US-20/SH-75 (Timmerman Jct.) Intersection Study

Community Advisory Committee (CAC) Meeting #1
April 7th, 2016
Blaine County Courthouse
Commissioners Large Conference Room

Study Website:
Welcome

Thank you for your commitment to participating with the Idaho Transportation Department (ITD) in this important study!

Who is involved?

- Idaho Transportation Department
- Blaine County & Local City Representatives
- Local Community Representatives:
  - Emergency Responders
  - Agriculture & Trucking Services
  - Commerce & Tourism
  - Transportation Providers
  - Major Employers
  - Residents/Citizens
Roles: Provide a wide range of perspectives and bring valuable information to the Study Management Team (SMT) through the alternatives development, evaluation, and selection process.

Responsibilities:
- Understand the intersection, the study context, the range of alternatives, and the implications of decisions
- Share facts and decisions on the study with your organization and the community
- Maintain a commitment to the study process. Provide open, honest, and continuous communication during the study
Community Advisory Committee (CAC) Roles & Responsibilities

Community Advisory Committee
Steering/Commenting Group

Study Management Team
Decision-Making Group

Idaho Transportation Department (District 4)
Owner

Kittelison & Associates, Inc.
Prime Consultant

Blaine County
Representative

RBCI
Public Involvement Lead
Safety Treatments Installed in the Past 25 Years
- Larger/more visible stop signs and warning signs
- In-lane rumble strips on US-20
- Shoulder and centerline rumble strips on SH-75
- Advance intersection warning signs, flashers, and lane markings
- Overhead flashing light at the intersection
- Reduced speed limit on SH-75 (45 mph)
- Narrowed SH-75 lanes to 11 feet

Other Relevant Studies
- 2008 SH-75 Timmerman to Ketchum Environmental Impact Statement (EIS) and Record of Decision (ROD)
- Blaine County Comprehensive Plan and Transportation Plan
- 2011 Road Safety Audit (RSA) for the intersection

Photo Courtesy: Rosemary Curtin
Study Overview

Study Purpose & Need

**Study Purpose:** ITD is continuing its commitment to improve safety at the US-20/SH-75 intersection (Timmerman Junction), while providing reliable and efficient mobility.

- Collaborate with local community leaders and representatives
- Evaluate a wide range of intersection alternatives
- Identify proposed mid-term and long-term improvements
- Provide direction to pursue funding for future implementation

**Study Need**

- #16 on ITD’s High Accident Location (HAL) list for District 4 and #321 statewide
- Several serious injury crashes in recent history
- Need to investigate treatments to further improve safety
- Continue to ensure adequate mobility through the intersection
Study Overview

Study Goals & Objectives

- **Goal #1: Improve safety performance**
  - Quantitative and qualitative predictive safety evaluation to estimate crash reduction potential

- **Goal #2: Maintain acceptable mobility**
  - Quantitative traffic operations analysis and qualitative mobility evaluation to estimate operational performance

- **Goal #3: Collaborate with community representatives**
  - **Listen** to the community to understand concerns and identify opportunities and constraints
  - **Involve** the community in the alternative development, evaluation, and selection process

- **Goal #4: Establish a prioritized implementation plan**
  - **Develop** mid-term and long-term improvement recommendations and define relative timeframes for implementation
Study Overview

Study Schedule

STUDY SCHEDULE

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2016</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>DEC</td>
<td>JAN</td>
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<tr>
<td>Review Intersection History &amp; Current Conditions</td>
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<tr>
<td>Develop &amp; Evaluate Alternatives</td>
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<tr>
<td>Proposed Improvements &amp; Implementation Plan (Intersection Study Report)</td>
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<tr>
<td>Community Advisory Committee Meeting</td>
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<td>Online Survey</td>
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</tbody>
</table>
Evaluation Criteria
For Tier 2 Alternatives Evaluation

➢ Safety Performance
  ▪ Expected influence on the type, frequency, and severity of crashes (especially angle type crashes)

➢ Mobility
  ▪ Expected influence on the movement of all types of traffic through the intersection

➢ Physical and Environmental Impacts
  ▪ Physical impact on the landscape, environment (e.g., wetlands), and properties in the vicinity of the intersection

➢ Implementation & Maintenance
  ▪ Constructability, the level of maintenance effort, and the feasibility of phasing an alternative (i.e., interim improvements to a long-term solution)

➢ Cost
  ▪ Construction and right-of-way costs
Comment Sheet

- PLEASE TURN IN YOUR COMMENT SHEET BEFORE YOU LEAVE TODAY.
- If you are unable to do so, please email your comment sheet to Yuri Mereszczak at yuri@kittelson.com or mail to 101 S Capitol Blvd, Ste 301, Boise, ID 83702 by no later than April 14th.

