

# 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

# Crashes at the Intersection 2002-2011

## 27 Total Crashes at this Intersection

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

## 20 Right Angle Crashes

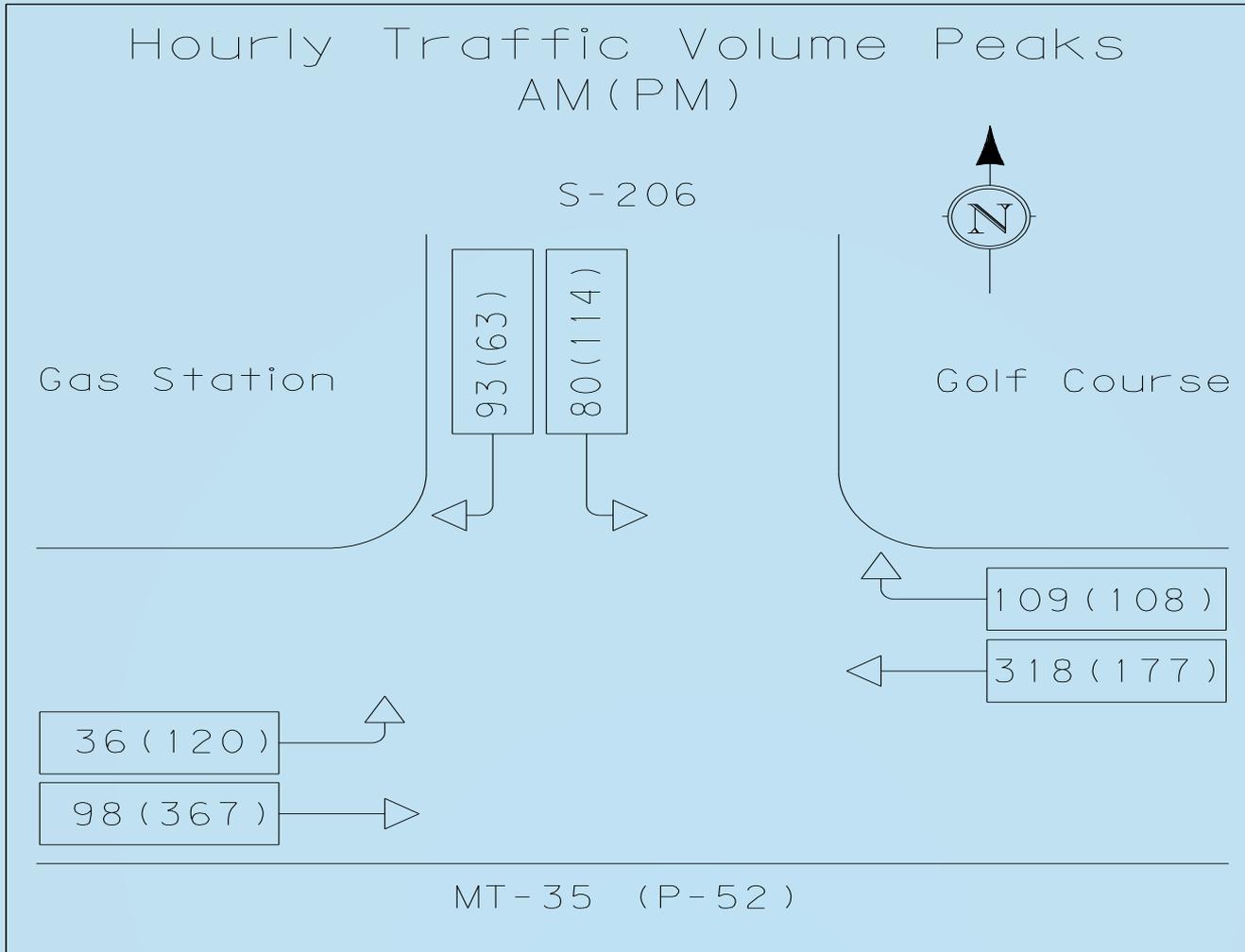
- 18 SB left turn vs. WB through
- 1 EB left vs. WB through
- 1 SB left vs. EB left

## 2 Rear End

4 Involved WB right turning vehicle

1 loss of control (WB)

