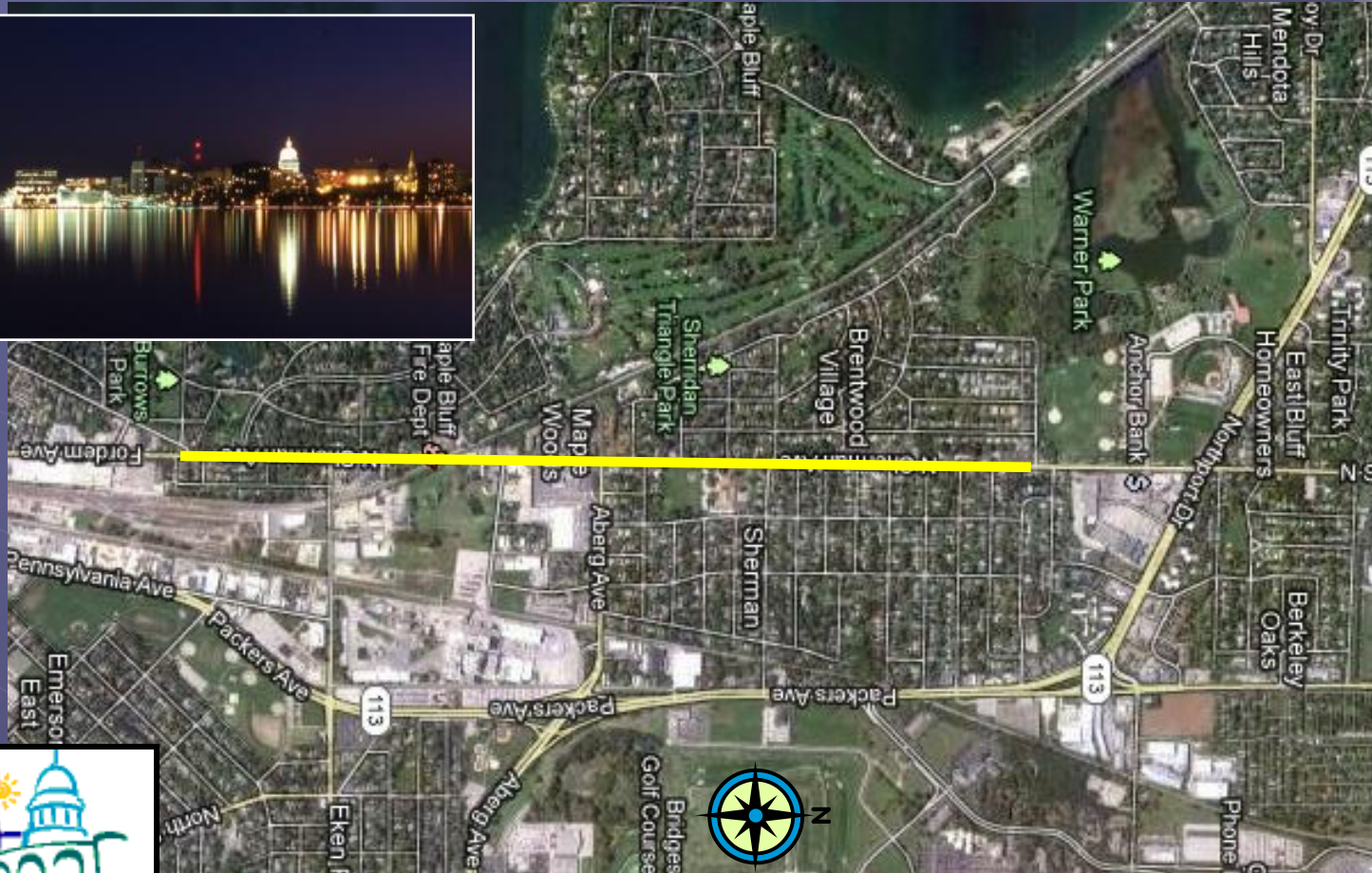


N. Sherman Ave.

Operations & Safety Analysis

Fordem to Trailway



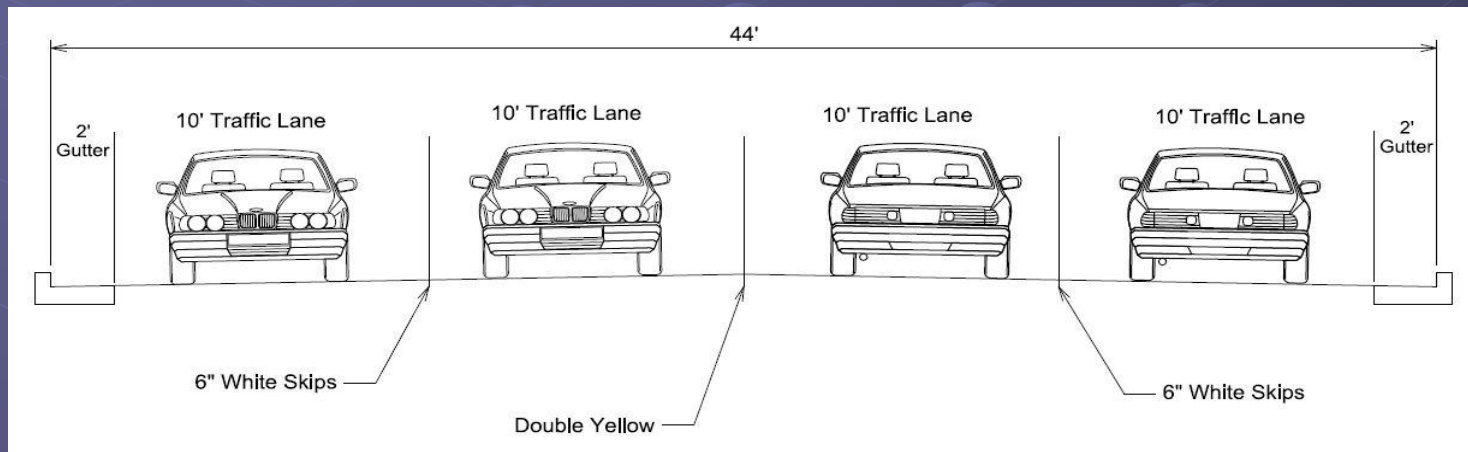
Project Description

Project:	Review operations and respond to concerns for traffic, pedestrian and bicycle safety, including speeding.
Project Limits:	Fordem Ave to Trailsway
Length:	1.6 miles
One public Meeting to date:	October 11, 2012

