



LINCOLN RD – MONTANA TO I-15

Corridor Improvement Options

11/06/2014

Informational Meeting

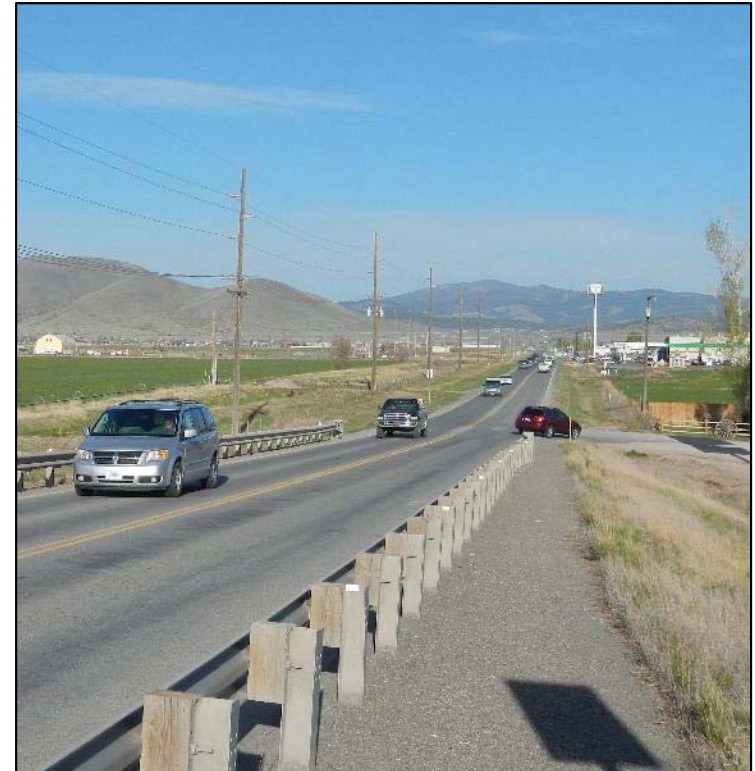
Welcome and Introductions

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- ❑ **Introductions**

- ❑ **Partners**
 - ❑ MDT
 - ❑ FHWA
 - ❑ Lewis and Clark County

- ❑ **Consultant Team**



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Meeting Outline

Background

Alternatives Considered

Alternatives Evaluation

Conclusion and Next Steps

Title VI Considerations

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This meeting is held pursuant to Title VI of the 1964 Civil Right Act which ensures that no person shall, as provided by Federal and State Civil Rights law, be excluded from participation in, denied the benefits of, or otherwise be subjected to discrimination on the basis of a protected status during any MDT project.

Further information is available in Title VI pamphlets available at the sign-in table.

Background

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- **Study area**
 - ▣ Lincoln Rd - N Montana Ave to I-15

- **Rapid growth**
 - ▣ North Valley development

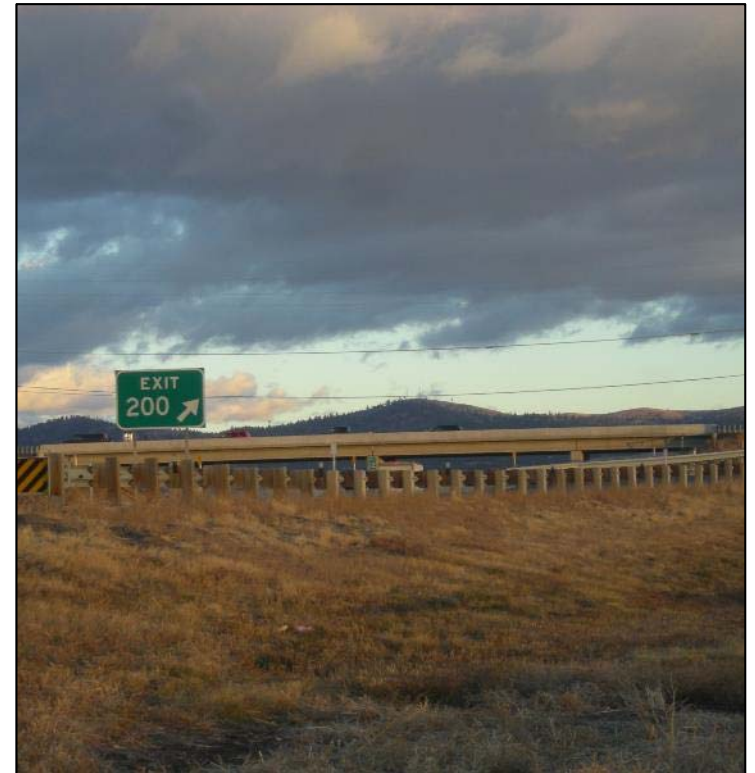
- **Custer Interchange**
 - ▣ Changes in travel patterns
 - ▣ All-way stop at NB off ramp



