Engineering for the Silver Tsunami

Scott M. Thompson – MnDOT District 7

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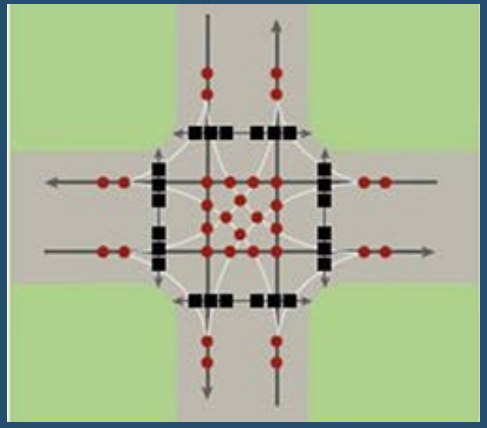
Statistics – a silver lining

- Crash rates down for older drivers
  - Better Health
  - Roadway Safety
  - Vehicle technologies

- Average driver age has increased
  - Hasn't resulted in large increase in crashes – thus far
  - "Design User" age should be 65+

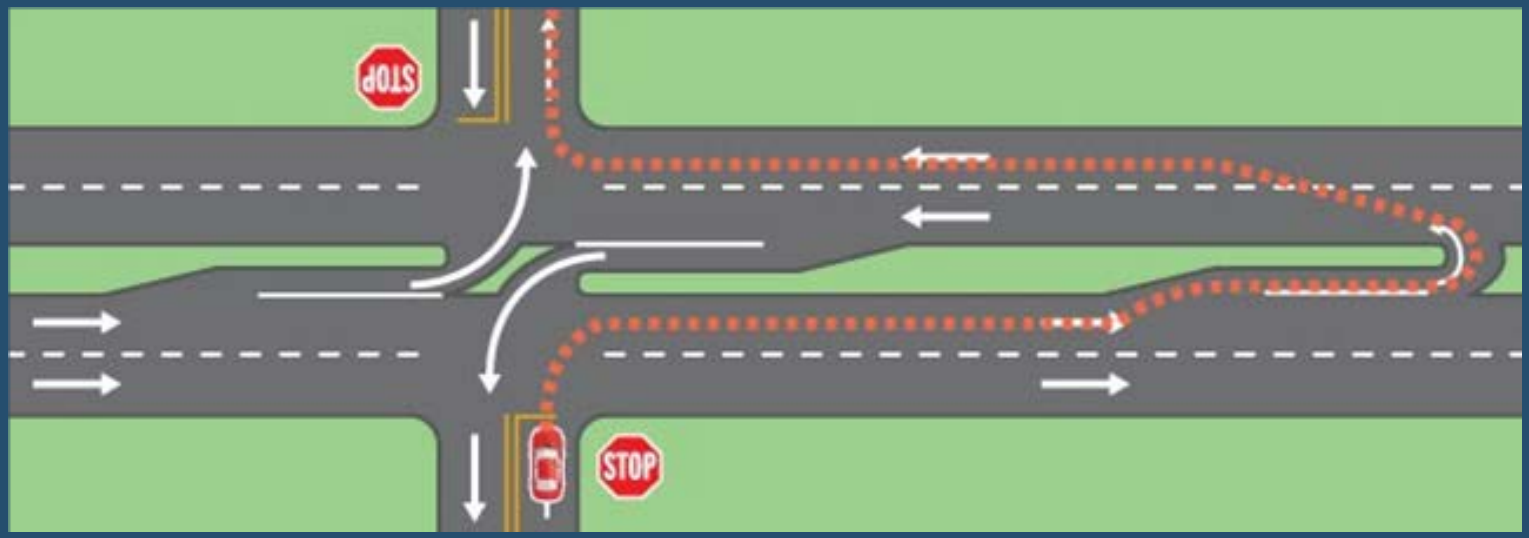
Intersections – the biggest problem

- Large number of decisions
  - More conflicts
- Comprehension



Intersections – the biggest problem

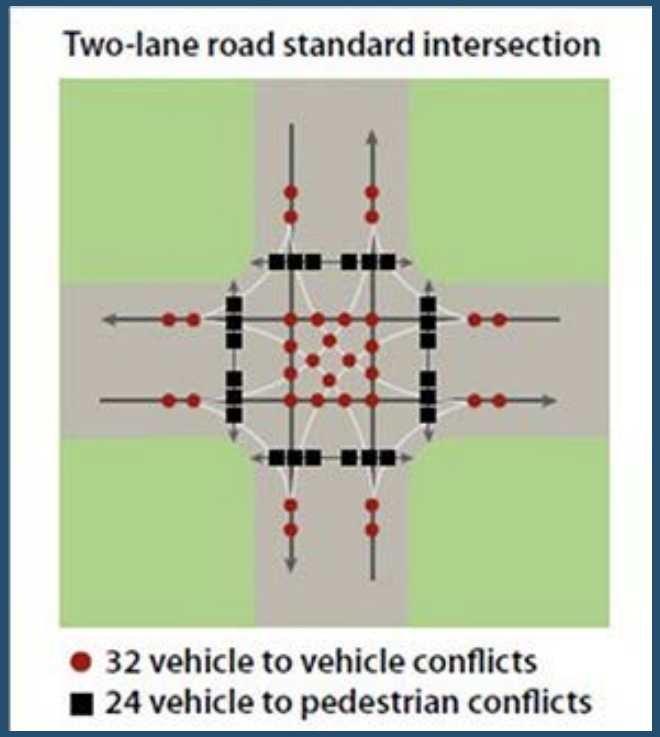
- Reduce the number of decisions
  - Reduced Conflict U-Turn (AKA: J-Turn)

