

# **City of Helena**

**Neill Ave/Helena**

**Avenue/Cruse Avenue/Last  
Chance Gulch Intersection**

**Last Chance Gulch Corridor Gateway  
Project**

# Welcome and Introductions

**City of Helena**  
**Montana Department of**  
**Transportation**  
**DOWL HKM**

# Purpose of Meeting

- Inform & involve the public
- Review what we heard from immediate stakeholders
- Discuss what we have done with stakeholder input
- Discuss why intersection improvements are needed
- Review improvement alternatives & schematics
- Discuss the need for access management at intersections

# What is a Concept Study?

- Provide a feasibility and constructability evaluation
- Establish a preliminary intersection design for the purposes of assessing right-of-way and infrastructure impacts and use in future final design efforts

# What We Heard

- *Why are improvements needed?*
- *When will they be needed?*
- *How will my business access be affected?*
- *How will customer/employee parking be affected?*
- *How will delivery services be affected?*
- *How will bicycle/pedestrian/ADA access be affected?*
- *Will I have an opportunity to provide input into the planning process going forward?*
- *Why don't we make LCG a two way street?*
- *How will emergency services be affected?*

# What We've Done

- ❑ *Met with stakeholders in the vicinity of the intersection.*
- ❑ *City has developed Women's Park parking alternative.*
- ❑ *City has applied for a TIGER 4 Grant.*
- ❑ *LCG has been analyzed as a two way street.*
- ❑ *Gathered examples of Downtown Roundabouts.*
- ❑ *Completed analysis of intersection alternatives.*
- ❑ *Brought Forward Two Alternatives for further Development*
  - Expanded Signalized Intersection

# Two-Way Conversion on Last Chance Gulch

## *Impacts on Intersection Design*

### Signalized Enlarged Intersection

- Remove Helena Avenue Leg
- Shift Cruse Alignment north to fits with Neill Avenue.
- Protected Left Turn Phase LOS D, Volume/Capacity 0.81
- No Realignment – Split Phase, LOS F, V/C = <1
- Additional Cost: \$2.8 Million

### Roundabout

- Increase inscribed circle from 140' to 180' to make roundabout function
- Realign LCG to west
- Realign Cruse to north
- Prohibit truck movements LCG to Cruse
- Impact Livery Square, Man Store, and Starbucks
- Volumes are balanced on 5 legs of the intersection
- Operates LOS C, V/C = 0.76
- Additional Cost: \$2.8 Million

# Why Are Changes Being Considered?

## □ **Improve Safety**

- **Pedestrians & Bicycles**
- **Cars, Buses, Light Trucks**
- **Emergency Vehicles**
- **Accident Severity**

## □ **Improve Capacity**

- **Level Of Service “C” or better at year 2035**

## □ **Reduce Congestion**

- **Improve Business Visibility**

## □ **Improve Air Quality**

- **Reduce delay and/or idle time**

## □ **Improve Connectivity**

- **Non-Motorized Transportation Modes (bikes, peds**

# Traffic

- **Small but noticeable increases in vehicular traffic over the past several years at the intersection.**
- **Without Improvements, the present intersection will reach Level Of Service (LOS) “E” or “F” by year 2035.**
- **Helena is growing slowly, but the effects are cumulative.**

# Helena Growth

- 9% population growth between 2000 & 2010
- Doubling growth from previous decade

# Five Year Crash History

Table 1: Crash summary for the Neill Avenue/Helena Avenue/Cruise Avenue/Last Chance Gulch Intersection and 11th Avenue/Cruise Avenue Intersection (July 2006 - June 2011)

Total	Collision Type						Severity			
	Rear End	Head On	Angle	Fixed Object	Side Swipe	Cyclist/Ped	Other	Property Damage Only	Injury	Fatal
50	27	2	7	2	5	5	2	37	13	0

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# Crash History Summary

Data from 5 Year Period 2006 - 2011

## CRASH TYPE

- ❑ **54% Were “Rear-Enders”**
- ❑ **14% Were from a Side Angle (“T-Bone”)**
- ❑ **10% Were Side-Swipes**
- ❑ **10% Involved Pedestrians**
- ❑ **4% Were Head-On**
- ❑ **4% Collided with a Fixed**

**Current AM Peak  
Vehicles / Hour  
2011 -2012  
Counts  
Existing  
Conditions**

**Current PM Peak  
Vehicles / Hour  
2011 -2012  
Counts  
Existing  
Conditions**

**Projected AM  
Peak  
Vehicles / Hour  
Design Year  
2035  
Existing  
Conditions**

**Projected PM  
Peak  
Vehicles / Hour  
Design Year 2035  
Existing  
Conditions**

# Improvement Alternatives

- **Enlarged Signalized Intersection**

- **What would it look like?**
- **How much space would it take?**

- **Roundabout**

- **What would it look like?**
- **How much space would it take?**

- **No-build**

- **Do Nothing to the Present Intersection**

# Project Development

## □ Iterative Process

- **Concept Development (This is where we are today)**
- **Concept Approval (This is the next step)**
- **Design Development**
- **Final Design**
- **Construction**

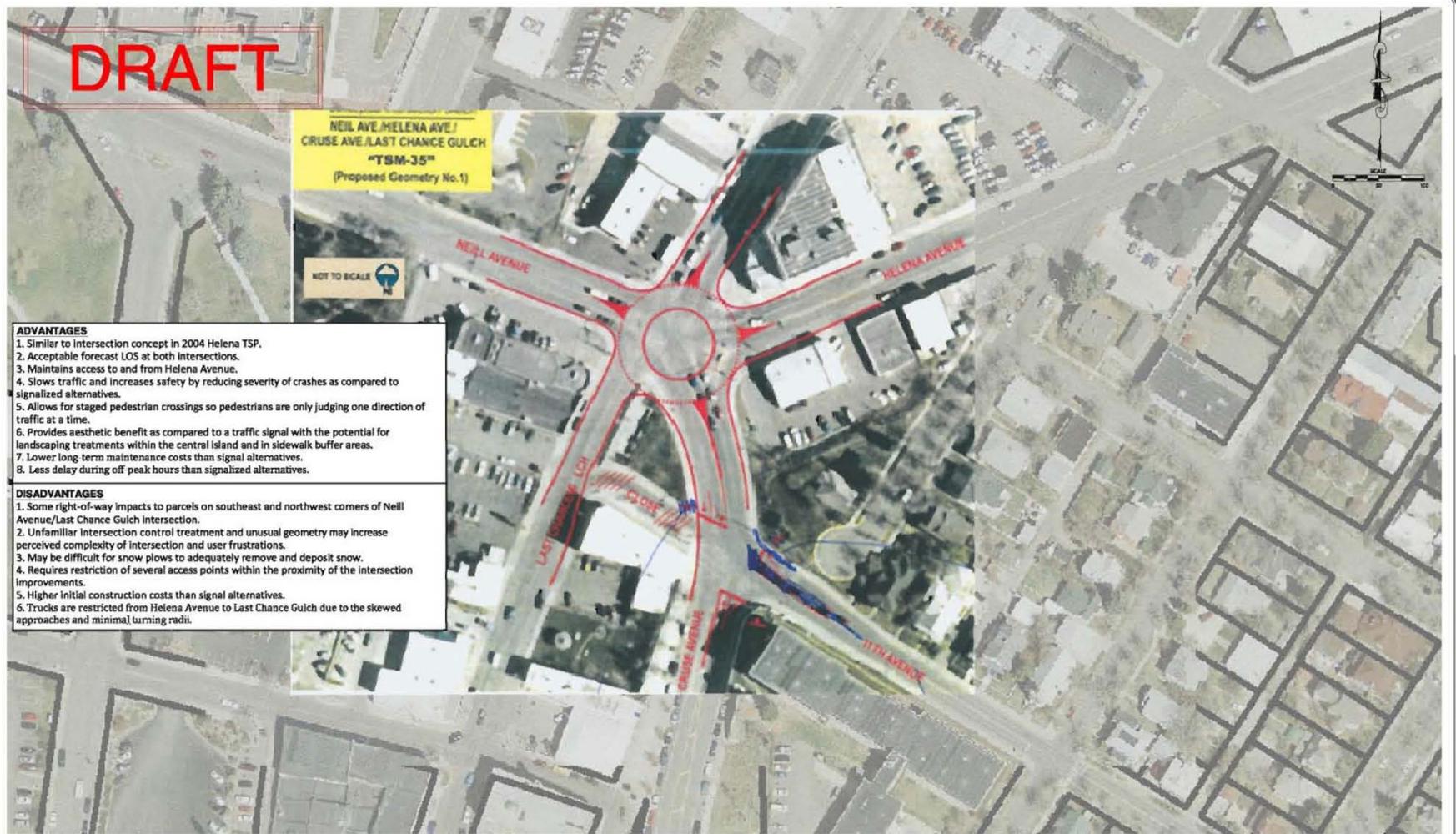
## □ The Following Slides Show The Process of Concept Development

