N. GAMMON RD

Short and Long-Term Plans

March 11, 2014
6:30 pm
Lussier Neighborhood Center

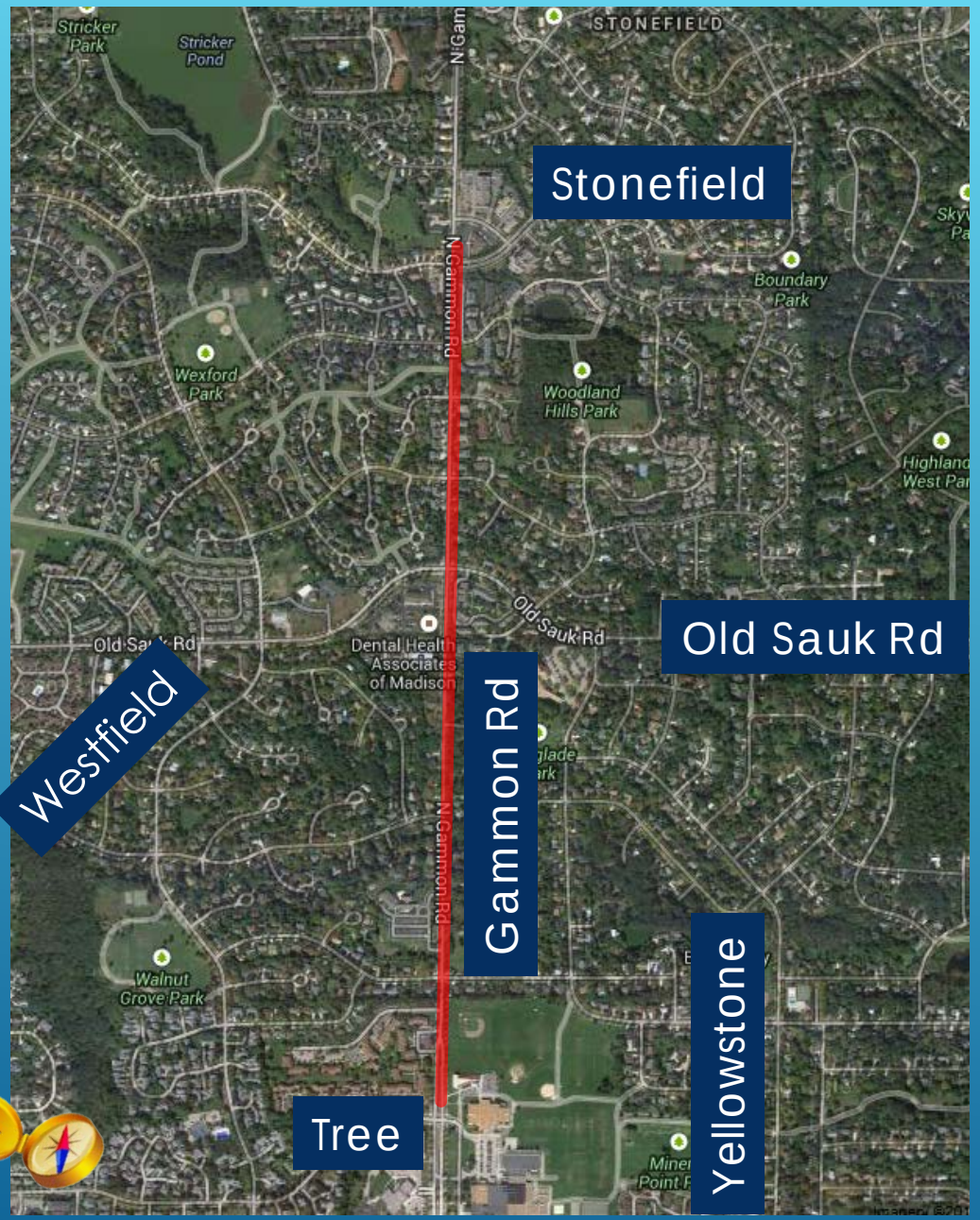
INTRODUCTIONS

- Alder Paul Skidmore D9, Alder Mark Clear D19
- Rob Phillips, P.E. City Engineer
- David Dryer, P.E. City Traffic Engineer

PAVEMENT RESURFACING SCHEDULED 2014

LIMITS

~1.2 Mile Segment

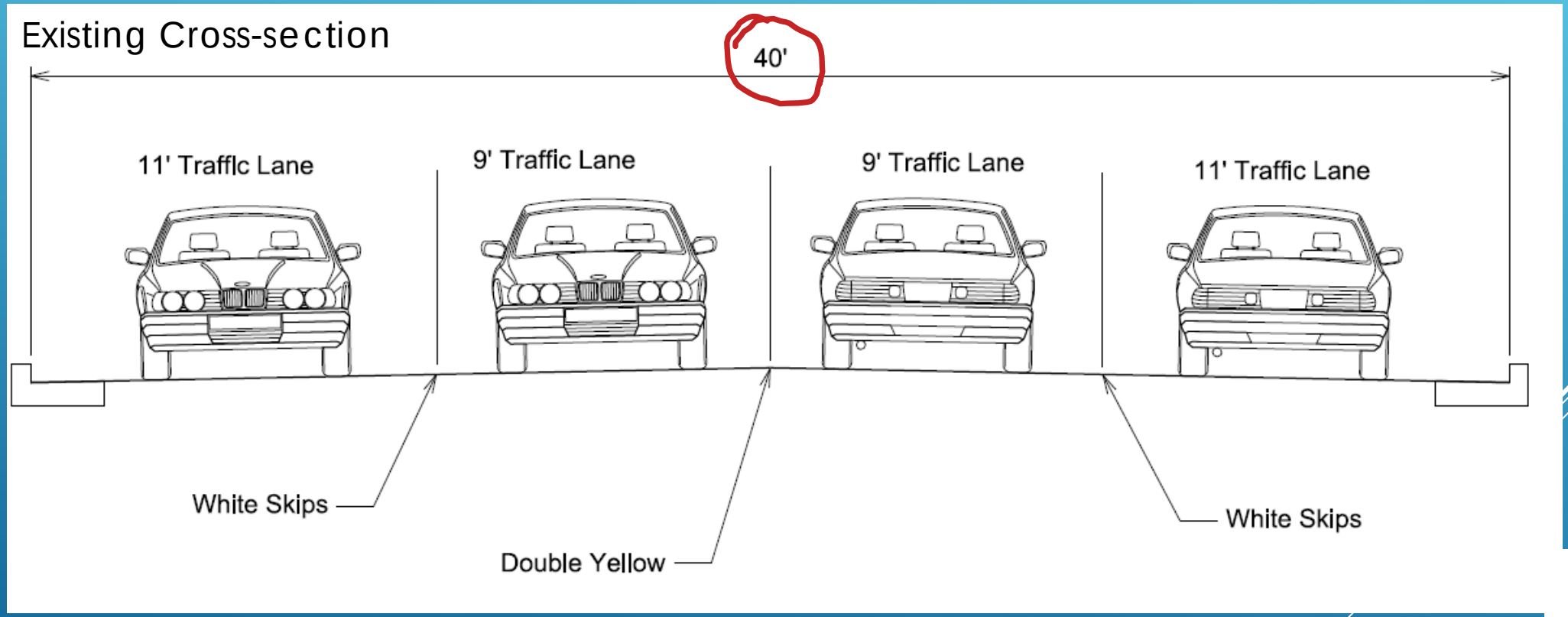


RESIDENTS RAISED CONCERNS

- Speeding
- Crashes
- Difficulty getting into and out of driveways
- Challenge to safely enforce speed limit

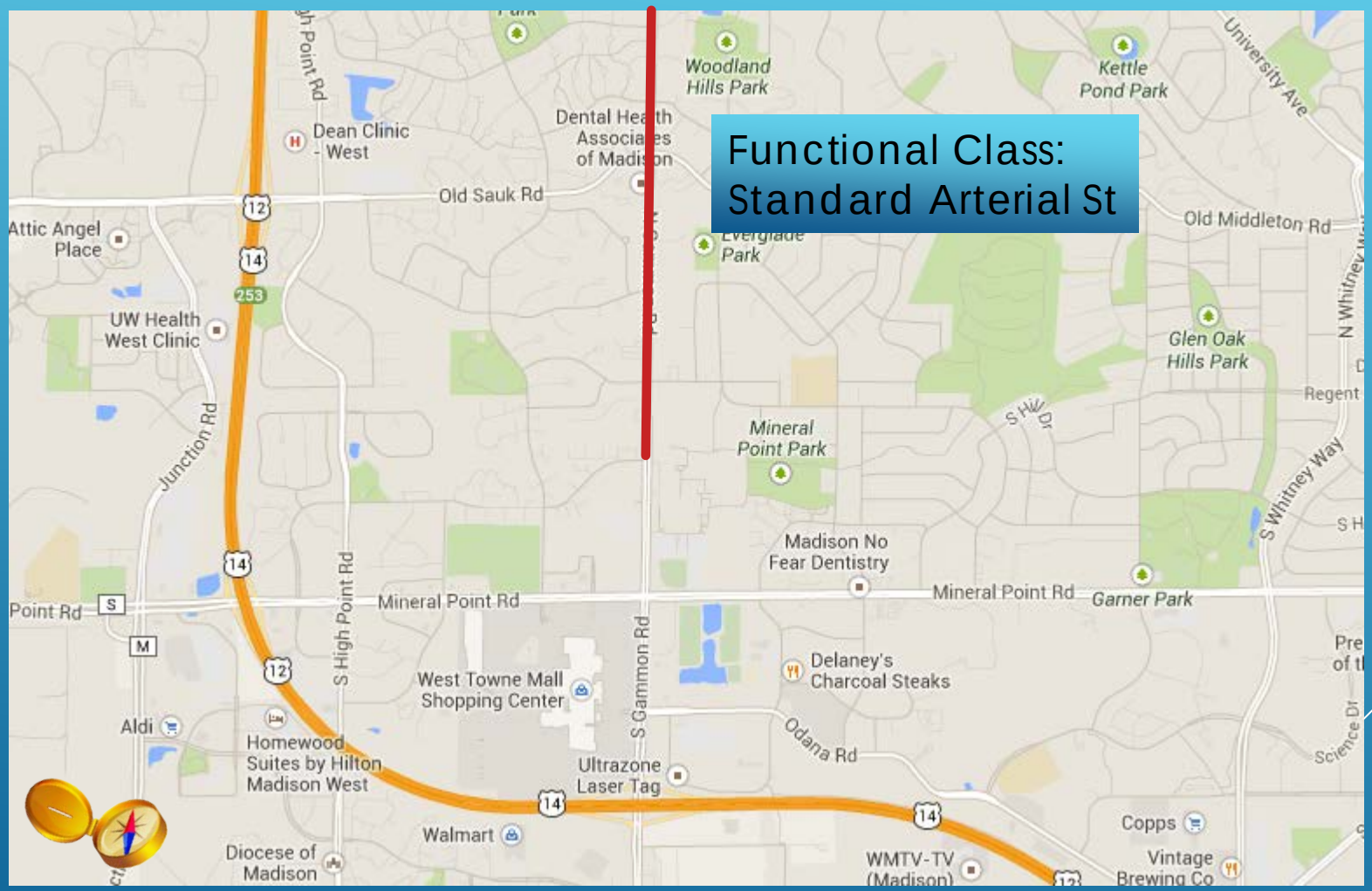
Alder's Requested we pause and review our options....

