

City of Madison Engineering Division

John Nolen Drive Reconstruction

Project I.D. 5992-11-20
City of Madison, John Nolen Drive
(Olin Avenue – North Shore Drive)

Transportation Commission
May 24, 2023



Introduction

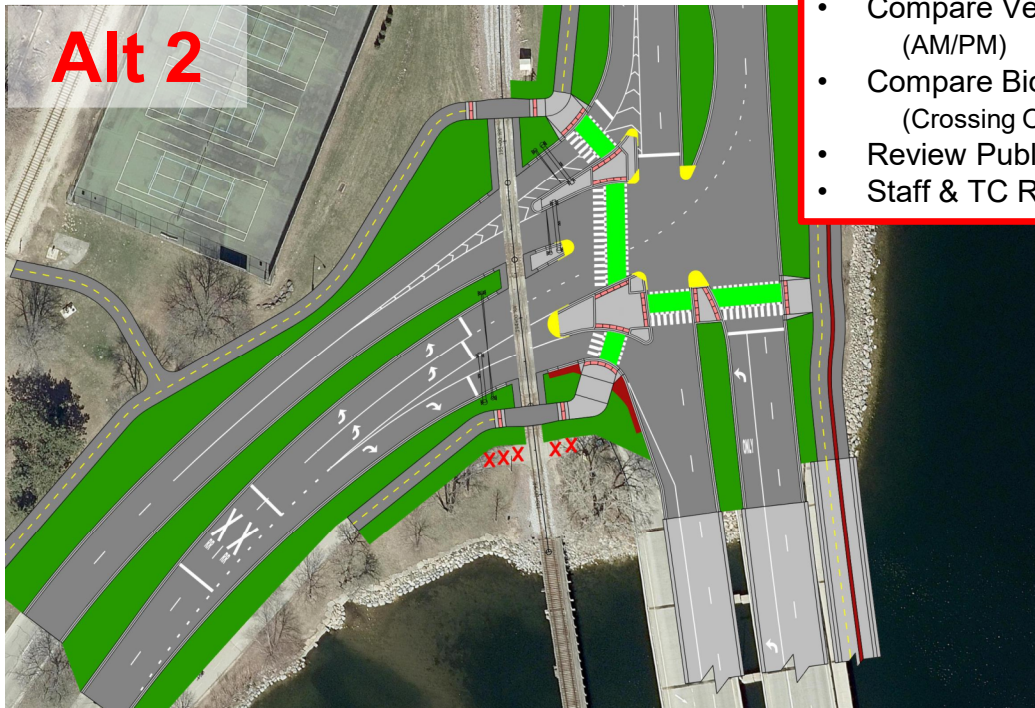
- John Nolen Drive (Lakeside Street to North Shore Drive) Reconstruction Starting in 2025
 - Includes Pavement, Bridges, Path Facility, North Shore Drive Intersection
 - NOT Lakeside Street Intersection
- Coordinating with Lake Monona Waterfront Master Plan
- Previous Presentations to Public and Transportation Commission
 - Street Typical Section
 - Pathway Typical Section
 - Bridge Structure Sections
 - North Shore Drive Intersection (follow up is primary focus of this meeting)
 - Underpass/Overpass Alternatives
 - **NOT part of this project**, but not precluded as a potential future improvement
 - Broom Street Intersection
 - **NOT part of this project**, but not precluded as a potential future improvement
- Today's Focus is the North Shore Drive Intersection
- Received Lot's of Feedback on Final Design Details to Consider
 - Stop Bar Locations
 - Bicycle Queuing Areas Adjacent to Capital City Path
 - Traffic Signal Head Locations/Types
 - Push Button Locations/Types
 - Crosswalk Width & Separation for Different Modes

