US 20 & SH 75
TIMMERMAN JUNCTION
Intersection Study

IDAHO TRANSPORTATION DEPARTMENT

US-20/SH-75 (TIMMERMAN JUNCTION) INTERSECTION STUDY

FINAL TECHNICAL APPENDIX - NOVEMBER 2016

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A

High-Level Environmental Scan Memorandum

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TECHNICAL MEMORANDUM

US-20, Jct SH-75, Timmerman Jct. Intersection Study

High-Level Environmental Scan

Date: July 6, 2016 ITD Project #: KN13075
To: Bruce Christensen, ITD Study Manager
From: Yuri Mereszczak, PE

The purpose of this memorandum is to identify, at a high-level, potential environmental constraints and considerations within the US-20/SH-75 intersection study area. This information will assist the Study Management Team (SMT) and the Community Advisory Committee (CAC) in evaluating the environmental impacts associated with each of the intersection alternatives. This scan involved only a cursory desk review, with no detailed desk investigations or field reviews.

STUDY INTRODUCTION

The Idaho Transportation Department (ITD) is continuing its commitment to improve safety at the US20/SH75 intersection (Timmerman Junction), while providing reliable and efficient mobility. To accomplish this, ITD, in collaboration with local community leaders and representatives, is evaluating a wide range of intersection alternatives. From this evaluation, the Study Management Team will identify proposed mid-term and long-term improvements for the intersection. While funding for the improvements is not currently in place, this study will help provide the direction needed to pursue funding for future implementation. The study area is generally illustrated by the boundary in Figure 1, which is approximately within ½ mile from the intersection itself on each approach.

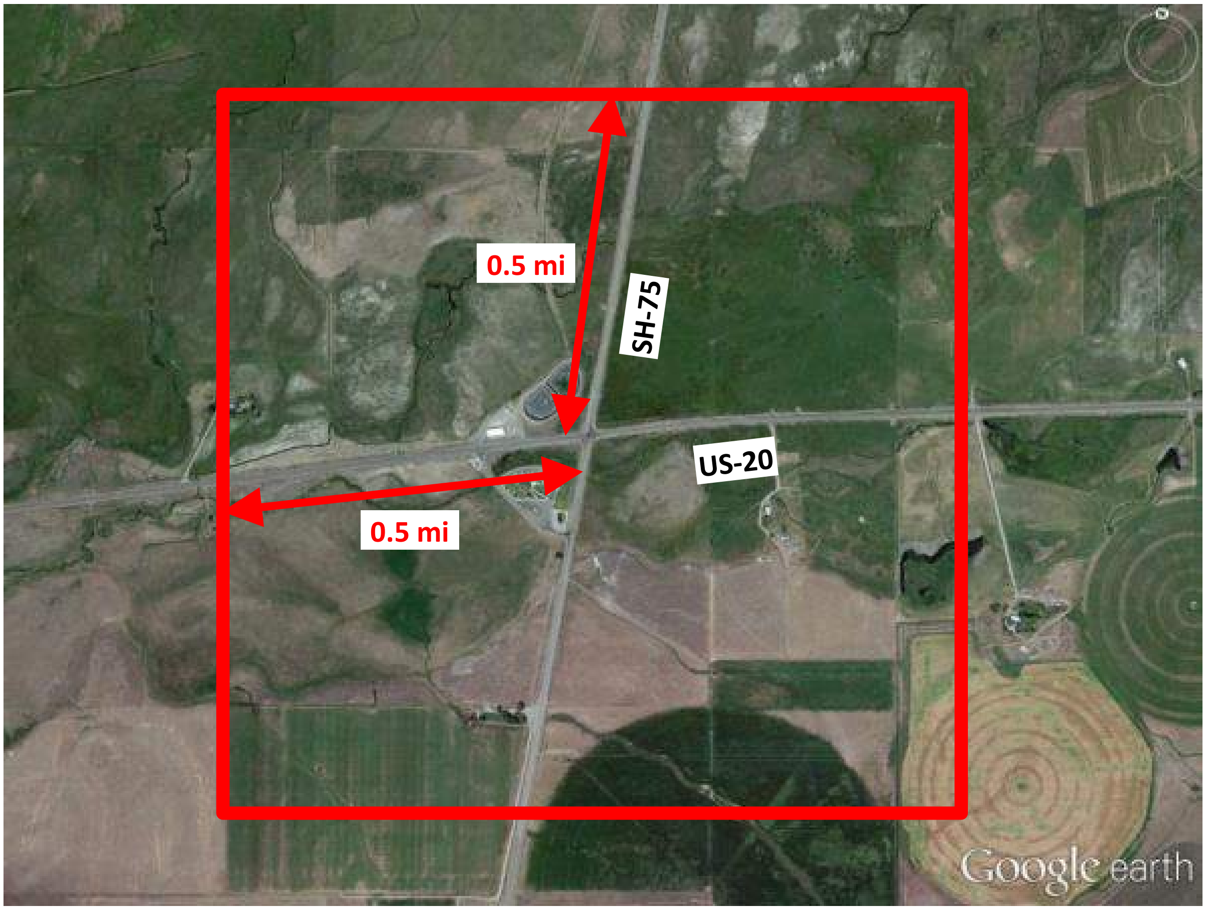


Figure 1: Intersection Study Limits

ENVIRONMENTAL SUMMARY

Cultural and Historic Resources

Research of the National Register of Historic Places in Idaho from the State Historic Preservation Office (SHPO) indicated there are no listed historic places in the project area (Reference 1). There were no field reviews or eligibility determinations completed as a part of this project.

Socioeconomics and Environmental Justice

Impacts to all property owners will be attempted to be minimized to the extent possible. Parcels within the project area may be impacted by partial acquisitions or permanent or temporary easements. The alternatives in this study are not expected to disproportionately impact low-income or minority populations.

Known/Suspected Hazardous Materials

The Environmental Protection Agency (EPA) Enviromapper program was accessed online and was used to determine possible hazardous materials within the project area (Reference 2). No facilities within the study area currently report to the EPA in the areas of air, water, waste, land, or toxics.

The Idaho Department of Environmental Quality (IDEQ) maintains a database of active and closed Underground Storage Tanks (USTs) and Leaking Underground Storage Tanks (LUSTs) sites. A review of IDEQ's database revealed no USTs or LUSTs within the study area (Reference 3).

Air Quality

Assessment of air quality within the study area for the various alternatives was not a part of the scope of this study and therefore was not assessed.

Threatened/Endangered Species

The U.S. Fish & Wildlife Service (USFWS) has identified the US-20/SH-75 intersection area as proposed critical habit for the Yellow-billed Cuckoo threatened species. The USFWS has also identified 20 species of migratory birds that could potentially be affected by activities within the intersection area (Reference 4). Attachment A provides a complete list of these birds as well as additional information from the USFWS website.

Farmlands & Soils

A soils report from the U.S. Geological Survey Web Soil Survey database shows primarily hapur silt loam soils with the immediate intersection area (Reference 5). The area surrounding the intersection is classified as "prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season." Attachment B provides the soils and farmlands report from the U.S. Geological Survey.

Wetlands & Surface Water

Figure 2 displays a map from the National Wetlands Inventory database managed by the U.S. Fish and Wildlife Service (Reference 6). The map indicates both Freshwater Emergent Wetlands and Freshwater Forested/Shrub Wetlands within the study area. Each of the intersection build alternatives appears to have some level of impact on one or more of the currently delineated wetlands within the study area. The level of impacts generally ranges from very minor to major. The impacts are defined more specifically in the intersection alternatives evaluation matrix.

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

User Remarks:

Wetlands Mapping from NWI Database (6/10/16)

Figure 2: Wetlands Mapping for Study Area (Reference 6)

Additionally, an excerpt from the 2004 Wetlands Delineation Report from the SH-75, Timmerman to Ketchum Final Environmental Impact Statement (FEIS) is included in Attachment C (provided by ITD staff). The delineation summary shows similar results to those presented in the NWI database, with additional detail on the characteristics of each wetland area.

Willow Creek runs immediately to the south of the intersection and is designated as a "water of the U.S." with its connection to the Big Wood River. Surface water discharged to Willow Creek may be subject to regulations under Section 404 of the Clean Water Act by the U.S. Army Corps of Engineers.

Floodplains & Groundwater

No floodplains are located within the intersection study area as illustrated in the Flood Insurance Rate Map (FIRM) from the Idaho Department of Water Resources website (Attachment D, Reference 7). A floodplain is identified on the FIRM along the Big Wood River approximately two miles to the west of the intersection; however that floodplain has no influence on the intersection area.

The "water table" refers to a saturated zone in the soil occurring during specified months for a duration longer than one month. Per the USGS Web Soil Survey, the depth to the water table for the entire project area varies from approximately 20 centimeters (~0.65 feet) to 200 centimeters (~6.5 feet), with most of the immediate intersection area being over ground in which the water table is approximately 20-25 centimeters below the surface (~0.65-0.80 feet) (Reference 7). Subsurface excavation and/or construction (including placement of roadway base materials) activities may encounter groundwater; therefore, dewatering and/or base stabilization may be necessary during construction. Attachment E provides the depth to water table report from the U.S. Geological Survey.

We trust this memorandum provides ITD with a sufficient, high-level environmental review to better inform the potential environmental constraints and considerations within the US-20/SH-75 intersection study area. We look forward to discussing the findings with ITD, and the US-20/SH-75 Study Management Team and Community Advisory Committee.

REFERENCES

1. Idaho State Historical Preservation Society. The National Register of Historic Places in Idaho. http://history.idaho.gov/sites/default/files/uploads/National_Register_Properties_Idaho.pdf. Accessed on June 10, 2016.

2. U.S. Environmental Protection Agency. Enviromapper. http://www.epa.gov/emefdata/em4ef.html. Accessed on June 10, 2016.

3. Idaho Department of Environmental Quality. Underground Storage Tank Database. http://www.deq.idaho.gov/waste/ustlust/. Accessed on June 10, 2016.

4. U.S. Fish and Wildlife Service. Endangered, Threatened, Proposed, and Candidate Species with Associated Proposed and Critical Habitats in Idaho. https://ecos.fws.gov/ipac/. Accessed on June 10, 2016.

5. U.S. Geological Survey. National Resources Conservation Service. Web Soil Survey. http://websoilsurvey.nrcs.usda.gov/app/. Accessed on June 10, 2016.

6. U.S. Fish and Wildlife Service. National Wetlands Inventory. http://www.fws.gov/wetlands/Data/Mapper.html. Accessed on June 10, 2016.

7. Idaho Department of Water Resources. Flood Hazard Mapping. http://maps.idwr.idaho.gov/FloodHazard/Map. Accessed on June 10, 2016.

Attachment A USFWS IPaC Trust Resources Report

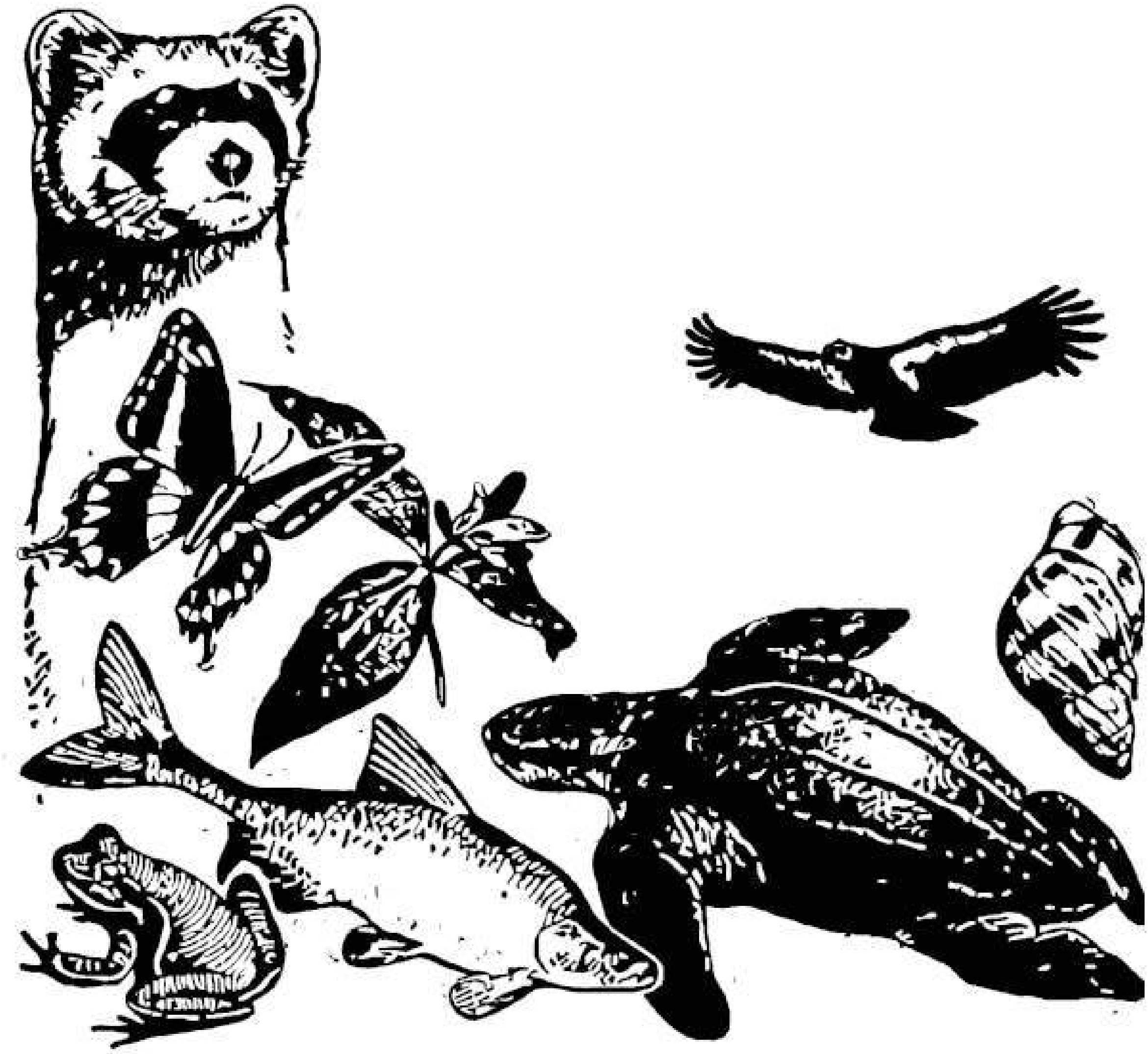
U.S. Fish & Wildlife Service

US-20/SH-75 Intersection Study

IPaC Trust Resources Report

Generated June 10, 2016 01:56 PM MDT, IPaC v3.0.7

This report is for informational purposes only and should not be used for planning or analyzing project level impacts. For project reviews that require U.S. Fish & Wildlife Service review or concurrence, please return to the IPaC website and request an official species list from the Regulatory Documents page.



IPaC - Information for Planning and Conservation (https://ecos.fws.gov/ipac/): A project planning tool to help streamline the U.S. Fish & Wildlife Service environmental review process.

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U.S. Fish & Wildlife Service

IPaC Trust Resources Report

NAME

US-20/SH-75 Intersection Study

LOCATION

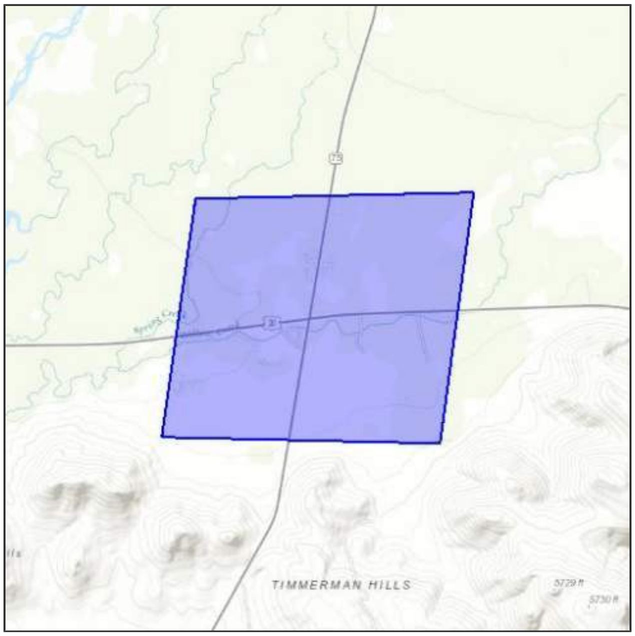
Blaine County, Idaho

DESCRIPTION

Idaho Transportation Department (ITD) study evaluating potential medium- and long-term improvements for the intersection of US-20 and SH-75.

IPAC LINK

https://ecos.fws.gov/ipac/project/RSSXD-QVHZV-EY7JX-ULB5N-VS4H7M



U.S. Fish & Wildlife Service Contact Information

Trust resources in this location are managed by:

Idaho Fish And Wildlife Office
1387 South Vinnell Way, Suite 368
Boise, ID 83709-1657
(208) 378-5243

Endangered Species

Proposed, candidate, threatened, and endangered species are managed by the Endangered Species Program of the U.S. Fish & Wildlife Service.

This USFWS trust resource report is for informational purposes only and should not be used for planning or analyzing project level impacts.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list from the Regulatory Documents section.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list either from the Regulatory Documents section in IPaC or from the local field office directly.

The list of species below are those that may occur or could potentially be affected by activities in this location:

Birds

Yellow-billed Cuckoo Coccyzus americanus Threatened

CRITICAL HABITAT

There is **proposed** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B06R

Critical Habitats

There are no critical habitats in this location

Migratory Birds

Birds are protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Any activity that results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish & Wildlife Service.[1] There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

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1. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern
  http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Conservation measures for birds
  http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Year-round bird occurrence data
  http://www.birdscanada.org/birdmon/default/datasummaries.jsp

The following species of migratory birds could potentially be affected by activities in this location:

Bald Eagle Haliaeetus leucocephalus Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B008

Black Rosy-finch Leucosticte atrata Bird of conservation concern
Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0J4

Brewer's Sparrow Spizella breweri Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HA

Burrowing Owl Athene cunicularia Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0NC

Calliope Hummingbird Stellula calliope — Bird of conservation concern

Season: Breeding

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0K3

Cassin's Finch Carpodacus cassinii — Bird of conservation concern

Year-round

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0J6

Eared Grebe Podiceps nigricollis — Bird of conservation concern

Season: Breeding

Ferruginous Hawk Buteo regalis — Bird of conservation concern

Year-round

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B06X

Fox Sparrow Passerella iliaca — Bird of conservation concern

Season: Breeding

Greater Sage-grouse Centrocercus urophasianus — Bird of conservation concern

Year-round

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B06W

Green-tailed Towhee Pipilo chlorurus — Bird of conservation concern

Season: Breeding

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0IO

Lewis's Woodpecker Melanerpes lewis — Bird of conservation concern

Season: Breeding

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HQ

Loggerhead Shrike Lanius ludovicianus — Bird of conservation concern

Season: Breeding

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0FY

Long-billed Curlew Numenius americanus — Bird of conservation concern

Season: Breeding

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B06S

Rufous Hummingbird selasphorus rufus — Bird of conservation concern

Season: Breeding

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0E1

Sage Thrasher Oreoscoptes montanus — Bird of conservation concern

Season: Breeding

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0ID

Short-eared Owl Asio flammeus — Bird of conservation concern

Year-round

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HD

Swainson's Hawk Buteo swainsoni — Bird of conservation concern

Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B070

Western Grebe aechmophorus occidentalis — Bird of conservation concern

Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0EA

Willow Flycatcher Empidonax traillii — Bird of conservation concern

Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0F6

Wildlife refuges and fish hatcheries

There are no refuges or fish hatcheries in this location

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

This location overlaps all or part of the following wetlands:

Freshwater Emergent Wetland

PEMA

PEMC

PEMF

PEMFh

Freshwater Forested/shrub Wetland

PFOA
PSSC

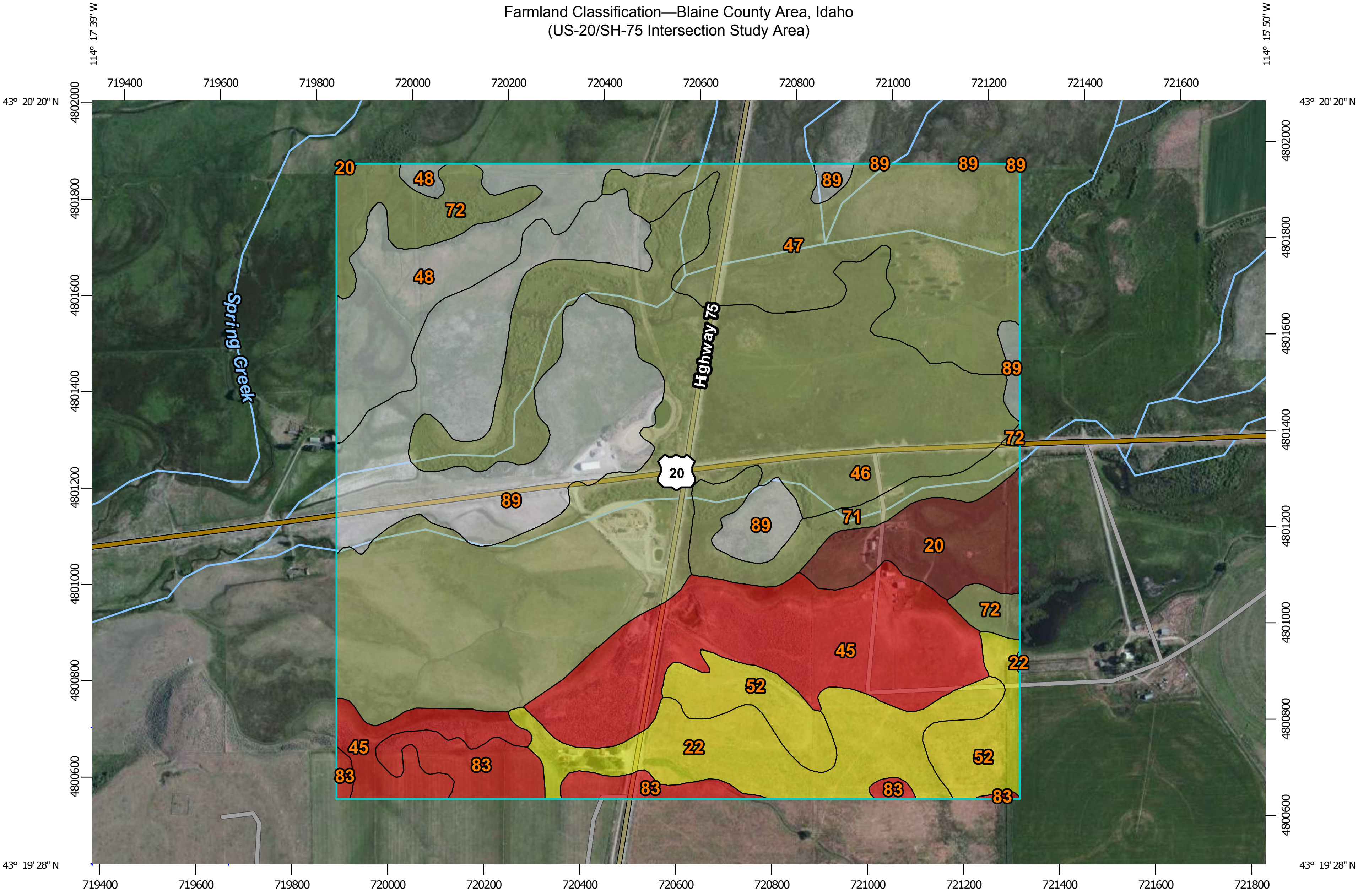
Freshwater Pond

PABFx
PUBHx

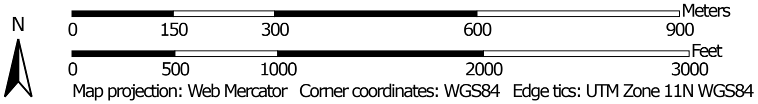
A full description for each wetland code can be found at the National Wetlands Inventory website: http://107.20.228.18/decoders/wetlands.aspx

Attachment B USGS Soils and Farmlands Report

Farmland Classification—Blaine County Area, Idaho
(US-20/SH-75 Intersection Study Area)



Map Scale: 1:11,200 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

- 🟥 Not prime farmland
- 🟩 All areas are prime farmland
- 🟩 Prime farmland if drained
- 🟩 Prime farmland if protected from flooding or not frequently flooded during the growing season
- 🟨 Prime farmland if irrigated
- 🟨 Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- 🟥 Prime farmland if irrigated and drained
- ⬜ Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- ⬜ Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- 🟦 Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- 🟦 Prime farmland if irrigated and reclaimed of excess salts and sodium
- 🟦 Farmland of statewide importance
- 🟦 Farmland of local importance
- 🟦 Farmland of unique importance
- ⬜ Not rated or not available

Soil Rating Lines

- 〰 Not prime farmland
- 〰 All areas are prime farmland
- 〰 Prime farmland if drained
- 〰 Prime farmland if protected from flooding or not frequently flooded during the growing season
- 〰 Prime farmland if irrigated
- 〰 Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- 〰 Prime farmland if irrigated and drained
- 〰 Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- 〰 Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- 〰 Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- 〰 Prime farmland if irrigated and reclaimed of excess salts and sodium
- 〰 Farmland of statewide importance
- 〰 Farmland of local importance
- 〰 Farmland of unique importance
- 〰 Not rated or not available

Soil Rating Points

- 🟥 Not prime farmland
- 🟩 All areas are prime farmland
- 🟩 Prime farmland if drained
- 🟩 Prime farmland if protected from flooding or not frequently flooded during the growing season
- 🟨 Prime farmland if irrigated
- 🟨 Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- 🟥 Prime farmland if irrigated and drained
- 🟩 Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- 🟧 Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- 🟩 Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- 🟩 Prime farmland if irrigated and reclaimed of excess salts and sodium
- 🟦 Farmland of statewide importance
- 🟦 Farmland of local importance
- 🟦 Farmland of unique importance
- ⬜ Not rated or not available

Water Features

MAP INFORMATION

～ Streams and Canals

Transportation

┼┼┼ Rails

～ Interstate Highways

～ US Routes

～ Major Roads

～ Local Roads

Background

▨ Aerial Photography

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Blaine County Area, Idaho
Survey Area Data: Version 13, Sep 25, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 18, 2010—May 23, 2010

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Farmland Classification

Farmland Classification— Summary by Map Unit — Blaine County Area, Idaho (ID680)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
20	Bruneel loam, 0 to 2 percent slopes	Prime farmland if irrigated and drained	16.8	3.6%
22	Carey Lake loam, 2 to 4 percent slopes	Prime farmland if irrigated	30.0	6.4%
45	Goodington-Manard complex, 2 to 8 percent slopes	Not prime farmland	55.9	12.0%
46	Hapur silt loam, 0 to 2 percent slopes	Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season	149.2	32.0%
47	Hapur-Bickett complex, 0 to 2 percent slopes	Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season	55.9	12.0%
48	Hapur-Picabo silt loams, 0 to 2 percent slopes	Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season	28.4	6.1%
52	Justesen loam, 2 to 4 percent slopes	Prime farmland if irrigated	19.3	4.1%
71	Marshdale loam, 0 to 2 percent slopes	Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season	13.5	2.9%
72	Marshdale-Bruneel loams, 0 to 2 percent slopes	Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season	15.5	3.3%
83	Muldoon-Peevywell loams, 2 to 15 percent slopes	Not prime farmland	13.9	3.0%

Farmland Classification— Summary by Map Unit — Blaine County Area, Idaho (ID680)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
89	Picabo silt loam, 0 to 2 percent slopes	Farmland of statewide importance, if irrigated	67.5	14.5%
Totals for Area of Interest			**465.9**	**100.0%**

Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

Attachment C Excerpt from 2004 Wetlands Delineation Report from the SH-75, Timmerman to Ketchum FEIS

4. WETLAND FINDINGS

A total of 40 wetland areas, 21 natural and 19 irrigation-dependent, were delineated in the project area in August 2002. Their locations are illustrated in Figures 2 and 3. The footprint for each wetland is shown on wetland boundary maps in Appendix B. Surface water was not always present during the survey, but hydrologic indicators including drift lines, high water marks, and/or obligate wetland vegetation were observed. Low water levels or the absence of surface water in wetlands appears to be typical for the project area in mid-August because July and August are the lowest average rainfall months of the year in that area (NRCS 1991).

The drainages in all of the natural wetland areas except the Big Wood River and Trail Creek appeared to have been significantly altered by road construction, heavily influenced by irrigation, and grazed at the time of the field visit. As a result, it was difficult to determine the natural hydrology of the area. NRCS soils maps (1991), hydric soils lists, and drainage patterns exhibited on aerial photography were used to assist in categorizing natural and irrigation-dependent wetlands.

4.1 Wetland Characteristics

Natural Wetlands

Twenty-one wetlands associated with perennial streams and drainages, areas with springs and high water tables were identified in the project area. All these natural wetlands are considered jurisdictional.

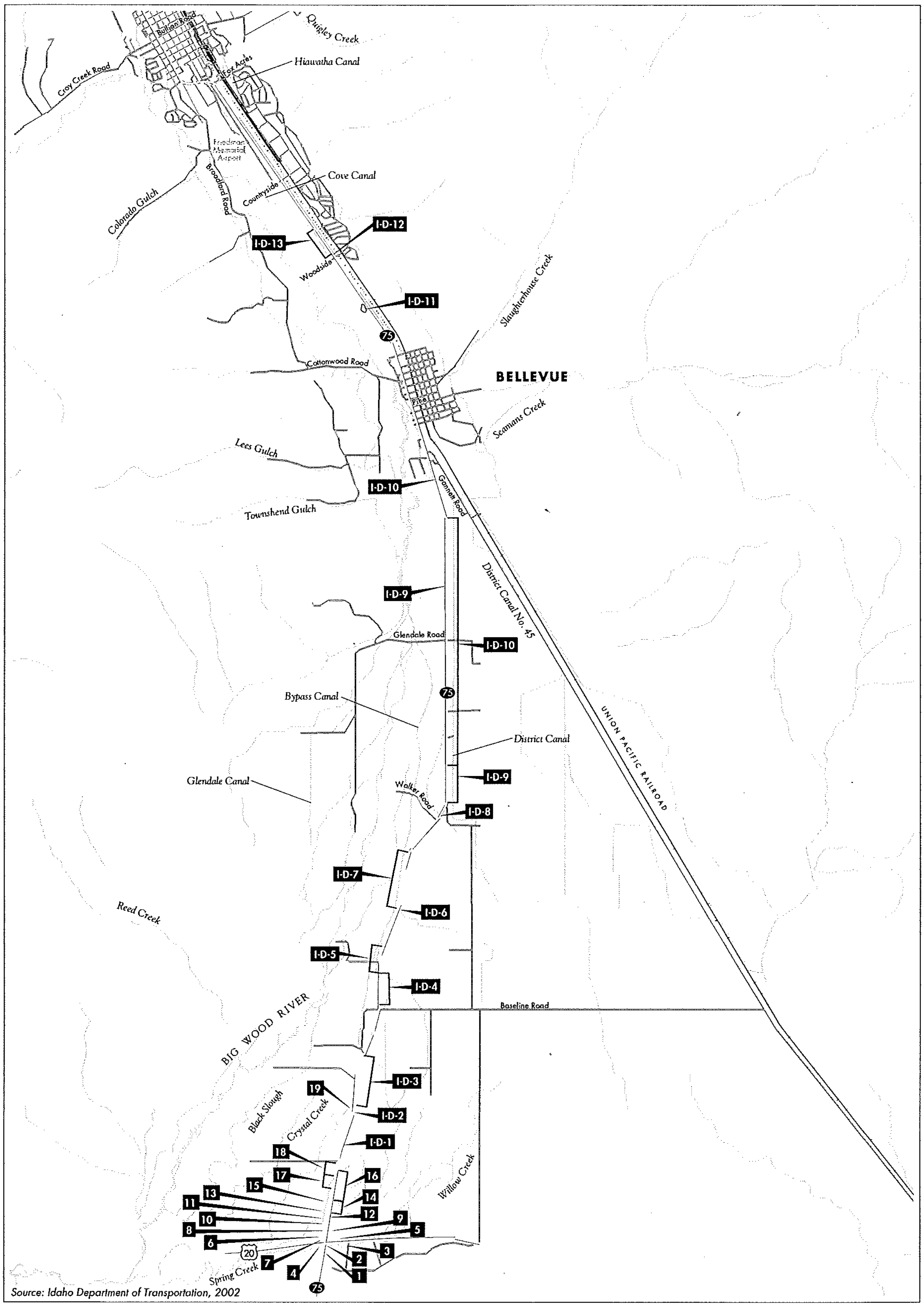
Palustrine Emergent Communities

Thirteen palustrine emergent communities were identified within the project area. All of the PEMs were located south of Baseline Road. Wetlands 1 and 3 are associated with the Willow Creek floodplain. Wetlands 5 and 6 appear to have been a part of the Willow Creek floodplain in the past, but are now separated by US-20. Wetlands 11 and 12 are adjacent to the unnamed tributary just north of the Timmerman junction. Wetlands 8, 9, 10, 15, 16, 18, and 19 are located in areas with springs, high groundwater, and/or intermittent drainage features such as natural or roadside depressions (see Figures 2 and 3 and Appendix B).

Low matrix chroma, saturation and surface water, obligate wetland vegetation, and mapped hydric soils were used to confirm hydric soils. The hydric soils Hapur silt loam, Bruneel loam, Marshdale-Bruneel loam, and/or Hapur-Bickett complex (55% Hapur silt loam and 35% Bickett mucky peat) were mapped in all PEM wetlands (NRCS 1991).

The PEM communities are most frequently dominated by Baltic rush (FACW+). Other plants that are dominants or co-dominants include silverweed (*Potentilla anserina,* OBL), beaked sedge (*Carex rostrata,* OBL), Nebraska sedge (*Carex nebrascensis,* OBL), sedges (*Carex* spp., FACW), creeping spike-rush (*Eleocharis palustris,* OBL), Kentucky bluegrass (*Poa pratensis,* FACU+), pasture grasses (NI), reed canarygrass (FACW), meadow foxtail (*Alopecurus*

Graphics Server/Graphics/Billable/SH-75 Timmerman/Concept Mitigation Plan/Fig 2 Wetland Map 4.14.03



Source: Idaho Department of Transportation, 2002

0 1
Approximate Scale in Miles

19 natural wetland

I-D-5 irrigation-dependent wetland

FIGURE 2

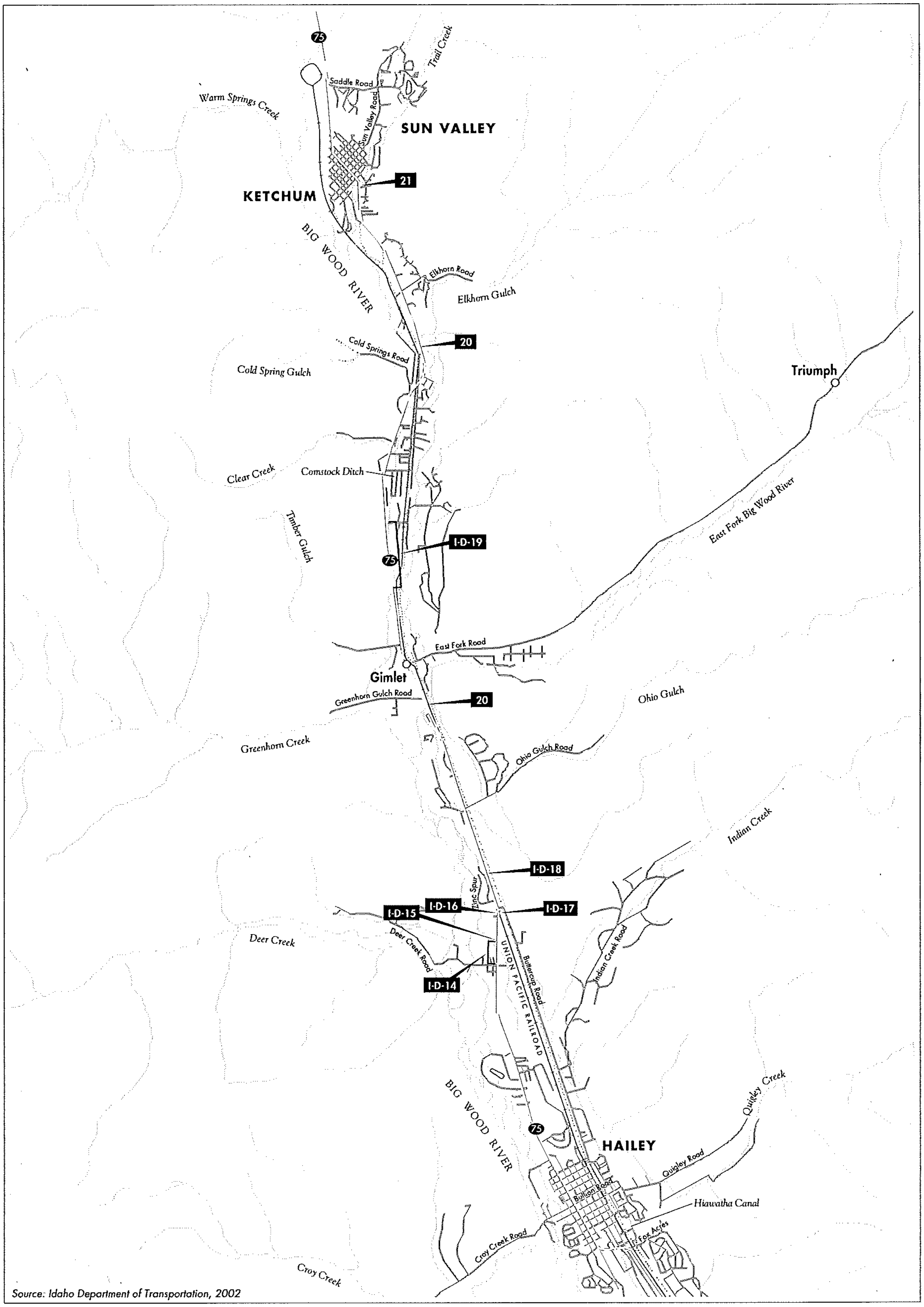
WETLAND LOCATION MAP
(SOUTH PORTION)

SH-75 TIMMERMAN TO KETCHUM
ITD# STP-F-2392(035) Key No. 3077

SHAPIRO
& ASSOCIATES, INC.

3003007T

Graphics Server/Graphics/B/Bakke/SH-75 Timmerman/Concept Mitigation Plan/Fig 3 Wetland Map 4.14.03



Source: Idaho Department of Transportation, 2002

0 1
Approximate Scale in Miles

19 natural wetland

I-D-5 irrigation-dependent wetland

FIGURE 3

WETLAND LOCATION MAP (NORTH PORTION)

SH-75 TIMMERMAN TO KETCHUM
ITD# STP-F-2392(035) Key No. 3077

SHAPIRO & ASSOCIATES, INC.

3003007T

pratensis, FACW) and common cattail (*Typha latifolia,* OBL). Individual shrubs of yellow willow (*Salix lutea,* OBL) and shrubby cinquefoil (*Potentilla fruticosa,* FAC-) were found in some wetlands. Most of the PEM communities outside the ROW were extensively grazed.

The hydrologic, soil, and vegetation characteristics for each PEM wetland are summarized and presented in Table 3 below. Individual data sheets are included in Appendix A

Table 3: Natural Palustrine Emergent Wetland Characteristics

Wetland Number	Hydrologic Indicators	Soil Indicators	Dominant Plants	Notes
1	Depression area adjacent to Willow Creek, hydric soils	Hapur silt loam, low chroma	Baltic rush	Grazed pasture
3	Depression area adjacent to Willow Creek, hydric soils	Hapur silt loam, low chroma	Baltic rush	Grazed pasture
5	Depression area, drainage patterns present	Hapur silt loam, low chroma	Baltic rush and silverweed	Grazed pasture
6	Drainage pattern, water marks in vehicle tracks and culvert present nearby	Hapur silt loam, low chroma	Baltic rush	Not grazed
8	Drainage pattern and culvert present	Hapur silt loam, low chroma	Reed canarygrass	Not grazed
9	Drainage pattern present	Hapur silt loam, low chroma	Baltic rush and silverweed	Grazed pasture
10	Drainage pattern present	Hapur silt loam, low chroma	Baltic rush and silverweed	Grazed pasture
11	Unnamed tributary riparian area with surface water present	Hapur-Bickett complex, low chroma, high organic matter, peaty silt	Beaked sedge and Nebraska sedge	
12	Unnamed tributary riparian area with surface water present	Hapur-Bickett complex, low chroma, high organic matter	Reed canarygrass, beaked sedge, and yellow willow,	Grazed pasture
15	Drainage patterns, soil saturated in upper 12"	Marshdale-Bruneel loam, peaty loam, low chroma	Baltic rush, sedges, silverweed, and shrubby cinquefoil	Grazed pasture
16	Drainage pattern, irrigation possibly in conjunction with subsurface flow	Hapur-Bickett complex, low chroma, peaty silt clay	Spike-rush and sedges	Grazed pasture
18	Drainage pattern, irrigation possibly in conjunction with subsurface flow	Bruneel loam, low chroma with mottles	Nebraska sedge, Kentucky bluegrass, and pasture grasses	Grazed pasture
19	Standing water, saturated in upper 12"	Bruneel loam, low chroma	Meadow foxtail	Heavily grazed

Palustrine Scrub-Shrub Communities

Six palustrine scrub-shrub communities, all located south of Baseline Road, were identified within the project area. Wetlands 2 and 4 are adjacent to Willow Creek and Wetland 7 appears to be associated with Willow Creek but separated by the US-20 roadbed. Wetlands 13 and 14 are located in the spring-fed areas just north of the unnamed tributary. Wetland 17 is associated with an intermittent drainage. Surface water or saturated soils were present at all PSS sites during the survey, with the exception of Wetlands 7 and 17. These wetlands exhibited watermarks, drift lines, drainage patterns, and obligate wetland vegetation, indicating that water was present earlier in the year (see Figures 2 and 3 and Appendix B).

Low matrix chroma, saturation and surface water, obligate wetland vegetation, and NRCS-mapped hydric soils were used to confirm hydric soils. All PSS wetlands are on mapped Hapur silt loam or Hapur-Bickett complex, both of which are hydric soils. Peaty soils were present in Wetlands 13 and 14.

The PSS communities are dominated by yellow willow (OBL), sandbar willow (*Salix exigua,* OBL), willow species (*Salix* spp., NI), and shrubby cinquefoil (FAC-) in the shrub layer. Reed canarygrass (FACW), beaked sedge (OBL), common cattail (OBL), silverweed (OBL), Baltic rush (FACW+), and creeping spike-rush (OBL) dominated the herb layer. A summary of the hydrologic, soil, and vegetation characteristics for each PSS wetland are presented below in Table 4. Individual data sheets are included in Appendix A.

Table 4: Natural Palustrine Scrub-Shrub Wetland Characteristics

Wetland Number	Hydrologic Indicators	Soil Indicators	Dominant Plants	Notes
2	Willow Creek riparian area with surface water present	Hapur silt loam, low chroma	Yellow willow, sandbar willow, beaked sedge, and reed canarygrass	Grazed pasture
4	Willow Creek riparian area with surface water present	Hapur silt loam, low chroma	Yellow willow, sandbar willow, common cattail, and reed canarygrass	Not grazed
7	Drainage pattern, water marks in vehicle tracks and culvert	Hapur silt loam, low chroma	Sandbar willow	Grazed pasture
13	Water marks, drainage patterns, and soil saturated at 12"	Hapur-Bickett complex, low chroma, peaty soil	Willow species, shrubby cinquefoil, Baltic rush, and silverweed	Grazed pasture
14	Boggy area with springs, saturated soil in upper 12"	Hapur-Bickett complex, low chroma, high organic matter, peat	Shrubby cinquefoil, Baltic rush, creeping spike-rush, and sedges	Grazed pasture
17	Depression with watermarks and drainage patterns	Hapur-Bickett complex, low chroma	Willow species, Baltic rush, and silverweed	Grazed pasture

Palustrine Forest Overstory

Two palustrine forest overstory communities are located within the project area. Wetland 20 is in the riparian zone adjacent to the Big Wood River, and Wetland 21 is adjacent to Trail Creek (see Figures 2 and 3 and Appendix B).

These two PFO wetlands are supplied by perennial stream flows and flooding from the Big Wood River and Trail Creek. Hydrology indicators including stream flow, watermarks, drift

TIMMERMAN

10/06/04

SHAPIRO
& ASSOCIATES, INC.

101 YESLER WAY SUITE 400
SEATTLE, WA 98104
TELEPHONE: (206) 624-9190

Attachment D IDWR Flood Insurance Rate Map

FIRM

FLOOD INSURANCE RATE MAP
Blaine County, Idaho
AND INCORPORATED AREAS

PANEL 1084 2000
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

COMMUNITY Blaine

NUMBER 165167

PANEL 1084

SUFFIX E

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER 16013C1084E
EFFECTIVE DATE 11/26/2010

U.S. DEPARTMENT OF HOMELAND SECURITY

Federal Emergency Management Agency

— Base Flood Elevation
🟩 0.2% (500 yr)
🟦 A (Unknown)
🟦 1% (100 yr, AE)
🟥 FLOODWAY
🟩 AH
🟦 AO (w/Depth)
🟨 D

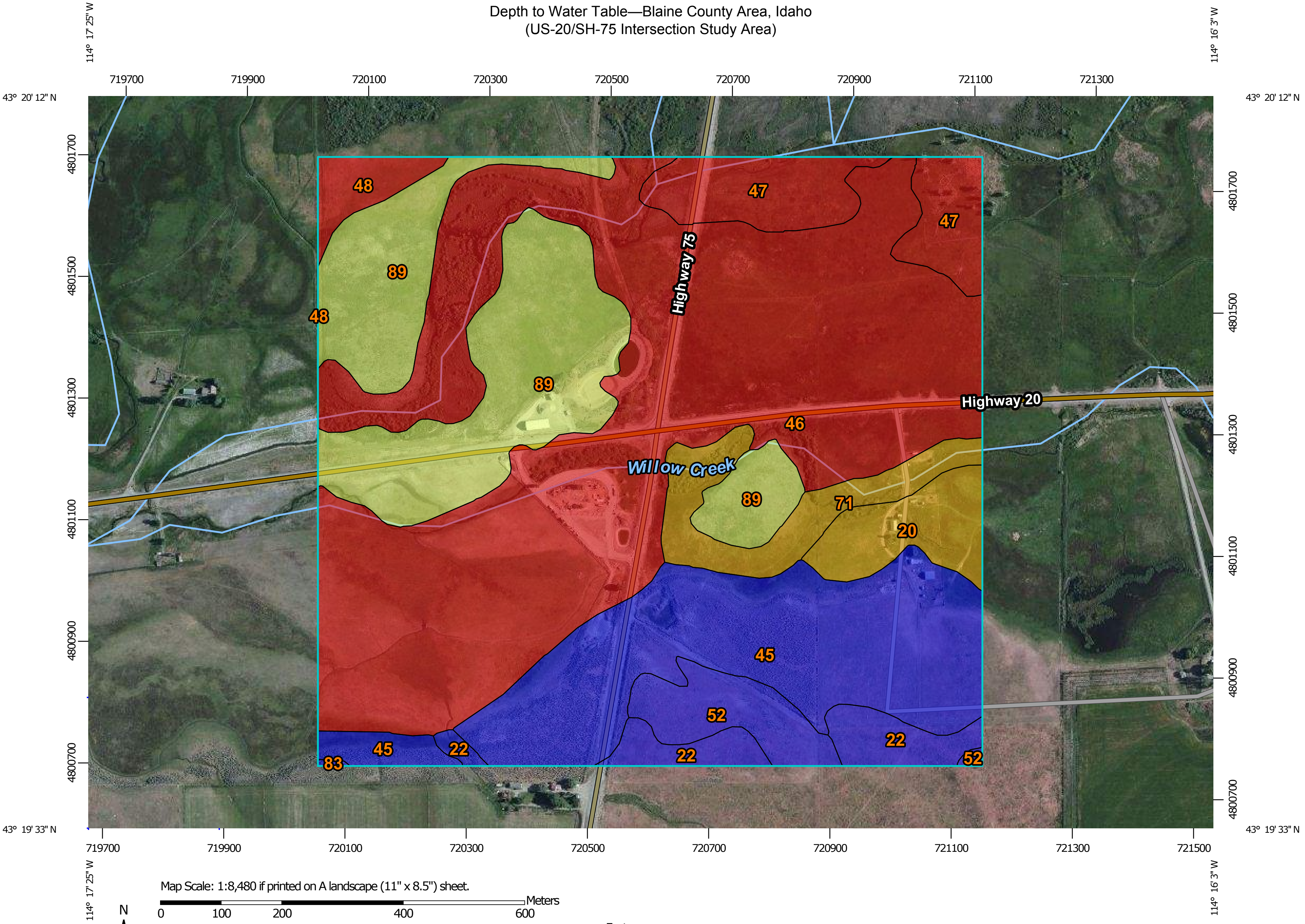
N

Aerial Photography From 2009

0 0.05 0.1 0.2
Miles

Attachment E USGS Depth to Water Table Report

Depth to Water Table—Blaine County Area, Idaho
(US-20/SH-75 Intersection Study Area)



Map Scale: 1:8,480 if printed on A landscape (11" x 8.5") sheet.

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- 🟥 0 - 25
- 🟧 25 - 50
- 🟨 50 - 100
- 🟩 100 - 150
- 🟦 150 - 200
- 🟪 > 200
- ⬜ Not rated or not available

Soil Rating Lines
- 〰 0 - 25
- 〰 25 - 50
- 〰 50 - 100
- 〰 100 - 150
- 〰 150 - 200
- 〰 > 200
- 〰 Not rated or not available

Soil Rating Points
- 🟥 0 - 25
- 🟧 25 - 50
- 🟨 50 - 100
- 🟩 100 - 150
- 🟦 150 - 200
- 🟦 > 200
- ▣ Not rated or not available

Water Features
- 〰 Streams and Canals

Transportation
- ┼┼┼ Rails
- 〰 Interstate Highways
- 〰 US Routes
- 〰 Major Roads
- 〰 Local Roads

Background
- ▨ Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Blaine County Area, Idaho
Survey Area Data: Version 13, Sep 25, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 18, 2010—May 23, 2010

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Depth to Water Table

Depth to Water Table— Summary by Map Unit — Blaine County Area, Idaho (ID680)				
Map unit symbol	**Map unit name**	**Rating (centimeters)**	**Acres in AOI**	**Percent of AOI**
20	Bruneel loam, 0 to 2 percent slopes	38	8.5	3.1%
22	Carey Lake loam, 2 to 4 percent slopes	>200	8.4	3.1%
45	Goodington-Manard complex, 2 to 8 percent slopes	>200	45.0	16.5%
46	Hapur silt loam, 0 to 2 percent slopes	23	123.5	45.4%
47	Hapur-Bickett complex, 0 to 2 percent slopes	23	15.3	5.6%
48	Hapur-Picabo silt loams, 0 to 2 percent slopes	23	3.9	1.4%
52	Justesen loam, 2 to 4 percent slopes	>200	8.3	3.0%
71	Marshdale loam, 0 to 2 percent slopes	31	10.8	4.0%
83	Muldoon-Peevywell loams, 2 to 15 percent slopes	>200	0.1	0.0%
89	Picabo silt loam, 0 to 2 percent slopes	92	48.5	17.8%
Totals for Area of Interest			**272.4**	**100.0%**

Description

"Water table" refers to a saturated zone in the soil. It occurs during specified months. Estimates of the upper limit are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Rating Options

Units of Measure: centimeters

Aggregation Method: Dominant Component

Component Percent Cutoff: *None Specified*

Tie-break Rule: Lower

Interpret Nulls as Zero: No

Beginning Month: January

Ending Month: December

B

Traffic Volume Development Memorandum

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING / PLANNING
101 S Capitol Boulevard, Suite 301, Boise, ID 83702 P 208.338.2683 F 208.338.2685

FINAL TECHNICAL MEMORANDUM

US20/SH75 (Timmerman Jct.) Intersection Study

Traffic Volume Development

Date: February 4, 2016 Project #: KN13075

To: Bruce Christensen, PE, ITD Study Manager

From: Yuri Mereszczak, PE, Andy Daleiden, PE, and Brett Korporaal

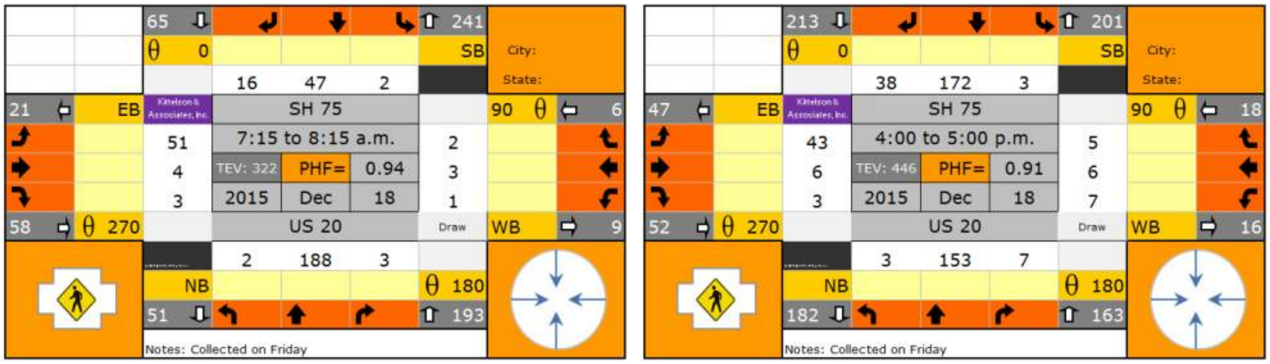
This memorandum is provided as part of the US20/SH75 (Timmerman Jct.) Intersection Study to document the development of existing and future turning movement and daily traffic volumes at the US20/SH75 intersection in Blaine County, Idaho. The memorandum is intentionally succinct and organized primarily around a set of figures. The main intent of the memorandum is to inform dialogue between Idaho Transportation Department (ITD) staff and Kittelson & Associates, Inc. (KAI) staff in order to arrive at an agreed upon set of traffic volumes for both existing and future conditions analyses.

Existing Traffic Volumes (December 2015)

US20/SH75 Existing Peak Hour Turning Movement Volumes

Figure 1 – Existing Friday AM & PM Peak Hour Turning Movement Volumes

<u>Description:</u> This figure displays the existing Friday a.m. and p.m. peak hour turning movement volumes counted at the US20/SH75 intersection on Friday, December 18, 2015. See Attachment A for the raw turning movement count data.



<u>Existing Friday AM Peak Hour (7:15am-8:15am)</u>

<u>Existing Friday PM Peak Hour (4:00pm-5:00pm)</u>

US20 & SH75 Existing Average Daily Traffic (ADT) Volumes

Figure 2 - Map of Daily Count Locations

Description: The red bars on the map indicate the approximate location of the video cameras that recorded the daily traffic volumes.

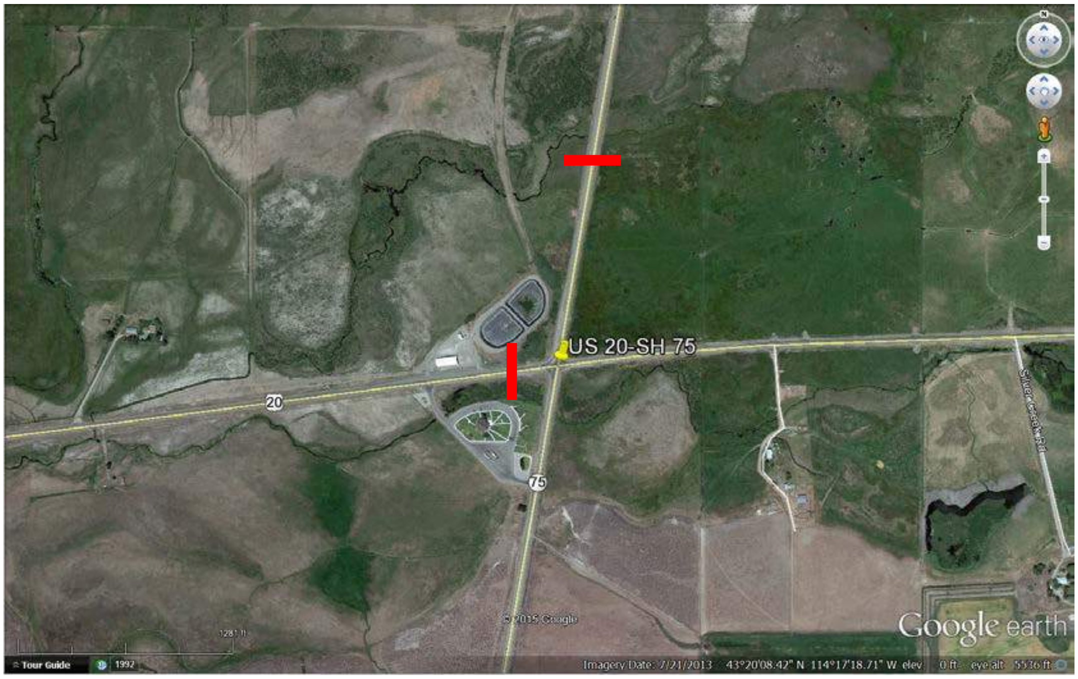


Figure 3 - Existing Daily Traffic Volumes Counted in December 2015

Description: This chart displays the daily traffic volumes counted (by direction) at the locations shown on the above map (Figure 2). Note that the count information on Tuesday is a compilation of data from two different Tuesdays. See Attachment B for the raw daily count data.

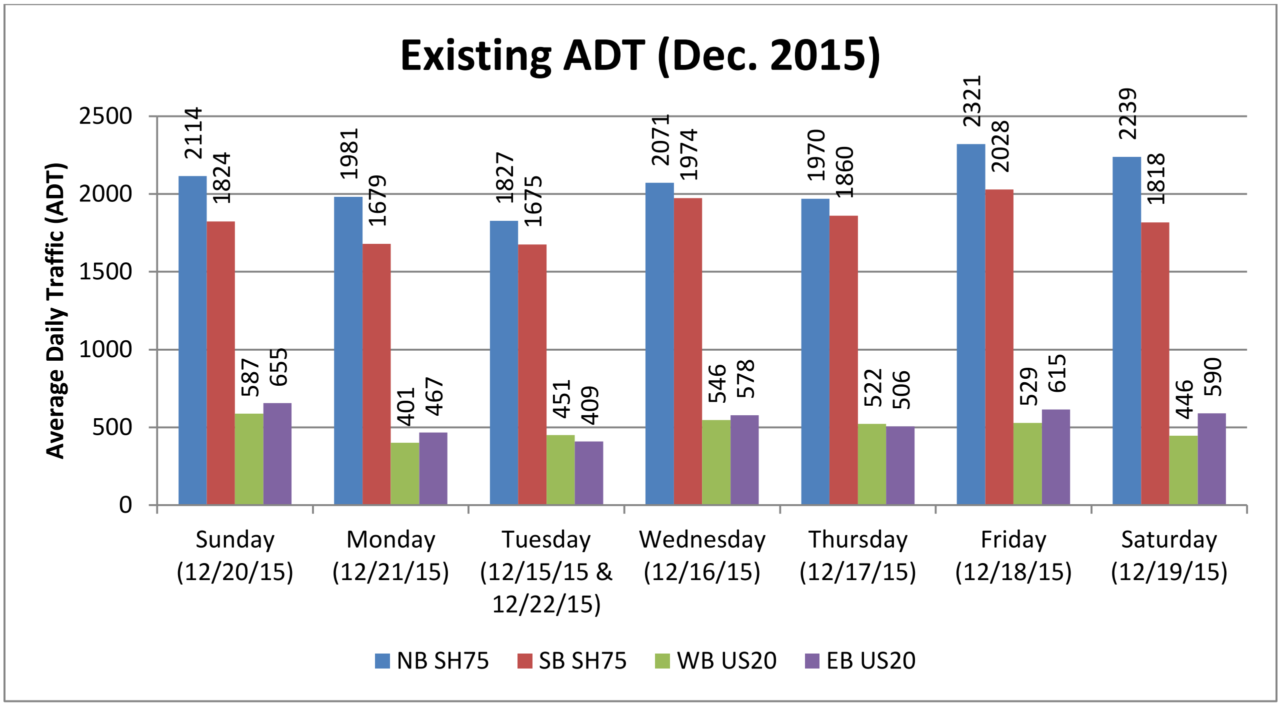
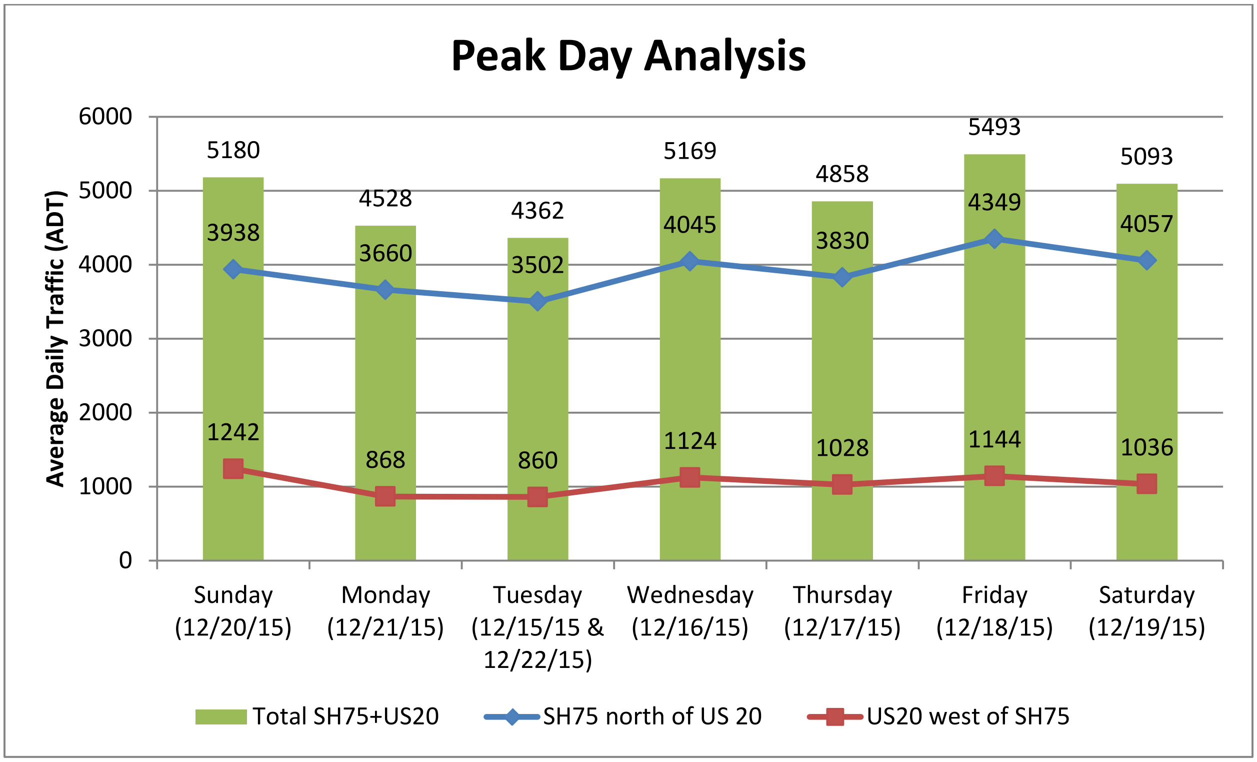


Figure 4 – Peak Day Analysis

Description: This chart illustrates the sum total of the SH75 (blue line) and US20 (red line) daily volumes as well as the sum total of both count locations combined (green columns).



Conclusions & Recommendations: Friday is the peak traffic day for the sum total of both count locations (5,493 vpd). Friday is also the peak traffic day for SH75 traffic (4,349 vpd). Sunday is the peak traffic day for US20 (1,242 vpd). **KAI recommends Friday as the peak traffic day and use of the peak hour turning movement counts collected on Friday, December 18, 2015 as the existing base peak hour turning movement volumes for the study.**

Seasonally Adjusted Existing Traffic Volumes (July Peak Season Conditions)

US20 & SH75 ITD Automatic Traffic Recorder (ATR) Data

Figure 5 – Map of ATR Locations

Description: The map illustrates the locations of the four ATRs (highlighted in green) from which data were gathered and processed via the ITD WIM/ATR Data website (*1*). The ATRs are: No. 68 - North of Hailey, Idaho on SH-75 (N SH75); No. 14 - North of Shoshone, Idaho on SH-75 (S SH75); No. 54 - East of Mountain Home on US-20 (W US20); No. 50 - Craters of the Moon, Idaho on US-20 (E US20).

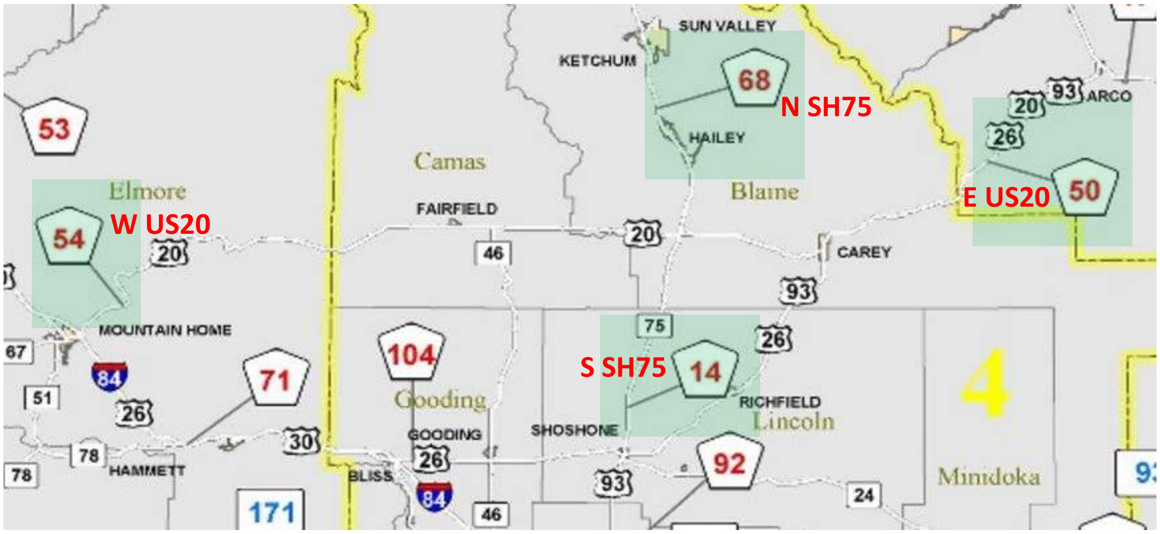
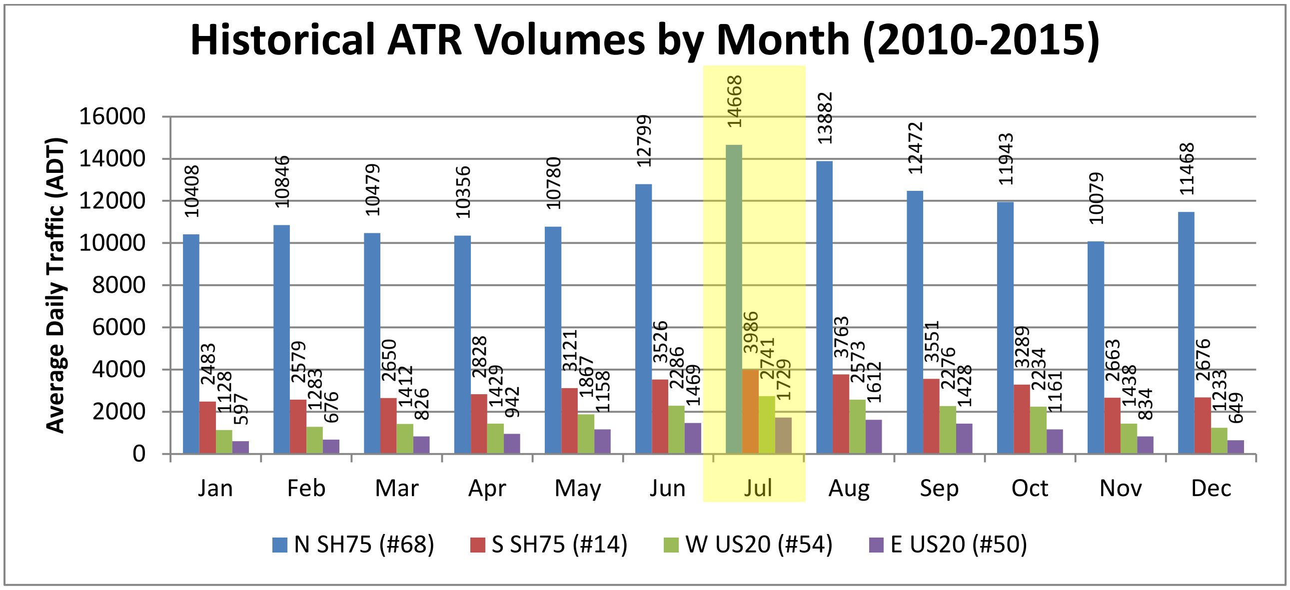


Figure 6 – Historical ATR Volumes by Month (2010-2015)

Description: This chart displays the monthly average daily traffic volumes at the ITD ATRs shown in Figure 5 from the years 2010 through 2015. See Attachment C for the raw ATR volume data.

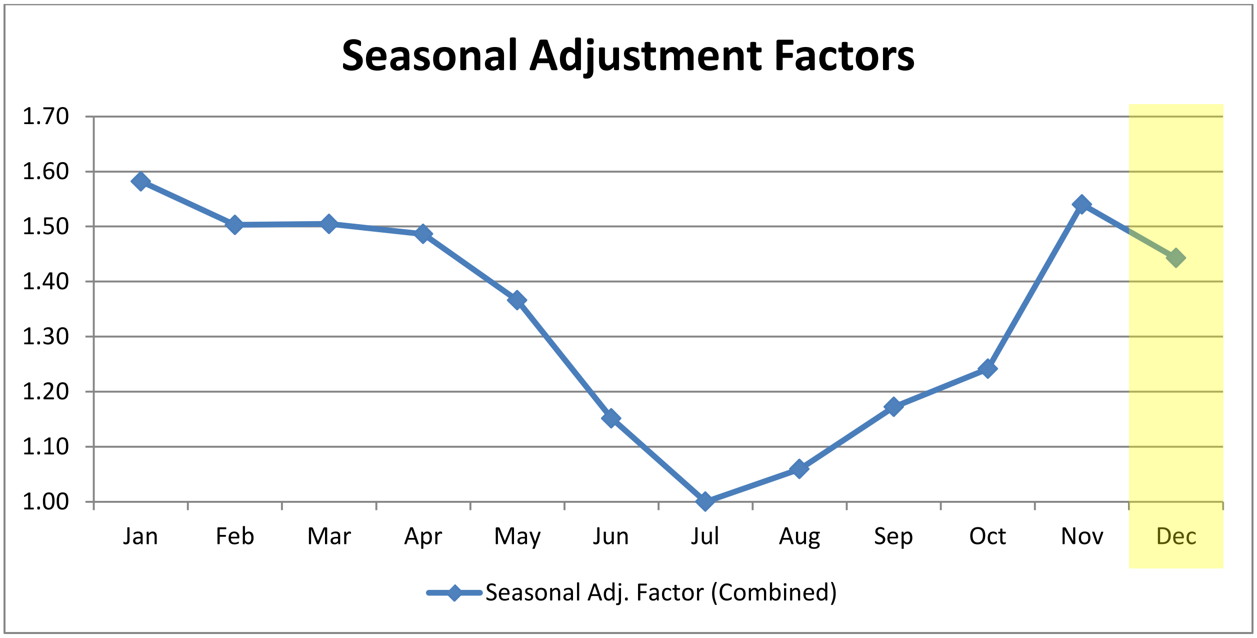


Conclusions & Recommendations: July is the peak volume month at all four ATR locations. **KAI recommends the December 2015 turning movement and daily traffic volumes be adjusted to represent July peak season volume traffic conditions.**

Traffic Volume Seasonal Adjustments

Figure 7 – Traffic Volume Seasonal Adjustment Factors

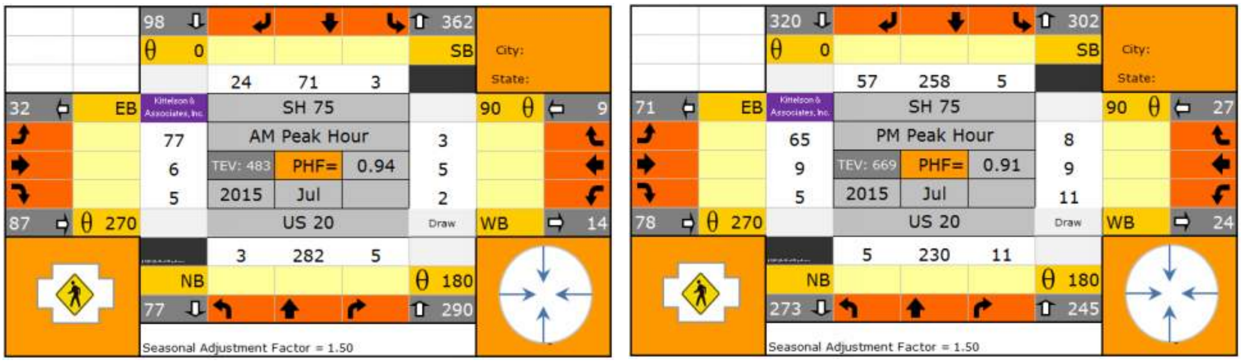
Description: This chart displays the monthly factors necessary to adjust volumes to the July peak season volume traffic conditions.



Conclusions & Recommendations: The monthly average daily traffic (ADT) volumes (shown in Figure 6) from the four ATR locations (shown in Figure 5) were aggregated to develop seasonal adjustment factors for the general area within which the US20/SH75 intersection is located. **KAI recommends a seasonal adjustment factor of 1.50 be applied to adjust the December 2015 turning movement and daily traffic volumes to represent July peak season traffic volumes.**

Figure 8 – Seasonally Adjusted Friday AM & PM Peak Hour Turning Movement Volumes

Description: This figure displays the Friday a.m. and p.m. peak hour turning movement volumes at the US20/SH75 intersection, adjusted to July peak season conditions.



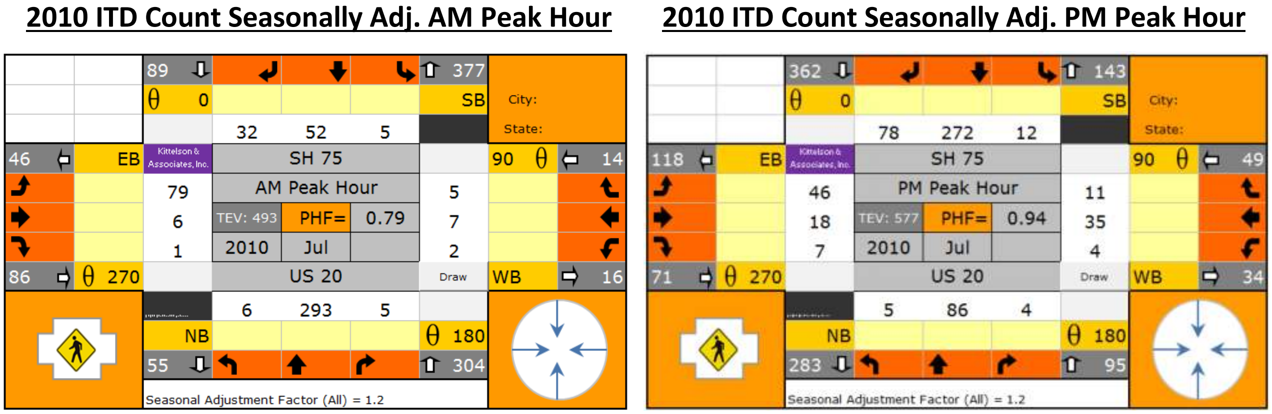
Seasonally Adjusted Friday AM Peak Hour

Seasonally Adjusted Friday PM Peak Hour

Conclusions & Recommendations: **KAI proposes to use these volumes in the existing conditions operational analysis of the US20/SH75 intersection.**

Figure 9 – 2010 ITD Count, Seasonally Adjusted AM & PM Peak Hour Turning Movement Volumes

Description: This figure displays weekday a.m. and p.m. peak hour turning movement volumes at the US20/SH75 intersection collected by ITD in September and October of the year 2010 and adjusted to July peak season conditions. See Attachment D for the raw count data provided by ITD.

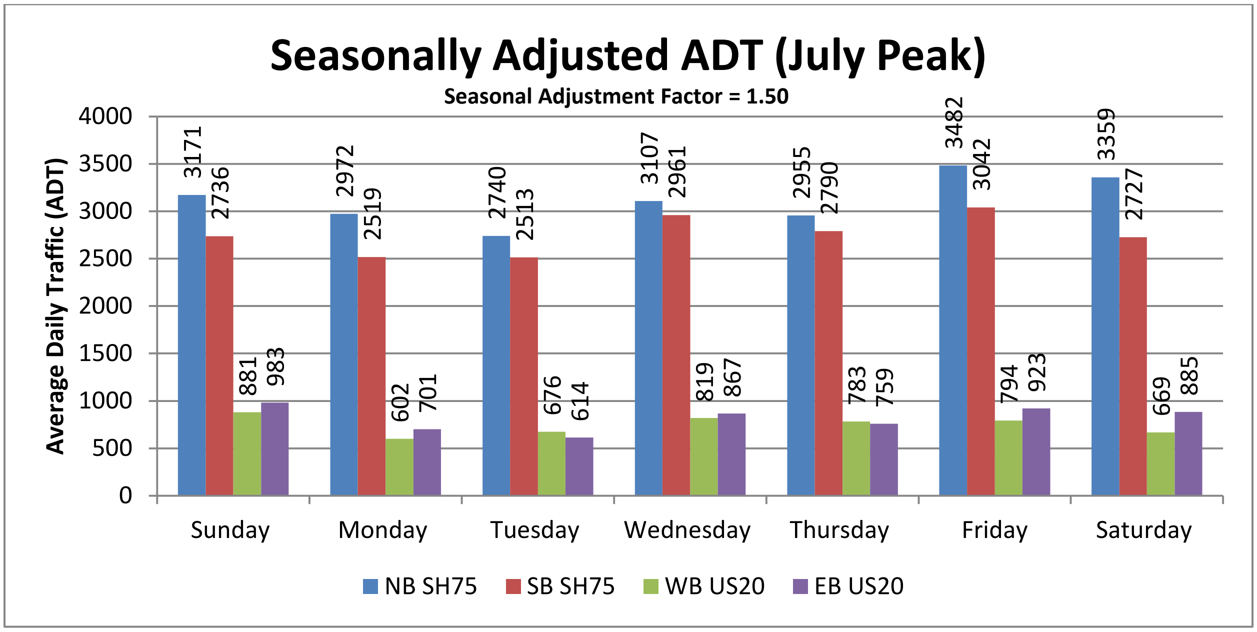

2010 ITD Count Seasonally Adj. AM Peak Hour **2010 ITD Count Seasonally Adj. PM Peak Hour**

Conclusions & Recommendations: These volumes provide a comparison to the proposed seasonally adjusted existing conditions volumes shown in Figure 8. The total entering volume (TEV) during the weekday a.m. peak hour from Figure 8 is 10 vph lower than that shown in Figure 9. The total entering volume (TEV) during the weekday p.m. peak hour from Figure 8 is 92 vph higher than that shown in Figure 9.

From this comparison, KAI concludes that the proposed volumes shown in Figure 8 reasonably represent the July peak season conditions, and as stated above, we propose to use the volumes shown in Figure 8 for the existing conditions operational analysis of the US20/SH75 intersection.

Figure 10 – Seasonally Adjusted Daily Traffic Volumes

Description: This figure displays the daily traffic volumes (by direction) at the locations shown in Figure 2, adjusted to July peak season conditions.



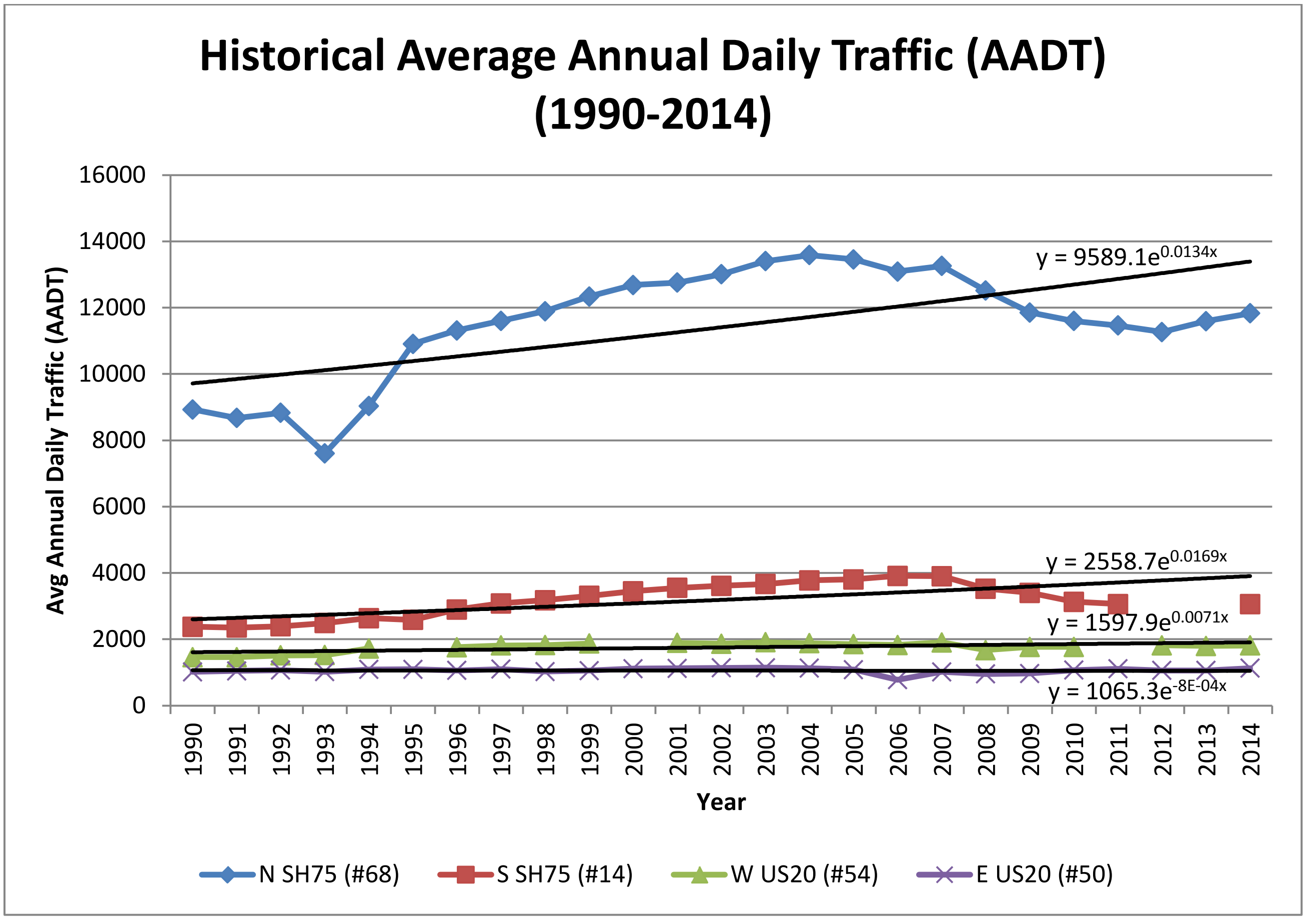
Conclusions & Recommendations: **KAI proposes to use these volumes in the traffic signal warrant analysis of the US20/SH75 intersection.**

Future Turning Movement Volumes (Year 2040)

Average Annual Growth Rate Determination

Figure 11 – Historical Average Annual Daily Traffic (AADT) by Year (1990-2014)

Description: This chart displays the average annual daily traffic (AADT) volumes from the ITD ATRs from the years 1990 through 2014. Lines representing the trend of traffic growth over the historical period are displayed for each ATR location. There are several years where no AADT is displayed at a couple of the ATR locations due to missing portions of data in those years.



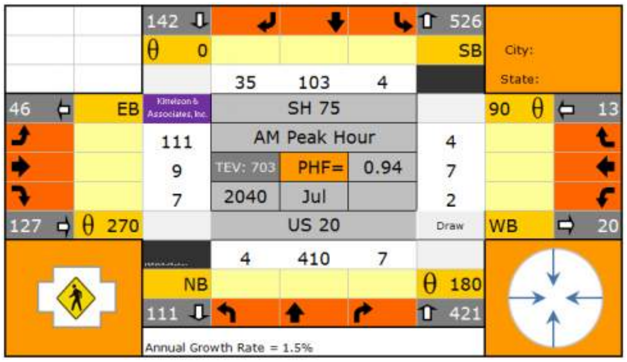
Conclusions & Recommendations: The trendlines show that the growth in traffic on SH75 has been at a rate of approximately 1.5% per year (1.34% at the N SH75 location and 1.69% at the S SH75 location), while the growth in traffic on US20 has been at a rate of less than 1% per year (0.71% at the W US20 location and -0.08% at the E US20 location. The locations on SH75 are closer to the intersection and therefore are assumed to be more representative of general growth trends in the region. **Therefore, KAI recommends applying an average annual growth rate of 1.5% to the Friday a.m. and p.m. seasonally adjusted turning movement volumes in order to establish the year 2040 turning movement volumes.** This growth rate is used in Figure 12 to determine the future year 2040 turning movement volumes and is proposed for use throughout the study to establish volumes for interim year sensitivity analyses as needed.

Year 2040 Turning Movement Volume Development

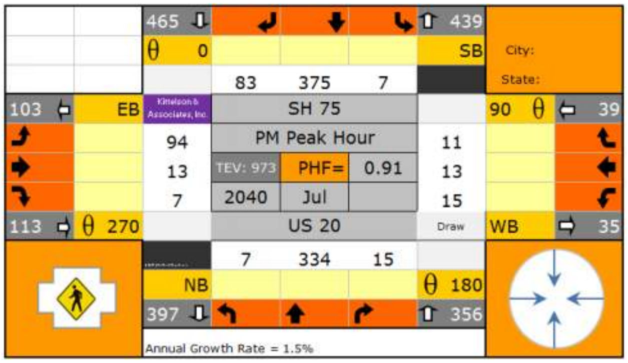
Figure 12 – Year 2040 Friday AM & PM Peak Hour Turning Movement Volumes

Description: This figure displays forecast year 2040 Friday a.m. and p.m. peak hour turning movement volumes at the US20/SH75 intersection (adjusted to July peak season conditions), based on the growth rates described under Figure 11.

Year 2040 Friday AM Peak Hour



Year 2040 Friday PM Peak Hour



Conclusions & Recommendations: **KAI proposes to use these volumes in the year 2040 base conditions and intersection alternatives operational analyses for the US20/SH75 intersection.**

We trust this memorandum provides you with valuable information towards determining appropriate existing and future conditions volumes to use throughout the study of the US20/SH75 intersection. We appreciate your review of this information and look forward to discussing it with you.

References

1. Idaho Transportation Department. WIM/ATR Data Website. https://itd.idaho.gov/highways/roadwaydata/Maps/ATR_WIMmap_map.html. Accessed December 2015.

Attachment A Existing Turning Movement Counts – Raw Data

Study: KITT0060
Intersection: SH-75 / US-20
City: Blaine County, Idaho
Control: Stop Sign

File Name : SH75 & US20
Site Code : 00000000
Start Date : 12/18/2015
Page No : 1

Groups Printed- General Traffic - 3+ Axle Heavy Trucks

	SH-75 From North					US-20 From East					SH-75 From South					US-20 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	1	11	0	0	12	2	1	0	0	3	0	41	0	0	41	0	2	5	0	7	63
07:15 AM	2	12	1	0	15	0	3	1	0	4	2	39	1	0	42	0	2	11	0	13	74
07:30 AM	3	4	1	0	8	0	0	0	0	0	0	59	1	0	60	1	0	15	0	16	84
07:45 AM	5	16	0	0	21	2	0	0	0	2	0	43	0	0	43	2	0	10	0	12	78
Total	11	43	2	0	56	4	4	1	0	9	2	182	2	0	186	3	4	41	0	48	299
08:00 AM	6	15	0	0	21	0	0	0	0	0	1	47	0	0	48	0	2	15	0	17	86
08:15 AM	3	15	1	0	19	0	0	1	0	1	0	26	0	0	26	0	1	8	0	9	55
08:30 AM	3	19	0	0	22	2	1	0	0	3	0	20	0	0	20	1	1	5	0	7	52
08:45 AM	5	23	1	0	29	1	2	0	0	3	0	33	0	0	33	0	2	8	0	10	75
Total	17	72	2	0	91	3	3	1	0	7	1	126	0	0	127	1	6	36	0	43	268

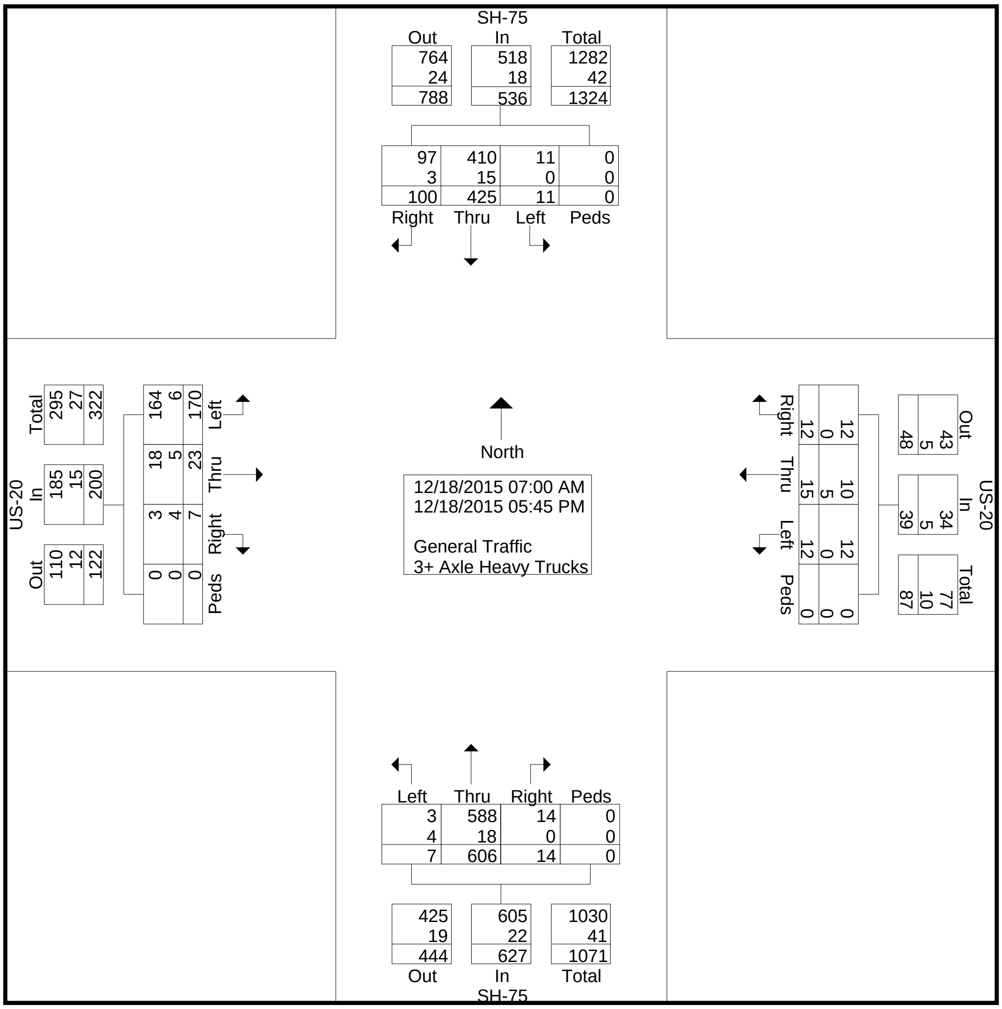
04:00 PM	6	44	2	0	52	2	1	2	0	5	1	43	2	0	46	1	2	16	0	19	122
04:15 PM	11	42	1	0	54	1	2	3	0	6	3	36	0	0	39	1	2	9	0	12	111
04:30 PM	15	40	0	0	55	0	2	1	0	3	2	29	1	0	32	1	1	10	0	12	102
04:45 PM	6	46	0	0	52	2	1	1	0	4	1	45	0	0	46	0	1	8	0	9	111
Total	38	172	3	0	213	5	6	7	0	18	7	153	3	0	163	3	6	43	0	52	446
05:00 PM	4	35	1	0	40	0	1	1	0	2	2	30	0	0	32	0	2	23	0	25	99
05:15 PM	12	32	1	0	45	0	1	2	0	3	1	49	0	0	50	0	1	9	0	10	108
05:30 PM	10	36	0	0	46	0	0	0	0	0	0	32	1	0	33	0	1	6	0	7	86
05:45 PM	8	35	2	0	45	0	0	0	0	0	1	34	1	0	36	0	3	12	0	15	96
Total	34	138	4	0	176	0	2	3	0	5	4	145	2	0	151	0	7	50	0	57	389
Grand Total	100	425	11	0	536	12	15	12	0	39	14	606	7	0	627	7	23	170	0	200	1402
Apprch %	18.7	79.3	2.1	0		30.8	38.5	30.8	0		2.2	96.7	1.1	0		3.5	11.5	85	0		
Total %	7.1	30.3	0.8	0	38.2	0.9	1.1	0.9	0	2.8	1	43.2	0.5	0	44.7	0.5	1.6	12.1	0	14.3	
General Traffic	97	410	11	0	518	12	10	12	0	34	14	588	3	0	605	3	18	164	0	185	1342
% General Traffic	97	96.5	100	0	96.6	100	66.7	100	0	87.2	100	97	42.9	0	96.5	42.9	78.3	96.5	0	92.5	95.7
3+ Axle Heavy Trucks	3	15	0	0	18	0	5	0	0	5	0	18	4	0	22	4	5	6	0	15	60
% 3+ Axle Heavy Trucks	3	3.5	0	0	3.4	0	33.3	0	0	12.8	0	3	57.1	0	3.5	57.1	21.7	3.5	0	7.5	4.3

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554   Utah (801) 413-2993

Study: KITT0060
Intersection: SH-75 / US-20
City: Blaine County, Idaho
Control: Stop Sign

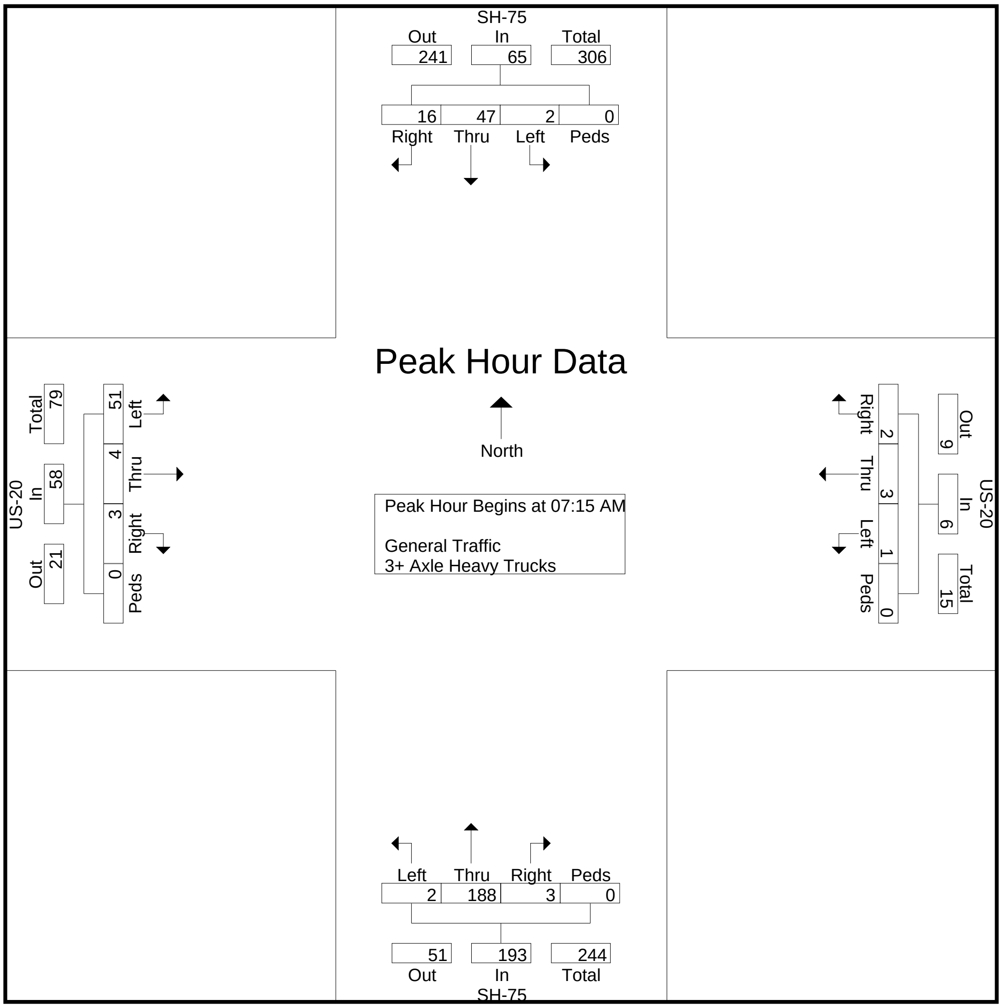
File Name : SH75 & US20
Site Code : 00000000
Start Date : 12/18/2015
Page No : 2



Study: KITT0060
Intersection: SH-75 / US-20
City: Blaine County, Idaho
Control: Stop Sign

File Name : SH75 & US20
Site Code : 00000000
Start Date : 12/18/2015

	SH-75 From North					**US-20 From East**					**SH-75 From South**					**US-20 From West**					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	2	12	**1**	0	15	0	**3**	**1**	0	**4**	**2**	39	**1**	0	42	0	**2**	11	0	13	74
07:30 AM	3	4	1	0	8	0	0	0	0	0	0	**59**	1	0	**60**	1	0	**15**	0	16	84
07:45 AM	5	**16**	0	0	**21**	**2**	0	0	0	2	0	43	0	0	43	**2**	0	10	0	12	78
08:00 AM	**6**	15	0	0	21	0	0	0	0	0	1	47	0	0	48	0	2	15	0	**17**	**86**
Total Volume	16	47	2	0	65	2	3	1	0	6	3	188	2	0	193	3	4	51	0	58	322
% App. Total	24.6	72.3	3.1	0		33.3	50	16.7	0		1.6	97.4	1	0		5.2	6.9	87.9	0		
PHF	.667	.734	.500	.000	.774	.250	.250	.250	.000	.375	.375	.797	.500	.000	.804	.375	.500	.850	.000	.853	.936



L2 Data Collection

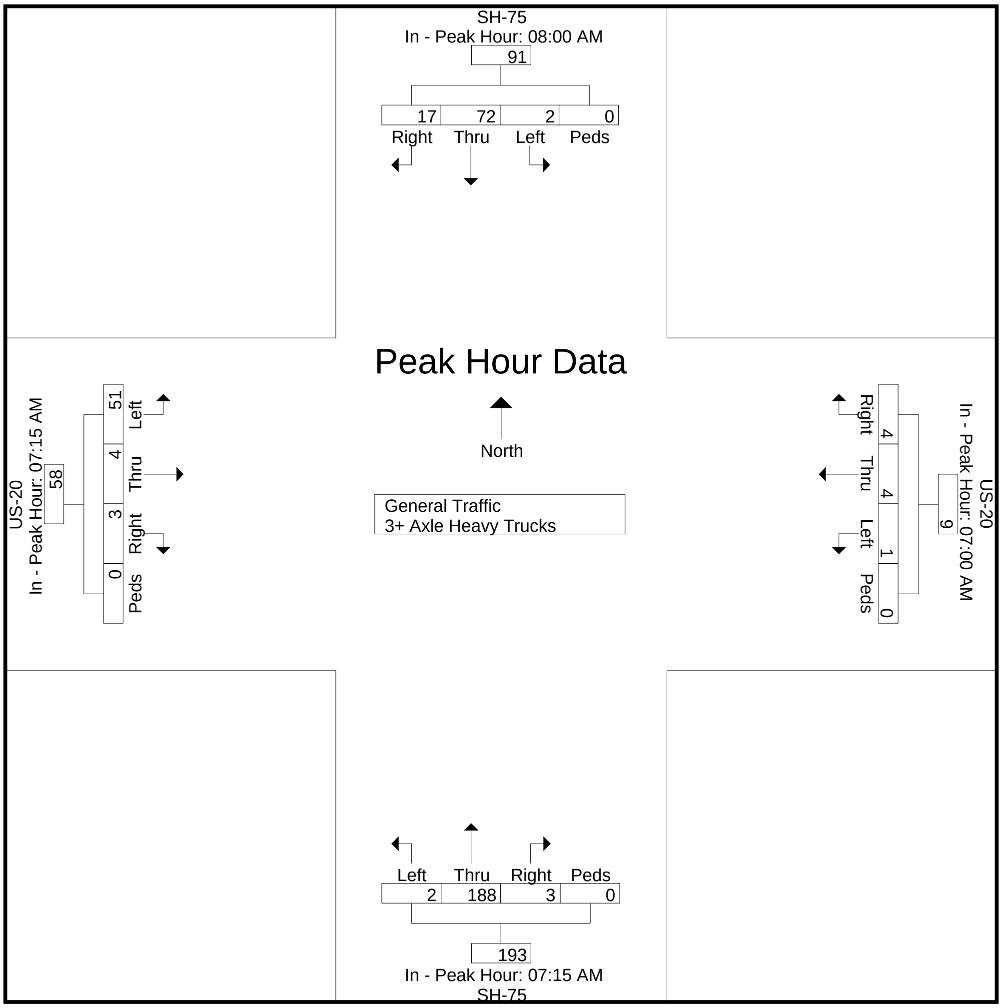
L2DataCollection.com
Idaho (208) 860-7554   Utah (801) 413-2993

Study: KITT0060
Intersection: SH-75 / US-20
City: Blaine County, Idaho
Control: Stop Sign

File Name : SH75 & US20
Site Code : 00000000
Start Date : 12/18/2015
Page No : 4

Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

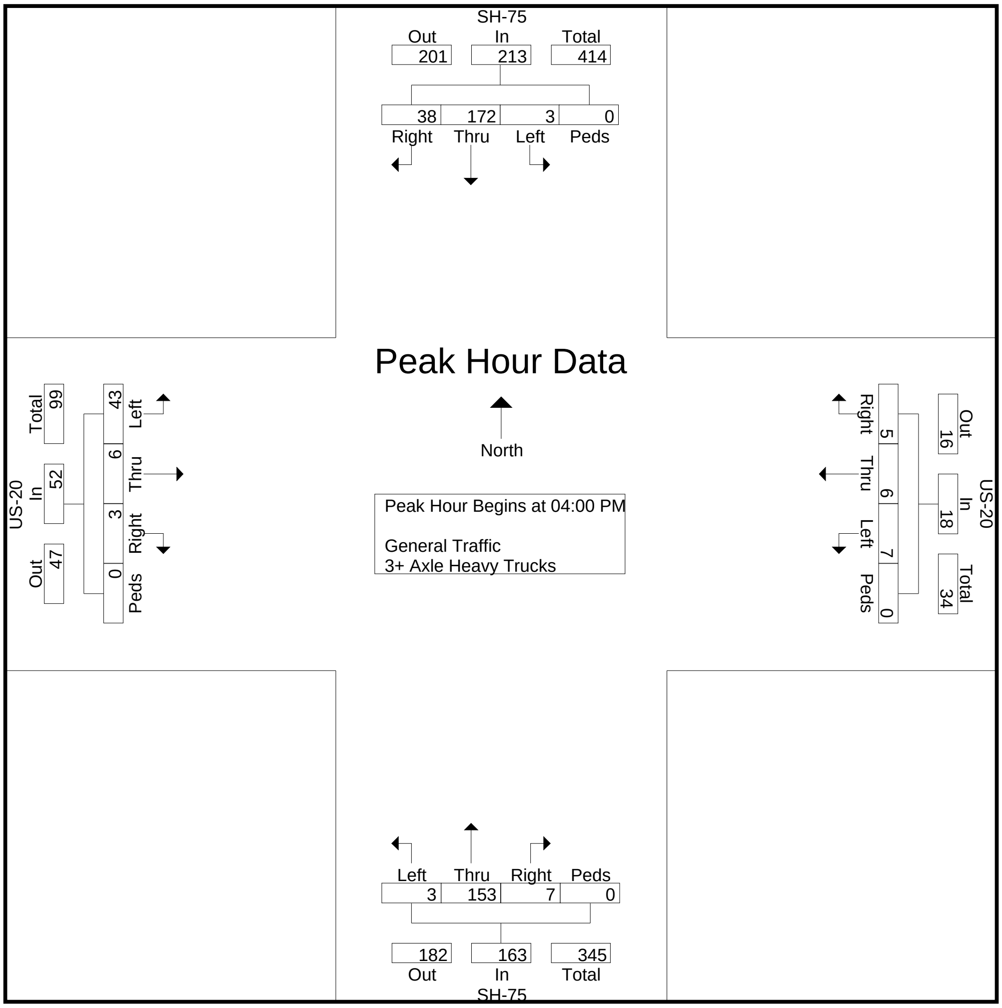
	SH-75 From North					**US-20 From East**					**SH-75 From South**					**US-20 From West**					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
	08:00 AM					07:00 AM					07:15 AM					07:15 AM					
+0 mins.	**6**	15	0	0	21	**2**	1	0	0	3	**2**	39	**1**	0	42	0	**2**	11	0	13	
+15 mins.	3	15	**1**	0	19	0	**3**	**1**	0	**4**	0	**59**	1	0	**60**	1	0	**15**	0	16	
+30 mins.	3	19	0	0	22	0	0	0	0	0	0	43	0	0	43	**2**	0	10	0	12	
+45 mins.	5	**23**	1	0	**29**	2	0	0	0	2	1	47	0	0	48	0	2	15	0	**17**	
Total Volume	17	72	2	0	91	4	4	1	0	9	3	188	2	0	193	3	4	51	0	58	
% App. Total	18.7	79.1	2.2	0		44.4	44.4	11.1	0		1.6	97.4	1	0		5.2	6.9	87.9	0		
PHF	.708	.783	.500	.000	.784	.500	.333	.250	.000	.563	.375	.797	.500	.000	.804	.375	.500	.850	.000	.853	



Study: KITT0060
Intersection: SH-75 / US-20
City: Blaine County, Idaho
Control: Stop Sign

File Name : SH75 & US20
Site Code : 00000000
Start Date : 12/18/2015
Page No : 5

	SH-75 From North					US-20 From East					SH-75 From South					US-20 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	6	44	**2**	0	52	**2**	1	2	0	5	1	43	**2**	0	**46**	**1**	**2**	**16**	0	**19**	**122**
04:15 PM	11	42	1	0	54	1	**2**	**3**	0	**6**	**3**	36	0	0	39	1	2	9	0	12	111
04:30 PM	**15**	40	0	0	**55**	0	2	1	0	3	2	29	1	0	32	1	1	10	0	12	102
04:45 PM	6	**46**	0	0	52	2	1	1	0	4	1	**45**	0	0	46	0	1	8	0	9	111
Total Volume	38	172	3	0	213	5	6	7	0	18	7	153	3	0	163	3	6	43	0	52	446
% App. Total	17.8	80.8	1.4	0		27.8	33.3	38.9	0		4.3	93.9	1.8	0		5.8	11.5	82.7	0		
PHF	.633	.935	.375	.000	.968	.625	.750	.583	.000	.750	.583	.850	.375	.000	.886	.750	.750	.672	.000	.684	.914

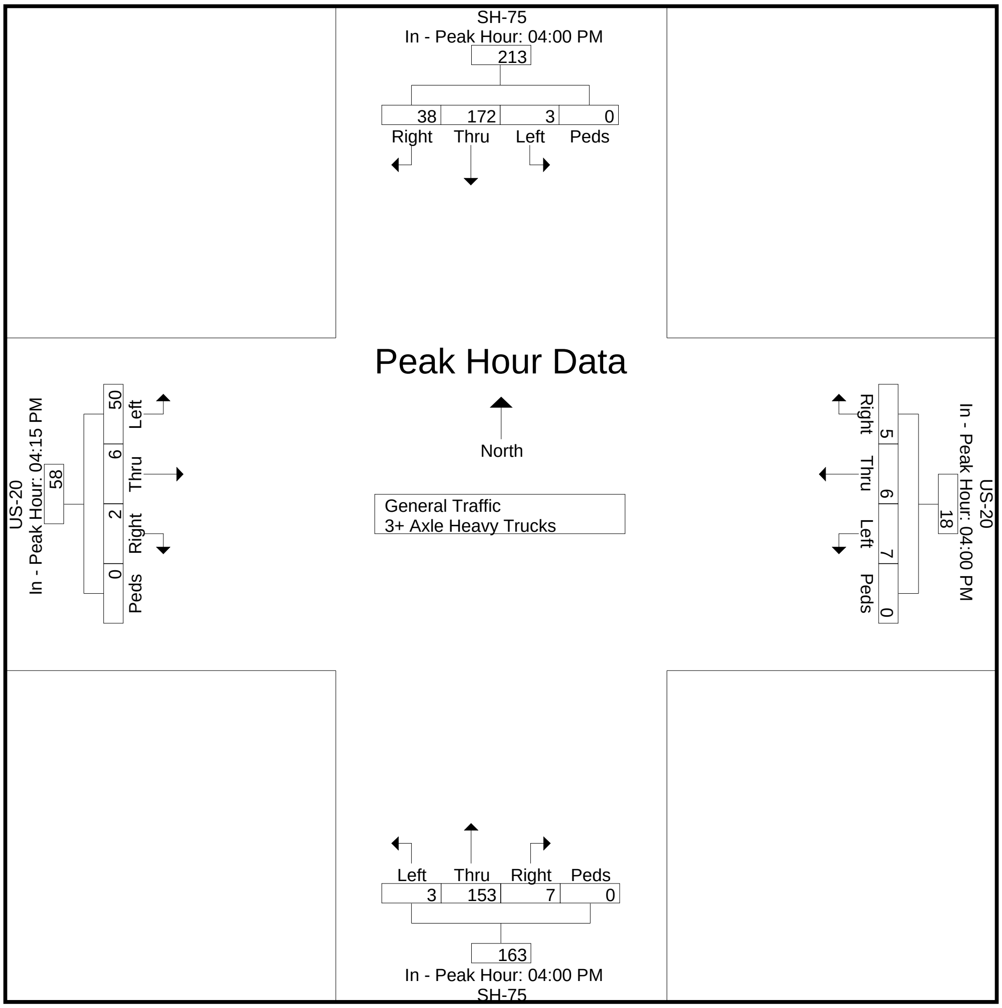


Study: KITT0060
Intersection: SH-75 / US-20
City: Blaine County, Idaho
Control: Stop Sign

File Name : SH75 & US20
Site Code : 00000000
Start Date : 12/18/2015

Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	SH-75 From North					**US-20 From East**					**SH-75 From South**					**US-20 From West**					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
	04:00 PM					04:00 PM					04:00 PM					04:15 PM					
+0 mins.	6	44	**2**	0	52	**2**	1	2	0	5	1	43	**2**	0	**46**	**1**	**2**	9	0	12	
+15 mins.	11	42	1	0	54	1	**2**	**3**	0	**6**	**3**	36	0	0	39	1	1	10	0	12	
+30 mins.	**15**	40	0	0	**55**	0	2	1	0	3	2	29	1	0	32	0	1	8	0	9	
+45 mins.	6	**46**	0	0	52	2	1	1	0	4	1	**45**	0	0	46	0	2	**23**	0	**25**	
Total Volume	38	172	3	0	213	5	6	7	0	18	7	153	3	0	163	2	6	50	0	58	
% App. Total	17.8	80.8	1.4	0		27.8	33.3	38.9	0		4.3	93.9	1.8	0		3.4	10.3	86.2	0		
PHF	.633	.935	.375	.000	.968	.625	.750	.583	.000	.750	.583	.850	.375	.000	.886	.500	.750	.543	.000	.580	



Study: KITT0060	File Name : SH75 & US20
Intersection: SH-75 / US-20	Site Code : 00000000
City: Blaine County, Idaho	Start Date : 12/18/2015
Control: Stop Sign	Page No : 7

Image 1

Attachment B Existing Daily Traffic Counts – Raw Data

L2 Data Collection

L2DataCollection.com

Idaho (208) 860-7554 Utah (801) 431-2993

Study: KITT0060
Type: Volume / Direction
Tech: Judd / Anderson
Count: Video Count

SH75 north of US20 VOL
Date Start: 15-Dec-15
Date End: 22-Dec-15
SH-75 north of US-20
Blaine County, Idaho

Start Time	15-Dec-15 Tue	SB	SB 3+	NB	NB 3+					Total
12:00 AM		*	*	*	*					*
12:15		*	*	*	*					*
12:30		*	*	*	*					*
12:45		*	*	*	*					*
01:00		*	*	*	*					*
01:15		*	*	*	*					*
01:30		*	*	*	*					*
01:45		*	*	*	*					*
02:00		*	*	*	*					*
02:15		*	*	*	*					*
02:30		*	*	*	*					*
02:45		*	*	*	*					*
03:00		*	*	*	*					*
03:15		*	*	*	*					*
03:30		*	*	*	*					*
03:45		*	*	*	*					*
04:00		*	*	*	*					*
04:15		*	*	*	*					*
04:30		*	*	*	*					*
04:45		*	*	*	*					*
05:00		*	*	*	*					*
05:15		*	*	*	*					*
05:30		*	*	*	*					*
05:45		*	*	*	*					*
06:00		*	*	*	*					*
06:15		*	*	*	*					*
06:30		*	*	*	*					*
06:45		*	*	*	*					*
07:00		*	*	*	*					*
07:15		*	*	*	*					*
07:30		*	*	*	*					*
07:45		*	*	*	*					*
08:00		*	*	*	*					*
08:15		*	*	*	*					*
08:30		*	*	*	*					*
08:45		*	*	*	*					*
09:00		*	*	*	*					*
09:15		*	*	*	*					*
09:30		*	*	*	*					*
09:45		*	*	*	*					*
10:00		*	*	*	*					*
10:15		*	*	*	*					*
10:30		*	*	*	*					*
10:45		*	*	*	*					*
11:00		*	*	*	*					*
11:15		*	*	*	*					*
11:30		*	*	*	*					*
11:45		*	*	*	*					*
Total		0	0	0	0					0
Percent		0.0%	0.0%	0.0%	0.0%					
Peak	-	-	-	-	-	-	-	-	-	-
Vol.	-	-	-	-	-	-	-	-	-	-
P.H.F.										