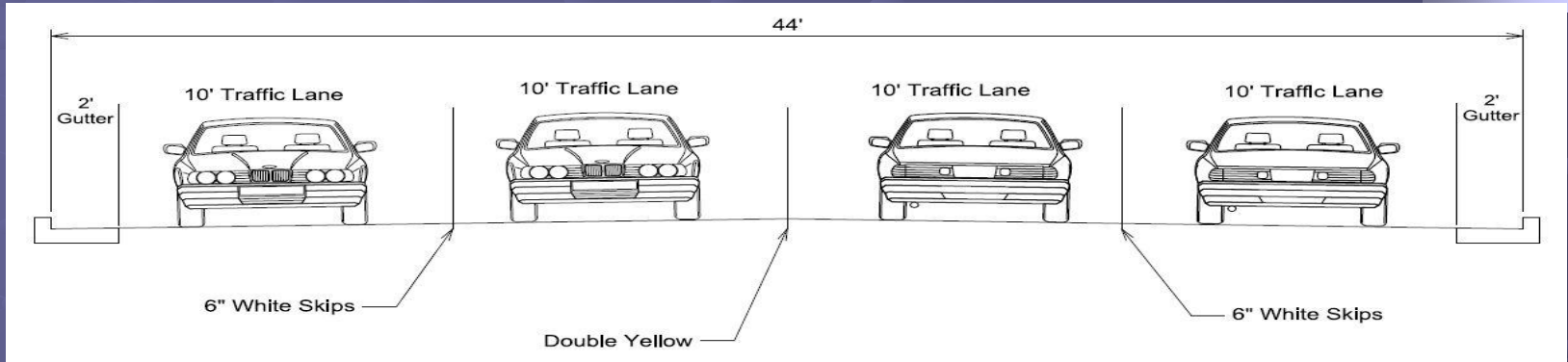


N. Sherman Ave.

Functionally Classified: Arterial Street
Posted Speed Limit: 30 mph
Existing Cross-Section—4 Lane undivided



N. Sherman Ave.



...it would be rare to build a Sherman Ave today

Sherman would not be considered a complete street.....

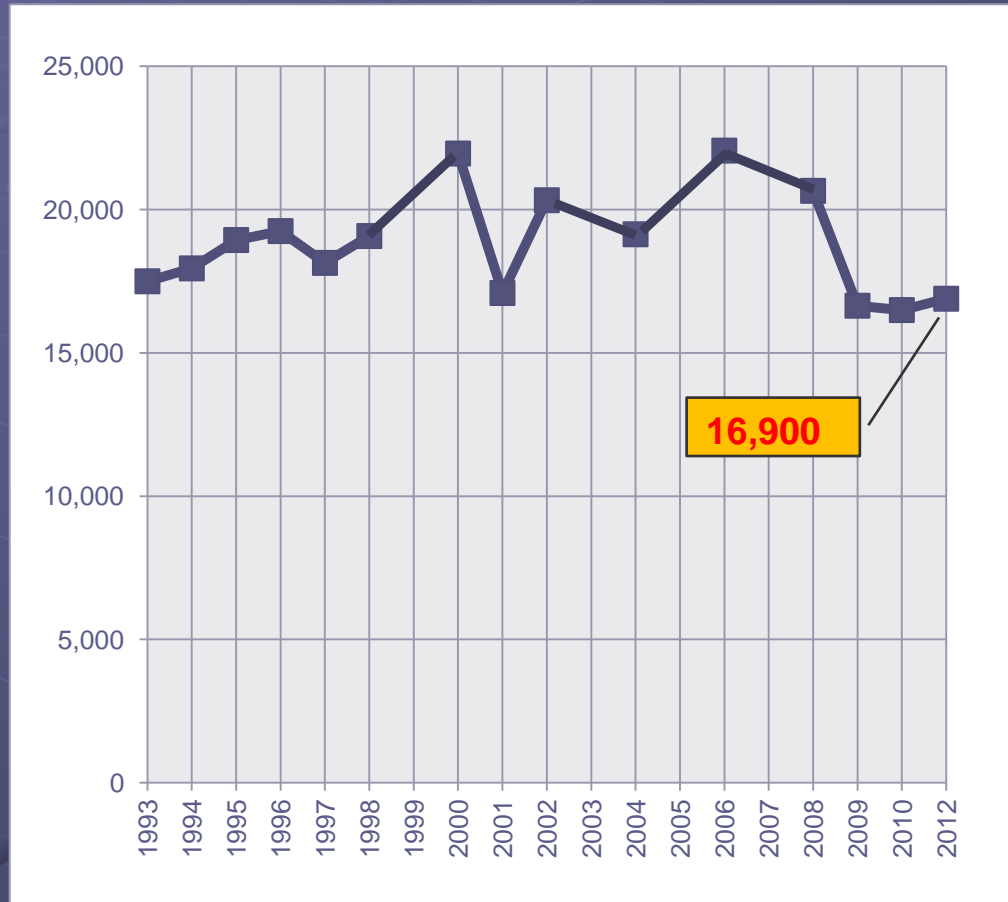
No pedestrian accommodations....