North Shore Drive Intersection

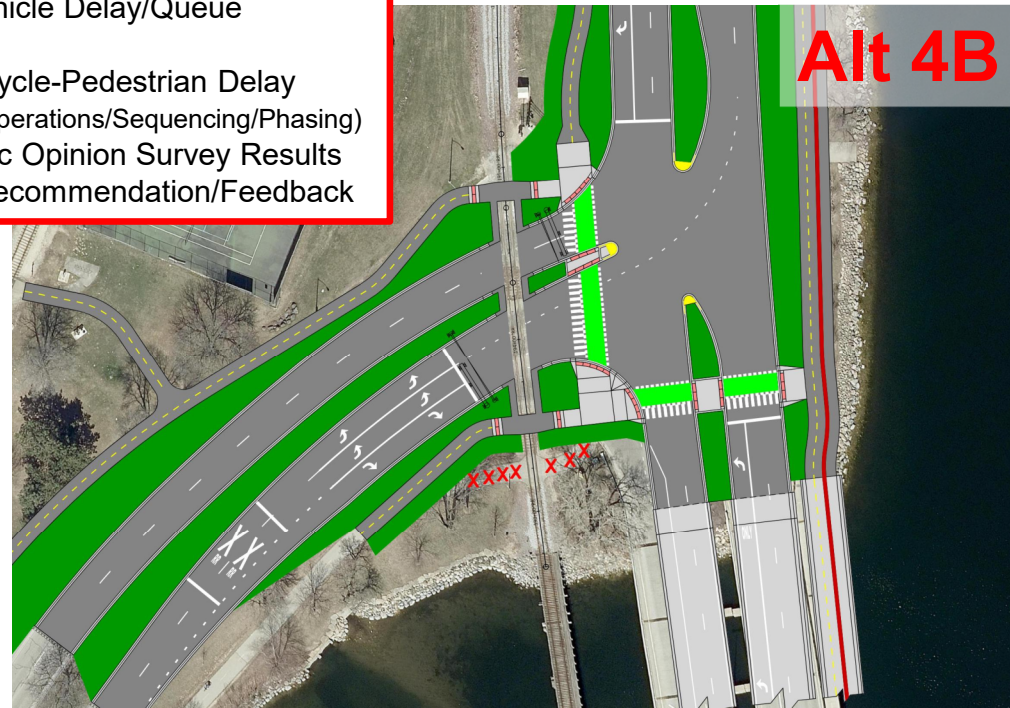
Objectives for Today:

- Discuss Safety Studies & Research on Channelized Right Turns
- Analyze Traffic Operations Modeling (Existing vs Alt 2 vs Alt 4B)
- Compare Vehicle Delay/Queue (AM/PM)
- Compare Bicycle-Pedestrian Delay (Crossing Operations/Sequencing/Phasing)
- Review Public Opinion Survey Results
- Staff & TC Recommendation/Feedback