Purpose

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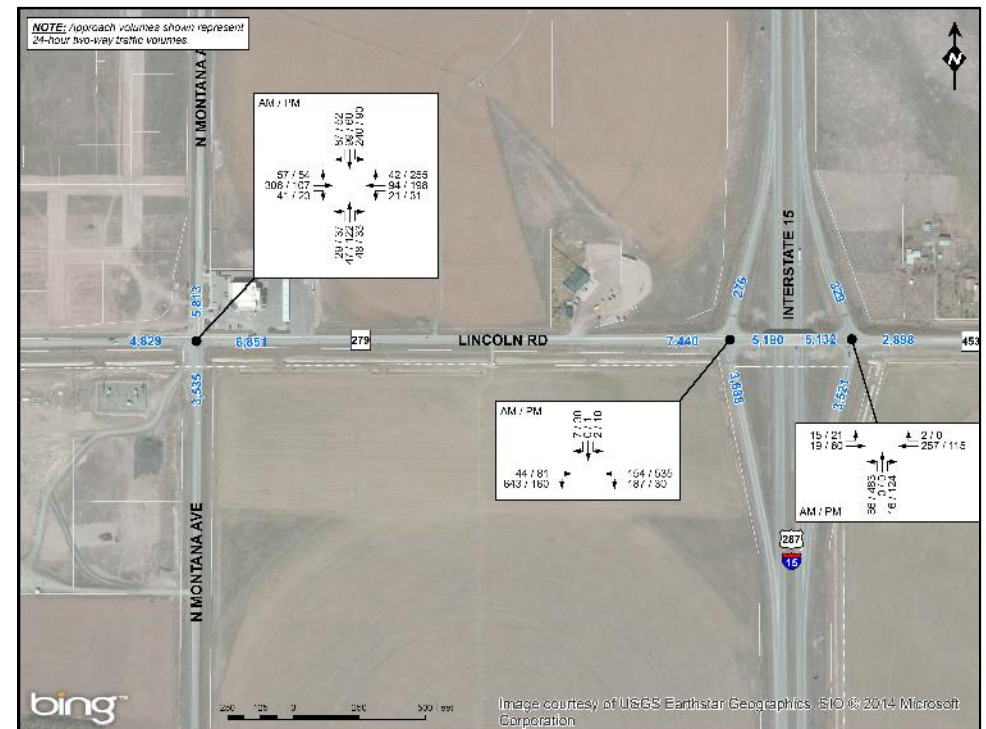
- **Identify improvement options**
 - ▣ Improve safety
 - ▣ Improve operations
- **Not full reconstruction of Interchange / Lincoln Rd**
 - ▣ Short- to mid-term implementation
- **Identify constraints and opportunities**
 - ▣ Feasible alternatives
 - ▣ Implementable



Existing Conditions

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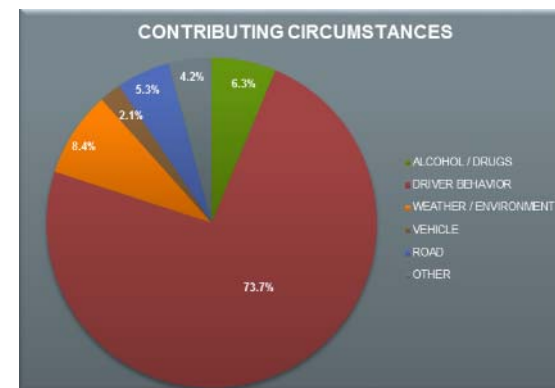
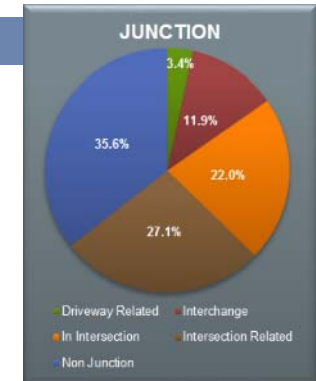
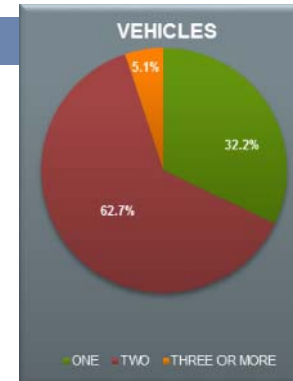
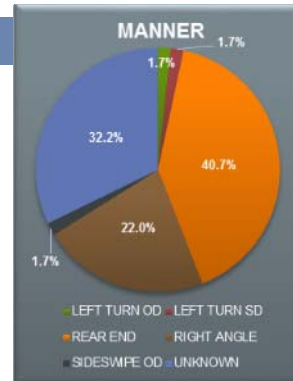
- **Data collected November 2013**
 - ▣ Volumes
 - ▣ Vehicle classifications
 - ▣ Turning movements
 - ▣ Queue lengths
- **Peak hours**
- **Site evaluation**



Safety

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- **July 01, 2003 to June 30, 2013**
 - 59 total crashes
 - 0 fatalities
 - 17 injury crashes
 - 9 crashes at Lincoln / Montana
 - 32 crashes on NB off ramp

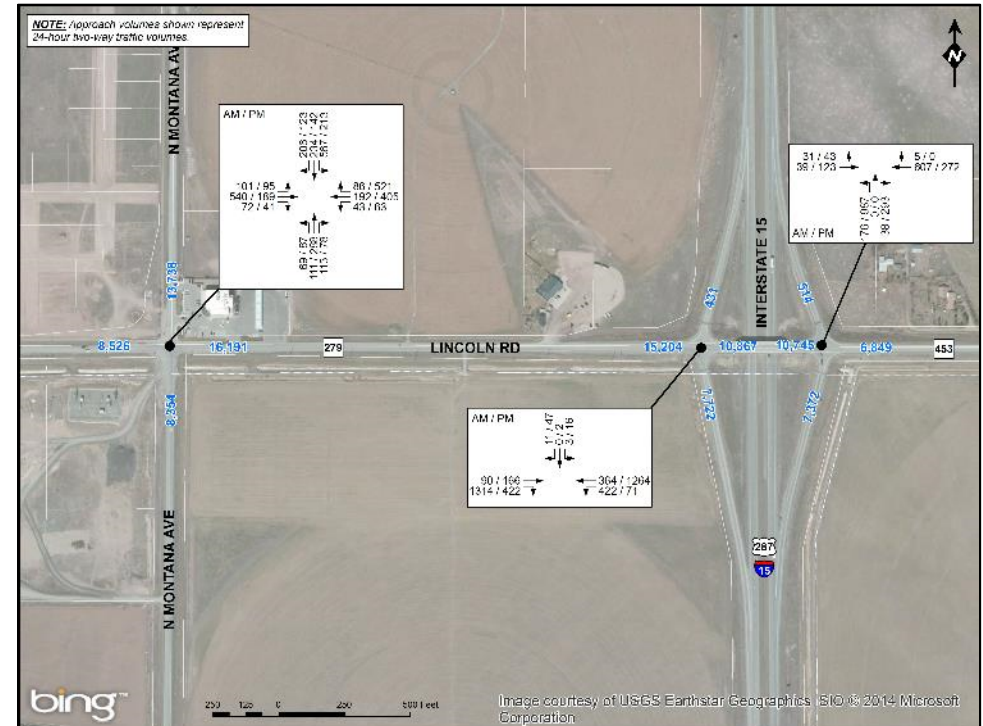


Projected Conditions

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- **Historic growth**
 - 2004 – 2013
 - 3.35% average annual