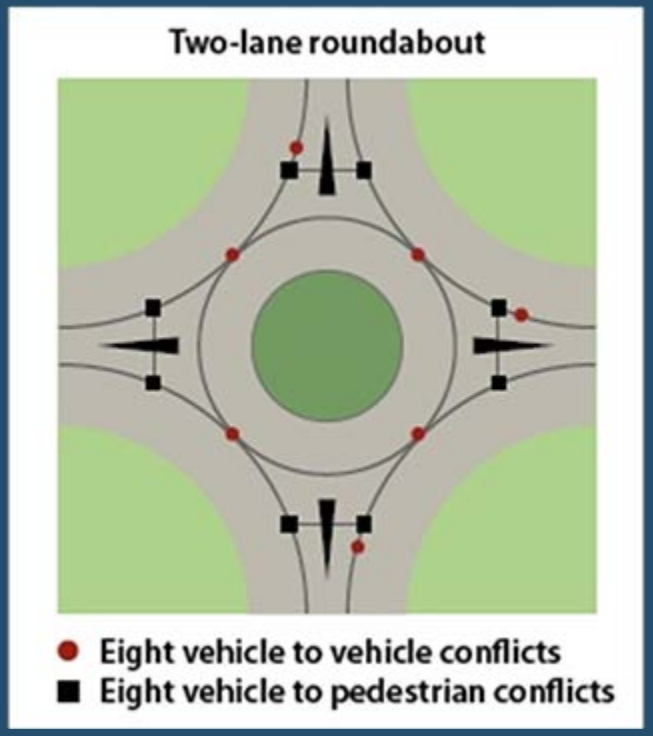


42 conflict points reduced to 24; 70% reduction in fatal crashes

Intersections – the biggest problem

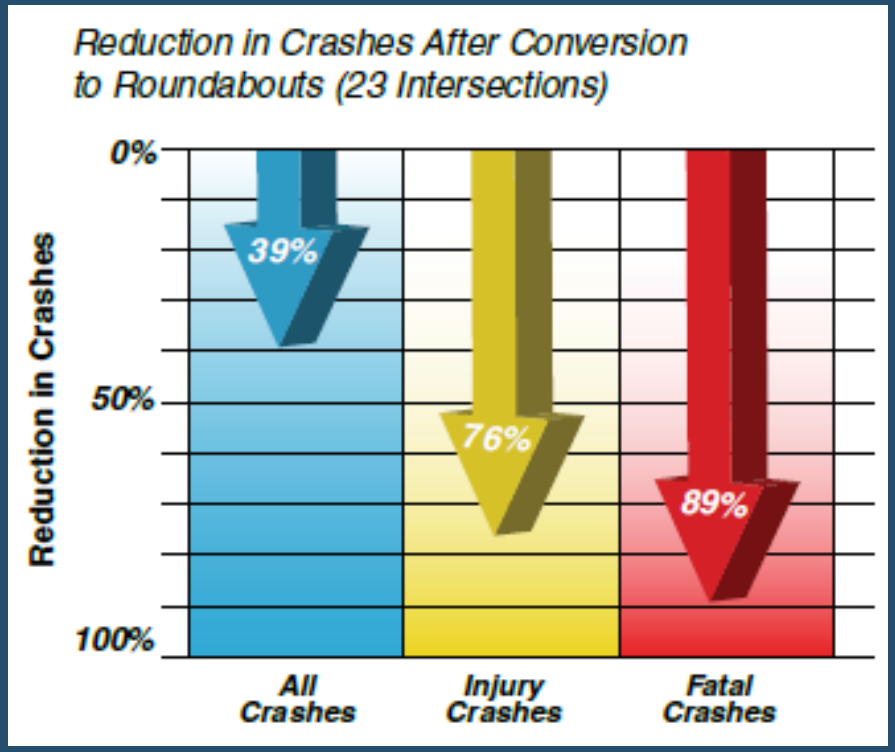
- Reduce Conflicts





Intersections – the biggest problem

- Roundabouts

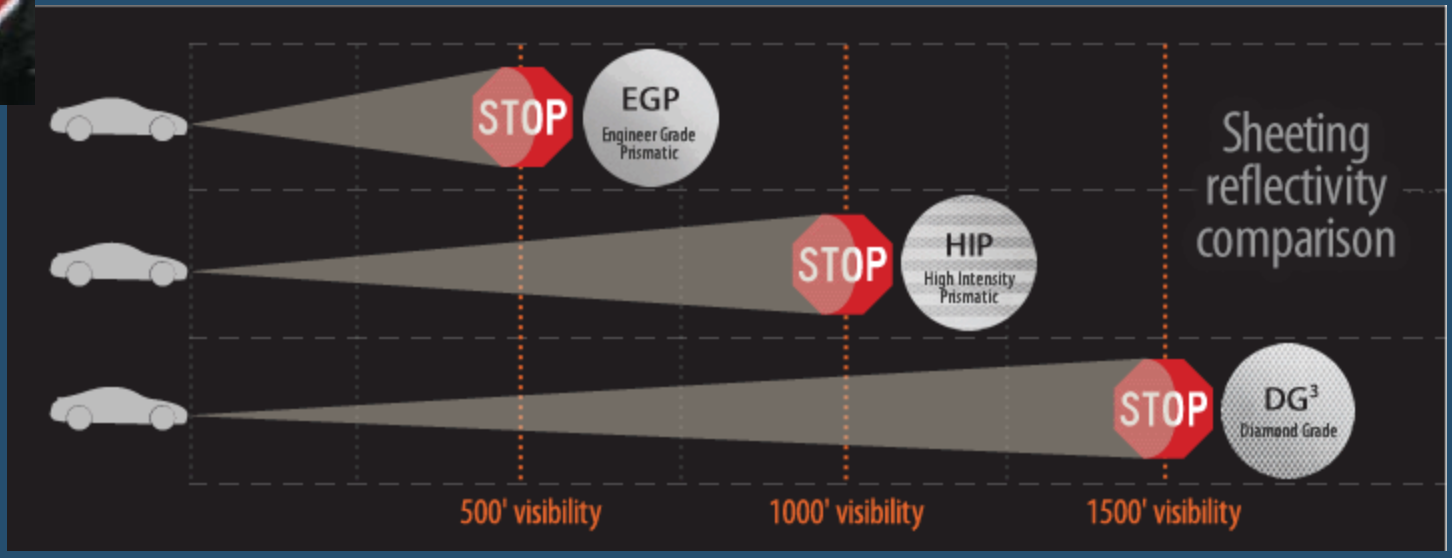


Intersections – strategies

- Improve comprehension with better signing materials

30% Light Returned

60% Light Returned



Intersections – strategies

- …with bigger signing
- …with improved clarity

Intersections – strategies

- Improve comprehension with flashers/beacons

Intersections – strategies