Alt 2



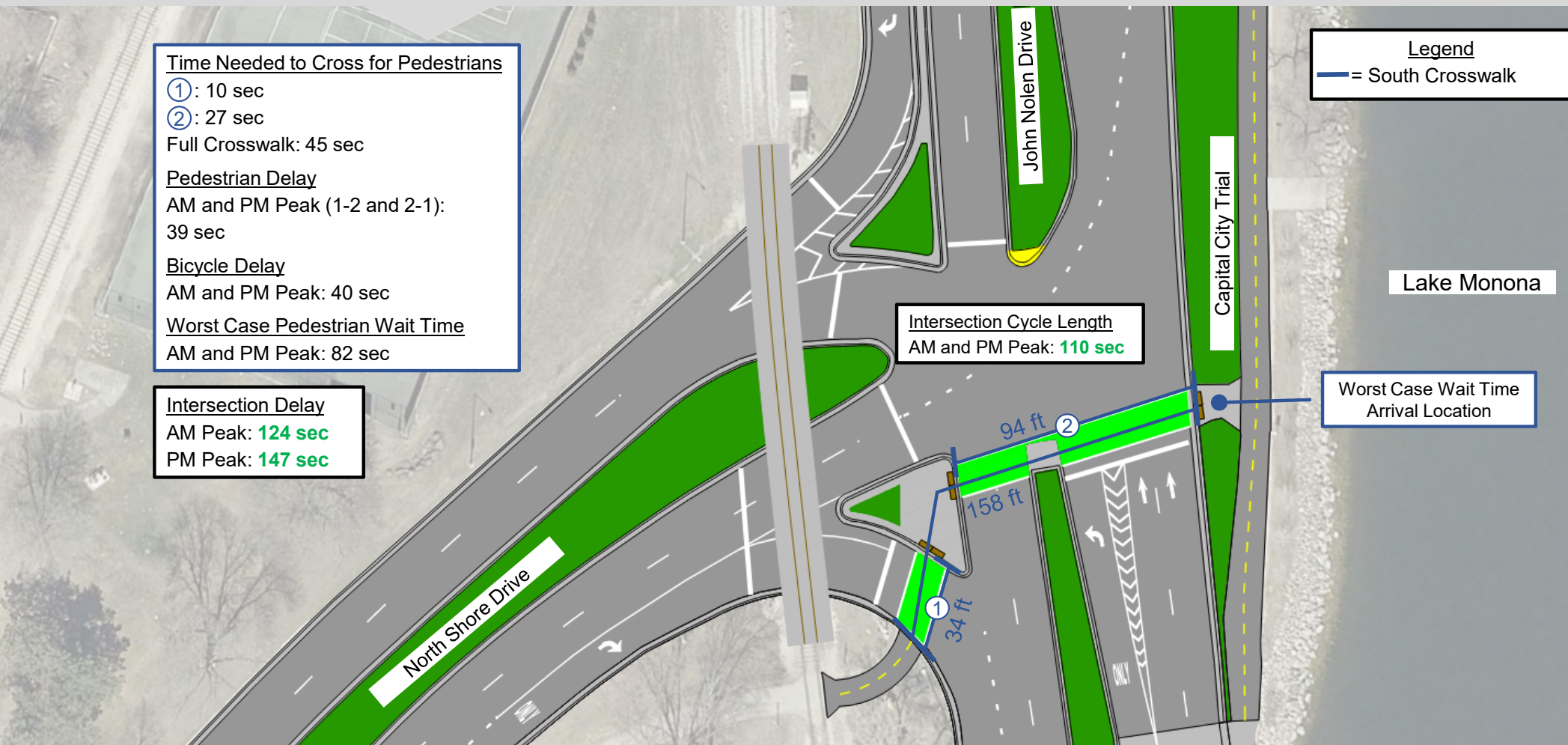
Alt 4B



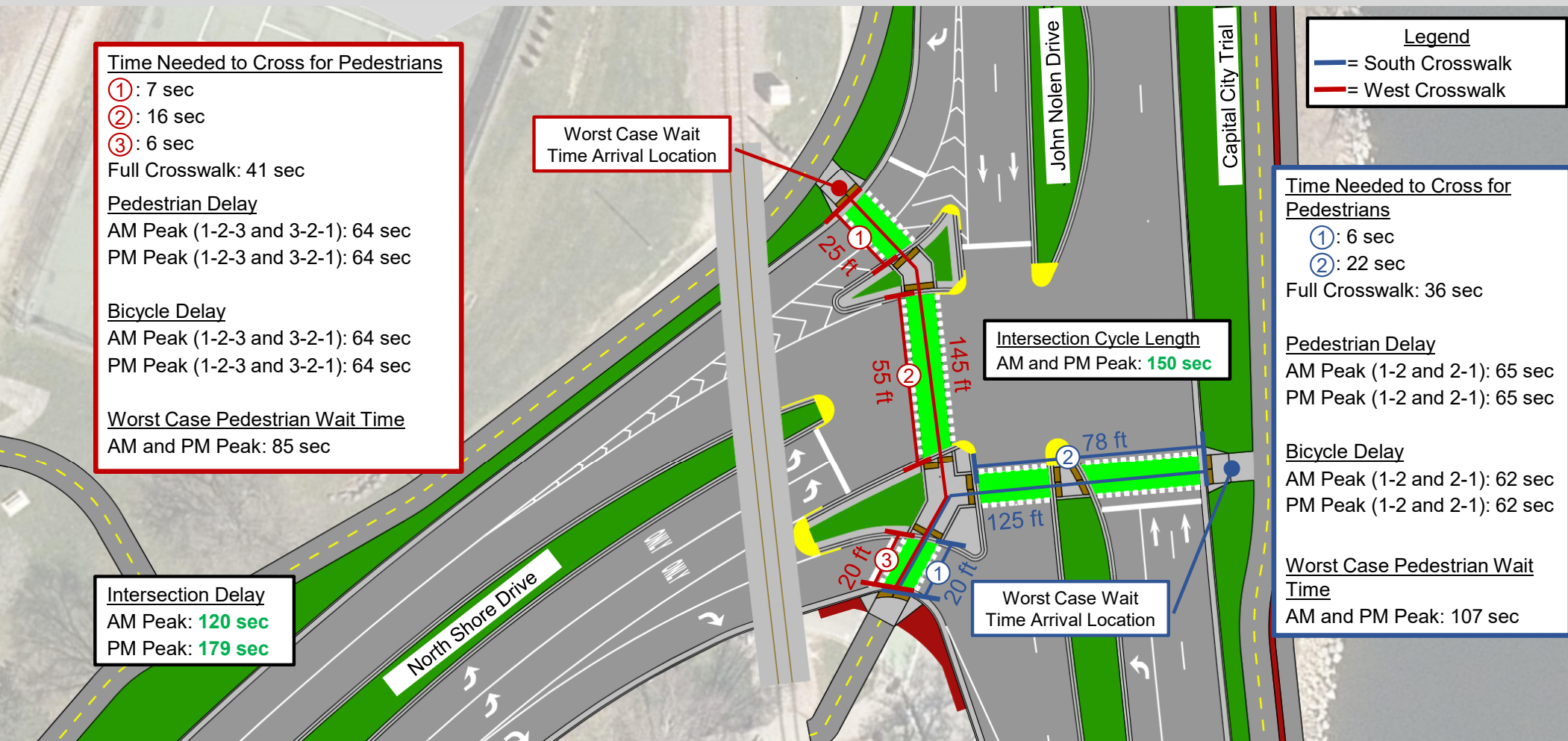
Channelized Right Turns – Safety Studies & Research