Tier 1 Alternatives Assessment Packet
Meeting Evaluation Form
Intersection Alternatives Evaluation

Existing Conditions

▷ Key Characteristics
  ▪ Arterial roadways; Scenic byways
  ▪ Two-way stop control
  ▪ High speeds

▷ Traffic Volumes
  ▪ SH-75 volumes much higher than US-20 volumes
  ▪ Seasonal variation. Evaluated summer conditions.
  ▪ Some trucks on SH-75; higher percentage on US-20

▷ Crash History (2011-2015)
  ▪ Observed number of crashes higher than expected
  ▪ All crashes angle type
  ▪ Severity
What are the key problems and how can engineering solutions help address them?

- High proportion of angle crashes due to failure to stop
  - Increase driver awareness of and attention to the conflicts
  - Reduce the number of crossing conflicts

- High proportion of injury crashes
  - Reduce vehicle speeds through the intersection
  - Reduce the number of conflicts

- Maintain adequate mobility
  - Minimize delay, stops, and travel time
  - Effectively allocate the use of space through infrastructure improvements and/or traffic control measures
Intersection Alternatives Evaluation

Tier 1 Alternatives

» Nine (9) Tier 1 Alternatives (Several with Variations)

» 1: No Build
» 2A-2C: Removal of Intersection Skew
» 3A-3B: Addition of Turn Lanes on SH-75
» 4A-4B: All-Way Stop-Controlled Intersection
» 5: Traffic Signal with Addition of Turn Lanes
» 6: Single-Lane Roundabout with Approach Curvature
» 7: Restricted Crossing U-Turn (RCUT) Intersection
» 8: Quadrant Intersection with Partial RCUT
» 9A-9B: Grade-Separated Interchange
Intersection Alternatives Evaluation
No Build (Alternative 1)
Intersection Alternatives Evaluation
Removal of Intersection Skew (Alternatives 2A-2C)
Intersection Alternatives Evaluation
Addition of Turn Lanes (Alternatives 3A-3B)

- Widen shoulder to accommodate left-turn lane
- Widen for right-turn lane
- ITD right-of-way
- Timmerman rest area
Intersection Alternatives Evaluation
All-Way Stop-Controlled Intersection (Alternatives 4A-4B)

NOTE: INSTALL ‘STOP AHEAD’ SAFETY COUNTERMEASURES ON SH-75 (e.g. RUMBLE STRIPS, ADVANCED SIGNING AND/OR FLASHERS).

ITD RIGHT-OF-WAY

REMOVE RIGHT-TURN CHANNELIZATION

TIMMERMAN REST AREA
Intersection Alternatives Evaluation
Traffic Signal with Turn Lanes (Alternative 5)

- Widen right-of-way
- Widen shoulder to accommodate left-turn lane
- Widen to accommodate left- and right-turn lanes
- Widen to accommodate left- and right-turn lanes
- Prepare to stop when flashing

Note: Add advanced signal warning flashers to all four approaches.