No bicycle facilities.....

.....Multi-lane undivided streets are not as safe as divided streets.



N. Sherman Ave. ADT



Source: City of Madison Traffic Engineering Division



N. Sherman Ave.

October, 2011 Ped and Bike Data
Trailsway to Fordem

447 trips/day bike (52% on sidewalk)
337 peds/day



Source: Alta Planning and Design

N. Sherman Ave.

October 2012, Neighborhood Meeting, Staff heard:

1. Too much speeding traffic on N Sherman
2. Difficult to cross for pedestrians, drivers not giving ROW, very problematic for seniors...
3. No accommodations for bicyclists
4. Cyclists on sidewalks, conflicts with peds
5. Traffic crashes



Speed Data

N. Sherman Ave.—Michigan Ct. & Commercial Dr.
85 percentile Speed—39.5 mph

N. Sherman Ave.—Logan St. & Farragut St.
85 percentile Speed—36.5 mph



Source: City of Madison, TE Division. Collected October 2012

N. Sherman Ave Crash Data

Type of Crash	Total # of Crashes	% of Total Crashes	Number of crashes with injuries	% of Injury Crashes
Left turn from Sherman	49	38.3	23	44.2
Right turn from Sherman	16	12.5	4	7.7
Left turn from minor street	24	18.8	10	19.2
Right turn from minor street	5	3.9	1	1.9
Bike/Pedestrian Related	5	3.9	2	3.9
Rear-end (not involving turns)	11	8.6	6	11.5
Ran stop sign	18	14.0	6	11.5
Totals	128	100	52	100



Source: City of Madison, TE Division. January 2007-December 2011.

Actions To Date:

- Modified Sherman from STH 113 to Trailsway
- Islands at Trailsway, Sherman Plaza
- RRFB near Northgate
- Radar board near Schools
- Signals at:
 - Schlimgen
 - Aberg
 - Commercial



Not a first for Sherman Ave...

Same problems studied 19 yrs ago

Recommended lane conversion...

Same problems studied 12 yrs ago

Limited lane conversion trial

Terminated by Alder & Ped/Bike

Same problems reported today...