SOURCE	DETAILS
Pedestrian Safety Guide and Countermeasure Selection System (USDOT/FHWA)	http://www.pedbikesafe.org/pedsafe/countermeasures_detail.cfm?CM_NUM=24 <ul style="list-style-type: none">• Slows Turning Vehicles• Allow Drivers & Pedestrians to Easily See Each Other• Reduce Pedestrian Exposure in the Roadway• Reduce Complexity of Intersection by Breaking into Manageable Parts
Safety & Economic Evaluation of the Highway Safety Improvement Program: Is There a Return on Investment (Transportation Research Board)	https://www.cmfclearinghouse.org/study_detail.php?stid=651 <ul style="list-style-type: none">• Providing Right Turn Channelization as a Countermeasure for a Reduction in Traffic Fatalities & Serious Injuries on All Public Roads (40% Reduction)
Department of Civil & Environmental Engineering Traffic Operations & Safety (TOPS) Laboratory University of Wisconsin - Madison	<p>Presented John Nolen Drive and North Shore Drive intersection alternatives to the TOPS Laboratory at UW-Madison for feedback & discussion</p> <ul style="list-style-type: none">• Both intersection alternatives (2 & 4B) are viable solutions• Anytime an increase in user delay (vehicle or bicycle/pedestrian) is experienced at an intersection, an increase in non-compliance can be expected as well

