

Welcome

We will be asking for your feedback on future slides. Please participate using your phone.

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Cliff Road Neighborhood Meeting

November 8, 2017

Dakota County and City of Eagan



Welcome / Introductions

Thank you!

Meeting Objectives

- * Discuss Safety Concerns
- * Highway Safety in Dakota County
- * Share Traffic Engineering Principals
- * **Recognize Traffic Engineering Tradeoffs**
- * How Cliff & Dodd Fits
- * Next Steps

Cliff and Dodd

Concerns We've Heard from you

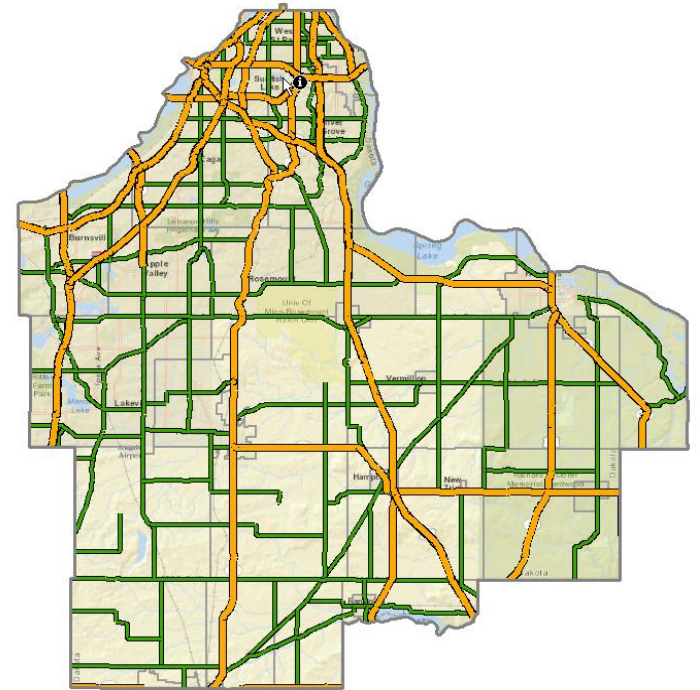
- * Excessive speeds
- * So many accidents
- * Add Traffic Control (Roundabout or Signal)
- * Difficulty Crossing Cliff Road
- * Turning off Cliff – Cars go around me
- * Additional Lanes on Cliff will make it harder to cross
- * 2016 Fatal Crash

Please share any additional concerns.

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County Highway System

- * 424 Miles of Road
 - * Rural, Urban, and Suburban
 - * Trail Facilities
 - * Just under 1500 Intersections
- * Intersection Traffic Control
 - * Side Street stop - 1300
 - * All Way Stop - 36
 - * Traffic Signal - 135
 - * Roundabout - 7
- * Cliff Road (County Hwy 32)
Minor Arterial & Cross County Connection
From I 35 W to future connection at TH 52