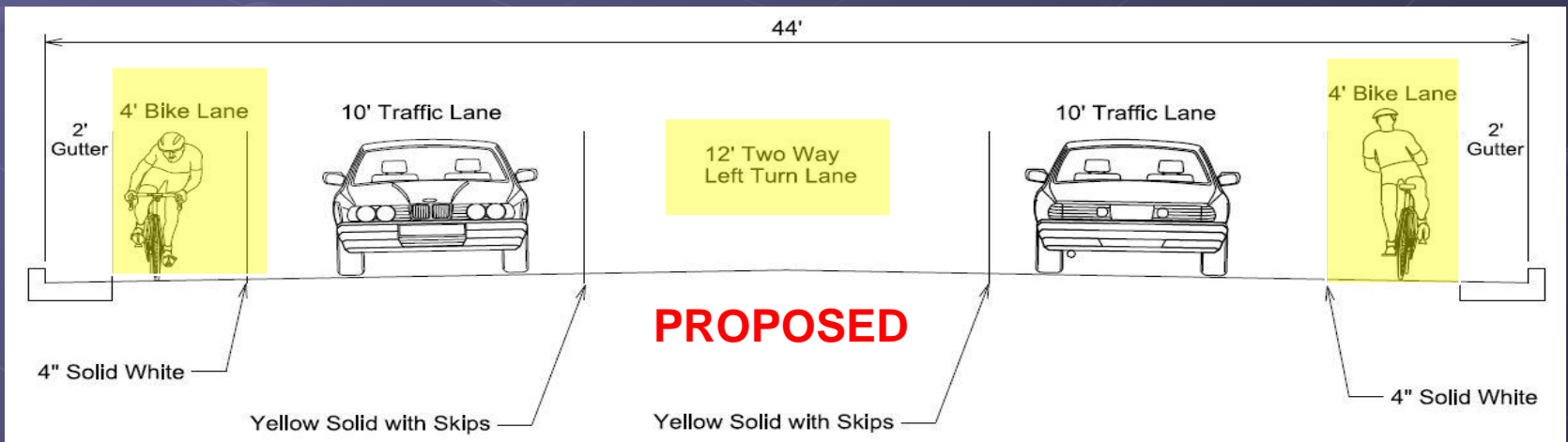
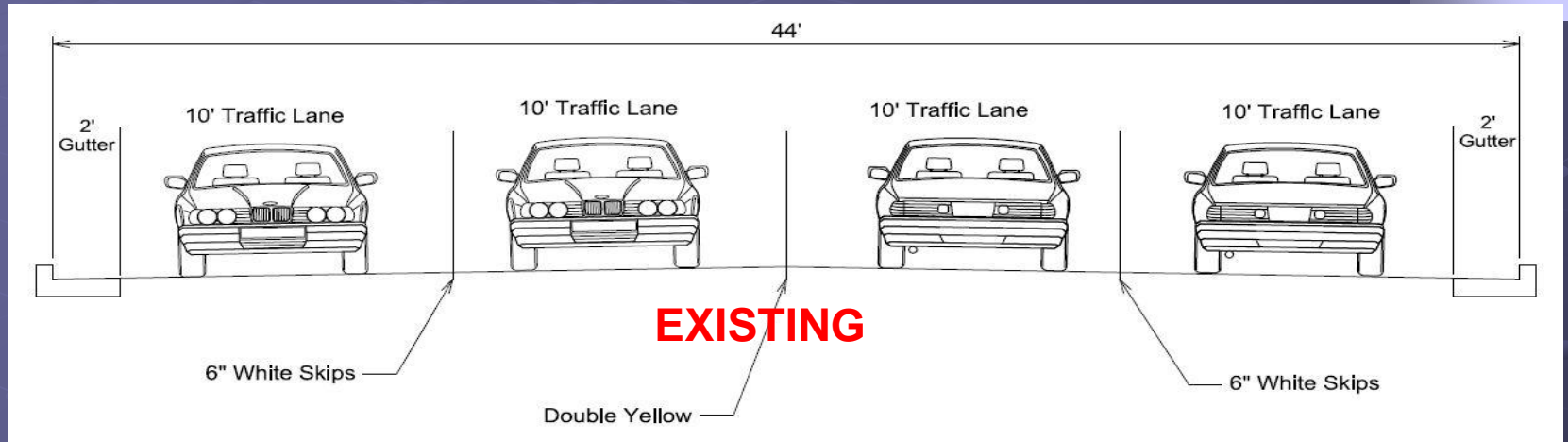


N. Sherman Ave

- Recommend conversion of 4 lane to 3 lanes with bike lanes and pedestrian refuge islands.



N. Sherman Ave.



Not a new concept.....

<http://www.lrrb.org/media/reports/200625.pdf> - report done by UW engineers for MN DOT on TWLTL safety
<http://www.fhwa.dot.gov/publications/research/safety/08046/index.cfm> - FHWA evaluation of TWLTL safety
http://safety.fhwa.dot.gov/provencountermeasures/fhwa_sa_12_011.htm - FHWA guidance for pedestrian islands
http://www.camsys.com/pubs/2011_AAA_CrashvCongUpd.pdf - AAA report on the costs of crashes vs. congestion
http://la.streetsblog.org/wp-content/pdf/york_blvd_final_report_compress.pdf - economic analysis of a 4 to 3 conversion
<http://www.fhwa.dot.gov/publications/research/safety/10053/10053.pdf> - FHWA estimates of crash reduction after lane reduction
http://www.lgc.org/freepub/docs/community_design/focus/walk_to_money.pdf - the economic benefits of walkable communities
http://www.iowadot.gov/crashanalysis/pdfs/iowa4to3laneconversion_fullbayes_june2005.pdf - effect of TWLTL on crash rates
http://www.ctre.iastate.edu/pubs/conferences/3lane_paper.pdf - study and analysis of four to three conversions
http://www.intrans.iastate.edu/publications/documents/t2summaries/4-3_lane.pdf - IA DOT summary of conversion studies
<http://www.ctre.iastate.edu/mtc/papers/2005/stout.pdf> - safety analysis of 4 to 3 conversions
http://www.urbanstreet.info/3rd_symp_proceedings/Four-Lane%20to%20Three-Lane.pdf - study of conversions
http://onlinepubs.trb.org/onlinepubs/circulars/ec019/Ec019_f4.pdf - paper on four to three conversions
http://www.michigan.gov/documents/mdot/MDOT_Research_Report_RC1555_Appendices_A-E_376150_7.pdf - lit review on the subject

More case studies:

