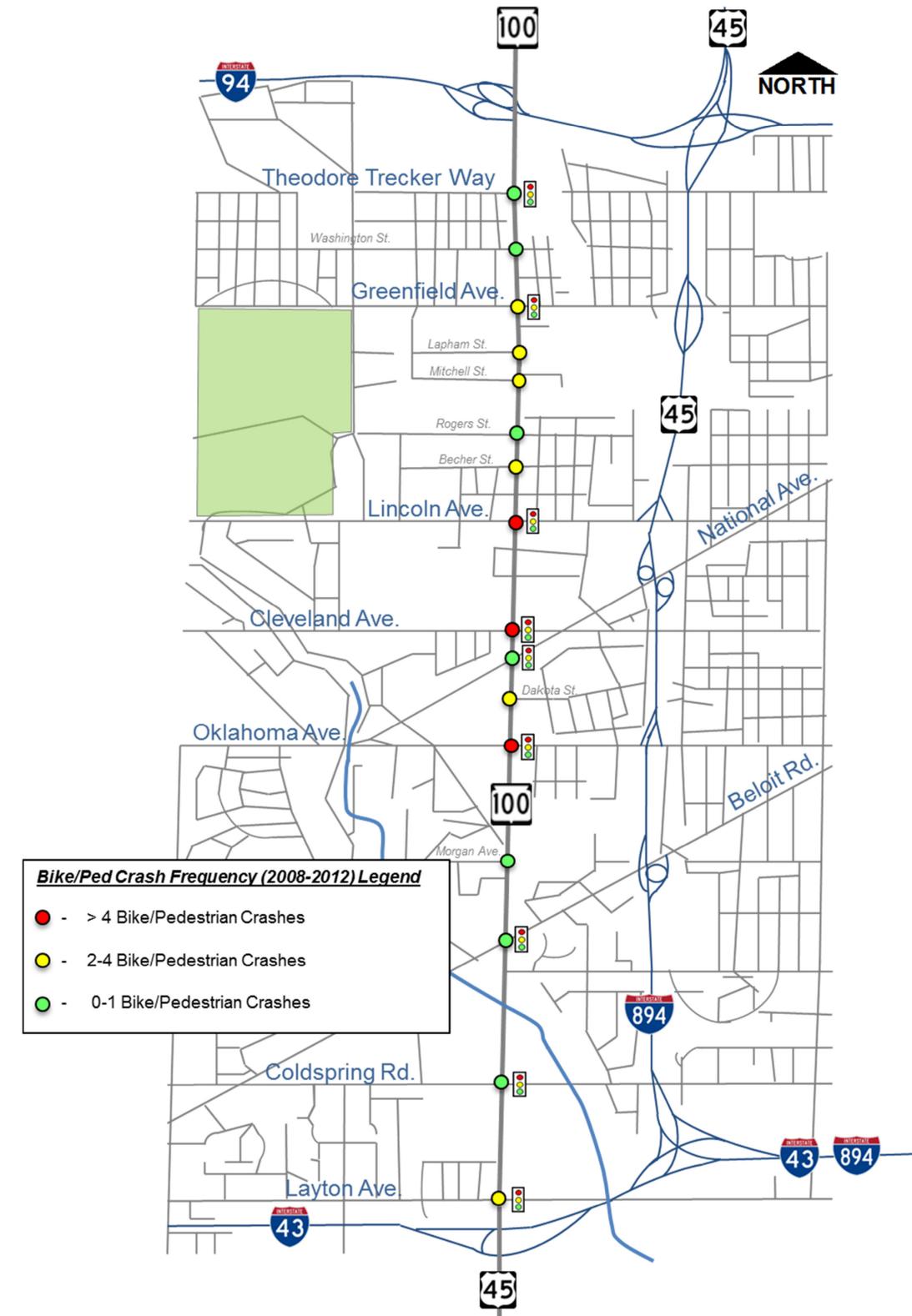
- 76% of the crashes were rear-end or angle crashes (red and dark blue on chart), indicating problems with vehicles making turns.
- 2% of the crashes involve bicycles
- 1% of the crashes involve pedestrians



During the crash study period (2008-2012):