- Improve comprehension with lighting

Intersections – strategies

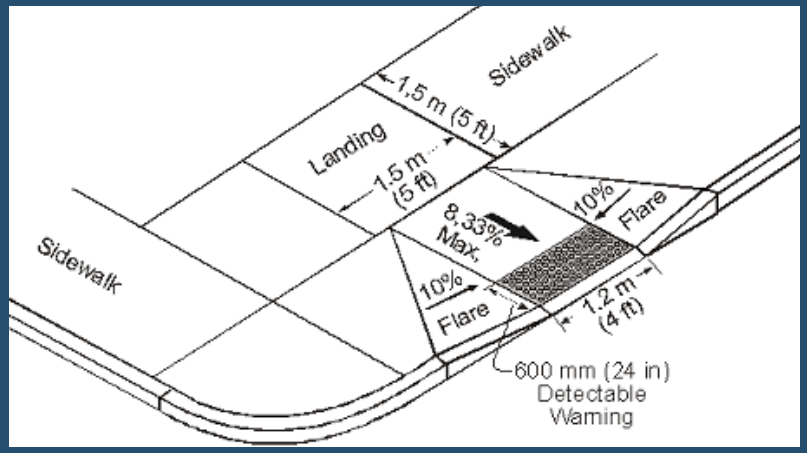
- Improve comprehension in all weather

Intersections – strategies

- Improve comprehension with contrast

Intersections – strategies

- Non-motorized improvements
  - Signals
    - APS (Accessible Pedestrian Signals)
    - Extra Walk Time
  - Curb Ramps



Questions ?

Contact Information

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Obstacles as we get older

- Declining Vision
  - 40’s: Hard to focus up close
  - 60’s: Reduced pupil size
  - 70’s: Loss of peripheral vision (20-30 degrees)