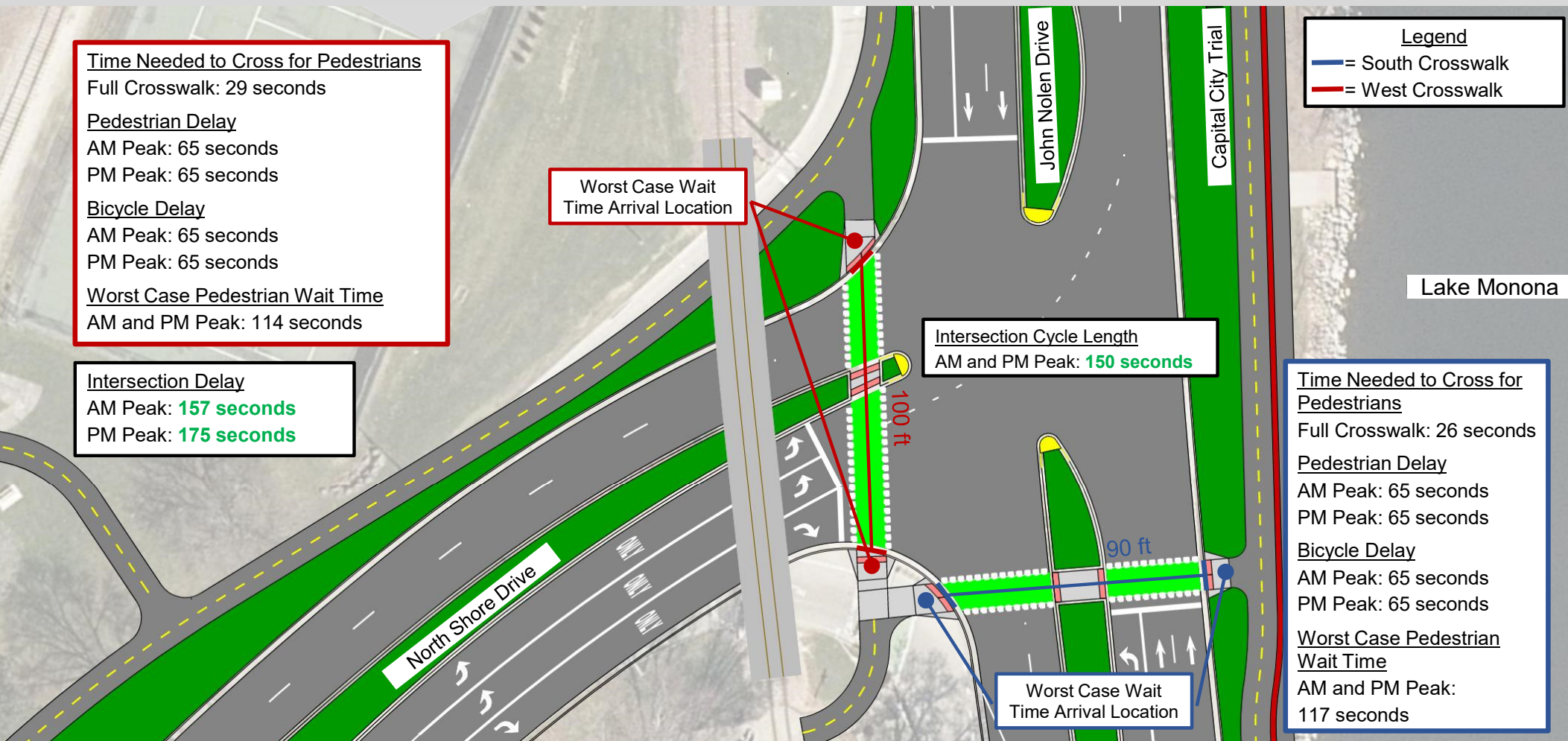
North Shore Drive Intersection – Existing Conditions



North Shore Drive Intersection – Alt 2 (Single “L” Crossing w/ Islands)