<http://katana.hsrc.unc.edu/cms/downloads/ENG.ElCajon%27sRoadDiet.pdf> - El Cajon, CA Des Moines, IA
<http://www.strans.org/billingsroadconversion.html> - Billings MT
http://www.intrans.iastate.edu/ltap/tech_news/2006/may-jun/4-3lanes.pdf - summary of IA research
<http://www.ite.org/traffic/documents/AB02H5501.pdf> - Burnsville, MN and River Falls, WI
<http://www.walkable.org/assets/downloads/roaddiets.pdf> - summarizes a number of case studies
http://www.oregonite.org/2007D6/paper_review/D4_201_Rosales_paper.pdf - contains multiple case studies
<http://www.pps.org/reference/rightsizing/> - numerous case studies and links to other resources
<http://www.co.genesee.mi.us/gcmpr-plan/LRTPWeb/TechReports/CStreets.pdf> - Genesee County, MI
<http://sdite.org/presentations2007/2A-Saak-Road%20Diet%20Implementation%20in%20NC%20-%20The%20East%20Blvd.%20Experience.pdf>
-Charlotte, NC
<http://www.ite.org/traffic/documents/AB07H3401.pdf> - Hartford, CT
http://www.sacog.org/complete-streets/toolkit/files/docs/City%20of%20Orlando_Edgewater%20Drive%20Before%20&%20After%20Re-Striping%20Results.pdf - Orlando, FL

Other materials:

<http://64.209.135.69/News/4786/road-diet-makes-ingersoll-fit-a-view-from-cityview> - oped from business owners post-conversion

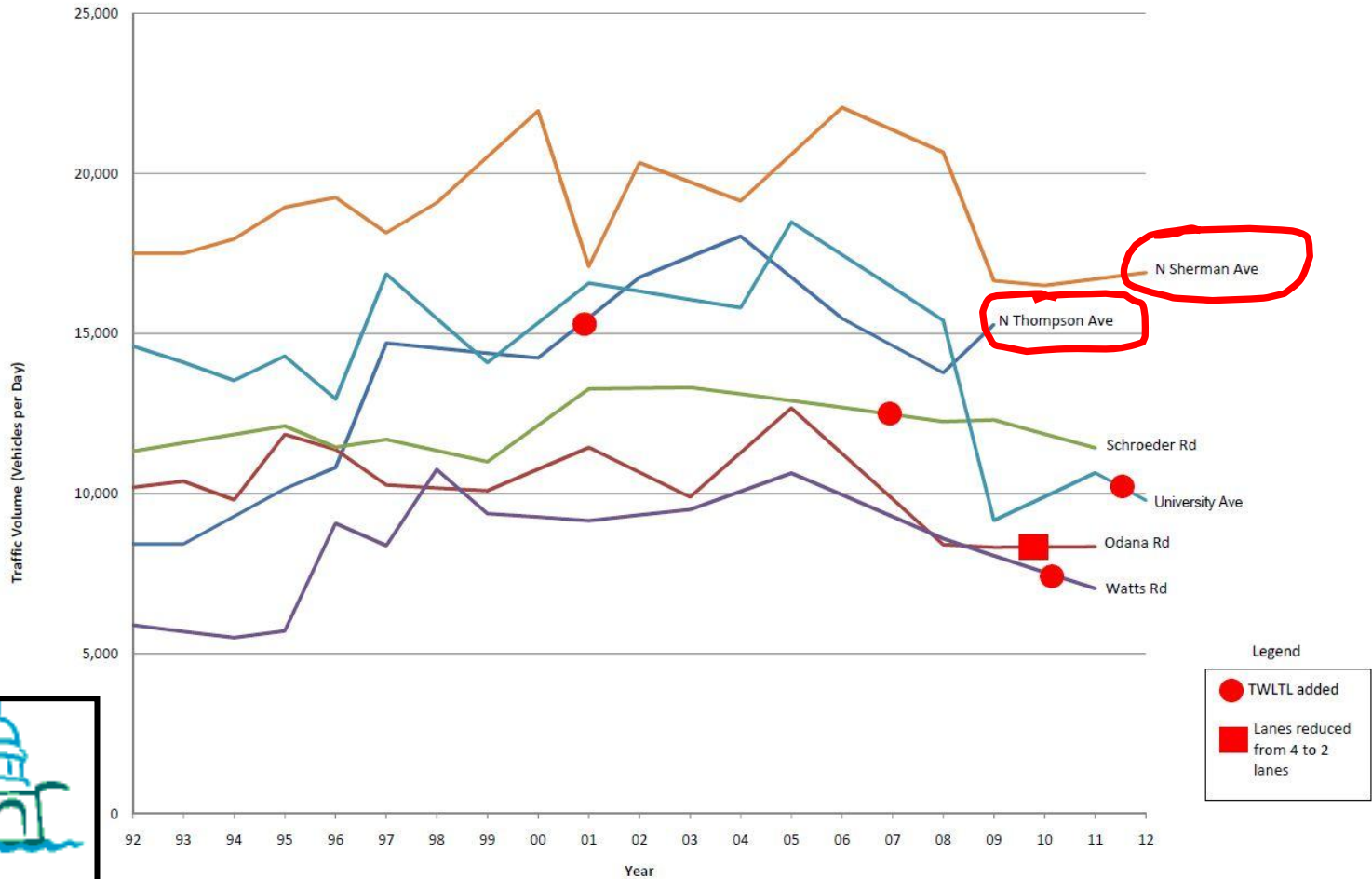
N. Sherman Ave

- Three Lane Conversion will:
 - Reduce crashes
 - Provide a complete street
 - Provide accommodations for bikes
 - Provide enhanced crossings for peds and it...
- Can adequately serve existing volume of traffic.