Study: KITT0060
Type: Volume / Direction
Tech: Judd / Anderson
Count: Video Count

SH75 north of US20 VOL
Date Start: 15-Dec-15
Date End: 22-Dec-15
SH-75 north of US-20
Blaine County, Idaho

Start Time	15-Dec-15 Tue	SB	SB 3+	NB	NB 3+					Total
12:00 PM		*	*	*	*					*
12:15		*	*	*	*					*
12:30		*	*	*	*					*
12:45		*	*	*	*					*
01:00		*	*	*	*					*
01:15		*	*	*	*					*
01:30		*	*	*	*					*
01:45		*	*	*	*					*
02:00		*	*	*	*					*
02:15		*	*	*	*					*
02:30		32	0	30	0					62
02:45		35	0	29	0					64
03:00		33	0	39	0					72
03:15		44	0	23	0					67
03:30		35	0	38	0					73
03:45		66	0	24	0					90
04:00		51	0	24	0					75
04:15		54	0	39	0					93
04:30		62	0	35	0					97
04:45		**60**	0	31	0					**91**
05:00		**70**	0	**32**	0					**102**
05:15		**84**	0	**44**	0					**128**
05:30		**83**	0	**35**	0					**118**
05:45		43	0	**46**	0					89
06:00		49	0	26	0					75
06:15		32	0	34	0					66
06:30		39	0	27	0					66
06:45		28	0	23	0					51
07:00		20	0	33	0					53
07:15		23	0	16	0					39
07:30		11	0	16	0					27
07:45		14	0	11	0					25
08:00		10	0	12	0					22
08:15		13	0	9	0					22
08:30		9	0	6	0					15
08:45		8	0	14	0					22
09:00		26	0	13	0					39
09:15		14	0	8	0					22
09:30		10	0	14	0					24
09:45		6	0	6	0					12
10:00		1	0	8	0					9
10:15		2	0	7	0					9
10:30		1	0	7	0					8
10:45		4	0	6	0					10
11:00		1	0	11	0					12
11:15		5	0	5	0					10
11:30		1	0	7	0					8
11:45		1	0	3	0					4
Total		1080	0	791	0					1871
Percent		57.7%	0.0%	42.3%	0.0%					
Peak	-	16:45	-	17:00	-	-	-	-	-	16:45
Vol.	-	297	-	157	-	-	-	-	-	439
P.H.F.		0.884		0.853						0.857

L2 Data Collection

L2DataCollection.com

Idaho (208) 860-7554 Utah (801) 431-2993

Study: KITT0060
Type: Volume / Direction
Tech: Judd / Anderson
Count: Video Count

SH75 north of US20 VOL
Date Start: 15-Dec-15
Date End: 22-Dec-15
SH-75 north of US-20
Blaine County, Idaho

Start Time	16-Dec-15 Wed	SB	SB 3+	NB	NB 3+					Total
12:00 AM		4	0	1	0					5
12:15		1	0	2	0					3
12:30		0	0	2	0					2
12:45		0	0	2	0					2
01:00		0	0	1	0					1
01:15		0	0	0	0					0
01:30		0	0	2	0					2
01:45		0	0	3	0					3
02:00		1	0	5	0					6
02:15		0	0	4	0					4
02:30		1	0	2	0					3
02:45		0	0	1	0					1
03:00		1	0	0	0					1
03:15		0	0	2	0					2
03:30		0	0	1	0					1
03:45		0	0	0	0					0
04:00		1	0	1	0					2
04:15		1	0	5	0					6
04:30		1	0	4	0					5
04:45		3	0	8	0					11
05:00		0	0	3	0					3
05:15		1	0	2	0					3
05:30		2	0	9	0					11
05:45		11	0	9	0					20
06:00		16	0	20	0					36
06:15		8	0	35	0					43
06:30		6	0	49	0					55
06:45		18	0	60	0					78
07:00		5	2	**62**	3					72
07:15		15	1	**60**	1					77
07:30		17	0	**62**	2					81
07:45		15	1	**67**	1					84
08:00		13	0	52	1					66
08:15		25	2	55	1					**83**
08:30		**27**	1	49	**5**					**82**
08:45		**34**	**2**	44	**2**					**82**
09:00		**47**	**1**	27	**1**					**76**
09:15		**36**	**3**	30	**2**					71
09:30		25	**2**	38	2					67
09:45		36	1	42	2					81
10:00		31	2	23	0					56
10:15		28	2	28	3					61
10:30		32	1	30	1					64
10:45		38	0	26	2					66
11:00		20	1	10	1					32
11:15		20	3	26	0					49
11:30		34	1	24	1					60
11:45		26	0	15	0					41
Total		600	26	1003	31					1660
Percent		36.1%	1.6%	60.4%	1.9%					
Peak	-	08:30	08:45	07:00	08:30	-	-	-	-	08:15
Vol.	-	144	8	251	10	-	-	-	-	323
P.H.F.		0.766	0.667	0.937	0.500					0.973

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 431-2993

Study: KITT0060
Type: Volume / Direction
Tech: Judd / Anderson
Count: Video Count

SH75 north of US20 VOL
Date Start: 15-Dec-15
Date End: 22-Dec-15
SH-75 north of US-20
Blaine County, Idaho

Start Time	16-Dec-15 Wed	SB	SB 3+	NB	NB 3+					Total
12:00 PM		23	1	18	2					44
12:15		44	1	20	2					67
12:30		31	1	20	1					53
12:45		31	2	29	**3**					65
01:00		40	2	27	**2**					71
01:15		30	3	33	**4**					70
01:30		23	1	29	**2**					55
01:45		32	1	31	1					65
02:00		44	4	37	0					85
02:15		35	0	19	1					55
02:30		41	**4**	36	1					82
02:45		47	**1**	31	1					80
03:00		35	**4**	28	0					67
03:15		30	**1**	38	1					70
03:30		30	0	20	1					51
03:45		38	1	31	0					70
04:00		46	0	24	0					70
04:15		44	1	**43**	0					88
04:30		43	0	**28**	0					71
04:45		**68**	1	**33**	2					**104**
05:00		**51**	0	**33**	1					**85**
05:15		**65**	0	37	0					**102**
05:30		**88**	3	23	0					**114**
05:45		56	2	23	0					81
06:00		46	4	31	0					81
06:15		44	1	18	0					63
06:30		27	3	40	0					70
06:45		31	1	17	0					49
07:00		23	1	24	0					48
07:15		11	0	16	0					27
07:30		13	0	13	2					28
07:45		12	0	19	1					32
08:00		6	2	13	0					21
08:15		8	1	8	0					17
08:30		10	0	14	1					25
08:45		8	0	19	0					27
09:00		6	0	8	0					14
09:15		5	0	11	1					17
09:30		9	0	7	2					18
09:45		5	0	9	0					14
10:00		5	0	9	0					14
10:15		2	0	5	0					7
10:30		1	0	9	0					10
10:45		3	0	9	0					12
11:00		4	0	1	0					5
11:15		4	1	5	0					10
11:30		2	0	3	0					5
11:45		0	0	5	1					6
Total		1300	48	1004	33					2385
Percent		54.5%	2.0%	42.1%	1.4%					
Peak	-	16:45	14:30	16:15	12:45	-	-	-	-	16:45
Vol.	-	272	10	137	11	-	-	-	-	405
P.H.F.		0.773	0.625	0.797	0.688					0.888

L2 Data Collection

L2DataCollection.com

Idaho (208) 860-7554 Utah (801) 431-2993

Study: KITT0060
Type: Volume / Direction
Tech: Judd / Anderson
Count: Video Count

SH75 north of US20 VOL
Date Start: 15-Dec-15
Date End: 22-Dec-15
SH-75 north of US-20
Blaine County, Idaho

Start Time	17-Dec-15 Thu	SB	SB 3+	NB	NB 3+					Total
12:00 AM		0	0	5	0					5
12:15		1	0	2	0					3
12:30		0	0	2	0					2
12:45		1	0	2	0					3
01:00		1	0	4	0					5
01:15		1	0	0	0					1
01:30		1	0	0	0					1
01:45		0	0	2	0					2
02:00		1	0	1	0					2
02:15		0	0	1	1					2
02:30		0	0	1	0					1
02:45		0	0	2	1					3
03:00		2	0	2	0					4
03:15		1	0	2	0					3
03:30		0	0	2	1					3
03:45		1	0	0	1					2
04:00		1	0	2	0					3
04:15		1	0	3	2					6
04:30		0	1	4	3					8
04:45		0	0	1	1					2
05:00		0	0	2	0					2
05:15		6	0	4	2					12
05:30		5	1	8	1					15
05:45		5	0	6	2					13
06:00		8	1	24	1					34
06:15		5	1	29	2					37
06:30		9	0	37	2					48
06:45		13	1	45	3					62
07:00		12	1	**82**	3					**98**
07:15		20	0	**48**	1					**69**
07:30		23	1	**59**	1					**84**
07:45		24	0	**54**	1					**79**
08:00		25	0	45	4					74
08:15		31	1	44	2					78
08:30		**33**	0	28	2					63
08:45		**23**	2	23	2					50
09:00		**29**	1	42	2					74
09:15		**33**	1	36	1					71
09:30		28	1	20	**3**					52
09:45		20	1	36	**3**					60
10:00		17	4	29	**4**					54
10:15		28	1	21	**2**					52
10:30		34	0	16	1					51
10:45		17	**3**	25	1					46
11:00		22	**1**	27	2					52
11:15		24	**3**	22	2					51
11:30		22	**5**	28	0					55
11:45		15	1	20	0					36
Total		543	32	898	60					1533
Percent		35.4%	2.1%	58.6%	3.9%					
Peak	-	08:30	10:45	07:00	09:30	-	-	-	-	07:00
Vol.	-	118	12	243	12	-	-	-	-	330
P.H.F.		0.894	0.600	0.741	0.750					0.842

L2 Data Collection

L2DataCollection.com

Idaho (208) 860-7554 Utah (801) 431-2993

Study: KITT0060
Type: Volume / Direction
Tech: Judd / Anderson
Count: Video Count

SH75 north of US20 VOL
Date Start: 15-Dec-15
Date End: 22-Dec-15
SH-75 north of US-20
Blaine County, Idaho

Start Time	17-Dec-15 Thu	SB	SB 3+	NB	NB 3+					Total
12:00 PM		24	0	18	1					43
12:15		28	0	26	0					54
12:30		36	1	22	1					60
12:45		24	1	22	1					48
01:00		25	1	31	0					57
01:15		38	3	25	**4**					70
01:30		31	0	35	**0**					66
01:45		26	1	35	**1**					63
02:00		24	**2**	24	**2**					52
02:15		31	**3**	21	1					56
02:30		27	**3**	29	0					59
02:45		34	**2**	35	0					71
03:00		33	1	23	0					57
03:15		31	0	27	1					59
03:30		44	1	23	0					68
03:45		37	1	32	0					70
04:00		29	0	30	0					59
04:15		65	1	23	1					90
04:30		**48**	2	19	0					69
04:45		**59**	3	**40**	0					**102**
05:00		**55**	1	**32**	1					**89**
05:15		**74**	1	**27**	1					**103**
05:30		48	0	**42**	0					**90**
05:45		52	1	19	0					72
06:00		47	1	17	1					66
06:15		34	2	20	0					56
06:30		45	2	42	0					89
06:45		30	3	11	0					44
07:00		21	3	29	2					55
07:15		21	0	14	0					35
07:30		15	1	27	0					43
07:45		10	0	10	2					22
08:00		13	0	9	0					22
08:15		10	0	12	2					24
08:30		15	0	13	0					28
08:45		10	3	12	0					25
09:00		6	0	19	0					25
09:15		2	0	14	1					17
09:30		5	0	6	0					11
09:45		4	1	10	0					15
10:00		4	0	8	0					12
10:15		5	0	8	0					13
10:30		4	1	8	0					13
10:45		5	0	8	0					13
11:00		3	0	17	1					21
11:15		0	0	2	0					2
11:30		4	0	5	0					9
11:45		3	0	7	0					10
Total		1239	46	988	24					2297
Percent		53.9%	2.0%	43.0%	1.0%					
Peak	-	16:30	14:00	16:45	13:15	-	-	-	-	16:45
Vol.	-	236	10	141	7	-	-	-	-	384
P.H.F.		0.797	0.833	0.839	0.438					0.932

Study: KITT0060
Type: Volume / Direction
Tech: Judd / Anderson
Count: Video Count

SH75 north of US20 VOL
Date Start: 15-Dec-15
Date End: 22-Dec-15
SH-75 north of US-20
Blaine County, Idaho

Start Time	18-Dec-15 Fri	SB	SB 3+	NB	NB 3+					Total
12:00 AM		3	0	4	0					7
12:15		2	0	4	0					6
12:30		1	0	4	0					5
12:45		0	0	2	0					2
01:00		0	0	1	0					1
01:15		1	0	4	0					5
01:30		0	0	2	0					2
01:45		2	0	1	1					4
02:00		0	0	0	0					0
02:15		0	0	3	0					3
02:30		0	0	1	0					1
02:45		1	0	0	0					1
03:00		0	0	2	0					2
03:15		1	0	1	0					2
03:30		0	0	1	0					1
03:45		1	0	1	1					3
04:00		1	0	0	0					1
04:15		1	0	2	0					3
04:30		2	0	4	1					7
04:45		1	0	3	0					4
05:00		2	1	6	2					11
05:15		3	1	0	3					7
05:30		7	0	4	1					12
05:45		5	0	5	2					12
06:00		4	0	12	0					16
06:15		9	0	21	1					31
06:30		7	1	53	0					61
06:45		6	1	45	1					53
07:00		12	0	47	1					60
07:15		15	0	**48**	**2**					**65**
07:30		8	0	**73**	**1**					**82**
07:45		19	2	**51**	**4**					**76**
08:00		22	0	**61**	**2**					**85**
08:15		16	3	32	2					53
08:30		21	1	26	1					49
08:45		26	2	40	2					70
09:00		27	0	36	1					64
09:15		22	2	25	2					51
09:30		19	1	31	1					52
09:45		22	3	32	2					59
10:00		**28**	1	14	3					46
10:15		**33**	**3**	13	0					49
10:30		**39**	**2**	16	0					57
10:45		**25**	**2**	16	3					46
11:00		27	**4**	29	3					63
11:15		25	0	19	1					45
11:30		23	1	26	0					50
11:45		34	1	22	1					58
Total		523	32	843	45					1443
Percent		36.2%	2.2%	58.4%	3.1%					
Peak	-	10:00	10:15	07:15	07:15	-	-	-	-	07:15
Vol.	-	125	11	233	9	-	-	-	-	308
P.H.F.		0.801	0.688	0.798	0.563					0.906

L2 Data Collection

L2DataCollection.com

Idaho (208) 860-7554 Utah (801) 431-2993

Study: KITT0060
Type: Volume / Direction
Tech: Judd / Anderson
Count: Video Count

SH75 north of US20 VOL
Date Start: 15-Dec-15
Date End: 22-Dec-15
SH-75 north of US-20
Blaine County, Idaho

Start Time	18-Dec-15 Fri	SB	SB 3+	NB	NB 3+					Total
12:00 PM		27	3	25	1					56
12:15		34	1	18	2					55
12:30		31	2	22	0					55
12:45		41	2	26	0					69
01:00		28	0	29	0					57
01:15		38	1	23	0					62
01:30		51	1	29	1					82
01:45		40	2	20	0					62
02:00		29	0	35	0					64
02:15		43	1	25	2					71
02:30		52	0	33	1					86
02:45		43	0	24	0					67
03:00		45	2	35	1					83
03:15		57	0	47	0					104
03:30		50	1	48	2					101
03:45		**54**	2	35	0					91
04:00		**51**	1	57	2					**111**
04:15		**55**	0	48	1					**104**
04:30		**54**	1	**43**	1					**99**
04:45		50	2	**46**	1					**99**
05:00		37	2	**62**	1					102
05:15		45	0	**55**	0					100
05:30		44	2	39	1					86
05:45		43	2	41	**3**					89
06:00		44	**3**	40	**1**					88
06:15		63	**1**	72	**2**					138
06:30		44	**3**	39	**2**					88
06:45		43	**3**	45	2					93
07:00		28	1	22	0					51
07:15		28	0	39	0					67
07:30		16	0	22	0					38
07:45		17	0	33	1					51
08:00		16	2	22	0					40
08:15		11	0	22	0					33
08:30		6	0	22	0					28
08:45		10	0	17	0					27
09:00		8	0	14	0					22
09:15		9	0	22	0					31
09:30		10	0	10	0					20
09:45		2	0	20	0					22
10:00		12	1	13	0					26
10:15		6	1	14	0					21
10:30		0	0	9	0					9
10:45		5	0	8	0					13
11:00		4	0	8	1					13
11:15		2	0	12	0					14
11:30		3	0	6	0					9
11:45		1	0	8	0					9
Total		1430	43	1404	29					2906
Percent		49.2%	1.5%	48.3%	1.0%					
Peak	-	15:45	18:00	16:30	17:45	-	-	-	-	16:00
Vol.	-	214	10	206	8	-	-	-	-	413
P.H.F.		0.973	0.833	0.831	0.667					0.930

Study: KITT0060
Type: Volume / Direction
Tech: Judd / Anderson
Count: Video Count

SH75 north of US20 VOL
Date Start: 15-Dec-15
Date End: 22-Dec-15
SH-75 north of US-20
Blaine County, Idaho

Start Time	19-Dec-15 Sat	SB	SB 3+	NB	NB 3+					Total
12:00 AM		3	0	7	0					10
12:15		1	0	10	1					12
12:30		0	0	3	0					3
12:45		1	0	8	0					9
01:00		2	0	2	1					5
01:15		0	0	2	0					2
01:30		3	0	2	0					5
01:45		3	1	4	0					8
02:00		1	1	3	0					5
02:15		0	0	3	1					4
02:30		0	0	5	0					5
02:45		0	0	10	0					10
03:00		2	0	7	0					9
03:15		1	0	3	0					4
03:30		1	0	9	0					10
03:45		1	0	5	1					7
04:00		1	0	2	0					3
04:15		1	0	8	0					9
04:30		2	0	2	0					4
04:45		2	0	7	1					10
05:00		0	0	9	0					9
05:15		4	0	6	1					11
05:30		1	0	1	1					3
05:45		4	0	6	1					11
06:00		4	1	6	0					11
06:15		4	0	14	1					19
06:30		3	0	11	0					14
06:45		9	2	5	**2**					18
07:00		6	1	10	**1**					18
07:15		14	0	11	**1**					26
07:30		14	0	14	**1**					29
07:45		24	**0**	15	0					39
08:00		14	**0**	20	1					35
08:15		23	**3**	22	2					50
08:30		46	**1**	33	0					80
08:45		23	0	19	0					42
09:00		40	0	24	0					64
09:15		44	0	12	1					57
09:30		35	1	24	0					60
09:45		41	2	24	0					67
10:00		44	0	26	1					71
10:15		49	0	20	3					72
10:30		**49**	0	19	0					68
10:45		**54**	1	16	0					71
11:00		**55**	1	**20**	0					**76**
11:15		**55**	0	**31**	0					**86**
11:30		38	1	**32**	0					**71**
11:45		44	1	**37**	1					**83**
Total		766	17	589	23					1395
Percent		54.9%	1.2%	42.2%	1.6%					
Peak	-	10:30	07:45	11:00	06:45	-	-	-	-	11:00
Vol.	-	213	4	120	5	-	-	-	-	316
P.H.F.		0.968	0.333	0.811	0.625					0.919

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 431-2993

Study: KITT0060
Type: Volume / Direction
Tech: Judd / Anderson
Count: Video Count

SH75 north of US20 VOL
Date Start: 15-Dec-15
Date End: 22-Dec-15
SH-75 north of US-20
Blaine County, Idaho

Start Time	19-Dec-15 Sat	SB	SB 3+	NB	NB 3+					Total
12:00 PM		37	1	26	0					64
12:15		**42**	1	28	0					71
12:30		**40**	0	44	0					84
12:45		**40**	0	29	0					69
01:00		**42**	0	39	2					83
01:15		34	0	22	1					57
01:30		23	0	33	1					57
01:45		40	1	35	0					76
02:00		32	1	38	1					72
02:15		33	1	40	0					74
02:30		31	0	44	0					75
02:45		30	1	34	0					65
03:00		36	0	52	**0**					88
03:15		43	0	55	**3**					101
03:30		23	0	56	**1**					80
03:45		38	0	40	**2**					80
04:00		47	2	**51**	0					**100**
04:15		32	0	**56**	0					**88**
04:30		30	0	**67**	0					**97**
04:45		25	**2**	**62**	0					**89**
05:00		32	**1**	47	0					80
05:15		36	**1**	35	0					72
05:30		26	**1**	39	0					66
05:45		17	0	45	0					62
06:00		15	0	48	0					63
06:15		23	0	38	0					61
06:30		12	0	29	1					42
06:45		12	1	46	0					59
07:00		20	0	40	1					61
07:15		11	1	35	1					48
07:30		13	0	34	0					47
07:45		11	0	26	3					40
08:00		11	1	34	0					46
08:15		14	0	21	0					35
08:30		8	0	25	0					33
08:45		6	0	43	0					49
09:00		8	1	24	0					33
09:15		6	0	28	0					34
09:30		3	1	16	1					21
09:45		7	0	11	1					19
10:00		5	0	12	0					17
10:15		7	0	11	0					18
10:30		1	0	21	0					22
10:45		2	0	4	0					6
11:00		7	0	13	0					20
11:15		1	1	9	0					11
11:30		1	0	13	0					14
11:45		3	0	10	0					13
Total		1016	19	1608	19					2662
Percent		38.2%	0.7%	60.4%	0.7%					
Peak	-	12:15	16:45	16:00	15:00	-	-	-	-	16:00
Vol.	-	164	5	236	6	-	-	-	-	374
P.H.F.		0.976	0.625	0.881	0.500					0.935

L2 Data Collection

L2DataCollection.com

Idaho (208) 860-7554 Utah (801) 431-2993

Study: KITT0060
Type: Volume / Direction
Tech: Judd / Anderson
Count: Video Count

SH75 north of US20 VOL
Date Start: 15-Dec-15
Date End: 22-Dec-15
SH-75 north of US-20
Blaine County, Idaho

Start Time	20-Dec-15 Sun	SB	SB 3+	NB	NB 3+					Total
12:00 AM		1	0	7	0					8
12:15		1	0	6	0					7
12:30		2	0	5	1					8
12:45		1	0	5	0					6
01:00		1	0	6	0					7
01:15		0	0	2	0					2
01:30		1	0	7	0					8
01:45		1	0	5	0					6
02:00		1	0	5	0					6
02:15		1	0	5	0					6
02:30		1	0	0	0					1
02:45		0	0	3	0					3
03:00		1	1	2	1					5
03:15		2	0	2	0					4
03:30		1	0	5	0					6
03:45		0	0	1	0					1
04:00		0	0	1	0					1
04:15		1	0	3	0					4
04:30		1	0	2	0					3
04:45		1	0	4	0					5
05:00		2	**1**	2	0					5
05:15		1	**0**	1	0					2
05:30		2	**0**	5	0					7
05:45		5	**1**	2	1					9
06:00		6	0	1	0					7
06:15		1	1	7	0					9
06:30		3	0	9	0					12
06:45		1	0	4	0					5
07:00		3	0	6	0					9
07:15		10	0	6	1					17
07:30		16	0	7	0					23
07:45		11	0	7	0					18
08:00		7	0	9	0					16
08:15		19	0	19	0					38
08:30		20	0	10	0					30
08:45		21	0	19	0					40
09:00		26	0	16	0					42
09:15		34	0	18	0					52
09:30		49	0	16	0					65
09:45		33	0	17	**0**					50
10:00		49	0	16	**1**					66
10:15		46	0	19	**0**					65
10:30		55	0	27	**1**					**83**
10:45		**56**	0	11	0					**67**
11:00		**64**	0	**17**	0					**81**
11:15		**61**	0	**20**	0					**81**
11:30		**60**	0	**19**	0					79
11:45		46	0	**25**	0					71
Total		725	4	411	6					1146
Percent		63.3%	0.3%	35.9%	0.5%					
Peak	-	10:45	05:00	11:00	09:45	-	-	-	-	10:30
Vol.	-	241	2	81	2	-	-	-	-	312
P.H.F.		0.941	0.500	0.750	0.500					0.940

L2 Data Collection

L2DataCollection.com

Idaho (208) 860-7554   Utah (801) 431-2993

Study: KITT0060
Type: Volume / Direction
Tech: Judd / Anderson
Count: Video Count

SH75 north of US20 VOL
Date Start: 15-Dec-15
Date End: 22-Dec-15
SH-75 north of US-20
Blaine County, Idaho

Start Time	20-Dec-15 Sun	SB	SB 3+	NB	NB 3+					Total
12:00 PM		**56**	0	30	0					86
12:15		**45**	0	16	0					61
12:30		**40**	0	33	0					73
12:45		**43**	0	34	0					77
01:00		33	0	49	0					82
01:15		33	0	43	0					76
01:30		40	0	41	0					81
01:45		45	1	57	0					103
02:00		38	0	36	1					75
02:15		26	0	40	0					66
02:30		37	0	42	0					79
02:45		32	0	33	0					65
03:00		47	0	46	0					93
03:15		31	0	59	0					90
03:30		42	0	46	**0**					88
03:45		34	0	49	**0**					83
04:00		42	0	58	**1**					101
04:15		45	1	27	**1**					74
04:30		27	0	46	0					73
04:45		30	1	**54**	0					**85**
05:00		37	0	**64**	0					**101**
05:15		51	0	**61**	0					**112**
05:30		24	0	**52**	1					**77**
05:45		17	0	52	0					69
06:00		17	0	50	0					67
06:15		18	0	42	0					60
06:30		15	0	49	1					65
06:45		24	0	40	0					64
07:00		21	**1**	34	0					56
07:15		12	**0**	36	1					49
07:30		15	**0**	58	0					73
07:45		7	**2**	29	1					39
08:00		5	0	42	0					47
08:15		9	0	23	0					32
08:30		5	0	30	0					35
08:45		5	0	30	0					35
09:00		9	1	20	0					30
09:15		6	0	15	1					22
09:30		5	0	12	0					17
09:45		6	1	22	0					29
10:00		1	0	20	0					21
10:15		0	0	12	0					12
10:30		2	0	13	0					15
10:45		2	0	4	0					6
11:00		4	0	9	1					14
11:15		1	0	10	0					11
11:30		1	0	15	0					16
11:45		2	0	5	0					7
Total		1087	8	1688	9					2792
Percent		38.9%	0.3%	60.5%	0.3%					
Peak	-	12:00	19:00	16:45	15:30	-	-	-	-	16:45
Vol.	-	184	3	231	2	-	-	-	-	375
P.H.F.		0.821	0.375	0.902	0.500					0.837

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 431-2993

Study: KITT0060
Type: Volume / Direction
Tech: Judd / Anderson
Count: Video Count

SH75 north of US20 VOL
Date Start: 15-Dec-15
Date End: 22-Dec-15
SH-75 north of US-20
Blaine County, Idaho

Start Time	21-Dec-15 Mon	SB	SB 3+	NB	NB 3+					Total
12:00 AM		2	0	4	0					6
12:15		1	0	3	1					5
12:30		0	0	6	0					6
12:45		3	0	2	0					5
01:00		0	0	5	0					5
01:15		0	0	3	1					4
01:30		0	1	1	0					2
01:45		2	0	1	0					3
02:00		0	0	4	0					4
02:15		1	0	0	0					1
02:30		1	0	1	0					2
02:45		0	0	0	0					0
03:00		0	0	1	1					2
03:15		0	0	1	2					3
03:30		1	0	1	0					2
03:45		0	0	2	1					3
04:00		1	0	2	0					3
04:15		0	0	5	2					7
04:30		0	0	6	1					7
04:45		3	0	9	0					12
05:00		3	0	6	2					11
05:15		2	0	6	4					12
05:30		0	1	12	1					14
05:45		5	0	7	2					14
06:00		4	0	27	2					33
06:15		6	0	33	0					39
06:30		11	0	40	**4**					55
06:45		6	0	37	**3**					46
07:00		7	0	**62**	**1**					70
07:15		13	2	**58**	**4**					**77**
07:30		12	0	**69**	3					**84**
07:45		14	2	**42**	1					**59**
08:00		23	2	48	0					**73**
08:15		14	0	38	0					52
08:30		29	1	53	4					87
08:45		20	1	38	3					62
09:00		21	0	33	3					57
09:15		23	2	36	1					62
09:30		29	2	30	0					61
09:45		22	1	28	2					53
10:00		31	1	33	3					68
10:15		30	**4**	29	2					65
10:30		28	**3**	23	3					57
10:45		**37**	**4**	20	3					64
11:00		**30**	**3**	13	2					48
11:15		**28**	0	21	1					50
11:30		**37**	1	27	2					67
11:45		33	3	15	2					53
Total		533	34	941	67					1575
Percent		33.8%	2.2%	59.7%	4.3%					
Peak	-	10:45	10:15	07:00	06:30	-	-	-	-	07:15
Vol.	-	132	14	231	12	-	-	-	-	293
P.H.F.		0.892	0.875	0.837	0.750					0.872

Study: KITT0060
Type: Volume / Direction
Tech: Judd / Anderson
Count: Video Count

SH75 north of US20 VOL
Date Start: 15-Dec-15
Date End: 22-Dec-15
SH-75 north of US-20
Blaine County, Idaho

Start Time	21-Dec-15 Mon	SB	SB 3+	NB	NB 3+					Total
12:00 PM		18	5	24	1					48
12:15		38	1	36	0					75
12:30		26	3	24	2					55
12:45		49	0	17	0					66
01:00		25	3	18	0					46
01:15		28	**4**	11	0					43
01:30		22	**2**	31	0					55
01:45		29	**3**	19	0					51
02:00		31	**5**	19	**2**					57
02:15		30	1	11	**0**					42
02:30		20	1	25	**2**					48
02:45		28	1	30	**2**					61
03:00		28	1	37	2					68
03:15		36	1	22	0					59
03:30		31	2	**16**	1					50
03:45		42	2	**61**	1					**106**
04:00		33	2	**46**	3					**84**
04:15		35	3	**26**	0					**64**
04:30		35	1	15	0					**51**
04:45		32	0	31	2					65
05:00		39	0	27	0					66
05:15		**50**	0	17	0					67
05:30		**25**	1	36	0					62
05:45		**52**	2	16	1					71
06:00		**48**	2	35	0					85
06:15		34	1	26	2					63
06:30		20	2	27	0					49
06:45		28	2	16	1					47
07:00		22	1	24	0					47
07:15		11	1	25	2					39
07:30		14	0	18	0					32
07:45		8	1	18	0					27
08:00		9	1	15	0					25
08:15		13	0	13	1					27
08:30		12	0	9	1					22
08:45		3	0	12	0					15
09:00		8	1	14	1					24
09:15		5	0	16	0					21
09:30		6	1	5	0					12
09:45		7	0	13	0					20
10:00		4	0	6	1					11
10:15		5	1	9	2					17
10:30		1	0	9	0					10
10:45		2	1	5	2					10
11:00		1	0	2	0					3
11:15		1	0	1	0					2
11:30		4	1	5	0					10
11:45		3	1	1	2					7
Total		1051	61	939	34					2085
Percent		50.4%	2.9%	45.0%	1.6%					
Peak	-	17:15	13:15	15:30	14:00	-	-	-	-	15:45
Vol.	-	175	14	149	6	-	-	-	-	305
P.H.F.		0.841	0.700	0.611	0.750					0.719

L2 Data Collection

L2DataCollection.com

Idaho (208) 860-7554 Utah (801) 431-2993

Study: KITT0060
Type: Volume / Direction
Tech: Judd / Anderson
Count: Video Count

SH75 north of US20 VOL
Date Start: 15-Dec-15
Date End: 22-Dec-15
SH-75 north of US-20
Blaine County, Idaho

Start Time	22-Dec-15 Tue	SB	SB 3+	NB	NB 3+					Total
12:00 AM		2	0	4	0					6
12:15		1	0	1	1					3
12:30		1	0	10	3					14
12:45		1	1	1	0					3
01:00		3	1	1	2					7
01:15		2	0	3	1					6
01:30		1	0	2	1					4
01:45		0	0	2	0					2
02:00		0	1	1	0					2
02:15		0	0	5	1					6
02:30		0	0	6	1					7
02:45		1	0	2	0					3
03:00		0	0	6	0					6
03:15		0	0	4	0					4
03:30		1	0	4	0					5
03:45		0	0	5	1					6
04:00		1	0	2	1					4
04:15		4	0	4	0					8
04:30		1	1	3	1					6
04:45		0	0	4	1					5
05:00		1	0	7	2					10
05:15		0	1	6	1					8
05:30		3	0	15	2					20
05:45		3	0	3	0					6
06:00		3	0	15	0					18
06:15		1	0	19	2					22
06:30		9	0	29	1					39
06:45		8	0	**44**	1					53
07:00		8	**0**	**42**	0					50
07:15		9	**1**	**31**	1					42
07:30		6	**1**	**54**	**7**					**68**
07:45		7	**2**	30	**5**					**44**
08:00		9	0	42	**3**					**54**
08:15		**12**	0	38	**3**					**53**
08:30		**20**	0	38	6					64
08:45		**15**	1	29	2					47
09:00		**18**	0	0	0					18
09:15		0	0	0	0					0
09:30		*	*	*	*					*
09:45		*	*	*	*					*
10:00		*	*	*	*					*
10:15		*	*	*	*					*
10:30		*	*	*	*					*
10:45		*	*	*	*					*
11:00		*	*	*	*					*
11:15		*	*	*	*					*
11:30		*	*	*	*					*
11:45		*	*	*	*					*
Total		151	10	512	50					723
Percent		20.9%	1.4%	70.8%	6.9%					
Peak	-	08:15	07:00	06:45	07:30	-	-	-	-	07:30
Vol.	-	65	4	171	18	-	-	-	-	219
P.H.F.		0.813	0.500	0.792	0.643					0.805
Grand Total		12044	380	13619	430					26473
Percent		45.5%	1.4%	51.4%	1.6%					

L2 Data Collection

L2DataCollection.com

Idaho (208) 860-7554 Utah (801) 431-2993

Study: KITT0060
Type: Volume / Direction
Tech: Judd / Anderson
Count: Video Count

US20 west of SH75 VOL
Date Start: 15-Dec-15
Date End: 22-Dec-15
US-20 west of SH-75
Blaine County, Idaho

Start Time	15-Dec-15 Tue	WB	WB 3+	EB	EB 3+					Total
12:00 AM		*	*	*	*					*
12:15		*	*	*	*					*
12:30		*	*	*	*					*
12:45		*	*	*	*					*
01:00		*	*	*	*					*
01:15		*	*	*	*					*
01:30		*	*	*	*					*
01:45		*	*	*	*					*
02:00		*	*	*	*					*
02:15		*	*	*	*					*
02:30		*	*	*	*					*
02:45		*	*	*	*					*
03:00		*	*	*	*					*
03:15		*	*	*	*					*
03:30		*	*	*	*					*
03:45		*	*	*	*					*
04:00		*	*	*	*					*
04:15		*	*	*	*					*
04:30		*	*	*	*					*
04:45		*	*	*	*					*
05:00		*	*	*	*					*
05:15		*	*	*	*					*
05:30		*	*	*	*					*
05:45		*	*	*	*					*
06:00		*	*	*	*					*
06:15		*	*	*	*					*
06:30		*	*	*	*					*
06:45		*	*	*	*					*
07:00		*	*	*	*					*
07:15		*	*	*	*					*
07:30		*	*	*	*					*
07:45		*	*	*	*					*
08:00		*	*	*	*					*
08:15		*	*	*	*					*
08:30		*	*	*	*					*
08:45		*	*	*	*					*
09:00		*	*	*	*					*
09:15		*	*	*	*					*
09:30		*	*	*	*					*
09:45		*	*	*	*					*
10:00		*	*	*	*					*
10:15		*	*	*	*					*
10:30		*	*	*	*					*
10:45		*	*	*	*					*
11:00		*	*	*	*					*
11:15		*	*	*	*					*
11:30		*	*	*	*					*
11:45		*	*	*	*					*
Total		0	0	0	0					0
Percent		0.0%	0.0%	0.0%	0.0%					
Peak	-	-	-	-	-	-	-	-	-	-
Vol.	-	-	-	-	-	-	-	-	-	-
P.H.F.										

L2 Data Collection

L2DataCollection.com

Idaho (208) 860-7554 Utah (801) 431-2993

Study: KITT0060
Type: Volume / Direction
Tech: Judd / Anderson
Count: Video Count

US20 west of SH75 VOL
Date Start: 15-Dec-15
Date End: 22-Dec-15
US-20 west of SH-75
Blaine County, Idaho

Start Time	15-Dec-15 Tue	WB	WB 3+	EB	EB 3+					Total
12:00 PM		*	*	*	*					*
12:15		*	*	*	*					*
12:30		*	*	*	*					*
12:45		*	*	*	*					*
01:00		*	*	*	*					*
01:15		*	*	*	*					*
01:30		*	*	*	*					*
01:45		*	*	*	*					*
02:00		*	*	*	*					*
02:15		*	*	*	*					*
02:30		4	0	12	0					16
02:45		11	0	8	0					19
03:00		5	0	10	0					15
03:15		16	0	10	0					26
03:30		15	0	7	0					22
03:45		15	0	**14**	0					29
04:00		15	0	**11**	0					26
04:15		19	0	**10**	0					29
04:30		13	0	**9**	0					22
04:45		**19**	0	1	0					**20**
05:00		**18**	0	3	0					**21**
05:15		**19**	0	13	0					**32**
05:30		**29**	0	11	0					**40**
05:45		12	0	8	0					20
06:00		10	0	5	0					15
06:15		9	0	8	0					17
06:30		10	0	6	0					16
06:45		6	0	5	0					11
07:00		6	0	9	0					15
07:15		5	0	7	0					12
07:30		2	0	3	0					5
07:45		2	0	4	0					6
08:00		1	0	3	0					4
08:15		1	0	0	0					1
08:30		3	0	3	0					6
08:45		1	0	3	0					4
09:00		5	0	0	0					5
09:15		4	0	3	0					7
09:30		1	0	4	0					5
09:45		3	0	1	0					4
10:00		1	0	0	0					1
10:15		2	0	0	0					2
10:30		1	0	3	0					4
10:45		0	0	2	0					2
11:00		0	0	5	0					5
11:15		2	0	2	0					4
11:30		0	0	2	0					2
11:45		3	0	0	0					3
Total		288	0	205	0					493
Percent		58.4%	0.0%	41.6%	0.0%					
Peak	-	16:45	-	15:45	-	-	-	-	-	16:45
Vol.	-	85	-	44	-	-	-	-	-	113
P.H.F.		0.733		0.786						0.706

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 431-2993

Study: KITT0060
Type: Volume / Direction
Tech: Judd / Anderson
Count: Video Count

US20 west of SH75 VOL
Date Start: 15-Dec-15
Date End: 22-Dec-15
US-20 west of SH-75
Blaine County, Idaho

Start Time	16-Dec-15 Wed	WB	WB 3+	EB	EB 3+					Total
12:00 AM		2	0	1	0					3
12:15		0	0	0	0					0
12:30		0	0	1	0					1
12:45		0	0	1	0					1
01:00		0	0	0	0					0
01:15		0	0	0	0					0
01:30		0	0	1	0					1
01:45		0	0	3	0					3
02:00		0	0	1	0					1
02:15		0	0	1	0					1
02:30		1	0	0	0					1
02:45		0	0	1	0					1
03:00		0	0	0	0					0
03:15		0	0	0	0					0
03:30		0	0	0	0					0
03:45		0	0	0	0					0
04:00		0	0	0	0					0
04:15		0	0	0	0					0
04:30		1	0	1	0					2
04:45		0	0	3	0					3
05:00		0	0	2	0					2
05:15		1	0	1	0					2
05:30		0	0	2	0					2
05:45		3	0	1	0					4
06:00		5	0	5	0					10
06:15		3	0	7	0					10
06:30		0	0	8	0					8
06:45		1	0	11	0					12
07:00		5	**1**	10	0					16
07:15		2	**0**	**15**	0					17
07:30		5	**2**	**12**	0					19
07:45		5	**1**	**14**	**0**					20
08:00		4	0	**13**	**0**					**17**
08:15		**9**	0	15	**1**					**25**
08:30		**6**	0	10	**3**					**19**
08:45		**9**	1	12	0					**22**
09:00		**11**	0	5	0					16
09:15		7	0	9	1					17
09:30		8	1	10	0					19
09:45		9	0	12	1					22
10:00		6	1	12	0					19
10:15		8	0	9	3					20
10:30		11	0	10	0					21
10:45		7	0	12	1					20
11:00		4	0	7	0					11
11:15		4	0	10	0					14
11:30		5	1	11	1					18
11:45		11	0	4	0					15
Total		153	8	263	11					435
Percent		35.2%	1.8%	60.5%	2.5%					
Peak	-	08:15	07:00	07:15	07:45	-	-	-	-	08:00
Vol.	-	35	4	54	4	-	-	-	-	83
P.H.F.		0.795	0.500	0.900	0.333					0.830

L2 Data Collection

L2DataCollection.com

Idaho (208) 860-7554 Utah (801) 431-2993

Study: KITT0060
Type: Volume / Direction
Tech: Judd / Anderson
Count: Video Count

US20 west of SH75 VOL
Date Start: 15-Dec-15
Date End: 22-Dec-15
US-20 west of SH-75
Blaine County, Idaho

Start Time	16-Dec-15 Wed	WB	WB 3+	EB	EB 3+					Total
12:00 PM		9	0	10	0					19
12:15		8	1	6	1					16
12:30		9	**1**	7	1					18
12:45		8	**1**	8	2					19
01:00		13	**2**	3	0					18
01:15		11	**4**	**15**	1					31
01:30		4	0	**9**	1					14
01:45		12	1	**9**	1					23
02:00		13	1	**10**	1					25
02:15		13	0	9	0					22
02:30		12	0	4	0					16
02:45		9	1	9	0					19
03:00		9	3	10	0					22
03:15		8	1	6	3					18
03:30		12	0	3	1					16
03:45		11	0	6	0					17
04:00		7	0	7	0					14
04:15		13	1	19	**1**					**34**
04:30		10	2	7	**2**					**21**
04:45		**16**	5	4	**0**					**25**
05:00		**17**	0	9	**2**					**28**
05:15		**13**	1	14	0					28
05:30		**18**	2	5	0					25
05:45		14	1	9	1					25
06:00		13	1	9	0					23
06:15		7	0	4	0					11
06:30		6	1	6	0					13
06:45		8	0	6	0					14
07:00		10	1	6	1					18
07:15		4	0	6	0					10
07:30		4	0	2	1					7
07:45		4	1	10	1					16
08:00		4	0	5	0					9
08:15		3	0	3	0					6
08:30		5	0	2	0					7
08:45		1	0	2	0					3
09:00		1	0	2	0					3
09:15		2	1	3	0					6
09:30		1	0	5	0					6
09:45		5	1	1	0					7
10:00		0	0	0	0					0
10:15		0	0	2	0					2
10:30		0	0	2	0					2
10:45		0	0	3	0					3
11:00		2	0	1	0					3
11:15		1	0	3	0					4
11:30		1	0	0	0					1
11:45		0	0	2	0					2
Total		351	34	283	21					689
Percent		50.9%	4.9%	41.1%	3.0%					
Peak	-	16:45	12:30	13:15	16:15	-	-	-	-	16:15
Vol.	-	64	8	43	5	-	-	-	-	108
P.H.F.		0.889	0.500	0.717	0.417					0.794

Study: KITT0060
Type: Volume / Direction
Tech: Judd / Anderson
Count: Video Count

US20 west of SH75 VOL
Date Start: 15-Dec-15
Date End: 22-Dec-15
US-20 west of SH-75
Blaine County, Idaho

Start Time	17-Dec-15 Thu	WB	WB 3+	EB	EB 3+					Total
12:00 AM		0	0	1	0					1
12:15		0	0	0	0					0
12:30		0	0	0	0					0
12:45		0	0	0	0					0
01:00		1	0	3	0					4
01:15		0	0	0	0					0
01:30		1	0	0	0					1
01:45		0	0	1	0					1
02:00		1	0	0	0					1
02:15		0	0	1	0					1
02:30		0	0	1	0					1
02:45		0	0	1	0					1
03:00		0	0	1	0					1
03:15		0	0	0	0					0
03:30		0	0	0	0					0
03:45		0	0	0	0					0
04:00		0	0	0	0					0
04:15		0	0	0	0					0
04:30		0	0	3	0					3
04:45		0	0	0	1					1
05:00		0	1	0	0					1
05:15		2	0	1	**1**					4
05:30		1	1	1	**2**					5
05:45		2	0	1	**2**					5
06:00		3	1	5	**1**					10
06:15		2	0	7	0					9
06:30		2	0	4	0					6
06:45		1	0	9	0					10
07:00		2	0	**21**	0					23
07:15		6	0	**10**	1					17
07:30		5	1	**10**	2					18
07:45		3	0	**10**	0					13
08:00		2	0	8	2					12
08:15		9	1	12	0					22
08:30		9	0	5	1					15
08:45		5	1	6	0					12
09:00		**8**	0	17	1					**26**
09:15		**9**	0	6	1					**16**
09:30		**11**	0	10	2					**23**
09:45		**6**	0	6	2					**14**
10:00		2	0	7	0					9
10:15		6	1	7	0					14
10:30		8	**2**	6	0					16
10:45		6	**1**	3	2					12
11:00		6	**0**	12	1					19
11:15		11	**3**	5	0					19
11:30		5	1	7	0					13
11:45		7	0	5	0					12
Total		142	14	213	22					391
Percent		36.3%	3.6%	54.5%	5.6%					
Peak	-	09:00	10:30	07:00	05:15	-	-	-	-	09:00
Vol.	-	34	6	51	6	-	-	-	-	79
P.H.F.		0.773	0.500	0.607	0.750					0.760

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 431-2993

Study: KITT0060
Type: Volume / Direction
Tech: Judd / Anderson
Count: Video Count

US20 west of SH75 VOL
Date Start: 15-Dec-15
Date End: 22-Dec-15
US-20 west of SH-75
Blaine County, Idaho

Start Time	17-Dec-15 Thu	WB	WB 3+	EB	EB 3+					Total
12:00 PM		6	1	4	0					11
12:15		8	0	**13**	0					21
12:30		11	0	**7**	0					18
12:45		8	1	**11**	0					20
01:00		6	2	**10**	1					19
01:15		15	0	8	0					23
01:30		12	0	8	0					20
01:45		7	0	5	0					12
02:00		10	0	7	2					19
02:15		10	0	8	0					18
02:30		12	1	2	0					15
02:45		9	0	7	0					16
03:00		13	0	8	0					21
03:15		11	0	4	0					15
03:30		13	1	5	0					19
03:45		7	0	9	0					16
04:00		10	**0**	12	1					23
04:15		14	**1**	3	1					19
04:30		**13**	**3**	6	1					23
04:45		**15**	**1**	6	0					**22**
05:00		**11**	0	12	1					**24**
05:15		**19**	1	7	1					**28**
05:30		11	1	12	0					**24**
05:45		13	0	8	1					22
06:00		10	1	4	1					16
06:15		9	0	6	0					15
06:30		10	3	4	1					18
06:45		6	0	2	1					9
07:00		3	0	5	0					8
07:15		3	0	1	0					4
07:30		4	0	7	0					11
07:45		5	1	4	0					10
08:00		3	1	3	1					8
08:15		4	0	2	0					6
08:30		1	0	0	0					1
08:45		4	0	2	0					6
09:00		1	1	7	**0**					9
09:15		2	1	0	**3**					6
09:30		1	1	0	**0**					2
09:45		2	0	2	**1**					5
10:00		1	0	4	0					5
10:15		1	0	5	0					6
10:30		2	1	2	1					6
10:45		3	0	2	0					5
11:00		0	0	7	0					7
11:15		0	1	1	0					2
11:30		1	1	0	0					2
11:45		1	0	1	0					2
Total		341	25	253	18					637
Percent		53.5%	3.9%	39.7%	2.8%					
Peak	-	16:30	16:00	12:15	21:00	-	-	-	-	16:45
Vol.	-	58	5	41	4	-	-	-	-	98
P.H.F.		0.763	0.417	0.788	0.333					0.875

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554   Utah (801) 431-2993

Study: KITT0060
Type: Volume / Direction
Tech: Judd / Anderson
Count: Video Count

US20 west of SH75 VOL
Date Start: 15-Dec-15
Date End: 22-Dec-15
US-20 west of SH-75
Blaine County, Idaho

Start Time	18-Dec-15 Fri	WB	WB 3+	EB	EB 3+					Total
12:00 AM		0	0	1	0					1
12:15		0	0	2	0					2
12:30		0	1	0	0					1
12:45		0	0	1	0					1
01:00		0	0	0	0					0
01:15		0	0	1	0					1
01:30		0	0	0	0					0
01:45		1	1	1	0					3
02:00		0	0	0	2					2
02:15		0	0	0	0					0
02:30		0	0	1	0					1
02:45		1	0	0	0					1
03:00		0	0	0	0					0
03:15		1	0	0	0					1
03:30		0	0	0	0					0
03:45		0	1	0	0					1
04:00		1	1	0	1					3
04:15		0	1	0	2					3
04:30		0	0	2	0					2
04:45		0	0	1	0					1
05:00		1	0	0	1					2
05:15		0	0	0	0					0
05:30		2	0	1	1					4
05:45		2	2	0	2					6
06:00		1	0	5	0					6
06:15		2	0	5	1					8
06:30		3	0	10	0					13
06:45		1	0	6	0					7
07:00		2	**0**	7	0					9
07:15		4	**2**	**12**	**1**					**19**
07:30		3	**1**	**14**	**1**					**19**
07:45		4	**1**	**9**	**2**					**16**
08:00		6	0	**17**	**1**					**24**
08:15		2	1	8	1					12
08:30		4	0	7	0					11
08:45		5	2	7	2					16
09:00		3	0	8	0					11
09:15		5	0	5	0					10
09:30		2	1	9	0					12
09:45		4	1	8	2					15
10:00		4	0	2	1					7
10:15		8	1	6	0					15
10:30		10	2	3	0					15
10:45		5	0	5	0					10
11:00		**5**	1	14	0					20
11:15		**7**	0	3	0					10
11:30		**11**	1	4	1					17
11:45		**6**	0	7	0					13
Total		116	21	192	22					351
Percent		33.0%	6.0%	54.7%	6.3%					
Peak	-	11:00	07:00	07:15	07:15	-	-	-	-	07:15
Vol.	-	29	4	52	5	-	-	-	-	78
P.H.F.		0.659	0.500	0.765	0.625					0.813

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 431-2993

Study: KITT0060
Type: Volume / Direction
Tech: Judd / Anderson
Count: Video Count

US20 west of SH75 VOL
Date Start: 15-Dec-15
Date End: 22-Dec-15
US-20 west of SH-75
Blaine County, Idaho

Start Time	18-Dec-15 Fri	WB	WB 3+	EB	EB 3+					Total
12:00 PM		7	2	3	0					12
12:15		8	0	5	1					14
12:30		4	0	6	0					10
12:45		9	1	7	0					17
01:00		**13**	1	11	0					25
01:15		**19**	1	9	0					29
01:30		**15**	0	7	0					22
01:45		**12**	1	5	0					18
02:00		13	0	5	1					19
02:15		12	0	4	1					17
02:30		12	0	11	1					24
02:45		10	1	6	1					18
03:00		13	1	7	0					21
03:15		13	0	21	0					34
03:30		11	1	6	0					18
03:45		11	0	20	**1**					32
04:00		7	2	10	**2**					21
04:15		12	2	10	**1**					25
04:30		18	0	11	**1**					30
04:45		7	0	7	1					15
05:00		4	1	**27**	0					32
05:15		13	0	**13**	0					26
05:30		10	0	**8**	1					19
05:45		8	**1**	**13**	1					**23**
06:00		14	**2**	18	3					**37**
06:15		18	**1**	18	0					**37**
06:30		9	**2**	10	1					**22**
06:45		10	1	10	1					22
07:00		7	0	10	1					18
07:15		8	1	9	0					18
07:30		3	0	5	1					9
07:45		7	0	8	1					16
08:00		8	1	5	0					14
08:15		1	0	3	0					4
08:30		4	0	9	1					14
08:45		4	1	1	0					6
09:00		2	0	3	0					5
09:15		1	0	8	0					9
09:30		3	0	4	0					7
09:45		0	0	6	0					6
10:00		5	0	4	0					9
10:15		0	0	4	0					4
10:30		1	0	2	0					3
10:45		0	0	0	0					0
11:00		1	0	1	0					2
11:15		0	0	1	0					1
11:30		1	0	3	0					4
11:45		0	0	5	0					5
Total		368	24	379	22					793
Percent		46.4%	3.0%	47.8%	2.8%					
Peak	-	13:00	17:45	17:00	15:45	-	-	-	-	17:45
Vol.	-	59	6	61	5	-	-	-	-	119
P.H.F.		0.776	0.750	0.565	0.625					0.804

Study: KITT0060
Type: Volume / Direction
Tech: Judd / Anderson
Count: Video Count

US20 west of SH75 VOL
Date Start: 15-Dec-15
Date End: 22-Dec-15
US-20 west of SH-75
Blaine County, Idaho

Start Time	19-Dec-15 Sat	WB	WB 3+	EB	EB 3+					Total
12:00 AM		0	**1**	1	0					2
12:15		0	**0**	2	0					2
12:30		0	**0**	1	1					2
12:45		0	**0**	2	0					2
01:00		0	0	0	0					0
01:15		0	0	0	0					0
01:30		0	0	1	0					1
01:45		1	0	0	0					1
02:00		0	0	2	0					2
02:15		0	0	0	0					0
02:30		0	0	0	0					0
02:45		0	0	1	0					1
03:00		1	0	1	0					2
03:15		0	0	1	0					1
03:30		0	0	1	0					1
03:45		0	0	1	1					2
04:00		0	0	0	0					0
04:15		0	0	1	0					1
04:30		0	0	0	0					0
04:45		0	0	0	1					1
05:00		0	0	0	0					0
05:15		1	0	1	0					2
05:30		0	0	0	0					0
05:45		2	1	0	1					4
06:00		1	0	0	0					1
06:15		1	0	5	0					6
06:30		0	0	2	0					2
06:45		1	0	1	0					2
07:00		0	0	2	0					2
07:15		3	0	2	0					5
07:30		4	0	4	**0**					8
07:45		5	0	3	**1**					9
08:00		3	0	6	**0**					9
08:15		3	0	5	**1**					9
08:30		**14**	1	7	0					22
08:45		**9**	0	6	0					15
09:00		**12**	0	10	0					22
09:15		**14**	0	5	0					19
09:30		11	0	6	0					17
09:45		9	0	10	0					19
10:00		7	0	7	0					14
10:15		10	0	3	0					13
10:30		8	0	9	0					17
10:45		13	0	5	0					18
11:00		11	0	**5**	0					**16**
11:15		15	0	**14**	0					**29**
11:30		9	0	**11**	0					**20**
11:45		7	0	**12**	1					**20**
Total		175	3	156	7					341
Percent		51.3%	0.9%	45.7%	2.1%					
Peak	-	08:30	12:00	11:00	07:30	-	-	-	-	11:00
Vol.	-	49	1	42	2	-	-	-	-	85
P.H.F.		0.875	0.250	0.750	0.500					0.733

L2 Data Collection

L2DataCollection.com

Idaho (208) 860-7554 Utah (801) 431-2993

Study: KITT0060
Type: Volume / Direction
Tech: Judd / Anderson
Count: Video Count

US20 west of SH75 VOL
Date Start: 15-Dec-15
Date End: 22-Dec-15
US-20 west of SH-75
Blaine County, Idaho

Start Time	19-Dec-15 Sat	WB	WB 3+	EB	EB 3+					Total
12:00 PM		9	0	8	0					17
12:15		14	0	11	0					25
12:30		7	0	19	0					26
12:45		9	0	9	0					18
01:00		8	0	13	1					22
01:15		7	0	9	0					16
01:30		8	0	15	0					23
01:45		**19**	0	11	0					30
02:00		**9**	0	15	0					24
02:15		**13**	0	11	0					24
02:30		**11**	1	11	1					24
02:45		7	0	9	0					16
03:00		15	0	9	0					24
03:15		8	0	23	0					31
03:30		10	**0**	11	0					21
03:45		11	**0**	13	**0**					**24**
04:00		11	**1**	16	**1**					**29**
04:15		10	**1**	**16**	**1**					**28**
04:30		12	0	**18**	**1**					**31**
04:45		6	0	**14**	0					20
05:00		6	0	**17**	0					23
05:15		9	0	9	0					18
05:30		4	0	12	0					16
05:45		0	0	10	0					10
06:00		3	0	5	0					8
06:15		10	0	5	0					15
06:30		1	0	5	0					6
06:45		1	0	8	0					9
07:00		4	0	6	1					11
07:15		1	0	10	0					11
07:30		3	0	7	0					10
07:45		1	0	5	0					6
08:00		3	0	6	0					9
08:15		2	0	5	0					7
08:30		1	0	2	0					3
08:45		1	0	15	0					16
09:00		1	0	3	0					4
09:15		2	0	9	0					11
09:30		0	0	1	1					2
09:45		3	0	2	0					5
10:00		0	1	2	1					4
10:15		0	0	3	0					3
10:30		0	0	5	0					5
10:45		0	0	1	0					1
11:00		3	0	2	0					5
11:15		0	0	2	0					2
11:30		0	0	1	0					1
11:45		1	0	0	0					1
Total		264	4	419	8					695
Percent		38.0%	0.6%	60.3%	1.2%					
Peak	-	13:45	15:30	16:15	15:45	-	-	-	-	15:45
Vol.	-	52	2	65	3	-	-	-	-	112
P.H.F.		0.684	0.500	0.903	0.750					0.903

L2 Data Collection

L2DataCollection.com

Idaho (208) 860-7554 Utah (801) 431-2993

Study: KITT0060
Type: Volume / Direction
Tech: Judd / Anderson
Count: Video Count

US20 west of SH75 VOL
Date Start: 15-Dec-15
Date End: 22-Dec-15
US-20 west of SH-75
Blaine County, Idaho

Start Time	20-Dec-15 Sun	WB	WB 3+	EB	EB 3+					Total
12:00 AM		0	0	0	0					0
12:15		0	0	3	0					3
12:30		1	0	4	0					5
12:45		0	0	2	0					2
01:00		0	0	1	0					1
01:15		0	0	1	0					1
01:30		0	0	0	0					0
01:45		0	0	2	0					2
02:00		1	0	1	0					2
02:15		0	0	2	0					2
02:30		0	1	0	1					2
02:45		0	1	0	0					1
03:00		0	0	0	1					1
03:15		1	0	0	0					1
03:30		1	0	3	0					4
03:45		0	1	0	0					1
04:00		0	0	2	1					3
04:15		0	0	0	0					0
04:30		0	0	0	0					0
04:45		0	0	1	0					1
05:00		0	0	1	0					1
05:15		0	0	0	0					0
05:30		0	**0**	0	0					0
05:45		0	**2**	1	0					3
06:00		1	**0**	0	1					2
06:15		1	**1**	1	0					3
06:30		0	0	1	0					1
06:45		0	0	0	1					1
07:00		0	0	2	0					2
07:15		3	0	3	0					6
07:30		3	0	0	0					3
07:45		6	0	2	**0**					8
08:00		3	0	3	**1**					7
08:15		9	0	4	**2**					15
08:30		8	1	4	**1**					14
08:45		4	1	6	0					11
09:00		7	0	3	0					10
09:15		6	0	6	0					12
09:30		9	0	5	0					14
09:45		9	0	9	0					18
10:00		6	0	3	0					9
10:15		10	0	**7**	0					17
10:30		**11**	0	**7**	1					**19**
10:45		**11**	1	**8**	0					**20**
11:00		**13**	0	**7**	0					**20**
11:15		**15**	0	7	0					**22**
11:30		8	0	7	0					15
11:45		10	0	8	0					18
Total		157	9	127	10					303
Percent		51.8%	3.0%	41.9%	3.3%					
Peak	-	10:30	05:30	10:15	07:45	-	-	-	-	10:30
Vol.	-	50	3	29	4	-	-	-	-	81
P.H.F.		0.833	0.375	0.906	0.500					0.920

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554   Utah (801) 431-2993

Study: KITT0060
Type: Volume / Direction
Tech: Judd / Anderson
Count: Video Count

US20 west of SH75 VOL
Date Start: 15-Dec-15
Date End: 22-Dec-15
US-20 west of SH-75
Blaine County, Idaho

Start Time	20-Dec-15 Sun	WB	WB 3+	EB	EB 3+					Total
12:00 PM		21	0	12	0					33
12:15		16	0	6	0					22
12:30		11	0	16	0					27
12:45		12	0	18	0					30
01:00		14	1	16	0					31
01:15		14	0	17	0					31
01:30		19	0	16	0					35
01:45		19	0	18	0					37
02:00		20	0	14	0					34
02:15		13	0	**22**	**0**					35
02:30		6	0	**21**	**1**					28
02:45		13	0	**19**	**0**					32
03:00		23	0	**16**	**1**					**40**
03:15		12	0	20	0					**32**
03:30		**22**	0	19	0					**41**
03:45		**18**	0	16	0					**34**
04:00		**23**	0	10	0					33
04:15		**17**	0	12	0					29
04:30		14	0	14	0					28
04:45		8	0	16	0					24
05:00		11	0	28	0					39
05:15		13	0	20	0					33
05:30		7	0	11	0					18
05:45		4	0	8	0					12
06:00		7	0	13	0					20
06:15		6	0	7	0					13
06:30		8	1	8	0					17
06:45		9	0	10	0					19
07:00		5	**0**	6	0					11
07:15		3	**0**	2	0					5
07:30		4	**1**	10	0					15
07:45		2	**1**	5	1					9
08:00		0	0	9	0					9
08:15		2	0	2	0					4
08:30		1	0	6	0					7
08:45		2	0	0	1					3
09:00		6	0	12	0					18
09:15		1	0	5	0					6
09:30		3	0	3	0					6
09:45		1	0	2	0					3
10:00		0	0	6	0					6
10:15		2	1	2	0					5
10:30		2	1	7	1					11
10:45		0	0	2	1					3
11:00		1	0	1	0					2
11:15		0	0	2	0					2
11:30		0	0	5	0					5
11:45		0	0	2	0					2
Total		415	6	512	6					939
Percent		44.2%	0.6%	54.5%	0.6%					
Peak	-	15:30	19:00	14:15	14:15	-	-	-	-	15:00
Vol.	-	80	2	78	2	-	-	-	-	147
P.H.F.		0.870	0.500	0.886	0.500					0.896

Study: KITT0060
Type: Volume / Direction
Tech: Judd / Anderson
Count: Video Count

US20 west of SH75 VOL
Date Start: 15-Dec-15
Date End: 22-Dec-15
US-20 west of SH-75
Blaine County, Idaho

Start Time	21-Dec-15 Mon	WB	WB 3+	EB	EB 3+					Total
12:00 AM		1	2	2	1					6
12:15		0	0	0	0					0
12:30		1	0	2	0					3
12:45		0	0	1	0					1
01:00		0	1	0	0					1
01:15		0	0	0	0					0
01:30		0	0	0	0					0
01:45		1	0	1	0					2
02:00		0	0	1	0					1
02:15		0	0	0	0					0
02:30		0	1	0	0					1
02:45		0	0	0	0					0
03:00		0	0	1	1					2
03:15		0	0	1	0					1
03:30		0	0	0	0					0
03:45		0	0	1	0					1
04:00		0	0	1	0					1
04:15		0	0	2	0					2
04:30		1	1	2	0					4
04:45		0	0	2	1					3
05:00		1	0	1	1					3
05:15		1	0	0	2					3
05:30		0	1	0	1					2
05:45		1	1	1	4					7
06:00		0	0	10	0					10
06:15		2	0	6	0					8
06:30		2	0	7	0					9
06:45		2	0	3	0					5
07:00		0	0	14	0					14
07:15		4	0	**13**	1					**18**
07:30		2	0	**16**	0					**18**
07:45		4	0	**7**	1					**12**
08:00		8	0	**15**	0					**23**
08:15		2	0	7	0					9
08:30		4	2	12	4					22
08:45		4	1	10	0					15
09:00		**4**	0	8	1					13
09:15		**6**	0	6	**0**					12
09:30		**5**	0	6	**0**					11
09:45		**10**	**3**	5	**2**					20
10:00		4	**4**	6	**7**					21
10:15		5	**3**	8	0					16
10:30		6	**2**	6	0					14
10:45		6	1	4	0					11
11:00		3	0	4	1					8
11:15		5	1	6	0					12
11:30		5	2	7	3					17
11:45		7	0	6	1					14
Total		107	26	211	32					376
Percent		28.5%	6.9%	56.1%	8.5%					
Peak	-	09:00	09:45	07:15	09:15	-	-	-	-	07:15
Vol.	-	25	12	51	9	-	-	-	-	71
P.H.F.		0.625	0.750	0.797	0.321					0.772

L2 Data Collection

L2DataCollection.com
Idaho (208) 860-7554 Utah (801) 431-2993

Study: KITT0060
Type: Volume / Direction
Tech: Judd / Anderson
Count: Video Count

US20 west of SH75 VOL
Date Start: 15-Dec-15
Date End: 22-Dec-15
US-20 west of SH-75
Blaine County, Idaho

Start Time	21-Dec-15 Mon	WB	WB 3+	EB	EB 3+					Total
12:00 PM		5	0	8	1					14
12:15		9	0	5	0					14
12:30		7	1	6	0					14
12:45		6	0	1	0					7
01:00		5	0	4	0					9
01:15		3	1	0	0					4
01:30		8	**2**	4	1					15
01:45		3	**1**	4	2					10
02:00		9	**1**	1	0					11
02:15		7	**2**	3	1					13
02:30		4	0	**14**	1					**19**
02:45		15	0	**7**	0					**22**
03:00		8	0	**10**	0					**18**
03:15		7	1	**9**	0					**17**
03:30		8	3	5	**2**					18
03:45		13	1	7	**0**					21
04:00		11	1	5	**1**					18
04:15		6	0	8	**2**					16
04:30		**9**	0	3	0					12
04:45		**8**	1	4	0					13
05:00		**10**	0	6	1					17
05:15		**14**	0	3	1					18
05:30		4	1	9	1					15
05:45		4	0	4	0					8
06:00		4	0	5	0					9
06:15		8	1	4	0					13
06:30		3	1	9	0					13
06:45		3	2	1	2					8
07:00		7	1	5	1					14
07:15		3	1	4	1					9
07:30		4	1	4	0					9
07:45		0	0	2	1					3
08:00		4	0	3	0					7
08:15		3	0	3	2					8
08:30		6	0	2	0					8
08:45		1	0	2	0					3
09:00		3	1	5	0					9
09:15		1	0	3	1					5
09:30		0	1	1	1					3
09:45		1	1	5	0					7
10:00		3	0	2	1					6
10:15		1	3	2	1					7
10:30		0	1	4	1					6
10:45		0	0	1	1					2
11:00		0	0	0	0					0
11:15		0	0	0	0					0
11:30		0	0	0	0					0
11:45		0	0	0	0					0
Total		238	30	197	27					492
Percent		48.4%	6.1%	40.0%	5.5%					
Peak	-	16:30	13:30	14:30	15:30	-	-	-	-	14:30
Vol.	-	41	6	40	5	-	-	-	-	76
P.H.F.		0.732	0.750	0.714	0.625					0.864

L2 Data Collection

L2DataCollection.com

Idaho (208) 860-7554 Utah (801) 431-2993

Study: KITT0060
Type: Volume / Direction
Tech: Judd / Anderson
Count: Video Count

US20 west of SH75 VOL
Date Start: 15-Dec-15
Date End: 22-Dec-15
US-20 west of SH-75
Blaine County, Idaho

Start Time	22-Dec-15 Tue	WB	WB 3+	EB	EB 3+					Total
12:00 AM		0	0	0	0					0
12:15		0	0	0	0					0
12:30		0	0	2	0					2
12:45		2	0	0	0					2
01:00		0	1	0	0					1
01:15		0	0	0	0					0
01:30		0	0	1	0					1
01:45		0	0	0	0					0
02:00		0	0	0	0					0
02:15		0	0	0	0					0
02:30		0	0	1	0					1
02:45		0	0	1	0					1
03:00		0	0	0	1					1
03:15		0	0	1	0					1
03:30		0	0	0	1					1
03:45		0	0	0	0					0
04:00		1	0	0	0					1
04:15		0	0	0	0					0
04:30		0	0	0	0					0
04:45		0	0	0	1					1
05:00		0	**0**	0	0					0
05:15		2	**1**	1	0					4
05:30		0	**2**	3	3					8
05:45		0	**1**	2	1					4
06:00		0	0	1	0					1
06:15		0	1	3	1					5
06:30		1	0	3	0					4
06:45		1	1	**5**	0					7
07:00		2	0	**9**	1					12
07:15		0	0	**5**	1					6
07:30		5	1	**14**	0					**20**
07:45		2	2	3	**3**					**10**
08:00		**3**	0	4	**0**					**7**
08:15		**7**	1	10	**1**					**19**
08:30		**5**	0	3	**3**					11
08:45		**3**	1	9	0					13
09:00		0	0	0	0					0
09:15		0	0	0	0					0
09:30		*	*	*	*					*
09:45		*	*	*	*					*
10:00		*	*	*	*					*
10:15		*	*	*	*					*
10:30		*	*	*	*					*
10:45		*	*	*	*					*
11:00		*	*	*	*					*
11:15		*	*	*	*					*
11:30		*	*	*	*					*
11:45		*	*	*	*					*
Total		34	12	81	17					144
Percent		23.6%	8.3%	56.3%	11.8%					
Peak	-	08:00	05:00	06:45	07:45	-	-	-	-	07:30
Vol.	-	18	4	33	7	-	-	-	-	56
P.H.F.		0.643	0.500	0.589	0.583					0.700
Grand Total		3149	216	3491	223					7079
Percent		44.5%	3.1%	49.3%	3.2%					

Attachment C ITD ATR Traffic Volumes – Raw Data

ITD ATR Counter No. 68
North of Hailey, Idaho on SH-75
Collected on 12/7/2015

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual 24-hr Avg
1990	7297	7880	8250	7594	8635	10146	11445	11403	9780	9186	7866	7582	8931
1991	7506	7754	7698	7435	8271	9434	11071	11161	9323	9027	7419	7877	8675
1992	7645	8025	8374	8011	8666	9733	11388	11502	8983	8290	7324	7637	8830
1993	6589	6918	7553	7164	7299	8407	9195	8818	7990	7613	6699	6967	7607
1994	7992	8392	8665	7662	7806	8991	11244	11365	10449	9729	7848	8162	9034
1995	9149	9752	9706	9439	10283	12044	13752	12983	12165	11405	10057	10195	10911
1996	9516	10276	10548	9920	10695	12567	14041	14094	12417	11736	9942	10008	11313
1997	9874	10667	10669	10122	10804	12553	14485	14473	12494	11908	10328	10877	11605
1998	10090	10606	10858	10471	11239	13071	14957	14723	13412	11671	10543	11085	11894
1999	10539	10554	11261	10578	11479	13395	15467	15119	13876	12910	11253	11595	12336
2000	10726	11395	11769	11190	12109	14187	15753	15371	13678	13072	11122	11869	12687
2001	10999	11776	12245	11319	12343	14140	15880	15484	13450	12964	11476	11000	12756
2002	11458	11989	11794	12372	12663	14249	16067	15328	13228	13473	11448	12025	13008
2003	11973	12169	11887	12170	12857	14644	16545	16157	14203	14014	11582	12655	13405
2004	11608	12317	12657	12595	13147	15367	16732	16137	14708		11501	12711	13589
2005	11271	12269	12738	12260	13182	14993	16317	15842	14588	13389	12118	12521	13457
2006	11158	11694	12164	11828	13050	14755	15628	15493	13966	13412	11507	12435	13091
2007	11895	12192	12250	11979	12975	14543	16084	15692	13509	13667	11994	12319	13258
2008	10818	11876	11793	11636	12260	13750	15296	14898	13218	12765	10705	11152	12514
2009	10759	11195	10505	10723	11172	12957	14811	13672	12856		10291	11466	11855
2010	10224	10770	10539	10330	10487	12535	14571	14124	12497	11473	9877	11736	11597
2011	10456	10539	9974	9844	10128	12119	14347	13699	12091				11466
2012	9684	10537	10023	9944	10371	12379	14441	13162	11984	11474	10005	11177	11264
2013	10411	10836	10556	10318	10873	12829	14561	13385	12334	11771	10055	11227	11596
2014	10514	10730	10490	10454	11017	12947	14887	14132	12538	12161	10378	11730	11831
2015	11157	11663	11290	11248	11806	13987	15198	14787	13389	12838			
Average (All Years)	*10050*	*10568*	*10625*	*10331*	*10985*	*12720*	*14391*	*13962*	*12428*	*11737*	*10139*	*10750*	*11540*
Average (Since 2010)	**10408**	**10846**	**10479**	**10356**	**10780**	**12799**	**14668**	**13882**	**12472**	**11943**	**10079**	**11468**	**11539**
Seasonal Adjustment Factor (Based off Avg. since 2010)	**1.290**	**1.261**	**1.286**	**1.294**	**1.265**	**1.127**	**1.000**	**1.054**	**1.150**	**1.186**	**1.313**	**1.218**	

ITD ATR Counter No. 14
North of Shoshone, Idaho on SH-75
Collected 12/7/2015

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual 24-hr Avg
1990	1539	1772	1899	2035	2431	2836	3391	3314	2855	2532	2072	1789	2376
1991	1665	1791	1790	1981	2272	2869	3414	3271	2765	2545	1960	1858	2352
1992	1708	1826	2029	2079	2397	2823	3361	3085	2754	2606	2049	1850	2390
1993	1583	1741	1967	2082	2534	2874	3513	3222	3120	2788	2236	2131	2487
1994	1913	1899	2160	2280	2637	3130	3711	3333	3183	2897	2238	2238	2640
1995	2052	2146	2203	2344	2563			3349	3252	3037	2518	2395	2586
1996	2005	2159	2375	2588	2862	3429	3956	3828	3397	3239	2602	2322	2897
1997	2128	2337	2631	2671	3038	3627	4308	4122	3793		2607	2629	3081
1998	2322	2548	2605	2853	3142	3675	4235	4069	3777	3332	2834	2765	3180
1999	2496	2587	2770	2874	3237	3773	4431	4099	3950	3630	2988	2862	3308
2000	2558	2796	2838	3095	3448	3954	4454	4256	4039	3809	3076	3071	3450
2001	2784	2921	3136	3346	3695	4074	4633	4497		3665	3286	2996	3548
2002	2889	2956	3074	3326	3651	4154	4585	4358	3978	3905	3270	3205	3613
2003	2962	2996	3076	3299	3685	4184	4635	4526	4063	3984	3324	3278	3668
2004	2966	3013	3207	3506	3715	4277	4737	4433	4313	4148	3558	3466	3778
2005	3117	3249	3393	3627	3799	4267	4802	4478	4166	3910	3502	3376	3807
2006	3199	3210	3304	3683	4005	4466	4833	4572	4389	4142	3608	3524	3911
2007	3236	3320	3527	3766	4095	4458	4769	4615	4137	4052	3533	3339	3904
2008	3025	3198	3180	3319	3583	3863	4287	4211	3812	3621	3146	3069	3526
2009	2793	2815	2852	3171	3440	3963	4809	4044	3818	3395	2883	2822	3400
2010	2616	2677	2725	2957	3123	3500	4046	3820	3566	3230	2641	2651	3129
2011	2513	2528	2508	2660	2897	3340	3901	3660	3452	3149			3061
2012	2361	2476	2481	2725	3015								
2013										3159	2634	2608	
2014	2368	2466	2610	2740	3229	3447	3938	3660	3463	3368	2714	2768	3064
2015	2559	2748	2925	3058	3343	3816	4057	3910	3722	3539			
Average (All Years)	*2454*	*2567*	*2691*	*2883*	*3193*	*3687*	*4209*	*3947*	*3642*	*3403*	*2838*	*2740*	*3181*
Average (Since 2010)	**2483**	**2579**	**2650**	**2828**	**3121**	**3526**	**3986**	**3763**	**3551**	**3289**	**2663**	**2676**	
Seasonal Adjustment Factor (Based off Avg. since 2010)	**1.377**	**1.353**	**1.335**	**1.290**	**1.217**	**1.115**	**1.000**	**1.056**	**1.109**	**1.175**	**1.332**	**1.329**	

ITD ATR Counter No. 50
East of Mountain Home on US-20
Collected 1/7/2015

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual 24-hr Avg
1990	717	833	1144	1253	1602	2051	2352	2181	1618	1801	1240	699	1462
1991	734	944	1076	1126	1521	1924	2183	2204	1851	1839	1089	976	1459
1992	885	1064	1293	1218	1634	1815	2103	2212	1863	1908	1231	855	1513
1993	540	850	1107	1099	1472	1634	1896	2528	2325	2356	1352	1043	1521
1994	961	975	1331	1419	1613	1790	2077	2769	2560	2598	1491	978	1719
1995	1035			1318	1779	2130	2633	2561	2287	2155	1395		
1996	850	1210	1376	1382	1758	2167	2758	2783	2305	2246	1352	920	1759
1997	1055	1332	1429	1336	1855	2204	2877	2679	2151	2162	1490	1183	1813
1998	977	1132	1327	1364	1898	2385	2848	2740	2471	2203	1430	1103	1823
1999	1075	1086	1423	1410	1945	2469	2993	2774	2457	2281	1409	1133	1871
2000	870	1321		1566	2127	2510	2957	2848	2402	2252	1409	1142	
2001	1251	1373	1539	1486	2129	2362	2787	2579	2260	2305	1514	1120	1892
2002	1110	1340	1458	1440	1821	2356	2684	2729	2275	2346	1572	1233	1864
2003	1263	1367	1513	1448	1907	2483	2787	2841	2234	2311	1520	1206	1907
2004	1117	1308	1510	1523	1835	2367	2824	2575	2375	2224	1531	1376	1880
2005	1140	1419	1506	1487	1903	2304	2784	2457	2330	2192	1497	1186	1850
2006	1094	1440	1328	1457	1829	2248	2628	2457	2326	2319	1571	1228	1827
2007	1236	1363	1490	1500	2407	2475	2667	2534	2243	2172	1576	1169	1903
2008	985	1101	1459	1220	1748	2212	2346	2439	2067	2039	1527	941	1674
2009	1087	1277	1314	1293	1927	2193	2751	2469	2235	2062	1452	1153	1768
2010	1044	1220	1395	1299	1740	2163	2777	2667	2383	2227	1290	1009	1768
2011		1188	1272	1361	1683	2160	2800	2602	2354	2141	1433	1340	
2012	1135	1314	1330	1409	1878	2267	2693	2579	2193	2212	1521	1257	1816
2013	1047	1298	1445	1478	2001	2281	2659	2345	2047	2073	1553	1324	1796
2014	1223	1248	1487	1453	1991	2303	2596	2380	2145	2279	1393	1237	1811
2015	1193	1428	1540	1576	1908	2540	2920	2862	2531	2469			
Average (All Years)	*1025*	*1217*	*1379*	*1382*	*1843*	*2223*	*2630*	*2569*	*2242*	*2199*	*1434*	*1117*	
Average (Since 2010)	**1128**	**1283**	**1412**	**1429**	**1867**	**2286**	**2741**	**2573**	**2276**	**2234**	**1438**	**1233**	
Seasonal Adjustment Factor (Based off Avg. since 2010)	**1.588**	**1.532**	**1.485**	**1.479**	**1.319**	**1.166**	**1.000**	**1.061**	**1.170**	**1.185**	**1.475**	**1.550**	

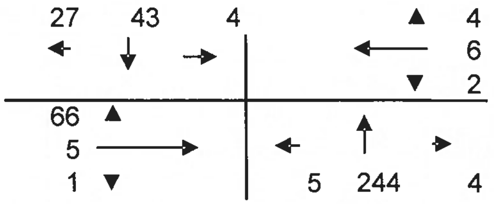
ITD ATR Counter No. 50
Craters of the Moon, Idaho on US-20
Collected 12/7/2015

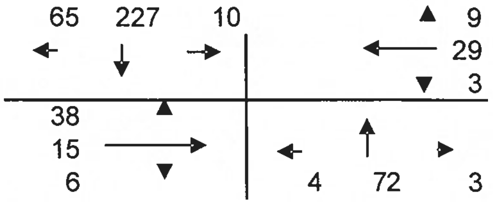
YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual 24-hr Avg
1990	472	528	753	968	1027	1608	1694	1626	1217	1013	816	469	1018
1991	508	693	818	910	1105	1489	1648	1673	1335	1040	667	608	1043
1992	553	664	780	955	1151	1466	1753	1780	1424	1088	702	441	1067
1993	309	424	704	815	1136	1471	1784	1657	1490	1099	761	580	1023
1994	551	566	867	947	1126	1516	1852	1720	1417	1142	700	640	1091
1995	536	659	771	905	1166	1558	1755	1586	1474	1166	876	672	1094
1996	466	628	827	1018	1137	1488	1698	1710	1370	1104	777	508	1061
1997	516	687	847	856	1117	1769	1795	1718	1351	1077	834	608	1098
1998	533	632	812	912	1164	1560	1736		1458	1113	789	599	1028
1999	612	570	839	830	1046	1439		1957	1468	1231	954	650	1054
2000	551	707	867	1018	1220	1512	1770	1631	1359	1203	852	663	1113
2001	599	637	869	986	1222	1506	1749	1650	1439	1223	968	603	1121
2002	560	698	688			1617	1724	1717	1434	1222	952	757	1137
2003	674	747	906	951	1214	1534	1802	1706	1403	1217	878	690	1144
2004	525	664	903	1011	1190	1504	1729	1604	1466	1210	953	736	1125
2005	532	747	895	986	1152	1432	1688	1523	1366	1118	887	669	1083
2006	577	702	815	969	1076						749	570	780
2007	545	612	742	859	1129	1355	1495	1500	1330	1120	910	613	1018
2008	473	532	764	807	1067	1286	1413	1380	1261	1047	859	538	952
2009	538	611	749	845	1092	1247	1407	1313	1325	1023	832	611	966
2010	522	652	803	878	1106	1462	1766	1661	1431	1207	769	564	1068
2011	603	641	731	889	1087	1354	1694	1544	1407	1108			1106
2012	621	669	797	927	1101	1344	1609	1569	1402	1129	870	656	1058
2013	554	656	758	945	1158	1429	1683	1567	1365	1076	871	679	1062
2014	635	649	890	974	1234	1562	1782	1619	1443	1217	826	695	1127
2015	647	791	977	1036	1259	1663	1842	1712	1522	1231			
Average (All Years)	*547*	*645*	*814*	*928*	*1139*	*1487*	*1703*	*1630*	*1398*	*1137*	*836*	*617*	
Average (Since 2010)	**597**	**676**	**826**	**942**	**1158**	**1469**	**1729**	**1612**	**1428**	**1161**	**834**	**649**	
Seasonal Adjustment Factor (Based off Avg. since 2010)	**1.655**	**1.609**	**1.522**	**1.456**	**1.331**	**1.151**	**1.000**	**1.068**	**1.174**	**1.328**	**1.518**	**1.625**	

Attachment D 2010 ITD Turning Movement Count – Raw Data

Sept 29 and Oct 5 2010

	From East			From West			From North			From South			
	WB			EB			SB			NB			
5-Oct	L	T	R	L	T	R	L	T	R	L	T	R	
7:00	0	1	0	12	0	1	2	10	2	3	48	1	80
7:15	0	0	2	16	1	0	1	12	9	0	56	1	98
7:30	1	4	0	23	1	0	0	10	9	1	81	0	130
7:45	1	1	2	15	3	0	1	11	7	1	59	2	103
	2	6	4	66	5	1	4	43	27	5	244	4	411
30-Sep													
17:15	0	1	1	10	4	2	2	57	13	0	25	1	116
17:30	2	10	4	11	2	2	2	59	20	1	14	1	128
17:45	0	6	2	9	3	1	2	59	15	2	17	1	117
18:00	1	12	2	8	6	1	4	52	17	1	16	0	120
	3	29	9	38	15	6	10	227	65	4	72	3	481





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Existing and Year 2040 No-Build Conditions Traffic and Safety Analysis Memorandum

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FINAL TECHNICAL MEMORANDUM

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

Existing and Year 2040 Base Conditions Traffic and Safety Analysis

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Date: March 28, 2016 Project #: KN 13075
To: Bruce Christensen, PE, ITD Study Manager
From: Yuri Mereszczak, PE, Andy Daleiden, PE, Brett Korporaal, and Zach Sadowski

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This memorandum summarizes the results of the existing conditions and year 2040 base conditions traffic and safety analysis performed for the intersection of US-20/SH-75 (Timmerman Junction). The analysis specifically includes the following, which serve as the main sections of this memorandum:

- Existing Transportation Facilities,
- Historical Crash Data Analysis,
- Intersection Traffic Operations Analysis, and
- Traffic Signal Warrant Analysis.

The results of these analyses inform the current and expected performance of the existing intersection configuration, two-way stop-control, as well as serve as a basis of comparison when looking at intersection alternatives in future stages of the study. Figure 1 provides a map of the study vicinity and highlights the location of the US-20/SH-75 intersection.

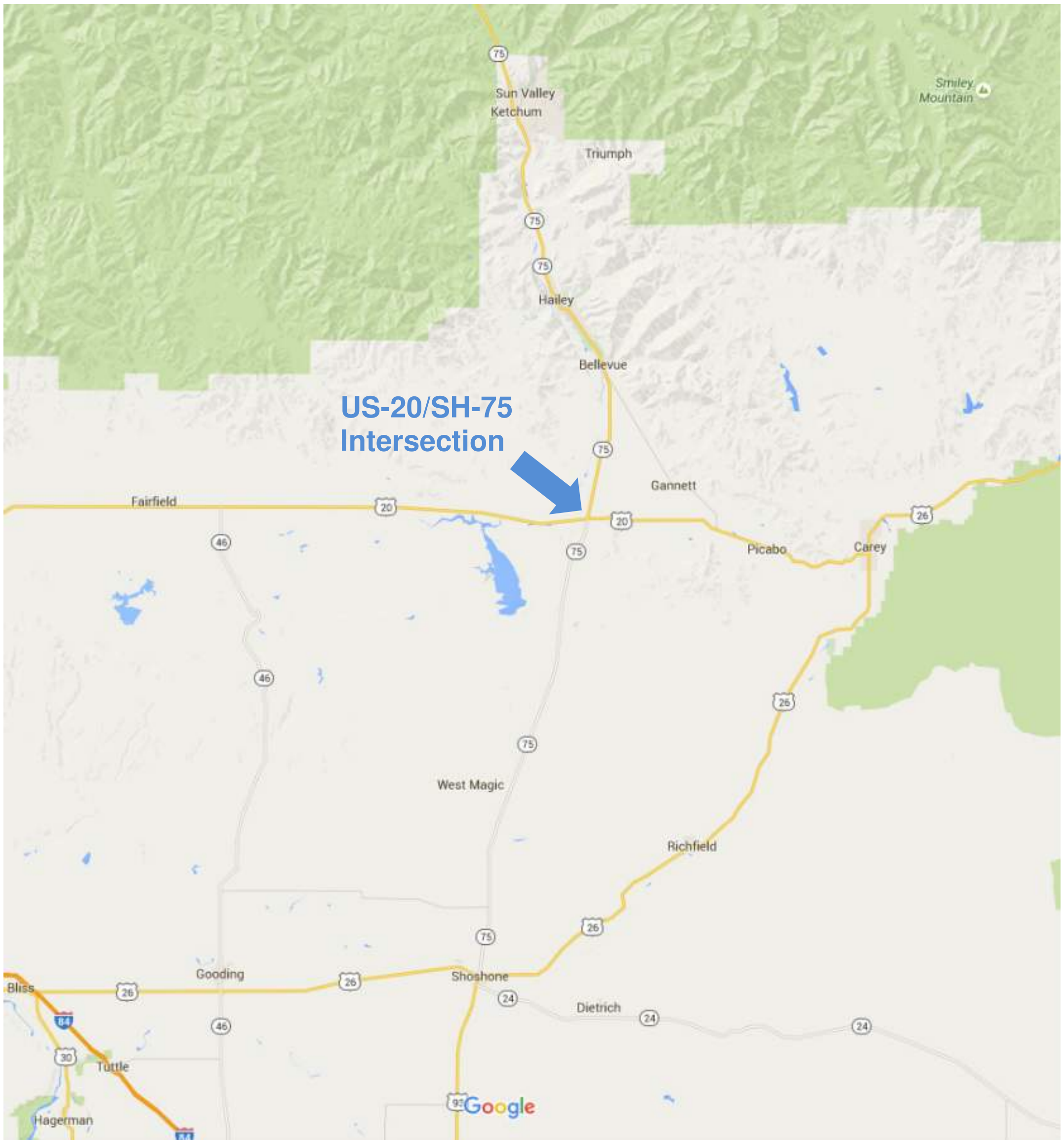


Figure 1: Study Vicinity Map

EXISTING TRANSPORTATION FACILITIES

Table 1 summarizes the characteristics of the existing US-20 and SH-75 roadways in the vicinity of the intersection, including the existing and year 2040 projected daily traffic volumes. No planned or funded capacity improvements are listed in the Idaho Transportation Department's (ITD) Idaho Transportation Investment Program (ITIP) for these roadways in the vicinity of the intersection (Reference 1).

Table 1: Existing Transportation Facilities and Roadway Designations

Roadway	Functional Classification[1]	Average Daily Traffic (ADT)[2]		Existing Truck Percentage	Number of Lanes	Posted Speed	Shoulders	Sidewalks/ Bicycle Lanes/ On-Street Parking
		Existing	Projected[3]					
SH-75 (N of US-20)	Minor Arterial	6,530	9,500	4%	3 Lanes	45 mph[4]	Paved/Gravel	No
SH-75 (S of US-20)	Minor Arterial	5,440	7,920	4%	2 Lanes	45 mph[4]	Paved/Gravel	No
US-20 (W of SH-75)	Principal Arterial (NHS Route)	1,720	2,500	8%	2 Lanes	65 mph	Paved/Gravel	No
US-20 (W of SH-75)	Principal Arterial (NHS Route)	610	880	8%	2 Lanes	65 mph	Paved/Gravel	No

[1] Information from the ITD 2015 Statewide Rural Functional Classification System Map (Reference 2). NHS Route = National Highway System Designated Route.

[2] Average Daily Traffic (ADT) volumes reported for peak season summer conditions based on a seasonal adjustment to the ADT volumes collected in December 2015.

[3] The projected traffic volumes are based on an estimated annual volume growth rate of 1.5%.

[4] Posted speed limit is 45 mph within approximately ½ mile of the intersection and 55 mph beyond ½ mile from the intersection.

It is worth noting that the SH-75: Timmerman to Ketchum Final Environmental Impact Statement (FEIS) and Record of Decision (ROD) both identify widening of the north leg of the intersection to provide a left-turn lane and right-turn pocket. The SH-75 FEIS also makes reference to the installation of a traffic signal at the US-20/SH-75 intersection under the preferred alternative; however, this treatment was not included in the SH-75 ROD.

HISTORICAL CRASH DATA ANALYSIS

The US-20/SH-75 intersection is a high crash location, ranking as #16 on ITD's High Accident Location (HAL) list for District 4 and #321 statewide. It is worth noting that crash data was obtained from ITD for a fifteen-year period from 2001-2015 for the sole purpose of determining whether or not any fatalities were reported at the intersection over the past fifteen years. While several serious injury crashes were reported, no fatalities were reported in the past fifteen years of crash data at the intersection of US-20/SH-75.

Crash data was obtained from ITD for the most recent five years at the US-20/SH-75 intersection. Table 2 summarizes the most recent five-year period from 2011-2015. *Attachment A provides the raw crash data information provided by ITD.*

Table 2: US-20/SH-75 Intersection Historical Crash Data (2011-2015)

Year	Property Damage Only	Personal Injury	Fatality	Total No. of Crashes[1]
2011	1	1	0	2
2012	0	2	0	2
2013	0	2	0	2
2014	1	1	0	2
2015[2]	0	2	0	2
Total	**2**	**8**	**0**	**10**

[1] All reported crashes were angle collisions with failure to stop/yield always cited as the contributing cause when a cause was recorded.

[2] The 2015 crash dataset was incomplete at the time of this memorandum, with crash data available through September 2015.

Key findings from the evaluation of the historical crash data shown in Table 2 are summarized below:

- Two crashes were reported at the intersection in each year within the dataset with a total of ten reported crashes within the five-year period. This intersection averages approximately 2.1 crashes per year given the year 2015 contained data only through September 2015.
- The intersection crash rate is approximately 1.2 crashes per million entering vehicles (crashes/MEV). This is based on a total of ten crashes over the five-year period and an average of 4,735 vehicles per day derived from the 24-hour counts collected near the intersection.
- No fatalities were reported among the ten recorded crashes; however, eight of the ten crashes involved at least one injury.
- All crashes were reported as angle collisions. This type of crash involves a vehicle from US-20 colliding with a vehicle from SH-75.
- The contributing cause for eight of the ten crashes was cited as failure to stop/yield while the other two crashes had no reported contributing cause.
- Nine of the ten accidents occurred during the daytime and while pavement conditions were reported as dry.

INTERSECTION TRAFFIC OPERATIONS ANALYSIS

This section addresses the following items related to the intersection traffic operations analysis:

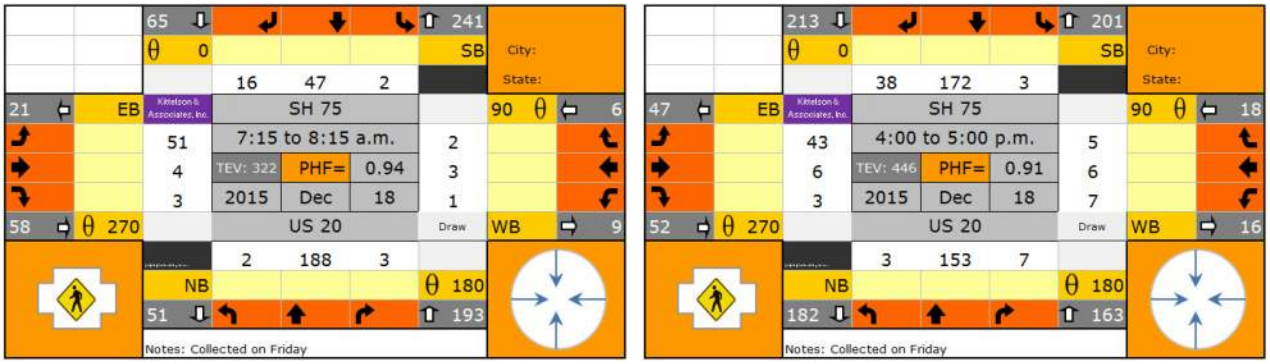
- An overview of the a.m. and p.m. peak hour volumes assumed for this study. Refer to the US-20/SH-75 Traffic Volume Development Memorandum for more detailed information on peak hour volume development for the intersection (Reference 3).
- Results of the peak season existing conditions a.m. and p.m. peak period intersection traffic operations analyses.

- Results of the peak season year 2040 base conditions a.m. and p.m. peak period intersection traffic operations analyses.

Peak Hour Volume Development

Existing Traffic Volumes

This study was initiated by ITD in December 2015 and daily and Friday peak hour traffic counts were collected in this same month. Daily traffic counts were also collected in December 2015 over a seven-day period and an analysis of the counts showed Friday as the peak day of the week. This conclusion was confirmed with ITD. Figure 2 shows the December 2015 Friday a.m. and p.m. peak hour counts. The Friday a.m. peak hour was determined to be from 7:15 a.m. to 8:15 a.m. while the Friday p.m. peak hour was determined to be from 4:00 p.m. to 5:00 p.m.



December 2015 Friday AM Peak Hour

December 2015 Friday PM Peak Hour

Figure 2: December 2015 Friday AM & PM Peak Hour Turning Movement Volumes

The Friday a.m. and p.m. peak hour counts collected in December 2015 were then adjusted to represent peak season conditions. July represents the peak volume month according to an analysis of ITD Automatic Traffic Recorder (ATR) data from the closest site on each leg of the intersection. Figure 3 shows the historical ATR ADT volumes by month for the most recent five-year period.

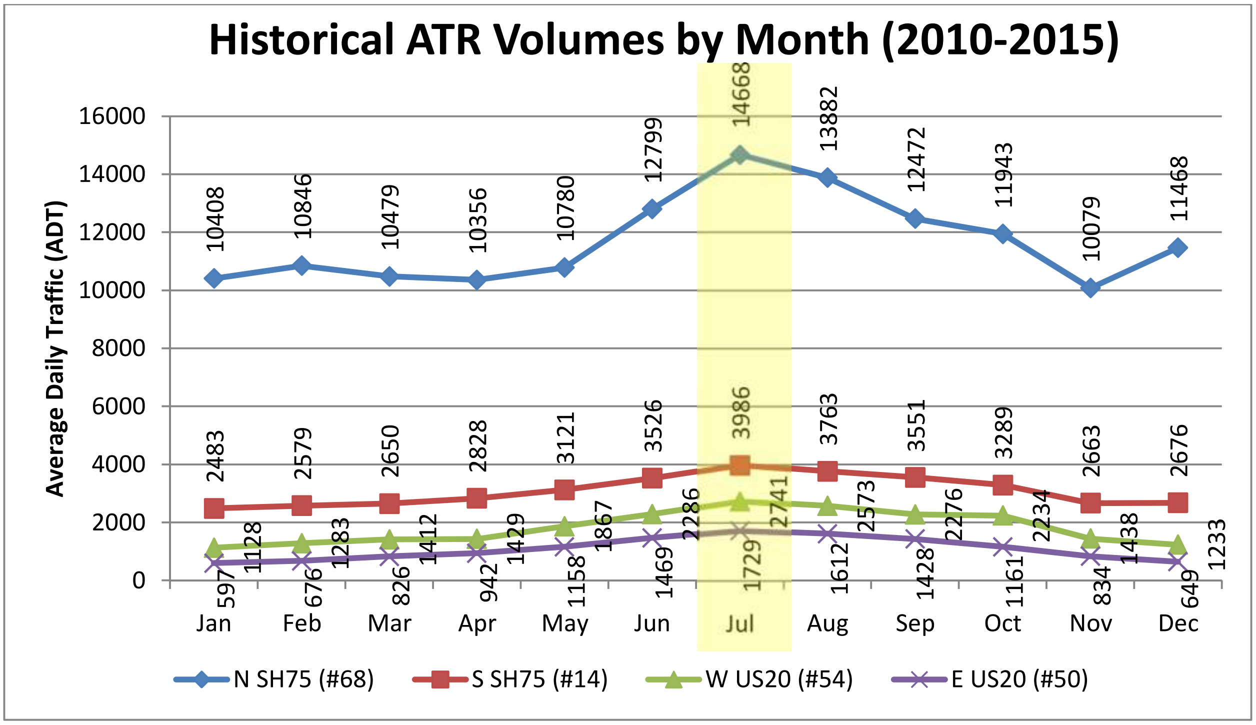
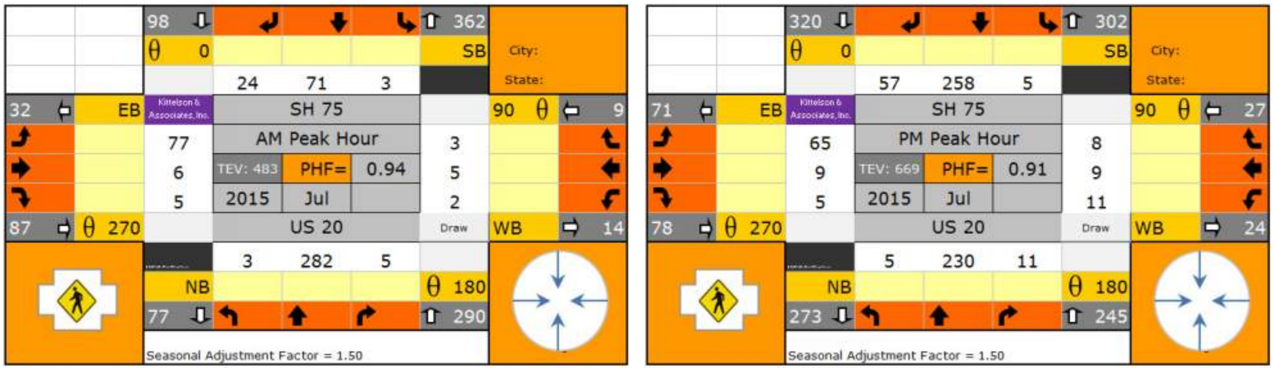


Figure 3: Historical Automated Traffic Recorder (ATR) Volumes by Month (2010-2015)

The monthly ADT volumes from Figure 2 for each of the four ATR locations were then aggregated to develop an overall seasonal adjustment factor to adjust the actual December peak hour counts to represent July peak season conditions. An overall adjustment factor of 1.50 was recommended, confirmed with ITD, and used to develop the peak season Friday a.m. and p.m. peak hour turning movement volumes shown in Figure 4.


Peak Season Existing Friday AM Peak Hour

Peak Season Existing Friday PM Peak Hour

Figure 4: Peak Season Friday AM & PM Peak Hour, Existing Turning Movement Volumes

Year 2040 Traffic Volumes

To determine peak season year 2040 traffic volumes, an average annual growth rate must be identified and applied to the peak season existing volumes shown in Figure 4. Figure 5 displays the average annual daily traffic (AADT) volumes from the four ITD ATRs from the years 1990 through 2014. Lines representing the trend of traffic growth over the historical period are displayed for each

ATR location. There are several years where no AADT is displayed at a couple of the ATR locations due to missing portions of data in those years.

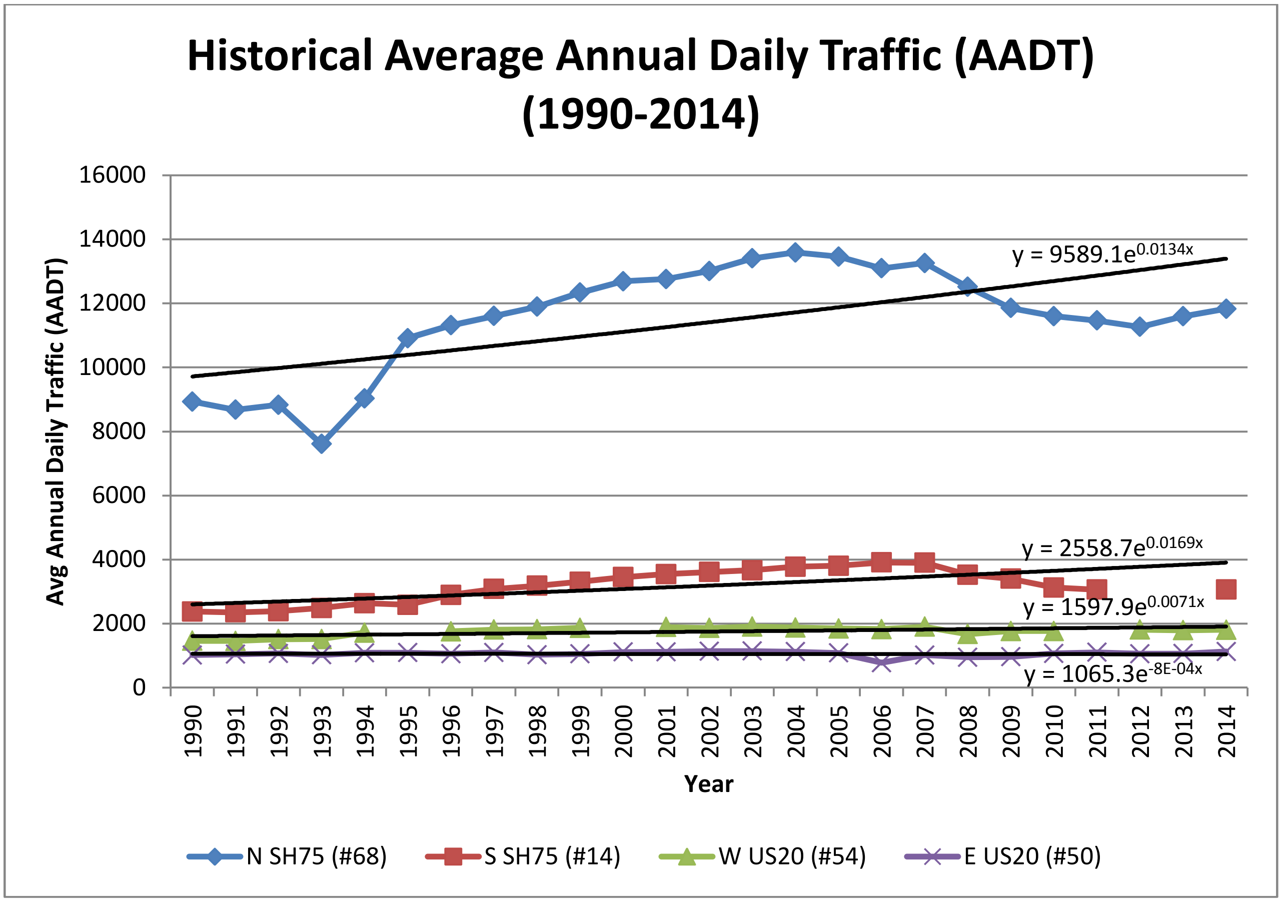
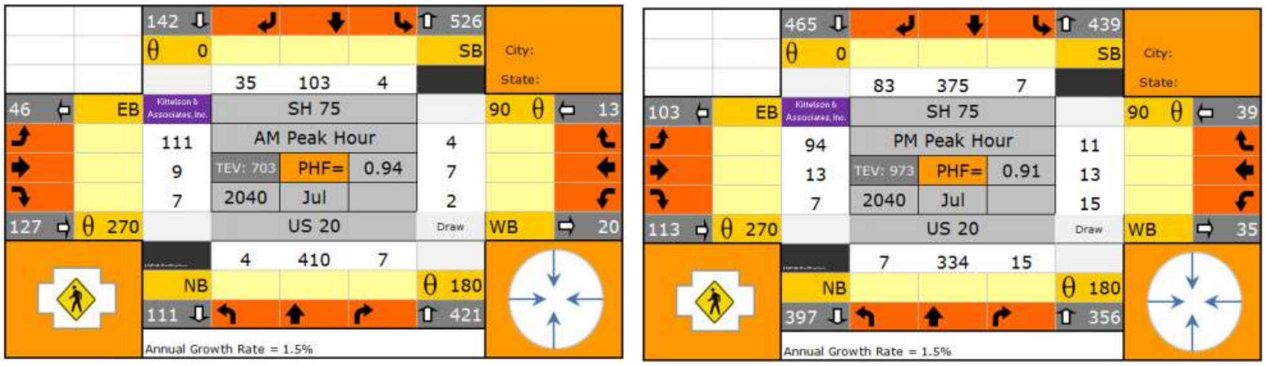


Figure 5: Historical Average Annual Daily Traffic (AADT) at ITD ATR Locations

The trendlines show that the growth in traffic on SH-75 has been at a rate of approximately 1.5% per year (1.34% at the N SH-75 location and 1.69% at the S SH-75 location), while the growth in traffic on US-20 has been at a rate of less than 1% per year (0.71% at the W US-20 location and -0.08% at the E US-20 location). The locations on SH-75 are closer to the intersection and therefore are assumed to be more representative of general growth trends in the region. Therefore, an average annual growth rate of 1.5% for the intersection was recommended, confirmed with ITD, and used to establish the year 2040 turning movement volumes shown in Figure 6.



Peak Season Year 2040 Friday AM Peak Hour

Peak Season Year 2040 Friday PM Peak Hour

Figure 6: Peak Season Friday AM & PM, Year 2040 Peak Hour Turning Movement Volumes

Intersection Traffic Operations

Using the above traffic volume information, analyses were conducted for existing and year 2040 peak season conditions according to the 2010 Highway Capacity Manual (HCM) procedures, as applied by Highway Capacity Software (HCS), for the Friday a.m. and p.m. peak hours. ITD does not have adopted level-of-service standards for signalized and unsignalized intersections. Often, a level-of-service “D” is considered acceptable at a signalized intersection and a critical movement volume-to-capacity ratio of 0.90 is typically considered acceptable at an unsignalized intersection.

ITD’s Roadway Design Manual suggests minimum levels of service for roadway segments. A level-of-service “B” is the recommended minimum for arterial roadway segments in rural, level environments (Reference 4). Given the rural nature of the US-20/SH-75 intersection, it is appropriate that the level of service for the intersection should more closely align with the recommended minimum level of service for the roadway segments. Therefore, a level-of-service “C” will be used as the overall guidance for acceptable intersection operations in this study.

Figure 7 provides an aerial view of the US-20/SH-75 intersection showing that each approach entry has a single left-through-right lane with the exception of the southbound entry, which has a left-through lane and a separate right-turn bay. All four approaches have a single egress lane. The intersection is two-way, stop-controlled with eastbound and westbound US-20 being the stop-controlled approaches and northbound and southbound SH-75 being uncontrolled approaches. This configuration was assumed for all existing and year 2040 base conditions analyses.

Figure 7: Existing Intersection Configuration

Table 3 provides a summary of the existing and year 2040 base conditions intersection operations results. *Attachment B provides the existing and year 2040 base conditions HCS level-of-service worksheets.*

Table 3: Existing and Year 2040 Base Conditions Intersection Operations Summary

Performance Measure	Peak Season Existing Conditions								Peak Season Year 2040 Base Conditions							
	Friday AM Peak Hour				Friday PM Peak Hour				Friday AM Peak Hour				Friday PM Peak Hour			
	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB
Level-of-Service (LOS)	A	A	B	B	A	A	C	B	A	A	C	B	A	A	D	C
Volume-to-Capacity Ratio (v/c)	0	0	0.16	0.02	0	0	0.20	0.06	0	0	0.31	0.03	0	0	0.44	0.13
Average Delay (sec)	0	0	13	11	0	0	16	13	0	0	17	13	0	0	27	17
Critical Movement	--	--	LT	TH	--	--	LT	LT	--	--	LT	TH	--	--	LT	LT

NB = Northbound; SB = Southbound; EB = Eastbound; WB = Westbound
LT = Left-turn; TH = Through

As shown in Table 3, all approaches at the US-20/SH-75 intersection operate at a level-of-service "C" or better under peak season existing conditions. All approaches operate at a level-of-service "C" or better under peak season year 2040 base conditions, with the exception of the eastbound US-20 approach, which operates at a level-of-service “D”. Based on these results, it is anticipated that the existing lane configurations and two-way, stop-control will provide adequate capacity through the year 2040. The levels of delay, as indicated by the level-of-service values, are generally acceptable in the year 2040, with the exception of the eastbound US-20 approach under peak conditions, as mentioned above.

TRAFFIC SIGNAL WARRANT ANALYSIS

Traffic signal warrants were evaluated for the US-20/SH-75 intersection using the Manual on Uniform Traffic Control Devices (MUTCD) warrant procedures as applied through ITD’s Traffic Signal Warrant Form 1415. As a traffic signal was identified as a potential intersection improvement in the SH-75 FEIS, evaluating traffic signal warrants as a part of this study helps identify whether or not installation of a traffic signal is justified based on quantitative data.

The signal warrant analyses were conducted for both the July peak season existing conditions in the year 2015 and July peak season conditions in the year 2040.[1] Table 4 provides a summary of the traffic signal warrant analyses.

Table 4: Traffic Signal Warrant Analysis Summary

MUTCD Warrant		Year 2015	Year 2040	Sensitivity Analysis
#1	Eight-Hour Volume	Not Met	Not Met	Not Met
#2	Four-Hour Volume	Not Met	Met	Met in Approx. Year 2030
#3	Peak Hour	Not Met	Met	Met in Approx. Year 2035
#4	Pedestrian Volume	Not Met	Not Met	--
#5	School Crossing	Not Met	Not Met	--
#6	Coordinated Signal System	Not Met	Not Met	--
#7	Crash Experience	Not Met	Not Met	--
#8	Roadway Network	Not Met	Not Met	--

A traffic signal is not warranted under July peak season existing conditions traffic volumes; however, a traffic signal is warranted under July peak season year 2040 traffic volumes. Table 4 illustrates the specific warrants met under the year 2040 conditions – the four-hour and peak hour volume warrants. The four-hour volume warrant is most appropriate for the context of the US-20/SH-75 intersection. The peak hour volume warrant is more applicable to intersections within close proximity to a facility generating large numbers of vehicles within a short period of time.

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[1] The signal warrant analyses include 100% of the right-turn volume on the minor street (US-20) given the rural environment and high speeds at the intersection. The right-turn volumes on US-20 are low relative to other movements at the intersection and therefore this assumption did not significantly influence the analysis results.

Given the fact a traffic signal is warranted under year 2040 conditions, a sensitivity analysis was conducted to identify the approximate timeframe at which the four-hour and peak hour signal warrants would be met. Assuming a 1.5% annual growth in both daily and peak hour traffic volumes at the intersection, Table 4 shows the four-hour warrant is expected to be met in approximately the year 2030 and the peak hour warrant is expected to be met in approximately the year 2035. *The ITD Form 1415 signal warrant analysis worksheets can be found in Attachment C along with charts displaying the results of the signal warrant sensitivity analysis.*

CONCLUSIONS

The following key conclusions can be drawn from the existing conditions and year 2040 base conditions traffic and safety analysis performed for the intersection of US-20/SH-75 (Timmerman Junction):

- The SH-75: Timmerman to Ketchum Final Environmental Impact Statement (FEIS) and Record of Decision (ROD) both identify widening of the north leg of the intersection to provide a left-turn lane and right-turn pocket.
- The SH-75 FEIS also makes reference to the installation of a traffic signal at the US-20/SH-75 intersection under the preferred alternative; however, this treatment was not included in the SH-75 ROD.
- Approximately 2.1 crashes per year occur at the US-20/SH-75 intersection. The intersection crash rate is approximately 1.2 crashes per million entering vehicles (crashes/MEV).
- No fatalities were reported in the past fifteen years of crash data at the intersection.
- All approaches to the US-20/SH-75 intersection operate at a level-of-service “C” or better under existing peak hour traffic volume conditions assuming the existing lane configurations and two-way, stop control.
- All approaches operate at a level-of-service “C” or better under peak season year 2040 base conditions (assuming the existing lane configurations and two-way, stop control), with the exception of the eastbound US-20 approach, which operates at a level-of-service “D”.
- A traffic signal is not warranted under current July peak season traffic volumes. A traffic signal is warranted under July peak season year 2040 traffic volumes, with the four-hour and peak hour volume warrants both being met. Based on a 1.5% annual growth in traffic at the intersection, the four-hour warrant is expected to be met in approximately the year 2030 and the peak hour warrant is expected to be met in approximately the year 2035.

REFERENCES

1. Idaho Transportation Department. *Idaho Transportation Investment Program (ITIP)*. http://itd.idaho.gov/itip/. Accessed February 23, 2016.

2. Idaho Transportation Department. *2015 Statewide Rural Functional Classification System Map.* http://itd.idaho.gov/highways/gis/StateMaps/FunctionalClassification.pdf. Accessed February 23, 2016.

3. Kittelson & Associates, Inc. “US-20/SH-75 (Timmerman Jct.) Intersection Study - Traffic Volume Development Memorandum.” February 4, 2016.

4. Idaho Transportation Department. *Roadway Design Manual*. August 2013. http://itd.idaho.gov/manuals/Manual%20Production/RoadwayDesign/Roadwaydesignprintable.htm. Accessed March 7, 2016.

Attachment A Crash Data

Accident #	Street1	Isect Distance	Direction From Intersection	Street2	Lane of Impact	Reference Street	Segment Code	Accident Date	Serial #	Agency Case #	Light	Weather	Wet/Dry	Other Surf Cond	Units	Fatalities	Injuries	Agency	Severity	UnitId	Direction	Unit Type	Action	Age	Injury	Res.	Prot-Dev	Ejection	Citation	fldAccidentYYYY	CountyName	Cityname	Image	Unit #	Person	Seating	Isect Related	Milepost	Event	Location	Contrib Circ	Sex	Number Of Injuries	Work Zone Related	State Highway	Latitude	Longitude	View Accident Image
1	SH 75			US 20	50		002230	8/15/2015 00:25	15C404693	1508-0037	Dark, No Street Lights	Clear	Dry	None	2	0	1	Blaine County Sheriff (Hailey)	C Injury Accident	16202576	W	Car	Going Straight	57	Possible	Idaho	Shoulder Belt Only	Not Ejected	DRIVINGÂ Â Â Stop for stop sign	2015	Blaine	Bellevue	INCOMPLETE	1	6	Y	Y	102.1240	Angle	Nonjunction	Failed to Obey Stop Sign	M	1	N	State Highway	43.33210424	-114.27885325	Select
	SH 75			US 20	50		002230	8/15/2015 00:25	15C404693	1508-0037	Dark, No Street Lights	Clear	Dry	None	2	0	1	Blaine County Sheriff (Hailey)	C Injury Accident	16202577	S	Van/Bus - 9 to 15 seats	Going Straight	50	None Evident	Idaho	Shoulder Belt Only	Not Ejected	Not Cited	2015	Blaine	Bellevue	INCOMPLETE	2	6	Y	Y	102.1240	Angle	In Intersection		M	1	N	State Highway	43.33210424	-114.27885325	Select
2	US 20			SH 75	50		002070	6/1/2015 17:11	15C399095	bcso1506-000	Day	Clear	Dry	None	2	0	1	Blaine County Sheriff (Hailey)	C Injury Accident	16007196	W	SUV/Crossover	Going Straight	18	None Evident	Idaho	Shoulder and Lap	Not Ejected	DRIVINGÂ Â Â Stop for stop sign	2015	Blaine	Bellevue	INCOMPLETE	1	4	Y	Y	178.0950	Angle	In Intersection	Failed to Yield	M	1	N	U.S. Highway	43.33199300	-114.27879300	Select
	US 20			SH 75	50		002070	6/1/2015 17:11	15C399095	bcso1506-000	Day	Clear	Dry	None	2	0	1	Blaine County Sheriff (Hailey)	C Injury Accident	16007197	S	Pickup	Going Straight	48	Possible	Idaho	Shoulder and Lap	Not Ejected	Not Cited	2015	Blaine	Bellevue	INCOMPLETE	2	4	Y	Y	178.0950	Angle	In Intersection	Other	M	1	N	U.S. Highway	43.33199300	-114.27879300	Select
3	SH 75			US 20	50		002230	8/7/2014 12:42	14C383436	1408-0014	Day	Rain	Wet	None	3	0	3	Blaine County Sheriff (Hailey)	C Injury Accident	15469574	S	SUV/Crossover	Turning Right	46	Possible	Idaho	Shoulder Belt Only	Not Ejected	Not Cited	2014	Blaine	Bellevue	COMPLETE	1	3	Y	Y	102.1240	Angle	Nonjunction		F	3	N	State Highway	43.33163600	-114.27898200	Select
	SH 75			US 20	50		002230	8/7/2014 12:42	14C383436	1408-0014	Day	Rain	Wet	None	3	0	3	Blaine County Sheriff (Hailey)	C Injury Accident	15469575	W	SUV/Crossover	Turning Left	29	Possible	California	Shoulder and Lap	Not Ejected	DRIVINGÂ Â Â Stop for stop sign	2014	Blaine	Bellevue	COMPLETE	2	3	Y	Y	102.1240	Head-On Turning	In Intersection	Failed to Yield	M	3	N	State Highway	43.33163600	-114.27898200	Select
	SH 75			US 20	50		002230	8/7/2014 12:42	14C383436	1408-0014	Day	Rain	Wet	None	3	0	3	Blaine County Sheriff (Hailey)	C Injury Accident	15469576	N	Truck - 3+ Axle	Going Straight	33	Possible	Utah	Shoulder and Lap	Not Ejected	Not Cited	2014	Blaine	Bellevue	COMPLETE	3	3	Y	Y	102.1240	Head-On Turning	Nonjunction		M	3	N	State Highway	43.33163600	-114.27898200	Select
4	SH 75			US 20	50		002230	4/13/2014 13:48	14C369374	1404-0021	Day	Clear	Dry	None	2	0	0	Blaine County Sheriff (Hailey)	Property Dmg Report	14981373	W	Car	Going Straight	22	None Evident	Washington	Shoulder and Lap	Not Ejected	DRIVINGÂ Â Â Stop for stop sign	2014	Blaine	Bellevue	COMPLETE	1	2	Y	Y	102.1240	Angle	Intersection Related	Failed to Yield	M	0	N	State Highway	43.33163600	-114.27898200	Select
	SH 75			US 20	50		002230	4/13/2014 13:48	14C369374	1404-0021	Day	Clear	Dry	None	2	0	0	Blaine County Sheriff (Hailey)	Property Dmg Report	14981374	S	Car	Going Straight	25	None Evident	Idaho	Shoulder and Lap	Not Ejected	Not Cited	2014	Blaine	Bellevue	COMPLETE	2	2	Y	Y	102.1240	Angle	In Intersection		M	0	N	State Highway	43.33163600	-114.27898200	Select
5	SH 75			US 20	50		002230	8/19/2013 11:07	13C351313	T13000751	Day	Clear	Dry	None	2	0	1	Idaho State Police Dist 4 Twin Falls	C Injury Accident	14353261	W	Car	Starting in Traffic	72	None Evident	Illinois	Shoulder and Lap	Not Ejected	DRIVINGÂ Â Â Stop for stop sign	2013	Blaine	Bellevue	COMPLETE	1	4	Y	Y	102.1240	Angle	In Intersection	Failed to Obey Stop Sign	M	1	N	State Highway	43.33197938	-114.27891763	Select
	SH 75			US 20	50		002230	8/19/2013 11:07	13C351313	T13000751	Day	Clear	Dry	None	2	0	1	Idaho State Police Dist 4 Twin Falls	C Injury Accident	14353262	S	Car	Going Straight	75	None Evident	Nevada	Shoulder and Lap	Not Ejected	Not Cited	2013	Blaine	Bellevue	COMPLETE	2	4	Y	Y	102.1240	Angle	In Intersection		M	1	N	State Highway	43.33197938	-114.27891763	Select
6	SH 75			US 20	50		002230	6/10/2013 16:48	13C349089	1306-0028	Day	Clear	Dry	None	2	0	7	Blaine County Sheriff (Hailey)	A Injury Accident	14276758	E	Car	Going Straight	68	None Evident	California	Shoulder and Lap	Not Ejected	Not Cited	2013	Blaine	Bellevue	COMPLETE	1	9	Y	Y	102.1240	Angle	In Intersection	Failed to Yield	M	7	N	State Highway	43.33163600	-114.27898200	Select
	SH 75			US 20	50		002230	6/10/2013 16:48	13C349089	1306-0028	Day	Clear	Dry	None	2	0	7	Blaine County Sheriff (Hailey)	A Injury Accident	14276759	S	Van/Bus - 9 to 15 seats	Going Straight	59	Possible	Idaho	Shoulder and Lap	Not Ejected	Not Cited	2013	Blaine	Bellevue	COMPLETE	2	9	Y	Y	102.1240	Angle	In Intersection		M	7	N	State Highway	43.33163600	-114.27898200	Select
7	SH 75			US 20	50		002230	7/22/2011 12:39	11C328643	BCSO1107-005	Day	Clear	Dry	None	2	0	0	Blaine County Sheriff (Hailey)	Property Dmg Report	13569290	E	Car	Turning Left	31	None Evident	Idaho	Shoulder and Lap	Not Ejected	DRIVINGÂ Â Â Observe & obey traffic control lig	2011	Blaine	Bellevue	COMPLETE	1	3	Y	Y	102.1240	Angle Turning	In Intersection	Failed to Obey Signal	M	0	N	State Highway	43.33199109	-114.27891226	Select
	SH 75			US 20	50		002230	7/22/2011 12:39	11C328643	BCSO1107-005	Day	Clear	Dry	None	2	0	0	Blaine County Sheriff (Hailey)	Property Dmg Report	13569291	S	Pickup	Going Straight	50	None Evident	Idaho	Shoulder and Lap	Not Ejected	Not Cited	2011	Blaine	Bellevue	COMPLETE	2	3	Y	Y	102.1240	Angle Turning	In Intersection		M	0	N	State Highway	43.33199109	-114.27891226	Select
8	SH 75			US 20	50		002230	7/28/2012 19:19	12C323159	BCSO1207-005	Day	Clear	Dry	None	2	0	5	Blaine County Sheriff (Hailey)	B Injury Accident	13374247	E	SUV/Crossover	Going Straight	46	Possible	Idaho	Shoulder and Lap	Not Ejected	DRIVINGÂ Â Â Stop for stop sign	2012	Blaine	Bellevue	COMPLETE	1	5	Y	Y	102.1240	Overturn	In Intersection	Failed to Obey Stop Sign	M	5	N	State Highway	43.33163600	-114.27898200	Select
	SH 75			US 20	50		002230	7/28/2012 19:19	12C323159	BCSO1207-005	Day	Clear	Dry	None	2	0	5	Blaine County Sheriff (Hailey)	B Injury Accident	13374248	N	SUV/Crossover	Going Straight	51	Non-Incapacitating	Idaho	Shoulder and Lap	Not Ejected	Not Cited	2012	Blaine	Bellevue	COMPLETE	2	5	Y	Y	102.1240	Angle	In Intersection		F	5	N	State Highway	43.33163600	-114.27898200	Select
9	SH 75			US 20	50		002230	4/13/2012 13:42	12C317178	BCSO1204-003	Day	Clear	Dry	None	2	0	3	Blaine County Sheriff (Hailey)	B Injury Accident	13174365	N	Pickup	Going Straight	51	Possible	Idaho	Shoulder and Lap	Not Ejected	Not Cited	2012	Blaine	Bellevue	COMPLETE	1	3	Y	Y	102.1240	Angle	In Intersection		M	3	N	State Highway	43.33163600	-114.27898200	Select
	SH 75			US 20	50		002230	4/13/2012 13:42	12C317178	BCSO1204-003	Day	Clear	Dry	None	2	0	3	Blaine County Sheriff (Hailey)	B Injury Accident	13174366	E	SUV/Crossover	Going Straight	53	Non-Incapacitating	California	Shoulder and Lap	Not Ejected	Not Cited	2012	Blaine	Bellevue	COMPLETE	2	3	Y	Y	102.1240	Angle	In Intersection	Failed to Yield	F	3	N	State Highway	43.33163600	-114.27898200	Select
10	SH 75			US 20	50		002230	9/1/2011 15:48	11C301380	T11001054	Day	Clear	Dry	None	2	0	1	Idaho State Police Dist 4 Twin Falls	B Injury Accident	12671536	E	Car	Turning Left	65	None Evident	Hawaii	Shoulder and Lap	Not Ejected	DRIVINGÂ Â Â Stop for stop sign	2011	Blaine	Bellevue	COMPLETE	1	3	Y	Y	102.1240	Angle	In Intersection	Failed to Obey Stop Sign	M	1	N	State Highway	43.33163600	-114.27898200	Select
	SH 75			US 20	50		002230	9/1/2011 15:48	11C301380	T11001054	Day	Clear	Dry	None	2	0	1	Idaho State Police Dist 4 Twin Falls	B Injury Accident	12671537	N	Pickup	Going Straight	52	None Evident	Idaho	Shoulder and Lap	Not Ejected		2011	Blaine	Bellevue	COMPLETE	2	3	Y	Y	102.1240	Angle	In Intersection		F	1	N	State Highway	43.33163600	-114.27898200	Select

Attachment B Existing and Year 2040 Base Conditions Level-of-Service Worksheets

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                 HCS+: Unsignalized Intersections Release 5.6

_______________________TWO-WAY STOP CONTROL SUMMARY____________________________

Analyst:              ZMS
Agency/Co.:           Kittelson & Associates, Inc.
Date Performed:       2/2/2016
Analysis Time Period: AM
Intersection:         US 20 & SH 75
Jurisdiction:         ITD
Units: U. S. Customary
Analysis Year:        2015
Project ID:
East/West Street:     US 20
North/South Street:   SH 75
Intersection Orientation: NS                 Study period (hrs):  0.25

______________________Vehicle Volumes and Adjustments__________________________
Major Street:  Approach        Northbound             Southbound
               Movement     1      2      3     |  4      5      6
                            L      T      R     |  L      T      R
_______________________________________________________________________________
Volume                      3      282    5        3      71     16
Peak-Hour Factor, PHF       0.94   0.94   0.94     0.94   0.94   0.94
Hourly Flow Rate, HFR       3      300    5        3      75     17
Percent Heavy Vehicles      3      --     --       3      --     --
Median Type/Storage         Undivided             /
RT Channelized?                                               Yes
Lanes                          0   1    0             0   1    1
Configuration                   LTR                    LT      R
Upstream Signal?                   No                     No
_______________________________________________________________________________
Minor Street:  Approach        Westbound              Eastbound
               Movement     7      8      9     |  10     11     12
                            L      T      R     |  L      T      R
_______________________________________________________________________________
Volume                      2      5      3        77     6      5
Peak Hour Factor, PHF       0.94   0.94   0.94     0.94   0.94   0.94
Hourly Flow Rate, HFR       2      5      3        81     6      5
Percent Heavy Vehicles      3      3      3        3      3      3
Percent Grade (%)                  0                      0
Flared Approach:  Exists?/Storage         No     /              No     /
Lanes                          0   1    0             0   1    0
Configuration                      LTR                    LTR
_______________________________________________________________________________

__________________Delay, Queue Length, and Level of Service____________________
Approach            NB     SB        Westbound             Eastbound
Movement            1      4   |  7      8      9    |  10     11     12
Lane Config         LTR    LT  |         LTR         |         LTR
_______________________________________________________________________________
v (vph)             3      3             10                    92
C(m) (vph)          1518   1250          589                   569
v/c                 0.00   0.00          0.02                  0.16
95% queue length    0.01   0.01          0.05                  0.57
Control Delay       7.4    7.9           11.2                  12.5
LOS                  A      A             B                     B
Approach Delay                           11.2                  12.5
Approach LOS                              B                     B
_______________________________________________________________________________
```

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                  HCS+: Unsignalized Intersections Release 5.6





Phone:                                        Fax:
E-Mail:

______________________TWO-WAY STOP CONTROL(TWSC) ANALYSIS_____________________

Analyst:              ZMS
Agency/Co.:           Kittelson & Associates, Inc.
Date Performed:       2/2/2016
Analysis Time Period: AM
Intersection:         US 20 & SH 75
Jurisdiction:         ITD
Units: U. S. Customary
Analysis Year:        2015
Project ID:
East/West Street:     US 20
North/South Street:   SH 75
Intersection Orientation: NS                 Study period (hrs):  0.25

________________________Vehicle Volumes and Adjustments_______________________
Major Street Movements      1      2      3      4      5      6
                            L      T      R      L      T      R

______________________________________________________________________________
Volume                     3      282    5      3      71     16
Peak-Hour Factor, PHF      0.94   0.94   0.94   0.94   0.94   0.94
Peak-15 Minute Volume      1      75     1      1      19     4
Hourly Flow Rate, HFR      3      300    5      3      75     17
Percent Heavy Vehicles     3      --     --     3      --     --
Median Type/Storage         Undivided             /
RT Channelized?                                               Yes
Lanes                         0   1    0           0   1    1
Configuration                  LTR                  LT     R
Upstream Signal?                  No                   No
______________________________________________________________________________
Minor Street Movements      7      8      9      10     11     12
                            L      T      R      L      T      R

______________________________________________________________________________
Volume                     2      5      3      77     6      5
Peak Hour Factor, PHF      0.94   0.94   0.94   0.94   0.94   0.94
Peak-15 Minute Volume      1      1      1      20     2      1
Hourly Flow Rate, HFR      2      5      3      81     6      5
Percent Heavy Vehicles     3      3      3      3      3      3
Percent Grade (%)                 0                    0
Flared Approach:  Exists?/Storage         No     /              No     /
RT Channelized?
Lanes                         0   1    0           0   1    0
Configuration                     LTR                  LTR
______________________________________________________________________________


______________________Pedestrian Volumes and Adjustments______________________
Movements                    13     14     15     16
______________________________________________________________________________
Flow (ped/hr)                 0      0      0      0
```

```
Lane Width (ft)              12.0   12.0   12.0   12.0
Walking Speed (ft/sec)       4.0    4.0    4.0    4.0
Percent Blockage             0      0      0      0
______________________________________________________________________________

_____________________________Upstream Signal Data______________________________
                 Prog.    Sat   Arrival   Green  Cycle   Prog.   Distance
                 Flow     Flow   Type     Time   Length  Speed   to Signal
                 vph      vph             sec     sec     mph      feet
______________________________________________________________________________
S2  Left-Turn
    Through
S5  Left-Turn
    Through
______________________________________________________________________________

Worksheet 3-Data for Computing Effect of Delay to Major Street Vehicles
______________________________________________________________________________
                                           Movement 2     Movement 5
______________________________________________________________________________
Shared ln volume, major th vehicles:         300            75
Shared ln volume, major rt vehicles:         5              0
Sat flow rate, major th vehicles:            1700           1700
Sat flow rate, major rt vehicles:            1700           1700
Number of major street through lanes:        1              1
______________________________________________________________________________

Worksheet 4-Critical Gap and Follow-up Time Calculation
______________________________________________________________________________
Critical Gap Calculation
Movement          1      4      7      8      9     10     11     12
                  L      L      L      T      R      L      T      R
______________________________________________________________________________
t(c,base)        4.1    4.1    7.1    6.5    6.2    7.1    6.5    6.2
t(c,hv)          1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00
P(hv)            3      3      3      3      3      3      3      3
t(c,g)                         0.20   0.20   0.10   0.20   0.20   0.10
Percent Grade                  0.00   0.00   0.00   0.00   0.00   0.00
t(3,lt)          0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00
t(c,T):  1-stage 0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00
         2-stage 0.00   0.00   1.00   1.00   0.00   1.00   1.00   0.00
t(c)     1-stage 4.1    4.1    7.1    6.5    6.2    7.1    6.5    6.2
         2-stage
______________________________________________________________________________
Follow-Up Time Calculations
Movement          1      4      7      8      9     10     11     12
                  L      L      L      T      R      L      T      R
______________________________________________________________________________
t(f,base)        2.20   2.20   3.50   4.00   3.30   3.50   4.00   3.30
t(f,HV)          0.90   0.90   0.90   0.90   0.90   0.90   0.90   0.90
P(HV)            3      3      3      3      3      3      3      3
t(f)             2.2    2.2    3.5    4.0    3.3    3.5    4.0    3.3
______________________________________________________________________________

Worksheet 5-Effect of Upstream Signals
______________________________________________________________________________
Computation 1-Queue Clearance Time at Upstream Signal
                                            Movement 2        Movement 5
                                         V(t)   V(l,prot)  V(t)   V(l,prot)
______________________________________________________________________________
V prog
```

```
Total Saturation Flow Rate, s (vph)
Arrival Type
Effective Green, g (sec)
Cycle Length, C (sec)
Rp (from Exhibit 16-11)
Proportion vehicles arriving on green P
g(q1)
g(q2)
g(q)
______________________________________________________________________________
Computation 2-Proportion of TWSC Intersection Time  blocked
                                            Movement 2        Movement 5
                                         V(t)   V(l,prot)  V(t)   V(l,prot)
______________________________________________________________________________
alpha
beta
Travel time, t(a) (sec)
Smoothing Factor, F
Proportion of conflicting flow, f
Max platooned flow, V(c,max)
Min platooned flow, V(c,min)
Duration of blocked period, t(p)
Proportion time blocked, p                    0.000             0.000
______________________________________________________________________________
Computation 3-Platoon Event Periods     Result
______________________________________________________________________________
p(2)                                    0.000
p(5)                                    0.000
p(dom)
p(subo)
Constrained or unconstrained?
______________________________________________________________________________
Proportion
unblocked                  (1)             (2)              (3)
for minor              Single-stage         Two-Stage Process
movements, p(x)          Process        Stage I         Stage II
______________________________________________________________________________
p(1)
p(4)
p(7)
p(8)
p(9)
p(10)
p(11)
p(12)
______________________________________________________________________________
Computation 4 and 5
Single-Stage Process
Movement                1      4      7      8      9     10     11     12
                        L      L      L      T      R      L      T      R
______________________________________________________________________________
V c,x                  75     305    403    389    302    393    392    75
s
Px
V c,u,x
______________________________________________________________________________
C r,x
C plat,x
______________________________________________________________________________
Two-Stage Process
                     7               8              10              11
```

```
              Stage1  Stage2  Stage1  Stage2  Stage1  Stage2  Stage1  Stage2
------------------------------------------------------------------------------
V(c,x)
s                     1500            1500            1500            1500
P(x)
V(c,u,x)
------------------------------------------------------------------------------
C(r,x)
C(plat,x)
------------------------------------------------------------------------------

Worksheet 6-Impedance and Capacity Equations
------------------------------------------------------------------------------
Step 1: RT from Minor St.                          9               12
------------------------------------------------------------------------------
Conflicting Flows                               302              75
Potential Capacity                              735              984
Pedestrian Impedance Factor                     1.00             1.00
Movement Capacity                               735              984
Probability of Queue free St.                   1.00             0.99
------------------------------------------------------------------------------
Step 2: LT from Major St.                          4                1
------------------------------------------------------------------------------
Conflicting Flows                               305              75
Potential Capacity                              1250             1518
Pedestrian Impedance Factor                     1.00             1.00
Movement Capacity                               1250             1518
Probability of Queue free St.                   1.00             1.00
Maj L-Shared Prob Q free St.                    1.00             1.00
------------------------------------------------------------------------------
Step 3: TH from Minor St.                          8               11
------------------------------------------------------------------------------
Conflicting Flows                               389              392
Potential Capacity                              544              542
Pedestrian Impedance Factor                     1.00             1.00
Cap. Adj. factor due to Impeding mvmnt          1.00             1.00
Movement Capacity                               541              539
Probability of Queue free St.                   0.99             0.99
------------------------------------------------------------------------------
Step 4: LT from Minor St.                          7               10
------------------------------------------------------------------------------
Conflicting Flows                               403              393
Potential Capacity                              556              565
Pedestrian Impedance Factor                     1.00             1.00
Maj. L, Min T Impedance factor                  0.98             0.99
Maj. L, Min T Adj. Imp Factor.                  0.99             0.99
Cap. Adj. factor due to Impeding mvmnt          0.98             0.99
Movement Capacity                               546              557
------------------------------------------------------------------------------

Worksheet 7-Computation of the Effect of Two-stage Gap Acceptance
------------------------------------------------------------------------------
Step 3: TH from Minor St.                          8               11
------------------------------------------------------------------------------
Part 1 - First Stage
Conflicting Flows
Potential Capacity
Pedestrian Impedance Factor
Cap. Adj. factor due to Impeding mvmnt
Movement Capacity
Probability of Queue free St.
```

```
_______________________________________________________________________________
Part 2 - Second Stage
Conflicting Flows
Potential Capacity
Pedestrian Impedance Factor
Cap. Adj. factor due to Impeding mvmnt
Movement Capacity
_______________________________________________________________________________
Part 3 - Single Stage
Conflicting Flows                               389              392
Potential Capacity                              544              542
Pedestrian Impedance Factor                     1.00             1.00
Cap. Adj. factor due to Impeding mvmnt          1.00             1.00
Movement Capacity                               541              539
_______________________________________________________________________________
Result for 2 stage process:
a
y
C t                                             541              539
Probability of Queue free St.                   0.99             0.99
_______________________________________________________________________________
Step 4: LT from Minor St.                          7               10
_______________________________________________________________________________
Part 1 - First Stage
Conflicting Flows
Potential Capacity
Pedestrian Impedance Factor
Cap. Adj. factor due to Impeding mvmnt
Movement Capacity
_______________________________________________________________________________
Part 2 - Second Stage
Conflicting Flows
Potential Capacity
Pedestrian Impedance Factor
Cap. Adj. factor due to Impeding mvmnt
Movement Capacity
_______________________________________________________________________________
Part 3 - Single Stage
Conflicting Flows                               403              393
Potential Capacity                              556              565
Pedestrian Impedance Factor                     1.00             1.00
Maj. L, Min T Impedance factor                  0.98             0.99
Maj. L, Min T Adj. Imp Factor.                  0.99             0.99
Cap. Adj. factor due to Impeding mvmnt          0.98             0.99
Movement Capacity                               546              557
_______________________________________________________________________________
Results for Two-stage process:
a
y
C t                                             546              557
_______________________________________________________________________________

Worksheet 8-Shared Lane Calculations
_______________________________________________________________________________
Movement                              7      8      9     10     11     12
                                      L      T      R      L      T      R
_______________________________________________________________________________
Volume (vph)                         2      5      3      81     6      5
Movement Capacity (vph)              546    541    735    557    539    984
Shared Lane Capacity (vph)                  589                  569
_______________________________________________________________________________
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Worksheet 9-Computation of Effect of Flared Minor Street Approaches

Movement                              7      8      9     10     11     12
                                      L      T      R      L       T      R

C sep                                546    541    735    557    539    984
Volume                               2      5      3      81     6      5
Delay
Q sep
Q sep +1
round (Qsep +1)

n max
C sh                                        589                  569
SUM C sep
n
C act
```

```
Worksheet 10-Delay, Queue Length, and Level of Service

Movement             1      4      7      8      9      10     11     12
Lane Config          LTR   LT             LTR                   LTR

v (vph)             3      3             10                    92
C(m) (vph)          1518   1250          589                   569
v/c                 0.00   0.00          0.02                  0.16
95% queue length    0.01   0.01          0.05                  0.57
Control Delay       7.4    7.9           11.2                  12.5
LOS                  A      A             B                     B
Approach Delay                           11.2                  12.5
Approach LOS                              B                     B
```

```
Worksheet 11-Shared Major LT Impedance and Delay

                                                 Movement 2     Movement 5

p(oj)                                               1.00           1.00
v(il), Volume for stream 2 or 5                     300            75
v(i2), Volume for stream 3 or 6                     5              0
s(il), Saturation flow rate for stream 2 or 5       1700           1700
s(i2), Saturation flow rate for stream 3 or 6       1700           1700
P*(oj)                                              1.00           1.00
d(M,LT), Delay for stream 1 or 4                    7.4            7.9
N, Number of major street through lanes             1              1
d(rank,1) Delay for stream 2 or 5                   0.0            0.0
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                 HCS+: Unsignalized Intersections Release 5.6

_______________________TWO-WAY STOP CONTROL SUMMARY___________________________

Analyst:              ZMS
Agency/Co.:           Kittelson & Associates, Inc.
Date Performed:       2/2/2016
Analysis Time Period: PM
Intersection:         US 20 & SH 75
Jurisdiction:         ITD
Units: U. S. Customary
Analysis Year:        2015
Project ID:
East/West Street:     US 20
North/South Street:   SH 75
Intersection Orientation: NS                 Study period (hrs):  0.25

______________________Vehicle Volumes and Adjustments_________________________
Major Street:  Approach        Northbound             Southbound
               Movement     1      2      3     |  4      5      6
                            L      T      R     |  L      T      R
______________________________________________________________________________
Volume                      5      230    11       5      258    57
Peak-Hour Factor, PHF       0.91   0.91   0.91     0.91   0.91   0.91
Hourly Flow Rate, HFR       5      252    12       5      283    62
Percent Heavy Vehicles      3      --     --       3      --     --
Median Type/Storage         Undivided            /
RT Channelized?                                               Yes
Lanes                          0   1    0             0   1    1
Configuration                   LTR                    LT     R
Upstream Signal?                   No                     No
______________________________________________________________________________
Minor Street:  Approach        Westbound              Eastbound
               Movement     7      8      9     |  10     11     12
                            L      T      R     |  L      T      R
______________________________________________________________________________
Volume                      11     9      8        65     9      5
Peak Hour Factor, PHF       0.91   0.91   0.91     0.91   0.91   0.91
Hourly Flow Rate, HFR       12     9      8        71     9      5
Percent Heavy Vehicles      3      3      3        3      3      3
Percent Grade (%)                  0                      0
Flared Approach:  Exists?/Storage         No     /              No     /
Lanes                          0   1    0             0   1    0
Configuration                      LTR                    LTR
______________________________________________________________________________

__________________Delay, Queue Length, and Level of Service___________________
Approach            NB     SB       Westbound             Eastbound
Movement            1      4   |  7      8      9    |  10     11     12
Lane Config         LTR    LT  |         LTR         |         LTR
______________________________________________________________________________
v (vph)             5      5             29                    85
C(m) (vph)          1274   1294          474                   429
v/c                 0.00   0.00          0.06                  0.20
95% queue length    0.01   0.01          0.19                  0.73
Control Delay       7.8    7.8           13.1                  15.5
LOS                  A      A             B                     C
Approach Delay                           13.1                  15.5
Approach LOS                              B                     C
______________________________________________________________________________
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                  HCS+: Unsignalized Intersections Release 5.6



Phone:                                        Fax:
E-Mail:

______________________TWO-WAY STOP CONTROL(TWSC) ANALYSIS_____________________

Analyst:              ZMS
Agency/Co.:           Kittelson & Associates, Inc.
Date Performed:       2/2/2016
Analysis Time Period: PM
Intersection:         US 20 & SH 75
Jurisdiction:         ITD
Units: U. S. Customary
Analysis Year:        2015
Project ID:
East/West Street:     US 20
North/South Street:   SH 75
Intersection Orientation: NS                 Study period (hrs):  0.25

________________________Vehicle Volumes and Adjustments_______________________
Major Street Movements      1      2      3      4      5      6
                            L      T      R      L      T      R
______________________________________________________________________________
Volume                     5      230    11     5      258    57
Peak-Hour Factor, PHF      0.91   0.91   0.91   0.91   0.91   0.91
Peak-15 Minute Volume      1      63     3      1      71     16
Hourly Flow Rate, HFR      5      252    12     5      283    62
Percent Heavy Vehicles     3      --     --     3      --     --
Median Type/Storage         Undivided             /
RT Channelized?                                               Yes
Lanes                         0   1    0           0   1    1
Configuration                  LTR                  LT     R
Upstream Signal?                  No                   No
______________________________________________________________________________
Minor Street Movements      7      8      9     10     11     12
                            L      T      R      L      T      R
______________________________________________________________________________
Volume                     11     9      8      65     9      5
Peak Hour Factor, PHF      0.91   0.91   0.91   0.91   0.91   0.91
Peak-15 Minute Volume      3      2      2      18     2      1
Hourly Flow Rate, HFR      12     9      8      71     9      5
Percent Heavy Vehicles     3      3      3      3      3      3
Percent Grade (%)                 0                    0
Flared Approach:  Exists?/Storage         No     /              No     /
RT Channelized?
Lanes                         0   1    0           0   1    0
Configuration                     LTR                  LTR
______________________________________________________________________________

______________________Pedestrian Volumes and Adjustments______________________
Movements                    13     14     15     16
______________________________________________________________________________
Flow (ped/hr)                0      0      0      0
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Lane Width (ft)              12.0   12.0   12.0   12.0
Walking Speed (ft/sec)       4.0    4.0    4.0    4.0
Percent Blockage             0      0      0      0
______________________________________________________________________________

_____________________________Upstream Signal Data_____________________________
                 Prog.    Sat   Arrival   Green  Cycle   Prog.   Distance
                 Flow     Flow   Type     Time   Length  Speed   to Signal
                 vph      vph             sec     sec     mph      feet
______________________________________________________________________________
S2  Left-Turn
    Through
S5  Left-Turn
    Through
______________________________________________________________________________

Worksheet 3-Data for Computing Effect of Delay to Major Street Vehicles
______________________________________________________________________________
                                          Movement 2     Movement 5
______________________________________________________________________________
Shared ln volume, major th vehicles:        252            283
Shared ln volume, major rt vehicles:        12             0
Sat flow rate, major th vehicles:           1700           1700
Sat flow rate, major rt vehicles:           1700           1700
Number of major street through lanes:       1              1
______________________________________________________________________________

Worksheet 4-Critical Gap and Follow-up Time Calculation
______________________________________________________________________________
Critical Gap Calculation
Movement          1      4      7      8      9     10     11     12
                  L      L      L      T      R      L      T      R
______________________________________________________________________________
t(c,base)        4.1    4.1    7.1    6.5    6.2    7.1    6.5    6.2
t(c,hv)          1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00
P(hv)            3      3      3      3      3      3      3      3
t(c,g)                         0.20   0.20   0.10   0.20   0.20   0.10
Percent Grade                  0.00   0.00   0.00   0.00   0.00   0.00
t(3,lt)          0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00
t(c,T):  1-stage 0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00
         2-stage 0.00   0.00   1.00   1.00   0.00   1.00   1.00   0.00
t(c)     1-stage 4.1    4.1    7.1    6.5    6.2    7.1    6.5    6.2
         2-stage
______________________________________________________________________________
Follow-Up Time Calculations
Movement          1      4      7      8      9     10     11     12
                  L      L      L      T      R      L      T      R
______________________________________________________________________________
t(f,base)        2.20   2.20   3.50   4.00   3.30   3.50   4.00   3.30
t(f,HV)          0.90   0.90   0.90   0.90   0.90   0.90   0.90   0.90
P(HV)            3      3      3      3      3      3      3      3
t(f)             2.2    2.2    3.5    4.0    3.3    3.5    4.0    3.3
______________________________________________________________________________

Worksheet 5-Effect of Upstream Signals
______________________________________________________________________________
Computation 1-Queue Clearance Time at Upstream Signal
                                            Movement 2        Movement 5
                                         V(t)   V(l,prot)  V(t)   V(l,prot)
______________________________________________________________________________
V prog
```

```
Total Saturation Flow Rate, s (vph)
Arrival Type
Effective Green, g (sec)
Cycle Length, C (sec)
Rp (from Exhibit 16-11)
Proportion vehicles arriving on green P
g(q1)
g(q2)
g(q)

_______________________________________________________________________________
Computation 2-Proportion of TWSC Intersection Time  blocked
                                            Movement 2        Movement 5
                                         V(t)   V(l,prot)  V(t)   V(l,prot)
_______________________________________________________________________________

alpha
beta
Travel time, t(a) (sec)
Smoothing Factor, F
Proportion of conflicting flow, f
Max platooned flow, V(c,max)
Min platooned flow, V(c,min)
Duration of blocked period, t(p)
Proportion time blocked, p                    0.000             0.000

_______________________________________________________________________________
Computation 3-Platoon Event Periods     Result
_______________________________________________________________________________

p(2)                                    0.000
p(5)                                    0.000
p(dom)
p(subo)
Constrained or unconstrained?

_______________________________________________________________________________
Proportion
unblocked                  (1)             (2)             (3)
for minor                Single-stage        Two-Stage Process
movements, p(x)            Process       Stage I         Stage II
_______________________________________________________________________________

p(1)
p(4)
p(7)
p(8)
p(9)
p(10)
p(11)
p(12)

_______________________________________________________________________________
Computation 4 and 5
Single-Stage Process
Movement                1      4      7      8      9     10     11     12
                        L      L      L      T      R      L      T      R
_______________________________________________________________________________

V c,x                  283    264    599    561    258    569    567    283
s
Px
V c,u,x

_______________________________________________________________________________
C r,x
C plat,x

_______________________________________________________________________________
Two-Stage Process
                     7               8               10               11
```

```
              Stage1  Stage2  Stage1  Stage2  Stage1  Stage2  Stage1  Stage2
______________________________________________________________________________
V(c,x)
s                     1500            1500            1500            1500
P(x)
V(c,u,x)
______________________________________________________________________________
C(r,x)
C(plat,x)
______________________________________________________________________________

Worksheet 6-Impedance and Capacity Equations
______________________________________________________________________________
Step 1: RT from Minor St.                          9               12
______________________________________________________________________________
Conflicting Flows                               258              283
Potential Capacity                              778              754
Pedestrian Impedance Factor                     1.00             1.00
Movement Capacity                               778              754
Probability of Queue free St.                   0.99             0.99
______________________________________________________________________________
Step 2: LT from Major St.                          4                1
______________________________________________________________________________
Conflicting Flows                               264              283
Potential Capacity                              1294             1274
Pedestrian Impedance Factor                     1.00             1.00
Movement Capacity                               1294             1274
Probability of Queue free St.                   1.00             1.00
Maj L-Shared Prob Q free St.                    1.00             1.00
______________________________________________________________________________
Step 3: TH from Minor St.                          8               11
______________________________________________________________________________
Conflicting Flows                               561              567
Potential Capacity                              435              432
Pedestrian Impedance Factor                     1.00             1.00
Cap. Adj. factor due to Impeding mvmnt          0.99             0.99
Movement Capacity                               431              428
Probability of Queue free St.                   0.98             0.98
______________________________________________________________________________
Step 4: LT from Minor St.                          7               10
______________________________________________________________________________
Conflicting Flows                               599              569
Potential Capacity                              412              431
Pedestrian Impedance Factor                     1.00             1.00
Maj. L, Min T Impedance factor                  0.97             0.97
Maj. L, Min T Adj. Imp Factor.                  0.98             0.98
Cap. Adj. factor due to Impeding mvmnt          0.97             0.97
Movement Capacity                               400              417
______________________________________________________________________________

Worksheet 7-Computation of the Effect of Two-stage Gap Acceptance
______________________________________________________________________________
Step 3: TH from Minor St.                          8               11
______________________________________________________________________________
Part 1 - First Stage
Conflicting Flows
Potential Capacity
Pedestrian Impedance Factor
Cap. Adj. factor due to Impeding mvmnt
Movement Capacity
Probability of Queue free St.
```