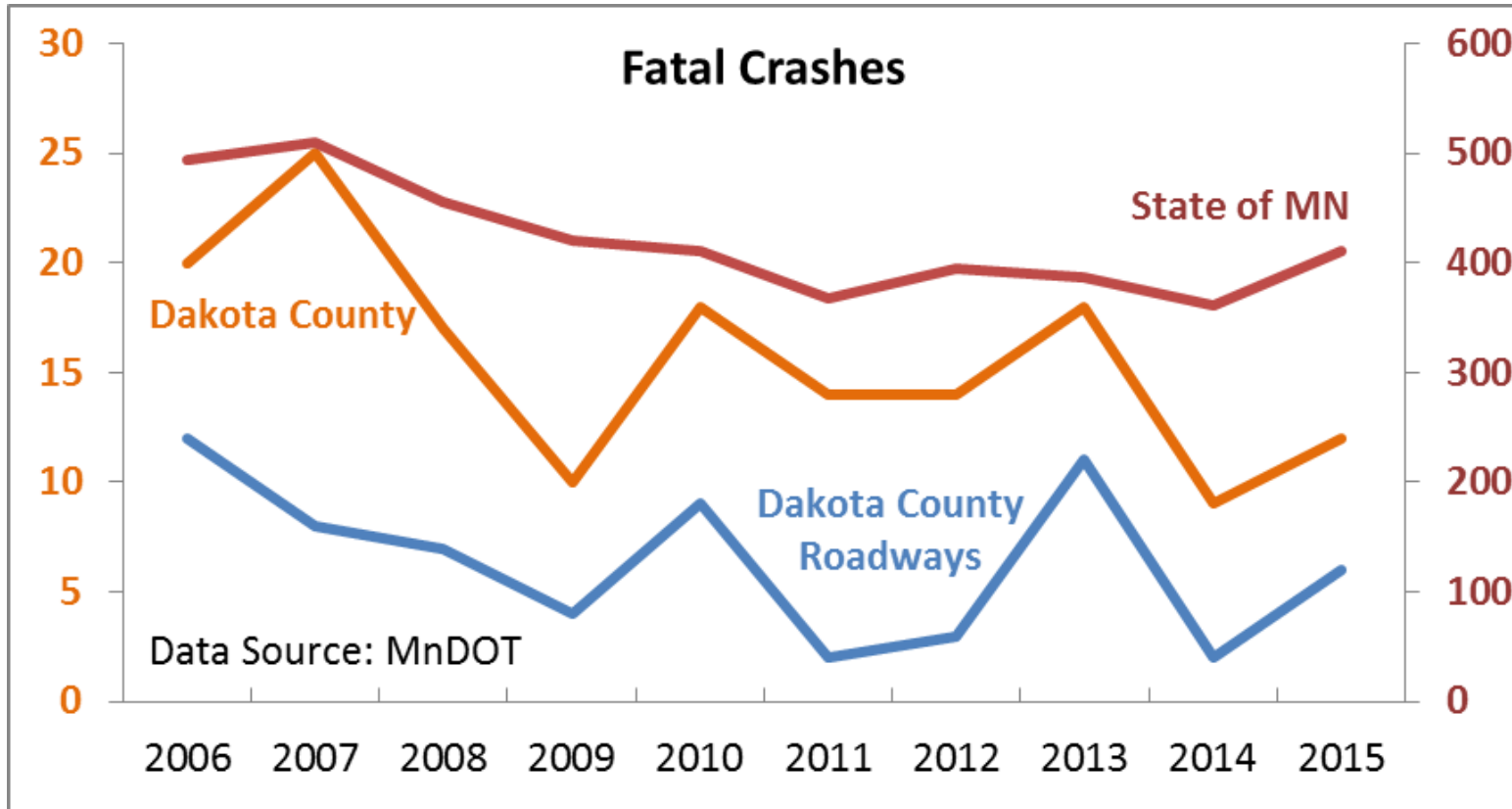
Highway Safety is our Top Priority

- * Transportation Plan Overarching Principal
- * County Highway Safety Plan
- * Toward Zero Death Initiative (4 “E” approach)
 - * Education
 - * Emergency Medical & Trauma Services
 - * Enforcement
 - * Engineering
 - + Everyone
- * County Board Strategic Measure