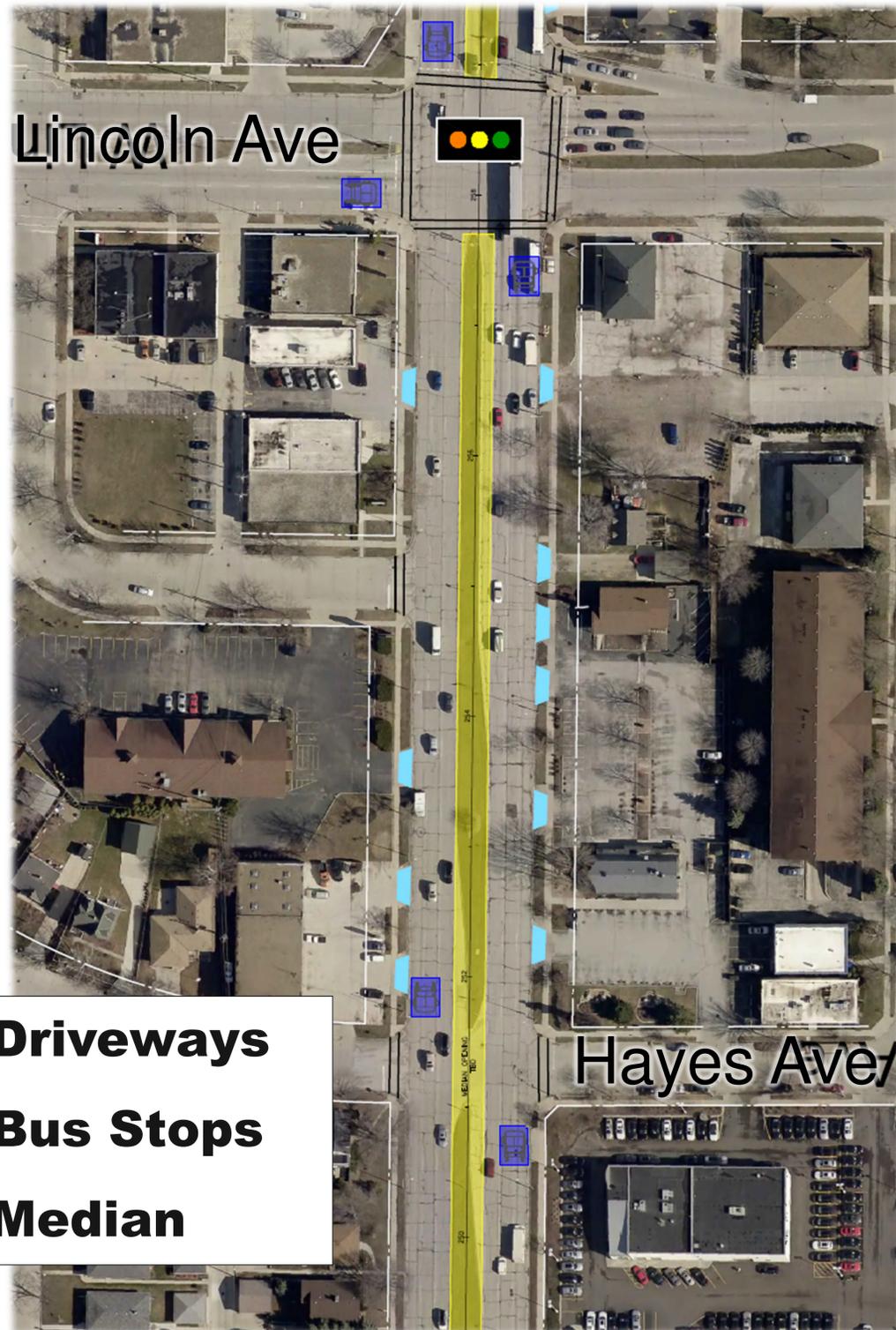
- 23 crashes involving bicycles occurred. 96% involved injuries with one crash having incapacitating injury.
- 14 crashes involving pedestrians occurred. All involved injuries with four crashes having incapacitating injuries.
- 5 or more crashes involving a bike or pedestrian occurred at the following intersections:
 - WIS 100 and Lincoln Avenue
 - WIS 100 and Cleveland Avenue
 - WIS 100 and Oklahoma Avenue

Intersection Pedestrian Crash Frequency



Improve Safety – Access Points

South Section - Layton Avenue to I-94



	Driveways
	Bus Stops
	Median

Item	South Corridor
Residential Driveways	10
Commercial Driveways	179
Total Driveways	189
Median Openings	11
Signalized Intersections	10
Unsignalized Intersections	22
Total Access Points	232

$232 \div 4.8 \text{ miles} = 48 \text{ access points/mile}$

Traffic Volumes

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%

Commercial freight (truck) 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



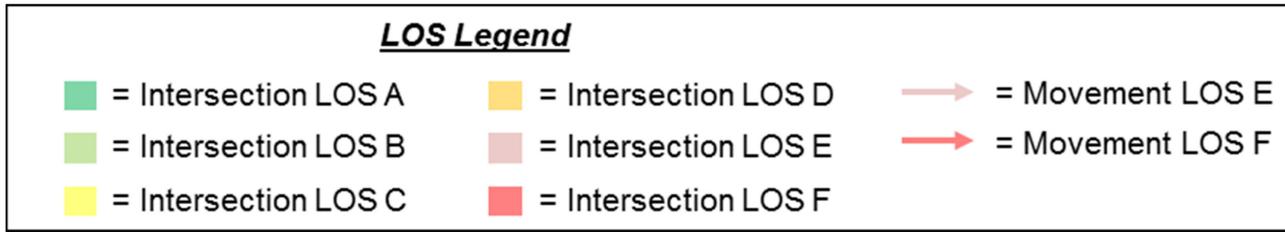
Description of Motor Vehicle Levels of Service

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.