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______________________________________________________________________________
Part 2 - Second Stage
Conflicting Flows
Potential Capacity
Pedestrian Impedance Factor
Cap. Adj. factor due to Impeding mvmnt
Movement Capacity
______________________________________________________________________________
Part 3 - Single Stage
Conflicting Flows                               561              567
Potential Capacity                              435              432
Pedestrian Impedance Factor                     1.00             1.00
Cap. Adj. factor due to Impeding mvmnt          0.99             0.99
Movement Capacity                               431              428
______________________________________________________________________________
Result for 2 stage process:
a
y
C t                                             431              428
Probability of Queue free St.                   0.98             0.98
______________________________________________________________________________
Step 4: LT from Minor St.                          7               10
______________________________________________________________________________
Part 1 - First Stage
Conflicting Flows
Potential Capacity
Pedestrian Impedance Factor
Cap. Adj. factor due to Impeding mvmnt
Movement Capacity
______________________________________________________________________________
Part 2 - Second Stage
Conflicting Flows
Potential Capacity
Pedestrian Impedance Factor
Cap. Adj. factor due to Impeding mvmnt
Movement Capacity
______________________________________________________________________________
Part 3 - Single Stage
Conflicting Flows                               599              569
Potential Capacity                              412              431
Pedestrian Impedance Factor                     1.00             1.00
Maj. L, Min T Impedance factor                  0.97             0.97
Maj. L, Min T Adj. Imp Factor.                  0.98             0.98
Cap. Adj. factor due to Impeding mvmnt          0.97             0.97
Movement Capacity                               400              417
______________________________________________________________________________
Results for Two-stage process:
a
y
C t                                             400              417
______________________________________________________________________________

Worksheet 8-Shared Lane Calculations
______________________________________________________________________________
Movement                              7      8      9     10     11     12
                                      L      T      R      L      T      R
______________________________________________________________________________
Volume (vph)                         12     9      8      71     9      5
Movement Capacity (vph)              400    431    778    417    428    754
Shared Lane Capacity (vph)                  474                  429
______________________________________________________________________________
```

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Worksheet 9-Computation of Effect of Flared Minor Street Approaches
_______________________________________________________________________________
Movement                               7      8      9     10     11     12
                                       L      T      R      L      T      R
_______________________________________________________________________________
C sep                                 400    431    778    417    428    754
Volume                                12     9      8      71     9      5
Delay
Q sep
Q sep +1
round (Qsep +1)
_______________________________________________________________________________
n max
C sh                                         474                  429
SUM C sep
n
C act
_______________________________________________________________________________

Worksheet 10-Delay, Queue Length, and Level of Service
_______________________________________________________________________________
Movement             1      4      7      8      9      10     11     12
Lane Config          LTR    LT            LTR                   LTR
_______________________________________________________________________________
v (vph)             5      5             29                    85
C(m) (vph)          1274   1294          474                   429
v/c                 0.00   0.00          0.06                  0.20
95% queue length    0.01   0.01          0.19                  0.73
Control Delay       7.8    7.8           13.1                  15.5
LOS                  A      A             B                     C
Approach Delay                           13.1                  15.5
Approach LOS                              B                     C
_______________________________________________________________________________

Worksheet 11-Shared Major LT Impedance and Delay
_______________________________________________________________________________
                                                  Movement 2     Movement 5
_______________________________________________________________________________
p(oj)                                                1.00           1.00
v(il), Volume for stream 2 or 5                      252            283
v(i2), Volume for stream 3 or 6                      12             0
s(il), Saturation flow rate for stream 2 or 5        1700           1700
s(i2), Saturation flow rate for stream 3 or 6        1700           1700
P*(oj)                                               1.00           1.00
d(M,LT), Delay for stream 1 or 4                     7.8            7.8
N, Number of major street through lanes              1              1
d(rank,1) Delay for stream 2 or 5                    0.0            0.0
_______________________________________________________________________________
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                 HCS+: Unsignalized Intersections Release 5.6

_______________________TWO-WAY STOP CONTROL SUMMARY___________________________

Analyst:              ZMS
Agency/Co.:           Kittelson & Associates, Inc.
Date Performed:       2/2/2016
Analysis Time Period: AM
Intersection:         US 20 & SH 75
Jurisdiction:         ITD
Units: U. S. Customary
Analysis Year:        2040
Project ID:
East/West Street:     US 20
North/South Street:   SH 75
Intersection Orientation: NS                 Study period (hrs):  0.25

______________________Vehicle Volumes and Adjustments_________________________
Major Street:  Approach        Northbound             Southbound
               Movement     1      2      3     |  4      5      6
                            L      T      R     |  L      T      R

______________________________________________________________________________
Volume                      4      410    7        4      103    35
Peak-Hour Factor, PHF       0.94   0.94   0.94     0.94   0.94   0.94
Hourly Flow Rate, HFR       4      436    7        4      109    37
Percent Heavy Vehicles      3      --     --       3      --     --
Median Type/Storage         Undivided             /
RT Channelized?                                               Yes
Lanes                          0   1    0             0   1    1
Configuration                   LTR                    LT     R
Upstream Signal?                   No                     No

______________________________________________________________________________
Minor Street:  Approach        Westbound              Eastbound
               Movement     7      8      9     |  10     11     12
                            L      T      R     |  L      T      R

______________________________________________________________________________
Volume                      2      7      4        111    9      7
Peak Hour Factor, PHF       0.94   0.94   0.94     0.94   0.94   0.94
Hourly Flow Rate, HFR       2      7      4        118    9      7
Percent Heavy Vehicles      3      3      3        3      3      3
Percent Grade (%)                  0                      0
Flared Approach:  Exists?/Storage         No     /              No     /
Lanes                          0   1    0             0   1    0
Configuration                      LTR                    LTR

______________________________________________________________________________

__________________Delay, Queue Length, and Level of Service___________________
Approach            NB     SB        Westbound             Eastbound
Movement            1      4   |  7      8      9    |  10     11     12
Lane Config         LTR    LT  |         LTR         |         LTR

______________________________________________________________________________
v (vph)             4      4             13                    134
C(m) (vph)          1475   1112          469                   433
v/c                 0.00   0.00          0.03                  0.31
95% queue length    0.01   0.01          0.09                  1.30
Control Delay       7.4    8.2           12.9                  17.0
LOS                  A      A             B                     C
Approach Delay                           12.9                  17.0
Approach LOS                              B                     C
______________________________________________________________________________
```

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                  HCS+: Unsignalized Intersections Release 5.6





Phone:                                        Fax:
E-Mail:

______________________TWO-WAY STOP CONTROL(TWSC) ANALYSIS_____________________

Analyst:              ZMS
Agency/Co.:           Kittelson & Associates, Inc.
Date Performed:       2/2/2016
Analysis Time Period: AM
Intersection:         US 20 & SH 75
Jurisdiction:         ITD
Units: U. S. Customary
Analysis Year:        2040
Project ID:
East/West Street:     US 20
North/South Street:   SH 75
Intersection Orientation: NS                 Study period (hrs):  0.25

________________________Vehicle Volumes and Adjustments_______________________
Major Street Movements      1      2      3      4      5      6
                            L      T      R      L      T      R
______________________________________________________________________________
Volume                     4      410    7      4      103    35
Peak-Hour Factor, PHF      0.94   0.94   0.94   0.94   0.94   0.94
Peak-15 Minute Volume      1      109    2      1      27     9
Hourly Flow Rate, HFR      4      436    7      4      109    37
Percent Heavy Vehicles     3      --     --     3      --     --
Median Type/Storage         Undivided             /
RT Channelized?                                               Yes
Lanes                         0   1    0           0   1    1
Configuration                  LTR                  LT     R
Upstream Signal?                  No                   No
______________________________________________________________________________
Minor Street Movements      7      8      9      10     11     12
                            L      T      R      L      T      R
______________________________________________________________________________
Volume                     2      7      4      111    9      7
Peak Hour Factor, PHF      0.94   0.94   0.94   0.94   0.94   0.94
Peak-15 Minute Volume      1      2      1      30     2      2
Hourly Flow Rate, HFR      2      7      4      118    9      7
Percent Heavy Vehicles     3      3      3      3      3      3
Percent Grade (%)                 0                    0
Flared Approach:  Exists?/Storage        No     /              No     /
RT Channelized?
Lanes                         0   1    0           0   1    0
Configuration                     LTR                  LTR
______________________________________________________________________________

______________________Pedestrian Volumes and Adjustments______________________
Movements                    13     14     15     16
______________________________________________________________________________
Flow (ped/hr)                 0      0      0      0
```

```
Lane Width (ft)              12.0   12.0   12.0   12.0
Walking Speed (ft/sec)       4.0    4.0    4.0    4.0
Percent Blockage             0      0      0      0
______________________________________________________________________________

_____________________________Upstream Signal Data_____________________________
                 Prog.    Sat   Arrival   Green  Cycle   Prog.   Distance
                 Flow     Flow   Type     Time   Length  Speed   to Signal
                 vph      vph             sec     sec     mph      feet
______________________________________________________________________________
S2  Left-Turn
    Through
S5  Left-Turn
    Through
______________________________________________________________________________

Worksheet 3-Data for Computing Effect of Delay to Major Street Vehicles
______________________________________________________________________________
                                           Movement 2     Movement 5
______________________________________________________________________________
Shared ln volume, major th vehicles:         436            109
Shared ln volume, major rt vehicles:         7              0
Sat flow rate, major th vehicles:            1700           1700
Sat flow rate, major rt vehicles:            1700           1700
Number of major street through lanes:        1              1
______________________________________________________________________________

Worksheet 4-Critical Gap and Follow-up Time Calculation
______________________________________________________________________________
Critical Gap Calculation
Movement          1      4      7      8      9     10     11     12
                  L      L      L      T      R      L      T      R
______________________________________________________________________________
t(c,base)        4.1    4.1    7.1    6.5    6.2    7.1    6.5    6.2
t(c,hv)          1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00
P(hv)            3      3      3      3      3      3      3      3
t(c,g)                         0.20   0.20   0.10   0.20   0.20   0.10
Percent Grade                  0.00   0.00   0.00   0.00   0.00   0.00
t(3,lt)          0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00
t(c,T):  1-stage 0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00
         2-stage 0.00   0.00   1.00   1.00   0.00   1.00   1.00   0.00
t(c)     1-stage 4.1    4.1    7.1    6.5    6.2    7.1    6.5    6.2
         2-stage
______________________________________________________________________________
Follow-Up Time Calculations
Movement          1      4      7      8      9     10     11     12
                  L      L      L      T      R      L      T      R
______________________________________________________________________________
t(f,base)        2.20   2.20   3.50   4.00   3.30   3.50   4.00   3.30
t(f,HV)          0.90   0.90   0.90   0.90   0.90   0.90   0.90   0.90
P(HV)            3      3      3      3      3      3      3      3
t(f)             2.2    2.2    3.5    4.0    3.3    3.5    4.0    3.3
______________________________________________________________________________

Worksheet 5-Effect of Upstream Signals
______________________________________________________________________________
Computation 1-Queue Clearance Time at Upstream Signal
                                            Movement 2        Movement 5
                                         V(t)   V(l,prot)  V(t)   V(l,prot)
______________________________________________________________________________
V prog
```

```
Total Saturation Flow Rate, s (vph)
Arrival Type
Effective Green, g (sec)
Cycle Length, C (sec)
Rp (from Exhibit 16-11)
Proportion vehicles arriving on green P
g(q1)
g(q2)
g(q)
______________________________________________________________________________
Computation 2-Proportion of TWSC Intersection Time  blocked
                                            Movement 2        Movement 5
                                         V(t)   V(l,prot)  V(t)   V(l,prot)
______________________________________________________________________________
alpha
beta
Travel time, t(a) (sec)
Smoothing Factor, F
Proportion of conflicting flow, f
Max platooned flow, V(c,max)
Min platooned flow, V(c,min)
Duration of blocked period, t(p)
Proportion time blocked, p                    0.000             0.000
______________________________________________________________________________
Computation 3-Platoon Event Periods     Result
______________________________________________________________________________
p(2)                                    0.000
p(5)                                    0.000
p(dom)
p(subo)
Constrained or unconstrained?
______________________________________________________________________________
Proportion
unblocked                  (1)             (2)             (3)
for minor              Single-stage         Two-Stage Process
movements, p(x)          Process        Stage I         Stage II
______________________________________________________________________________
p(1)
p(4)
p(7)
p(8)
p(9)
p(10)
p(11)
p(12)
______________________________________________________________________________
Computation 4 and 5
Single-Stage Process
Movement                1      4      7      8      9     10     11     12
                        L      L      L      T      R      L      T      R
______________________________________________________________________________
V c,x                  109    443    592    565    440    570    568    109
s
Px
V c,u,x
______________________________________________________________________________
C r,x
C plat,x
______________________________________________________________________________
Two-Stage Process
                     7               8              10              11
```

```
              Stage1  Stage2  Stage1  Stage2  Stage1  Stage2  Stage1  Stage2
______________________________________________________________________________
V(c,x)
s                     1500            1500            1500            1500
P(x)
V(c,u,x)
______________________________________________________________________________
C(r,x)
C(plat,x)
______________________________________________________________________________

Worksheet 6-Impedance and Capacity Equations
______________________________________________________________________________
Step 1: RT from Minor St.                          9               12
______________________________________________________________________________
Conflicting Flows                               440              109
Potential Capacity                              615              942
Pedestrian Impedance Factor                     1.00             1.00
Movement Capacity                               615              942
Probability of Queue free St.                   0.99             0.99
______________________________________________________________________________
Step 2: LT from Major St.                          4                1
______________________________________________________________________________
Conflicting Flows                               443              109
Potential Capacity                              1112             1475
Pedestrian Impedance Factor                     1.00             1.00
Movement Capacity                               1112             1475
Probability of Queue free St.                   1.00             1.00
Maj L-Shared Prob Q free St.                    1.00             1.00
______________________________________________________________________________
Step 3: TH from Minor St.                          8               11
______________________________________________________________________________
Conflicting Flows                               565              568
Potential Capacity                              433              431
Pedestrian Impedance Factor                     1.00             1.00
Cap. Adj. factor due to Impeding mvmnt          0.99             0.99
Movement Capacity                               430              428
Probability of Queue free St.                   0.98             0.98
______________________________________________________________________________
Step 4: LT from Minor St.                          7               10
______________________________________________________________________________
Conflicting Flows                               592              570
Potential Capacity                              416              431
Pedestrian Impedance Factor                     1.00             1.00
Maj. L, Min T Impedance factor                  0.97             0.98
Maj. L, Min T Adj. Imp Factor.                  0.98             0.98
Cap. Adj. factor due to Impeding mvmnt          0.97             0.98
Movement Capacity                               404              420
______________________________________________________________________________

Worksheet 7-Computation of the Effect of Two-stage Gap Acceptance
______________________________________________________________________________
Step 3: TH from Minor St.                          8               11
______________________________________________________________________________
Part 1 - First Stage
Conflicting Flows
Potential Capacity
Pedestrian Impedance Factor
Cap. Adj. factor due to Impeding mvmnt
Movement Capacity
Probability of Queue free St.
```

```
-------------------------------------------------------------------------------
Part 2 - Second Stage
Conflicting Flows
Potential Capacity
Pedestrian Impedance Factor
Cap. Adj. factor due to Impeding mvmnt
Movement Capacity
-------------------------------------------------------------------------------
Part 3 - Single Stage
Conflicting Flows                               565              568
Potential Capacity                              433              431
Pedestrian Impedance Factor                     1.00             1.00
Cap. Adj. factor due to Impeding mvmnt          0.99             0.99
Movement Capacity                               430              428
-------------------------------------------------------------------------------
Result for 2 stage process:
a
y
C t                                             430              428
Probability of Queue free St.                   0.98             0.98
-------------------------------------------------------------------------------
Step 4: LT from Minor St.                          7               10
-------------------------------------------------------------------------------
Part 1 - First Stage
Conflicting Flows
Potential Capacity
Pedestrian Impedance Factor
Cap. Adj. factor due to Impeding mvmnt
Movement Capacity
-------------------------------------------------------------------------------
Part 2 - Second Stage
Conflicting Flows
Potential Capacity
Pedestrian Impedance Factor
Cap. Adj. factor due to Impeding mvmnt
Movement Capacity
-------------------------------------------------------------------------------
Part 3 - Single Stage
Conflicting Flows                               592              570
Potential Capacity                              416              431
Pedestrian Impedance Factor                     1.00             1.00
Maj. L, Min T Impedance factor                  0.97             0.98
Maj. L, Min T Adj. Imp Factor.                  0.98             0.98
Cap. Adj. factor due to Impeding mvmnt          0.97             0.98
Movement Capacity                               404              420
-------------------------------------------------------------------------------
Results for Two-stage process:
a
y
C t                                             404              420
-------------------------------------------------------------------------------

Worksheet 8-Shared Lane Calculations
-------------------------------------------------------------------------------
Movement                              7      8      9     10     11     12
                                      L      T      R      L      T      R
-------------------------------------------------------------------------------
Volume (vph)                         2      7      4      118    9      7
Movement Capacity (vph)              404    430    615    420    428    942
Shared Lane Capacity (vph)                  469                  433
-------------------------------------------------------------------------------
```

```
Worksheet 9-Computation of Effect of Flared Minor Street Approaches
------------------------------------------------------------------------------
Movement                              7      8      9     10     11     12
                                      L      T      R      L      T      R
------------------------------------------------------------------------------
C sep                                404    430    615    420    428    942
Volume                               2      7      4      118    9      7
Delay
Q sep
Q sep +1
round (Qsep +1)
------------------------------------------------------------------------------
n max
C sh                                        469                  433
SUM C sep
n
C act
------------------------------------------------------------------------------

Worksheet 10-Delay, Queue Length, and Level of Service
------------------------------------------------------------------------------
Movement             1      4      7      8      9      10     11     12
Lane Config          LTR   LT             LTR                   LTR
------------------------------------------------------------------------------
v (vph)             4      4             13                    134
C(m) (vph)          1475   1112          469                   433
v/c                 0.00   0.00          0.03                  0.31
95% queue length    0.01   0.01          0.09                  1.30
Control Delay       7.4    8.2           12.9                  17.0
LOS                  A      A             B                     C
Approach Delay                           12.9                  17.0
Approach LOS                              B                     C
------------------------------------------------------------------------------

Worksheet 11-Shared Major LT Impedance and Delay
------------------------------------------------------------------------------
                                                 Movement 2     Movement 5
------------------------------------------------------------------------------
p(oj)                                               1.00           1.00
v(il), Volume for stream 2 or 5                     436            109
v(i2), Volume for stream 3 or 6                     7              0
s(il), Saturation flow rate for stream 2 or 5       1700           1700
s(i2), Saturation flow rate for stream 3 or 6       1700           1700
P*(oj)                                              1.00           1.00
d(M,LT), Delay for stream 1 or 4                    7.4            8.2
N, Number of major street through lanes             1              1
d(rank,1) Delay for stream 2 or 5                   0.0            0.0
------------------------------------------------------------------------------
```

```
                 HCS+: Unsignalized Intersections Release 5.6

_______________________TWO-WAY STOP CONTROL SUMMARY___________________________

Analyst:              ZMS
Agency/Co.:           Kittelson & Associates, Inc.
Date Performed:       2/2/2016
Analysis Time Period: PM
Intersection:         US 20 & SH 75
Jurisdiction:         ITD
Units: U. S. Customary
Analysis Year:        2040
Project ID:
East/West Street:     US 20
North/South Street:   SH 75
Intersection Orientation: NS                 Study period (hrs):  0.25

______________________Vehicle Volumes and Adjustments_________________________
Major Street:  Approach        Northbound             Southbound
               Movement     1      2      3     |  4      5      6
                            L      T      R     |  L      T      R
______________________________________________________________________________
Volume                      7      334    15       7      375    83
Peak-Hour Factor, PHF       0.91   0.91   0.91     0.91   0.91   0.91
Hourly Flow Rate, HFR       7      367    16       7      412    91
Percent Heavy Vehicles      3      --     --       3      --     --
Median Type/Storage         Undivided             /
RT Channelized?                                               Yes
Lanes                          0   1    0             0   1    1
Configuration                   LTR                    LT     R
Upstream Signal?                   No                     No
______________________________________________________________________________
Minor Street:  Approach        Westbound              Eastbound
               Movement     7      8      9     |  10     11     12
                            L      T      R     |  L      T      R
______________________________________________________________________________
Volume                      15     13     11       94     13     7
Peak Hour Factor, PHF       0.91   0.91   0.91     0.91   0.91   0.91
Hourly Flow Rate, HFR       16     14     12       103    14     7
Percent Heavy Vehicles      3      3      3        3      3      3
Percent Grade (%)                  0                      0
Flared Approach:  Exists?/Storage         No     /              No     /
Lanes                          0   1    0             0   1    0
Configuration                      LTR                    LTR
______________________________________________________________________________

__________________Delay, Queue Length, and Level of Service___________________
Approach            NB     SB        Westbound             Eastbound
Movement            1      4   |  7      8      9    |  10     11     12
Lane Config         LTR    LT  |         LTR         |         LTR
______________________________________________________________________________
v (vph)             7      7             42                    124
C(m) (vph)          1142   1170          332                   283
v/c                 0.01   0.01          0.13                  0.44
95% queue length    0.02   0.02          0.43                  2.11
Control Delay       8.2    8.1           17.4                  27.3
LOS                  A      A             C                     D
Approach Delay                           17.4                  27.3
Approach LOS                              C                     D
______________________________________________________________________________
```

```
                  HCS+: Unsignalized Intersections Release 5.6






Phone:                                        Fax:
E-Mail:

______________________TWO-WAY STOP CONTROL(TWSC) ANALYSIS______________________

Analyst:              ZMS
Agency/Co.:           Kittelson & Associates, Inc.
Date Performed:       2/2/2016
Analysis Time Period: PM
Intersection:         US 20 & SH 75
Jurisdiction:         ITD
Units: U. S. Customary
Analysis Year:        2040
Project ID:
East/West Street:     US 20
North/South Street:   SH 75
Intersection Orientation: NS                 Study period (hrs):  0.25

________________________Vehicle Volumes and Adjustments_______________________
Major Street Movements      1      2      3      4      5      6
                            L      T      R      L      T      R
______________________________________________________________________________
Volume                     7      334    15     7      375    83
Peak-Hour Factor, PHF      0.91   0.91   0.91   0.91   0.91   0.91
Peak-15 Minute Volume      2      92     4      2      103    23
Hourly Flow Rate, HFR      7      367    16     7      412    91
Percent Heavy Vehicles     3      --     --     3      --     --
Median Type/Storage         Undivided             /
RT Channelized?                                               Yes
Lanes                         0   1    0           0   1    1
Configuration                  LTR                  LT     R
Upstream Signal?                  No                   No
______________________________________________________________________________
Minor Street Movements      7      8      9      10     11     12
                            L      T      R      L      T      R
______________________________________________________________________________
Volume                     15     13     11     94     13     7
Peak Hour Factor, PHF      0.91   0.91   0.91   0.91   0.91   0.91
Peak-15 Minute Volume      4      4      3      26     4      2
Hourly Flow Rate, HFR      16     14     12     103    14     7
Percent Heavy Vehicles     3      3      3      3      3      3
Percent Grade (%)                 0                    0
Flared Approach:  Exists?/Storage        No     /              No     /
RT Channelized?
Lanes                         0   1    0           0   1    0
Configuration                     LTR                  LTR
______________________________________________________________________________

______________________Pedestrian Volumes and Adjustments______________________
Movements                    13     14     15     16
______________________________________________________________________________
Flow (ped/hr)                0      0      0      0
```

```
Lane Width (ft)              12.0   12.0   12.0   12.0
Walking Speed (ft/sec)       4.0    4.0    4.0    4.0
Percent Blockage             0      0      0      0
______________________________________________________________________________

_____________________________Upstream Signal Data_____________________________
                 Prog.    Sat   Arrival   Green  Cycle   Prog.   Distance
                 Flow     Flow   Type     Time   Length  Speed   to Signal
                 vph      vph             sec     sec     mph      feet
______________________________________________________________________________
S2  Left-Turn
    Through
S5  Left-Turn
    Through
______________________________________________________________________________

Worksheet 3-Data for Computing Effect of Delay to Major Street Vehicles
______________________________________________________________________________
                                           Movement 2     Movement 5
______________________________________________________________________________
Shared ln volume, major th vehicles:         367            412
Shared ln volume, major rt vehicles:         16             0
Sat flow rate, major th vehicles:            1700           1700
Sat flow rate, major rt vehicles:            1700           1700
Number of major street through lanes:        1              1
______________________________________________________________________________

Worksheet 4-Critical Gap and Follow-up Time Calculation
______________________________________________________________________________
Critical Gap Calculation
Movement          1      4      7      8      9     10     11     12
                  L      L      L      T      R      L      T      R
______________________________________________________________________________
t(c,base)        4.1    4.1    7.1    6.5    6.2    7.1    6.5    6.2
t(c,hv)          1.00   1.00   1.00   1.00   1.00   1.00   1.00   1.00
P(hv)            3      3      3      3      3      3      3      3
t(c,g)                         0.20   0.20   0.10   0.20   0.20   0.10
Percent Grade                  0.00   0.00   0.00   0.00   0.00   0.00
t(3,lt)          0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00
t(c,T):  1-stage 0.00   0.00   0.00   0.00   0.00   0.00   0.00   0.00
         2-stage 0.00   0.00   1.00   1.00   0.00   1.00   1.00   0.00
t(c)     1-stage 4.1    4.1    7.1    6.5    6.2    7.1    6.5    6.2
         2-stage
______________________________________________________________________________
Follow-Up Time Calculations
Movement          1      4      7      8      9     10     11     12
                  L      L      L      T      R      L      T      R
______________________________________________________________________________
t(f,base)        2.20   2.20   3.50   4.00   3.30   3.50   4.00   3.30
t(f,HV)          0.90   0.90   0.90   0.90   0.90   0.90   0.90   0.90
P(HV)            3      3      3      3      3      3      3      3
t(f)             2.2    2.2    3.5    4.0    3.3    3.5    4.0    3.3
______________________________________________________________________________

Worksheet 5-Effect of Upstream Signals
______________________________________________________________________________
Computation 1-Queue Clearance Time at Upstream Signal
                                            Movement 2       Movement 5
                                         V(t)   V(l,prot)  V(t)   V(l,prot)
______________________________________________________________________________
V prog
```

```
Total Saturation Flow Rate, s (vph)
Arrival Type
Effective Green, g (sec)
Cycle Length, C (sec)
Rp (from Exhibit 16-11)
Proportion vehicles arriving on green P
g(q1)
g(q2)
g(q)
------------------------------------------------------------------------------
Computation 2-Proportion of TWSC Intersection Time  blocked
                                            Movement 2        Movement 5
                                         V(t)   V(l,prot)  V(t)   V(l,prot)
------------------------------------------------------------------------------
alpha
beta
Travel time, t(a) (sec)
Smoothing Factor, F
Proportion of conflicting flow, f
Max platooned flow, V(c,max)
Min platooned flow, V(c,min)
Duration of blocked period, t(p)
Proportion time blocked, p                    0.000             0.000
------------------------------------------------------------------------------
Computation 3-Platoon Event Periods     Result
------------------------------------------------------------------------------
p(2)                                    0.000
p(5)                                    0.000
p(dom)
p(subo)
Constrained or unconstrained?
------------------------------------------------------------------------------
Proportion
unblocked                  (1)             (2)              (3)
for minor              Single-stage         Two-Stage Process
movements, p(x)          Process        Stage I         Stage II
------------------------------------------------------------------------------
p(1)
p(4)
p(7)
p(8)
p(9)
p(10)
p(11)
p(12)
------------------------------------------------------------------------------
Computation 4 and 5
Single-Stage Process
Movement                1      4      7      8      9     10     11     12
                        L      L      L      T      R      L      T      R
------------------------------------------------------------------------------
V c,x                  412    383    871    815    375    828    823    412
s
Px
V c,u,x
------------------------------------------------------------------------------
C r,x
C plat,x
------------------------------------------------------------------------------
Two-Stage Process
                     7               8              10              11
```

```
              Stage1  Stage2  Stage1  Stage2  Stage1  Stage2  Stage1  Stage2
------------------------------------------------------------------------------
V(c,x)
s                     1500            1500            1500            1500
P(x)
V(c,u,x)
------------------------------------------------------------------------------
C(r,x)
C(plat,x)
------------------------------------------------------------------------------

Worksheet 6-Impedance and Capacity Equations
------------------------------------------------------------------------------
Step 1: RT from Minor St.                          9              12
------------------------------------------------------------------------------
Conflicting Flows                               375              412
Potential Capacity                              669              638
Pedestrian Impedance Factor                     1.00             1.00
Movement Capacity                               669              638
Probability of Queue free St.                   0.98             0.99
------------------------------------------------------------------------------
Step 2: LT from Major St.                          4                1
------------------------------------------------------------------------------
Conflicting Flows                               383              412
Potential Capacity                              1170             1142
Pedestrian Impedance Factor                     1.00             1.00
Movement Capacity                               1170             1142
Probability of Queue free St.                   0.99             0.99
Maj L-Shared Prob Q free St.                    0.99             0.99
------------------------------------------------------------------------------
Step 3: TH from Minor St.                          8              11
------------------------------------------------------------------------------
Conflicting Flows                               815              823
Potential Capacity                              311              307
Pedestrian Impedance Factor                     1.00             1.00
Cap. Adj. factor due to Impeding mvmnt          0.98             0.98
Movement Capacity                               306              302
Probability of Queue free St.                   0.95             0.95
------------------------------------------------------------------------------
Step 4: LT from Minor St.                          7              10
------------------------------------------------------------------------------
Conflicting Flows                               871              828
Potential Capacity                              270              289
Pedestrian Impedance Factor                     1.00             1.00
Maj. L, Min T Impedance factor                  0.94             0.94
Maj. L, Min T Adj. Imp Factor.                  0.95             0.95
Cap. Adj. factor due to Impeding mvmnt          0.94             0.94
Movement Capacity                               255              271
------------------------------------------------------------------------------

Worksheet 7-Computation of the Effect of Two-stage Gap Acceptance
------------------------------------------------------------------------------
Step 3: TH from Minor St.                          8              11
------------------------------------------------------------------------------
Part 1 - First Stage
Conflicting Flows
Potential Capacity
Pedestrian Impedance Factor
Cap. Adj. factor due to Impeding mvmnt
Movement Capacity
Probability of Queue free St.
```

```
______________________________________________________________________________
Part 2 - Second Stage
Conflicting Flows
Potential Capacity
Pedestrian Impedance Factor
Cap. Adj. factor due to Impeding mvmnt
Movement Capacity
______________________________________________________________________________
Part 3 - Single Stage
Conflicting Flows                               815              823
Potential Capacity                              311              307
Pedestrian Impedance Factor                     1.00             1.00
Cap. Adj. factor due to Impeding mvmnt          0.98             0.98
Movement Capacity                               306              302
______________________________________________________________________________
Result for 2 stage process:
a
y
C t                                             306              302
Probability of Queue free St.                   0.95             0.95
______________________________________________________________________________
Step 4: LT from Minor St.                          7                10
______________________________________________________________________________
Part 1 - First Stage
Conflicting Flows
Potential Capacity
Pedestrian Impedance Factor
Cap. Adj. factor due to Impeding mvmnt
Movement Capacity
______________________________________________________________________________
Part 2 - Second Stage
Conflicting Flows
Potential Capacity
Pedestrian Impedance Factor
Cap. Adj. factor due to Impeding mvmnt
Movement Capacity
______________________________________________________________________________
Part 3 - Single Stage
Conflicting Flows                               871              828
Potential Capacity                              270              289
Pedestrian Impedance Factor                     1.00             1.00
Maj. L, Min T Impedance factor                  0.94             0.94
Maj. L, Min T Adj. Imp Factor.                  0.95             0.95
Cap. Adj. factor due to Impeding mvmnt          0.94             0.94
Movement Capacity                               255              271
______________________________________________________________________________
Results for Two-stage process:
a
y
C t                                             255              271
______________________________________________________________________________

Worksheet 8-Shared Lane Calculations
______________________________________________________________________________
Movement                              7      8      9     10     11     12
                                      L      T      R      L      T      R
______________________________________________________________________________
Volume (vph)                         16     14     12     103    14     7
Movement Capacity (vph)              255    306    669    271    302    638
Shared Lane Capacity (vph)                  332                  283
______________________________________________________________________________
```

```
Worksheet 9-Computation of Effect of Flared Minor Street Approaches
______________________________________________________________________________
Movement                              7      8      9     10     11     12
                                      L      T      R      L      T      R
______________________________________________________________________________
C sep                                255    306    669    271    302    638
Volume                               16     14     12     103    14     7
Delay
Q sep
Q sep +1
round (Qsep +1)
______________________________________________________________________________
n max
C sh                                        332                  283
SUM C sep
n
C act
______________________________________________________________________________

Worksheet 10-Delay, Queue Length, and Level of Service
______________________________________________________________________________
Movement             1      4      7      8      9      10     11     12
Lane Config          LTR   LT             LTR                   LTR
______________________________________________________________________________
v (vph)             7      7             42                    124
C(m) (vph)          1142   1170          332                   283
v/c                 0.01   0.01          0.13                  0.44
95% queue length    0.02   0.02          0.43                  2.11
Control Delay       8.2    8.1           17.4                  27.3
LOS                  A      A             C                     D
Approach Delay                           17.4                  27.3
Approach LOS                              C                     D
______________________________________________________________________________