- **Signalized Intersection Alternatives**
- **Roundabout Alternatives**









**ADVANTAGES**

1. Similar to intersection concept in 2004 Helena TSP.
2. Acceptable forecast LOS at both intersections.
3. Maintains access to and from Helena Avenue.
4. Slows traffic and increases safety by reducing severity of crashes as compared to signalized alternatives.
5. Allows for staged pedestrian crossings so pedestrians are only judging one direction of traffic at a time.
6. Provides aesthetic benefit as compared to a traffic signal with the potential for landscaping treatments within the central island and in sidewalk buffer areas.
7. Lower long term maintenance costs than signal alternatives.
8. Less delay during off peak hours than signalized alternatives.

**DISADVANTAGES**

1. Some right-of-way impacts to parcels on southeast and northwest corners of Neill Avenue/Last Chance Gulch intersection.
2. Unfamiliar intersection control treatment and unusual geometry may increase perceived complexity of intersection and user frustrations.
3. May be difficult for snow plows to adequately remove and deposit snow.
4. Requires restriction of several access points within the proximity of the intersection improvements.
5. Higher initial construction costs than signal alternatives.
6. Trucks are restricted from Helena Avenue to Last Chance Gulch due to the skewed approaches and minimal turning radii.

NOTE: ALTERNATIVE #1A (ILLUSTRATED) – SINGLE-LANE NEILL AVENUE ENTRY  
 ALTERNATIVE #1B (NOT ILLUSTRATED) – TWO-LANE NEILL AVENUE ENTRY

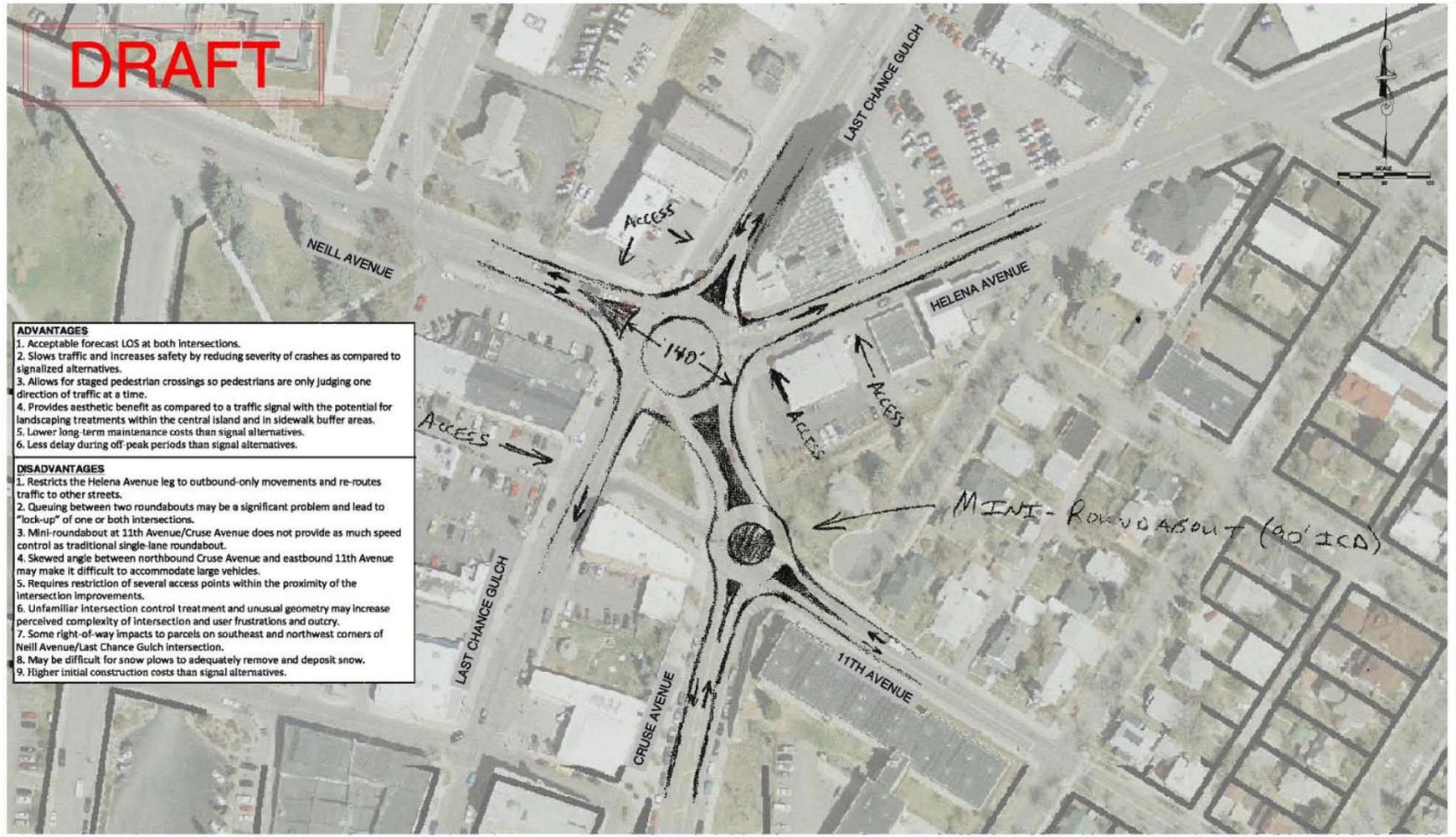
ALTERNATIVE #1A & #1B - SINGLE-LANE ROUNDABOUT (BASED ON 2004 TSP UPDATE)  
 HELENA, MONTANA