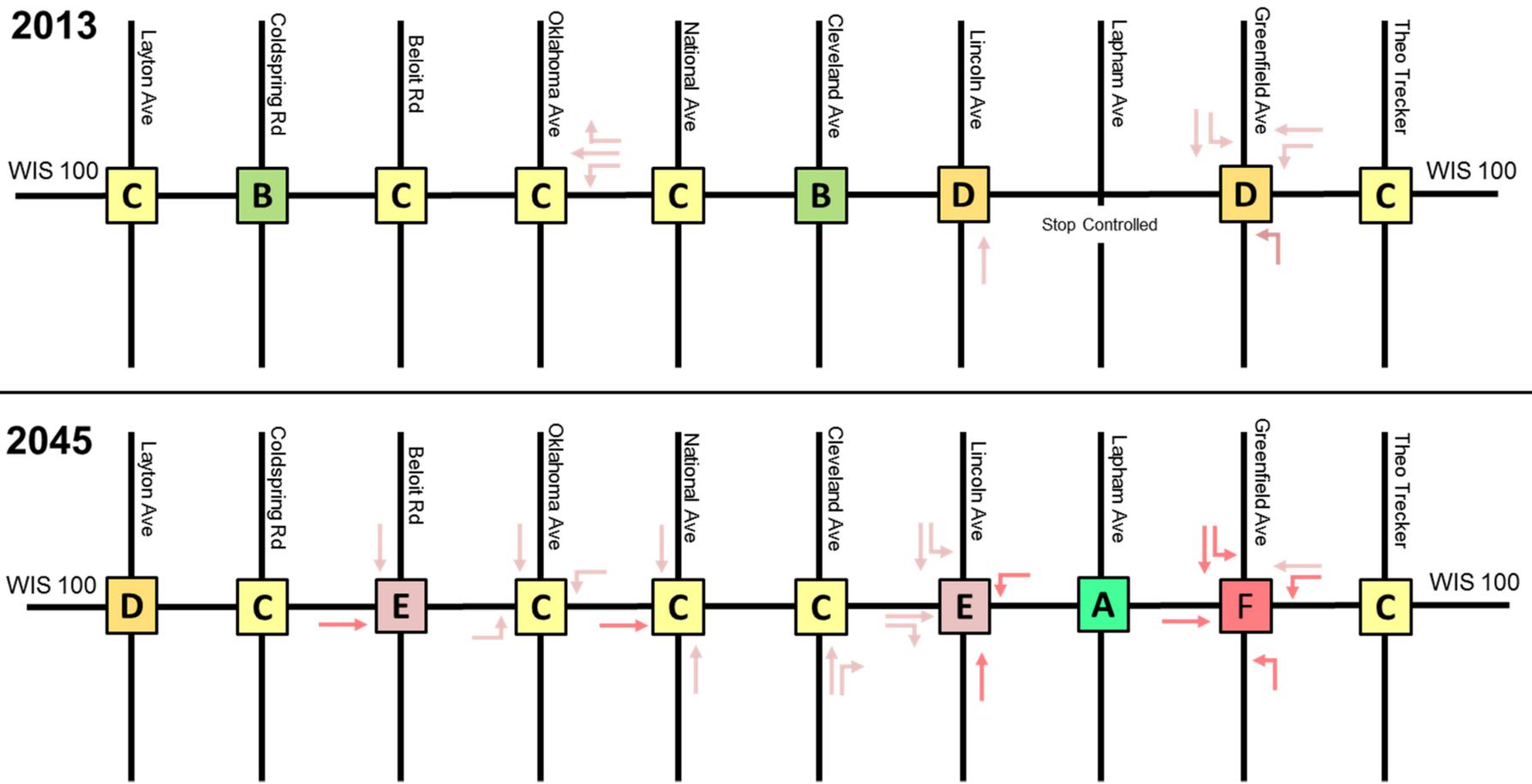
Improve Traffic Operations

South Section – Layton Avenue to I-94

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