- **Projected growth**
 - 25 years (2038)
 - I-15 (1.8%)
 - Lincoln West (2.3%)
 - Lincoln East (3.5%)
 - N Montana Ave (3.5%)



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Alternatives Considered

Lincoln / N Montana

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- **No Action**
 - ▣ AM queuing in SB and EB directions
 - ▣ PM queuing in WB direction
- **Traffic Signals**
 - ▣ SB and NB left, WB right
 - ▣ Left-turn bays in all directions
- **Single-Lane Roundabout**
 - ▣ Standard single lane
 - ▣ Added RT bypass in WB direction
 - ▣ Looked at RT bypass in all directions
- **Multi-Lane Roundabout**
 - ▣ Full multi-lane
 - ▣ Dual entry in SB direction



Lincoln / I-15 SB

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- **No Action**
 - ▣ Some WB queuing during AM
 - ▣ Future concern
- **Ramp Modifications**
 - ▣ Additional on-ramp
 - ▣ Separates RT and LT movements
- **Traffic Signals**
 - ▣ Not needed for capacity
- **Single-Lane Roundabout**
 - ▣ Not needed for capacity
 - ▣ Would provide continuity with other ramp if a roundabout



Lincoln / I-15 NB

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- **No Action**
 - ▣ All-Way Stop
 - ▣ NB queuing during PM
 - ▣ Future queuing onto interstate
- **Ramp Modifications**
 - ▣ Additional off-ramp lane (RT)
- **Traffic Signals**
 - ▣ NB right-turn lane
 - ▣ Shared through/left-turn
- **Single-Lane Roundabout**
 - ▣ Added RT Bypass



Alternatives Comparison

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Traffic Signals

- **Pros**
 - ▣ Familiarity
 - ▣ Signal coordination
 - ▣ Handles unbalanced flows well
 - ▣ Can be adjusted
- **Cons**
 - ▣ Conflict points
 - ▣ High speeds
 - ▣ Stop on red
 - ▣ Maintenance costs
 - ▣ Safety
 - ▣ Air quality

