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

Community Advisory Committee (CAC) Meeting #2
July 14th, 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:
  ❮ Legislative Representatives
  ❮ Emergency Responders
  ❮ Agriculture & Trucking Services
  ❮ Commerce & Tourism
  ❮ Transportation Providers
  ❮ Major Employers
  ❮ Residents/Citizens
Community Advisory Committee (CAC) Roles & Responsibilities

**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
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 potential mid-term and long-term improvements
- Provide direction to pursue funding for future implementation

Goal #1: Improve safety performance
Goal #2: Maintain acceptable mobility
Goal #3: Collaborate with community representatives
Goal #4: Establish a prioritized implementation plan
Recap

Tiered Alternatives Evaluation Process

We Are Here
## Recap

### Study Schedule

<table>
<thead>
<tr>
<th>Study Schedule</th>
<th>2015</th>
<th>2016</th>
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<tbody>
<tr>
<td><strong>Review Intersection History &amp; Current Conditions</strong></td>
<td>DEC</td>
<td>JUN</td>
</tr>
<tr>
<td><strong>Develop &amp; Evaluate Alternatives</strong></td>
<td>FEB</td>
<td>APR</td>
</tr>
<tr>
<td><strong>Proposed Improvements &amp; Implementation Plan (Intersection Study Report)</strong></td>
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<tr>
<td><strong>Community Advisory Committee Meeting</strong></td>
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</table>
CAC Meeting #1 Follow-Up Items
Proposed ITD Responses to Short-Term Treatment Ideas

1. Trim trees and shrubbery on all corners of the intersection to increase visibility
2. Improvements to signage and other warning measures on US-20
   a. Lower the speed limits on US-20
   b. Increase signage and flashing lights east and west of the intersection
   c. Use larger flashing lights
3. Install rumble strips on SH-75 prior to the intersection
4. Implement speed feedback signs in advance of intersection
5. Provide lighting at the intersection for better nighttime visibility
6. Request Idaho State Patrol be regularly stationed at the intersection for a while
CAC Meeting #1 Follow-Up Items
Proposed ITD Responses to Short-Term Treatment Ideas

- Extension of NB
  - No Passing Stripe

- Proposed 55' Extension
  - SB No Passing Stripe

- Existing 55' - 25'
CAC Meeting #1 Follow-Up Items
Acceleration of Trucks Towards Timmerman Hill

Figure 3-25. Speed-Distance Curves for Acceleration of a Typical Heavy Truck of 120 kg/kW [200 lb/hp] on Upgrades and Downgrades

>40 mph
Have crashes gone down with the recent safety treatments that have been implemented?

US-20/SH-75 Crashes by Year

- No. of Crashes/Year
- No. of Injury Crashes/Year
Are there more crashes involving trucks than would be expected?
- **2006-2015**: ~20% (5 of 23) involved a vehicle with 3+ axles
  - **2006-2009**: 50% (4 of 8) involved a vehicle with 3+ axles
  - **2010-2015**: 7% (1 of 15) involved a vehicle with 3+ axles
- Percent of trucks through intersection ~5%-6%
- Percent of trucks involved in crashes (20%) over past 10 years is higher than expected, but has dropped off to more normal levels over the past 6 years.

Is there any trend with the angle crashes? (2011-2015 Crash Data Only)
- Contributing cause of all crashes was “failure to yield” on US-20
- US-20 driver believed intersection was 4-way stop – documented with 2 crashes
- 7 of the 11 crashes involved motorists from out of state
- 8 of the 11 crashes potentially influenced by the intersection skew angle
Overview of Tier 2 Alternatives
Packet Organization

- Existing Conditions
  - Information same as CAC Meeting #1

- Intersection Alternatives
  - Front Side of First Page
    - Information largely the same as CAC Meeting #1
    - Exceptions: Concept Graphic, Cost Assessment, & SMT Feedback
  - Back Side of First Page
    - Evaluation Summary and Key Considerations
    - Summary of Feedback from SMT & CAC Meeting #1
    - Ground-Level Rendering (Looking North Toward Wood River Valley)
Overview of Tier 2 Alternatives

Alternatives Carried Forward from Tier 1 Evaluation

Nine (9) Tier 1 Alternatives (Several with Variations) screened to seven (7) Tier 2 Alternatives

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
Alt 1: No Build

SMT: 100% Carry Forward (6 of 6)
CAC: 60% Carry Forward (9 of 15)
Alt 2C: Remove Skew (Centered)

SMT: 50% Carry Forward (3 of 6)
CAC: 44% Carry Forward (7 of 16)
Alt 3B: Add Left- and Right-Turn Lanes on SH-75

SMT: 60% Carry Forward (3 of 5)
CAC: 44% Carry Forward (7 of 16)
Alt 5: Traffic Signal with Turn Lanes

SMT: 100% Carry Forward (6 of 6)
CAC: 69% Carry Forward (11 of 16)
Alt 6: Single-Lane Roundabout

SMT: 100% Carry Forward (6 of 6)
CAC: 88% Carry Forward (14 of 16)
Alt 7: Restricted Crossing U-Turn Intersection

SMT: 50% Carry Forward (3 of 6)
CAC: 60% Carry Forward (9 of 15)
Alt 9A: Grade-Separated Diamond Interchange

SMT: 67% Carry Forward (4 of 6)
CAC: 25% Carry Forward (4 of 16)
Overview of Tier 2 Alternatives
Cost Assessment

Benefit/Cost Ratios

- Costs:
  - Planning & Construction Costs
  - Maintenance (Post-Opening) Costs

- “Benefits” - Compared to No-Build:
  - Auto Passenger & Truck Time Saved (or Not Saved)
    - Disbenefit for all alternatives except Alts 3B & 9A
  - Economic Cost of Crashes
## Overview of Tier 2 Alternatives

### Cost Assessment

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Construction Cost</th>
<th>B/C Ratio</th>
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<tbody>
<tr>
<td>1: No Build</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>2C: Remove Skew (Centered)</td>
<td>$1.6M</td>
<td>0.13</td>
</tr>
<tr>
<td>3B: Add NB &amp; SB RT &amp; LT Lanes</td>
<td>$1.3M</td>
<td>0.44</td>
</tr>
<tr>
<td>5: Traffic Signal w/ Turn Lanes</td>
<td>$2.5M</td>
<td>-0.01</td>
</tr>
<tr>
<td>6: Single-Lane Roundabout</td>
<td>$2.8M</td>
<td>0.34</td>
</tr>
<tr>
<td>7: RCUT Intersection</td>
<td>$4.1</td>
<td>0.00</td>
</tr>
<tr>
<td>9A: Grade-Separated Diamond IC</td>
<td>$10.3M</td>
<td>0.20</td>
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- Benefit/Cost Ratio < 1.0 → Cost is more than overall anticipated benefit
- Benefit/Cost Ratio < 0.0 → More anticipated disbenefit than benefit

- **SH-75 LT & RT Turn Lanes**: Lowest cost & highest overall B/C ratio
- **Roundabout**: Highest potential safety benefit (~$2.5M in crash savings)
- **Traffic Signal**: Operational disbenefit slightly outweighs safety benefits
Overview of Tier 2 Alternatives
Evaluation Criteria & Subcriteria

» Safety Performance
  ▪ Expected change in crashes per year (all types and severities)
  ▪ Expected change in injury crashes per year
  ▪ Influence on angle type crashes
  ▪ Change in the number of vehicle-vehicle conflict points

» Mobility
  ▪ Average delay/level-of-service (by roadway approach)
  ▪ Expected residual capacity of the intersection
  ▪ Change in number of stops (by roadway approach)
  ▪ Travel time through the intersection
  ▪ Impact on the movement of freight and agricultural vehicles

Avg. Rank from CAC Mtg. #1

1.1

2.3
Overview of Tier 2 Alternatives
Evaluation Criteria & Subcriteria

Physical and Environmental Impacts
- Impact to the physical landscape
- Impact to adjacent properties and/or access to adjacent properties
- Impacts to sensitive and/or protected environmental features (e.g., wetlands)
- Impervious surface added to the intersection area
- Impact to the “view shed” into the Wood River Valley

Implementation & Maintenance
- Ease of construction
- Level of effort and ability to effectively maintain an alternative
- Capability of phasing an alternative

Cost
- Construction costs
- Benefit/Cost ratio
Tier 2 Alternatives Evaluation Summary

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Alt #1: No Build</th>
<th>Alt #2: Removal of Intersection Skew (Centered)</th>
<th>Alt #3B: Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75</th>
<th>Alt #5: Traffic Signal with Addition of Turn Lanes</th>
<th>Alt #6: Single-Lane Roundabout with Approach Curvature</th>
<th>Alt #7: Restricted Crossing U-Turn Intersection (RCUT)</th>
<th>Alt #9A: Grade-Separated Diamond Interchange</th>
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<tr>
<td>Safety Performance</td>
<td>Poor</td>
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Next Steps

➡ **Online Survey for General Public – First Few Weeks of August**
  - Link will be emailed and we’ll look to you to distribute to your organization and contacts

➡ **Community Advisory Committee (CAC) Meeting #3 (Last CAC Meeting)**
  - Review Draft Intersection Study Report and Implementation Plan
  - When: Thursday, October 6th, 10:00am-12:00pm (tentative)
  - Where: Right back here!

➡ **Comment Sheet & Meeting Evaluation Form**
  - PLEASE TURN IN YOUR COMMENT SHEET & MEETING EVALUATION FORM BEFORE YOU LEAVE TODAY.

Study Website:

Thank You!