Welcome

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

To use text messaging:
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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

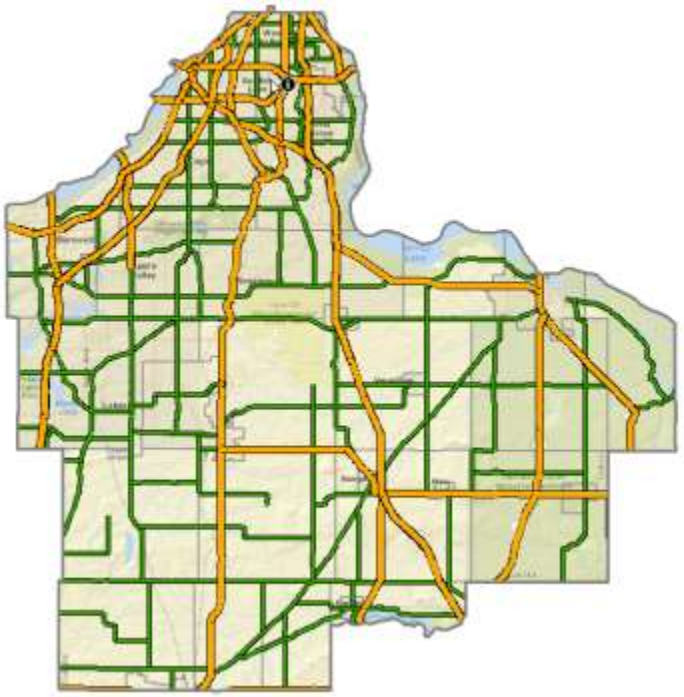
* Excessive speeds
* So many accidents
* Add Traffic Control (Roundabout or Signal)
* Difficulty Crossing Cliff Road
* Turning off Cliff – Cars go around me
* Additional Lanes on Cliff will make it harder to cross
* 2016 Fatal Crash

Please share any additional concerns.

(link)