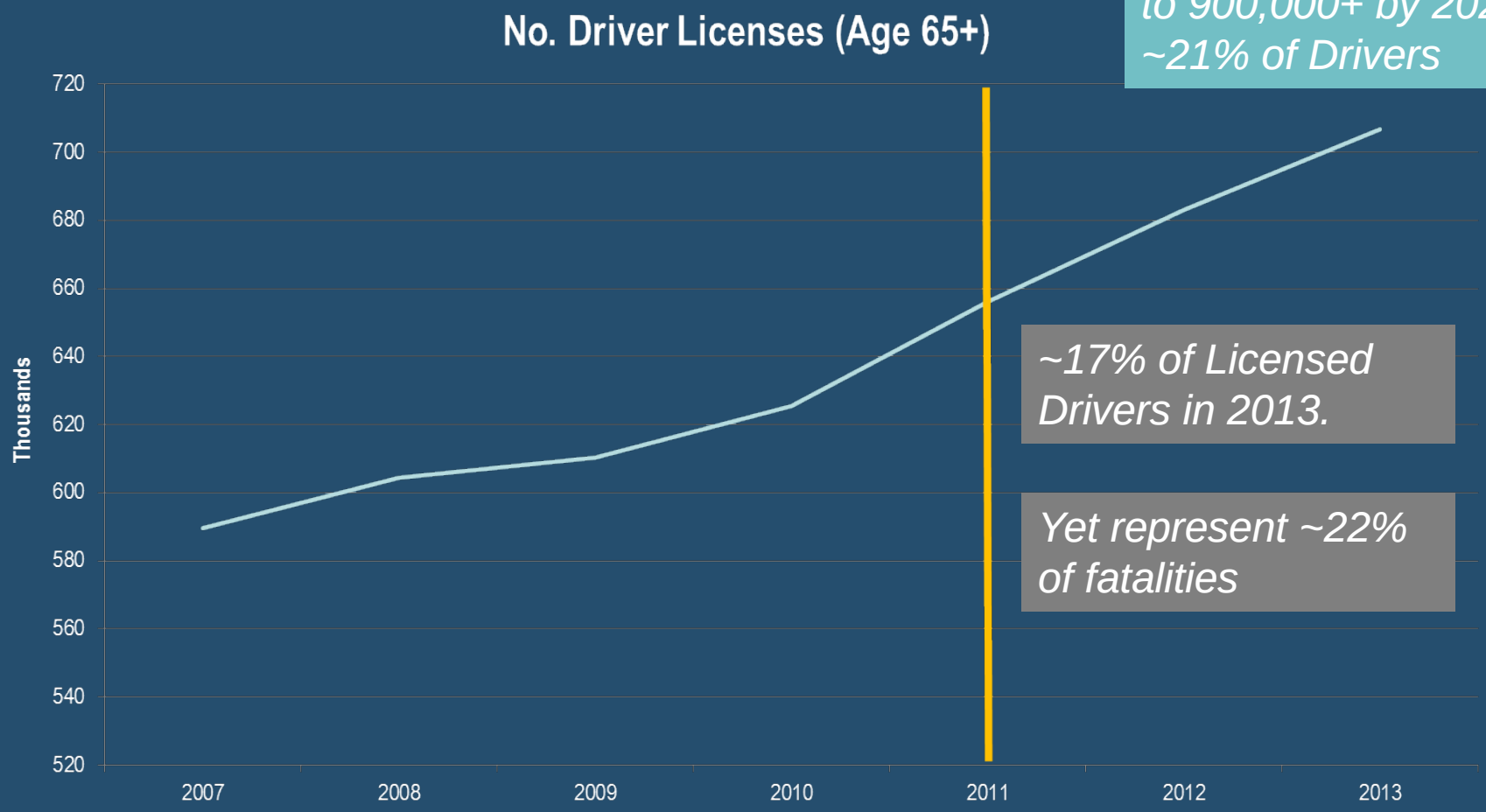
- Slowed reaction times
- Reduced fitness (strength, flexibility)

Identify Curves

- Use chevrons to delineate curves.

Trend of older drivers

Projected to increase to 900,000+ by 2020
~21% of Drivers

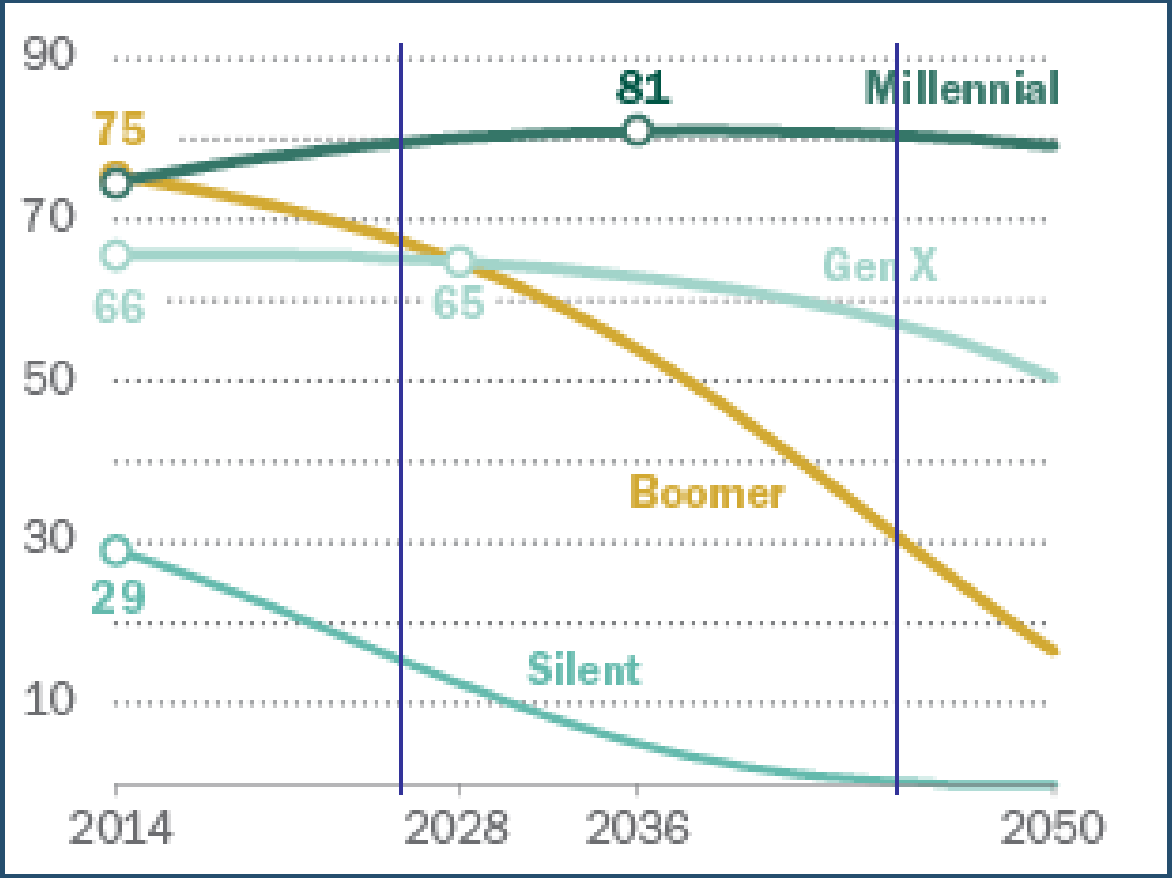


~17% of Licensed Drivers in 2013.

Yet represent ~22% of fatalities

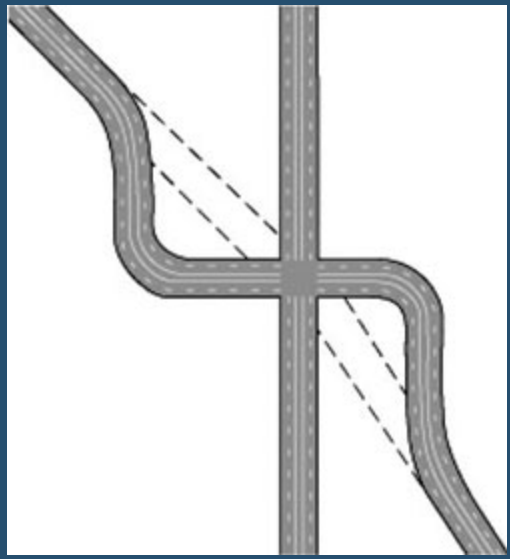
What's to come

Making transportation easier is good for everyone



Other Age Related Issues

- Address driver flexibility: remove skew



Non Engineering Solutions

- Mobility programs
  - Ensuring transportation for those who don't drive

Non Engineering Solutions

- Identifying older drivers at increased risk of crashing and intervene
  - Update procedures for assessing medical fitness for driving
  - In Minnesota – Voluntary reporting of unsafe drivers https://dps.mn.gov
- Increase seat belt use among older drivers