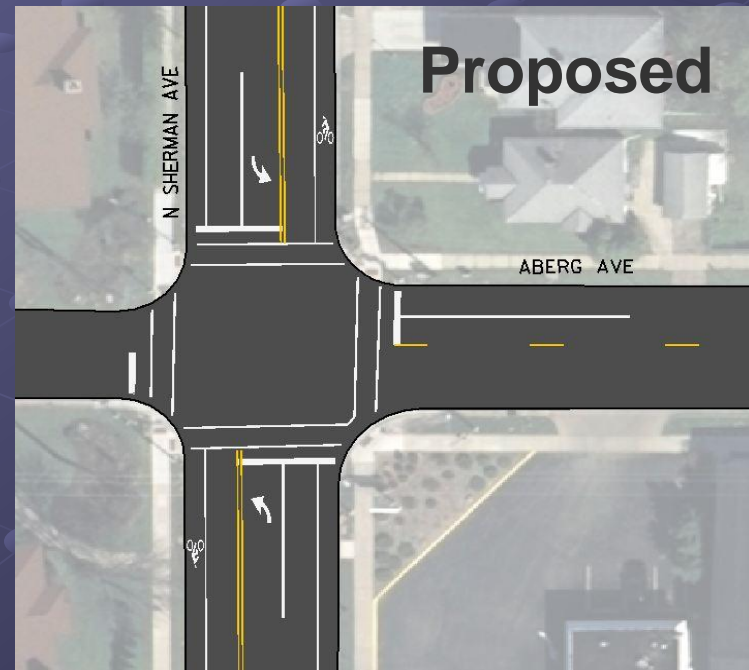
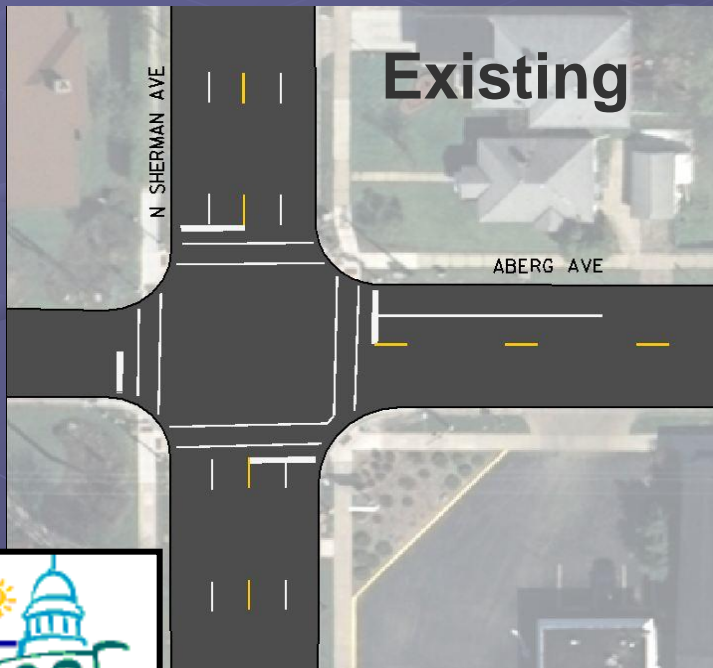
Traffic Diversion