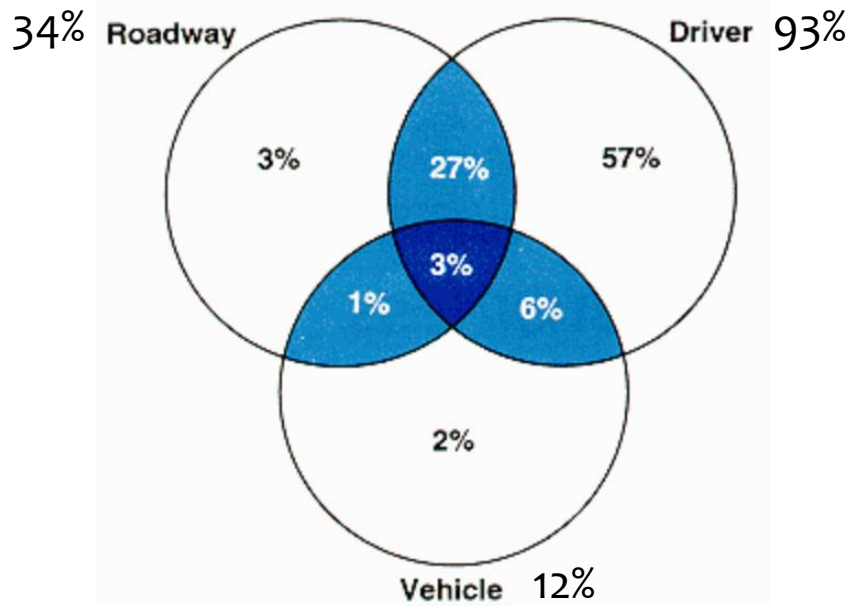
County Strategic Measure

Review with the County Board Each Year



What Causes Crashes

OVER 90% of Crashes are Caused by Driver Error



(National Highway Traffic Safety Administration)

Top Contributing Factors

Top contributing factors to crashes in 2015:

- * Distracted Driving (23%)
- * Failure to yield (20%)
- * Following too closely (14%)
- * Improper lane use (6%)
- * Speed (6%)
- * Disregard traffic control (5%)

Note: Chemical Impairment (2%)