WHAT SHOULD THE STREET LOOK LIKE?
HOW WOULD IT OPERATE?
WHAT WOULD CHANGES MEAN TO RESIDENTS AND THE REGION?

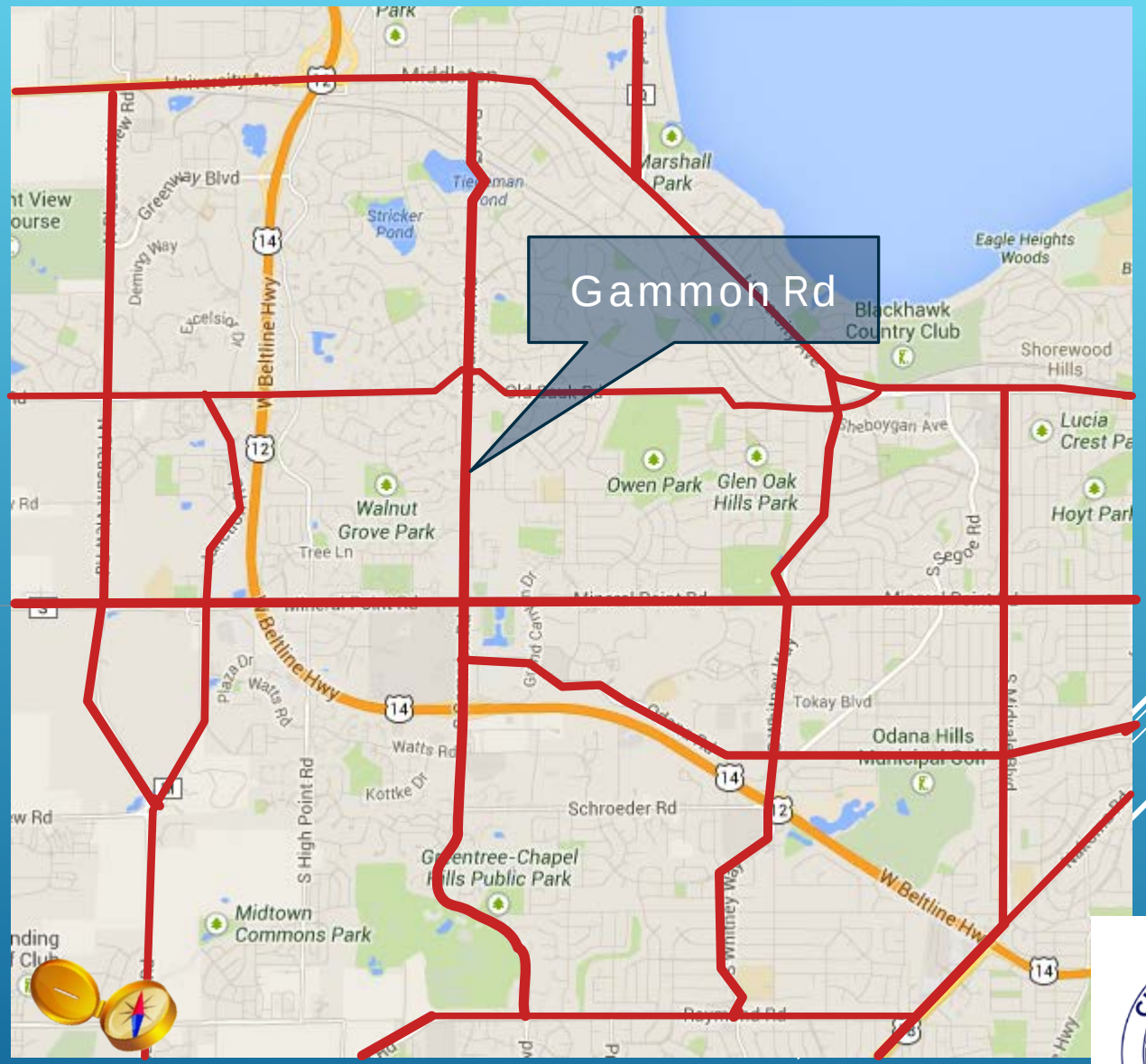


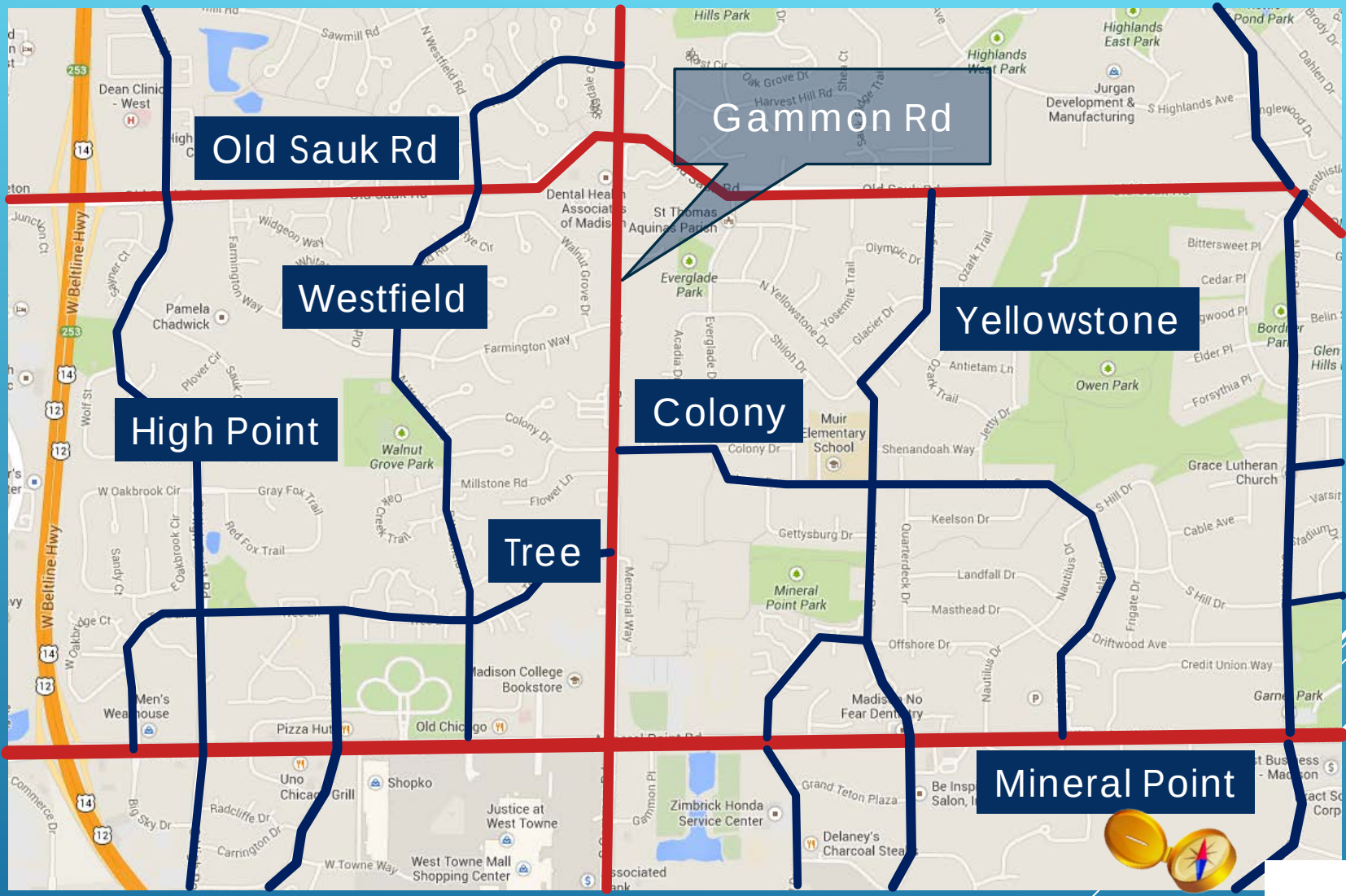
Right-of-Way width varies
EXISTING CROSS-SECTION (width varies at OSR)