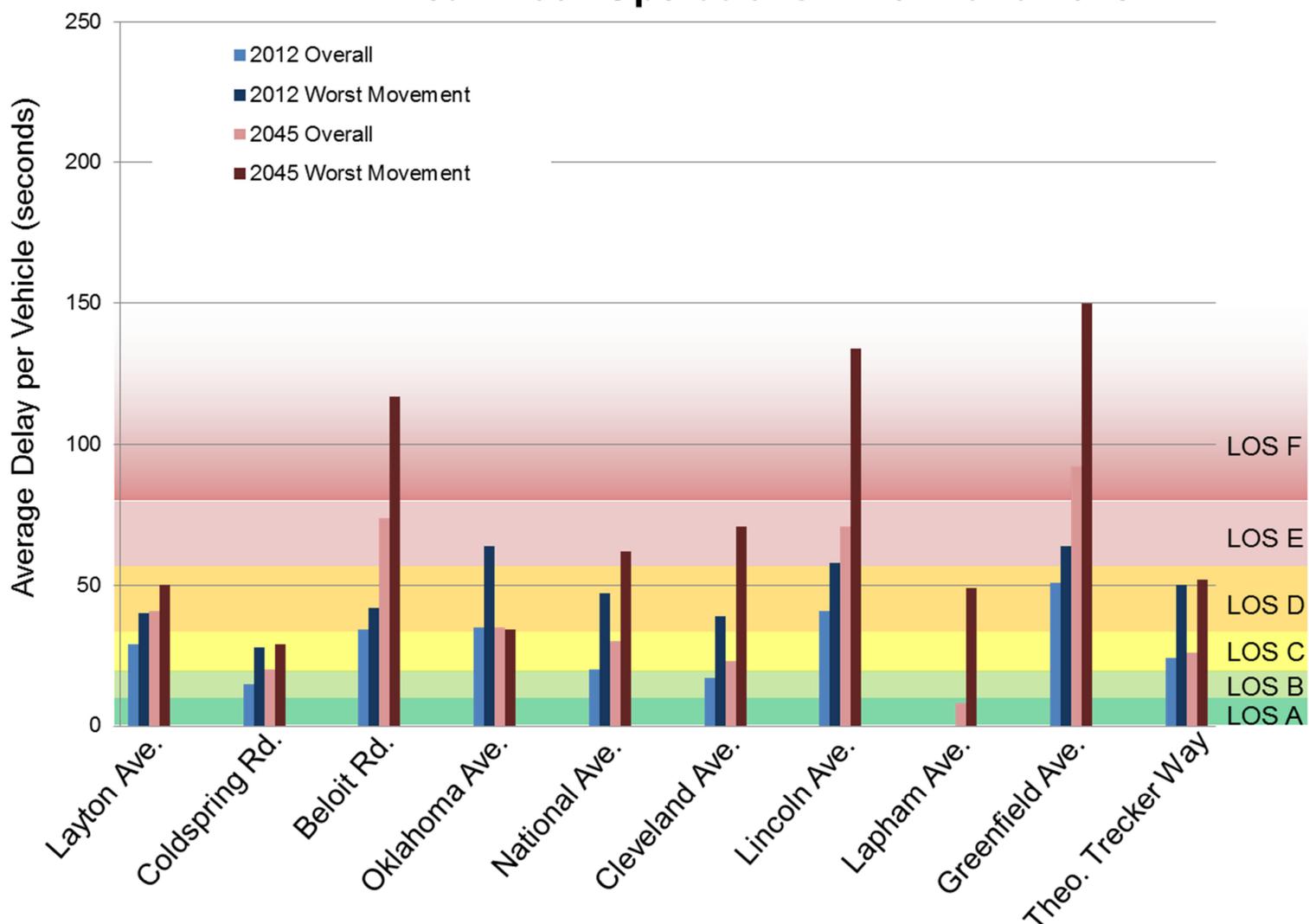


AM Peak Hour



9 existing vs. 25 future criteria below WisDOT goal

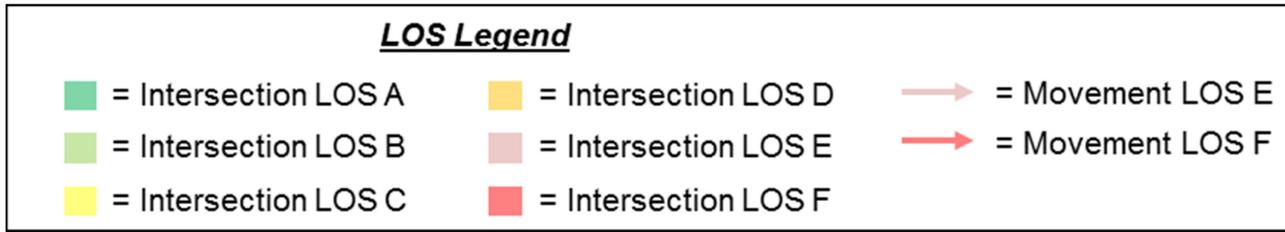
AM Peak Hour Operations in 2012 and 2045