Traffic Engineering

Traffic Engineering is Risk Management

- * All Traffic Control has crash risk
- * Driver error – Factor in Engineering Decision Making

Consider traffic control tradeoffs to minimize risk

- * Assess traffic conditions
- * Traffic Control Change does not necessarily improve safety

Crash Data in Traffic Engineering

Reportable Crash: involves >\$1000 damage, injury or death

Crash Rate Considers Number of Crashes & Traffic Volume

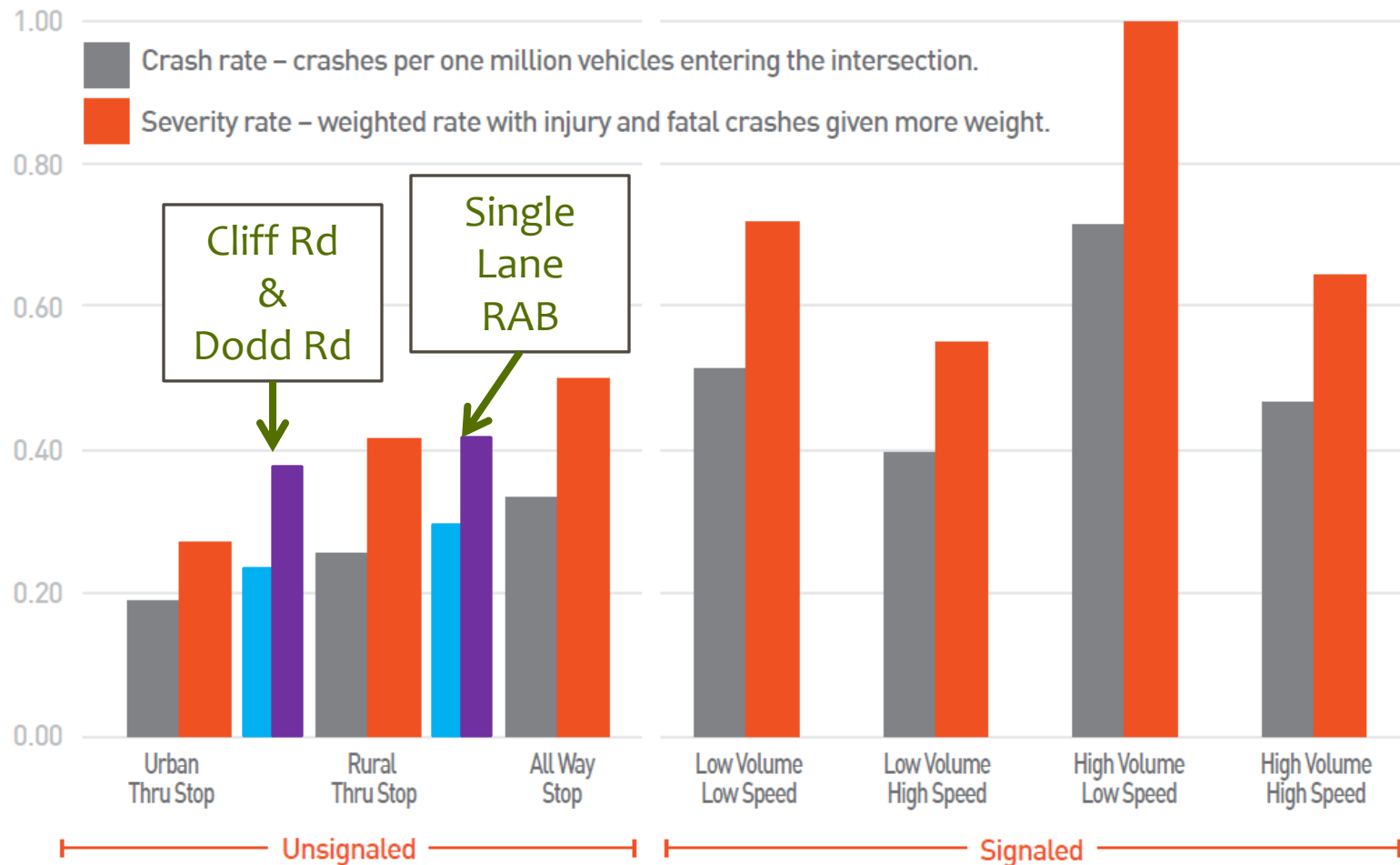
Example:

Side Stop average crash rate is 0.20 crashes per million entering vehicles.

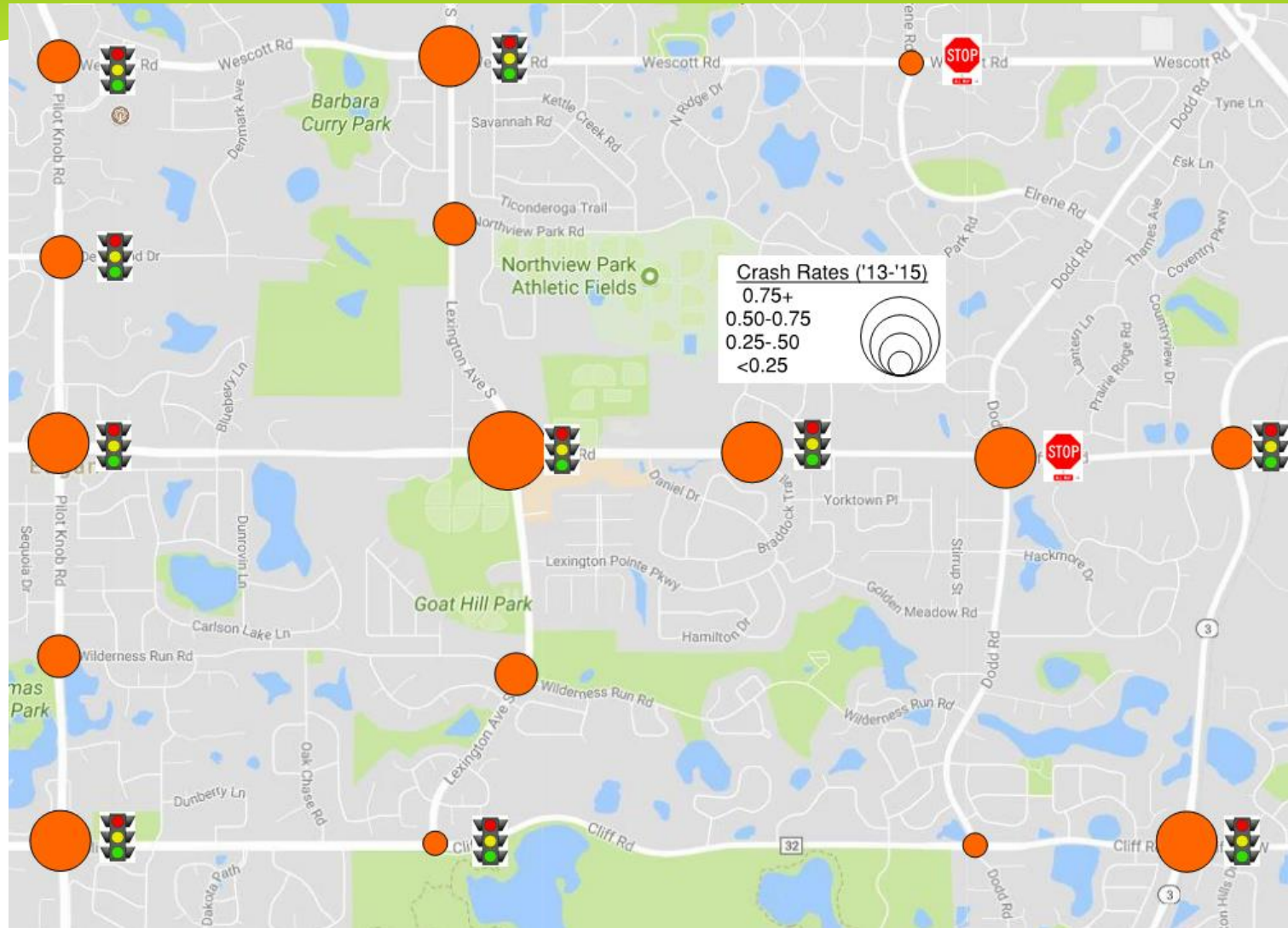
A typical intersection with 12,000 vehicles per day (5 million entering vehicles in a year) would therefore average 1 crash per year.