BACKGROUND


Functional Class:
Standard Arterial St
Woodland Hills Park
Kettle Pond Park
University Ave
Dean Clinic - West
Old Sauk Rd
Old Middleton Rd
Attic Angel Place
Everglade Park
UW Health West Clinic
Glen Oak Hills Park
Junction Rd
Mineral Point Park
Madison No Fear Dentistry
Mineral Point Rd
Garner Park
S High Point Rd
S Gammon Rd
West Towne Mall Shopping Center
Delaney's Charcoal Steaks
Aldi
Homewood Suites by Hilton Madison West
Ultrazone Laser Tag
Odana Rd
Walmart
Copps
Diocese of Madison
WMTV-TV (Madison)
Vintage Brewing Co

REGIONAL ARTERIAL STREETS





ARTERIAL & COLLECTOR STREETS

SPEED AND VOLUME DATA

Traffic Volume ~17,300 Vehicles per day (VPD) (South end)
~15,200 VPD North end (North of Old Sauk Rd)

Average Travel Speed (at time posted Speed Limit 35 mph)

- **38 mph**

85th Percentile Speed

- **43 mph**

Average Travel Speed (Posted Speed Limit 30 mph)

- **37 mph------before 38 mph**

85th Percentile Speed

- **40 mph-------before 43 mph**

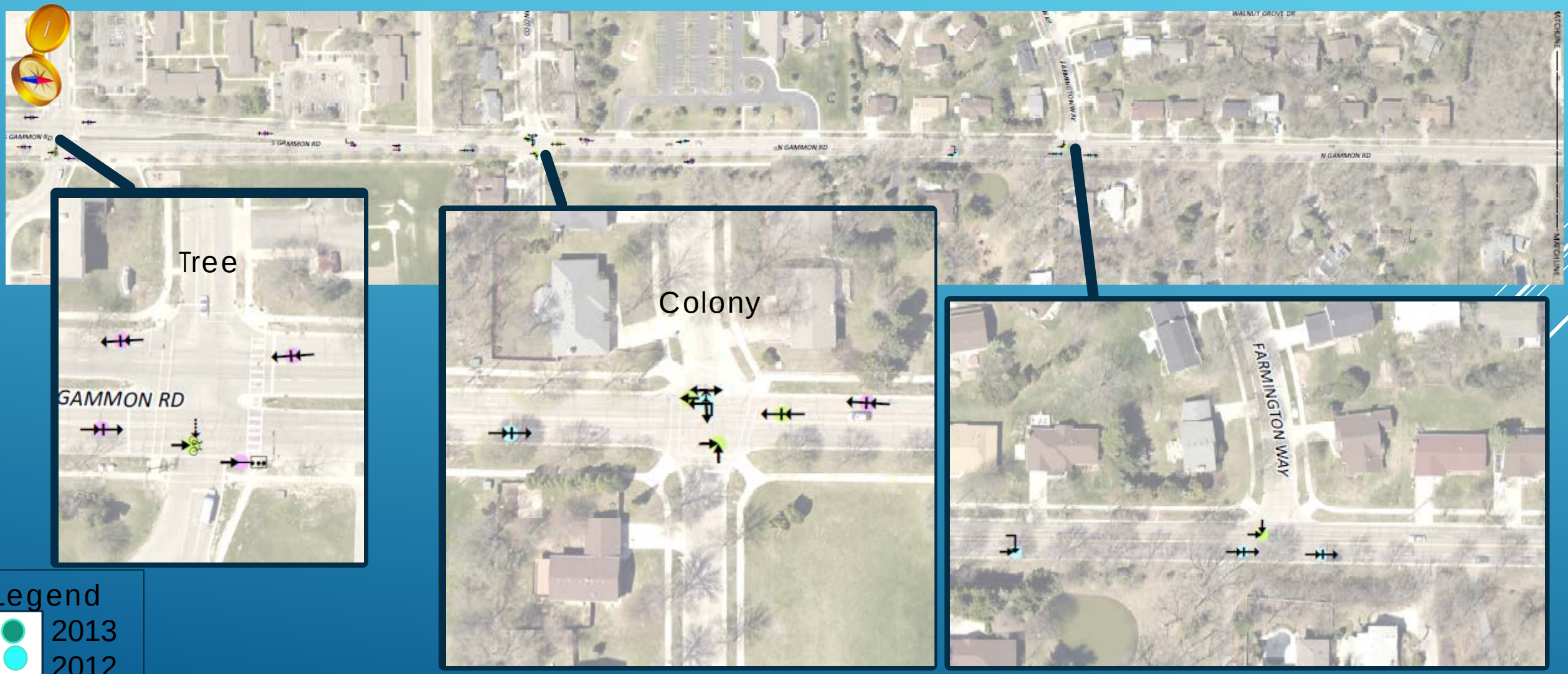
SPEED AND VOLUME DATA CURRENT

TRAFFIC CRASHES ON N GAMMON RD

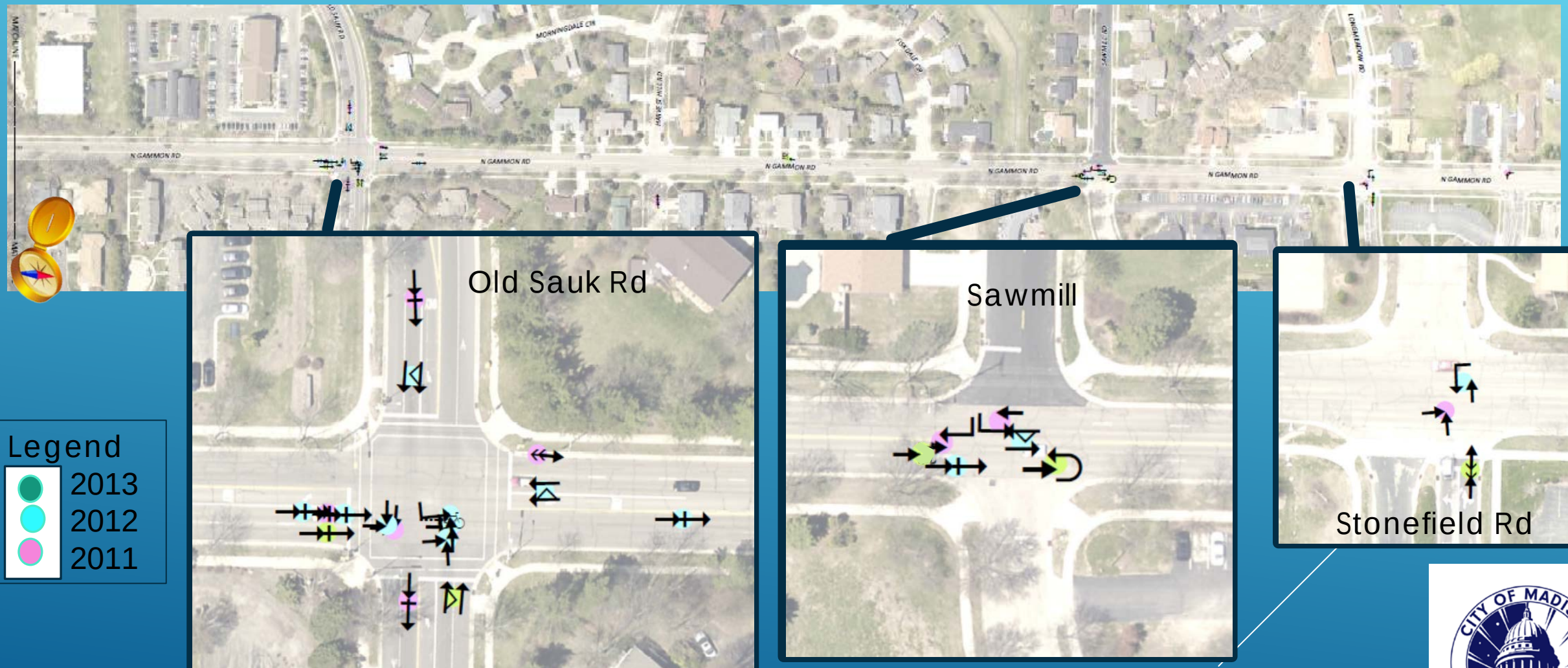
(TREE LANE TO STONEFIELD RD)

