Intersection of MT 35 & S 206
AGENDA

• Why this Project?
• Existing Intersection
• Options That Have Been Considered
  • Traffic Signal
  • Roundabout
• Roundabout
  • What is a Roundabout?
Why This Project?

- Identified through a safety review
- Right angle crash trend
Layout of the Existing Intersection
27 Total Crashes at this Intersection

- 16 injury crashes with 27 injuries
- 11 property damage only

20 Right Angle Crashes

- 18 SB left turn vs. WB through
- 1 EB left vs. WB through
- 1 SB left vs. EB left

2 Rear End

4 Involved WB right turning vehicle

1 loss of control (WB)
• Existing Traffic Volumes

Hourly Traffic Volume Peaks
AM (PM)

S-206

Gas Station

93 (63)
80 (114)

Golf Course

109 (108)
318 (177)

MT-35 (P-52)

36 (120)
98 (367)
Studies and Factors for Justifying Traffic Control Signals

- MUTCD (Manual on Uniform Traffic Control Devices)
- Nine Warrants for Traffic Signal Control
  - Warrant 1 – Eight-Hour Vehicular Volume
    Condition A - Minimum Vehicular Volume
    Condition B - Interruption of Continuous Traffic
  - Warrant 2 – Four-Hour Vehicular Volume
  - Warrant 3 – Peak Hour
  - Warrant 4 – Pedestrian Volume
  - Warrant 5 – School Crossing
  - Warrant 6 – Coordinated Signal Systems
  - Warrant 7 – Crash Experience
  - Warrant 8 – Roadway Network
  - Warrant 9 – Intersection Near a Railroad Grade Crossing
• Traffic Signal Warrants Met
  • Warrant 1 – Eight Hour Vehicular Volume
  • Warrant 7 - Crash Experience
Roundabouts

- Where should roundabouts be considered?
  - Intersections needing higher form of traffic control
  - Intersections with an identified crash trend
NOW, THEREFORE, BE IT RESOLVED BY THE SENATE AND THE HOUSE OF REPRESENTATIVES OF THE STATE OF MONTANA:

(1) That the Department of Transportation and cities and towns in their respective jurisdictions be encouraged to construct more roundabouts instead of signalized, right-angle intersections.

(2) That copies of this resolution be sent by the Secretary of State to the Governor, to the Director of the Department of Transportation, and to the Montana League of Cities and Towns with the request that it be forwarded to each city or town public works department or similar entity involved in road design and construction.
What Is a Roundabout

- A circular intersection joining two or more streets
- All turns are to the right
- Traffic flows in a counterclockwise direction
- The SAFEST at-grade intersection
Comparison of Roundabouts Vs. Signals

- **Improved safety**
  - More than 90% reduction in fatalities
  - 76% reduction in injuries
  - 35% reduction in all crashes
  - 40% reduction in pedestrian injuries

- **Reduce congestion**
  - Efficient during both peak hours and other times
    - Typically less delay
Comparison of Roundabouts Vs. Signals

- Reduce pollution and fuel use
  - Fewer stops and hard accelerations, less time idling
- U-turns are allowed
- Saves taxpayers money in traffic signal maintenance and electricity
Vehicle – Vehicle Crossing Conflicts

<table>
<thead>
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<th>Signalized Intersection</th>
<th>Roundabout Design</th>
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<tr>
<td>Diverging</td>
<td>8</td>
<td>4</td>
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<tr>
<td>Merging</td>
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Vehicle – Vehicle Crossing Conflicts
Crash History at Intersections in Kalispell Area
Reserve Drive (S-548) and Stillwater
Jan. 1, 2004 to Dec. 31, 2006
12 Crashes

5 Right Angle
1 Left Turn Opposite Direction
1 Rear End
2 Sideswipe Same Direction
3 Single-Vehicle

Jan. 1, 2008 to Dec. 31, 2010
1 Rear End Crash
MT 83 & MT 35

Jan. 1, 2000 to Dec. 31, 2004
8 Crashes

1 Right Angle
2 Rear End
2 Sideswipe Same Direction
3 Single-Vehicle

Jan. 1, 2006 to Dec. 31, 2010
14 Crashes

4 Right Angle
8 Rear End
1 Sideswipe Opposite Direction
1 Single-Vehicle
US 2 & S - 206

13 Crashes
- 4 Right Angle
- 3 Rear End
- 1 Head On
- 3 Left turn Opposite Direction
- 2 Single-Vehicle

Jan. 1, 2005 to Dec. 31, 2010
8 Crashes
- 1 Rear End
- 1 Head On
- 1 Sideswipe Same Direction
- 5 Single-Vehicle
US 93 & MT 82

Jan. 1, 2004 to Dec. 31, 2006
17 Crashes

- 9 Right Angle
- 1 Rear End
- 1 Left Turn Opposite Direction
- 2 Sideswipe Same Direction
- 1 Pedestrian
- 4 Single-Vehicle

Jan. 1, 2008 to Dec. 31, 2010
9 Crashes

- 3 Right Angle
- 5 Rear End
- 1 Sideswipe Same Direction
Crash History at Roundabouts in Helena Area
<table>
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<th>Time Period</th>
<th>Total Crashes</th>
<th>Right Angle Crashes</th>
<th>Left Turn Opposite Direction Crashes</th>
<th>Rear End Crashes</th>
<th>Sideswipe Same Direction Crashes</th>
<th>SVLC in Roundabout Crashes</th>
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Saddle Drive & Colonial Drive

Jan. 1, 2009 to July 31, 2011
3 Crashes
  2 Sideswipe Collisions
  1 SVLC in Roundabout
Secondary 282 & Jackson Creek Road (Montana City)

June 2004 to June 2007
Jan. 2008 to July 2011

3 Crashes
   2 Right Angle
   1 Left Turn Opposite Direction

4 Crashes
   3 Sideswipe collisions
   1 Rear End
• Operation of the intersection
  • One way stop control
  • Signalized
  • Roundabout
Layout of the Proposed Roundabout
Questions?
Next Steps

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Presentation
http://www.mdt.mt.gov/pubinvolve/mt35_s206