Worksheet 11-Shared Major LT Impedance and Delay
______________________________________________________________________________
                                                 Movement 2     Movement 5
______________________________________________________________________________
p(oj)                                               0.99           0.99
v(il), Volume for stream 2 or 5                     367            412
v(i2), Volume for stream 3 or 6                     16             0
s(il), Saturation flow rate for stream 2 or 5       1700           1700
s(i2), Saturation flow rate for stream 3 or 6       1700           1700
P*(oj)                                              0.99           0.99
d(M,LT), Delay for stream 1 or 4                    8.2            8.1
N, Number of major street through lanes             1              1
d(rank,1) Delay for stream 2 or 5                   0.1            0.1
______________________________________________________________________________
```

Attachment C Signal Warrant Analysis Worksheets

ITD 1415 (Rev. 11-04)

Minimum Traffic Signal Warrants

City				Date
Bellevue				2/4/2016
Major Street	**Minor Street**	**Speed Limit**	**Population**	**Analysis for Year**
SH 75	US 20	65/45	2,286	2015

Peak 8 Hour Volume (Vehicles and/or Pedestrians per Hour)

Time (Use the same time for both streets)	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM
Major Street (Total vehicles from both approaches)	296	326	366	398	521	563	508	553
Minor Street (Total vehicles from one direction)	44	33	48	45	83	65	95	92
Pedestrian (Highest volume crossing the major street)	0	0	0	0	0	0	0	0

Warrant	Description	Compliance	
		Yes	No
1 Eight-Hour Vehicular Volume	**One** of the following conditions exists for each of any 8 hours of an average day: A. The VPH given in the 100% column of Table 1-A-1 **and** Table 1-A-2 exist, **or** B. The VPH given in the 100% column of Table 1-B-1 **and** Table 1-B-2 exist. Volumes on the major street and minor street must be for the same 8 hours. The higher volume on the minor street is not required to be from the same approach during each of these 8 hours. Option: If the posted speed limit exceeds 40 mph, or if the intersection lies within an isolated community with a population of less than 10,000, the 70% columns may be used in place of the 100% columns.	☐	☒
		OR	
	Both of the following conditions exist for each of any 8 hours of an average day: A. The VPH given in the 80% column of Table 1-A-1 **and** Table 1-A-2 exist, **and** B. The VPH given in the 80% column of Table 1-B-1 **and** Table 1-B-2 exist. Note: The major street and minor street volumes must be for the same 8 hours of each condition, however, the 8 hours satisfied in Table 1-A does not have to be the same 8 hours satisfied in Table 1-B. On the minor street, the higher volume does not need to be from the same approach during each of these 8 hours.	☐	☒

Table 1-A Eight Hour Vehicular Volume

-1. Volume required for each of any 8 hours on major street (Total of both approaches)

Number of Lanes		100%	80%	70%
Major Street	**Minor Street**			
1	1	500	400	350
2 or more	1	600	480	420
2 or more	2 or more	600	480	420
1	2 or more	500	400	350

-2. Volume required for each of any 8 hours on minor street approach (One direction only)

Number of Lanes		100%	80%	70%
Major Street	**Minor Street**			
1	1	150	120	105
2 or more	1	150	120	105
2 or more	2 or more	200	160	140
1	2 or more	200	160	140

Number Hours Met (8 Req'd)
0

Table 1-B Eight Hour Interruption of Continuous Traffic

-1. Volume required for each of any 8 hours on major street (Total of both approaches)

Number of Lanes		100%	80%	70%
Major Street	**Minor Street**			
1	1	750	600	525
2 or more	1	900	720	630
2 or more	2 or more	900	720	630
1	2 or more	750	600	525

-2. Volume required for each of any 8 hours on minor street approach (One direction only)

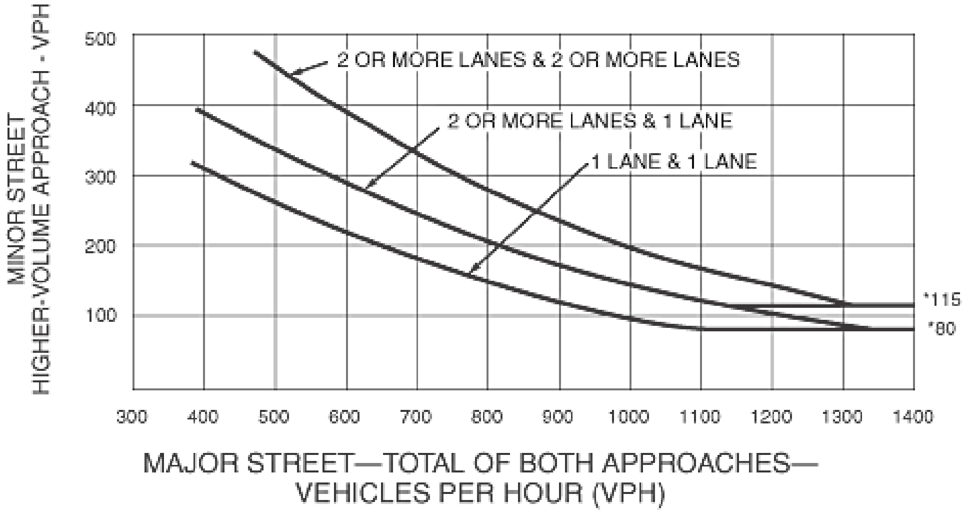
Number of Lanes		100%	80%	70%
Major Street	**Minor Street**			
1	1	75	60	50
2 or more	1	75	60	50
2 or more	2 or more	100	80	70
1	2 or more	100	80	70

Number Hours Met (8 Req'd)
2

Minimum Traffic Signal Warrants

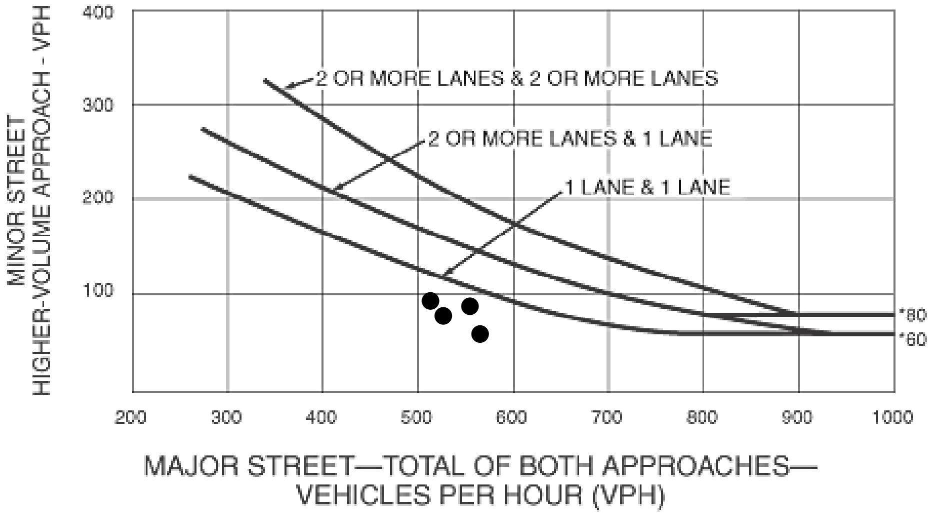
Warrant	Description	Compliance	
		Yes	No
2 Four-Hour Vehicular Volume	For each of any 4 hours of an average day, the plotted points on Figure 1 represent 100% VPH on the major street (total of both approaches.) **and** The VPH on the higher-volume minor street approach (one direction only) fall above the applicable curve for the existing combination of approach lanes. On the minor street, the higher volume does not need to be from the same approach during each of these 4 hours. Use Figure 2, 70% chart if the speed limit exceeds 40 mph or if this is an isolated community with a population of less than 10,000.	☐	☒

Figure 1. Warrant 2, Four-Hour Vehicular Volume (100% Factor)



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

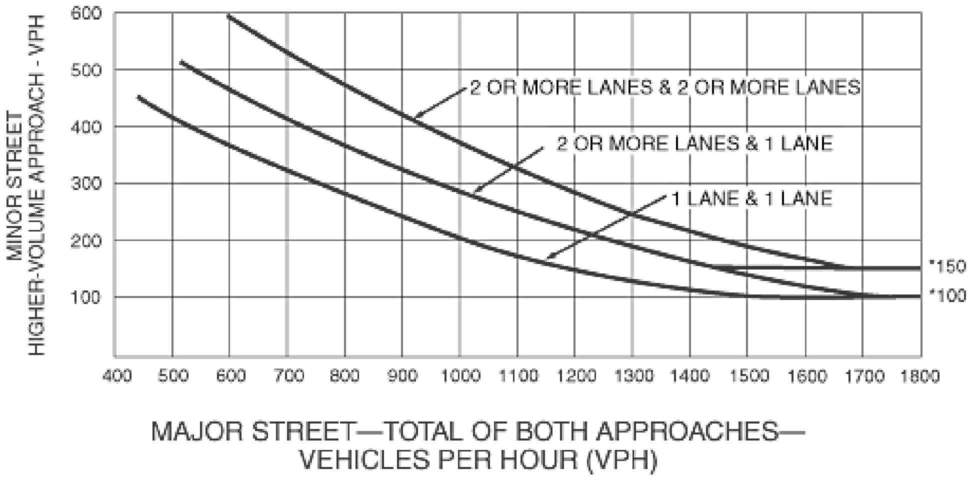
Warrant	Description	Compliance	
		Yes	No
3 Peak Hour	If either of the two following categories (A or B) are met: A. If all three of the following conditions exist for the same 1 hour (any four consecutive 15-minute periods) of an average day: 1. The total vehicle stopped time delay on a minor street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach, or 5-vehicle-hours for a two-lane approach, **and** 2. The volume on the same minor street approach (one direction only) equals or exceeds: 100 VPH for one moving lane of traffic, or 150 VPH for two moving lanes, **and** 3. The total volume entering during the hour equals or exceeds: 650 VPH for intersections with three approaches, or 800 VPH for intersections with four or more approaches.	☐	☒
		OR	
	B. The plotted point representing the VPH on the major street (total of both approaches) and the corresponding VPH on the higher-volume minor street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in Figure 3, Peak Hour (100% Factor) for the existing combination of approach lanes. Use Figure 4, Peak Hour (70% Factor) if the speed limit exceeds 40 mph, or if the intersection lies within a built-up area of an isolated community having a population of less than 10,000.	☐	☒

Notes for 3, Peak Hour

The Peak Hour Signal Warrant is intended for use at a location where, for a minimum of 1 hour of an average day, traffic on the minor street suffers undue delay when entering or crossing the major street. This signal warrant must be applied only in unusual circumstances. Such cases include high-occupancy facilities that attract or release large numbers of vehicles over a short period of time.

Minimum Traffic Signal Warrants

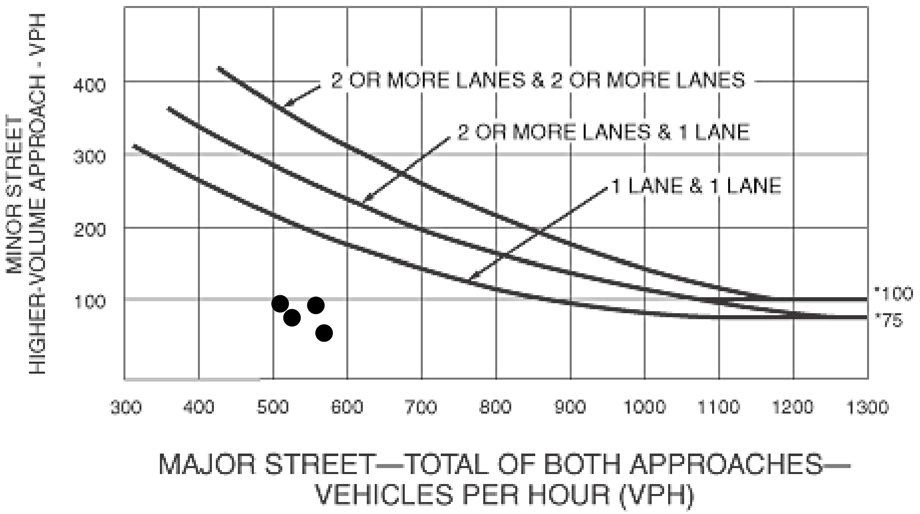
Figure 3. Warrant 3, Peak Hour (100% Factor)



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

<table>
<tr><th rowspan="2">Warrant</th><th rowspan="2">Description</th><th colspan="2">Compliance</th></tr>
<tr><th>Yes</th><th>No</th></tr>
<tr><td>4
Pedestrian Volume</td><td>A. Pedestrian volume crossing the major street during an average day is 100 or more for each of any 4 hours, or 190 or more during any one hour;
<u>and</u>
B. There are fewer than 60 gaps per hour in the traffic stream to allow pedestrians to cross during the same period when the pedestrian volume criterion is satisfied. Where there is a divided street having a median of sufficient width for pedestrians to wait, the requirement applies separately to each direction of vehicular traffic. See note on next page.</td><td>☐</td><td>☒</td></tr>
</table>

Minimum Traffic Signal Warrants

Warrant	Description	Compliance	
		Yes	No
5 School Crossing	A. Number of gaps in traffic stream during the period children are using the crossing is less than the number of minutes in the same period; **and** B. At least 20 children use the crossing during the latest crossing hour;	☐	☒

Notes for 4, Pedestrian Volume and 5, School Crossing

Shall not be applied if at location where the distance to the nearest traffic control signal along the major street is less than 300 feet, unless the proposed traffic control signal will not restrict the progressive movement of traffic.

6 Coordinated Signal System	A. In a one-way street or on a street that has traffic predominantly in one direction, the adjacent traffic control signals are so far apart that they do not provide the necessary degree of vehicular platooning; **or** B. On a two-way street, adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive movement.	☐	☒
7 Crash Experience	A. Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency; **and** B. Five or more reported crashes of type susceptible to correction by a traffic control signal have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash; **and** C. For each of any 8 hours of an average day, the VPH given in both of the 80% columns in Tables 1-A-1 and 1-A-2 or the VPH in both of the 80% columns in Tables 1-B-1 and 1-B-2 exists on the major street and the higher-volume minor street approach, respectively, to the intersection, or the volume of pedestrian traffic is not less than 80% of the requirements specified in the Pedestrian Volume Warrant. These major street and minor street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours.	☐	☒
8 Roadway Network	A. The intersection has a total existing or immediately projected entering volume of at least 1,000 VPH during the peak hour of a typical weekday and has 5-year projected traffic volumes based on an engineering study that meet one or more of Warrants 1,2 and 3 during an average weekday; **or** B. The intersection has a total existing or immediately projected entering volume of at least 1,000 VPH for each of any 5 hours of a non-normal business day (Saturday or Sunday). Note: A major route as used in this warrant shall have one or more of these characteristics: 1. Principal network for through traffic 2. Includes a highway entering a city 3. Appears as a major route on an official plan	☐	☒

District Traffic Engineer's Signature	Date

ITD 1415 (Rev. 11-04)

Minimum Traffic Signal Warrants

City				Date
Bellevue				2/4/2016
Major Street	**Minor Street**	**Speed Limit**	**Population**	**Analysis for Year**
SH 75	US 20	65/45	2,286	2040

Peak 8 Hour Volume (Vehicles and/or Pedestrians per Hour)

Time (Use the same time for both streets)	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM
Major Street (Total vehicles from both approaches)	431	474	533	579	758	819	739	805
Minor Street (Total vehicles from one direction)	64	48	70	65	121	95	138	134
Pedestrian (Highest volume crossing the major street)	0	0	0	0	0	0	0	0

Warrant	Description	Compliance	
		Yes	No
1 Eight-Hour Vehicular Volume	**One** of the following conditions exists for each of any 8 hours of an average day: A. The VPH given in the 100% column of Table 1-A-1 **and** Table 1-A-2 exist, **or** B. The VPH given in the 100% column of Table 1-B-1 **and** Table 1-B-2 exist. Volumes on the major street and minor street must be for the same 8 hours. The higher volume on the minor street is not required to be from the same approach during each of these 8 hours. Option: If the posted speed limit exceeds 40 mph, or if the intersection lies within an isolated community with a population of less than 10,000, the 70% columns may be used in place of the 100% columns.	☐	☒
		OR	
	Both of the following conditions exist for each of any 8 hours of an average day: A. The VPH given in the 80% column of Table 1-A-1 **and** Table 1-A-2 exist, **and** B. The VPH given in the 80% column of Table 1-B-1 **and** Table 1-B-2 exist. Note: The major street and minor street volumes must be for the same 8 hours of each condition, however, the 8 hours satisfied in Table 1-A does not have to be the same 8 hours satisfied in Table 1-B. On the minor street, the higher volume does not need to be from the same approach during each of these 8 hours.	☐	☒

Table 1-A Eight Hour Vehicular Volume

-1. Volume required for each of any 8 hours on major street (Total of both approaches)

Number of Lanes		100%	80%	70%
Major Street	**Minor Street**			
1	1	500	400	350
2 or more	1	600	480	420
2 or more	2 or more	600	480	420
1	2 or more	500	400	350

-2. Volume required for each of any 8 hours on minor street approach (One direction only)

Number of Lanes		100%	80%	70%	Number Hours Met (8 Req'd)
Major Street	**Minor Street**				
1	1	150	120	105	3
2 or more	1	150	120	105	
2 or more	2 or more	200	160	140	
1	2 or more	200	160	140	

Table 1-B Eight Hour Interruption of Continuous Traffic

-1. Volume required for each of any 8 hours on major street (Total of both approaches)

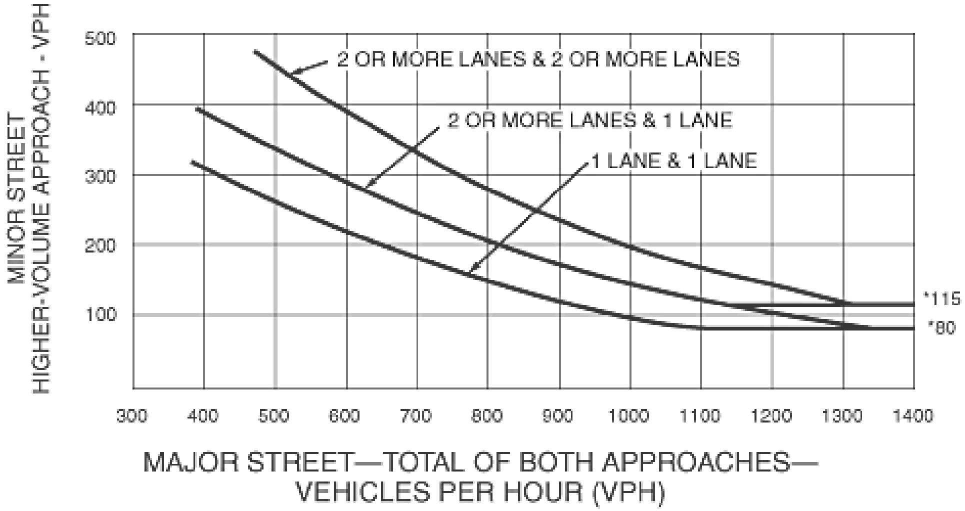
Number of Lanes		100%	80%	70%
Major Street	**Minor Street**			
1	1	750	600	525
2 or more	1	900	720	630
2 or more	2 or more	900	720	630
1	2 or more	750	600	525

-2. Volume required for each of any 8 hours on minor street approach (One direction only)

Number of Lanes		100%	80%	70%	Number Hours Met (8 Req'd)
Major Street	**Minor Street**				
1	1	75	60	50	6
2 or more	1	75	60	50	
2 or more	2 or more	100	80	70	
1	2 or more	100	80	70	

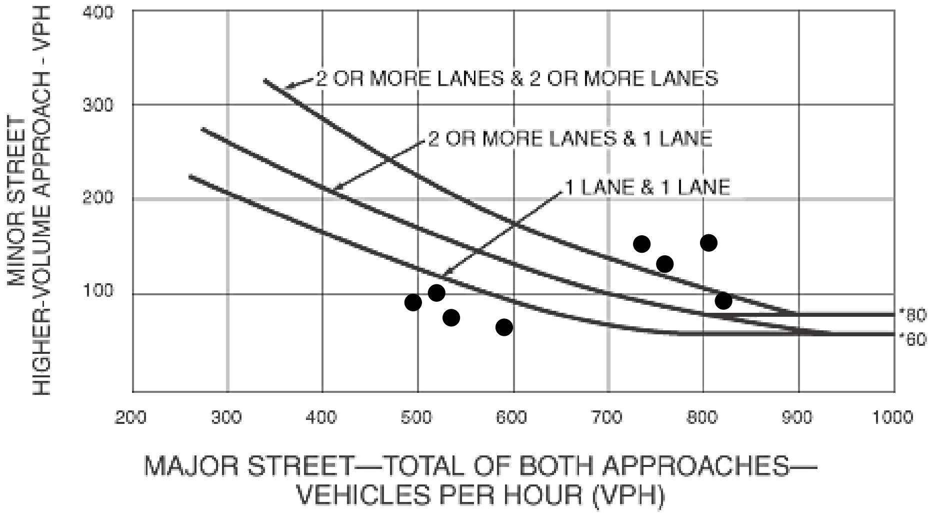
Warrant	Description	Compliance	
		Yes	No
2 Four-Hour Vehicular Volume	For each of any 4 hours of an average day, the plotted points on Figure 1 represent 100% VPH on the major street (total of both approaches.) **and** The VPH on the higher-volume minor street approach (one direction only) fall above the applicable curve for the existing combination of approach lanes. On the minor street, the higher volume does not need to be from the same approach during each of these 4 hours. Use Figure 2, 70% chart if the speed limit exceeds 40 mph or if this is an isolated community with a population of less than 10,000.	☒	☐

Figure 1. Warrant 2, Four-Hour Vehicular Volume (100% Factor)



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Minimum Traffic Signal Warrants

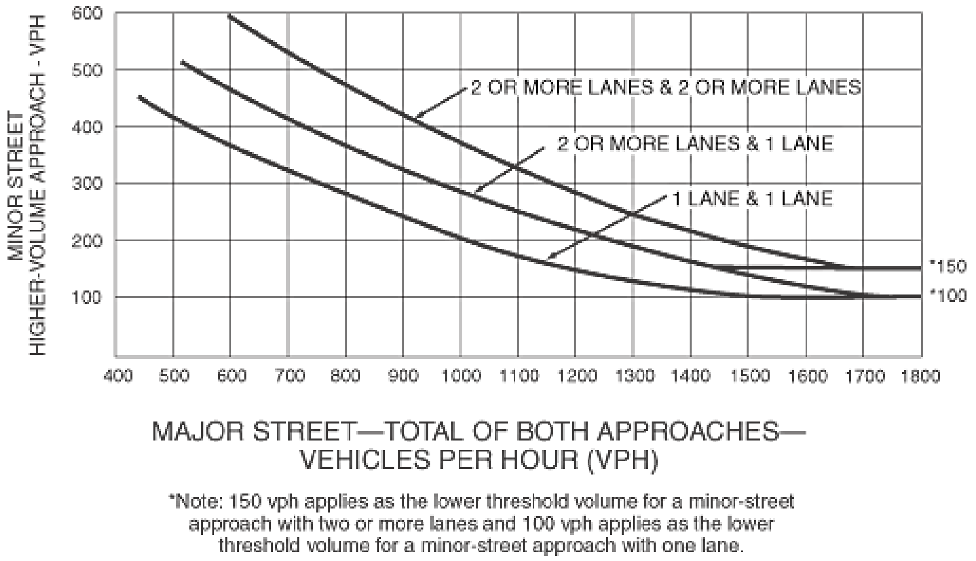
<table>
<tr><th rowspan="2">Warrant</th><th rowspan="2">Description</th><th colspan="2">Compliance</th></tr>
<tr><th>Yes</th><th>No</th></tr>
<tr><td rowspan="3">3
Peak Hour</td><td>If either of the two following categories (A or B) are met:
A. If all three of the following conditions exist for the same 1 hour (any four consecutive 15-minute periods) of an average day:
1. The total vehicle stopped time delay on a minor street approach (one direction only) controlled by a STOP sign equals or exceeds:
4 vehicle-hours for a one-lane approach, or
5-vehicle-hours for a two-lane approach,
<u>and</u>
2. The volume on the same minor street approach (one direction only) equals or exceeds:
100 VPH for one moving lane of traffic, or
150 VPH for two moving lanes,
<u>and</u>
3. The total volume entering during the hour equals or exceeds:
650 VPH for intersections with three approaches, or
800 VPH for intersections with four or more approaches.</td><td>☐</td><td>☒</td></tr>
<tr><td colspan="3">OR</td></tr>
<tr><td>B. The plotted point representing the VPH on the major street (total of both approaches) and the corresponding VPH on the higher-volume minor street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in <u>Figure 3</u>, Peak Hour (100% Factor) for the existing combination of approach lanes. Use <u>Figure 4</u>, Peak Hour (70% Factor) if the speed limit exceeds 40 mph, or if the intersection lies within a built-up area of an isolated community having a population of less than 10,000.</td><td>☒</td><td>☐</td></tr>
</table>

Notes for 3, Peak Hour

The Peak Hour Signal Warrant is intended for use at a location where, for a minimum of 1 hour of an average day, traffic on the minor street suffers undue delay when entering or crossing the major street. This signal warrant must be applied only in unusual circumstances. Such cases include high-occupancy facilities that attract or release large numbers of vehicles over a short period of time.

Minimum Traffic Signal Warrants

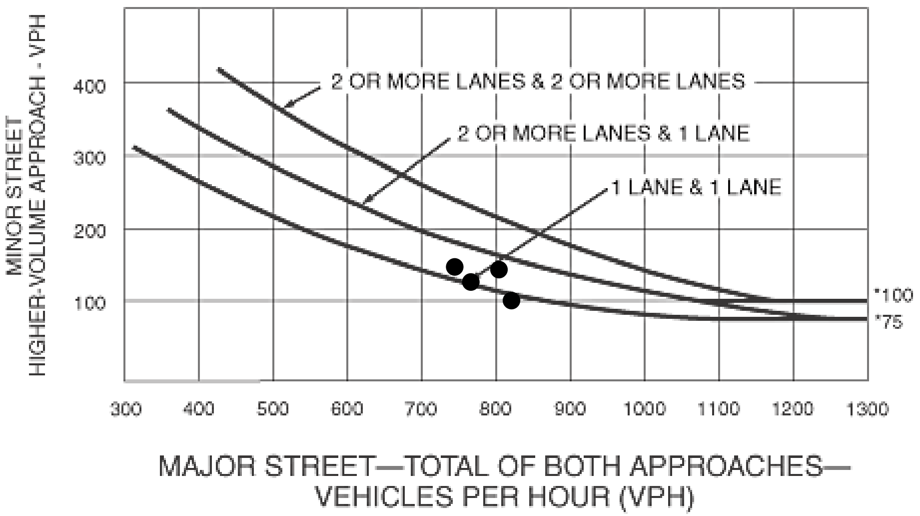
Figure 3. Warrant 3, Peak Hour (100% Factor)



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant	Description	Compliance	
		Yes	No
4 Pedestrian Volume	A. Pedestrian volume crossing the major street during an average day is 100 or more for each of any 4 hours, or 190 or more during any one hour; **and** B. There are fewer than 60 gaps per hour in the traffic stream to allow pedestrians to cross during the same period when the pedestrian volume criterion is satisfied. Where there is a divided street having a median of sufficient width for pedestrians to wait, the requirement applies separately to each direction of vehicular traffic. See note on next page.	☐	☒

Minimum Traffic Signal Warrants

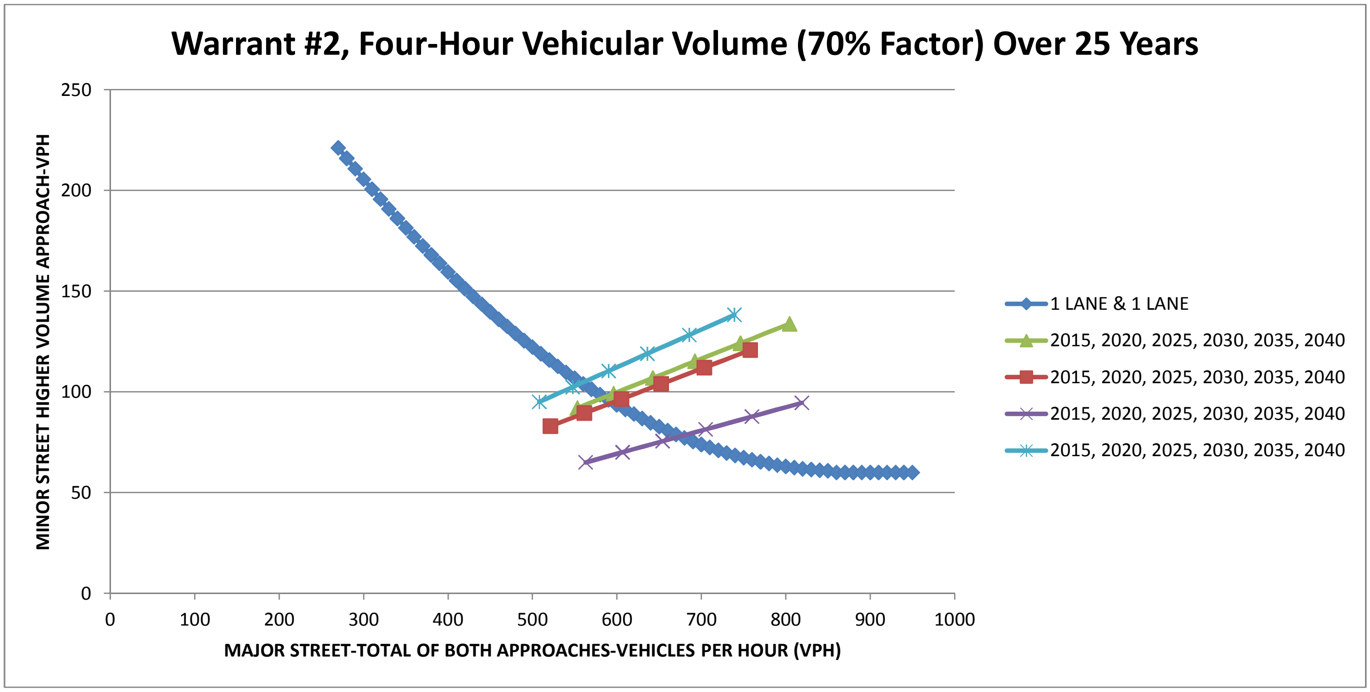
Warrant	Description	Compliance	
		Yes	No
5 School Crossing	A. Number of gaps in traffic stream during the period children are using the crossing is less than the number of minutes in the same period; **and** B. At least 20 children use the crossing during the latest crossing hour;	☐	☒

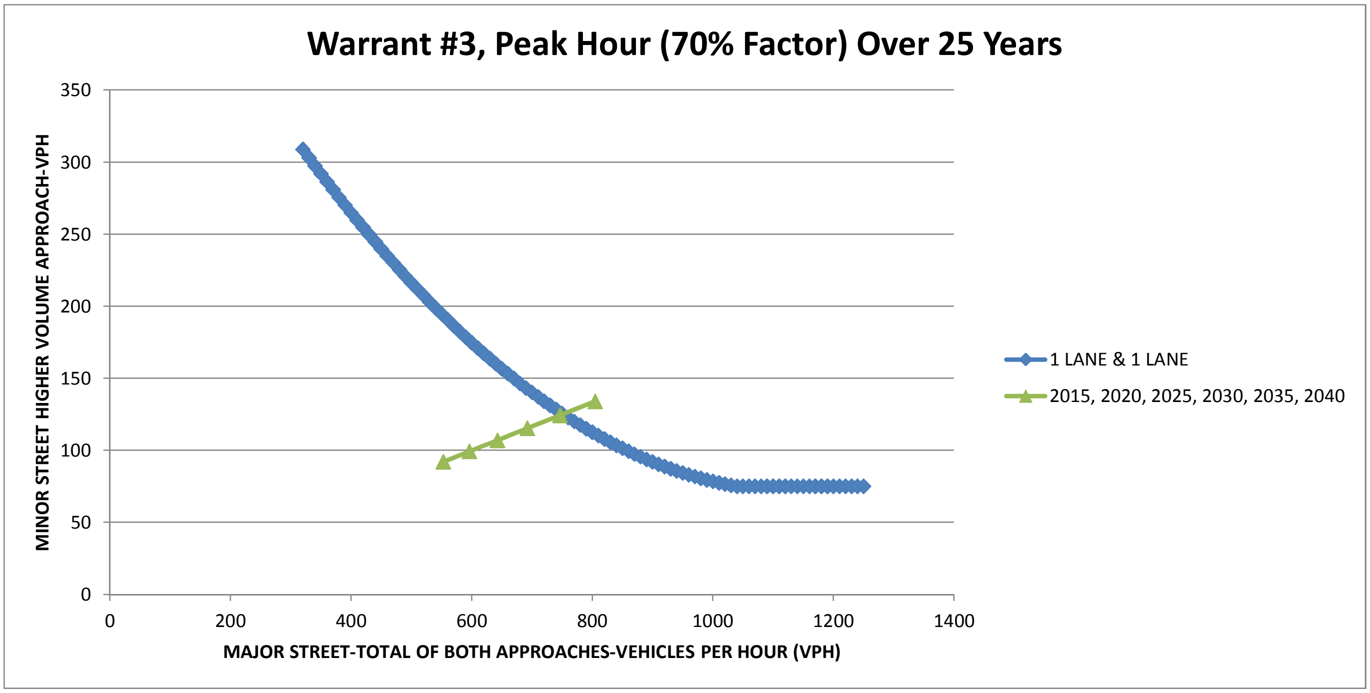
Notes for 4, Pedestrian Volume and 5, School Crossing

Shall not be applied if at location where the distance to the nearest traffic control signal along the major street is less than 300 feet, unless the proposed traffic control signal will not restrict the progressive movement of traffic.

6 Coordinated Signal System	A. In a one-way street or on a street that has traffic predominantly in one direction, the adjacent traffic control signals are so far apart that they do not provide the necessary degree of vehicular platooning; **or** B. On a two-way street, adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive movement.	☐	☒
7 Crash Experience	A. Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency; **and** B. Five or more reported crashes of type susceptible to correction by a traffic control signal have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash; **and** C. For each of any 8 hours of an average day, the VPH given in both of the 80% columns in Tables 1-A-1 and 1-A-2 or the VPH in both of the 80% columns in Tables 1-B-1 and 1-B-2 exists on the major street and the higher-volume minor street approach, respectively, to the intersection, or the volume of pedestrian traffic is not less than 80% of the requirements specified in the Pedestrian Volume Warrant. These major street and minor street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours.	☐	☒
8 Roadway Network	A. The intersection has a total existing or immediately projected entering volume of at least 1,000 VPH during the peak hour of a typical weekday and has 5-year projected traffic volumes based on an engineering study that meet one or more of Warrants 1,2 and 3 during an average weekday; **or** B. The intersection has a total existing or immediately projected entering volume of at least 1,000 VPH for each of any 5 hours of a non-normal business day (Saturday or Sunday). Note: A major route as used in this warrant shall have one or more of these characteristics: 1. Principal network for through traffic 2. Includes a highway entering a city 3. Appears as a major route on an official plan	☐	☒

District Traffic Engineer's Signature	Date


Warrant #2, Four-Hour Vehicular Volume (70% Factor) Over 25 Years
MINOR STREET HIGHER VOLUME APPROACH-VPH
250
200
150
100
50
0
0
100
200
300
400
500
600
700
800
900
1000
MAJOR STREET-TOTAL OF BOTH APPROACHES-VEHICLES PER HOUR (VPH)
1 LANE & 1 LANE
2015, 2020, 2025, 2030, 2035, 2040
2015, 2020, 2025, 2030, 2035, 2040
2015, 2020, 2025, 2030, 2035, 2040
2015, 2020, 2025, 2030, 2035, 2040



Warrant #3, Peak Hour (70% Factor) Over 25 Years

D

ITD Traffic Signal Warrant Form 1415 - Existing Conditions

ITD 1415 (Rev. 11-04)

Minimum Traffic Signal Warrants

City				Date
Bellevue				2/4/2016
Major Street	**Minor Street**	**Speed Limit**	**Population**	**Analysis for Year**
SH 75	US 20	65/45	2,286	2015

Peak 8 Hour Volume (Vehicles and/or Pedestrians per Hour)

Time (Use the same time for both streets)	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM
Major Street (Total vehicles from both approaches)	296	326	366	398	521	563	508	553
Minor Street (Total vehicles from one direction)	44	33	48	45	83	65	95	92
Pedestrian (Highest volume crossing the major street)	0	0	0	0	0	0	0	0

Warrant	Description	Compliance	
		Yes	No
1 Eight-Hour Vehicular Volume	**One** of the following conditions exists for each of any 8 hours of an average day: A. The VPH given in the 100% column of Table 1-A-1 **and** Table 1-A-2 exist, **or** B. The VPH given in the 100% column of Table 1-B-1 **and** Table 1-B-2 exist. Volumes on the major street and minor street must be for the same 8 hours. The higher volume on the minor street is not required to be from the same approach during each of these 8 hours. Option: If the posted speed limit exceeds 40 mph, or if the intersection lies within an isolated community with a population of less than 10,000, the 70% columns may be used in place of the 100% columns.	☐	☒
			OR
	Both of the following conditions exist for each of any 8 hours of an average day: A. The VPH given in the 80% column of Table 1-A-1 **and** Table 1-A-2 exist, **and** B. The VPH given in the 80% column of Table 1-B-1 **and** Table 1-B-2 exist. Note: The major street and minor street volumes must be for the same 8 hours of each condition, however, the 8 hours satisfied in Table 1-A does not have to be the same 8 hours satisfied in Table 1-B. On the minor street, the higher volume does not need to be from the same approach during each of these 8 hours.	☐	☒

Table 1-A Eight Hour Vehicular Volume

-1. Volume required for each of any 8 hours on major street (Total of both approaches)

Number of Lanes		100%	80%	70%
Major Street	**Minor Street**			
1	1	500	400	350
2 or more	1	600	480	420
2 or more	2 or more	600	480	420
1	2 or more	500	400	350

-2. Volume required for each of any 8 hours on minor street approach (One direction only)

Number of Lanes		100%	80%	70%
Major Street	**Minor Street**			
1	1	150	120	105
2 or more	1	150	120	105
2 or more	2 or more	200	160	140
1	2 or more	200	160	140

Number Hours Met (8 Req'd)
0

Table 1-B Eight Hour Interruption of Continuous Traffic

-1. Volume required for each of any 8 hours on major street (Total of both approaches)

Number of Lanes		100%	80%	70%
Major Street	**Minor Street**			
1	1	750	600	525
2 or more	1	900	720	630
2 or more	2 or more	900	720	630
1	2 or more	750	600	525

-2. Volume required for each of any 8 hours on minor street approach (One direction only)

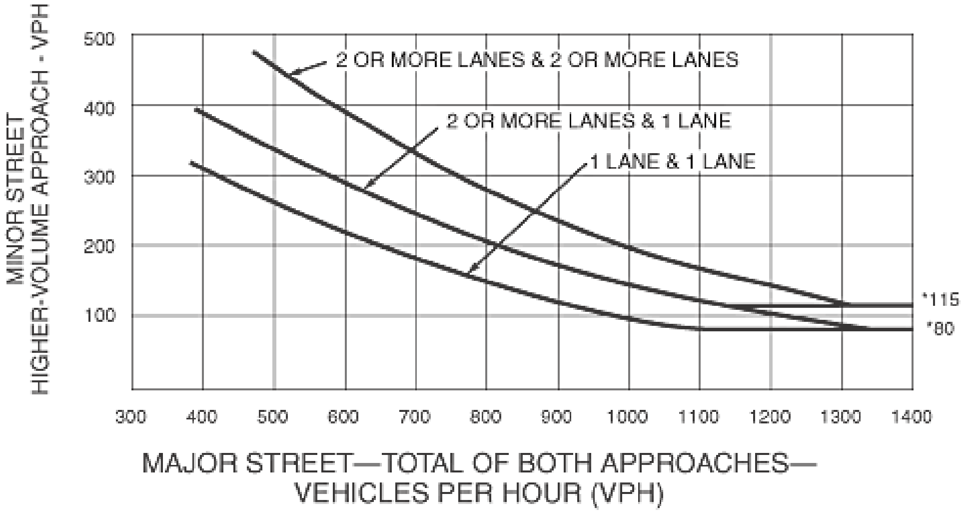
Number of Lanes		100%	80%	70%
Major Street	**Minor Street**			
1	1	75	60	50
2 or more	1	75	60	50
2 or more	2 or more	100	80	70
1	2 or more	100	80	70

Number Hours Met (8 Req'd)
2

Minimum Traffic Signal Warrants

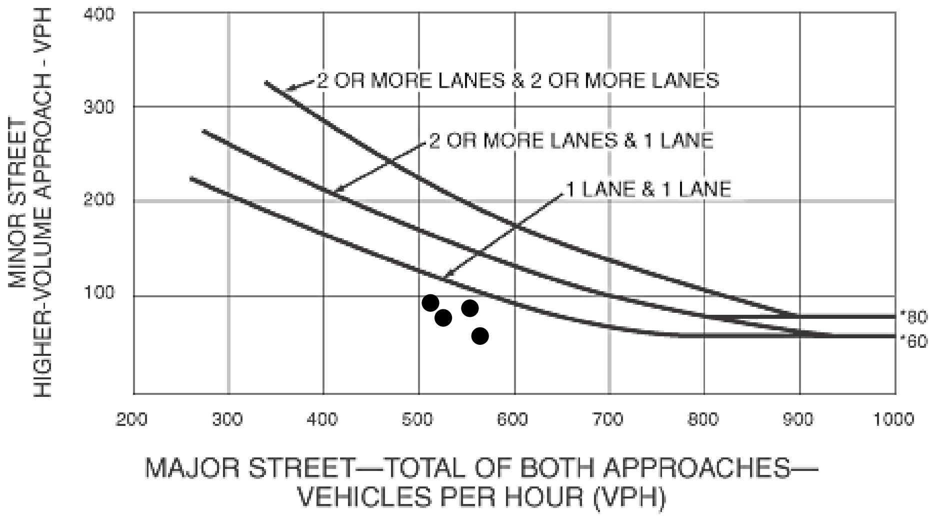
Warrant	Description	Compliance	
		Yes	No
2 Four-Hour Vehicular Volume	For each of any 4 hours of an average day, the plotted points on Figure 1 represent 100% VPH on the major street (total of both approaches.) **and** The VPH on the higher-volume minor street approach (one direction only) fall above the applicable curve for the existing combination of approach lanes. On the minor street, the higher volume does not need to be from the same approach during each of these 4 hours. Use Figure 2, 70% chart if the speed limit exceeds 40 mph or if this is an isolated community with a population of less than 10,000.	☐	☒

Figure 1. Warrant 2, Four-Hour Vehicular Volume (100% Factor)



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

ITD 1415 (Rev. 11-04)

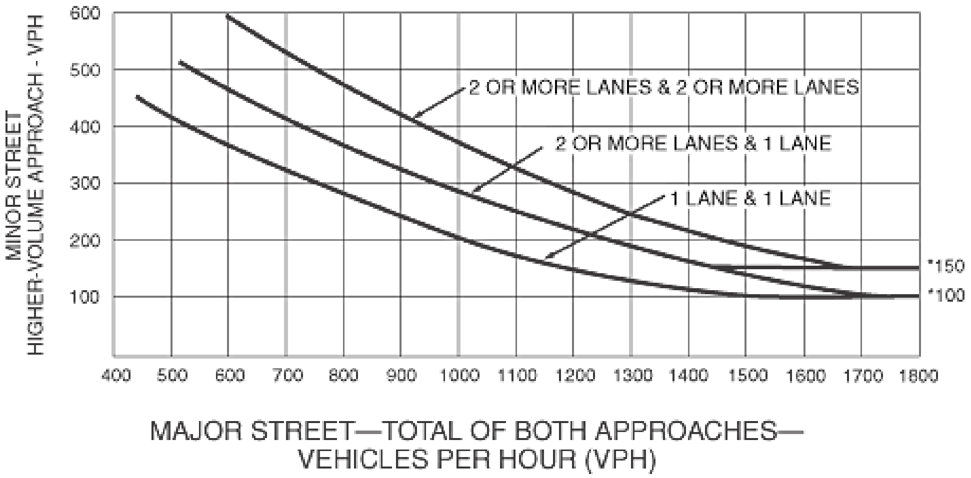
Minimum Traffic Signal Warrants

Warrant	Description	Compliance	
		Yes	No
3 Peak Hour	If either of the two following categories (A or B) are met: A. If all three of the following conditions exist for the same 1 hour (any four consecutive 15-minute periods) of an average day: 1. The total vehicle stopped time delay on a minor street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach, or 5-vehicle-hours for a two-lane approach, **and** 2. The volume on the same minor street approach (one direction only) equals or exceeds: 100 VPH for one moving lane of traffic, or 150 VPH for two moving lanes, **and** 3. The total volume entering during the hour equals or exceeds: 650 VPH for intersections with three approaches, or 800 VPH for intersections with four or more approaches.	☐	☒
	OR		
	B. The plotted point representing the VPH on the major street (total of both approaches) and the corresponding VPH on the higher-volume minor street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in Figure 3, Peak Hour (100% Factor) for the existing combination of approach lanes. Use Figure 4, Peak Hour (70% Factor) if the speed limit exceeds 40 mph, or if the intersection lies within a built-up area of an isolated community having a population of less than 10,000.	☐	☒

Notes for 3, Peak Hour

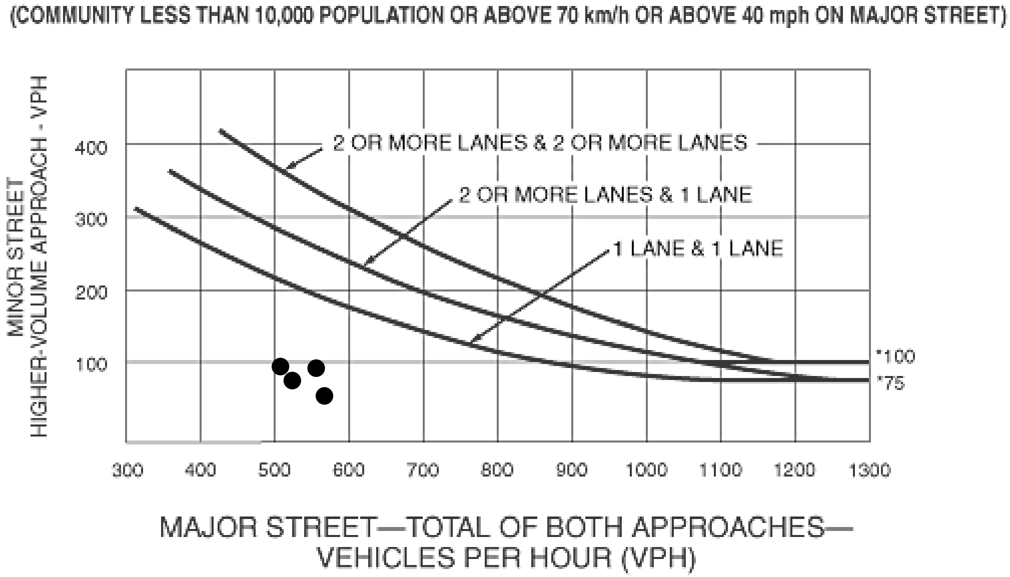
The Peak Hour Signal Warrant is intended for use at a location where, for a minimum of 1 hour of an average day, traffic on the minor street suffers undue delay when entering or crossing the major street. This signal warrant must be applied only in unusual circumstances. Such cases include high-occupancy facilities that attract or release large numbers of vehicles over a short period of time.

Figure 3. Warrant 3, Peak Hour (100% Factor)



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4. Warrant 3, Peak Hour (70% Factor)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant	Description	Compliance	
		Yes	No
4 Pedestrian Volume	A. Pedestrian volume crossing the major street during an average day is 100 or more for each of any 4 hours, or 190 or more during any one hour; **and** B. There are fewer than 60 gaps per hour in the traffic stream to allow pedestrians to cross during the same period when the pedestrian volume criterion is satisfied. Where there is a divided street having a median of sufficient width for pedestrians to wait, the requirement applies separately to each direction of vehicular traffic. See note on next page.	☐	☒

Minimum Traffic Signal Warrants

Warrant	Description	Compliance Yes	Compliance No
5 School Crossing	A. Number of gaps in traffic stream during the period children are using the crossing is less than the number of minutes in the same period; **and** B. At least 20 children use the crossing during the latest crossing hour;	☐	☒

Notes for 4, Pedestrian Volume and 5, School Crossing

Shall not be applied if at location where the distance to the nearest traffic control signal along the major street is less than 300 feet, unless the proposed traffic control signal will not restrict the progressive movement of traffic.

6 Coordinated Signal System	A. In a one-way street or on a street that has traffic predominantly in one direction, the adjacent traffic control signals are so far apart that they do not provide the necessary degree of vehicular platooning; **or** B. On a two-way street, adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive movement.	☐	☒
7 Crash Experience	A. Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency; **and** B. Five or more reported crashes of type susceptible to correction by a traffic control signal have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash; **and** C. For each of any 8 hours of an average day, the VPH given in both of the 80% columns in Tables 1-A-1 and 1-A-2 or the VPH in both of the 80% columns in Tables 1-B-1 and 1-B-2 exists on the major street and the higher-volume minor street approach, respectively, to the intersection, or the volume of pedestrian traffic is not less than 80% of the requirements specified in the Pedestrian Volume Warrant. These major street and minor street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours.	☐	☒
8 Roadway Network	A. The intersection has a total existing or immediately projected entering volume of at least 1,000 VPH during the peak hour of a typical weekday and has 5-year projected traffic volumes based on an engineering study that meet one or more of Warrants 1,2 and 3 during an average weekday; **or** B. The intersection has a total existing or immediately projected entering volume of at least 1,000 VPH for each of any 5 hours of a non-normal business day (Saturday or Sunday). Note: A major route as used in this warrant shall have one or more of these characteristics: 1. Principal network for through traffic 2. Includes a highway entering a city 3. Appears as a major route on an official plan	☐	☒

District Traffic Engineer's Signature	Date

E

ITD Traffic Signal Warrant Form 1415 - Future Conditions

ITD 1415 (Rev. 11-04)

Minimum Traffic Signal Warrants

City				Date
Bellevue				2/4/2016
Major Street	**Minor Street**	**Speed Limit**	**Population**	**Analysis for Year**
SH 75	US 20	65/45	2,286	2040

Peak 8 Hour Volume (Vehicles and/or Pedestrians per Hour)

Time (Use the same time for both streets)	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM
Major Street (Total vehicles from both approaches)	431	474	533	579	758	819	739	805
Minor Street (Total vehicles from one direction)	64	48	70	65	121	95	138	134
Pedestrian (Highest volume crossing the major street)	0	0	0	0	0	0	0	0

Warrant	**Description**	**Compliance**	
		Yes	No
1 Eight-Hour Vehicular Volume	**One** of the following conditions exists for each of any 8 hours of an average day: A. The VPH given in the 100% column of Table 1-A-1 **and** Table 1-A-2 exist, **or** B. The VPH given in the 100% column of Table 1-B-1 **and** Table 1-B-2 exist. Volumes on the major street and minor street must be for the same 8 hours. The higher volume on the minor street is not required to be from the same approach during each of these 8 hours. Option: If the posted speed limit exceeds 40 mph, or if the intersection lies within an isolated community with a population of less than 10,000, the 70% columns may be used in place of the 100% columns.	☐	☒
		OR	
	Both of the following conditions exist for each of any 8 hours of an average day: A. The VPH given in the 80% column of Table 1-A-1 **and** Table 1-A-2 exist, **and** B. The VPH given in the 80% column of Table 1-B-1 **and** Table 1-B-2 exist. Note: The major street and minor street volumes must be for the same 8 hours of each condition, however, the 8 hours satisfied in Table 1-A does not have to be the same 8 hours satisfied in Table 1-B. On the minor street, the higher volume does not need to be from the same approach during each of these 8 hours.	☐	☒

Table 1-A Eight Hour Vehicular Volume

-1. Volume required for each of any 8 hours on major street (Total of both approaches)

Number of Lanes		100%	80%	70%
Major Street	**Minor Street**			
1	1	500	400	350
2 or more	1	600	480	420
2 or more	2 or more	600	480	420
1	2 or more	500	400	350

-2. Volume required for each of any 8 hours on minor street approach (One direction only)

Number of Lanes		100%	80%	70%	Number Hours Met (8 Req'd)
Major Street	**Minor Street**				
1	1	150	120	105	3
2 or more	1	150	120	105	
2 or more	2 or more	200	160	140	
1	2 or more	200	160	140	

Table 1-B Eight Hour Interruption of Continuous Traffic

-1. Volume required for each of any 8 hours on major street (Total of both approaches)

Number of Lanes		100%	80%	70%
Major Street	**Minor Street**			
1	1	750	600	525
2 or more	1	900	720	630
2 or more	2 or more	900	720	630
1	2 or more	750	600	525

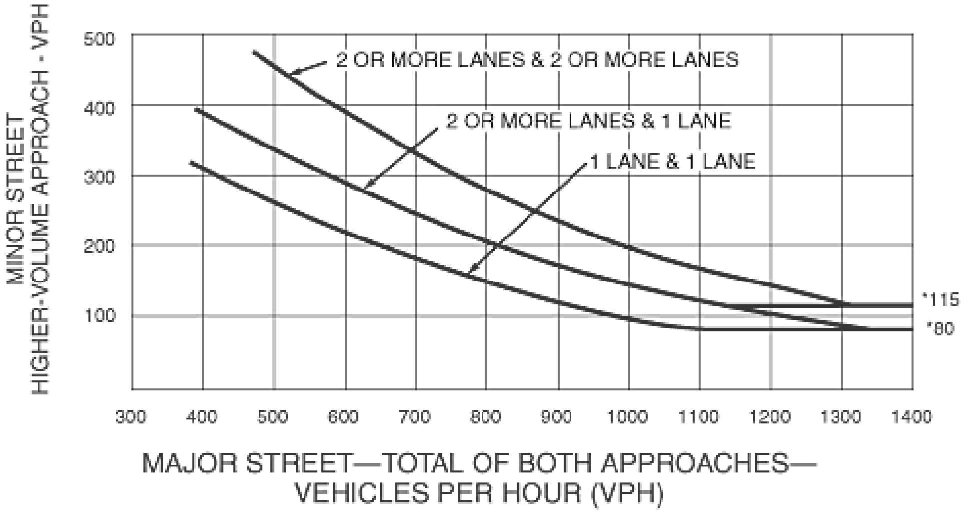
-2. Volume required for each of any 8 hours on minor street approach (One direction only)

Number of Lanes		100%	80%	70%	Number Hours Met (8 Req'd)
Major Street	**Minor Street**				
1	1	75	60	50	6
2 or more	1	75	60	50	
2 or more	2 or more	100	80	70	
1	2 or more	100	80	70	

Minimum Traffic Signal Warrants

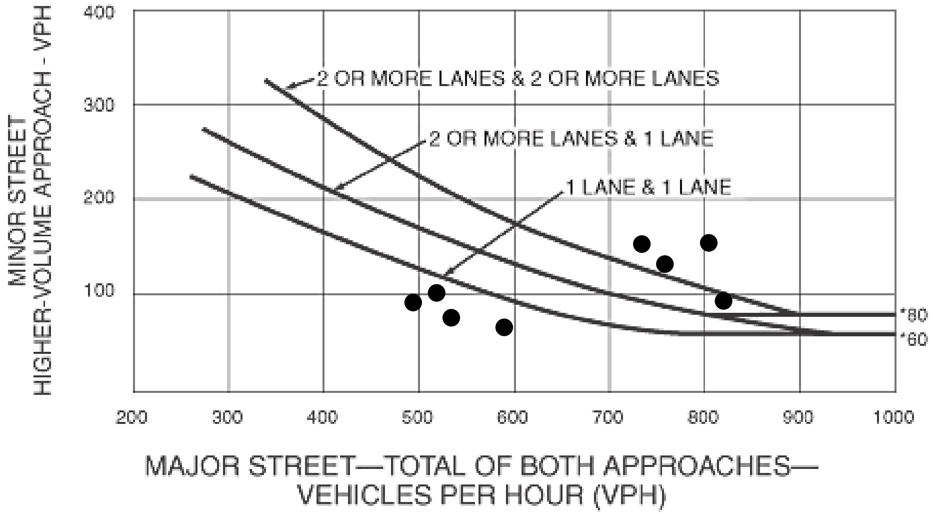
Warrant	Description	Compliance	
		Yes	No
2 Four-Hour Vehicular Volume	For each of any 4 hours of an average day, the plotted points on Figure 1 represent 100% VPH on the major street (total of both approaches.) **and** The VPH on the higher-volume minor street approach (one direction only) fall above the applicable curve for the existing combination of approach lanes. On the minor street, the higher volume does not need to be from the same approach during each of these 4 hours. Use Figure 2, 70% chart if the speed limit exceeds 40 mph or if this is an isolated community with a population of less than 10,000.	☒	☐

Figure 1. Warrant 2, Four-Hour Vehicular Volume (100% Factor)



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Minimum Traffic Signal Warrants

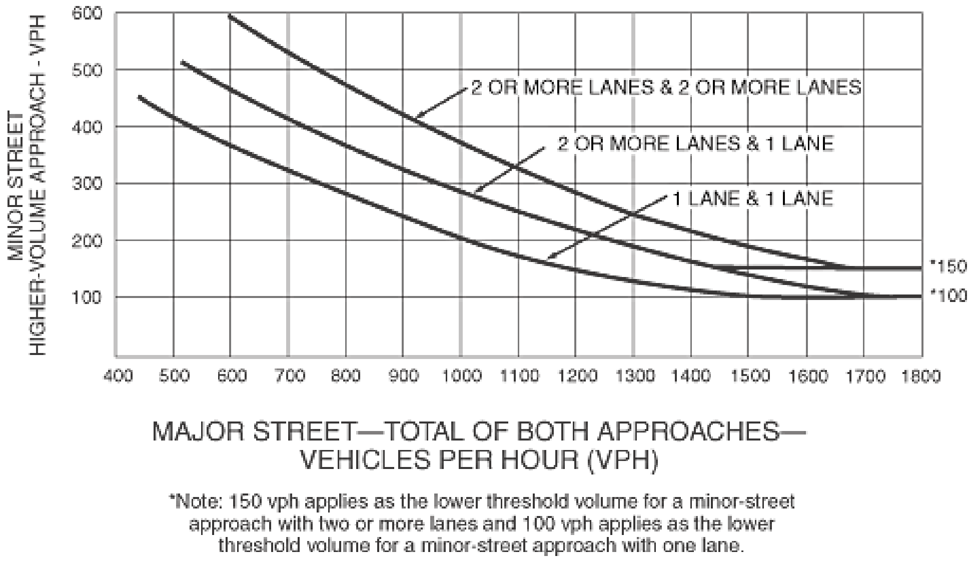
<table>
<tr><th rowspan="2">Warrant</th><th rowspan="2">Description</th><th colspan="2">Compliance</th></tr>
<tr><th>Yes</th><th>No</th></tr>
<tr><td rowspan="3">3
Peak Hour</td><td>If either of the two following categories (A or B) are met:
A. If all three of the following conditions exist for the same 1 hour (any four consecutive 15-minute periods) of an average day:
1. The total vehicle stopped time delay on a minor street approach (one direction only) controlled by a STOP sign equals or exceeds:
4 vehicle-hours for a one-lane approach, or
5-vehicle-hours for a two-lane approach,
<u>and</u>
2. The volume on the same minor street approach (one direction only) equals or exceeds:
100 VPH for one moving lane of traffic, or
150 VPH for two moving lanes,
<u>and</u>
3. The total volume entering during the hour equals or exceeds:
650 VPH for intersections with three approaches, or
800 VPH for intersections with four or more approaches.</td><td>☐</td><td>☒</td></tr>
<tr><td colspan="3">OR</td></tr>
<tr><td>B. The plotted point representing the VPH on the major street (total of both approaches) and the corresponding VPH on the higher-volume minor street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in <u>Figure 3</u>, Peak Hour (100% Factor) for the existing combination of approach lanes. Use <u>Figure 4</u>, Peak Hour (70% Factor) if the speed limit exceeds 40 mph, or if the intersection lies within a built-up area of an isolated community having a population of less than 10,000.</td><td>☒</td><td>☐</td></tr>
</table>

Notes for 3, Peak Hour

The Peak Hour Signal Warrant is intended for use at a location where, for a minimum of 1 hour of an average day, traffic on the minor street suffers undue delay when entering or crossing the major street. This signal warrant must be applied only in unusual circumstances. Such cases include high-occupancy facilities that attract or release large numbers of vehicles over a short period of time.

Minimum Traffic Signal Warrants

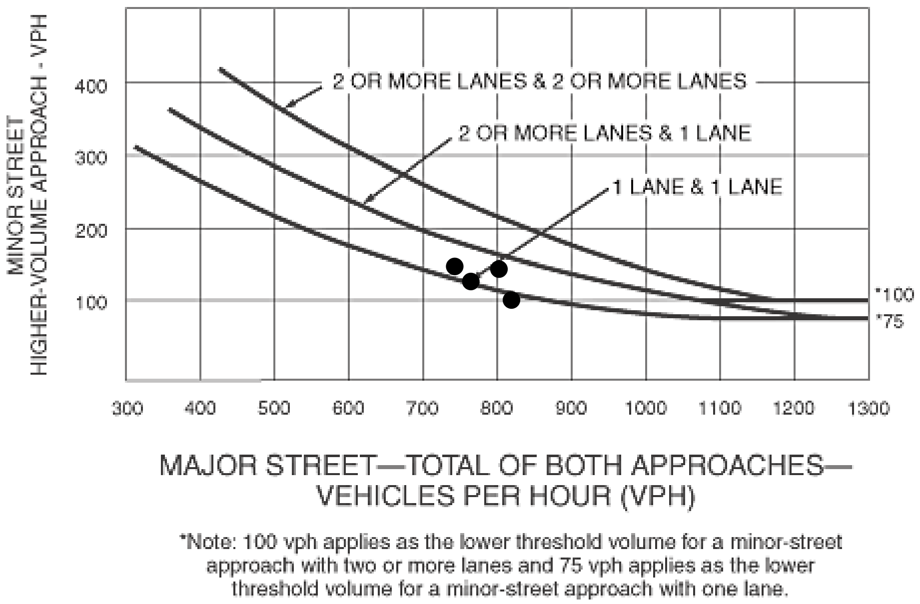
Figure 3. Warrant 3, Peak Hour (100% Factor)



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant	Description	Compliance	
		Yes	No
4 Pedestrian Volume	A. Pedestrian volume crossing the major street during an average day is 100 or more for each of any 4 hours, or 190 or more during any one hour; **and** B. There are fewer than 60 gaps per hour in the traffic stream to allow pedestrians to cross during the same period when the pedestrian volume criterion is satisfied. Where there is a divided street having a median of sufficient width for pedestrians to wait, the requirement applies separately to each direction of vehicular traffic. See note on next page.	☐	☒

Minimum Traffic Signal Warrants

Warrant	Description	Compliance	
		Yes	No
5 School Crossing	A. Number of gaps in traffic stream during the period children are using the crossing is less than the number of minutes in the same period; **and** B. At least 20 children use the crossing during the latest crossing hour;	☐	☒

Notes for 4, Pedestrian Volume and 5, School Crossing

Shall not be applied if at location where the distance to the nearest traffic control signal along the major street is less than 300 feet, unless the proposed traffic control signal will not restrict the progressive movement of traffic.

6 Coordinated Signal System	A. In a one-way street or on a street that has traffic predominantly in one direction, the adjacent traffic control signals are so far apart that they do not provide the necessary degree of vehicular platooning; **or** B. On a two-way street, adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive movement.	☐	☒
7 Crash Experience	A. Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency; **and** B. Five or more reported crashes of type susceptible to correction by a traffic control signal have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash; **and** C. For each of any 8 hours of an average day, the VPH given in both of the 80% columns in Tables 1-A-1 and 1-A-2 or the VPH in both of the 80% columns in Tables 1-B-1 and 1-B-2 exists on the major street and the higher-volume minor street approach, respectively, to the intersection, or the volume of pedestrian traffic is not less than 80% of the requirements specified in the Pedestrian Volume Warrant. These major street and minor street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours.	☐	☒
8 Roadway Network	A. The intersection has a total existing or immediately projected entering volume of at least 1,000 VPH during the peak hour of a typical weekday and has 5-year projected traffic volumes based on an engineering study that meet one or more of Warrants 1,2 and 3 during an average weekday; **or** B. The intersection has a total existing or immediately projected entering volume of at least 1,000 VPH for each of any 5 hours of a non-normal business day (Saturday or Sunday). Note: A major route as used in this warrant shall have one or more of these characteristics: 1. Principal network for through traffic 2. Includes a highway entering a city 3. Appears as a major route on an official plan	☐	☒

District Traffic Engineer's Signature	Date

F

Tier 1 Alternatives Assessment Packet

US 20 & SH 75
TIMMERMAN JUNCTION
Intersection Study

US-20/SH-75 (TIMMERMAN JUNCTION) INTERSECTION STUDY

TIER 1 ALTERNATIVES ASSESSMENT PACKET

The Idaho Transportation Department (ITD), in collaboration with local community leaders and representatives, is evaluating a wide range of alternatives for potential future improvements to the US-20/SH-75 (Timmerman Junction) intersection. This study is applying a tiered approach to evaluating alternatives and determining intersection improvement recommendations. This approach will involve three stages - Tier 1 Alternatives, Tier 2 Alternatives, Recommended Intersection Improvements.

This packet provides information on the existing conditions of the intersection, along with information on nine Tier 1 Alternatives for the intersection (several of the alternatives have multiple variations). The Tier 1 Alternatives are the initial set of alternatives developed for the intersection and represent the "wide range" of alternatives being considered.

ITD welcomes your feedback and appreciates your time in completing the comment sheet provided at the back of this packet. Your comments will be considered to help determine the alternatives carried forward as Tier 2 Alternatives.

For more information please contact:
Bruce Christensen
ITD Study Manager
208-886-7860
Bruce.Christensen@itd.idaho.gov

or visit
http://itd.idaho.gov/projects/d4/US20_ID75_IntersectionStudy/

EXISTING CONDITIONS

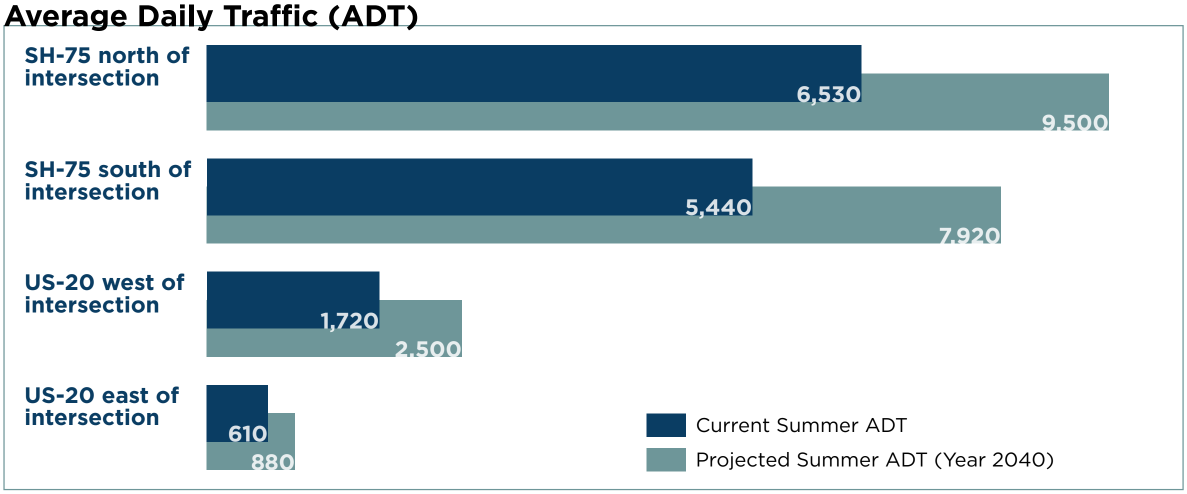
INTERSECTION CHARACTERISTICS

The US-20/SH-75 intersection is currently two-way, stop-controlled with eastbound and westbound US-20 being the stop-controlled approaches and northbound and southbound SH-75 being uncontrolled approaches. Each approach entry has a single left-through-right lane with the exception of the southbound entry, which has a left-through lane and a separate right-turn lane.

EXISTING CONDITIONS CONTINUED

	SH-75		US-20
Posted Speeds	**45 MPH** within 1/2 mile of intersection	**55 MPH** beyond 1/2 mile of intersection	**65 MPH**
Functional Classification	**Minor Arterial**		**Principal Arterial** (National Highway System Route)
Scenic Byways	 **Sawtooth Scenic Byway**		 **Peaks to Craters Scenic Byway** east of the intersection

Average Daily Traffic (ADT)



Trucks in ADT

4%

4%

8%

8%

Crash Data (2011-2015)

10 reported crashes

8 involved at least one injury

1.7 expected crashes/year

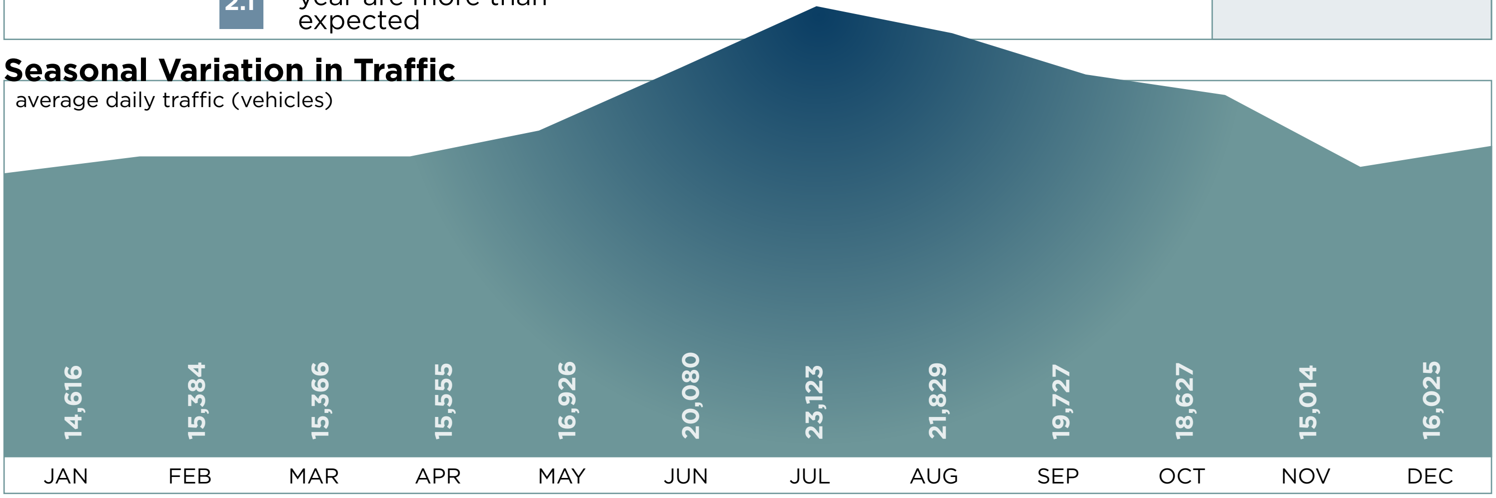
2.1 observed crashes/year are more than expected

Contributing cause for all crashes was “failure to stop/yield”

All crashes were angle type

ZERO reported **fatalities at the intersection** in the past 15 years

Seasonal Variation in Traffic



ALTERNATIVE 1

NO BUILD

The existing lane configurations and two-way, stop control remain in place at the intersection.

ASSESSMENT OF FUTURE CONDITIONS

Costs	Construction	Maintenance
Very High		
High		
Medium	**None**	
Low		▨
Very Low		▨

Safety Performance

With the no-build condition…

2.4 expected crashes/year

- proportion of injury crashes expected to remain high
- ‘failure to stop’ crashes expected to continue to be an issue

Future Traffic Operations (Year 2040)

SH-75	US-20	Expected Residual Capacity
A Level of Service	**D** Level of Service	**56%**
<1 Average Delay (sec/veh)	**27** Average Delay (sec/veh)	

Study Management Team (SMT) Feedback

- Recent improvements improved safety
- Adequate operations now and in the future
- Other alternatives are costly

SMT Recommendation:

Carry Forward

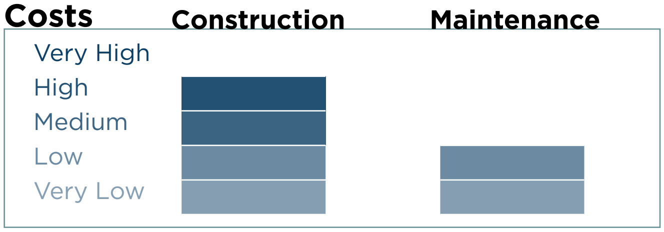
ALTERNATIVE 2A

REMOVE SKEW (SHIFT NORTH)

US-20 is realigned to intersect perpendicular to SH-75 approximately 100 feet to the north of the current intersection. A northbound right-turn lane is added on SH-75, while all other lane configurations remain unchanged. The existing two-way, stop control remains in place at the intersection.

ASSESSMENT OF FUTURE CONDITIONS

Costs



Safety Performance

2.3 expected crashes / year

Removing the skew from the intersection is expected to...

- reduce crashes overall by ~5%
- result in a minor decrease in injury crashes

Future Traffic Operations (Year 2040)

SH-75
A Level of Service
<1 Average Delay (sec/veh)

US-20
D Level of Service
27 Average Delay (sec/veh)

Expected Residual Capacity
56%

Mobility Compared to No Build

	SH-75	US-20
Average Delay (sec/veh)	No Change	No Change
Stops	No Change	No Change
Travel Time through Intersection	Minimal Decrease	Minimal Increase

Study Management Team (SMT) Feedback

- Minimal safety benefit
- Extensive impacts

SMT Recommendation:
Eliminate

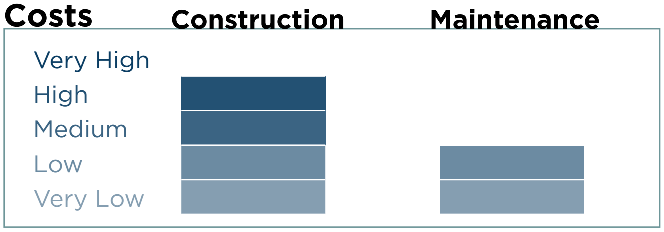
ALTERNATIVE 2B

REMOVE SKEW (SHIFT EAST)

SH-75 is realigned to intersect perpendicular to US-20 approximately 100 feet to the east of the current intersection. A northbound right-turn lane is added, while all other lane configurations remain unchanged. The existing two-way, stop control remains in place at the intersection.

ASSESSMENT OF FUTURE CONDITIONS

Costs



Safety Performance

2.3
expected crashes / year

Removing the skew from the intersection is expected to…

- reduce crashes overall by ~5%
- result in a minor decrease in injury crashes

Future Traffic Operations (Year 2040)

SH-75
A
Level of Service
<1
Average Delay (sec/veh)

US-20
D
Level of Service
27
Average Delay (sec/veh)

Expected Residual Capacity
56%

Mobility Compared to No Build

	SH-75	US-20
Average Delay (sec/veh)	No Change	No Change
Stops	No Change	No Change
Travel Time through Intersection	Minimal Increase	No Change

Study Management Team (SMT) Feedback

- Minimal safety benefit
- Extensive impacts

SMT Recommendation:
Eliminate

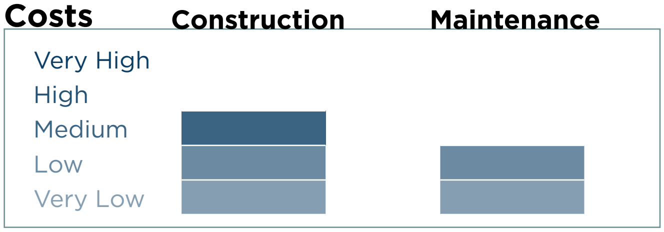
ALTERNATIVE 2C

REMOVE SKEW (CENTERED)

US-20 is realigned to intersect perpendicular to SH-75 at approximately the same intersection location. A northbound right-turn lane is added on SH-75, while all other lane configurations remain unchanged. The existing two-way, stop control remains in place at the intersection.

ASSESSMENT OF FUTURE CONDITIONS

Costs



Safety Performance

2.3

expected crashes / year

Removing the skew from the intersection is expected to...

- reduce crashes overall by ~5%
- result in a minor decrease in injury crashes

Future Traffic Operations (Year 2040)

SH-75

A

Level of Service

<1

Average Delay (sec/veh)

US-20

D

Level of Service

27

Average Delay (sec/veh)

Expected Residual Capacity

56%

Mobility Compared to No Build

	SH-75	US-20
Average Delay (sec/veh)	No Change	No Change
Stops	No Change	No Change
Travel Time through Intersection	No Change	Minimal Increase

Study Management Team (SMT) Feedback

- Minimal safety benefit
- Least impactful skew removal option

SMT Recommendation:

Carry Forward

ALTERNATIVE 3A

ADD A NORTHBOUND RIGHT-TURN LANE ON SH-75

A northbound right-turn lane is added on SH-75, while all other lane configurations remain unchanged. The existing two-way, stop control remains in place at the intersection. Widening occurs only on the south leg of the intersection.

ASSESSMENT OF FUTURE CONDITIONS

Costs

	Construction	Maintenance
Very High		
High		
Medium		
Low	▨	▨
Very Low	▨	▨

Safety Performance

2.0* expected crashes/year

Adding a right-turn lane to the intersection...

- ↓ expected minor reduction in the number of crashes overall
- ↑ proportion of angle and injury crashes expected to remain high

*Given historical crashes are primarily angle type, actual crashes/year may be higher than estimated.

Future Traffic Operations (Year 2040)

SH-75	US-20	Expected Residual Capacity
A Level of Service	**D** Level of Service	**56%**
<1 Average Delay (sec/veh)	**27** Average Delay (sec/veh)	

Mobility Compared to No Build

	SH-75	US-20
Average Delay (sec/veh)	No Change	No Change
Stops	No Change	No Change
Travel Time through Intersection	Minimal Decrease	No Change

Study Management Team (SMT) Feedback

- Minor safety and mobility benefits
- Not a long-term solution

SMT Recommendation:
Eliminate

ALTERNATIVE 3B

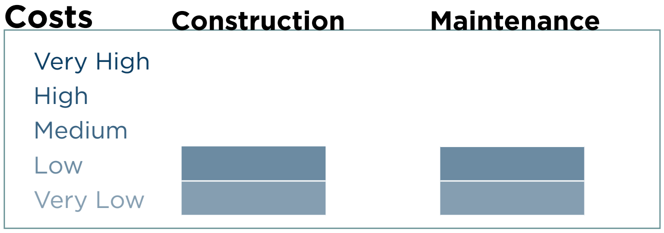
ADD NORTHBOUND AND SOUTHBOUND LEFT- AND RIGHT-TURN LANES ON SH-75

Northbound left- and right-turn lanes are added on SH-75. A southbound left-turn lane is added on SH-75. All other lane configurations remain unchanged. The existing two-way, stop control remains in place at the intersection. Widening occurs on the north and south legs of the intersection.

Note that left-turn lanes are generally not warranted according to ITD Turn Lane Warrant Guidance

ASSESSMENT OF FUTURE CONDITIONS

Costs



Safety Performance

2.0* expected crashes/year

Adding left- and right-turn lanes to the intersection...

↓ expected minor reduction in the number of crashes overall

↑ proportion of angle and injury crashes expected to remain high

*Given historical crashes are primarily angle type, actual crashes/year may be higher than estimated.

Future Traffic Operations (Year 2040)

SH-75
A
Level of Service
<1
Average Delay (sec/veh)

US-20
D
Level of Service
27
Average Delay (sec/veh)

Expected Residual Capacity
56%

Mobility Compared to No Build

	SH-75	US-20
Average Delay (sec/veh)	Minimal Decrease	No Change
Stops	Minimal Decrease	No Change
Travel Time through Intersection	Minimal Decrease	No Change

Study Management Team (SMT) Feedback

- Potential safety and operations benefit
- Relatively low cost and easy to implement

SMT Recommendation:
Carry Forward

ALTERNATIVE 4A

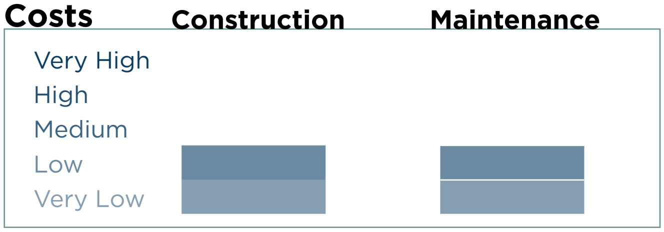
ALL-WAY STOP-CONTROLLED INTERSECTION

Stop signs are added to the northbound and southbound approaches on SH-75. All lane configurations remain unchanged but the southbound right-turn channelization is removed.

Note that conversion to all-way stop-control is not warranted according to national guidance.

ASSESSMENT OF FUTURE CONDITIONS

Costs



Safety Performance

1.3 expected crashes / year

Converting the intersection to all-way stop-control is expected to...

- reduce crashes overall by ~60%-75%%
- reduce injury and angle crashes by ~45%-55%
- result in an increase in rear-end crashes

Future Traffic Operations (Year 2040)

SH-75	US-20	
C Level of Service	**B** Level of Service	**Expected Residual Capacity**
16 Average Delay (sec/veh)	**11** Average Delay (sec/veh)	**34%**

Mobility Compared to No Build

	SH-75	US-20
Average Delay (sec/veh)	Significant Increase	Significant Decrease
Stops	Significant Increase	No Change
Travel Time through Intersection	Some Increase	Minor Decrease

Study Management Team (SMT) Feedback

- Could increase rear-end crashes
- Too much operational impact to SH-75
- Not a good long-term solution

SMT Recommendation:
Eliminate

ALTERNATIVE 4B

ALL-WAY STOP-CONTROLLED INTERSECTION AND REMOVE SOUTHBOUND RIGHT-TURN LANE

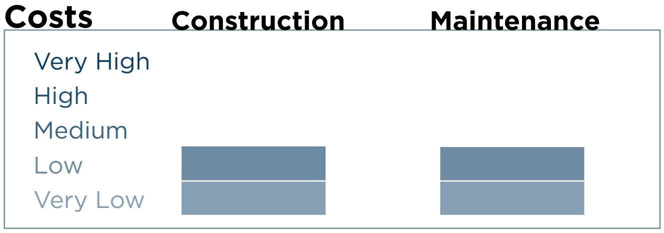
Stop signs are added to the northbound and southbound approaches on SH-75. The southbound right-turn lane is removed and all other lane configurations remain unchanged.

Note that conversion to all-way stop-control is not warranted according to national guidance.

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

ASSESSMENT OF FUTURE CONDITIONS

Costs



Safety Performance

1.3 expected crashes / year

Adding left- and right-turn lanes to the intersection...

- ↓ reduce crashes overall by ~45%-55%
- ↓ reduce injury and angle crashes by ~60%-75%
- ↑ result in an increase in rear-end crashes

Future Traffic Operations (Year 2040)

SH-75	US-20	Expected Residual Capacity
C Level of Service	**B** Level of Service	**34%**
17 Average Delay (sec/veh)	**11** Average Delay (sec/veh)	

Mobility Compared to No Build

	SH-75	US-20
Average Delay (sec/veh)	Significant Increase	Significant Decrease
Stops	Significant Increase	No Change
Travel Time through Intersection	Some Increase	Some Decrease

Study Management Team (SMT) Feedback

- Could increase rear-end crashes
- Too much operational impact to SH-75
- Not a good long-term solution

SMT Recommendation:

Eliminate

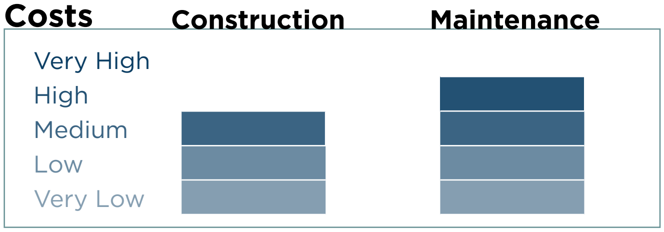
ALTERNATIVE 5

TRAFFIC SIGNAL WITH ADDITION OF TURN LANES

Install a traffic signal control with separate left-turn and right-turn lanes on all approaches. Installation of the turn lanes requires widening of all four legs of the intersection. The traffic signal is not expected to be warranted for at least 15 years.

ASSESSMENT OF FUTURE CONDITIONS

Costs



Safety Performance

1.3 expected crashes/year

Installation of a traffic signal is expected to....

- reduce angle crashes by ~70%-75%
- increase rear-end crashes on SH-75 by ~55%-60%

Future Traffic Operations (Year 2040)

SH-75
A
Level of Service
8
Average Delay (sec/veh)

US-20
C
Level of Service
26
Average Delay (sec/veh)

Expected Residual Capacity
59%

Mobility Compared to No Build

	SH-75	US-20
Average Delay (sec/veh)	Minor Increase	Minimal Increase
Stops	Some Increase	Minor Decrease
Travel Time through Intersection	Minor Increase	Minor Increase

Study Management Team (SMT) Feedback

- Significant safety benefit
- Smaller relative impact
- Public likely to support

SMT Recommendation:
Carry Forward

ALTERNATIVE 6

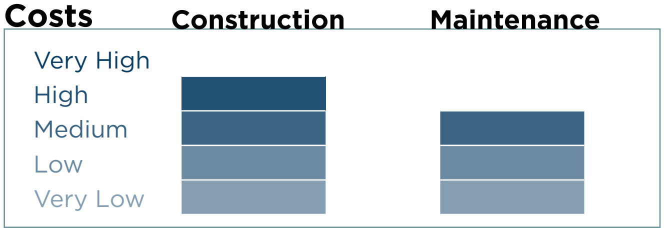
SINGLE-LANE ROUNDABOUT WITH APPROACH CURVATURE

Install an approximately 160-foot diameter roundabout with single-lane entries and exits and a truck apron to allow large and oversized vehicles to negotiate the roundabout.

Successive approach curves are used in advance of each roundabout entry to improve speed consistency and visibility approaching the roundabout.

ASSESSMENT OF FUTURE CONDITIONS

Costs



Safety Performance

0.7 expected crashes / year

Converting the intersection to a single-lane roundabout is expected to...

- reduce crashes overall by ~65%-75%
- reduce injury crashes by ~80%-90%
- eliminate all key conflict points related to angle crashes

Future Traffic Operations (Year 2040)

SH-75	US-20	
A Level of Service	**A** Level of Service	**Expected Residual Capacity**
10 Average Delay (sec/veh)	**7** Average Delay (sec/veh)	**52%**

Mobility Compared to No Build

	SH-75	US-20
Average Delay (sec/veh)	Some Increase	Significant Decrease
Stops	Minor Increase	Some Decrease
Travel Time through Intersection	Minor Increase	Minor Decrease

Study Management Team (SMT) Feedback

- Significant safety benefits and US-20 operational benefit
- Aesthetic advantages
- Major physical impact and cost

SMT Recommendation:
Carry Forward

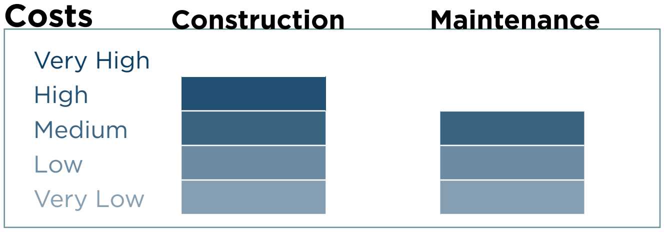
ALTERNATIVE 7

RESTRICTED CROSSING U-TURN (RCUT) INTERSECTION

Installation of a restricted crossing u-turn (RCUT) intersection eliminates the left-turn and through movements from the US-20 approaches. Instead, drivers turn right from US-20 onto SH-75 and then make a U-turn maneuver at a one-way median opening to then proceed through on SH-75 or right on US-20 (see yellow arrows). Movements on SH-75 remain free flow. The RCUT requires widening on SH-75 to accommodate the raised medians and the loons that allow for large trucks to make the U-turn maneuvers.

ASSESSMENT OF FUTURE CONDITIONS

Costs



Safety Performance

1.3 expected crashes / year

Installation of an RCUT is expected to...

- reduce crashes overall by ~35%-55%*
- result in some reduction in angle and injury crashes

*Actual crash reduction percentage could vary widely as crash reduction data for RCUT intersections is limited.

Future Traffic Operations (Year 2040)

SH-75	US-20*	
A Level of Service	**C** Level of Service	**Expected Residual Capacity**
<1 Average Delay (sec/veh)	**22** Average Delay (sec/veh)	**80%**

*LOS and average delay are reported for the combination of right-turn and u-turn movements required for eastbound and westbound traffic.

Mobility Compared to No Build

	SH-75	US-20
Average Delay (sec/veh)	Minimal Decrease	Minor Decrease
Stops	Minimal Decrease	Some Increase*
Travel Time through Intersection	Minimal Decrease	Significant Increase

*Increase in stops is due to more than one stop now required for eastbound and westbound through and left-turn movements.

Study Management Team (SMT) Feedback

- Significant safety benefit
- Maintenance and driver understanding challenges
- Major physical impact and cost

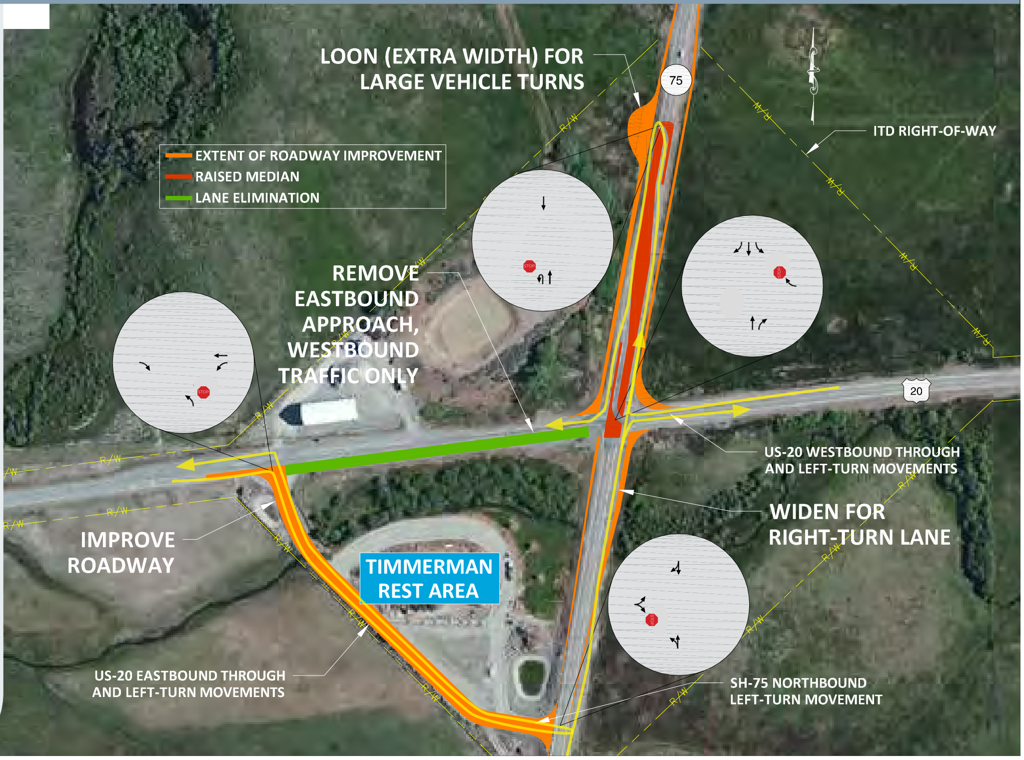
SMT Recommendation:

Carry Forward

ALTERNATIVE 8

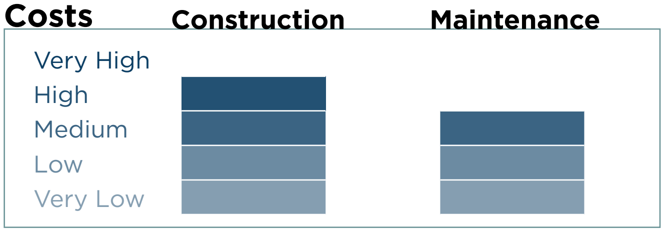
QUADRANT INTERSECTION WITH PARTIAL RESTRICTED CROSSING U-TURN (RCUT)

Elimination of the eastbound US-20 approach and improvement of the existing rest area roadway in the southwest quadrant of the intersection to accommodate eastbound US-20 traffic and northbound SH-75 left-turns. Installation of a restricted crossing u-turn for left-turn and through movements from the westbound US-20 approach as described in Alternative 7. See yellow arrows for re-routed traffic movements.



ASSESSMENT OF FUTURE CONDITIONS

Costs



Safety Performance

1.8

expected crashes / year

Installation of a quadrant with a partial RCUT is expected to....

- ↓ eliminate some key conflict points related to angle crashes
- ↓ result in some reduction in angle and injury crashes

Future Traffic Operations (Year 2040)

SH-75	US-20	
A Level of Service	**C** Level of Service	**Expected Residual Capacity**
<1 Average Delay (sec/veh)	**21** Average Delay (sec/veh)	**75%**

Mobility Compared to No Build

	SH-75	US-20
Average Delay (sec/veh)	Minimal Decrease	Minor Decrease
Stops	Minimal Decrease	Minor Increase*
Travel Time through Intersection	Minimal Decrease	Significant Increase

*Increase in stops is due to more than one stop now required for westbound through and left-turn movements.

Study Management Team (SMT) Feedback

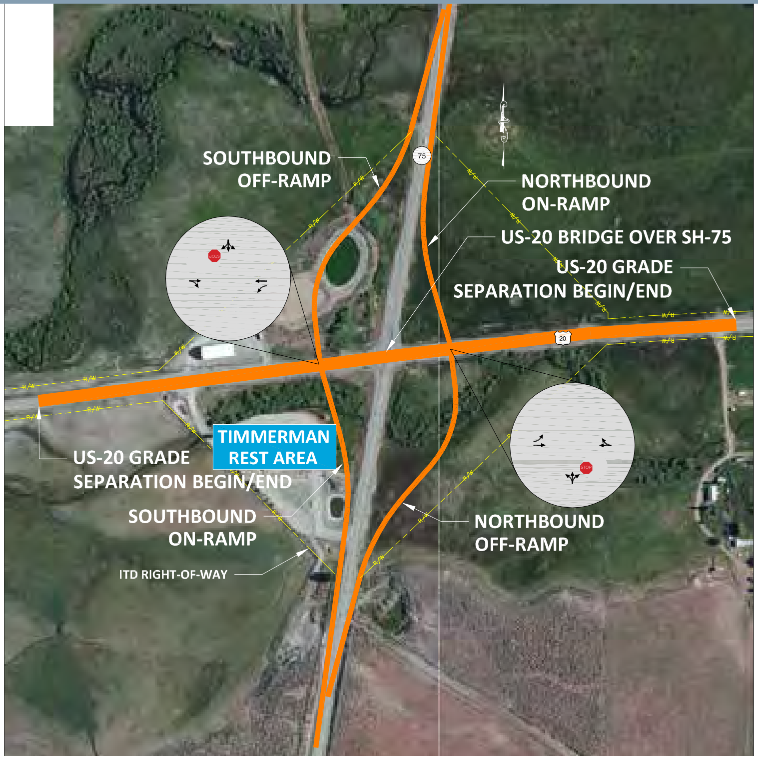
- Not enough safety benefit
- Maintenance and driver understanding challenges
- Major physical impact and cost

SMT Recommendation:

Eliminate

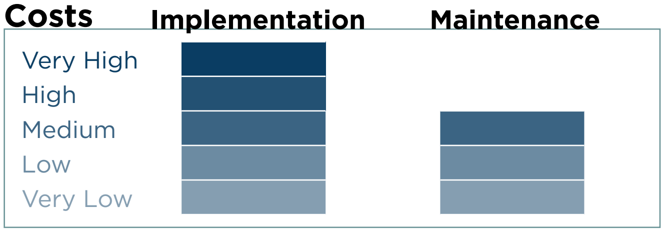
ALTERNATIVE 9A
GRADE-SEPARATED DIAMOND INTERCHANGE

Convert the existing at-grade intersection to a grade-separated diamond interchange with US-20 elevated above SH-75. Two unsignalized, stop-controlled intersections would be installed at the ramp terminal intersections with US-20.



ASSESSMENT OF FUTURE CONDITIONS

Costs



Safety Performance

1.4 expected crashes/year

Converting the intersection to a grade-separated diamond interchange is expected to....

- reduce crashes overall by ~30%-50%
- reduce injury crashes by ~50%-60%
- Eliminate some key conflict points related to angle crashes

Future Traffic Operations (Year 2040)

	SH-75 Mainline	SH-75 Off-Ramps	US-20 Mainline	US-20 Off-Ramps	Expected Residual Capacity
Level of Service	A	A	A	A	85%
Average Delay (sec/veh)	<1	10	<1	8	

Mobility Compared to No Build

	SH-75 Mainline	US-20
Average Delay (sec/veh)	Minimal Decrease	Significant Decrease
Stops	Minimal Decrease	Significant Decrease
Travel Time through Intersection	Minimal Decrease	Significant Decrease

Study Management Team (SMT) Feedback

- Great safety and mobility performance
- Common highway-to-highway treatment
- Tremendous physical impact and cost

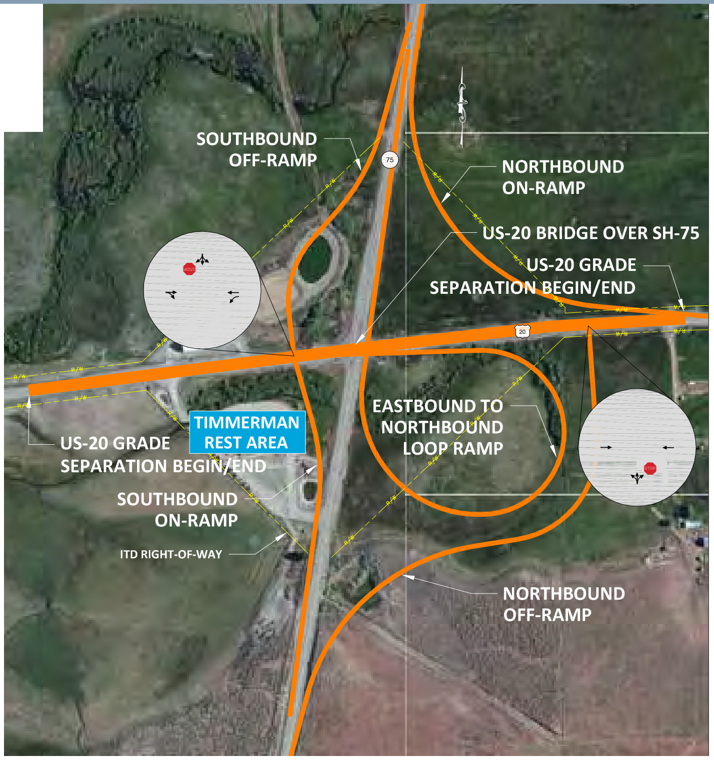
SMT Recommendation:

Carry Forward

ALTERNATIVE 9B

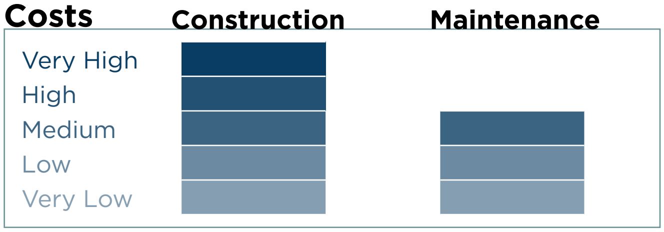
GRADE-SEPARATED DIAMOND INTERCHANGE WITH A LOOP RAMP

Convert the existing at-grade intersection to a grade-separated diamond interchange with a loop ramp in the southeast quadrant for eastbound to northbound movements. US-20 would be elevated above SH-75. Two unsignalized, stop-controlled intersections would be installed at the ramp terminal intersections with US-20.



ASSESSMENT OF FUTURE CONDITIONS

Costs



Safety Performance

1.4 expected crashes/year

Converting the intersection to a grade-separated diamond interchange with a loop ramp is expected to....

- reduce crashes overall by ~30%-50%
- reduce injury crashes by ~50%-60%
- Eliminate some key conflict points related to angle crashes

Future Traffic Operations (Year 2040)

SH-75 Mainline	SH-75 Off-Ramps	US-20 Mainline	US-20 Off-Ramps	Expected Residual Capacity
A Level of Service	A Level of Service	A Level of Service	A Level of Service	85%
<1 Average Delay (sec/veh)	10 Average Delay (sec/veh)	<1 Average Delay (sec/veh)	8 Average Delay (sec/veh)	

Mobility Compared to No Build

	SH-75 Mainline	US-20
Average Delay (sec/veh)	Minimal Decrease	Significant Decrease
Stops	Minimal Decrease	Significant Decrease
Travel Time through Intersection	Minimal Decrease	Significant Decrease

Study Management Team (SMT) Feedback

- Great safety and mobility performance
- Tremendous physical impact and cost
- Traffic volumes do not justify impact

SMT Recommendation:
Eliminate

COMMENT SHEET

CAC MEETING #1 - APRIL 7TH, 2016

US 20 SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: ________________________________ **Email:** ____________________________________

Organization: ____

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****
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, Suite 301, Boise, ID 83702 by no later than April 14th.

Intersection Alternatives (Tier 1) Evaluation

Please identify whether you would like to see the alternative carried forward for Tier 2 evaluation or whether you think the alternative should be eliminated from further consideration. Please explain your choice.

Alt. No.	Intersection Alternative	Desired Action (Circle One)	Please Explain Your Choice
1	No Build	Carry Forward Eliminate	
2A	Remove Skew (Shift North)	Carry Forward Eliminate	
2B	Remove Skew (Shift East)	Carry Forward Eliminate	
2C	Remove Skew (Centered)	Carry Forward Eliminate	
3A	Add a Northbound Right-Turn Lane on SH-75	Carry Forward Eliminate	
3B	Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	Carry Forward Eliminate	
4A	All-Way Stop-Controlled Intersection	Carry Forward Eliminate	
4B	All-Way Stop-Controlled Intersection with Removal of Southbound Right-Turn Lane	Carry Forward Eliminate	
5	Traffic Signal with Addition of Turn Lanes	Carry Forward Eliminate	
6	Single-Lane Roundabout with Approach Curvature	Carry Forward Eliminate	
7	Restricted Crossing U-Turn (RCUT) Intersection	Carry Forward Eliminate	
8	Quadrant Intersection with Partial Restricted Crossing U-Turn (RCUT)	Carry Forward Eliminate	
9A	Grade-Separated Diamond Interchange	Carry Forward Eliminate	
9B	Grade-Separated Diamond Interchange with a Loop Ramp	Carry Forward Eliminate	

--OVER--

Please use the space below to add and describe any additional alternatives you believe should be considered and why you believe the alternative(s) should be considered.

____

____

____

____

____

Alternatives Evaluation Criteria for Tier 2 Alternatives

Please rank the six evaluation criteria listed below from #1 to #5 in order of importance to your organization's interests. Please use each number only once (#1 is top priority).

Rank	Evaluation Criteria	Description
	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	• Level of maintenance effort, and the feasibility of phasing an alternative (i.e., interim improvements to long-term solution)
	Cost	• Construction and right-of-way costs

Please use the space below to add any evaluation criteria you believe should be considered and to provide comments to help explain your ranking of the proposed evaluation criteria.

____

____

____

____

____

MEETING EVALUATION

CAC MEETING #1 - APRIL 7TH, 2016

US 20 & SH 75
TIMMERMAN JUNCTION
Intersection Study

Please provide feedback regarding today's meeting.

What worked well for this meeting?

What did not work so well?

What suggestions do you have for our next CAC meeting?

Other comments

G

Expected Safety Performance Estimation Worksheets (Highway Safety Manual Application)

General Information and Input Data for Rural Two-Lane Two-Way Roadway Intersections

General Information		Location Information	
Analyst	YSM & ZMS	Roadway	
Agency or Company	Kittelson & Associates, Inc.	Intersection	US 20/SH 75 (Timmerman JCT.)
Date Performed	02/22/16	Jurisdiction	Blaine County, ID
		Analysis Year	2040

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 4ST, 4SG)		--	4ST
AADT$_{major}$ (veh/day)	AADT$_{MAX}$ = 14,700 (veh/day)	--	8,510
AADT$_{minor}$ (veh/day)	AADT$_{MAX}$ = 3,500 (veh/day)	--	1,800
Intersection skew angle (degrees) [If 4ST, does skew differ for minor legs?]	Yes	0	Skew for Leg 1 (All): 10 Skew for Leg 2 (4ST only): 7
Number of signalized or uncontrolled approaches with a left-turn lane (0, 1, 2, 3, 4)		0	0
Number of signalized or uncontrolled approaches with a right-turn lane (0, 1, 2, 3, 4)		0	1
Intersection lighting (present/not present)		Not Present	Not Present
Calibration Factor, C$_i$		1.00	0.62

Crash Modification Factors for Rural Two-Lane Two-Way Roadway Intersections

(1) CMF for Intersection Skew Angle CMF $_{1i}$ from Equations 10-22 or 10-23	(2) CMF for Left-Turn Lanes CMF $_{2i}$ from Table 10-13	(3) CMF for Right-Turn Lanes CMF $_{3i}$ from Table 10-14	(4) CMF for Lighting CMF $_{4i}$ from Equation 10-24	(5) Combined CMF CMF $_{COMB}$ (1)*(2)*(3)*(4)
1.05	1.00	0.86	1.00	0.90

Intersection Crashes for Rural Two-Lane Two-Way Roadway Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	N $_{spf\ 3ST,\ 4ST\ or\ 4SG}$	Overdispersion Parameter, k	Crash Severity Distribution	N $_{spf\ 3ST,\ 4ST\ or\ 4SG}$ by Severity Distribution	Combined CMFs	Calibration Factor, C$_i$ (from ITD Report - Calibrating the HSM Crash Prediction Models for Idaho's Highways)	Predicted average crash frequency, N $_{predicted\ int}$
	from Equations 10-8, 10-9, or 10-10	from Section 10.6.2	from Table 10-5	(2)$_{TOTAL}$ * (4)	from (5) of Worksheet 2B		(5)*(6)*(7)
Total	4.228	0.24	1.000	4.228	0.90	0.62	2.360
Fatal and Injury (FI)	--	--	0.431	1.822	0.90	0.62	1.017
Property Damage Only (PDO)	--	--	0.569	2.406	0.90	0.62	1.343

Predicted Crashes Using Highway Safety Manual (HSM) Crash Modification Factors (CMFs) & the Calibrated Safety Performance Function (SPF) for the Base Condition

General Information		Location Information	
Analyst	YSM & ZMS	Roadway	
Agency or Company	Kittelson & Associates, Inc.	Intersection	US 20/SH 75 (Timmerman JCT.)
Date Performed	02/22/16	Jurisdiction	Blaine County, ID
		Analysis Year	2040

Base Condition (Alt.1) Expected Crashes ($N_{predicted}$) = **2.36** *from Base Condition SPF on previous worksheet*

Alt. No.	Alt. Name	HSM CMF	Expected Crashes ($N_{predicted}$)	Notes
2A, 2B, & 2C	Remove Skew	0.95	**2.25**	
3A	Add NB RT Lane	0.86	**2.03**	
3B	Add NB RT & NB&SB LT lanes	0.45	**1.06**	Given historical crashes are primarily angle type, expected crashes/year seems unrealistic. Expected crashes/year for Alt 3A will be used instead.
4A & 4B	AWSC Intersection	0.54	**1.27**	
5	Traffic Signal w/ Turn Lanes	0.56	**1.32**	
6	Single-Lane Roundabout	0.29	**0.68**	
7	RCUT Intersection	0.56	**1.32**	
8	Quadrant w/ Partial RCUT	0.78	**1.84**	
9A & 9B	Grade-Separated Interchange	0.58	**1.37**	

H

SMT & CAC Meeting #1 Summaries

US 20 SH 75
TIMMERMAN JUNCTION
Intersection Study

Study Management Team (SMT)
Meeting #1 Summary

March 17th, 2016, 2:30PM–4:30PM

Blaine County Courthouse, Commissioners Large Conf. Room
206 1st Ave South, Suite #300, Hailey, ID 83333

STUDY MANAGEMENT TEAM (SMT) ATTENDEES

- Bruce Christensen – ITD District 4
- Scott Malone – ITD District 4
- Angenie McCleary – Blaine County Commissioner
- Gene Ramsey – Blaine County Sheriff
- Yuri Mereszczak – Kittelson & Associates, Inc.
- Brett Korporaal – Kittelson & Associates, Inc.

WELCOME AND INTRODUCTIONS

- Experience with the Intersection and Interests and Concerns
  - Bruce:
    - Would like to develop a roadmap for the future
    - Desire to decide near-term, mid- and long-term solutions as a unanimous decision amongst SMT
    - Because there is currently no further funding after the study, we can't guarantee that what is recommended by the study will be constructed
    - If we have a roadmap and know what we want to do, we can plan for the future
    - Addressing safety is a priority
  - Scott:
    - Scott's interests mirror Bruce's
    - Safety and maintenance look at this intersection
    - First safety sign and rumble strips were put in ~25 years ago
  - Gene:
    - Concerns about any future construction impact, particularly to the wetlands in the area
    - Looking for an approach that sets up a good strategy by evaluating all options and doing what's best for people's safety
    - Northbound and southbound lanes on SH 75 were narrowed to 11 feet
    - Crashes at this intersection create heavy congestion because there is no good detour route
    - Alignment (skew) of the intersecting roadways and location of the utility poles can make visibility tough
      - As part of a follow-up to SMT Meeting #1, KAI staff visited the US-20/SH-75 intersection and checked sight distances from the US-20 approaches (looking in both directions) per AASHTO intersection sight distance measurements. All sight distances from US-20 meet AASHTO requirements and no sight obstructions from power poles, signs, or other roadside appurtenances were observed.
  - Larry Schoen (on behalf of Angenie):
    - Sincere appreciation towards ITD for funding a study to come back and evaluate the intersection

        - ITD, Blaine County, and the Sheriff's office have come together to implement changes within the past five years. These seem to have been successful in calming traffic – improvements in signage have helped slow people down on SH-75
        - Oftentimes traffic is moving too fast in the northbound direction coming down off of Timmerman Hill
        - Lights at the rest stop are bright and may be causing some visibility issues at night
        - Snow on SH-75 is often plowed well ahead of US-20, if US-20 is plowed at all
        - Failing to stop at the intersection – is this still an issue? Have running the stop sign crashes decreased?
    - Yuri:
        - Kittelson & Associates, Inc. (KAI) primary interests are to help guide and facilitate this study and present an objective perspective based on a rigorous technical evaluation
    - Angenie:
        - Overall there has been safety improvement at the intersection and less public outcry, especially since the speed limit reduction on SH-75 was implemented
        - The SMT should focus on the most cost-effective solutions with the biggest safety benefits
        - US-20/SH-75 intersection is a gateway intersection
        - A double-yellow center stripe should be considered on SH-75 through the section where the speed limit is reduced
        - The SMT should keep in mind that the Friedman Airport could be moved south of the junction in the long-term (closer to Lincoln County). As of right now, the most likely new site for the airport is to the west on US-20, closer to Fairfield, but at this time it doesn't appear the airport will be going anywhere anytime soon.

STUDY OVERVIEW

- The SMT received and reviewed the meeting packets
- The SMT is the decision-making group for this study
- The SMT agreed that this study needs to provide direction, with a timeline, in order to start evaluating funding and future implementation opportunities
- Gene mentioned a study that was completed approximately three years ago for placard load trucks to determine how many and what type of trucks utilize the intersection. This study may be helpful in the consideration of a recommended alternative.
    - **Action: Bruce to follow-up and see if ITD can track down any of the data and information from the study**
- Purpose & Need Discussion
    - Scott mentioned that the ITD Office of Highway and Safety has a new procedure for identifying high accident locations, but that the previous High Accident Location (HAL) list is a data-driven approach and is still valid to use.
    - Provide direction to pursue funding for future implementation - How do we identify funding for future projects?
        - Having a completed study provides the foundation to assess and identify funding options for the future.
- The SMT was reminded of the future meeting with the Community Advisory Committee (CAC) on April 7th

INTERSECTION ALTERNATIVE EVALUATION

- Alternatives 2A, 2B and 2C – Removal of Intersection Skew:
    - The SMT was generally in agreement that alternatives including removal of the intersection skew are costly and may not provide enough benefit

- Alternatives 3A and 3B – Addition of Turn Lanes on SH-75:
  - SMT doesn't expect turn lanes on SH-75 to significantly reduce crashes, particularly angle crashes
  - Could widening be a benefit to allow vehicles to get around if there is a crash in the intersection?
  - Widening could be a downfall because of longer time to cross the intersection. Many vehicles on US 20 come to a stop and misjudge the time/gap to make a turn or get across the intersection
  - A southbound and northbound left-turn lane could make things worse because volumes are so low, a reason ITD lane warrant does not warrant a left-turn lane
- Alternative 4A and 4B – All-Way Stop-Controlled Intersection:
  - There were some reservations amongst members of the SMT for an all-way stop
    - These reservations were voiced because of people's habits – concerns that drivers on SH-75 would run the stop signs due to not being used to stopping and that this could result in some serious crashes
  - Would expect to see an increase in rear-end crashes
  - An all-way stop is not warranted according to MUTCD guidance, due primarily to the imbalance of volumes on SH-75 compared to US-20
- Alternative 5 – Traffic Signal with Turn Lanes:
  - A question arose in regard to a signal preventing vehicles on either highway from driving through the intersection without stopping
    - Agreement that there would be a reduced chance of vehicles running a red light (versus running a stop sign) because of the better visibility of the signal
    - Agreement that rear-end crashes may increase
  - General public likely to accept a traffic signal as mitigation
- Alternative 6 – Single-Lane Roundabout with Approach Curvature:
  - SMT would not object to a roundabout, were in agreement that this could potentially be the safest alternative
    - There was an opinion that if people in the general public were to take a survey, most would vote for a traffic signal because of familiarity, however, most would probably like a roundabout because of less delay
  - There may be high cost associated with this alternative due to impacts to wetlands
  - ITD recognized that snow removal could be an issue because of lack of familiarity with roundabouts
  - There was an opinion that the community may be receptive to a roundabout because of low delay and safety benefits
- Alternative 7 – Restricted Crossing U-Turn (RCUT) Intersection:
  - While the SMT understands the concept of a restricted crossing U-turn intersection, the majority of the SMT did not see it as a practical location
    - Too many large trucks for benefit of RCUT at the intersection
- Alternative 8 – Quadrant Intersection with Partial RCUT:
  - SMT was generally in agreement that the southwest quadrant with a partial RCUT was a complicated mitigation plan for the intersection
  - Generally, SMT members did not see benefit in using the rest area road to divert traffic from the US 20/SH 75 intersection
- Alternative 9A and 9B – Grade-Separated Interchange:
  - SMT was generally in agreement that the cost of a grade-separated interchange would most likely outweigh the benefits

EVALUATION CRITERIA

- The SMT decided as a group that public input should be removed from the evaluation criteria because it is not quantifiable as compared to the rest of the evaluation criteria
    - The SMT fully recognizes the value of public input and comments and concerns from the CAC and general public will be incorporated throughout the decision-making process

NEXT STEPS

- The SMT members were to complete and submit the comment sheets provided in the meeting packets to Kittelson & Associates, Inc. (KAI) by Thursday, March 24th
    - Comment sheets were provided to KAI by all six SMT members and are summarized below

SUMMARY OF COMMENT SHEETS

Table 1 provides a summary of the SMT's decisions and comments on the Tier 1 Alternatives as documented on the comment sheets submitted by the SMT members.

Table 1: Summary of SMT Tier 1 Intersection Alternatives Evaluation

Alt. No.	Intersection Alternative	Carry Forward	Eliminate	Summary of Comments
1	**No Build**	6	0	• Operationally adequate now and for a while into the future. • Recent treatments have improved safety. • Other alternatives are costly. • Need to include in environmental process. • Not a good option, but an option.
2A	Remove Skew (Shift North)	0	6	• Not enough safety benefit. Not a long-term solution. • Impacts ITD maintenance facility with no real benefit over Alt. 2C. • Substantial physical/environmental impacts.
2B	Remove Skew (Shift East)	0	6	• Not enough safety benefit. Not a long-term solution. • May calm SH-75 downhill traffic. • Substantial physical/environmental impacts.
2C	**Remove Skew (Centered)**	3	3	• Not enough safety benefit. Not a long-term solution. • Best and least impactful skew removal option. • Substantial physical/environmental impacts.
3A	Add a Northbound Right-Turn Lane on SH-75	2	4	• Not much safety benefit without rear-end crash history. • Very little mobility benefit. • Fairly simple to implement and could be helpful. • Not a long-term solution.
3B	**Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75**	3	2	• Low cost. • Some SMT members see some operational and safety benefit, while others see little to no benefit. • Consider adding lighting and flashers to improve visibility.
4A	All-Way Stop-Controlled Intersection	0	6	• Too much operational impact to SH-75. Volumes aren't balanced enough for this treatment. • Could increase rear-end crashes. • Against the recommendation of the Road Safety Audit. • Could be a "quick fix," but not a good long-term solution.

Alt. No.	Intersection Alternative	Carry Forward	Eliminate	Summary of Comments
4B	All-Way Stop-Controlled Intersection with Removal of Southbound Right-Turn Lane	1	5	• Too much operational impact to SH-75. Volumes aren't balanced enough for this treatment. • Could increase rear-end crashes. • Against the recommendation of the Road Safety Audit. • Could be a "quick fix," but not a good long-term solution. • Significant expected safety benefit; could be a reasonable first phase prior to signal or roundabout.
5	**Traffic Signal with Addition of Turn Lanes**	6	0	• Significant safety benefit. Reasonable operational performance. Meets study safety and operational goals. • Medium cost. • Likely good support from the public. Timing of implementation would be critical. • Smaller footprint than other alternatives.
6	**Single-Lane Roundabout with Approach Curvature**	6	0	• Significant safety benefit. Significant operational improvement for US-20. Meets study safety and operational goals. • Aesthetic advantages. Potential gateway treatment. • Timing of implementation would be critical. • Less maintenance costs. • Major physical impact and cost with a larger footprint.
7	**Restricted Crossing U-Turn Intersection (RCUT)**	3	3	• Significant safety benefit. No impact to SH-75 mobility. Meets study safety and operational goals. • Traffic volumes may be too high for this alternative. • Footprint and cost appear very large. • Would not be popular with maintenance crews. • May not be well accepted by the community.
8	Quadrant Intersection with Partial Restricted Crossing U-Turn (RCUT)	2	4	• Difficult to sign; not intuitive for visitors to the area. • Not a significant safety benefit for the cost. • Heavy eastbound left-turn benefits from this option. • Traffic volumes may be too high for this alternative. • Footprint and cost appear very large. • Would not be popular with maintenance crews. • May not be well accepted by the community.
9A	**Grade-Separated Diamond Interchange**	4	2	• Great safety and mobility performance. • Possible very long-term solution. • Common treatment for highway-to-highway connections. • Too costly; too big of a footprint and impact on wetlands. Could possibly be somewhat mitigated by moving interchange further south. • Expensive, but should be evaluated. • Traffic volumes do not justify the cost.
9B	Grade-Separated Diamond Interchange with a Loop Ramp	2	4	• Very large footprint and too much impact to adjacent parcels. • Too costly. Too much impact on wetlands. • Traffic volumes do not justify the cost.

KAI recommends the following seven (7) alternatives (highlighted in **bold** in Table 1) be carried forward for further evaluation under Tier 2, pending feedback and comments received from the CAC:

- Alternative #1: No Build
- Alternative #2C: Removal of Intersection Skew (Centered)
- Alternative #3B: Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75
- Alternative #5: Traffic Signal with Addition of Turn Lanes
- Alternative #6: Single-Lane Roundabout with Approach Curvature
- Alternative #7: Restricted Crossing U-Turn Intersection (RCUT)
- Alternative #9A: Grade-Separated Diamond Interchange

This is based on the SMT members' indication of "carry forward" or "eliminate," as well as interpretation of the comments provided for each alternative.

Table 2 provides a summary of the SMT members' rankings of the evaluation criteria proposed for use during the Tier 2 Alternatives evaluation.

Table 2: Summary of SMT Rankings of Proposed Evaluation Criteria

Evaluation Criteria	No. of Rankings					Avg. Rank
	#1	#2	#3	#4	#5	
Safety Performance	6	0	0	0	0	**1.0**
Mobility	1	3	0	2	0	**2.5**
Physical & Environmental Impacts	0	0	6	0	0	**3.0**
Cost	0	1	1	2	2	**3.8**
Implementation & Maintenance	0	1	1	1	3	**4.0**

As shown in Table 2, safety performance is the unanimous #1 priority for evaluation amongst members of the SMT. Mobility is the #2 priority based on the average of the rankings. These top two priorities align with Study Goal #1 – Improve Safety Performance and Study Goal #2 – Maintain Acceptable Mobility. Physical & environmental impacts, cost, and implementation & maintenance round out the #3 through #5 priorities based on the average of the rankings.

UPCOMING MEETINGS

- SMT Meeting #2: Thursday, June 23rd, 2016
- SMT Meeting #3: Thursday, September 15th, 2016
- CAC Meeting #1: Thursday, April 7th, 2016
- CAC Meeting #2: Thursday, July 14th, 2016
- CAC Meeting #3: Thursday, October 6th, 2016

ATTACHMENTS

- SMT Meeting #1 Comment Sheets

COMMENT SHEET

SMT MEETING #1 – MARCH 17TH, 2016

US 20 SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Andy Daleiden **Email:** adaleiden@kittelson.com

Organization: Kittelson & Associates Inc.

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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, Suite 301, Boise, ID 83702 by no later than April 14th.

Intersection Alternatives (Tier 1) Evaluation

Please identify whether you would like to see the alternative carried forward for Tier 2 evaluation or whether you think the alternative should be eliminated from further consideration. Please explain your choice.

Alt. No.	Intersection Alternative	Desired Action (Circle One)	Please Explain Your Choice
1	No Build	[✓ Carry Forward] Eliminate	Need to include for environmental and for comparison with other alternatives
2A	Remove Skew (Shift North)	Carry Forward [✓ Eliminate]	Not a long term solution.
2B	Remove Skew (Shift East)	Carry Forward [✓ Eliminate]	Not a long term solution.
2C	Remove Skew (Centered)	Carry Forward [✓ Eliminate]	Not a long term solution.
3A	Add a Northbound Right-Turn Lane on SH-75	Carry Forward [✓ Eliminate]	This alternative ~~does~~ is not ~~[illegible]~~ a long-term solution for the intersection.
3B	Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	[✓ Carry Forward] Eliminate	low cost; some operational and safety benefits; add "lighting" and "flashers" to improve visibility.
4A	All-Way Stop-Controlled Intersection	Carry Forward [✓ Eliminate]	Not a long term solution; impacts SH 75.
4B	All-Way Stop-Controlled Intersection with Removal of Southbound Right-Turn Lane	Carry Forward [✓ Eliminate]	" " " " " " " .
5	Traffic Signal with Addition of Turn Lanes	[✓ Carry Forward] Eliminate	possible long-term solution; meets goals #1 and #2
6	Single-Lane Roundabout with Approach Curvature	[✓ Carry Forward] Eliminate	possible long-term solution; meets goals #1 and #2
7	Restricted Crossing U-Turn (RCUT) Intersection	[✓ Carry Forward] Eliminate	possible long-term solution; meets goals #1 and #2
8	Quadrant Intersection with Partial Restricted Crossing U-Turn (RCUT)	Carry Forward [✓ Eliminate]	Difficult to sign; not intuitive for visitors to the area.
9A	Grade-Separated Diamond Interchange	[✓ Carry Forward] Eliminate	long, long-term solution; common treatment for highway to highway connections.
9B	Grade-Separated Diamond Interchange with a Loop Ramp	Carry Forward [✓ Eliminate]	Not needed; too big; major impacts to adjacent parcels.

--OVER--

Please use the space below to add and describe any alternatives you believe should be considered and why you believe the alternative(s) should be considered.

Alternatives Evaluation Criteria for Tier 2 Alternatives

Please rank the six evaluation criteria listed below from #1 to #~~6~~5 in order of importance to your organization's interests. Please use each number only once (#1 is top priority).

Rank	Evaluation Criteria	Assessment Metrics
1	Safety Performance	• Expected change 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
2	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, including oversized vehicles and megaloads
3	Physical and Environmental Impacts	• Extent of impact to the physical landscape • Extent of impact to adjacent properties and/or access to adjacent properties • Impacts to sensitive and/or protected environmental features • Amount of impervious surface added to the intersection area
5	Implementation & Maintenance	• Ease of construction given existing constraints • Level of effort and ability to effectively maintain an alternative • Ability of an alternative to be phased for construction
4	Cost	• Estimated construction costs • Estimated right-of-way acquisition costs
	Public Input	• Community Advisory Committee (CAC) and online survey feedback • Study Management Team's (SMT) assessment of level of support and political will for implementation

Please use the space below to add any evaluation criteria or assessment metrics you believe should be considered and to provide comments to help explain your ranking of the proposed evaluation criteria.

Please provide other comments related to your organization's interests with the US-20/SH-75 intersection.

COMMENT SHEET

SMT MEETING #1 - MARCH 17TH, 2016

US 20 ✣ SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Angenie McCleary Email: amccleary@co.blaine.id.us

Organization: Blaine County Commissioner

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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, Suite 301, Boise, ID 83702 by no later than April 14th.

Intersection Alternatives (Tier 1) Evaluation

Please identify whether you would like to see the alternative carried forward for Tier 2 evaluation or whether you think the alternative should be eliminated from further consideration. Please explain your choice.

Alt. No.	Intersection Alternative	Desired Action (Circle One)	Please Explain Your Choice
1	No Build	[✓ Carry Forward] Eliminate	It seems speed reduction has improved safety; other measures are costly. Perhaps No Build is best short/mid term solution and other solution is better long term solution.
2A	Remove Skew (Shift North)	Carry Forward [✓ Eliminate]	Doesn't seem like enough safety improvement
2B	Remove Skew (Shift East)	Carry Forward [✓ Eliminate]	"
2C	Remove Skew (Centered)	Carry Forward [✓ Eliminate]	"
3A	Add a Northbound Right-Turn Lane on SH-75	[✓ Carry Forward] Eliminate	Fairly simple could be helpful.
3B	Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	[✓ Carry Forward] Eliminate	Worth considering
4A	All-Way Stop-Controlled Intersection	Carry Forward [✓ Eliminate]	Stop sign could create different safety conditions
4B	All-Way Stop-Controlled Intersection with Removal of Southbound Right-Turn Lane	Carry Forward [✓ Eliminate]	"
5	Traffic Signal with Addition of Turn Lanes	[✓ Carry Forward] Eliminate	Good solution. Mid cost. Likely good public support
6	Single-Lane Roundabout with Approach Curvature	[✓ Carry Forward] Eliminate	Good safety solution
7	Restricted Crossing U-Turn (RCUT) Intersection	Carry Forward [✓ Eliminate]	Too costly w/ not enough benefit
8	Quadrant Intersection with Partial Restricted Crossing U-Turn (RCUT)	Carry Forward [✓ Eliminate]	Public not use to it / likely won't like going out of way. Too costly
9A	Grade-Separated Diamond Interchange	Carry Forward [✓ Eliminate]	Too costly; too big a footprint
9B	Grade-Separated Diamond Interchange with a Loop Ramp	Carry Forward [✓ Eliminate]	"

--OVER--

Please use the space below to add and describe any alternatives you believe should be considered and why you believe the alternative(s) should be considered.

Alternatives Evaluation Criteria for Tier 2 Alternatives

Please rank the six evaluation criteria listed below from #1 to #6 in order of importance to your organization's interests. Please use each number only once (#1 is top priority).

Rank	Evaluation Criteria	Assessment Metrics
1	Safety Performance	• Expected change 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
4	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, including oversized vehicles and megaloads
3	Physical and Environmental Impacts	• Extent of impact to the physical landscape • Extent of impact to adjacent properties and/or access to adjacent properties • Impacts to sensitive and/or protected environmental features • Amount of impervious surface added to the intersection area
5	Implementation & Maintenance	• Ease of construction given existing constraints • Level of effort and ability to effectively maintain an alternative • Ability of an alternative to be phased for construction
2	Cost	• Estimated construction costs • Estimated right-of-way acquisition costs
eliminate	Public Input considered	• Community Advisory Committee (CAC) and online survey feedback • Study Management Team's (SMT) assessment of level of support and political will for implementation

↳ but not criteria

Please use the space below to add any evaluation criteria or assessment metrics you believe should be considered and to provide comments to help explain your ranking of the proposed evaluation criteria.

Please provide other comments related to your organization's interests with the US-20/SH-75 intersection.

COMMENT SHEET

SMT MEETING #1 - MARCH 17TH, 2016

US 20 SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Bruce Christensen **Em ail:** ____________________

Organization: ITD

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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, Suite 301, Boise, ID 83702 by no later than ~~April 14th~~. March 24

Intersection Alternatives (Tier 1) Evaluation

Please identify whether you would like to see the alternative carried forward for Tier 2 evaluation or whether you think the alternative should be eliminated from further consideration. Please explain your choice.

Alt. No.	Intersection Alternative	Desired Action (Circle One)	Please Explain Your Choice
1	No Build	[✓ Carry Forward] Eliminate	Things aren't working that badly right now.
2A	Remove Skew (Shift North)	Carry Forward [✓ Eliminate]	
2B	Remove Skew (Shift East)	Carry Forward [✓ Eliminate]	
2C	Remove Skew (Centered)	[✓ Carry Forward] Eliminate	2A & 2B are too costly as compared to 2C
3A	Add a Northbound Right-Turn Lane on SH-75	Carry Forward [✓ Eliminate]	
3B	Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	[✓ Carry Forward] Eliminate	Similar to No-build alternative
4A	All-Way Stop-Controlled Intersection	Carry Forward [✓ Eliminate]	Against recommendation of Road Safety Audit Team.
4B	All-Way Stop-Controlled Intersection with Removal of Southbound Right-Turn Lane	Carry Forward [✓ Eliminate]	" "
5	Traffic Signal with Addition of Turn Lanes	[✓ Carry Forward] Eliminate	Popular option. But timing is critical More work needed on timing.
6	Single-Lane Roundabout with Approach Curvature	[✓ Carry Forward] Eliminate	Safety & aesthetic advantages, Timing critical with this option too.
7	Restricted Crossing U-Turn (RCUT) Intersection	Carry Forward [✓ Eliminate]	
8	Quadrant Intersection with Partial Restricted Crossing U-Turn (RCUT)	[✓ Carry Forward] Eliminate	Heavy EB left move benefits from this option as opposed to regular RCUT.
9A	Grade-Separated Diamond Interchange	[✓ Carry Forward] Eliminate	Expensive but should evaluated.
9B	Grade-Separated Diamond Interchange with a Loop Ramp	Carry Forward [✓ Eliminate]	Too much wetland impact.

--OVER--

Please use the space below to add and describe any alternatives you believe should be considered and why you believe the alternative(s) should be considered.

Alternatives Evaluation Criteria for Tier 2 Alternatives

Please rank the six evaluation criteria listed below from #1 to #6 in order of importance to your organization's interests. Please use each number only once (#1 is top priority).

Rank	Evaluation Criteria	Assessment Metrics
1	Safety Performance	- Expected change 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
1	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, including oversized vehicles and megaloads
3	Physical and Environmental Impacts/Gateway	- Extent of impact to the physical landscape - Extent of impact to adjacent properties and/or access to adjacent properties - Impacts to sensitive and/or protected environmental features - Amount of impervious surface added to the intersection area
3	Implementation	- Ease of construction given existing constraints - Level of effort and ability to effectively maintain an alternative - Ability of an alternative to be phased for construction
3	Cost	- Estimated construction costs - Estimated right-of-way acquisition costs
	~~Public Input~~	~~- Community Advisory Committee (CAC) and online survey feedback~~ ~~- Study Management Team's (SMT) assessment of level of support and political will for implementation~~

Please use the space below to add any evaluation criteria or assessment metrics you believe should be considered and to provide comments to help explain your ranking of the proposed evaluation criteria.

Please provide other comments related to your organization's interests with the US-20/SH-75 intersection. Timing of signalization or roundabout is key. No Build LOS C/D in 2040 is not consistent w/ signal warrant recommendation in 2030. Do you agree?

COMMENT SHEET

SMT MEETING #1 - MARCH 17TH, 2016

US 20 SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Gene Ramsey Email: gramsey@co.blaine.id.us

Organization: Sheriff

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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, Suite 301, Boise, ID 83702 by no later than ~~April 14th~~. March 24th

Intersection Alternatives (Tier 1) Evaluation

Please identify whether you would like to see the alternative carried forward for Tier 2 evaluation or whether you think the alternative should be eliminated from further consideration. Please explain your choice.

Alt. No.	Intersection Alternative	Desired Action (Circle One)	Please Explain Your Choice
1	No Build	[✓ Carry Forward] Eliminate	Not a good option But a Option
2A	Remove Skew (Shift North)	Carry Forward Eliminate	Just pick one I like 2C
2B	Remove Skew (Shift East)	Carry Forward Eliminate	
2C	Remove Skew (Centered)	Carry Forward Eliminate	
3A	Add a Northbound Right-Turn Lane on SH-75	[✓ Carry Forward] Eliminate	Not much Benefit
3B	Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	Carry Forward Eliminate	
4A	All-Way Stop-Controlled Intersection	Carry Forward [✓ Eliminate]	Not Good will increase rear-end Crash. winter travel up hill Bad idea.
4B	All-Way Stop-Controlled Intersection with Removal of Southbound Right-Turn Lane	Carry Forward [✓ Eliminate]	No way Too much stopping rear-end Not Balanced Volumes
5	Traffic Signal with Addition of Turn Lanes	[✓ Carry Forward] Eliminate	I think adequate consideration has been given to less restrictive traffic control
6	Single-Lane Roundabout with Approach Curvature	[✓ Carry Forward] Eliminate	
7	Restricted Crossing U-Turn (RCUT) Intersection	[✓ Carry Forward] Eliminate	But I think traffic Volumes may be to High
8	Quadrant Intersection with Partial Restricted Crossing U-Turn (RCUT)	[✓ Carry Forward] Eliminate	Again High Traffic
9A	Grade-Separated Diamond Interchange	[✓ Carry Forward] Eliminate	
9B	Grade-Separated Diamond Interchange with a Loop Ramp	[✓ Carry Forward] Eliminate	

--OVER--

Please use the space below to add and describe any alternatives you believe should be considered and why you believe the alternative(s) should be considered.

Alternatives Evaluation Criteria for Tier 2 Alternatives

Please rank the six evaluation criteria listed below from #1 to #6 in order of importance to your organization's interests. Please use each number only once (#1 is top priority).

Rank	Evaluation Criteria	Assessment Metrics
1	Safety Performance	• Expected change 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
4	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, including oversized vehicles and megaloads
3	Physical and Environmental Impacts	• Extent of impact to the physical landscape • Extent of impact to adjacent properties and/or access to adjacent properties • Impacts to sensitive and/or protected environmental features • Amount of impervious surface added to the intersection area
2	Implementation & Maintenance	• Ease of construction given existing constraints • Level of effort and ability to effectively maintain an alternative • Ability of an alternative to be phased for construction
5	Cost	• Estimated construction costs • Estimated right-of-way acquisition costs
STaTement ONly	~~Public Input~~	• Community Advisory Committee (CAC) and online survey feedback • Study Management Team's (SMT) assessment of level of support and political will for implementation

Please use the space below to add any evaluation criteria or assessment metrics you believe should be considered and to provide comments to help explain your ranking of the proposed evaluation criteria.

Please provide other comments related to your organization's interests with the US-20/SH-75 intersection.

Yuri Mereszczak

From: Scott Malone <Scott.Malone@itd.idaho.gov>
Sent: Monday, March 21, 2016 3:50 PM
To: Yuri Mereszczak
Cc: Bruce Christensen
Subject: Timmerman Junction Comment Sheet.

Yuri,
I decided to use an email to respond to the comment sheet. I hope this isn't too much of a problem for you.

Scott E. Malone
Scott.malone@itd.idaho.gov

Alternates:

1 No Build – carry forward (CF). Good practice to have a NB alternate for the CAC. I think there may be a feeling that everything is working well in the short term, at least.

2a Rem. Skew North – eliminate (ELIM). I guess a general comment I have is that the area surrounding the IS is expected to largely contain wetlands, so any alternate that impacts much beyond the existing roadbed will be expensive and problematic. That being said, this alternate appears to take out the mtce. facility with no particular advantage over the centered option (2C). I suppose it could be left in for comment and perhaps I'm missing some advantage of it.

2b Rem. Skew East – ELIM. May have some benefit to calming downhill SH75 traffic, but looks like a big hit to wetlands. I suppose it could be left in for comment and perhaps I'm missing some advantage of it.

2c Rem skew Centered – CF Looks like the best skew removal option. Same benefits with less off alignment impact and cost.

3a NB RTL – ELIM Appears to have almost no safety or mobility benefits. In general, I would think lane additions at the IS primarily make sense in association with a signal.

3b NB SB LTL RTL – ELIM Same comments as above.

4a All way stops – ELIM Idea was not accepted well by community in years past. Could be a "quick fix" if future high profile accidents occur, but probably not a good choice.

4b AWS Rem SB RTL – ELIM Same as above.

5 Traf Signal – CF Reasonable solution for safety and mobility. Could be less cost than larger improvements with smaller footprint. Probably well accepted by community.

6 Roundabout - CF Good solution for safety and mobility. Less mtce. cost. Probably well accepted by community. Major impact and cost with larger footprint. It may be beyond what we want to consider with this study, but the general concept of moving this intersection to the south near the relatively flat area as the highway comes off the hill has been discussed informally for years. The advantages would include getting away from the wetlands and even allowing restoration of wetlands at the IS. The mtce. area could possibly be relocated for more wetland mitigation. It would likely be much more expensive with the considerable new roadway that would be

necessary. Would have to look at the wetland mitigation trade-off. Perhaps this could be considered a "very long term" solution.

7 RCUT – ELIM Seems to have fewer benefits than a roundabout and only slightly better than a signal. Footprint and cost appear very large. Will not be popular with snow removal forces. May not be well accepted by community. Probably not a good place to roll out the first of its kind in Idaho.

8 RCUT Quad. Rest. – ELIM Same comments as above.

9a GSDI – CF Great safety and mobility. Might be better very long term if roundabout doesn't work out. Huge footprint and cost. Might be mitigated with IS relocation to the south. Has been verbal resistance to a grade separation due to the visual restriction as you enter the valley at this "gateway" location.

9b GSDI with loop – CF Might consider as very long term progression of the GSDI. Had to imagine this capacity being needed in study timeframe. Very huge footprint and cost. Could be more difficult ultimate build out if IS is relocated up the hill.

Evaluation Criteria –
#1 Safety – Major ITD goal.

#2 Mobility - Major ITD goal. Doesn't seem like a major risk at this IS.

#3 Phy. and Env. Impacts – Wetland major issue. View shed issue. Overall environmentally sensitive area.

#4 Impl. and Mtce. – Mtce. cost and difficulty seem lower risk. It is an isolated IS so construction phasing could be an issue.

#5 Cost – Cost seems to me more of a timing issue as to availability of funding. The mid-term solutions may be similar in costs. The long-term solutions may also be somewhat similar.

The public input criteria seems difficult to put in the mix. It is not a technical consideration like the others.

Feel free to call me with any questions or clarifications. Let me know if you need anything additional.

Thanks,

Scott E. Malone, P. E.
District 4 Engineering Manager
Idaho Transportation Department
(208) 886-7804
scott.malone@itd.idaho.gov

COMMENT SHEET
SMT MEETING #1 - MARCH 17TH, 2016

US 20 / SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Yuri Mereszczak **Email:** yuri@kittelson.com

Organization: Kittelson & Associates, Inc.

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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, Suite 301, Boise, ID 83702 by no later than April 14th.

Intersection Alternatives (Tier 1) Evaluation

Please identify whether you would like to see the alternative carried forward for Tier 2 evaluation or whether you think the alternative should be eliminated from further consideration. Please explain your choice.

Alt. No.	Intersection Alternative	Desired Action (Circle One)	Please Explain Your Choice
1	No Build	[✓ Carry Forward] Eliminate	- Operationally adequate for some time to come - Costs of other alternatives may not justify benefit.
2A	Remove Skew (Shift North)	Carry Forward [✓ Eliminate]	- Costs do not justify benefit. Minimal safety benefit. - Physical/environmental impacts too substantial.
2B	Remove Skew (Shift East)	Carry Forward [✓ Eliminate]	" "
2C	Remove Skew (Centered)	Carry Forward [✓ Eliminate]	" "
3A	Add a Northbound Right-Turn Lane on SH-75	Carry Forward [✓ Eliminate]	- No real tangible mobility benefit. NB RT vol. so low. - No real tangible safety benefit. Not much history of rear-end crashes.
3B	Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	Carry Forward [✓ Eliminate]	- Minimal expected safety & mobility benefits. - Makes intersection wider → more exposure for crossing & LT vehs.
4A	All-Way Stop-Controlled Intersection	Carry Forward [✓ Eliminate]	- Better to combine all southbound movements. - Refer to Alt. 4B.
4B	All-Way Stop-Controlled Intersection with Removal of Southbound Right-Turn Lane	[✓ Carry Forward] Eliminate	- Could be a reasonable first phase prior to implementing signal or rdbt. - Significant expected safety benefit.
5	Traffic Signal with Addition of Turn Lanes	[✓ Carry Forward] Eliminate	- Significant expected safety benefit. - Expected to be well received by public. - Warranted in long-term. Reasonable operational performance.
6	Single-Lane Roundabout with Approach Curvature	[✓ Carry Forward] Eliminate	- Significant expected safety benefit. - Achieves traffic calming while still providing good operational performance. - Potential gateway.
7	Restricted Crossing U-Turn (RCUT) Intersection	[✓ Carry Forward] Eliminate	- Significant expected safety benefit & mobility is slightly improved for SH-75. - Maintenance & driver understanding present challenges.
8	Quadrant Intersection with Partial Restricted Crossing U-Turn (RCUT)	Carry Forward [✓ Eliminate]	- Not a significant safety benefit for the cost. - Confusing for drivers who don't regularly use intx.
9A	Grade-Separated Diamond Interchange	Carry Forward [✓ Eliminate]	- Traffic volumes, even in the long-term, do not justify the cost.
9B	Grade-Separated Diamond Interchange with a Loop Ramp	Carry Forward [✓ Eliminate]	- Even more impact than 9A & volumes do not justify cost.

--OVER--

Please use the space below to add and describe any alternatives you believe should be considered and why you believe the alternative(s) should be considered.

Alternatives Evaluation Criteria for Tier 2 Alternatives

Please rank the six evaluation criteria listed below from #1 to #6 in order of importance to your organization's interests. Please use each number only once (#1 is top priority).

Rank	Evaluation Criteria	Assessment Metrics
1	Safety Performance	• Expected change 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
2	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, including oversized vehicles and megaloads
3	Physical and Environmental Impacts	• Extent of impact to the physical landscape • Extent of impact to adjacent properties and/or access to adjacent properties • Impacts to sensitive and/or protected environmental features • Amount of impervious surface added to the intersection area
5	Implementation & Maintenance	• Ease of construction given existing constraints • Level of effort and ability to effectively maintain an alternative • Ability of an alternative to be phased for construction
4	Cost	• Estimated construction costs • Estimated right-of-way acquisition costs
X	Public Input	• Community Advisory Committee (CAC) and online survey feedback • Study Management Team's (SMT) assessment of level of support and political will for implementation

Please use the space below to add any evaluation criteria or assessment metrics you believe should be considered and to provide comments to help explain your ranking of the proposed evaluation criteria.

Please provide other comments related to your organization's interests with the US-20/SH-75 intersection.

Community Advisory Committee (CAC)
Meeting #1 Summary

April 7th, 2016, 10:00AM–12:00PM

Blaine County Courthouse, Commissioners Meeting Room
206 1st Ave South, Suite #300, Hailey, ID 83333

COMMUNITY ADVISORY COMMITTEE (CAC) ATTENDEES

- Bruce Christensen – ITD District 4
- Scott Malone – ITD District 4
- Angenie McCleary – Blaine County Commissioner
- Yuri Mereszczak – Kittelson & Associates, Inc.
- Andy Daleiden – Kittelson & Associates, Inc.
- Zachary Sadowski – Kittelson & Associates, Inc.
- Rosemary Curtin – RBCI
- Pat Bowton – Hailey Chamber of Commerce
- Brian Christiansen – City of Ketchum
- Brad Dufur – City of Sun Valley
- Dan Gilmore – Power Engineers
- Jacob Greenberg – Blaine County Commissioner
- Len Harlig – Citizen
- Jim Keating – Blaine County Recreation District
- Bart Lassman – Wood River Fire & Rescue (Paramedics)
- Jason Miller – Mountain Rides
- Arlene Schieven – Sun Valley-Ketchum Chamber & Visitors Bureau
- Lawrence Schoen – Blaine County Commissioner
- Jack Sibbach – Sinclair Co./Sun Valley
- Jade Sparrow – Blaine/Camas County Farm Bureau
- Kyle Broadie – Blaine County Road & Bridge
- Jeff Loomis – Blaine County Engineer
- Lesley Andrus – Property owner on NE corner of intersection
- Greg Cappel – Citizen
- Chad Stoesz – Wood River Land Trust
- Michelle Stennett – Idaho State Senate

WELCOME AND INTRODUCTIONS

- Opening Statements
    - Yuri Mereszczak, KAI:
        - Kittelson & Associates, Inc. (KAI) will guide and facilitate this study and present an objective perspective based on a rigorous technical evaluation
        - CAC meetings are open to the public so anyone can come and participate.
    - Bruce Christensen, ITD:
        - ITD's goal is to develop a roadmap for the future of the US-20/SH-75 intersection
        - ITD desires to decide near-, mid-, and long-term solutions with input from CAC

        - Because there is currently no further funding after the study, ITD can't guarantee that what is recommended by the study will be constructed
        - If ITD has a roadmap and knows what the community most desires, ITD can plan for the future
        - Addressing safety is a priority

STUDY OVERVIEW

- The CAC received the meeting agenda, study fact sheet, and 3 gold stars
- The SMT is the decision-making group for this study
- The CAC provides a wide range of perspectives and information through the alternatives development, evaluation, and selection process
- Overall study process described including tiered alternative evaluation process
- Background, history, study purpose & need, goals & objectives, and schedule were presented
    - A question arose about how far back in time the crash data was evaluated
        - Specifically focused on the past five years of data, but also looked at data up to fifteen years back to try and assess any trends. No additional significant trends were observed aside from those already identified.

EVALUATION CRITERIA – BRIEF WORK SESSION

- Evaluation criteria were described and groups broke out so each person could place their three gold stars in the three most important categories to them.
    - Safety Performance received the most gold stars (22)
    - Physical & Environmental Impacts received the second most gold stars (14)
    - Mobility received the third most gold stars (10)
    - Implementation & Maintenance received 2 gold stars
    - Cost received 0 gold stars
- CAC members received the Tier 1 Alternatives Assessment Packets

OVERVIEW OF THE TIER 1 INTERSECTION ALTERNATIVES

- Discussed existing conditions
    - A question arose about how many trucks are involved in accidents
        - It did seem there were more crashes involving trucks than would be expected.
    - A question arose about what was being meant by "truck"
        - A "truck" is any vehicle with more than two axles.
    - Bart Lassman commented that there have been fatalities at the intersection although they likely occurred prior to the crash data evaluated for this study.
    - A question arose about what is meant by angle crashes
        - One vehicle colliding with the side of another vehicle, typically due to crossing or turning maneuvers. Angle crashes do not include head-on or rear-end crashes.
- **Study staff will look at crash data more closely to address the above questions in regard to the crash history. The findings and information will be shared at CAC Meeting #2 in July.**
- Discussed Tier 1 alternatives development and overview
- Discussed the No Build, Removal of Intersection Skew, Addition of Turn Lanes, All-Way Stop-Control, and Traffic Signal alternatives.
    - No questions arose during the group overview of these alternatives.
- Discussed the Single-Lane Roundabout alternative
    - A question arose if other places in Idaho have constructed roundabouts
        - Yes
    - A question arose if roundabouts slow and break up traffic on SH-75

    - Roundabouts slow all traffic on all approaches. This is part of the fundamental geometric design of roundabouts and one of the inherent reasons for improved safety performance of roundabout intersections over other intersection control types.
- Discussed the Restricted Crossing U-Turn (RCUT), Quadrant with Partial RCUT, Grade-Separated Interchange alternatives.
    - No questions arose during the group overview of these alternatives.
- Discussed how to evaluate the different intersection alternatives. The intersection alternatives assessment matrix was distributed to all CAC members

WORK SESSION IN BREAKOUT GROUPS

- CAC members discussed and evaluated alternatives in breakout groups of six to eight people. Each breakout group included at least one SMT member to help facilitate the discussion and answer questions.
- Comment sheets and meeting evaluation forms were collected at the end of the meeting.

SUMMARY OF COMMENT SHEETS

Table 1 provides a summary of the CAC's rankings and comments on the Tier 1 Alternatives as documented on the comment sheets submitted by the CAC members. Sixteen (16) comment sheets were received in total.

Table 1: Summary of CAC Tier 1 Intersection Alternatives Evaluation (17 Comment Sheets)

Alt. No.	Intersection Alternative	Carry Forward	Eliminate	Summary of Comments
1	**No Build**	9	6	• Lower speed limits and better signage desired • Recent improvements may be enough • Does not improve safety
2A	Remove Skew (Shift North)	1	15	• Not enough benefit to justify cost and impact • Doesn't address safety issues
2B	Remove Skew (Shift East)	1	15	• Not enough benefit to justify cost and impact • Doesn't address safety issues
2C	**Remove Skew (Centered)**	7	9	• Not enough benefit to justify cost and impact • Lower cost than 2A & 2B
3A	Add a Northbound Right-Turn Lane on SH-75	3	12	• Not enough safety benefit or traffic volume to justify • Could result in visibility issues for westbound US-20 traffic • Easy to implement; could be combined with other alts.
3B	**Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75**	7	9	• Not enough safety benefit or traffic volume to justify • Primarily just a mobility improvement • Could help underlying cause of some crashes
4A	All-Way Stop-Controlled Intersection	6	10	• Poor for mobility, especially for trucks • Likely increase to rear end crashes • Cost effective and easy to implement, but not a long-term solution
4B	All-Way Stop-Controlled Intersection with Removal of Southbound Right-Turn Lane	1	15	• Poor for mobility, especially for trucks • Likely increase to rear end crashes • Cost effective and easy to implement, but not a long-term solution
5	**Traffic Signal with Addition of Turn Lanes**	11	5	• Safety likely improved, but at the cost of mobility • Not a good treatment for a rural location • Less confusing than other alternatives • Higher maintenance expenditures expected

Alt. No.	Intersection Alternative	Carry Forward	Eliminate	Summary of Comments
6	**Single-Lane Roundabout with Approach Curvature**	14	2	• Good balance of improving safety and mobility; crashes less likely to be severe • Need to be mindful of mobility impacts to trucks and maintenance • Sensible long-term solution with potential aesthetic benefit
7	**Restricted Crossing U-Turn Intersection (RCUT)**	9	6	• Concerns about mobility impacts and driver understanding, but worth investigating further • Good safety benefits, especially related to angle crashes • Concerns about physical/environmental impacts, maintenance and cost
8	Quadrant Intersection with Partial Restricted Crossing U-Turn (RCUT)	0	14	• Not enough safety benefit and too much impact to mobility • Significant challenges expected with driver understanding • Physical/environmental impacts are too great
9A	**Grade-Separated Diamond Interchange**	4	12	• Physical/environmental impacts are too great; very costly • Affects view shed of natural surroundings on SH-75 • Not as desirable as other options
9B	Grade-Separated Diamond Interchange with a Loop Ramp	1	15	• Physical/environmental impacts and impacts to private property are too great; very costly • Affects view shed of natural surroundings on SH-75 • Too much for character of the area; unnecessary

KAI discussed the results shown in Table 1 with the ITD Study Manager and in conjunction with the recommendations from the Study Management Team (SMT). Based on this, the following seven (7) alternatives (highlighted in **bold** in Table 1) are recommended to be **carried forward for further evaluation under Tier 2**:

- **Alternative #1: No Build**
- **Alternative #2C: Removal of Intersection Skew (Centered)**
- **Alternative #3B: Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75**
- **Alternative #5: Traffic Signal with Addition of Turn Lanes**
- **Alternative #6: Single-Lane Roundabout with Approach Curvature**
- **Alternative #7: Restricted Crossing U-Turn Intersection (RCUT)**
- **Alternative #9A: Grade-Separated Diamond Interchange**

These are the same alternatives originally recommended to be carried forward by the SMT following SMT Meeting #1 conducted in March 2016.

CAC members were also given the opportunity to provide additional comments or comment on any additional alternatives or treatments they think should be considered by ITD, in particular focusing on potential short-term treatment ideas. A summary of these comments is provided below:

<u>Short-Term Treatment Ideas</u>

- Trim trees and shrubbery on all corners of the intersection to increase visibility. *<u>Note:</u> Study staff measured the sight distance at the intersection per AASHTO standards and did not find any violations of AASHTO sight distance requirements.*
- Lower the speed limits on US-20
- Increase signage and flashing lights east and west of the intersection

- Provide lighting at the intersection for better nighttime visibility. *Note: 1 of 23 reported crashes (2005-2009, 2011-2016) occurred in darkness. 1 reported crash occurred at dawn/ dusk. The remaining 21 reported crashes occurred in daylight. Therefore, at this time ITD does not see lighting at the intersection as a short-term need, but something that may be implemented as part of a long-term recommendation.*
- Install rumble strips on SH-75 prior to the intersection
- Use larger flashing lights
- Implement speed feedback signs in advance of intersection
- Request Idaho State Patrol be regularly stationed at the intersection for a while

Considerations for Future Alternatives Analysis

- Southbound traffic on SH-75 needs extra consideration for any alternative that flows or stops traffic at the intersection. Consider use of a climbing lane or a slow vehicle turnout heading up Timmerman Hill.
- Show how double and triple tractor trailers negotiate the roundabout

Table 2 provides a summary of the CAC members' rankings of the evaluation criteria proposed for use during the Tier 2 Alternatives evaluation.

Table 2: Summary of CAC Rankings of Proposed Evaluation Criteria

Evaluation Criteria	No. of Rankings					Avg. Rank
	#1	#2	#3	#4	#5	
Safety Performance	14	2	0	0	0	**1.1**
Mobility	2	8	4	0	1	**2.3**
Physical & Environmental Impacts	1	4	10	0	1	**2.8**
Implementation & Maintenance	0	1	2	10	3	**3.9**
Cost	0	0	0	5	11	**4.7**

As shown in Table 2, safety performance is the #1 priority for evaluation amongst most members of the CAC. Mobility is the #2 priority based on the average of the rankings. These top two priorities align with Study Goal #1 – Improve Safety Performance and Study Goal #2 – Maintain Acceptable Mobility. Physical & Environmental Impacts, Implementation & Maintenance, and Cost round out the #3 through #5 priorities based on the average of the rankings.

These rankings align well with the SMT members' rankings of the evaluation criteria. The #1, #2, and #3 ranked criteria – Safety Performance, Mobility, and Physical & Environmental Impacts – were consistent between the SMT and CAC. The SMT had Cost as the #4 ranked criterion, while the CAC had Implementation and Maintenance as the #4 ranked criterion.

KAI and ITD will discuss the use of this information going forward, and in particular, whether or not to apply numerical weighting to the criteria based on the results in Table 2 for the Tier 2 alternatives evaluation. Regardless of whether numerical weighting is applied, it is clear from this exercise that Safety Performance is the top criteria followed by Mobility and Physical & Environmental Impacts. This will be considered by the SMT as the study moves forward into the Tier 2 alternative evaluation.

CAC members were also given the opportunity to provide additional comments or comment on any additional evaluation criteria they think should be considered by ITD. A summary of these comments is provided below:

- Consider trucker education as well.
- Most people will likely default to safety as #1. Traffic calming is key.

- Because Blaine County is a resort community, physical and environmental impacts at the gateway to the Wood River Valley will be more important here than in metro areas.
- Any plan should be able to be implemented and therefore cost effective.
- Spending more now for future planning equals a lower cost later.
- All evaluation criteria are important considerations.
- Wildlife, wetlands, and view shed impacts are very important.
- No solution is good if it cannot be maintained, especially in winter.
- Cost is important, but some additional cost may be worth it for safety benefit.
- Consideration should be given to bicycle and motorcycle traffic and their mobility and risk due to exposure. This has ramifications for safety and mobility.
- Think about the opportunity for gateway art.
- Work to minimize the footprint of the intersection.

UPCOMING MEETINGS

- SMT Meeting #2: Wednesday, June 22nd, 2016, 2pm-4pm, Blaine County Courthouse Commissioners Large Conference Room
- SMT Meeting #3: Thursday, September 15th, 2016, Time and location TBD
- CAC Meeting #2: Thursday, July 14th, 2016, 10am-12pm, Blaine County Courthouse Commissioners Large Conference Room
- CAC Meeting #3: Thursday, October 6th, 2016, Time and location TBD

ATTACHMENTS

- CAC Meeting #1 Sign-In Sheet
- CAC Meeting #1 Comment Sheets
- CAC Meeting #1 Materials are available on the study website at: http://itd.idaho.gov/projects/D4/US20_ID75_IntersectionStudy/

Timmerman Junction Study (US-20/SH-75)
ITD District 4
Community Advisory Committee (CAC) Meeting #1

April 7, 2016 Meeting *(Please sign your name)*	First Name	Last Name	Organization
Patricia A Bowton	Pat	Bowton	Hailey Chamber of Commerce
	Walter	Burnside	ITD District 4 Maintenance
Brian Christiansen	Brian	Christiansen	City of Ketchum
Brad Dufur	Brad	Dufur	City of Sun Valley
Dan Gilmore	Dan	Gilmore	Power Engineers
Jacob Greenberg	Jacob	Greenberg	Blaine County
Len Harlig	Len	Harlig	Citizen
	Connie	Jones	ITD D4 Environmental
	Jim	Keating	Blaine County Recreation District
	Christopher	Koch	City of Bellevue
Bart Lassman	Bart	Lassman	Wood River Fire & Rescue (Paramedics)
	Robyn	Mattison, P.E.	City of Ketchum
X	Angenie	McCleary	Blaine County Regional Transportation Committee
	Jason	Miller	Mountain Rides
	Randall	Patterson	City of Carey
	Gene	Ramsey	Blaine County
	Arlene	Schieven	Sun Valley-Ketchum Chamber & Visitors Bureau
	Lawrence	Schoen	Blaine County
	Terrence	Sheehan	Senior Connection
Jack Sibbach	Jack	Sibbach	Sinclair Co./Sun Valley
Jade Sparrow	Jade	Sparrow	Blaine/Camas County Farm Bureau
	Rex	Squires	Blaine County School District
Kyle Broadie	KYLE ~~Steve~~	BROADIE ~~Thompson~~	Blaine County Road & Bridge
Jeff	JEFF	LOOMIS	BLAINE CO. ENGINEER
	Lesley	Andrews	property owner of NE corner

Greg Cappel	interested citizen junction accident survivor	gregory.cappel@gmail
Chad Stoesz	Wood River Land Trust	cstoesz@woodriverlandtrust.org
Scott Malone	ITD	scott.malone@itd.idaho.gov
Michelle Stennett	State Senate	mstennett@senate.idaho.gov

Send committee members list of Names

COMMENT SHEET

CAC MEETING #1 - APRIL 7TH, 2016

US 20 & SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Len Harlig Email: lenharlig@cox.net

Organization: Blaine County Comp Plan

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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, Suite 301, Boise, ID 83702 by no later than April 14th.

Intersection Alternatives (Tier 1) Evaluation

Please identify whether you would like to see the alternative carried forward for Tier 2 evaluation or whether you think the alternative should be eliminated from further consideration. Please explain your choice.

Alt. No.	Intersection Alternative	Desired Action (Circle One)	Please Explain Your Choice
1	No Build	[✓ Carry Forward] Eliminate	But with lower speed limits & more signs and flashing warnings
2A	Remove Skew (Shift North)	Carry Forward [✓ Eliminate]	Looks like too much construction for no problem elemenation
2B	Remove Skew (Shift East)	Carry Forward [✓ Eliminate]	"
2C	Remove Skew (Centered)	Carry Forward [✓ Eliminate]	"
3A	Add a Northbound Right-Turn Lane on SH-75	Carry Forward [✓ Eliminate]	Doesn't solve angled collisions
3B	Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	[✓ Carry Forward] Eliminate	might help w/ add'l warnings to motorists
4A	All-Way Stop-Controlled Intersection	Carry Forward [✓ Eliminate]	creates problems for Southbound trucks in winter
4B	All-Way Stop-Controlled Intersection with Removal of Southbound Right-Turn Lane	Carry Forward [✓ Eliminate]	"
5	Traffic Signal with Addition of Turn Lanes	[✓ Carry Forward] Eliminate	as long as signals are traffic-activated
6	Single-Lane Roundabout with Approach Curvature	[✓ Carry Forward] Eliminate	Isn't accident-proof, but accidents are less likely to be fatal
7	Restricted Crossing U-Turn (RCUT) Intersection	[✓ Carry Forward] Eliminate	worth looking at, but seems more trouble than its worth
8	Quadrant Intersection with Partial Restricted Crossing U-Turn (RCUT)	Carry Forward [✓ Eliminate]	Sounds like Rube Goldberg run amuck
9A	Grade-Separated Diamond Interchange	Carry Forward [✓ Eliminate]	too big city for this area
9B	Grade-Separated Diamond Interchange with a Loop Ramp	Carry Forward [✓ Eliminate]	Too much "freeway" for Blaine County

--OVER--

Please use the space below to add and describe any additional alternatives you believe should be considered and why you believe the alternative(s) should be considered.

Trim down bushes on all corners of intersection to increase visibility.

Lower east/west speed limits

Increase signage + flashing lights east/west

These are all low cost improvements, with little impact.

Alternatives Evaluation Criteria for Tier 2 Alternatives

Please rank the six evaluation criteria listed below from #1 to #5 ? in order of importance to your organization's interests. Please use each number only once (#1 is top priority).

Rank	Evaluation Criteria	Description
1	**Safety Performance**	• Expected influence on the type, frequency, and severity of crashes (especially angle type crashes)
4	**Mobility**	• Expected influence on the movement of all types of traffic through the intersection
2	**Physical and Environmental Impacts**	• Physical impact on the landscape, environment (e.g., wetlands), and properties in the vicinity of the intersection.
3	**Implementation & Maintenance**	• Level of maintenance effort, and the feasibility of phasing an alternative (i.e., interim improvements to long-term solution)
5	**Cost**	• Construction and right-of-way costs

Please use the space below to add any evaluation criteria you believe should be considered and to provide comments to help explain your ranking of the proposed evaluation criteria.

◉ I'd like to see consideration of trucker education as well.

◉ I think most people would default to Safety as #1. ◉ Because BC is a resort community with high visitor counts, I think physical & Enviro impacts at the Gateway to the WR Valley will be more important here than in metro areas.

◉ I'd rate Impl + maintenance higher than mobility. People are in too much of a hurry anyway.

COMMENT SHEET

CAC MEETING #1 - APRIL 7TH, 2016

US 20 & SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Dan Gilmore Email: dan.gilmore@powereng.com

Organization: POWER Engineers

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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, Suite 301, Boise, ID 83702 by no later than April 14th.

Intersection Alternatives (Tier 1) Evaluation

Please identify whether you would like to see the alternative carried forward for Tier 2 evaluation or whether you think the alternative should be eliminated from further consideration. Please explain your choice.

Alt. No.	Intersection Alternative	Desired Action (Circle One)	Please Explain Your Choice
1	No Build	[✓ Carry Forward] Eliminate	Wonder if are more things we can do at current configuration
2A	Remove Skew (Shift North)	[✓ Carry Forward] Eliminate	worth considering further
2B	Remove Skew (Shift East)	[✓ Carry Forward] Eliminate	"
2C	Remove Skew (Centered)	[✓ Carry Forward] Eliminate	"
3A	Add a Northbound Right-Turn Lane on SH-75	Carry Forward ? Eliminate	is this an area that crashes are occurring? - Could eliminate
3B	Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	[✓ Carry Forward] Eliminate	Keeps things moving
4A	All-Way Stop-Controlled Intersection	Carry Forward [✓ Eliminate] ?	Least preferred - everyone gets held up
4B	All-Way Stop-Controlled Intersection with Removal of Southbound Right-Turn Lane	Carry Forward [✓ Eliminate]	would put more traffic into main intersection
5	Traffic Signal with Addition of Turn Lanes	[✓ Carry Forward] Eliminate	Keeps things moving.
6	Single-Lane Roundabout with Approach Curvature	[✓ Carry Forward] Eliminate	Safety! They work. Mobility impact on truck going south
7	Restricted Crossing U-Turn (RCUT) Intersection	[✓ Carry Forward] Eliminate	
8	Quadrant Intersection with Partial Restricted Crossing U-Turn (RCUT)	Carry Forward [✓ Eliminate]	seems complicated especially with out of town drivers not used to junction
9A	Grade-Separated Diamond Interchange	[✓ Carry Forward] Eliminate	but probably not worth cost
9B	Grade-Separated Diamond Interchange with a Loop Ramp	[✓ Carry Forward] Eliminate	Safe but expensive

--OVER--

Please use the space below to add and describe any additional alternatives you believe should be considered and why you believe the alternative(s) should be considered.

Alternatives Evaluation Criteria for Tier 2 Alternatives

Please rank the six evaluation criteria listed below from #1 to #5 in order of importance to your organization's interests. Please use each number only once (#1 is top priority).

Rank	Evaluation Criteria	Description
1	**Safety Performance**	• Expected influence on the type, frequency, and severity of crashes (especially angle type crashes)
2	**Mobility**	• Expected influence on the movement of all types of traffic through the intersection
3	**Physical and Environmental Impacts**	• Physical impact on the landscape, environment (e.g., wetlands), and properties in the vicinity of the intersection.
4	**Implementation & Maintenance**	• Level of maintenance effort, and the feasibility of phasing an alternative (i.e., interim improvements to long-term solution)
5	**Cost**	• Construction and right-of-way costs – But needs to be taken into account

Please use the space below to add any evaluation criteria you believe should be considered and to provide comments to help explain your ranking of the proposed evaluation criteria.

COMMENT SHEET

CAC MEETING #1 - APRIL 7TH, 2016

US 20 & SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Jade Sparrow Email: jsparrow@idfbins.com

Organization: Farm Bureau Insurance

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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, Suite 301, Boise, ID 83702 by no later than April 14th.

Intersection Alternatives (Tier 1) Evaluation

Please identify whether you would like to see the alternative carried forward for Tier 2 evaluation or whether you think the alternative should be eliminated from further consideration. Please explain your choice.

Alt. No.	Intersection Alternative	Desired Action (Circle One)	Please Explain Your Choice
1	No Build	Carry Forward [✓ Eliminate]	fixes nothing
2A	Remove Skew (Shift North)	Carry Forward [✓ Eliminate]	not enough safety benefit US20 Increase travel time
2B	Remove Skew (Shift East)	Carry Forward [✓ Eliminate]	not enough safety benefit SH75 Increase travel time
2C	Remove Skew (Centered)	Carry Forward [✓ Eliminate]	not enough safety benefit US 20 Increase travel time
3A	Add a Northbound Right-Turn Lane on SH-75	Carry Forward [✓ Eliminate]	not enough safety benefit not a long term solution
3B	Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	Carry Forward [✓ Eliminate]	doesn't prevent failure to stop accidents
4A	All-Way Stop-Controlled Intersection	Carry Forward [✓ Eliminate]	not a long term solution increase rearend crashes SH75 increase delays, stop & travel time
4B	All-Way Stop-Controlled Intersection with Removal of Southbound Right-Turn Lane	Carry Forward [✓ Eliminate]	" Same reasons as above"
5	Traffic Signal with Addition of Turn Lanes	Carry Forward [✓ Eliminate]	high maintence increase delays & traveltime both HWYS Increase stop SH-75
6	Single-Lane Roundabout with Approach Curvature	Carry Forward [✓ Eliminate]	Truck traffic & South bound up timmerman - Major delays
7	Restricted Crossing U-Turn (RCUT) Intersection	Carry Forward [✓ Eliminate]	driver understanding challenges US20 Increase stops & travel time
8	Quadrant Intersection with Partial Restricted Crossing U-Turn (RCUT)	Carry Forward [✓ Eliminate]	not enough safety benefit driver understanding challenges
9A	Grade-Separated Diamond Interchange	[✓ Carry Forward] Eliminate	as long as over pass is high enough to accomidate larger equipment
9B	Grade-Separated Diamond Interchange with a Loop Ramp	Carry Forward [✓ Eliminate]	over kill—

--OVER--

Please use the space below to add and describe any additional alternatives you believe should be considered and why you believe the alternative(s) should be considered.

I think the whole intersection should be light up to accaunt for night time visiblity. I think South bound traffic on SH75 Climbing timmerman need extra consideration any plan that slows or stops traffic could cause larger problems. Mobility & Visiability = Safety Roundabouts & doubles & tripples trailer tractors!... How's that work? w/a hill?

Alternatives Evaluation Criteria for Tier 2 Alternatives

Please rank the six evaluation criteria listed below from #1 to #5 in order of importance to your organization's interests. Please use each number only once (#1 is top priority).

Rank	Evaluation Criteria	Description
2	**Safety Performance**	- Expected influence on the type, frequency, and severity of crashes (especially angle type crashes)
1	**Mobility**	- Expected influence on the movement of all types of traffic through the intersection
5	**Physical and Environmental Impacts**	- Physical impact on the landscape, environment (e.g., wetlands), and properties in the vicinity of the intersection.
3	**Implementation & Maintenance**	- Level of maintenance effort, and the feasibility of phasing an alternative (i.e., interim improvements to long-term solution)
4	**Cost**	- Construction and right-of-way costs

Please use the space below to add any evaluation criteria you believe should be considered and to provide comments to help explain your ranking of the proposed evaluation criteria.

Anytime traffic flow is interupted on a HWY or Freeway risk of crashes increase which reduces safety. Any plan should be obtainable to impliment therefore cost effective. Bigger cost now for future planning = lower cost later. Longterm solution is a must. The landscape is causing visability issues at current moment.

COMMENT SHEET

CAC MEETING #1 - APRIL 7TH, 2016

US 20 & SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Arlene Schieven Email: arlene@visitsunvalley.com

Organization: Visit Sun Valley

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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, Suite 301, Boise, ID 83702 by no later than April 14th.

Intersection Alternatives (Tier 1) Evaluation

Please identify whether you would like to see the alternative carried forward for Tier 2 evaluation or whether you think the alternative should be eliminated from further consideration. Please explain your choice.

Alt. No.	Intersection Alternative	Desired Action (Circle One)	Please Explain Your Choice
1	No Build	[✓ Carry Forward] Eliminate	
2A	Remove Skew (Shift North)	Carry Forward [✓ Eliminate]	Not enough impact to justify cost
2B	Remove Skew (Shift East)	Carry Forward [✓ Eliminate]	As above
2C	Remove Skew (Centered)	Carry Forward [✓ Eliminate]	
3A	Add a Northbound Right-Turn Lane on SH-75	Carry Forward [✓ Eliminate]	
3B	Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	Carry Forward [✓ Eliminate]	Limited traffic on 20
4A	All-Way Stop-Controlled Intersection	Carry Forward [✓ Eliminate]	Could be warranted in future
4B	All-Way Stop-Controlled Intersection with Removal of Southbound Right-Turn Lane	Carry Forward [✓ Eliminate]	" ↓ "
5	Traffic Signal with Addition of Turn Lanes	Carry Forward [✓ Eliminate]	" "
6	Single-Lane Roundabout with Approach Curvature	[✓ Carry Forward] Eliminate	* Need to consider whether trucks could make it up the hill
7	Restricted Crossing U-Turn (RCUT) Intersection	Carry Forward Eliminate	
8	Quadrant Intersection with Partial Restricted Crossing U-Turn (RCUT)	Carry Forward Eliminate	
9A	Grade-Separated Diamond Interchange	Carry Forward [✓ Eliminate]	
9B	Grade-Separated Diamond Interchange with a Loop Ramp	Carry Forward [✓ Eliminate]	

--OVER--

Please use the space below to add and describe any additional alternatives you believe should be considered and why you believe the alternative(s) should be considered.

More advanced warnings of the intersection → low cost
I don't have a lot of input as I am fairly new to
the area but it would seem that smaller efforts might
be worthwhile prior to the more extensive & costly options.

Alternatives Evaluation Criteria for Tier 2 Alternatives

Please rank the six evaluation criteria listed below from #1 to #5 in order of importance to your organization's interests. Please use each number only once (#1 is top priority).

Rank	Evaluation Criteria	Description
1	**Safety Performance**	• Expected influence on the type, frequency, and severity of crashes (especially angle type crashes)
2	**Mobility**	• Expected influence on the movement of all types of traffic through the intersection
3	**Physical and Environmental Impacts**	• Physical impact on the landscape, environment (e.g., wetlands), and properties in the vicinity of the intersection.
4	**Implementation & Maintenance**	• Level of maintenance effort, and the feasibility of phasing an alternative (i.e., interim improvements to long-term solution)
5	**Cost**	• Construction and right-of-way costs

Please use the space below to add any evaluation criteria you believe should be considered and to provide comments to help explain your ranking of the proposed evaluation criteria.

All are important considerations.

COMMENT SHEET

CAC MEETING #1 - APRIL 7TH, 2016

US 20 & SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Lawrence Schoen

Email: lschoen@co.blaine.id.us

Organization: Blaine County

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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, Suite 301, Boise, ID 83702 by no later than April 14th.

Intersection Alternatives (Tier 1) Evaluation

Please identify whether you would like to see the alternative carried forward for Tier 2 evaluation or whether you think the alternative should be eliminated from further consideration. Please explain your choice.

Alt. No.	Intersection Alternative	Desired Action (Circle One)	Please Explain Your Choice
1	No Build	[✓ Carry Forward] Eliminate	cost effective; safety already improved.
2A	Remove Skew (Shift North)	Carry Forward [✓ Eliminate]	90° approaches good; higher cost, impacts
2B	Remove Skew (Shift East)	Carry Forward [✓ Eliminate]	90° approaches good; higher costs, impacts
2C	Remove Skew (Centered)	[✓ Carry Forward] Eliminate	90° approaches good; This is best of the three
3A	Add a Northbound Right-Turn Lane on SH-75	[✓ Carry Forward] Eliminate	simple, short-term fix; could combine with other measures
3B	Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	[✓ Carry Forward] Eliminate	Could eliminate some traffic backup mostly affects mobility, not safety
4A	All-Way Stop-Controlled Intersection	Carry Forward [✓ Eliminate]	No! Esp bad for southbound Hwy 75
4B	All-Way Stop-Controlled Intersection with Removal of Southbound Right-Turn Lane	Carry Forward [✓ Eliminate]	Same as above.
5	Traffic Signal with Addition of Turn Lanes	Carry Forward [✓ Eliminate]	No! Do not support signals in rural location
6	Single-Lane Roundabout with Approach Curvature	[✓ Carry Forward] Eliminate	Roundabouts improve safety, moderate traffic flow equally in all directions
7	Restricted Crossing U-Turn (RCUT) Intersection	[✓ Carry Forward] Eliminate	Willing to consider but ~~[illegible]~~ an awkward solution
8	Quadrant Intersection with Partial Restricted Crossing U-Turn (RCUT)	Carry Forward [✓ Eliminate]	Don't support this pattern.
9A	Grade-Separated Diamond Interchange	Carry Forward [✓ Eliminate]	No alternative route for high clearance traffic; very costly; affects viewshed
9B	Grade-Separated Diamond Interchange with a Loop Ramp	Carry Forward [✓ Eliminate]	Radical, costly, impactful unnecessary, ugly

Consider: Add slow vehicle or hill climb lane southbound, south of intersection

--OVER--

Please use the space below to add and describe any additional alternatives you believe should be considered and why you believe the alternative(s) should be considered.

Alternatives Evaluation Criteria for Tier 2 Alternatives

Please rank the six evaluation criteria listed below from #1 to #5 in order of importance to your organization's interests. Please use each number only once (#1 is top priority).

Rank	Evaluation Criteria	Description
#1	**Safety Performance**	• Expected influence on the type, frequency, and severity of crashes (especially angle type crashes) most important issue
#3	**Mobility**	• Expected influence on the movement of all types of traffic through the intersection willing to compromise somewhat for safety
#2	**Physical and Environmental Impacts**	• Physical impact on the landscape, environment (e.g., wetlands), and properties in the vicinity of the intersection. wildlife, wetlands; also affects cost; viewshed very important
#4	**Implementation & Maintenance**	• Level of maintenance effort, and the feasibility of phasing an alternative (i.e., interim improvements to long-term solution) No solution is good if cannot be maintained, esp in winter
#5	**Cost**	• Construction and right-of-way costs Important, but some add'l $ may be worth it for safety

Please use the space below to add any evaluation criteria you believe should be considered and to provide comments to help explain your ranking of the proposed evaluation criteria.

COMMENT SHEET

CAC MEETING #1 - APRIL 7TH, 2016

US 20 SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Greg Cappel Email: gregory.cappel@gmail.com

Organization: interested citizen

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Intersection Alternatives (Tier 1) Evaluation

Please identify whether you would like to see the alternative carried forward for Tier 2 evaluation or whether you think the alternative should be eliminated from further consideration. Please explain your choice.

Alt. No.	Intersection Alternative	Desired Action (Circle One)	Please Explain Your Choice
1	No Build	Carry Forward Eliminate	Elim
2A	Remove Skew (Shift North)	Carry Forward Eliminate	Elim
2B	Remove Skew (Shift East)	Carry Forward Eliminate	Elim
2C	Remove Skew (Centered)	Carry Forward Eliminate	Elim
3A	Add a Northbound Right-Turn Lane on SH-75	Carry Forward Eliminate	Carry Fwd — applied in conjunction
3B	Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	Carry Forward Eliminate	Elim.
4A	All-Way Stop-Controlled Intersection - keep southbound right turn	Carry Forward Eliminate	Carry Fwd
4B	All-Way Stop-Controlled Intersection with Removal of Southbound Right-Turn Lane	Carry Forward Eliminate	Elim.
5	Traffic Signal with Addition of Turn Lanes	Carry Forward Eliminate	Carry Fwd
6	Single-Lane Roundabout with Approach Curvature	Carry Forward Eliminate	Carry Fwd
7	Restricted Crossing U-Turn (RCUT) Intersection	Carry Forward Eliminate	Elim
8	Quadrant Intersection with Partial Restricted Crossing U-Turn (RCUT)	Carry Forward Eliminate	Elim
9A	Grade-Separated Diamond Interchange	Carry Forward Eliminate	Elim
9B	Grade-Separated Diamond Interchange with a Loop Ramp	Carry Forward Eliminate	Elim.

--OVER--

Please use the space below to add and describe any additional alternatives you believe should be considered and why you believe the alternative(s) should be considered.

Alternatives Evaluation Criteria for Tier 2 Alternatives

Please rank the six evaluation criteria listed below from #1 to #5 in order of importance to your organization's interests. Please use each number only once (#1 is top priority).

Rank	Evaluation Criteria	Description
1	**Safety Performance**	- Expected influence on the type, frequency, and severity of crashes (especially angle type crashes)
3	**Mobility**	- Expected influence on the movement of all types of traffic through the intersection
2	**Physical and Environmental Impacts**	- Physical impact on the landscape, environment (e.g., wetlands), and properties in the vicinity of the intersection.
5	**Implementation & Maintenance**	- Level of maintenance effort, and the feasibility of phasing an alternative (i.e., interim improvements to long-term solution)
4	**Cost**	- Construction and right-of-way costs

Please use the space below to add any evaluation criteria you believe should be considered and to provide comments to help explain your ranking of the proposed evaluation criteria.

Consideration of 2 wheel traffic (bicycle or motorcycle) and their mobility / risk exposure

COMMENT SHEET

CAC MEETING #1 - APRIL 7TH, 2016

US 20 & SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Brad DuFur Email: bdufur@svidaho.org

Organization: Sun Valley City Council

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Intersection Alternatives (Tier 1) Evaluation

Please identify whether you would like to see the alternative carried forward for Tier 2 evaluation or whether you think the alternative should be eliminated from further consideration. Please explain your choice.

Alt. No.	Intersection Alternative	Desired Action (Circle One)	Please Explain Your Choice
1	No Build	Carry Forward Eliminate	
2A	Remove Skew (Shift North)	Carry Forward [✓ Eliminate]	Doesn't reduce number of crashes
2B	Remove Skew (Shift East)	Carry Forward [✓ Eliminate]	" "
2C	Remove Skew (Centered)	Carry Forward [✓ Eliminate]	" "
3A	Add a Northbound Right-Turn Lane on SH-75	Carry Forward [✓ Eliminate]	Still 2.0 crashes a year + injury crashes remain high
3B	Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	Carry Forward [✓ Eliminate]	" "
4A	All-Way Stop-Controlled Intersection	Carry Forward [✓ Eliminate]	Still 1.3 crashes a year + ↑ in rear-end crashes
4B	All-Way Stop-Controlled Intersection with Removal of Southbound Right-Turn Lane	Carry Forward [✓ Eliminate]	" "
5	Traffic Signal with Addition of Turn Lanes	Carry Forward [✓ Eliminate]	" "
6	Single-Lane Roundabout with Approach Curvature	[✓ Carry Forward] Eliminate	Safest alternative, only 8 conflict points
7	Restricted Crossing U-Turn (RCUT) Intersection	[✓ Carry Forward] Eliminate	reduction in angle + injury crashes
8	Quadrant Intersection with Partial Restricted Crossing U-Turn (RCUT)	Carry Forward Eliminate	
9A	Grade-Separated Diamond Interchange	Carry Forward [✓ Eliminate]	Environmental impact
9B	Grade-Separated Diamond Interchange with a Loop Ramp	Carry Forward [✓ Eliminate]	Private land, cost, environmental impact

--OVER--

Please use the space below to add and describe any additional alternatives you believe should be considered and why you believe the alternative(s) should be considered.

Alternatives Evaluation Criteria for Tier 2 Alternatives

Please rank the six evaluation criteria listed below from #1 to #5 in order of importance to your organization's interests. Please use each number only once (#1 is top priority).

Rank	Evaluation Criteria	Description
1	**Safety Performance**	• Expected influence on the type, frequency, and severity of crashes (especially angle type crashes)
3	**Mobility**	• Expected influence on the movement of all types of traffic through the intersection
2	**Physical and Environmental Impacts**	• Physical impact on the landscape, environment (e.g., wetlands), and properties in the vicinity of the intersection.
4	**Implementation & Maintenance**	• Level of maintenance effort, and the feasibility of phasing an alternative (i.e., interim improvements to long-term solution)
5	**Cost**	• Construction and right-of-way costs

Please use the space below to add any evaluation criteria you believe should be considered and to provide comments to help explain your ranking of the proposed evaluation criteria.

The meeting was well organized and informative.

More time for questions in future meetings.

COMMENT SHEET
CAC MEETING #1 - APRIL 7TH, 2016

US 20 SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: BART LASSMAN Email: blassman@wrfr.com

Organization: Wood River Fire & Rescue

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Intersection Alternatives (Tier 1) Evaluation

Please identify whether you would like to see the alternative carried forward for Tier 2 evaluation or whether you think the alternative should be eliminated from further consideration. Please explain your choice.

Alt. No.	Intersection Alternative	Desired Action (Circle One)	Please Explain Your Choice
1	No Build	Carry Forward [✓ Eliminate]	should not be an option
2A	Remove Skew (Shift North)	Carry Forward [✓ Eliminate]	does not seem to address any safety concerns
2B	Remove Skew (Shift East)	Carry Forward [✓ Eliminate]	and " other extensive impacts
2C	Remove Skew (Centered)	Carry Forward [✓ Eliminate]	"
3A	Add a Northbound Right-Turn Lane on SH-75	Carry Forward [✓ Eliminate]	"
3B	Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	Carry Forward [✓ Eliminate]	does not seem to address enough of the safety concerns
4A	All-Way Stop-Controlled Intersection	[✓ Carry Forward] Eliminate	could be a short term solution to address safety
4B	All-Way Stop-Controlled Intersection with Removal of Southbound Right-Turn Lane	[✓ Carry Forward] Eliminate	great idea as a long term solution
5	Traffic Signal with Addition of Turn Lanes	[✓ Carry Forward] Eliminate	"
6	Single-Lane Roundabout with Approach Curvature	[✓ Carry Forward] Eliminate	"
7	Restricted Crossing U-Turn (RCUT) Intersection	[✓ Carry Forward] ~~Eliminate~~	"
8	Quadrant Intersection with Partial Restricted Crossing U-Turn (RCUT)	Carry Forward [✓ Eliminate]	not enough safety benefit
9A	Grade-Separated Diamond Interchange	[✓ Carry Forward] ~~Eliminate~~	would not be as desirable as some of the other options
9B	Grade-Separated Diamond Interchange with a Loop Ramp	Carry Forward [✓ Eliminate]	far too much physical impact although does address some safety concerns

--OVER--

Please use the space below to add and describe any additional alternatives you believe should be considered and why you believe the alternative(s) should be considered.

slow vehicle turnout after controlled intersection (southbound) to climb Timmerman hill.

Alternatives Evaluation Criteria for Tier 2 Alternatives

Please rank the six evaluation criteria listed below from #1 to #5 in order of importance to your organization's interests. Please use each number only once (#1 is top priority).

Rank	Evaluation Criteria	Description
1	**Safety Performance**	• Expected influence on the type, frequency, and severity of crashes (especially angle type crashes)
5	**Mobility**	• Expected influence on the movement of all types of traffic through the intersection
3	**Physical and Environmental Impacts**	• Physical impact on the landscape, environment (e.g., wetlands), and properties in the vicinity of the intersection.
2	**Implementation & Maintenance**	• Level of maintenance effort, and the feasibility of phasing an alternative (i.e., interim improvements to long-term solution)
4	**Cost**	• Construction and right-of-way costs

Please use the space below to add any evaluation criteria you believe should be considered and to provide comments to help explain your ranking of the proposed evaluation criteria.

COMMENT SHEET
CAC MEETING #1 - APRIL 7TH, 2016

US 20 & SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Chad Stoesz Email: cstoesz@woodriverlandtrust.org

Organization: Wood River Land Trust

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Intersection Alternatives (Tier 1) Evaluation

Please identify whether you would like to see the alternative carried forward for Tier 2 evaluation or whether you think the alternative should be eliminated from further consideration. Please explain your choice.

Alt. No.	Intersection Alternative	Desired Action (Circle One)	Please Explain Your Choice
1	No Build	[✓ Carry Forward] Eliminate	Existing improvements may be enough
2A	Remove Skew (Shift North)	Carry Forward [✓ Eliminate]	not sufficient safety gain
2B	Remove Skew (Shift East)	Carry Forward [✓ Eliminate]	''
2C	Remove Skew (Centered)	Carry Forward [✓ Eliminate]	''
3A	Add a Northbound Right-Turn Lane on SH-75	Carry Forward [✓ Eliminate]	Not enough east traffic to warrant
3B	Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	Carry Forward [✓ Eliminate]	
4A	All-Way Stop-Controlled Intersection	[✓ Carry Forward] Eliminate	Good safety gain - simple
4B	All-Way Stop-Controlled Intersection with Removal of Southbound Right-Turn Lane	Carry Forward [✓ Eliminate]	
5	Traffic Signal with Addition of Turn Lanes	[✓ Carry Forward] Eliminate	
6	Single-Lane Roundabout with Approach Curvature	[✓ Carry Forward] Eliminate	Most sensible overall
7	Restricted Crossing U-Turn (RCUT) Intersection	[✓ Carry Forward] Eliminate	
8	Quadrant Intersection with Partial Restricted Crossing U-Turn (RCUT)	Carry Forward [✓ Eliminate]	
9A	Grade-Separated Diamond Interchange	Carry Forward [✓ Eliminate]	Too impactful to environment
9B	Grade-Separated Diamond Interchange with a Loop Ramp	Carry Forward [✓ Eliminate]	

--OVER--

Please use the space below to add and describe any additional alternatives you believe should be considered and why you believe the alternative(s) should be considered.

None

Alternatives Evaluation Criteria for Tier 2 Alternatives

Please rank the six evaluation criteria listed below from #1 to #5 in order of importance to your organization's interests. Please use each number only once (#1 is top priority).

Rank	Evaluation Criteria	Description
2	**Safety Performance**	• Expected influence on the type, frequency, and severity of crashes (especially angle type crashes)
3	**Mobility**	• Expected influence on the movement of all types of traffic through the intersection
1	**Physical and Environmental Impacts**	• Physical impact on the landscape, environment (e.g., wetlands), and properties in the vicinity of the intersection.
4	**Implementation & Maintenance**	• Level of maintenance effort, and the feasibility of phasing an alternative (i.e., interim improvements to long-term solution)
5	**Cost**	• Construction and right-of-way costs

Please use the space below to add any evaluation criteria you believe should be considered and to provide comments to help explain your ranking of the proposed evaluation criteria.

COMMENT SHEET
CAC MEETING #1 - APRIL 7TH, 2016

US 20 ❖ SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: JASON MILLER Email: JASON@MOUNTAINRIDES.ORG

Organization: MOUNTAIN RIDES

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Intersection Alternatives (Tier 1) Evaluation

Please identify whether you would like to see the alternative carried forward for Tier 2 evaluation or whether you think the alternative should be eliminated from further consideration. Please explain your choice.

Alt. No.	Intersection Alternative	Desired Action (Circle One)	Please Explain Your Choice
1	No Build	[✓ Carry Forward] Eliminate	RECENT IMPROVEMENT BENEFITS SEEM GOOD
2A	Remove Skew (Shift North)	Carry Forward [✓ Eliminate]	COST BENEFIT NOT GOOD ENOUGH
2B	Remove Skew (Shift East)	Carry Forward [✓ Eliminate]	" " "
2C	Remove Skew (Centered)	Carry Forward [✓ Eliminate]	" " "
3A	Add a Northbound Right-Turn Lane on SH-75	Carry Forward [✓ Eliminate]	DON'T SEE ENOUGH IMPACT.
3B	Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	Carry Forward [✓ Eliminate]	ADDED COMPLEXITY
4A	All-Way Stop-Controlled Intersection	[✓ Carry Forward] Eliminate	SEEMS GOOD
4B	All-Way Stop-Controlled Intersection with Removal of Southbound Right-Turn Lane	~~Carry Forward~~ [✓ Eliminate]	NEED TO KEEP RT LANE
5	Traffic Signal with Addition of Turn Lanes	[✓ Carry Forward] Eliminate	NOT BAD. MAY NOT FIT RURAL CHARACTER
6	Single-Lane Roundabout with Approach Curvature	[✓ Carry Forward] Eliminate	LOVE IT!!!
7	Restricted Crossing U-Turn (RCUT) Intersection	Carry Forward [✓ Eliminate]	TOO COMPLEX; TRAVEL DELAY
8	Quadrant Intersection with Partial Restricted Crossing U-Turn (RCUT)	Carry Forward [✓ Eliminate]	" "
9A	Grade-Separated Diamond Interchange	Carry Forward [✓ Eliminate]	TOO MUCH IMPACT; DOESN'T FIT
9B	Grade-Separated Diamond Interchange with a Loop Ramp	Carry Forward [✓ Eliminate]	" " "

--OVER--

Please use the space below to add and describe any additional alternatives you believe should be considered and why you believe the alternative(s) should be considered.

GO ROUNDABOUT – THE ONLY WAY TO GO ☺

THEY WORK!

Alternatives Evaluation Criteria for Tier 2 Alternatives

Please rank the six evaluation criteria listed below from #1 to #5 in order of importance to your organization's interests. Please use each number only once (#1 is top priority).

Rank	Evaluation Criteria	Description
1	**Safety Performance**	• Expected influence on the type, frequency, and severity of crashes (especially angle type crashes)
2	**Mobility**	• Expected influence on the movement of all types of traffic through the intersection
3	**Physical and Environmental Impacts**	• Physical impact on the landscape, environment (e.g., wetlands), and properties in the vicinity of the intersection.
5	**Implementation & Maintenance**	• Level of maintenance effort, and the feasibility of phasing an alternative (i.e., interim improvements to long-term solution)
4	**Cost**	• Construction and right-of-way costs

Please use the space below to add any evaluation criteria you believe should be considered and to provide comments to help explain your ranking of the proposed evaluation criteria.

- TRAFFIC CALMING IS KEY.
- THINK ABOUT HOW IMPROVEMENTS IMPACT CYCLING BECAUSE ROAD CYCLING HAS POTENTIAL TO CONTINUE TO INCREASE
- THINK ABOUT OPPORTUNITY FOR GATEWAY ART.

COMMENT SHEET
CAC MEETING #1 - APRIL 7TH, 2016

US 20 & SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Jim Keating
Email: jkeating@bcrd.org

Organization: BCRD

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Intersection Alternatives (Tier 1) Evaluation

Please identify whether you would like to see the alternative carried forward for Tier 2 evaluation or whether you think the alternative should be eliminated from further consideration. Please explain your choice.

Alt. No.	Intersection Alternative	Desired Action (Circle One)	Please Explain Your Choice
1	No Build	Carry Forward [✓ Eliminate]	is opportunity for improvement
2A	Remove Skew (Shift North)	Carry Forward [✓ Eliminate]	not sure the change makes difference
2B	Remove Skew (Shift East)	Carry Forward [✓ Eliminate]	"
2C	Remove Skew (Centered)	Carry Forward [✓ Eliminate]	"
3A	Add a Northbound Right-Turn Lane on SH-75	Carry Forward [✓ Eliminate]	
3B	Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	Carry Forward [✓ Eliminate]	
4A	All-Way Stop-Controlled Intersection	[✓ Carry Forward] Eliminate	
4B	All-Way Stop-Controlled Intersection with Removal of Southbound Right-Turn Lane	Carry Forward [✓ Eliminate]	
5	Traffic Signal with Addition of Turn Lanes	[✓ Carry Forward] Eliminate	safety strong but expected mobility impacts
6	Single-Lane Roundabout with Approach Curvature	[✓ Carry Forward] Eliminate	#1 choice due to safety, mobility, impact combo
7	Restricted Crossing U-Turn (RCUT) Intersection	[✓ Carry Forward] Eliminate	strong safety, some mobility issues,
8	Quadrant Intersection with Partial Restricted Crossing U-Turn (RCUT)	Carry Forward [✓ Eliminate]	not as strong safety vs. cost.
9A	Grade-Separated Diamond Interchange	Carry Forward [✓ Eliminate]	Large visibility + impact issues
9B	Grade-Separated Diamond Interchange with a Loop Ramp	Carry Forward [✓ Eliminate]	large visibility + impact issues

--OVER--

Please use the space below to add and describe any additional alternatives you believe should be considered and why you believe the alternative(s) should be considered.

—

Alternatives Evaluation Criteria for Tier 2 Alternatives

Please rank the six evaluation criteria listed below from #1 to #5 in order of importance to your organization's interests. Please use each number only once (#1 is top priority).

Rank	Evaluation Criteria	Description
#1	**Safety Performance**	- Expected influence on the type, frequency, and severity of crashes (especially angle type crashes)
#2	**Mobility**	- Expected influence on the movement of all types of traffic through the intersection
#3	**Physical and Environmental Impacts**	- Physical impact on the landscape, environment (e.g., wetlands), and properties in the vicinity of the intersection.
#4	**Implementation & Maintenance**	- Level of maintenance effort, and the feasibility of phasing an alternative (i.e., interim improvements to long-term solution)
#5	**Cost**	- Construction and right-of-way costs

Please use the space below to add any evaluation criteria you believe should be considered and to provide comments to help explain your ranking of the proposed evaluation criteria.

Please consider growing # of cyclists using this intersection.

This has ramifications for safety and mobility.

COMMENT SHEET

CAC MEETING #1 - APRIL 7TH, 2016

US 20 & SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: JEFF LOOMIS

Email: JLOOMIS@CO.BLAINE.ID.US

Organization: BLAINE COUNTY

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Intersection Alternatives (Tier 1) Evaluation

Please identify whether you would like to see the alternative carried forward for Tier 2 evaluation or whether you think the alternative should be eliminated from further consideration. Please explain your choice.

Alt. No.	Intersection Alternative	Desired Action (Circle One)	Please Explain Your Choice
1	No Build	[✓ Carry Forward] Eliminate	WOULD LIKE TO KNOW RESULTING BENEFITS OF MOST RECENTLY IMPLEMENTED SAFETY MEASURES
2A	Remove Skew (Shift North)	Carry Forward [✓ Eliminate]	TOO MUCH FOR LIMITED OUTCOME
2B	Remove Skew (Shift East)	Carry Forward [✓ Eliminate]	" " " " "
2C	Remove Skew (Centered)	[✓ Carry Forward] Eliminate	BETTER BENEFIT TO OUTCOME, THOUGH LIMITED TO EXISTING CONDITIONS
3A	Add a Northbound Right-Turn Lane on SH-75	[✓ Carry Forward] Eliminate	TURN LANES MAY BE RECOGNIZABLE BENEFIT TO EXISTING UNDERLYING CAUSE OF CRASHES (UNDEFINED)
3B	Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	[✓ Carry Forward] Eliminate	- SAME AS ABOVE -
4A	All-Way Stop-Controlled Intersection	Carry Forward [✓ Eliminate]	FULL STOP UNDESIRABLE AND ADDS MOBILITY CONCERNS ESPECIALLY SOUTH OF INTERSECTION
4B	All-Way Stop-Controlled Intersection with Removal of Southbound Right-Turn Lane	Carry Forward [✓ Eliminate]	- SAME AS ABOVE -
5	Traffic Signal with Addition of Turn Lanes	Carry Forward [✓ Eliminate]	SIGNAL NOT DESIRED
6	Single-Lane Roundabout with Approach Curvature	[✓ Carry Forward] Eliminate	MOST BENEFIT AND OVERALL AESTHETIC ↑?
7	Restricted Crossing U-Turn (RCUT) Intersection	Carry Forward [✓ Eliminate]	"TOO MUCH" FOR THIS INTERSECTION
8	Quadrant Intersection with Partial Restricted Crossing U-Turn (RCUT)	Carry Forward [✓ Eliminate]	- SAME AS ABOVE - ENVIRONMENTAL ↓
9A	Grade-Separated Diamond Interchange	Carry Forward [✓ Eliminate]	- SAME AS ABOVE - ENVIRONMENTAL ↓
9B	Grade-Separated Diamond Interchange with a Loop Ramp	Carry Forward [✓ Eliminate]	- SAME AS ABOVE - ENVIRONMENTAL ↓

--OVER--

Please use the space below to add and describe any additional alternatives you believe should be considered and why you believe the alternative(s) should be considered.

CONSIDER ACCELERATION CONCERNS SB OF INTERSECTION

" DECELERATION " " " "

Alternatives Evaluation Criteria for Tier 2 Alternatives

Please rank the six evaluation criteria listed below from #1 to #5 in order of importance to your organization's interests. Please use each number only once (#1 is top priority).

Rank	Evaluation Criteria	Description
1	**Safety Performance**	- Expected influence on the type, frequency, and severity of crashes (especially angle type crashes)
1	**Mobility**	- Expected influence on the movement of all types of traffic through the intersection
3	**Physical and Environmental Impacts**	- Physical impact on the landscape, environment (e.g., wetlands), and properties in the vicinity of the intersection.
5	**Implementation & Maintenance**	- Level of maintenance effort, and the feasibility of phasing an alternative (i.e., interim improvements to long-term solution)
4	**Cost**	- Construction and right-of-way costs

Please use the space below to add any evaluation criteria you believe should be considered and to provide comments to help explain your ranking of the proposed evaluation criteria.

MINIMIZE "FOOTPRINT"

COMPARE THIS INTERSECTION TO SIMILAR INTERSECTION IN JEROME

COMMENT SHEET

CAC MEETING #1 - APRIL 7TH, 2016

US 20 SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Brian Christiansen Email: bchristiansen@ketchumidaho.org

Organization: City of Ketchum

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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, Suite 301, Boise, ID 83702 by no later than April 14th.

Intersection Alternatives (Tier 1) Evaluation

Please identify whether you would like to see the alternative carried forward for Tier 2 evaluation or whether you think the alternative should be eliminated from further consideration. Please explain your choice.

Alt. No.	Intersection Alternative	Desired Action (Circle One)	Please Explain Your Choice
1	No Build	[✓ Carry Forward] Eliminate	
2A	Remove Skew (Shift North)	Carry Forward [✓ Eliminate]	Not much benefit for cost
2B	Remove Skew (Shift East)	Carry Forward [✓ Eliminate]	" "
2C	Remove Skew (Centered)	[✓ Carry Forward] Eliminate	lower cost but still min benefit
3A	Add a Northbound Right-Turn Lane on SH-75	Carry Forward [✓ Eliminate]	
3B	Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	[✓ Carry Forward] Eliminate	
4A	All-Way Stop-Controlled Intersection	Carry Forward [✓ Eliminate]	Too much of a loss of LOS on Hwy 75
4B	All-Way Stop-Controlled Intersection with Removal of Southbound Right-Turn Lane	Carry Forward [✓ Eliminate]	
5	Traffic Signal with Addition of Turn Lanes	[✓ Carry Forward] Eliminate	
6	Single-Lane Roundabout with Approach Curvature	[✓ Carry Forward] Eliminate	
7	Restricted Crossing U-Turn (RCUT) Intersection	Carry Forward [✓ Eliminate]	
8	Quadrant Intersection with Partial Restricted Crossing U-Turn (RCUT)	Carry Forward [✓ Eliminate]	
9A	Grade-Separated Diamond Interchange	Carry Forward [✓ Eliminate]	
9B	Grade-Separated Diamond Interchange with a Loop Ramp	Carry Forward [✓ Eliminate]	

--OVER--

Please use the space below to add and describe any additional alternatives you believe should be considered and why you believe the alternative(s) should be considered.

Alternatives Evaluation Criteria for Tier 2 Alternatives

Please rank the six evaluation criteria listed below from #1 to #5 in order of importance to your organization's interests. Please use each number only once (#1 is top priority).

Rank	Evaluation Criteria	Description
1	**Safety Performance**	• Expected influence on the type, frequency, and severity of crashes (especially angle type crashes)
2	**Mobility**	• Expected influence on the movement of all types of traffic through the intersection
3	**Physical and Environmental Impacts**	• Physical impact on the landscape, environment (e.g., wetlands), and properties in the vicinity of the intersection.
4	**Implementation & Maintenance**	• Level of maintenance effort, and the feasibility of phasing an alternative (i.e., interim improvements to long-term solution)
5	**Cost**	• Construction and right-of-way costs

Please use the space below to add any evaluation criteria you believe should be considered and to provide comments to help explain your ranking of the proposed evaluation criteria.

COMMENT SHEET

CAC MEETING #1 - APRIL 7TH, 2016

US 20 SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Jack Sibbach Email: jsibbach @ sunvalley.com

Organization: Sun Valley Resort

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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, Suite 301, Boise, ID 83702 by no later than April 14th.

Intersection Alternatives (Tier 1) Evaluation

Please identify whether you would like to see the alternative carried forward for Tier 2 evaluation or whether you think the alternative should be eliminated from further consideration. Please explain your choice.

Alt. No.	Intersection Alternative	Desired Action (Circle One)	Please Explain Your Choice
1	No Build	Carry Forward [✓ Eliminate]	Safety
2A	Remove Skew (Shift North)	Carry Forward [✓ Eliminate]	Cost
2B	Remove Skew (Shift East)	Carry Forward [✓ Eliminate]	Cost
2C	Remove Skew (Centered)	[✓ Carry Forward] Eliminate	
3A	Add a Northbound Right-Turn Lane on SH-75	Carry Forward [✓ Eliminate]	
3B	Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	[✓ Carry Forward] Eliminate	
4A	All-Way Stop-Controlled Intersection	[✓ Carry Forward] Eliminate	Safety
4B	All-Way Stop-Controlled Intersection with Removal of Southbound Right-Turn Lane	Carry Forward [✓ Eliminate]	
5	Traffic Signal with Addition of Turn Lanes	[✓ Carry Forward] Eliminate	
6	Single-Lane Roundabout with Approach Curvature	[✓ Carry Forward] Eliminate	
7	Restricted Crossing U-Turn (RCUT) Intersection	[✓ Carry Forward] [✓ Eliminate]	
8	Quadrant Intersection with Partial Restricted Crossing U-Turn (RCUT)	Carry Forward [✓ Eliminate]	
9A	Grade-Separated Diamond Interchange	Carry Forward [✓ Eliminate]	
9B	Grade-Separated Diamond Interchange with a Loop Ramp	Carry Forward [✓ Eliminate]	

--OVER--

Please use the space below to add and describe any additional alternatives you believe should be considered and why you believe the alternative(s) should be considered.

Remove Willows

Signage

Alternatives Evaluation Criteria for Tier 2 Alternatives

Please rank the six evaluation criteria listed below from #1 to #5 in order of importance to your organization's interests. Please use each number only once (#1 is top priority).

Rank	Evaluation Criteria	Description
1	**Safety Performance**	• Expected influence on the type, frequency, and severity of crashes (especially angle type crashes)
2	**Mobility**	• Expected influence on the movement of all types of traffic through the intersection
3	**Physical and Environmental Impacts**	• Physical impact on the landscape, environment (e.g., wetlands), and properties in the vicinity of the intersection.
4	**Implementation & Maintenance**	• Level of maintenance effort, and the feasibility of phasing an alternative (i.e., interim improvements to long-term solution)
5	**Cost**	• Construction and right-of-way costs

Please use the space below to add any evaluation criteria you believe should be considered and to provide comments to help explain your ranking of the proposed evaluation criteria.

COMMENT SHEET

CAC MEETING #1 - APRIL 7TH, 2016

US 20 SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Jacob Greenberg Email: jgreenberg@co.blaine.id.us

Organization: BLAINE COUNTY

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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, Suite 301, Boise, ID 83702 by no later than April 14th.

Intersection Alternatives (Tier 1) Evaluation

Please identify whether you would like to see the alternative carried forward for Tier 2 evaluation or whether you think the alternative should be eliminated from further consideration. Please explain your choice.

Alt. No.	Intersection Alternative	Desired Action (Circle One)	Please Explain Your Choice
1	No Build	Carry Forward [✓ Eliminate]	CURRENT RATE OF OCCURRENCE IS NOT ACCEPTABLE
2A	Remove Skew (Shift North)	Carry Forward [✓ Eliminate]	
2B	Remove Skew (Shift East)	Carry Forward [✓ Eliminate]	
2C	Remove Skew (Centered)	[✓ Carry Forward] Eliminate	
3A	Add a Northbound Right-Turn Lane on SH-75	Carry Forward [✓ Eliminate]	AGREE TO ELIMINATE
3B	Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	[✓ Carry Forward] Eliminate	
4A	All-Way Stop-Controlled Intersection	Carry Forward [✓ Eliminate]	AGREE TO ELIMINATE
4B	All-Way Stop-Controlled Intersection with Removal of Southbound Right-Turn Lane	Carry Forward [✓ Eliminate]	AGREE TO ELIMINATE
5	Traffic Signal with Addition of Turn Lanes	[✓ Carry Forward] Eliminate	PROVIDES A DEFINITE SIGNAL - OTHERS COULD BE CONFUSING
6	Single-Lane Roundabout with Approach Curvature	[✓ Carry Forward] Eliminate	
7	Restricted Crossing U-Turn (RCUT) Intersection	[✓ Carry Forward] Eliminate	
8	Quadrant Intersection with Partial Restricted Crossing U-Turn (RCUT)	Carry Forward [✓ Eliminate]	AGREE TO ELIMINATE
9A	Grade-Separated Diamond Interchange	Carry Forward [✓ Eliminate]	TOO OBTRUSIVE FOR VISUAL CORRIDOR
9B	Grade-Separated Diamond Interchange with a Loop Ramp	Carry Forward [✓ Eliminate]	TOO OBTRUSIVE

--OVER--

Please use the space below to add and describe any additional alternatives you believe should be considered and why you believe the alternative(s) should be considered.

RUMBLE STRIPS ON 75 PRIOR TO INTERSECTION (NOW!)
BIGGER FLASHING LIGHTS (NOW) ONE CAR PER GREEN LIGHT
SIGNAGE ON SIDE OF ROAD WITH POSTED SPEED AND YOUR
ACTUAL SPEED DIGITAL (NOW) IDAHO STATE PATROL
STATIONED FOR AWILE (TO LET PEOPLE KNOW WE ARE
SERIOUS (NOW!)

Alternatives Evaluation Criteria for Tier 2 Alternatives

Please rank the six evaluation criteria listed below from #1 to #5 in order of importance to your organization's interests. Please use each number only once (#1 is top priority).

Rank	Evaluation Criteria	Description
1	**Safety Performance**	- Expected influence on the type, frequency, and severity of crashes (especially angle type crashes)
2	**Mobility**	- Expected influence on the movement of all types of traffic through the intersection
3	**Physical and Environmental Impacts**	- Physical impact on the landscape, environment (e.g., wetlands), and properties in the vicinity of the intersection.
4	**Implementation & Maintenance**	- Level of maintenance effort, and the feasibility of phasing an alternative (i.e., interim improvements to long-term solution)
5	**Cost**	- Construction and right-of-way costs

Please use the space below to add any evaluation criteria you believe should be considered and to provide comments to help explain your ranking of the proposed evaluation criteria.

SAFETY FIRST! KEEP TRAFFIC MOVING
CONSIDER THE ENVIRONMENT.
NEED TO BE ABLE TO MAINTAIN UNDER
OUR ENVIRONMENTAL CONDITIONS

COMMENT SHEET

CAC MEETING #1 - APRIL 7TH, 2016

US 20 SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Kyle Broadie Email: Kbroadie@co.blaine.id.us

Organization: Blaine County Road + Bridge

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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, Suite 301, Boise, ID 83702 by no later than April 14th.

Intersection Alternatives (Tier 1) Evaluation

Please identify whether you would like to see the alternative carried forward for Tier 2 evaluation or whether you think the alternative should be eliminated from further consideration. Please explain your choice.

Alt. No.	Intersection Alternative	Desired Action (Circle One)	Please Explain Your Choice
1	No Build	[✓ Carry Forward] Eliminate	ADD MORE SIGNS ON 20
2A	Remove Skew (Shift North)	Carry Forward [✓ Eliminate]	Cost
2B	Remove Skew (Shift East)	Carry Forward [✓ Eliminate]	Coast
2C	Remove Skew (Centered)	[✓ Carry Forward] Eliminate	MORE WARNING ON BOTH 75 AND 20
3A	Add a Northbound Right-Turn Lane on SH-75	Carry Forward [✓ Eliminate]	Could cause blind spot for thru traffic going east on 20
3B	Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	Carry Forward [✓ Eliminate]	SAME AS ABOVE
4A	All-Way Stop-Controlled Intersection	Carry Forward [✓ Eliminate]	
4B	All-Way Stop-Controlled Intersection with Removal of Southbound Right-Turn Lane	Carry Forward [✓ Eliminate]	
5	Traffic Signal with Addition of Turn Lanes	[✓ Carry Forward] Eliminate	
6	Single-Lane Roundabout with Approach Curvature	Carry Forward [✓ Eliminate]	MAINTENANCE/COAST
7	Restricted Crossing U-Turn (RCUT) Intersection	[✓ Carry Forward] Eliminate	MAINTENANCE NIGHTMARE AND COST
8	Quadrant Intersection with Partial Restricted Crossing U-Turn (RCUT)	Carry Forward [✓ Eliminate]	
9A	Grade-Separated Diamond Interchange	[✓ Carry Forward] Eliminate	
9B	Grade-Separated Diamond Interchange with a Loop Ramp	Carry Forward [✓ Eliminate]	Coast

--OVER--

Please use the space below to add and describe any additional alternatives you believe should be considered and why you believe the alternative(s) should be considered.

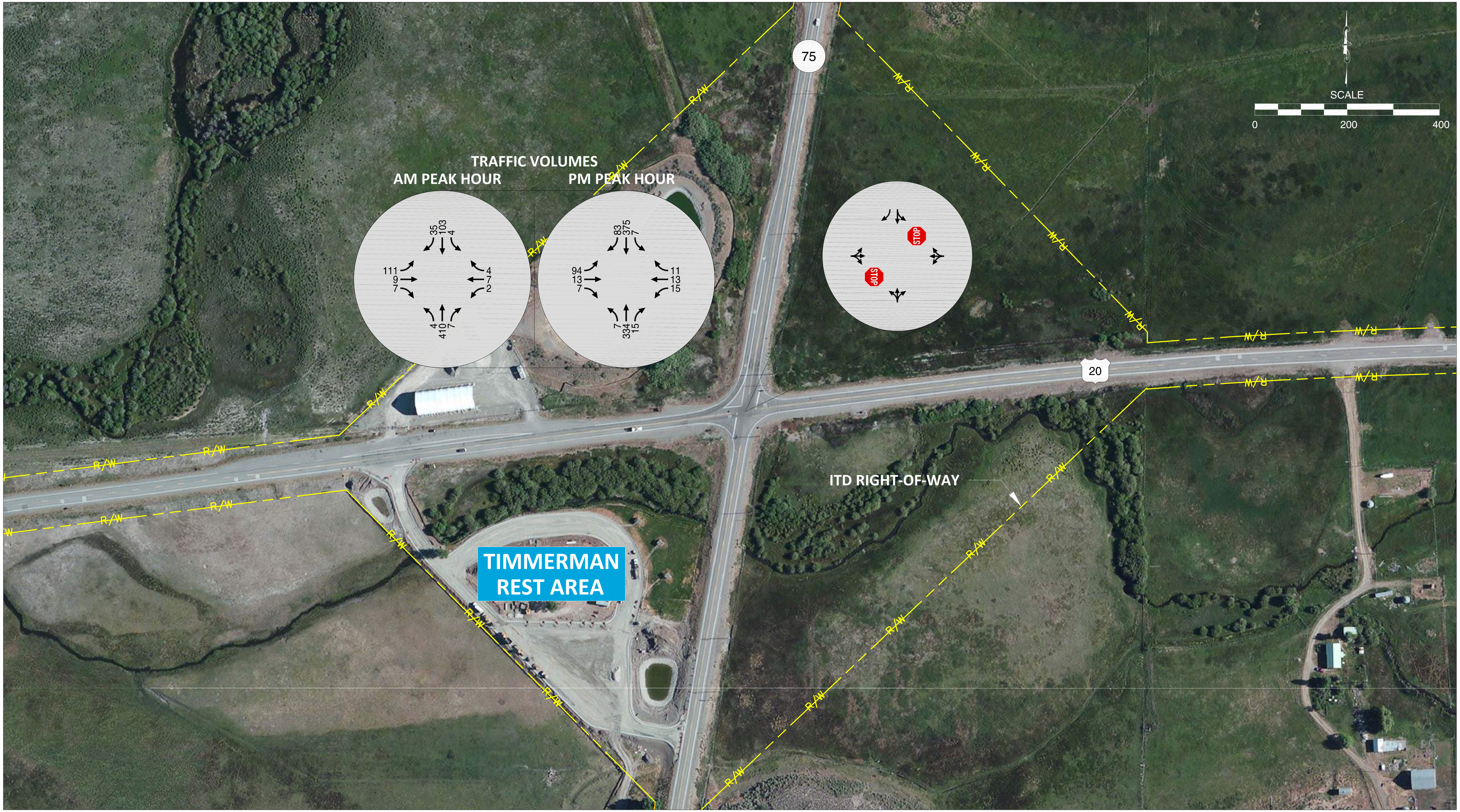
Alternatives Evaluation Criteria for Tier 2 Alternatives

Please rank the six evaluation criteria listed below from #1 to #5 in order of importance to your organization's interests. Please use each number only once (#1 is top priority).

Rank	Evaluation Criteria	Description
1	**Safety Performance**	- Expected influence on the type, frequency, and severity of crashes (especially angle type crashes)
2	**Mobility**	- Expected influence on the movement of all types of traffic through the intersection
3	**Physical and Environmental Impacts**	- Physical impact on the landscape, environment (e.g., wetlands), and properties in the vicinity of the intersection.
4	**Implementation & Maintenance**	- Level of maintenance effort, and the feasibility of phasing an alternative (i.e., interim improvements to long-term solution)
5	**Cost**	- Construction and right-of-way costs

Please use the space below to add any evaluation criteria you believe should be considered and to provide comments to help explain your ranking of the proposed evaluation criteria.

Tier 2 Alternatives Concept Designs



No Build
Timmerman Junction (US-20/SH-75)
Blaine County, Idaho

Alternative
1

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LEGEND/NOTES

▨ New Pavement

Skew angle of 8-10 degrees removed
Travel lanes = 12 feet wide
Paved shoulders = 8 feet wide
Intersection radii = 50 feet
New pavement area = 85,000 sqft

Preliminary Cost: $1.3 to $1.7 million
Benefit/Cost Ratio: 0.13

Removal of Intersection Skew (Centered)
Timmerman Junction (US-20/SH-75)
Blaine County, Idaho

Alternative
2C

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LEGEND/NOTES

▨ New Pavement

Travel lanes = 12 feet wide
Paved shoulders = 8 feet wide
Intersection radii = 50 feet
New pavement area = 30,000 sqft

Preliminary Cost: $1.0 to $1.3 million
Benefit/Cost Ratio: 0.44

Addition of Northbound and Southbound Left-Turn and Right-Turn Lanes
Timmerman Junction (US-20/SH-75)
Blaine County, Idaho

Alternative
3B

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LEGEND/NOTES

▨ New Pavement

Travel lanes = 12 feet wide
Paved shoulders = 8 feet wide
Intersection radii = 50 feet
New pavement area = 70,000 sqft

Preliminary Cost: $2.0 to $2.5 million
Benefit/Cost Ratio: - 0.01

Traffic Signal with Addition of Turn Lanes
Timmerman Junction (US-20/SH-75)
Blaine County, Idaho

Alternative
5

ITD RIGHT-OF-WAY

TRUCK APRON FOR LARGE VEHICLES TO USE IN NEGOTIATING ROUNDABOUT

TIMMERMAN REST AREA

APPROACH CURVES ON ALL APPROACHES TO SLOW VEHICLE SPEEDS

LEGEND/NOTES
- ⬛ New Pavement
- 🟥 Raised Median
- ▨ Truck Apron
- 🟩 Landscape

Roundabout Diameter = 160 feet
Circulating Lane Width = 20 feet
Truck Apron = 15 feet wide
New pavement area = 190,000 sqft
Approach entry and exit lanes vary in width.
Raised curb placed between paved shoulders around the roundabout circulatory roadway.

Preliminary Cost: $2.4 to $2.9 million
Benefit/Cost Ratio: 0.34

Single-Lane Roundabout with Approach Curvature
Timmerman Junction (US-20/SH-75)
Blaine County, Idaho

Alternative
6

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LEGEND/NOTES

▩	New Pavement
🟥	Raised Median
▨	Traversable Median Area

Travel lanes = 12 feet wide
Paved shoulders = 8 feet wide
New pavement area = 200,000 sqft

Preliminary Cost: $3.4 to $4.2 million
Benefit/Cost Ratio: 0.00

Restricted Crossing U-Turn (RCUT) Intersection
Timmerman Junction (US-20/SH-75)
Blaine County, Idaho

Alternative
7

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LEGEND/NOTES

▨	New Pavement
▨	Lane Removal

Total Overpass Length: ~ 2,800 feet
Bridge Structure: 48 feet wide, ~ 150 feet long
Bridge Approaches: ~1,325 feet each
Ramp Shoulders = 4 feet wide
US-20 Shoulders = 6-12 feet wide
New pavement area = 260,000 sqft

Preliminary Cost: $8.6 to $10.3 million
Benefit/Cost Ratio: 0.20

Grade-Separated Diamond Interchange
Timmerman Junction (US-20/SH-75)
Blaine County, Idaho

Alternative
9A

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J

Tier 2 Alternatives Assessment Packet

US 20 & SH 75
TIMMERMAN JUNCTION
Intersection Study

IDAHO TRANSPORTATION DEPARTMENT

US-20/SH-75 (TIMMERMAN JUNCTION) INTERSECTION STUDY

TIER 2 ALTERNATIVES ASSESSMENT PACKET

The Idaho Transportation Department (ITD), in collaboration with local community leaders and representatives, is evaluating a wide range of alternatives for potential future improvements to the US-20/SH-75 (Timmerman Junction) intersection. This study is applying a tiered approach to evaluating alternatives and determining intersection improvement recommendations. This approach will involve three stages - Tier 1 Alternatives, Tier 2 Alternatives, Recommended Intersection Improvements.

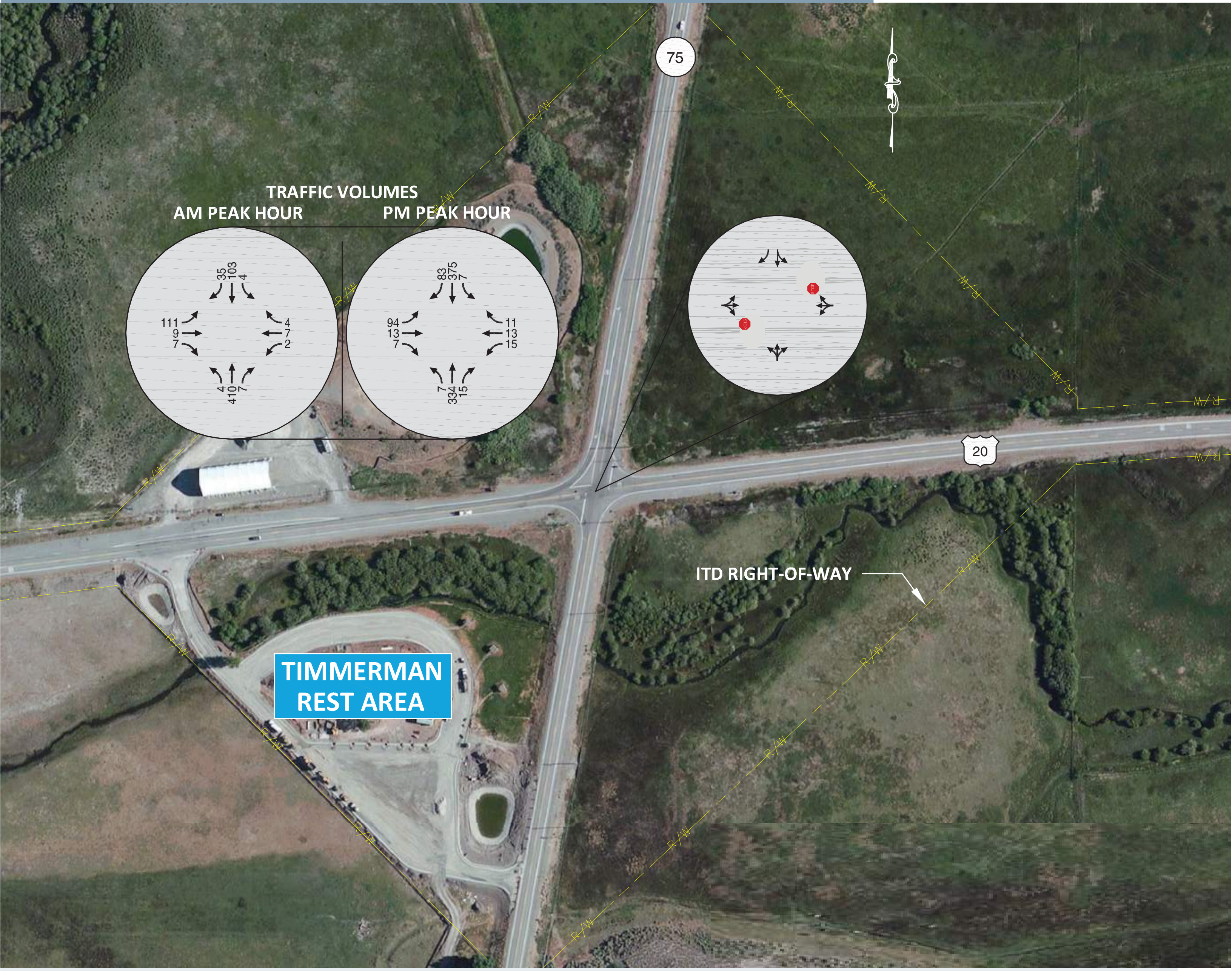
This packet provides information on the existing conditions of the intersection, along with information on seven Tier 2 Alternatives for the intersection. The Tier 2 Alternatives are the those selected by the Study Management Team (SMT) out of the Tier 1 assessment for further evaluation by ITD.

ITD welcomes your feedback and appreciates your time in completing the comment sheet provided at the back of this packet. Your comments will be considered to help determine the alternatives carried forward as the Recommended Intersection Improvements.

For more information please contact:
Bruce Christensen
ITD Study Manager
208-886-7860
Bruce.Christensen@itd.idaho.gov

or visit
http://itd.idaho.gov/projects/d4/US20_ID75_IntersectionStudy/

INTERSECTION CHARACTERISTICS

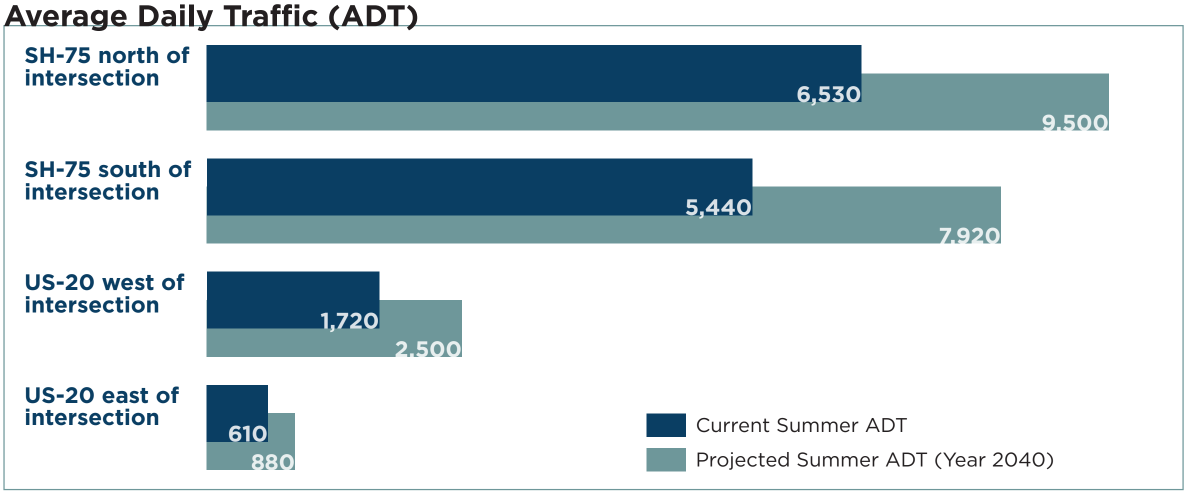


The US-20/SH-75 intersection is currently two-way, stop-controlled with eastbound and westbound US-20 being the stop-controlled approaches and northbound and southbound SH-75 being uncontrolled approaches. Each approach entry has a single left-through-right lane with the exception of the southbound entry, which has a left-through lane and a separate right-turn lane.

EXISTING CONDITIONS CONTINUED

	SH-75		US-20
Posted Speeds	**45 MPH** within 1/2 mile of intersection	**55 MPH** beyond 1/2 mile of intersection	**65 MPH**
Functional Classification	**Minor Arterial**		**Principal Arterial** (National Highway System Route)
Scenic Byways	**Sawtooth Scenic Byway**		**Peaks to Craters Scenic Byway** east of the intersection

Average Daily Traffic (ADT)



Trucks in ADT

4%

4%

8%

8%

Crash Data (2011-2015)

10 reported crashes

8 involved at least one injury

1.7 expected crashes/year

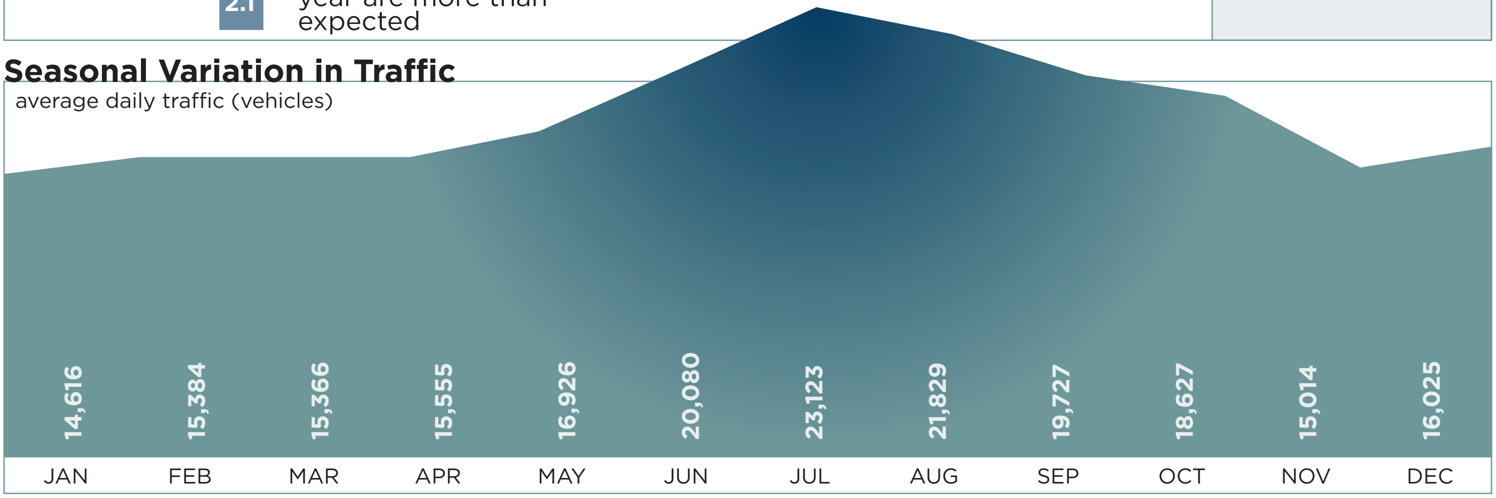
2.1 observed crashes/year are more than expected

Contributing cause for all crashes was "failure to yield"

All crashes were angle type

ZERO reported **fatalities at the intersection** in the past 15 years

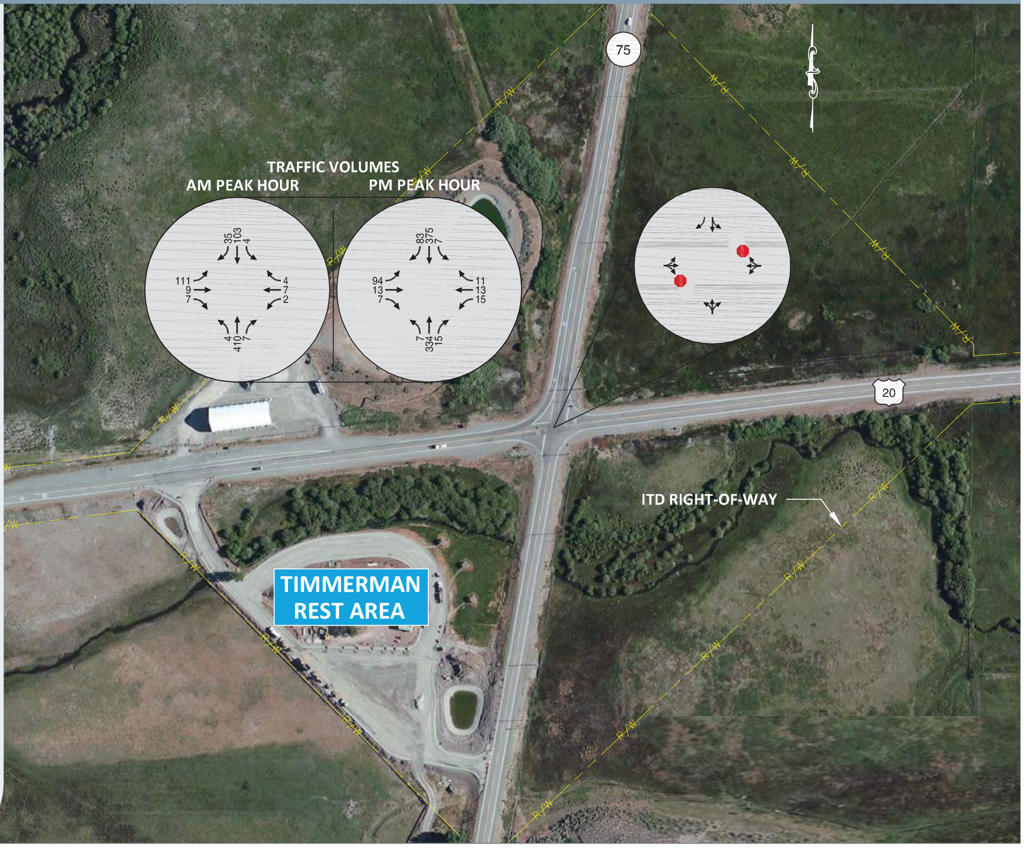
Seasonal Variation in Traffic



ALTERNATIVE 1

NO BUILD

The existing lane configurations and two-way, stop control remain in place at the intersection.



ASSESSMENT OF FUTURE CONDITIONS

Cost Assessment

Benefit/Cost Ratio	Construction	Maintenance
None	None	Low

Safety Performance

2.4 expected crashes/year

With the no-build condition...

- proportion of injury crashes expected to remain high
- 'failure to yield' crashes expected to continue to be an issue

Future Traffic Operations (Year 2040)

SH-75	US-20	Expected Residual Capacity
A Level of Service	D Level of Service	56%
<1 Average Delay (sec/veh)	27 Average Delay (sec/veh)	

Study Management Team (SMT) Feedback from Meeting #2

- Reasonable short- to mid-term alternative.
- Plan for a build alternative for the long-term.
- Hard to justify cost given the low B/C ratios for the build alternatives.

SMT Average Rank:
1.2

ALTERNATIVE 1

NO BUILD

Good > > > > > > > > > > > > > > > > > > > Poor

◉ ◓ ○ ●

	Rating	Key Considerations
Safety Performance	●	• Highest expected crash rate of all alternatives • No reduction in conflict points
Mobility	◓	• Minimal delay and stops on SH-75 • No mobility improvement for US-20 • Operationally functional through year 2040
Physical & Environmental Impacts	◉	• No impact from today’s conditions
Implementation & Maintenance	◓	• No construction • Low operational & maintenance costs & effort
Cost	◉	• No construction cost • No operational or safety benefit

Feedback from SMT Meeting #1

- Recent improvements improved safety
- Adequate operations now and in the future
- Other alternatives are costly

Feedback from CAC Meeting #1

- Lower speed limits and better signage desired
- Recent improvements may be enough
- Does not improve safety

ALTERNATIVE 2C

REMOVE SKEW (CENTERED)

US-20 is realigned to intersect perpendicular to SH-75 at approximately the same intersection location. All lane configurations remain unchanged. The existing two-way, stop control remains in place at the intersection.

ASSESSMENT OF FUTURE CONDITIONS

Cost Assessment

Benefit/Cost Ratio	Construction	Maintenance
0.13	$1.6M	Low

Safety Performance

2.3 expected crashes / year

Removing the skew from the intersection is expected to...

- reduce crashes overall by ~5%
- result in a minor decrease in injury crashes

Future Traffic Operations (Year 2040)

SH-75	US-20	Expected Residual Capacity
A Level of Service	D Level of Service	56%
<1 Average Delay (sec/veh)	27 Average Delay (sec/veh)	

Mobility Compared to No Build

	SH-75	US-20
Average Delay (sec/veh)	No Change	No Change
Stops	No Change	No Change
Travel Time through Intersection	No Change	Minimal Increase

Study Management Team (SMT) Feedback from Meeting #2

- Potential "first phase" improvement for roundabout or other build alternatives.
- Recent crash history shows the majority of crashes occurring on the acute skew angles. Not clear if removal of skew would help reduce crashes.

SMT Average Rank:
3.3

ALTERNATIVE 2C

REMOVE SKEW (CENTERED)

Good > > > > > > > > > > > > > > > > > > > Poor

◉ ◓ ○ ●

	Rating	Key Considerations
Safety Performance	○	• Potentially some reduction in angle crashes • No reduction in conflict points
Mobility	◓	• Minimal delay and stops on SH-75 • No mobility improvement for US-20 • Operationally functional through year 2040
Physical & Environmental Impacts	◓	• Some physical/environmental impacts • No access impacts • Medium amount of additional impervious area
Implementation & Maintenance	◓	• Medium difficulty to construct • Low operational & maintenance costs & effort
Cost	◓	• Medium-low cost ($1.6M) • Low benefit/cost ratio (0.13)

Feedback from SMT Meeting #1

- Minimal safety benefit
- Least impactful skew removal option

Feedback from CAC Meeting #1

- Not enough benefit to justify cost and impact

ALTERNATIVE 3B

ADD NORTHBOUND AND SOUTHBOUND LEFT- AND RIGHT-TURN LANES ON SH-75

Northbound left- and right-turn lanes are added on SH-75. A southbound left-turn lane is added on SH-75. All other lane configurations remain unchanged. The existing two-way, stop control remains in place at the intersection. Widening occurs on the north and south legs of the intersection.

Note that left-turn lanes are generally not warranted according to ITD Turn Lane Warrant Guidance

ASSESSMENT OF FUTURE CONDITIONS

Cost Assessment

Benefit/Cost Ratio	Construction	Maintenance
0.44	$1.3M	Low

Safety Performance

2.0* expected crashes/year

Adding left- and right-turn lanes to the intersection...

- ↓ expected minor reduction in the number of crashes overall
- ↑ proportion of angle and injury crashes expected to remain high

*Given historical crashes are primarily angle type, actual crashes/year may be higher than estimated.

Future Traffic Operations (Year 2040)

SH-75	US-20	Expected Residual Capacity
A Level of Service	D Level of Service	56%
<1 Average Delay (sec/veh)	27 Average Delay (sec/veh)	

Mobility Compared to No Build

	SH-75	US-20
Average Delay (sec/veh)	Minimal Decrease	No Change
Stops	Minimal Decrease	No Change
Travel Time through Intersection	Minimal Decrease	No Change

Study Management Team (SMT) Feedback from Meeting #2

- Concerns about additional intersection width and potential for additional blind spots.
- Capability to reduce crashes is not clear.
- Consider as short- to mid-term improvement and not implementing the northbound right-turn lane (low volume).

SMT Average Rank:
4.0

ALTERNATIVE 3B

ADD NORTHBOUND AND SOUTHBOUND LEFT- AND RIGHT-TURN LANES ON SH-75

Good > Poor

◉ ◓ ○ ●

	Rating	Key Considerations
Safety Performance	●	• Minimal expected reduction in crashes and no expected reduction in angle crashes • No reduction in conflict points
Mobility	◓	• Slight improvement in mobility on SH-75 • No mobility improvement for US-20
Physical & Environmental Impacts	◉	• Minor physical/environmental impacts • No access impacts • Small amount of additional impervious area
Implementation & Maintenance	◓	• Easiest build alternative to construct • Low operational & maintenance costs & effort
Cost	◓	• Medium-low cost ($1.3M) • Highest benefit/cost ratio (0.44)

Feedback from SMT Meeting #1

- Potential safety and operations benefit
- Relatively low cost and easy to implement

Feedback from CAC Meeting #1

- Not enough safety benefit or traffic volume to justify
- Primarily just a mobility improvement
- Could help underlying cause of some crashes

ALTERNATIVE 5

TRAFFIC SIGNAL WITH ADDITION OF TURN LANES

Install a traffic signal control with separate left-turn and right-turn lanes on all approaches. Installation of the turn lanes requires widening of all four legs of the intersection. The traffic signal is not expected to be warranted for at least 15 years.

ASSESSMENT OF FUTURE CONDITIONS

Cost Assessment

Benefit/Cost Ratio	Construction	Maintenance
-0.01	$2.5M	High

Safety Performance

1.3 expected crashes/year

Installation of a traffic signal is expected to....

- reduce angle crashes by ~70%-75%
- increase rear-end crashes on SH-75 by ~55%-60%

Future Traffic Operations (Year 2040)

SH-75	US-20	Expected Residual Capacity
A Level of Service	C Level of Service	59%
8 Average Delay (sec/veh)	26 Average Delay (sec/veh)	

Mobility Compared to No Build

	SH-75	US-20
Average Delay (sec/veh)	Minor Increase	Minimal Increase
Stops	Some Increase	Minor Decrease
Travel Time through Intersection	Minor Increase	Minor Increase

Study Management Team (SMT) Feedback from Meeting #2

- Visual impact is a consideration.
- Most significant mobility impact and no physical geometry to prevent angle crashes.

SMT Average Rank:
4.2

ALTERNATIVE 5

TRAFFIC SIGNAL WITH ADDITION OF TURN LANES

Good > > > > > > > > > > > > > > > > > > > Poor

◉ ◓ ○ ●

	Rating	Key Considerations
Safety Performance	◓	• Expect ~50% reduction in crashes • No reduction in conflict points
Mobility	○	• More delay and stops on SH-75 • Little improvement to US-20 operations • More imposing on truck traffic
Physical & Environmental Impacts	◓	• Some physical/environmental impacts (including view shed impacts) • No access impacts • Medium amount of additional impervious area
Implementation & Maintenance	○	• Minor amount of difficulty to construct • High operational & maintenance costs & effort
Cost	○	• Medium cost ($2.5M) • Lowest benefit/cost ratio (-0.01)

Feedback from SMT Meeting #1

- Significant safety benefit
- Smaller relative impact
- Public likely to support

Feedback from CAC Meeting #1

- Safety likely improved, but at the cost of mobility
- Not a good treatment for a rural location
- Less confusing than other alternatives
- Higher maintenance expenditures expected

ALTERNATIVE 6

SINGLE-LANE ROUNDABOUT WITH APPROACH CURVATURE

Install an approximately 160-foot diameter roundabout with single-lane entries and exits and a truck apron to allow large and oversized vehicles to negotiate the roundabout.

Successive approach curves are used in advance of each roundabout entry to improve speed consistency and visibility approaching the roundabout.

ASSESSMENT OF FUTURE CONDITIONS

Cost Assessment

Benefit/Cost Ratio	Construction	Maintenance
0.34	$2.8M	Medium

Safety Performance

0.7 expected crashes/year

Converting the intersection to a single-lane roundabout is expected to...

- reduce crashes overall by ~65%-75%
- reduce injury crashes by ~80%-90%
- eliminate all key conflict points related to angle crashes

Future Traffic Operations (Year 2040)

SH-75	US-20	Expected Residual Capacity
A Level of Service 10 Average Delay (sec/veh)	A Level of Service 7 Average Delay (sec/veh)	52%

Mobility Compared to No Build

	SH-75	US-20
Average Delay (sec/veh)	Some Increase	Significant Decrease
Stops	Minor Increase	Some Decrease
Travel Time through Intersection	Minor Increase	Minor Decrease

Study Management Team (SMT) Feedback from Meeting #2

- Roundabout provides the most safety benefit and is a good long-term option.
- Expensive and has a mobility disbenefit.

SMT Average Rank:
2.3

ALTERNATIVE 6

SINGLE-LANE ROUNDABOUT WITH APPROACH CURVATURE

Good > > > > > > > > > > > > > > > > > > > Poor

◉ ◒ ○ ●

	Rating	Key Considerations
Safety Performance	◉	• Expect ~70% reduction in crashes • Conflict points are reduced from 32 to 8
Mobility	◒	• More delay and stops on SH-75 • Significant mobility improvement on US-20 • More imposing on truck traffic
Physical & Environmental Impacts	◒	• Some physical/environmental impacts • Minor impact to ITD facility access • Large amount of additional impervious area
Implementation & Maintenance	○	• Significant difficulty to construct • Medium operational & maintenance costs & effort
Cost	◒	• Medium cost ($2.8M) • Medium benefit/cost ratio (0.34)

Feedback from SMT Meeting #1

- Significant safety benefits and US-20 operational benefit
- Aesthetic advantages
- Major physical impact and cost

Feedback from CAC Meeting #1

- Good balance of improving safety and mobility; crashes less likely to be severe
- Need to be mindful of mobility impacts to trucks and maintenance
- Sensible long-term solution with potential aesthetic benefit

ALTERNATIVE 7

RESTRICTED CROSSING U-TURN (RCUT) INTERSECTION

Installation of a restricted crossing u-turn (RCUT) intersection eliminates the left-turn and through movements from the US-20 approaches. Instead, drivers turn right from US-20 onto SH-75 and then make a U-turn maneuver at a one-way median opening to then proceed through on SH-75 or right on US-20. Movements on SH-75 remain free flow. The RCUT requires widening on SH-75 to accommodate the raised medians and the loons that allow for large trucks to make the U-turn maneuvers.

ASSESSMENT OF FUTURE CONDITIONS

Cost Assessment

Benefit/Cost Ratio	Construction	Maintenance
0.0	$4.1M	Medium

Safety Performance

1.3 expected crashes / year

Installation of an RCUT is expected to...

- reduce crashes overall by ~35%-55%*
- result in some reduction in angle and injury crashes

*Actual crash reduction percentage could vary widely as crash reduction data for RCUT intersections is limited.

Future Traffic Operations (Year 2040)

SH-75	US-20*	Expected Residual Capacity
A Level of Service	E Level of Service	80%
<1 Average Delay (sec/veh)	47 Average Delay (sec/veh)	

*LOS and average delay are reported for the combination of right-turn and u-turn movements required for eastbound and westbound traffic.

Mobility Compared to No Build

	SH-75	US-20
Average Delay (sec/veh)	Minimal Decrease	Minor Decrease
Stops	Minimal Decrease	Some Increase*
Travel Time through Intersection	Minimal Decrease	Significant Increase

*Increase in stops is due to more than one stop now required for eastbound and westbound through and left-turn movements.

Study Management Team (SMT) Feedback from Meeting #2

- Not enough benefit for the cost, especially compared to other build alternatives.
- Significant out-of-direction travel and mobility disbenefit to US-20 traffic.

SMT Average Rank:
6.0

ALTERNATIVE 7

RESTRICTED CROSSING U-TURN (RCUT) INTERSECTION

Good > > > > > > > > > > > > > > > > > > > Poor

◉ ◓ ○ ●

	Rating	Key Considerations
Safety Performance	◓	• Expect ~50% reduction in crashes • Conflict points are reduced from 32 to 20
Mobility	◓	• Slight improvement in mobility on SH-75 • Significant mobility impact on US-20
Physical & Environmental Impacts	◓	• Some physical/environmental impacts • Minor impact to rest area access • Large amount of additional impervious area
Implementation & Maintenance	○	• Significant difficulty to construct • Medium operational & maintenance costs & effort
Cost	○	• Medium-high cost ($4.1M) • Low benefit/cost ratio (0.00)

Feedback from SMT Meeting #1

- Significant safety benefit
- Maintenance and driver understanding challenges
- Major physical impact and cost

Feedback from CAC Meeting #1

- Concerns about mobility impacts and driver understanding, but worth investigating further
- Good safety benefits, especially related to angle crashes
- Concerns about physical/environmental impacts, maintenance and cost

ALTERNATIVE 9A

GRADE-SEPARATED DIAMOND INTERCHANGE

Convert the existing at-grade intersection to a grade-separated diamond interchange with US-20 elevated above SH-75. Two unsignalized, stop-controlled intersections would be installed at the ramp terminal intersections with US-20.

ASSESSMENT OF FUTURE CONDITIONS

Cost Assessment

Benefit/Cost Ratio	Construction	Maintenance
0.20	$10.3M	Medium

Safety Performance

1.4 expected crashes/year

Converting the intersection to a grade-separated diamond interchange is expected to....

- reduce crashes overall by ~30%-50%
- reduce injury crashes by ~50%-60%
- Eliminate some key conflict points related to angle crashes

Future Traffic Operations (Year 2040)

	SH-75 Mainline	US-20 Mainline	Northbound Off-Ramp	Southbound Off-Ramp
Level of Service	A	A	A	A
Average Delay (sec/veh)	<1	<1	9	10

Expected Residual Capacity 85%

Mobility Compared to No Build

	SH-75 Mainline	US-20
Average Delay (sec/veh)	Minimal Decrease	Significant Decrease
Stops	Minimal Decrease	Significant Decrease
Travel Time through Intersection	Minimal Decrease	Significant Decrease

Study Management Team (SMT) Feedback from Meeting #2

- The volumes and safety history do not warrant this level of expenditure.
- Not visually acceptable.

SMT Average Rank: 7.0

ALTERNATIVE 9A

GRADE-SEPARATED DIAMOND INTERCHANGE

Good > > > > > > > > > > > > > > > > > > > Poor

◉ ◓ ○ ●

	Rating	Key Considerations
Safety Performance	◓	• Expect ~40% reduction in crashes • Conflict points are reduced from 32 to 24
Mobility	◉	• Slight improvement in mobility on SH-75 • Significant mobility improvement on US-20
Physical & Environmental Impacts	●	• Significant physical/environmental impacts (including view shed impacts) • ITD facility relocation required and some impact to rest area & private property access • Substantial amount of additional impervious area
Implementation & Maintenance	●	• Significant difficulty to construct • Medium operational & maintenance costs & effort
Cost	●	• High cost ($10.3M) • Low benefit/cost ratio (0.20)

Feedback from SMT Meeting #1

- Great safety and mobility performance
- Common highway-to-highway treatment
- Tremendous physical impact and cost

Feedback from CAC Meeting #1

- Physical/environmental impacts are too great; very costly
- Affects view shed of natural surroundings on SH-75
- Not as desirable as other options

TIER 2 EVALUATION

ALTERNATIVES EVALUATION SUMMARY

Good > Poor

◉ ◒ ○ ●

Average Rank of Criteria from CAC Meeting #1

Safety Performance	**1.1**
Mobility	**2.3**
Physical & Environmental Impacts	**2.8**
Implementation & Maintenance	**3.9**
Cost	**4.7**

	Safety Performance	**Mobility**	**Physical & Environmental Impacts**	**Implementation & Maintenance**	**Cost**
Alt #1: No Build	●	◒	◉	◒	◉
Alt #2C: Removal of Intersection Skew (Centered)	○	◒	◒	◒	◒
Alt #3B: Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	●	◒	◉	◒	◒
Alt #5: Traffic Signal with Addition of Turn Lanes	◒	○	◒	○	○
Alt #6: Single-Lane Roundabout with Approach Curvature	◉	◒	◒	○	◒
Alt #7: Restricted Crossing U-Turn Intersection (RCUT)	◒	◒	◒	○	○
Alt #9A: Grade-Separated Diamond Interchange	◒	◉	●	●	●

COMMENT SHEET

CAC MEETING #2 - JULY 14TH, 2016

US 20 SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: ________________________________ **Email:** ____________________________________

Organization: ____

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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, Suite 301, Boise, ID 83702 by no later than July 21st.

Intersection Alternatives (Tier 2) Evaluation

> Please rank the alternatives from 1 through 7 in order of preference (1 being your most preferred alternative)
> Circle the best timeframe for implementation of alternatives or chose "never"

Alternative	Rank	Best Timeframe (circle one)	Please explain your rankings and provide any other comments on the alternatives
1: No Build		Short-Term Mid-Term Long-Term Never	
2C: Remove Skew (Centered)		Short-Term Mid-Term Long-Term Never	
3B: Add Northbound and Southbound Left- and Right-Turn Lanes on SH-75		Short-Term Mid-Term Long-Term Never	
5: Traffic Signal with Additional Turn Lanes		Short-Term Mid-Term Long-Term Never	
6: Single-Lane Roundabout with Approach Curvature		Short-Term Mid-Term Long-Term Never	
7: Restricted Crossing U-Turn (RCUT) Intersection		Short-Term Mid-Term Long-Term Never	
9A: Grade-Separated Diamond Interchange		Short-Term Mid-Term Long-Term Never	

Short-Term = 0-10 years; Mid-Term = 10-20 years; Long-Term = 20+ years

Please provide any general comments or comments on the alternatives evaluation process

____

____

____

____

--OVER--

MEETING EVALUATION

CAC MEETING #2 - JULY 14TH, 2016

Please provide feedback regarding today's meeting.

What worked well for this meeting?

What did not work so well?

What suggestions do you have for our next CAC meeting?

Other comments

K

Tier 2 Alternatives Concept-Level Construction Cost Estimates

US20/SH75 (Timmerman Jct.) Intersection Study - KN13075

Tier 2 Alternatives Concept Cost Estimates

Alt 2C - Removal of Intersection Skew (Centered)

Idaho Transportation Department

Engineer's Estimate - Conceptual

Prepared By: Yuri Mereszczak, PE, Andy Daleiden, PE, Brett Korporaal, & Zachary Sadowski			*Date: June, 2016*		
		This Estimate has a Rating of:	**2B**	*(See rating scale guide below.)*	
	ITEM	**UNIT**	**TOTAL QUANTITY**	**UNIT PRICE**	**TOTAL COST**
1	Excavation (Item No. 205-005A)	CY	3,300	$ 7.00	$ 23,100.00
2	Obliteration of Old Road (Item No. 204-006A)	LF	1,200	$ 10.00	$ 12,000.00
3	Pavement Removal (Item No. 203-015A)	SY	7,000	$ 3.00	$ 21,000.00
4	Granular Borrow (Item No. 205-040A)	CY	4,200	$ 15.00	$ 63,000.00
5	Base Course (Fill) (Item No. 303-022A)	TON	2,800	$ 25.00	$ 70,000.00
6	Subbase Course (Fill) (Item No. 301-005A)	TON	8,600	$ 20.00	$ 172,000.00
7	New Pavement (Item No. 405-325A)	TON	2,600	$ 90.00	$ 234,000.00
8	Curb & Gutter (Item No. 615-430A)	LF	0	$ 17.00	$ -
9	Colored & Patterned Concrete	SY	0	$ 60.00	$ -
10	Culvert Extension - 48" Pipe on South Approach (Item No. 602-085A)	LF	6	$ 90.00	$ 540.00
11	Bridge Structure	SF	0	$ 160.00	$ -
12	Street Lighting	EA	0	$ 7,000.00	$ -
13	Advanced Warning Flasher System (4 approaches)	LS	0	$ 100,000.00	$ -
14	Traffic Signal Installation (Item No. 656-005A)	LS	0	$ 200,000.00	$ -
15	Pavement Marking (Item No. S900-60A)	LF	9,800	$ 0.20	$ 1,960.00
16	Pavement Marking Thermoplastic (Item No. S900-62A)	SF	300	$ 10.00	$ 3,000.00
17	Topsoil (Item No. 213-010A)	SY	5,400	$ 2.00	$ 10,800.00
18	Seeding (Item No. 621-010A)	ACRE	1.1	$ 1,000.00	$ 1,104.22
19	Concrete Sidewalk (Item No.613-005A)	SY	0	$ 35.00	$ -
20	Retaining Wall	SF	0	$ 45.00	$ -
21	Geotextile Fabric	??	0	$ -	$ -
				Subtotal A	**$ 612,504**
22	Clearing & Grubbing	% of Subtotal A	4%	$ 612,504	$ 24,500.17
23	Signing	% of Subtotal A	2%	$ 612,504	$ 12,250.08
24	Utility Relocation Coordination/Support	% of Subtotal A	5%	$ 612,504	$ 30,625.21
25	Drainage System	% of Subtotal A	5%	$ 612,504	$ 30,625.21
26	Mobilization	% of Subtotal A	12%	$ 612,504	$ 73,500.51
27	Surveying	% of Subtotal A	3%	$ 612,504	$ 18,375.13
28	Environmental Mitigation	% of Subtotal A	25%	$ 612,504	$ 153,126.06
29	Construction Traffic Control	% of Subtotal A	5%	$ 612,504	$ 30,625.21
30	Base Stabilization (Geofabric/Drainable Base Materials)	% of Subtotal A	3%	$ 612,504	$ 18,375.13
31	Temporary Erosion Control	% of Subtotal A	2%	$ 612,504	$ 12,250.08
				Subtotal B	**$ 404,253**
32	Right-of-Way Area	SF	0	$ 0.22	$ -
33	Construction/Right-of-Way Easement Area	% of Subtotal A & B	0%	$ 1,016,757	$ -
34	Engineering Design & Construction Management	% of Subtotal A & B	25%	$ 1,016,757	$ 254,200.00
				Subtotal C	**$ 254,200**
				TOTAL PROJECT SUBTOTAL	**$ 1,270,957**
				30% Contingency	**$ 381,290**
				TOTAL ESTIMATED PROJECT COST	**$ 1,652,247**

Scope Accuracy:

Level 1: Project scope well understood and well defined.

Level 2: Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

Level 3: Project scope is a "vision" with limited detail.

Engineering Effort:

Level A: Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear, (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

Level B: Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

Level C: No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 50%.

US20/SH75 (Timmerman Jct.) Intersection Study - KN13075

Tier 2 Alternatives Concept Cost Estimates

Alt 3B - Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75

Idaho Transportation Department

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING/PLANNING

Engineer's Estimate - Conceptual

Prepared By: Yuri Mereszczak, PE, Andy Daleiden, PE, Brett Korporaal, & Zachary Sadowski | *Date: June, 2016*

This Estimate has a Rating of: **2B** *(See rating scale guide below.)*

	ITEM	UNIT	TOTAL QUANTITY	UNIT PRICE	TOTAL COST
1	Excavation (Item No. 205-005A)	CY	7,500	$ 7.00	$ 52,500.00
2	Obliteration of Old Road (Item No. 204-006A)	LF	0	$ 10.00	$ -
3	Pavement Removal (Item No. 203-015A)	SY	9,000	$ 3.00	$ 27,000.00
4	Granular Borrow (Item No. 205-040A)	CY	100	$ 15.00	$ 1,500.00
5	Base Course (Fill) (Item No. 303-022A)	TON	2,700	$ 25.00	$ 67,500.00
6	Subbase Course (Fill) (Item No. 301-005A)	TON	8,200	$ 20.00	$ 164,000.00
7	New Pavement (Item No. 405-325A)	TON	2,500	$ 90.00	$ 225,000.00
8	Curb & Gutter (Item No. 615-430A)	LF	0	$ 17.00	$ -
9	Colored & Patterned Concrete	SY	0	$ 60.00	$ -
10	Culvert Extension - 48" Pipe on South Approach (Item No. 602-085A)	LF	29	$ 90.00	$ 2,610.00
11	Bridge Structure	SF	0	$ 160.00	$ -
12	Street Lighting	EA	0	$ 7,000.00	$ -
13	Advanced Warning Flasher System (4 approaches)	LS	0	$ 100,000.00	$ -
14	Traffic Signal Installation (Item No. 656-005A)	LS	0	$ 200,000.00	$ -
15	Pavement Marking (Item No. S900-60A)	LF	7,900	$ 0.20	$ 1,580.00
16	Pavement Marking Thermoplastic (Item No. S900-62A)	SF	400	$ 10.00	$ 4,000.00
17	Topsoil (Item No. 213-010A)	SY	1,800	$ 2.00	$ 3,600.00
18	Seeding (Item No. 621-010A)	ACRE	0.4	$ 1,000.00	$ 361.34
19	Concrete Sidewalk (Item No.613-005A)	SY	0	$ 35.00	$ -
20	Retaining Wall	SF	0	$ 45.00	$ -
21	Geotextile Fabric	??	0	$ -	$ -
				Subtotal A	**$ 549,651**
22	Clearing & Grubbing	% of Subtotal A	2%	$ 549,651	$ 10,993.03
23	Signing	% of Subtotal A	2%	$ 549,651	$ 10,993.03
24	Utility Relocation Coordination/Support	% of Subtotal A	5%	$ 549,651	$ 27,482.57
25	Drainage System	% of Subtotal A	5%	$ 549,651	$ 27,482.57
26	Mobilization	% of Subtotal A	12%	$ 549,651	$ 65,958.16
27	Surveying	% of Subtotal A	3%	$ 549,651	$ 16,489.54
28	Environmental Mitigation	% of Subtotal A	5%	$ 549,651	$ 27,482.57
29	Construction Traffic Control	% of Subtotal A	5%	$ 549,651	$ 27,482.57
30	Base Stabilization (Geofabric/Drainable Base Materials)	% of Subtotal A	4%	$ 549,651	$ 21,986.05
31	Temporary Erosion Control	% of Subtotal A	2%	$ 549,651	$ 10,993.03
				Subtotal B	**$ 247,343**
32	Right-of-Way Area	SF	0	$ 0.22	$ -
33	Construction/Right-of-Way Easement Area	% of Subtotal A & B	0%	$ 796,994	$ -
34	Engineering Design & Construction Management	% of Subtotal A & B	25%	$ 796,994	$ 199,300.00
				Subtotal C	**$ 199,300**
				TOTAL PROJECT SUBTOTAL	**$ 996,294**
				30% Contingency	**$ 298,890**
				TOTAL ESTIMATED PROJECT COST	**$ 1,295,184**

Scope Accuracy:

Level 1: Project scope well understood and well defined.

Level 2: Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

Level 3: Project scope is a "vision" with limited detail.

Engineering Effort:

Level A: Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear, (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

Level B: Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

Level C: No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 50%.

US20/SH75 (Timmerman Jct.) Intersection Study - KN13075

Tier 2 Alternatives Concept Cost Estimates

Alt 5 - Traffic Signal with Addition of Turn Lanes

Idaho Transportation Department

Engineer's Estimate - Conceptual

Prepared By: Yuri Mereszczak, PE, Andy Daleiden, PE, Brett Korporaal, & Zachary Sadowski | *Date: June, 2016*

This Estimate has a Rating of: **2B** *(See rating scale guide below.)*

	ITEM	UNIT	TOTAL QUANTITY	UNIT PRICE	TOTAL COST
1	Excavation (Item No. 205-005A)	CY	13,900	$ 7.00	$ 97,300.00
2	Obliteration of Old Road (Item No. 204-006A)	LF	0	$ 10.00	$ -
3	Pavement Removal (Item No. 203-015A)	SY	8,400	$ 3.00	$ 25,200.00
4	Granular Borrow (Item No. 205-040A)	CY	300	$ 15.00	$ 4,500.00
5	Base Course (Fill) (Item No. 303-022A)	TON	4,900	$ 25.00	$ 122,500.00
6	Subbase Course (Fill) (Item No. 301-005A)	TON	15,200	$ 20.00	$ 304,000.00
7	New Pavement (Item No. 405-325A)	TON	4,600	$ 90.00	$ 414,000.00
8	Curb & Gutter (Item No. 615-430A)	LF	0	$ 17.00	$ -
9	Colored & Patterned Concrete	SY	0	$ 60.00	$ -
10	Culvert Extension - 48" Pipe on South Approach (Item No. 602-085A)	LF	38	$ 90.00	$ 3,420.00
11	Bridge Structure	SF	0	$ 160.00	$ -
12	Street Lighting	EA	0	$ 7,000.00	$ -
13	Advanced Warning Flasher System (4 approaches)	LS	1	$ 100,000.00	$ 100,000.00
14	Traffic Signal Installation (Item No. 656-005A)	LS	1	$ 200,000.00	$ 200,000.00
15	Pavement Marking (Item No. S900-60A)	LF	10,900	$ 0.20	$ 2,180.00
16	Pavement Marking Thermoplastic (Item No. S900-62A)	SF	600	$ 10.00	$ 6,000.00
17	Topsoil (Item No. 213-010A)	SY	4,100	$ 2.00	$ 8,200.00
18	Seeding (Item No. 621-010A)	ACRE	0.8	$ 1,000.00	$ 833.33
19	Concrete Sidewalk (Item No.613-005A)	SY	0	$ 35.00	$ -
20	Retaining Wall	SF	0	$ 45.00	$ -
21	Geotextile Fabric	??	0	$ -	$ -
				Subtotal A	**$ 1,288,133**
22	Clearing & Grubbing	% of Subtotal A	1%	$ 1,288,133	$ 12,881.33
23	Signing	% of Subtotal A	1.0%	$ 1,288,133	$ 12,881.33
24	Utility Relocation Coordination/Support	% of Subtotal A	2%	$ 1,288,133	$ 25,762.67
25	Drainage System	% of Subtotal A	3%	$ 1,288,133	$ 38,644.00
26	Mobilization	% of Subtotal A	10%	$ 1,288,133	$ 128,813.33
27	Surveying	% of Subtotal A	2%	$ 1,288,133	$ 25,762.67
28	Environmental Mitigation	% of Subtotal A	2%	$ 1,288,133	$ 25,762.67
29	Construction Traffic Control	% of Subtotal A	2%	$ 1,288,133	$ 25,762.67
30	Base Stabilization (Geofabric/Drainable Base Materials)	% of Subtotal A	2%	$ 1,288,133	$ 25,762.67
31	Temporary Erosion Control	% of Subtotal A	1%	$ 1,288,133	$ 12,881.33
				Subtotal B	**$ 334,915**
32	Right-of-Way Area	SF	0	$ 0.22	$ -
33	Construction/Right-of-Way Easement Area	% of Subtotal A & B	0%	$ 1,623,048	$ -
34	Engineering Design & Construction Management	% of Subtotal A & B	25%	$ 1,623,048	$ 405,800.00
				Subtotal C	**$ 405,800**
				TOTAL PROJECT SUBTOTAL	**$ 2,028,848**
				25% Contingency	**$ 507,220**
				TOTAL ESTIMATED PROJECT COST	**$ 2,536,068**

Scope Accuracy:

Level 1: Project scope well understood and well defined.

Level 2: Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

Level 3: Project scope is a "vision" with limited detail.

Engineering Effort:

Level A: Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear, (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

Level B: Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

Level C: No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 50%.

US20/SH75 (Timmerman Jct.) Intersection Study - KN13075

Tier 2 Alternatives Concept Cost Estimates

Alt 6 - Single-Lane Roundabout with Approach Curvature

Idaho Transportation Department

Engineer's Estimate - Conceptual

Prepared By: Yuri Mereszczak, PE, Andy Daleiden, PE, Brett Korporaal, & Zachary Sadowski | *Date: June, 2016*

This Estimate has a Rating of: **2B** *(See rating scale guide below.)*

	ITEM	UNIT	TOTAL QUANTITY	UNIT PRICE	TOTAL COST
1	Excavation (Item No. 205-005A)	CY	8,700	$ 7.00	$ 60,900.00
2	Obliteration of Old Road (Item No. 204-006A)	LF	0	$ 10.00	$ -
3	Pavement Removal (Item No. 203-015A)	SY	10,100	$ 3.00	$ 30,300.00
4	Granular Borrow (Item No. 205-040A)	CY	400	$ 15.00	$ 6,000.00
5	Base Course (Fill) (Item No. 303-022A)	TON	5,600	$ 25.00	$ 140,000.00
6	Subbase Course (Fill) (Item No. 301-005A)	TON	17,400	$ 20.00	$ 348,000.00
7	New Pavement (Item No. 405-325A)	TON	4,200	$ 90.00	$ 378,000.00
8	Curb & Gutter (Item No. 615-430A)	LF	6,200	$ 17.00	$ 105,400.00
9	Colored & Patterned Concrete	SY	3,800	$ 60.00	$ 228,000.00
10	Culvert Extension - 48" Pipe on South Approach (Item No. 602-085A)	LF	43	$ 90.00	$ 3,870.00
11	Bridge Structure	SF	0	$ 160.00	$ -
12	Street Lighting	EA	15	$ 7,000.00	$ 105,000.00
13	Advanced Warning Flasher System (4 approaches)	LS	0	$ 100,000.00	$ -
14	Traffic Signal Installation (Item No. 656-005A)	LS	0	$ 200,000.00	$ -
15	Pavement Marking (Item No. S900-60A)	LF	12,300	$ 0.20	$ 2,460.00
16	Pavement Marking Thermoplastic (Item No. S900-62A)	SF	700	$ 10.00	$ 7,000.00
17	Topsoil (Item No. 213-010A)	SY	9,200	$ 2.00	$ 18,400.00
18	Seeding (Item No. 621-010A)	ACRE	1.9	$ 1,000.00	$ 1,884.06
19	Concrete Sidewalk (Item No.613-005A)	SY	0	$ 35.00	$ -
20	Retaining Wall	SF	0	$ 45.00	$ -
21	Geotextile Fabric	??	0	$ -	$ -
				Subtotal A	**$ 1,435,214**
22	Clearing & Grubbing	% of Subtotal A	1%	$ 1,435,214	$ 14,352.14
23	Signing	% of Subtotal A	1%	$ 1,435,214	$ 14,352.14
24	Utility Relocation Coordination/Support	% of Subtotal A	2%	$ 1,435,214	$ 28,704.28
25	Drainage System	% of Subtotal A	5%	$ 1,435,214	$ 71,760.70
26	Mobilization	% of Subtotal A	10%	$ 1,435,214	$ 143,521.41
27	Surveying	% of Subtotal A	2%	$ 1,435,214	$ 28,704.28
28	Environmental Mitigation	% of Subtotal A	5%	$ 1,435,214	$ 71,760.70
29	Construction Traffic Control	% of Subtotal A	3%	$ 1,435,214	$ 43,056.42
30	Base Stabilization (Geofabric/Drainable Base Materials)	% of Subtotal A	2%	$ 1,435,214	$ 28,704.28
31	Temporary Erosion Control	% of Subtotal A	1%	$ 1,435,214	$ 14,352.14
				Subtotal B	**$ 459,269**
32	Right-of-Way Area	SF	0	$ 0.22	$ -
33	Construction/Right-of-Way Easement Area	% of Subtotal A & B	0%	$ 1,894,483	$ -
34	Engineering Design & Construction Management	% of Subtotal A & B	25%	$ 1,894,483	$ 473,700.00
				Subtotal C	**$ 473,700**
				TOTAL PROJECT SUBTOTAL	**$ 2,368,183**
				20% Contingency	**$ 473,640**
				TOTAL ESTIMATED PROJECT COST	**$ 2,841,823**

Scope Accuracy:

Level 1: Project scope well understood and well defined.

Level 2: Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

Level 3: Project scope is a "vision" with limited detail.

Engineering Effort:

Level A: Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear, (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

Level B: Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

Level C: No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 50%.

US20/SH75 (Timmerman Jct.) Intersection Study - KN13075

Tier 2 Alternatives Concept Cost Estimates

Alt 7 - Restricted Crossing U-Turn Intersection

Idaho Transportation Department

Engineer's Estimate - Conceptual

Prepared By: Yuri Mereszczak, PE, Andy Daleiden, PE, Brett Korporaal, & Zachary Sadowski

Date: June, 2016

This Estimate has a Rating of: **2B** *(See rating scale guide below.)*

	ITEM	UNIT	TOTAL QUANTITY	UNIT PRICE	TOTAL COST
1	Excavation (Item No. 205-005A)	CY	21,800	$ 7.00	$ 152,600.00
2	Obliteration of Old Road (Item No. 204-006A)	LF	0	$ 10.00	$ -
3	Pavement Removal (Item No. 203-015A)	SY	12,400	$ 3.00	$ 37,200.00
4	Granular Borrow (Item No. 205-040A)	CY	6,000	$ 15.00	$ 90,000.00
5	Base Course (Fill) (Item No. 303-022A)	TON	9,200	$ 25.00	$ 230,000.00
6	Subbase Course (Fill) (Item No. 301-005A)	TON	28,600	$ 20.00	$ 572,000.00
7	New Pavement (Item No. 405-325A)	TON	8,000	$ 90.00	$ 720,000.00
8	Curb & Gutter (Item No. 615-430A)	LF	6,500	$ 17.00	$ 110,500.00
9	Colored & Patterned Concrete	SY	2,300	$ 60.00	$ 138,000.00
10	Culvert Extension - 48" Pipe on South Approach (Item No. 602-085A)	LF	65	$ 90.00	$ 5,850.00
11	Bridge Structure	SF	0	$ 160.00	$ -
12	Street Lighting	EA	9	$ 7,000.00	$ 65,660.00
13	Advanced Warning Flasher System (4 approaches)	LS	0	$ 100,000.00	$ -
14	Traffic Signal Installation (Item No. 656-005A)	LS	0	$ 200,000.00	$ -
15	Pavement Marking (Item No. S900-60A)	LF	21,400	$ 0.20	$ 4,280.00
16	Pavement Marking Thermoplastic (Item No. S900-62A)	SF	500	$ 10.00	$ 5,000.00
17	Topsoil (Item No. 213-010A)	SY	11,400	$ 2.00	$ 22,800.00
18	Seeding (Item No. 621-010A)	ACRE	2.4	$ 1,000.00	$ 2,354.59
19	Concrete Sidewalk (Item No.613-005A)	SY	0	$ 35.00	$ -
20	Retaining Wall	SF	0	$ 45.00	$ -
21	Geotextile Fabric	??	0	$ -	$ -
				Subtotal A	**$ 2,156,245**
22	Clearing & Grubbing	% of Subtotal A	1%	$ 2,156,245	$ 21,562.45
23	Signing	% of Subtotal A	1%	$ 2,156,245	$ 21,562.45
24	Utility Relocation Coordination/Support	% of Subtotal A	1.5%	$ 2,156,245	$ 32,343.67
25	Drainage System	% of Subtotal A	5%	$ 2,156,245	$ 107,812.23
26	Mobilization	% of Subtotal A	10%	$ 2,156,245	$ 215,624.46
27	Surveying	% of Subtotal A	1%	$ 2,156,245	$ 21,562.45
28	Environmental Mitigation	% of Subtotal A	3%	$ 2,156,245	$ 64,687.34
29	Construction Traffic Control	% of Subtotal A	2%	$ 2,156,245	$ 43,124.89
30	Base Stabilization (Geofabric/Drainable Base Materials)	% of Subtotal A	2%	$ 2,156,245	$ 43,124.89
31	Temporary Erosion Control	% of Subtotal A	0.5%	$ 2,156,245	$ 10,781.22
				Subtotal B	**$ 582,186**
32	Right-of-Way Area	SF	0	$ 0.22	$ -
33	Construction/Right-of-Way Easement Area	% of Subtotal A & B	0%	$ 2,738,431	$ -
34	Engineering Design & Construction Management	% of Subtotal A & B	25%	$ 2,738,431	$ 684,700.00
				Subtotal C	**$ 684,700**
				TOTAL PROJECT SUBTOTAL	**$ 3,423,131**
				20% Contingency	**$ 684,630**
				TOTAL ESTIMATED PROJECT COST	**$ 4,107,761**

Scope Accuracy:

Level 1: Project scope well understood and well defined.

Level 2: Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

Level 3: Project scope is a "vision" with limited detail.

Engineering Effort:

Level A: Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear, (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

Level B: Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

Level C: No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 50%.

US20/SH75 (Timmerman Jct.) Intersection Study - KN13075

Tier 2 Alternatives Concept Cost Estimates

Alt 9A - Grade-Separated Diamond Interchange

Idaho Transportation Department

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING/PLANNING

Engineer's Estimate - Conceptual

Prepared By: Yuri Mereszczak, PE, Andy Daleiden, PE, Brett Korporaal, & Zachary Sadowski | *Date: June, 2016*

This Estimate has a Rating of: **2B** *(See rating scale guide below.)*

	ITEM	UNIT	TOTAL QUANTITY	UNIT PRICE	TOTAL COST
1	Excavation (Item No. 205-005A)	CY	7,000	$ 7.00	$ 49,000.00
2	Obliteration of Old Road (Item No. 204-006A)	LF	0	$ 10.00	$ -
3	Pavement Removal (Item No. 203-015A)	SY	10,500	$ 3.00	$ 31,500.00
4	Granular Borrow (Item No. 205-040A)	CY	165,500	$ 15.00	$ 2,482,500.00
5	Base Course (Fill) (Item No. 303-022A)	TON	8,400	$ 25.00	$ 210,000.00
6	Subbase Course (Fill) (Item No. 301-005A)	TON	26,000	$ 20.00	$ 520,000.00
7	New Pavement (Item No. 405-325A)	TON	7,800	$ 90.00	$ 702,000.00
8	Curb & Gutter (Item No. 615-430A)	LF	0	$ 17.00	$ -
9	Colored & Patterned Concrete	SY	0	$ 60.00	$ -
10	Culvert Extension - 48" Pipe on South Approach (Item No. 602-085A)	LF	239	$ 90.00	$ 21,465.00
11	Bridge Structure	SF	7,500	$ 160.00	$ 1,200,000.00
12	Street Lighting	EA	5	$ 7,000.00	$ 35,000.00
13	Advanced Warning Flasher System (4 approaches)	LS	0	$ 100,000.00	$ -
14	Traffic Signal Installation (Item No. 656-005A)	LS	0	$ 200,000.00	$ -
15	Pavement Marking (Item No. S900-60A)	LF	24,700	$ 0.20	$ 4,940.00
16	Pavement Marking Thermoplastic (Item No. S900-62A)	SF	500	$ 10.00	$ 5,000.00
17	Topsoil (Item No. 213-010A)	SY	84,300	$ 2.00	$ 168,600.00
18	Seeding (Item No. 621-010A)	ACRE	17.4	$ 1,000.00	$ 17,408.85
19	Concrete Sidewalk (Item No.613-005A)	SY	0	$ 35.00	$ -
20	Retaining Wall	SF	7,150	$ 45.00	$ 321,750.00
21	Geotextile Fabric	??	0	$ -	$ -
				Subtotal A	**$ 5,769,164**
22	Clearing & Grubbing	% of Subtotal A	1%	$ 5,769,164	$ 57,691.64
23	Signing	% of Subtotal A	0.5%	$ 5,769,164	$ 28,845.82
24	Utility Relocation Coordination/Support	% of Subtotal A	1%	$ 5,769,164	$ 57,691.64
25	Drainage System	% of Subtotal A	5%	$ 5,769,164	$ 288,458.19
26	Mobilization	% of Subtotal A	8%	$ 5,769,164	$ 461,533.11
27	Surveying	% of Subtotal A	1%	$ 5,769,164	$ 57,691.64
28	Environmental Mitigation	% of Subtotal A	5%	$ 5,769,164	$ 288,458.19
29	Construction Traffic Control	% of Subtotal A	1.5%	$ 5,769,164	$ 86,537.46
30	Base Stabilization (Geofabric/Drainable Base Materials)	% of Subtotal A	0.5%	$ 5,769,164	$ 28,845.82
31	Temporary Erosion Control	% of Subtotal A	0.5%	$ 5,769,164	$ 28,845.82
				Subtotal B	**$ 1,384,599**
32	Right-of-Way Area	SF	1,533	$ 0.22	$ 337.26
33	Construction/Right-of-Way Easement Area	% of Subtotal A & B	0%	$ 7,153,763	$ -
34	Engineering Design & Construction Management	% of Subtotal A & B	20%	$ 7,153,763	$ 1,430,800.00
				Subtotal C	**$ 1,431,137**
				TOTAL PROJECT SUBTOTAL	**$ 8,584,900**
				20% Contingency	**$ 1,716,990**
				TOTAL ESTIMATED PROJECT COST	**$ 10,301,890**

Scope Accuracy:

Level 1: Project scope well understood and well defined.

Level 2: Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

Level 3: Project scope is a "vision" with limited detail.

Engineering Effort:

Level A: Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear, (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

Level B: Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

Level C: No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 50%.

L

Tier 2 Alternatives Life-Cycle Cost Estimate Output Worksheet

NCHRP Project 03-110: Estimating the Life-Cycle Cost of Intersection Designs

Life-Cycle Cost Estimating Tool

Introduction

The Life-Cycle Cost Estimating Tool (LCCET) was deveoped as part of NCHRP Project 03-110. The objective of this project was to develop a spreadsheet-based tool that can be used to compare the life-cycle costs of alternative designs for new and existing intersections. The tool will be applicable to the following types of intersections: stop-controlled, traffic signal, roundabout, and innovative designs.

Overview of Tool

This spreadsheet tool provides life cycle cost comparisons between different intersection or influence area treatments. The tool incoporates the following costs: safety, vehicular delay, multimodal delay, operations, maintenance, initial capital costs and emissions. Any of these elements can be excluded from the analysis by unselecting them in the "Outputs" worksheet.

Maintenance

Version: LCCET 1.0
Maintained By: TBD
Contact Information: TBD

Tool Guidance

Additional user guidance can be found in Chapter 3 of the NCHRP Project 03-110 Final Report, which is located at the following link: [Website to be determined by NCHRP]

Disclaimers

This is draft material as submitted by the research agency. The opinions and conclusions expressed or implied in the material are those of the research agency. They are not necessarily those of the Transportation Research Board, the National Academies, or the program sponsors. No warranty is made by the developers or their employer as to the accuracy, completeness, or reliability of this software and its associated equations and documentation. No responsibility is assumed by the developers for incorrect results or damages resulting from the use of this software.

Legend

🟩	Required data entry field
🟦	Optional data entry field
⬛	Data entry field not used
[Value]	Automated input
Abc	Comment/Guidance text
Abc	Warning/Error text
🟪	**Purple tabs** are for reference values only. **Modifying these sheets may cause the LCCET to cease functioning properly.**

How to Use the Life-Cycle Cost Estimating Tool

1. On the **Organization Information** sheet, provide basic project information. This is used for project context and attribution only.
2. The sheet **CostParameters** contains costs that are consistently applied across all project alternatives. The user should review these costs to ensure they are realistic for the location and also select the appropriate input type based on available data or applicable policies.
3. The **GHG.Costs** sheet contains discounted costs for greenhouse gases (GHGs). GHGs are handled separately because the discount rate for GHGs may vary from the discount rate applied to other costs.
4. The **DemandParameters** sheet details the flow profiles applied to all alternatives by mode. The purpose of this sheet is to calibrate peak hour data to annual data so that various inputs are in a consistent format.
5. The sheet **Alternatives_MasterList** is used to manage alternatives. This allows the analyst to add or remove alternatives and sets up the basic sheet titles. It also establishes the base alternative that will be used as a basis for comparison for all alternatives.
6. The sheet **BaseCase** provides cost inputs for the base case analysis. All other alternatives are compared to this alternative.

7. The worksheet **Outputs** is used to compile the summary information within the Net Present Value Table within each alternative. This sheet provides a plot of the results and a comparison.
8. **Purple worksheet tabs** are for calculations and formula references. **These sheets should not be modified without a thorough knowledge of the VBA code used in the LCCET.**

Cost Parameters

This sheet defines the basic cost parameters used in the benefit-cost analysis. You may either use the default values or override the defaults with your own values. **Note that all costs must be in the same year dollars, preferably in base year dollars.** Consult the Bureau of Labor Statistics web site for latest information on the consumer price index to adjust values to current year: http://www.bls.gov/cpi/

Type	Category group (select)	Category	Unit valuation	Default value	Override value	Use value	Override date	Notes/References
Base year for discounting	N/A	N/A	N/A	N/A	2015	2015		All costs will be discounted to the Base Year for Discounting. *Enter the year in the "Override Value" column.*
Discount rate	N/A	N/A	Percent	0.03		0.03		OMB Circular A-4 recommends using both 3% and 7% real rates.
Value of time	N/A	Person (weekday)	$ per person hour	$ 12.98		$ 12.98		USDOT Revised Departmental Guidance on Valuation of Travel Time in Economic Analysis (Revision 2 – corrected) April 2013
		Person (weekend)	$ per person hour	$ 12.98		$ 12.98		
		Trucks	$ per truck hour	$ 25.75		$ 25.75		
Crashes	● **KABCO**	K - Fatality crashes	$ per crash	$ 9,200,000	$ 6,493,502	$ 6,493,502		Used ITD 2014 Crash Economics (Cost of Crash)
		A - Severe injury crashes	$ per crash	$ 440,125	$ 323,382	$ 323,382		
		B - Moderate injury crashes	$ per crash	$ 120,167	$ 90,577	$ 90,577		
		C - Minor injury crashes	$ per crash	$ 62,114	$ 60,040	$ 60,040		
		O - No injury crashes	$ per crash	$ 6,734	$ 6,951	$ 6,951		
	● **Fatality, injury, PDO**	Fatality crashes	$ per crash	$ 9,200,000				
		Injury crashes	$ per crash	$ 167,264				
		Property damage only crashes	$ per crash	$ 6,734				
	● **Total crashes**	Total crashes	$ per crash	N/A				
	● **User defined categories**	(Enter user defined categories)	$ per crash	N/A				
Greenhouse gases	● **Federal Method (Exec. Order 12866)**	CO2 equivalent	$ per metric ton	Values vary annually, see table in GHG.Costs		See table in GHG.Costs sheet		Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866 (May 2013; revised November 2013)
	● **User defined**	CO2 equivalent	$ per metric ton	N/A		See table in GHG.Costs sheet		
Criteria pollutants	● **Criteria pollutants by type**	CO	$ per metric ton	$ 39,600		$ 39,600		Corporate Average Fuel Economy for MY2017- MY2025 Passenger Cars and Light Trucks (August 2012), page 922, Table VIII-16, "Economic Values Used for Benefits Computations (2010 dollars)"
		NOx	$ per metric ton	$ 7,887		$ 7,887		
		HC	$ per metric ton	$ 1,700		$ 1,700		
		PM 2.5	$ per metric ton	$ 306,500		$ 306,500		
	● **User defined categories**	(Enter user defined categories)	$ per metric ton	N/A				

Demand Volume Profile

This sheet creates demand profiles for specified years based on the major facility type and total entering AADT. You may either use the default hourly and daily factors or provide your own. These profiles are applied to all alternatives to convert peak hour information to annual delay estimates.

Peak Hours and Facility Profile

Enter peak period begin and end times:

Peak Weekday Time Period	From	To
AM peak	7:00 AM	8:00 AM
PM peak	4:00 PM	5:00 PM
Weekend peak		

Select Analysis Basis: Specific Day/Month

Weekday Count: Friday, July 17, 2015 Enter dates as "mm/dd/yyyy"

Weekend Count: Enter dates as "mm/dd/yyyy"

Select facility type: Rural Principal Arterial

At intersections of varying facilities select the roadway that will be more representative of the volume, or interpolate between values.

Volume Adjustment Factor:	Automated Adj. Factor	Override Value	Value Applied	
Weekday Adjustment:	0.765		76.5%	This adjustment factor is used to align the input delay values within the alternatives sheets with the specific volume factor.
Weekend Adjustment:	1.000		100.0%	This adjustment factor is used to align the input delay values within the alternatives sheets with the specific volume factor.

	Base Analysis Volumes	Adjusted Average Annual Volume	Override Value	Year 1 Value Applied
AM peak hour:	486	372		372
PM peak hour:	677	518		518
Weekend peak hour:				
Specific Weekday Daily Traffic:	14,668	11,221		11,221

Volume entries are used to calibrate the volume-delay curve for a given alternative, and AADT values are used to develop demand profiles for each hour of each year. A minimum of one hourly volume must be entered within this table. If data is not available for a time period(s) please leave blank. Offpeak data is only used for calibrating the delay equation, not for AADT estimates.

Adjust hourly volume profile to input peak hour volumes (Yes/No)? No

If 'Yes' is selected the default hourly volume profiles will be adjusted to match the input peak hour volumes.
Review plots of demand profiles to the right of Column "R" to assess the appropriateness of the profiles.

Quantity (sum over all cordon approaches)	Units	Year										
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	
		2015	2040									Demand data must be entered for the opening year and end year for each alternative. Demand data must also be entered for any interim years specified for an alternative.
Average annual daily traffic (AADT)	Avg veh/day	11,221	16,280									
AM peak hour volume	veh/hr	486	705									Enter hourly volumes used to carry out travel time/delay calculations for intersection(s)
PM peak hour volume	veh/hr	677	982									
Weekend peak hour volume:	veh/hr											
Average annual auto occupancy	Passengers per vehicle	1.2	1.2									Enter annual averages
Average annual % trucks	Average %	6.0%	6.0%									
Annual transit passengers	Transit passengers per year	0	0									Enter annual totals
Annual cyclists	Cyclists per year	0	0									
Annual pedestrians	Pedestrians per year	0	0									

Click button when years are entered to set up calculations tables:

This button should be pressed any time changes are made to the values above. This button creates a "typical" annual profile in rows 167 and below for various user types.

Passenger Vehicle Demand Profile Parameters

Note: All charts illustrating volume profiles are shown to right of Column "R"

Review Daily Profile or Override Values:
Chart shown at right

Day of Week	Urban	Rural	Default Profile Value	Override Value	Applied Value	Notes
Monday	98.0%	95.1%	95.1%		95.1%	
Tuesday	98.0%	91.2%	91.2%		91.2%	
Wednesday	100.0%	93.2%	93.2%		93.2%	
Thursday	103.0%	98.1%	98.1%		98.1%	
Friday	115.0%	116.2%	116.2%		116.2%	
Saturday	99.0%	105.1%	105.1%		105.1%	
Sunday	87.0%	101.1%	101.1%		101.1%	

Review Monthly Profile or

	Functional Class	Default Profile			

Override Values:

Chart shown at right

Month	Rural Interstate	Rural Principal Arterial	Rural Minor Arterial	Rural Major Collector	Rural Minor Collector	Urban Interstate	Urban Other Frwy & Expwy	Urban Principal Arterial	Urban Minor Arterial	Default Profile Value	Override Value	Applied Value	Notes
January	74.7%	81.3%	83.4%	81.2%	81.2%	83.6%	80.2%	83.1%	88.1%	81.3%		81.3%	
February	82.8%	85.5%	93.5%	93.5%	93.5%	86.3%	87.4%	102.1%	94.4%	85.5%		85.5%	
March	92.6%	89.1%	97.3%	97.7%	97.7%	93.6%	93.6%	103.0%	101.6%	89.1%		89.1%	
April	99.4%	95.8%	100.4%	104.4%	104.4%	99.2%	95.8%	98.7%	84.4%	95.8%		95.8%	
May	108.7%	109.1%	109.1%	100.9%	100.9%	99.0%	102.6%	101.2%	102.5%	109.1%		109.1%	
June	110.5%	108.7%	110.6%	104.1%	104.1%	103.9%	106.8%	105.0%	106.0%	108.7%		108.7%	
July	124.3%	112.5%	101.6%	98.2%	98.2%	115.2%	110.7%	99.1%	115.0%	112.5%		112.5%	
August	113.7%	113.0%	101.5%	105.6%	105.6%	105.0%	114.2%	105.4%	111.0%	113.0%		113.0%	
September	108.7%	103.8%	106.2%	105.4%	105.4%	108.1%	108.8%	109.1%	108.1%	103.8%		103.8%	
October	99.6%	104.1%	108.0%	102.8%	102.8%	101.2%	106.9%	95.2%	103.6%	104.1%		104.1%	
November	97.4%	96.5%	98.3%	100.7%	100.7%	101.2%	96.2%	99.2%	98.9%	96.5%		96.5%	
December	87.2%	91.0%	96.6%	99.8%	99.8%	99.5%	93.3%	93.8%	90.3%	91.0%		91.0%	

Review Weekday Hourly Demand Profile or Override Values:

Chart shown at right

Review Weekend Hourly Demand Profile or Override Values:

Chart shown at right

Category	Hour Starting	Functional Class									Calibrated Profile Value	Override Value	Applied Value	Notes
		Rural Interstate	Rural Principal Arterial	Rural Minor Arterial	Rural Major Collector	Rural Minor Collector	Urban Interstate	Urban Other Frwy & Expwy	Urban Principal Arterial	Urban Minor Arterial				
Weekday	12:00 AM	1.1%	0.9%	1.2%	1.2%	0.8%	1.1%	1.0%	1.0%	1.0%	0.9%		0.9%	
	1:00 AM	0.8%	0.5%	0.6%	0.5%	0.4%	0.6%	0.6%	0.6%	0.6%	0.5%		0.5%	
	2:00 AM	0.6%	0.3%	0.3%	0.4%	0.1%	0.5%	0.4%	0.5%	0.4%	0.3%		0.3%	
	3:00 AM	0.6%	0.3%	0.3%	0.3%	0.1%	0.4%	0.4%	0.5%	0.2%	0.3%		0.3%	
	4:00 AM	0.8%	0.6%	0.5%	0.4%	0.1%	0.7%	0.7%	0.9%	0.2%	0.6%		0.6%	
	5:00 AM	1.5%	1.9%	1.8%	1.0%	0.6%	2.2%	2.5%	3.0%	0.7%	1.9%		1.9%	
	6:00 AM	3.4%	4.8%	4.5%	2.8%	2.0%	5.1%	5.8%	5.4%	2.3%	4.8%		4.8%	
	7:00 AM	5.6%	7.2%	7.2%	6.3%	3.4%	6.9%	7.7%	7.1%	6.7%	7.2%		7.2%	
	8:00 AM	5.4%	5.9%	6.0%	6.0%	3.5%	5.5%	5.3%	5.8%	6.6%	5.9%		5.9%	
	9:00 AM	5.3%	5.0%	4.4%	4.9%	3.7%	4.6%	3.7%	4.7%	5.4%	5.0%		5.0%	
	10:00 AM	5.6%	5.1%	4.4%	4.8%	4.7%	4.6%	3.7%	4.6%	5.1%	5.1%		5.1%	
	11:00 AM	5.8%	5.3%	4.6%	5.0%	5.6%	4.9%	4.2%	5.0%	5.6%	5.3%		5.3%	
	12:00 PM	6.0%	5.4%	4.9%	5.2%	5.5%	5.2%	4.5%	5.3%	7.1%	5.4%		5.4%	
	1:00 PM	6.2%	5.7%	5.0%	5.5%	5.6%	5.3%	4.5%	5.4%	6.6%	5.7%		5.7%	
	2:00 PM	6.7%	6.4%	5.6%	6.2%	6.1%	6.0%	5.7%	6.3%	6.0%	6.4%		6.4%	
	3:00 PM	7.4%	7.5%	8.0%	7.1%	7.1%	7.0%	7.3%	6.9%	6.2%	7.5%		7.5%	
	4:00 PM	8.0%	8.3%	8.8%	8.3%	8.0%	7.7%	8.7%	7.2%	6.3%	8.3%		8.3%	
	5:00 PM	7.7%	8.3%	8.9%	9.3%	10.7%	8.1%	9.0%	7.7%	7.5%	8.3%		8.3%	
	6:00 PM	6.0%	6.2%	5.9%	7.2%	8.5%	6.5%	6.8%	6.2%	7.0%	6.2%		6.2%	
	7:00 PM	4.5%	4.3%	4.8%	4.9%	6.6%	4.9%	4.9%	4.4%	5.3%	4.3%		4.3%	
	8:00 PM	3.6%	3.4%	3.6%	4.0%	6.0%	3.9%	4.0%	3.5%	4.4%	3.4%		3.4%	
	9:00 PM	3.1%	3.0%	3.1%	3.9%	4.9%	3.6%	3.7%	3.3%	3.5%	3.0%		3.0%	
	10:00 PM	2.4%	2.3%	2.6%	2.8%	3.8%	2.8%	2.9%	2.6%	3.3%	2.3%		2.3%	
	11:00 PM	1.8%	1.6%	2.0%	1.9%	2.0%	2.0%	1.9%	2.1%	1.9%	1.6%		1.6%	
	Total										100.2%	0.0%	100.2%	
Weekend	12:00 AM	1.6%	1.6%	2.4%	2.2%	1.6%	2.1%	2.3%	2.3%	2.8%	1.6%		1.6%	
	1:00 AM	1.1%	1.0%	1.3%	1.2%	0.9%	1.4%	1.5%	1.4%	2.3%	1.0%		1.0%	
	2:00 AM	0.9%	0.6%	0.7%	0.7%	0.4%	1.0%	0.8%	1.0%	2.1%	0.6%		0.6%	
	3:00 AM	0.7%	0.5%	0.5%	0.5%	0.2%	0.6%	0.5%	0.6%	0.8%	0.5%		0.5%	
	4:00 AM	0.7%	0.5%	0.5%	0.4%	0.2%	0.6%	0.5%	0.6%	0.5%	0.5%		0.5%	
	5:00 AM	1.0%	0.9%	0.8%	0.6%	0.2%	1.0%	0.9%	1.0%	0.5%	0.9%		0.9%	
	6:00 AM	1.7%	1.6%	1.6%	1.0%	0.7%	1.7%	1.6%	1.7%	1.1%	1.6%		1.6%	
	7:00 AM	2.7%	2.5%	2.5%	1.8%	1.4%	2.5%	2.3%	2.4%	1.8%	2.5%		2.5%	
	8:00 AM	3.9%	3.6%	3.3%	2.8%	2.5%	3.5%	3.6%	3.5%	3.0%	3.6%		3.6%	
	9:00 AM	5.2%	5.0%	4.5%	3.9%	4.6%	4.7%	4.5%	4.6%	4.8%	5.0%		5.0%	
	10:00 AM	6.3%	6.2%	5.5%	4.9%	5.8%	5.7%	5.7%	5.6%	5.4%	6.2%		6.2%	
	11:00 AM	7.0%	7.0%	6.3%	6.0%	6.3%	6.5%	6.6%	5.4%	5.7%	7.0%		7.0%	
	12:00 PM	7.2%	7.5%	7.2%	6.8%	8.6%	7.2%	7.6%	7.1%	7.4%	7.5%		7.5%	
	1:00 PM	7.2%	7.5%	7.3%	7.1%	8.1%	7.2%	7.3%	7.1%	7.1%	7.5%		7.5%	
	2:00 PM	7.3%	7.5%	7.2%	7.3%	7.7%	7.1%	7.4%	7.2%	6.9%	7.5%		7.5%	
	3:00 PM	7.5%	7.7%	8.2%	7.4%	7.7%	7.3%	7.5%	7.3%	6.7%	7.7%		7.7%	
	4:00 PM	7.5%	7.8%	7.5%	7.9%	8.6%	7.3%	7.5%	7.3%	7.1%	7.8%		7.8%	
	5:00 PM	7.1%	7.5%	7.4%	8.0%	8.6%	7.2%	7.1%	7.3%	6.8%	7.5%		7.5%	
	6:00 PM	6.1%	6.5%	6.7%	7.5%	6.7%	6.4%	6.3%	6.3%	6.7%	6.5%		6.5%	
	7:00 PM	5.1%	5.1%	5.4%	6.3%	5.6%	5.2%	5.1%	5.2%	5.6%	5.1%		5.1%	
	8:00 PM	4.1%	4.1%	4.3%	5.2%	5.1%	4.3%	4.3%	4.4%	4.9%	4.1%		4.1%	
	9:00 PM	3.3%	3.3%	3.5%	4.5%	3.9%	3.8%	3.7%	3.8%	4.0%	3.3%		3.3%	
	10:00 PM	2.6%	2.6%	2.9%	3.4%	3.2%	3.2%	3.2%	3.3%	3.5%	2.6%		2.6%	
	11:00 PM	1.9%	1.9%	2.4%	2.5%	1.9%	2.5%	2.3%	2.6%	2.4%	1.9%		1.9%	
	Total										100.0%	0.0%	100.0%	

Rural Principal Arterial
0.009
0.005
0.003
0.003
0.006
0.019
0.048
0.072
0.059
0.05
0.051
0.053
0.054
0.057
0.064
0.075
0.083
0.083
0.062
0.043
0.034
0.03
0.023
0.016
0.016
0.01
0.006
0.005
0.005
0.009
0.016
0.025
0.036
0.05
0.062
0.07
0.075
0.075
0.075
0.077
0.078
0.075
0.065
0.051
0.041
0.033
0.026
0.019

Alternative 1 - No-Build

Description: **No-Build**

A summary of the net present value for this alternative is shown to the right in Column "J"

Planning & construction period	Begin planning & construction	**2015**	First year of planning & construction
Operating period	Opening year	**2015**	Travel time/delay and demand forecasts for the opening year *must* be provided.