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

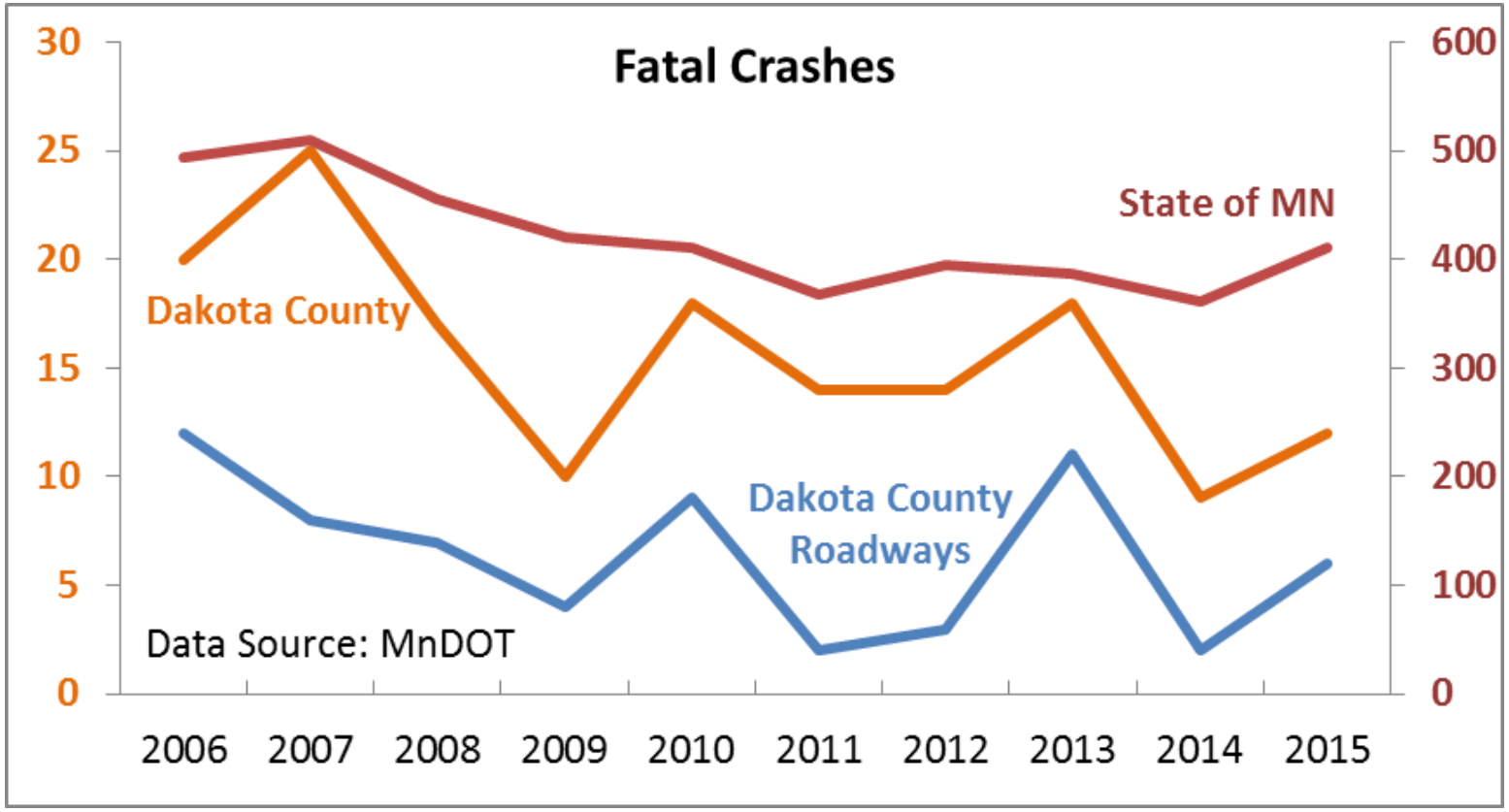


Highway Safety is our Top Priority

* 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

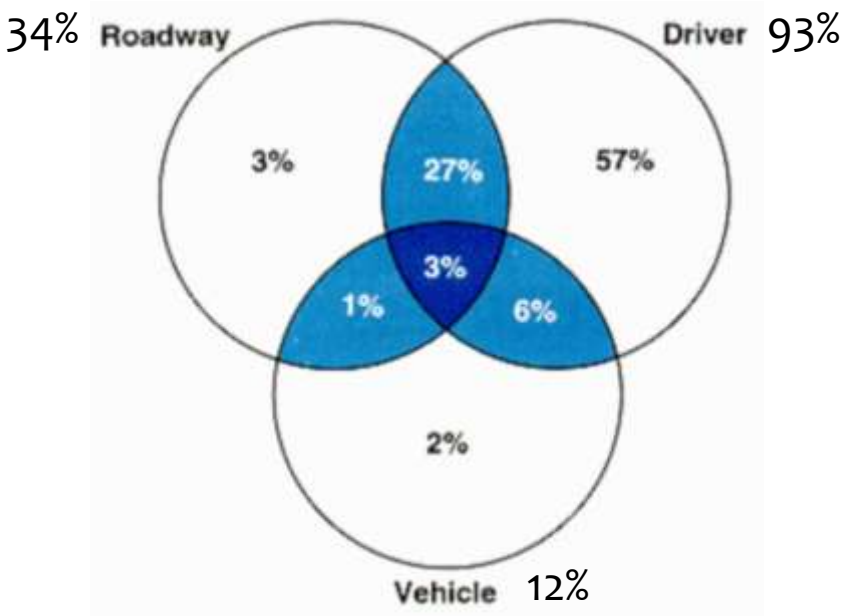
County Strategic Measure

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%)