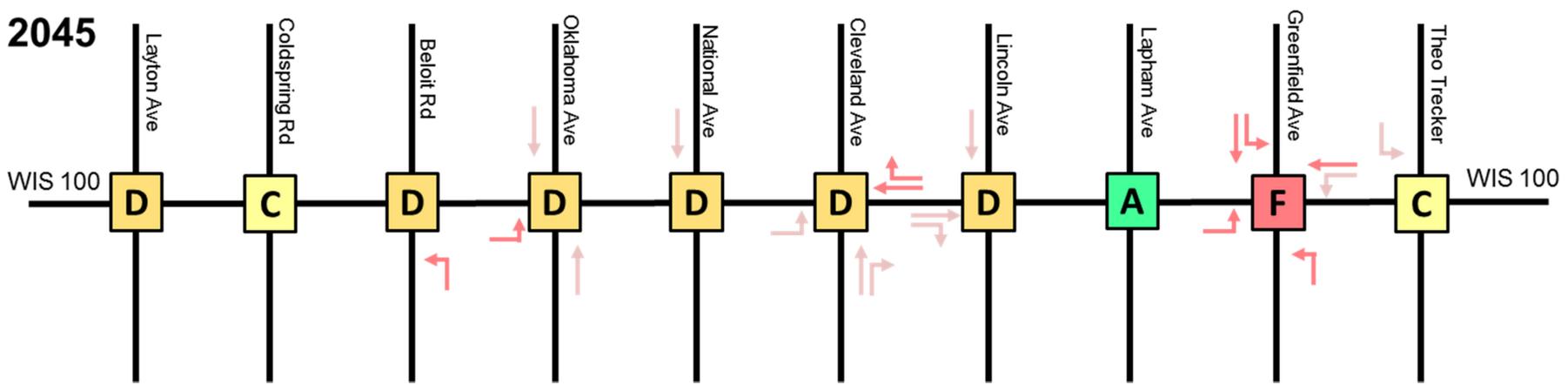
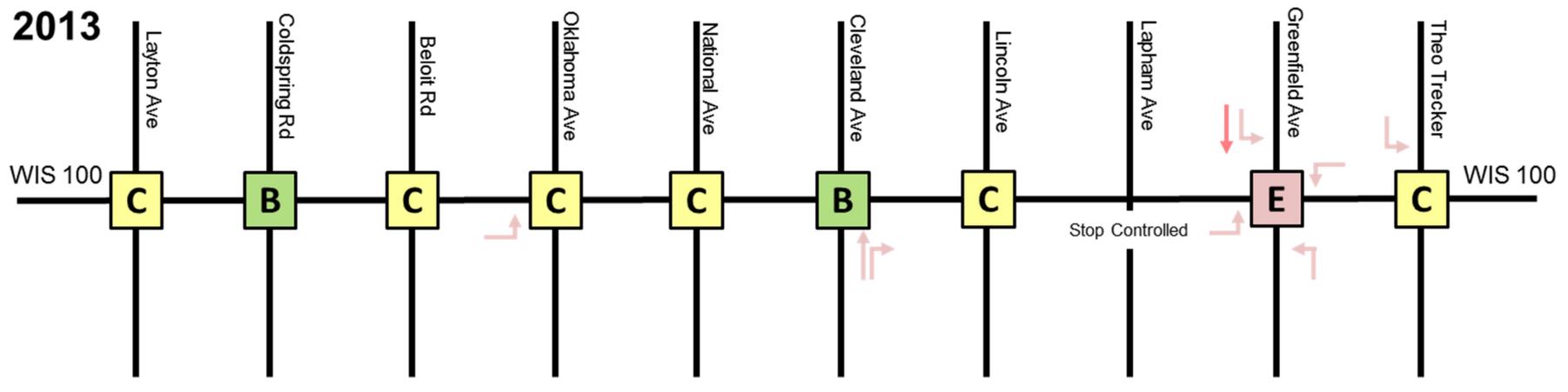
Improve Traffic Operations