Volume Trends on Streets with Lane Reductions



Traffic Diversion

Significant diversion not expected, some congestion for PM Peak Hour outbound



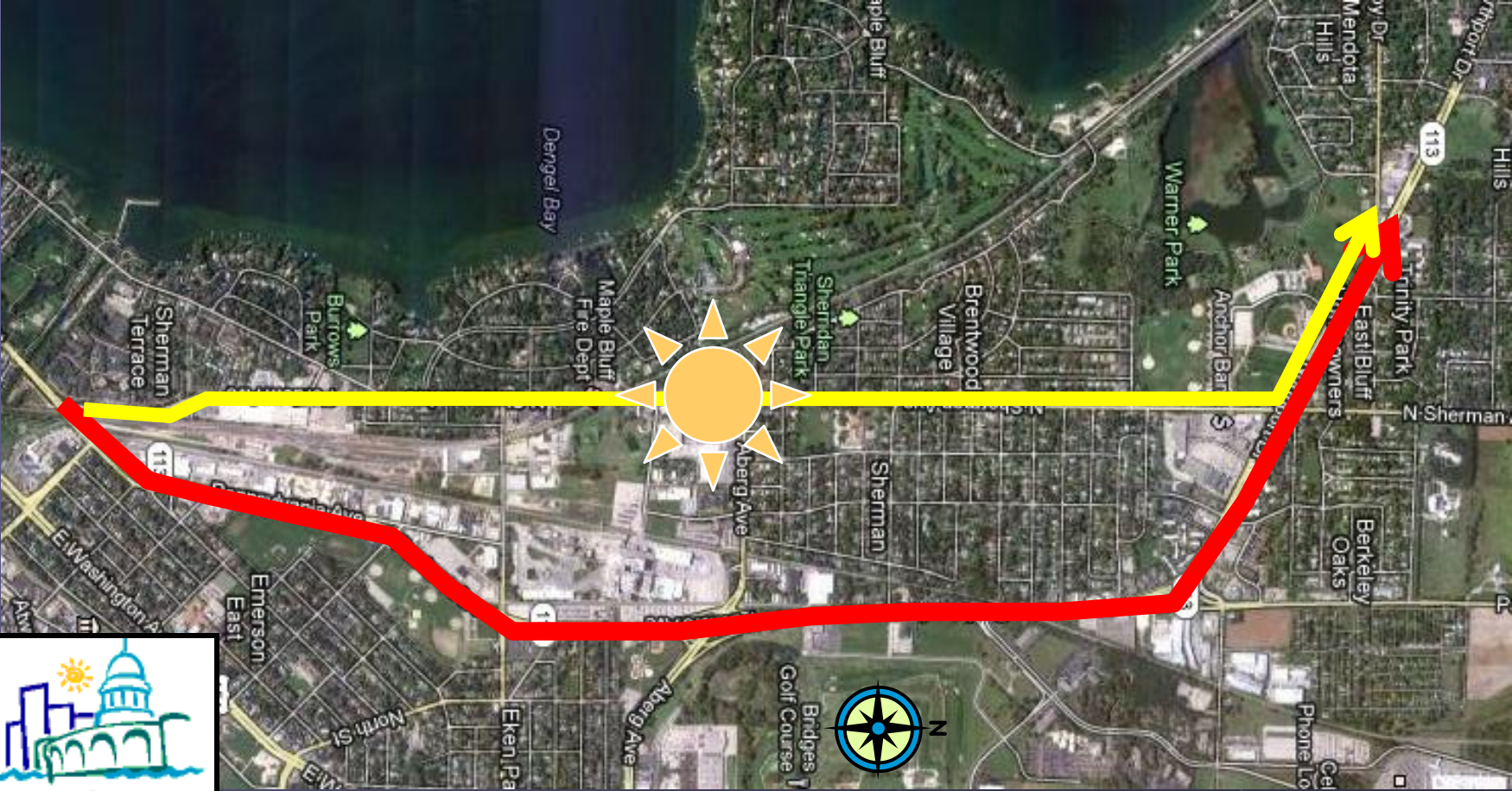
N. Sherman Ave.



50th percentile queue, PM Peak Hour, modeled with proposed

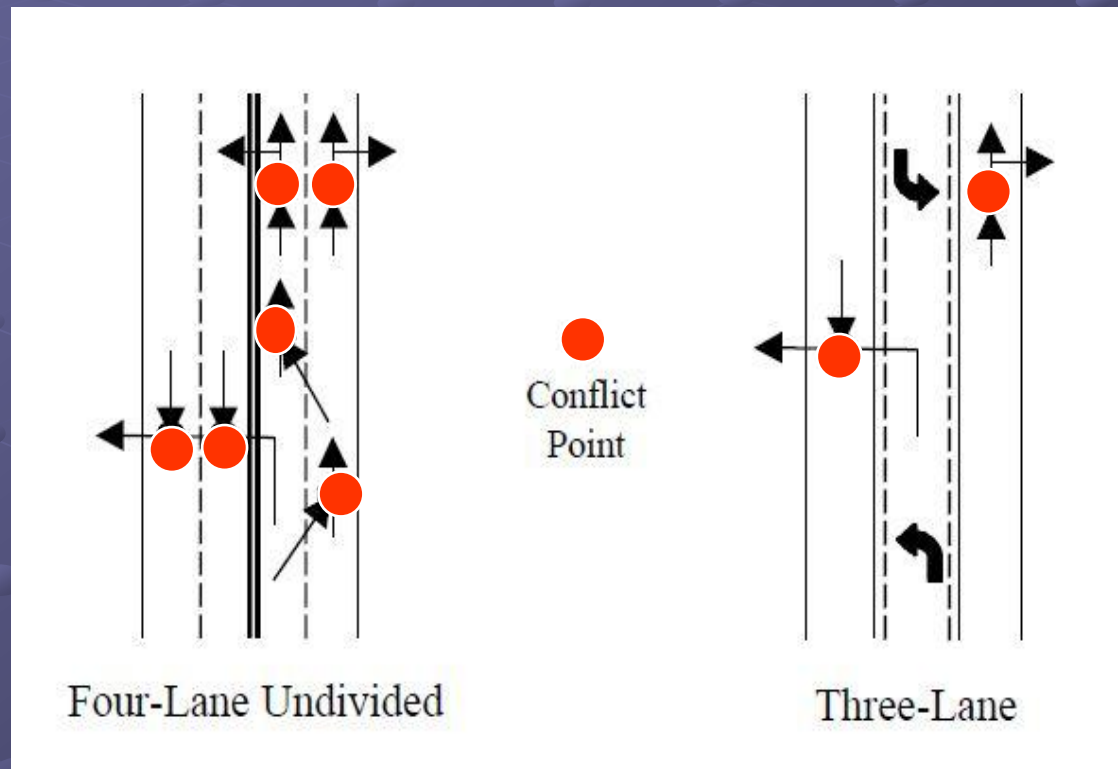


Diversion Route



Traffic Crashes

Function of Points of Conflict



A 67% reduction....