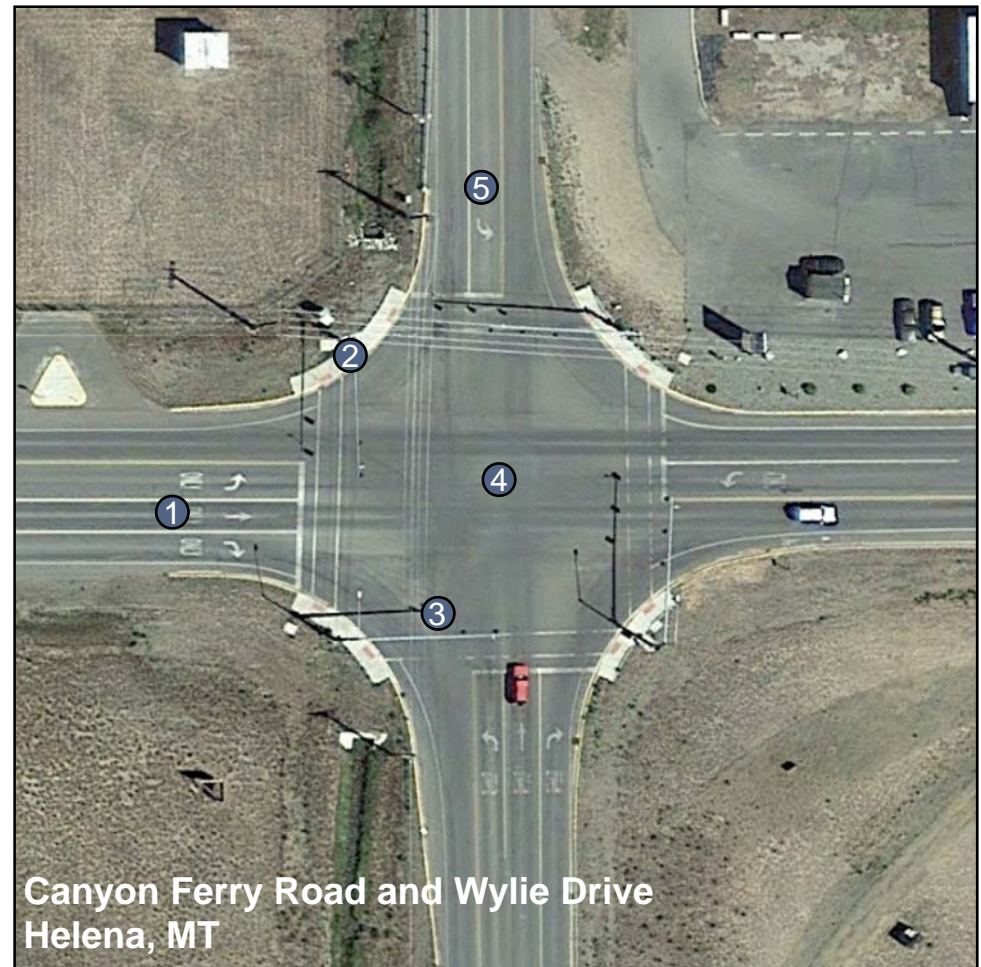
Roundabouts

- **Pros**
 - ▣ Improved safety
 - ▣ Reduced delay
 - ▣ Reduced operation and maintenance costs
 - ▣ Lower traffic speeds
 - ▣ Fewer conflict points
 - ▣ Air quality
- **Cons**
 - ▣ Intimidating to unfamiliar drivers
 - ▣ Potential for delay for unbalanced traffic
 - ▣ Intimidating for bicycle traffic

Traffic Signals

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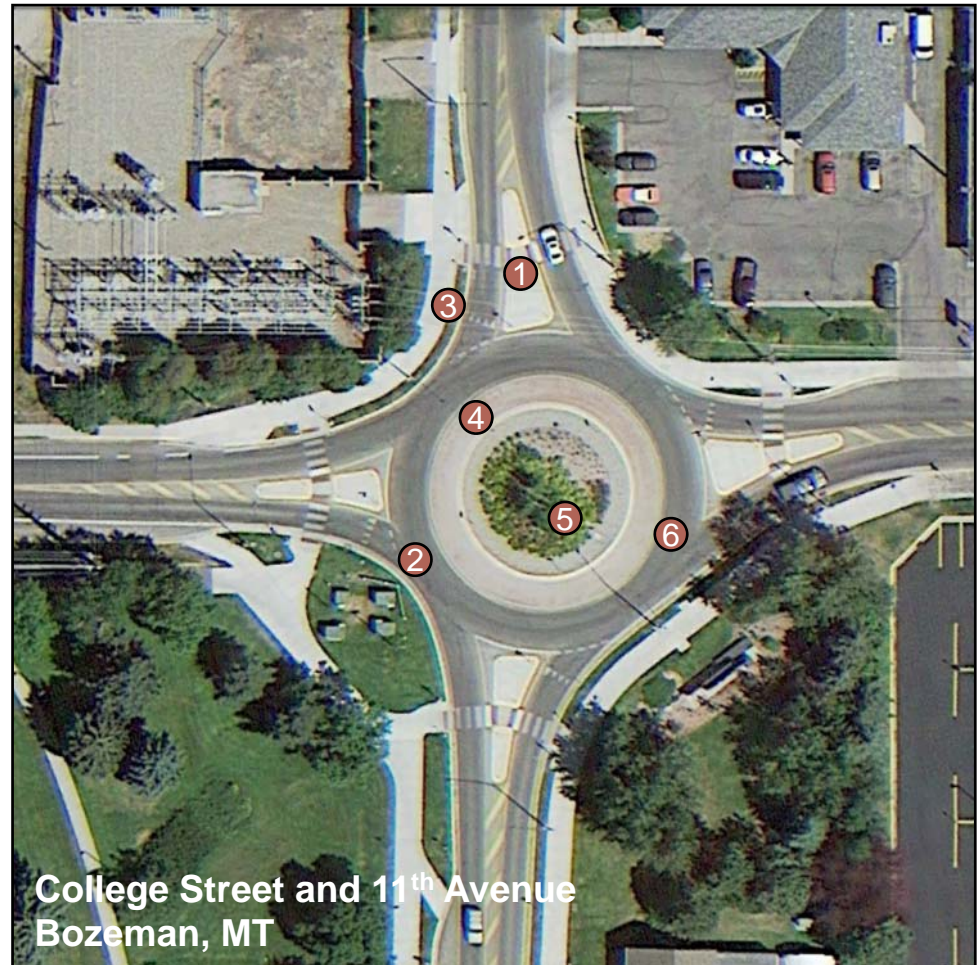
- 1 Striping directs vehicles to the proper lane for the desired direction of travel.
- 2 Pedestrian crossing controlled in conjunction with vehicular traffic.
- 3 Overhead signal heads direct vehicle traffic.
- 4 Clear view of traffic traveling on all other legs of the intersection.
- 5 Possible to have protected, dedicated turn bays.