# • Existing Traffic Volumes



# 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

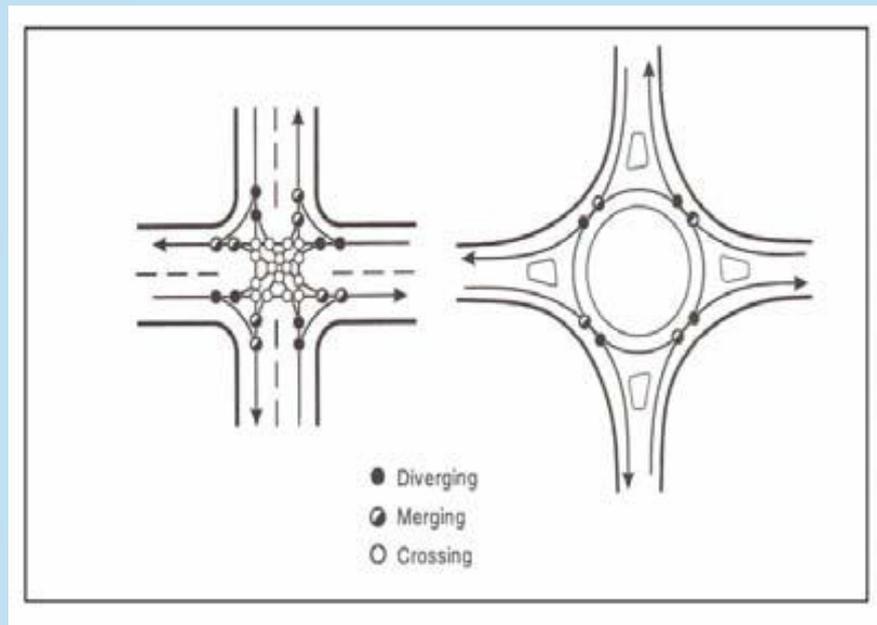
# Vehicle – Vehicle Crossing Conflicts

## Signalized Intersection

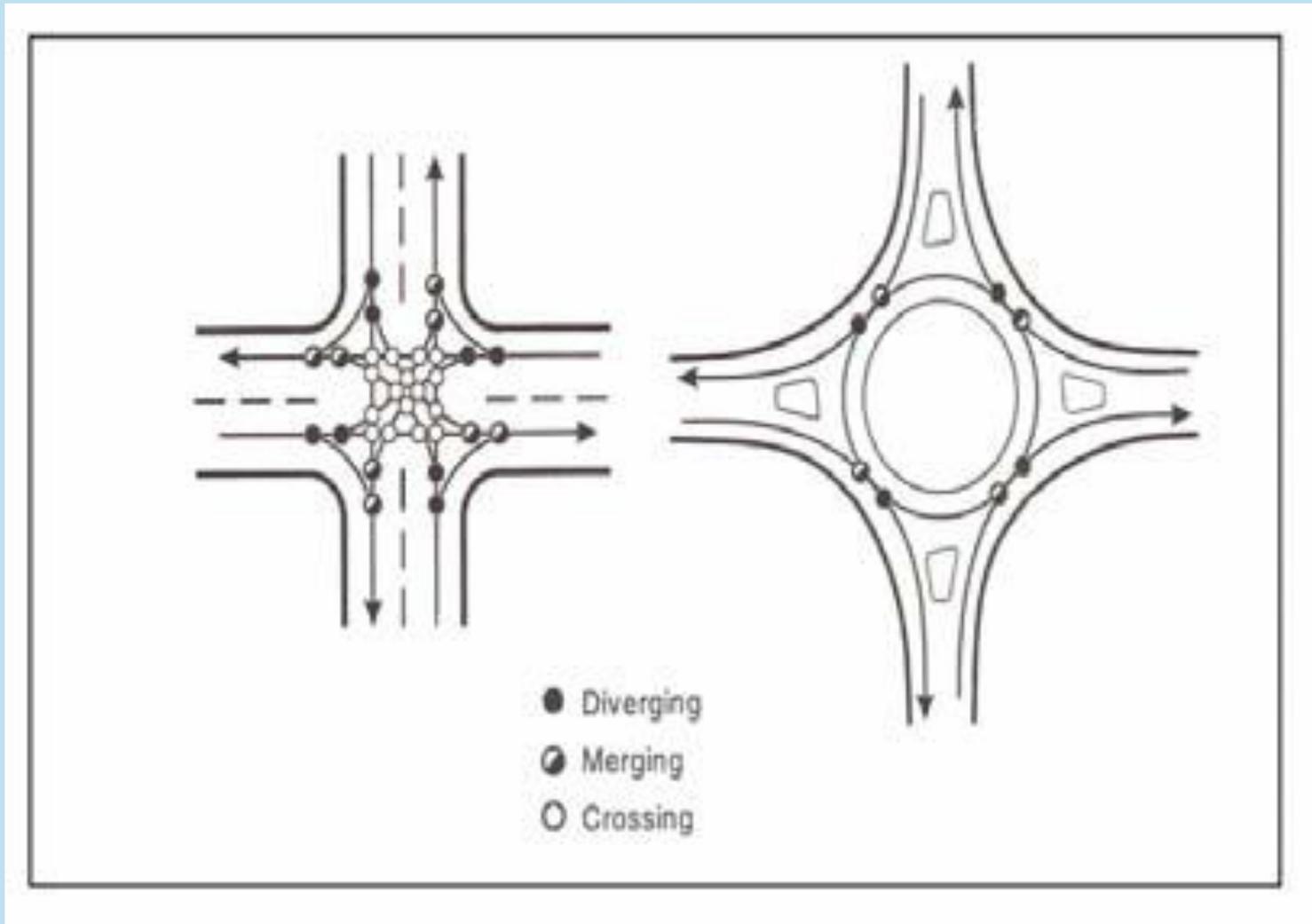
Diverging	8
Merging	8
Crossing	<u>16</u>
Total	32