South Section – Layton Avenue to I-94

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

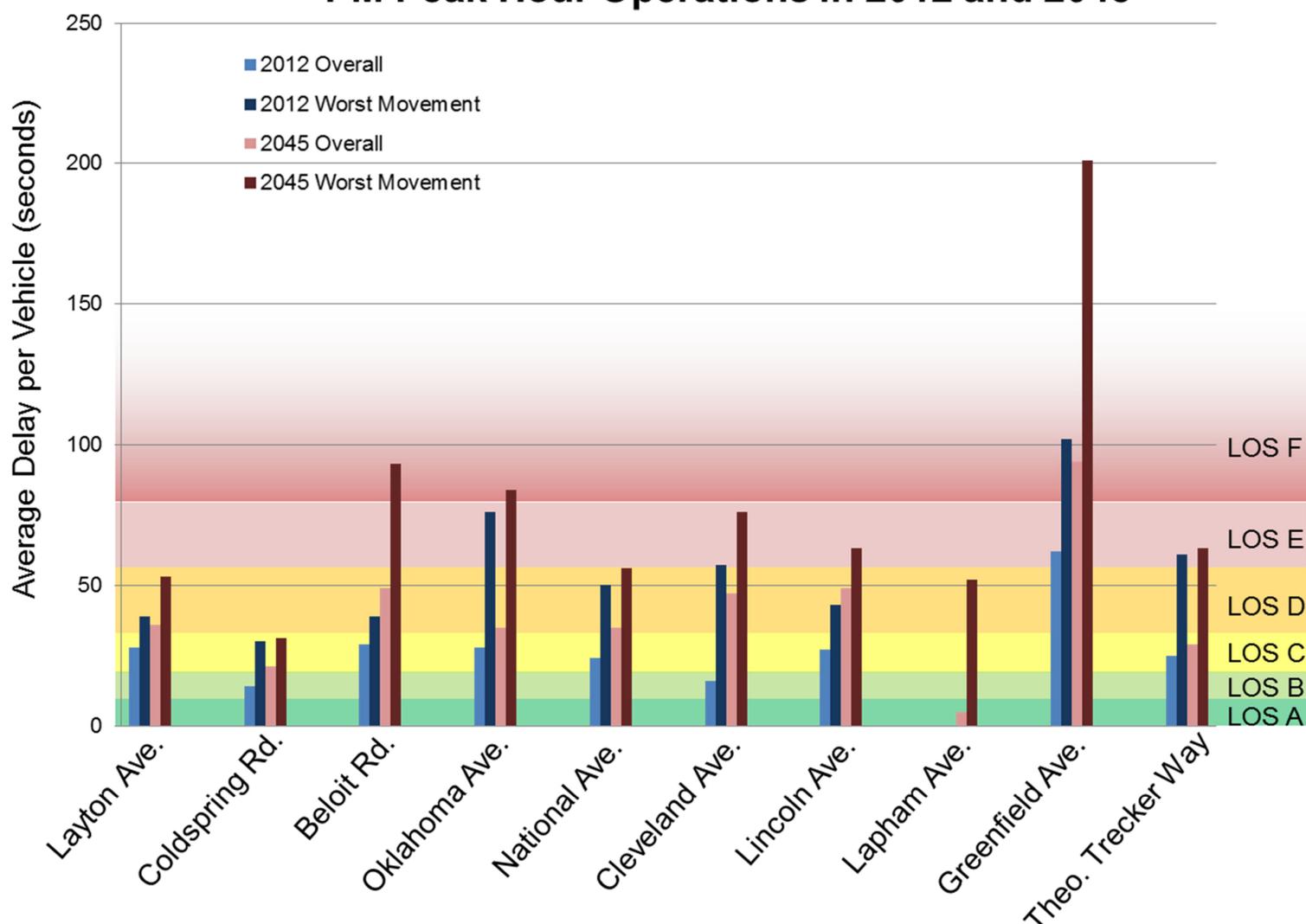


PM Peak Hour



10 existing vs. 21 future criteria below WisDOT goal

PM Peak Hour Operations in 2012 and 2045



Improve Multimodal Accommodations

South Section - Layton Avenue to I-94

What are Multimodal Accommodations?

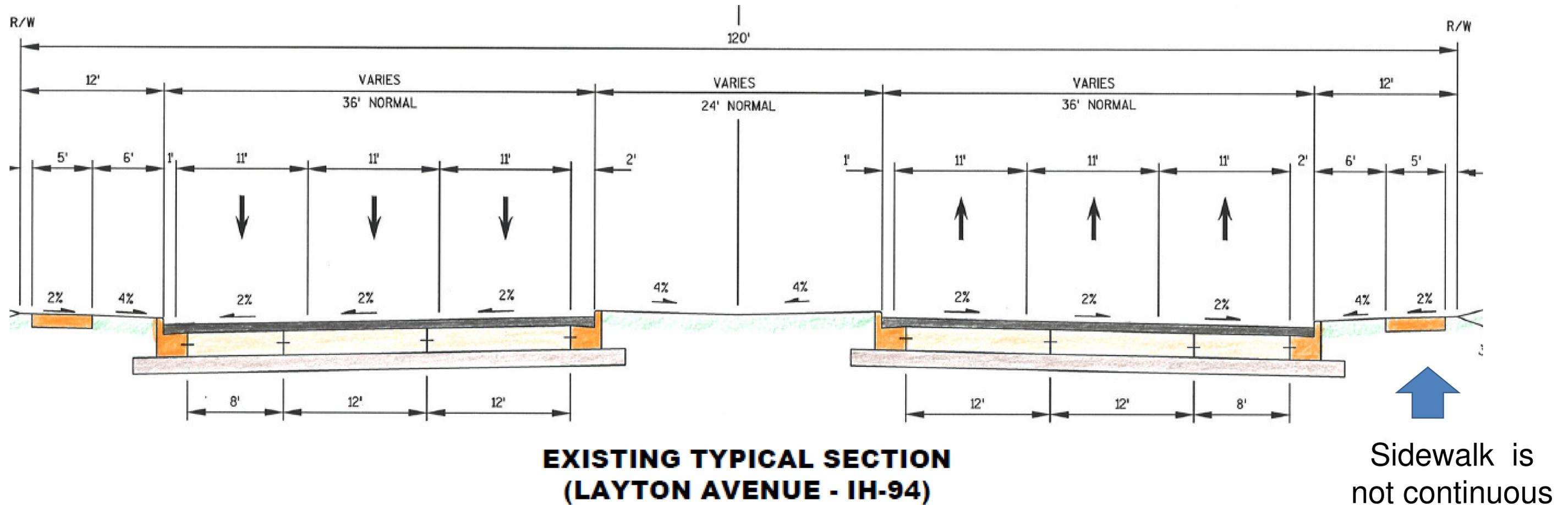
Multimodal accommodations are the inclusion of facilities for all modes of transportation (cars, buses, trucks, bicycles, and pedestrians) along a transportation corridor such as WIS 100.