FIGURE  
**A**

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- ADVANTAGES**
1. Acceptable forecast LOS at both intersections.
  2. Slows traffic and increases safety by reducing severity of crashes as compared to signalized alternatives.
  3. Allows for staged pedestrian crossings so pedestrians are only judging one direction of traffic at a time.
  4. Provides aesthetic benefit as compared to a traffic signal with the potential for landscaping treatments within the central island and in sidewalk buffer areas.
  5. Lower long term maintenance costs than signal alternatives.
  6. Less delay during off-peak periods than signal alternatives.

- DISADVANTAGES**
1. Restricts the Helena Avenue leg to outbound-only movements and re-routes traffic to other streets.
  2. Queuing between two roundabouts may be a significant problem and lead to "lock-up" of one or both intersections.
  3. Mini-roundabout at 11th Avenue/Cruise Avenue does not provide as much speed control as traditional single-lane roundabout.
  4. Skewed angle between northbound Cruise Avenue and eastbound 11th Avenue may make it difficult to accommodate large vehicles.
  5. Requires restriction of several access points within the proximity of the Intersection improvements.
  6. Unfamiliar Intersection control treatment and unusual geometry may increase perceived complexity of intersection and user frustrations and outcry.
  7. Some right-of-way impacts to parcels on southeast and northwest corners of Neill Avenue/Last Chance Gulch intersection.
  8. May be difficult for snow plows to adequately remove and deposit snow.
  9. Higher initial construction costs than signal alternatives.