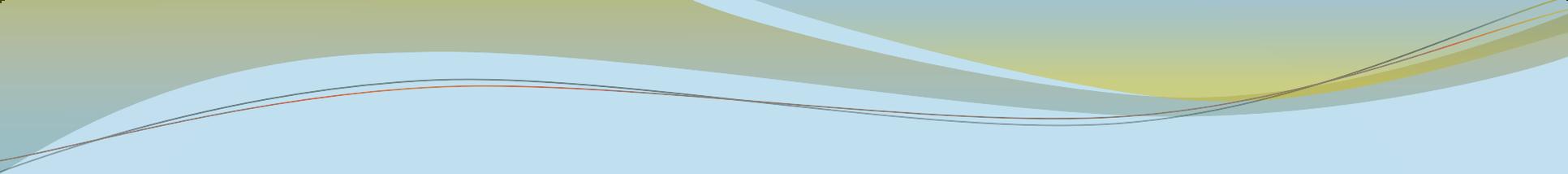
## Roundabout Design

Diverging	4
Merging	4
Crossing	<u>0</u>
Total	8



# 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

**Jan. 1, 1998 to Dec. 31,  
2003**

**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**

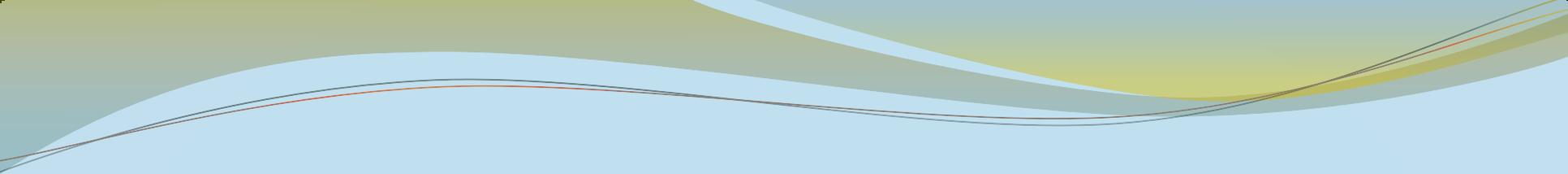
**17 Crashes**

- 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

# Canyon Ferry Road & Lake Helena Drive

**June 1, 2006 to Dec. 31, 2008**

**Jan. 1, 2009 to July 31, 2011**

**15 Crashes**

- 9 Right Angle
- 1 Left Turn Opposite  
Direction
- 3 Rear End
- 1 Sideswipe Same  
Direction

**4 Crashes**

- 2 Sideswipe  
Collisions
- 1 Rear End
- 1 SVLC in  
Roundabout

# 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

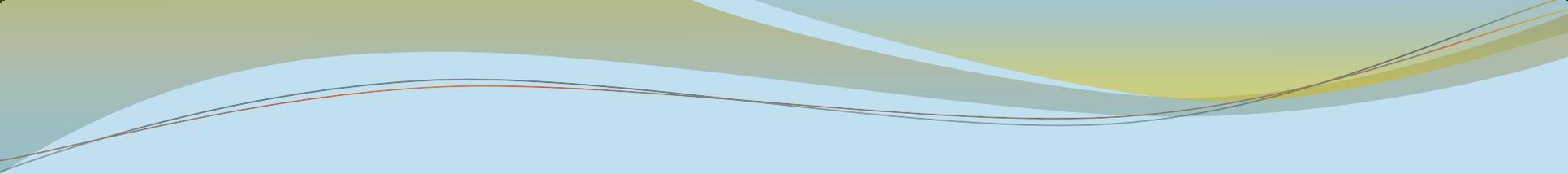
1 Left Turn Opposite  
Direction

## 4 Crashes

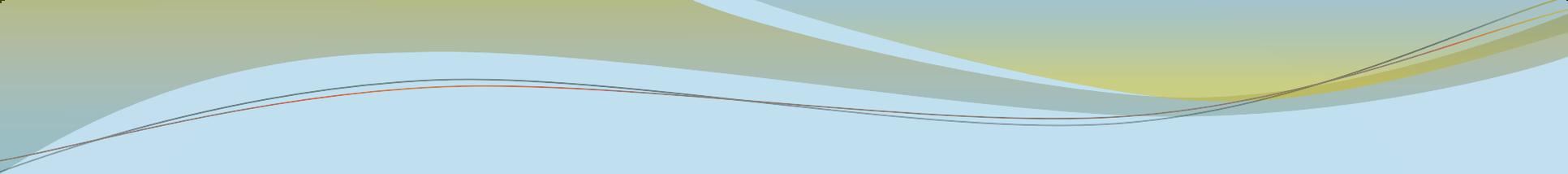
3 Sideswipe  
collisions

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](http://www.mdt.mt.gov/pubinvolve/mt35_s206)