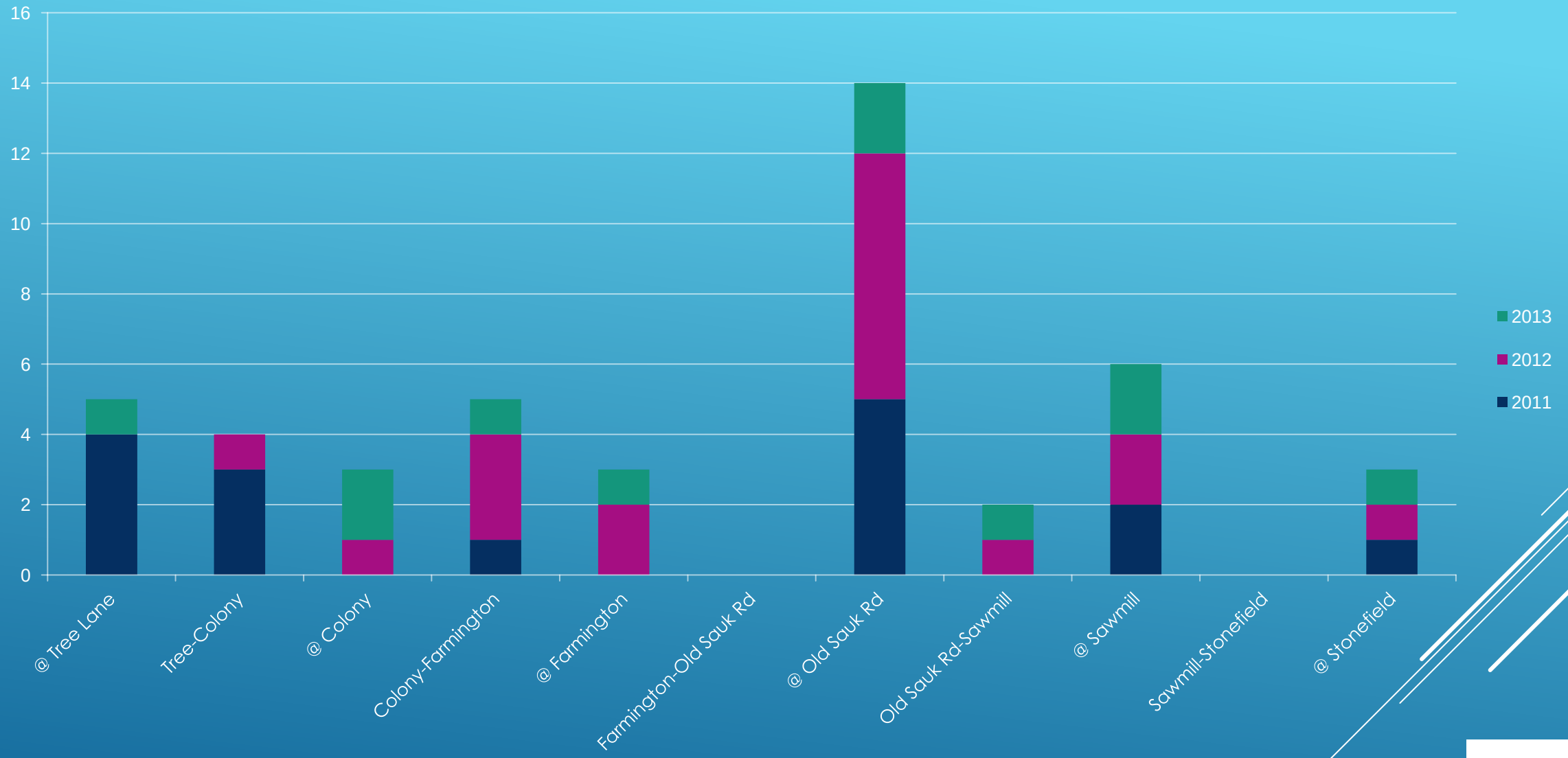
	2011	2012	2013	3 Year Average
@ Tree Lane	4	--	1	1.67
Tree-Colony	3	1	--	1.33
@ Colony	--	1	2	1.33
Colony-Farmington	1	3	1	1.67
@ Farmington	--	2	1	1.33
Farmington-Old Sauk Rd	--	--	--	--
@ Old Sauk Rd	5	7	2	4.67
Old Sauk Rd-Sawmill	--	1	1	0.67
@ Sawmill	2	2	2	2.00
Sawmill-Stonefield	--	--	--	--
@ Stonefield	1	1	1	1.0
Total	16	18	11	

CRASH STRIP MAP

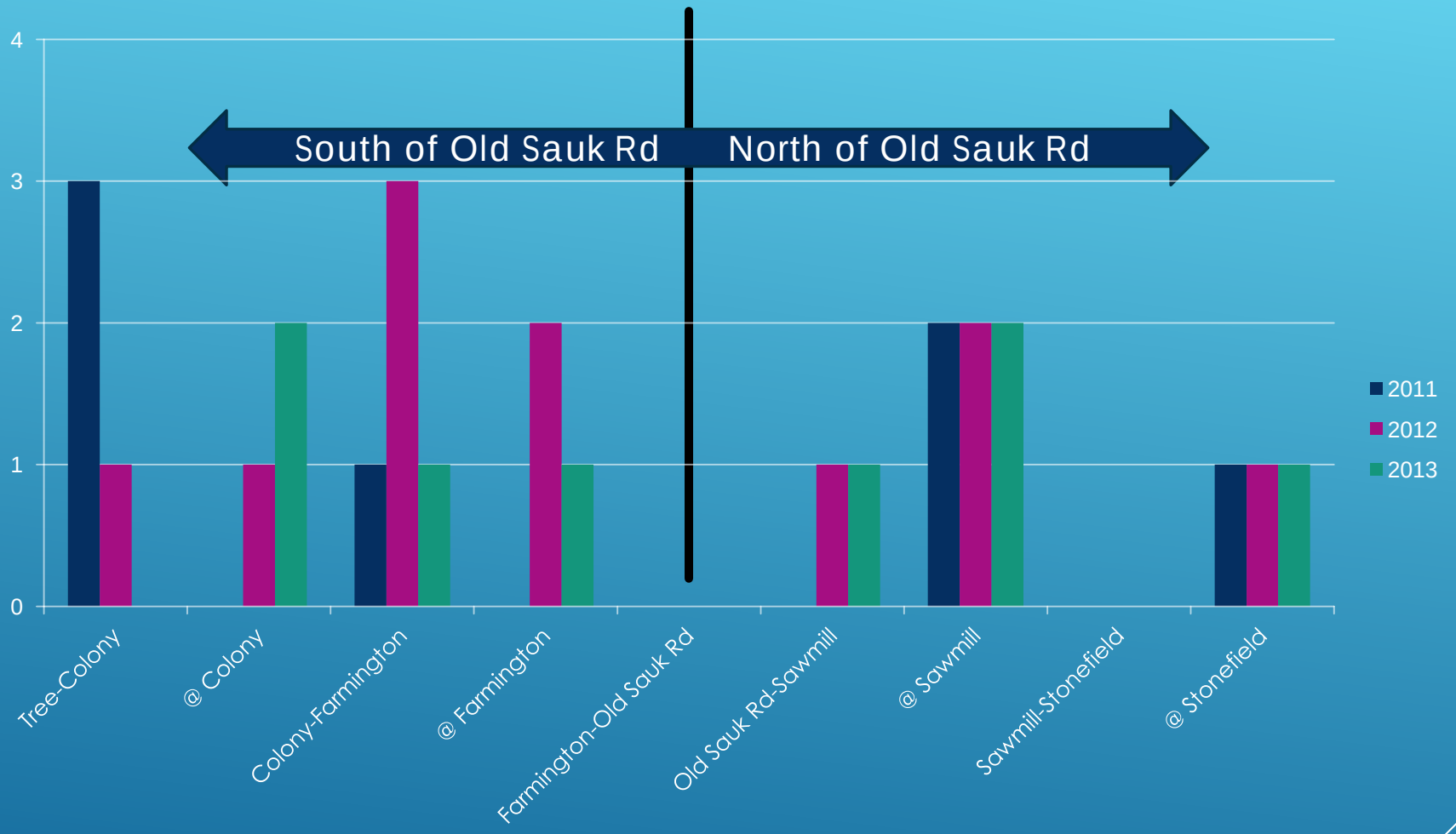


CRASH STRIP MAP





TREE-STONEFIELD TOTAL CRASH COMPARISON



N. GAMMON RD TREE LANE TO STONEFIELD RD ANNUAL CRASHES (SIGNALIZED INTERSECTIONS REMOVED)

INTERSECTION LOCATIONS	Crashes per Million Entering Vehicles (MEV)	Statewide Average (MEV)
@ Tree Lane(signal)-	0.26	0.59
@ Colony-	0.16	0.40
@ Farmington-	0.16	0.40
@ Old Sauk Rd (signal)-	0.44	0.59
@ Sawmill-	0.36	0.40
@ Stonefield-	0.18	0.40

All locations are below Statewide average in crashes per intersection location...

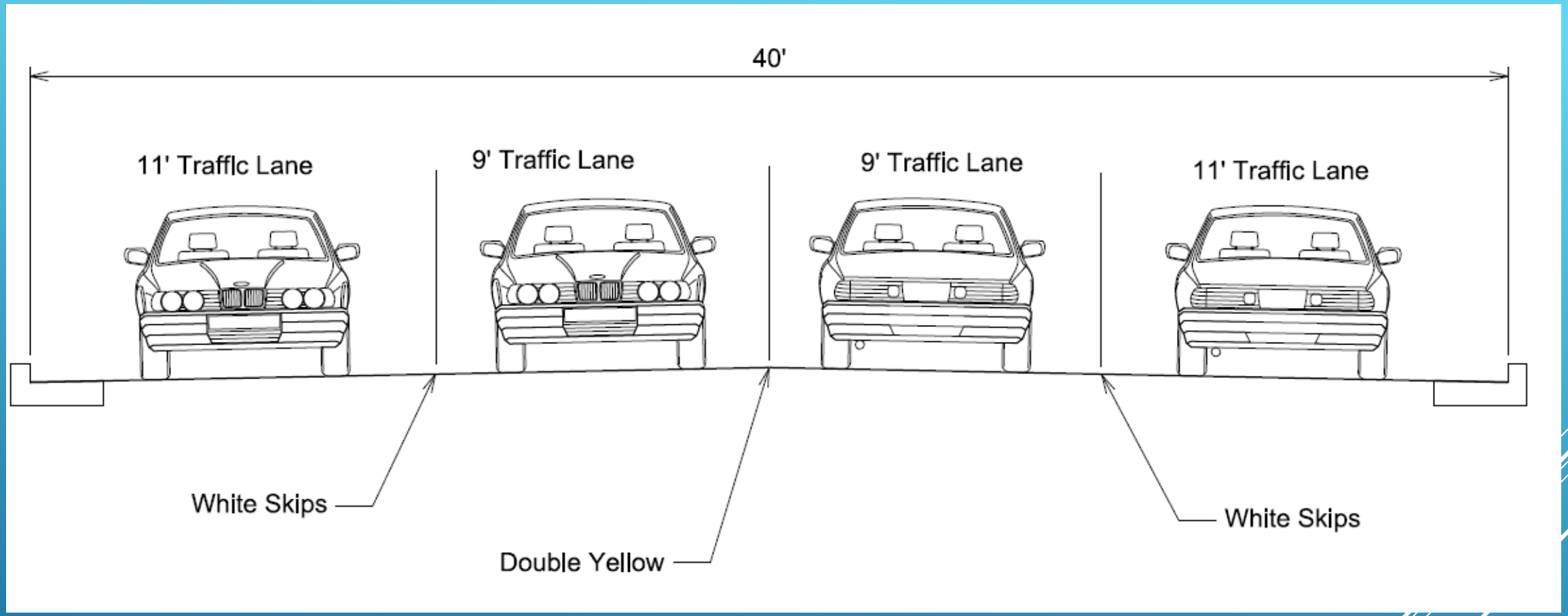
HOW DO WE COMPARE?