In the South Section area, WIS 100 serves 22 schools, 14 parks, 10 churches, 3 hospitals, and numerous employment centers. Citizens should have multiple transportation choices available to them to access these destinations.

Improve Multimodal Accommodations

South Section - Layton Avenue to I-94

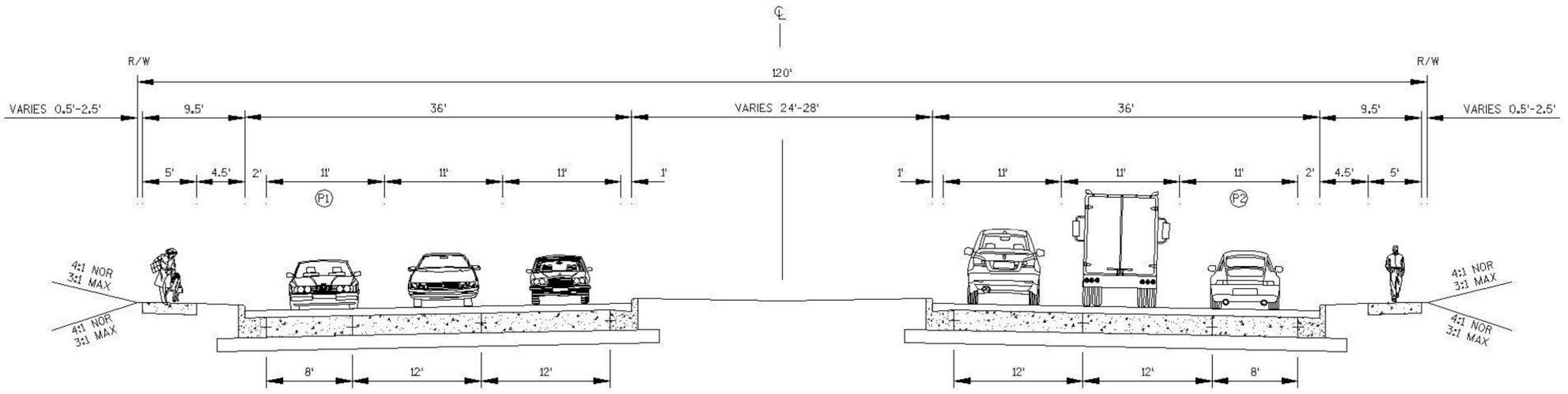


- WIS 100 has no on-street bicycle accommodations south of I-94.
- Sidewalk is not present along the east side of WIS 100 between Theodore Trecker Way and I-94. (0.4 mile)
- Transit uses the outside driving lane; there are no bus pull-outs at bus stops.