	Interim year 1		Travel time/delay and demand forecasts for up to three years between the opening year and the end year *may* be provided.
	Interim year 2		
	Interim year 3		
	End year	**2040**	Travel time/delay and demand forecasts for the end (horizon) year *must* be provided.
Worksheet setup	Setup Worksheet		Once you have entered begin planning & construction, opening, and end years, click this button to set up the worksheet. You may enter other inputs at any time.

Net Present Value Summary	
Planning & Construction Costs	$ -
Operating & Maintenance Costs	$ 56,472
Auto Passenger Time	$ 1,276,746
Auto Passenger Reliability	--
Truck Time	$ 134,725
Truck Reliability	--
Transit Passenger Time	--
Transit Passenger Reliability	--
Bicyclist Time	--
Pedestrian Time	--
Safety	$ 3,465,646
Greenhouse Gases	--
Criteria Pollutants	--
Total Net Present Value	**$ 4,933,589**

Planning & construction costs	**Units**	**Planning & construction year(s)**					**Notes**
		2015	**2016**	**2017**	**2018**	**2019**	
Planning & Construction Costs	Dollars	$ -					
(Other planning & construction costs)	Dollars	$ -					
(Other planning & construction costs)	Dollars	$ -					
(Other planning & construction costs)	Dollars	$ -					
(Other planning & construction costs)	Dollars	$ -					
(Other planning & construction costs)	Dollars	$ -					
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						

Operating & maintenance costs	**Units**	**Begin year**	**Period (years)**	**Cost**	**Notes**
Power	Dollars	2015	1	$ 200	
Inspection	Dollars	2016	1	$ 500	
Repaving	Dollars	2035	20	$ 50,000	
Signing, striping	Dollars	2020	5	$ 5,000	**Thermoplastic and paint**
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				

Calculations can

Demand & travel time / delay	**Average travel time / delay**		**Opening year**	**Interim year(s)**			**End year**	**Notes**
	Time Period	**Units**	**2015**				**2040**	
Average vehicle travel time or delay	AM peak	seconds/veh	2.7				3.5	
	PM peak	seconds/veh	2.6				4.1	
	Weekend peak	seconds/veh						
Standard deviation of vehicle travel time or delay	AM peak	seconds/veh						
	PM peak	seconds/veh						
	Weekend peak	seconds/veh						
Average bicycle travel time or delay	All time periods	seconds/bike						
Average pedestrian travel time or delay	All time periods	seconds/ped						

Number of travel

Safety	**Crash type**	**Units**						
KABCO	K - Fatality crashes	crashes/year	0.0				0.0	
	A - Severe injury crashes	crashes/year	0.2				0.2	
	B - Moderate injury crashes	crashes/year	0.6				0.7	
	C - Minor injury crashes	crashes/year	0.8				0.9	
	O - No injury crashes	crashes/year	0.4				0.5	

Emissions	**Type**	**Units**						
Greenhouse gases -- Federal method (Exec. Order 12866)	CO2 equivalent	metric tons/year						
Criteria pollutants -- by type	CO	metric tons/year						
	NOx	metric tons/year						
	HC	metric tons/year						
	PM 2.5	metric tons/year						

Alternative 2C - Remove Skew (Centered)

Description: **Removes intersection skew and adds northbound right-turn lane**

A summary of the net present value for this alternative is shown to the right in Column "J"

Planning & construction period	Begin planning & construction	**2015**	First year of planning & construction
Operating period	Opening year	**2015**	Travel time/delay and demand forecasts for the opening year *must* be provided.
	Interim year 1		Travel time/delay and demand forecasts for up to three years between the opening year and the end year *may* be provided.
	Interim year 2		
	Interim year 3		
	End year	**2040**	Travel time/delay and demand forecasts for the end (horizon) year *must* be provided.
Worksheet setup	Setup Worksheet		Once you have entered begin planning & construction, opening, and end years, click this button to set up the worksheet. You may enter other inputs at any time.

Net Present Value Summary		
Planning & Construction Costs	$	1,652,300
Operating & Maintenance Costs	$	56,472
Auto Passenger Time	$	1,276,746
Auto Passenger Reliability		--
Truck Time	$	134,725
Truck Reliability		--
Transit Passenger Time		--
Transit Passenger Reliability		--
Bicyclist Time		--
Pedestrian Time		--
Safety	$	3,251,120
Greenhouse Gases		--
Criteria Pollutants		--
Total Net Present Value	**$**	**6,371,364**

Planning & construction costs	**Units**	**Planning & construction year(s)**					**Notes**
		2015	**2016**	**2017**	**2018**	**2019**	
Planning & Construction Costs	Dollars	$ 1,652,300					
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						

Operating & maintenance costs	**Units**	**Begin year**	**Period (years)**	**Cost**	**Notes**
Power	Dollars	2015	1	$ 200	
Inspection	Dollars	2016	1	$ 500	
Repaving	Dollars	2035	20	$ 50,000	
Signing, striping	Dollars	2020	5	$ 5,000	**Thermoplastic and paint**
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				

Calculations can

Demand & travel time / delay	**Average travel time / delay**		**Opening year**	**Interim year(s)**			**End year**	**Notes**
	Time Period	**Units**	**2015**				**2040**	
Average vehicle travel time or delay	AM peak	seconds/veh	2.7				3.5	
	PM peak	seconds/veh	2.6				4.1	
	Weekend peak	seconds/veh						
Standard deviation of vehicle travel time or delay	AM peak	seconds/veh	0.0				0.0	
	PM peak	seconds/veh	0.0				0.0	
	Weekend peak	seconds/veh	0.0				0.0	
Average bicycle travel time or delay	All time periods	seconds/bike	0.0				0.0	
Average pedestrian travel time or delay	All time periods	seconds/ped	0.0				0.0	
Safety	**Crash type**	**Units**						
KABCO	K - Fatality crashes	crashes/year	0.0				0.0	
	A - Severe injury crashes	crashes/year	0.2				0.2	
	B - Moderate injury crashes	crashes/year	0.6				0.7	
	C - Minor injury crashes	crashes/year	0.8				0.9	
	O - No injury crashes	crashes/year	0.4				0.5	
Emissions	**Type**	**Units**						
Greenhouse gases -- Federal method (Exec. Order 12866)	CO2 equivalent	metric tons/year	0.0				0.0	
Criteria pollutants -- by type	CO	metric tons/year	0.0				0.0	
	NOx	metric tons/year	0.0				0.0	
	HC	metric tons/year	0.0				0.0	
	PM 2.5	metric tons/year	0.0				0.0	

Number of travel

Alternative 3B - Add NB and SB Turn-Lanes

Description: **Add northbound and southbound turn lanes**

A summary of the net present value for this alternative is shown to the right in Column "J"

Planning & construction period	Begin planning & construction	**2015**	First year of planning & construction
Operating period	Opening year	**2015**	Travel time/delay and demand forecasts for the opening year *must* be provided.
	Interim year 1		Travel time/delay and demand forecasts for up to three years between the opening year and the end year *may* be provided.
	Interim year 2		
	Interim year 3		
	End year	**2040**	Travel time/delay and demand forecasts for the end (horizon) year *must* be provided.
Worksheet setup	**Setup Worksheet**		Once you have entered begin planning & construction, opening, and end years, click this button to set up the worksheet. You may enter other inputs at any time.

Net Present Value Summary		
Planning & Construction Costs	$	1,295,200
Operating & Maintenance Costs	$	57,456
Auto Passenger Time	$	1,237,076
Auto Passenger Reliability		--
Truck Time	$	130,539
Truck Reliability		--
Transit Passenger Time		--
Transit Passenger Reliability		--
Bicyclist Time		--
Pedestrian Time		--
Safety	$	2,937,975
Greenhouse Gases		--
Criteria Pollutants		--
Total Net Present Value	**$**	**5,658,247**

Planning & construction costs	**Units**	**Planning & construction year(s)**					**Notes**
		2015	**2016**	**2017**	**2018**	**2019**	
Planning & Construction Costs	Dollars	$ 1,295,200					
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						

Operating & maintenance costs	**Units**	**Begin year**	**Period (years)**	**Cost**	**Notes**
Power	Dollars	2015	1	$ 200	
Inspection	Dollars	2016	1	$ 500	
Repaving	Dollars	2035	20	$ 50,000	
Signing, striping	Dollars	2020	5	$ 5,300	**Thermoplastic and paint**
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				

Calculations can

Demand & travel time / delay	**Average travel time / delay**		**Opening year**	**Interim year(s)**			**End year**	**Notes**
	Time Period	**Units**	**2015**				**2040**	
Average vehicle travel time or delay	AM peak	seconds/veh	2.6				3.4	
	PM peak	seconds/veh	2.5				4.0	
	Weekend peak	seconds/veh						
Standard deviation of vehicle travel time or delay	AM peak	seconds/veh						
	PM peak	seconds/veh						
	Weekend peak	seconds/veh						
Average bicycle travel time or delay	All time periods	seconds/bike						
Average pedestrian travel time or delay	All time periods	seconds/ped						

Number of travel time/delay entries

Safety	**Crash type**	**Units**						
KABCO	K - Fatality crashes	crashes/year	0.0				0.0	
	A - Severe injury crashes	crashes/year	0.2				0.2	
	B - Moderate injury crashes	crashes/year	0.5				0.6	
	C - Minor injury crashes	crashes/year	0.7				0.8	
	O - No injury crashes	crashes/year	0.4				0.4	

Emissions	**Type**	**Units**						
Greenhouse gases -- Federal method (Exec. Order 12866)	CO2 equivalent	metric tons/year						
Criteria pollutants -- by type	CO	metric tons/year						
	NOx	metric tons/year						
	HC	metric tons/year						
	PM 2.5	metric tons/year						

Alternative 5 - Signal

Description: **Signalized intersection with turn lanes pn all approaches designed to 55mph**

A summary of the net present value for this alternative is shown to the right in Column "J"

Planning & construction period	Begin planning & construction	**2015**	First year of planning & construction
Operating period	Opening year	**2015**	Travel time/delay and demand forecasts for the opening year *must* be provided.
	Interim year 1		Travel time/delay and demand forecasts for up to three years between the opening year and the end year *may* be provided.
	Interim year 2		
	Interim year 3		
	End year	**2040**	Travel time/delay and demand forecasts for the end (horizon) year *must* be provided.
Worksheet setup	**Setup Worksheet**		Once you have entered begin planning & construction, opening, and end years, click this button to set up the worksheet. You may enter other inputs at any time.

Planning & construction costs	**Units**	**Planning & construction year(s)**					**Notes**
		2015	**2016**	**2017**	**2018**	**2019**	
Planning & Construction Costs	Dollars	$ 2,536,100					
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						

Net Present Value Summary	
Planning & Construction Costs	$ 2,536,100
Operating & Maintenance Costs	$ 143,254
Auto Passenger Time	$ 2,688,068
Auto Passenger Reliability	--
Truck Time	$ 283,651
Truck Reliability	--
Transit Passenger Time	--
Transit Passenger Reliability	--
Bicyclist Time	--
Pedestrian Time	--
Safety	$ 1,938,731
Greenhouse Gases	--
Criteria Pollutants	--
Total Net Present Value	**$ 7,589,805**

Operating & maintenance costs	**Units**	**Begin year**	**Period (years)**	**Cost**	**Notes**
Power	Dollars	2015	1	$ 1,500	
Inspection	Dollars	2016	1	$ 3,000	
Repaving	Dollars	2035	20	$ 60,000	
Signing, striping	Dollars	2020	5	$ 8,200	**Thermoplastic and paint**
Signal Retiming	Dollars	2020	5	$ 1,000	
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				

Calculations can

Demand & travel time / delay	**Average travel time / delay**		**Opening year**	**Interim year(s)**			**End year**	**Notes**
	Time Period	**Units**	**2015**				**2040**	
Average vehicle travel time or delay	AM peak	seconds/veh	7.5				8.2	
	PM peak	seconds/veh	6.4				7.2	
	Weekend peak	seconds/veh						
Standard deviation of vehicle travel time or delay	AM peak	seconds/veh						
	PM peak	seconds/veh						
	Weekend peak	seconds/veh						
Average bicycle travel time or delay	All time periods	seconds/bike						
Average pedestrian travel time or delay	All time periods	seconds/ped						

Number of travel

Safety	**Crash type**	**Units**						
KABCO	K - Fatality crashes	crashes/year	0.0				0.0	
	A - Severe injury crashes	crashes/year	0.1				0.1	
	B - Moderate injury crashes	crashes/year	0.4				0.4	
	C - Minor injury crashes	crashes/year	0.5				0.5	
	O - No injury crashes	crashes/year	0.2				0.3	

Emissions	**Type**	**Units**						
Greenhouse gases -- Federal method (Exec. Order 12866)	CO2 equivalent	metric tons/year						
Criteria pollutants -- by type	CO	metric tons/year						
	NOx	metric tons/year						
	HC	metric tons/year						
	PM 2.5	metric tons/year						

Alternative 6 - Roundabout

Description: **Single-lane roundabout (160' ICD)**

A summary of the net present value for this alternative is shown to the right in Column "J"

Planning & construction period	Begin planning & construction	**2015**	First year of planning & construction
Operating period	Opening year	**2015**	Travel time/delay and demand forecasts for the opening year *must* be provided.
	Interim year 1		Travel time/delay and demand forecasts for up to three years between the opening year and the end year *may* be provided.
	Interim year 2		
	Interim year 3		
	End year	**2040**	Travel time/delay and demand forecasts for the end (horizon) year *must* be provided.
Worksheet setup	**Setup Worksheet**		Once you have entered begin planning & construction, opening, and end years, click this button to set up the worksheet. You may enter other inputs at any time.

Net Present Value Summary	
Planning & Construction Costs	$ 2,840,000
Operating & Maintenance Costs	$ 120,985
Auto Passenger Time	$ 2,620,015
Auto Passenger Reliability	--
Truck Time	$ 276,470
Truck Reliability	--
Transit Passenger Time	--
Transit Passenger Reliability	--
Bicyclist Time	--
Pedestrian Time	--
Safety	$ 999,589
Greenhouse Gases	--
Criteria Pollutants	--
Total Net Present Value	**$ 6,857,060**

Planning & construction costs	**Units**	**Planning & construction year(s)**					**Notes**
		2015	**2016**	**2017**	**2018**	**2019**	
Planning & Construction Costs	Dollars	$ 2,840,000					
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						

Operating & maintenance costs	**Units**	**Begin year**	**Period (years)**	**Cost**	**Notes**
Power	Dollars	2015	1	$ 2,000	
Inspection	Dollars	2016	1	$ 500	
Repaving	Dollars	2035	20	$ 80,000	
Signing, striping	Dollars	2020	5	$ 9,500	**Thermoplastic and paint**
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				

Calculations can

Demand & travel time / delay	**Average travel time / delay**		**Opening year**	**Interim year(s)**			**End year**	**Notes**
	Time Period	**Units**	**2015**				**2040**	
Average vehicle travel time or delay	AM peak	seconds/veh	5.8				7.7	
	PM peak	seconds/veh	6.3				8.3	
	Weekend peak	seconds/veh						
Standard deviation of vehicle travel time or delay	AM peak	seconds/veh						
	PM peak	seconds/veh						
	Weekend peak	seconds/veh						
Average bicycle travel time or delay	All time periods	seconds/bike						
Average pedestrian travel time or delay	All time periods	seconds/ped						

Safety	**Crash type**	**Units**						
KABCO	K - Fatality crashes	crashes/year	0.0				0.0	
	A - Severe injury crashes	crashes/year	0.1				0.1	
	B - Moderate injury crashes	crashes/year	0.2				0.2	
	C - Minor injury crashes	crashes/year	0.2				0.3	
	O - No injury crashes	crashes/year	0.1				0.1	

Emissions	**Type**	**Units**						
Greenhouse gases -- Federal method (Exec. Order 12866)	CO2 equivalent	metric tons/year						
Criteria pollutants -- by type	CO	metric tons/year						
	NOx	metric tons/year						
	HC	metric tons/year						
	PM 2.5	metric tons/year						

Alternative 7 - RCUT

Description: **Restricted crossing U-turn intersection for eastbound and westbound traffic**

A summary of the net present value for this alternative is shown to the right in Column "J"

Planning & construction period	Begin planning & construction	**2015**	First year of planning & construction
Operating period	Opening year	**2015**	Travel time/delay and demand forecasts for the opening year *must* be provided.
	Interim year 1		Travel time/delay and demand forecasts for up to three years between the opening year and the end year *may* be provided.
	Interim year 2		
	Interim year 3		
	End year	**2040**	Travel time/delay and demand forecasts for the end (horizon) year *must* be provided.
Worksheet setup	Setup Worksheet		Once you have entered begin planning & construction, opening, and end years, click this button to set up the worksheet. You may enter other inputs at any time.

Net Present Value Summary	
Planning & Construction Costs	$ 4,108,000
Operating & Maintenance Costs	$ 115,476
Auto Passenger Time	$ 2,646,332
Auto Passenger Reliability	--
Truck Time	$ 279,247
Truck Reliability	--
Transit Passenger Time	--
Transit Passenger Reliability	--
Bicyclist Time	--
Pedestrian Time	--
Safety	$ 1,938,731
Greenhouse Gases	--
Criteria Pollutants	--
Total Net Present Value	**$ 9,087,787**

Planning & construction costs	**Units**	**Planning & construction year(s)**					**Notes**
		2015	**2016**	**2017**	**2018**	**2019**	
Planning & Construction Costs	Dollars	$ 4,108,000					
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						

Operating & maintenance costs	**Units**	**Begin year**	**Period (years)**	**Cost**	**Notes**
Power	Dollars	2015	1	$ 1,500	
Inspection	Dollars	2016	1	$ 750	
Repaving	Dollars	2035	20	$ 80,000	
Signing, striping	Dollars	2020	5	$ 9,300	**Thermoplastic and paint**
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				

Calculations can

Demand & travel time / delay	**Average travel time / delay**		**Opening year**	**Interim year(s)**			**End year**	**Notes**
	Time Period	**Units**	**2015**				**2040**	
Average vehicle travel time or delay	AM peak	seconds/veh	8.0				8.2	
	PM peak	seconds/veh	6.4				6.8	
	Weekend peak	seconds/veh						
Standard deviation of vehicle travel time or delay	AM peak	seconds/veh						
	PM peak	seconds/veh						
	Weekend peak	seconds/veh						
Average bicycle travel time or delay	All time periods	seconds/bike						
Average pedestrian travel time or delay	All time periods	seconds/ped						

Safety	**Crash type**	**Units**						
KABCO	K - Fatality crashes	crashes/year	0.0				0.0	
	A - Severe injury crashes	crashes/year	0.1				0.1	
	B - Moderate injury crashes	crashes/year	0.4				0.4	
	C - Minor injury crashes	crashes/year	0.5				0.5	
	O - No injury crashes	crashes/year	0.2				0.3	

Emissions	**Type**	**Units**						
Greenhouse gases -- Federal method (Exec. Order 12866)	CO2 equivalent	metric tons/year						
Criteria pollutants -- by type	CO	metric tons/year						
	NOx	metric tons/year						
	HC	metric tons/year						
	PM 2.5	metric tons/year						

Alternative 9A - Grade Separated Diamond Interchange

Description: **Grade Separated Diamond Interchange**

A summary of the net present value for this alternative is shown to the right in Column "J"

Planning & construction period	Begin planning & construction	**2015**	First year of planning & construction
Operating period	Opening year	**2015**	Travel time/delay and demand forecasts for the opening year *must* be provided.
	Interim year 1		Travel time/delay and demand forecasts for up to three years between the opening year and the end year *may* be provided.
	Interim year 2		
	Interim year 3		
	End year	**2040**	Travel time/delay and demand forecasts for the end (horizon) year *must* be provided.
Worksheet setup	**Setup Worksheet**		Once you have entered begin planning & construction, opening, and end years, click this button to set up the worksheet. You may enter other inputs at any time.

Planning & construction costs	**Units**	**Planning & construction year(s)**					**Notes**
		2015	**2016**	**2017**	**2018**	**2019**	
Planning & Construction Costs	Dollars	$ 10,301,900					
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						
(Other planning & construction costs)	Dollars						

Net Present Value Summary	
Planning & Construction Costs	$ 10,301,900
Operating & Maintenance Costs	$ 136,802
Auto Passenger Time	$ 668,406
Auto Passenger Reliability	--
Truck Time	$ 70,532
Truck Reliability	--
Transit Passenger Time	--
Transit Passenger Reliability	--
Bicyclist Time	--
Pedestrian Time	--
Safety	$ 2,012,629
Greenhouse Gases	--
Criteria Pollutants	--
Total Net Present Value	**$ 13,190,269**

Operating & maintenance costs	**Units**	**Begin year**	**Period (years)**	**Cost**	**Notes**
Power	Dollars	2015	1	$ 750	
Inspection	Dollars	2016	1	$ 2,000	
Repaving	Dollars	2035	20	$ 100,000	
Signing, striping	Dollars	2020	5	$ 10,000	**Thermoplastic and paint**
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				
(Other O&M costs)	Dollars				

Calculations can

Demand & travel time / delay	**Average travel time / delay**		**Opening year**	**Interim year(s)**			**End year**	**Notes**
	Time Period	**Units**	**2015**				**2040**	
Average vehicle travel time or delay	AM peak	seconds/veh	1.8				1.9	
	PM peak	seconds/veh	1.8				1.9	
	Weekend peak	seconds/veh						
Standard deviation of vehicle travel time or delay	AM peak	seconds/veh						
	PM peak	seconds/veh						
	Weekend peak	seconds/veh						
Average bicycle travel time or delay	All time periods	seconds/bike						
Average pedestrian travel time or delay	All time periods	seconds/ped						

Safety	**Crash type**	**Units**						
KABCO	K - Fatality crashes	crashes/year	0.0				0.0	
	A - Severe injury crashes	crashes/year	0.1				0.1	
	B - Moderate injury crashes	crashes/year	0.4				0.4	
	C - Minor injury crashes	crashes/year	0.5				0.6	
	O - No injury crashes	crashes/year	0.2				0.3	

Emissions	**Type**	**Units**						
Greenhouse gases -- Federal method (Exec. Order 12866)	CO2 equivalent	metric tons/year						
Criteria pollutants -- by type	CO	metric tons/year						
	NOx	metric tons/year						
	HC	metric tons/year						
	PM 2.5	metric tons/year						

Analysis Summary

Cost Categories	Net Present Value of Costs									
	Alternative 1 - No-Build	Alternative 2C - Remove Skew (Centered)	Alternaitve 3B - Add NB and SB Turn-Lanes	Alternative 5 - Signal	Alternative 6 - Roundabout	Alternative 7 - RCUT	Alternative 9A - Grade Separated Diamond Interchange			
Planning & Construction Costs	$ -	$ 1,652,300	$ 1,295,200	$ 2,536,100	$ 2,840,000	$ 4,108,000	$ 10,301,900			
Maintenance (Post-Opening) Costs	$ 56,472	$ 56,472	$ 57,456	$ 143,254	$ 120,985	$ 115,476	$ 136,802			
Auto Passenger Time	$ 1,276,746	$ 1,276,746	$ 1,237,076	$ 2,688,068	$ 2,620,015	$ 2,646,332	$ 668,406			
Auto Passenger Reliability	--	--	--	--	--	--	--			
Truck Time	$ 134,725	$ 134,725	$ 130,539	$ 283,651	$ 276,470	$ 279,247	$ 70,532			
Truck Reliability	--	--	--	--	--	--	--			
Transit Passenger Time	--	--	--	--	--	--	--			
Transit Passenger Reliability	--	--	--	--	--	--	--			
Bicyclist Time	--	--	--	--	--	--	--			
Pedestrian Time	--	--	--	--	--	--	--			
Safety	$ 3,465,646	$ 3,251,120	$ 2,937,975	$ 1,938,731	$ 999,589	$ 1,938,731	$ 2,012,629			
Greenhouse Gases	--	--	--	--	--	--	--			
Criteria Pollutants	--	--	--	--	--	--	--			
Total cost	**$4,933,589**	**$6,371,364**	**$5,658,247**	**$7,589,805**	**$6,857,060**	**$9,087,787**	**$13,190,269**			

Benefit Categories	Net Present Value of Benefits Relative to Base Case									
		Alternative 2C - Remove Skew (Centered)	Alternaitve 3B - Add NB and SB Turn-Lanes	Alternative 5 - Signal	Alternative 6 - Roundabout	Alternative 7 - RCUT	Alternative 9A - Grade Separated Diamond Interchange			
Auto Passenger Time		$ -	$ 39,670	$ (1,411,322)	$ (1,343,269)	$ (1,369,586)	$ 608,340			
Auto Passenger Reliability										
Truck Time		$ -	$ 4,186	$ (148,926)	$ (141,745)	$ (144,522)	$ 64,193			
Truck Reliability										
Transit Passenger Time										
Transit Passenger Reliability										
Bicyclist Time										
Pedestrian Time										
Safety		$ 214,526	$ 527,671	$ 1,526,915	$ 2,466,057	$ 1,526,915	$ 1,453,017			
Greenhouse Gases										
Criteria Pollutants										
Net Present Value of Benefits		**$ 214,526**	**$ 571,527**	**$ (33,334)**	**$ 981,042**	**$ 12,806**	**$ 2,125,550**			
Net Present Value of Costs		**$ 1,652,300**	**$ 1,296,184**	**$ 2,622,882**	**$ 2,904,513**	**$ 4,167,004**	**$ 10,382,230**			
Present Value of Net Benefits		**$ (1,437,774)**	**$ (724,657)**	**$ (2,656,216)**	**$ (1,923,471)**	**$ (4,154,198)**	**$ (8,256,680)**			
Benefit-Cost Ratio		**0.13**	**0.44**	**-0.01**	**0.34**	**0.00**	**0.20**			

M

Tier 2 Alternatives 3D Ground-Level Renderings

Alternative 1: No Build

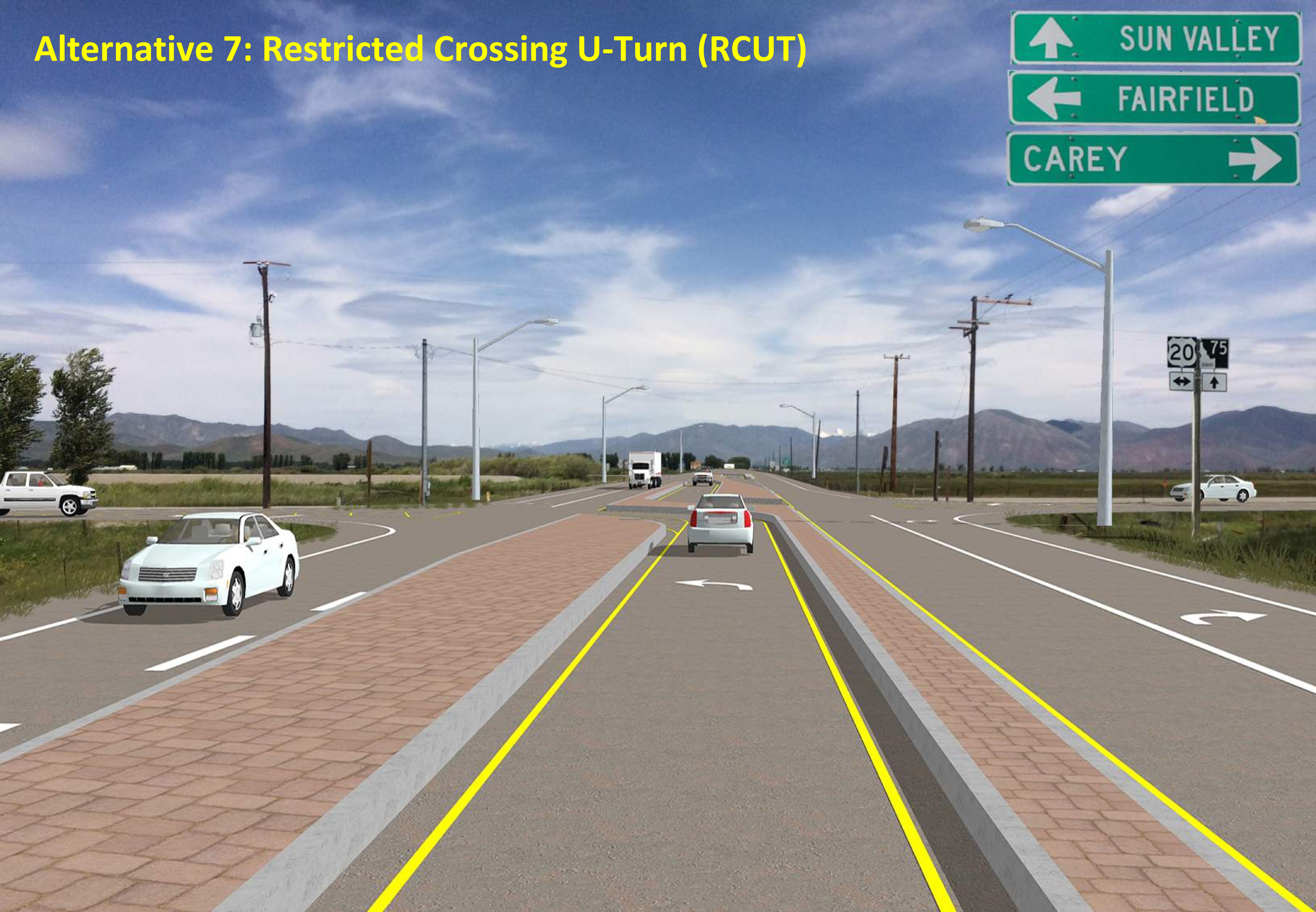
Alternative 2C: Remove Intersection Skew

Alternative 3B: Add Turn Lanes on SH-75

Alternative 5: Traffic Signal

Alternative 6: Single-Lane Roundabout

Alternative 7: Restricted Crossing U-Turn (RCUT)

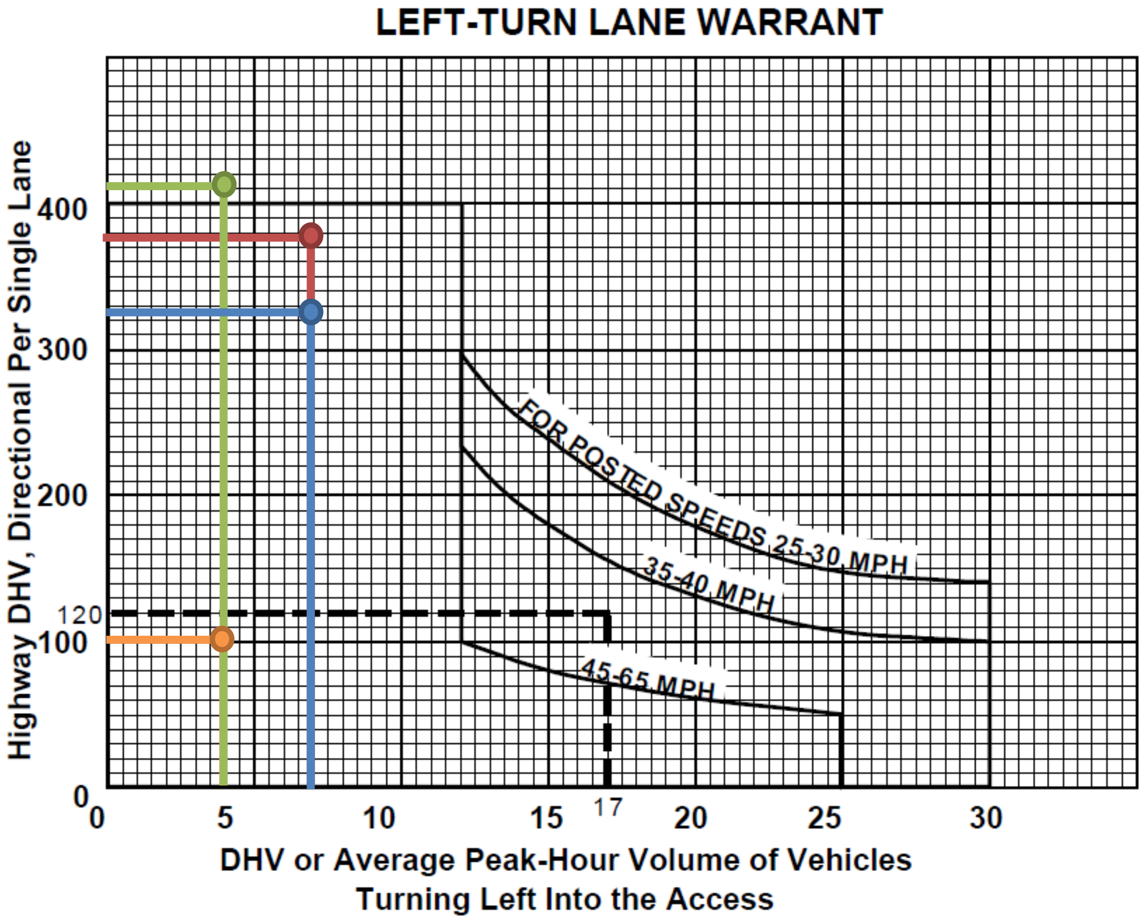


Alternative 9A: Grade-Separated Diamond Interchange

N

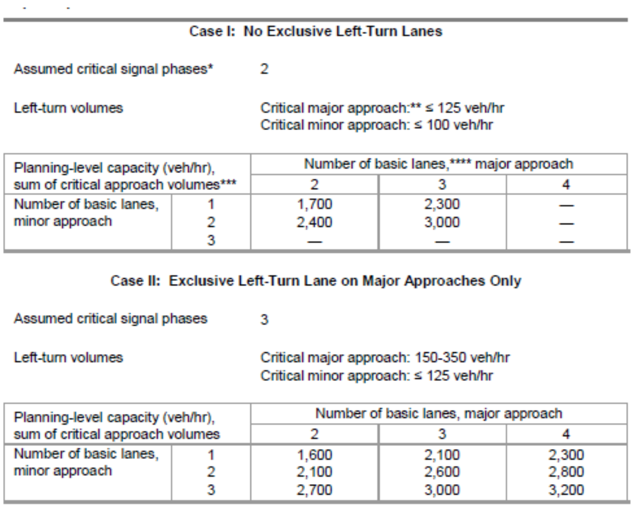
ITD Turn Lane Warrant Worksheets

ITD Left-Turn Lane Warrant (Unsignalized)



AM Peak – SBL; PM peak – SBL; AM Peak – NBL; PM Peak – NBL

Left-Turn Lane Warrant (Signalized) – FHWA Signalized Intersection Guide



Case I: No Exclusive Left-Turn Lanes

Assumed critical signal phases* 2

Left-turn volumes Critical major approach:** ≤ 125 veh/hr
Critical minor approach: ≤ 100 veh/hr

Planning-level capacity (veh/hr), sum of critical approach volumes***		Number of basic lanes,**** major approach		
		2	3	4
Number of basic lanes, minor approach	1	1,700	2,300	—
	2	2,400	3,000	—
	3	—	—	—

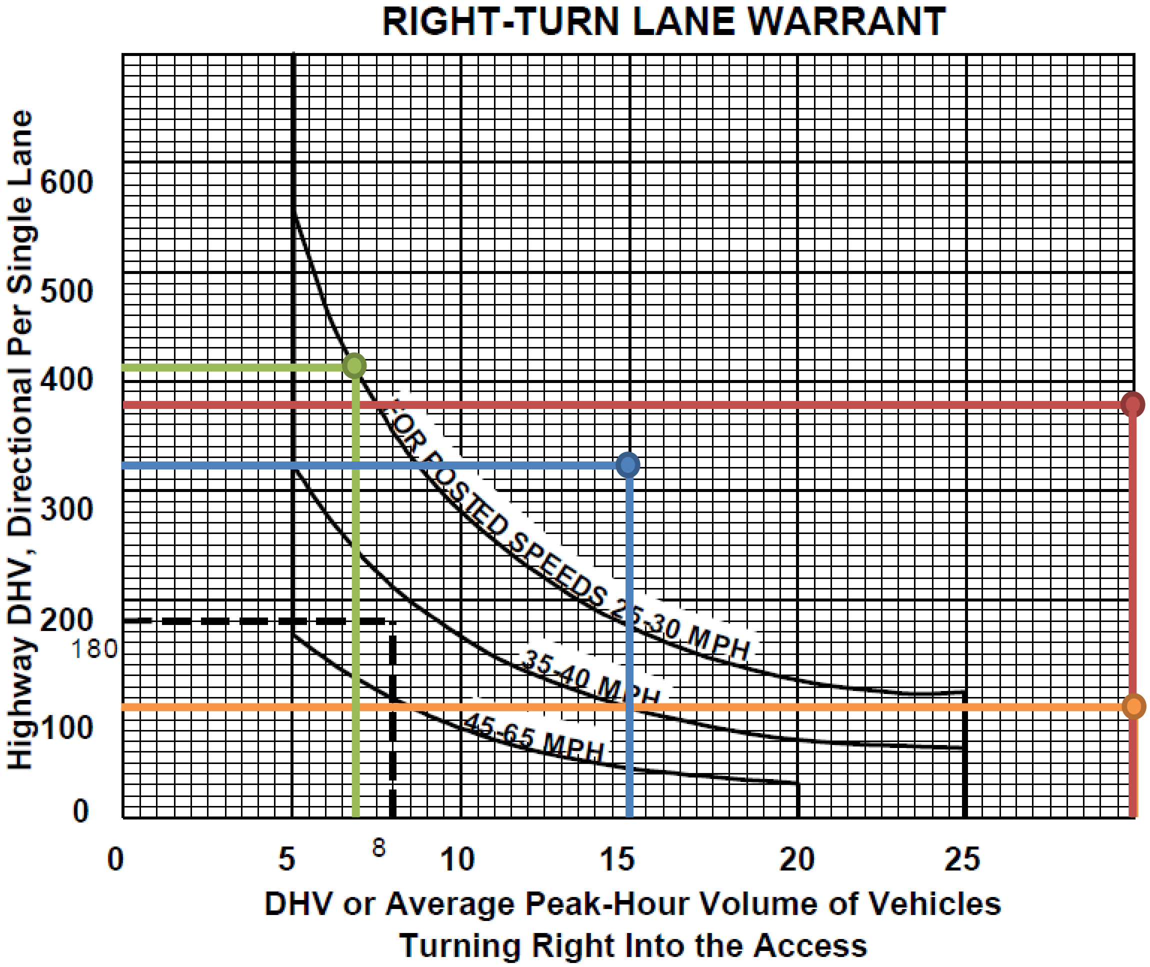
Case II: Exclusive Left-Turn Lane on Major Approaches Only

Assumed critical signal phases 3

Left-turn volumes Critical major approach: 150-350 veh/hr
Critical minor approach: ≤ 125 veh/hr

Planning-level capacity (veh/hr), sum of critical approach volumes		Number of basic lanes, major approach		
		2	3	4
Number of basic lanes, minor approach	1	1,600	2,100	2,300
	2	2,100	2,600	2,800
	3	2,700	3,000	3,200

ITD Right-Turn Lane Warrant



AM Peak – SBR; PM peak – SBR; AM Peak – NBR; PM Peak – NBR
(35) (83) (7) (15)

All warrants met for right-turn lanes…

NCHRP 279 References ITD warrant criteria (see above for results)

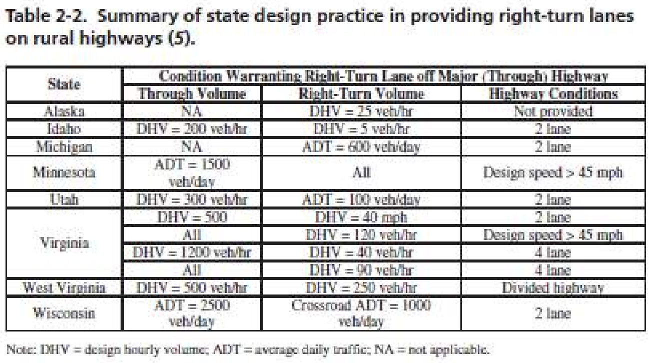


Table 2-2. Summary of state design practice in providing right-turn lanes on rural highways (5).

State	Condition Warranting Right-Turn Lane off Major (Through) Highway		
	Through Volume	Right-Turn Volume	Highway Conditions
Alaska	NA	DHV = 25 veh/hr	Not provided
Idaho	DHV = 200 veh/hr	DHV = 5 veh/hr	2 lane
Michigan	NA	ADT = 600 veh/day	2 lane
Minnesota	ADT = 1500 veh/day	All	Design speed > 45 mph
Utah	DHV = 300 veh/hr	ADT = 100 veh/day	2 lane
Virginia	DHV = 500	DHV = 40 mph	2 lane
	All	DHV = 120 veh/hr	Design speed > 45 mph
	DHV = 1200 veh/hr	DHV = 40 veh/hr	4 lane
	All	DHV = 90 veh/hr	4 lane
West Virginia	DHV = 500 veh/hr	DHV = 250 veh/hr	Divided highway
Wisconsin	ADT = 2500 veh/day	Crossroad ADT = 1000 veh/day	2 lane

Note: DHV = design hourly volume; ADT = average daily traffic; NA = not applicable.

O

Roundabout Alternative Truck Turning Templates

LEGEND/NOTES

▇	New Pavement
🟥	Raised Median
▨	Truck Apron
🟩	Landscape

Roundabout Diameter = 160 feet
Circulating Lane Width = 20 feet
Truck Apron = 15 feet wide
New pavement area = 190,000 sqft
Approach entry and exit lanes vary in width.
Raised curb placed between paved shoulders around the roundabout circulatory roadway.

Preliminary Cost: $2.4 to $2.9 million
Benefit/Cost Ratio: 0.34

WB-67 Truck Turns from US-20 onto SH-75
Single-Lane Roundabout with Approach Curvature
Blaine County, Idaho

Figure
1

H:\projfile\19251 - US 20_SH 75 Intersection Study\dwgs\design\19251_PreferredConcepts.dwg Sep 15, 2016 - 9:30am - bkorporaal Layout Tab: Alt6-Rdbt (WB67Trucks_US20)

Roundabout Diameter = 160 feet
Circulating Lane Width = 20 feet
Truck Apron = 15 feet wide
New pavement area = 190,000 sqft
Approach entry and exit lanes vary in width.
Raised curb placed between paved shoulders around the roundabout circulatory roadway.

Preliminary Cost: $2.4 to $2.9 million
Benefit/Cost Ratio: 0.34

WB-67 Truck Turns from SH-75 onto US-20
Single-Lane Roundabout with Approach Curvature
Blaine County, Idaho

Figure
2

H:\projfile\19251 - US 20_SH 75 Intersection Study\dwgs\design\19251_PreferredConcepts.dwg Sep 15, 2016 - 9:35am - bkorporaal Layout Tab: Alt6-Rdbt (WB67Trucks_SH75)

LEGEND/NOTES

▬	New Pavement
🟥	Raised Median
▨	Truck Apron
🟩	Landscape

Roundabout Diameter = 160 feet
Circulating Lane Width = 20 feet
Truck Apron = 15 feet wide
New pavement area = 190,000 sqft
Approach entry and exit lanes vary in width.
Raised curb placed between paved shoulders around the roundabout circulatory roadway.

Preliminary Cost: $2.4 to $2.9 million
Benefit/Cost Ratio: 0.34

WB-109 Truck Turns from US-20 onto SH-75
Single-Lane Roundabout with Approach Curvature
Blaine County, Idaho

Figure
3

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LEGEND/NOTES

⬛	New Pavement
🟥	Raised Median
▨	Truck Apron
🟩	Landscape

Roundabout Diameter = 160 feet
Circulating Lane Width = 20 feet
Truck Apron = 15 feet wide
New pavement area = 190,000 sqft
Approach entry and exit lanes vary in width.
Raised curb placed between paved shoulders around the roundabout circulatory roadway.

Preliminary Cost: $2.4 to $2.9 million
Benefit/Cost Ratio: 0.34

WB-109 Truck Turns from SH-75 onto US-20
Single-Lane Roundabout with Approach Curvature
Blaine County, Idaho

Figure
4

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P

Tier 2 Alternatives Detailed Evaluation Worksheet

US-20/SH-75 (Timmerman Jct.) Intersection Study (ITD KN 13075)
Evaluation Criteria Matrix for Tier 2 Alternatives (Scoring System)
Yuri Mereszczak, Andy Daleiden, Brett Korporaal
9/26/2016

Scoring System

1	**Very Positive**
0.5	**Positive**
0	**Neutral**
-0.5	**Negative**
-1	**Very Negative**

Evaluation Criteria Tabs
Safety Performance
Mobility
Physical & Environmental Impacts
Implementation & Maintenance
Cost

Evaluation Criteria		**Tier 2 Alternatives - Evaluation Scores**						
		Alt #1: No Build	**Alt #2C: Removal of Intersection Skew (Centered)**	**Alt #3B: Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75**	**Alt #5: Traffic Signal with Addition of Turn Lanes**	**Alt #6: Single-Lane Roundabout with Approach Curvature**	**Alt #7: Restricted Crossing U-Turn Intersection (RCUT)**	**Alt #9A: Grade-Separated Diamond Interchange**
Safety Performance	Expected change in crashes per year (all types and severities)	-1.0	-0.5	-0.5	0.5	1.0	0.5	0.5
	Expected change in injury crashes per year	-1.0	-0.5	-0.5	0.0	1.0	0.0	0.5
	Influence on angle type crashes	-1.0	-0.5	-1.0	1.0	1.0	0.5	1.0
	Change in the number of vehicle-vehicle conflict points	-1.0	-1.0	-1.0	-1.0	1.0	0.5	0.0
	Safety Performance Subtotal	-4.0	-2.5	-3.0	0.5	4.0	1.5	2.0
	Normalized Evaluation Subtotal	**-1.0**	**-0.6**	**-0.8**	**0.1**	**1.0**	**0.4**	**0.5**
Mobility	Average delay/level-of-service (by roadway approach)	0.5	0.5	0.5	0.0	0.5	0.0	1.0
	Expected residual capacity of the intersection	0.5	0.5	0.5	0.5	0.5	1.0	1.0
	Change in number of stops (by roadway approach)	0.5	0.5	0.5	-0.5	-0.5	0.0	1.0
	Travel time through the intersection	0.5	0.5	0.5	0.0	0.0	-0.5	1.0
	Impact on the movement of freight and agricultural vehicles, including oversized vehicles and megaloads	0.0	0.0	0.0	-0.5	-0.5	-0.5	0.5
	Mobility Subtotal	2.0	2.0	2.0	-0.5	0.0	0.0	4.5
	Normalized Evaluation Subtotal	**0.4**	**0.4**	**0.4**	**-0.1**	**0.0**	**0.0**	**0.9**
Physical & Environmental Impacts	Extent of impact to the physical landscape	1.0	0.0	0.5	0.0	0.0	0.0	-1.0
	Extent of impact to adjacent properties and/or access to adjacent properties	1.0	0.5	1.0	1.0	0.5	1.0	-1.0
	Impacts to sensitive and/or protected environmental features (e.g., wetlands, cultural features, habitat of protected species)	1.0	0.5	0.5	0.5	0.5	0.0	-1.0
	Amount of impervious surface added to the intersection area	1.0	0.0	0.5	0.0	-0.5	-0.5	-1.0
	Impact to the "view shed" into the Wood River Valley	1.0	1.0	1.0	0.0	0.5	1.0	-1.0
	Physical & Environmental Impacts Subtotal	5.0	2.0	3.5	1.5	1.0	1.5	-5.0
	Normalized Evaluation Subtotal	**1.0**	**0.4**	**0.7**	**0.3**	**0.2**	**0.3**	**-1.0**
Implementation & Maintenance	Ease of construction of an alternative given the existing constraints in the intersection area	1.0	-0.5	0.0	0.0	-1.0	-1.0	-1.0
	Estimated level of effort and ability to effectively maintain an alternative	0.5	0.5	0.5	-1.0	-0.5	-0.5	-0.5
	Ability of an alternative to phase from a mid-term treatment into a long-term solution or the ability of an alternative to be a long-term solution phased from a mid-term treatment	0.0	0.5	0.5	0.0	0.0	0.0	-1.0
	Implementation & Maintenance Subtotal	1.5	0.5	1.0	-1.0	-1.5	-1.5	-2.5
	Normalized Evaluation Subtotal	**0.5**	**0.2**	**0.3**	**-0.3**	**-0.5**	**-0.5**	**-0.8**
Cost	Estimated design & construction costs	1.0	0.5	0.5	0.0	0.0	-0.5	-1.0
	Estimated benefit/cost ratio	0.5	0.0	0.5	-0.5	0.5	-0.5	0.0
	Implementation & Maintenance Subtotal	1.5	0.5	1.0	-0.5	0.5	-1.0	-1.0
	Normalized Evaluation Subtotal	**0.8**	**0.3**	**0.5**	**-0.3**	**0.3**	**-0.5**	**-0.5**
	Total Evaluation Score	**6.0**	**2.5**	**4.5**	**0.0**	**4.0**	**0.5**	**-2.0**
	Total Normalized Evaluation Score	**1.7**	**0.6**	**1.2**	**-0.3**	**1.0**	**-0.3**	**-0.9**

Safety Performance

This worksheet provides supporting detail for the evaluation summary in the "Tier 2 Alts Evaluation Matrix."

Table SP-1: Summarizes the scoring based on an alternative's expected reduction in crashes from the No Build Alternative.

	Tier 2 Alternatives						
	Alt #1: No Build	Alt #2C: Removal of Intersection Skew (Centered)	Alt #3B: Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	Alt #5: Traffic Signal with Addition of Turn Lanes	Alt #6: Single-Lane Roundabout with Approach Curvature	Alt #7: Restricted Crossing U-Turn Intersection (RCUT)	Alt #9A: Grade-Separated Diamond Interchange
Expected Crashes/Year	2.4	2.3	2.0	1.3	0.7	1.3	1.4
Difference from No Build	*0.0*	*0.1*	*0.4*	*1.1*	*1.7*	*1.1*	*1.0*
Score	**-1.0**	**-1.0**	**-0.5**	**0.5**	**1.0**	**0.5**	**0.5**

Table SP-2: Summarizes the scoring based on an alternative's expected reduction in injury crashes from the No Build Alternative.

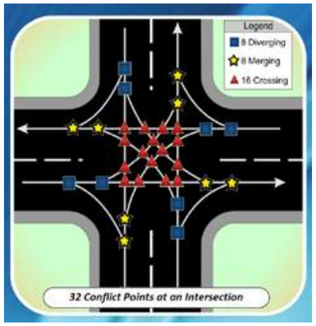
	Tier 2 Alternatives						
	Alt #1: No Build	Alt #2C: Removal of Intersection Skew (Centered)	Alt #3B: Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	Alt #5: Traffic Signal with Addition of Turn Lanes	Alt #6: Single-Lane Roundabout with Approach Curvature	Alt #7: Restricted Crossing U-Turn Intersection (RCUT)	Alt #9A: Grade-Separated Diamond Interchange
Expected Reduction in Injury Crashes	None	Minor	Minor	Moderate	High (80%-90%)	Moderate	Moderate/High (50%-60%)
Score	**-1.0**	**-0.5**	**-0.5**	**0.0**	**1.0**	**0.0**	**0.5**

Table SP-3: Summarizes the scoring based on an alternative's expected reduction in angle crashes from the No Build Alternative.

	Tier 2 Alternatives						
	Alt #1: No Build	Alt #2C: Removal of Intersection Skew (Centered)	Alt #3B: Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	Alt #5: Traffic Signal with Addition of Turn Lanes	Alt #6: Single-Lane Roundabout with Approach Curvature	Alt #7: Restricted Crossing U-Turn Intersection (RCUT)	Alt #9A: Grade-Separated Diamond Interchange
Expected Reduction in Angle Crashes	None	Minor	None	High (70%-75%)	High	Moderate/High	High
Score	**-1.0**	**-0.5**	**-1.0**	**1.0**	**1.0**	**0.5**	**1.0**

Table SP-4: Summarizes the change in the number of conflict points from the No Build Alternative.

	Tier 2 Alternatives						
	Alt #1: No Build	Alt #2C: Removal of Intersection Skew (Centered)	Alt #3B: Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	Alt #5: Traffic Signal with Addition of Turn Lanes	Alt #6: Single-Lane Roundabout with Approach Curvature	Alt #7: Restricted Crossing U-Turn Intersection (RCUT)	Alt #9A: Grade-Separated Diamond Interchange
No. of Conflict Points	32	32	32	32	8	20	24
Difference from No Build	*0*	*0*	*0*	*0*	*24*	*12*	*8*
Score	**-1.0**	**-1.0**	**-1.0**	**-1.0**	**1.0**	**0.5**	**0.0**



Mobility

This worksheet provides supporting detail for the evaluation summary in the "Tier 2 Alts Evaluation Matrix."

Table M-1: Summarizes the average delay for both the critical SH75 and US20 approaches (Higher of AM or PM Peak Hour)

	Tier 2 Alternatives						
	Alt #1: No Build	Alt #2C: Removal of Intersection Skew (Centered)	Alt #3B: Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	Alt #5: Traffic Signal with Addition of Turn Lanes	Alt #6: Single-Lane Roundabout with Approach Curvature	Alt #7: Restricted Crossing U-Turn Intersection (RCUT)	Alt #9A: Grade-Separated Diamond Interchange
SH-75 Critical Approach Avg. Delay (s)	<1	<1	<1	8	10	<1	<1
US-20 Critical Approach Avg. Delay (s)	27	27	27	26	7	45	8
Score	**0.5**	**0.5**	**0.5**	**0.0**	**0.5**	**0.0**	**1.0**

Also, accounted for intersection weighted avg. delay (from life-cycle cost spreadsheet)

Table M-2: Summarizes the expected residual capacity of the intersection

	Tier 2 Alternatives						
	Alt #1: No Build	Alt #2C: Removal of Intersection Skew (Centered)	Alt #3B: Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	Alt #5: Traffic Signal with Addition of Turn Lanes	Alt #6: Single-Lane Roundabout with Approach Curvature	Alt #7: Restricted Crossing U-Turn Intersection (RCUT)	Alt #9A: Grade-Separated Diamond Interchange
Expected Intersection Residual Capacity	56%	56%	56%	59%	52%	80%	85%
Score	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**1.0**	**1.0**

Table M-3: Summarizes the change in number of stops for both SH75 and US20

	Tier 2 Alternatives						
	Alt #1: No Build	Alt #2C: Removal of Intersection Skew (Centered)	Alt #3B: Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	Alt #5: Traffic Signal with Addition of Turn Lanes	Alt #6: Single-Lane Roundabout with Approach Curvature	Alt #7: Restricted Crossing U-Turn Intersection (RCUT)	Alt #9A: Grade-Separated Diamond Interchange
SH-75 Change in No. of Stops	No Change	No Change	Minimal Decrease	Some Increase	Minor Increase	Minimal Decrease	Minimal Decrease
US-20 Change in No. of Stops	No Change	No Change	No Change	Minor Decrease	Some Decrease	Some Increase	Significant Decrease
Score	**0.5**	**0.5**	**0.5**	**-0.5**	**-0.5**	**0.0**	**1.0**

SH-75: greater influence due to volume

Table M-4: Summarizes the change in travel time through the intersection for both SH75 and US20

	Tier 2 Alternatives						
	Alt #1: No Build	Alt #2C: Removal of Intersection Skew (Centered)	Alt #3B: Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	Alt #5: Traffic Signal with Addition of Turn Lanes	Alt #6: Single-Lane Roundabout with Approach Curvature	Alt #7: Restricted Crossing U-Turn Intersection (RCUT)	Alt #9A: Grade-Separated Diamond Interchange
SH-75 Change in Travel Time	No Change	No Change	Minimal Decrease	Minor Increase	Minor Increase	Minimal Decrease	Minimal Decrease
US-20 Change in Travel Time	No Change	Minimal Increase	No Change	Minor Increase	Minor Decrease	Significant Increase	Significant Decrease
Score	**0.5**	**0.5**	**0.5**	**0.0**	**0.0**	**-0.5**	**1.0**

SH-75: greater influence due to volume

Table M-5: Summarizes the impact on the movement of freight and agricultural vehicles, including oversized vehicles and megaloads for both SH75 and US20

	Tier 2 Alternatives						
	Alt #1: No Build	Alt #2C: Removal of Intersection Skew (Centered)	Alt #3B: Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	Alt #5: Traffic Signal with Addition of Turn Lanes	Alt #6: Single-Lane Roundabout with Approach Curvature	Alt #7: Restricted Crossing U-Turn Intersection (RCUT)	Alt #9A: Grade-Separated Diamond Interchange
SH-75 Impact on Freight/Oversized Vehicles	None	None	Minor Improvement	Some Degradation	Some Degradation	None	Minor Degradation
US-20 Impact on Freight/Oversized Vehicles	None	None	None	Minor Improvement	Minor Improvement	Significant Degradation	Significant Improvement
Score	**0.0**	**0.0**	**0.0**	**-0.5**	**-0.5**	**-0.5**	**0.5**

Physical & Environmental Impacts

This worksheet provides supporting detail for the evaluation summary in the "Tier 2 Alts Evaluation Matrix."

Table E-1: Summarizes the extent of impact to landscape

	Tier 2 Alternatives						
	Alt #1: No Build	Alt #2C: Removal of Intersection Skew (Centered)	Alt #3B: Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	Alt #5: Traffic Signal with Addition of Turn Lanes	Alt #6: Single-Lane Roundabout with Approach Curvature	Alt #7: Restricted Crossing U-Turn Intersection (RCUT)	Alt #9A: Grade-Separated Diamond Interchange
Extent of Impact to Physical Landscape	No Impact	Some Impact	Minor Impact	Some Impact (incl. view shed impacts)	Some Impact	Some Impact	Significant Impact (incl. view shed)
Score	**1.0**	**0.0**	**0.5**	**0.0**	**0.0**	**0.0**	**-1.0**

Table E-2: Summarizes the extent of impact to adjacent properties and/or access

	Tier 2 Alternatives						
	Alt #1: No Build	Alt #2C: Removal of Intersection Skew (Centered)	Alt #3B: Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	Alt #5: Traffic Signal with Addition of Turn Lanes	Alt #6: Single-Lane Roundabout with Approach Curvature	Alt #7: Restricted Crossing U-Turn Intersection (RCUT)	Alt #9A: Grade-Separated Diamond Interchange
Extent of Impact to Adjacent Properties and/or Access	No Impact	Minor Impact to ITD maintenance facility access	No Impact	No Impact	Minor Impact to ITD maintenance facility access	Minor Impact to Rest Area access (as currently illustrated, but likely could mitigate)	Significant Impact to ITD maintenance facility & Some Impact to rest area and private property access
Score	**1.0**	**0.5**	**1.0**	**1.0**	**0.5**	**1.0**	**-1.0**

Table E-3: Summarizes the impacts to sensitive and/or protected environmental features

	Tier 2 Alternatives						
	Alt #1: No Build	Alt #2C: Removal of Intersection Skew (Centered)	Alt #3B: Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	Alt #5: Traffic Signal with Addition of Turn Lanes	Alt #6: Single-Lane Roundabout with Approach Curvature	Alt #7: Restricted Crossing U-Turn Intersection (RCUT)	Alt #9A: Grade-Separated Diamond Interchange
Extent of Impact to Enviornmental Features	No Impact	Minor Impact	Minor Impact	Minor Impact	Minor Impact	Some Impact	Significant Impact
Score	**1.0**	**0.5**	**0.5**	**0.5**	**0.5**	**0.0**	**-1.0**

Table E-4: Summarizes the amount impervious surface area added to the intersection area

	Tier 2 Alternatives						
	Alt #1: No Build	Alt #2C: Removal of Intersection Skew (Centered)	Alt #3B: Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	Alt #5: Traffic Signal with Addition of Turn Lanes	Alt #6: Single-Lane Roundabout with Approach Curvature	Alt #7: Restricted Crossing U-Turn Intersection (RCUT)	Alt #9A: Grade-Separated Diamond Interchange
Amount of Impervious Surface Added (sq.ft.)	0	85,000	30,000	70,000	190,000	200,000	260,000
Score	**1.0**	**0.0**	**0.5**	**0.0**	**-0.5**	**-0.5**	**-1.0**

Table E-5: Summarizes the impacts to the "view shed" into the Wood River Valley

	Tier 2 Alternatives						
	Alt #1: No Build	Alt #2C: Removal of Intersection Skew (Centered)	Alt #3B: Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	Alt #5: Traffic Signal with Addition of Turn Lanes	Alt #6: Single-Lane Roundabout with Approach Curvature	Alt #7: Restricted Crossing U-Turn Intersection (RCUT)	Alt #9A: Grade-Separated Diamond Interchange
Extent of Impact to Enviornmental Features	No Impact	No Impact	No Impact	Some Impact	Minor Impact	No Impact	Significant Impact
Score	**1.0**	**1.0**	**1.0**	**0.0**	**0.5**	**1.0**	**-1.0**

Implementation & Maintenance

This worksheet provides supporting detail for the evaluation summary in the "Tier 2 Alts Evaluation Matrix."

Table I-1: Ease of construction of an alternative

	Tier 2 Alternatives						
	Alt #1: No Build	Alt #2C: Removal of Intersection Skew (Centered)	Alt #3B: Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	Alt #5: Traffic Signal with Addition of Turn Lanes	Alt #6: Single-Lane Roundabout with Approach Curvature	Alt #7: Restricted Crossing U-Turn Intersection (RCUT)	Alt #9A: Grade-Separated Diamond Interchange
Ease of Construction	No Construction	Medium Difficulty - Maintaining traffic at tie-ins and through intersection will present some challenge	Minor Difficulty - No shift in alignment, but full intersection rebuild is necessary due to poor pavement conditions.	Minor Difficulty - No shift in alignment, but putting up signal equipment will require some temporary detouring.	Significant Difficulty - Change in alignment on all 4 approaches and maintaining traffic through intersection is challenging.	Significant Difficulty - Placing medians and maintaining traffic through intersection present substantial challenges.	Significant Difficulty - Majority of work occurs off of existing roadway. Maintaining US-20 traffic will require detour.
Score	**1.0**	**-0.5**	**0.0**	**0.0**	**-1.0**	**-1.0**	**-1.0**

Table I-2: Estimated effort and ability to effectively maintain an alternative

	Tier 2 Alternatives						
	Alt #1: No Build	Alt #2C: Removal of Intersection Skew (Centered)	Alt #3B: Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	Alt #5: Traffic Signal with Addition of Turn Lanes	Alt #6: Single-Lane Roundabout with Approach Curvature	Alt #7: Restricted Crossing U-Turn Intersection (RCUT)	Alt #9A: Grade-Separated Diamond Interchange
Effort and Ability to Maintain	Estimated Maintenance/Power Lifetime Costs: ~$60k	Estimated Maintenance/Power Lifetime Costs: ~$60k	Estimated Maintenance/Power Lifetime Costs: ~$60k	Estimated Maintenance/Power Lifetime Costs: ~$145k. Some signal equipment can be tough to access.	Estimated Maintenance/Power Lifetime Costs: ~$120k. Snow & debris removal can be challenging.	Estimated Maintenance/Power Lifetime Costs: ~$115k. Snow & debris removal can be challenging.	Estimated Maintenance/Power Lifetime Costs: ~$135k. Regular bridge inspections required.
Score	**0.5**	**0.5**	**0.5**	**-1.0**	**-0.5**	**-0.5**	**-0.5**

Table I-3: Capability of phasing an alternative

	Tier 2 Alternatives						
	Alt #1: No Build	Alt #2C: Removal of Intersection Skew (Centered)	Alt #3B: Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	Alt #5: Traffic Signal with Addition of Turn Lanes	Alt #6: Single-Lane Roundabout with Approach Curvature	Alt #7: Restricted Crossing U-Turn Intersection (RCUT)	Alt #9A: Grade-Separated Diamond Interchange
Phasing Capability	N/A	Could be integrated with most other alternatives.	Could be a potential mid-term solution leading to Alts #5, #6, or #7.	Once implemented likely won't phase to another alternative. Alts #2C & #3B could lead into this alternative.	Once implemented likely won't phase to another alternative. Alts #2C & #3B could lead into this alternative.	Once implemented likely won't phase to another alternative. Alts #2C & #3B could lead into this alternative.	Once implemented likely won't phase to another alternative. No other alternatives provide much phasing advantage into this alternative.
Score	**0.0**	**0.5**	**0.5**	**0.0**	**0.0**	**0.0**	**-1.0**

Cost

This worksheet provides supporting detail for the evaluation summary in the "Tier 2 Alts Evaluation Matrix."

Table C-1: Summarizes the scoring based on an alternative's estimated design & construction costs.

	Tier 2 Alternatives						
	Alt #1: No Build	Alt #2C: Removal of Intersection Skew (Centered)	Alt #3B: Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	Alt #5: Traffic Signal with Addition of Turn Lanes	Alt #6: Single-Lane Roundabout with Approach Curvature	Alt #7: Restricted Crossing U-Turn Intersection (RCUT)	Alt #9A: Grade-Separated Diamond Interchange
Estimated Design & Construction Costs	No Cost	$ 1,600,000	$ 1,300,000	$ 2,500,000	$ 2,800,000	$ 4,100,000	$ 10,300,000
Score	**1.0**	**0.5**	**0.5**	**0.0**	**0.0**	**-0.5**	**-1.0**

Table C-2: Summarizes the scoring based on an alternative's expected benefit/cost ratio taking into account life-cycle benefits & costs.

	Tier 2 Alternatives						
	Alt #1: No Build	Alt #2C: Removal of Intersection Skew (Centered)	Alt #3B: Add Northbound and Southbound Right- and Left-Turn Lanes on SH-75	Alt #5: Traffic Signal with Addition of Turn Lanes	Alt #6: Single-Lane Roundabout with Approach Curvature	Alt #7: Restricted Crossing U-Turn Intersection (RCUT)	Alt #9A: Grade-Separated Diamond Interchange
Estimated Benefit/Cost Ratio	Base Case - No Cost, No Benefit	0.13	0.44	-0.01	0.34	0.00	0.20
Score	**0.0**	**0.0**	**0.5**	**-0.5**	**0.5**	**-0.5**	**0.0**

Q

SMT & CAC Meeting #2 Summaries

US 20 SH 75
TIMMERMAN JUNCTION
Intersection Study

Study Management Team (SMT)
Meeting #2 Summary

June 22nd, 2016, 10:00AM–12:00PM

Blaine County Courthouse, Commissioners Large Conf. Room
206 1st Ave South, Suite #300, Hailey, ID 83333

MEETING OBJECTIVE:
Evaluate and screen the Tier 2 Alternatives for the purpose of developing the overall implementation plan for the intersection study.

ATTENDEES

- Bruce Christensen – ITD District 4
- Scott Malone – ITD District 4
- Gene Ramsey – Blaine County Sheriff
- Angenie McCleary – Blaine County Commissioner
- Andy Daleiden – Kittelson & Associates, Inc.
- Yuri Mereszczak – Kittelson & Associates, Inc.

WELCOME & RECAP

- Yuri provided an overview of the meeting purpose and materials.
- Bruce mentioned that the phasing plan would be good to have at the SMT Meeting #3. Yuri indicated that the scope/plan for the Meeting #3 would include the phasing plan discussion.
- Reviewed the SMT members and roles, study purpose and goals, tiered alternatives evaluation process, and where we are in the study process (Tier II).
- An online survey will be out in early August for the public to comment on the latest alternatives.
- CAC Meeting #2 will be held on July 14th, 2016 at 10 AM. There will be a BCRTC meeting immediately before CAC Meeting #2.

SMT & CAC MEETING #1 FOLLOW-UP ITEMS

- Proposed ITD Responses to Short-Term Treatment Ideas from CAC
    - Bruce reviewed the proposed responses. A few points were added from the SMT below:
    - Video monitoring data could be installed on a longer duration to assess the conditions that exist and capture data for the various types of maneuvers that occur throughout the day. Example of the DDI research study, which used a data collection effort to record vehicle activity and identify wrong-way maneuvers through an algorithm.
    - Rumble strips on SH 75 – ITD doesn't place these on the uncontrolled approaches as it might make drivers think a stop condition is ahead.
    - SH 75 flashing lights are alternating style and provide a visual cue for drivers. US 20 could use larger lights on the alternating style of lights on the stop-ahead sign. The current lights are 8-inch.
    - 45 mph speed on SH 75 is good for slowing down at the intersection. The length of the speed zone is long, so the speed zone could be reduced after the intersection. The

southbound direction 45 mph speed zone could be modified to stop at the rest area driveway. The northbound direction 45 mph speed zone could be reduced to start just after the intersection. **Action Items: Bruce (ITD D4) will send a markup of this concept to the SMT and bring this proposal up at the CAC meeting. Bruce (ITD D4) will perform a speed study. Bruce will group the responses.**

  - **Action: KAI will send responses to CAC in advance of meeting with the meeting agenda materials.**
  - Please see attached the document providing revised ITD Responses to the Short-Term Treatment Ideas from CAC Meeting #1.
- Shifting the US-20/SH-75 Intersection to the South
  - What is the benefit? Removes skew and moves the roadway alignment out of the wetlands area.
  - This option seems to be cost prohibitive.
- Acceleration of Trucks Towards Timmerman Hill
  - Average 1% grade for about ½ mile heading southbound; will a truck be able to get up to reasonable speed?
    - Based on AASHTO, the guidance suggests that most trucks will be able to accelerate to at least 40 mph prior to the steeper grade up Timmerman Hill. Focus on this finding at the CAC meeting.
- CAC Questions on Historical Safety Data
  - Yuri reviewed this data and provided responses to answer the questions/requested information from the CAC.
  - **Action: KAI will update the slide to only focus on the crash reports for the 2 crashes that included in the police reports the drivers' confusion of an all-way stop controlled intersection.**
  - **Action: KAI will change "failure to stop" language on this slide to "failure to yield" so as not to mislead the actual contributing cause of the crashes.**

OVERVIEW OF ACTIVITIES SINCE SMT MEETING #1

- High-Level Environmental Review
  - Note: The US Fish and Wildlife Service wetlands map and the SH-75 EIS delineated wetlands areas (~10 years old) generally matched.
  - The intent of showing this map is to highlight that wetlands exist around the intersection and that the wetlands may be impacted in varying levels by the different alternatives. With impacts, mitigation would be necessary and a rough mitigation cost was estimated for each alternative.
- Overview of Tier 2 Alternatives Assessment Packet
  - Yuri reviewed the materials packet and how construction costs were estimated at this concept level.
  - **Action: KAI will add pages numbers to the packet.**
- Review of B/C Analysis and findings for the alternatives
  - Yuri reviewed the life-cycle cost analysis used to develop benefit/cost ratios for each alternative. At CAC Meeting #2, we would like the SMT to help explain this information at the work sessions.
    - The life-cycle cost analysis provides net present value monetization of the design and construction costs, maintenance costs, expected user delay costs/benefits, and expected safety costs/benefits. Oftentimes, a B/C analysis will only account for design and

construction costs and safety costs/benefits; therefore, KAI suggests the life-cycle cost assessment provides a more holistic assessment of the B/C ratios for the given alternatives.

    - Are the signal and roundabout disbenefit similar for operations? Yes
    - Is the safety benefit higher for roundabouts? Yes
    - The no-build may be a reasonable option given the reported crash history.
    - The perception of a safety issue has potentially gone down since the spike in crashes in 2010.
    - Since the crashes are low, it's hard to make a strong case for the build alternatives having a significant impact on the safety performance of the intersection.
- Review of Evaluation Criteria and Sub-criteria
  - Should KAI present weighting of the evaluation criteria and weighted scores to the CAC?
    - Safety is a priority, but the historical data does not lead to a safety problem.
    - Suggest not using a weighting factor, as you may lead folks too aggressively in a certain direction.
      - Factoring safety by 2.0 → it does not seem right since the crash data is low and there's likely not a statistical significance towards the potential change in crashes.
    - Should we be providing a range for the evaluation results? It was determined not to show a range.
    - The traffic signal and roundabout improvements provide a documented safety benefit based on national statistics. Our safety database for this intersection is so low, so it is difficult to directly apply a weighting factor.
    - We need to account for the view shed impacts in the evaluation of alternatives. Probably best to incorporate in the Physical & Environmental Impacts category.
    - The SMT recommended we not use any weighting for presentation of the evaluation results to the CAC. It is best to allow the CAC members to assess the raw scores through application of their own judgment and not to artificially lead them in one direction or another.
    - **Action: KAI will incorporate a fifth sub-criterion under Physical & Environmental Impacts and adjust the evaluation of alternatives accordingly. The sub-criteria will be "Impact to the view shed into the Wood River Valley."**
    - **Action: KAI will update all of the evaluation tables to show just the raw scores and not the weighted scores.**
    - **Action: KAI will update the evaluation summary table to bold the alternative that ranks the highest in each category.**

TIER 2 ALTERNATIVES ASSESSMENT

The SMT went through the meeting packets and discussed the Tier 2 alternatives and the evaluation summary. Each SMT member completed the comment sheet providing a ranking of the Tier 2 alternatives (from 1 through 7 with 1 being most preferred) and comments on the alternatives. Table 1 provides a summary of the rankings and of the comments provided by the SMT members and the raw comment sheets are provided with the attachments to this summary.

Table 1: Summary of SMT Tier 2 Intersection Alternatives Evaluation

Alternative	No. of Rankings							Avg. Rank	Summary of Comments
	#1	#2	#3	#4	#5	#6	#7		
1: No Build	5	1	0	0	0	0	0	**1.2**	• Reasonable short- to mid-term alternative. A build alternative should be planned for the long-term. • Hard to justify large expenditure at the intersection given low B/C ratios for build alternatives.
2C: Remove Skew (Centered)	1	0	2	2	1	0	0	**3.3**	• Potential "first phase" improvement for roundabout or other build alternatives. • Recent crash history shows the majority of crashes occurring on the acute skew angles. Not clear if removal of skew would help reduce crashes.
3B: Add Left- and Right-Turn Lanes on SH-75	0	1	1	1	3	0	0	**4.0**	• Concerns about additional intersection width and potential for additional blind spots. • Capability to reduce crashes is not clear. • Consider as short- to mid-term improvement and not implementing the northbound right-turn lane (low volume).
5: Traffic Signal with Addition of Turn Lanes	0	0	1	3	2	0	0	**4.2**	• Visual impact is a consideration. • Most significant mobility impact and no physical geometry to prevent angle crashes.
6: Single-Lane Roundabout with Approach Curvature	0	4	2	0	0	0	0	**2.3**	• Roundabout provides the most safety benefit and is a good long-term option. • Expensive and has a mobility disbenefit.
7: Restricted Crossing U-Turn (RCUT)	0	0	0	0	0	6	0	**6.0**	• Not enough benefit for the cost, especially compared to other build alternatives. • Significant out-of-direction travel and mobility disbenefit to US-20 traffic.
9A: Grade-Separated Diamond Interchange	0	0	0	0	0	0	6	**7.0**	• The volumes and safety history do not warrant this level of expenditure. • Not visually acceptable.

The following are observations by KAI staff based on the information in the comment sheets and the summary of the Tier 2 alternatives evaluation presented in Table 1:

- The No Build alternative is the most supported alternative with 5 out of the 6 SMT members ranking it as their #1 alternative.
- The Single-Lane Roundabout alternative is the second most supported alternative with 4 out 6 SMT members ranking it as their #2 alternative and the other two members ranking it as their #3 alternative.
- The Restricted Crossing U-Turn (RCUT) and Grade-Separated alternatives are clearly not supported by SMT members with the RCUT unanimously ranking as #6 and the Grade-Separated alternative unanimously ranking as #7.
- The Remove Skew and Add Left- and Right-Turn Lanes on SH-75 alternatives both received some support from SMT members, with both receiving comments as potentially being mid-term treatments prior to a more significant improvement.
- The Traffic Signal alternative also received some support, but less than any other alternatives aside from the RCUT and Grade-Separated alternatives. The SMT raised concerns with the impacts the traffic signal has on mobility (particularly on SH-75) and the impacts the signal mast arms and equipment have on the view shed.

UPCOMING MEETINGS

- SMT Meeting #3: Thursday, September 22nd, 2016
- CAC Meeting #2: Thursday, July 14th, 2016
- CAC Meeting #3: Thursday, October 6th, 2016

ATTACHMENTS

- ITD Responses to Short-Term Treatment Ideas from CAC #1
- SMT Meeting #2 Comment Sheets

Short-Term Treatment Ideas from CAC Meeting #1 (**ITD Response in Green**)

- Trim trees and shrubbery on all corners of the intersection to increase visibility. *Note: Study staff measured the sight distance at the intersection per AASHTO standards and did not find any violations of AASHTO sight distance requirements.*
    - **This is done regularly so all sight lines meet AASHTO requirements. Due to soggy ground, it is next planned for late fall/ early winter.**
- Improvements to signage and other warning measures on US-20: Lower the speed limits on US-20; Increase signage and flashing lights east and west of the intersection; Use larger flashing lights
    - **Crash records show people are stopping. (We have numerous, transverse rumble strips, 3 STOP AHEAD signs per approach, 3 flashing lights per approach, larger CROSS TRAFFIC DOES NOT STOP signs, and the largest STOP signs we make). Crash records show people are getting the message to stop – occasionally they just make really bad decisions after they've stopped and/ or choose to do a rolling stop.**
    - **So we're not excited about more flashing lights and signs helping.**
- Install rumble strips on SH-75 prior to the intersection
    - **Best practice is to only use transverse rumble strips approaching stop signs.**
- Implement speed feedback signs in advance of intersection
    - **ITD first plans to shorten the 45 zones going away from intersection to improve speed compliance and better focus attention on the intersection.**
- Provide lighting at the intersection for better nighttime visibility
    - **This is likely with a major improvement such as roundabout or signal but is not recommended in short term based on crash history. Only 1 of 11 crashes from 2011-2016 and 1 of 12 crashes from 2005-2009 occurred at night).**
- Request Idaho State Patrol be regularly stationed at the intersection for a while
    - **Blaine County Sheriff would be primary law enforcement partner.**

COMMENT SHEET

SMT MEETING #2 - JUNE 22ND, 2016

US 20 SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Angenie McCleary Email: amccleary@co.blaine.id.us

Organization: Blaine County

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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, Suite 301, Boise, ID 83702 by no later than June 29th.

Intersection Alternatives (Tier 2) Evaluation

Please rank the alternatives from 1 through 7 in order of preference (1 being your most preferred alternative).

Rank	Alternative	Please explain your rankings and provide any other comments on the alternatives
1	**1: No Build**	Short term
4	**2C: Remove Skew (Centered)**	
3	**3B: Add Northbound and Southbound Left- and Right-Turn Lanes on SH-75**	
5	**5: Traffic Signal with Additional Turn Lanes**	Visual impact is a consideration
2	**6: Single-Lane Roundabout with Approach Curvature**	Best long term
6	**7: Restricted Crossing U-Turn (RCUT) Intersection**	No reason to do compared to roundabout due to cost. Mobility makes it unfeasible
7	**9A: Grade-Separated Diamond Interchange**	Not visually acceptable This is out

General Comments

--OVER--

COMMENT SHEET

SMT MEETING #2 - JUNE 22ND, 2016

US 20 & SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Gene Ramsey Email: gramsey@co.blaine.id.us

Organization: Blaine Co Sheriff

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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, Suite 301, Boise, ID 83702 by no later than June 29th.

Intersection Alternatives (Tier 2) Evaluation

Please rank the alternatives from 1 through 7 in order of preference (1 being your most preferred alternative).

Rank	Alternative	Please explain your rankings and provide any other comments on the alternatives
2	**1: No Build**	Top 3 are hard to
1	**2C: Remove Skew (Centered)**	Rate.
5	**3B: Add Northbound and Southbound Left- and Right-Turn Lanes on SH-75**	
4	**5: Traffic Signal with Additional Turn Lanes**	
3	**6: Single-Lane Roundabout with Approach Curvature**	
6	**7: Restricted Crossing U-Turn (RCUT) Intersection**	
7	**9A: Grade-Separated Diamond Interchange**	

General Comments

--OVER--

COMMENT SHEET

SMT MEETING #2 - JUNE 22ND, 2016

US 20 & SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Scott Malone Email:

Organization: ITD

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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, Suite 301, Boise, ID 83702 by no later than June 29th.

Intersection Alternatives (Tier 2) Evaluation

Please rank the alternatives from 1 through 7 in order of preference (1 being your most preferred alternative).

#	Rank	Alternative	Please explain your rankings and provide any other comments on the alternatives
0	1	**1: No Build** Short Term	Highest raw B/C. Confirms improvements not really needed yet.
1.6m	4	**2C: Remove Skew (Centered)** Lower Cost Short-med.	Crash benefits not clear - but might exist. Cost advantage over roundabout. Prefer to 3B
1.3m	5	**3B: Add Northbound and Southbound Left- and Right-Turn Lanes on SH-75** Lower Cost Short-med.	Crash benefits not clear (currently). statistical crash benefits.
.5m	3	**5: Traffic Signal with Additional Turn Lanes** Medium	OK alternate if roundabout fails for some reason to be viable.
.8M	2	**6: Single-Lane Roundabout with Approach Curvature** Medium Term	Best B/C ~~as~~ beside No Build.
t.1m	6	**7: Restricted Crossing U-Turn (RCUT) Intersection** Elim.	No advantage over roundabout. Eliminate
0.3M	7	**9A: Grade-Separated Diamond Interchange** Very Long Term	Probably too far out in future to be further considered. Eliminate

General Comments

The one % avg. grade SB breaks from steeper to flatter and could end up more of a truck issue. Climbing lane has been looked at and is possible but w/ added expense. I might make the 2C & 3B alternates better choices. I don't think 7 or 9A are viable going forward.

--OVER--

COMMENT SHEET

SMT MEETING #2 - JUNE 22ND, 2016

US 20 & SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Bruce Christensen Email: Bruce.Christensen@itd.idaho.g

Organization: ITD

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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Intersection Alternatives (Tier 2) Evaluation

Please rank the alternatives from 1 through 7 in order of preference (1 being your most preferred alternative).

Rank	Alternative	Please explain your rankings and provide any other comments on the alternatives
1	**1: No Build**	
3	**2C: Remove Skew (Centered)**	I look at this as Phase I of roundabout construction and to minimize cost (hopefully) of roundabout. 8 of 11 Crashes involved skew NB/EB or SB/WB.
5	**3B: Add Northbound and Southbound Left- and Right-Turn Lanes on SH-75**	
4	**5: Traffic Signal with Additional Turn Lanes**	
2	**6: Single-Lane Roundabout with Approach Curvature**	Roundabout option has the most safety benefit and is best (see below)
6	**7: Restricted Crossing U-Turn (RCUT) Intersection**	
7	**9A: Grade-Separated Diamond Interchange**	

General Comments

** View-shed alternative but is expensive and has a mobility disbenefit as compared with No Build. Roundabout rendering does not show luminaires or raised center island needed for safety.

--OVER--

COMMENT SHEET

SMT MEETING #2 - JUNE 22ND, 2016

US 20 & SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Andy Daleiden

Email: adaleiden@kittelson.com

Organization: Kittelson & Associates

PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.

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, Suite 301, Boise, ID 83702 by no later than June 29th.

Intersection Alternatives (Tier 2) Evaluation

Please rank the alternatives from 1 through 7 in order of preference (1 being your most preferred alternative).

Rank	Alternative	Please explain your rankings and provide any other comments on the alternatives
1	**1: No Build**	This alternative is okay, in the near-term, but an improvement should be identified for the next 5-10 years and then for 10-20 years.
5	**2C: Remove Skew (Centered)**	
2	**3B: Add Northbound and Southbound Left- and Right-Turn Lanes on SH-75**	The NB right turn could be removed w/ this option (low volume).
4	**5: Traffic Signal with Additional Turn Lanes**	
3	**6: Single-Lane Roundabout with Approach Curvature**	Good long term option
6	**7: Restricted Crossing U-Turn (RCUT) Intersection**	Long-term improvement is a good option, but the out-of-direction travel
7	**9A: Grade-Separated Diamond Interchange**	The volumes and safety do not warrant this type of improvement

General Comments

--OVER--

COMMENT SHEET

SMT MEETING #2 - JUNE 22ND, 2016

US 20 SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Yuri Mereszczak Email: yuri@kittelson.com

Organization: KITTELSON & ASSOCIATES, INC.

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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, Suite 301, Boise, ID 83702 by no later than June 29th.

Intersection Alternatives (Tier 2) Evaluation

Please rank the alternatives from 1 through 7 in order of preference (1 being your most preferred alternative).

Rank	Alternative	Please explain your rankings and provide any other comments on the alternatives
1	**1: No Build**	Hard to justify expenditure given low B/C ratios on the build alternatives.
3	**2C: Remove Skew (Centered)**	This is a potential "first phase" improvement as the limited crash history does show some potential problems with the acute skew angles.
4	**3B: Add Northbound and Southbound Left- and Right-Turn Lanes on SH-75**	I'm concerned about the additional intersection width and creating more blind spots with vehicles hiding other vehicles, but this is a common treatment for this type of intersection.
5	**5: Traffic Signal with Additional Turn Lanes**	Most significant mobility impact and no physical geometry to prevent angle crashes. View shed impacts as well.
2	**6: Single-Lane Roundabout with Approach Curvature**	If something is to be done due to public perception or outcry, the roundabout stands out as having the best safety benefit.
6	**7: Restricted Crossing U-Turn (RCUT) Intersection**	Low benefit/cost ratio. Significant impact to US-20 mobility.
7	**9A: Grade-Separated Diamond Interchange**	Too much expenditure and improvement for the given context.

General Comments

--OVER--

Community Advisory Committee (CAC)
Meeting #2 Summary

July 14th, 2016, 10:00AM–12:00PM

Blaine County Courthouse, Commissioners Meeting Room
206 1st Ave South, Suite #300, Hailey, ID 83333

MEETING OBJECTIVE:
Evaluate and screen the Tier 2 Alternatives for the purpose of developing the overall implementation plan for the intersection study.

COMMUNITY ADVISORY COMMITTEE (CAC) ATTENDEES

See Attachment A for the meeting sign-in sheet.

- Bruce Christensen – ITD District 4
- Scott Malone – ITD District 4
- Angenie McCleary – Blaine County Commissioner
- Yuri Mereszczak – Kittelson & Associates, Inc.
- Andy Daleiden – Kittelson & Associates, Inc.
- Rosemary Curtin – RBCI
- Brian Christiansen – City of Ketchum
- Jacob Greenberg – Blaine County Commissioner
- Len Harlig – Citizen
- Jim Keating – Blaine County Recreation District
- Jason Miller – Mountain Rides
- Lawrence Schoen – Blaine County Commissioner
- Jack Sibbach – Sinclair Co./Sun Valley
- Jade Sparrow – Blaine/Camas County Farm Bureau
- Jeff Loomis – Blaine County Engineer
- Chad Stoesz – Wood River Land Trust
- Brad Lynch – ITD District 4
- Donna Pence – State Representative
- Gene Ramsey – Blaine County Sheriff
- Rex Squires – Blaine County School District
- Ryan Thorne – Idaho Mountain Express
- Nathan Jerke – ITD District 4

WELCOME AND RECAP

- What Have You Heard?
    - Perception of more fatalities and crashes at this intersection than there actually are; need to provide data.
    - Recent improvements have been received well and seem to be working well. Support for continued incremental and/or short-term improvements.
    - Perception that enough has been done already.
    - I slow down with the recent improvements at the intersection.
    - Why 45 mph? Why do we need to slow down?
    - Glad that we are looking at this intersection and addressing the safety improvements.
    - It seems that we still have problems with people not stopping on US-20.
    - This project is looking at both today's conditions and into the future, so need to be sure to communicate this to the public.
    - Perception of the safety problem; recent improvements are generally good.

    - Anecdote – observed a car traveling westbound without stopping at the intersection.
- Review CAC Roles & Responsibilities
- Review Study Purpose & Goals
- Tiered Alternatives Evaluation Process
- Study Schedule

CAC MEETING #1 FOLLOW-UP ITEMS

- ITD Responses to Short-Term Treatment Ideas from CAC Meeting #1
    - Bruce reviewed the items and ITD's responses. *See Attachment B for ITD's responses.*
    - Questions/comments from the CAC:
        - Do the accident statistics capture the type of motorist (local resident or tourist) coming through the intersection?
            - 7 of the 11 crashes involved out-of-state drivers.
        - What percent of crashes involved folks running the stop sign?
            - We are not able to definitively determine this from the crash data as the reports don't document that level of detail.
        - Are there safety issues with the current configuration of the intersection? We need to address complacency and folks not expecting the stop control.
            - To address safety, we need to address the engineering, education, and enforcement aspects.
        - Additional short-term treatment idea from CAC Meeting #2:
            - Elevated flashing signage over the lane approaching the intersection (from both east and west directions) placed sufficiently before the intersection in hopes of catching the eye of a driver who isn't paying attention to the road-side signs
- Acceleration of Trucks Towards Timmerman Hill
    - Yuri addressed this topic. No questions or comments from the group.
- CAC Questions on Historical Safety Data
    - Yuri addressed this topic. No questions or comments from the group.

OVERVIEW OF TIER 2 ALTERNATIVES

- Alternatives Carried Forward from the Tier 1 Alternatives Assessment
    - Yuri addressed this topic. No questions or comments from the group.
- Tier 2 Alternatives Assessment Packet Organization
    - Yuri addressed this topic and reviewed each of the seven Tier 2 alternatives.
    - It would be helpful to have a comparison of crashes for the no-build condition to other similar intersections.
        - **Action Item:** How does the crash rate at this intersection compare to other similar intersections throughout the state?
    - Do you have information on how fast trucks can slow down coming off the Timmerman Hill grade to the south of the intersection?
        - The downgrade averages about 1% as you get within ½ mile of the intersection.
        - **Action Item:** Check the downgrade on northbound SH-75 and identify the distance needed for trucks to comfortably decelerate and stop on SH-75 if the intersection control was a roundabout or traffic signal.

    - Alternative 1: No Build
        - Yuri presented this alternative. No questions or comments from the group.
    - Alternative 2C: Remove Skew (Centered)
        - Yuri presented this alternative. No questions or comments from the group.
    - Alternative 3B: Addition of Left-Turn and Right-Turn Lanes on SH-75
        - Is the visibility impacted with the addition of the turn lanes?
        - Yes. There is an option to add an offset for the left-turns on SH-75 to improve visibility, but the visibility for drivers on US-20 would still be impacted slightly by vehicles are turning left or right off of SH-75.
    - Alternative 5: Traffic Signal with Addition of Turn Lanes
        - Yuri presented this alternative. No questions or comments from the group.
    - Alternative 6: Single-Lane Roundabout
        - The mound impacts visibility at the intersection.
            - For a roundabout, the mound is intentional to provide a visual cue for the driver. There are very few fatalities at modern roundabouts in the US.
        - Snow plowing on SH-75: Lots of wind on the south side of the intersection, which has an impact on truck trailers sliding.
        - What is the average speed for the roundabout?
            - 20-25 mph or less
        - Does the roundabout impact mobility?
            - Yes on SH-75, but helps mobility on US-20.
        - US-20 is a major truck route for large loads and over-legal loads. The loads can be up to 100 feet long. These trucks might need to reroute.
            - The roundabout design does accommodate over-legal loads on US-20. There are design elements that can be incorporated in the roundabout to route over-legal loads from US-20 to SH-75 if that was necessary.
        - What are the crash statistics for roundabouts vs. other intersections?
            - Nationwide statistics: 35% decrease in crashes overall at roundabouts and 75% decrease in injury crashes at roundabouts
    - Alternative 7: Restricted Crossing U-Turn (RCUT)
        - Yuri presented this alternative. No questions or comments from the group.
    - Alternative 9A: Grade-Separated Diamond Interchange
        - Yuri presented this alternative. No questions or comments from the group.
- Overview of Tier 2 Alternatives Cost Assessment
    - Yuri addressed this topic. No questions or comments from the group.
- Overview of Tier 2 Alternatives Evaluation
    - Yuri addressed this topic. No questions or comments from the group.

TIER 2 ALTERNATIVES ASSESSMENT (WORKSESSION) - SUMMARY OF COMMENT SHEETS

Table 1 on the following page provides a summary of the CAC's rankings and comments on the Tier 2 Alternatives as documented on the comment sheets submitted by the CAC members. Fifteen (15) comment sheets were received in total, which is 100% of the meeting attendees. *See Attachment C for the CAC Meeting #2 comments sheets.*

Table 1: Summary of CAC Tier 2 Intersection Alternatives Evaluation (15 Comment Sheets)

Intersection Alternative	No. of Rankings							Avg. Rank	Best Timeframe - Votes	Summary of Comments
	#1	#2	#3	#4	#5	#6	#7			
1: No Build	3	2	4	3	1	2	0	**3.2**	**Short-Term - 12** Mid-Term - 1 Long-Term - 0 Never - 0	• Traffic volumes and frequency of crashes don't justify improvements • Feeling that a long-term improvement option needs to be planned • Consider implementation of some of the short-term improvement suggestions in conjunction with No-Build
2C: Remove Skew (Centered)	3	7	1	1	1	2	0	**2.7**	**Short-Term - 8** Mid-Term - 5 Long-Term - 1 Never - 1	• Not enough benefit for the cost • Not enough safety benefit • Skew seems be a large part of the problem with the crashes • Cost-effective option, but may not be a long-term solution • Could be paired with other alternatives
3B: Add Left- and Right-Turn Lanes on SH-75	0	2	3	3	6	1	0	**4.0**	Short-Term - 2 **Mid-Term - 7** Long-Term - 0 Never - 3	• Not enough benefit for the cost • Could be paired with removal of skew option • Concerned about visibility obstructions • Don't think this will improve the crash rate
5: Traffic Signal with Addition of Turn Lanes	0	2	5	3	2	1	2	**4.0**	Short-Term - 2 Mid-Term - 3 **Long-Term - 4** **Never – 4**	• Common intersection type; comfortable, but introduces other issues • Interrupts flow of traffic • Inconvenient, inefficient, unsafe • Increases rear end crashes • Concerns about ability to stop in poor weather conditions • Would work better with a southbound climbing lane for trucks
6: Single-Lane Roundabout with Approach Curvature	8	1	1	0	3	1	1	**2.7**	Short-Term - 3 **Mid-Term - 4** Long-Term - 3 Never - 3	• Mixed opinions on acceptance by the Wood River Valley community • Maintenance and snow removal concerns • Heavy truck traffic through intersection • Best option for safety & driver behavior changes • Concerns about ability to stop in poor weather conditions • Implement in short- or mid-term if funds are available sooner
7: Restricted Crossing U-Turn Intersection (RCUT)	0	0	0	2	1	5	7	**6.1**	Short-Term - 0 Mid-Term - 0 Long-Term - 1 **Never - 12**	• Too much cost for benefit and overly complicated • Inconvenient and inefficient • Difficult for truck traffic
9A: Grade-Separated Diamond Interchange	1	1	1	3	0	2	7	**5.2**	Short-Term - 0 Mid-Term- 0 **Long-Term - 7** Never - 6	• Traffic volumes do not warrant cost • Visual impacts are too substantial • Substantial environmental impacts • Safety benefit not as high or on par with Alts 5-7 • Best alternative for safety, traffic flow, and visibility of intersection

Note: For rankings, 1 is the most supported alternative with 7 being the least supported alternative. Therefore, the lower number for the average ranking is the most supported alternative.

OBSERVATIONS FROM CAC MEETING #2 COMMENTS

The following are observations by KAI staff based on the information in the comment sheets from CAC respondents and the summary of the Tier 2 alternatives evaluation presented in Table 1:

- **Single-Lane Roundabout (Tied #1 average rank):** This alternative tied with the Remove Skew alternative as the most supported alternative (based on average rank), receiving the most #1 votes (8, 53%) of any of the alternatives. Opinions on timeframe for implementation of the Single-Lane Roundabout alternative were mixed.
- **Remove Skew (Centered) (Tied #1 average rank):** This alternative tied with the Single-Lane Roundabout alternative as the most supported alternative (based on average rank) and received three #1 votes and the most #2 votes (7, 46%) of any of the alternatives. The majority of respondents thought the Remove Skew alternative would be a good short-term (0-10 year timeframe) improvement.
- **No Build (#3 average rank):** This alternative received a mixture of rankings and came in as the next most supported alternative behind the Single-Lane Roundabout and Remove Skew alternatives (based on average rank). Comments on the No Build alternative generally indicated that recent improvements have helped, but there is still a feeling that something else might need to be done to improve the intersection.
- **Add Left- and Right-Turn Lanes on SH-75 (Tied #4 average rank):** This alternative received some support from respondents, but did not gain a single #1 vote and the majority of respondents ranked it as #4 or lower. A couple of respondents identified this alternative as one that could possibly be paired with the Remove Skew alternative. Several respondents noted concerns about the increased visibility obstructions that would occur with this alternative.
- **Traffic Signal (Tied #4 average rank):** This alternative received some support from respondents, but did not gain any #1 votes and the majority of respondents ranked it as #4 or lower. Most respondents expressed concern with the interruption of traffic flow and likely increase in rear-end crashes, but several did note this as a “familiar” treatment to drivers and may be acceptable to the community.
- **Grade-Separated Interchange (#6 average rank):** This alternative received seven #7 votes (almost 50%) and a generally limited level of support from respondents (only three #3 or better votes). There seemed to be some understanding that a grade-separated alternative could be a potential long-term alternative (beyond 20 years), but there were several comments that it’s not an appropriate level of expenditure in the near- or mid-term timeframe given the current & expected traffic volumes and crash history at the intersection.
- **Restricted Crossing U-Turn (RCUT) (#7 average rank):** This alternative received seven #7 votes (almost 50%) and very little support from respondents (no votes above #4). It was nearly unanimous amongst respondents that the RCUT should never be implemented (12 of 13 respondents circling “Never”, 92%).

NEXT STEPS

The feedback gathered from CAC Meeting #2 and the observations above will be taken into consideration in conjunction with the feedback received from SMT Meeting #2, the upcoming online survey for the general public, and the technical analysis of the alternatives to develop the Draft Implementation Plan for the intersection. The Draft Implementation Plan will be presented at CAC Meeting #3 in October 2016 for comment as part of the overall Draft Intersection Study report.

UPCOMING MEETINGS AND PUBLIC INVOLVEMENT ACTIVITIES

- Online Survey for the General Public: August 8th – 21st, 2016
    - **Website link will be emailed to all CAC members and we'll look for <u>your help to distribute this to your organization and contacts.</u>** We'd like to see very active participation in this survey from the Wood River Valley community!
- SMT Meeting #3: Thursday, September 22nd, 2016, 1:00pm-3:00pm, Blaine County Courthouse, Commissioners Meeting Room
- CAC Meeting #3: Thursday, October 6th, 2016, 10:00am-12:00pm, Blaine County Courthouse, Commissioners Meeting Room

ATTACHMENTS

- Attachment A: CAC Meeting #2 Sign-In Sheet
- Attachment B: ITD Responses to Short-Term Treatment Ideas from CAC Meeting #1
- Attachment C: CAC Meeting #2 Comment Sheets
- CAC Meeting #2 Materials are available on the study website at: http://itd.idaho.gov/projects/D4/US20_ID75_IntersectionStudy/

Attachment A CAC Meeting #2 Sign-In Sheet

Timmerman Junction Study (US-20/SH-75)

ITD District 4

Community Advisory Committee (CAC) Meeting #~~1~~ 2

~~April 7, 2016 Meeting~~ *(Please sign your name)*	First Name	Last Name	Organization
	Pat	Bowton	Hailey Chamber of Commerce
	Walter	Burnside	ITD District 4 Maintenance
	Greg	Cappel	
Brian Christen	Brian	Christiansen	City of Ketchum
	Bruce	Christensen	Idaho Transportatoin Department
	Brad	Dufur	City of Sun Valley
	Dan	Gilmore	Power Engineers
	Jacob	Greenberg	Blaine County
Len Harlig	Len	Harlig	Citizen
	Connie	Jones	ITD D4 Environmental
	Jim	Keating	Blaine County Recreation District
	Christopher	Koch	City of Bellevue
	Bart	Lassman	Wood River Fire & Rescue (Paramedics)
	Jeff	Loomis	Blaine County
Brad Lynch	Brad	Lynch	
S Malone	Scott	Malone	Idaho Transportatoin Department
	Robyn	Mattison, P.E.	City of Ketchum
Angenie McCleary	Angenie	McCleary	Blaine County Regional Transportation Committee
J R Miller	Jason	Miller	Mountain Rides
	Randall	Patterson	City of Carey
Donna Pence	Donna	Pence	State Representative
Gene Ramsey	Gene	Ramsey	Blaine County
	Arlene	Schieven	Sun Valley-Ketchum Chamber & Visitors Bureau

	Lawrence	Schoen	Blaine County
	Terrence	Sheehan	Senior Connection
Jack Sibbach	Jack	Sibbach	Sinclair Co./Sun Valley
Jade Sparrow	Jade	Sparrow	Blaine/Camas County Farm Bureau
Rex Squires	Rex	Squires	Blaine County School District
	Steve	Thompson	Blaine County Road and Bridge
	Chad	Stoesz	Wood River Land Trust
Ryan Thom	Ryan	Thom	Idaho Mt Express
	Nathan	Jerke	ITD

Attachment B ITD Responses to Short-Term Treatment Ideas from CAC Meeting #1

Short-Term Treatment Ideas from CAC Meeting #1 (**ITD Response in Green**)

- Trim trees and shrubbery on all corners of the intersection to increase visibility. *Note: Study staff measured the sight distance at the intersection per AASHTO standards and did not find any violations of AASHTO sight distance requirements.*
  - **This is done regularly so all sight lines meet AASHTO requirements. Due to soggy ground, it is next planned for late fall/ early winter.**
- Improvements to signage and other warning measures on US-20: Lower the speed limits on US-20; Increase signage and flashing lights east and west of the intersection; Use larger flashing lights
  - **Crash records show people are stopping. (We have numerous, transverse rumble strips, 3 STOP AHEAD signs per approach, 3 flashing lights per approach, larger CROSS TRAFFIC DOES NOT STOP signs, and the largest STOP signs we make). Crash records show people are getting the message to stop – occasionally they just make really bad decisions after they've stopped and/ or choose to do a rolling stop.**
  - **So we're not excited about more flashing lights and signs helping.**
- Install rumble strips on SH-75 prior to the intersection
  - **Best practice is to only use transverse rumble strips approaching stop signs.**
- Implement speed feedback signs in advance of intersection
  - **ITD first plans to shorten the 45 zones going away from intersection to improve speed compliance and better focus attention on the intersection.**
- Provide lighting at the intersection for better nighttime visibility
  - **This is likely with a major improvement such as roundabout or signal but is not recommended in short term based on crash history. Only 1 of 11 crashes from 2011-2016 and 1 of 12 crashes from 2005-2009 occurred at night).**
- Request Idaho State Patrol be regularly stationed at the intersection for a while
  - **Blaine County Sheriff would be primary law enforcement partner.**

Attachment C CAC Meeting #2 Comment Sheets

COMMENT SHEET
CAC MEETING #2 - JULY 14TH, 2016

US 20 & SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: JEFF LOOMIS Email: JLOOMIS@CO.BLAINE.ID.US

Organization: BLAINE COUNTY

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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, Suite 301, Boise, ID 83702 by no later than July 21st.

Intersection Alternatives (Tier 2) Evaluation

> Please rank the alternatives from 1 through 7 in order of preference (1 being your most preferred alternative)
> Circle the best timeframe for implementation of alternatives or chose "never"

Alternative	Rank	Best Timeframe (circle one)	Please explain your rankings and provide any other comments on the alternatives
1: No Build	2	[✓ Short-Term] Mid-Term Long-Term Never	DECISION POINT AS TO WHETHER THIS INTERSECTION NEEDS PHYSICAL IMPROVEMENTS AT ALL BASED ON VOLUMES, CRASH RATES, ETC.
2C: Remove Skew (Centered)	6	Short-Term Mid-Term Long-Term [✓ Never]	NOT ENOUGH BENEFIT FOR COST, NOT SURE IT IMPROVES EXISTING CONDITIONS?
3B: Add Northbound and Southbound Left- and Right-Turn Lanes on SH-75	4	[✓ Short-Term] Mid-Term Long-Term Never	THIS SEEMS LIKE A SIMILAR COST TO ROUNDABOUT, BUT LESS BENEFIT
5: Traffic Signal with Additional Turn Lanes	5	Short-Term Mid-Term Long-Term [✓ Never]	NOT INTERESTED IN A SIGNALIZED INTERSECTION
6: Single-Lane Roundabout with Approach Curvature	1	[✓ Short-Term] Mid-Term Long-Term Never	SEE 1: NO BUILD → IF DECISION IS MADE TO IMPROVE INTERSECTION, ROUNDABOUT APPEARS MOST B/C. I THINK FITS DESIRES OF WOOD RIVER VALLEY COMMUNITY - NOT NECESSARILY [illegible] CURV
7: Restricted Crossing U-Turn (RCUT) Intersection	7	Short-Term Mid-Term Long-Term [✓ Never]	NOT INTERESTED IN AN RCUT INTERSECTION
9A: Grade-Separated Diamond Interchange	3	Short-Term Mid-Term [✓ Long-Term] Never	WOULD CONSIDER THIS MORE IF VOLUMES WERE MORE SIGNIFICANT, BUT SAFETY BENEFIT ISN'T AS HIGH AS ROUNDABOUT

Short-Term = 0-10 years; Mid-Term = 10-20 years; Long-Term = 20+ years

Please provide any general comments or comments on the alternatives evaluation process

HAVE EXHAUSTED INTERIM (LOW COST, WITH EXISTING OPERATIONS CAPACITY) ALTERNATIVES TO ADDRESS THIS INTERSECTION? BIGGEST QUESTION FOR ME IS IF AN IMPROVEMENT PROJECT SHOULD BE TRIGGERED

--~~OVER~~--

COMMENT SHEET
CAC MEETING #2 - JULY 14TH, 2016

US 20 & SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Nathan Jerke Email: nathan.jerke@itd.idaho.gov

Organization: ITD

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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Intersection Alternatives (Tier 2) Evaluation

> Please rank the alternatives from 1 through 7 in order of preference (1 being your most preferred alternative)
> Circle the best timeframe for implementation of alternatives or chose "never"

Alternative	Rank	Best Timeframe (circle one)	Please explain your rankings and provide any other comments on the alternatives
1: No Build	6	[✓ Short-Term] Mid-Term Long-Term Never	Works now, but will eventually need to be changed/improved
2C: Remove Skew (Centered)	1	[✓ Short-Term] or [✓ Mid-Term] Long-Term Never	could be paired with turn bay addition will someday be needed for additional improvements as traffic increases
3B: Add Northbound and Southbound Left- and Right-Turn Lanes on SH-75	2	Short-Term [✓ Mid-Term] Long-Term Never	could be paired with scew removal will someday need additional improvement as traffic increases
5: Traffic Signal with Additional Turn Lanes	3	Short-Term [✓ Mid-Term] Long-Term Never	comfortable for drivers but does present or introduce other issues
6: Single-Lane Roundabout with Approach Curvature	5	Short-Term Mid-Term [✓ Long-Term] Never	Many maintenance issues and not widely accepted in region yet.
7: Restricted Crossing U-Turn (RCUT) Intersection	7	Short-Term Mid-Term Long-Term [✓ Never]	Don't see this as an attractive option
9A: Grade-Separated Diamond Interchange	4	Short-Term Mid-Term [✓ Long-Term] Never	Traffic numbers may someday dictate need for this option, but cost is a negative short or mid-term

Short-Term = 0-10 years; Mid-Term = 10-20 years; Long-Term = 20+ years

Please provide any general comments or comments on the alternatives evaluation process

Short-term = No build is probably a good alternative until greater need is apparent; Mid-term = intersection reconstruction of some kind is needed but no clear favorite alternative; long-term - depending on traffic needs & future crash data, a major change is needed.

--OVER--

COMMENT SHEET
CAC MEETING #2 - JULY 14TH, 2016

US 20 SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Donna Pence Email: donnapence25@msn.com

Organization: State LEGISLATURE

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****
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, Suite 301, Boise, ID 83702 by no later than July 21st.

Intersection Alternatives (Tier 2) Evaluation

> Please rank the alternatives from 1 through 7 in order of preference (1 being your most preferred alternative)
> Circle the best timeframe for implementation of alternatives or chose "never"

Alternative	Rank	Best Timeframe (circle one)	Please explain your rankings and provide any other comments on the alternatives
1: No Build	2	[✓ Short-Term] Mid-Term Long-Term Never	Skew Seems To be The problem
2C: Remove Skew (Centered)	1	[✓ Short-Term] Mid-Term Long-Term Never	Not a big ~~change~~ Increase for any safety ~~for~~ From others.
3B: Add Northbound and Southbound Left- and Right-Turn Lanes on SH-75	3	Short-Term [✓ Mid-Term] Long-Term Never	Don't think the help - but ~~makes~~ Block Seeing view.
5: Traffic Signal with Additional Turn Lanes	4	Short-Term [✓ Mid-Term] Long-Term Never	Don't like to interrupt the Traffic Flow
6: Single-Lane Roundabout with Approach Curvature	~~4~~ 5	Short-Term Mid-Term Long-Term [✓ Never]	Bad issues with Snow Removal - Plowing!
7: Restricted Crossing U-Turn (RCUT) Intersection	~~5~~ 6	Short-Term Mid-Term Long-Term [✓ Never]	To much cost for Benefit
9A: Grade-Separated Diamond Interchange	~~6~~ 7	Short-Term Mid-Term Long-Term [✓ Never]	~~No~~ Same

Short-Term = 0-10 years; Mid-Term = 10-20 years; Long-Term = 20+ years

Please provide any general comments or comments on the alternatives evaluation process

I missed first meeting. This gives me an understanding of possibilities. -
all in all you cannot combat poor judgement

--OVER--

COMMENT SHEET
CAC MEETING #2 - JULY 14TH, 2016

US 20 & SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Angenie McCleary Email: amccleary@co.blaine.id.us

Organization: Blaine County

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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Intersection Alternatives (Tier 2) Evaluation

> Please rank the alternatives from 1 through 7 in order of preference (1 being your most preferred alternative)
> Circle the best timeframe for implementation of alternatives or chose "never"

Alternative	Rank	Best Timeframe (circle one)	Please explain your rankings and provide any other comments on the alternatives
1: No Build	1	[✓ Short-Term] Mid-Term Long-Term Never	
2C: Remove Skew (Centered)	2	[✓ Short-Term] [✓ Mid-Term] Long-Term Never	Due to our particular conditions/accidents I think removing skew could be very helpful
3B: Add Northbound and Southbound Left- and Right-Turn Lanes on SH-75	5	Short-Term Mid-Term Long-Term Never	At this time I'm worried ~~about~~ that this may negatively impact visibility
5: Traffic Signal with Additional Turn Lanes	4	Short-Term Mid-Term [✓ Long-Term] Never	
6: Single-Lane Roundabout with Approach Curvature	3	Short-Term Mid-Term [✓ Long-Term] Never	I'm concerned w/ winter conditions & snow plowing which may be challenging Good for safety & mobility
7: Restricted Crossing U-Turn (RCUT) Intersection	6	Short-Term Mid-Term Long-Term [✓ Never]	I'm not supportive due to mobility and cost & benefit
9A: Grade-Separated Diamond Interchange	7	Short-Term Mid-Term Long-Term [✓ Never]	I'm not supportive due to visual impact & ↑ cost

Short-Term = 0-10 years; Mid-Term = 10-20 years; Long-Term = 20+ years

Please provide any general comments or comments on the alternatives evaluation process

I thought the meeting was run very well.

--OVER--

COMMENT SHEET
CAC MEETING #2 - JULY 14TH, 2016

US 20 SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Scott Malone Email:

Organization: ITD

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****
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Intersection Alternatives (Tier 2) Evaluation

> Please rank the alternatives from 1 through 7 in order of preference (1 being your most preferred alternative)
> Circle the best timeframe for implementation of alternatives or chose "never"

Alternative	Rank	Best Timeframe (circle one)	Please explain your rankings and provide any other comments on the alternatives
1: No Build	1	[✓ Short-Term] [✓ Mid-Term] Depends on crashes Long-Term Never	Best B/C Crashes don't justify improvements yet,
2C: Remove Skew (Centered)	5	Short-Term Mid-Term Long-Term [✓ Never]	Too much effort in PE & impacts to do short of Roundabout. You might as well just build roundabout.
3B: Add Northbound and Southbound Left- and Right-Turn Lanes on SH-75	6	Short-Term Mid-Term Long-Term [✓ Never]	Crash benefits not clear.
5: Traffic Signal with Additional Turn Lanes	3	Short-Term [✓ Mid-Term] Long-Term Never	Acceptable alternative if roundabout becomes unacceptable.
6: Single-Lane Roundabout with Approach Curvature	2	Short-Term [✓ Mid-Term] Long-Term Never	Best B/C besides No build. May provide very long term fix.
7: Restricted Crossing U-Turn (RCUT) Intersection	7	Short-Term Mid-Term Long-Term [✓ Never]	No advantages
9A: Grade-Separated Diamond Interchange	4	Short-Term Mid-Term [✓ Long-Term] Never	If volumes get too high or crashes really increase - might be viable

Short-Term = 0-10 years; Mid-Term = 10-20 years; Long-Term = 20+ years

Please provide any general comments or comments on the alternatives evaluation process

--OVER--

COMMENT SHEET
CAC MEETING #2 - JULY 14TH, 2016

US 20 & SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Brad Lynch Email: Brad.Lynch@ITD.Idaho.Gov

Organization: I.T.D

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Intersection Alternatives (Tier 2) Evaluation

> Please rank the alternatives from 1 through 7 in order of preference (1 being your most preferred alternative)
> Circle the best timeframe for implementation of alternatives or chose "never"

Alternative	Rank	Best Timeframe (circle one)	Please explain your rankings and provide any other comments on the alternatives
1: No Build	1	[✓ Short-Term] Mid-Term Long-Term Never	it is working now But I Fill need changed
2C: Remove Skew (Centered)	2	Short-Term Mid-Term [✓ Long-Term] Never	I think this is the Biggest problems.
3B: Add Northbound and Southbound Left- and Right-Turn Lanes on SH-75	3	Short-Term [✓ Mid-Term] Long-Term Never	
5: Traffic Signal with Additional Turn Lanes	7	Short-Term Mid-Term Long-Term [✓ Never]	do not Like at all
6: Single-Lane Roundabout with Approach Curvature	6	Short-Term Mid-Term Long-Term [✓ Never]	doing winter clean up and the work on the curbed gutter every year NOT Good
7: Restricted Crossing U-Turn (RCUT) Intersection	5	Short-Term Mid-Term Long-Term Never	do not Like
9A: Grade-Separated Diamond Interchange	4	Short-Term Mid-Term Long-Term Never	I Have no like For this But do see the Binafits.

Short-Term = 0-10 years; Mid-Term = 10-20 years; Long-Term = 20+ years

Please provide any general comments or comments on the alternatives evaluation process

I am looking at this as a maintenance worker.

--OVER--

COMMENT SHEET

CAC MEETING #2 - JULY 14TH, 2016

US 20 SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Jacob Greenberg Email: jgreenberg@co.blaine.id.us

Organization: Blaine County

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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Intersection Alternatives (Tier 2) Evaluation

> Please rank the alternatives from 1 through 7 in order of preference (1 being your most preferred alternative)
> Circle the best timeframe for implementation of alternatives or chose "never"

Alternative	Rank	Best Timeframe (circle one)	Please explain your rankings and provide any other comments on the alternatives
1: No Build	6	[✓ Short-Term] Mid-Term Long-Term Never	6 need to do more
2C: Remove Skew (Centered)	1	[✓ Short-Term] Mid-Term Long-Term Never	1 this seems like the biggest cause of accidents
3B: Add Northbound and Southbound Left- and Right-Turn Lanes on SH-75	2	Short-Term Mid-Term Long-Term Never	2 in conjunction w/ skew removal
5: Traffic Signal with Additional Turn Lanes	3	Short-Term Mid-Term Long-Term Never	4 slows traffic
6: Single-Lane Roundabout with Approach Curvature	5	Short-Term Mid-Term Long-Term Never	5 Snow plowing issues.
7: Restricted Crossing U-Turn (RCUT) Intersection	4	Short-Term Mid-Term Long-Term Never	4 Concerned about restricted view.
9A: Grade-Separated Diamond Interchange	7	Short-Term Mid-Term Long-Term [✓ Never]	7 View & cost prohibitive – why not Hwy 75 elevated

Short-Term = 0-10 years; Mid-Term = 10-20 years; Long-Term = 20+ years

Please provide any general comments or comments on the alternatives evaluation process

--OVER--

COMMENT SHEET

CAC MEETING #2 - JULY 14TH, 2016

US 20 SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Jack Sibbach **Email:** jsibbach@sunvalley.com

Organization: Sun Valley Resort

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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, Suite 301, Boise, ID 83702 by no later than July 21st.

Intersection Alternatives (Tier 2) Evaluation

> Please rank the alternatives from 1 through 7 in order of preference (1 being your most preferred alternative)
> Circle the best timeframe for implementation of alternatives or chose "never"

Alternative	Rank	Best Timeframe (circle one)	Please explain your rankings and provide any other comments on the alternatives
1: No Build	4	[✓ Short-Term] Mid-Term Long-Term Never	
2C: Remove Skew (Centered)	6	Short-Term [✓ Mid-Term] Long-Term Never	
3B: Add Northbound and Southbound Left- and Right-Turn Lanes on SH-75	5	Short-Term [✓ Mid-Term] Long-Term Never	
5: Traffic Signal with Additional Turn Lanes	3	Short-Term Mid-Term [✓ Long-Term] Never	
6: Single-Lane Roundabout with Approach Curvature	1	Short-Term Mid-Term [✓ Long-Term] Never	Safety
7: Restricted Crossing U-Turn (RCUT) Intersection	7	Short-Term Mid-Term Long-Term [✓ Never]	
9A: Grade-Separated Diamond Interchange	2	Short-Term Mid-Term [✓ Long-Term] Never	

Short-Term = 0-10 years; Mid-Term = 10-20 years; Long-Term = 20+ years

Please provide any general comments or comments on the alternatives evaluation process

--OVER--

COMMENT SHEET

CAC MEETING #2 - JULY 14TH, 2016

US 20 & SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Lawrence Schoen Email: lschoen@co.blaine.id.us

Organization: Blaine County

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****
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, Suite 301, Boise, ID 83702 by no later than July 21st.

Intersection Alternatives (Tier 2) Evaluation

> Please rank the alternatives from 1 through 7 in order of preference (1 being your most preferred alternative)
> Circle the best timeframe for implementation of alternatives or chose "never"

Alternative	Rank	Best Timeframe (circle one)	Please explain your rankings and provide any other comments on the alternatives
1: No Build	3	Short-Term Mid-Term Long-Term Never	
2C: Remove Skew (Centered)	2	[✓ Short-Term] Mid-Term Long-Term Never	Skew is central to visibility issues, all accidents, cost-efficient option will affect Hwy 20 approach.
3B: Add Northbound and Southbound Left- and Right-Turn Lanes on SH-75	5	Short-Term Mid-Term Long-Term [✓ Never]	unsafe
5: Traffic Signal with Additional Turn Lanes	6	Short-Term Mid-Term Long-Term [✓ Never]	inconvenient, inefficient, unsafe
6: Single-Lane Roundabout with Approach Curvature	1	[✓ Short-Term] [✓ Mid-Term] Long-Term Never	will achieve biggest behavior change in best way.
7: Restricted Crossing U-Turn (RCUT) Intersection	4	Short-Term Mid-Term Long-Term [✓ Never]	inconvenient, inefficient
9A: Grade-Separated Diamond Interchange	7	Short-Term Mid-Term Long-Term [✓ Never]	Costly, big localized environmental impact, unsightly in important view corridor

Short-Term = 0-10 years; Mid-Term = 10-20 years; Long-Term = 20+ years

Please provide any general comments or comments on the alternatives evaluation process

Re: remove skew option - can be implemented with other short-term actions like signage improvements, etc. I support any measures that affect Hwy 20 traffic behavior, alertness, etc. except do not think general lighting should be increased (signage lighting yes, ambient lighting no)

--OVER--

COMMENT SHEET

CAC MEETING #2 - JULY 14TH, 2016

US 20 & SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: JASON MILLER Email: JASON@MOUNTAINRIDES.ORG

Organization: MOUNTAIN RIDES

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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Intersection Alternatives (Tier 2) Evaluation

> Please rank the alternatives from 1 through 7 in order of preference (1 being your most preferred alternative)
> Circle the best timeframe for implementation of alternatives or chose "never"

Alternative	Rank	Best Timeframe (circle one)	Please explain your rankings and provide any other comments on the alternatives
1: No Build	3	[✓ Short-Term] Mid-Term Long-Term Never	WHAT WE HAVE MIGHT BE OK.
2C: Remove Skew (Centered)	2	Short-Term [✓ Mid-Term] Long-Term Never	BASED ON FACT THAT MOST ACCIDENTS HAD SKEW AS FACTOR
3B: Add Northbound and Southbound Left- and Right-Turn Lanes on SH-75	4	Short-Term [✓ Mid-Term] Long-Term Never	DOESN'T YIELD MUCH IMPROVEMENTS.
5: Traffic Signal with Additional Turn Lanes	5	Short-Term Mid-Term [✓ Long-Term] Never	I DON'T LIKE THE POTENTIAL REAR END CRASHES
6: Single-Lane Roundabout with Approach Curvature	1	Short-Term [✓ Mid-Term] Long-Term Never	I THINK THIS BALANCES SAFETY, MOBILITY + COST BEST
7: Restricted Crossing U-Turn (RCUT) Intersection	7	Short-Term Mid-Term Long-Term [✓ Never]	DON'T LIKE FOR SAFETY OR MOBILITY
9A: Grade-Separated Diamond Interchange	6	Short-Term Mid-Term [✓ Long-Term] Never	DOESN'T SEEM APPROPRIATE.

Short-Term = 0-10 years; Mid-Term = 10-20 years; Long-Term = 20+ years

Please provide any general comments or comments on the alternatives evaluation process

KNOWING HOW THIS INTERSECTION COMPARES TO SIMILAR INTERSECTIONS WOULD BE HELPFUL.

CONSIDER HOW RECREATIONAL ROAD CYCLING IS ACCOMMODATED.

--OVER--

COMMENT SHEET
CAC MEETING #2 - JULY 14TH, 2016

US 20 SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Gene Ramsey Email: gramsey@co.blaine.id.us

Organization: Sheriff

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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Intersection Alternatives (Tier 2) Evaluation

> Please rank the alternatives from 1 through 7 in order of preference (1 being your most preferred alternative)
> Circle the best timeframe for implementation of alternatives or chose "never"

Alternative	Rank	Best Timeframe (circle one)	Please explain your rankings and provide any other comments on the alternatives
1: No Build	4	Short-Term Mid-Term Long-Term Never	Hard To say Never do anything
2C: Remove Skew (Centered)	2	[✓ Short-Term] Mid-Term Long-Term Never	Best most likely wasted money Do iT once. any option
3B: Add Northbound and Southbound Left- and Right-Turn Lanes on SH-75	5	Short-Term Mid-Term Long-Term [✓ Never]	
5: Traffic Signal with Additional Turn Lanes	3	Short-Term Mid-Term [✓ Long-Term] Never	
6: Single-Lane Roundabout with Approach Curvature	1	Short-Term [✓ Mid-Term] Long-Term Never	But only spend money on others like the skew that would be wasted money
7: Restricted Crossing U-Turn (RCUT) Intersection	6	Short-Term Mid-Term Long-Term [✓ Never]	
9A: Grade-Separated Diamond Interchange	7	Short-Term Mid-Term Long-Term [✓ Never]	

Short-Term = 0-10 years; Mid-Term = 10-20 years; Long-Term = 20+ years

Please provide any general comments or comments on the alternatives evaluation process

--OVER--

COMMENT SHEET
CAC MEETING #2 - JULY 14TH, 2016

US 20 & SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Jade Sparrow **Email:** jsparrow@idfbins.com

Organization: Farm Bureau Insurance

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****
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Intersection Alternatives (Tier 2) Evaluation

> Please rank the alternatives from 1 through 7 in order of preference (1 being your most preferred alternative)
> Circle the best timeframe for implementation of alternatives or chose "never"

Alternative	Rank	Best Timeframe (circle one)	Please explain your rankings and provide any other comments on the alternatives
1: No Build	3	[✓ Short-Term] Mid-Term Long-Term Never	has made some improvement I think further improvement is needed
2C: Remove Skew (Centered)	2	[✓ Short-Term] Mid-Term Long-Term Never	For crash improvement & visability this makes the most sense
3B: Add Northbound and Southbound Left- and Right-Turn Lanes on SH-75	4	Short-Term [✓ Mid-Term] Long-Term Never	Some concern over visability
5: Traffic Signal with Additional Turn Lanes	7	Short-Term Mid-Term Long-Term [✓ Never]	Truck traffic - Agriculture & construction is high. Oversized & long loads - stop ability weather conditions
6: Single-Lane Roundabout with Approach Curvature	7	Short-Term Mid-Term Long-Term [✓ Never]	Truck traffic - Agriculture & construction is high oversized & long loads - weather conditions slow ability
7: Restricted Crossing U-Turn (RCUT) Intersection	7	Short-Term Mid-Term Long-Term [✓ Never]	Truck traffic long & oversized... Coming off US 20 how will they U-turn?
9A: Grade-Separated Diamond Interchange	1	Short-Term Mid-Term [✓ Long-Term] Never	Best for safety & traffic flow & visability - question below

Short-Term = 0-10 years; Mid-Term = 10-20 years; Long-Term = 20+ years

Please provide any general comments or comments on the alternatives evaluation process

On 9A - Diamond Interchange - rather than filling the wetlands could post/bridge like over pass leave more wetlands what would cost difference be?

--OVER--

COMMENT SHEET

CAC MEETING #2 - JULY 14TH, 2016

US 20 SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: LEN HARLIG Email: len@lenharlig.com (new email)

Organization: B.C. Comp. PLAN

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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Intersection Alternatives (Tier 2) Evaluation

> Please rank the alternatives from 1 through 7 in order of preference (1 being your most preferred alternative)
> Circle the best timeframe for implementation of alternatives or chose "never"

Alternative	Rank	Best Timeframe (circle one)	Please explain your rankings and provide any other comments on the alternatives
1: No Build	3	[✓ Short-Term] Mid-Term Long-Term Never	utilize recommended Changes such as lower speed on HWY 20; larger signs and lights, rumble strips. (over)
2C: Remove Skew (Centered)	4	Short-Term [✓ Mid-Term] Long-Term Never	only if first alternative doesn't lower accident rate
3B: Add Northbound and Southbound Left- and Right-Turn Lanes on SH-75	5	Short-Term Mid-Term Long-Term [✓ Never]	Hard to imagine this will improve accident rate; it just adds lanes to have accidents in
5: Traffic Signal with Additional Turn Lanes	2	Short-Term [✓ Mid-Term] Long-Term Never	This has possibilites, but it would work better with an add'l southbound lane for trucks after intersection
6: Single-Lane Roundabout with Approach Curvature	1	Short-Term Mid-Term [✓ Long-Term] Never	my preference; if funds available sooner, I'd move to mid or short Term
7: Restricted Crossing U-Turn (RCUT) Intersection	6	Short-Term Mid-Term Long-Term [✓ Never]	Seems costly and overly Complicated
9A: Grade-Separated Diamond Interchange	7	Short-Term Mid-Term Long-Term [✓ Never]	never is a long time, but future traffic forecasts don't seem to justify visual intrusion + cost

Short-Term = 0-10 years; Mid-Term = 10-20 years; Long-Term = 20+ years

Please provide any general comments or comments on the alternatives evaluation process

We seem to be making progress as a group and approaching Consensus. all of my time preferences are based on ITD's not having present funds for them. I'd move #5; #6; and #2 to short-term if funding becomes available sooner.

--OVER--

COMMENT SHEET

CAC MEETING #2 - JULY 14TH, 2016

US 20 & SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Brian Christiansen Email: bchristiansen@ketchumidaho.org

Organization: City of Ketchum

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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Intersection Alternatives (Tier 2) Evaluation

> Please rank the alternatives from 1 through 7 in order of preference (1 being your most preferred alternative)
> Circle the best timeframe for implementation of alternatives or chose "never"

Alternative	Rank	Best Timeframe (circle one)	Please explain your rankings and provide any other comments on the alternatives
1: No Build	4	[✓ Short-Term] Mid-Term Long-Term Never	
2C: Remove Skew (Centered)	3	Short-Term [✓ Mid-Term] Long-Term Never	
3B: Add Northbound and Southbound Left- and Right-Turn Lanes on SH-75	5	Short-Term [✓ Mid-Term] Long-Term Never	
5: Traffic Signal with Additional Turn Lanes	2	[✓ Short-Term] Mid-Term Long-Term Never	
6: Single-Lane Roundabout with Approach Curvature	1	[✓ Short-Term] Mid-Term Long-Term Never	
7: Restricted Crossing U-Turn (RCUT) Intersection	7	Short-Term Mid-Term Long-Term [✓ Never]	
9A: Grade-Separated Diamond Interchange	6	Short-Term Mid-Term Long-Term [✓ Never]	

Short-Term = 0-10 years; Mid-Term = 10-20 years; Long-Term = 20+ years

Please provide any general comments or comments on the alternatives evaluation process

--OVER--

COMMENT SHEET
CAC MEETING #2 - JULY 14TH, 2016

US 20 & SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Jim Keating **Email:** jkeating@bcrd.org

Organization: Blaine County Recreation District

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****
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Intersection Alternatives (Tier 2) Evaluation

> Please rank the alternatives from 1 through 7 in order of preference (1 being your most preferred alternative)
> Circle the best timeframe for implementation of alternatives or chose "never"

Alternative	Rank	Best Timeframe (circle one)	Please explain your rankings and provide any other comments on the alternatives
1: No Build	5	[✓ Short-Term] Mid-Term Long-Term Never	
2C: Remove Skew (Centered)	2	[✓ Short-Term] Mid-Term Long-Term Never	
3B: Add Northbound and Southbound Left- and Right-Turn Lanes on SH-75	3	[✓ Short-Term] Mid-Term Long-Term Never	
5: Traffic Signal with Additional Turn Lanes	4	[✓ Short-Term] Mid-Term Long-Term Never	
6: Single-Lane Roundabout with Approach Curvature	1	[✓ Short-Term] Mid-Term Long-Term Never	
7: Restricted Crossing U-Turn (RCUT) Intersection	6	Short-Term Mid-Term [✓ Long-Term] Never	
9A: Grade-Separated Diamond Interchange	7	Short-Term Mid-Term [✓ Long-Term] Never	

Short-Term = 0-10 years; Mid-Term = 10-20 years; Long-Term = 20+ years

Please provide any general comments or comments on the alternatives evaluation process

Bike/Bicycle use of road is a key issue on 75 in other areas.
This intersection is now part of 2 connected loops that
approach from east and west and turn north

--OVER--

R

Online Survey Public Comment Summary Memorandum

Public Comment Summary

Date: September 21, 2016

ITD KN#: 13075

To: Bruce Christensen (Idaho Transportation Department)

From: Yuri Mereszczak, PE; Robyn Austin (Kittelson & Associates, Inc.)

Project: US-20 & SH-75 (Timmerman Junction) Intersection Study

Subject: Online Survey Public Comment Summary

Introduction

This memorandum summarizes public feedback received on the US-20 &-SH 75 (Timmerman Junction) Intersection Study through an online survey at: http://www.surveygizmo.com/s3/2953321/US-20-and-Idaho-75-SH-75-Intersection-Timmerman-Junction-Study (link no longer active). The comment period went from August 8th through August 21st, 2016. The purpose of this survey was to collect public feedback on the following alternatives for the intersection:

- No-Build
- Remove the Intersection Skew
- Add Northbound and Southbound Left- and Right-Turn Lanes on SH-75
- Traffic Signal with Turn Lanes
- Single-Lane Roundabout with Approach Curvature
- Grade-Separated Diamond Interchange

Notifications

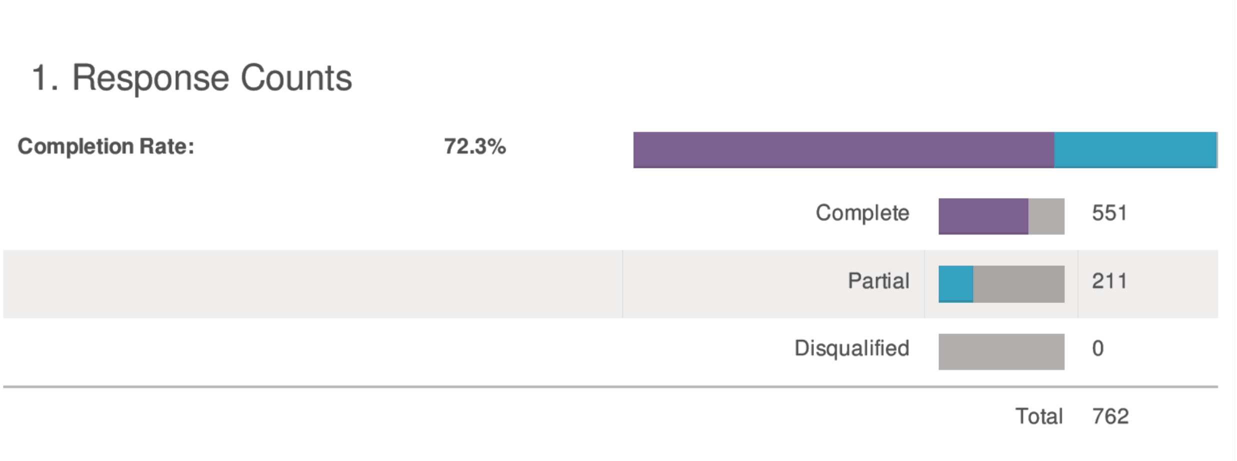
Citizens in the Wood River Valley and Magic Valley areas were notified about the survey in the following ways:

- **E-mail Notication:** Emails were sent to the Community Advisory Committee (CAC) on August 8th and August 19th asking members of the committee to advertise the survey to their organizations and contacts. Additionally, several emails were sent to community members, local officials, and area businesses with the request to share among their work associates, family and friends.
- **Website:** The link to the online survey was advertised on the study website at http://itd.idaho.gov/projects/d4/US20_ID75_IntersectionStudy/. The link was posted on the ITD Facebook page and notifications sent on the ITD Twitter feed.
- **Media:** A news release was issued by ITD on Aug. 8 announcing the availability of the survey and with a link and additional project information. The news release garnered articles in two local newspapers (Twin Falls Times-News & Idaho Mountain Express - Ketchum) and two TV news stories (KMVT-Twin Falls).

- **Local Public Advisory Group:** Community Advisory Committee (CAC) members were encouraged to forward the survey link to their employees, membership lists and to their other contacts.

Public Comment Summary

As shown in the graphics below, the survey received 762 total responses. 72% of those completed the entire survey, which is a relatively high completion rate for an online survey.



1. Response Counts

Completion Rate: 72.3%

Complete	551
Partial	211
Disqualified	0
Total	762

The following sections summarize the results from each question asked in the survey. The survey was generally organized in the following manner:

- **Initial Questions:** Questions asking respondents to provide information on where they're from, how they use the intersection, and their assessment of the alternatives evaluation criteria.