Roundabouts

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- 1 Splitter islands are raised or painted areas used to separate entering and exiting traffic, to guide and slow entering traffic, and provide refuge for pedestrians and bicycles.
- 2 Vehicles are deflected or guided by the roundabout's central island, resulting in lower speeds overall.
- 3 Vehicles entering the roundabout must yield to circulating traffic.
- 4 A mountable apron may be necessary to accommodate large vehicles.
- 5 The central island is a raised center of a roundabout and can be landscaped for improved aesthetics.
- 6 All vehicles circulate counter-clockwise around and pass to the right of the central island.



College Street and 11th Avenue
Bozeman, MT

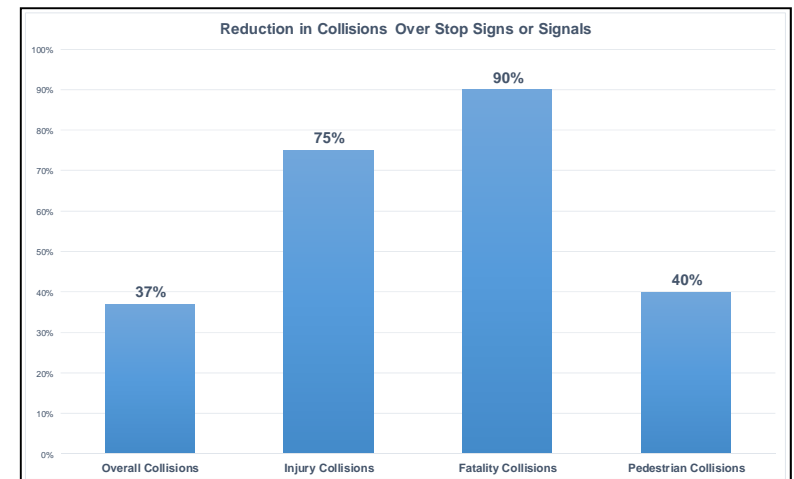
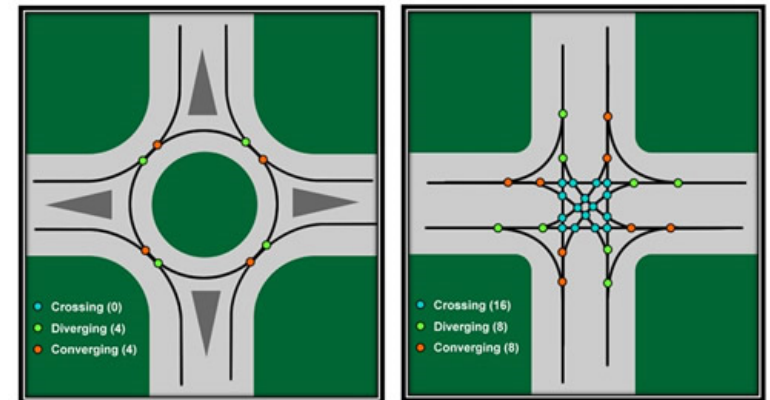
Roundabouts

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- **Reduction in conflict points**
 - ▣ 32 with standard intersection
 - ▣ 8 with roundabout

- **Improved safety**
 - ▣ 90% reduction in fatalities
 - ▣ 75% reduction in injuries

- **Slower speeds**



Source: Federal Highway Administration and Insurance Institute for Highway Safety (FHWA and IIHS)

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Lincoln / N Montana

Existing Configuration

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□ AM Peak Hour

- Existing LOS D
- 2018 LOS F
- SB left-turn
 - ~1,600 ft queue
- EB through
 - ~750 ft queue