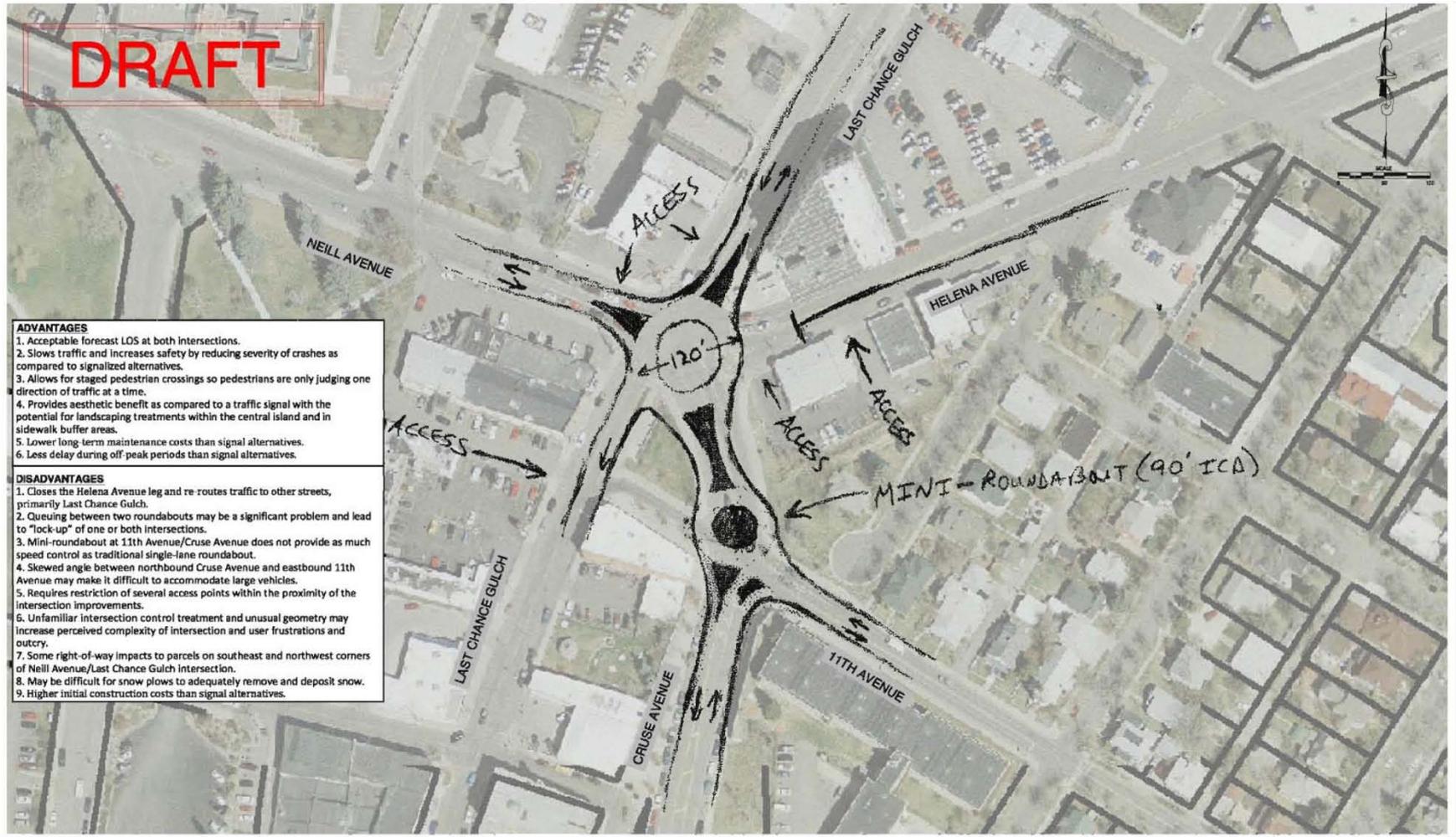
NOTE: ALTERNATIVE #1A (ILLUSTRATED) - SINGLE-LANE NEILL AVENUE ENTRY  
 ALTERNATIVE #1B (NOT ILLUSTRATED) - TWO-LANE NEILL AVENUE ENTRY

ALTERNATIVE #3A & #3B - SINGLE-LANE ROUNDABOUT WITH A MINI-ROUNDABOUT (EASTBOUND HELENA AVENUE ALLOWED)  
 HELENA, MONTANA

FIGURE  
**C**

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<p><b>ADVANTAGES</b></p> <ol style="list-style-type: none"> <li>1. Acceptable forecast LOS at both intersections.</li> <li>2. Slows traffic and increases safety by reducing severity of crashes as compared to signalized alternatives.</li> <li>3. Allows for staged pedestrian crossings so pedestrians are only judging one direction of traffic at a time.</li> <li>4. Provides aesthetic benefit as compared to a traffic signal with the potential for landscaping treatments within the central island and in sidewalk buffer areas.</li> <li>5. Lower long-term maintenance costs than signal alternatives.</li> <li>6. Less delay during off-peak periods than signal alternatives.</li> </ol>
<p><b>DISADVANTAGES</b></p> <ol style="list-style-type: none"> <li>1. Closes the Helena Avenue leg and re-routes traffic to other streets, primarily Last Chance Gulch.</li> <li>2. Queuing between two roundabouts may be a significant problem and lead to "lock-up" of one or both intersections.</li> <li>3. Mini-roundabout at 11th Avenue/Cruise Avenue does not provide as much speed control as traditional single-lane roundabout.</li> <li>4. Skewed angle between northbound Cruise Avenue and eastbound 11th Avenue may make it difficult to accommodate large vehicles.</li> <li>5. Requires restriction of several access points within the proximity of the intersection improvements.</li> <li>6. Unfamiliar intersection control treatment and unusual geometry may increase perceived complexity of intersection and user frustrations and outcry.</li> <li>7. Some right-of-way impacts to parcels on southeast and northwest corners of Neill Avenue/Last Chance Gulch intersection.</li> <li>8. May be difficult for snow plows to adequately remove and deposit snow.</li> <li>9. Higher initial construction costs than signal alternatives.</li> </ol>