- **Intersection Alternatives:** For each of the six intersection alternatives, respondents were asked whether or not they support the alternative and then directed to explain why based on their initial response.
- **Ranking of Intersection Alternatives:** To close out the survey, respondents were asked to rank each of the six intersection alternatives in relation to each other.

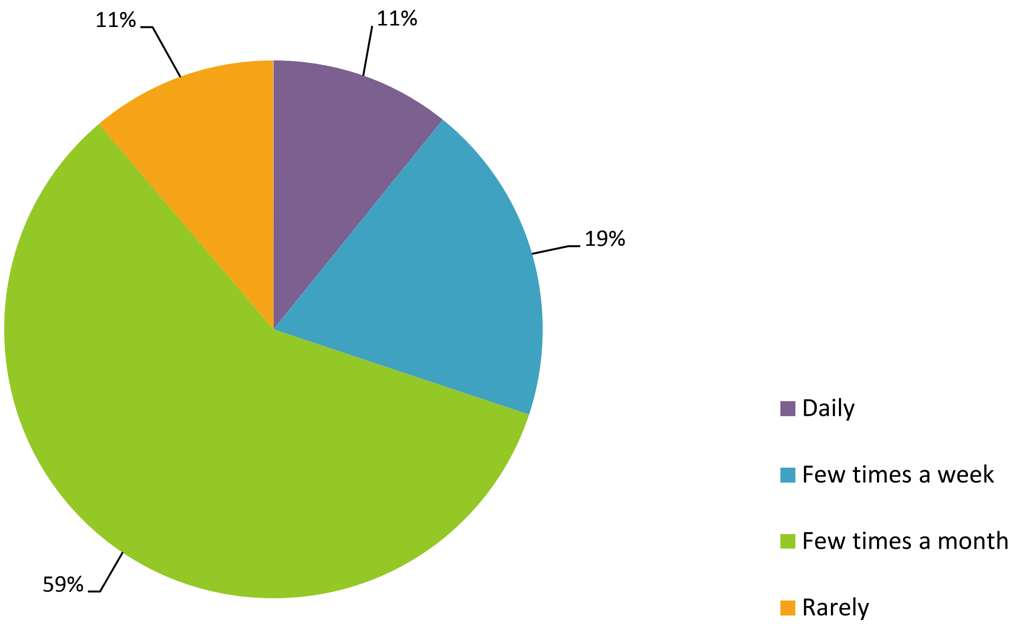
In each section below, the survey questions respondents were asked are highlighted in **bold**, followed by illustrations/summaries of the results of each question.

Initial Questions

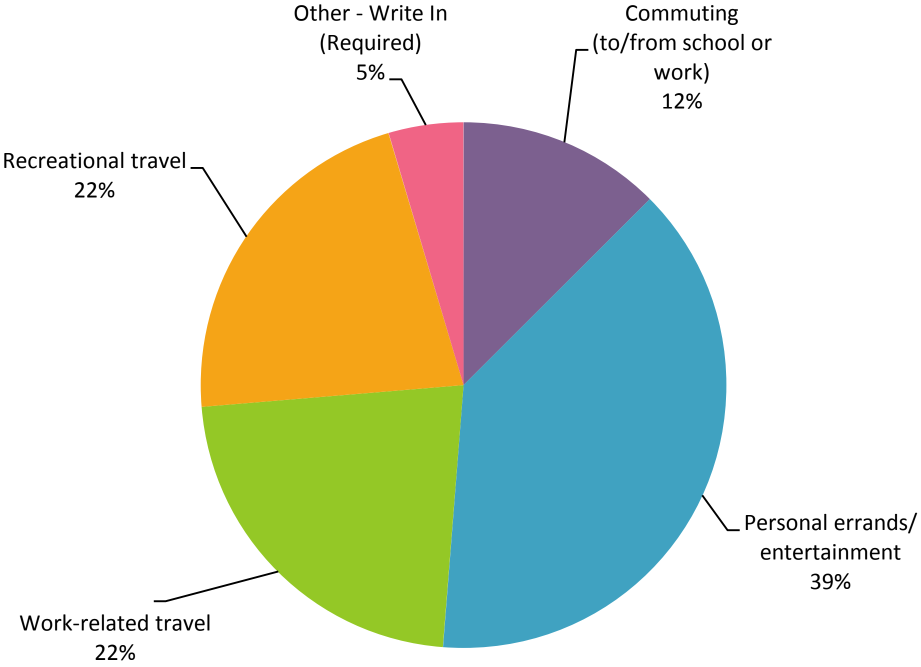
What zip code do you live in?

Respondents were asked to identify the zip code they live in. The highest number of responses came from zip code 83333 (Hailey) followed by 83313 (Bellevue) and 83340 (Ketchum). A significant number of responses also came from 83301 (Twin Falls) and 83352 (Shoshone).

How often do you use the intersection?



What is your primary reason for using the intersection?



Please rank the five evaluation criteria (listed in alphabetical order) from 1 through 5 in order of preference (1 being your most important and 5 being least important).

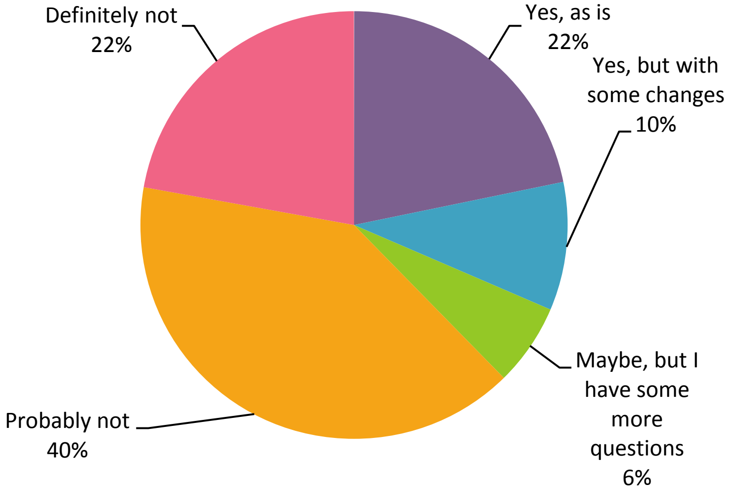
Overall Rank	Item	Rank Distribution
1	**Safety Performance:** Effect on frequency and severity of crashes	
2	**Mobility:** Effect on the movement of all users through the intersection	
3	**Implementation & Maintenance**: Amount of effort needed to construct and maintain the intersection	
4	**Cost:** Estimated construction and maintenance costs	
5	**Physical and Environmental Impacts**: Impact on the environment and properties near the intersection	

Lowest Rank Highest Rank

As the graphic above shows, safety performance was identified as the most important evaluation criteria followed by mobility. The bottom three (implementation & maintenance, cost, and physical and environmental impacts) all ranked relatively low by comparison.

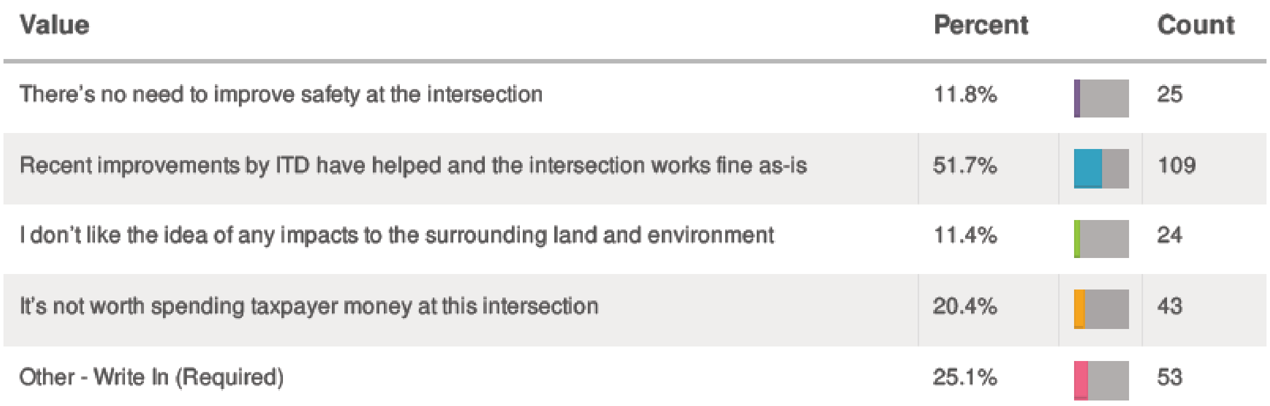
Alternative 1: No-Build

Would you support ITD implementing the No-Build alternative?



Support Implementing

You indicated that you would potentially support implementing this alternative. Would you please indicate why?



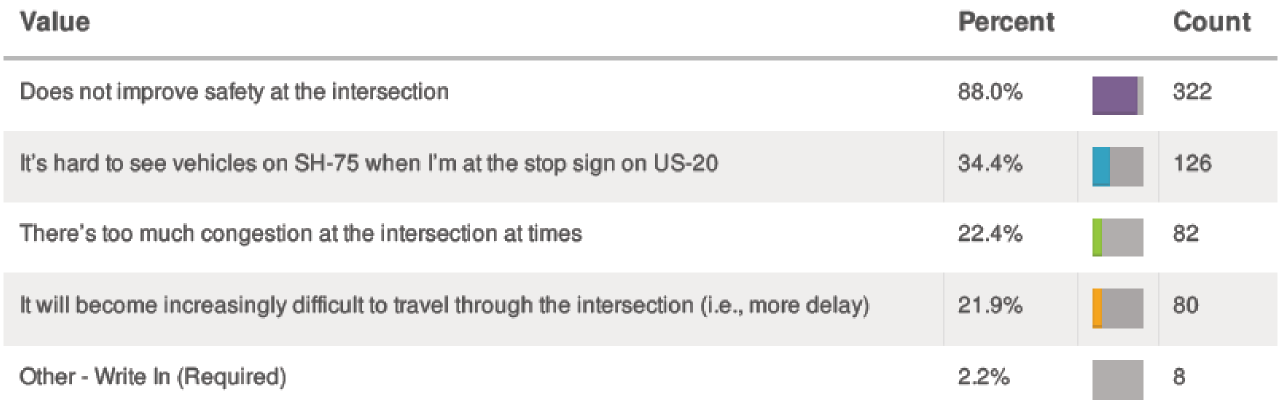
Value	Percent		Count
There's no need to improve safety at the intersection	11.8%		25
Recent improvements by ITD have helped and the intersection works fine as-is	51.7%		109
I don't like the idea of any impacts to the surrounding land and environment	11.4%		24
It's not worth spending taxpayer money at this intersection	20.4%		43
Other - Write In (Required)	25.1%		53

Key Themes from Write-In Comments

- Need additional signs and warnings leading up to the intersection
- Clear weeds and other obstructions to improve sight distance

Do Not Support Implementing

You indicated that you would likely not support implementing this alternative. Would you please indicate why?



Value	Percent	Count
Does not improve safety at the intersection	88.0%	322
It's hard to see vehicles on SH-75 when I'm at the stop sign on US-20	34.4%	126
There's too much congestion at the intersection at times	22.4%	82
It will become increasingly difficult to travel through the intersection (i.e., more delay)	21.9%	80
Other - Write In (Required)	2.2%	8

Key Themes from Write-In Comments

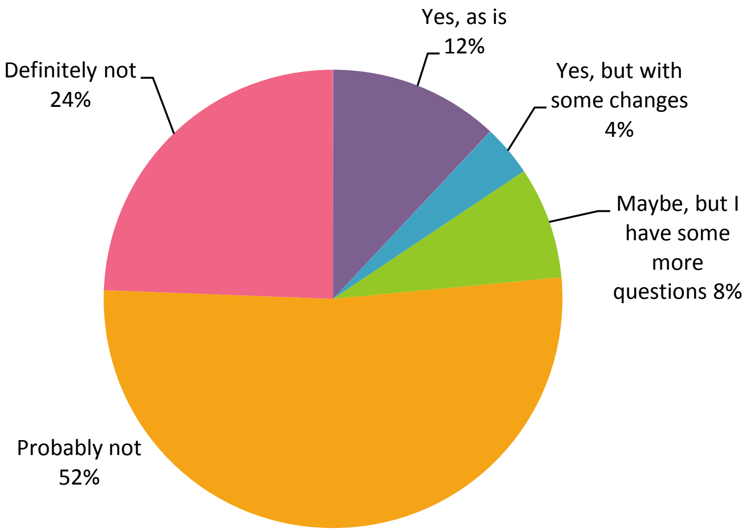
- Doing nothing is not an option when safety is a consideration
- Some drivers misunderstand the current intersection

Summary of Feedback for the No-Build Alternative

The No-Build alternative had a relatively high percentage of disapproval, with 62% of respondents probably or definitely not supportive of keeping the intersection as-is. Safety at the intersection is a major concern. While some people felt that the recent safety improvements to the intersection did help, the majority of respondents felt more still needs to be done.

Alternative 2C: Remove the Intersection Skew

Would you support ITD implementing the Remove the Intersection Skew alternative?



Support Implementing

You indicated that you would potentially support implementing this alternative. Would you please indicate why?

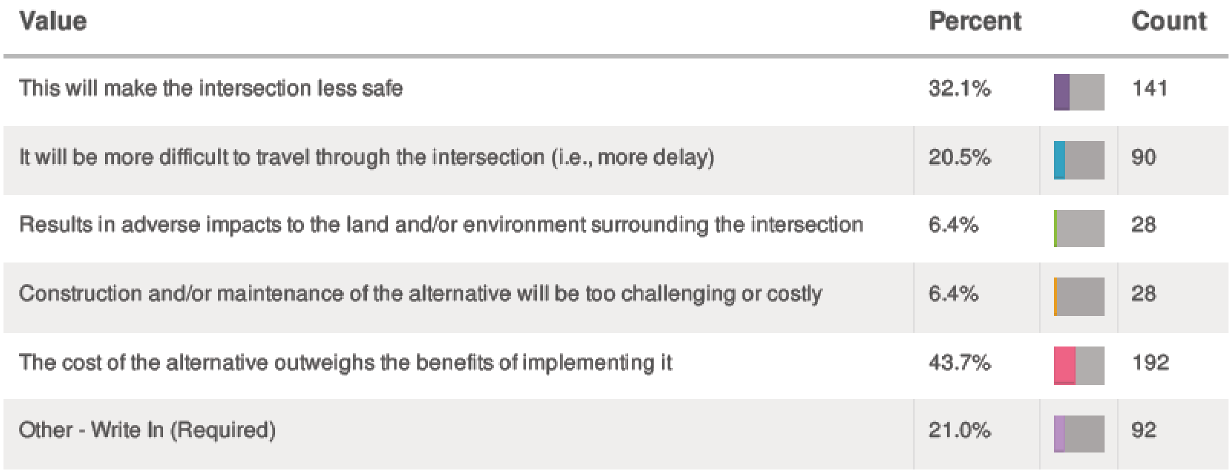
Value	Percent	Count
This will improve safety at the intersection	63.8%	81
It will be easier to travel through the intersection (i.e., less delay)	25.2%	32
I'm not concerned with the impacts to the land and/or environment surrounding the intersection and/or the impacts are okay considering the benefits of the alternative	19.7%	25
The overall benefits of the alternative are worth the cost of implementing it	26.0%	33
Other - Write In (Required)	9.4%	12

Key Themes from Write-In Comments

- Makes it easier to see traffic on SH-75
- Seems like a lot of work for only a slight improvement

Do Not Support Implementing

You indicated that you would likely not support implementing this alternative. Would you please indicate why?



Value	Percent	Count
This will make the intersection less safe	32.1%	141
It will be more difficult to travel through the intersection (i.e., more delay)	20.5%	90
Results in adverse impacts to the land and/or environment surrounding the intersection	6.4%	28
Construction and/or maintenance of the alternative will be too challenging or costly	6.4%	28
The cost of the alternative outweighs the benefits of implementing it	43.7%	192
Other - Write In (Required)	21.0%	92

Key Themes from Write-In Comments

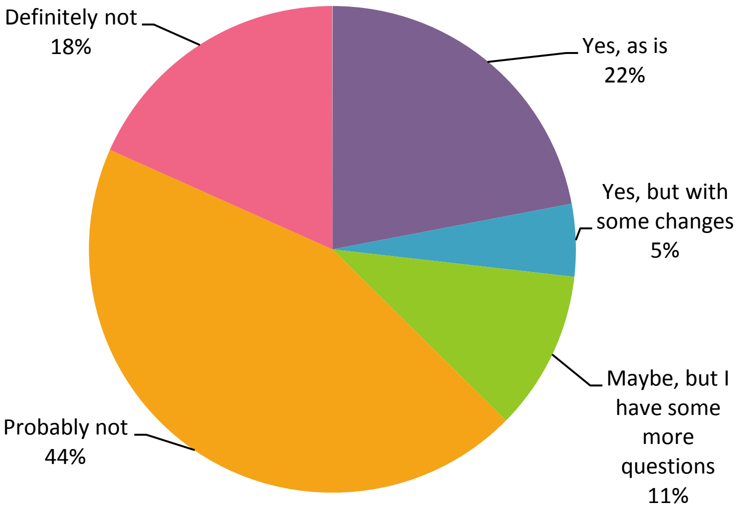
- Not a significant enough improvement for the cost
- Does not really address the safety issues

Summary of Feedback for the Remove the Intersection Skew Alternative

The remove skew alternative had the highest percentage of disapproval, with 76% of respondents indicating they would probably or definitely not support implementation of this alternative. Feedback from the public was clear that this alternative did not increase safety at the intersection enough. The cost of the alternative compared to the benefits was not favorable.

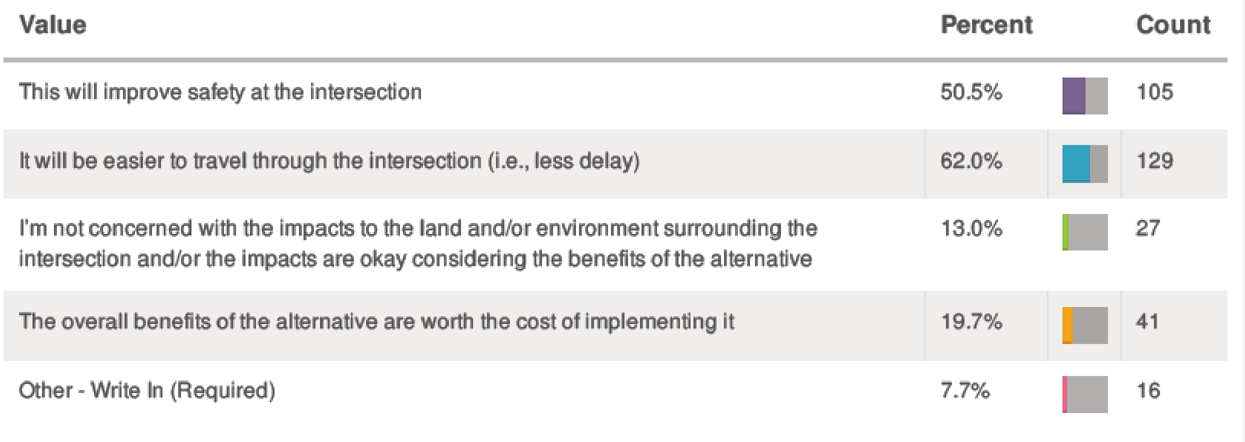
Alternative 3B: Add Northbound and Southbound Left- and Right-Turn Lanes on SH-75

Would you support ITD implementing the Add Northbound and Southbound Left- and Right-Turn Lanes alternative?



Support Implementing

You indicated that you would potentially support implementing this alternative. Would you please indicate why?



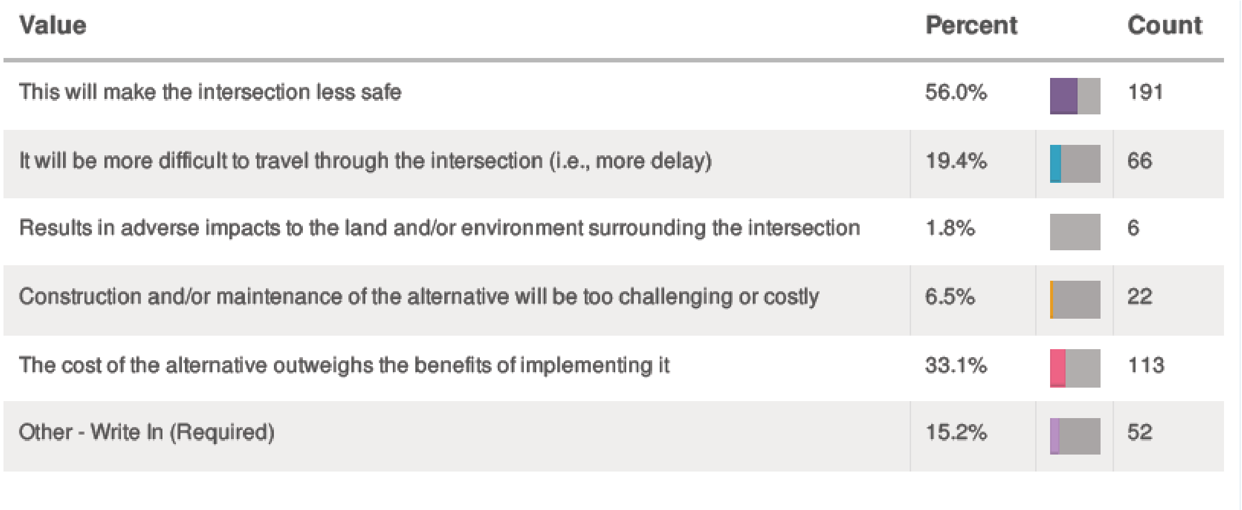
Value	Percent	Count
This will improve safety at the intersection	50.5%	105
It will be easier to travel through the intersection (i.e., less delay)	62.0%	129
I'm not concerned with the impacts to the land and/or environment surrounding the intersection and/or the impacts are okay considering the benefits of the alternative	13.0%	27
The overall benefits of the alternative are worth the cost of implementing it	19.7%	41
Other - Write In (Required)	7.7%	16

Key Themes from Write-In Comments

- Does not address problems with east/west traffic
- Concerned this will make the intersection less safe for US-20 traffic

Do Not Support Implementing

You indicated that you would likely not support implementing this alternative. Would you please indicate why?



Value	Percent	Count
This will make the intersection less safe	56.0%	191
It will be more difficult to travel through the intersection (i.e., more delay)	19.4%	66
Results in adverse impacts to the land and/or environment surrounding the intersection	1.8%	6
Construction and/or maintenance of the alternative will be too challenging or costly	6.5%	22
The cost of the alternative outweighs the benefits of implementing it	33.1%	113
Other - Write In (Required)	15.2%	52

Key Themes from Write-In Comments

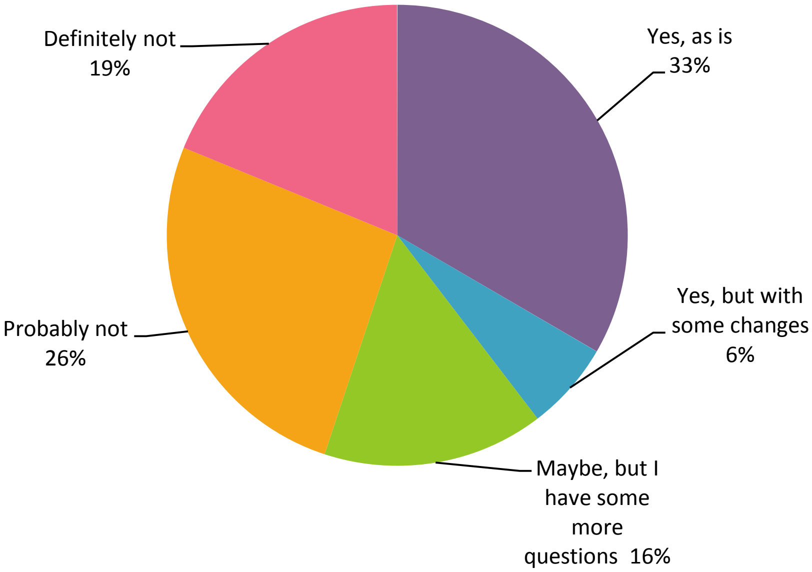
- Does not solve the key problems at the intersection and doesn't improve safety

Summary of Feedback for Adding North and Southbound Left- and Right-Turn Lanes on SH-75

The majority of respondents (52%) indicated they would probably or definitely not support implementation of this alternative. While some felt that the addition of turn lanes would increase mobility on SH 75, many felt this alternative did not address concerns about safety.

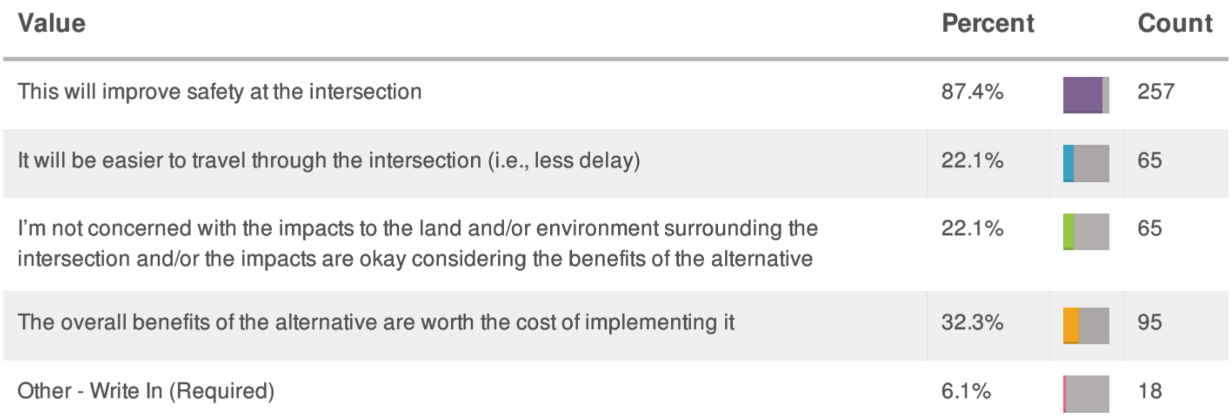
Alternative 5: Traffic Signal with Addition of Turn Lanes

Would you support ITD implementing the Traffic Signal with Addition of Turn Lanes alternative?



Support Implementing

You indicated that you would potentially support implementing this alternative. Would you please indicate why?



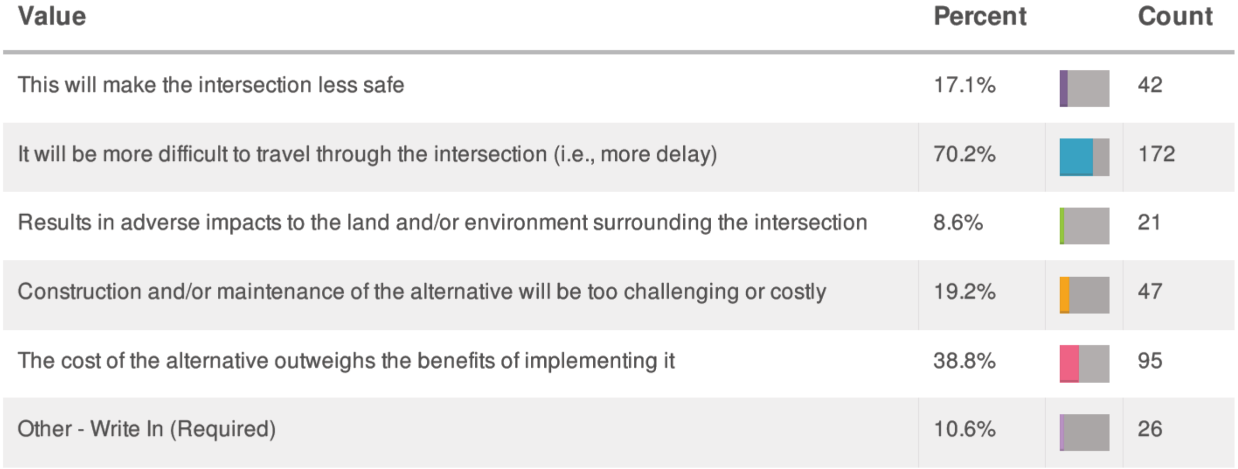
Value	Percent	Count
This will improve safety at the intersection	87.4%	257
It will be easier to travel through the intersection (i.e., less delay)	22.1%	65
I'm not concerned with the impacts to the land and/or environment surrounding the intersection and/or the impacts are okay considering the benefits of the alternative	22.1%	65
The overall benefits of the alternative are worth the cost of implementing it	32.3%	95
Other - Write In (Required)	6.1%	18

Key Themes from Write-In Comments

- Long-term, recognizable solution
- Support the signal but not adding turn lanes with it

Do Not Support Implementing

You indicated that you would likely not support implementing this alternative. Would you please indicate why?



Value	Percent	Count
This will make the intersection less safe	17.1%	42
It will be more difficult to travel through the intersection (i.e., more delay)	70.2%	172
Results in adverse impacts to the land and/or environment surrounding the intersection	8.6%	21
Construction and/or maintenance of the alternative will be too challenging or costly	19.2%	47
The cost of the alternative outweighs the benefits of implementing it	38.8%	95
Other - Write In (Required)	10.6%	26

Key Themes from Write-In Comments

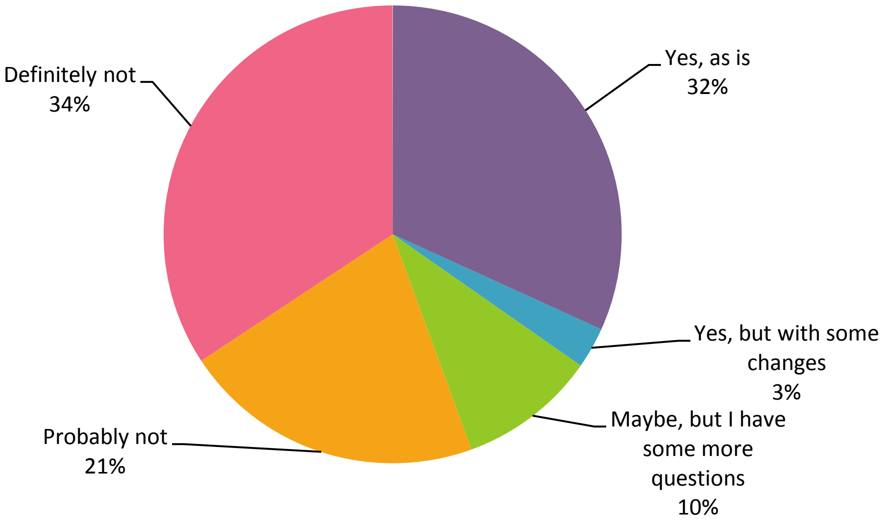
- Does not seem like enough traffic to warrant a signal
- Unnecessary stops for trucks on SH-75

Summary of Feedback for the Traffic Signal with Addition of Turn Lanes Alternative

This alternative tied with the Grade-Separate Interchange Alternative for the most support, with 39% of respondents indicating they would support the Traffic Signal Alternative as-is or with some changes. However, this alternative also had a reasonable level of disapproval, with 45% of respondents indicating they probably or definitely would not support a traffic signal. This alternative also had the highest percentage of “Maybe” responses, indicating some uncertainty as to whether this is the right alternative for the US-20/SH-75 intersection. Those who supported the alternative felt that a signalized intersection would greatly increase safety at the intersection. Those who did not support it stated that it would worsen mobility and be unsafe for trucks having to stop and start again on SH-75 in winter travel conditions.

Alternative 6: Single-Lane Roundabout with Approach Curvature

Would you support ITD implementing the Single-Lane Roundabout with Approach Curvature alternative?



Support Implementing

You indicated that you would potentially support implementing this alternative. Would you please indicate why?

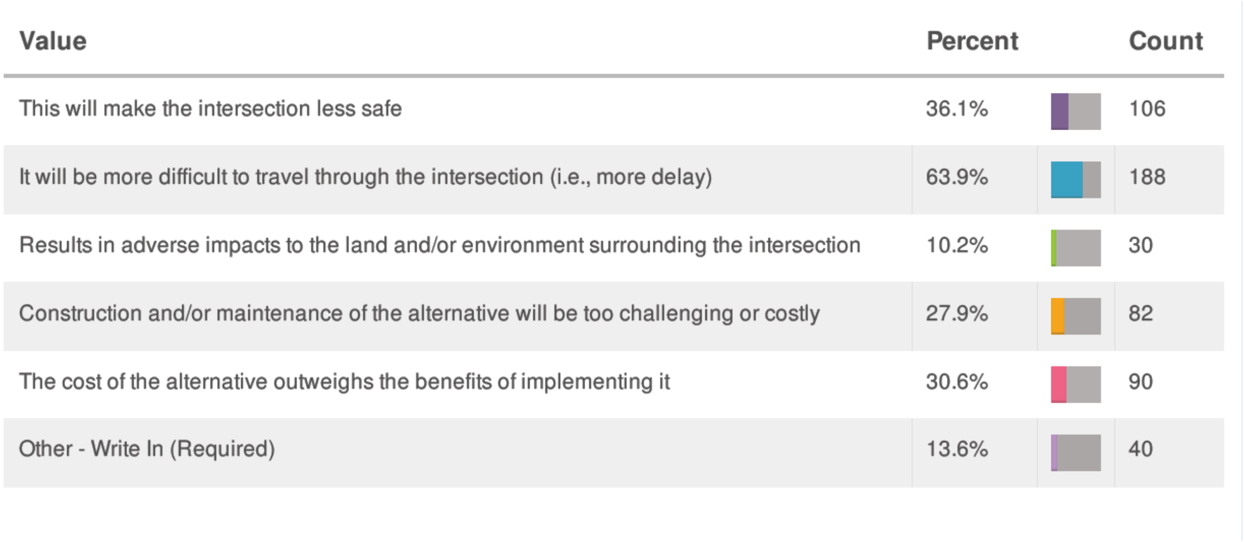
Value	Percent		Count
This will improve safety at the intersection	85.6%	🟪	202
It will be easier to travel through the intersection (i.e., less delay)	53.4%	🟦	126
I'm not concerned with the impacts to the land and/or environment surrounding the intersection and/or the impacts are okay considering the benefits of the alternative	29.2%	🟩	69
The overall benefits of the alternative are worth the cost of implementing it	46.6%	🟧	110
Other - Write In (Required)	8.1%	🟥	19

Key Themes from Write-In Comments

- Slows traffic and increases safety
- Snow removal, maintenance, and driver understanding would all need to be addressed

Do Not Support Implementing

You indicated that you would likely not support implementing this alternative. Would you please indicate why?



Value	Percent	Count
This will make the intersection less safe	36.1%	106
It will be more difficult to travel through the intersection (i.e., more delay)	63.9%	188
Results in adverse impacts to the land and/or environment surrounding the intersection	10.2%	30
Construction and/or maintenance of the alternative will be too challenging or costly	27.9%	82
The cost of the alternative outweighs the benefits of implementing it	30.6%	90
Other - Write In (Required)	13.6%	40

Key Themes from Write-In Comments

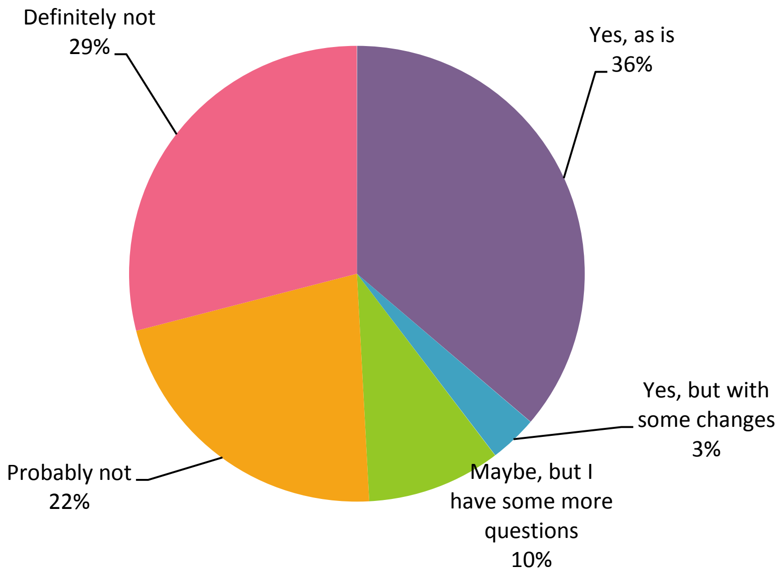
- Drivers in the area do not know how to use a roundabout
- Not a good option for trucks
- Not appropriate for state highways

Summary of Feedback for the Single-Lane Roundabout with Approach Curvature Alternative

The majority of respondents disapproved with the Roundabout Alternative, with 55% of respondents indicating they would probably or definitely not support it. However, the Roundabout Alternative also had the next highest level of support behind the Traffic Signal and Grade-Separated Interchange Alternatives (35% of respondents indicated they would support it as-is or with some changes). Those in support thought it would increase safety and improve mobility and would also serve as a long-term solution for the intersection. Those in opposition thought a roundabout would be too difficult to maneuver, especially for trucks and freight. Both groups expressed concerns over maintenance and snow removal.

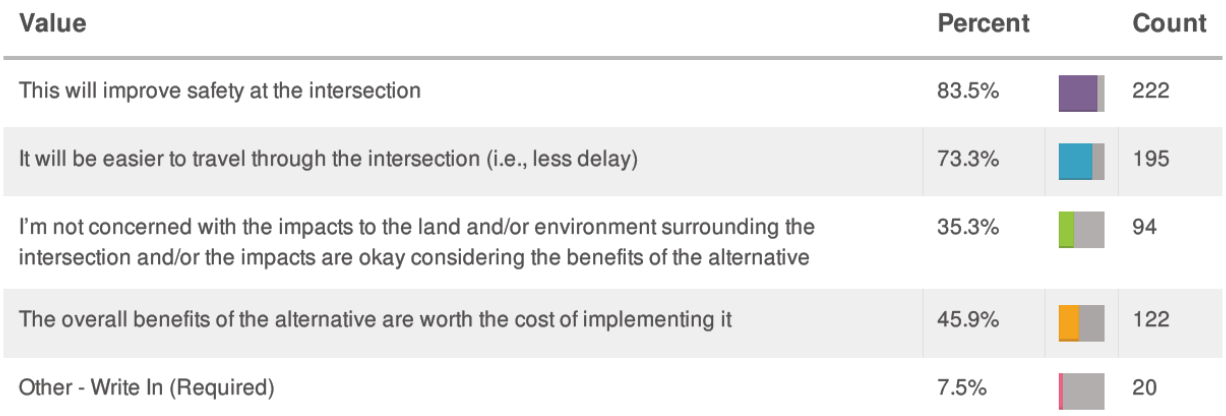
Alternative 9A: Grade-Separated Diamond Interchange

Would you support ITD implementing the Grade-Separated Diamond Interchange alternative?



Support Implementing

You indicated that you would potentially support implementing this alternative. Would you please indicate why?



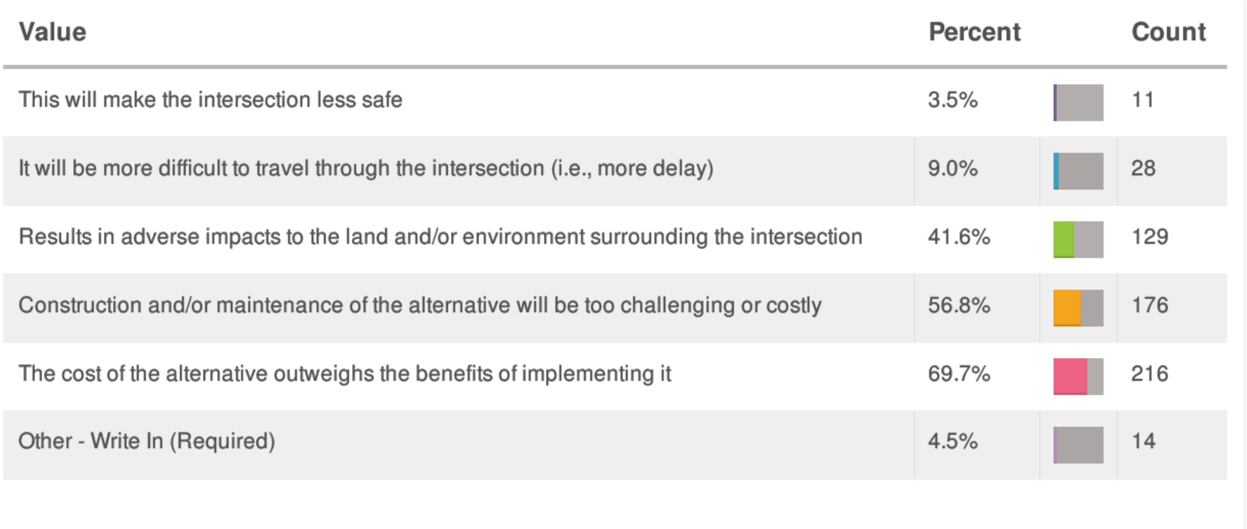
Value	Percent		Count
This will improve safety at the intersection	83.5%	🟪	222
It will be easier to travel through the intersection (i.e., less delay)	73.3%	🟦	195
I'm not concerned with the impacts to the land and/or environment surrounding the intersection and/or the impacts are okay considering the benefits of the alternative	35.3%	🟩	94
The overall benefits of the alternative are worth the cost of implementing it	45.9%	🟧	122
Other - Write In (Required)	7.5%	🟥	20

Key Themes from Write-In Comments

- Best alternative for safety
- A long-term solution

Do Not Support Implementing

You indicated that you would likely not support implementing this alternative. Would you please indicate why?



Value	Percent	Count
This will make the intersection less safe	3.5%	11
It will be more difficult to travel through the intersection (i.e., more delay)	9.0%	28
Results in adverse impacts to the land and/or environment surrounding the intersection	41.6%	129
Construction and/or maintenance of the alternative will be too challenging or costly	56.8%	176
The cost of the alternative outweighs the benefits of implementing it	69.7%	216
Other - Write In (Required)	4.5%	14

Key Themes from Write-In Comments

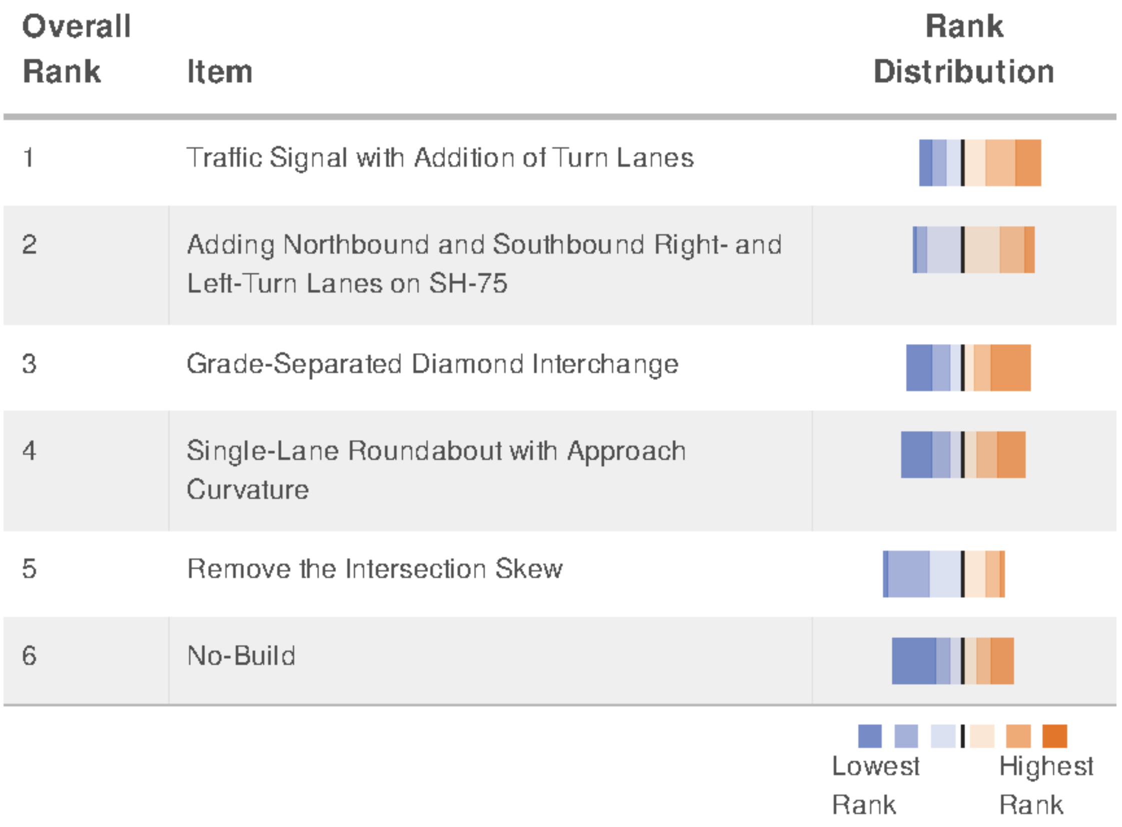
- Overkill/too costly
- Not enough traffic to warrant the cost and environmental implications

Summary of Feedback for the Grade-Separated Diamond Interchange Alternative

The majority of respondents disapproved with the Grade-Separated Interchange Alternative, with 57% of respondents indicating they would probably or definitely not support it. However, this alternative also tied with the Traffic Signal Alternative for the most support of any alternative with 39% of respondents indicating they would support it as-is or with some changes. Supporters of the alternative indicated it would greatly increase safety at the intersection while improving mobility as well. This alternative was also viewed as a good long-term solution that would not require any additional improvements. Those who did not support this alternative felt the cost was too great and that it was too impactful for the amount of vehicles currently using the intersection.

Ranking of Alternatives

Please rank the six alternatives from 1 through 6 in order of preference (1 being your most preferred alternative and 6 being your least preferred alternative).



Overall Rank	Item	Rank Distribution
1	Traffic Signal with Addition of Turn Lanes	
2	Adding Northbound and Southbound Right- and Left-Turn Lanes on SH-75	
3	Grade-Separated Diamond Interchange	
4	Single-Lane Roundabout with Approach Curvature	
5	Remove the Intersection Skew	
6	No-Build	

In summarizing the results shown in the chart above, it appears the general public desires something to be done at the US-20/SH-75 intersection, but there is not a clear indication as to what is the most favored alternative. The weighted average sum rank of each alternative is summarized in the below.

Intersection Alternative	Avg. Rank
1: No Build	**3.9**
2C: Remove Intersection Skew (Centered)	**3.9**
3B: Add Northbound and Southbound Left- and Right-Turn Lanes on SH-75	**3.2**
5: Traffic Signal with Addition of Turn Lanes	**3.0**
6: Single-Lane Roundabout with Approach Curvature	**3.5**
9A: Grade-Separated Diamond Interchange	**3.3**

As shown in the table above, the traffic signal alternative had best average ranking while the remove intersection skew and no-build alternatives had the worst average ranking. When looking at the distribution of rankings as illustrated in the chart above, the traffic signal alternative had the highest number of #1, #2, or #3 rankings, while the grade-separated interchange alternative had the most overall #1 rankings. Both the grade-separated interchange alternative and the roundabout alternative had high amounts of both #1 and #6 rankings, while the traffic signal alternative received the third most #1 rankings, but had less #6 rankings than the grade-separated interchange and roundabout alternatives. The addition of turn lanes on SH-75 and remove skew alternatives received the most "mid-range" rankings (#2 through #5).

Key Themes from Additional Survey Comments

- Safety needs to be the biggest concern
- The perception of a problem is greater than the reality of one
- Many of the problems at the intersection are related to drivers not paying attention
- Existing signage needs to be improved with more warnings leading up to the intersection
- Intersection would benefit from clearing weeds and debris

Overall Summary of Public Comments

Generally summarizing the results of the online survey, it appears the public is slightly more in favor of the Traffic Signal Alternative than other alternatives, but that the Grade-Separated Interchange, Roundabout, and Addition of Turn Lanes on SH-75 Alternatives would receive relatively comparable levels of favor to the Traffic Signal Alternative. It appears the public is generally not in favor of the No-Build or Remove the Intersection Skew Alternatives, although even these alternatives would likely receive some level of support if implemented.

Next Steps

The final Community Advisory Committee (CAC) meeting for the study is scheduled for October 6th, 2016 from 10:00am-12:00pm at the Old Blaine County Courthouse (Commissioners Meeting Room) - 206 1st Ave South, Suite #300, Hailey, Idaho. Highlights of the results of the online survey will be presented at this meeting along with a draft of the Intersection Study Report for comment. All survey respondents are welcome and encouraged to attend the CAC meeting as well as any other members of the general public. The final Intersection Study Report is expected to be published and available by November 2016.

Attachments

Attachment A: US-20/SH-75 Intersection Compiled Online Survey Comments

Attachment B: Media Articles

Attachment A US-20/SH-75 Intersection Compiled Online Survey Comments

Attachment B Media Articles

Attachment A US-20/SH-75 Intersection Compiled Online Survey Comments

Report for US-20 and Idaho 75 (SH-75) Intersection (Timmerman Junction) Study

1. Response Counts

Completion Rate: **72.3%**

Complete	551
Partial	211
Disqualified	0
Total	762

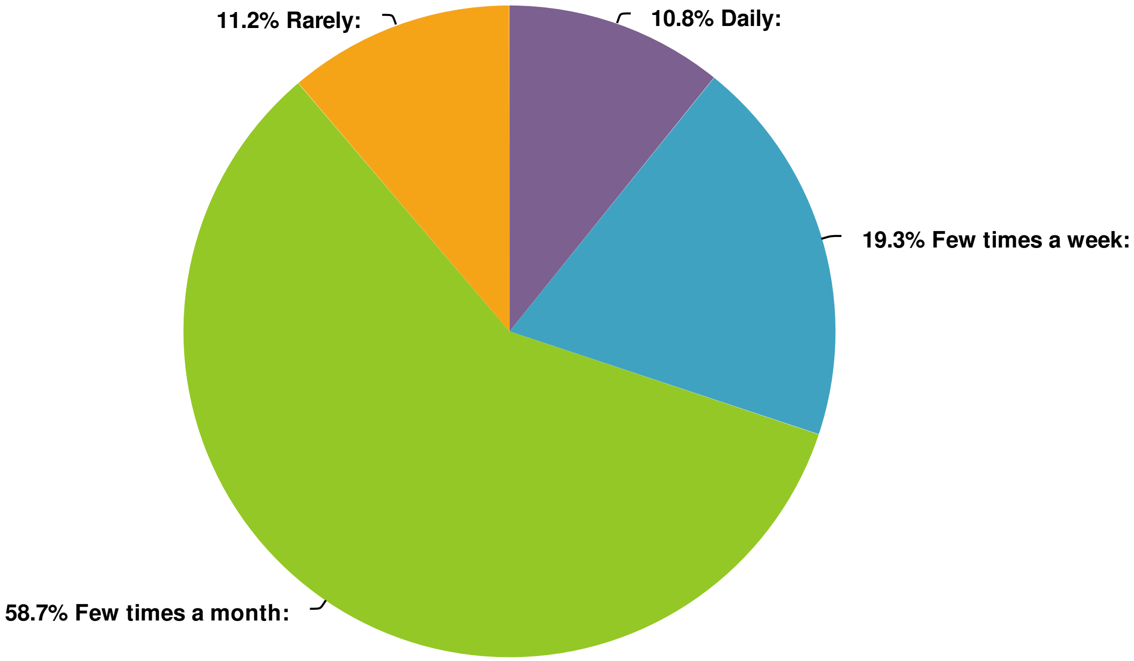
2. What zipcode do you live in?

Count	Response
241	83333
93	83313
69	83340
61	83301
43	83352
29	83327
22	83338
21	83320
16	83330
15	83353
9	83328
7	83316
6	83341
5	83349
4	83314
4	83348

Count	Response
3	83318
3	83322
3	83324
3	83617
3	83702
3	83709
3	83716
2	83335
2	83347
2	83350
2	83355
2	83642
1	11111
1	13090
1	21211
1	57105
1	83201
1	83204
1	83278
1	83344
1	83354
1	83401
1	83440
1	83442
1	83501

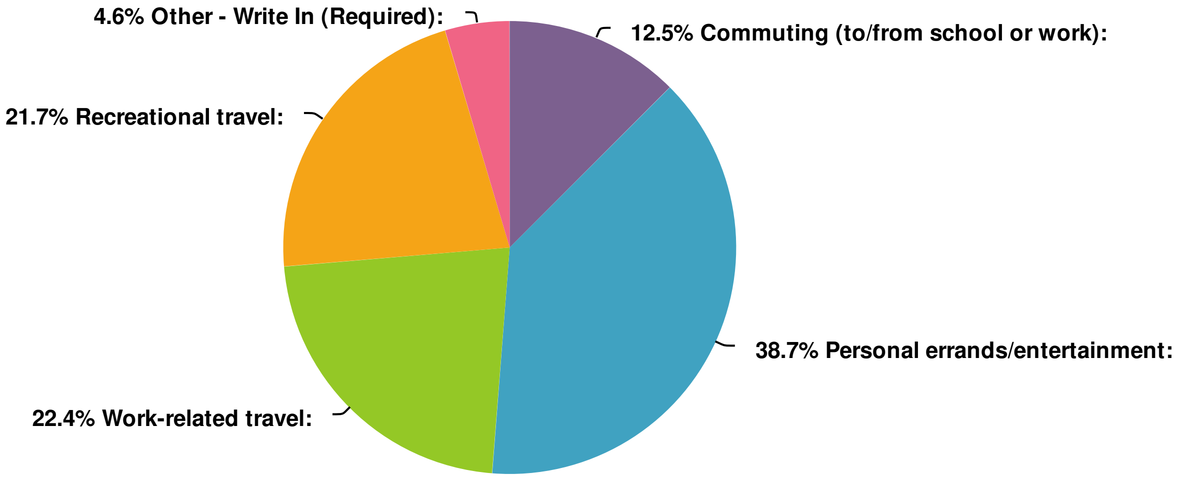
Count	Response
1	83616
1	83623
1	83629
1	83631
1	83644
1	83646
1	83703
1	83704
1	83705
1	83706
1	83711
1	83712
1	83713
1	84325
1	85737
1	89801
1	92131
1	98040

3. How often do you use the intersection?



Value	Percent		Count
Daily	10.8%		76
Few times a week	19.3%		136
Few times a month	58.6%		412
Rarely	11.2%		79
		Total	**703**

4. What is your primary reason for using the intersection?



Value	Percent		Count
Commuting (to/from school or work)	12.5%		87
Personal errands/entertainment	38.7%		269
Work-related travel	22.4%		156
Recreational travel	21.7%		151
Other - Write In (Required)	4.6%		32
		Total	**695**

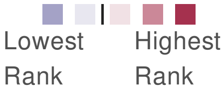
Other - Write In (Required)	Count
Other - Write In (Required)	32
All of the above	1
Doctor visits	1
Doctors appointments .	1
Total	32

Other - Write In (Required)	Count
Family	1
Family cabin on Silver Creek	1
I Work for the Sheriff's Office and drive there as well as investigate crashes at the intersection.	1
Ice Hockey	1
Live in Hailey through the week and in Gooding on weekends	1
My Mother was killed there	1
Pernonal and work related	1
RANCH WORK, HAULING CATTLE	1
Shop Twin Fall or Boise	1
Shopping in Twin or Boise	1
Shopping in twin falls	1
Shopping, Medical, Recreation	1
Travel to/from either Boise or Twin Falls	1
VISITING FAMILY	1
Visiting family	1
Visting family	1
days off	1
errands and recreation travel	1
family/medical travel	1
home in area	1
medical appointments	1
medical related	1
shopping Twin Falls	1
visit family	1
we fly to Boise and drive to Sun Valley	1
Total	32

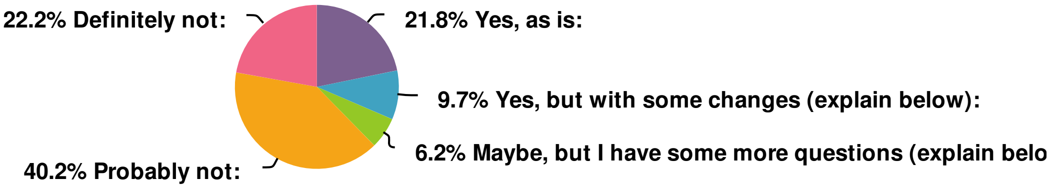
Other - Write In (Required)	Count
work & personal	1
work and personal	1
work and recreational travel and errands	1
work related	1
Total	32

5. Please rank the five evaluation criteria (listed in alphabetical order) from 1 through 5 in order of preference (1 being your most important and 5 being least important).

Overall Rank	Item	Rank Distribution	Score	Total Respondents
1	**Safety Performance:** Effect on frequency and severity of crashes		2,816	626
2	**Mobility:** Effect on the movement of all users through the intersection		2,316	625
3	**Implementation & Maintenance**: Amount of effort needed to construct and maintain the intersection		1,514	622
4	**Cost**: Estimated construction and maintenance costs		1,389	622
5	**Physical and Environmental Impacts**: Impact on the environment and properties near the intersection		1,332	622

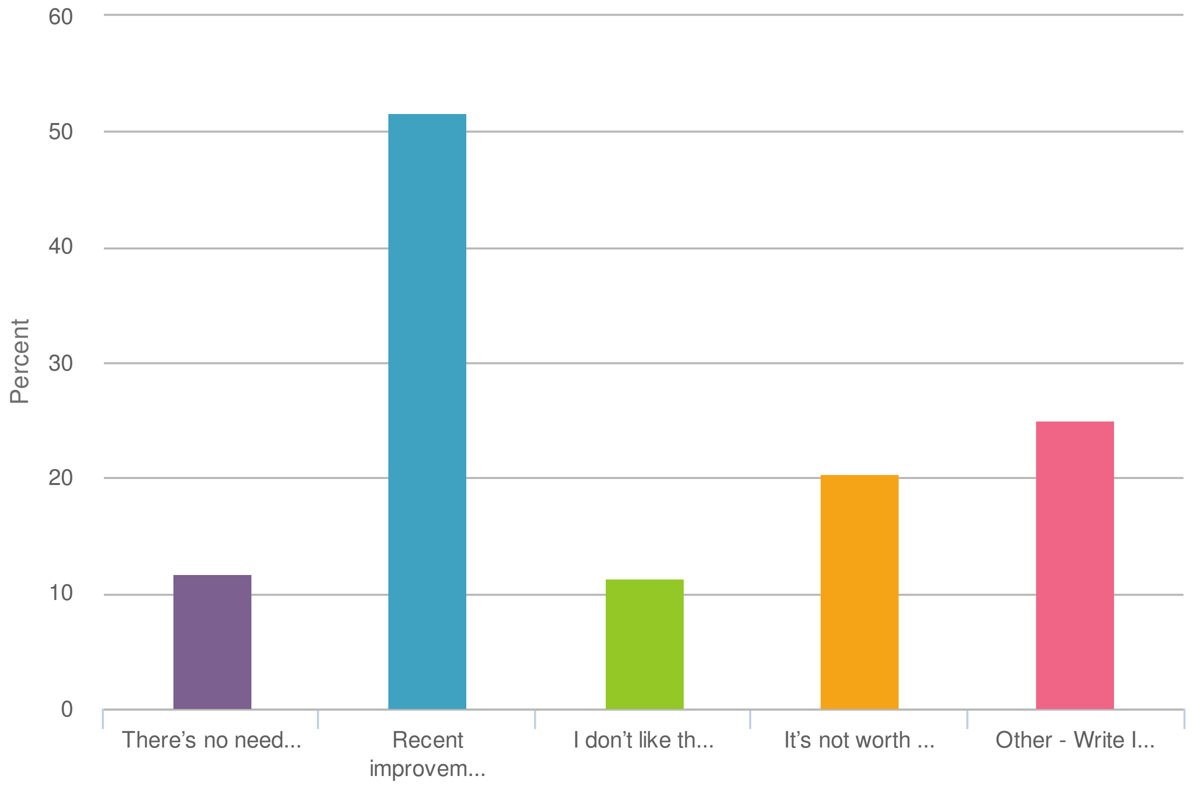


6. Would you support ITD implementing the no-build option?



Value	Percent		Count
Yes, as is	21.8%		131
Yes, but with some changes (explain below)	9.7%		58
Maybe, but I have some more questions (explain below)	6.2%		37
Probably not	40.2%		241
Definitely not	22.2%		133
		Total	**600**

7. You indicated that you would potentially support implementing this option. Would you please indicate why? (check all that apply)



Value	Percent	Count
There's no need to improve safety at the intersection	11.8%	25
Recent improvements by ITD have helped and the intersection works fine as-is	51.7%	109
I don't like the idea of any impacts to the surrounding land and environment	11.4%	24
It's not worth spending taxpayer money at this intersection	20.4%	43
Other - Write In (Required)	25.1%	53

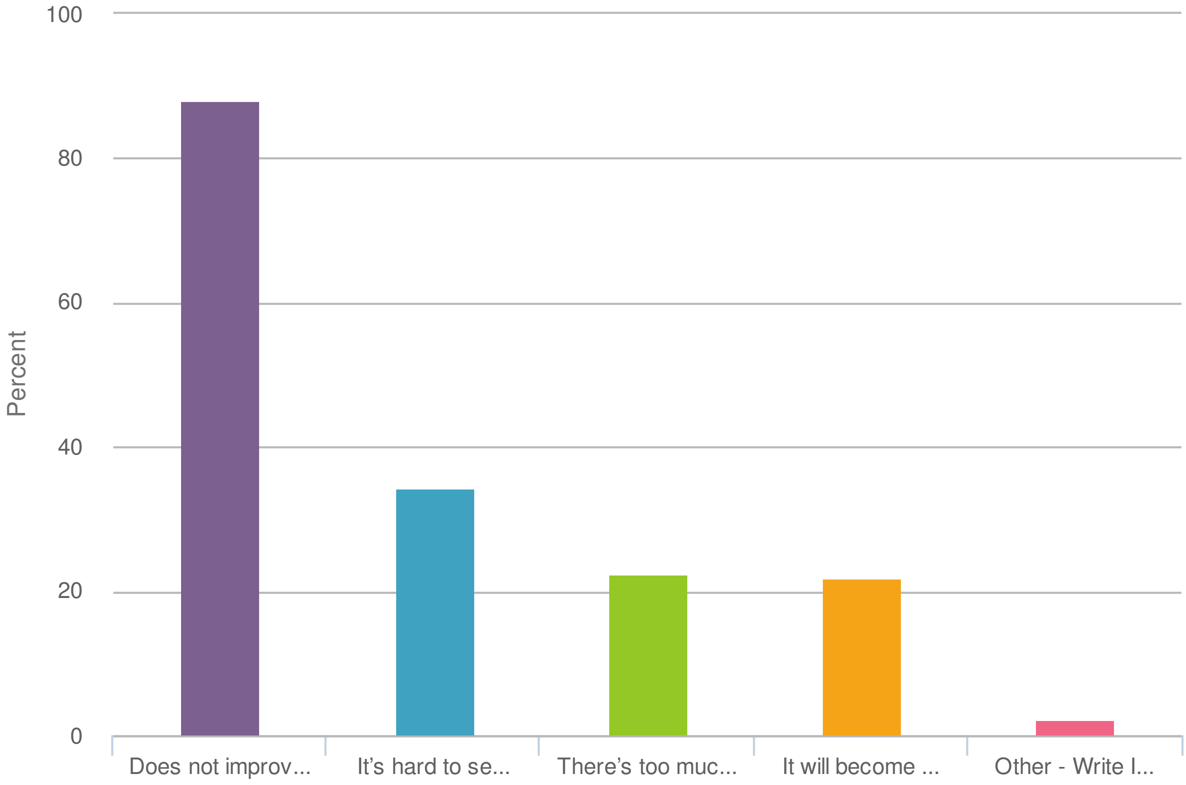
Other - Write In (Required)	Count
Other - Write In (Required)	53
Recent improvements by ITD have helped and the intersection works fine as-is	3
4 way stop, more stop lighting	1
Add additional warnings and safety markings to alert drivers to the intersection	1
Total	53

Other - Write In (Required)	Count
Additional sign	1
Bigger stop ahead signs & more red flashing lights Lower the speed limit on highway 20 approaching the intersection.	1
Cost effective, easy changes would help	1
Cut down the weeds along the highways so there is better visibility and there will be less accidents.	1
Depends what other options are	1
Feel there needs to be more officers out inforcing the 45 mile an hour speed limit. I slow down to 45, but I am the 1% that does, everyone passes me, even our commuter buses that come and go from Shoshone. I have had several cars going from east to west and west to east not even stop. (good thing I was going 45 or there would have been a collision). I never see a police officer, maybe once a month if I am lucky, going to work and going home.	1
Have to see all options before concluding what I think is best option	1
I am not aware of a a lot of serious accidents.	1
I believe southbound traffic needs to remain continuous. If a stop sign is implemented crashes will start to occur at approximately MP 100.5 due to cars attempting to pass large trucks/semis & slow drivers.	1
I believe this is still a viable near-term option	1
I don’t like the idea of any impacts to the surrounding land and environment	1
I drive road everyday, I slow down to the 45, which really would help if everyone obeyed the speed limit, but I am the 1% that does. People pass me all the time just before the intersection as I am going 45. We need more police officers out on that road to make sure people slow down. I have had cars twice since I have been driving go right through this intersection without stopping, (good thing I was going 45).	1
I want to see all the options before indicating my preferance.	1
I would like to see how it compares with other options	1
I would like to see traffic from all directions slowed to 35 at least 300 ft from intersection, as well as more red flashing lights on the East/West sides.	1
ITD knows what they are doing.	1
I'm only interested in supporting this option if there is still a way to make the intersection safer. This is a dangerous intersection.	1
Improve safety	1
Increase Line of Sight	1
Total	53

Other - Write In (Required)	Count
Keep speed at 55 on Hwy 75, and reduce speed on Hwy 20 approaching stop signs	1
Like the safety, 45 doesn't need to go so far past the intersection.	1
Minimizing impat to land use would be good	1
More signage	1
Needs some minor changes.,for safety	1
Not	1
Nothing you do can make stupid people stop being stupid	1
Perhaps a round-a-bout	1
Put the pattern changing from one road to another more like a freeway exchange..	1
Remove all shrubs and obstructions too improve visual	1
Remove the willows for better visibility.	1
Rumble strips on Highway 20 help. Adding them on highway 75 would help even more.	1
Safety on thia road is hugely important! I cannot support anything that does bot improve that.	1
Slowing traffic North/South seems to make the East/West traffic think it is going to stop. There needs to be larger signs, and possibly larger lit letters, telling them that the North/South traffic does not stop	1
The existing rumble strips are great but there has to be a better signage option (s) that can be implemented downstream. i would like to know what is the cost of a traffic light wi	1
The intersection is better with the previous ITD improvements, but there are still some drivers who need additional reminding.	1
The speed needs to decrease on Highway 20 and not Highway 75 or as well as Hwy 75.	1
This intersection would be just fine if people would pay attention. Perhaps an ISP officer sitting in the vicinity frequently would help.	1
This should only be considered as a short-term solution	1
What are the other options before I decide the value of no change	1
With the lower 45 mph in place I think the intersection is much safer and works well.	1
all of the above	1
Total	53

Other - Write In (Required)	Count
enhanced signage on 20. I often see individuals blow through the blinking light without stoping and assessing traffic	1
explanation is vague	1
i wish there was a side by side comperson of all options before i construct an opinion	1
i would like to revew the rest of the options before giving my opinion. this survey must not allow that option	1
improve existing intersection before redoing it in an expensive manner.	1
improve signage on cross roads	1
low costs. need to find a way to stop traffic east/west & increase view while increasing speed limit for north /south traffic	1
replace 1940s light with 4 modern ones.	1
see comments below	1
speed reduction is no help as implemented	1
stop signs need to have flashing l.e.d. lights	1
Total	53

8. You indicated that you would likely not support implementing this option. Would you please indicate why? (check all that apply)



Value	Percent	Count
Does not improve safety at the intersection	88.0%	322
It's hard to see vehicles on SH-75 when I'm at the stop sign on US-20	34.4%	126
There's too much congestion at the intersection at times	22.4%	82
It will become increasingly difficult to travel through the intersection (i.e., more delay)	21.9%	80
Other - Write In (Required)	2.2%	8

Other - Write In (Required)	Count
Other - Write In (Required)	8
Does not improve safety at the intersection	7
It’s hard to see vehicles on SH-75 when I’m at the stop sign on US-20	3
There’s too much congestion at the intersection at times	3
It will become increasingly difficult to travel through the intersection (i.e., more delay)	2
Because the speed limit is too low on hwy 75 causing congestion and longer delays for all vehicles approaching the intersection.	1
Driver education is inadequate. Impatience, entitlement and use of cell phones impair jugement.	1
Some people, particularly non locals, do not understand the pattern of the blinking light, and often pull out in front of drivers on SH-75	1
Take out some of the growth south west corner of intersection	1
The intersection is still unsafe!	1
Too many willows that block the sight lines.	1
Vegetation issues	1
traffic needs to either stop all ways or a stop lifgt needs to be put in	1
Total	8

9. Comments:

Count	Response
1	It already is a two way stop!
1	90 degree intersections
1	A change to improve safety and ease of mobility is definitely required here.
1	A ramp over highway 75 would eliminate traffic colliding with other on highway 75
1	Add a 4 way stoplight and it will be fixed.
1	Added left hand turning lanes on HWY 75
1	All that intersection needs is a free running right from east to west with a stop and left or right turn at the end of the ramps. Do like they do in Boise at intersections. The problem at Timmerman is with the traffic crossing. Don't allow traffic to cross. As an example, the traffic coming from Fairfield could simply make a right curve along the south side of the rest area. Stop at the existing rest area stop sign then turn right or left. The hazard becomes eliminated because there is no traffic coming from the other side. The West bound coming from Picabo could make a right curve north away from the intersection then stop and turn right or left. No traffic crossing the existing intersection will stop the crossing accidents. This adjustment will fix the current problem and cost very little money and do little if any damage to the wet lands environment.
1	Are there simple changes that would improve safety. The current intersection is very convenient for north-south bound travelers, not so much for Highway 20 travelers.
1	As is is fine except additional safety additions to the east west traffic. Some widening of lanes may help as well
1	As it is now, it is up to drivers to use good judgement and follow the rules (speed limit, stops signs & such). If drivers do this then it works, but no matter what changes are made, if drivers are not responsible then it really doesn't matter of the changes because those choices will prove to be unsafe.

Count	Response
1	Best option both at this intersection and others such as East Fork south of Ketchum is to implement round about intersections and remove traffic signals. Let's move with the 21st century.
1	Both sides of the intersection should slow. Hwy 75 can stay at 45, but US 20 should slow to 35.
1	Build an overpass or put in a stop light. It is not hard to see vehicles. It could be my depth perception but it seems the light is there before it should be. It is visible for a good distance and the rumble strips are there so it is just a matter of paying attention. Have seen several vehicles run the light and not stop.
1	Busy intersection at times, safety is a high concern, maintenance is not being upheld. What price would you put on your family, money should not be an issue.
1	Can't see light. Not in my lane. Not aimed at me. No black backing around light. NEED LARGE BRIGHT LIGHT FOR EACH LANE! ITD is negligent in keeping this antiquated light despite accidents.
1	Crashes didn't seem to decrease in frequency after lowering the speed limit.
1	Current reduced speed limit caused more safety issues. I have been passed numerous time in the intersection because vehicles following me want to go faster than the speed limit. I've stopped obeying the 45 limit and haven't been passed in the intersection since.
1	Do not like the round about idea. Been issues with the round about on Fox Acres. Stop lights would concern me for big trucks driving up Timmerman, gathering speed from a stop light.
1	Do something to wake people from their zombie-like lack of paying attention state of mind. More rumble strip or something; Don't waste my tax money, please. Particularly on a contractor's boondoggle over-pass dream job.
1	Doing nothing should not be an option.
1	Driving both north and south on Rte 75 the blinking light often appears as the turn indicator of an oncoming vehicle.
1	Evidence has shown that keeping it how it is does nothing to help with avoiding accidents. The slower speed limit didn't help either because very few actually observe the 45mph.
1	Existing implementation seems to impact the north-south driver .... slowing (45 mph) and narrowing the lanes, while the east-west who are the ones that need to stop are unhindered (other than rumble strips) and are approaching intersection at 65 mph. Should this not be the other way around?
1	For whatever reason people do not stop at the stop sign. I'm on a FD and I've seen and been there to help with many accidents that could have been avoided with a stop light.
1	Had hwy 20 coming from Fairfield been routed around the south side of the rest area when it was reconstructed the traffic traveling either way on hwy 20 would have had to make a 90 degree turn onto hwy 75 thus lessening the assumption by those drivers that hwy 75 traffic would stop for them thus lessening the chance hwy 20 traffic would pull out in front of hwy 75 thru traffic.
1	Highway needs to be widened to include a turning lane for entrance to the Rest Area where vehicles are out of the travel lanes of both 75 and 20.
1	How about a Round a bout. Very safe

Count	Response
1	How about a rotary?
1	How do I evaluate before I can see the proposed new layout.
1	I beleave this intersection works just fine the way it is.
1	I don't know how you can fix people simply not paying attention.
1	I hate that the speed limit is reduced for the distance it is.
1	I have had three vechicles cross, with out stopping at the intersection on Hwy 20, while I am on 75 near or in the intersection this past 6 weeks alone. The current control method, rumbletrips included are not enough. My husband is the fire chief for the area and responds to the accidents...it needs to be fixed!
1	I just don't see why a person has to change the intersection, due to drivers not paying attention to the road, signs and on coming traffic. This intersections has been here for years and years.
1	I patrolled this area as an LEO for 17 years and there were more fatal crashes on other parts of SH75 than the 20/75 JCT.
1	I see no reason for an expensive road construction as the intersection works well the way it is now. 45 mph is good.
1	I think a stop light should be installed with a default green direction on north/south which and an east/west driver would trigger a light change.
1	I think if anything is going to be done it should be done on hwy 20
1	I think the intersection is fine, but would like to see improvements made to sreen the existing sewage ponds and gravel barn (white plastic). This is treh entryway to our scenic sawtooth corridor, but it looks terrible.
1	I think the recent 45 mph speed limit helped greatly. The only thing I would like to see is a turning lane from north bound 75 to west bound 20
1	I would like to see a more visible light so that even if people aren't paying attention to the signs, it is obvious that they will have to slow or stop. The small flashing light is great at night, but it doesn't give a great warning during daylight hours.
1	I would like to see the tall vegetation on the nw to be cut down. There should be nothing blocking the view of the intersection.
1	I would support changes if it included over pass.
1	I'd like to add larger signage on the Hwy 20 west/east sides of Hwy 75. Something that would grab the driver's attention! Also slow speed down at least 1/4 mile in advance of intersection.
1	I'm usually east-west traffic. North-south just doesn't slow down or look. When traffic is heavy east-west can't get through.

Count	Response
1	I've nearly been hit there multiple times by people on 20 not stopping. I know people from work that have been hit under the same circumstances.
1	I've often wondered how many people have to die at this intersection before anything changes.
1	ITS FLAT GROUND AT THE INTERSECTION, IT HAS A BLINKING LIGHT AND RUMBLE STRIPS MAYBE A MORE RESPONSIBLE DRIVER WOULD HELP IMPROVE
1	If drivers obey the traffic control at the intersection it will be fine. People go the 45 mile per hour speed limit on 75 and drivers stop at the stop sign on 20 there is no crashes. The only crash I hear of is when driver's fail to come to a complete stop at the stop sign on highway 20 and fail to look both ways. I feel there is plenty of warning at the intersection and would not make sense to spend tax payers money to add anything else to the intersection
1	If no build remove everything that blocks the view
1	If this is an option then why even ask the question? The problem remains
1	If your concerned about cost. Why not make it a mandatory four way stop?
1	Increase the size of the light, LED, brighter, remove all shrubs to enhance view of sight, improve signage
1	It's not clear to tourists that it's only a 2-way stop. Also, the folks entering SH75 from US20 seem to underestimate the speed of the traffic, and create some hazardous situations.
1	Just change the blinking light to blink red both ways (i.e. 4-way stop). Safe, simple, cost-effective, low-impact - could be done in no time. It seems that many of the worst accidents have happened because the Hwy 20 drivers mistakenly think it is a 4-way stop. So make it a 4-way stop - this is a no-brainer.
1	Just cutting down the weeds will provide better visibility.
1	Just reiterating that the reduced speed limit and flashing lights are vast improvements. No need to make additional improvements
1	Larger signage
1	Lower speed limits and improved visibility at the intersection have helped with safety issues.
1	Make an over pass.
1	Make it a four way stop, all stop.
1	Making the red and yellow lights more visible would help. I've seen similar intersections with larger or more lights. The yellow when traveling north, down the hill, is very difficult to see at times.
1	Maybe, if anything, add more LED lighting so that we can see the intersection more clearly.
1	My biggest concern is for people's safety. There have been too many serious accidents!

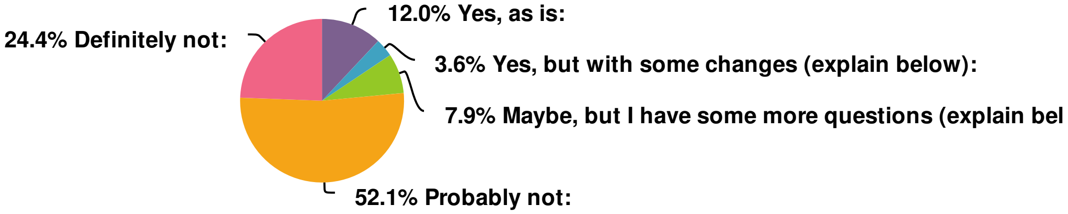
Count	Response
1	My idea would be to remove the willows along to the Highway 20 to increase visibility of all traffic users. These trees reduce visibility and the reaction time of the north/south bound users in the instance a west/east bound drive is not going to stop. Removal of these trees would make it easier to drive defensively.
1	Need it safer
1	Needs a turn lane! You need me to tell u that????
1	North South traffic should go 55 and further speed control should be used on east west traffic
1	Not safe enough. Difficult to cross 75
1	Not sure just what needs to be done it is better just not the best.
1	People make poor choices at this intersection. They can not judge the speed of on coming traffic and pull out in front a vehicle that can not possibly stop in time. I believe a traffic light giving Hwy 75 traffic the longer green cycle is the best option.
1	People need to take control of their own safety
1	Please do not put a signal here.
1	Put some bigger stop signs on Highway 20
1	Safety is the main issue. this is not safe.
1	Safety needs to be improved
1	Since I live near Gooding, I could choose to use either highway to get to Timmerman. I always choose 75, because I do not want to use the stop sign on 20, especially when I am sometimes pulling a trailer. I am always very cautious, knowing that a driver from 20 could pull out in front of me.
1	Something needs to be done.
1	Stop looking for ways to waste time and money.
1	Stop signs need flashing lights around them
1	The existing conditions are dangerous. The items that have been in place to slow down drivers are helpful, but there are much better long-term solutions.
1	The existing improvements have helped. A number of the crashes are from the East West travelers not paying attention to the "cross traffic doesn't stop signs". Make those signs BIGGER.
1	The intersection is still too dangerous
1	The least that needs to be done is a much larger blinking light. The present light is barely visible.
1	The lower speeds appear to be adhered to generally, while this may not be the "best" solution, on balance it seems like it has provided bang for the buck.

Count	Response
1	The no-build option will not make any improvements to the intersection!
1	The problem is with visibility, the shrubs and trees are too high and make visibility difficult. The reduced speed wasn't helpful. Maybe a round-about would be good if you don't want to put in an over pass and proper exits which would really be a good safe approach.
1	The risks outweigh the benefits for safety as the intersection becomes suggestion. Visibility is limited and speeds (even with signage) are not safe. A four way stop sign would be annoying and I could foresee people running it to avoid having to stop for cross traffic unless speed mountains (not bumps) were put in. I imagine that a two or three lane rotary traffic circle would work well to slow traffic from all directions and keep flow going and prevent backups. I do not know what the maintenance would be in winter when roads are snow/ice covered - they seem to do okay in Sweden!
1	The safety is poor.
1	The slow down has helped with the safety issue, however, most people do not slow down and people still go through the flashing red light believing that it is a four way stop.
1	The speed reduction to 45 mph seems to be reducing the intersection related collisions.
1	The vegetation on opposite sides of Highway 20 ,next to settling pond and on rest area side also along 75 at intersection northwest and south west at intersection.
1	The visibility at the intersection is good. The drivers/drivers' judgment not necessarily so. Drivers on 75 exhibit very poor gap control which results in frustration for the drivers on 20. Idaho drivers can't work a four way stop. Make the driving test interactive. Fail people who haven't learned the basic rules of the road.
1	The visibility is wide open, people just need to learn how to slow down and use caution. It is the DRIVERS not the road..
1	There could be signs that light up saying through traffic doesn't stop. Solar signs could be used
1	There is absolutely no need to spend a single dollar on the intersection. The only reason it is dangerous is human error that is inexcusable. Signage and visibility are excellent.
1	There is room and need to improve, so doing nothing will allow the current issues to continue
1	There needs to be a better way to emplement safety measures
1	This is the worst intersection I drive through. I've lived here since 1972 and there have been few improvements and many accidents
1	This is a big safety concern to many accidents, congestion of traffic is terrible, traffic flow is terrible
1	Too many people traveling on US 20 still cause accidents at the junction. There has to be a way to improve so they have to stop.
1	Ultimately I would like to see an overpass installed in the area. If the intersection needs moved to the south up onto the "bench" that would make construction of the overpass less of an impact for all the Green people's concerns.

Count	Response
1	Vehicles turning right onto 20 W from SH-75 N are hidden on SH-75 to drivers stopped at the junction coming from Fairfield. This is due to the non-perpendicular angle of the junction of the two highways. Because drivers don't pay attention nor do they understand the rules of a two-way stop (it's not a 4-way stop and drivers seem to think whoever stops first has the rideaway. This is not true. Drivers turning Left onto SH-74 from Fairfield have to yield to both traffic travelling on SH 75 as well as traffic travelling straight across the intersection from Carey. Amendments are necessary to this intersection.
1	Vision of approaching vehicles is very poor and although there is a 45 speed limit most people don't obey the signs.
1	We continue to have accidents at this intersection. Change is needed to remove the continued los of life.
1	We have had so many close calls. Some pull out from stopping not really paying attention. Or barely stopping. We always slow down and have stopped on 75 from being hit.
1	We used to live about ten miles from Timmerman and there were accidents all the time. It was scary to drive through the intersection on hwy 75 because you never knew if the hwy 20 traffic was going to stop.I think that hwy 20 traffic sometimes perceived the intersection as a four way stop. The recent improvements and lowered speed limit through the intersection seems to have helped, but when I'm passing through on hwy 75 I don't ever take it for granted that hwy 20 traffic is going to stop. I don't know how the intersection could be further improved without going to great expense.
1	We were traveling thru this intersection in June 2016. We were headed north and had a near miss with a car traveling to the west. Never saw us even though we ended up sideways in the lane to miss them. We suspect it was due to the level of the sun at that time of day. Even with the bumps and signs, operators still don't stop.
1	What if it is a 4 way stop? That is putting in two signs and a red flashing light. Then re-evaluate in 2 years?
1	When going through I always worry that cross traffic is not clear that through traffic does not stop
1	Why is this an issue? The speed limit shouldn't even be lowered here, it seems like someone is justifying their job to "study" this intersection.
1	Why not have an on demand set of lights. They could be regulated for peak commute times and then used as necessary the rest of the time
1	Will not cure the problem
1	Yes
1	improved light, signage, and stop warning could go a long way in improving safety without impacting/altering the area or costing a lot
1	lower speeds have helped to improve safety. Need signs (more, larger) indicating intersection and stop coming up. 'Warning: dangerous intersection' signs placed in all directions.
1	narrower lanes to 10' in all directions for 500' back of intersection
1	not sure what "no-build" means. is it that nothing can be built within the ITD right-of-way?
1	people just need to pay attention while driving.

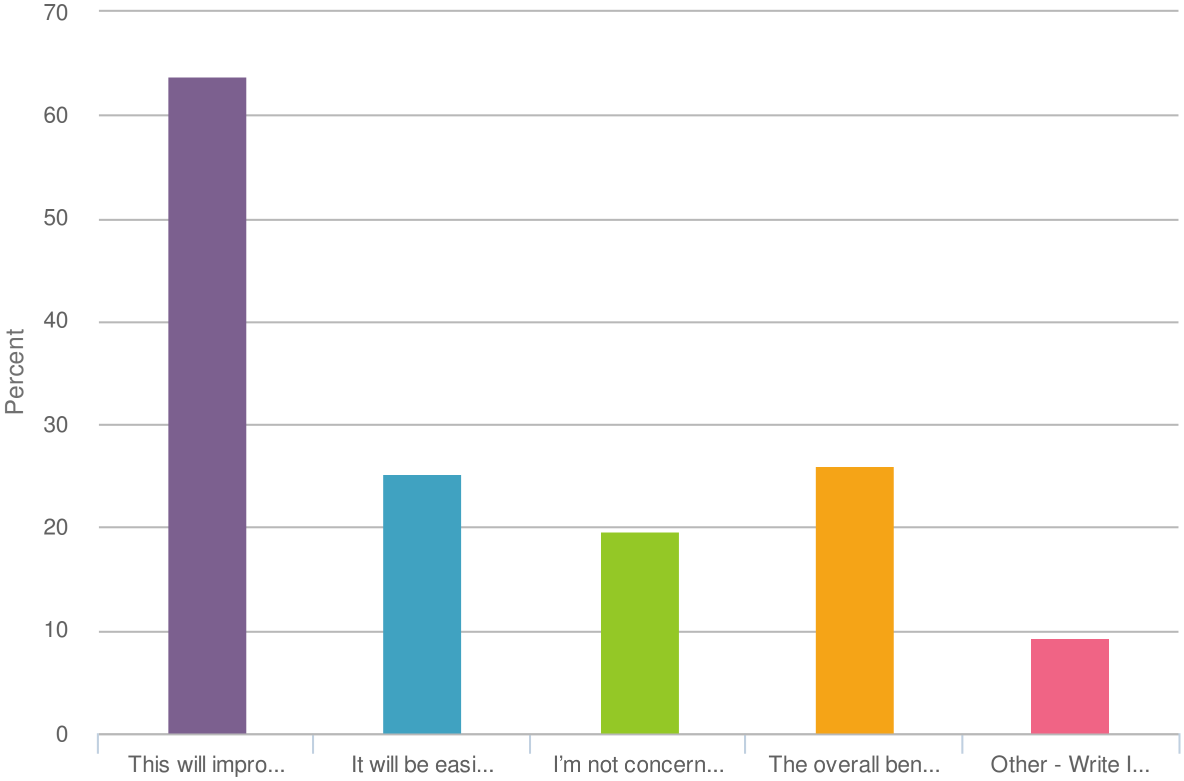
Count	Response
1	problems getting across 75 while on 20 is getting increasingly difficult especially with livestock trailer
1	replace the antique light with metal arm that you find in every other place in the country. Aim the lights straight at the traffic- they are crooked now. LARGE stop sign needed. leave yellow and red lights- big trucks need to keep moving for hill.
1	there are definitely better options than how the intersection is now.
1	there doesn't seem to be an area to accept response to #6 - does not improve safety.
1	this intersection has had so many near misses and other confused motorist that we are lucky there has not been more accidents and fatalities.
1	this is an antiquated intersection designed for rural conditions that no longer exist - a death trap that I experience nearly every day.
1	what about a 4-way stop light?
1	would a round about be to much congestion,,,,

10. Would you support ITD implementing the remove skew at intersection option?



Value	Percent		Count
Yes, as is	12.0%		70
Yes, but with some changes (explain below)	3.6%		21
Maybe, but I have some more questions (explain below)	7.9%		46
Probably not	52.1%		305
Definitely not	24.4%		143
		Total	**585**

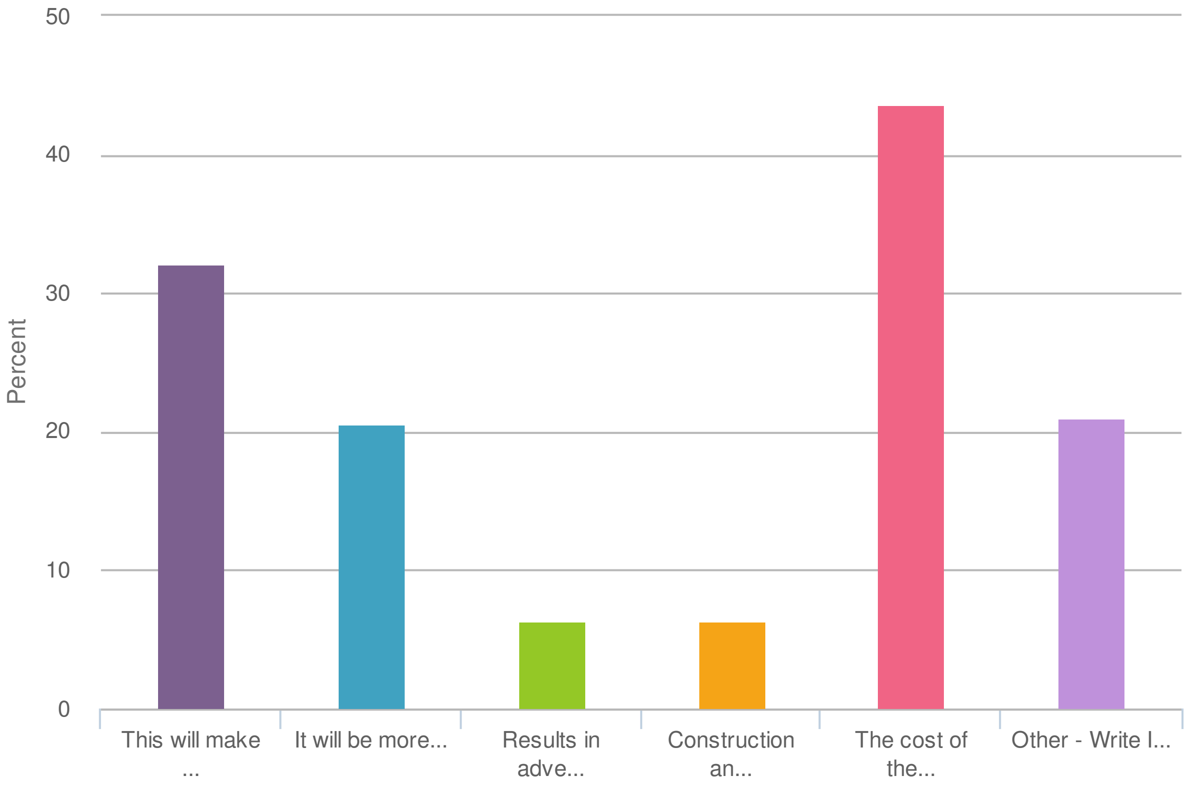
11. You indicated that you would potentially support implementing this option. Would you please indicate why? (check all that apply)



Value	Percent	Count
This will improve safety at the intersection	63.8%	81
It will be easier to travel through the intersection (i.e., less delay)	25.2%	32
I'm not concerned with the impacts to the land and/or environment surrounding the intersection and/or the impacts are okay considering the benefits of the alternative	19.7%	25
The overall benefits of the alternative are worth the cost of implementing it	26.0%	33
Other - Write In (Required)	9.4%	12

Other - Write In (Required)	Count
Other - Write In (Required)	12
Add stop lights	1
Because visibility increases. I only support this if the speed limit is subsequently raised to 55 through the intersection after construction.	1
I am no safety expert but you indicate this is safer than the no build option	1
It is essentially the same as it is now	1
This will improve safety at the intersection	1
cost effective, makes it easier to see both directions, still not the best option	1
its just fine the way it is.	1
maybe do in future.	1
same	1
same as previous.	1
seems like a lot of work for slight imporvement to safety.	1
the light remains	1
without a known cost, it may not be worth the dollars for a minimal change. the east/west approaches may be more visible but that is unknown with the information given,	1
Total	12

12. You indicated that you would likely not support implementing this option. Would you please indicate why? (check all that apply)



Value	Percent	Count
This will make the intersection less safe	32.1%	141
It will be more difficult to travel through the intersection (i.e., more delay)	20.5%	90
Results in adverse impacts to the land and/or environment surrounding the intersection	6.4%	28
Construction and/or maintenance of the alternative will be too challenging or costly	6.4%	28
The cost of the alternative outweighs the benefits of implementing it	43.7%	192
Other - Write In (Required)	21.0%	92

Other - Write In (Required)	Count
Other - Write In (Required)	91
The cost of the alternative outweighs the benefits of implementing it	7
This will make the intersection less safe	3
Total	91

Other - Write In (Required)	Count
does not improve safety	3
Construction and/or maintenance of the alternative will be too challenging or costly	1
DOES NOT FIX THE SAFTEY PROBLEM	1
Does not improve safety	1
Does not improve the intersection enough	1
Does not seem to improve the safety issue	1
Doesn't look like it will be much different	1
Doesn't really address the safety issues	1
Doesn't seem better than the as-built	1
Doesn't seem to address safety	1
Duh! No turn lane!	1
From a safety vs. cost perspective, there does not seem to be any substantive benefit.	1
Gains very little in safety	1
Harder to see approaching traffic	1
I am used to the existing.	1
I don't believe it will help safety.	1
I don't see any changes this would make to what is being done now	1
I don't see how it is really any different than the existing so in my opinion I don't think it is worth the time and money. Most importantly safety is still poor.	1
I don't see how it will help improve safety	1
I don't see that safety has been improved much with this option	1
I don't see that this really solves the problem of safety, it looks like a safety bandaid	1
I don't think it would change much.	1
I don't think your problem of safety will be solved.	1
I don't understand the benefit of this change.	1
Total	91

Other - Write In (Required)	Count
I fail to see this change will make the intersection more safe.	1
I want to see all options before deciding	1
I want to see the other options before I decide.	1
I'm not sure this addresses the issues of people who forget to stop or pull out in front of oncoming traffic.	1
I'm unsure that this will really improve safety much.	1
It appears this does nothing to help with the safety aspect and that is most important to me.	1
It does not add cross traffic turn lanes to the 75 traffic.	1
It doesn't improve safety enough to warrant cost.	1
It doesn't increase safety	1
It just doesn't really increase the safety factor enough at the intersection to justify the cost . Might as well leave it the way it is .	1
It will be more difficult to travel through the intersection (i.e., more delay)	1
It's a stupid idea	1
It's too much like it is right now - not changed enough	1
Little to no improvement	1
Looks about the same	1
May help but don't know if would change accidents	1
NO REAL CHANGE	1
NOT NEEDED	1
Need better options	1
No benefit over the existing condition. The skew is not significant enough to warrant the	1
No obvious improvement on current conditions.	1
No significant improvement	1
Not a significant improvment	1
Not much of a change for safety	1
Total	91

Other - Write In (Required)	Count
Not safe enough	1
Not significant improvement. For cars stopped 4 to 5 behind the first car, it will still be difficult to see approachign traffic and gauge the situation.	1
Not sure if this would be a significant modification	1
Now you have good visibility, you can see the intersection from a ways out. Putting a curve in the road may reduce visibility of the intersection.	1
Really no change to east-west traffic	1
Results in adverse impacts to the land and/or environment surrounding the intersection	1
Safety concerns	1
Safety is just slightly better than before, I want to remove as much chance of accidents as possible.	1
See no change in safety and would be unnecessary if doesn't fix the problem	1
Seems useless	1
Still doesn't change people not stopping on HWY 20	1
Still not enough increase in safety of the intersection.	1
The improved vision by straightening out the intersection is marginal at best.	1
The improvements don't appear to make much of a difference so the benefit is not worth the cost.	1
The safety of the intersection is not improved enough to warrant the work	1
There are still cross traffic accidents that result in fatalities	1
This is only a bandaid on a much bigger safety and ease of use issue. It will not make the necessary improvements to meet current and future needs.	1
This is virtually no improvement.	1
This will make the intersection less safe, adverse impact on the wet lands, and the cost.	1
Very little difference than doing nothing. Costs money, disturbs surrounding lands for little reason, and doesn't solve the safety issue	1
WILL NOT IMPROVE SAFETY	1
Wont change any thing	1
all of the above	1
Total	91

Other - Write In (Required)	Count
does not address the real problem	1
does not solve anything	1
does not take out stop signs	1
for the cost, little, if any improvement	1
if you are going to do that you might as well leave it the same	1
no benefit lightly changing lanes	1
no real improvement	1
not enough benifit for cost	1
not enough change in safety to warrant the work	1
not helping the safety.	1
not much change for the cost	1
not needed	1
not sure it will dramatically improve the safety of the intersection	1
nothing corrected	1
nothing really has changed	1
resembles a bandaid not a cure	1
still not safe	1
this solution too closely resembles the current design	1
very little change to existing. Still not safe	1
why would you go to the effort to move the road as indicated. Seems a waste of $ and time	1
won't change safety issue	1
Total	91

13. Comments:

Count	Response
1	Its not any better than what we already have.
1	?
1	Accomplishes almost nothing to address safety issues
1	Adverse effect on the beautiful wet lands and less safe.
1	Build an overpass
1	Do simple fix NOW, before there are any more accidents there. I have lived here for 45 yrs and have seen way too many accidents there that could be prevented.
1	Does not add enough safety for the cost.
1	Don't think this would make the junction any safer or eff
1	Graphic makes it appear that there is little or no safety benefit, but there is cost. If so, not sure why it would be considered.
1	How does it help?
1	How will this help really????
1	I am not convinced that this would be any safer than the current intersection.
1	I can't see the safety benefit for the cost.
1	I cant believe that this option would really make any difference to safety.
1	I don't really see how this changes the safety factors at the intersection.

Count	Response
1	I don't see how this improves safety.
1	I don't see this as making the intersection any safer. And it still doesn't address the east-west traffic being able to get through.
1	I don't see where it will help
1	I don't think the issue is related to the intersection not being perpendicular - it is people travelling North-South not looking for cross traffic. Making the intersection a 4-way stoplight except for high commute times would likely address the safety in the lowest cost manner. Making it a flashing Red for East-West and flashing Yellow for North-South from 7-9am and 4-6pm and then a normal stoplight would likely address the issue.
1	I don't think this would really improve safety to any great degree.
1	I don't understand how this removing of the stew design makes the visibility any better.
1	I feel that it looks to similar to the current design, which is faulty.
1	I have actually discussed this option and Idea with acquaintances.
1	I haven't seen a problem with the way the roads are placed at the present time. Having the ruts crossing the road helps people to know they need to stop.
1	I think the improvements this scenario offers are negligible ...especially when weighted with the cost.
1	I think the speed limit needs to change on all sides of the itersection, not jus 75
1	I think with a curve right before the intersection it's not making it more safe
1	I'd want to try other options first; this is my 4th choice. I could live with this option if it were the final, but it doesn't answer the problem of e/w drivers who might 'blow' through the intersection.
1	I'm not sure if this will really improve the safety and decrease accidents
1	If improvements are being made, lets do it right now and not just slightly fix it.
1	If the intersection is changed to this the safety and efficiency of it still isn't increased. The effort that it would take to build this wouldn't be worth the outcome.
1	It doesn't help with safety.
1	It looks like an accident waiting to happen... don't like the concept
1	It may improve visibility, but it would only slightly decrease the risk of collisions. The Hwy 20 traffic still has to stop and yield. The primary cause of the intersection related collisions is failure to yield from stop sign.
1	It seems like additional lanes would help improve the overall safety of the intersection.
1	It's more cost effective and can be down quicker to put in 4 way stop light.

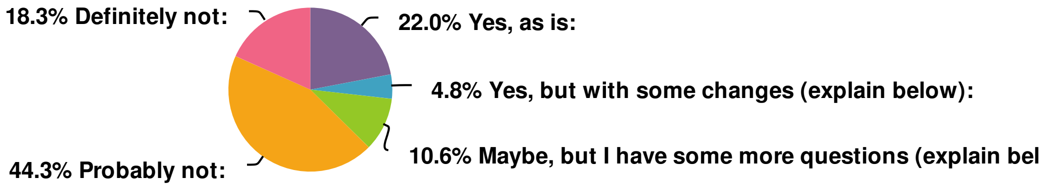
Count	Response
1	Just spend money with no real out come
1	Limited safety improvement over no-build
1	Make it a four way stop, all stop.
1	Many people commute hwy 75, it should be the right of way thoroughfare. The changes to make it safer need to be to hwy 20.
1	Might have to be an over pass
1	NO COMMENT TO THIS
1	No improvements would made to the intersection with this alternative and it would even make some things worse.
1	No..
1	Not a good option
1	Not a significant improvement.
1	Not enough bang for our buck. Stopping leads to impatience and frustration. The intersection is too busy to have so many vehicles required to come to a full stop.
1	Not sure that the skew intersection creates a substantially greater safety issue.
1	Ok
1	Please do not put a signal here
1	Round about
1	Safety Needs To Come First!!!
1	Safety first!
1	Seems like a lot of work to produce very little improvement over the old design.
1	Seems like a waste of money. Also it better not make it any slower
1	Seems silly to spend any money without a significant improvement.
1	Should include turn lanes
1	Silly alternative! The skew is not really the problem...
1	Still dangerous
1	Still does nothing for east-west traffic, who have to stop

Count	Response
1	Still won't make people stop at stop signs or prevent them from pulling in front of on coming traffic because they think Hwy 75 will stop for them
1	Still would have problems w traffic.
1	That won't do much an cost abunch
1	That's dumb and doesn't discourage law breakers or speeding people.
1	The cost of re-routing the highway in this manner does not seem to offer a significant improvement in safety or visibility.
1	The farmers that live and work in the area would experience difficulty pulling fully loaded trailers up Timmerman if they had to stop at the bottom. It would cause traffic delays and safety hazards with people trying to pass them on Timmerman HIll
1	The photo shows the old existing light remains in the center of the intersection instead of one directly aimed at each lane. It is invisible when the sun is behind. Why no backing? Why would you change the road alignment and leave the ineffective light?
1	The sightline is improved, but in my experience it isn't the view, it is the people taking chances to merge or cross
1	There is no persuasive reason to spend any money in the intersection.
1	This does not improve the safety of this intersection which very concerning.
1	This does not really change the issue of dangerous left turns from the east & west
1	This is a good option, however, it still leaves the intersection in a two-way stop situation (and drivers do not understand who's turn it is)
1	This is basically what we have already but from a different angle.
1	This is not the safest option so expense would not be worth the investment.
1	This is spending a couple million to achieve the same road system which is currently in place. A waste of money for minimal improvement.
1	This is the same as the current configuration with a twist making it more difficult to see on coming traffic.
1	This may improve site lines, but doesn't begin to deal with controling traffic at the intersection which I think is causing many of the accidents. Just not good enough
1	This might improve sight lines North and South but still doesn't solve safety issue
1	This options is just confusing and doesn't seem to offer any more safety. I'm not an engineer. I'm just a driver. But it doesn't seem to offer a solution to the safety issue at Timmerman.
1	This still gets poor safety rating, but I do like this.

Count	Response
1	This will cause people not to stop ~ they will slow down but be more inclined to continue moving than stopping. Having a turn lane on the north bound lane of Hwy 75 onto US 20 could help.
1	This will not stop impatient drivers coming off of HWY 20.
1	This would be, I feel, the best solution. I have traveled through that intersection for 22 years and have seen many near misses there. ITD has only given lip service to this hazard over the years.
1	This would help some, but not much.
1	This would help with line of sight issues
1	This would not fix the safety concerns or flow of traffic
1	This would not solve the safety or flow problem just spend unnecessary money to change the way you come into an intersection. Still a big safety concern and traffic flow.
1	What I see is not that people can't see oncoming traffic, they don't stop. I don't know if they think that 75 traffic has a stop sign as well or what...
1	When people are so oblivious at an intersection that they kill themselves it's called colloquially, "Doing a Darwin." The ISSUE is paying attention.
1	Why bother with this change? Still expensive and not much benefit.
1	Why is this not safer? it squares up the intersection so you can see.
1	Why spend the time and money.
1	Yes
1	You also need to start lowering the speed limits on Highway 20 further away from the intersection than it is now. That will help with safety.
1	You're still not solving the problem you need to build an overpass
1	add left turn lanes from each direction at the intersection
1	does not appear to do much to improve safety
1	doesn't seem much of an improvement. doesn't really solve the problems.
1	may be when they put 4-lanes in , an overpass would be needed.
1	not that much difference from what we have, still dangerous
1	same comments as before
1	same problems as before

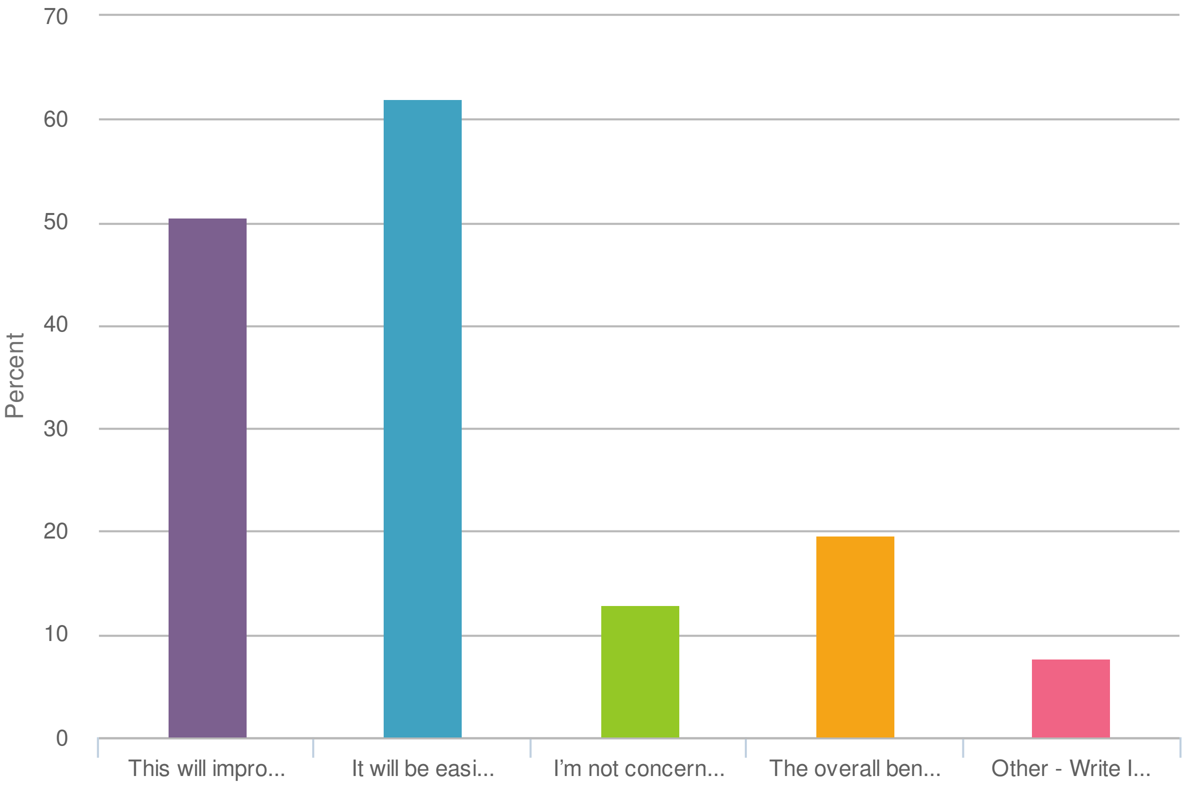
Count	Response
1	skewed angle is a huge detriment - this is much better and more like a common intersection. I feel warning lights/signage need to be improved however - not visible enough and not clear enough that NS traffic does not stop
1	still a problem getting across intersection
1	stupid! No turn lane or merging lane!
1	this design is pretty close to what we have now. no reason for cost if it will need replaced again.
1	this option doesn't seem to do enough
1	ㅎ It will be more difficult to travel through the intersection (i.e., more delay

14. Would you support ITD implementing the add northbound and southbound turn lanes option?



Value	Percent		Count
Yes, as is	22.0%		125
Yes, but with some changes (explain below)	4.8%		27
Maybe, but I have some more questions (explain below)	10.6%		60
Probably not	44.3%		251
Definitely not	18.3%		104
		Total	**567**

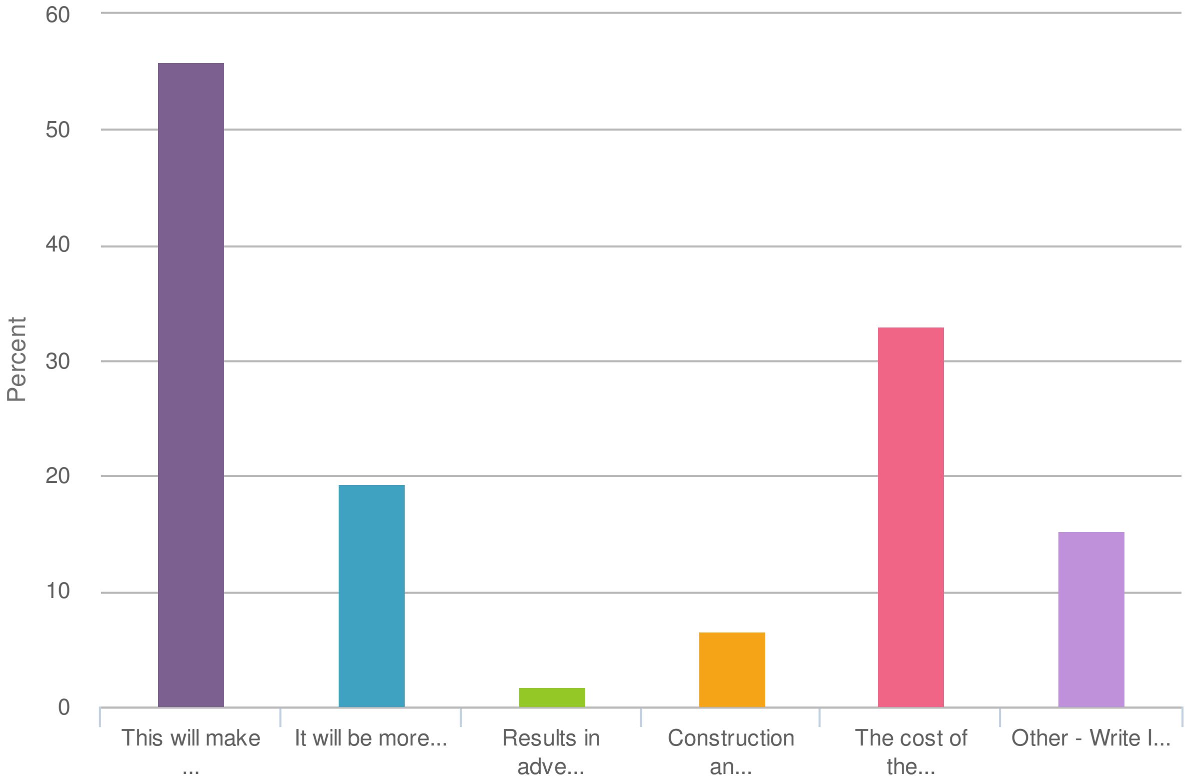
15. You indicated that you would potentially support implementing this option. Would you please indicate why? (check all that apply)



Value	Percent		Count
This will improve safety at the intersection	50.5%	🟪	105
It will be easier to travel through the intersection (i.e., less delay)	62.0%	🟦	129
I'm not concerned with the impacts to the land and/or environment surrounding the intersection and/or the impacts are okay considering the benefits of the alternative	13.0%	🟩	27
The overall benefits of the alternative are worth the cost of implementing it	19.7%	🟧	41
Other - Write In (Required)	7.7%	🟥	16

Other - Write In (Required)	Count
Other - Write In (Required)	16
It will be easier to travel through the intersection (i.e., less delay)	4
I’m not concerned with the impacts to the land and/or environment surrounding the intersection and/or the impacts are okay considering the benefits of the alternative	4
same	2
Doesn't more lanes usually lead to increased speeds?	1
I don't think this really improves the safety, it seems to make it more busy and complicated	1
I'm worried that having 4 lanes each way may cause confusion to drivers trying to cross Highway 75	1
Maybe a stoplight	1
Reduce speed	1
The overall benefits of the alternative are worth the cost of implementing it	1
The speed limit could remain 45 since this option clears traffic from the intersection quicker than present conditions.	1
This ishould a good plan for north - south traffic. The same needs to be implemented for East-West trafgi5.	1
This may possibly help, but it might create more problems. If the turn lanes were out in, it would be better to have traffic lights to help with the turning.	1
This will improve safety at the intersection	1
This will improve the turn off of highway 75 but I still have to turn into highway 75 from highway 20 everyday to get to school or work so it doesn't help from that respect.	1
Though this seems to make ease of use better, it still does not improve over all safety. I'm afraid this design will create its own, new potential problems. Turn lanes can help keep traffic moving, but turning traffic can create a vision obstruction, blocking the view for drivers on US 20.	1
Will it really be more safe for the east/west travelers?	1
as long as the hwy 75 traffic does not stop the intersection is dangerous	1
good, with more visible traffic lights	1
it would be nice to have a turn lane but people will still try and beat traffic turning.	1
Total	16

16. You indicated that you would likely not support implementing this option. Would you please indicate why? (check all that apply)



Value	Percent	Count
This will make the intersection less safe	56.0%	191
It will be more difficult to travel through the intersection (i.e., more delay)	19.4%	66
Results in adverse impacts to the land and/or environment surrounding the intersection	1.8%	6
Construction and/or maintenance of the alternative will be too challenging or costly	6.5%	22
The cost of the alternative outweighs the benefits of implementing it	33.1%	113
Other - Write In (Required)	15.2%	52

Other - Write In (Required)	Count
Other - Write In (Required)	52
This will make the intersection less safe	10
It will be more difficult to travel through the intersection (i.e., more delay)	3
Total	52

Other - Write In (Required)	Count
The cost of the alternative outweighs the benefits of implementing it	3
Add an overpass on 75	1
Construction and/or maintenance of the alternative will be too challenging or costly	1
DOES NOT ADDRESS THE INTERSECTION'S PROBLEM	1
Does not improve safety.	1
Doesn't address the main issue which is cross traffic.	1
Doesn't improve safety	1
Don't see a big safety improvement	1
I am not sure this will imrpove safety	1
I don't really see what the difference is.	1
I see very little turning traffic from hwy 75 causing a problem	1
I'm no expert, but according to your "arros" this will make the intersection less safe. This is contrary to myinitial take on the proposal. IF I"M wrong, and this makes the intersection safer, then this option should be considered.	1
I'm not sure this would stop accidents.	1
Im not sure if this is the answer either.	1
It doesn't fix the safety problem! Why bother?	1
It doesn't seem to improve turning from Hwy 20 onto Hwy 75.	1
It doesn't solve problems	1
It is fine as it is. Drivers simply need to be more vigilant.	1
It is still too similar to how it is now	1
It is still unsafe, so cost produces no worthwhile benefit.	1
Make it a four way stop, less costly.	1
Not good enough	1
Not needed	1
Not relative	1
Total	52

Other - Write In (Required)	Count
Once again, this option does not directly address the safety problem.	1
People stopped at stop signs	1
Potential confusion at the intersection	1
REMEMBER PLEASE, SAFETY NEEDS TO BE THE TOP PRIORITY, NOTHING LESS!	1
Really not sure if this will correct the problem	1
SAFTEY CONCERN	1
Still doesn't really improve safety.	1
Still doesnt solve the problem	1
The problem isn't the people on hwy 75 turning , generally the problem is people on hwy26 20 who get tired of waiting or just don't see the vehicles on hwy 75 .	1
This doesn't solve the actual problem of people on 20 yielding to 75 traffic	1
Those going straight might not understand that they need to stop.	1
Unless you decrease the speed on US 20, nothing will change.	1
What difference will this make?	1
Would not impact safety	1
You still have not addressed the problem	1
again no significant change to east-west traffic	1
does not solve the problem	1
doesn't help cross traffic cross any easier. waste of time and money	1
doesnt seem effective to the problem	1
doesnt solve the safety issue	1
east west traffic flows are not really in the consideration	1
little improvement in what exists, as far as safety and congestion	1
more confusing, not a cure	1
no change to safety	1
Total	52

Other - Write In (Required)	Count
not enough change from current configuration	1
seems that with more turning lanes this just creates more of a cluster f	1
the accidents I have seen or heard about don't happen because of vehicles turning - they occur because the east west traffic either don't stop or they stop and think that north south traffic stops and they pull out in front of traffic	1
too complicated for people not familiar with area.	1
too many lanes to watch may take away the concentration needed to watch for intersection traffic. Turn lanes sometime get confusing if you do not travel the road daily and a lot a one time or seldom travelers use this intersection..	1
would not improve safety	1
Total	52

17. Comments

Count	Response
1	Add an overpass
1	Add the skew as well
1	Adding lanes is not going to do much.
1	Adding lanes just gives distracted drivers more opportunity to cause accidents.
1	Again waste of money with no benefit
1	Again, it doesn't seem to solve any safety issues.
1	Again, seems that it would just further complicate the intersection without significant safety benefits.
1	All the turn lanes would block the vision of the East West drivers and I could see more accidents happening from people thinking that they could see all of the cars.
1	Allows for more congestion at the intersection where some drivers get more annoyed, thus less safety.
1	Already vommented.
1	Combine this with removing the Skew.
1	Costs money and still does not fix the problem.
1	Doesn't add to safety
1	Even better chance that someone will turn in front of oncoming traffic.
1	From my experience, delays because of lack of additional turn lanes are pretty minor

Count	Response
1	How much north bound traffic is turning left? I don't think much. Not enough to warrant a new lane. The south bound left turn lane might be a worthwhile addition. would these changes just encourage straight bound cars to maintain faster mph through intersection?
1	I can't see the improvement in safety for the overall cost of this project.
1	I don't see it improving safety.
1	I feel this will just make it a bigger mess resulting in more accidents.
1	I feel this would make the intersection more dangerous as the east and west traffic would have more south/northbound traffic to interpret.
1	I have seen many near accidents on 75 with turning traffic being nearly rear-ended because drivers miss brake lights.
1	I haven't considered turning vehicles to be the danger.
1	I just left my comments before on this topic. If turn lanes were added, traffic lights should be added.
1	I like the idea of adding turn lanes.
1	I really feel there should be a traffic light here. Or a cloverleaf built.
1	I think that this would improve the safety for people turning off of 75 however I don't think that it impacts those traveling on HWY 20.
1	I think the main safety concern is with Highway 20, not Highway 75; so while this option makes traffic flow more smoothly on Highway 75 it only makes safety a higher concern for Highway 20 travelers.
1	I think there could still be risk to people running through the stop signs
1	I think this is less safe because potentially more cars are at the intersection at once.
1	I think this would create more confusion i.e., accidents
1	Is the lack of turn lanes the cause of accidents? Not having a turn lane has not been a problem for me, but I would feel safer knowing all approaching vehicles had a light they couldn't miss infront of them.
1	It is a simple fix to me a stop light just like at countryside or woodside blvd. Will probably almost eliminate the bad wrecks. I have seen way to many in the 60 years i have lived here. Might be over 50 wrecks a lot fatal.
1	It would add to the confusion of the pot of the area motorists who terms to be the cause of the majority of the intersection related collisions.
1	Just do a round about
1	Lots of changes and expense with little or no safety benefits
1	Make it a four way stop, all stop.

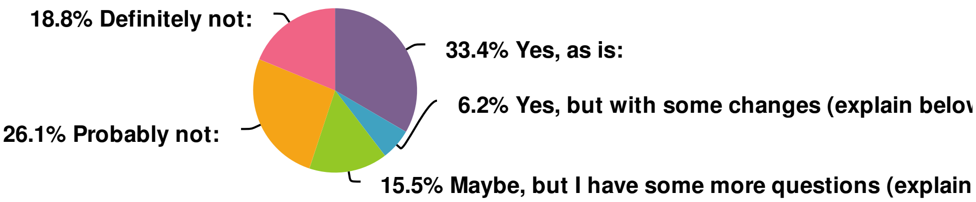
Count	Response
1	Need a merge southbound. Crusing south bounders will rear end mergers coming from a dead stop! North bound needs merge. Same deal! Surely u have seen this problem somewhere in the state or nation? Maybe we need to google this problem! Ha!
1	No
1	No signal plz
1	Northbound/Southbound traffic is not the problem. It's the Eastbound/Westbound traffic. They don't see the need to stop, but rather roll right through and pull out in front of oncoming cars.
1	Not a significant improvement. Better signage and more visible red/yellow lights would help.
1	People who are stopped wanting to turn left onto SH75 from 20 will still try to sneak out and go before the people on SH 75 either get to them or they are going to turn left onto SH 20.
1	People will continue to pull out in front of on coming vehicles.
1	People will still blow through the stop signs
1	Probably less safe than no-build with stacked vehicles turning further obscuring cross traffic
1	Round about
1	SAFETY!
1	SO THIS MEAN YOU PUT MORE VEHICLES AT THE INTERSECTION THAN IF IT NORMAL OPERATION
1	Safety is a concern. Looks too confusing
1	Safety issue of Hwy 20 running stop sign still posses a problem, also now with more turn lanes congestion and having traffic turn in front of on coming traffic. More safety issues. Also plowing snow is harder, safety concern of snow plowing
1	Safety!
1	See my answer to the last option
1	See previous comments. The issues I see stem from traffic on 20, not mobility of 75.
1	Seems like this would be confusing to non-locals.
1	Seems unnecessary to me.
1	Semi trucks and campers tend to congest HWY 75 and can give those coming off of HWY 20 the false sense that they are able to merge into HWY 75 traffic.
1	Sent there turn lanes now????
1	Still a safety hazard.

Count	Response
1	Still dangerous left turns
1	Still not safe.
1	Still won't stop cross traffic from pulling in front of traffic on Hwy 75. This will actually encourage it by having special lanes for so called safe entry into the highway
1	Stoplight
1	The issue is a signal not the turn lanes. A turn lane would help in busy times but a signal would manage the flow
1	The only way this will help is if you implement a 4 way stop
1	The turning lanes may block view even more.
1	The wrecks are caused by people pulling out in front of the Thru traffic. The flashing yellow light is what is causing the confusion. That flashing light is not necessary. Get rid of it!
1	There is not enough traffic on Hwy 20 to cause more than a few cars backed up at peak traffic hours. Adding the lanes will just put more blind spots to certain lanes creating a more danger to traffic turning right.
1	There should be turn lanes in the east and west bound lanes as well.
1	This could help ~ but all lanes still need to STOP.
1	This could work if Idaho drivers were better educated and evaluated.
1	This does not address the main safety concerns here that are the hwy 20 cross traffic
1	This does nothing to improve safety.
1	This is a better alternative to what is there now, with probably the least amount of cost.
1	This might be an okay answer. I can see problems seeing around the vehicle next to you at the intersection. This may tempt someone to move up further into the intersection to see better and then getting hit.
1	This puts somebody potentially sitting in the middle of the road at the intersection, accidents happen because people are careless, unattentive and stupid, don't give idiots more things to hit
1	This solves some issues on 75, but changes nothing on 20, which is a problem
1	This still does not help to address that east-west have to stop while north-south does not
1	This would cause more congestion and still not solve the safety issue.
1	This would work even better with 4 way stop lights.

Count	Response
1	Traffic needs to be stopped or deverted in order to improve safety. This would not prevent vehicles traveling north/south from colliding with vehicles traveling east/west
1	Unnecessary. I realize it's money for some people to do a bunch of unnecessary stuff.
1	Vehicles in the #75 turn lanes would impair visibility for vehicles on #20, making the intersection less safe.
1	While this looks like a good option, it still doesn't seem to address a major concern which is the merging traffic from Hwy 20. Often times this traffic thinks that the traffic on Hwy 75 is stopping and pulls out in front of oncoming traffic.
1	Why not just put in a four way stop?
1	Would make sense with a new traffic light
1	Would this address the issue of people on 20 pulling out in front of oncoming traffic on 75? I don't know the statistics as to where the majority of crashes take place. Is it due to a failure to yield from people crossing or merging onto 75, or is it people on 75 not seeing folks that are merging from 20?
1	You also need to start lowering the speed limits on Highway 20 further away from the intersection than it is now. That will help with safety.
1	You can't see traffic when people are in the right turn lanes.
1	You will have some passing or not being alert at the intersection.
1	adds too much more stuff to contend with. Still would not stop people from running their respective stop sign.
1	again does not improve safety and will make it harder to see cars
1	as before
1	does not get rid of fundamental problem of skewed intersection.
1	doesn't solve real problem
1	headed in the right direction, but still not enough. there would be no impact in daily driving and I feel accidents would rise
1	left turn lanes on Hwy 20, also
1	poor excuse for curing the problem
1	seems to be a better option than the first two.
1	seems to make things worse by making the intersection bigger.
1	stop both ways of traffic.
1	there is still the lack of an accelerating lane for traffic turning north and south form 20 to 75

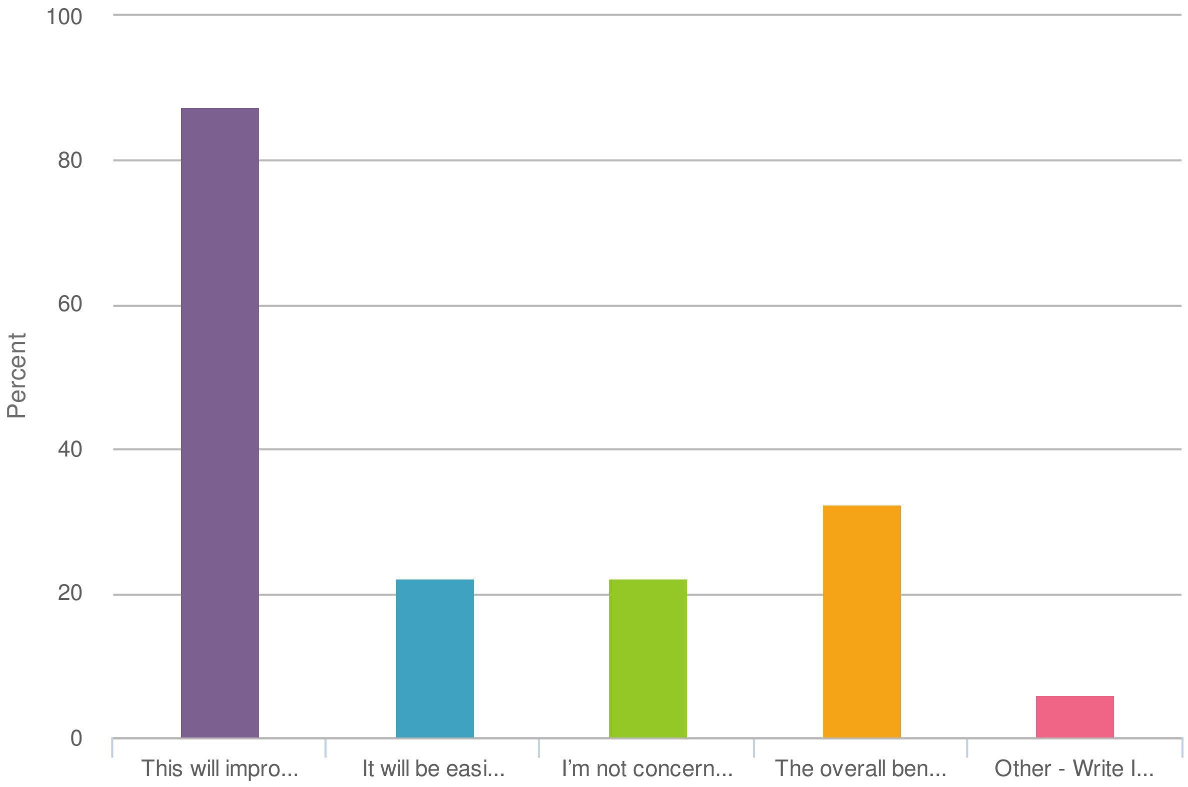
Count	Response
1	there would be improved safety for vehicles turning north or south onto Hwy20
1	this looks a little better, but does not show traffic travelling east/west.
1	to confusing for some
1	ᄒ It will be easier to travel through the intersection (i.e., less delay) why not put in a stop light.

18. Would you support ITD implementing the traffic signal option?



Value	Percent		Count
Yes, as is	33.4%		188
Yes, but with some changes (explain below)	6.2%		35
Maybe, but I have some more questions (explain below)	15.5%		87
Probably not	26.1%		147
Definitely not	18.8%		106
		Total	**563**

19. You indicated that you would potentially support implementing this option. Would you please indicate why? (check all that apply)

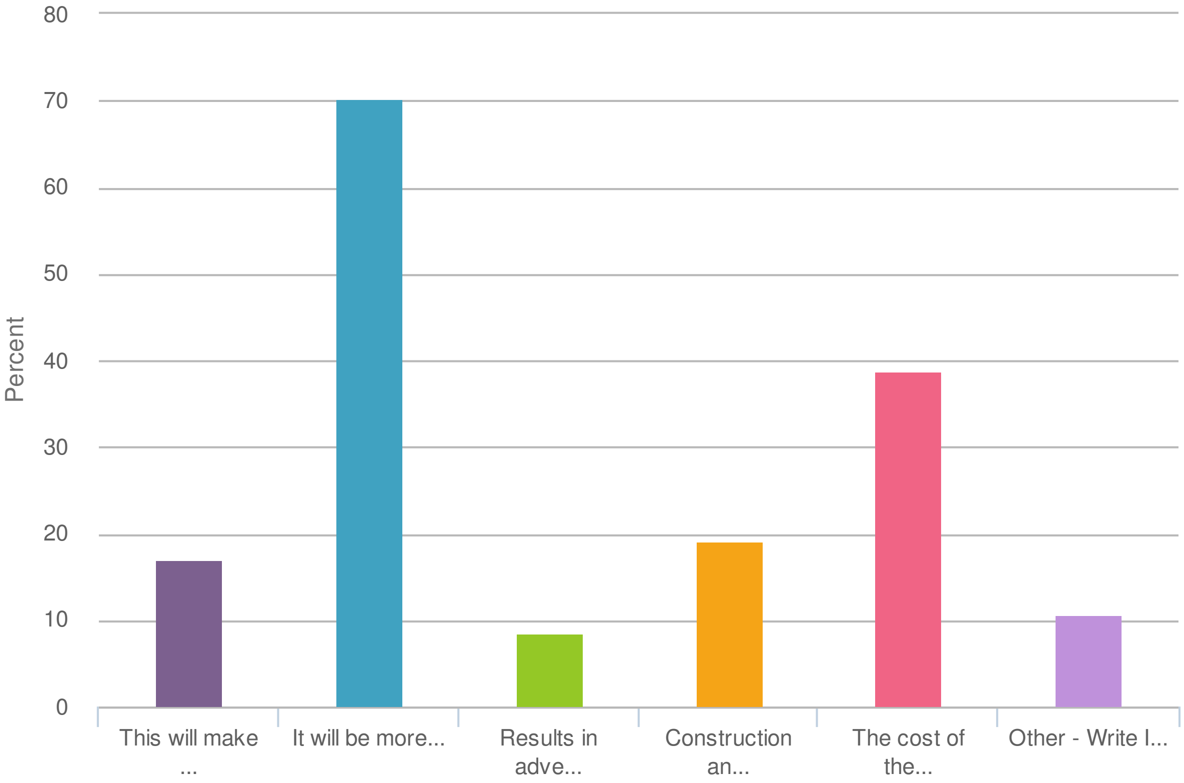


Value	Percent		Count
This will improve safety at the intersection	87.4%		257
It will be easier to travel through the intersection (i.e., less delay)	22.1%		65
I’m not concerned with the impacts to the land and/or environment surrounding the intersection and/or the impacts are okay considering the benefits of the alternative	22.1%		65
The overall benefits of the alternative are worth the cost of implementing it	32.3%		95
Other - Write In (Required)	6.1%		18

Other - Write In (Required)	Count
Other - Write In (Required)	18
This will improve safety at the intersection	6
It will be easier to travel through the intersection (i.e., less delay)	3
Total	18

Other - Write In (Required)	Count
I’m not concerned with the impacts to the land and/or environment surrounding the intersection and/or the impacts are okay considering the benefits of the alternative	2
Adequate with future development in mind	1
Although I support the basic idea of implementing a traffic light, I'm uncertain about high speed, or ever run away vehicles, coming down Timmerman Hill.	1
Concerned with environmental impact	1
If the	1
It might work with the traffic signal	1
May be the best long term solution, but very costly. I love the flashing lights that warn drivers that the lights are about to change. If this light was added would you be able to shorten the total lenghth of the 45 MPH area. Having to go 45 MPH so far past the intersection seems like complete overkill and probably just a speed trap	1
Not sure turn lanes would be needed on east west - not a ton of traffic and with a light not necessary. Maybe on north south traffic	1
Only if this option has shown improved safety at other sites.	1
Signal timing to avoid unnecessary delay must be a part of the design	1
Straighten out the skew in highway 20.	1
The overall benefits of the alternative are worth the cost of implementing it	1
This is it!!!!!!!!!!!!!!!	1
Why add turn lanes. Why add cost with no clear outcome	1
Would support a signal, but not addition of turn lanes in both directiions.	1
other than leaving it alone this is the best idea	1
provides a more commonly recognized version of traffic control	1
same	1
see below	1
turn lanes not nessessary	1
Total	18

20. You indicated that you would likely not support implementing this option. Would you please indicate why? (check all that apply)



Value	Percent	Count
This will make the intersection less safe	17.1%	42
It will be more difficult to travel through the intersection (i.e., more delay)	70.2%	172
Results in adverse impacts to the land and/or environment surrounding the intersection	8.6%	21
Construction and/or maintenance of the alternative will be too challenging or costly	19.2%	47
The cost of the alternative outweighs the benefits of implementing it	38.8%	95
Other - Write In (Required)	10.6%	26

Other - Write In (Required)	Count
Other - Write In (Required)	26
It will be more difficult to travel through the intersection (i.e., more delay)	8
The cost of the alternative outweighs the benefits of implementing it	6
Total	26

Other - Write In (Required)	Count
Construction and/or maintenance of the alternative will be too challenging or costly	2
This will make the intersection less safe	2
A traffic light is not expected so far out of towns and there will be problems of traffic failing to stop from all 4 directions instead of the 2 directions that exist now	1
Causing traffic to back up on 75 will be unsafe	1
I hate stop lights	1
Leave intersection as it is.	1
Maybe	1
North and South flyover would work much better	1
Not safe enough	1
Overkill.	1
Probably a good idea, but there is so little traffic through this area--is it worth the expense?	1
Results in adverse impacts to the land and/or environment surrounding the intersection	1
Stoplights do not belong on rural roads and will cause extreme delays.	1
There doesn't seem to be enough traffic to warrant a light. Even during prime commute times, the delay to turn onto Hwy 75 after stopping is very short.	1
There is not enough traffic at this intersection to warrant such a huge expense.	1
This is a dangerous option. Trucks comming down the hill may not be able to stop in time for the Signal.	1
This might be a cost-effective option	1
This option, though improving safety, created other problems.	1
Trucks?	1
Unnecessary stops for SH-75	1
Will make south bound traffic hard for big truck to gather speed for the hill	1
add another traffic light to the problem	1
big trucks will not have time to gain speed going south on 75	1
congestion	1
Total	26

Other - Write In (Required)	Count
hwy 75 is to busy a certian time of day for a light	1
there are better options for safety, cost and mobility	1
this just slows down traffic north/south whereas the goal should be to increase the speed limit	1
too many traffic signals already in the valley	1
with Timmerman right there I see this as a safety issue with larger vehicles not having time or room to stop especially in icey conditions	1
Total	26

21. Comments

Count	Response
1	Safety is my main concern. Anything that improves the safety of that intersection is worth it.
1	A stop at the bottom of a long hill is never a good idea. Get rid of the signal light and make the west and East bound traffic turn right or left at the end of their ramps. Leave North and South traffic alone. They are not the problem.
1	A traffic signal would be very helpful. It would be funny to see one in the country, but it would be for the best!
1	Add this after previous options are not enough.
1	After commuting daily through this intersection for the last 17 years, this option is overkill. If a traffic signal is implemented, it is not necessary to add additional turning lanes (there is not enough traffic to warrant this)
1	As long as it was put in with good working cameras or loops
1	As long as the traffic lights are tuned right, this will vastly improve safety and will be worth the costs of implementation.
1	At last I see lights I like, but only hwy 20 should have to stop. South bound trucks will be too slow going up Timmerman and the next thing you will want is another lane for them. Getting too expensive.
1	But the cost seems high but traffic will only continue to increase through this intersection so it might be the best option for the long-run.
1	Can't believe that we need another traffic light. I don't think the overall traffic load at the intersection warrants 24 hour a day interruptions to the smooth flow of traffic.
1	Cost cost cost! Seems confusing less safe.

Count	Response
1	East/West Approaches are still skewed.
1	Great idea! I don't mind stopping for safety and I know the valley would feel much safer.
1	How long would it take to implement? Would the light have sensors to change when a car arrives? How much would it cost?
1	I AM NOT SURE WHAT THE COST WOULD BE, BUT WITH INCREASING TRAFFIC VOLUME THIS APPEARS TO BE A POSSIBLE SOLUTION TO THE DANGERS PRESENT AT THE INTERSECTION.
1	I already mentioned if turn lanes are added, there needs to be full traffic lights added.
1	I don't see why everything is fixed with a stop light. This would be too costly to build and you will cause more road rage.
1	I like the idea ~ yes, traffic may be delayed but it will force people to stop. If the lights were motion detected that would help speed up the delays.
1	I think a stoplight is the best option for the intersection
1	I think this is the best option with the lights causing all 4 areas to stop.
1	I thought a 4 way stop was considered and rejected when changes were first implemented, due to safety concerns with large trucks coming down / going up Timmerman Hill in inclement weather. This option seems like it may improve safety right at the intersection, but potentially cause safety concerns further back from the intersection, in all directions.
1	I worry about there being more delays, but would improve the safety
1	I would agree with turn lanes. But I am still thinking a light or round about.
1	I would be concerned about delays and people running red lights if there's no cross traffic and they get impatient.
1	I would support this as long as there aren't long wait times for those traveling on Hwy 20 as compared to those traveling on 75.
1	I would want to know what the future development of the area is, more residential? If so, I believe this would be a good idea since more local commuters would be traveling through the area. If it is expect to remain mostly farming land, this might be overkill.
1	I'm more concerned with safety than with saving-time. This alternative is the best low physical impact way to maximize safety. I would add two features to this alternative: 1) traffic-activated signals so drivers don't have to wait for signals to change when there is no oncoming cross-traffic; and 2) a separate truck lane going south of the intersection for trucks to climb the hill after they have stopped at the signal.
1	I'm wondering if we would need all three lanes if there is the signal, and would be interested in seeing what the difference in delay would be with just two lanes as opposed to three.
1	I'm worried about north bound traffic in the mornings on slick roads having to stop on the hill if the light is red.At times their bumper to bumper with lots of trucks and equipment.

Count	Response
1	If north/south increase to 4 lanes.... Then yes, most definitely need a stop light
1	If you are going South and you are stopped at the light, trying to get your speed up to go up and over the hill will be difficult for those traveling with older vehicles and trailers attached to them.
1	If you use smart technology that minimizes the wait to pass through the intersection rather than timers, this option would be acceptable.
1	It may help a little with safety on HWY 20 and the flow of traffic for Hwy 20. I still believe it would be a big safety issues of traffic going through red lights, and the flow of traffic.
1	It seems costly and I feel like the changes that have been made already (ie the reduced speed zone) have helped tremendously.
1	It will not be safe with semis going down the hill and having to stop along with loaded semis having to start at base if hill holding up traffic
1	It would hinder folks commuting to work in the morning. Take more time to stop at a stoplight.
1	Like the intersection as is
1	May cause traffic delays at intersection.
1	May make the travel of Hwy 20 go a little faster but still I see safety concerns, I think an overpass should be placed on Hwy 20 to cross
1	Might be good in theory, but I see people running lights a lot ... I feel this would just be one more area for them. The intersection, as is, allows traffic to proceed if nothing is coming, no waiting unnecessarily for a light to change. Drivers just need to be smart and do what they are supposed to do.
1	Need best technology to alert drivers to impending stop at traffic light. Would rumble strips or additional flashing lights help?
1	No more traffic lights I don't want to live in congestion. The stop sign works just fine it's not a particularly high volume intersection. Traffic lights infuriate me
1	No need for turn lanes
1	Not a real fan of traffic lights in rural areas such as this. Too many people fail to stop and/or push the yellow/ red transition.
1	Not enough traffic to warrant the expense.
1	Opticom system for fire department use should be involved.
1	People may actually stop is they see the red light or at least slow down.
1	People run the light now

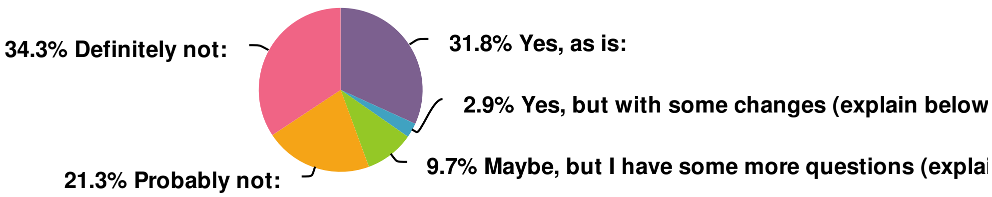
Count	Response
1	People will complain about this option, but mostly because they like to lay the hammer down when they're headed south on 75. Once people get through that intersection they really like to get up to speed (75 mph) as quickly as possible. This will slow that down, and also help with safety. And since you asked, I'll tell you that I like this option.
1	Perhaps a N-S (Rt 75) green signal light and the E-W (Rt 20) would need to trip a source for the light to turn
1	Poor design option
1	Potential to increase different types of accidents
1	Putting a signal here Will increase accidents and reduce capacity.
1	Round about
1	Same answer as before with the farmers and loaded trucks and trailers
1	See previous comments.
1	Signal is best so we can maintain 55 thru the intersection when not red or yellow
1	Signal must have vehicle detection that works in all weather
1	Smart light that has warning light when soon to be red
1	Solution, as long as lights for US20 are pressure actuated and the signals don't change just on time alone. Keep flow on 75 as priority traffic
1	South and North lane would have to stop when there is no traffic in East/West movement.
1	Still a merging problem for right turns!
1	Still not the best solution in my opinion, but far better than a blinking light.
1	Stopping vehicles pulling heavy trailers headed south on 75 is a bad option. The steep grade just south of the intersection will hold up traffic on weekends and cause dangerous passing situations where viewing distance is limited.
1	The real problem is just Hwy 20 drivers not yielding.
1	The signal is more obvious than the blinking lights that are already in place.
1	The traffic on 75 includes many large trucks that would significantly impact the flow of traffic through the intersection if they were required to stop at a light.
1	The turning traffic does not have to wait long enough to turn for a light to be value added.
1	This could really back up traffic going north and south, especially during bad weather.

Count	Response
1	This is a low impact solution to a problem, that for the sake of argument here, perhaps exists. No money however for the road-grader, cement pouring, machine running tax-dollar consuming construction industry.
1	This is a slight improvement to safety but not the best alternative.
1	This is much better than the previous options, but I am hoping for an overpass. This light gets so much traffic from the east, Twin Falls, Boise, etc that there has to be an option where cars are separated at the turn.
1	This is the way it should be!!!!!!!!!
1	This is too impacting on mobility, unless the lights are on sensors that keep traffic flowing north and south unless a need arises in east west flows.
1	This option improves the safety.
1	This plan would create more travel delays and only slightly increase safety. Maintenence costs would be unnecessarily high. It would be a drain on the sheriff's office who would be dispatched to "light not working properly" calls.
1	This seems to be comparable to other major intersections between Hailey and Ketchum and may be a good option.
1	This will cause cars to pass semi-trucks as they are trying to start from a red light going south moving the danger zone to MP 100.5. I think there would need to be a total of 5 lanes put in on HWY 75. 2 Northbound, 2 Southbound, & 1 Turn Lane in the center. This would allow for a designated passing lane going each direction to pass trucks and slow traffic.
1	This will pose significant problems with large loads heading north on HWY 75. During the winter will also pose challenge due to the frequent slick road conditions.
1	This will slow traffic because big trucks will not have time to gain speed before going up Timmerman Hill. Impatient drivers will then pass even when unsafe to do so.
1	This would be safer.
1	This would cause huge delay at all hours. I think people less safe with people running the lights or making the turns.
1	This would help safety, but hinder mobility.
1	Traffic light not expected so far from town and more traffic failing to stop will be an issue
1	Very expensive, but would definitely lessen the accidents. Bigger, better lighting and signage should do it.
1	We just gained some time by the increased speed limit through Lincoln county. A stop light will take too much back. How would you manage green time. If we have to stop when there is no traffic, you encourage civil disobedience.
1	Will congest morning traffic. Bad idea. North and South need to flow.

Count	Response
1	Will it really be safer?
1	Will the traffic light change only when a car is present?
1	Wouldn't it make more sense to start with just the traffic light change before rearranging the landscape and all the lanes?
1	Yes! This combined with lowered speed limit a mile or more before intersection.
1	Yes. Important to do.
1	You also need to start lowering the speed limits on Highway 20 further away from the intersection than it is now. That will help with safety.
1	You might have individuals running the red light.
1	as long as there were sensors that will turn the light green if there is no one coming
1	better signage for existing blinking light should be done before any elaborate and expensive options even be considered.
1	don't put in a stop light. this would be a ridiculous idea
1	horrible idea.
1	is there really enough traffic to warrant a traffic signal?
1	it will rarely have cross traffic to use the light
1	just a stop light with no turn lanes with a green preference north/south and east/west drivers would trigger a timed light change.
1	lots of delay and braking on the downhill going north on ID 75 will be difficult, especially for the many travelers to the area.
1	make the light change only when there is cross traffic (Hwy 20) present.
1	need to address whether light is changed by traffic sensors from EW - this could be a problem to traffic flow from NS requiring frequent stops in traffic
1	the intersection dose not need a light traffic is not that congested nor probably ever will be
1	this is better
1	this would be annoying as hell and people would run red lights from the north and south
1	will make it more difficult to travel thru the intersection

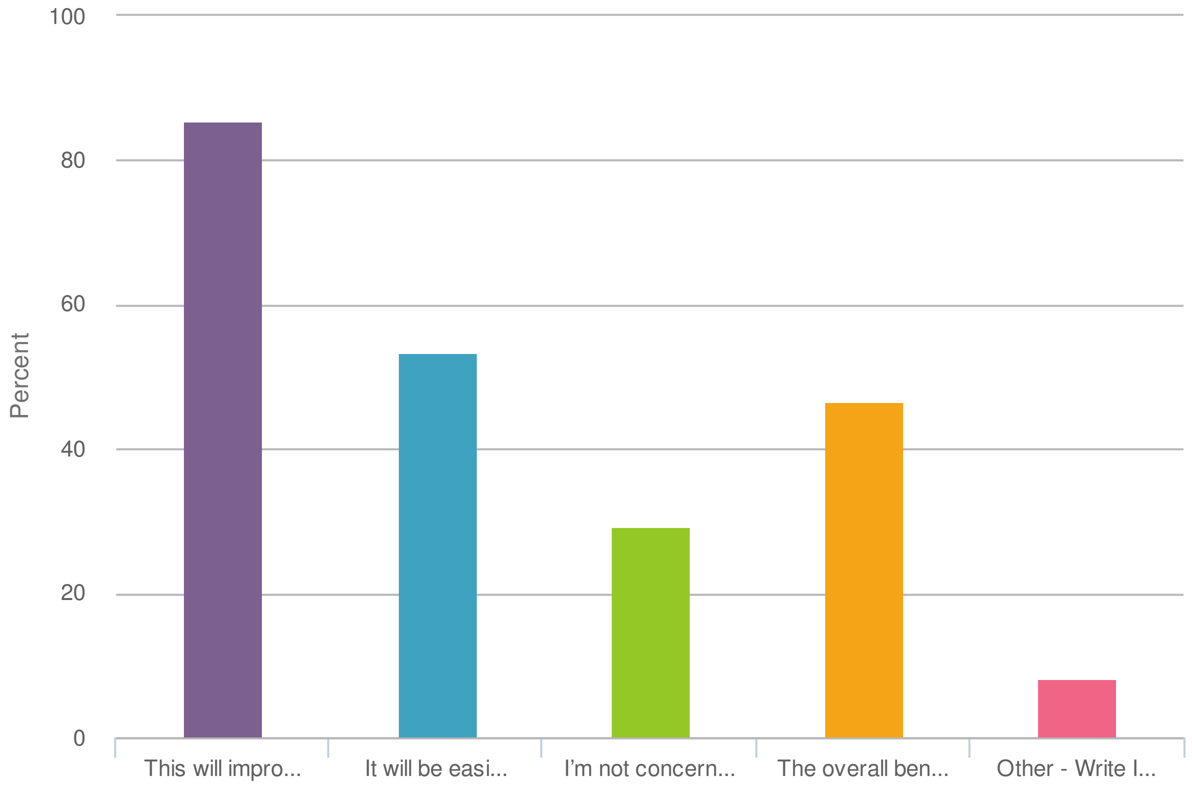
Count	Response
1	ㅊ This will improve safety at the intersection ㅊ It will be easier to travel through the intersection (i.e., less delay) ㅊ I'm not concerned with the impacts to the land and/or environment surrounding the intersection and/or the impacts are okay considering the benefits of the alternative ㅊ The overall benefits of the alternative are worth the cost of implementing it

22. Would you support ITD implementing the roundabout option?



Value	Percent		Count
Yes, as is	31.8%		178
Yes, but with some changes (explain below)	2.9%		16
Maybe, but I have some more questions (explain below)	9.7%		54
Probably not	21.3%		119
Definitely not	34.3%		192
		Total	**559**

23. You indicated that you would potentially support implementing this option. Would you please indicate why? (check all that apply)

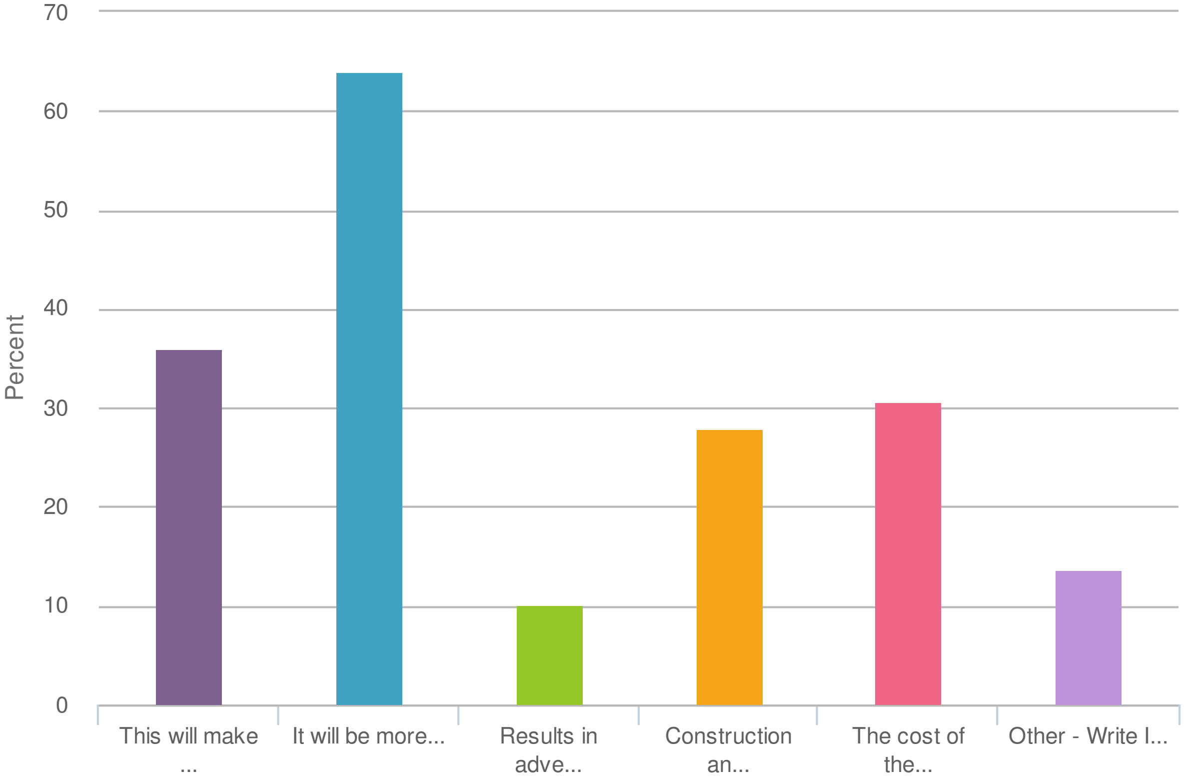


Value	Percent	Count
This will improve safety at the intersection	85.6%	202
It will be easier to travel through the intersection (i.e., less delay)	53.4%	126
I'm not concerned with the impacts to the land and/or environment surrounding the intersection and/or the impacts are okay considering the benefits of the alternative	29.2%	69
The overall benefits of the alternative are worth the cost of implementing it	46.6%	110
Other - Write In (Required)	8.1%	19

Other - Write In (Required)	Count
Other - Write In (Required)	19
This will improve safety at the intersection	11
I'm not concerned with the impacts to the land and/or environment surrounding the intersection and/or the impacts are okay considering the benefits of the alternative	7
Total	19

Other - Write In (Required)	Count
The overall benefits of the alternative are worth the cost of implementing it	6
It will be easier to travel through the intersection (i.e., less delay)	5
An overpass would be safer and have better traffic flow	1
I am more concerned with people not yielding to on coming traffic and slowing down.	1
I can see a need to reduce speed limits at the approach of this solution from all directions.	1
I don't agree with the maintenance cost rating....over time this is no different than the existing from the maintenance standpoint	1
I have questions about the difficulties in maintaining this option	1
I think this a roundabout is the very best option.	1
Mobility through the itnersection for all movements is a plus; keep in mind large trucks and freight movement through the intersection; a medium- to long-term improvement to the intersection	1
Not all people understand round abouts	1
Snow removal may be a problem might be a good solution but speeds coming in would need to be regulated	1
Speed	1
The raised curb would be very difficult to maintain. A painted devider leading up to the round about would work much easier.	1
This seems like a great option for slowing all traffic down.	1
Traffic congestion/snow removal	1
While this would improve the safety it would slow travlers down	1
everyone would have to slow down	1
i think it would be difficult for wide loads and plowing?	1
mobility maintained but slow, while saftey improved	1
needs to be huge, highway safe dimentions	1
same	1
Total	19

24. You indicated that you would likely not support implementing this option. Would you please indicate why? (check all that apply)



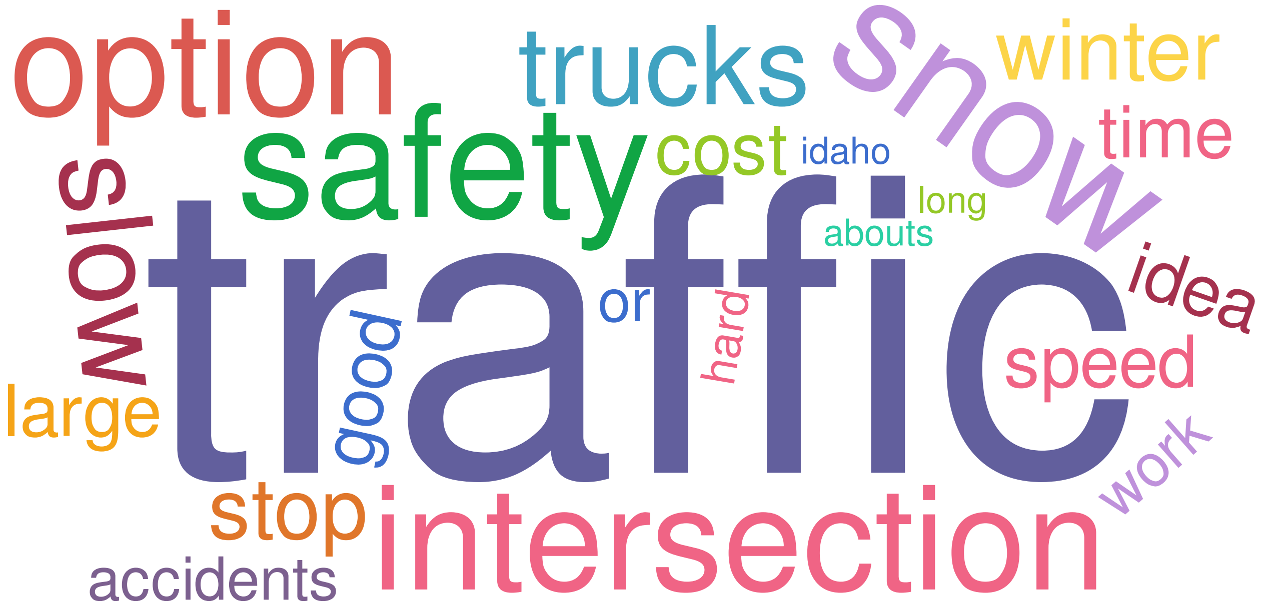
Value	Percent		Count
This will make the intersection less safe	36.1%		106
It will be more difficult to travel through the intersection (i.e., more delay)	63.9%		188
Results in adverse impacts to the land and/or environment surrounding the intersection	10.2%		30
Construction and/or maintenance of the alternative will be too challenging or costly	27.9%		82
The cost of the alternative outweighs the benefits of implementing it	30.6%		90
Other - Write In (Required)	13.6%		40

Other - Write In (Required)	Count
Other - Write In (Required)	40
It will be more difficult to travel through the intersection (i.e., more delay)	7
This will make the intersection less safe	6
Total	40

Other - Write In (Required)	Count
The cost of the alternative outweighs the benefits of implementing it	4
Construction and/or maintenance of the alternative will be too challenging or costly	2
A roundabout? Seriously? C'mon!	1
Americans do not generally know how to properly use a traffic circle. I predict more crashes, albeit at lower speeds, with this option.	1
I dont think it will make it safer but would make any accident less severe	1
I fail to see this change will make the intersection more safe.	1
I'm concerned that drivers will not know how to negotiate the intersection, causing delays.	1
Idaho is not used to roundabouts and i think one would diminish safety.	1
Idahoans do not know how to properly navigate roundabouts. People STILL stop at them	1
In Idaho no one really knows how to use a round	1
JUST DONT THINK A ROUNDABOUT IS SAFE FOR THAT AREA	1
Lots of trucks at different times of year! This is the most stupid of all!	1
Make it very big!!!	1
No one likes roundabouts!	1
Not good spot for a roundabout, trucks need speed to climb hill south bound, if they do go with this optioin the need to put a passing lane on the hill	1
Not on a highway	1
Not sure I like the idea.	1
Now this Idea is just plane silly. Round abouts are for slow moving traffic not trucks on Icy surfaces.	1
People are idiots	1
People don't know how to use a roundabout. Check out the one in Woodside and see how many people are confused by it	1
People here don't know how to handle a roundabout and the speeds along 75 are way too high for this idea	1
Results in adverse impacts to the land and/or environment surrounding the intersection	1
Roundabouts are confusing	1
Total	40

Other - Write In (Required)	Count
Roundabouts confuse	1
Roundabouts with raised islands have no business in areas that receive large amounts of snow.	1
SAME COLLISION PROBLEMS	1
STUPID...	1
See previous comments	1
Seriously?	1
This does not improve the safety much in my view; westerners are too confused by how to behave in roundabouts.	1
This is a major highway !	1
This would cause mass confusion and people wouldn't slow down and more wrecks would happen	1
Will make the intersection more dangerous!!	1
difficult to plow snow through intersection	1
most Idahoans won't understand how to negotiate this type of intersection safely. Truck traffic and large recreational vehicles will cause problems for other drivers.	1
most US citizens don't understand round abouts	1
most the people in Hailey have problems using the round about at Fox Acres correctly, this would be a mess!	1
not sure	1
roun-a-bouts are a joke, it also impeades the the large over size loade that are directed this way.	1
roundabout on the highway seems extreme.	1
roundabouts aren't practical in winter conditions.	1
roundabouts work well at slower speeds..this intersection tends to get speeds from 45-55+ mph	1
same issue as the stop lights... speed limit should be increase on north/south traffic not decreased.	1
Total	40

25. Comments



Count	Response
1	Winter conditions could be hazardous.
1	Oh my god, this is the worst idea of them all. Please no, oh lord, no, no no.
1	A round about in this location is the dumbest thing I have ever heard of it is just a step below a full on traffic light. Think about how difficult it will be for a loaded or empty truck to climb the hill from a dead stop on icy roads. During the winter this will add risk and make the intersection less safe than it already is. DUMB DUMB DUMB IDEA!
1	A round about that requires all vehicles entering to stop first. Control the intersection, make everyone stop every time they use the intersection! Is that so hard?
1	A roundabout will slow north/south bound traffic which is the bulk of the traffic, and it seems to me that the cross traffic safety can be addressed with existing signals, speed reduction zones, and adding turn lanes on the north south Hwy 75.
1	A roundabout would be OK, but the traffic signal is what I envision being better.
1	After spending time in Europe, I see all the benefits of a roundabout. Safety is a primary concern at this particular intersection, and the roundabout would have certainly saved the lives of many people.
1	Again, this option does not seem to address the concerns raised a few years ago about large trucks coming down / going up Timmerman in inclement weather. Snow plowing the roundabout would seem to be an ongoing maintenance issue.
1	Also not sure about large trucks and fram equipment - see a lot of crub run over by round about by high school
1	Americans haven't the hang of roundabouts. I'm not sure the safety would increase. It would slow down traffic in both ways.

Count	Response
1	An overpass would be safer and have better traffic flow
1	As long as the lanes and radius are big enough to not slow down big trucks
1	At what speed will be posted for the round about? It may be more hazardous in the winter time with heavy traffic and a fairly severe storm event happening.
1	Best idea and only spend money for an improvement
1	Best idea yet! People would naturally slow down, great idea, do it, please!
1	Commuters will vehemently hate ITD and will send hate mail if you do this option
1	Confusing and less safe on an intersection that works well now. I have personally not seen an accident since the speed limit was lowered to 45mph.
1	Cost and maintenance.
1	Drivers don't pay attention to stop signs now, how will they view yield signs ? More people that Blaine Co. residents use this road/intersection.
1	Find an alternative to the pavers, the cost and maintenance of pavers would be a negative.
1	Getting better here. I know this is a more expensive option, but what is the cost of a human life?
1	Great alternative that will improve safety and keep traffic flowing. Make sure to accommodate cyclists.
1	Has a higher safety rating.
1	Honestly I hate roundabouts but if it will make it safer than I am good with that!
1	How would large trucks, semis, vehicles pulling trailers navigate a round about and keep traffic flowing? Round abouts are not realistic for varied size traffic like those that travel through this intersection.
1	How would semi truck say triples get around this ?
1	How would this work with snow removal in the winter?
1	I actually like this option
1	I am concerned with the number of large semis with double and triple trailers and campers going through the intersection. if they will fit, great
1	I believe that we should implement more roundabouts at many intersections including this one.
1	I do like roundabouts, but make them wide enough for ease snow removal and traffic
1	I don't agree that safety is improved unless there are a lot of warning lights, good signage, reduced speed (25mph). Most people don't have the common sense to handle a high speed round about.

Count	Response
1	I don't understand how roundabouts improve safety. It just add confusion to those who don't regularly travel the area.
1	I grew up with "traffic circles" and every time I enter one I feel like I am taking my life in my hands. A roundabout would be my worst nightmare option for this situation, costly, unsafe, poor mobility - please don't!
1	I hate round abouts. They are stressful and hazardous and far more likely to cause accidents although not head-ons or T-boes. Again, no money for the boys...
1	I have driven on many roundabouts. I have yet to seen Idaho construct a functional one. May be if the one in Boise shows promise my opinion might change.
1	I have never seen the benefits of roundabouts. They slow traffic down and if not done properly, can cause confusion and accidents. The only time I have seen them work well was when they were paired with stoplights. In this instance we can have the stoplights and save the cost of building the roundabout.
1	I like this idea as well, however, if people do not yield thinking they have the right of way, you could potentially still have problems.
1	I like this option the best! I feel that by slowing people down it will help with the safety(since the speed reduction does nothing) while it may be a pain and take more time it will help with accidents
1	I think the roundabout option has potential. I would like to see more specifics on diameter of the ring and studies that detail capacity/speed. Short of an overpass, however, this might be an excellent option.
1	I think this is definitely an option--They use them In Montana and Az and they seem to work. Hard in the snow country though.
1	I think this option seems that it would improve safety and also keep traffic flowing the smoothest.
1	I understand that this would be a pain during the winter months for road maintenance but I would take that over safety any day!
1	I was recently in United Kingdom and saw roundabouts in use on major roads and they functioned well. I would definitely be in support of this idea.
1	I worry that not everyone understands how roundabouts work.
1	I'm unsure that this will actually improve safety -- I'd like to see some statistics on roundabouts reducing accidents.
1	Idaho drivers are not very familiar with round-abouts.
1	If immediate funding were available this would be my first choice. If not, then other less costly alternatives first, gradually working toward the roundabout solution eventually.
1	Improves safety.
1	In my opinion, this intersection is too high speed to warrant this option. In addition, many oversize vehicles, including trucks carrying pre-fab homes travel through this intersection. Again, drivers here do not understand the rules of a roundabout either (as evidenced in Hailey on Fox Acres Rd.)

Count	Response
1	It would be miserable to remove snow from such a thing. The roundabouts in Boise and the new one in Twin Falls by the mall just confuse people. Semi and people pulling camp trailers with ATV trailers in double will take lots of room and slow the flow of traffic.
1	Just do it. We've had enough fatalities and injuries. Cost should not be a concern. Truckers will just have to handle going slower up the hill, etc.
1	Leave intersection as is.
1	Make it a four way stop, all stop.
1	Most don't really understand how a roundabout works. And for semi's, could be more dangerous.
1	Most people don't know how to use round abouts and they aren't usually made properly to make them safe
1	Most people don't understand how to use a round about. Some people would not yield. that would be as bad as running the stop sign
1	Need warning signage and rumble strips to alert drivers to non-standard (In Idaho) traffic roundabout
1	No comment
1	No! No! No! No! No!!!! Roundabout is not the answer! You still have idiots who think yielding does not apply to them and will go on thru. Trucks going south will be slowed down. For them to make the grade will be a long haul going south. Vehicles behind the trucks will get impatient and will try and go around the truck and cause wrecks. I've seen it vehicles passing that stretch of highway even though it is a no pass zone. You will make the stretch of highway right by the rest stop and south a mile or two more dangerous with vehicles wanting to pass the slow going up the hill vehicles!
1	No, just no
1	Not a big fan of "round-abouts" Especially in winter with snow removal needs.
1	Not good for plowing snow and truck/freight movement
1	Not needed at this time.
1	Not safe enough given the expense and confusion of the proposed solution.
1	Not sure how snow plows like this?
1	Ok maybe
1	Pavers- you have to be kidding. they would be torn up the first winter. This is a country intersection, not a large city.
1	People don't get roundabouts

Count	Response
1	People don't seem to know how to utilize roundabouts. They will sit at the yield sign, not signal when they're coming out.
1	People hardly know how to use roundabouts in Idaho.
1	People in Idaho don't know the meaning of the word "Yield" and typically speed through roundabouts in the Treasure Valley.
1	Personal experience with Roundabouts shows only that Inconsiderate and Arrogant people have one more way to prove it.
1	Pretty good solution, though the description on how large loads handle the roundabout isn't clear to me.
1	ROUNDABOUTS ARE CONFUSING, HARD TO SEE AT NIGHT AND FOLLOW, HARD TO PLOW SNOW IN, SLOWS TRAFFIC DOWN, MERGING IN ROUNDABOUT IS UNSAFE AT TIMES ALSO.
1	Round a bouts are not practical in snow country. I favor traffic having to slow down and obey traffic signal.
1	Roundabout not appropriate for this area. And not safe for cyclists either!
1	Roundabout ok idea, but commuter traffic is a concern. Also large trucks and farm equipment need to be accommodated with wider roundabout.
1	Roundabout's are a huge pain. People never seem to know which way to go, when it is their turn and it holds people up. I think a 4 way stop or traffic light makes the most sense and has the least cost and impact. If you put in a traffic light and then do another study in 205 years that would make more sense economically and environmentally.
1	Roundabouts are changing with yield to the right of way. There is more traffic on 75 then there is on 20 and will upset many people who drive through there every day. This will not help the intersection and will cost a lot of money and hard for ITD to plow the highway and keep it open. People also tend to drive over a roundabout durning heavy snow fall causing damage to there vehicle and headic for the state when unnecessary lawsuits come in.
1	Roundabouts are confusing, hard to understand, and hard to see at nights, you still have the problem of traffic flow and safety on traffic merging in and out of traffic. Also plowing snow would be difficult, and where does the snow get removed to.
1	Roundabouts are not common in the US and confuse people, with the large amount of elderly, tourists, and low visibility in winter this will be unsafe and confusing
1	Roundabouts can be a great solution, however, in my experience they are not conducive to snowy conditions. It is made worse when driver's are not properly educated on how to navigate a round about
1	Roundabouts may be the new kid on the block, but I don't think they belong on a main highway.
1	Roundabouts work great
1	Safer but some education might be needed for public
1	Slows me down.

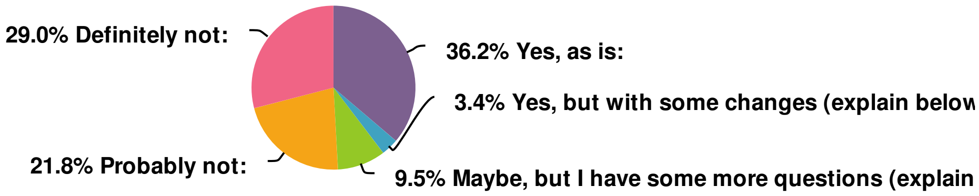
Count	Response
1	Snow removal will be a challenge.
1	Snow removal would be hazardous.
1	Sometimes the traffic comes in clusters so at points when you would be trying to turn into the roundabout you would be delayed for a really long time because there would be a long line of cars from one side.