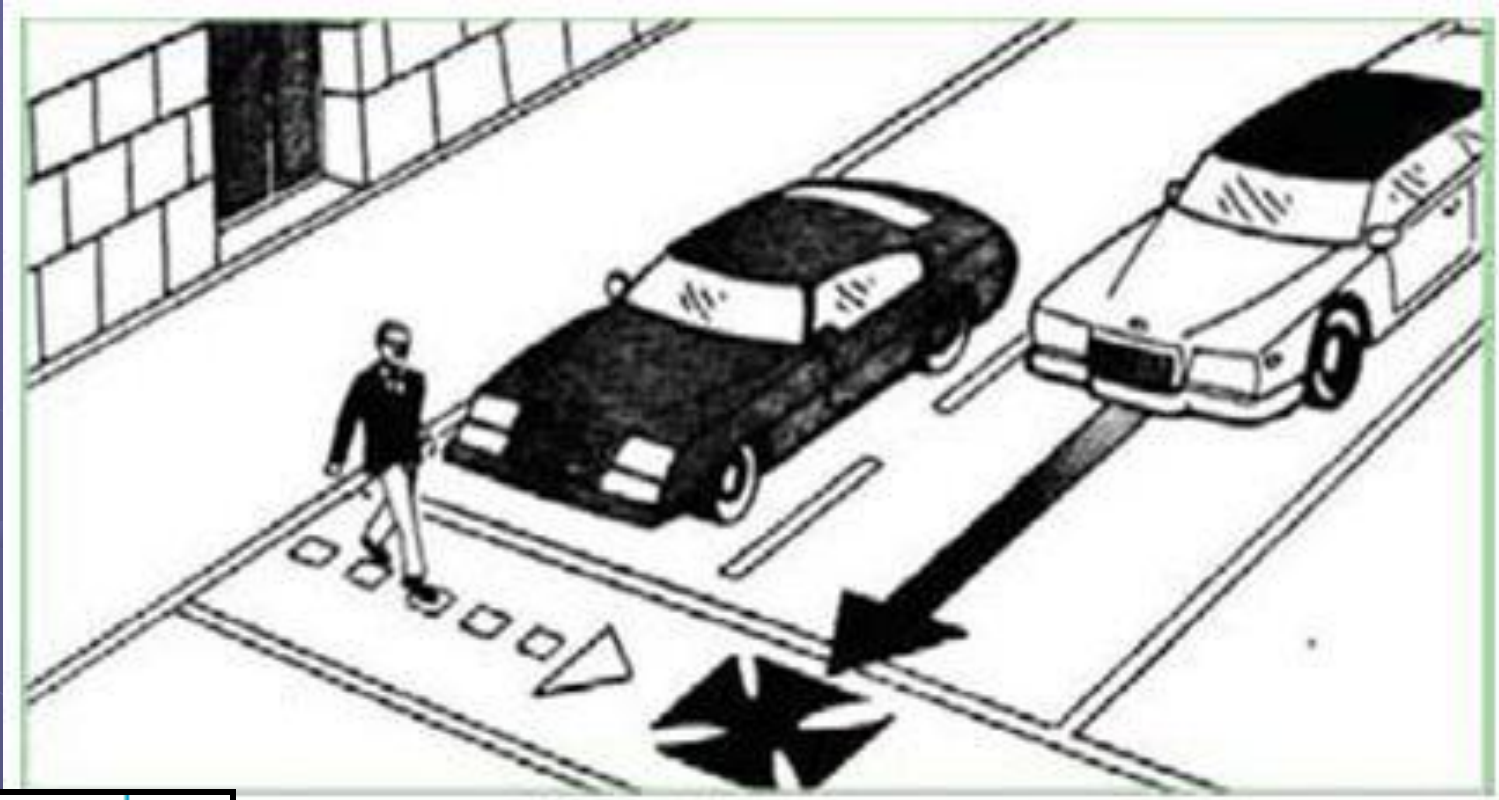
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Totals	128	100	52	100



Source: City of Madison, TE Division. January 2007-December 2011.

Ped Accomodations



Four Lane Street—multiple threat crash

Ped Accommodations



Dan Burden



Ped Accommodations

Refuge Islands

- 1) Northgate Mall at the existing RRFB
- 2) Between Steensland and Boyd
- 3) Logan St North side
- 4) Farragut St North side (near schools)
- 5) Sachtjen St South side



N. Sherman Ave.

COST:

Installation with semi-permanent markings
and construction of refuge islands with signing:

\$100,000