MIDBLOCK SEGMENTS	Average Crashes Per Year	Crashes Per Mile	Crashes per 100 Million Vehicle Miles Traveled	Local Road Crash Rate Statewide per 100 Million Vehicle Miles Traveled
Tree-Colony-	1.33	7.4	135	
Colony-Farmington-	1.67	7.9	146	
Farmington-Old Sauk Rd-	0	0	0	
Old Sauk Rd-Sawmill-	0.67	2.2	48	
Sawmill-Stonefield	0	0	0	237

All locations are below Statewide average in crashes per segment…

HOW DO WE COMPARE?

CROSS-SECTION OPTIONS
(NO WIDENING)



Existing Cross-section

STATUS QUO—REMARK AS IS TODAY
(NWOPT1)

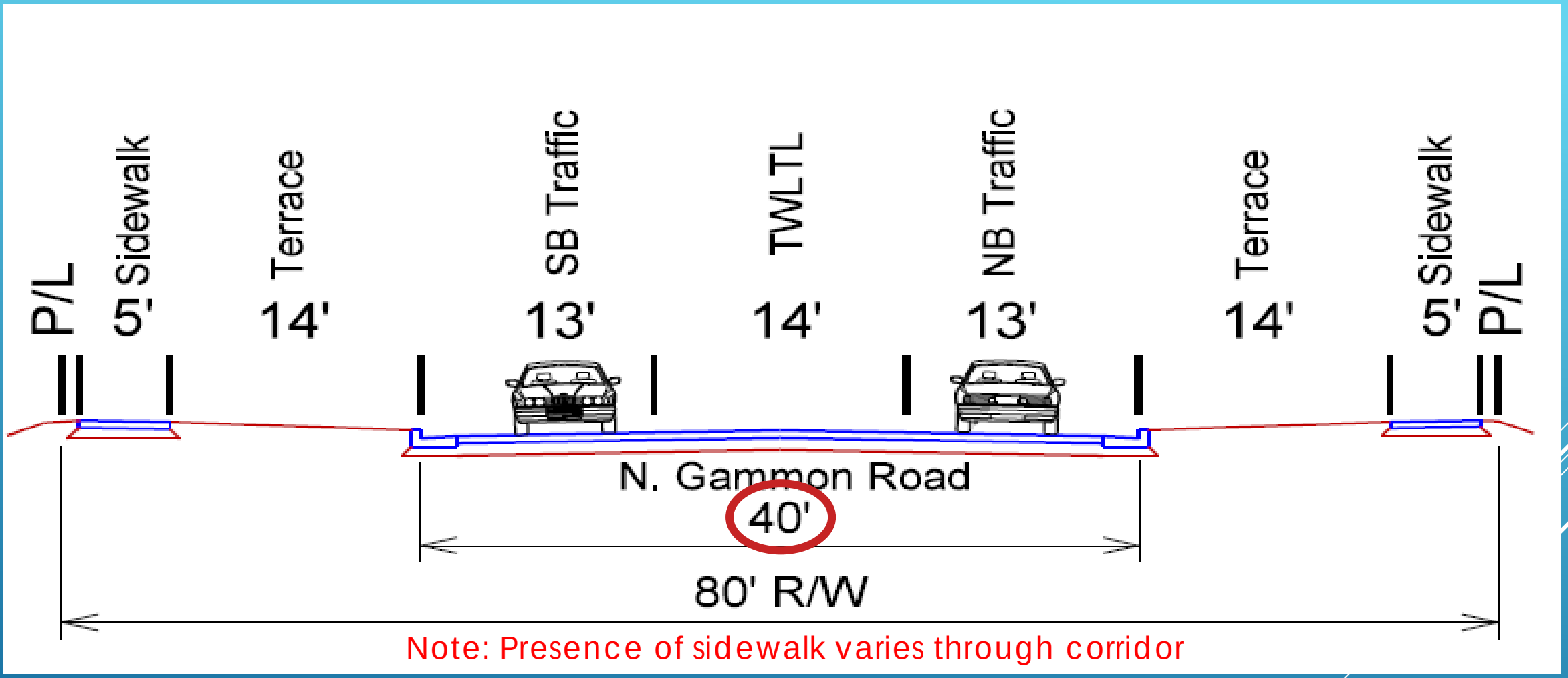
PROS

- Least expensive
- Maintains street capacity
- Traffic diversion--little to none

CONS

- Does not address neighborhood request
- No facilities for pedestrians and bicyclists

STATUS QUO-REMARK AS IS TODAY (NWOPT1)



3 LANE, NO WIDENING, NO BIKE LANES (RESTRIPING)

(NWOPT2)

3 LANE, NO WIDENING PROS & CONS (NWOPT2)

PROS

- Can be safer if transitions can be made appropriately and volumes are not too high
- Benefit to left turning motorists from/to driveways
- More uniform speed once in the 3 lane section

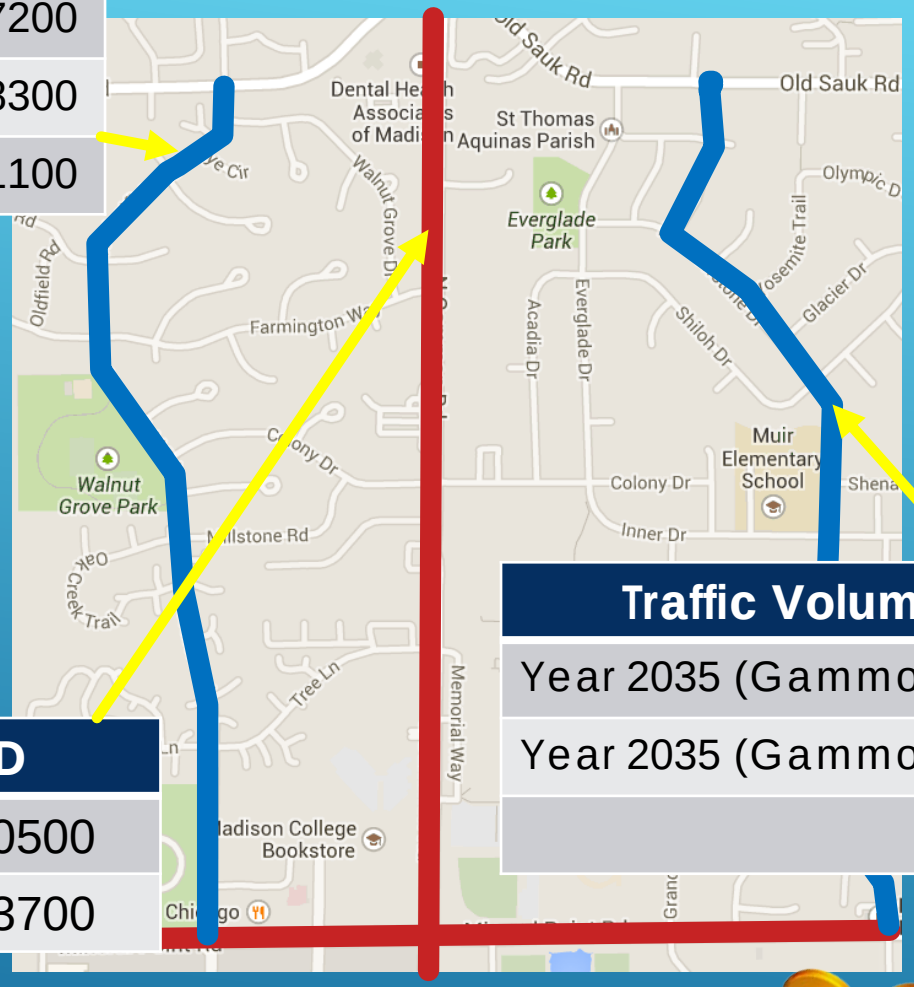
CONS

- Driveway operations begin to fail at volumes over 17,500 vpd
- Metropolitan Planning Organization (MPO) projected volumes exceed 17,500 vpd
- Expect diversion to parallel collector streets
- Problematic lane drop near schools as people jockey for position
- Without reconstruction signal fails under future traffic at Old Sauk Rd and Gammon

- City of Middleton desires 3 lane cross-section with bikes, North of Old Sauk Rd—Stonefield. To provide this space for bikes requires widening Gammon Rd.
- 3 Lane section reduces the capacity of Gammon Rd—result, diverted traffic
- Requires Gammon Rd lane drop North of Tree Lane
- Has negative impacts on the intersection operation of Old Sauk Rd and Gammon Rd—lane drops and unbalanced lane use reduce intersection capacity

ADDITIONAL CONSIDERATIONS…
(NWOPT2)

Traffic Volume on WESTFIELD RD	
Year 2035 (Gammon Rd current lanes)	7200
Year 2035 (Gammon Rd 3 lanes)	8300
Difference	1100



Traffic Volume on N GAMMON RD	
Year 2035 (Gammon Rd current lanes)	20500
Year 2035 (Gammon Rd 3 lanes)	13700

Traffic Volume on YELLOWSTONE RD	
Year 2035 (Gammon Rd current lanes)	2500
Year 2035 (Gammon Rd 3 lanes)	4000
Difference	1500

TRAFFIC DIVERSION PROJECTIONS

TRAFFIC SIGNALS

TRAFFIC SIGNALS

PROS

- Can improve safety where majority of crashes are right angle crashes
- Can reduce congestion when volumes are so high that access from sidestreets is difficult
- Can provide a defined gap in traffic for pedestrians and cyclists to cross

CONS

- Will increase certain crashes—rear ends in particular
- Can increase delay to side street traffic
- Increase auto exhaust emissions
- Increase fuel consumption
- Cost $100,000+

SIGNAL INSTALLATION CRITERIA[1](nine of them)

- 1, 2 and 3--Volume of traffic on main and side streets
- 4 and 5—Peds and Schools
- 6 Part of a system
- 7 Crashes
- 8 & 9 Network and RR related

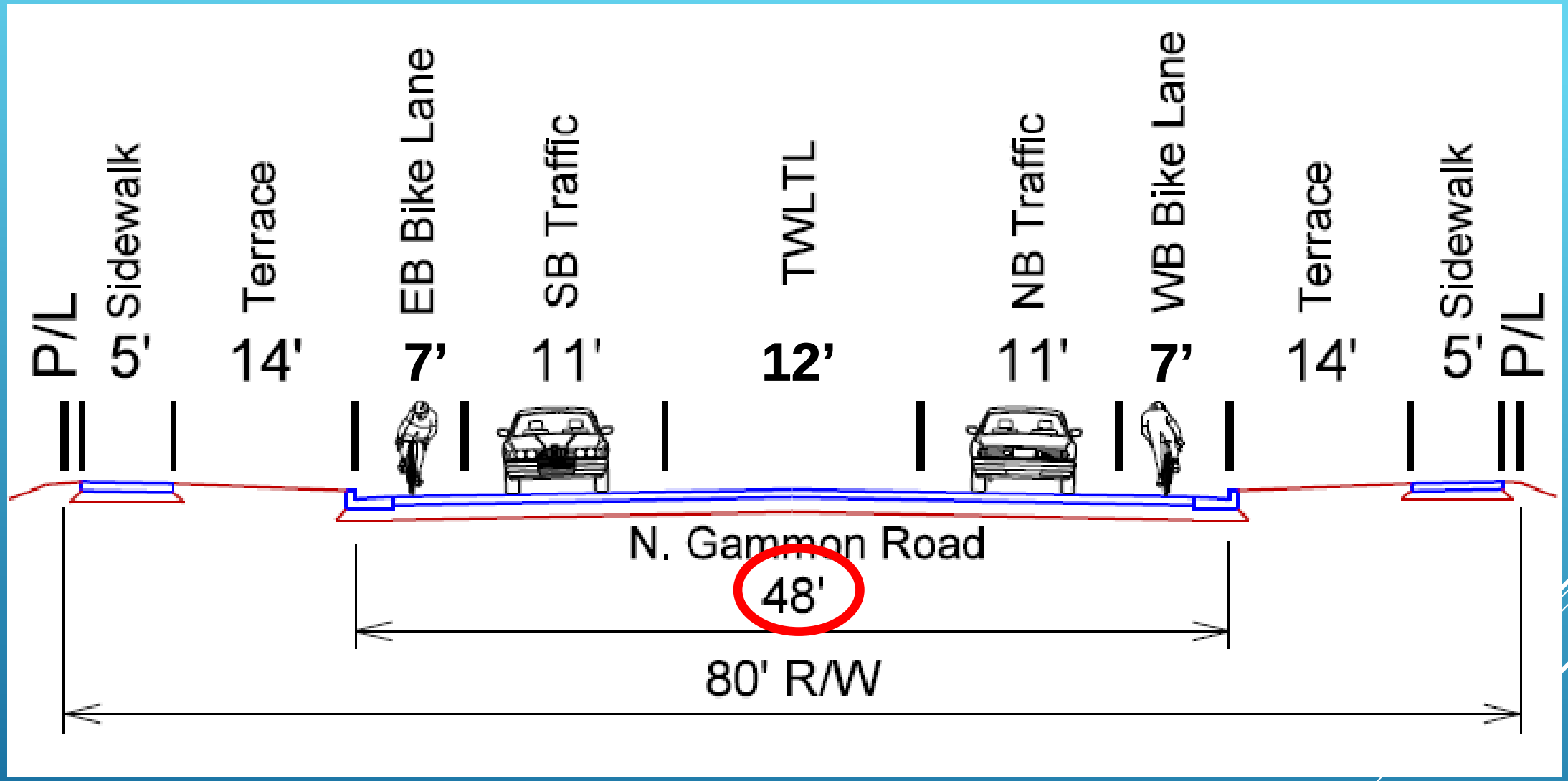
TRAFFIC SIGNALS

[1] Per the State of Wisconsin and US Federal Highway Administration

Intersection	Meet Criteria (Y/N)	Ranking
Colony	No	9th in 2009
Stonefield	No	27th last year

TRAFFIC SIGNALS

CROSS-SECTION OPTIONS
(REQUIRE WIDENING)



3 LANE WIDENING WITH BIKES, SIDEWALKS

(WOPT1)

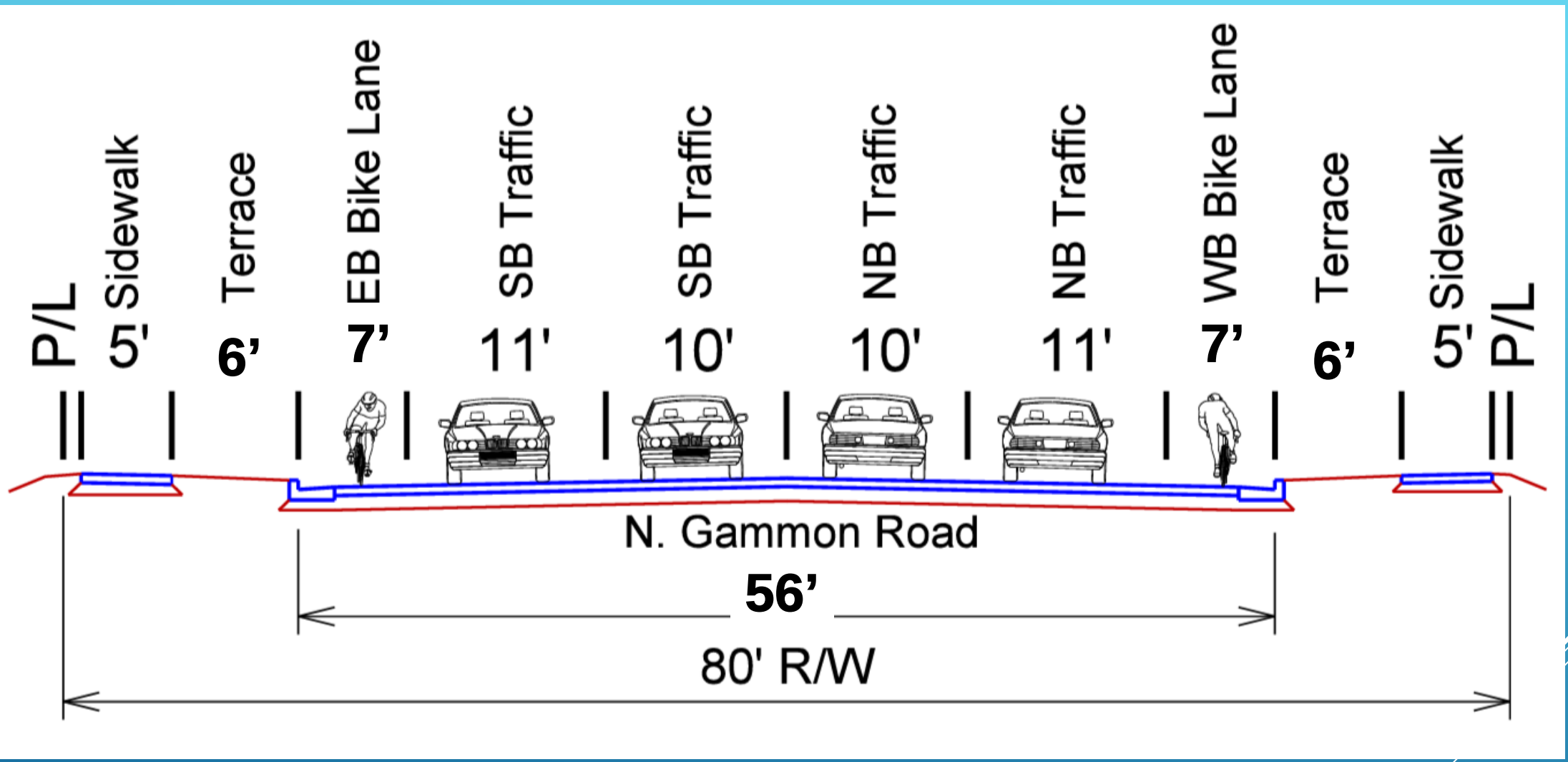
PROS

- Can be safer if lane transitions can be made appropriately and volumes are not too high
- Provides Bike Facilities
- Benefit to left turning motorists from/to driveways
- More uniform speed once in the 3 lane section

CONS

- Requires widening
- Driveway operations begin to fail at volumes over 17,500 vpd
- Volumes are expected to exceed 17,500 vpd
- Diversion to parallel collector streets
- Problematic lane drop as people jockey for position
- Without reconstruction signal fails under future traffic at Old Sauk Rd and Gammon
- Cost $

3 LANE, WIDENING-WITH BIKES PROS/CONS (WOPT1)



4 LANE, WIDENING-WITH BIKES, SIDEWALKS

(WOPT2)