Ref: Crash Fact Book, Minnesota crashes involving multiple vehicles

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

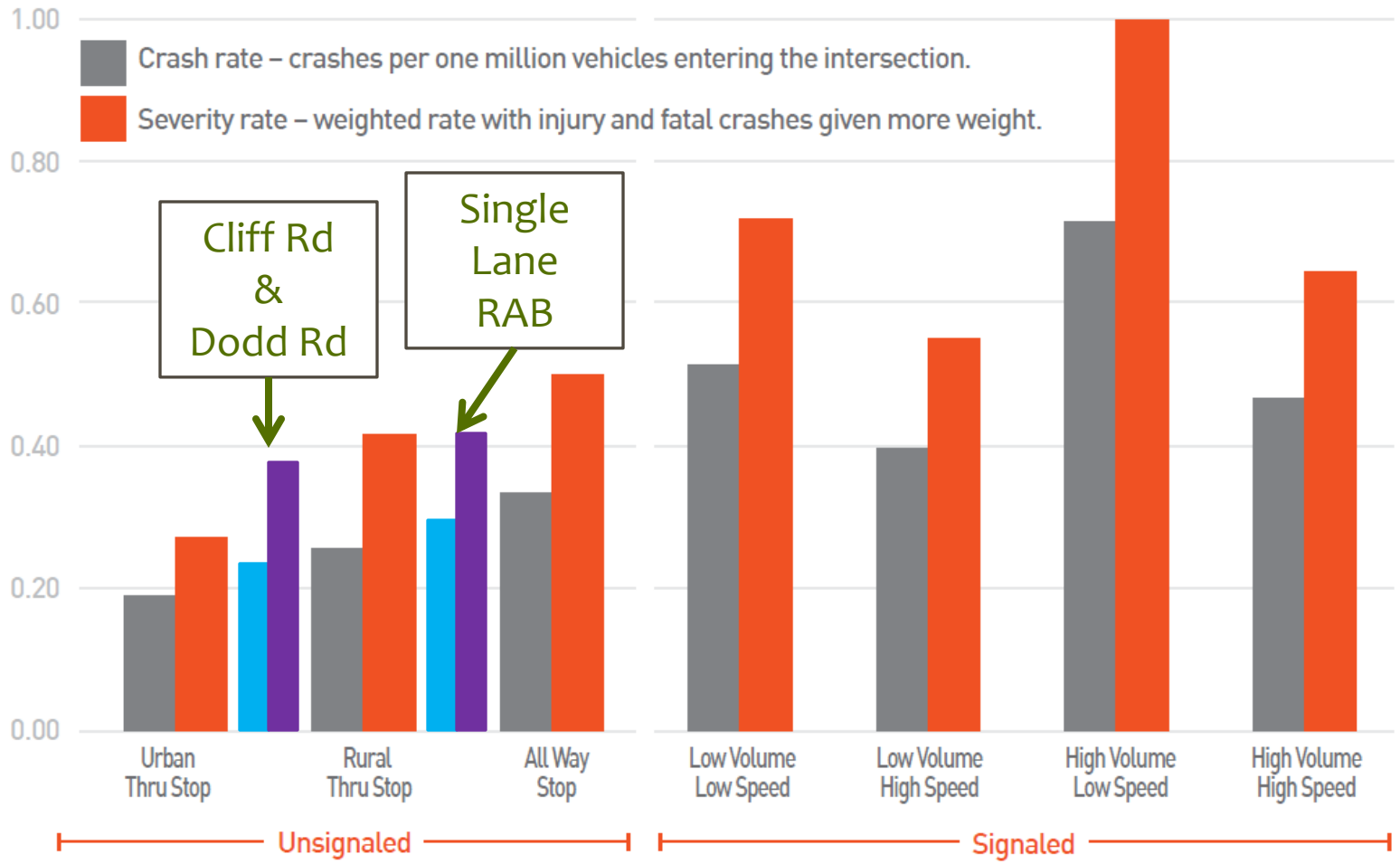
Crash Rate Considers Number of Crashes & Traffic Volume

Example:

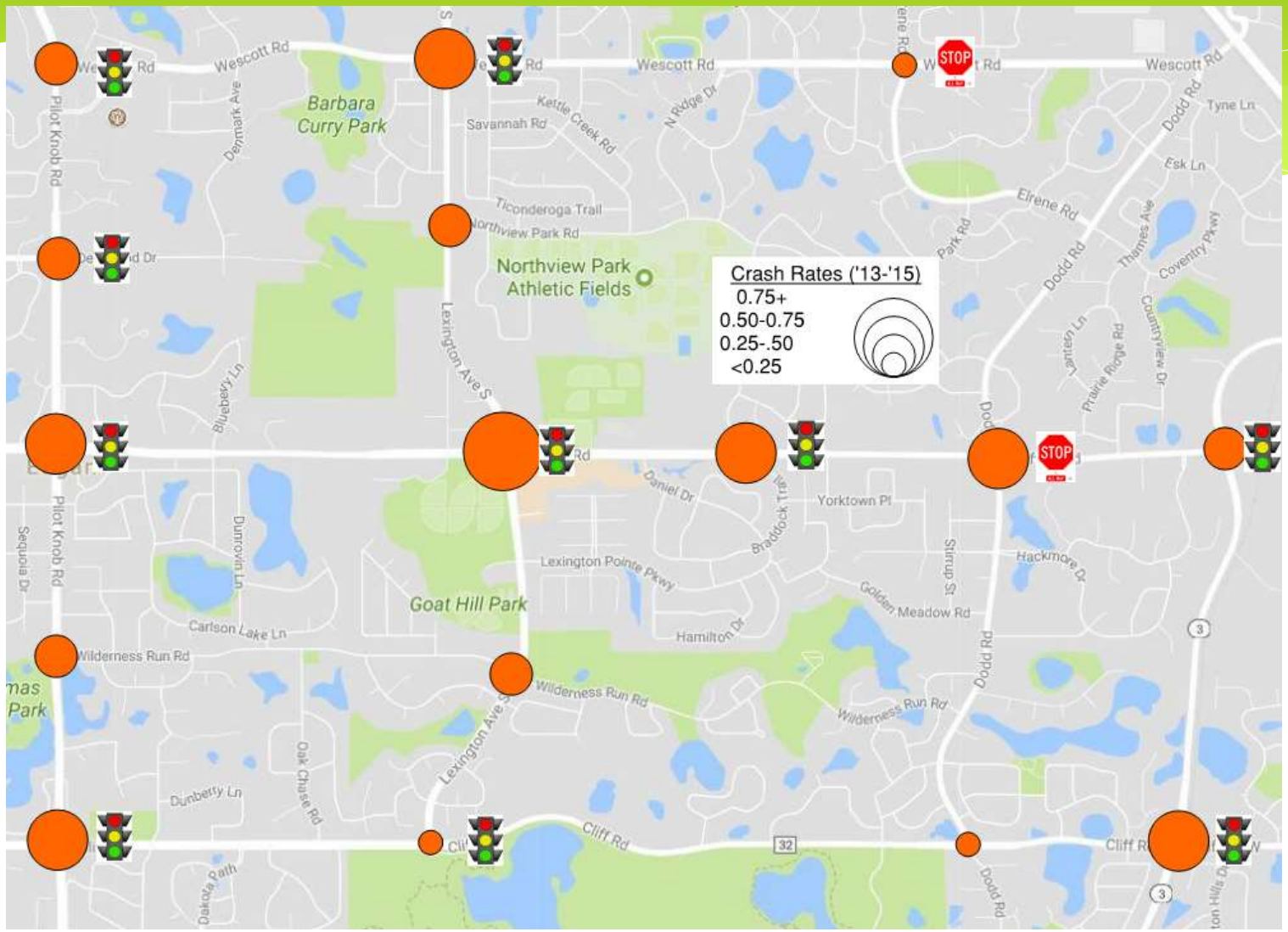
Side Stop average crash rate is 0.20 crashes per million entering vehicles. A typical intersection with 12,000 vehicles per day (5 million entering vehicles in a year) would therefore average 1 crash per year.