Severity Rate Considers Number of Crashes, Type of Crashes (injury severity), & Traffic Volume

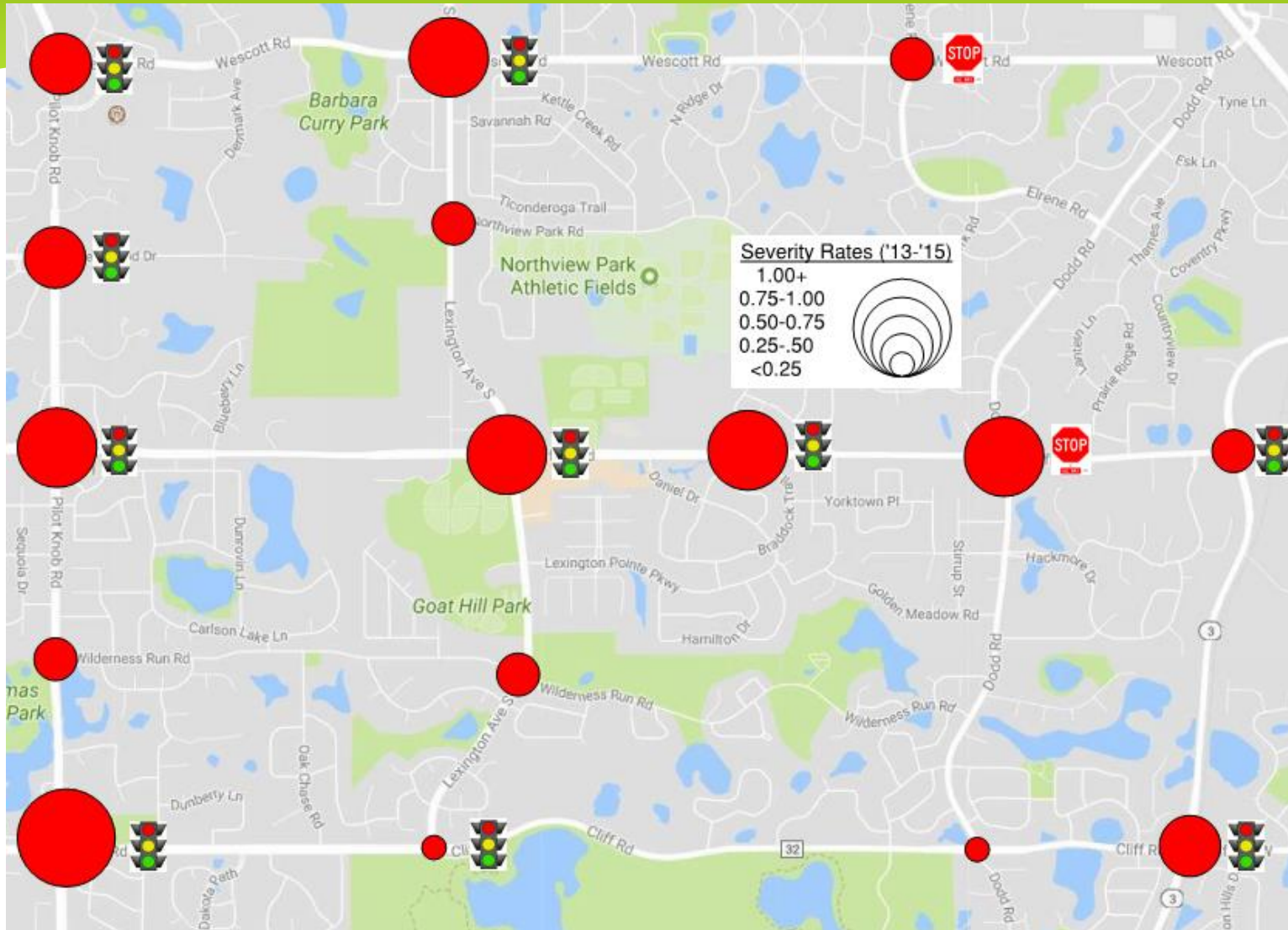
Crash Data By Traffic Control



Crash Rates – Area Intersections



Severity Rates – Area Intersections



Traffic Engineering Parameters

Minnesota Statutes 169.06

Subd. 1 – Uniform System

- * Devices conform to State specifications
- * Provides criteria for various traffic control, including volume thresholds for
 - * All way stops
 - * Traffic signals

Signal Justification Report

- * Requires State approval
- * Due to impacts on safety and traffic, focus on need throughout the day (8 hours), not peak hour alone



Traffic Engineering Tradeoffs

Speed Limits

- * Used to reduce variability in vehicle speeds
- * Speed Limits are established through Statute
 - * Defines speeds for certain roadway types
 - * Establishes process for MnDOT to determine all other speeds by speed study
- * Most people drive what is comfortable
- * Lowering the posted speed limit rarely slows traffic or reduces crashes
- * Improperly set speed limits decrease safety
- * Speed study can result in higher speed limits



Traffic Engineering Tradeoffs

Side Stop

Used for

- * Unbalanced approach traffic
- * Maintain through road mobility
- * Lowest average crash and severity rates

Drawbacks

- * Side streets rely on gaps
- * Side street delay
- * Crash risk increases with traffic volumes



All Way Stop

Used for

- * Moderate traffic volumes
- * Balanced approach traffic
- * Lower speeds

Drawbacks

- * Inefficient and cause delay
- * Increased crash risk compared to side stop

Traffic Control Tradeoffs

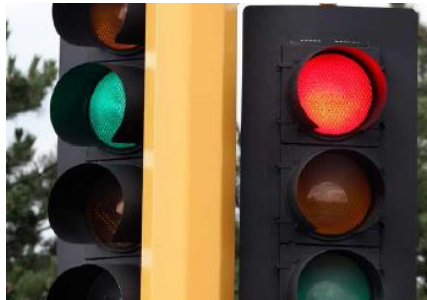
Traffic Signal

Used for

- * Consistently high volumes of traffic
- * Collector or arterial routes

Drawbacks

- * Additional decision making
- * Increased risk of crashes compared to other traffic control
- * Can create delay
- * Rarely improve safety