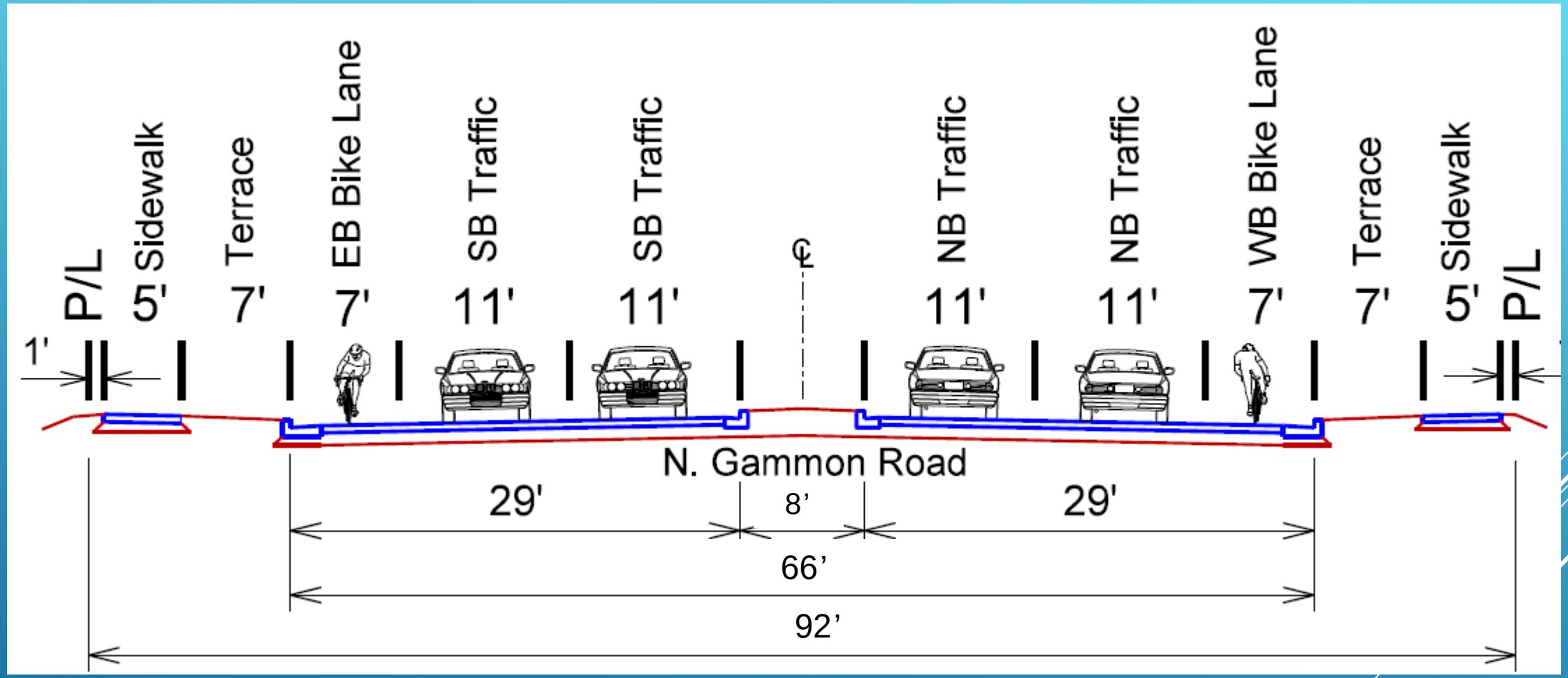
PROS

- Maintains capacity
- Facilities for bicyclists
- Traffic diversion—little to none

CONS

- Requires widening
- Does not address Neighborhood request
- Cost $$

4 LANE, WIDENING WITH BIKES, SIDEWALKS PROS/CONS (WOPT2)



4 LANE, WIDENING-BOULEVARD, WITH BIKES, SIDEWALKS

(WOPT3)

PROS

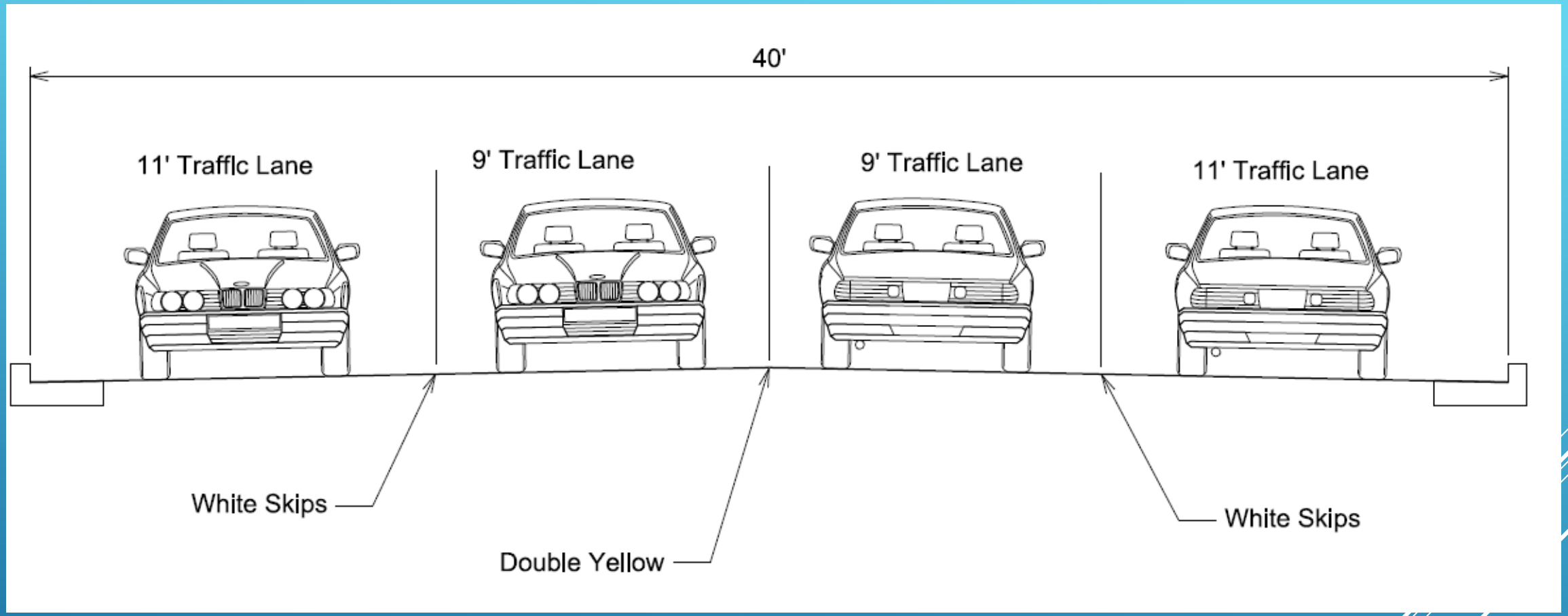
- Safest cross-section, location for U-turns provided
- Safer environment for pedestrians and bicyclists
- Opportunity for landscaping

CONS

- Requires widening/right-of way expansion
- To minimize impact on adjoining property median is narrow
- No direct left-turn access to/from property
- Cost $$$

4 LANE, WIDENING BOULEVARD-WITH BIKES, SIDEWALKS PROS/CONS (WOPT3)

STAFF RECOMMENDATION



NO WIDENING, EXISTING SECTION WITH MODIFICATIONS
(RECOMMENDED OPTION)

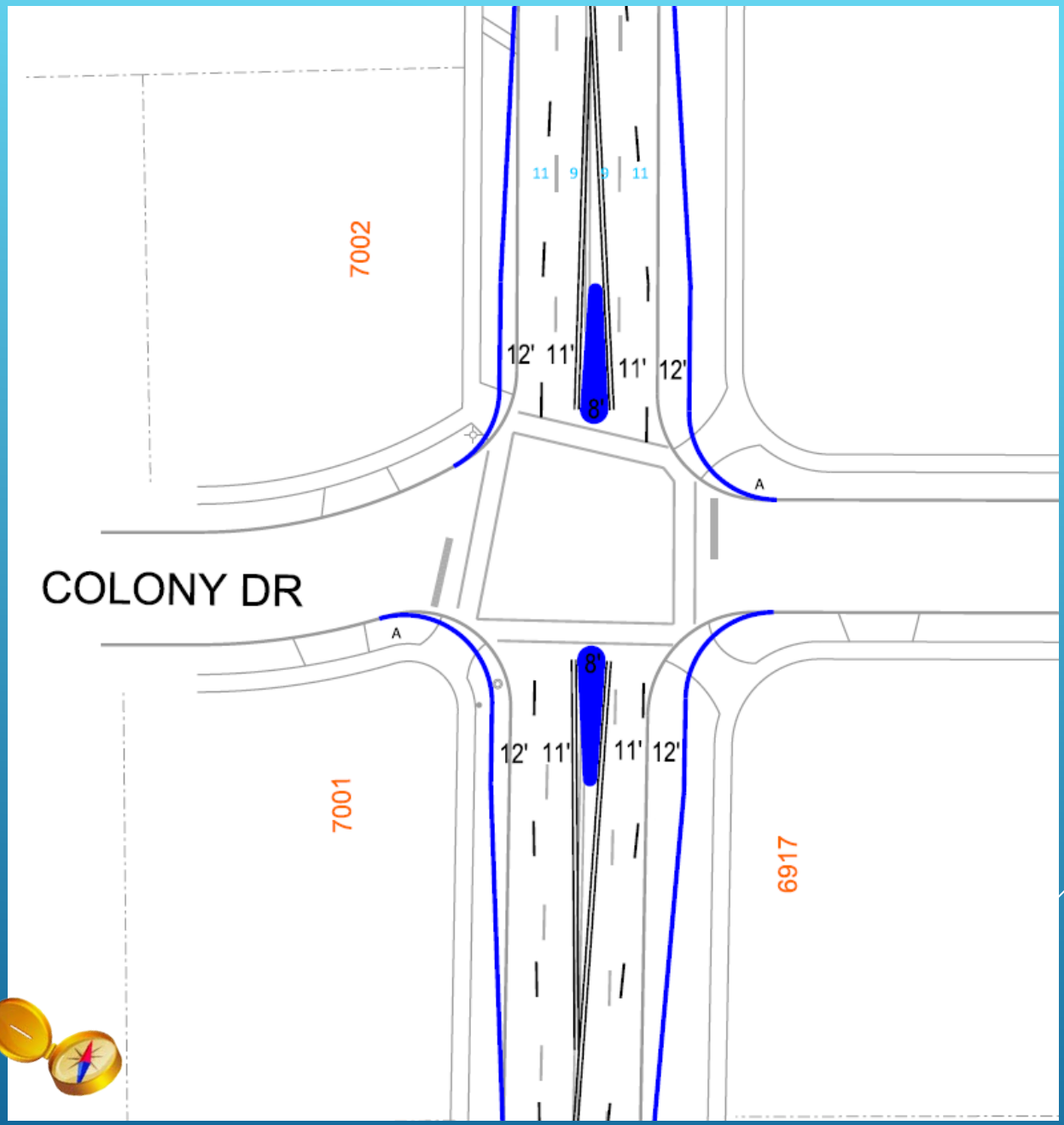
Install pedestrian islands at Colony and Sawmill—improving pedestrian crosswalks and signing