□ PM Peak Hour

- Existing LOS C
- 2018 LOS E
- WB right-turn
 - ~1,600 ft queue



Traffic Signal

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- **AM Peak Hour**
 - ▣ Existing LOS B
 - ▣ 2028 LOS C
 - ▣ Off-peak delay

- **PM Peak Hour**
 - ▣ Existing LOS B
 - ▣ 2028 LOS B



Roundabout

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- **AM Peak Hour**
 - ▣ Existing LOS A
 - ▣ 2028 LOS E
 - ▣ Potential long-term delay on EB approach

- **PM Peak Hour**
 - ▣ Existing LOS A
 - ▣ 2028 LOS A
 - ▣ Right-turn bypass



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Simulation Video

Lincoln Road and Montana Avenue

Alternative: No Action
Time Period: Existing AM
2X normal speed



For Conceptual Purposes Only

Lincoln Road and Montana Avenue

Alternative: Signal
Time Period: Existing AM
2X normal speed



For Conceptual Purposes Only

Lincoln Road and Montana Avenue

Alternative: Roundabout
Time Period: Existing AM
2X normal speed



For Conceptual Purposes Only

Lincoln Road and Montana Avenue

Alternative: No Action

Time Period: Existing PM

2X normal speed



For Conceptual Purposes Only

Lincoln Road and Montana Avenue

Alternative: Signal
Time Period: Existing PM
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For Conceptual Purposes Only

Lincoln Road and Montana Avenue

Alternative: Roundabout
Time Period: Existing PM
2X normal speed



For Conceptual Purposes Only

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I-15 Interchange

Existing Configuration

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- **AM Peak Hour**
 - SB on ramp
 - Queuing along bridge
 - Concern as volumes increase

- **PM Peak Hour**
 - Existing LOS E
 - 2018 LOS F
 - Queuing onto interstate



Traffic Signal

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- **AM Peak Hour**
 - SB on ramp
 - 2nd lane

- **PM Peak Hour**
 - Existing LOS B
 - 2028 LOS B
 - Off peak delay



Roundabout

32

- **AM Peak Hour**
 - ▣ SB on ramp
 - 2nd lane

- **PM Peak Hour**
 - ▣ Existing LOS A
 - ▣ 2028 LOS A
 - ▣ Potential long-term delay on WB approach
 - ▣ Right-turn bypass



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Simulation Video

Lincoln Road and I-15

Alternative: No Action

Time Period: Existing AM

2X normal speed



For Conceptual Purposes Only

Lincoln Road and I-15

Alternative: Signal

Time Period: Existing AM

2X normal speed



Lincoln Road and I-15

Alternative:

Roundabout

Time Period: Existing AM

2X normal speed



For Conceptual Purposes Only

Lincoln Road and I-15

Alternative: No Action

Time Period: Existing PM

2X normal speed



For Conceptual Purposes Only

Lincoln Road and I-15

Alternative: Signal

Time Period: Existing PM

2X normal speed



For Conceptual Purposes Only

Lincoln Road and I-15

Alternative:

Roundabout

Time Period: Existing PM

2X normal speed



For Conceptual Purposes Only

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Conclusions and Next Steps

Additional Considerations

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□ **Safety**

- Roundabout vs. Signal

□ **Speeds**

- Lincoln (45 mph)
- N Montana (60/55 mph)

□ **Future expansion**

- Lincoln 5-lane?