1	Still leaves the intersection unsafe because people will force their way into the roundabout causing accidents
1	Still stupid!
1	THIS IS THE TICKET. NO MORE DELAY DO IT THIS WAY!!! YURI DO YOU HEAR ME?!?!?!
1	The mentally impaired are able to negotiate a round about. The least traveled road is not delayed for the higher traffic and vice versa
1	The time this will take would be the issue. Road construction in Idaho takes too long.
1	There is not enough traffic through this intersection (current or in the foreseeable future) to justify complicating the intersection this much.
1	There is too much traffic and people coming to the valley will be confused
1	This area is home to too many old people who are unwilling to learn new ways of the road. There are too many kids in this area who think they own the road. And there are too many yuppies who behave like old people and think they are kids.
1	This forces everyone in all directions to slow down, yet keeps traffic moving without delays.
1	This is Idaho, NOT Oregon. Round things are for inner city not for Highway 75. Bad idea.
1	This is always hard for people and they don't stop/yield to other traffic ~ I think this will create more accidents.
1	This is by far and away he best solution! Take heed from other countries that use traffic circles. They increase safety by slowing down traffic and keep traffic flowing.
1	This is not a good idea at all. We are in semi-hauling rigs with triples being pulled, not user friendly at all... I hate roundabouts......
1	This is still a rural highway, not a busy intersection in town. This seems to be a little over engineering
1	This is the best design to improve safety and ease of travel
1	This is the best option!!
1	This is the best option; it is the best way to force cars to come to a stop at the intersection, and lessens the likelihood that someone will get stuck at a red light not detecting a vehicle.
1	This is the most asinine solution imaginable. Can't believe you would consider it.

Count	Response
1	This is the only option where the safety is improved and the majority of other areas are also "in the green."
1	This just seems silly in this location.
1	This may be the way to go!
1	This option is the safest. Accidents in a roundabout are generally glancing. not fatal.
1	This really sucks. No one uses round a bouts it would create more wrecks
1	This will also cause more crashes on HWY 75 at MP 100.5 due to cars attempting to pass a loaded truck which is going slow and trying to get a run at Timmerman Hill. I believe you would need to implement passing lanes after the roundabout.
1	This will greatly slow traffic - not appropriate for highways
1	This would be awesome , do we really need a brick (?) center divider and could another lane be added for turning off to the right?
1	This would be horrible delay with greatly reducing the speeds. Going from 55 mph heading south to 25mph through a round about. Hay trucks with triple loads would have difficulty navigating. I see that this could cause more accident but at a lower speed?
1	This would be nearly impossible to plow.
1	This would create traffic delays at high volume use times and the construction would be lengthy and cause delays. Not a good design.
1	Too expensive
1	Traffic at times are very congested. I could see road rage w this.
1	Traffic circles work but are confusing to people who are not used to them, i.e. visitors to the area. There needs to be good signage before the circle to warn and explain the circle.
1	Turnabouts do not work for extra long trailers or RVs or for triple trailers such as hay trucks. They are hard for motorcycles as well. Motorcycles have to slow down too much and may tip over.
1	We like this idea, but we also know most American don't understand this idea as they haven't been exposed to it enough on a daily basis. I think you would have quite a bit of difficulty getting people to properly use this idea.
1	Winter is long in this region and trying to keep a round about plowed and safe would be costly -- repairs and such would be constant. Snowplowing in straight lines is more cost effective and I believe driving straight is safer than trying to negotiate roundabouts in inclement weather. Other drivers seem to not know how to use round abouts and the flow of traffic is decreased because of that.
1	Would be extraordinarily expensive,would impact the ecology of the wetland area, and seems a bit goofy.
1	Yes

Count	Response
1	Yes!
1	at some distant point in the future, this might be best bet
1	best plan!!!!!!! it will automatically slow people down and yet keep the flow of traffic moving safely.
1	concerns of people coming to a stop before entering the roundabout
1	either keep as is and find a way to get east/west traffic to stop at all times and improve this line of sight OR next time there is money available to build a rest area use it instead to build a bridge. not sure what the cost of the rest area was at Timmerman Hill but I would have to assume it would have paid for a good amount of a bridge that increases safety
1	not big on round abouts
1	round about would not be a good alternative. People just try to speed their way through and beat other people and cut in front of people.
1	roundabouts are something that take a hard learning curve I think that accidents would increase for a while, snow removal would be very hard because of the effects of wind and built up lane edges.
1	roundabouts are not friendly to trucks and those pulling trailers.
1	roundabouts are stupid
1	roundabouts create confusion for a lot of people, I ramp over the highway would be much better
1	roundabouts suck
1	seems like it would work, but also seems expensive
1	snow removal and winter maintenance would be very difficult.
1	the road is better off the way it is than this. granted minor fender benders would take place instead of major accidents. it would plug up the north, south traffic too much
1	this is the most stupid option. it is fine for cars . But not for truck traffic or snowplow trucks. What a nightmare.
1	this seems like a remote location for a roundabout.
1	unsure how this would work in winter snow and for trucks
1	what happenens if hay truck which are usually doubles or triples or fuel trucks that are typically doubles try to come through will they be able to slow enough or could they end up wrecking as a result of negligent planning?
1	will be harder with large long loads
1	will it move traffic thru the roundabout quickly enough

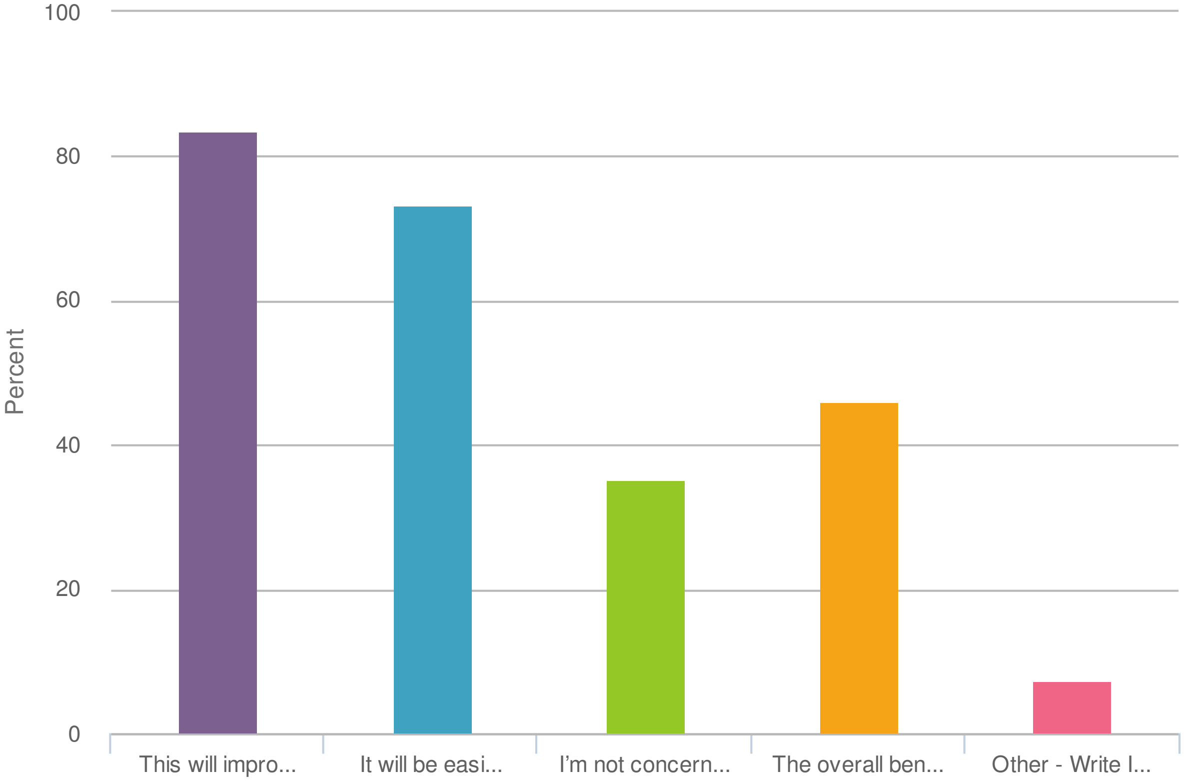
Count	Response
1	would be a good option but NO raised berm in the center so that visibility across the roundabout is not impaired. does the intersection really warrant the cost? This option would need plenty of signage and advertising to instruct drivers on how to use a roundabout
1	would need to be large enough to accommodate large vehicles - traffic flow NS would probably be impacted adversely though

26. Would you support ITD implementing the grade-separated diamond interchange option?



Value	Percent	Count
Yes, as is	36.2%	201
Yes, but with some changes (explain below)	3.4%	19
Maybe, but I have some more questions (explain below)	9.5%	53
Probably not	21.8%	121
Definitely not	29.0%	161
	Total	**555**

27. You indicated that you would potentially support implementing this option. Would you please indicate why? (check all that apply)

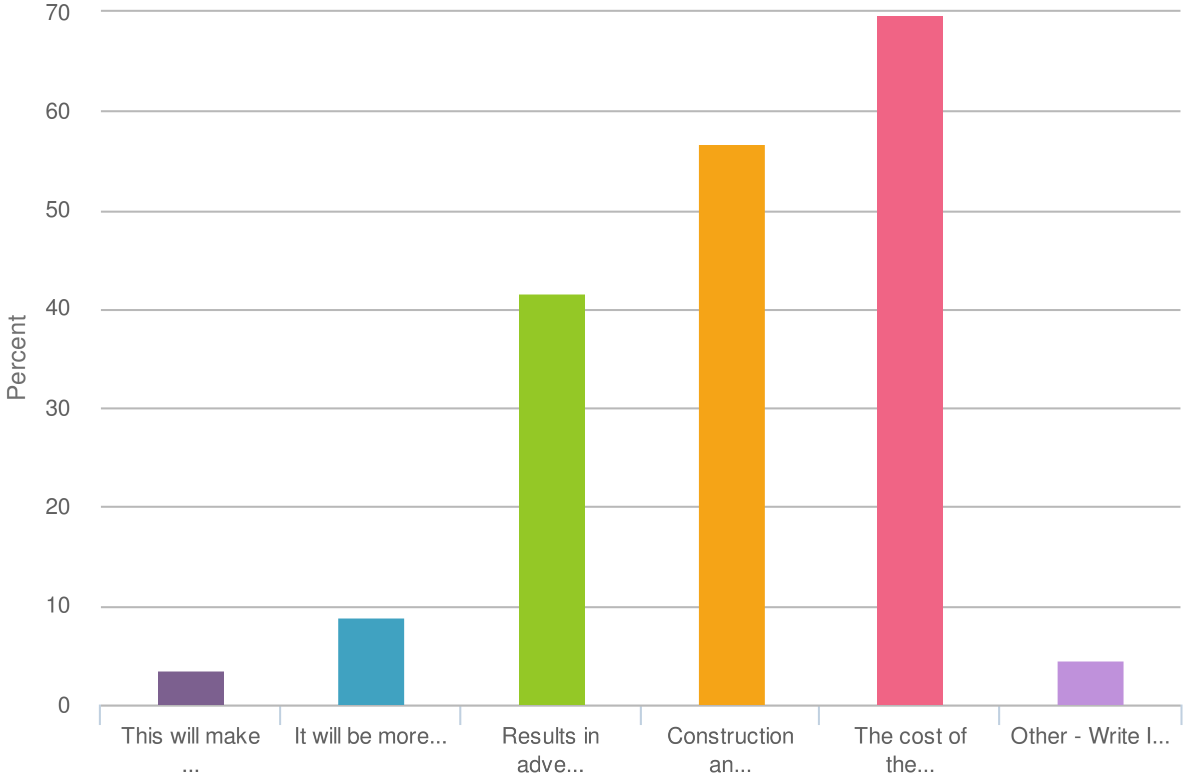


Value	Percent	Count
This will improve safety at the intersection	83.5%	222
It will be easier to travel through the intersection (i.e., less delay)	73.3%	195
I'm not concerned with the impacts to the land and/or environment surrounding the intersection and/or the impacts are okay considering the benefits of the alternative	35.3%	94
The overall benefits of the alternative are worth the cost of implementing it	45.9%	122
Other - Write In (Required)	7.5%	20

Other - Write In (Required)	Count
Other - Write In (Required)	20
This will improve safety at the intersection	10
It will be easier to travel through the intersection (i.e., less delay)	9
Total	20

Other - Write In (Required)	Count
I’m not concerned with the impacts to the land and/or environment surrounding the intersection and/or the impacts are okay considering the benefits of the alternative	6
The overall benefits of the alternative are worth the cost of implementing it	5
An overpass is the most logical solution, the rest of the country uses this option why not us?	1
As long as the turn offs don't interfere with the houses around the rest area this is a good idea.	1
Best option for safety	1
Does traffic volume justify this option at this time?	1
Don't be so nebulous! What is the cost in real money?? Why on earth would u stop the right turn people? Merge them?	1
I believe this is the way the road should have been built at the begining. I imagined it not as bomb proof but yes - something to this effect.	1
ITD has rights of way at this intersection which will make implementation easier.	1
In addition to the roundabout, this would be a long-term solution; I dont think this alternative should be rulled out becuase of cost. Consider the inevitable growth within the region. This alternative will continue to provide mobility and better safety for many many years to come.	1
It shows improvement in safety, but I don't quite understand it with this drawing.	1
It would add safety to those traveling through.	1
Overall this might be better if you put the bridge on highway 20 allowing highway 75 traffice to go through.	1
Please no stop lights at the bottom of the off ramps. Also please consider increasing the speed limit to 65 through the intersection with this option.	1
Probably safest plan but expensive and impact to private land unknown	1
This is a great idea!	1
This is the best choice for long term. Should be four lane underpass.	1
This was needed before the rest area should have been rebuilt.	1
Would the people of the wood river vally except this?	1
cost does not equal benefit compared to other alternatives	1
same	1
this will fix the problem once and for all.	1
Total	20

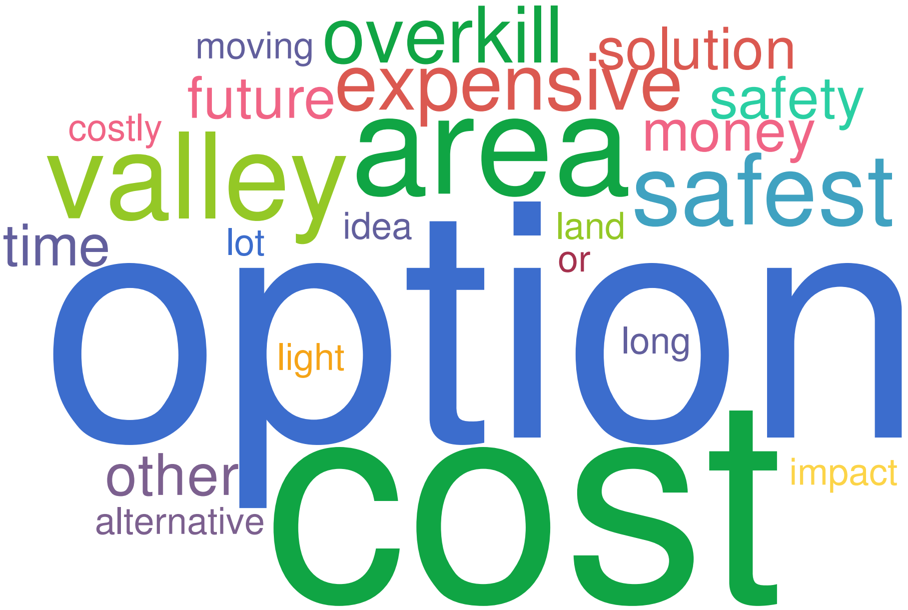
28. You indicated that you would likely not support implementing this option. Would you please indicate why? (check all that apply)



Value	Percent		Count
This will make the intersection less safe	3.5%		11
It will be more difficult to travel through the intersection (i.e., more delay)	9.0%		28
Results in adverse impacts to the land and/or environment surrounding the intersection	41.6%		129
Construction and/or maintenance of the alternative will be too challenging or costly	56.8%		176
The cost of the alternative outweighs the benefits of implementing it	69.7%		216
Other - Write In (Required)	4.5%		14

Other - Write In (Required)	Count
Other - Write In (Required)	14
Construction and/or maintenance of the alternative will be too challenging or costly	4
The cost of the alternative outweighs the benefits of implementing it	3
Results in adverse impacts to the land and/or environment surrounding the intersection	2
Definitely not enough traffic to warrant this huge expense	1
Evalutate winter conditions	1
It will be more difficult to travel through the intersection (i.e., more delay)	1
Leave intersection as is.	1
Now you are really wasting tax payers money.	1
Overkill!	1
The costs and the environmental impact are too great to warrant the improvement in safety	1
This is not appropriate level of project for the other alts....not enough traffic	1
This will make the intersection less safe	1
What are the costs? Please help me out.	1
Why spend all that money when it's not necessary.	1
creating additional intersections with more lanes makes it more complicated for drivers	1
ridiculous overkill	1
same	1
too much	1
unessessary	1
Total	14

29. Comments



Count	Response
1	Best plan.
1	it still needs to be four lanes, not two. there is a lot of traffic going through there.
1	An absurd contractor's dream.
1	At this point, cost is an issue. Hard to judge with no real comparison of cost relative to other options.
1	Best but expensive
1	Best idea of them all.
1	Best long term option to handle future expected traffic increases
1	Best option. Keeps traffic moving. I realize ITD doesn't have the money to do this, but is the safest.
1	Best solution in my opinion, long overdue
1	Cost.
1	Cost...
1	Definitely not necessary. Would also create a non usable junction while being constructed. Where else would traffic have to detour to get around this are while it is being constructed.? There is no way to detour around this in this sparse area.
1	Do not like this option at all
1	Expense is obviously a consideration, but this option would provide a guaranteed solution. It could also provide an attractive gateway into the valley if constructed with an artistic as well as functional sensibility.

Count	Response
1	Four lanes instead of two under the overpass.
1	How ugly! It looks like something that belongs in Chicago not here
1	I am not sure the cost and land impact would be beneficial.
1	I believe installing a traffic light to replace the flashing light would be the cheaper option and have less of an environmental impact and also be cheaper.
1	I believe this is the most beneficial way to improve intersection. Cost should not matter what price do you put on your families life, traffic flows much better, easier maintenance, less confusing,
1	I don't know that traffic on Hwy 20 warrants such a project.
1	I don't like the impact on the land surrounding the area
1	I really think that this idea is overkill. Is the volume of traffic at this intersection at a level that will warrant this solution? Will it be any time in the near future?
1	I think as concerns for the impact of the wetlands are high in this area rather than filling with dirt and planting grass other possibly more costly options should be considered. Cost shouldn't prevent safety as a first priority. All other options still leave safety issues and some create more safety issues. I think it would be possible to build on posts rather than filling in the land and making it a beautiful artistic display welcoming many to the valley with the creative juices that fill our area!
1	I think the overall design needs to be turned 90 degrees. there is way more traffic on Highway 75 then on highway 20
1	I think this is a great option.
1	I would support the bridge. Cost would be high, but safer in the long run. You got to stop trying to put an band aid on the problem. If this wa done in 1975, many lives would had been save.
1	ITD could put in new lights right now.
1	If a traffic light/4 way stop was not effective after a 2-5 year study this is the best alternative.
1	If this option is considered it appears that raising SH-75 would be a better alternative with the changes in elevation on SH-75.
1	If wildly expanding growth is projected, this is the best alternative. Otherwise, we end up doing this again in 5 to 10 years.
1	In a time of unlimited resources (or at least lots of surplus) this might be considered. Rather see the budget used to fill potholes or resurface existing well traveled routes.
1	Include some visual effects. May want to look at SH-75 on top - provide better visual.
1	Is this really being considered? Just buy a new car for everyone that gets in a wreck here for the next 50 years instead, it will be cheaper.

Count	Response
1	It just would not work at a rural, but busy intersection like this. It would be challenging especially to those traveling to Sun Valley.
1	It seems to me those exiting to head up to our valley would still have the same dangers that timmerman currently faces just at another location.
1	Just too much for that intersection. There's also such strange weather patterns in that part of the valley in the winter that I foresee the overpasses becoming really icy and hazardous.
1	Less costly for when the road headed north to south finally becomes a four lane.
1	Make it a four way stop, all stop.
1	Makes it flow like a freeway. If you do this big of project try to improve the land around area
1	My only concern is construction time and delays. If this is in the budget I believe it would be the best option. Otherwise the stoplight would probably be the best.
1	My only concern is the length of the ramps on and off of Highway 75--do they need to be that long?
1	Nice, but expensive.
1	No way
1	No, seems way too much of an overkill here! Way more expensive too?
1	Nope
1	Not needed at this time. Probably not for years.
1	Obviously this is not the desired choice as it is only 1 of 2 that show old broken asphalt in the pic. I think it would be much safer and easier to maintain than a round about.
1	Only drawback is the access to the rest area. May need to consider moving it. Another concern are the dump merge lanes. Idaho interchanges seldom have sufficiently sized merge lanes that allow merging traffic to meet the actual highway speeds.
1	Out of scale with the environment.
1	Poor option all around.
1	Round about
1	Roundabout is safer and more economical option.
1	See comments on other options.
1	Snow plowing and maintenance would become cumbersome and this plan would cost a lot of money. This is defiantly an undesirable plan.
1	So far this is the best solution offered to meet safety and mobility issues.

Count	Response
1	Takes a lot of the "people mistake" out the question. My favorite so far.
1	That looks amazing but I do have concerns over the cost....
1	The best solution for safety
1	The cost of this option is likely prohibitive although it would be safe and keep traffic moving.
1	The round-about is cheaper but cost really should not matter.
1	There is not enough traffic through this intersection (current or in the foreseeable future) to justify complicating the intersection this much.
1	This alternative is not appropriate as the gateway to the Wood River Valley!
1	This appears to be the safest alternative. The rest area should be designed to be integrated into an underground/bermed structure for aesthetic and long term maintenance benefits.
1	This intersection doesn't maintain enough traffic to warrant the money spent on an overpass.
1	This is a great idea, but a traffic light would be more cost effective.
1	This is by far the more expensive, but the safest and would keep traffic flowing.
1	This is crazy in dollars, months if not years in construction
1	This is exactly what ITD should have done at the intersection of US 93 and golf course Road. That intersection with the traffic light is a disaster, and involves massive delays for people traveling in and out of Twin Falls. That is where you need to spend your money!
1	This is overkill!
1	This is so worth it.
1	This is the MOST efficient, safest, and common sense way to improve this intersection for centuries to come. It will save multiple lives, prevent several thousands of dollars of property damage, and make the intersection less stressful to drive through. (Possibly seek funding from the insurance companies on the cost savings they will benefit from the lack of claims at this intersection.)
1	This is the best option.
1	This is the safest option. This would help with the heavy traffic flow from the morning commuters. The traffic is bumper to bumper in the morning and in the evening, this option would keep traffic flowing with a high amount of safety.
1	This is unnecessary over kill.
1	This is what should be done. Many lives will be saved. That intersection is very dangerous.
1	This just seems like overkill, honestly. The intersection is not THAT crowded.

Count	Response
1	This may be a future consideration, I am not sure this much improvement is necessary at this time.
1	This one is completely unnecessary.
1	This option makes the most sense! Trucks and vehicles with trailers could make that south side grade up the hill a lot easier not having to come to a stop or slow way down for yielding.
1	This really is the best solution. Better to spend the time and money now. If it isn't done then 10 yrs from now you'll be back out here building this.
1	This safer and does keep traffic going
1	This type of intersection seems unlikely to help avoid accidents with other cars or wildlife. I do not support this plan.
1	This violates the rural atmosphere as the entrance to our beautiful valley. It also seems over building for the area. This intersection is not located in a city proper!!
1	This will definitely keep traffic away from each other and keep traffic moving.
1	This would be the best as it does not hamper traffic, and East/ West traffic would not interfere with North/South movement, thus minimizing any potential accidents.
1	This would create more intersections which could cause more crashes and cost a lot of money to build a bridge.
1	This would fix the problem
1	Timmerman intersection is the gateway to our valley. There have been many efforts to protect the land and areas to honor the openness and views. This option significantly changes the views and is less inviting, it feels like a city. We are not a city.
1	Too costly
1	Too costly and not conducive to oversize vehicles, like those carrying pre-fab homes.
1	Way too expensive!!
1	What price would you put on your family and their lives. ITD Mission is your Safety, Your Mobility, this is the best way to improve safety, mobility, and maintenance is for plowing road work is easiest.
1	Why not use the same intersection design used south of Twin Falls with Hwy 95 and Interstate 84?
1	Will keep traffic moving and people out of incorrect lanes... Safest I believe, but don't like the cost.
1	Will not be an improvement.
1	With the growth of the area this is probably inevitable any way.
1	Wonderful idea! I have always wondered why this has not been done! The safest option in my opinion!

Count	Response
1	Worth every penny!
1	Yes
1	You have got to be kidding. NO WAY.
1	cost
1	cost benefit and environmental/visual impact
1	excessive!
1	get a grip. It is a simple intersection that needs a stop light. How difficult it that. Why do we overspend?
1	horrible idea. this is an overkill idea and destroys the environmental character of the area. also, it encourages speeding, which is a problem in that intersection.
1	instead of a central area of cars, you now have them spread out... not good.
1	looks okay for two-lane, what about 4-lane?
1	now your cookin
1	overkill
1	this is by far the best option.
1	this is definitely an option, but do we have the volume of drivers during all hours of the day. or is it just in the morning. getting warmer.
1	this is the only option that makes sense.
1	this is the very safest way I can think of to keep everyone safe at this intersection.Its bad and I think all other alternatives still have safety issues. The tree huggers will hate it but have watched this valley grow so much in 40 years its unbelieveable.The traffic is here now,got to build for the future
1	this might be overkill at this point, maybe in the future when there is more people and cars
1	this seems a bit much
1	this seems like over-kill for the volume of vehicles.
1	to expensive
1	very costly and since not a freeway too expensive

30. Please rank the 6 alternatives from 1 through 6 in order of preference (1 being your most preferred alternative and 6 being your least preferred alternative).

Overall Rank	Item	Rank Distribution	Score	Total Respondents
1	Traffic Signal with Addition of Turn Lanes		2,047	515
2	Adding Northbound and Southbound Right- and Left-Turn Lanes on SH-75		1,937	514
3	Grade-Separated Diamond Interchange		1,928	518
4	Single-Lane Roundabout with Approach Curvature		1,807	516
5	Remove the Intersection Skew		1,600	510
6	No-Build		1,573	506

31. Do you have any additional comments you would like to share with us?

Count	Response
4	no
3	No
2	None
1	Please no round about, this will make everyone sad and depressed.
1	An overpass, while the most expensive and time consuming is the best possible situation for improving speed and travel on 75/20. Consider the scenario of having 20 be the under and 75 be the over as opposed to the way it was in your rendering.
1	Any way you go, there are is going to be a downside.
1	Anything but a bridge would be a maintenance nightmare.
1	As stated before, I would like to see some improvements to beautifythe intersection and screen or move the non-scenic elements (sewage laggons and gravel barn from the "gateway".
1	Bigger lights, larger signage, clear out all brush and vegetation 10 yards back in all directions from the intersection.
1	Bigger stop signs will help a bunch. But you just can't fix stupid.
1	Biggest concerns are safety
1	Changing the speed limit (as done a few years ago) has really helped this intersection, but more changes are needed. Please make this intersection safer. I vote for the roundabout! We had them in Vail (CO), and they are fantastic. Thanks for asking the public their thoughts on this.

Count	Response
1	Community involvement is popular in Blaine Co. but this project needs professional planning not enviro-tree-hugger-asthetics people who fly over the highway in their planes. Ask the working/tourist people who use this intersection.
1	Cost? Your recommendations? Surely someone smarter than me or your department has seen this problem before? I can't believe you are so spineless to go straight to the public without costs or opinions! Oh I've got it. You are afraid of the money people or the tree spikers of the Wood River Valley. No I haven't forgotten how difficult it was to straighten the curve north of SunValley. Come on - Idaho DOT have some guts and intelligence. Tell us what's best in your opinion. Cost is important, but do you need to kill a whole family before you act? And yes -Dear Tree Spikers- will it be your family killed versus maintaining the scenic beauty of the Wood River Valley? We cannot go backward in time. We need to have some forward thinking people making some informed and intelligent decisions, not stuck in Neverland!
1	Cut down willows that block the view. Lots of more important projects in the state that need the funds. Intersection works ok now. Don't remove the rest stop to widen road.
1	Don't Nuc it. We also have farm equipment around here still and bridges or round about
1	Drivers need to pay more attention to what they are doing and you can't make that happen. Maybe more reflective signage at the crossings. Rumble strips are good also. Good luck.
1	East west drivers just don't get it! Maybe they are gawking at our beautiful scenery! People can run red lights too - so not sure what would make people pay attention
1	Existing lack of effective signing is bad. Existing lighting is confusing. East-West traffic does not know what they are dealing with.
1	Folks traveling in all directions need more warning when approaching the intersection, it sneaks up fast on dark nights.
1	Grade separation is really the only answer with traffic volumes and the movement of traffic. It is a long term solution for the traveling public.
1	How about routing the highways so they bypass downtown areas to reduce commute times and city center congestion.
1	How does the safety/accident rate compare to the intersection further south on Hwy 75/93 at the intersection of Hwy 93/Hwy 25 to Jerome? Perhaps expanding the intersection at Hwy 75/Hwy 20 to something similar here while straightening out the skew might be an option. I think expanding the intersection on Hwy 20 to include turn lanes would also suit the intersection.
1	How will this be funded? When and how long will it take?
1	I LIVED IN THE AREA AND HAVE BEEN IN THE AREA FOR OVER 45 YEARS AND HAVE USED THE INTERSECTION MANY TIMES IT BOILS DOWN TO MAKING THE DRIVER MORE RESPONSIBLE FOR THEIR ACTIONS AS A DRIVER
1	I believe the overpass idea is the best solution for centuries to come. After it is implemented it will make this intersection a non-issue for traffic crashes.
1	I believe with some very minor changes like raising the grade of SH-75 a foot would give the visual cue to people traveling on US-20 would solve much of the problems.

Count	Response
1	I do not think the overpass idea is necessary for this intersection. It will cost way too much money and there is never a constant stream of traffic at this intersection. There are always cars traveling but not all at once or in high concentrations.
1	I don't feel the amount of collisions since the 45 mph zone was implemented is enough to warrant a large expense to fix this intersection. It should be left as is.
1	I feel like Hwy 20 is the less traveled and already has a stop sign. That road should have the 45 mph slow down and changes made to it instead of on Hwy 75.
1	I have had a couple close calls there- especially with people out of state and unfamiliar with the stopping requirements. Overpass option is the best.
1	I have now completed this survey two times. Following my first response I gave thought to the fact that the simplest, least expensive option was left off the table. Perhaps this was due to tendancies to over-think chronic long term problems such as this. You could solve the biggest problem by simply making this a four way stop with rumble strips from every approach. Problem solved. Very little cost. Why do you not include this option?????
1	I like removing the Skew to help warn Highway 20 traffic. Adding turn lanes to this option should make it better and later adding signal lights if traffic volume justifies.
1	I like the idea of the over-pass!
1	I like the roundabout, but wonder how it works for people with boats/trailers. Also wonder how the snow removal would work in the winter. Although adding the overpass would be the safest, seems like it would take a long time, be very costly and really impact the environment.
1	I live in West Magic and travel that stretch primarily commuting to work. However, I work graveyards, so the time and direction I am driving is opposite the majority of drivers. As an emergency dispatcher I have seen improvements in the safety of the intersection over the years, and I would love to see something that made people more aware of the danger of cross traffic.
1	I love that this is finally being looked at!
1	I no longer have to drive through this intersection daily (as in the past) but I am glad to see something is finally being done. I have witnessed on several occasions people not paying attention and driving through the intersection without coming to a stop and have almost been hit quite a few times.
1	I strongly believe that an overpass is the most reasonable method for making this intersection safe.
1	I think something needs to be done here since every year we have accidents at this location, usually with poor outcomes. I like the idea of either installing lights on all sides or the roundabout. I would like to know what the impact to taxpayers would be between the options as well.
1	I think that Yuri is sexy and the best project manager in the state of ID. He has a hot wife and a sexy body. I would give him whatever he wants to stay at ITD and not leave to OR like he plans to do in 5 months. Sorry to let the cat out of the bag.
1	I think that entire stretch of highway from Twin falls to Bellevue needs to be four lanes. the speed limit is not slowing most drivers. It's really the drivers being bad drivers.

Count	Response
1	I travel the intersection often. I also care for people that have been injured at the intersection. From me experience the East West travelers need to see the "cross traffic don't stop' signs better. I do feel that the decreased speed to 45 north south has helped. I thinks that maybe decreased speed on East West to 45 mph coming into the intersection would help as well. Slowing the mobility north south would be very difficult for the amount of large trucks through the area and commuters. This may actually lead to more accidents with people trying to get through the area faster.
1	I use this intersection frequently and it is easy to use now. I have not seen an accident since the speed limit was lowered to 45 mph. Why put a lot of money into something that works well.
1	I've lived in Ketchum nearly 50 years and that intersection has ALWAYS been dangerous. Put in a BIG traffic signal like the one at East Fork, with lights warning when it is about to change, make the speed limit 45 on both highways a long ways before the intersection, and ENFORCE it.
1	IF you left this intersection unchanged ... how about more signage to slow approaching traffic with warning signals to the hidden intersection.
1	If kept as is, speed limit on Hwy 75 should be 55. There should be more warning and decreased speed before approaching intersection on Hwy 20.
1	If you choose to put in a roundabout your engineering skills should be put into question. Environmental issues should never be put before the safety of the traveling public.
1	If you desire to hear about a simple inexpensive low impact minor change to this problem contact Jim French in District four. Some times less is more.
1	If you do the round about you have to address the bushes for visibility still the coming from the west you cant see what is coming down the hill from the south. That wont change by just adding a traffic circle.
1	In my opinion, there simply is not enough traffic at that intersection for taxpayers to have to spend any money beyond what we already have in place. If drivers cannot safely navigate that intersection, then they really should not be operating a motor vehicle. We should stop installing traffic lights and spending huge amounts of taxpayer money to compensate for poorly trained and negligent drivers.
1	In the meantime, cut down the grass/foliage in the northwest corner!!
1	It is inexcusable not to remove that almost useless blinking light in favor of wire or pole mounted modern lights for each lane. Why not start there? Tomorrow. I can hardly see the little dim blinking light.
1	It would be so easy for you to waste a huge amount of taxpayer money on a problem that is essentially negligible.
1	It would have been helpful to have information about this intersection. How many accidents occur there as it is now? How many deaths? How have recent modifications changed these statistics? The intersection seem safer now that it previously did, but I have no real data on which to base this "feeling."
1	It would help tremendously to remove all the growth in south west corner. When traveling south on 75 coming to intersection you cannot see cars entering the intersectin on 20 traveling east. Easy fix and should do this first before spending the money.
1	It's a tough call but something has to be done. Too many idiots taking too many chances there. More and more people will get injured or killed as the traffic flow increases. Which it will.

Count	Response
1	Just a simple light with solar power and traffic adjusted makes the most sense to me. And it is affordable. Make it Like Woodside and Countryside blvds.
1	Just think safety. You don't have to over do it but you have to make it safe.
1	Keep in mind all the travel trailers. Keeping the flow going is important, especially before climbing the hill (going south). Also, it would be great to not have to slow down (eliminate the 45mph zone).
1	Keep the north and south going 55. The east and west slow them down so they know there is a stop sign.
1	Keep traffic moving north and south with as little delay possible. The interchange may cost more but would be the best option in my opinion.
1	LEAVE THE INTERSECTION ALONE! STOP WASTING MONEY!
1	Make it a mandatory 4 way stop and use road furniture like a roundabout to enforce it.
1	Most of the area residents who must use this crowded corridor feel that a complete divided highway should have been constructed between Shoshone and Ketchum decades ago . Whether through phony "environmental" concerns or other influences, this was never done and we all pay for it in lost time, lives, and patience. The use of this roadway isn't static and certainly the auto numbers aren't going to go down, so we can only expect increasing problems in future, unless something is done by committed, forward-thinking individuals at the state level, regardless of cost.
1	Most of the ideas are too much money and not necessary . The rest area was redone at big expense when there was nothing wrong with it. Money should have been spent on couple of big lights at intersection and before intersection.
1	No build a signal light!
1	No ty
1	Not at this time , thank you.
1	Not at this time.
1	Noted from personal experience, drivers with 5B license plates consistently drive faster than the rest of us and don't obey speed limit or traffic signs. Consequently to protect the rest of us, the diamond overpass alternative seems the safest even if it is more costly to build and maintain. The environmental impacts are not great given what is currently in place on the ITD rights of way.
1	Other than the stoplight or the bridge .... still does not deal with the east-west traffic ... consider slowing them to 45 mph, flashing signs to indicate north-south does not stop (small sign on stop sign is not enough).
1	Passing lanes are needed more than the intersection improvements. People that live around this area and drive it continually should definitely be aware of the dangers, but then again they are the speeders, texting and talking on the phones. Put in passing lanes and let the speeders speed and the slow people can get out of their way.
1	Please consider the safety of the people who live and visit our valley as being the primary focus and concern. Thank you.

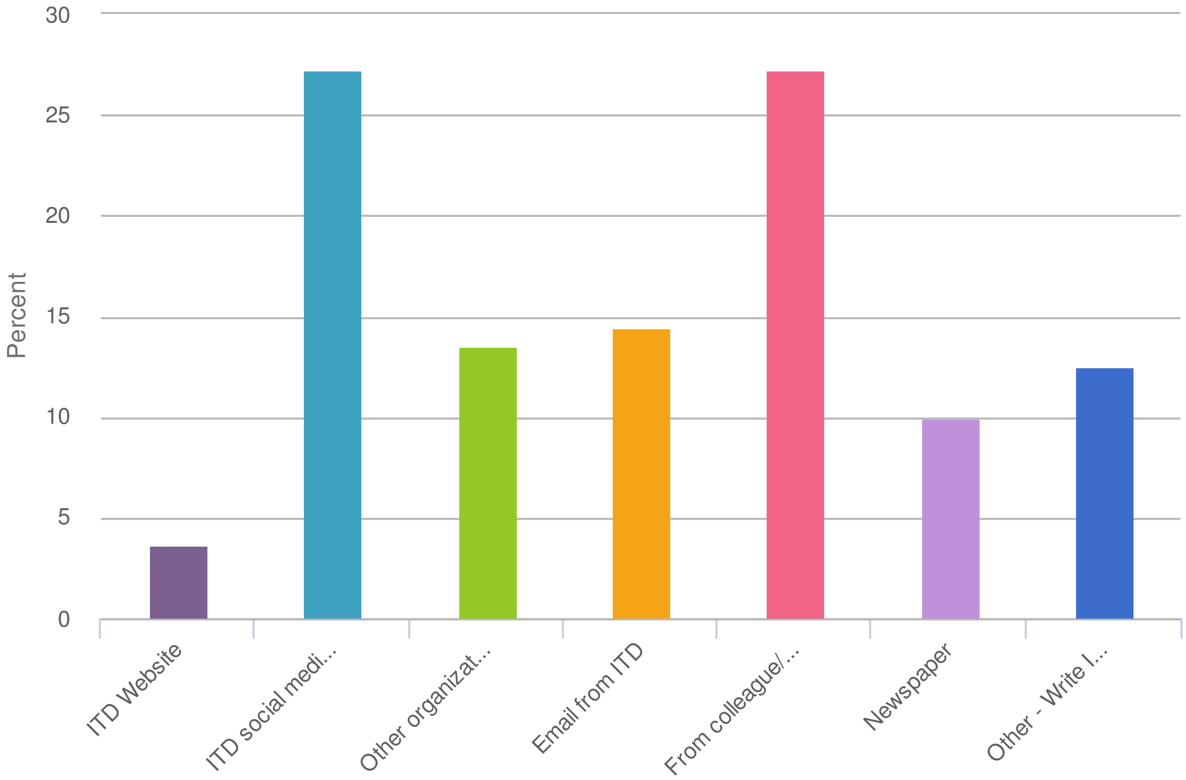
Count	Response
1	Please don't spend money just to create a bigger safety issue than what currently exists. Think outside of yourself and put yourself in a Semi hauling double tankers of fuel coming down Timmerman the roads are slick and the snow is drifting near the bottom. The children in the mini van in front of you have been making faces at you and asking you to honk the horn on your way into the valley putting a huge smile on your face. As you near the bottom slowing down is becoming harder and harder, the light or round about is coming near and you begin to pray that you will be able to stay on the road without hitting the mini van full of children that have made your morning. Who will be to blame if more accidents and possibly more deadly accidents are a direct result of negligent planning?
1	Please fix this intersection! Ada and Canyon counties shouldn't be the only areas seeing improvements in Idaho!
1	Please get this problem solved. This is a decades old problem.
1	Please, please, please do not do a round about. I have lived in several areas that have them and especially in the winter it is not a safe option for big truck traffic of snow removal.
1	ROUNDABOUT is the BEST choice.
1	ROUNDABOUT!! YURI ARE YOU LISTENING TO ME. Come on BRO!!!
1	Reduce the sign clutter on Hwy 20 and enlarge the stop sign and add a sign "cross traffic does not stop would make those drivers more aware this isn't a 4 way stop. Keep the speed limit on Hwy 75 at 55
1	Roundabout is great. Improving on what is there with 10' lanes would be next best.
1	Roundabout makes the most sense to me. I've been in many countries where they are more numerous than straight intersection. This would be a fairly simple (not confusing) one.
1	Roundabout should be large enough to handle long and oversize loads and not have curbing in this location.
1	Rumble strips are very important and several early precaution lights should be enough. I have never understood why you decreased Hwy 75 from 55MPH to 45MPH and left Hwy 20 at 65MPH when that is the direction that must stop at the stop sign.
1	Safety must be more important than any other consideration here. People die here.
1	Silver Creek is very close so I think some sort of land project should also be done
1	Since I'm a member of the CAC, you've probably heard enough commentary from me.
1	Slowing the speed limit in both directions has made huge improvements to the intersection.
1	Something substantive needs to done. The 2-way stop is seriously dangerous.
1	Spend the money. Put in the overpass.
1	Thank you for addressing this intersection.
1	Thank you for inviting us to take this survey. Hope this intersection can be built soon to save lives.

Count	Response
1	Thank you for upgrading.... That intersection has become a threat over the last few years.
1	Thank you#
1	Thanks for asking for public input.
1	Thanks for asking our input.
1	Thanks for your efforts in making this a safer intersection.
1	Thanks for your efforts!
1	Thanks so much for doing this survey!
1	The cost of the overpass I'm sure will be over the top but I think in the long run its the way to go. The traffic is already heavy at timmerman and getting worse as more people come to the valley
1	The intersection has a far worse reputation for accidents than is reality. No improvements are needed now or until traffic significantly increases.
1	The need for improvement at this intersection is because there are too many people on the road that shouldn't be.
1	The reason it unsafe now is limited visibly above grade water water lagoons and brush blocking traffic view
1	The rest area rebuild was a huge waste of tax payer dollars. I was so disappointed in that excessive expenditure. Some resources should have been put towards improving the safety of the intersection before replacing perfectly good toilets with new ones and adding enough huge overhead lights that it now looks like an airport. We don't need over/under passes and new lanes, just better/clearer signage and lights.
1	The visual impact of left turn lanes on Hwy 75 and Hwy 20 would help drivers realize that the intersection is a major traffic area. Any plan should consider the types of vehicles using the intersection. Specifically large number of semi-trucks moving up or down Timmerman Hill.
1	There is no need to add costly items.just cut down all the weeds and overgrowth such as the cattails on the water at the rest stop. If you must add the turn lanes, you must add the traffic lights or the crossroads will be worse than it is now
1	There needs to be a count of the amount of traffic that flows through this intersection so that the residents of the north valley understand how many cars travel through this intersection every morning and evening.
1	There needs to be a way to force traffic on US 20 to stop and a bridge could alleviate a lot of that problem.
1	This intersection continues to be very dangerous and will get worse with more Traffic.
1	This intersection is just ridiculous with the 45 mph going thru it. A signal is the best option of all with turning lanes east/west bound.
1	This intersection needs to be improved in the next 5 to years

Count	Response
1	This is a remarkable safe intersection if driver's simply paid attention and exercised caution. All changes suggested are not needed.
1	This survey cost the taxpayers over $163,000 to date. This money could be used to make safety changes to the intersection. It's obvious what needs done to totally improve safety at this location. We do not need a survey to tell us this.
1	Until this becomes 4 lanes north/south I think there is little need to change intersection. More important is increase # of lanes traveling north/south to ease rush hour traffic and recreational travelers.
1	We love to up past Ketchum for recreation - that intersection is the worst, you really have to watch for the cross traffic as it is, and if you stop at the rest stop - trying to get back on the highway is difficult - you can sit there for a few minutes or longer. The grade going up the south side is a bit steep - you need some speed to get up it. Being at a dead stop or slowed way down will not make it easy to get up the grade. You would have to add another lane going south for the slow traffic, so those in cars that can go faster than a truck or trailer can keep on going, or there will be cars trying to get passed the slowed trucks, then you are back to square one with traffic accidents this time on the south side of that intersection. There really is no safe place to pass for miles on that stretch of road as it is. NO DEAD STOPS OR SLOWED WAY DOWN - for south bound traffic!!
1	With the amount of traffic that goes through that intersection ITD should fix it right the first time and not year later have to go back and redo the whole structure again. Safety and mobility for today tomorrow and the future is what needs to be looked at. Not Cost
1	Yes. What you are planning to do with the intersection sounds good. I rarely use the intersection. My only use of it is when I am going to Sun Valley. The traffic signal and roundabout are in my opinion, your best bets when it comes to intersection improvements.
1	You also need to start lowering the speed limits on Highway 20 further away from the intersection than it is now. That will help with safety.
1	You need to take a look at adding passing lanes on 75 between Timmerman and Shoshone. Should have been done a long time ago!!!
1	Your rankings of the different options (on sheet 3 of the survey and the previous sheet) didn't appear on the page so no rankings were given in this survey.
1	absolutely no round-about .
1	have you considered putting up solar lighted stop signs that flash on hwy 20. Then on hwy 75 put solar powered flashing slow signs.
1	no roundabout please
1	none
1	none
1	people need to pull their heads out of their asses out and pay attention!
1	roundabouts have been in use in Germany for many years and have prevented many accidents. It could be artfully designed as a welcome gateway to the Woodriver Valley

Count	Response
1	the intersection doesn't work bad most of the time. just certain instances with excessive retard drivers on the road. I don't like the idea of changing the landscape with an overpass, but it may be the best choice out there
1	we have same problem at intersection of 93/25. It also needs a stop light. People pick up speed coming down timmerman grade. The blind spot to the north when you are on hwy 20 is also a problem. A stop light would seem the easiest, least expensive option. Stop means stop.
1	you have the electricity there... put in a stop light, with warning signs when it might change.

32. How did you hear about this survey? (check all that apply)



Value	Percent	Count
ITD Website	3.7%	20
ITD social media (e.g., Facebook, Twitter)	27.3%	148
Other organization/agency social media	13.5%	73
Email from ITD	14.4%	78
From colleague/friend	27.3%	148
Newspaper	10.0%	54
Other - Write In (Required)	12.5%	68

Other - Write In (Required)	Count
Other - Write In (Required)	68
Other organization/agency social media	4
Total	68

Other - Write In (Required)	Count
Sun Valley Board of Realtors	4
Times News	4
From colleague/friend	3
Newspaper	3
Facebook	2
kmvt	2
At Rotary	1
BC Regional Transportation Council	1
BLAINE COUNTY	1
Blaine County Sheriff's Facebook page	1
Blaine County Sheriff's Office	1
Board of realtors	1
Facebook	1
Friend	1
It was sent to my St. Luke's email	1
KEZJ radio	1
KMVT	1
KMVT	1
KMVT News	1
KMVT news	1
KMVT news story	1
KMVT, Blaine County paper	1
KMVT.	1
KMVT.com	1
KTVB	1
Total	68

Other - Write In (Required)	Count
Ketchum City emailed newsletter	1
Kmvt tv news at 10	1
LEPC	1
MLS email for realtors	1
News story.	1
Notified by Employer	1
Online news	1
Other friends FB	1
Real estate MLS email	1
SVBOR	1
Sawtooth Board of Realtors	1
Sheriff's Office	1
St. Luke's Employee e-mail	1
St.Luke's Wood River PR department	1
TV	1
The Times News	1
Times News paper	1
Times-News article	1
Timmerman Junction committee	1
Twin Falls newspaper	1
Work	1
Work E-mail	1
Work office post	1
Work-St Luke's	1
city of ketchum newsletter	1
Total	68

Other - Write In (Required)	Count
e-mailed to me	1
facebook post	1
from Sun Valley Board of Realtors	1
kmvt.com	1
magic valley times news	1
mvtn	1
sent to me by concerned driver	1
times news	1
work e-mail	1
work notification - frequent trips between Hailey/Boise offices	1
Total	68

Attachment B Media Articles

Our Mission. Your Safety. Your Mobility. Your Economic Opportunity.
Idaho Transportation Department
News Release

8/8/2016

Contact:

Nathan Jerke
Public Information Specialist
(208) 886-7809
nathan.jerke@itd.idaho.gov

FOR IMMEDIATE RELEASE

Public input sought via online survey about potential U.S. 20/Idaho 75 junction improvements

SHOSHONE – The Idaho Transportation Department invites the public to help plan future improvements to the intersection of U.S. 20 and Idaho 75 (Timmerman Junction) by completing an online survey about several potential roadway options.

The online survey is open **today (Monday, Aug. 8) through Aug. 21** and takes less than 10 minutes to complete. The survey can be found at the following link: http://www.surveygizmo.com/s3/2953321/US-20-and-Idaho-75-SH-75-Intersection-Timmerman-Junction-Study.

The intersection is located in southern Blaine County and used by many motorists traveling to and from Sun Valley and the Wood River valley. The online survey is part of ITD’s Timmerman Junction Study identifying future intersection improvements.

The online survey will help ITD evaluate and recommend improvements to enhance safety and provide reliable mobility at this regionally significant highway junction.

By taking the online survey, the community can:

- Help ITD learn more about why and how often motorists travel through Timmerman Junction.
- Review and prioritize criteria for evaluating alternatives.
- See and provide feedback on the range of options being studied.
- Learn more about the study.

The study is built upon previous improvements, planning efforts and recommendations from previous federal, state and local planning efforts. Construction funding has not been identified, so a timetable for intersection improvements is not certain.

The public is also invited to attend the final Community Advisory Committee (CAC) meeting for the Timmerman Junction Study. The CAC meeting is scheduled at 10 a.m. **Oct. 6** at the Old Blaine County Courthouse in the Commissioners Meeting Room (206 1st Ave South, Suite #300, Hailey, Idaho).

To learn more about the study and evaluations to-date, visit http://itd.idaho.gov/Projects/D4/US20_ID75_IntersectionStudy/.

The Idaho Transportation Department is responsible for all highways on the State Highway System – interstates, state highways and U.S. routes. All other roads are under the jurisdiction of the local, city or county entity.

BREAKING

Authorities investigating body found on north side of canyon

http://magicvalley.com/news/local/itd-issues-survey-on-timmerman-junction-improvements/article_eded8891-7ac3-59e1-b1b1-b674ad89d3f9.html

‹

PREVIOUS

From Cattle to Concerts: Owner seeks zoning change for ranchland near Buhl

›

FEATURED

ITD issues survey on Timmerman Junction improvements

HEATHER KENNISON hkennison@magicvalley.com 9 hrs ago

Give input on potential U.S. 20/Idaho 75 junction improvements

File photo courtesy of the Idaho Transportation Department. Timmerman Junction where U.S. Highway 20 and Idaho State Highway 75 meet. State 75 takes travelers to the Sun Valley and Wood River Valley.

By Nathan Jerke, Idaho Transportation Department | Posted: Tue 10:35 AM, Aug 09, 2016

View Map

SHOSHONE, Idaho (News Release) – The Idaho Transportation Department invites the public to help plan future improvements to the intersection of U.S. 20 and Idaho 75 (Timmerman Junction) by completing an online survey about several potential roadway options.

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Comments are posted from viewers like you and do not always reflect the views of this station.

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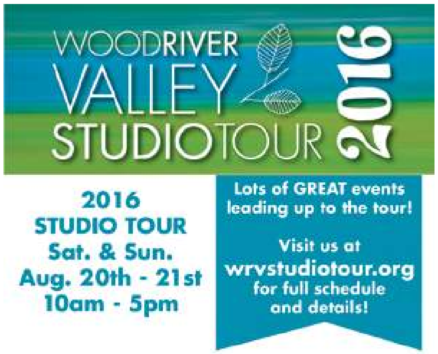
BRIEFS

ITD seeks input on highway junction

Posted: Wednesday, August 10, 2016 4:00 am

0 comments


WOODRIVER VALLEY STUDIOTOUR 2016
2016 STUDIO TOUR Sat. & Sun. Aug. 20th - 21st 10am - 5pm
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The Idaho Transportation Department is inviting the public to help plan future improvements to the intersection of U.S. Highway 20 and state Highway 75 (Timmerman Junction) by completing an online survey about several potential roadway options.

The online survey is open through Aug. 21 and takes less than 10 minutes to complete. The survey can be found at http://www.surveygizmo.com/s3/2953321/US-20-and-Idaho-75-SH-75-Intersection-Timmerman-Junction-Study.

The intersection in southern Blaine County is used by many motorists traveling to and from Sun Valley and the Wood River Valley. The online survey is part of ITD's Timmerman Junction Study identifying future intersection improvements.

The online survey will help ITD evaluate and recommend improvements to enhance safety and provide reliable mobility, the organization stated.

By taking the online survey, the community can:

- Help ITD learn more about why and how often motorists travel through Timmerman Junction.
- Review and prioritize criteria for evaluating alternatives.

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To learn more about the study and evaluations to-date,

isit itd.idaho.gov/Projects/D4/US20_ID75_ IntersectionStudy/.

SUBMIT YOUR NEWS!

We're always interested in hearing about news in our community. Let us know what's going on!

Submit news

SHOSHONE — Addressing concerns about high-speed crashes, the Idaho Transportation Department wants public input to prepare for future improvements at U.S. 20 and Idaho 75 (Timmerman Junction).

An online survey highlighting several potential roadway options is open now through Aug. 21 and estimated to take less than 10 minutes to complete.

The intersection in southern Blaine County is used by many motorists traveling to and from Sun Valley and the Wood River Valley. The survey is part of ITD’s Timmerman Junction Study identifying future improvements.

“Historically, over the past 15 years, there’s been several severe crashes, fortunately no fatalities,” ITD spokesman Nathan Jerke said.

The department has already lowered speed limits, added rumble strips on Idaho 75 and signage on Highway 20, with positive results. However, the department anticipates more changes will be needed.

“This is kind of a precursor to almost the inevitable,” Jerke said.

Survey-takers have the opportunity to give opinions on each of seven alternatives, he said, including: a “no build” option; removing the skew to make the intersection a 90-degree angle; adding right and left turn bays; installing a traffic signal; building a roundabout; creating a restricted crossing U-turn intersection; or creating a ramp-style interchange.

By taking the online survey, the community can help ITD learn more about why and how often motorists travel through Timmerman Junction. Survey-takers will also be asked to rank alternatives in order of preference.

The survey can be found at: http://www.surveygizmo.com/s3/2953321/US-20-and-Idaho-75-SH-75-Intersection-Timmerman-Junction-Study or http://bit.ly/2aAOB3x.

The study is built upon previous improvements and recommendations from federal, state and local planning efforts. Construction funding has not been identified, so a timetable for intersection improvements is not certain.

Jerke said that in a best-case scenario, improvements would be made in the next five to seven years.

Survey results will be compiled by a consulting company, which will present its recommendations in October or November, he said.

The public is also invited to attend the final Community Advisory Committee meeting for the Timmerman Junction Study, 10 a.m. Oct. 6 at the Old Blaine County Courthouse in the Commissioners Meeting Room, 206 First Ave. S., Suite 300 in Hailey.

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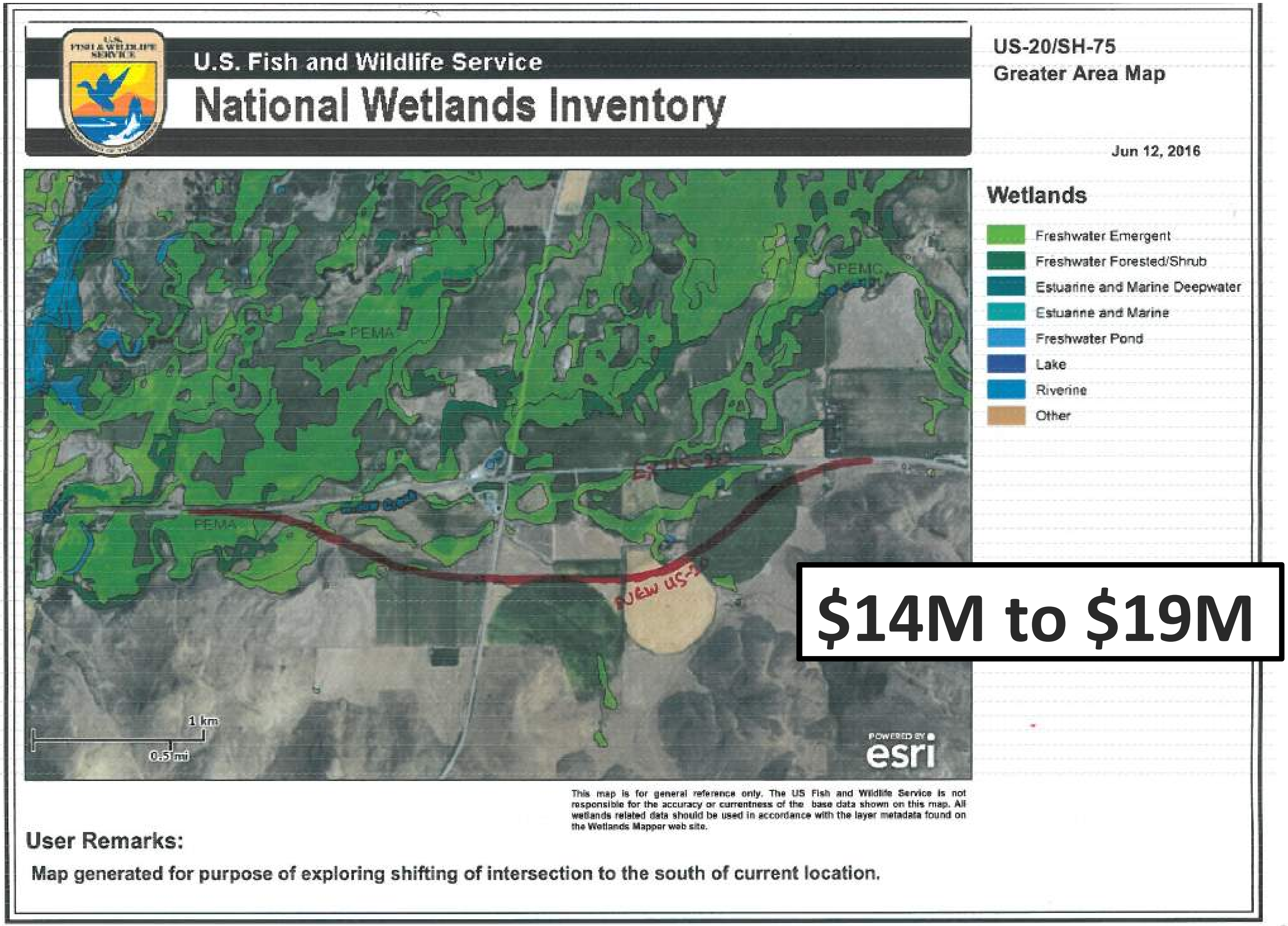
Supporting Information for Other Intersection Treatment Ideas

Short-Term Treatment Ideas from CAC Meeting #1 (**ITD Response in Green**)

- Trim trees and shrubbery on all corners of the intersection to increase visibility. *Note: Study staff measured the sight distance at the intersection per AASHTO standards and did not find any violations of AASHTO sight distance requirements.*
    - **This is done regularly so all sight lines meet AASHTO requirements. Due to soggy ground, it is next planned for late fall/ early winter.**
- Improvements to signage and other warning measures on US-20: Lower the speed limits on US-20; Increase signage and flashing lights east and west of the intersection; Use larger flashing lights
    - **Crash records show people are stopping. (We have numerous, transverse rumble strips, 3 STOP AHEAD signs per approach, 3 flashing lights per approach, larger CROSS TRAFFIC DOES NOT STOP signs, and the largest STOP signs we make). Crash records show people are getting the message to stop – occasionally they just make really bad decisions after they've stopped and/ or choose to do a rolling stop.**
    - **So we're not excited about more flashing lights and signs helping.**
- Install rumble strips on SH-75 prior to the intersection
    - **Best practice is to only use transverse rumble strips approaching stop signs.**
- Implement speed feedback signs in advance of intersection
    - **ITD first plans to shorten the 45 zones going away from intersection to improve speed compliance and better focus attention on the intersection.**
- Provide lighting at the intersection for better nighttime visibility
    - **This is likely with a major improvement such as roundabout or signal but is not recommended in short term based on crash history. Only 1 of 11 crashes from 2011-2016 and 1 of 12 crashes from 2005-2009 occurred at night).**
- Request Idaho State Patrol be regularly stationed at the intersection for a while
    - **Blaine County Sheriff would be primary law enforcement partner.**

SMT & CAC Meeting #1 Follow-Up Items

Shifting the US-20/SH-75 Intersection to the South



U.S. Fish and Wildlife Service

National Wetlands Inventory

US-20/SH-75
Greater Area Map

Jun 12, 2016

Wetlands

🟩	Freshwater Emergent
🟩	Freshwater Forested/Shrub
🟦	Estuarine and Marine Deepwater
🟦	Estuarine and Marine
🟦	Freshwater Pond
🟦	Lake
🟦	Riverine
🟫	Other

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

User Remarks:

Map generated for purpose of exploring shifting of intersection to the south of current location.

$14M to $19M

CAC Meeting #1 Follow-Up Items

Acceleration of Trucks Towards Timmerman Hill

T

ITD Highway Safety Improvement Program Benefit-Cost Ratio Worksheets

Please respond to the following questions:

Worksheet updated 3/24/2016

1.

District	4
Contact Person:	Bruce Christensen
Email Address	bruce.christensen@itd.idaho.gov
Phone:	208-886-7860
Key #:	13075
Project Name:	US20/SH75 Timmerman Junction Intersection Study
Route:	Remove Intersection Skew Alternative
Beg MP:	
End MP:	

Select Countermeasures:

3.	4.	5.	6.	7.
Countermeasure 1	Crash Reduction Factor 1	Star Rating (1-5)	Service Life 1	Cost of Countermeasures 1
Change intersection skew angle	5.00%		40	$ 1,652,000
Countermeasure 2	Crash Reduction Factor 2		Service Life 2	Cost of Countermeasures 2
Countermeasure 3			Service Life 3	Cost of Countermeasures 3

8.

Total Construction Cost (include non safety costs) $ 1,652,000

CounterMeasure 1 Crashes		**CounterMeasure 2 Crashes**		**CounterMeasure 3 Crashes**	
Type of Crashes		Type of Crashes		Type of Crashes	
All	(examples include All, ROR, Rear End, Fatal and Serious Injury Crashes)		(examples include All, ROR, Rear End, Fatal and Serious Injury Crashes)		(examples include All, ROR, Rear End, Fatal and Serious Injury Crashes)

CRASH HISTORY

Counter Measure 1		**Counter Measure 2**		**Counter Measure 3**	
List only crashes relevant to the CRF 1		List only crashes relevant to the CRF 2		List only crashes relevant to the CRF 3	
0	*Fatal Crashes over past 5 years		*Fatal Crashes over past 5 years		*Fatal Crashes over past 5 years
1	*Serious Injury Crashes (A injury) over past 5 years		*Serious Injury Crashes (A injury) over past 5 years		*Serious Injury Crashes (A injury) over past 5 years
3	*Non-Incapacitating Injury Crashes (B injury) over past 5 years		*Non-Incapacitating Injury Crashes (B injury) over past 5 years		*Non-Incapacitating Injury Crashes (B injury) over past 5 years
5	*Possible Injury Crashes (C injury) over the past 5 years		*Possible Injury Crashes (C injury) over the past 5 years		*Possible Injury Crashes (C injury) over the past 5 years
2	*Property Damage Only Crashes over past 5 years		*Property Damage Only Crashes over past 5 years		*Property Damage Only Crashes over past 5 years

Result: 0.3 to 1 Benefit-Cost Ratio Just Safety

Result: 0.3 to 1 Benefit-Cost Ratio Total Project

2017 Cost Estimate

	Idaho Costs (2015)	Five year Crash totals by Crash Severity CM 1	Total Economic Cost by Category CM1	One year Average (Number) CM1	One Year Average (Cost) CM1	Five year Crash totals by Crash Severity CM 2	Total Economic Cost by Category CM2	One year Average (Number) CM2	One Year Average (Cost) CM2	Five year Crash totals by Crash Severity CM 3	Total Economic Cost by Category CM3	One year Average (Number) CM3	One Year Average (Cost) CM3
Fatal	$9,498,816.00	0	$0.00	0.00	$0.00	0	$0.00	0.00	$0.00	0	$0.00	0.00	$0.00
Serious Injuries (FHWA Term- Disabling Injuries) (A)	$454,281.00	1	$454,281.00	0.20	$90,856.20	0	$0.00	0.00	$0.00	0	$0.00	0.00	$0.00
Non Incapacitating Injuries (B)	$123,732.00	3	$371,196.00	0.60	$74,239.20	0	$0.00	0.00	$0.00	0	$0.00	0.00	$0.00
Possible Injuries (C)	$63,181.00	5	$315,905.00	1.00	$63,181.00	0	$0.00	0.00	$0.00	0	$0.00	0.00	$0.00
Property Damage Only (PDO)	$3,201.00	2	$6,402.00	0.40	$1,280.40	0	$0.00	0.00	$0.00	0	$0.00	0.00	$0.00

Countermeasure	Crash Reduction Factor	Estimated Service Life in Years of Countermeasure	Total cost of Countermeasure
Change intersection skew angle	0.05	40	$1,652,000.00
0	0.00	0	$0.00
0	0.00	0	$0.00

	CRF applied to one year average CM 1	Adjusted one year average Service Life	CRF applied to one year average CM 2	Adjusted one year average Service Life	CRF applied to one year average CM 3	Adjusted one year average Service Life
Fatal	0	0	0	0.00	0	0.00
SI (A)	0.19	7.6	0	0.00	0	0.00
NI (B)	0.57	22.8	0	0.00	0	0.00
PI ©	0.95	38	0	0.00	0	0.00
PDO	0.38	15.2	0	0.00	0	0.00

Total Countermeasure cost $1,652,000.00 **Total Construction cost** 1652000

	Number of crashes with countermeasure 1 installed over service life	Cost Savings
Fatal	$0.00	$0.00
SI (A)	$3,452,535.60	$181,712.40
EI (B)	$2,821,089.60	$148,478.40
PI ©	$2,400,878.00	$126,362.00
PDO	$48,655.20	$2,560.80
Total	$8,723,158.40	$459,113.60

	Number of crashes with countermeasure 2 installed over service life	Cost Savings
Fatal	$0.00	$0.00
SI (A)	$0.00	$0.00
EI (B)	$0.00	$0.00
PI ©	$0.00	$0.00
PDO	$0.00	$0.00
Total	$0.00	$0.00

	Number of crashes with countermeasure3 installed over service life	Cost Savings
Fatal	$0.00	$0.00
SI (A)	$0.00	$0.00
EI (B)	$0.00	$0.00
PI ©	$0.00	$0.00
PDO	$0.00	$0.00
Total	$0.00	$0.00

Cost Benefit Ratio Just Safety
0.28 to 1

Total all Countermeasures benefits $459,113.60

Cost Benefit Ratio
0.28 to 1

Please respond to the following questions:

Worksheet updated 3/24/2016

1.

District 4
Contact Person: Bruce Christensen
Email Address bruce.christensen@itd.idaho.gov
Phone: 208-886-7860
Key #: 13075
Project Name: US20/SH75 Timmerman Junction Intersection Study
Route: **Single-Lane Roundabout with Approach Curvature Alternative**
Beg MP:
End MP:

Select Countermeasures:

3.	**4.**	**5.**	**6.**	**7.**
Countermeasure 1	Crash Reduction Factor 1	Star Rating (1-5)	Service Life 1	Cost of Countermeasures 1
Convert intersection with minor-road stop control to modern roundabout - Rural one lane	**71.00%**	**5**	40	2,860,000.00
Countermeasure 2	Crash Reduction Factor 2		Service Life 2	Cost of Countermeasures 2
Countermeasure 3			Service Life 3	Cost of Countermeasures 3

8.

Total Construction Cost (include non safety costs) 2,860,000.00

CounterMeasure 1 Crashes		**CounterMeasure 2 Crashes**		**CounterMeasure 3 Crashes**	
Type of Crashes		Type of Crashes		Type of Crashes	
All	(examples include All, ROR, Rear End, Fatal and Serious Injury Crashes)		(examples include All, ROR, Rear End, Fatal and Serious Injury Crashes)		(examples include All, ROR, Rear End, Fatal and Serious Injury Crashes)

CRASH HISTORY

Counter Measure 1		**Counter Measure 2**		**Counter Measure 3**	
List only crashes relevant to the CRF 1		List only crashes relevant to the CRF 2		List only crashes relevant to the CRF 3	
0	*Fatal Crashes over past 5 years		*Fatal Crashes over past 5 years		*Fatal Crashes over past 5 years
1	*Serious Injury Crashes (A injury) over past 5 years		*Serious Injury Crashes (A injury) over past 5 years		*Serious Injury Crashes (A injury) over past 5 years
3	*Non-Incapacitating Injury Crashes (B injury) over past 5 years		*Non-Incapacitating Injury Crashes (B injury) over past 5 years		*Non-Incapacitating Injury Crashes (B injury) over past 5 years
5	*Possible Injury Crashes (C injury) over the past 5 years		*Possible Injury Crashes (C injury) over the past 5 years		*Possible Injury Crashes (C injury) over the past 5 years
2	*Property Damage Only Crashes over past 5 years		*Property Damage Only Crashes over past 5 years		*Property Damage Only Crashes over past 5 years

Result: 2.3 to 1 Benefit-Cost Ratio Just Safety

Result: 2.3 to 1 Benefit-Cost Ratio Total Project

2017 Cost Estimate

	Idaho Costs (2015)	Five year Crash totals by Crash Severity CM 1	Total Economic Cost by Category CM1	One year Average (Number) CM1	One Year Average (Cost) CM1	Five year Crash totals by Crash Severity CM 2	Total Economic Cost by Category CM2	One year Average (Number) CM2	One Year Average (Cost) CM2	Five year Crash totals by Crash Severity CM 3	Total Economic Cost by Category CM3	One year Average (Number) CM3	One Year Average (Cost) CM3
Fatal	$9,498,816.00	0	$0.00	0.00	$0.00	0	$0.00	0.00	$0.00	0	$0.00	0.00	$0.00
Serious Injuries (FHWA Term-Disabling Injuries) (A)	$454,281.00	1	$454,281.00	0.20	$90,856.20	0	$0.00	0.00	$0.00	0	$0.00	0.00	$0.00
Non Incapacitating Injuries (B)	$123,732.00	3	$371,196.00	0.60	$74,239.20	0	$0.00	0.00	$0.00	0	$0.00	0.00	$0.00
Possible Injuries (C)	$63,181.00	5	$315,905.00	1.00	$63,181.00	0	$0.00	0.00	$0.00	0	$0.00	0.00	$0.00
Property Damage Only (PDO)	$3,201.00	2	$6,402.00	0.40	$1,280.40	0	$0.00	0.00	$0.00	0	$0.00	0.00	$0.00

Countermeasure	Crash Reduction Factor	Estimated Service Life in Years of Countermeasure	Total cost of Countermeasure
road stop control to modern	0.71	40	$2,860,000.00
0	0.00	0	$0.00
0	0.00	0	$0.00

	CRF applied to one year average CM 1	Adjusted one year average Service Life	CRF applied to one year average CM 2	Adjusted one year average Service Life	CRF applied to one year average CM 3	Adjusted one year average Service Life
Fatal	0	0	0	0.00	0	0.00
SI (A)	0.058	2.32	0	0.00	0	0.00
NI (B)	0.174	6.96	0	0.00	0	0.00
PI ©	0.29	11.6	0	0.00	0	0.00
PDO	0.116	4.64	0	0.00	0	0.00

Total Countermeasure cost $2,860,000.00

Total Construction cost 2860000

	Number of crashes with countermeasure 1 installed over service life	Cost Savings
Fatal	$0.00	$0.00
SI (A)	$1,053,931.92	$2,580,316.08
EI (B)	$861,174.72	$2,108,393.28
PI ©	$732,899.60	$1,794,340.40
PDO	$14,852.64	$36,363.36
Total	$2,662,858.88	$6,519,413.12

	Number of crashes with countermeasure 2 installed over service life	Cost Savings
Fatal	$0.00	$0.00
SI (A)	$0.00	$0.00
EI (B)	$0.00	$0.00
PI ©	$0.00	$0.00
PDO	$0.00	$0.00
Total	$0.00	$0.00

	Number of crashes with countermeasure3 installed over service life	Cost Savings
Fatal	$0.00	$0.00
SI (A)	$0.00	$0.00
EI (B)	$0.00	$0.00
PI ©	$0.00	$0.00
PDO	$0.00	$0.00
Total	$0.00	$0.00

Cost Benefit Ratio Just Safety

2.28 to 1

Total all Countermeasures benefits $6,519,413.12

Cost Benefit Ratio

2.28 to 1

Please respond to the following questions:

Worksheet updated 3/24/2016

1.

District 4
Contact Person: Bruce Christensen
Email Address bruce.christensen@itd.idaho.gov
Phone: 208-886-7860
Key #: 13075
Project Name: US20/SH75 Timmerman Junction Intersection Study
Route: **Grade-Separated Diamond Interchange Alternative**
Beg MP:
End MP:

Select Countermeasures:

3.	**4.**	**5.**	**6.**	**7.**
Countermeasure 1	Crash Reduction Factor 1	Star Rating (1-5)	Service Life 1	Cost of Countermeasures 1
Convert at-grade intersection into grade-separated interchange	**42.00%**	**4**	60	10,302,000.00
Countermeasure 2	Crash Reduction Factor 2		Service Life 2	Cost of Countermeasures 2
Countermeasure 3			Service Life 3	Cost of Countermeasures 3

8.

Total Construction Cost (include non safety costs) 10,302,000.00

CounterMeasure 1 Crashes		**CounterMeasure 2 Crashes**		**CounterMeasure 3 Crashes**	
Type of Crashes		Type of Crashes		Type of Crashes	
All	(examples include All, ROR, Rear End, Fatal and Serious Injury Crashes)		(examples include All, ROR, Rear End, Fatal and Serious Injury Crashes)		(examples include All, ROR, Rear End, Fatal and Serious Injury Crashes)

CRASH HISTORY

Counter Measure 1		**Counter Measure 2**		**Counter Measure 3**	
List only crashes relevant to the CRF 1		List only crashes relevant to the CRF 2		List only crashes relevant to the CRF 3	
0	*Fatal Crashes over past 5 years		*Fatal Crashes over past 5 years		*Fatal Crashes over past 5 years
1	*Serious Injury Crashes (A injury) over past 5 years		*Serious Injury Crashes (A injury) over past 5 years		*Serious Injury Crashes (A injury) over past 5 years
3	*Non-Incapacitating Injury Crashes (B injury) over past 5 years		*Non-Incapacitating Injury Crashes (B injury) over past 5 years		*Non-Incapacitating Injury Crashes (B injury) over past 5 years
5	*Possible Injury Crashes (C injury) over the past 5 years		*Possible Injury Crashes (C injury) over the past 5 years		*Possible Injury Crashes (C injury) over the past 5 years
2	*Property Damage Only Crashes over past 5 years		*Property Damage Only Crashes over past 5 years		*Property Damage Only Crashes over past 5 years

Result: 0.6 to 1 Benefit-Cost Ratio Just Safety

Result: 0.6 to 1 Benefit-Cost Ratio Total Project

2017 Cost Estimate

	Idaho Costs (2015)	Five year Crash totals by Crash Severity CM 1	Total Economic Cost by Category CM1	One year Average (Number) CM1	One Year Average (Cost) CM1	Five year Crash totals by Crash Severity CM 2	Total Economic Cost by Category CM2	One year Average (Number) CM2	One Year Average (Cost) CM2	Five year Crash totals by Crash Severity CM 3	Total Economic Cost by Category CM3	One year Average (Number) CM3	One Year Average (Cost) CM3
Fatal	$9,498,816.00	0	$0.00	0.00	$0.00	0	$0.00	0.00	$0.00	0	$0.00	0.00	$0.00
Serious Injuries (FHWA Term-Disabling Injuries) (A)	$454,281.00	1	$454,281.00	0.20	$90,856.20	0	$0.00	0.00	$0.00	0	$0.00	0.00	$0.00
Non Incapacitating Injuries (B)	$123,732.00	3	$371,196.00	0.60	$74,239.20	0	$0.00	0.00	$0.00	0	$0.00	0.00	$0.00
Possible Injuries (C)	$63,181.00	5	$315,905.00	1.00	$63,181.00	0	$0.00	0.00	$0.00	0	$0.00	0.00	$0.00
Property Damage Only (PDO)	$3,201.00	2	$6,402.00	0.40	$1,280.40	0	$0.00	0.00	$0.00	0	$0.00	0.00	$0.00

Countermeasure	Crash Reduction Factor	Estimated Service Life in Years of Countermeasure	Total cost of Countermeasure
into grade-separated	0.42	60	$10,302,000.00
0	0.00	0	$0.00
0	0.00	0	$0.00

	CRF applied to one year average CM 1	Adjusted one year average Service Life	CRF applied to one year average CM 2	Adjusted one year average Service Life	CRF applied to one year average CM 3	Adjusted one year average Service Life
Fatal	0	0	0	0.00	0	0.00
SI (A)	0.116	6.96	0	0.00	0	0.00
NI (B)	0.348	20.88	0	0.00	0	0.00
PI ©	0.58	34.8	0	0.00	0	0.00
PDO	0.232	13.92	0	0.00	0	0.00

Total Countermeasure cost $10,302,000.00

Total Construction cost 10302000

	Number of crashes with countermeasure 1 installed over service life	Cost Savings
Fatal	$0.00	$0.00
SI (A)	$3,161,795.76	$2,289,576.24
EI (B)	$2,583,524.16	$1,870,827.84
PI ©	$2,198,698.80	$1,592,161.20
PDO	$44,557.92	$32,266.08
Total	$7,988,576.64	$5,784,831.36

	Number of crashes with countermeasure 2 installed over service life	Cost Savings
Fatal	$0.00	$0.00
SI (A)	$0.00	$0.00
EI (B)	$0.00	$0.00
PI ©	$0.00	$0.00
PDO	$0.00	$0.00
Total	$0.00	$0.00

	Number of crashes with countermeasure3 installed over service life	Cost Savings
Fatal	$0.00	$0.00
SI (A)	$0.00	$0.00
EI (B)	$0.00	$0.00
PI ©	$0.00	$0.00
PDO	$0.00	$0.00
Total	$0.00	$0.00

Cost Benefit Ratio Just Safety

0.56 to 1

Total all Countermeasures benefits $5,784,831.36

Cost Benefit Ratio

0.56 to 1

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SMT & CAC Meeting #3 Summaries

Study Management Team (SMT)
Meeting #3 Summary

October 3rd, 2016, 10:00AM–12:00PM

Blaine County Courthouse, Commissioners Large Conf. Room
206 1st Ave South, Suite #300, Hailey, ID 83333

MEETING OBJECTIVE:
Review the Draft Intersection Study Report to ensure all key conclusions and findings are incorporated and implementation recommendations are consistent with the outcomes of the study process.

10:00 TO 10:15 WELCOME & RECAP

- Attendees: Angenie McCleary (Blaine County), Yuri Mereszczak (Kittelson & Associates, Inc.), Andy Daleiden (Kittelson & Associates, Inc.), Bruce Christensen (ITD District 4), Scott Malone (ITD District 4), Gene Ramsey (Blaine County Sheriff)
- Yuri provided a review of the following items and highlighted the framework of the implementation plan.
    - Review SMT Roles & Responsibilities
    - Review Study Purpose & Goals
    - Tiered Alternatives Evaluation Process – The study is getting close to the finish line.
    - Review Study Schedule – We plan to wrap up the study by the end of October 2016.
- KAI/ITD D4 will be meeting with ITD Environmental and Project Development tomorrow morning and with the ITD Maintenance group during their Winter Kickoff meeting.

10:15 TO 10:25 SMT & CAC MEETING #2 FOLLOW-UP ITEMS

- Safety Comparison of US-20/SH-75 Intersection to Other Similar Intersections in Idaho
    - Bruce has prepared some information regarding this topic and will present this information at the CAC meeting on Wednesday. This subject intersection falls in the middle of the comparison of five similar intersections throughout the state.
- Deceleration of Trucks Traveling Down Timmerman Hill Toward the Intersection
    - There is adequate distance for loaded trucks to stop at the intersection after coming down from the hill.
- These two items will be presented at the CAC meeting.
- *Note: A short conversation occurred regarding the relocation of the 55 mph zone at the intersection on the SH 75. Angenie indicated that she had received positive feedback about this change.*

10:25 TO 10:40 ONLINE SURVEY SUMMARY

- Yuri presented the findings of the survey. 762 people responded with a 71% completion rate. Hailey had the highest number of responses.
    - Safety and mobility were the top ranked items. Physical and environmental impacts was low, but should be discussed further as the study moves into implementation, programming, and design. The public will be more interested in the aesthetics and environmental elements once something is more imminent in construction.

  - All of the alternatives received high rankings with the traffic signal receiving the most combined #1, #2, and #3 rankings. The roundabout and grade separated interchange received a lot of high rankings, but also received a number of low rankings.
  - The roundabout received a lot of comments regarding maintenance and snow plowing. Curbing is a critical item regarding these comments.
    - This intersection falls under the jurisdiction of three different ITD maintenance crews.
    - ITD District 4 Winter Kickoff meeting will occur on Tuesday, October 5. ITD D4 staff and KAI staff will provide an update on the study at this meeting and be available for questions.

10:40 TO 11:20 OVERVIEW OF DRAFT INTERSECTION STUDY REPORT & IMPLEMENTATION PLAN

- Yuri presented an overview of the following items:
  - Draft Intersection Study Report
    - Includes five sections and a technical appendix. The only new material that has not been presented at previous SMT meetings is included in the Implementation Plan Section of the report.
  - Key Conclusions & Outcomes
    - Safety performance is **the top priority** and maintaining mobility is a key priority.
    - Review of alternatives and key findings:
      - Recommended:
        - No build alternative (short- to mid-term option)
        - Remove the intersection skew alternative (short- to mid-term option)
        - Roundabout (best overall improvement option)
        - Grade separated diamond interchange (very long-term improvement option; continued preservation of right-of-way)
      - Not Recommended:
        - Add turn lanes
        - Traffic signal
  - Implementation Plan Summary
    - If you plan to do the roundabout, it probably does not make sense to move forward with the “remove the skew” option. Although, it’s good to have the “remove the skew” option in place in the study.
    - The roundabout alternative is the best alternative, as it best meets the goals and objectives of the study.
    - This intersection is on the HAL for ITD D4.
  - Implementation Plan Considerations
    - ITD does an annual truck rodeo at the ITD District maintenance yards. This could be a location/event to incorporate a roundabout rodeo.
    - Roundabout rodeo → timing of this would typically be done during preliminary design; this can inform the preliminary design.
    - Several other topics were discussed including perception of safety issues versus reality; video monitoring of the intersection (less on automated → Bruce would prefer to look at the video data); and continue collaboration within the community.

11:20 TO 11:50 OPEN DISCUSSION & WORKSESSION ON DRAFT IMPLEMENTATION PLAN

The SMT completed comment sheets in response to the Draft Implementation Plan. Each SMT member completed the comment sheet indicating whether they support or do not support the recommended improvement and for an explanation of their choice. Table 1 provides a summary of the comment sheets provided by the SMT members and the raw comment sheets are provided with the attachments to this summary.

Table 1: Summary of SMT Comments on Draft Implementation Plan

Recommended Improvement (Time Frame)	Support	Do Not Support	Summary of Comments
No Build (Short-Term to Mid-Term)	**6**	**0**	• Willing to wait for funds to do just one construction project. No obvious need to "rush" to a project. • Consider other short-term options: Larger/brighter overhead flashing light; Flashing LED lights around stop signs • Difficult to see justification for near-term improvement; plan for a more extensive long-term improvement • Let visual and environmental impact
Remove Skew (Centered) (Short-Term to Mid-Term)	**3**	**3**	• May not be worth the investment and just doing the roundabout improvement may be better. • Good to have a lower cost option for shorter term implementation if crashes increase • Risk with this alternative that it wouldn't really result in much benefit. • Reasonable option given the types of crashes that have occurred and if there isn't adequate funding for the roundabout
Single-Lane Roundabout with Approach Curvature (Short-Term to Long-Term)	**6**	**0**	• Good long-term solution; best satisfies the goals of the study. • Some public opposition and concerns from ITD maintenance • Significant public outreach would need to occur; consider an outreach kiosk at the rest area • Best option that should probably be implemented if crashes and politics dictate action.
Grade-Separated Diamond Interchange (Very Long-Term) *Right-of-Way Preservation Only*	**4**[1]	**3**[1]	• Really expensive and negative impacts to the environment and view. Only a very long-term option. • Good to have this option if there's some unanticipated increase in traffic volumes/patterns. • ITD is currently making good use of the R/W and seems short-sighted to give up land you may want to use in the future. • Visual impact is unacceptable and the roundabout is much less expensive. Good to maintain R/W.

Short-Term = 0-5 years; Mid-Term = 5-15 years; Long-Term = 15-25 years; Very Long-Term = 25+ years

[1] One SMT member circled both "Support" and "Do Not Support" for this alternative.

11:50 TO 12:00 NEXT STEPS & CLOSEOUT

- No future meetings planned as a part of this study
- Final Intersection Study Report available by November 2016
- ITD will keep public informed of next steps
- Thank you for your participation!!

ATTACHMENTS

- SMT Meeting #3 Completed Comment Sheets

COMMENT SHEET

SMT MEETING #3 - OCTOBER 3RD, 2016

US 20 ⚓ SH 7
TIMMERMAN JUN
Intersection Stu

Name: Gene Ramsey **Email:** gramsey@co.blaine.id.us

Organization: Sheriff

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

If you are unable to do so, please email your comment sheet to Yuri Mereszczak at yuri@kittelson.com or r to 101 S Capitol Blvd, Suite 301, Boise, ID 83702 by no later than October 12th.

> Please circle whether you **support** or **do not support** the recommended improvement and explain your cho
You may support more than one improvement.

Recommended Improvement (Time Frame)	Your Opinion (Circle One)	Please Explain Your Choice
No Build (Short-Term to Mid-Term)	[✓ Support] Do Not Support	Willing To wait for Funds To do construction right – One Time Short Term
Remove Intersection Skew (Short-Term to Mid-Term)	Support [✓ Do Not Support]	I don't wont To see Two construction Times. 1. for Skew the 2, for Roundabout.
Single-Lane Roundabout with Approach Curvature (Short-Term to Long-Term)	[✓ Support] Do Not Support	Good long Term solution. or better and Term.
Grade-Separated Diamond Interchange (Very Long-Term) ***Right-of-Way Preservation Only***	Support [✓ Do Not Support]	

Short-term = 0-5 years; Mid-term = 5-15 years; Long-term = 15-25 years; Very long-term = 25+ years

Are there any additional intersection improvement ideas we haven't yet considered?

No

Please provide any other comments you have on the Draft Intersection Study Report or the Intersection Stu overall.

COMMENT SHEET

SMT MEETING #3 - OCTOBER 3RD, 2016

US 20 SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Bruce Christensen Email: Bruce.Christensen@itd.idaho.gov

Organization: ITD

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****
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, Suite 301, Boise, ID 83702 by no later than October 12th.

> Please circle whether you **support** or **do not support** the recommended improvement and explain your choice. You may support more than one improvement.

Recommended Improvement (Time Frame)	Your Opinion (Circle One)	Please Explain Your Choice
No Build **(Short-Term to Mid-Term)**	[✓ Support] Do Not Support	Support. Trade-offs with all options.
Remove Intersection Skew **(Short-Term to Mid-Term)**	[✓ Support] Do Not Support	Support. However it may not be worth cost of investment in resources. Just do roundabout maybe better.
Single-Lane Roundabout with Approach Curvature **(Short-Term to Long-Term)**	[✓ Support] Do Not Support	Support. Some public opposition & ITD Maintenance concerns expected though
Grade-Separated Diamond Interchange **(Very Long-Term)** ***Right-of-Way Preservation Only***	[✓ Support] [✓ Do Not Support]	This is really expensive, and has a negative impact to environment and view. Suggest this only as very long-term option.

Short-term = 0-5 years; Mid-term = 5-15 years; Long-term = 15-25 years; Very long-term = 25+ years

Are there any additional intersection improvement ideas we haven't yet considered?

I don't think so.

Please provide any other comments you have on the Draft Intersection Study Report or the Intersection Study overall.

—

COMMENT SHEET

SMT MEETING #3 - OCTOBER 3RD, 2016

US 20 & SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Scott Malone Email:

Organization: ITD

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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, Suite 301, Boise, ID 83702 by no later than October 12th.

> Please circle whether you **support** or **do not support** the recommended improvement and explain your choice. You may support more than one improvement.

Recommended Improvement (Time Frame)	Your Opinion (Circle One)	Please Explain Your Choice
No Build **(Short-Term to Mid-Term)**	[✓ Support] Do Not Support	0-15+ years OK. Will probably be driven by future crashes.
Remove Intersection Skew **(Short-Term to Mid-Term)**	[✓ Support] Do Not Support	Good to have a lower cost option for shorter term implemation if crashes increase. Effort to implemat probaby similar to roundabout.
Single-Lane Roundabout with Approach Curvature **(Short-Term to Long-Term)**	[✓ Support] Do Not Support	Best option that should probaby be implemented if crashes and politic dictate action. Likely solution for the foreseeable future. 15+ years
Grade-Separated Diamond Interchange **(Very Long-Term)** ***Right-of-Way Preservation Only***	[✓ Support] Do Not Support	ROW Preservation wise. Good to h this option if some unanticipated increase in traffic volume / pattern oc

Short-term = 0-5 years; Mid-term = 5-15 years; Long-term = 15-25 years; Very long-term = 25+ years

Are there any additional intersection improvement ideas we haven't yet considered?

Not that I know of.

Please provide any other comments you have on the Draft Intersection Study Report or the Intersection Study overall.

Good results. I think this gives ITD great tool for future improvement guide.

COMMENT SHEET

SMT MEETING #3 - OCTOBER 3RD, 2016

US 20 ✢ SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Angenie McCleary Email: amccleary@co.blaine.id.us

Organization: Blaine County

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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, Suite 301, Boise, ID 83702 by no later than October 12th.

> Please circle whether you **support** or **do not support** the recommended improvement and explain your choice. You may support more than one improvement.

Recommended Improvement (Time Frame)	Your Opinion (Circle One)	Please Explain Your Choice
No Build **(Short-Term to Mid-Term)**	[✓ Support] Do Not Support	I support in the short-term mid term. I know funding is limited and some improv (includ. ↓ speed) has been done. No bld also ↓ visual impact & en
Remove Intersection Skew **(Short-Term to Mid-Term)**	[✓ Support] Do Not Support	I think this is a reasonable i short or mid term solution given the type of accidents & if there isn't adequate funding for a roundab
Single-Lane Roundabout with Approach Curvature **(Short-Term to Long-Term)**	[✓ Support] Do Not Support	If there isn't funding, I think this is also a good mid or long-term
Grade-Separated Diamond Interchange **(Very Long-Term)** ***Right-of-Way Preservation Only***	Support [✓ Do Not Support]	I think the visual impact is unacceptable and the roundabout is much ↓ expensive. Good to maintai right o

Short-term = 0-5 years; Mid-term = 5-15 years; Long-term = 15-25 years; Very long-term = 25+ years

Are there any additional intersection improvement ideas we haven't yet considered?

Short-term improvements to signage and lighting sho be further examined.

Please provide any other comments you have on the Draft Intersection Study Report or the Intersection Study overall.

Good report

COMMENT SHEET

SMT MEETING #3 - OCTOBER 3RD, 2016

US 20 & SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: ANDY DALEIDEN Email: addleiden@kittelson.com

Organization: Kittelson & Associates, Inc.

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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, Suite 301, Boise, ID 83702 by no later than October 12th.

> Please circle whether you **support** or **do not support** the recommended improvement and explain your choice. You may support more than one improvement.

Recommended Improvement (Time Frame)	Your Opinion (Circle One)	Please Explain Your Choice
No Build (Short-Term to Mid-Term)	[✓ Support] Do Not Support	• Enhance the overhead red flashing light at the intx. (make bigger / brighter & LED) • Add LED lights around stop signs on US 20
Remove Intersection Skew (Short-Term to Mid-Term)	Support [✓ Do Not Support]	With the roundabout being the preferred alternative, I don't think the investment is worth it for the skew alternative. Suggest moving forward w/ the roundabout alternative with programming and design. Additionally, significant outreach will need to occur w/ the roundabout. Include a roundabout rodeo, school and community outreach; Also, consider setting up a outreach kiosk at the rest area to inform travelers about the roundabout.
Single-Lane Roundabout with Approach Curvature (Short-Term to Long-Term)	[✓ Support] Do Not Support	
Grade-Separated Diamond Interchange (Very Long-Term) ***Right-of-Way Preservation Only***	[✓ Support] Do Not Support	

Short-term = 0-5 years; Mid-term = 5-15 years; Long-term = 15-25 years; Very long-term = 25+ years

Are there any additional intersection improvement ideas we haven't yet considered?

None.

Please provide any other comments you have on the Draft Intersection Study Report or the Intersection Study overall.

Thank You!

COMMENT SHEET

SMT MEETING #3 - OCTOBER 3RD, 2016

US 20 / SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Yuri Mereszczak Email: yuri@kittelson.com

Organization: Kittelson + Associates, Inc.

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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, Suite 301, Boise, ID 83702 by no later than October 12th.

> Please circle whether you **support** or **do not support** the recommended improvement and explain your choice. You may support more than one improvement.

Recommended Improvement (Time Frame)	Your Opinion (Circle One)	Please Explain Your Choice
No Build (Short-Term to Mid-Term)	[✓ Support] Do Not Support	It's difficult to see justification for any extensive near-term improvement given the lack of crash history. A more extensive improvement should be planned for the long-term, but I don't see the need for ITD to "rush" into anything.
Remove Intersection Skew (Short-Term to Mid-Term)	Support [✓ Do Not Support]	I've just struggled to take the "risk" with this alternative that it wouldn't really result in much benefit given it's hard to tell how much impact the skew angles have.
Single-Lane Roundabout with Approach Curvature (Short-Term to Long-Term)	[✓ Support] Do Not Support	This alternative best satisfies the goals of the study and has the best potential for the most safety benefit. There are some maintenance challenges, but nothing that hasn't been faced before or that can't be overcome.
Grade-Separated Diamond Interchange (Very Long-Term) ***Right-of-Way Preservation Only***	[✓ Support] Do Not Support	ITD is currently making good use of the R/W and it seems short-sighted to give up land you may want to use in the future.

Short-term = 0-5 years; Mid-term = 5-15 years; Long-term = 15-25 years; Very long-term = 25+ years

Are there any additional intersection improvement ideas we haven't yet considered?

Please provide any other comments you have on the Draft Intersection Study Report or the Intersection Study overall.

Community Advisory Committee (CAC)
Meeting #3 Summary

October 5th, 2016, 10:00AM–12:00PM

Blaine County Courthouse, Commissioners Large Conf. Room
206 1st Ave South, Suite #300, Hailey, ID 83333

MEETING OBJECTIVE:
Review the Draft Intersection Study Report to ensure all key conclusions and findings are incorporated and implementation recommendations are consistent with the outcomes of the study process.

WELCOME & RECAP

Yuri welcomed the CAC. Bruce introduced the project and welcomed the CAC members. Rosemary had the CAC members introduce themselves and comment on what they have heard from the community about the study.

Meeting Attendees

- Bruce Christensen (Idaho Transportation Department District 4)
- Jade Sparrow (Blaine/Camas Farm Bureau)
- Scott Malone (Idaho Transportation Department District 4)
- Dan Gilmore (Power Engineers)
- Jim Keating (Blaine County Recreation District)
- Jack Sibbach (Sun Valley Resort)
- Greg Cappel (Blaine County Resident)
- Donna Pence (Idaho State Representative)
- Gene Ramsey (Blaine County Sheriff)
- Nathan Jerke (Idaho Transportation Department District 4 Public Information)
- Jason Miller (Mountain Rides)
- Chad Stoesz (Wood River Land Trust)
- Robyn Mattison (City of Ketchum)
- Ken Worthington (Blaine County Resident)
- Desiree Fawn (News reporter) – check sign-in sheet
- Yuri Mereszczak (Kittelson & Associates. Inc.)
- Rosemary Curtin (RBCI)
- Andy Daleiden (Kittelson & Associates. Inc.)

What have you heard?

- Support for grade-separated interchange
- Support for roundabout
- Increase size of signs at the intersection

- Consider bicycle traffic
- Surprise for a roundabout → more urban treatment, but understand why
- Some people were not aware of the meetings
- Roundabout → seems really slow; more city/urban treatment versus rural
- An educational component is necessary regardless of which alternative is chosen
- Pretty diverse opinions of what should be there; let's just build it now.
- Recent changes at the intersection have been beneficial; move ahead with some incremental improvements and then the roundabout
- Intersection improvements should minimize impacts to the aesthetics and rural nature of the area

General Questions

- What have we heard about the 36th/Hill roundabout in Boise?
    - Larger roundabout
    - Mobility has been improved
    - Crossings work for pedestrians
    - Extensive public outreach was done prior to and during construction

A PowerPoint presentation and display boards were used to help discuss topics during the meeting. Additionally, agendas, draft reports, and concepts of the alternatives were provided on each table for the meeting attendees.

Yuri reviewed the following items with the CAC:

- CAC Roles & Responsibilities
- Study Purpose & Goals
- Tiered Alternatives Evaluation Process
- Study Schedule

Yuri noted appreciation for the strong attendance from the CAC, SMT, and community-at-large throughout the study.

ITD has recently shortened the 45mph posted speed zone downstream from the intersection as direct result of comments from the CAC.

SMT & CAC MEETING #2 FOLLOW-UP ITEMS

Bruce presented an overview of the safety comparison of the US-20/SH-75 intersection to other similar intersections in Idaho. This item was brought up at the last CAC meeting. The question was asked as to what "benchmark" should be used for comparison. An average crash rate of 1.0/million entering vehicles is a general industry rule-of-thumb for an "expected" rate of crashes per million entering vehicles at an intersection similar to US-20/SH-75. The subject intersection is slightly higher than 1.0 and falls in the middle of comparative intersections within Idaho. Yuri presented on the deceleration of trucks traveling down Timmerman Hill toward the intersection, based on deceleration information from the AASHTO *Policy on Geometric Design of Highways and Streets*. The

CAC members felt that this additional information was helpful in addressing questions from CAC Meeting #2.

ONLINE SURVEY SUMMARY

Yuri presented a summary of study's the online survey held in August 2016. A significant number of responses were received from the community on the survey (762 people participated, with 551 completing the survey in full). There was discussion from the CAC on the survey regarding the traffic signal, roundabout, and grade-separated interchange alternatives. All of these alternatives and the addition of turn lanes on SH-75 received a good amount of support.

OVERVIEW OF DRAFT INTERSECTION STUDY REPORT & IMPLEMENTATION PLAN

Yuri reviewed the key conclusions & outcomes, implementation plan summary, and implementation plan considerations from the Draft Intersection Study Report. Key highlights from the presentation include:

- No-Build Alternative
    - Recent changes at the intersection have been beneficial
    - The crash data and operations support a no build alternative in the near term
    - SMT ranked this alternative as #1
    - CAC ranked this alternative at #3
    - General public ranked this alternative as #6.

- Remove the Intersection Skew Alternative
    - Could address some of the angle-type crashes at the intersection
    - Could be phased in conjunction with the roundabout
    - SMT ranked this alternative as #3
    - CAC ranked this alternative at #1 (tie)
    - General public ranked this alternative as #5.

- Roundabout Alternative
    - Best addresses the primary goals of the study and provides the best safety performance
    - SMT ranked this alternative as #2
    - CAC ranked this alternative at #1 (tie)
    - General public ranked this alternative as #4

- Grade-Separated Interchange Alternative (Right-of-Way Preservation Only)
    - Continue to maintain the ROW at the intersection
    - B/C ratio does not support implementation of a grade separated interchange within the planning horizon of the study
    - SMT ranked this alternative as #7
    - CAC ranked this alternative at #6
    - General public ranked this alternative as #3.

Other comments/notes/questions from the CAC:

- Traffic would slow down with the roundabout alternative. What about trucks traveling north and south on SH-75? How would truck speeds be impacted with the roundabout?
    - Yuri discussed the impact of the intersection on acceleration up Timmerman Hill. Given the grade is relatively flat for the first ½ mile south of the intersection (average grade of ~1% prior to the steeper grade up the hill). Most trucks will be able to accelerate from the intersection to a reasonable running speed prior to the steeper grade up the hill regardless of stopping/slowing at the intersection. Therefore, providing a passing lane up the hill is considered mostly unrelated to what occurs at the intersection, but it is discussed in the report for future consideration by ITD.
- Perception of safety issues versus reality
    - The data is important to look at and the data does not depict problems with safety much beyond that typically expected at an intersection such as US-20/SH-75. However, ITD and the study team acutely recognize that many members of the community have been impacted at this intersection and therefore safety problems are a reality for them. This study is a good start to identifying improvements to enhance the safety performance of the intersection.
- What does ITD think about the video monitoring of the intersection idea?
    - This may be good to do especially during the winter and summer months due to the seasonal variation in traffic at this intersection. It provides an opportunity to learn more about occurrences at the intersection beyond just what the crash data and operational analysis reveal.

OPEN DISCUSSION & WORKSESSION ON DRAFT IMPLEMENTATION PLAN

The CAC completed comment sheets in response to the Draft Implementation Plan for the study. Each CAC member present at the meeting completed a comment sheet and one CAC member not present at the meeting also completed a comment sheet. On the comment sheets, CAC members indicated whether they support or do not support the recommended improvement and were asked to provide an explanation for their choice. Table 1 provides a summary of the comment sheets provided by the CAC members and the raw comment sheets are provided with the attachments to this summary.

Table 1: Summary of CAC Comments on Draft Implementation Plan

Recommended Improvement (Time Frame)	Support	Do Not Support	Summary of Comments
No Build (Short-Term to Mid-Term)	**8**	**2**	• A change is needed now. • Current needs are being met, but a build option should be planned for long-term. • Continue to look for short-term, low cost improvements. • Video monitoring is a good idea for near-term.
Remove Skew (Centered) (Short-Term to Mid-Term)	**4**	**4**	• Not enough support; not worth the cost. • Generally an unneeded step, but has some benefit to future roundabout. • Cost effective; some safety improvement. • Support option, but less so than the roundabout.
Single-Lane Roundabout with Approach Curvature (Short-Term to Long-Term)	**9**	**1**	• Best overall, long-term option with potential for aesthetic benefit as well. Balances safety improvement and cost. • Some support, but may still need another longer range improvement. • Need a public relations effort to help citizens be more in support. • Traffic calming improvement that optimizes safety.
Grade-Separated Diamond Interchange (Very Long-Term) *Right-of-Way Preservation Only*	**5**[1]	**3**[1]	• Not necessary. Little safety benefit with large visual/environmental impact. Too costly. • Preserve ROW for this option, especially in case population increases. • Best overall option for traffic flow and safety, but cost may make this difficult to prioritize.

Short-Term = 0-5 years; Mid-Term = 5-15 years; Long-Term = 15-25 years; Very Long-Term = 25+ years

[1] If "Do Not Support" was circled, but the respondent noted support for preservation of right-of-way, then that was tallied as "Support" as the Implementation Plan explicitly identifies this alternative only for right-of-way preservation.

NEXT STEPS & CLOSEOUT

- No future meetings planned as a part of this study
- Final Intersection Study Report available by November 2016
- ITD will keep public informed of next steps
- Thank you for your participation!!

ATTACHMENTS

- Attachment A: CAC Meeting #3 Sign-In Sheet
- Attachment B: CAC Meeting #2 Comment Sheets
- CAC Meeting #3 Materials are available on the study website at: http://itd.idaho.gov/projects/D4/US20_ID75_IntersectionStudy/

Attachment A CAC Meeting #3 Sign-In Sheet

Timmerman Junction Study (US-20/SH-75)
ITD District 4
Community Advisory Committee (CAC) Meeting #3

October 5, 2016 Meeting *(Please sign your name)*	First Name	Last Name	Organization
	Lesley	Andrus	
	Pat	Bowton	Hailey Chamber of Commerce
	Kyle	Broadie	Blaine County Road and Bridge
	Walter	Burnside	ITD District 4 Maintenance
	Greg	Cappel	County Resident
	Brian	Christiansen	City of Ketchum
Bruce	Bruce	Christensen	Idaho Transportatoin Department
	Brad	Dufur	City of Sun Valley
Dan	Dan	Gilmore	Power Engineers
	Jacob	Greenberg	Blaine County
	Len	Harlig	Citizen
	Connie	Jones	ITD D4 Environmental
	Jim	Keating	Blaine County Recreation District
	Christopher	Koch	City of Bellevue
	Bart	Lassman	Wood River Fire & Rescue (Paramedics)
	Jeff	Loomis	Blaine County
	Brad	Lynch	
	Scott	Malone	Idaho Transportatoin Department
Robyn L Mattison	Robyn	Mattison, P.E.	City of Ketchum
	Angenie	McCleary	Blaine County Regional Transportation Committee
	Jason	Miller	Mountain Rides
	Randall	Patterson	City of Carey .
Donna Pence	Donna	Pence	State Representative
Gene D Ramsey	Gene	Ramsey	Blaine County

	Lawrence	Schoen	Blaine County
	Terrence	Sheehan	Senior Connection
Jack Sibbach	Jack	Sibbach	Sinclair Co./Sun Valley
Jade Sparrow	Jade	Sparrow	Blaine/Camas County Farm Bureau
	Rex	Squires	Blaine County School District
	Steve	Thompson	Blaine County Road and Bridge
	Michelle	Stennett	State Senator
	Chad	Stoesz	Wood River Land Trust
	Nathan	Jerke	ITD
Worthington			resident

Attachment B CAC Meeting #3 Comment Sheets

COMMENT SHEET

CAC MEETING #3 - OCTOBER 5TH, 2016

US 20 SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Chad Stoesz Email: cstoesz@woodriverlandtrust.org

Organization: Wood River Land Trust

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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, Suite 301, Boise, ID 83702 by no later than October 12th.

> Please circle whether you **support** or **do not support** the recommended improvement and explain your choice. You may support more than one improvement.

Recommended Improvement (Time Frame)	Your Opinion (Circle One)	Please Explain Your Choice
No Build (Short-Term to Mid-Term)	[✓ Support] Do Not Support	safety is adequate already
Remove Intersection Skew (Short-Term to Mid-Term)	[✓ Support] Do Not Support	
Single-Lane Roundabout with Approach Curvature (Short-Term to Long-Term)	[✓ Support] Do Not Support	Best compromise
Grade-Separated Diamond Interchange (Very Long-Term) ***Right-of-Way Preservation Only***	Support [✓ Do Not Support]	Not necessary - little safety benefit with large visual impact

Short-term = 0-5 years; Mid-term = 5-15 years; Long-term = 15-25 years; Very long-term = 25+ years

Are there any additional intersection improvement ideas we haven't yet considered?

Please provide any other comments you have on the Draft Intersection Study Report or the Intersection Study overall.

COMMENT SHEET

CAC MEETING #3 - OCTOBER 5TH, 2016

US 20 SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Greg Cappel Email: gregory.cappel@gmail

Organization: N/A

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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, Suite 301, Boise, ID 83702 by no later than October 12th.

> Please circle whether you **support** or **do not support** the recommended improvement and explain your choice. You may support more than one improvement.

Recommended Improvement (Time Frame)	Your Opinion (Circle One)	Please Explain Your Choice
No Build (Short-Term to Mid-Term)	Support [✓ Do Not Support]	I believe that a change is needed, now.
Remove Intersection Skew (Short-Term to Mid-Term)	Support Do Not Support	
Single-Lane Roundabout with Approach Curvature (Short-Term to Long-Term) (See back page comment)	[✓ Support] Do Not Support	The option feels like the best overall option with respect to safety, mobility and environmental preservation. It would also lend itself to a "aesthetic "gateway" feature.
Grade-Separated Diamond Interchange (Very Long-Term) ***Right-of-Way Preservation Only***	Support Do Not Support	

Short-term = 0-5 years; Mid-term = 5-15 years; Long-term = 15-25 years; Very long-term = 25+ years

Are there any additional intersection improvement ideas we haven't yet considered?

No

Please provide any other comments you have on the Draft Intersection Study Report or the Intersection Study overall.

I am grateful for the time, effort and thoughtful depth that has gone into the study and these presentations

COMMENT SHEET

CAC MEETING #3 - OCTOBER 5TH, 2016

US 20 SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: JASON

Email: JASON@MOUNTAINRIDES.ORG

Organization: MTN RIDES

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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, Suite 301, Boise, ID 83702 by no later than October 12th.

> Please circle whether you **support** or **do not support** the recommended improvement and explain your choice. You may support more than one improvement.

Recommended Improvement (Time Frame)	Your Opinion (Circle One)		Please Explain Your Choice
No Build (Short-Term to Mid-Term)	[✓ Support]	Do Not Support	SMALL TWEAKS ON CURRENT IS OK FOR NEAR TERM
Remove Intersection Skew (Short-Term to Mid-Term)	Support	[✓ Do Not Support]	DOESN'T HAVE ENOUGH SUPPORT
Single-Lane Roundabout with Approach Curvature (Short-Term to Long-Term)	[✓ Support]	Do Not Support	I THINK IT'S THE BEST LONG TERM SOLUTION
Grade-Separated Diamond Interchange (Very Long-Term) ***Right-of-Way Preservation Only***	Support	[✓ Do Not Support]	TOO MUCH VISUAL/LAND/ ENVIRONMENTAL IMPACT

Short-term = 0-5 years; Mid-term = 5-15 years; Long-term = 15-25 years; Very long-term = 25+ years

Are there any additional intersection improvement ideas we haven't yet considered?

Please provide any other comments you have on the Draft Intersection Study Report or the Intersection Study overall.

LOOKS GOOD THANKS

COMMENT SHEET

CAC MEETING #3 - OCTOBER 5TH, 2016

US 20 SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Dan Gilmore Email: dan.gilmore@powereng.com

Organization: POWER Engineers

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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, Suite 301, Boise, ID 83702 by no later than October 12th.

> Please circle whether you **support** or **do not support** the recommended improvement and explain your choice. You may support more than one improvement.

Recommended Improvement (Time Frame)	Your Opinion (Circle One)	Please Explain Your Choice
No Build (Short-Term to Mid-Term)	[✓ Support] Do Not Support	can be "implemented" immediately at low cost
Remove Intersection Skew (Short-Term to Mid-Term)	Support [✓ Do Not Support]	not sure it's worth the money -
Single-Lane Roundabout with Approach Curvature (Short-Term to Long-Term)	[✓ Support] Do Not Support	seems like safest option that balances cost
Grade-Separated Diamond Interchange (Very Long-Term) ***Right-of-Way Preservation Only***	Support [✓ Do Not Support]	seems to excessive - I would definitely keep ROW though!

Short-term = 0-5 years; Mid-term = 5-15 years; Long-term = 15-25 years; Very long-term = 25+ years

Are there any additional intersection improvement ideas we haven't yet considered?

Please provide any other comments you have on the Draft Intersection Study Report or the Intersection Study overall.

COMMENT SHEET

CAC MEETING #3 - OCTOBER 5TH, 2016

US 20 SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Donna Pence Email: donnapence25@msn.com

Organization: State Legislature

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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, Suite 301, Boise, ID 83702 by no later than October 12th.

> Please circle whether you **support** or **do not support** the recommended improvement and explain your choice. You may support more than one improvement.

Recommended Improvement (Time Frame)	Your Opinion (Circle One)	Please Explain Your Choice
No Build (Short-Term to Mid-Term)	[✓ Support] Do Not Support	video monitoring would be good added ~~Passing Lane at top of Grade~~ * Passing Lane Improvement
Remove Intersection Skew ([✓ Short-Term] to Mid-Term) +	Support [✓ Do Not Support]	Generally an unNeeded step, however, the Skew may * ~~This Too~~ be an Imrovement Towards Round-a-bout
Single-Lane Roundabout with Approach Curvature (Short-Term to [✓ Long-Term])	[✓ Support] Do Not Support	Luke-Warm Support but may Need To See it Long range Improvement.
Grade-Separated Diamond Interchange (Very Long-Term) ***Right-of-Way Preservation Only***	[✓ Support] * [✓ Do Not Support] but	May NEED Long range Keep right of way

Short-term = 0-5 years; Mid-term = 5-15 years; Long-term = 15-25 years; Very long-term = 25+ years

Are there any additional intersection improvement ideas we haven't yet considered?

IT SEEMED Very Complete

Please provide any other comments you have on the Draft Intersection Study Report or the Intersection Study overall.

well done study - and it offered Public & Individuals involved in commercial & professional involvement of Intersection a venue.

COMMENT SHEET

CAC MEETING #3 - OCTOBER 5TH, 2016

US 20 SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Ken Worthington Email: none - 720-3358

Organization: ____________________

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****
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, Suite 301, Boise, ID 83702 by no later than October 12th.

> Please circle whether you **support** or **do not support** the recommended improvement and explain your choice. You may support more than one improvement.

Recommended Improvement (Time Frame)	Your Opinion (Circle One)	Please Explain Your Choice
No Build **(Short-Term to Mid-Term)**	[✓ Support] Do Not Support	use other measures first. Hway 20 east - move light closer to intersection; larger signs. sign at stop sign too small
Remove Intersection Skew **(Short-Term to Mid-Term)**	Support ? Do Not Support	
Single-Lane Roundabout with Approach Curvature **(Short-Term to Long-Term)**	Support [✓ Do Not Support]	
Grade-Separated Diamond Interchange **(Very Long-Term)** ***Right-of-Way Preservation Only***	Support ? Do Not Support	

Short-term = 0-5 years; Mid-term = 5-15 years; Long-term = 15-25 years; Very long-term = 25+ years

Are there any additional intersection improvement ideas we haven't yet considered?

Please provide any other comments you have on the Draft Intersection Study Report or the Intersection Study overall.

COMMENT SHEET

CAC MEETING #3 - OCTOBER 5TH, 2016

US 20 SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Jade Sparrow Email: jsparrow@idfbins.com

Organization: Farm Bureau

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****
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, Suite 301, Boise, ID 83702 by no later than October 12th.

> Please circle whether you **support** or **do not support** the recommended improvement and explain your choice. You may support more than one improvement.

Recommended Improvement (Time Frame)	Your Opinion (Circle One)		Please Explain Your Choice
No Build (Short-Term to Mid-Term)	[✓ Support]	Do Not Support	overall the needs are being met and as a short term option the changes being implimented is progress.
Remove Intersection Skew (Short-Term to Mid-Term)	[✓ Support]	Do Not Support	I support this option as a mid term solution... if it in turn proves as a waste of state funds, I believe in opting out of wasted funds
Single-Lane Roundabout with Approach Curvature (Short-Term to Long-Term)	[✓ Support]	Do Not Support	I have been against this in all past surveys... considering cost & changes made to make up for larger vehicles. This has been made more acceptable. still not my favorite
Grade-Separated Diamond Interchange (Very Long-Term) *Right-of-Way Preservation Only*	[✓ Support]	Do Not Support	I believe the overall flow & safety factor are the best with this option though I do understand cost factor may make this not a priority for the state.

Short-term = 0-5 years; Mid-term = 5-15 years; Long-term = 15-25 years; Very long-term = 25+ years

Are there any additional intersection improvement ideas we haven't yet considered?

I think the video survalence idea could prove benificial and should be implimented. It could be a huge factor in decisions on what plan should truely be implimented. still some concerns on my part for the truck traffic for Hay trucks & mail trucks pulling tripples or doubles.

Please provide any other comments you have on the Draft Intersection Study Report or the Intersection Study overall.

I enjoyed being part of this process and look forward to seeing how it all plays out. Thank you!

COMMENT SHEET

CAC MEETING #3 - OCTOBER 5TH, 2016

US 20 SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Jack Sibbach Email: jsibbach@sunvalley.com

Organization: Sun Valley Resort

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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, Suite 301, Boise, ID 83702 by no later than October 12th.

> Please circle whether you **support** or **do not support** the recommended improvement and explain your choice. You may support more than one improvement.

Recommended Improvement (Time Frame)	Your Opinion (Circle One)	Please Explain Your Choice
No Build (Short-Term to Mid-Term)	Support [✓ Do Not Support]	Something should be done in the short-term such as: improved signage, visual approachs, (vegetation mitigation) and video monitoring
Remove Intersection Skew (Short-Term to Mid-Term)	[✓ Support] Do Not Support	Cost effective some safety improvement
Single-Lane Roundabout with Approach Curvature (Short-Term to Long-Term)	[✓ Support] Do Not Support	Would need a public relations effort to make citizens feel supportive. #1 for safety
Grade-Separated Diamond Interchange (Very Long-Term) *Right-of-Way Preservation Only*	[✓ Support] Do Not Support	Preserve Land Rights May be implemented if population increases enough to support.

Short-term = 0-5 years; Mid-term = 5-15 years; Long-term = 15-25 years; Very long-term = 25+ years

Are there any additional intersection improvement ideas we haven't yet considered?

Please provide any other comments you have on the Draft Intersection Study Report or the Intersection Study overall.

COMMENT SHEET

CAC MEETING #3 - OCTOBER 5TH, 2016

US 20 ✣ SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: Robyn Mattison Email: rmattison@ketchumidaho.org
Organization: City of Ketchum

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****
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, Suite 301, Boise, ID 83702 by no later than October 12th.

> Please circle whether you **support** or **do not support** the recommended improvement and explain your choice. You may support more than one improvement.

Recommended Improvement (Time Frame)	Your Opinion (Circle One)	Please Explain Your Choice
No Build (Short-Term to Mid-Term)	[✓ Support] Do Not Support	Support in the short term Long term should include a build option
Remove Intersection Skew (Short-Term to Mid-Term)	[✓ Support] Do Not Support	I support this option less than the roundabout option.
Single-Lane Roundabout with Approach Curvature (Short-Term to Long-Term)	[✓ Support] Do Not Support	
Grade-Separated Diamond Interchange (Very Long-Term) ***Right-of-Way Preservation Only***	Support [✓ Do Not Support]	I do Support for the purpose of preserving the RoW.

Short-term = 0-5 years; Mid-term = 5-15 years; Long-term = 15-25 years; Very long-term = 25+ years

Are there any additional intersection improvement ideas we haven't yet considered?

Please provide any other comments you have on the Draft Intersection Study Report or the Intersection Study overall.

I appreciate the public involvement process included in this Study. Good job!

COMMENT SHEET

CAC MEETING #3 - OCTOBER 5TH, 2016

US 20 SH 75
TIMMERMAN JUNCTION
Intersection Study

Name: LEN HARLIG **Email:** len@lenharlig.com

Organization: BC Comp PLAN

****PLEASE TURN IN YOUR FORM PRIOR TO LEAVING TODAY'S MEETING.****

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, Suite 301, Boise, ID 83702 by no later than October 12th.

> Please circle whether you **support** or **do not support** the recommended improvement and explain your choice. You may support more than one improvement.

Recommended Improvement (Time Frame)	Your Opinion (Circle One)	Please Explain Your Choice
No Build (Short-Term to Mid-Term)	[✓ Support] Do Not Support	with the east/west signage, rumble strips, and lower approach speeds
Remove Intersection Skew (Short-Term to Mid-Term)	Support [✓ Do Not Support]	dont see sufficient safety improvement to warrant cost
Single-Lane Roundabout with Approach Curvature (Short-Term to Long-Term)	[✓ Support] Do Not Support	traffic calming improvement that optimizes safety!
Grade-Separated Diamond Interchange (Very Long-Term) ***Right-of-Way Preservation Only***	Support [✓ Do Not Support]	too costly and too "freeway" for a rural community

Short-term = 0-5 years; Mid-term = 5-15 years; Long-term = 15-25 years; Very long-term = 25+ years

Are there any additional intersection improvement ideas we haven't yet considered?

Please provide any other comments you have on the Draft Intersection Study Report or the Intersection Study overall.

Because I consider safety as more important than mobility, I would support a 4-way signal.