Install Radar Display Speed Boards for both directions of traffic

Maintain lower posted speed limit

MODIFICATIONS
(RECOMMENDED OPTION)

PED REFUGE ISLANDS



PROS

- Improved conditions for crossing—both peds and cyclists
- Some space at island locations for motorists to stage for turns
- Not as expensive as widening options
- Maintains circulation without impacting parallel neighborhood streets
- No lane drop jockeying
- Better compliance with posted speed limit

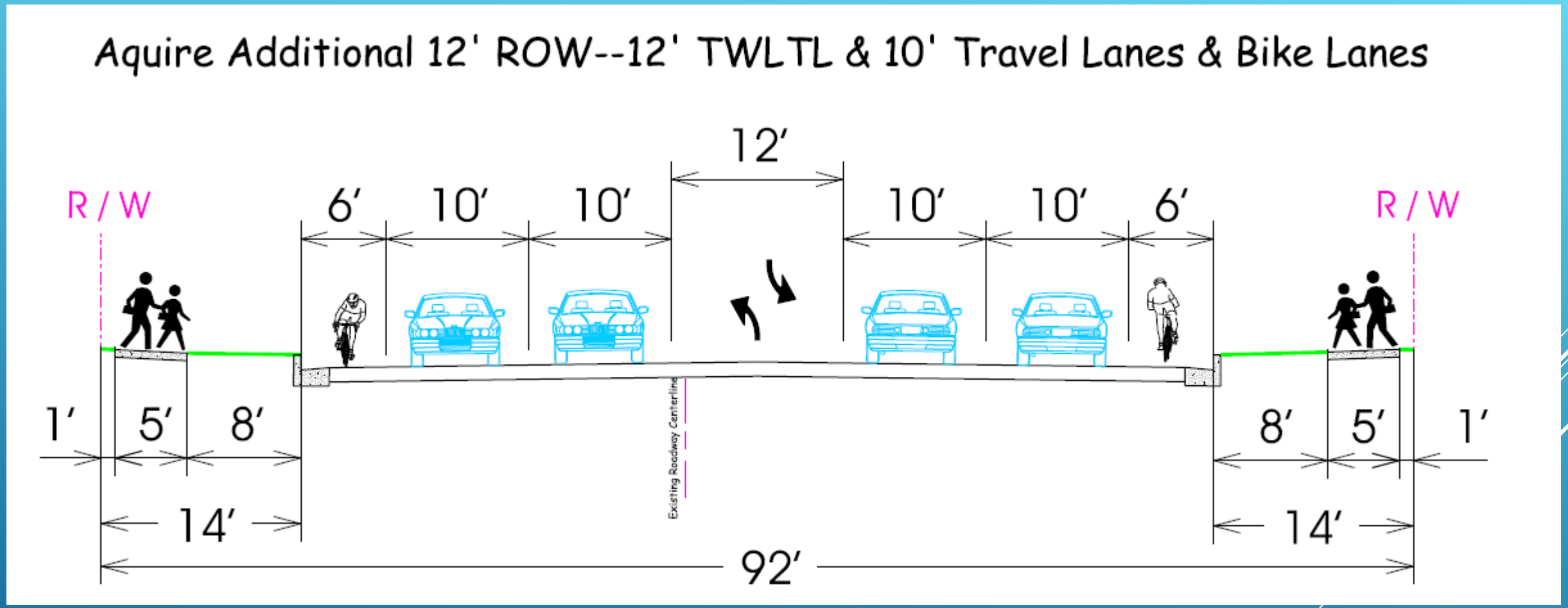
CONS

- Cost $

NO WIDENING WITH MODIFICATIONS PROS/CONS

(RECOMMENDED OPTION)

LONG-TERM RECOMMENDATION



WIDEN, FOR BIKES WITH CENTER LEFT-TURN LANE, SIDEWALK, AND SELECT ISLAND LOCATIONS

PROS

- Provides room for left-turns to/from driveways
- Improved conditions for crossing—both peds and cyclists
- Provides bike facilities
- Maintains circulation without impacting parallel neighborhood streets
- No lane drop jockeying

CONS

- Cost $$$

NO WIDENING WITH MODIFICATIONS PROS/CONS

(RECOMMENDED OPTION)

QUESTIONS

- N. Sherman Avenue
- Old University Avenue
- Watts Road
- Schroeder Road

CITY HAS BUILT 3 LANE SECTIONS

OLD UNIVERSITY AVE

COLLECTOR STREET 4 LANE TO 3 LANE TWLTL CONVERSION 7,600-11,400 VPD
PARALLEL ARTERIAL STREET TO ABSORB DIVERSION

NAKOMA RD

ARTERIAL STREET NO LANE CONVERSION 8,300-11,400 VPD

ODANA RD

ARTERIAL STREET 2 LANE WITH PARKING--ADDED PED ISLANDS
7,000-8,300 VPD

OLD SAUK RD

ARTERIAL STREET WITH NO CHANGE IN CROSS-SECTION
10-11,000 VPD

N SHERMAN AVE

ARTERIAL STREET 4 LANE TO 3 LANE TWLTL CONVERSION—HIGHLY CONTROVERSIAL 15-15,500 VPD WITH NEARBY PARALLEL ARTERIAL STREET TO ABSORB ANY DIVERSION

SCHROEDER RD

COLLECTOR STREET--2 LANE WITH PARKING TO 3 LANE TWLTL--CAPACITY EXPANSION PROJECT 7,600 VPD

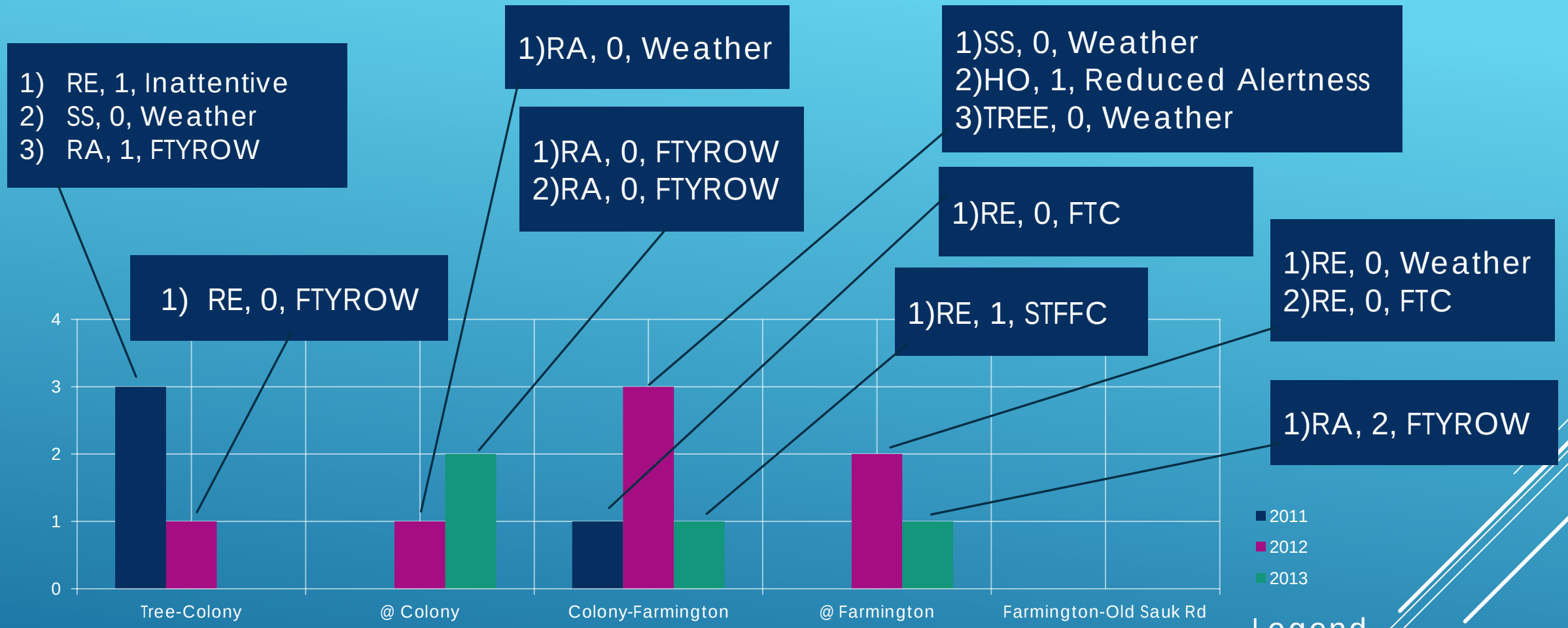
OLD MIDDLETON RD

COLLECTOR STREET RECONSTRUCT NO CHANGE IN LANES
2,500-5,600 VPD

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/gcmpc-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

TWLTLS HAVE BEEN EXTENSIVELY STUDIED



Legend

Crash type, No. Injured, Description

N. GAMMON RD TREE LANE TO OLD SAUK RD ANNUAL CRASHES (SIGNALIZED INTERSECTIONS REMOVED)