NOTE: ALTERNATIVE #1A - SINGLE-LANE NEILL AVENUE ENTRY  
 ALTERNATIVE #1B - TWO-LANE NEILL AVENUE ENTRY

ALTERNATIVE #4A & #4B - SINGLE-LANE ROUNDABOUT AND MINI-ROUNDABOUT (HELENA AVENUE CLOSED)  
 HELENA, MONTANA

FIGURE  
**D**

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# 15-20 year Operational Analysis With Improvements

- **Table 5 – Summary and Sensitivity Analysis**
  - Alternative 1B – Roundabout
  - **Alternative 6 – Signalized Intersection**

# What Are Some of the Functional Differences Between Signalized and Roundabout Intersections

- Signalized Intersection
- Traffic stops completely between signal phases
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  - Fifth Outline Level
  - Sixth Outline Level
- Traffic moves through the intersection at the signed speed on the entering streets unless stopped by the traffic light
- Accidents tend to be more severe due to higher speeds and greater potential for conflicts with other vehicles, bikes & peds
- Every driver grows up learning how to negotiate a signalized intersection so it seems like 'second nature' to everyone

- Roundabout
  - Click to edit Master text styles
  - Once the roundabout has been entered, traffic moves continuously until exiting
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    - Fifth Outline Level
    - Sixth Outline Level
  - Traffic moves around the circle in a counterclockwise direction until exiting via a 'soft' right turning movement
  - Traffic is typically slowed to 15 mph as it enters and moves around the circle
  - Accidents tend to be less severe because of slower speeds and fewer points of conflict with other vehicles, bikes & peds
  - Despite the fact that many are in use today, many drivers will experience a 'learning curve' to learn the procedure and etiquette of roundabouts

# Is There a Cost Difference in Construction or Operation Between Signalized and Roundabout Intersections?

- Signalized Intersection

## Construction Cost

- Generally more expensive to construct
- An eight phase traffic signal & controller with video detection can cost upwards of \$500,000 +
- Concrete curb, gutter and sidewalk costs are usually less than for roundabout
- Striping and signing costs are similar
- Few opportunities for landscaping

## Operational Costs

Relatively high due to signals

- Roundabout intersection

## Construction Cost

- Generally less expensive to construct
- No traffic signal to install (although infrequently, self activated pedestrian crossing signals are used)
- Concrete curb, gutter and sidewalk costs are typically more than signalized due to more islands and the center circle with truck ramp
- More opportunities for landscaping

## Operational Costs

- Relatively low, but some due to landscape maintenance

# Who Will Make the Preferred Concept Decision

?

## Helena City Commission

The City Commission will make the decision as to which course of action to take considering and balancing:

- **Technical Studies and Analyses**
- **Public Health and Safety**
- **Public Need**
- **Stakeholder Input**
  - **Montana Department of Transportation**
  - **Business Owners and Leaders**
  - **Special Interest Groups**
  - **Traveling Public**
  - **Emergency Service Providers**
- **Funding Availability**
- **Constructability**

# Next Steps

- **City Commission Decision on Preferred Concept**
- **Refine preferred concept to level of detail sufficient to show:**
  - **Dimensions of Key Features**
    - **Lanes/Channelization/Striping/Signalization**
  - **Emergency Vehicle Wheel Paths**
  - **ADA/Bike/Pedestrian Facilities**
  - **Parking, Access & Delivery Restrictions**
  - **Transit Routes & Accommodations**
- **CAD-generated preliminary design of preferred alternative**
- **City direction to proceed to design**
- **Construction dependent upon future funding**

# Public Comments

# Project Contact Points

- City of Helena

- John Rundquist, Public Works Director
- Ryan Leyland, City Engineer

- Montana

- Roy Peterson, Bureau Chief Traffic and Safety
- Danielle Bolan, Traffic and Safety Engineer

- **Consultant – DOWL HKM**

- Gary Gray, PE
- Phil Odegard, PE
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# How to Comment

– Eighth  
Outline  
Level

## Ninth Outline Level Click

- Fill out comment form and leave on table by exit.

- Click to edit the outline
- Mail Comment form to:

- Second Outline Level
  - Gary E. Gray
    - Third Outline Level
- DOWLHKM
  - Fourth Outline Level
- PO Box 1009
  - Fifth Outline Level
- Helena, MT 59624
  - Sixth Outline Level

- Email Gary at [ggray@dowlhkm.com](mailto:ggray@dowlhkm.com)

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Please join us at the tables around the room to ask further questions.

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• Thank you for your participation!

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