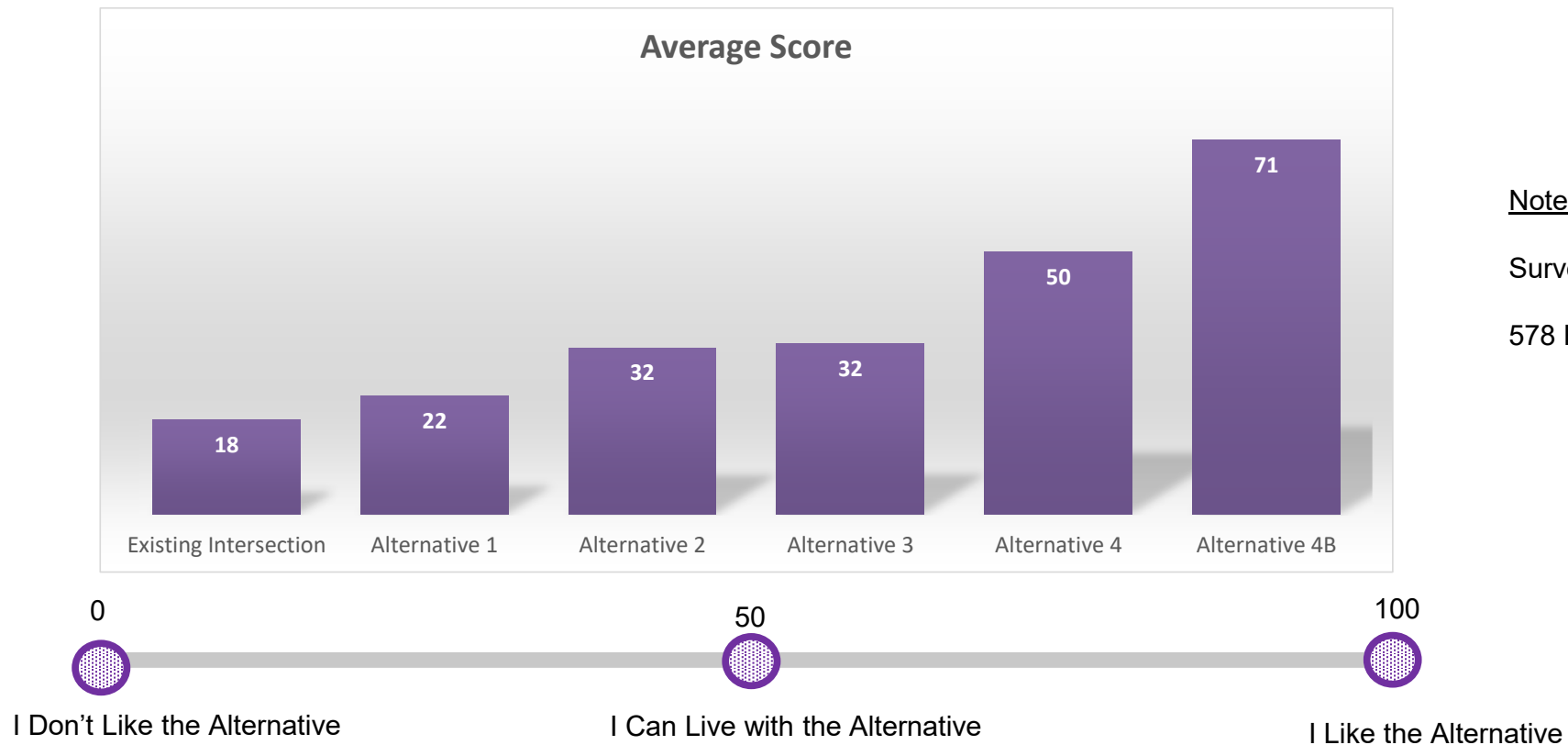


North Shore Drive Intersection – Alt 4B (Single “L” Crossing w/o Islands)



Public Opinion Survey Results

North Shore Drive Intersection Survey Responses



Notes:

Survey Closed 5/15/2023

578 Responses

North Shore Drive – Summary

	ALTERNATIVES COMPARISON							
	Average Vehicle Delay (sec)	Average – Max Ped Delay S Crosswalk (sec)	Average – Max Ped Delay W Crosswalk (sec)	Visibility of Rt Turning Vehicle & Path User in Crosswalk	Rt Turning Vehicle Speed Through Crosswalk after Stop Bar	Bike/Ped Crossing Length (S Crosswalk)	Bike/Ped Crossing Length (W Crosswalk)	Simplicity of Bike/Ped Crossing (S Crosswalk)
EXISTING	124/147 sec AM/PM 110 sec Cycle Length	40 – 82 sec	N/A	Crosswalk on near-side of turning movement & perpendicular to vehicle	Crosswalk on near-side of turning movement	158-ft to Cross Roadway	N/A	3 Segments & Turns within Island
ALT 2 L-Crossing w/ Islands	+ 120/179 AM/PM 150 sec Cycle Length	+ 62 – 107 sec	+ 64 – 85 sec	+ Crosswalk on near-side of turning movement & perpendicular to vehicle	+ Crosswalk on near-side of turning movement	- 125-ft to Cross Roadway	- 145-ft to Cross Roadway	- 3 Segments & Turns within Island
ALT 4B L-Crossing w/o Islands	- 157/175 AM/PM 150 sec Cycle Length	- 65 – 117 sec	- 65 – 114 sec	- Crosswalk on far-side of turning movement & parallel to vehicle	- Crosswalk on far-side of turning movement	+ 90-ft to Cross Roadway	+ 100-ft to Cross Roadway	+ 2 Segments & No Turns within Median

North Shore Drive – Staff & TC Recommendation

Staff Recommendation

- Staff are OK with both alternatives (Alt 2 & 4B)
- Staff recommend Alt 2:
 - Lower user delay (Alt 2 vs 4B) likely result in improved user compliance
 - Better visibility between right turning vehicles and people walking/biking
 - Flexibility to include raised crossings on rt turns (slow vehicle speed)
- Staff realize Alt 4B benefits:
 - Smaller roadway footprint (less pavement, may reduce speeds)
 - Simpler & shorter crosswalks
 - Public support & feedback

Transportation Commission Recommendation

- Feedback & Thoughts

THANK YOU!

- Project Website: <https://www.cityofmadison.com/JohnNolenDrive>
- Contact: JohnNolenDrive@cityofmadison.com