□ **Growth rates**

- 25 year projections

□ **Changes in travel patterns**

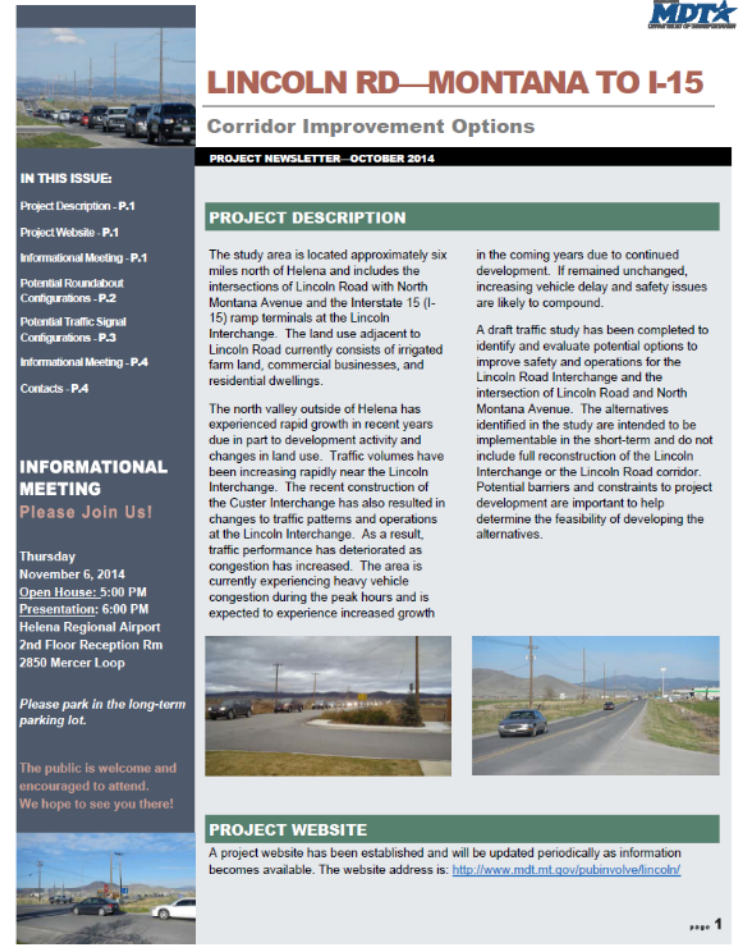
- Jim Darcy
- New development

□ **Impacts to existing businesses and adjacent properties**

Conclusion

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- Questions, concerns, and or comments
 - ▣ Public comment by Dec. 5th
 - ▣ Website:
www.mdt.mt.gov/pubinvolve/lincoln
 - ▣ Study contact:
Steve Prinzing, PE
Pre-Construction Engineer
MDT Great Falls District
406-454-5899
sprinzing@mt.gov



MDT
Montana Department of Transportation

LINCOLN RD—MONTANA TO I-15

Corridor Improvement Options

PROJECT NEWSLETTER—OCTOBER 2014

IN THIS ISSUE:

- Project Description - P.1
- Project Website - P.1
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- Potential Traffic Signal Configurations - P.3
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- Contacts - P.4

INFORMATIONAL MEETING

Please Join Us!

Thursday
November 6, 2014
Open House: 5:00 PM
Presentation: 6:00 PM
Helena Regional Airport
2nd Floor Reception Rm
2850 Mercer Loop

Please park in the long-term parking lot.

The public is welcome and encouraged to attend.
We hope to see you there!

PROJECT DESCRIPTION

The study area is located approximately six miles north of Helena and includes the intersections of Lincoln Road with North Montana Avenue and the Interstate 15 (I-15) ramp terminals at the Lincoln Interchange. The land use adjacent to Lincoln Road currently consists of irrigated farm land, commercial businesses, and residential dwellings.

The north valley outside of Helena has experienced rapid growth in recent years due in part to development activity and changes in land use. Traffic volumes have been increasing rapidly near the Lincoln Interchange. The recent construction of the Custer Interchange has also resulted in changes to traffic patterns and operations at the Lincoln Interchange. As a result, traffic performance has deteriorated as congestion has increased. The area is currently experiencing heavy vehicle congestion during the peak hours and is expected to experience increased growth

in the coming years due to continued development. If remained unchanged, increasing vehicle delay and safety issues are likely to compound.

A draft traffic study has been completed to identify and evaluate potential options to improve safety and operations for the Lincoln Road Interchange and the intersection of Lincoln Road and North Montana Avenue. The alternatives identified in the study are intended to be implementable in the short-term and do not include full reconstruction of the Lincoln Interchange or the Lincoln Road corridor. Potential barriers and constraints to project development are important to help determine the feasibility of developing the alternatives.



PROJECT WEBSITE

A project website has been established and will be updated periodically as information becomes available. The website address is: <http://www.mdt.mt.gov/pubinvolve/lincoln/>

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