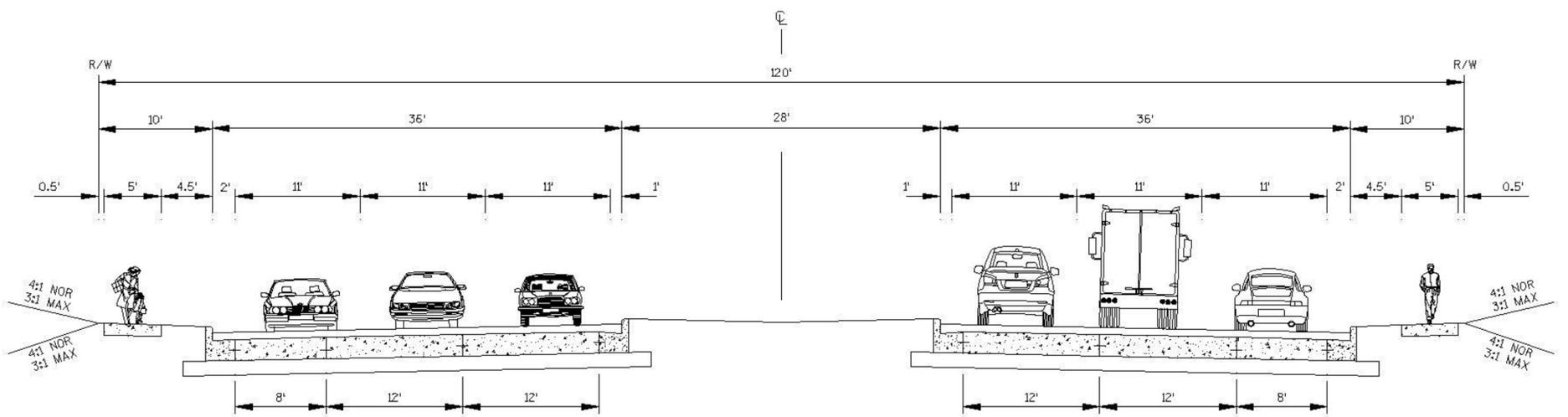
Typical Sections

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

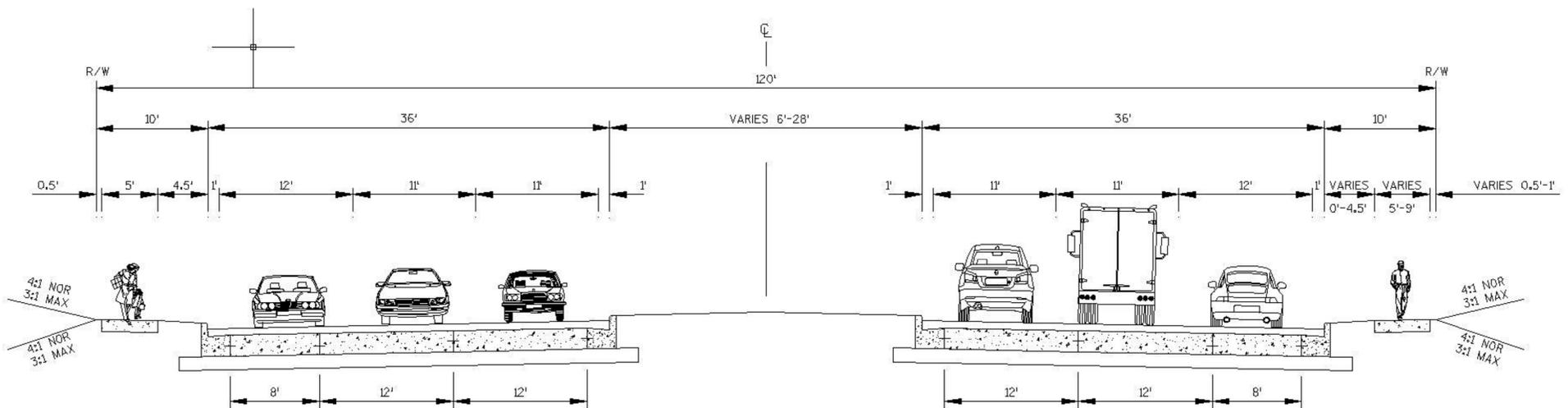
North Section Existing Typical Sections



(CAPITOL DRIVE TO SILVER SPRING DRIVE)

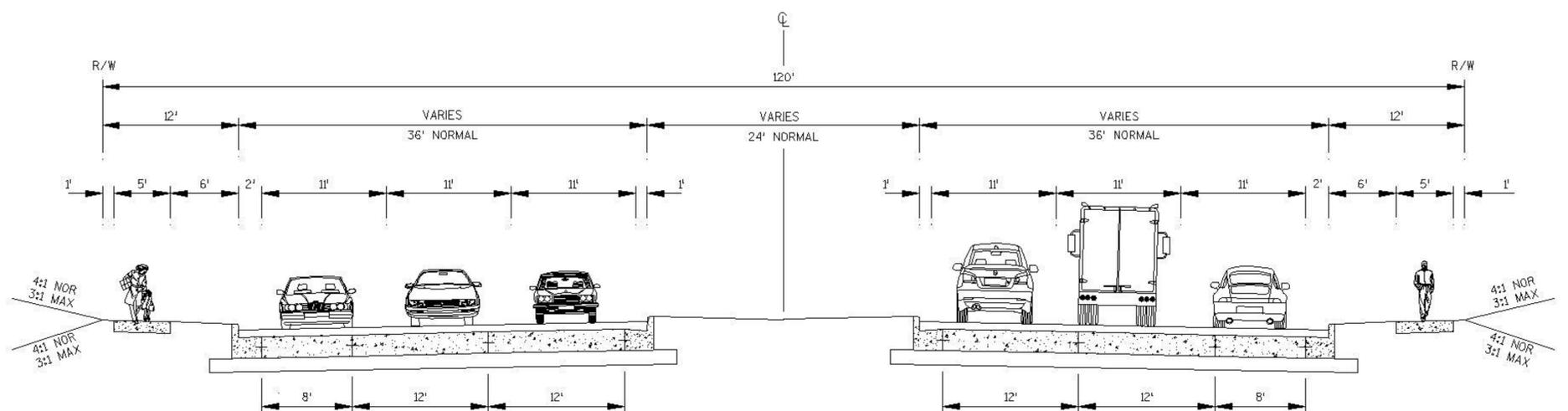


(BURLEIGH STREET TO CAPITOL DRIVE)



(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.