Roundabouts

Used for

- * Moderate to high traffic volumes
- * Improving traffic flow
- * Significant reduction in crash severity

Drawbacks

- * Higher cost
- * Increased crash rates
- * Not suitable for principal arterials

Traffic Engineering Tradeoffs

Additional Through Lanes

Used For

- * Providing additional traffic capacity
- * Improving traffic flow
- * Significantly increasing gaps for side street traffic
- * Minimizing side street delay
- * Managing Access

Drawbacks

- * High cost
- * Property impacts



Traffic Engineering Review

Engineering Study Process

- * Field Review
- * Crash/Safety Review
 - * Typically 3 or more years of data to establish trends
- * Delay/Traffic Volume Review
 - * Evaluate various traffic control based on standard criteria
 - * Typically look at 8 hour needs
- * Comparison System Wide

What We Saw: Cliff/Dodd

- * At times during peak hours:
 - * Delay for traffic on Dodd
 - * Cars line up on Dodd
 - * Motorists need to make decisions with traffic in multiple lanes
- * Generally, minimal delay for traffic on Dodd Road
- * Pedestrians identified gaps within a reasonable timeframe, some moved quickly across the street.
- * Traffic slowed on Cliff for turning traffic
- * Left turn lane used by traffic on Cliff passing right turners

Cliff Road Corridor

- * Speeds
- * Passing on shoulder (At Hay Lake Road)
- * Passing in turn lane (At Dodd)
- * Trucks/Truck Route
- * Lack of Trail and pedestrian facilities
- * Growing traffic volumes

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Cliff and Dodd Considerations

Side Stop:

- * Most times of the day – Dodd Road has minimal delay
- * Some queuing and delay during parts of the peak hour
- * Requires Dodd Road to wait for gap in traffic

All-way stop:

- * Traffic only met 3 of 8 hours
- * Traffic volumes not balanced – Dodd much lower than Cliff
- * Concern about increased crash and crash severity risk
- * Concern about increased delays for Cliff Road
- * Reduces delay for Dodd Road during peak times of the day

Cliff and Dodd Options

Traffic Signal:

- * Traffic only met 3 of 8 hours
- * Increased crash and severity risk
- * Increased delay
- * Assigned time to cross roadway

Roundabout:

- * Significantly higher traffic on Cliff Road
- * Impacts main road all day
- * Improves mobility and potentially safety for side road traffic
- * Cliff Road long term needs
- * Enhanced treatment for bikes & pedestrians
- * Intersection focused solution

Cliff and Dodd Options

Right Turn Lane on Cliff Road at Dodd Road:

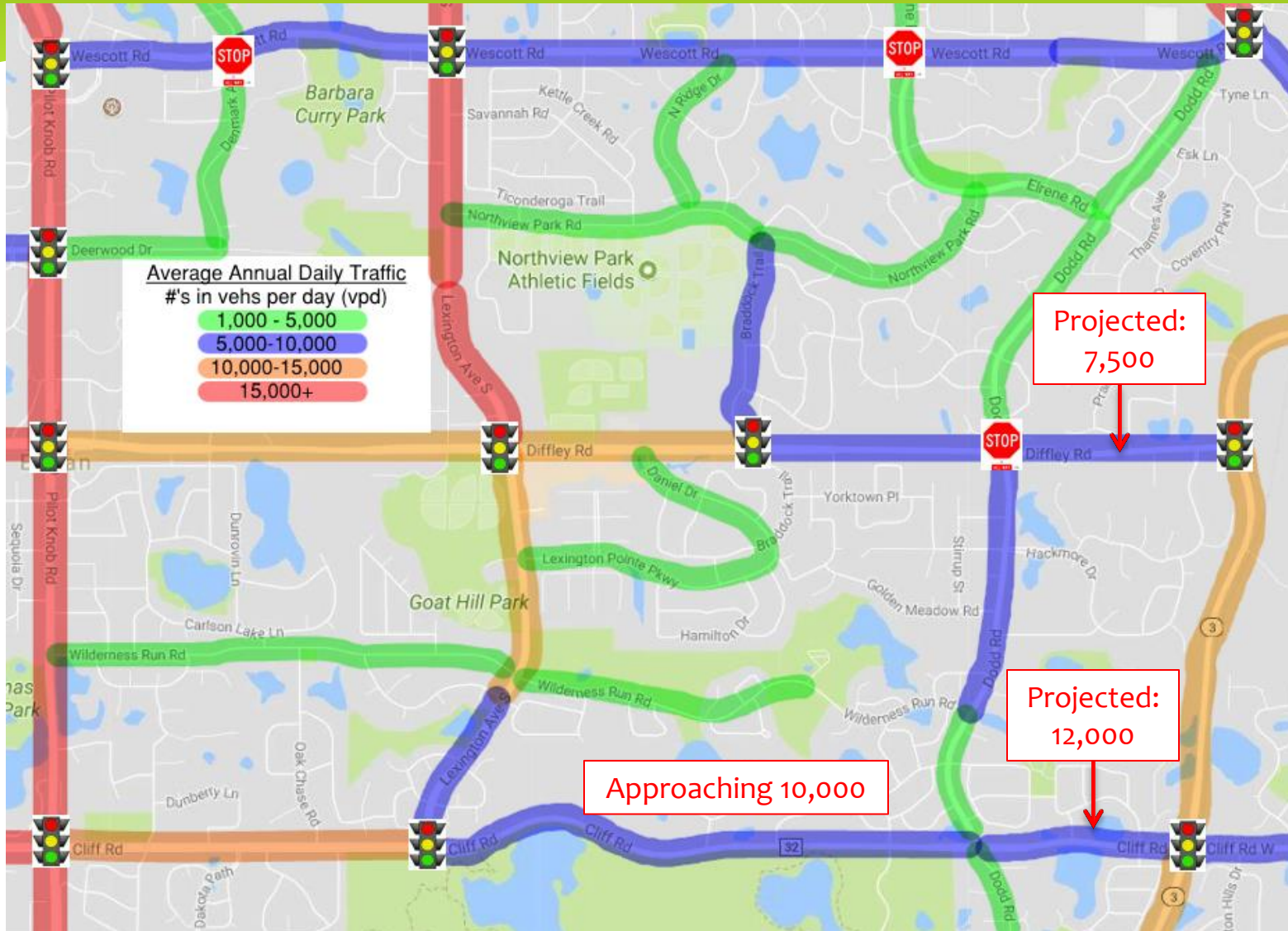
- * Address issue of passing turning vehicles
- * Doesn't address side street crashes or delay

Four-lane Divided Roadway on Cliff Road (Lexington to TH 3):

- * Provides capacity and additional gaps
- * Minimize side street delay and need for traffic control
- * Associated turn lanes sort and store traffic
- * Addresses Long-term traffic needs along Cliff Road
- * Cost and impacts

Intersection Traffic Volumes

Traffic Control is based on both the mainline volume and traffic on the side road



Summary

Volumes not at a level where all way stop or signal is appropriate

Roundabout:

- * Safety benefit as traffic volumes increase on Dodd Road
- * Would improve mobility for Dodd Road
- * May not fit well with long-term needs on Cliff Road

Four-Lane Divided Roadway on Cliff Road:

- * Would create gaps & reduce delay at Dodd Road
- * Addresses need for turn lanes at all intersections
- * Accommodates Pedestrians and Bicyclists
- * Meets long-term capacity needs

Next Steps

- * Capture today's discussion
- * Continue to monitor intersection and corridor
- * County and City to discuss improvement considerations
- * 2019-23 Capitol Improvement Program Process



Discussion

Thank you