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

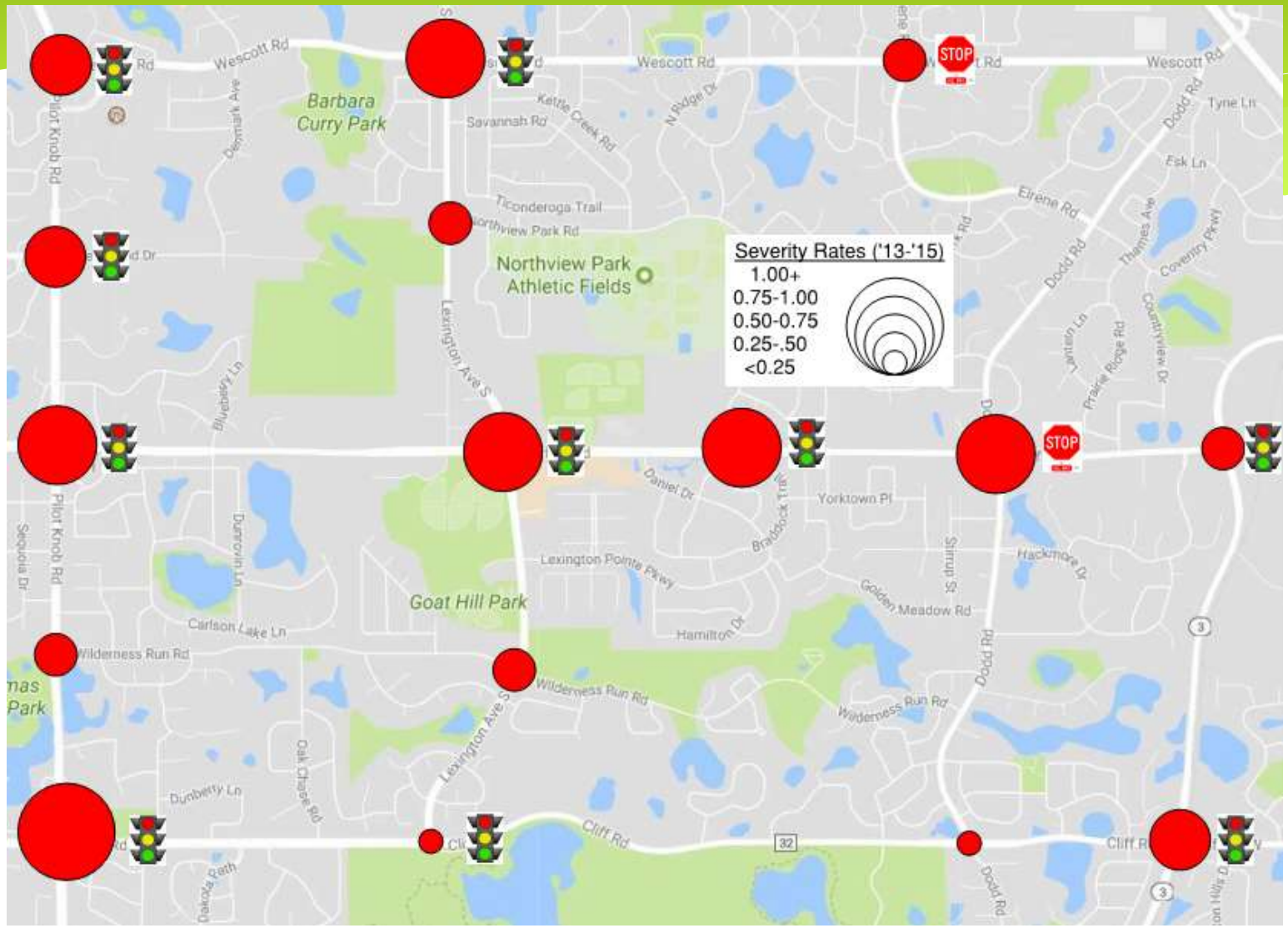
Crash Data By Traffic Control



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

(link)

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:

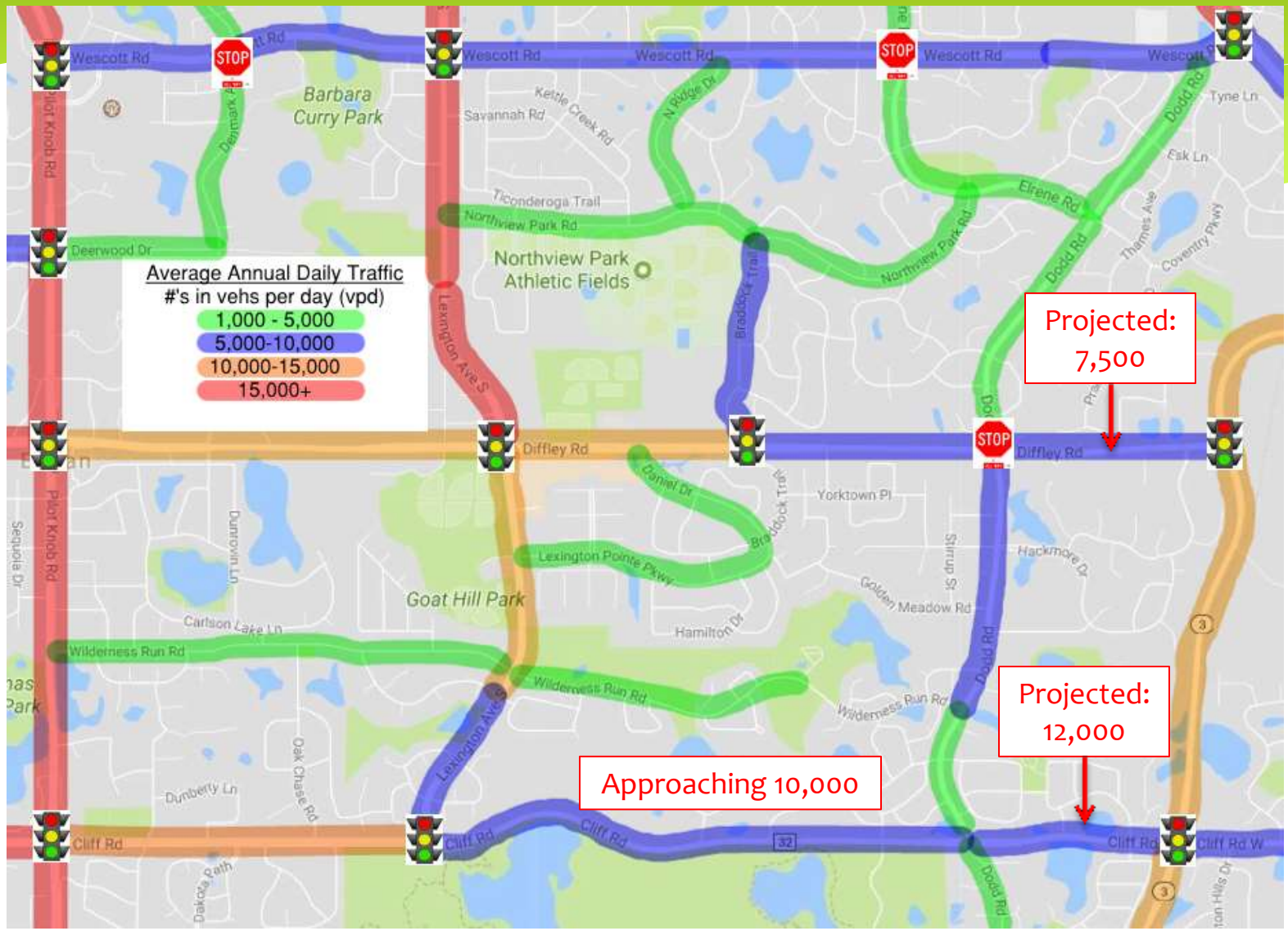
* Address issue of passing turning vehicles
* Doesn't address side street crashes or delay

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