Timmerman Rest Area

ITD Right-Of-Way
Intersection Alternatives Evaluation

Single-Lane Roundabout with Approach Curves (Alternative 6)
Roundabout Safety Performance – Conflict Point Comparison

Traditional Four-Leg Intersection

- 32 Conflict Points


Single-Lane Roundabout

- 8 Conflict Points

Intersection Alternatives Evaluation

Restricted Crossing U-Turn (RCUT) Intersection (Alternative 7)

https://www.youtube.com/watch?v=BLwl01NCp9I
(2:30-4:10)

50+ RCUTs installed in the U.S. (AL, LA, MD, MI, MN, MO, NC, OH, TX)
RCUT Safety Performance – Conflict Point Comparison

Traditional Four-Leg Intersection

32 Conflict Points

Restricted Crossing U-Turn Intersection

20 Conflict Points

Intersection Alternatives Evaluation

Quadrant Intersection with Partial RCUT (Alternative 8)
Quadrant with Partial RCUT Safety Performance – Conflict Point Comparison

Traditional Four-Leg Intersection

Quadrant with Partial RCUT Intersection

32 Conflict Points

26 Conflict Points

Intersection Alternatives Evaluation
Grade-Separated Interchange (Alternatives 9A-9B)
Intersection Alternatives Evaluation
Tier 1 Alternatives Assessment

Fatal Flaws Assessment with Your Take on the Following:

- Do the costs outweigh or justify the potential benefits of the alternative?
- Does the alternative have the potential to satisfy the goals of improving safety performance (Goal #1) and maintaining acceptable mobility (Goal #2)?
- What is your reaction to the physical impacts of the alternative on the surrounding area?
- Are there other aspects of the alternative that do or do not satisfy the interest(s) you represent?

Please consider these questions when completing the “Please Explain Your Choice” column on the Comment Sheet.
## Intersection Alternatives Evaluation

### Alternatives Assessment Snapshot

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Improve Safety Performance (Goal #1)</th>
<th>Maintain Acceptable Mobility (Goal #2)</th>
<th>Physical Impacts</th>
<th>Relative Cost</th>
<th>SMT Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  No Build</td>
<td>∙</td>
<td>∙</td>
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<td>Carry Forward</td>
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<tr>
<td>2A Remove Skew (Shift North)</td>
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<td>∙</td>
<td>∙</td>
<td>$$$$</td>
<td>Eliminate</td>
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<tr>
<td>2B Remove Skew (Shift East)</td>
<td>∙</td>
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<td>∙</td>
<td>$$$$</td>
<td>Eliminate</td>
</tr>
<tr>
<td>2C Remove Skew (Centered)</td>
<td>∙</td>
<td>∙</td>
<td>∙</td>
<td>$$$</td>
<td>Carry Forward</td>
</tr>
<tr>
<td>3A Add Northbound Right-Turn Lane</td>
<td>∙</td>
<td>∙</td>
<td>∙</td>
<td>$</td>
<td>Eliminate</td>
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<tr>
<td>3B Add SH-75 Left- &amp; Right-Turn Lanes</td>
<td>∙</td>
<td>∙</td>
<td>∙</td>
<td>$$</td>
<td>Carry Forward</td>
</tr>
<tr>
<td>4A All-Way Stop Control</td>
<td>!</td>
<td>∙</td>
<td>∙</td>
<td>$</td>
<td>Eliminate</td>
</tr>
<tr>
<td>4B All-Way Stop Control (Remove Southbound Right-Turn Lane)</td>
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<td>Eliminate</td>
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<tr>
<td>5 Traffic Signal with Turn Lanes</td>
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<td>$$$</td>
<td>Carry Forward</td>
</tr>
<tr>
<td>6 Single-Lane Roundabout with Approach Curves</td>
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<td>$$$$</td>
<td>Carry Forward</td>
</tr>
<tr>
<td>7 Restricted Crossing U-Turn (RCUT)</td>
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<td>$$$$</td>
<td>Carry Forward</td>
</tr>
<tr>
<td>8 Quadrant with Partial RCUT</td>
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<td>$$$$</td>
<td>Eliminate</td>
</tr>
<tr>
<td>9A Grade-Separated Diamond IC</td>
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<td>$$$$$</td>
<td>Carry Forward</td>
</tr>
<tr>
<td>9B Grade-Separated Diamond IC with Loop Ramp</td>
<td>!</td>
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<td>!</td>
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Closeout & Next Steps

Comment Sheet & Meeting Evaluation Form

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Next Community Advisory Committee (CAC) Meeting

- Evaluation and Screening of Tier 2 Alternatives
- When: Thursday, July 14th, 10:00am-12:00pm (tentative)
- Where: Right back here! (tentative)

Study Website: