

I-15/US-20 Connector Planning and Environmental Linkages (PEL) Study Report

Appendix F. I-15/US-20 Safety and Mobility Improvements Study Level Two Alternative Screening Summary



Appendix F



20065 I-15/US-20 Safety and Mobility Study

Level Two Alternative Screening Summary

August 28, 2019





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Executive Summary

The Idaho Transportation Department (ITD) District 6 is conducting the Interstate 15 (I-15) and United States Highway 20 (US-20) Safety and Mobility Study (Project No. A020(065), Key No. 20065). ITD, along with the Bonneville Metropolitan Planning Organization (BMPO) and its member agencies, have identified the need to improve the I-15/US-20 connection and the adjacent six interchanges. The project team includes ITD and their consultants for technical resources, BMPO, and member agencies.

The project study includes two phases of work.

Phase A collected existing data and studies from previous work and started a public outreach program. Phase A was completed in summer of 2018.

Phase B, the current phase, includes development of a Planning and Environmental Linkages (PEL) study. The PEL represents a collaborative and integrated approach to transportation decision-making that:

- 1. Considers environmental, community, and economic goals early in the transportation planning process, and
- 2. Uses the information, analysis, and products developed during planning to inform the environmental process as the project moves into a NEPA document.

The PEL will include three levels of screening to develop a recommended list of alternative(s) to advance into a National Environmental Policy Act (NEPA) document, once funding allows. A screening level reviews each alternative against the screening criteria questions developed with the purpose, need, and project goals considerations.

Level One screening results recommended ten alternatives be advanced into Level Two analysis. Details on Level One screening is summarized in the Level One Alternative Screening Summary Report (April 2019). This report summarizes the Level Two alternatives development, analysis and alternatives screening process and results.

Level Two Summary

Below is a summary of Level Two, along with appendices that include details for each step.

- Level One screening resulted in ten alternatives, including the no-build, which advanced into Level Two analysis. The alternatives were renamed from the Level One naming convention to follow a letter designation and were given a brief description.
- Over the course of six months, the technical team worked on details for each alternative, including (see **Appendix B** for the alternative development plan and design criteria):
 - o A coarse geometric layout to meet established design criteria



- Travel demand modeling for traffic forecasting
- Connectivity options for pedestrian/bicycle and local streets
- o Review of potential environmental resource impacts
- o Structure crossings
- Land use planning and zoning
- Benefit cost analysis based on a high-level construction cost relative to the benefits each alternative provides
- A qualitative risk analysis workshop was held (February 2019) to identify risks, descriptions, and qualitative analysis for each alternative's risk events in seven areas:
 - o Design
 - Environmental and hydraulics
 - o Right-of-way
 - o Construction
 - o Railroad
 - Structures and geotechnical
 - Partnership and stakeholders

Seventeen individuals representing ITD, BMPO, City of Idaho Falls, Bonneville County, FHWA and the consultant team participated in the workshop. Each participant filled out a risk questionnaire for each alternative to identify possible risks. The questionnaires were compiled, reviewed, and risks were agreed upon by the group at the workshop. The resulting risk summary is located in **Appendix C**.

- Following the qualitative risk workshop, the analysis team reviewed the results and looked at ways to improve alternatives to prepare them for Level Two screening.
- The following were provided to the analysis team for their review prior to the Level Two screening meeting:
 - Draft purpose and need, and project goals (Appendix A)
 - Level Two concept alternative maps
 - Descriptions of the alternatives
 - Evaluation criteria matrix and evaluation questions with a detailed summary of Level Two findings
 - Risk workshop summary

Evaluation Questions and Criteria Matrix are in **Appendix D**. The information packet for Level Two screening is in **Appendix E**.

• The Level Two screening meeting included eighteen individuals representing ITD, BMPO, City of Idaho Falls, Bonneville County, FHWA, and the consultant team.



- The Community Working Group Meeting #4, held on April 29, 2019, was used to review the materials for the public open house and revisions were made to the exhibits and meeting format. More information can be found on the project website, located here: <u>http://i15us20connector.com/#resources</u>
- At the Level Two screening meeting, four alternatives were recommended to advance to Level Three analysis (**Appendix F**). The Level Two alternatives and results from the screening meeting were presented to the public at an open house meeting, held on May 16, 2019. An open house summary is posted on the project website, located here: http://i15us20connector.com/#resources

Next Steps

For Level Three, the Project Team will:

- Further refine the geometrical layouts, structure locations, local roads and pedestrian/bicycle connectivity, and environmental impacts to known resources for each alternative.
- Complete micro-simulation modeling for the planning year, 2045, for each concept alternative to identify areas of delay and make adjustments to lane configurations in the geometric layouts.
- Supplement environmental information with field studies to collect information during the summer season, including wetlands and cultural resources and survey.
- Have agency checkpoints to gather their input on the alternatives, leading toward concurrence for the final PEL Report.
- Review and modify Level Three evaluation screening questions as needed to address agency concerns.
- Complete a Risk Analysis workshop that updates and supplements the identification, description, and analysis of each remaining alternative's risk events, responding to each risk or opportunity using value engineering and other methods.
- A similar group of attendees from the Level 2 screening meeting will meet to review and screen alternatives against the Level Three evaluation criteria matrix and evaluation questions.
- Conduct specific outreach to stakeholders and businesses in the vicinity of the Level Three alternatives.
- Present draft Level Three alternatives and draft screening results to the public in the spring of 2020.
- Feedback from the public meeting will be incorporated into the final PEL Report.
- Submit a final PEL Report to FHWA that summarizes all three levels of screening and includes a completed FHWA PEL questionnaire. Request FHWA concurrence prior to transitioning the recommended alternative(s) into National Environmental Policy Act (NEPA) analysis.



Draft Purpose and Need

DRAFT PURPOSE AND NEED DEVELOPMENT

May 8, 2018

Introduction

This Purpose and Need Statement for potential transportation improvements on I-15 and U.S. 20 in or near Bonneville County and Idaho Falls was developed after analysis of existing conditions and in coordination with stakeholder agencies and the public.

The primary users of these corridors include:

- North-south through traffic (i.e. coming and going from the south toward Yellowstone)
- Traffic destined for central Idaho Falls
- Local crosstown traffic (moving from one side of the city to the other using the interstate)

All three user groups, which include travelers of all types (auto, freight, bus, bicycle, and pedestrian) are increasing in volume, and demand is expected to increase into the near future. The project is being conducted to figure out how to accommodate these now and into the future, with improved capacity, safety, and mobility.

In the following section we will define a Purpose and Need as well as additional project goals.

- The "Purpose" is a concise statement defining the transportation problem to be solved.
- The "Needs" identify the specific deficiencies recognized through analysis of existing and projected conditions and provide data to support the Purpose statement. The needs are summarized here and will be fully documented in the Existing Conditions Report (in development, to be completed summer 2018), prepared as part of this PEL study.
- "Additional Goals" are also included to identify related and important objectives identified by project stakeholders that may be considered during project development, but are not the reason the project is being developed.

Project Purpose (indicates how the project action proposes to address the problem)

The purpose of the PEL study is to identify and analyze improvements to address safety, congestion, mobility and travel time reliability for efficient movement of people, goods and services on I-15 and US-20 in or near Bonneville County and Idaho Falls.

Project Needs (details the problem, today and in the future)

The PEL will study multi-modal connections and capacity improvements to I-15 and US-20 as well as potential new roadway linkages in order to:

- 1. Address unsafe travel conditions on I-15 and US-20
 - a. Traffic backs up at exit ramps

- b. Substandard lane change / merge space between exits
- c. Interchanges are spaced too closely together
- Reduce congestion at the I-15/US-20 interchange, particularly for traffic exiting US-20 towards southbound I-15 at the onramp, and for northbound traffic on I-15 exiting at US-20 eastbound exchange, which both operate at a current LOS D
 - a. High volumes of freight traffic
 - b. High volumes of peak hour local commuter traffic
 - c. Limited crossings of railroad and river funnel traffic to the I-15/US-20 corridor
- 3. Provide pedestrian and bicycle mobility within the I-15 and US-20 corridors
 - a. Built and natural barriers limit safe connectivity to adjacent facilities and the river and adjacent multiuse trails
 - b. According to the 2008 BMPO Bicycle and Pedestrian plan the corridor's "existing facilities are either inadequate, deficient, or associated with various problems."
- 4. Address future travel demand forecasts
 - a. Current infrastructure will not accommodate travel demands of increasing local growth and regional tourism
 - b. Current infrastructure is projected to operate at Level of Service E or F at the interchange of I-15/US-20 by the year 2045, which will not appropriately provide for future growth as identified in adopted local (City, County, and MPO) land use and comprehensive plans.

Additional Goals

- 1. Provide transportation facilities that improve access to local schools, recreation facilities and commercial areas that support local land use plans while also reducing the negative impacts of the existing infrastructure on those community resources.
- 2. In addition to improvements to pedestrian and bicycle facilities in the corridor, seek to provide additional connections to the surrounding multi-modal network.
- 3. Provide improvements that serve all types of travelers including local commuters, freight, and regional tourism.
- 4. Consider new infrastructures impacts to local roads through coordination with Idaho Falls and Bonneville County.
- 5. In addition to identification and mitigation of any direct environmental impacts of the proposed improvements, seek to provide additional opportunities for the project to enhance local environmental resources.

B

Level Two Analysis Approach; Design Criteria Matrix

Memo

Project:	I-15/US-20 Connector
Subject:	Level 2 Alternative Analysis Baseline Assumptions
Date:	Monday, October 22, 2018

This baseline analysis memo is intended to document assumptions and establish the level of analysis detail for the Level 2 screening of alternatives.

The purpose of the Level 2 screening is to use a mixture of qualitative and quantitative analyses to evaluate and compare the alternatives refined through the Level 1 process. Generally, the alternatives will be a coarse development of horizontal and vertical alignments and concept travel demand modeling to depict major and minor roadway connections, structure locations, bicycle and pedestrian facilities or linkages, major utilities, railroad and drainage locations.

The analysis anticipated to be performed is categorized into the list below. Within each category, there is a summary of tasks to be completed with assumptions for the depth of analysis.

Level 2 Analysis Categories

- 1. Geometric Layout goal is to determine if the alternative concept will fit geometrically and to develop a footprint to estimate impacts and costs
 - Establish a design criteria matrix (design speed, standard right-of-way (ROW) width, level of service (LOS) thresholds, roadway classification). ITD/FHWA to approve.
 - b. Develop coarse layout of horizontal/vertical alignments for each alternative
 - Perform a 1st pass of the travel demand model (fatal flaw check) to determine the number of lanes on each segment needed to meet LOS threshold
 - ii. No superelevation will be modeled, though transition lengths will be considered for geometric constraints.
 - iii. Use Openroads concept station to get footprints for each alternative
 - iv. Use aerial digital terrain model (DTM) provided from ITD's aerial mapping (2017). Request from Bonneville County the aerial to the north of the project area.
 - c. Do not model intersection layouts/configurations including lane add/drops
 - d. Model on/off ramps as single lane unless travel demand shows need for dual lanes (see 2.c)
 - e. Refer to the IDAPA code for approach requirements if local roads tie into the state system
- 2. Travel Demand

- b. Assume a single point urban interchange (SPUI) configuration for all service interchange replacements or reconfigurations (base delay assumption)
- c. Determine the number of lanes needed to meet LOS threshold based on travel demand. Based on the planning year, 2045 no-build and sensitivity analyses (Phase A task, 2018), alternatives analysis will begin with:
 - i. I-15 with 2 lanes in each direction
 - ii. US-20 connectors with 2 lanes in each direction
 - iii. Direct connect ramps as 1 lane
 - iv. Service interchange ramps with 1 lane.
- d. Review freight access, freight hubs and travel patterns for specific modeling requirements
- 3. Bridges
 - a. Establish new bridge locations, length, width, and spans
 - b. Estimate the bridge deck and super structure depth to aid in establishing a reasonable roadway vertical
 - c. Develop a matrix of span length vs. girder depth based on concrete/steel to aid in cost/benefit ratio
 - d. Provide comments on constructability for complicated structures (curved, multilevel, etc.)
- 4. Hydrology/Hydraulics
 - a. No additional HEC-RAS modeling will be performed
 - b. Show alternative footprints to determine bridge abutment locations. Stay out of the identified floodplain.
 - c. Use established water surface profile from Phase A for base design High Water Line (HWL) elevation.
- 5. Utilities
 - a. Identify major conflicts based on those identified in Phase A work
 - b. Incorporate utility expansions, if known
 - i. Provide a letter to utilities with a project area map requesting future expansion/replacement plans or potential plans
 - ii. Attend Bonneville County Utility Coordination Council (UCC) meetings to bring awareness
 - c. Railroad
 - i. Identify existing railroad ROW
 - ii. Identify new railroad crossing/bridges
 - iii. Identify needed utility borings
 - iv. Meet with railroad and share alternative concepts to identify concerns
 - d. City of Idaho Falls
 - i. Meet with City on expansion needs or replacements
- 6. Pedestrian/bike/multi-modal
 - a. Identify ped/bike routing for each alternative
 - b. Tie alternatives to City ped/bike master plan facilities
 - i. Identify areas of concern that will not meet the master plan

- iii. Identify pedestrian facilities on new structures or modifications to existing structures
- c. Identify needs that the City and/or County will take on as their projects
- d. Identify transit providers existing facilities and incorporate future expansion plans in each alternative.
- 7. Right of Way (ROW)
 - a. Establish standard ROW width for facilities based on the number of lanes and functional classification
 - b. Review assumed area outside of proposed ROW needed for construction and make note if there is a concern with a resource area
 - c. Identify number of relocations for each alternative
 - d. Quantify needed ROW by land use. Quantify estimated acreages through prime farmland, residential, business, 4(f), public lands, hazmat areas, and other land use categories
 - e. Identify potential controversial parcels based on public involvement activities.
 - f. Identify local road realignment ROW needs
 - g. Identify ROW reversion areas to local entities
 - i. This is where current state highways would become local roads based on the alternative
- 8. Local Access Roads
 - a. Identify those adjacent local roads affected by each alternative
 - b. Identify how the local roads will connect the local system or the alternative (ramp, at-grade intersection, stop controlled, signal, etc.)
 - c. Provide a coarse geometric layout for US-20 as a local road for those alternatives that provide new US-20 connectors
 - i. Grandview Drive and Lindsay Blvd. Geometric layouts will also be developed as needed. Geometry for other local streets will not be completed for Level 2.
 - d. Review local access policies (City of Idaho Falls, BMPO, etc.), identify conflicts in each alternative
 - e. Identify off-system improvements as a result of the alternatives (secondary impacts to parallel and adjacent roads)
 - f. Review freight access, freight hubs and travel patterns for each alternative
- 9. Land Use Planning
 - a. Compare alternative ROW and impacts with land use plans for the city or county
 - b. Summarize how the alternative compliments or impacts the potential zoning
 - c. Obtain the land use planning GIS layer from the County
- 10. Environmental Features/Constraints
 - a. Summarize alternative impact area relative to the known environmental resources from Phase A
 - b. Identify resources by alternative that require additional data and acquire necessary information.
- 11. Economic Development

- a. Identify future development plans and document how they impact or are impacted by the alternatives
 - i. INL
 - ii. Airport
 - iii. University expansion
 - iv. Golf Course
- b. Review alternatives with City and County and document if alternative meets their economic goals
- 12. Major Stakeholder Coordination on Alternatives goal to identify fatal flaws
 - a. INL
 - b. Airport
 - c. Universities
 - d. Hotels/eateries on Lindsay
 - e. Adjacent land/business owners
 - f. TRPTA (bus transit)

ROADWAY NAME I-15/US-20 (65 MPH)

ROADWAY CHARACTERISTICS AND TRAFFIC DATA

Functional Class	Freeway			Pavement Type	HMA/	PCCP		
Design Vehicle	Turnpike Double (WB-109D))	Terrain	Level		
Latest Year	2019	2019 AADT=			Latest Truck %			
Design Year	2039	AADT=			Projected Truck %			
Posted Speed	65			mph	Design Speed	65		mph
No. of Lanes (Typ)					Curb & Gutter (Typ))		
Pavement Width (ft	Park Strip Width (Ty	yp)		ft	
Shoulder Width (T			ft	Sidewalk Width (Ty	p)		ft	

Commont

Order of Precedence: Manual on Uniform Traffic Control Devices (MUTCD); AASHTO Roadside Design Guide (RDG); AASHTO A Policy on Geometric Design of Highways (GB); ITD Road Design Manual (Design Manual)

FHWA Controlling Criteria		Existing	ITD Standard	Proposed/ Used	Design Exception	References	Date of Decision, Comments
Design Speed	Speed	65 mph	Idaho Code 49-201 Idaho Code 49-654	65 mph		GB 2-53:58, 6-2 (T. 6-1), 6-11:12, 7-2, 7-27, 8-1:2; Manual (p. 84) 335.07	
Design Loading Structural Capacity	Design Loading		HL 93	HL 93		GB 6-7:8 (T. 6-6, 6-7), 6-16:17, 7-6, 38, 8-4	
	Mainline	12.0 ft	12.0 ft	12.0 ft		GB , 7-4:5 (T. 7-3), 7-13, 29:30, 8:2-	
Lane Width	LT Turn		12.0 ft	12.0 ft		3;	
	RT Turn		12.0 ft	12.0 ft		Manual (p. 189) 520.04	
	Outside		10.0 ft	10.0 ft		GB 4-8:11, 6-5:6 (T. 6-5), 7-4:5 (T. 7-	
Shoulder Width	Inside		4.0 ft	4.0 ft		3), 7-13:14, 30, 8-2:3, 18;	
	Barrier		12.0 ft	12.0 ft			
Horizontal Curve Radius	Min Radii (Super)		1660 ft. (6%)	1660 ft. (6%)		GB 3-31:32 (T. 3-7, F. 3-9, F. 3-10), 44 (T.3-8), 45 (T.3-9)(Any Facility);	
Superelevation Rate	Max Super		6.0%	6.0%		GB 3-30:36, 44 (T.3-9), 3-45 (T.3-9), 3-73:74 (T. 3-22), 4- 28:29, 6-3:4,13, 7-4,16:20 (F. 7-3, F. 7-4), 7-29;	
Maximum Grade	Max Grade		3.0%	3.0%		GB 3-119, 6-3 (T. 6-2), 6-12 (T. 6-8), 7-3:4 (T. 7-2), 7-28:29 (T. 7-4), 8-3:4 (T. 8-1);	
Cross Slope	Cross Slope		1.5% to 2%	1.5% to 2%		GB 3-29:30, 4-1:6 (T. 4-1), 6-3,13, 7- 4, 13, 29;	
Stopping-Sight Distance	Min		645 ft.	645'		GB 3-2:8 (T. 3-1:2, F. 3-22b), 3- 106:110, 6-4:5 (T. 6-3:4), 6-13, 7-3 (T. 7-1), 7-28;	
Vertical Clearance*	Min		16.5 ft over road, 23.5 ft over rail, 17.5 ft ped over rd	17 ft.		GB 6-17, 7-6:7, 38, 8-4;	



ITD Additional C	riteria	Existing	ITD Standard	Proposed/ Used	Design Waiver	References	Date of Decision, Comments
Lateral Offset to Obstruction	Min		4 ft on tangents/ 6 ft on curves	4 ft on tangents/ 6 ft on curves		RDG 10-3; GB 7-37:38	
Vertical Alignment	Sag Curve Min. K		157	157		GB Crest 3-155:157 (T. 3-34:35),	
	Crest Min. K		151	151		Sag 3-161 (T. 3-36);	
Clear Zone	Distance		Meet clear zone compliant requirements defined AASHTO	Meet clear zone compliant requirements defined AASHTO		RDG 3-6 (figure 3.2), 3-8;	
Intersection Sight	Case, Dist		N/A	N/A		GB 9-28.54	List case (A-F) and minimum sight
Distance	Case, Dist		N/A	N/A		02 0 20.04,	distance

ROADWAY NAME Ramps

ROADWAY CHARACTERISTICS AND TRAFFIC DATA								
Functional Class	Ramp				Pavement Type	HMA		
Design Vehicle	Intersta	te Semi (V	NB-67)	Terrain	Level		
Latest Year	2019	AADT=	SEE C	OMMENTS	Latest Truck %			
Design Year	2039	AADT=	SEE C	OMMENTS	Projected Truck %			
Posted Speed		25,45,65	5	mph	Design Speed	40		mph
No. of Lanes (Typ))		1		Curb & Gutter (Typ))		Туре М1
Pavement Width (Гур)			ft	Park Strip Width (T	yp)	N/A	ft
Shoulder Width (T	yp)			ft	Sidewalk Width (Ty	p)	N/A	ft

Order of Precedence: Manual on Uniform Traffic Control Devices (MUTCD); AASHTO Roadside Design Guide (RDG); AASHTO A Policy on Geometric Design of Highways (GB); ITD Road Design Manual (Design Manual)

FHWA Controlling Criteria		Existing	ITD Standard	Proposed/ Used	Design Exception	References	Date of Decision, Comments	
Design Speed	Speed	N/A	AASHTO	25 MPH (Within 300' of Ramp Terminal/Stop Bar) 45 MPH (Ramp Proper) 60 MPH (Free Flow Terminal)	Not Required	GB 10-89:90;		
Design Loading Structural Capacity	Design Loading	N/A	HL-93	HL-93	Not Required	GB 8-4		
	Mainline	N/A	12.0 ft	12.0 ft		CB 2 402 (T 2 20) 8:2 2 40		
Lane Width	LT Turn	N/A	12.0 ft	12.0 ft	Not Required	GB 3-103 (1. 3-29), 6:2-3, 10- 102:103: Design Manual		
	RT Turn	N/A	12.0 ft	12.0 ft		102.103, Design Manual		
	Outside	N/A	8.0 ft	8.0 ft				
	Inside	N/A	4.0 ft	4.0 ft				
Shoulder Width	Barrier	N/A	2.0 ft	2.0 ft	Not Required	Not Required	GB 10-102:103; Design Manual	
Horizontal Curve Radius	Min Radii (Super)	N/A	144 (25 MPH) 643 (45 MPH) 1330 (60 MPH)	144 (25 MPH) 643 (45 MPH) 1330 (60 MPH)	Not Required	GB 3-31:36 (T. 3-7, F. 3-10), 44 (T.3- 8), 45 (T.3-9)(Any Facility),10-90; Design Manual		
Superelevation Rate	Max Super	N/A	6.0%	6.0%	Not Required	GB 3-30:36 (F. 3-9, F. 3-10), 44 (T.3- 9), 3-45 (T.3-9), 10-93:94; Design Manual		
Maximum Grade	Max Grade	N/A	6.0%	6.0%	Not Required	GB 10-92:93; Design Manual		
Cross Slope	Cross Slope	N/A	1.5% to 2%	2.0%	Not Required	GB 4-1:6 (T. 4-1), 7-29, 10-93:94; Design Manual		



Stopping-Sight Distance	Min	N/A	155 (25 MPH) 360 (45 MPH) 570 (60 MPH)	155 (25 MPH) 360 (45 MPH) 570 (60 MPH)	Not Required	GB 3-2:8, 3-106:110,10-92; Design Manual		
Vertical Clearance*	Min	N/A	16.5 ft over road, 23.5 ft over rail, 17.5 ft ped over rd	16.5 ft over road, 23.5 ft over rail	Not Required	GB 4-52:54 (F. 4-14) 8-4; Design Manual		
ITD Additional C	riteria	Existing	ITD Standard	Proposed/ Used	Design Waiver	References	Date of Decision, Comments	
Lateral Offset to Obstruction	Min	N/A	4 ft on tangents/ 6 ft on curves	Curbed 4' tangent/6' radius Non Curbed: Shoulder+2	Not Required	RDG 10-3; GB 7-37:38, 10-102		
	Sag Curve Min. K	N/A	26 (25 MPH) 79 (45 MPH) 136 (60 MPH)	*26 (25 MPH) *79 (45 MPH) *136 (60 MPH)	Not Required		CD Crock 2 455-457 (T. 2.24-25)	
Vertical Alignment	Crest Min. K	N/A	12 (25 MPH) 61 (45 MPH) 151 (60 MPH)	12 (25 MPH) 61 (45 MPH) 151 (60 MPH)		GB Crest 3-155:157 (1. 3-34:35), i Sag 3-161 (T. 3-36), 10-93; Design Manual		
Ramp Acceleration Lanes	Length	N/A	[V=25, Va=23, V'a=0, L=180] [V=45, Va=35, V'a=23, L=380] [V=60, Va=47, V'a=35, L=420]	[V=25, Va=23, V'a=0, L=180] [V=45, Va=35, V'a=23, L=380] [V=60, Va=47, V'a=35, L=420]	Not Required	GB 10-107:111 (F. 10-69, T. 10-3:4), 10-119:122 (F. 10-73)		
Ramp Deceleration Lanes	Length	N/A	[V=25, Va=23, V'a=0, L=235] [V=45, Va=40, V'a=22, L=295] [V=60, Va=52, V'a=40, L=300]	[V=25, Va=23, V'a=0, L=235] [V=45, Va=40, V'a=22, L=295] [V=60, Va=52, V'a=40, L=300]	Not Required	GB 10-112:119 (F. 10-70:72, T. 10- 5), 10-123 (F. 10-74)		
Clear Zone	Distance	N/A	Meet clear zone compliant requirements defined AASHTO	Meet clear zone compliant requirements defined AASHTO	Not Required	RDG 3-6 (F. 3.2), 3-8; Design Manual		
Intersection Sight Distance	Case, Dist	N/A	Meet 2011 AASHTO requirements for sight triangles cases A-F and skew	Meet 2011 AASHTO requirements for sight triangles cases A-F and skew	Not Required	GB 9-28:54; Design Manual		
	Case, Dist	N/A						



I-15/US-20 Connector Project

Risk Management Plan



Prepared for: Idaho Transportation Department

> Lead Author: Blane Long

Prepared By: HDR Engineering, Inc.

Last updated: August 6, 2019

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Section 1 – Introduction

Introduction

Understanding that risk management is an iterative process; the initial risk profile for a project changes as it progresses from concept through completion. This understanding is critical to the overall success of the project. To assist the I-15/US-20 Connector Project Team and Project Manager in managing the evolution of risks, this risk management plan was developed.



Figure 1: How a risk is managed

The most successful projects can be defined not only as being completed on time and under budget, but also as having experienced no physical injuries to humans or damage to property. Defining a risk management process and associated procedures is extremely important as they create a consistent means in which threats and opportunities are assessed and managed. The risk management process and these procedures are meant to help identify the best opportunities for the Project Team to successfully complete its projects.

Communicating the definition for the methodology or approach of the risk management process is an essential element to the success of the project. Defining this approach assists all team members equally understand the necessary aspects of Idaho Transportation Department's (ITD) risk management process.

There are two primary elements to the Risk Management Plan for the I-15/US-20, Connector Project.

- 1. Level 2 Risk Assessment an assessment of the risks associated with the Alternatives B-J. This includes the identification, description and qualitative analysis of each alternative's risk events.
- Level 3 Risk Analysis a quantitative analysis of the risks associated with the Level 3 alternatives. This includes the identification, description and analysis of each of the remaining alternative's risk events and responding to each threat or opportunity using value engineering and other methods.

The overarching objectives of risk management are to identify and minimize, or eliminate all threat risks that have a potential of taking place, and to enhance and exploit opportunities where possible. Other objectives of the plan include:

- Identification of threats and opportunities, including quantifying probabilities and impacts;
- Identification of measures to eliminate or mitigate risks;
- Identification of measures to enhance or exploit opportunities;
- Implementation of measures to eliminate or mitigate risks where financially feasible; and
- Allocate risks to the party or parties who have the best means for controlling risk.

Project/Alternative Descriptions

Alternative A: No-Build Alternative

Alternative B: Alternative B generally follows the I-15/US-20 existing corridors between I-15 Exit 118 (Broadway) and the US-20 City Center/Riverside Exit (Fremont). The alternative includes the addition of high speed collector-distributor ramps to accommodate the high-capacity movement of traffic moving between I-15 Southbound and US-20 Eastbound. Improvements to the impacted interchanges, not including the City Center/Riverside Exit, and corresponding connections will be required to improve traffic flow and connectivity. A local river crossing of the Snake River to enable better connectivity of Lindsay Blvd traffic north of John's hole is included.

Alternative C: Alternative generally follows the I-15/US-20 existing Corridors between I-15 Exit 118 (Broadway) and extending beyond the US-20 City Center/Riverside Exit (Fremont). The alternative includes the addition of high speed collector-distributor ramps to accommodate the high-capacity movement of traffic moving between I-15 Southbound and US-20 Eastbound. Improvements to the impacted interchanges, including the City Center/Riverside Exit (Fremont), and corresponding connections will be required to improve traffic flow and connectivity. A local river crossing of the Snake River to enable better connectivity of Lindsay Blvd traffic north of John's hole is included.

Alternative D: Between the I-15 Exits 118 & 119 low speed one-way collector-distributor ramps with "Texas Turnarounds" are included to improve safety and accessibility. The improvements essentially convert these two existing interchanges into a "split interchange". A new system to system connection between I-15 and US-20 is included north of John's Hole to enable the "free

flow" movement between the two systems. Improvements to the Science Center interchange as a full interchange connecting to US-20 will be required.

Alternative E: Between the I-15 Exits 118 & 119 low speed one-way collector-distributor ramps with "Texas Turnarounds" are included to improve safety and accessibility. The improvements essentially convert these two existing interchanges into a "split interchange". No access between US-20 and I-15 would be allowed where Grandview (Exit 119) currently exists. US-20 over John's Hole would continue the connection to Grandview and would be re-routed to connect as a local road at Science Center Dr. A new full move interchange in conjunction with new high-speed collector-distributor ramps between I-15 and US-20, is included north of the existing I-15 Exit 119. Improvements to the Science Center interchange as a full interchange connecting to US-20 will be required.

Alternative F: Between the I-15 Exits 118 & 119 low speed one-way collector-distributor ramps with "Texas Turnarounds" are included to improve safety and accessibility. The improvements convert these two existing interchanges into a "split interchange". US-20 over John's Hole would continue the connection from Grandview over the Snake River and would be re-routed to connect as a local road at Fremont Road. The heavy traffic movement between the south leg of I-15 and the east leg of US-20 would be accommodated with a couplet configuration. The north to eastbound collector-distributor ramp would be located near the existing John's Hole Bridge. The US-20 west to I-15 southbound movement would be accommodated via a couplet ramp located north of John's Hole. Additional connection ramps for local and interstate connectivity will be required.

Alternative G: The Alternative primarily consists of relocating the I-15/US-20 Connection to a new system to system type interchange in the vicinity of north of the Idaho Falls airport near 49th north (Telford Road). A new US-20 alignment would connect this new system to system interchange to the existing US-20 near current day 15th East (St Leon Road) interchange. The existing US-20 roadway Exit 119 and the 49th N would be reverted back to a local street accommodating local connectivity. Additional interchange may be required at 5th W (River Rd) and 5th E (Lewisville Highway). Modifications at the existing I-15 Exit 118 & 119 to improve safety may be required.

Alternative H: The Alternative primarily consists of relocating the I-15/US-20 Connection to a new system to system type interchange north of the Idaho Falls airport near 49th north (Telford Road). A new US-20 alignment would connect this new system to system interchange to the existing US-20 near current day 15th East (St Leon Road) interchange and provide new access to the west side of Idaho Falls. The existing US-20 roadway Exit 119 and the 49th N would be reverted back to a local street accommodating local connectivity.

Additional interchanges may be required at 5th W (River Rd) and 5th E (Lewisville Highway). Modifications at the existing I-15 Exit 118 & 119 to improve safety may be required. The Alternative H includes all the features included in Alternative G. Additionally, the new US-20 alignment between I-15 and the 15th E at approximately the vicinity of 49th N would be extended east past the current US-20 alignment to provide enhanced connectivity to US-26. **Alternative I:** The Alternative primarily consists of relocating the I-15/US-20 Connection to a new system to system type interchange north of the Idaho Falls airport near 49th north (Telford Road). A new US-20 alignment would connect this new system to system interchange to the existing US-20 near current day 15th East (St Leon Road) interchange. The existing US-20 roadway Exit 119 and the 49th N would be reverted back to a local street accommodating local connectivity.

Additional interchanges may be required at 5th W (River Rd) and 5th E (Lewisville Highway). Modifications at the existing I-15 Exit 118 & 119 to improve safety may be required. The Alternative H includes all the features included in Alternative G. Additionally, the new US-20 alignment between I-15 and the 15th E at approximately the vicinity of 49th N would be extended east past the current US-20 alignment to provide enhanced connectivity to US-26.

Alternative I also includes all of the added features of the Alternative G/H and includes a highcapacity alignment on the west side of Idaho Falls. The alignment is shown extending westward along 49th N to 45th W which would be extended southward to reconnect with a system to system interchange near the current day I-15 Exit 113. Connections to intersecting arterial streets with the new alignment by interchanges or at-grade intersections will be required.

Alternative J: Alternative J relocates the existing I-15 traffic between I-15 Exit 119 north to 49th via a new a new alignment eastward toward a new connection with US-20. A new connection with the existing US-20 will be required somewhere near 33rd N. Connections to the existing arterial streets will be required to enable connectivity in Idaho Falls.

Alternative K: The Alternative primarily consists of relocating the I-15/US-20 Connection to a new system to system type interchange in the vicinity of north of the Idaho Falls airport near 81th north. A new US-20 alignment would connect this new system to system interchange to the existing US-20 near current day Hitt Road interchange. The existing US-20 roadway Exit 119 and the 81st N would be reverted back to a local street accommodating local connectivity.

Additional interchanges may be required at 5th W (River Rd) and 5th E (Lewisville Highway). Modifications at the existing I-15 Exit 118 & 119 to improve safety may be required. Additionally, the new US-20 alignment between I-15 and the 25th E at approximately the vicinity of 81st N would be extended east past the current US-20 alignment to provide enhanced connectivity to US-26.

Alternative K also includes a high-capacity alignment on the west side of Idaho Falls. The alignment is shown extending westward along 81st N to 45th W which would be extended southward to reconnect with a system to system interchange near the current day I-15 Exit 113. Connections to intersecting arterial streets with the new alignment by interchanges or at-grade intersections will be required.

Risk Management Strategy / Approach

Data Management

A risk register will be used to manage information about individual project risks. This information will include the initial quantified risks, how the risk will be responded to, who the risk owner is, and when updates will be required. The system will have a number of custom reports that will convey progress on the mitigation of risks.



Risk Identification

It is important to perform the first workshop early in the planning phase of the project to identify risks. The risks from this workshop will be imported into a risk register for project management and reporting.

The first risk workshop was held on February 5 & 6, 2019 in Rigby, ID. During this workshop risks were identified for the Alternatives B-K of the Level 2 Screening. See the Appendix for the individual risks that were identified during this workshop.

The second risk workshop will be conducted as part of the Level 3 screening process. This workshop will involve cost and schedule risk analysis and value engineering to assist in determining risk response strategies.

Response Strategies

Response strategies will be developed as part of the Level 3 screening process for the top risks remaining on the alternatives.

Updates

It is important to have continuous progress updates on the response strategies for the individual risks.

Progress and Reporting

Progress on how a response strategy is performing shall be reported on until the risk is either retired or its residual accepted and accounted for within the base cost estimate. Part of this reporting process should include the cost to mitigate. Details on how a strategy is progressing will be documented in the risk register.

Section 2 – Definitions

Glossary of Selected Terms

Base Cost Estimate	The base cost estimate represents the project cost that can reasonably be expected if the project materializes as planned and there is no occurrence of risk. The base cost estimate is unbiased and neutral - it is neither optimistic nor conservative. The base cost includes the known and quantified items and the known but not yet quantified (miscellaneous item allowance). The base cost estimate does not include any risks, unknown/unknowns or contingencies. NOTE: Base cost estimates are to be prepared in current year dollars and will exclude future cost escalation.
Market Conditions	Market conditions are the consequence of supply and demand factors which determine prices and quantities in a market economy and which are separate from inflation. Market conditions include things like: competitive environment during bidding and contracting; the labor market; resource availability; etc.
Probability	Probability is the likelihood or chance that something is the case or will happen. The theory is used to draw conclusions about the likelihood of potential events and the underlying mechanics of complex systems.
Risk	Risk is the combination of the probability of an uncertain event and its consequences. A positive consequence presents an <i>opportunity</i> ; a negative consequence poses a <i>threat</i> .

Section 3 – Roles / Responsibilities

Project Manager

The Project Manager as it relates to risk management shall:

Oversee the Risk Management Implementation

Project Risk Manager

The Project Risk Manager and Risk Lead shall facilitate Risk Management on the I-15/US-20, Connector Project in accordance with this Risk Management Plan (RMP).

The Project Risk Manager and Risk Lead shall:

- Implement the RMP
- Ensure that project members are educated on the contents of the RMP
- Keep the RMP aligned with the current phase and demands of the project
- Maintain consistency with ITD best practices and other recognized standards for project risk management
- Organize risk workshops
- Maintain integrity of the risk management process according to current ITD guidelines
- Evaluate and assess performance of subject matter experts
- Ensure that the risk register developed appropriately addresses risk events, impacts, and probabilities
- Act as a support for the Project Team and other risk owners regarding the definition of, the implementation of and follow-up for Project Team risk response plans
- Ensure that approved risk response plans are integrated into the program risk register
- Once the risk response plans for specific risk events have been executed, coordinate with estimating staff and the Project Team for inclusion in the project's base cost estimate and schedule
- Ensure that the project risk register is updated to include for each risk event a risk owner, response strategy, written details concerning the risk response strategy implementation, and the estimate /actual costs to implement the strategy

- Coordinate communication to review the status of implementation of the risk response measures and their effectiveness
- Keep all appropriate parties informed of updates and changes to the project risk management plan, including effectiveness of response actions
- Maintain the data associated with the program risk register
- Coordinate updates to the risk register on a periodic basis
- Produce periodic risk reports and distribute to appropriate management and staff

Design Team

The role of the design teams is to understand their respective risks on the risk register.

The Project Manager shall:

- Identify and nominate the risk owners
- Lead response efforts at the project level
- Determine and execute risk response strategies
- Coordinate with the Risk Manager on progress towards meeting risk response objectives
- Identify new risks and opportunities to be addressed at future risk review meetings or workshops
- Coordinate with the Risk Manager in the identification and assessment of new risks and opportunities. This will include descriptions of each item.
- Coordinate with Risk Manager regarding a budget and schedule to implement risk mitigation actions
- Implement assigned risk mitigating actions once approved by the Project Manager
- Regularly update assigned risks and monitor progress on risk reduction and opportunity enhancement with the Risk Manager

Section 4 – Risk Identification

Risk management is an iterative process - the initial risk profile for a project changes as it progresses from concept through completion. Understanding this concept is critical to the overall success of the project. To assist project managers in managing this evolution, this risk management plan was developed for the project.

Risk identification occurs through each phase of project development. As projects evolve, the risk profiles change as project knowledge and understanding grows. This results in changes to previously identified risks and also contributes to identification of new risks throughout the life of the project.

When attempting to organize any and all risks for the purposes of determining what the best strategy in dealing with them may be, the logical first step in the process is to actually make a thorough and careful identification of what the expected risks are. Specifically speaking, the risk identification process is one in which all of the potential and likely risks that may arise are documented. This identification process usually involves a session of intense discussion followed by careful documentation and categorization of the risks.

Risk Identification Inputs

The first and most important input in the process is a well-defined project. In order to fully understand and assess the potential risks a project may be exposed to, a mutual understanding of the project is necessary. This means that when we focus on the risks and uncertainties our project will face, we must first be able to define the project in terms of scope, schedule and estimate - commensurate with the level of project development at the time of risk analysis.

Risk Identification Tools and Techniques

In risk identification the project team discusses as many risks as possible that may affect project objectives. The assumptions are stated for the analysis used to delineate thresholds for risks. There are a wide variety of techniques used for risk identification.

Risk Identification Outputs

An expected deliverable from Risk Identification includes a preliminary "risk register" which documents the following information:

- Project Identification
- Identification # for each risk identified
- Use of the Risk Breakdown Structure (RBS)
- Date and phase of project development when risk was identified
- Name of Risk (does the risk pose a threat or present an opportunity?)
- Detailed Description of Risk Event
- Risk Trigger
- Risk Type
- Potential Responses to Identified Risk

Identification # for each risk identified - This is a unique number is assigned to each risk for tracking purposes.

Use of the Risk Breakdown Structure (RBS) - ITD uses a risk breakdown structure (RBS). A RBS is a hierarchical organization of risk types. The RBS is organized with a numbering system that is used to uniquely identify risks in the program risk register.

The purpose of an RBS is to help categorize and organize similar risk events, thereby helping the risk manager and Project Team become more efficient identifying and managing its risks and opportunities.

Date and phase of project development when risk was identified - Document the date the risk was identified and which project development phase (planning, environmental, scoping, design, and construction).

Name of Risk (does the risk pose a threat or present an opportunity?) - Each identified risk should have an appropriate name, for example "NEPA Delay" or "Reduction in Condemnation"; the nature of the risk with respect to project objectives (threat or opportunity) should also be documented. This can be done using the RBS for naming conventions.

Detailed Description of Risk Event - The detailed description of the identified risk must provide information that is Specific, Measurable, Attributable (a cause is indicated), Relevant, and Time bound (SMART). The description must be clear and thorough enough so that others reading the description of the risk will understand what it means.

Risk Trigger - Each identified risk should include the risk trigger(s). Risks rarely just suddenly occur; usually there is some warning of imminent threat or opportunity. These warning signs should be clearly described and information about the risk trigger should be documented. For example "NEPA Approval Date" may be considered a risk trigger on a project that has a risk of a legal challenge, or other as appropriate.

Risk Type - Does the identified risk affect project schedule, cost, or both?

Potential Responses to Identified Risk - Document, if known, possible response actions to the identified risk. Can the identified threat be avoided, transferred, mitigated or is it to be accepted? Can the identified opportunity be exploited, shared or enhanced?

Risk Identification - Risk identification involves determining which risks (threats and opportunities) might affect the project, and documenting their characteristics. It may be a simple risk assessment organized by the Project Team, or an outcome of the workshop process. This list is maintained in a risk register and updated regularly as the project is developed.

Qualitative Risk Analysis – This analysis assesses the impact and likelihood of the identified risks and develops prioritized lists of these risks for further analysis or direct mitigation.

Qualitative Risk Analysis is often used:

- As an initial screening or review of project risks;
- when a quick assessment is desired; or

• As the preferred approach for some simpler and smaller projects where robust and/or lengthy quantitative analysis is not necessary.

Qualitative Risk Analysis provides a convenient way to identify, describe and characterize project risks. Qualitative analysis utilizes relative degrees of probability and consequence of each identified project risk event in descriptive non-numeric terms.

Section 5 – Risk Assessment

Risk assessment is a step in the risk management process, and is the determination of the quantitative and/or qualitative value of risk. Quantitative risk assessment requires calculations of two components of risk: the magnitude of the potential loss (or gain), and the probability that the loss (or gain) will occur.

Risk assessment consists of an objective evaluation in which assumptions and uncertainties are clearly considered and presented for that risk. Part of the difficulty of risk management is that measurement of both of the quantities in which risk assessment is concerned - potential loss and probability of occurrence - can be very difficult to measure.

Risk Identification

Risk Identification is comprised of a workshop with the Project Team and stakeholders. The risk assessment replaces general and vaguely defined contingency with explicitly defined risk events. The associated probabilities of occurrence, and impacts on project cost and/or schedule of each risk are included. The risk register combines this information on the nature of the risk (a brief description of the event or scope change, its probability of occurrence, its cost and/or schedule impact (expressed as a probability distribution), and the activities potentially impacted).

The workshop involves an open and transparent process to account for risk events/factors affecting various activities under various project options. These risk events can be classified as technical (i.e. geotechnical, structural, or environmental design considerations), non-technical (i.e. right of way costs, regulatory concerns, or market conditions), or political (i.e. funding, legal challenges, or scope changes). Example risk events may include the potential for additional requirements to meet environmental regulations, adverse geotechnical conditions in constructing high retaining walls, or the discovery of unexpected utilities.

Discipline leads from the Project Team who have a valued perspective on the risk/opportunity issues, populate the risk register in a workshop setting. Uncertainty and correlations in the base costs and durations can also be assessed when they are significant, and these are defined consistently with the risk and opportunity events. The likelihood and consequences of occurrence for each risk/opportunity event are assessed during the workshop.

Section 6 – Risk Response Actions / Allocation

As a project unfolds, there will be a number of times over the course of the project's respective life cycle that the Project Team and/or the Project Manager will find themselves in a position in which they realize that a particular component or facet of that project does in fact come with a set or series of inherent risks. After all of these likely and potential risks have been properly organized and categorized, it is up to the Project Team and/or the Project Manager to effectively determine the best way to deal with these risks.

Determining the best responses to these risks is the next step. This is where risk response planning comes into practice. Risk response planning refers specifically to the act of developing and enlisting a series of options that presumably reduce any threats that may exist to the predefined program objectives.

Risk response requires effort to develop and implement response actions; we must plan for expending this effort following the results of our risk analysis.

Response and Updates

After the response strategies are determined, the top risks will be evaluated and these response strategies will be further developed to mitigate or avoid the threats and exploit or accept the opportunities. Input comes from key members of the design team, ITD and stakeholder agencies.

Section 7 – Risk Monitoring and Control

A basic principle of project management is that after the plan has been established and project execution has started, continuous monitoring and control is necessary to ensure appropriate progress and advancement is being made towards meeting the project's ultimate goal. Risk monitoring and control will be used to track identified risks, identify and monitor residual risks, and identify new risks. When the risk management plan (RMP) is properly administered, it helps ensure proper execution of the RMP, and evaluates the effectiveness in reducing risk. Risk monitoring and control is an ongoing process for the life of the project.

Risk Breakdown Structure

Level 1					Project Ris	k				
 Level 2	Environmental & Hydraulics ENV	Structures & Geotech STG	Design / PS&E DES	Right-of-Way (including Access and Acquisition) ROW	Utilities UTL	Railroad RR	Partnerships and Stakeholders PSP	Management / Funding MGT	Contracting and Procurement CTR	Construction
Level 3	ENV 10 NEPA/SEPA Documentation Completion (incl. Section 4f, etc.) NEPA/SEPA Challenges	STG 10 Potential Changes to Structures Design (Bridge Superstructure, Retaining Walls)	DES 10 Potential Changes to roadway design (including vertical and/or horizontal alignment, earthwork, pavement, etc.)	ROW 10 Issues Associated with Development of ROW Plan	UTL 10 Utility Design Coordination and Agreements	RR 10 Railroad Design Coordination and Agreements	PSP 10 Tribal Issues	MGT 10 Change in Project Managers and/or other key Leadership	CTR 10 Change in Project Delivery Method	CNS 10 Traffic Control and Staging Issues (MOT/WZTC)
	ENV 20 ESA Issues (incl. consultation, Biologic Assessments/Biological Opinions, Fish Passage)	STG 20 Potential Changes to Geotechnical Design Foundations, Liquefaction, Mitigation, etc. Challenging Geotech Conditions	DES 20 Approval of Design Deviations Changes to roadway design criteria (i.e. shoulder width, sight distance, etc.)	ROW 20 Uncertainty in Future ROW Escalation Rate (Project- Specific, including change in land use, urbanization, etc.)	UTL 20 Utility relocations and conflicts	RR 20 Railroad Coordination during construction (flagging, work restrictions, work windows, etc.)	PSP 20 Public Involvement Issues Other Interagency Agreements (i.e. Sound Transit, USFS, cities, counties, etc.)	MGT 20 Delayed Decision Making	CTR 20 Issues Related to Contract Language (Contract Packaging, Warranties, Liquidated Damages, DBE, Insurance/Bonding, etc.)	CNS 20 Construction Permitting Issues (incl. work restrictions)
	ENV 30 Environmental Permitting (incl. Appeals)	STG 30 Changes to Structural Design Criteria (e.g., seismic)	DES 30 Changes to Architectural, CSS, Landscape Design	ROW 30 Limited Access (Interchange Justification Report - IJR, Access Hearing, etc.)		RR 30 Contractor Right of Entry Requirements	PSP 30 Additional Scope in Response to Third Party Concerns (e.g., artwork, shared-use pathways, intersection improvements, etc.)	MGT 30 Availability of Funding / Cash Flow Restrictions	CTR 30 Delays in Ad/Bid/Award Process (Addenda, Protests, etc.)	CNS 30 Work Windows (Weather, Fish, etc.)
	ENV 40 Archaeological/Cultural Discoveries, historic property impacts & mitigation (Section 106)		DES 40 Projects by other agencies affected by or affecting this project (design coordination)	ROW 40 Managed Access (Appeal Hearing, etc.)				MGT 40 Political/Policy Changes	CTR 40 Market Conditions (non- competitive bidding environment) Lack of Qualified Bidders	CNS 40 Construction Schedule Uncertainty (general, including timing of award)
	ENV 50 Hazardous Materials Groundwater and Soil Contamination (PE, RW, CN)		DES 50 Potential Changes to Design of Permanent Traffic Items (ITS, Illumination, Intersection, etc.)	ROW 50 ROW Acquisition Issues (condemnation, relocations, demolitions, etc.)				MGT 50 State Workforce Limitations	CTR 50 Delays in Procurement of Specialty Materials or Equipment and associated cost premiums	CNS 50 Marine/ Over Water Construction Issues
	ENV 60 Wetlands / Stream / Habitat Mitigation		DES 60 Design / PS&E Reviews 	ROW 60 Additional ROW is required (including full vs partial takes): Temporary and Permanent Access Breaks - FHWA approval Construction / Subterranean Easements					CTR 60 Contractor Non- Performance	CNS 70 Earthwork Issues (re-use, haul, disposal, etc.)
	ENV 70 Stormwater, Potential Changes to Flow Control or Runoff Treatment/Hydraulic Requirements								CTR 70 Availability of Specialty Labor/Labor and/or Productivity Disruptions	CNS 80 Coordination with Adjacent Projects During Constructio
	ENV 80 Environmental Impacts during Construction (including water quality, TESC etc.)									CNS 90 Contractor Access / Staging Coordination and Constructability Issues
	ENV 90 Permanent Noise Mitigation									CNS 100 Construction Accidents
	ENV 900 Other Environmental Issues	STR 900 Other STR Issues	DES 900 Other Design Issues	ROW 900 Other ROW Issues	UTL 900 Other UTL Issues	RR 900 Other RR Issues	PSP 900 Other PSP fasues	MGT 900 Other MGT Issues	CTR 900 Other CTR Issues	CNS 900 Other Construction Issues (including unanticipated change orders/claims)



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Individual Risks – Alternative B



Individual Risks – Alternative C



Individual Risks – Alternative D



Individual Risks – Alternative E









Individual Risks – Alternative H



Individual Risks – Alternative I



Individual Risks – Alternative J



Individual Risks – Alternative K



Risk Register Summary

The following table summarizes all the potential risks identified during the qualitative risk workshop. The risks that were determined to be active are included in the summary report, by alternative.

Qualitative Risk Summary February

	2019					
Sub Project ID	Function ID	Status	Date Identified	Functional Assignment	Threat / Opportunity Events	Description
В	CNS	Active	2/4/2019	Construction	Construction Phasing	With these options being extensive and doing construction w construction may be slow needing to plan for phasing. Construct break project up into phasing and plan
В	DES	Active	2/3/2019	Design / PS&E	Alignment	Temple View Elementary – roadway impact the school. Time increa
В	DES	Active	2/4/2019	Design / PS&E	2 to 3 additional river crossings	Additional river crossings will require extensive environmental docuc clearances, possibly could affect permitting to be
В	DES	Active	2/4/2019	Design / PS&E	Agency Approval for Riverside/Science Center Ramps onto US-20	Congestion at Exit 119 is moved east with direct ramps but the me see similar congestion in short merge/diverge area to Exit 308 a could be a risk of obtaining agency appro
В	ENV	Active	2/4/2019	Environmental & Hydraulics	Section 4(f) Impacts - historical properties	Section 4(f) requires transportation projects to avoid impacts or "tal Historic Eligible properties. This regulation requires transportation "takes". The alternatives under consideration show "takes" to 3 cer and Antares Park (west of I-15 between Broadway and Grandvie north of US 20). There are potentially several Nation Historic Eligi transportation systems. The risk to the project is correctly identifyin impacts to this resource with other completing issues. Increase analysis of impacts and a Extensive analysis must be done to consider alternatives that av almost all cases, if there is a viable alternative that avoids the impa- be selected. Significant time to complete NEPA discipline repo- alternatives
В	ENV	Active	2/4/2019	Environmental & Hydraulics	Hazardous Materials - Industrial Area	Some of the light industrial businesses along Lindsay Blvd (inc contaminated soils. Review of existing HM records with EPA and D for any Phase I HM inve Construction costs will increase if contaminated soils are found.
В	ENV	Retired	2/3/2019	Environmental & Hydraulics	Wetland/Waters of U.S/Stream Channel Alteration	Bridges will impact wetlands and waters of the U.S. and Strea mitigation. Only looking at number of bridges for each alternative impacts are > .1 acre = mitigation There are several alternatives w river or adjacent because of more bridges potentially requiring wetland impacts is: D most, C second, (B,E,I,J = third) Wetland require mitigation during the permitting process and there are no co to find mitigation and negotiat
В	ROW	Active	2/3/2019	Right-of-Way	City Park	City Park (SW corner of Grandvie
B	ROW	Retired	2/3/2019	Right-of-Way	Temple View Elementary	Elementary School will b
В	ROW	Active	2/3/2019	Right-of-Way	Closing access to Lindsay from US 20	Possible inverse condemnation for lo
В	ROW	Active	2/4/2019	Right-of-Way	Grain Silos	Business may need to be relocated Cost of Relocation Time to act that uses it.
С	CNS	Active	2/4/2019	Construction	Construction phasing	With these options being extensive and doing construction will construction may be slow needing to plan for phasing. Construct break project up into phasing and plan
С	DES	Active	2/3/2019	Design / PS&E	Bike Ped	With 3 levels of traffic, no bike/ped facilities on upper levels? N possibly either elevated ped structures or to

hile continuing to let traffic through. The pace of ion could extend into multiple years. Decide how to ming for multi-year work.

ase and cost increase and possible public perception

umentation. Additional time to acquire environmental e individual permit vs. a nationwide

rge and diverge is near the Exit 308 ramps and could nd Exit 309 ramps, may not completely meet P&N, ovals for geometrics/safety.

kes" of public parks, recreation areas and/or National n agencies to select feasible alternatives that avoid rtain 4(f) properties; Temple View Elementary School ew) and Russ Freeman Park (east side of the River ible properties in the residential areas, irrigation and ag the unknown historic properties and then balancing in preliminary engineering for documentation and alternatives.

roid the 4(f) properties (very high bar to get over) In acts and meets the project purpose and need, it must ort, must spend more time considering avoidance

luding a gas station) have the potential to contain DEQ show no known sites. Increased costs for NEPA estigations.

Increase time to complete NEPA discipline report.

Im Alteration and require permitting and possibly which means there will be wetland impacts. If the with more potential pier columns and abutments in the wetland mitigation. Order of alternatives with more mitigation and stream channel alteration could both ommercial banks in Eastern Idaho which means time with agencies.

ew) will be impacted

e impacted

oss of business and etc.

dress in ROW; Coordination with Railroad operator

hile continuing to let traffic through. The pace of ion could extend into multiple years. Decide how to ning for multi-year work.

ot shown on lower? Will need to add connectivity, unnels with I-15 and Railroad.

Qualitative Risk Summary February

	2019					
Sub Project ID	Function ID	Status	Date Identified	Functional Assignment	Threat / Opportunity Events	Description
С	DES	Active	2/4/2019	Design / PS&E	2 to 3 additional river crossings	Additional river crossings will require extensive environmental docuce clearances, possibly could affect permitting to be
С	ENV	Active	2/4/2019	Environmental & Hydraulics	Section 4(f) Impacts (public parks, recreation areas and historical properties)	Section 4(f) requires transportation projects to avoid impacts or "tal Historic Eligible properties. This regulation requires transportation "takes". The alternatives under consideration show "takes" to 3 cer and Antares Park (west of I-15 between Broadway and Grandvie north of US 20). There are potentially several Nation Historic Eligi transportation systems. The risk to the project is correctly identifyin impacts to this resource with other completing issues. Increase analysis of impacts and a Extensive analysis must be done to consider alternatives that avoid almost all cases, if there is a viable alternative that avoids the impact be selected. Significant time to complete NEPA discipline repo- alternatives
С	ENV	Active	2/3/2019	Environmental & Hydraulics	Hazardous Material Issues	Potential displacements can lead to lead paint and asbestos issues displacements will potentially require lead paint and asbestos inves Phase II efforts may be required
С	ENV	Active	2/3/2019	Environmental & Hydraulics	Hazardous Materials - LUST	Alternative C may impact LUST at SW Note: accounts only for agency-listed LUST and RCRA sites; addition be present in industrial and commercial areas near the project of construction may require hauling of excavated materials to appro- hauling, disposal, and sampling analyses. Encountering unexp construction. In addition, investigations and negotiations with landor with discovered contamination can
С	ENV	Active	2/4/2019	Environmental & Hydraulics	Hazardous Materials - Industrial	Some of the light industrial businesses along Lindsay Blvd (incl contaminated soils. Review of existing HM records with EPA and D for any Phase I HM inve Construction costs will increase if contaminated soils are found.
С	ENV	Retired	2/3/2019	Environmental & Hydraulics	Wetland/Waters of U.S/Stream Channel Alteration	Bridges will impact wetlands and waters of the U.S. and Strea mitigation. Only looking at number of bridges for each alternative impacts are > .1 acre = mitigation There are several alternatives w river or adjacent because of more bridges potentially requiring v wetland impacts is: D most, C second, (B,E,I,J = third) Wetland in require mitigation during the permitting process and there are no co to find mitigation and negotiate
С	ENV	Active	2/3/2019	Environmental & Hydraulics	Wetland Mitigation	Alternative C includes 2 new Porter Canal There is no wetland bank in this service area. Wetland mitigation wetlands, which require long-term monitoring commitments. compensatory money to an NGO to build a wetland restoration pro this in Idaho. Wetland mitigation monitoring requirements vary by health of constructed wetlands for multiple decades. Negotiatin FHWA, and ITD can be time-intensive. Depending on the extent plan could take 18 m
C	ROW	Active	2/3/2019	Right-of-Way	City Park	City Park will be imp

umentation. Additional time to acquire environmental e individual permit vs. a nationwide

kes" of public parks, recreation areas and/or National n agencies to select feasible alternatives that avoid tain 4(f) properties; Temple View Elementary School ew) and Russ Freeman Park (east side of the River ble properties in the residential areas, irrigation and g the unknown historic properties and then balancing in preliminary engineering for documentation and alternatives.

void the 4(f) properties (very high bar to get over) In acts and meets the project purpose and need, it must ort, must spend more time considering avoidance

in older homes and businesses Home and business stigation and removal prior to demolition Phase I and on older buildings

corner of Broadway Intch

ional areas may be present Hazardous materials may corridor. Hazardous materials encountered during oved disposal sites. Additional costs can arise from bected hazardous materials can temporarily delay owners and responsible parties over costs associated be time consuming.

luding a gas station) have the potential to contain DEQ show no known sites. Increased costs for NEPA stigations.

Increase time to complete NEPA discipline report.

m Alteration and require permitting and possibly which means there will be wetland impacts. If the ith more potential pier columns and abutments in the wetland mitigation. Order of alternatives with more mitigation and stream channel alteration could both ommercial banks in Eastern Idaho which means time e with agencies.

and Snake River crossings

may have to include on-site or nearby constructed In-lieu fee projects may be possible (i.e., giving oject), but there is little to no established process for project, but can include monitoring and ensuring the g an acceptable wetland mitigation with the Corps, of wetland impacts, developing a wetland mitigation nonths. City Park will be impacted

Qualitative Risk Summary February

·			-		2019	
Description	Threat / Opportunity Events	Functional Assignment	Date Identified	Status	Function ID	Sub Project ID
Possible inverse condemnation for lo	Closing access to Lindsay from US 20	Right-of-Way	2/3/2019	Active	ROW	С
Displacing homes and businesses and possibly school Taking of economic impacts to people Requires mitigation for all displace	Displacements	Right-of-Way	2/3/2019	Active	ROW	С
Home Displacements can lead to potential low income/minority neighborhoods where home displacements will be required could avoidance Early determination of low income and/or minority popu alternatives	Environmental Justice	Right-of-Way	2/3/2019	Active	ROW	С
Business may need to be relocated Cost of Re	Grain Silo	Right-of-Way	2/4/2019	Active	ROW	С
With these options being extensive and doing construction w construction may be slow needing to plan for phasing. Construct break project up into phasing and plar	Construction Phasing	Construction	2/4/2019	Active	CNS	D
Much of scenario is not bik	Bike/Ped	Design / PS&E	2/3/2019	Active	DES	D
Section 4(f) requires transportation projects to avoid impacts or "ta Historic Eligible properties. This regulation requires transportatio "takes". The alternatives under consideration show "takes" to 3 ce and Antares Park (west of I-15 between Broadway and Grandvie north of US 20). There are potentially several Nation Historic Elig transportation systems. The risk to the project is correctly identifyir impacts to this resource with other completing issues. Increase analysis of impacts and a Extensive analysis must be done to consider alternatives that av almost all cases, if there is a viable alternative that avoids the impa- be selected. Significant time to complete NEPA discipline repo- alternatives	Section 4(f) Impacts (public parks, recreation areas and historical properties)	Environmental & Hydraulics	2/4/2019	Active	ENV	D
Potential displacements can lead to lead paint and asbestos issued displacements will potentially require lead paint and asbestos inve Phase II efforts may be required	Hazardous Material Issues	Environmental & Hydraulics	2/3/2019	Active	ENV	D
Some of the light industrial businesses along Lindsay Blvd (inc contaminated soils. Review of existing HM records with EPA and I for any Phase I HM inve Construction costs will increase if contaminated soils are found.	Hazardous Materials - Industrial	Environmental & Hydraulics	2/4/2019	Active	ENV	D
Alternative D has 4 new crossings over the Snake River each plus There is no wetland bank in this service area. Wetland mitigation wetlands, which require long-term monitoring commitments. compensatory money to an NGO to build a wetland restoration pr this in Idaho. Wetland mitigation monitoring requirements vary by health of constructed wetlands for multiple decades. Negotiatir FHWA, and ITD can be time-intensive. Depending on the extent plan could take 18 m	Wetland Mitigation	Environmental & Hydraulics	2/3/2019	Active	ENV	D
The west ramp is adjacent to a school property and may have s additional Environmenta	School Impacts	Right-of-Way	2/3/2019	Retired	ROW	D
Looks like Pedestrian Accommodations wil	Pedestrian Impacts	Right-of-Way	2/3/2019	Retired	ROW	D

oss of business and etc.

f homes, businesses and land can be expensive and ements and negotiations can be difficult and costly

y EJ issues in some of the neighborhoods Several d potentially be low income and/or minority requiring ulations should be done to identify potential avoidance

elocation Time to address in ROW

while continuing to let traffic through. The pace of tion could extend into multiple years. Decide how to nning for multi-year work.

ce/ped friendly

akes" of public parks, recreation areas and/or National on agencies to select feasible alternatives that avoid ertain 4(f) properties; Temple View Elementary School ew) and Russ Freeman Park (east side of the River gible properties in the residential areas, irrigation and ng the unknown historic properties and then balancing e in preliminary engineering for documentation and alternatives.

void the 4(f) properties (very high bar to get over) In acts and meets the project purpose and need, it must ort, must spend more time considering avoidance

es in older homes and businesses Home and business estigation and removal prior to demolition Phase I and d on older buildings

cluding a gas station) have the potential to contain DEQ show no known sites. Increased costs for NEPA estigations.

Increase time to complete NEPA discipline report.

s Willow Ck, and a large embankment in Porter Canal on may have to include on-site or nearby constructed In-lieu fee projects may be possible (i.e., giving roject), but there is little to no established process for project, but can include monitoring and ensuring the ng an acceptable wetland mitigation with the Corps, t of wetland impacts, developing a wetland mitigation months.

ome School/park environmental impacts. Potential al Clearance

Looks like Pedestrian Accommodations will be significant for this project.

Qualitative Risk Summary February

2019 Sub Project Function Date Status **Functional Assignment Threat / Opportunity Events** Description Identified ID ID Impacts to the apartments (likely EJ resource) south of Grandview and the Temple View Elementary school may require ROW requirements for WB US 20 to SB I D 2/3/2019 ROW Retired Right-of-Way challenging relocation and mitigation processes Relocation of an entire school could be very costly. Mitigation for an 15 ramp impacted EJ resource could be politically difficult and extend the NEPA approval process. 2/3/2019 ROW Right-of-Way City Park City Park will be impacted D Active D ROW Retired 2/3/2019 Right-of-Way Temple View Elementary Elementary Scholl will be impacted 2/3/2019 D ROW Retired Right-of-Way Low income neighborhood Check laws as they pertain to blight areas D ROW 2/4/2019 Right-of-Way Grain Silo Business may need to be relocated Cost of Relocation Time to address in ROW Active D ROW 2/4/2019 Airport Impact North end of I-15 ramps impact airport. Geometry of ramp may be altered to reduce the impacts to ROW Active Right-of-Way Airport Impact D STG Active 2/3/2019 Structures & Geotech Park/Garbage Dump Freeman park was a garbage dump, piers for elevated roadways/bridges are a concern Costs WAY higher With these options being extensive and doing construction while continuing to let traffic through. The pace of Е 2/4/2019 CNS Active Construction Construction Phasing construction may be slow needing to plan for phasing. Construction could extend into multiple years. Decide how to break project up into phasing and planning for multi-year work. Foote Drive connection to US 20 would need to be included, possibly to Skyline. Could be in the Western States Cat Е 2/3/2019 DES Active Design / PS&E Foote Drive connection to US 20 dealership yard. Also near the Airport. Е DES Active 2/4/2019 Design / PS&E US-20 Flyover US-20 flyover ramps are designed at 65 mph. Reduce design speed to decrease ramps impacts on adjacent properties Need to connect Science Center to be able to access US-20 North. Expansion of the SC IC and the RR crossing, Е DES Active 2/4/2019 Design / PS&E Science Center access to US 20 requires coordiation/approvals. Section 4(f) requires transportation projects to avoid impacts or "takes" of public parks, recreation areas and/or National Historic Eligible properties. This regulation requires transportation agencies to select feasible alternatives that avoid "takes". The alternatives under consideration show "takes" to 3 certain 4(f) properties; Temple View Elementary School and Antares Park (west of I-15 between Broadway and Grandview) and Russ Freeman Park (east side of the River north of US 20). There are potentially several Nation Historic Eligible properties in the residential areas, irrigation and Environmental & Section 4(f) Impacts (public parks, transportation systems. The risk to the project is correctly identifying the unknown historic properties and then balancing Е ENV Active 2/4/2019 Hydraulics recreation areas and historical properties) impacts to this resource with other completing issues. Increase in preliminary engineering for documentation and analysis of impacts and alternatives. Extensive analysis must be done to consider alternatives that avoid the 4(f) properties (very high bar to get over) In almost all cases, if there is a viable alternative that avoids the impacts and meets the project purpose and need, it must be selected. Significant time to complete NEPA discipline report, must spend more time considering avoidance alternatives Potential displacements can lead to lead paint and asbestos issues in older homes and businesses Home and business Environmental & Е ENV Active 2/3/2019 Hazardous Material Issues displacements will potentially require lead paint and asbestos investigation and removal prior to demolition Phase I and Hydraulics Phase II efforts may be required on older buildings Alternative E may impact LUST at SW corner of Broadway Interchange Alternative E impacts LUST at Olympia and Foote and crosses industrial area with at least one RCRA site Note: accounts only for agency-listed LUST and RCRA sites; additional areas may be present Hazardous materials may **Environmental &** 2/3/2019 Е ENV Active Hazardous Materials- LUST be present in industrial and commercial areas near the project corridor. Hazardous materials encountered during Hydraulics construction may require hauling of excavated materials to approved disposal sites. Additional costs can arise from hauling, disposal, and sampling analyses. Encountering unexpected hazardous materials can temporarily delay construction. In addition, investigations and negotiations with landowners and responsible parties over costs associated with discovered contamination can be time consuming.

Qualitative Risk Summary February

				_	2019	
Description	Threat / Opportunity Events	Functional Assignment	Date Identified	Status	Function ID	Sub Project ID
Some of the light industrial businesses along Lindsay Blvd (ind contaminated soils. Review of existing HM records with EPA and I for any Phase I HM inve Construction costs will increase if contaminated soils are found.	Hazardous Materials - Industrial	Environmental & Hydraulics	2/4/2019	Active	ENV	E
Bridges will impact wetlands and waters of the U.S. and Stread mitigation. Only looking at number of bridges for each alternative impacts are > .1 acre = mitigation There are several alternatives we river or adjacent because of more bridges potentially requiring wetland impacts is: D most, C second, (B,E,I,J = third) Wetland require mitigation during the permitting process and there are no con- to find mitigation and negotian	Wetland/Waters of U.S/Stream Channel Alteration	Environmental & Hydraulics	2/3/2019	Retired	ENV	E
Alternative E has 4 new crossings over Snake R. and Porter C. Wetland mitigation may have to include on-site or nearby constr commitments. In-lieu fee projects may be possible (i.e., giving a restoration project), but there is little to no established proces requirements vary by project, but can include monitoring and enside decades. Negotiating an acceptable wetland mitigation with t Depending on the extent of wetland impacts, developing a	Wetland Mitigation	Environmental & Hydraulics	2/3/2019	Retired	ENV	E
Alternative E has 4 new crossings over Snake R. and upgrade The Snake River through the project corridor is home to several species could require coordination with and/or permission from L come from biological assessments and required mitigations. Coor wildlife impacts can be time consuming. Hopefully much of th stakeholders mee	Wildlife Issues Along River Corridor	Environmental & Hydraulics	2/3/2019	Retired	ENV	E
Potential noise impacts to home, businesses, and school which mitigation can be expensive for noise barriers or mitigating with receptors and assess potential noise mitigation	Noise Impacts	Environmental & Hydraulics	2/3/2019	Retired	ENV	E
Alternatives that will significantly change the ambient noise levels walls, soundproof windows). There are several neighborhoods complex analysis and evaluation for noise impacts. Increase Increased construction costs for installing noise mitigation walls	Noise	Environmental & Hydraulics	2/4/2019	Retired	ENV	E
North IC would impact commercial business on both east and we multiple commercial properties for this option. Probabilit	Commercial property impact	Right-of-Way	2/3/2019	Active	ROW	E
City Park will be im	City Park	Right-of-Way	2/3/2019	Active	ROW	E
Displacing homes and businesses and possibly school Taking of economic impacts to people Requires mitigation for all displace	Displacements	Right-of-Way	2/3/2019	Active	ROW	E
Home Displacements can lead to potential low income/minority neighborhoods where home displacements will be required could avoidance Early determination of low income and/or minority populaternatives	Environmental Justice	Right-of-Way	2/3/2019	Active	ROW	E
Business may need to be relocated Cost of Re	Grain Silo	Right-of-Way	2/4/2019	Active	ROW	E
Will need to connect GV to	Grandview Connection	Design / PS&E	2/3/2019	Active	DES	F F

luding a gas station) have the potential to contain DEQ show no known sites. Increased costs for NEPA estigations.

Increase time to complete NEPA discipline report.

m Alteration and require permitting and possibly e which means there will be wetland impacts. If the ith more potential pier columns and abutments in the wetland mitigation. Order of alternatives with more mitigation and stream channel alteration could both ommercial banks in Eastern Idaho which means time e with agencies.

anal There is no wetland bank in this service area. ucted wetlands, which require long-term monitoring compensatory money to an NGO to build a wetland is for this in Idaho. Wetland mitigation monitoring uring the health of constructed wetlands for multiple ne Corps, FHWA, and ITD can be time-intensive. wetland mitigation plan could take 18 months.

s or new structures near John Hole Forebay Park migratory bird and raptor species. "Take" of these SFWS and/or IDFG. Additional project costs could ordination with agencies and stakeholders regarding s would be conducted during project scoping and tings.

may require noise mitigation and permitting Noise speed reductions Need to assess noise levels at all n reasonableness and feasibility

to adjacent properties may require mitigation (noise adjacent to the project alternatives that will require se costs for NEPA documentation and analysis Increase time to complete NEPA discipline report.

st sides of I-15. Costs would increase to acquire the y of public opostion of impacting properties pacted

homes, businesses and land can be expensive and ments and negotiations can be difficult and costly

EJ issues in some of the neighborhoods Several potentially be low income and/or minority requiring lations should be done to identify potential avoidance

location Time to address in ROW US-20 North.

Qualitative Risk Summary February

	2019					-	
Sub Project ID	Function ID	Status	Date Identified	Functional Assignment	Threat / Opportunity Events	Description	
F	DES	Active	2/3/2019	Design / PS&E	SC Access to US-20	Need to connect Science Center to be	
F	DES	Active	2/3/2019	Design / PS&E	Airport	The ramps to US 20 shown in the FAA zone. Could require Fa ramps/structure in	
F	DES	Active	2/3/2019	Design / PS&E	City Park impact (Freeman)	NB fly ramp impacts city park (used to be a dump) also impact lo finalize environmental and to acquire the R/	
F	ENV	Active	2/4/2019	Environmental & Hydraulics	Environmental & Hydraulics Section 4(f) Impacts (public parks, recreation areas and historical properties) Environmental & Hydraulics Section 4(f) Impacts (public parks, recreation areas and historical properties) Section 4(f) Impacts (public parks, recreation areas and historical properties)		
F	ENV	Active	2/3/2019	Environmental & Hydraulics	Hazardous Material Issues	Potential displacements can lead to lead paint and asbestos issues displacements will potentially require lead paint and asbestos inves Phase II efforts may be required	
F	ENV	Active	2/3/2019	Environmental & Hydraulics	Hazardous Materials - LUST	Alt F nears LUST at Olymp Note: accounts only for agency-listed LUST and RCRA sites; additi be present in industrial and commercial areas near the project of construction may require hauling of excavated materials to appro- hauling, disposal, and sampling analyses. Encountering unexp construction. In addition, investigations and negotiations with lando with discovered contamination car	
F	ENV	Active	2/4/2019	Environmental & Hydraulics	Hazardous Materials - Industrial	Some of the light industrial businesses along Lindsay Blvd (inc contaminated soils. Review of existing HM records with EPA and I for any Phase I HM inve Construction costs will increase if contaminated soils are found.	
F	ENV	Active	2/4/2019	Environmental & Hydraulics	Noise	Alternatives that will significantly change the ambient noise levels walls, soundproof windows). There are several neighborhoods a complex analysis and evaluation for noise impacts. Increas Increased construction costs for installing noise mitigation walls.	
F	ROW	Active	2/3/2019	Right-of-Way	City Park	City Park will be imp	
F	ROW	Active	2/3/2019	Right-of-Way	Closing access to Lindsay from US 20	Possible inverse condemnation for lo	
F	STG	Active	2/3/2019	Structures & Geotech	Park/Garbage Dump	Freeman park was a garbage dump, piers for eleva	
G	CNS	Active	2/3/2019	Construction	C&D Pit	Off 33rd North – Future Park, existing construction/demolition si contamination. Long term plan was to be a park. A shift to the n was was a solid was	

e able to access US-20.

AA coordination and FAA may not allow elevated RPZ.

low income area. Project cost would rise in order to /W. Negative schedule impact

akes" of public parks, recreation areas and/or National on agencies to select feasible alternatives that avoid ertain 4(f) properties; Temple View Elementary School ew) and Russ Freeman Park (east side of the River gible properties in the residential areas, irrigation and ng the unknown historic properties and then balancing e in preliminary engineering for documentation and alternatives.

void the 4(f) properties (very high bar to get over) In acts and meets the project purpose and need, it must ort, must spend more time considering avoidance

es in older homes and businesses Home and business estigation and removal prior to demolition Phase I and d on older buildings

pia and Foote

tional areas may be present Hazardous materials may corridor. Hazardous materials encountered during oved disposal sites. Additional costs can arise from spected hazardous materials can temporarily delay lowners and responsible parties over costs associated n be time consuming.

cluding a gas station) have the potential to contain DEQ show no known sites. Increased costs for NEPA estigations.

Increase time to complete NEPA discipline report.

to adjacent properties may require mitigation (noise adjacent to the project alternatives that will require se costs for NEPA documentation and analysis . Increase time to complete NEPA discipline report.

pacted

oss of business and etc.

vated roadways/bridges are a concern

site. Monitoring. The C&G Pit is active, possibility of north could impact residential area. Area to the west aste site.

Qualitative Risk Summary February

	2019					
Sub Project ID	Function ID	Status	Date Identified	Functional Assignment	Threat / Opportunity Events	Description
G	DES	Retired	2/3/2019	Design / PS&E	Landfill	US 20 crossing a la
G	DES	Active	2/3/2019	Design / PS&E	Airport	The ramps to US 20 shown in the FAA zone. Could require FA ramps/structure in
G	PSP	Active	2/3/2019	Partnerships and Stakeholders	Public opposition	We have already received comments against siting a new road lengthen the schedule which impacts cost Neighbors who fight u elected officials involved which requires t
G	ROW	Active	2/4/2019	Right-of-Way	Airport	Airport Master Plan update may impact the overall transportation p of economic risk/benefit. Could change
Н	CNS	Active	2/3/2019	Construction	C&D Pit	Off 33rd North – Future Park, existing construction/demolition sit contamination. Long term plan was to be a park. A shift to the no was was a solid was
н	DES	Active	2/3/2019	Design / PS&E	Access to agriculture west of I-15	North of the ramps to I-15 have eliminated the overpass to acce farmland would increase cost by adding more structures. The ext Could be a relocat
н	DES	Active	2/3/2019	Design / PS&E	Airport	The ramps to US 20 shown in the FAA zone. Could require FA ramps/structure in
н	DES	Active	2/3/2019	Design / PS&E	5th East Access	Provide access to US 20
Н	DES	Active	2/3/2019	Design / PS&E	Access	New configuration at the St. Leon Interchange prohibits any acc commercial business will be purchased and u
н	DES	Active	2/3/2019	Design / PS&E	5th West crossing	Provide access to US 20 via 5th West
Н	DES	Active	2/4/2019	Design / PS&E	Exit 119	This option does not address exit 119 north bound ramp. If this is the done.
Н	PSP	Active	2/3/2019	Partnerships and Stakeholders	Public opposition	We have already received comments against siting a new road lengthen the schedule which impacts cost Neighbors who fight u elected officials involved which requires t
н	ROW	Active	2/3/2019	Right-of-Way	Displacements	Displacing homes and businesses and possibly school Taking of economic impacts to people Requires mitigation for all displace
I	CNS	Active	2/3/2019	Construction	C&D Pit	Off 33rd North – Future Park, existing construction/demolition sit contamination. Long term plan was to be a park. A shift to the no was was a solid was
I	DES	Active	2/3/2019	Design / PS&E	Programmed project at exit 113	ITD has a programmed project at exit 113 which could affect the could increase cost by impacting previo
I	DES	Active	2/3/2019	Design / PS&E	65th South	How does 65th South tie in to I-15 – any change from curr
I	DES	Active	2/4/2019	Design / PS&E	Exit 119	This option does not address exit 119 north bound ramp. If this is th done.
I	DES	Active	2/4/2019	Design / PS&E	Exit 113 - Agency Approvals for ramps/weaving	Exit 113 interchange north bound on ramp interferes with new b conditions in Idaho Falls. Could cause safety concerns or requi
1	PSP	Active	2/3/2019	Partnerships and Stakeholders	Public opposition	We have already received comments against siting a new road lengthen the schedule which impacts cost Neighbors who fight u elected officials involved which requires t
I	PSP	Active	2/3/2019	Partnerships and Stakeholders	Perception of City "taking over" county areas	Property owners in this area are anti-city growth and will negatively us, it delays and even stops the project. (Old Butte Road) money was stop projects.

andfill

AA coordination and FAA may not allow elevated RPZ.

lway in these areas. Delays due to opposition can us tend to delay and even stop projects. Often get time and raises the stakes.

blan for access to and from airport Trickle down cost e the access point to I-15.

te. Monitoring. The C&G Pit is active, possibility of orth could impact residential area. Area to the west te site.

ess farmland west of I-15. Creating access to this tra structure and design could impact the schedule. tion.

AA coordination and FAA may not allow elevated RPZ.

via 5th East

cess for the businesses on Haroldsen Drive. More relocated if access is provided.

(shown on G not on H)

he selected option, this ramp will need improvements

way in these areas. Delays due to opposition can us tend to delay and even stop projects. Often get time and raises the stakes.

homes, businesses and land can be expensive and ments and negotiations can be difficult and costly

te. Monitoring. The C&G Pit is active, possibility of orth could impact residential area. Area to the west te site.

option and the location of the south connection. This ously programmed project (2023)

rent? Would a new connection be provided.

he selected option, this ramp will need improvements

ypass. Creates a weaving issue similar to existing ire design exceptions requiring agency approvals.

lway in these areas. Delays due to opposition can us tend to delay and even stop projects. Often get time and raises the stakes.

y perceive this as feeding the city's vision If they fight asted. Neighbors who fight us tend to delay and even

Qualitative Risk Summary February

	2019		-			
Sub Project ID	Function ID	Status	Date Identified	Functional Assignment	Threat / Opportunity Events	Description
I	ROW	Active	2/4/2019	Right-of-Way	County Ordinance	County has ordinance to protect farmland west of Idaho Falls. Lo back on expansion to t
I	ROW	Active	2/4/2019	Right-of-Way	Airport Zone	Project is close to the north end of the airport, there are height re proposed project would be a
J	DES	Active	2/3/2019	Design / PS&E	SC Access to 20	Need to connect Science Center to be
J	DES	Active	2/4/2019	Design / PS&E	East River Road/Local Access	How will this option provide access to East River Road (route is sev side of Idaho Falls. Possible land locking issues. Possibility of n provide access for commu
J	DES	Active	2/4/2019	Design / PS&E	Future INL plans	Roadway crosses through area the INL is planning to develop. Cou
J	ENV	Active	2/4/2019	Environmental & Hydraulics	Section 4(f) Impacts (public parks, recreation areas and historical properties)	Section 4(f) requires transportation projects to avoid impacts or "tal Historic Eligible properties. This regulation requires transportation "takes". The alternatives under consideration show "takes" to 3 cer and Antares Park (west of I-15 between Broadway and Grandvie north of US 20). There are potentially several Nation Historic Eligi transportation systems. The risk to the project is correctly identifyin impacts to this resource with other completing issues. Increase analysis of impacts and a Extensive analysis must be done to consider alternatives that av almost all cases, if there is a viable alternative that avoids the impa- be selected. Significant time to complete NEPA discipline repo- alternatives
J	ENV	Active	2/3/2019	Environmental & Hydraulics	Hazardous Material Issues	Potential displacements can lead to lead paint and asbestos issues displacements will potentially require lead paint and asbestos inves Phase II efforts may be required
J	ENV Active 2/4/2019 Environmental & Hydraulics		Environmental & Hydraulics	Hazardous Materials - Industrial	Some of the light industrial businesses along Lindsay Blvd (incl contaminated soils. Review of existing HM records with EPA and D for any Phase I HM inve Construction costs will increase if contaminated soils are found.	
J	ROW	Active	2/3/2019	Right-of-Way	Impact of low-income properties	The NB to I-15 alignment impacts multiple low-income prope environmental approvals due to the
к	DES	Active	2/3/2019	Design / PS&E	Programmed project at exit 113	ITD has a programmed project at exit 113 which could affect the o option could increase cost by impacting previo
к	DES	Active	2/4/2019	Design / PS&E	Exit 119	This option does not address exit 119 north bound ramp. If this is the done.
к	DES	Active	2/4/2019	Design / PS&E	Exit 113 - Agency Approvals for ramps/weaving	Exit 113 interchange north bound on ramp interferes with new b conditions in Idaho Falls. Could cause safety concerns or requi
к	DES	Active	2/4/2019	Design / PS&E	Roundabout	Round-a-bout will be hard to locate in this area. Due to railroad Ro the area. Location conflicts with railroad. Gaining railroad approval

ng standing property owners in the area would push the west.

estrictions and types of development allowed. Verify illowed in area.

e able to access US-20.

vered) Partially cutting off the community on the north needing additional ramps/mainlines/underpasses to unity benefit.

uld impact growth in the area, access considerations

kes" of public parks, recreation areas and/or National n agencies to select feasible alternatives that avoid rtain 4(f) properties; Temple View Elementary School ew) and Russ Freeman Park (east side of the River ible properties in the residential areas, irrigation and ag the unknown historic properties and then balancing in preliminary engineering for documentation and alternatives.

roid the 4(f) properties (very high bar to get over) In acts and meets the project purpose and need, it must ort, must spend more time considering avoidance

s in older homes and businesses Home and business stigation and removal prior to demolition Phase I and I on older buildings

luding a gas station) have the potential to contain DEQ show no known sites. Increased costs for NEPA estigations.

Increase time to complete NEPA discipline report.

erties. N/A Schedule would be impacted by the erroperties affected.

option and the location of the south connection. This ously programmed project (2023)

he selected option, this ramp will need improvements

bypass. Creates a weaving issue similar to existing ire design exceptions requiring agency approvals.

ound-a-bout may not work well during times of train in could be challenging, would require gating for safety.

Qualitative Risk Summary February

	2019									
Sub Project ID	Function ID	Status	Date Identified	Functional Assignment	Threat / Opportunity Events	Description				
к	PSP	Active	2/3/2019	Partnerships and Stakeholders	Public opposition	We have already received comments against siting a new road lengthen the schedule which impacts cost Neighbors who fight u elected officials involved which requires t				
к	PSP	Active	2/3/2019	Partnerships and Stakeholders	Perception of City "taking over" county areas	Property owners in this area are anti-city growth and will negatively us, it delays and even stops the project. (Old Butte Road) money wa stop projects.				
к	ROW	Active	2/4/2019	Right-of-Way	County Ordinance	County has ordinance to protect farmland west of Idaho Falls. Lou back on expansion to t				

dway in these areas. Delays due to opposition can us tend to delay and even stop projects. Often get time and raises the stakes.

time and raises the stakes. In perceive this as feeding the city's vision If they fight vasted. Neighbors who fight us tend to delay and even

ong standing property owners in the area would push the west.





I-15/US-20 PEL Evaluation Questions (Level 1 & Level 2)

Needs, Goals, and Objectives	Level 1 Criteria Questions	Level 1 Responses	Level 2 Criteria Questions	Level 2 Responses
Safety	Does the alternative improve bike,	Better/Good/Fair/Negative	Does the alternative reduce backups on the exit ramps?	Better/Good/Neutral/Fair/Worse
	pedestrian and vehicle safety on I-15 and US- 20, including the interchange on or off- ramps?		Does the alternative provide the opportunity to address geometric deficiencies on I-15, US-20 and interchange ramps, including substandard lane width, acceleration, deceleration, and weaving distance between exits?	Better/Good/Neutral/Fair/Worse
			Does the alternative address substandard interchange spacing on I-15 and US-20?	Better/Good/Neutral/Fair/Worse
			Are changes in access (closures or relocations) expected to reduce crashes?	Better/Good/Neutral/Fair/Worse
Congestion	Does the alternative reduce congestion on	Better/Good/Fair/Negative	Does the alternative increase the capacity of I-15 and US-20?	Better/Good/Neutral/Fair/Worse
	1-15 and US-20?		Does the alternative separate regional through trips and local destination trips?	Better/Good/Neutral/Fair/Worse
			Does the alternative improve freight movement?	Better/Good/Neutral/Fair/Worse
			Does the alternative provide improved, alternative, or additional crossings of railroad and river?	Better/Good/Neutral/Fair/Worse
Local bicycle, pedestrian, transit and vehicle connectivity	Does the alternative enhance or improve bicycle, pedestrian, transit and vehicle connectivity throughout the I-15/US-20 study area?	Better/Good/Fair/Negative	Does the alternative enhance or improve bicycle, pedestrian, transit and vehicle connectivity throughout the I-15/US-20 project area?	Better/Good/Neutral/Fair/Worse
Future Travel Demand	Does the alternative improve travel time	Better/Good/Fair/Negative	Does the alternative provide capacity improvements to address projected population and tourism growth?	Better/Good/Neutral/Fair/Worse
	reliability on I-15 and US-20 in the study area?		Does the alternative provide LOS improvements to adequately address future growth as identified in adopted City, County, and MPO land use and	Better/Good/Neutral/Fair/Worse

7/1/2019



I-15/US-20 PEL Evaluation Questions (Level 1 & Level 2)

Needs, Goals, and Objectives	Level 1 Criteria Questions	Level 1 Responses	Level 2 Criteria Questions	Level 2 Responses
			comprehensive plans? *(Acceptable LOS per BMPO Long Range Transportation Plan = LOS A-D)	
Environmental	Does the alternative meet the purpose and	Better/Good/Fair/Negative	Will the environmental impacts require additional agency approvals or permits?	Better/Good/Neutral/Fair/Worse
	need of the project?		Does the alternative create any problematic or unmitigatable impacts to environmental resources?	Better/Good/Neutral/Fair/Worse
			Does the alternative provide enhancement to local environmental resources?	Better/Good/Neutral/Fair/Worse
Economics, Demographics and Market Impacts	Does the alternative enhance or improve economic, demographic and market condition in accordance with city, county and MPO land use and comprehensive plan objectives and goals?	Better/Good/Fair/Negative		
Public Support			Does the alternative create any controversial issues?	Better/Good/Neutral/Fair/Worse
Cost/ Constructability	Does the alternative provide options for	Better/Good/Fair/Negative	Does the project provide logical and sequential phasing?	Better/Good/Neutral/Fair/Worse
	phased improvements?		Does the Alternative provide a reasonable cost/benefit?	Better/Good/Neutral/Fair/Worse
Access	Does the alternative improve access to local resources including schools, recreational facilities, and commercial areas?	Better/Good/Fair/Negative	How well does the alternative improve access to local resources including schools, recreational facilities, and commercial areas?	Better/Good/Neutral/Fair/Worse

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		Evaluation Criteria 1					Evaluation Criteria 2					
Needs, Goals	, and Objectives	Safety	Safety	Safety	Safety		Congestion	Congestion	Congestion	Congestion		t
Alter	rnatives	Does the alternative reduce backups on the exit ramps?	Does the alternative provide the opportunity to address geometric deficiencies on I-15, US-20 and interchange ramps, including substandard lane width, acceleration, deceleration, and weaving distance between exits?	Does the alternative address substandard interchange spacing on I-15 and US-20?	Are changes in access (closures or relocations) expected to reduce crashes?	Safety Summary	Does the alternative increase the capacity of I-15 and US-20?	Does the alternative separate regional through trips and local destination trips?	Does the alternative improve freight movement?	Does the alternative provide improved, alternative, or additional crossings of railroad and river?	Congestion Summary	c t
	Answer											
А	Comments											T
_	Answer											
В	Comments											T
6	Answer											
C C	Comments											
D	Answer											
b	Comments											
F	Answer											
-	Comments											
F	Answer											
	Comments											
G	Answer											
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н	Answer											
	Comments											
1	Answer											
	Comments											
L	Answer											1
	Comments											+
к	Comments											+
					1		1					

Evaluation Criteria 3	Evaluation Criteria 4					
Local bicycle, pedestrian, nsit and vehicle connectivity	Future Travel Demand	Future Travel Demand				
pes the alternative enhance improve bicycle, pedestrian, nsit and vehicle connectivity hroughout the I-15/US-20 project area?	Does the alternative provide capacity improvements to address projected population and tourism growth?	Does the alternative provide LOS improvements to adequately address future growth as identified in adopted City, County, and MPO land use and comprehensive plans? *(Acceptable LOS per BMPO Long Range Transportation Plan = LOS A-D)	Future Travel Demand Overall			

Evaluation Criteria 5					Evaluation Criteria 6	Evaluation Criteria 7			Evaluation Criteria 8		
Needs, Goals, and Objectives		Environmental	Environmental	Environmental		Public Support	Cost/Constructability	Cost/Constructability		Access	
					Environmental Summary				Constructability Summary		Alternative Overall
Alte	ernatives	Will the environmental impacts require additional agency approvals or permits?	Does the alternative create any problematic or unmitigatable impacts to environmental resources?	Does the alternative provide enhancement to local environmental resources?		Does the alternative create any controversial issues?	Does the project provide logical and sequential phasing?	Does the alternative provide a reasonable cost/benefit?		How well does the alternative improve access to local resources including schools, recreational facilities, and commercial areas?	
	Answer										0
А	Comments										
В	Answer										
	Comments										
C	Answer										
с 	Comments										
D	Answer										
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Е	Answer										
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I.	Answer										
	Comments										
J	Answer										
к	Answer										
	Comments										





Level Two Screening Packet

Appendix E Summary

Appendix E includes the Level 2 Alternatives Screening Packet information: concept alternative exhibits, the evaluation criteria matrix, and a detailed summary of Level Two findings based on each evaluation question.

Level 2 Evaluation Questions, detailed in Appendix D, included the following topics:

- Safety
- Congestion
- Local bicycle, pedestrian, transit and vehicle connectivity
- Future travel demand
- Environmental
- Economics, demographics, and market impacts
- Public support
- Cost/Constructability
- Access




















Alternative Improvement	Section	Level 2 Criteria Questions	Observations from TransCAD Scenarios	Observations from Exhibits
	Safety	Does the alternative reduce backups on the exit ramps?	Exit 118 - Ramp volumes decrease south of exit but increase north of exit Exit 119 - Ramp volumes decrease I-15 -Volumes between Exits 118 & 119 decrease	It should help reduce backups on I-15 ramps with direct ramps to US-20
		Does the alternative provide the opportunity to address geometric deficiencies on I-15, US-20 and interchange ramps, including substandard lane width, acceleration, deceleration, and weaving distance between exits?		Opportunities to rebuild ramps to meet acceleration and deceleration needs as well as lane widths. However, weaving areas between I-15 Exits 118 and 119 and US-20 Exits 308, 309, and 310 are not changed. New merge/diverge conflicts introduced with direct ramp connections between Exit 308 ramps.
		Does the alternative address substandard interchange spacing on I- 15 and US-20?		Removes Lindsay Blvd. IC, Exit 307, so increase distance from Exit 308. All other exits still at substandard spacing. New merge/diverge conflicts introduced with direct ramp connections between Exit 308 ramps.
В		Are changes in access (closures or relocations) expected to reduce crashes?		Providing direct ramps and reducing backups at Exit 119 is expected to reduce crashes. Removing the Lindsay Blvd. IC, Exit 307, removes a weaving and spacing issue and is expected to reduce crashes.
	Congestion	Does the alternative increase the capacity of I-15 and US-20?	US-20 volumes east of Exist 308 increase with this alternative, still within acceptable LOS.	West of exit 308 capacity improved by providing direct ramps, removing regional trips from I-15 and US-20, leaving capacity for local trips.
		Does the alternative separate regional through trips and local destination trips?	Slight reduction of trips on US-26 through town	Puts regional trips on direct ramps to bypass the interchanges and local trips to and from Idaho Falls.
		Does the alternative improve freight movement?		Separates regional and local trips while maintaining access to Idaho Falls and surrounding communities.
		Does the alternative provide improved, alternative, or additional crossings of railroad and river?		Additional crossings with direct ramps and Lindsay Blvd. crossing.
	Future Travel Demand	Does the alternative provide capacity improvements to address projected population and tourism growth?		Provides more capacity for regional movements with direct ramps and for local movements by reducing demand on existing US-20 west of Exit 308 and I-15 between Exits 118 and 119.
	Needs, Goals, and Objectives	Does the alternative provide LOS improvements to adequately address future growth as identified in adopted City, County, and MPO land use and comprehensive plans?	Proposed facilities will serve I-15, US-20, and ramp model volumes at acceptable LOS. Portions of Broadway east of I-15 and US-26 north of E Street exceed LOS D threshold.	

Alternative Improvement	Section	Level 2 Criteria Questions	Observations from TransCAD Scenarios	Observations from Exhibits	
	Safety	Does the alternative reduce backups on the exit ramps?	Exit 118 - Ramp volumes decrease south of exit but increase north of exit Exit 119 - Ramp volumes decrease I-15 -Volumes between Exits 118 & 119 decrease	It should help reduce backups on I-15 ramps with direct ramps to US-20	
		Does the alternative provide the opportunity to address geometric deficiencies on I-15, US-20 and interchange ramps, including substandard lane width, acceleration, deceleration, and weaving distance between exits?		Opportunities to rebuild ramps to meet acceleration and deceleration needs as well as lane widths. However, weaving areas between I-15 Exits 118 and 119 and US-20 Exits 308, 309, and 310 are not changed. New merge/diverge conflicts introduced with direct ramp connections between Exit 308 and Exit 309 ramps.	
		Does the alternative address substandard interchange spacing on I- 15 and US-20?		Removes Lindsay Blvd. IC, Exit 307, so increase distance from Exit 308. All other exits still at substandard spacing. New merge/diverge conflicts introduced with direct ramp connections between Exit 308 and Exit 309 ramps.	
с		Are changes in access (closures or relocations) expected to reduce crashes?		Providing direct ramps and reducing backups at Exit 119 is expected to reduce crashes. Removing the Lindsay Blvd. IC, Exit 307, removes a weaving and spacing issue and is expected to reduce crashes.	
	Congestion	Does the alternative increase the capacity of I-15 and US-20?	US-20 volumes east of Exit 308 increase with this alternative.	West of exit 308 capacity improved by providing direct ramps, removing through trips from I-15 and US-20, leaving capacity for local trips.	
		Does the alternative separate regional through trips and local destination trips?	Slight reduction of trips on US-26 through town	Puts regional trips on direct ramps to bypass the interchanges and local trips to and from Idaho Falls.	
		Does the alternative improve freight movement?		Separates regional and local trips while maintaining access to Idaho Falls and surrounding communities.	
		Does the alternative provide improved, alternative, or additional crossings of railroad and river?		Additional crossings with direct ramps and Lindsay Blvd. crossing.	
	Future Travel Demand Needs, Goals, and Objectives	Does the alternative provide capacity improvements to address projected population and tourism growth?		Provides more capacity for regional movements with direct ramps and for local movements by reducing demand on existing US-20 west of Exit 308 and I-15 between Exits 118 and 119.	
		Does the alternative provide LOS improvements to adequately address future growth as identified in adopted City, County, and MPO land use and comprehensive plans?	Proposed facilities will serve I-15, US-20, and most ramp model volumes at acceptable LOS. Direct ramps combined with Exits 119 and 308 volumes exceed LOS D threshold.		

	Alternative Improvement	Section	Level 2 Criteria Questions	Observations from TransCAD Scenarios	Observations from Exhibits	
	D		Does the alternative reduce backups on the exit ramps?	Exit 118 - Ramp volumes increase south of exit One-way frontage roads carry traffic separate from I-15 I-15 -Volumes between Exits 118 & 119 increase	It should help reduce backups on I-15 ramps	
		Safety	Does the alternative provide the opportunity to address geometric deficiencies on I-15, US-20 and interchange ramps, including substandard lane width, acceleration, deceleration, and weaving distance between exits?		Opportunities to rebuild ramps to meet acceleration and deceleration needs as well as lane widths. The weaving issues between Exits 118, 119, and the new system interchange are removed or improved with the frontage roads and braided ramps. However, weaving areas between US-20 Exits 309 and 310 are substandard.	
			Does the alternative address substandard interchange spacing on I- 15 and US-20?		Removes weaving issue between Exits 118 and 119 with frontage roads. Removes Riverside IC, Exit 308, so increased distance between Exit 307 and Exit 309. New system interchange is spaced too closely to Exit 119 and Exit 309 but is an improvement over the existing configuration.	
			Are changes in access (closures or relocations) expected to reduce crashes?		Providing frontage roads and reducing backups at Exit 119 is expected to reduce crashes. Removing the Riverside IC, Exit 308, removes a weaving and spacing issue and is expected to reduce crashes.	
		Congestion	Does the alternative increase the capacity of I-15 and US-20?	US-20 volumes east of Exist 309 increase slightly with this alternative.	West of Exit 309, old US-20 capacity improved by removing through trips and putting them on new alignment, leaving capacity for local trips.	
			Does the alternative separate regional through trips and local destination trips?	Reduction of trips on US-26 through town	Keeps regional trips on I-15 and US-20 to bypass the interchanges and local trips to and from Idaho Falls.	
			Does the alternative improve freight movement?		Separates regional and local trips while maintaining access to Idaho Falls and surrounding communities.	
			Does the alternative provide improved, alternative, or additional crossings of railroad and river?		Additional crossings with new system IC direct ramps.	
		Future Travel Demand Needs, Goals, and Objectives	Does the alternative provide capacity improvements to address projected population and tourism growth?		Provides more capacity for regional movements with direct ramps and local movements while reducing demand on existing US-20 west of Exit 309.	
			Does the alternative provide LOS improvements to adequately address future growth as identified in adopted City, County, and MPO land use and comprehensive plans?	Proposed facilities will serve I-15, US-20, and most ramp model volumes at acceptable LOS. NB to EB and WB to SB direct ramps connecting I-15 and US-20 exceed LOS D threshold. Portions of Broadway east of I-15 and US-26 north of E Street exceed LOS D threshold.		

Alternative Improvement	Section	Level 2 Criteria Questions	Observations from TransCAD Scenarios	Observations from Exhibits	
		Does the alternative reduce backups on the exit ramps?	Exit 118 - Ramp volumes decrease south of exit One-way frontage roads carry traffic separate from I-15 I-15 -Volumes between Exits 118 & 119 decrease	It should help reduce backups on I-15 ramps	
E	Safety	Does the alternative provide the opportunity to address geometric deficiencies on I-15, US-20 and interchange ramps, including substandard lane width, acceleration, deceleration, and weaving distance between exits?		Opportunities to rebuild ramps to meet acceleration and deceleration needs as well as lane widths. The weaving issues between Exits 118, 119, and the new interchange are removed or improved with the frontage roads and braided ramps. However, weaving areas between the new interchange and US-20 Exits 309 and 310 are substandard.	
		Does the alternative address substandard interchange spacing on I- 15 and US-20?		Removes weaving issue between Exits 118 and 119 with frontage roads. Removes Riverside IC, Exit 308, so increases distance between Exit 307 and Exit 309. New interchange is spaced too closely to Exit 119 and Exit 309 but is an improvement over the existing configuration.	
		Are changes in access (closures or relocations) expected to reduce crashes?		Providing frontage roads and reducing backups at Exit 119 is expected to reduce crashes. Removing the Riverside IC, Exit 308, removes a weaving and spacing issue and is expected to reduce crashes.	
	Congestion	Does the alternative increase the capacity of I-15 and US-20?	US-20 volumes east of Exist 309 increase slightly with this alternative.	West of Exit 309, old US-20 capacity improved by removing through trips and putting them on new alignment, leaving capacity for local trips.	
		Does the alternative separate regional through trips and local destination trips?	Reduction of trips on US-26 through town	Keeps regional trips on I-15 and US-20 to bypass the interchanges and local trips to and from Idaho Falls.	
		Does the alternative improve freight movement?		Separates regional and local trips while maintaining access to Idaho Falls and surrounding communities.	
		Does the alternative provide improved, alternative, or additional crossings of railroad and river?		Additional crossings with new US-20 alignment and new direct ramps	
	Future Travel	Does the alternative provide capacity improvements to address projected population and tourism growth?		Provides more capacity for regional movements with direct ramps and local movements while reducing demand on existing US-20 west of Exit 309.	
	Demand Needs, Goals, and Objectives	Does the alternative provide LOS improvements to adequately address future growth as identified in adopted City, County, and MPO land use and comprehensive plans?	Proposed facilities will serve I-15, US-20, and most ramp model volumes at acceptable LOS. NB to EB direct ramp connecting I-15 and US-20 exceed LOS D threshold. Portions of Broadway east of I- 15 and US-26 north of E Street exceed LOS D threshold.		

Alternative Improvement	Section	Level 2 Criteria Questions	Observations from TransCAD Scenarios	Observations from Exhibits
		Does the alternative reduce backups on the exit ramps?	Exit 118 - Ramp volumes increase south of exit One-way frontage roads carry traffic separate from I-15 I-15 -Volumes between Exits 118 & 119 decrease	It should help reduce backups on I-15 ramps with separate direct ramps
	Safety	Does the alternative provide the opportunity to address geometric deficiencies on I-15, US-20 and interchange ramps, including substandard lane width, acceleration, deceleration, and weaving distance between exits?		Opportunities to rebuild ramps to meet acceleration and deceleration needs as well as lane widths. The weaving issues between Exits 118, 119, and the new system interchange are removed or improved with the frontage roads and braided ramps. However, weaving areas between US-20 Exits 309 and 310 are substandard.
		Does the alternative address substandard interchange spacing on I- 15 and US-20?		Removes weaving issue between Exits 118 and 119 with frontage roads. Removes Lindsay, Exit 307, and Riverside, Exit 308. New system interchange is spaced too closely to Exit 119 and Exit 309 but is an improvement over the existing configuration.
F		Are changes in access (closures or relocations) expected to reduce crashes?		Providing frontage roads and reducing backups at Exit 119 is expected to reduce crashes. Removing the Lindsay and Riverside IC removes weaving and spacing issues and is expected to reduce crashes.
		Does the alternative increase the capacity of I-15 and US-20?	US-20 volumes east of Exist 309 increase slightly with this alternative.	Volumes in EB direction remain the same on US-20. WB is significantly lower as the WB trips are on the new alignment.
	Congestion	Does the alternative separate regional through trips and local destination trips?	Reduction of trips on US-26 through town	Keeps regional trips on I-15 and US-20 to bypass the interchanges and local trips to and from Idaho Falls. Some mixing still exists on the braided ramps and on US-20 east of I-15.
		Does the alternative improve freight movement?		Separates regional and local trips while maintaining access to Idaho Falls and surrounding communities. Lindsay Blvd. interchange has reduced access.
		Does the alternative provide improved, alternative, or additional crossings of railroad and river?		Additional crossings with new system IC direct ramps, on by Johns Hole and the others at a new crossing north.
	Future Travel Demand Needs, Goals,	Does the alternative provide capacity improvements to address projected population and tourism growth?		Provides more capacity for regional movements with direct ramps.
	and Objectives	Does the alternative provide LOS improvements to adequately address future growth as identified in adopted City, County, and MPO land use and comprehensive plans?	Proposed facilities will serve I-15, US-20, and ramp model volumes at acceptable LOS.	

Alternative Improvement	Section	Level 2 Criteria Questions	Observations from TransCAD Scenarios	Observations from Exhibits
		Does the alternative reduce backups on the exit ramps?	Exit 118 - Ramp volumes increase north of exit, weaving issues could get worse between Exits 118 and 119 Exit 119 - Ramp volumes decrease I-15 -Volumes between Exits 118 & 119 increase significantly	Higher volumes on I-15 and Exit 118 ramps will make the weaving issues between Exits 118 and 119 more pronounced, so may not reduce backups.
	Safety	Does the alternative provide the opportunity to address geometric deficiencies on I-15, US-20 and interchange ramps, including substandard lane width, acceleration, deceleration, and weaving distance between exits?		Does not address existing I-15 Exits 118 and 119 and US-20 Exit 307 interchanges and other deficiencies. Adds new interchange at Lewisville Highway on new alignment that is too close to reconfigured Exit 311.
		Does the alternative address substandard interchange spacing on I- 15 and US-20?		Does not address existing I-15 Exits 118 and 119 and US-20 Exit 307 interchanges and other deficiencies. Adds new interchange at Lewisville Highway on new alignment that is too close to reconfigured Exit 311.
		Are changes in access (closures or relocations) expected to reduce crashes?		Changing US-20 to local street with at- grade intersections and reduced speed and volumes should reduce crashes.
G	Congestion	Does the alternative increase the capacity of I-15 and US-20?	I-15 has higher volumes north of Exit 118 until the new system IC. Still has capacity but weaving and substandard IC spacing will reduce effectiveness of system with higher volumes. US-20 volumes on local road are reduced but are similar to existing volumes and appear to exceed LOS D threshold between I-15 and Riverside Dr.	
		Does the alternative separate regional through trips and local destination trips?	Slight decrease of trips on US-26 through town	Some regional trips still on old system, based on volume distribution.
		Does the alternative improve freight movement?		Does not address existing issues at Exit 118 and 119, access to Idaho Falls maintained.
		Does the alternative provide improved, alternative, or additional crossings of railroad and river?		Additional crossings with new system IC direct ramps.
	Future Travel Demand Needs, Goals,	Does the alternative provide capacity improvements to address projected population and tourism growth?		Does not address existing I-15 and US-20 Exit 307 interchanges and other deficiencies. Increased volumes will see existing problems potentially increase on I-15 and at Exits 118 and 119.
	Objectives	Does the alternative provide LOS improvements to adequately address future growth as identified in adopted City, County, and MPO land use and comprehensive plans?	Old US-20 converted to local road and lower speeds carries volumes that exceed LOS D threshold between I-15 and Riverside Dr.	

Alternative Improvement	Section	Level 2 Criteria Questions	Observations from TransCAD Scenarios	Observations from Exhibits	
		Does the alternative reduce backups on the exit ramps?	Exit 118 - All ramp volumes increase, weaving issues could get worse between Exits 118 and 119. Exit 119 - Ramp volumes decrease I-15 -Volumes between Exits 118 & 119 increase significantly.	Higher volumes on I-15 and Exit 118 ramps will make the weaving issues between Exits 118 and 119 more pronounced, so may not reduce backups.	
	Safety	Does the alternative provide the opportunity to address geometric deficiencies on I-15, US-20 and interchange ramps, including substandard lane width, acceleration, deceleration, and weaving distance between exits?		Does not address existing I-15 and US-20 Exit 307 interchanges and other deficiencies. Adds new interchange at Lewisville Highway on new alignment that is too close to reconfigured Exit 311.	
		Does the alternative address substandard interchange spacing on I- 15 and US-20?		Does not address existing I-15 and US-20 Exit 307 interchanges and other deficiencies. Adds new interchange at Lewisville Highway on new alignment that is too close to reconfigured Exit 311.	
		Are changes in access (closures or relocations) expected to reduce crashes?		Changing US-20 to local street with at- grade intersections and reduced speed and volumes should reduce crashes.	
н	Congestion	Does the alternative increase the capacity of I-15 and US-20?	I-15 has higher volumes north of Exit 118 until the new system IC. Still has capacity but weaving and substandard IC spacing will reduce effectiveness of system with higher volumes. US-20 volumes on local road are reduced but are similar to existing volumes and appear to exceed LOS D threshold between I-15 and Riverside Dr.		
		Does the alternative separate regional through trips and local destination trips?	Slight decrease of trips on US-26 through town	Some regional trips still on old system, based on volume distribution.	
		Does the alternative improve freight movement?		Does not address existing issues at Exit 118 and 119, access to Idaho Falls maintained.	
		Does the alternative provide improved, alternative, or additional crossings of railroad and river?		Additional crossings with new system IC direct ramps.	
	Future Travel Demand Needs, Goals,	Does the alternative provide capacity improvements to address projected population and tourism growth?		Does not address existing I-15 and US-20 Exit 307 interchanges and other deficiencies. Increased volumes will see existing problems potentially increase on I-15 and at Exits 118 and 119.	
	Objectives	Does the alternative provide LOS improvements to adequately address future growth as identified in adopted City, County, and MPO land use and comprehensive plans?	Old US-20 converted to local road and lower speeds carries volumes that exceed LOS D threshold between I-15 and Riverside Dr.		

Alternative Improvement	Section	Level 2 Criteria Questions	Observations from TransCAD Scenarios	Observations from Exhibits	
		Does the alternative reduce backups on the exit ramps?	Exit 118 - All ramp volumes increase, weaving issues could get worse between Exits 118 and 119. Exit 119 - Ramp volumes decrease I-15 -Volumes between Exits 118 & 119 increase significantly.	Higher volumes on I-15 and Exit 118 ramps will make the weaving issues between Exits 118 and 119 more pronounced, so may not reduce backups.	
	Safety	Does the alternative provide the opportunity to address geometric deficiencies on I-15, US-20 and interchange ramps, including substandard lane width, acceleration, deceleration, and weaving distance between exits?		Does not address existing I-15 and US-20 Exit 307 interchanges and other deficiencies. New interchanges on I-15 and along US-20 at Lewisville Highway on new alignment are too close to reconfigured Exit 311.	
		Does the alternative address substandard interchange spacing on I- 15 and US-20?		Does not address existing I-15 and US-20 Exit 307 interchanges and other deficiencies. New interchanges on I-15 and along US-20 at Lewisville Highway on new alignment are too close to reconfigured Exit 311.	
		Are changes in access (closures or relocations) expected to reduce crashes?		Changing US-20 to local street with at- grade intersections and reduced speed and volumes should reduce crashes.	
I	Congestion	Does the alternative increase the capacity of I-15 and US-20?	I-15 has higher volumes in study area than No-Build, reducing capacity. US-20 volumes on local road are reduced but are similar to existing volumes and appear to exceed LOS D threshold between I-15 and Riverside Dr.		
		Does the alternative separate regional through trips and local destination trips?	Slight decrease of trips on US-26 through town	Some regional trips still on old system, based on volume distribution.	
		Does the alternative improve freight movement?		Does not address existing issues at Exit 118 and 119, access to Idaho Falls maintained.	
		Does the alternative provide improved, alternative, or additional crossings of railroad and river?		Additional crossings with new US-20 alignment and system IC direct ramps.	
	Future Travel Demand Needs, Goals, and	Does the alternative provide capacity improvements to address projected population and tourism growth?		Does not address existing I-15 interchanges and other deficiencies. Increased volumes will see existing problems potentially increase on I-15 and at Exits 118 and 119.	
	Objectives	Does the alternative provide LOS improvements to adequately address future growth as identified in adopted City, County, and MPO land use and comprehensive plans?	Old US-20 converted to local road and lower speeds carries volumes that exceed LOS D threshold between I-15 and Riverside Dr.		

Alternative Improvement	Section	Level 2 Criteria Questions	Observations from TransCAD Scenarios	Observations from Exhibits
		Does the alternative reduce backups on the exit ramps?	Exit 118 - All ramp volumes increase, but I- 15 volumes reduced, Exit 119 moved further away and not full access, so fewer conflicts or weaves	Higher volumes on I-15 and Exit 118 ramps will make the weaving issues between Exits 118 and 119 more pronounced, so may not reduce backups.
	Safety	Does the alternative provide the opportunity to address geometric deficiencies on I-15, US-20 and interchange ramps, including substandard lane width, acceleration, deceleration, and weaving distance between exits?		Changes Exit 119 to partial access and changes US-20 to local road with at-grade intersections, so removes most of these issues.
	Safety	Does the alternative address substandard interchange spacing on I- 15 and US-20?		Changes Exit 119 to partial access and changes US-20 to local road with at-grade intersections, so removes most interchange spacing issues.
		Are changes in access (closures or relocations) expected to reduce crashes?		Changing US-20 to local street with at- grade intersections and reduced speed and volumes should reduce crashes.
J		Does the alternative increase the capacity of I-15 and US-20?	I-15 volumes reduced south of Exit 118. US-20 volumes reduced through town. However, more trips on Broadway and US- 26 in town, adding to congestion while reducing congestion on freeway.	
	Congestion	Does the alternative separate regional through trips and local destination trips?	Increases volumes on Broadway east of I- 15 and US-26 through town.	Regional trips using Broadway and US-26 as opposed to I-15, based on volume distribution.
		Does the alternative improve freight movement?		May make freight trips take longer as more trips traveling through town rather than on freeway.
		Does the alternative provide improved, alternative, or additional crossings of railroad and river?		Improved US-20 crossing at John's Hole and new crossing further north on new I- 15 alignment.
	Future Travel Demand Needs, Goals,	Does the alternative provide capacity improvements to address projected population and tourism growth?		No, moves trips from high speed facilities to low speed facilities in town.
	and Objectives	Does the alternative provide LOS improvements to adequately address future growth as identified in adopted City, County, and MPO land use and comprehensive plans?	I-15 volumes reduced south of Exit 118. US-20 volumes reduced through town.	

Alternative Improvement	Section	Level 2 Criteria Questions	Observations from TransCAD Scenarios	Observations from Exhibits
к		Does the alternative reduce backups on the exit ramps?	Increases volumes on Exit 118 ramps and I 15 between Exits 118 and 119. reduces volumes on Exit 119 ramps.	Higher volumes on I-15 and Exit 118 ramps will make the weaving issues between Exits 118 and 119 more pronounced, so may not reduce backups.
	Safaty	Does the alternative provide the opportunity to address geometric deficiencies on I-15, US-20 and interchange ramps, including substandard lane width, acceleration, deceleration, and weaving distance between exits?		Does not address existing I-15 and US-20 Exit 307 interchanges and other deficiencies. New interchanges on I-15 and along US-20 at Lewisville Highway on new alignment are too close to reconfigured Exit 311.
	Sarety	Does the alternative address substandard interchange spacing on I- 15 and US-20?		Does not address existing I-15 and US-20 Exit 307 interchanges and other deficiencies. New interchanges on I-15 and along US-20 at Lewisville Highway on new alignment are too close to reconfigured Exit 311.
		Are changes in access (closures or relocations) expected to reduce crashes?		Changing US-20 to local street with at- grade intersections and reduced speed and volumes should reduce crashes.
	Congestion	Does the alternative increase the capacity of I-15 and US-20?	I-15 has higher volumes in study area than No-Build, reducing capacity. US-20 volumes on local road are reduced but are similar to existing volumes and appear to exceed LOS D threshold between I-15 and Science Center Dr.	
		Does the alternative separate regional through trips and local destination trips?	Slight decrease of trips on US-26 through town	Some regional trips still on old system, based on volume distribution.
		Does the alternative improve freight movement?		Does not address existing issues at Exit 118 and 119, access to Idaho Falls maintained.
		Does the alternative provide improved, alternative, or additional crossings of railroad and river?		Additional crossing with new US-20 alignment.
	Future Travel Demand Needs, Goals, and	Does the alternative provide capacity improvements to address projected population and tourism growth?		Does not address existing I-15 interchanges and other deficiencies. Increased volumes will see existing problems potentially increase on I-15 and at Exits 118 and 119.
	Objectives	Does the alternative provide LOS improvements to adequately address future growth as identified in adopted City, County, and MPO land use and comprehensive plans?	Old US-20 converted to local road and lower speeds carries volumes that exceed LOS D threshold between I-15 and Riverside Dr.	

				Congest	ion/Constructability - S	tructures	
Alternative	Needs, Goals, and Objectives	Level 2 Criteria Questions	Opportunities	Challenges	Overall User Cost/Savings	ROW Impacts	Structure Improvements
в	Congestion	Does the alternative provide improved, alternate, or additional crossings of railroad and river?	Comments *Adds two structures over river, and two structures over railroad.	Comments	Comments	Comments	Comments
В	Cost/ Constructability	Does the project provide logical and sequential phasing?	*Most of the new structures are off of 1-15, or over 1-15, reducing the amount of changes of traffic on 1-15. *Can keep Grandview bridge over Snake open during construction	*Replacing the bridges at Broadway & I-15 will require a traffic shift as one of the bridges is demolished. Grade raise required at Broadway Bridge. * Ramp from Westbound Grandview to NB I-15 is close to the tracks	*Only two new structures over the Snake River, fewest of all alternatives	*Footprints of interchanges will be larger, but does not take that much. Ramp bridges take new ROW.	*4 new bridges at Broadway Interchange *1 new bridge at Grandview Interchange *1 New Bridge, WB US-20 to SB I-15 *3 new bridges, NB I-15 over Railroad and Lindsay Rd. and Canal *2 ramp bridges over Snake River, I-15 to US20 *3 new bridges at US-20 Riverside Crossing *14 total new bridges
с	Congestion	Does the alternative provide improved, alternate, or additional crossings of railroad and river?	*Adds four structures over river, replacing one structure over river (Grandview), and adds two structures over railroad.				
c	Cost/ Constructability	Does the project provide logical and sequential phasing?	*Most of the new structures are off of I-15, or over I-15, reducing the amount of changes of traffic on I-15.	*Replacing the bridges at Broadway & I-15 will require a traffic shift as one of the bridges is demolished. Grade raise required at Broadway Bridge. *May need to fully close Grandview to replace interchange bridge and river crossing bridges. * Ramp from Westbound Grandview to NB I-15 is close to the tracks *Ramp bridge from WB US20 to SB I-15 will cross I-15 intersection at high skew, difficult to design and construct.	*Four new structures over the Snake River will be costly. *Demolition of Grandview Bridge will need careful consideration do not pollute the river. *Most new bridges of alternates that do not include a full re-alignment		*4 new bridges at Broadway Interchange *1 new bridge at Grandview Interchange *1 New Bridge, WB US-20 to SB 1-15 *3 new bridges, NB 1-15 over Railroad and Lindsay Rd. and Canal *2 ramp bridges over Snake River, 1-15 to US20 *1 New bridge, Grandview over Snake River *1 new river crossing, north of Grandview *3 new bridges at US-20 Riverside Crossing *16 total new bridges
D	Congestion	Does the alternative provide improved, alternate, or additional crossings of railroad and river?	*Adds four structures over river, which also pass over railroad.				
D	Cost/ Constructability	Does the project provide logical and sequential phasing?	*Most of the new structures are off of 1-15, or over 1-15, reducing the amount of changes of traffic on 1-15. *Can keep Grandview bridge over Snake open during construction *New river bridges are well north of town, in not quite as busy of an area.	*Replacing the bridges at Broadway & I-15 will require a traffic shift as one of the bridges is demolished. Grade raise required at Broadway Bridge. *U-Turn bridges at Grandview Intersection could be difficult to erect, global stability will be an issue with such a tight curve.	*Four new structures over the Snake River will be costly.	*Frontage roads for I-15 will take some residential.	*2 new I-15 bridges at Broadway Interchange *1 new bridge at Grandview Interchange *2 new ramp bridge, I-15 to US20 *4 new river crossings, I-15 to US20 *1 new bridge, intersection north of Grandview *1 new bridge, US20 over Riverside *11 total new bridges
E	Congestion	Does the alternative provide improved, alternate, or additional crossings of railroad and river?	*Adds three structures over river, and two new structures over railroad (Ramp bridges).				
E	Cost/ Constructability	Does the project provide logical and sequential phasing?	C	*Replacing the bridges at Broadway & I-15 will require a traffic shift as one of the bridges is demolished. Grade raise required at Broadway Bridge. *Interchange north of Grandview is directly over railroad tracks. *Ramp bridge over Grandview river bridge crosses at very high skew. Straddle bent may be required to support.	*Four new structures over the Snake River will be costly. *New interchange north of Grandview will be costly *High skew at ramp bridge over Grandview river bridge could prove to be costly.		*2 new I-15 bridges at Broadway Interchange *3 new bridges at Grandview Interchange *4 new river crossings, I-15 to US20 *1 new bridge, US20 over Science Center *10 total new bridges
F	Congestion	Does the alternative provide improved, alternate, or additional crossings of railroad and river?	*2 new bridges across Snake River at Grandview, replaces existing. 2 new bridges over railroad near Grandview, one replacement, one new. 2 new ramp bridges over railroad and snake river.				

				Congest	ion/Constructability - S	tructures	
Alternative	Needs, Goals, and Objectives	Level 2 Criteria Questions	Opportunities	Challenges	Overall User Cost/Savings	ROW Impacts	Structure Improvements
F	Cost/ Constructability	Does the project provide logical and sequential phasing?	*Most of the new structures are off of I-15, or over I-15, reducing the amount of changes of traffic on I-15.	Comments *Replacing the bridges at Broadway & I-15 will require a traffic shift as one of the bridges is demolished. Grade raise required at Broadway Bridge.	Comments *Four new structures over the Snake River will be costly. *Demolition of Grandview Bridge will need careful consideration do not pollute the river.	Comments	Comments *2 new I-15 bridges at Broadway Interchange, 1 new ramp bridge *5 new bridges at Grandview Interchange, including replacement bridge over railroad *3 bridges on ramp from NB I- 15 to US20, over railroad, Lindsay, and canal. *2 new river crossings at Grandview, replaces Grandview Bridge. *1 new bridge, Grandview over Snake River *1 new bridge, ramps over Riverside *1 new bridge, ramps over Riverside *1 dtal new bridges
G	Congestion	Does the alternative provide improved, alternate, or additional crossings of railroad and river?	*4 new ramp crossing both the railroad and the Snake River, well north of town. Grandview bridge left in place.				
G	Cost/ Constructability	Does the project provide logical and sequential phasing?	*Traffic on I-15 will be nearly uninterrupted. Will only need temporary closures when setting girders overhead.		*Four new structures over the Snake River will be costly. *Least amount of total bridges of all alternates	*Entire alternate is placed north of town in rural area. Road widening is through farm fields instead of buildings.	*4 new I-15 to US20 bridges over railroad and Snake River. *1 new bridge, US20 over East River Road *1 new bridge, US20 over Lewisville Hwy. *2 new bridges, US20 over N15th *8 total new bridges
н	Congestion	Does the alternative provide improved, alternate, or additional crossings of railroad and river?	*2 new ramp crossing both the railroad and the Snake River, well north of town. Grandview bridge left in place.				
н	Cost/ Constructability	Does the project provide logical and sequential phasing?	*Traffic on I-15 will be nearly uninterrupted. Will be able to build re-routed I-15 while existing is in service		*Two new structures over the Snake River is least of all alternates	*Entire alternate is placed north of town in rural area. Road widening is through farm fields instead of buildings. *Intersection on US20 & E 49th N takes a portion of an industrial area.	*2 new I-15 to US20 bridges over railroad and Snake River. *2 new I-15 ramp bridges, over I-15 or other ramps *1 new bridge, US20 over East River Road *1 new bridge, US20 over Lewisville Hwy. *2 new bridges over US20 at new E 49th N interchange *2 new bridges, US20 over N15th *10 total new bridges
I	Congestion	Does the alternative provide improved, alternate, or additional crossings of railroad and river?	*3 new crossings over both the railroad and the Snake River, well north of town, while leaving the Grandview bridge as is.				
I	Cost/ Constructability	Does the project provide logical and sequential phasing?	*Alternate is mostly utilizing farmland, so most of the work is done off of 1-15. Some nightly closures will be required for the new southern interchange, for placing girders. Rerouted portion of 1- 15 can be built while existing 1- 15 is in service. The sequencing at the northern interchange could will require the rerouted 1-15 built first, then building up the interchange around it.	*Multi-level interchange will be complicated for design and construction (4 levels)	*Three new structures over the Snake River is less than some of the alternatives. *Multi-level interchange will be costly. *Most new bridges of any alternate	*Entire alternate is placed north and east of town in rural area. Road widening is mostly through farm fields instead of buildings. *South interchange takes some industrial land	*3 new I-15 to US20 bridges over railroad and Snake River. *2 new I-15 ramp bridges to US20, over I-15 *5 new side road bridges over US20 *6 new US20 bridges over side roads. *2 new bridges, US20 over I-15 at interchange *4 ramp bridges at new interchange *2 total new bridges

			Congestion/Constructability - Structures						
Alternative	Needs, Goals, and Objectives	Level 2 Criteria Questions	Opportunities	Challenges	Overall User Cost/Savings	ROW Impacts	Structure Improvements		
			Comments	Comments	Comments	Comments	Comments		
J	Congestion	Does the alternative provide improved, alternate, or additional crossings of railroad and river?	*3 new river crossings, replacing Grandview Bridge. 2 of these bridges carry full I-15 traffic.						
J	Cost/ Constructability	Does the project provide logical and sequential phasing?	*Much of re-routed I-15 is through rural area.	*Rerouting I-15 near the south end of the alternate only to bend it back over the existing I- 5 will require I-15 to be detoured. *Keeping I-15 to US-20 access open will be difficult.	*Three new structures over the Snake River is less than some of the alternatives, but two of them will be much wider than others, carrying interstate traffic.	*South end of project re- routes I-15 to the west before turning back east, through areas already in use by residential and commercial. After re-routed I-15 crosses river, it crosses through a lot of residential areas, already in use.	*4 new I-15 bridges over snake river. *2 new I-15 bridge over Lindsay *1 new ramp bridge over Snake River. *1 new I-15 ramp bridge to US20, over I-15 *8 total new bridges		

obility Matrix	/ Matrix		Calculated by:	BAF	Date:	2/28/2019	
			Checked by:	CCW	Date:	3/4/2019	
Alternative Improvement	Bike/Pedestrian Facility	Status	Facility Opportunities with Alternative	Facility Challenges with Alternative	Difficulty of Facility Implementation with Alternative	Difficulty of Traveling on Facility Through Alternative	Additional Structures Needed with Alternative
	Grandview Shared Use Path Extension to Snake River	Proposed	Facility could be built in conjuction with project alternative	Additional structure width needed for 12' path, or connection needed to one of direct ramps and width added to that ramp	Decreases difficulty - alternative already requires new road/structure from Saturn to Snake River	Decreases difficulty - facility could be built with project and would reduce intersection conflicts for bikes/peds	Additional structure width needed for path, to be added to existing US-20 structures or proposed direct ramp
	Skyline Dr. Bike Lanes	Proposed	None	None	None	None	None
	Saturn Dr. Signed Bike Route	Proposed	Improve approach at Grandview intersection with project	None	Decreases difficulty due to ability to lump in aproach improvement with greater project	Facility currently does not exist, opportunity to improve with alternative	None
	West Snake River Shared Use Path	Existing south of US-20, Proposed north of US-20	Opportunity to build proposed shared use path approach with US-20, and improve existing US-20 approach in conjuction with alternative	Shared use path will need to cross over or under both NB and SB direct ramps, US-20 mainline section, as well as proposed north river crossing at Higham St.	A structure(s)/tunnel(s), or floating bridge, may need to be built, possibly along west bank of Snake River, to allow bikes/peds to cross roadway sections	Tunnels/below grade crossings create a tighter travel space that feels less comfortable and can cause safety issues	Possible structure(s)/tunnel(s) or floating bridge under direct ramps, US-20 mainline section
	East Snake River Shared Use Path	Existing south of railroad, Proposed north of railroad	Improve connection to West Snake River Shared Use Path and shared use path continuing to the east, as well as create more permanent crossing under US-20	Fill of proposed NB direct ramp would cover existing path, path approaching and along Fremont Ave would need to be realigned, as well as crossings built under direct ramps and north river crossing	Path(s) would likely need to be rerouted, floating bridge extended/replaced	In order to implement alternative improvements to shared use path, would likely make path more complex when compared to existing	Existing floating bridge may need to be replaced and extended, or replaced with a structure(s)/tunnel(s)
	Science Center Shared Use Path	Proposed	None	None	None	None	None
В	Anderson St. Shared Use Path	Changes Proposed	None	None	None	None	None
	Iona St. Shared Use Path	Proposed	None	None	None	None	None
	Idaho Canal Shared Use Path	Proposed	None	None	None	None	None
	Freeman Park Shared Use Paths	Existing	None	None	None	None	None
	Fremont Ave. Bike Lanes	Proposed	Opportunity to build approach/connection to proposed bike lanes beginning at Higham St.	None	Decreases difficulty due to ability to lump in aproach improvement with greater project	None	None
	N 5th West Shared Use Path	Proposed	None	None	None	None	None
	65th North Shared Use Path	Proposed	None	None	None	None	None
	Riverview Dr. Signed Bike Route	Proposed	None	None	None	None	None
	Neighborhood, School, Park sidewalks	Existing	Opportunity to add sidewalk on Lindsey Blvd. north of US-20, as well as the west side of Fremont Ave. from Highman St. south to existing sidewalk	Temple View Elementary School would be largely impacted by alternative, including sidewalk, Colorado Ave. and the building itself - along with possible impacts to Antares Park	Temple View Elementary would likely need to be moved/shifted if alternative was put into place, as well as paths/sidewalks leading to school	Existing paths/sidewalks within footprint of proposed NB and SB direct ramps will need to be moved/realigned	Possibly new school building/structure

ity Matrix	Matrix		Calculated by: BAF		Date:	2/28/2019	
			Checked by:	CCW	Date:	3/4/2019	
Alternative Improvement	Bike/Pedestrian Facility	Status	Facility Opportunities with Alternative	Facility Challenges with Alternative	Difficulty of Facility Implementation with Alternative	Difficulty of Traveling on Facility Through Alternative	Additional Structures Needed with Alternative
	Grandview Shared Use Path Extension to Snake River	Proposed	Facility could be built in conjuction with project alternative	Additional structure width needed for 12' path, or connection needed to one of direct ramps and width added to that ramp	Decreases difficulty - alternative already requires new road/structure from Saturn to Snake River	Decreases difficulty - facility could be built with project and would reduce intersection conflicts for bikes/peds	Additional structure width needed for path, to be added to existing US-20 structures or proposed direct ramp
	Skyline Dr. Bike Lanes	Proposed	None	None	None	None	None
	Saturn Dr. Signed Bike Route	Proposed	Improve approach at Grandview intersection with alternative	None	Decreases difficulty due to ability to lump in aproach improvement with greater project	Facility currently does not exist, opportunity to improve with alternative	None
	West Snake River Shared Use Path	Existing south of US-20, Proposed north of US-20	Opportunity to build proposed shared use path approach with US-20, and improve existing US-20 approach in conjuction with alternative	Shared use path will need to cross over or under both NB and SB direct ramps, US-20 mainline section, as well as proposed north river crossing at Higham St.	A structure(s)/tunnel(s), or floating bridge, may need to be built, possibly along west bank of Snake River, to allow bikes/peds to cross roadway sections	Tunnels/below grade crossings create a tighter travel space that feels less comfortable and can cause safety issues	Possible structure(s)/tunnel(s) or floating bridge under direct ramps, US-20 mainling section
	East Snake River Shared Use Path	Existing south of railroad, Proposed north of railroad	Improve connection to West Snake River Shared Use Path and shared use path continuing to the east, as well as create more permanent crossing under US-20	Fill of proposed NB direct ramp would cover existing path, path approaching and along Fremont Ave would need to be realigned, as well as crossings built under direct ramps and north river crossing	Path(s) would likely need to be rerouted, floating bridge extended/replaced	In order to implement alternative improvements to shared use path, would likely make path more complex when compared to existing	Existing floating bridge may need to be replaced and extended, or replaced with a structure(s)/tunnel(s)
	Science Center Shared Use Path	Proposed	None	None	None	None	None
с	Anderson St. Shared Use Path	Changes Proposed	None	None	None	None	None
	Iona St. Shared Use Path	Proposed	Implement signal spot improvement in conjuction with alternative	None	Decreases difficulty due to ability to lump in aproach improvement with greater project	None	Signal poles for possible RRFB or full signalized intersection
	Idaho Canal Shared Use Path	Proposed	None	None	None	None	None
	Freeman Park Shared Use Paths	Existing	None	None	None	None	None
	Fremont Ave. Bike Lanes	Proposed	Opportunity to build/place start of bike lanes north of Highman St.	None	Decreases difficulty due to ability to lump in aproach improvement with greater project	None	None
	N 5th West Shared Use Path	Proposed	None	None	None	None	None
	65th North Shared Use Path	Proposed	None	None	None	None	None
	Riverview Dr. Signed Bike Route	Proposed	None	None	None	None	None
	Neighborhood, School, Park sidewalks	Existing	Opportunity to add sidewalk on Lindsey Blvd. north of US-20, as well as the west side of Fremont Ave. from Highman St. to Vissing St.	Temple View Elementary School would be largely impacted by alternative, including sidewalk, Colorado Ave. and the building itself - along with possible impacts to Antares Park	Temple View Elementary would likely need to be moved/shifted if alternative was put into place, as well as paths/sidewalks leading to school	Existing paths/sidewalks within footprint of proposed NB and SB direct ramps will need to be moved/realigned	Possibly new school building/structure

bility Matrix	Matrix		Calculated by:	BAF	Date:	2/28/2019	
			Checked by:	ccw	Date:	3/4/2019	
Alternative Improvement	Bike/Pedestrian Facility	Status	Facility Opportunities with Alternative	Facility Challenges with Alternative	Difficulty of Facility Implementation with Alternative	Difficulty of Traveling on Facility Through Alternative	Additional Structures Needed with Alternative
	Grandview Shared Use Path Extension to Snake River	Proposed	Facility could be built in conjuction with project alternative	Additional structure width needed for 12' path	Decreases difficulty east of I-15 to Snake River because alternative already requires new road/structure	Decreases intersection conflicts with bikes/peds, but alternative doesn't require new structure over I-15, which would cause difficulty in adding path to this section	Additional structure width needed for path
	Skyline Dr. Bike Lanes	Proposed	None	None	None	None	None
	Saturn Dr. Signed Bike Route	Proposed	Improve approach at Grandview intersection with alternative	None	Decreases difficulty due to ability to lump in aproach improvement with greater project	Decreases difficulty by reducing conflicts with cars coming off of existing SB off ramp	None
	West Snake River Shared Use Path	Existing south of US-20, Proposed north of US-20	Opportunity to build proposed shared use path approach with US-20, and improve existing US-20 approach in conjuction with alternative	Shared use path will need to cross under US-20 direct ramps over the river to the north	A tunnel or separate structure may need to be built, possibly along west bank of Snake River, to allow bikes/peds to cross under US-20	Tunnels/below grade crossings create a tighter travel space that feels less comfortable and can cause safety issues	Possible structure/tunnel under US-20
	East Snake River Shared Use Path	Existing south of railroad, Proposed north of railroad	Improve connection to West Snake River Shared Use Path and shared use path continuing to the east, as well as create more permanent crossing under US-20	Would need to realign path approaching Fremont Ave, as well as make sure path could cross under proposed interchange ramps	Would make it easier to implement more permanent crossing under US-20, but difficulty added in realigning path to Fremont Ave, as well making crossings possible under proposed ramps	If permanent crossing implemented under US-20, may make traveling on facility easier - though additional crossings under proposed ramps could cause complications - path would also have to pass through possible signalized intersection at Old US-20 and Fremont Ave.	Possible structure/tunnel under one of proposed interchange ramps
	Science Center Shared Use Path	Proposed	Shared use path to east of US-20 could be built in conjuction with alternative, as well as improved intersection approach at N Blvd.	Shared use path must cross proposed EB on and WB off ramps	Could make it easier since path could be built in conjuction with Science Center Dr reconstruction	Would have to come up with a way to safely cross the east on and off ramps of the proposed updated interchange	Possible tunnels under on and off ramps or MSE wall on north side of Science Center Dr. along interchange aproaches
D	Anderson St. Shared Use Path	Changes Proposed	Alternative shows proposed roadway reconstruction tying in just east of railroad crossing, could implement adding proposed bike path in conjuction with changes	None	Would make it easier to implement because path construction from N Blvd to east of railroad crossing could coincide with roadway reconstruction	None	None
	Iona St. Shared Use Path	Proposed	None	None	None	None	None
	Idaho Canal Shared Use Path	Proposed	None	None	None	None	None
	Freeman Park Shared Use Paths	Existing	None	Proposed roadway section connecting new full Y interchange to updated Science Center interchange will cut through park, and potentially sever existing shared use paths	Would have to implement crossings under US-20 and direct ramps in order to keep existing paths to south open and connected to those on the north side of proposed roadway	Could cut off south part of park from the northern section - park would likely have to decrease in size by rougly 1/3 if not connected under US-20	Possible structures/tunnels for shared us paths crossing under proposed roadway/interchange ramps
	Fremont Ave. Bike Lanes	Proposed	Opportunity to build proposed bike lanes between Science Center Dr. and Presto St.	None	Decreases difficulty due to ability to lump in aproach improvement with greater project	None	None
	N 5th West Shared Use Path	Proposed	None	None	None	None	None
	65th North Shared Use Path	Proposed	None	None	None	None	None
	Riverview Dr. Signed Bike Route	Proposed	None	None	None	None	None
	Neighborhood, School, Park sidewalks	Existing	Opportunity to add consistent sidewalk on Science Center Dr. from Fremont Ave to N Blvd	Mobility impacts to Temple View Elementary School with proposed footprint of SB frontage road running right over Colorado Ave. Possible impacts to Antares Park as well	Temple View Elementary would require additional roadway/sidewalk approaches leading up to it, along with not impacting school with SB frontage road	Would be hard to reach Temple View school in proposed alternate conditions without additional improvements	MSE wall along west side of SB frontage road

obility Matrix	Matrix		Calculated by: Checked by:	BAF CCW	Date: Date:	3/1/2019 3/4/2019	
Alternative Improvement	Bike/Pedestrian Facility	Status	Facility Opportunities with Alternative	Facility Challenges with Alternative	Difficulty of Facility Implementation with Alternative	Difficulty of Traveling on Facility Through Alternative	Additional Structures Needed with Alternative
	Grandview Shared Use Path Extension to Snake Proposed River		Facility could be built in conjuction with project alternative	Additional structure width needed for 12' path	Decreases difficulty - alternative already requires new road/structure from Saturn to Snake River	Decreases difficulty - facility could be built with project and would reduce intersection conflicts for bikes/peds	Additional structure width needed for path
	Skyline Dr. Bike Lanes	Proposed	None	None	None	None	None
	Saturn Dr. Signed Bike Route	Proposed	Improve approach at Grandview intersection with alternative	None	Decreases difficulty due to ability to lump in aproach improvement with greater project	Decreases difficulty by reducing conflicts with cars coming off of existing SB off ramp	None
	West Snake River Shared Use Path	Existing south of US-20, Proposed north of US-20	Opportunity to build proposed shared use path approach with US-20, and improve existing US-20 approach in conjuction with alternative	Shared use path will need to cross over or under US-20, as well as proposed new river crossing and direct ramps	Structures/tunnels, or floating bridges, may need to be built along west bank of Snake River to allow bikes/peds to cross under US-20 as well as proposed new river crossing and direct ramps	Tunnels/below grade crossings create a tighter travel space that feels less comfortable and can cause safety issues	Possible structures/tunnels or floating bridges under US-20 and proposed new river crossing and direct ramps
	East Snake River Shared Use Path	Existing south of railroad, Proposed north of railroad	Improve connection to West Snake River Shared Use Path and shared use path continuing to the east, as well as create more permanent crossing under US-20	Path will need a way to cross under the proposed new roadway river crossing and direct ramps	Would make it easier to implement more permanent crossing under US-20, but difficulty added in making crossings possible under proposed direct ramps and river crossing	See above reasons/issues, though possible more permanent crossing under US-20 could make traveling along facility easier in that section. Path would also have to pass through possible signalized intersection at Old US-20 and Fremont Ave.	Possible structure/tunnel under US-20, as well as structures/tunnels or floating bridge under proposed river crossing and direct ramps
-	Science Center Shared Use Path	Proposed	Shared use path to east of US-20 could be built in conjuction with alternative, as well as improved intersection approach at N Blvd.	Shared use path must cross proposed EB on and WB off ramps	Could make it easier since path could be built in conjuction with Science Center Dr reconstruction	Would have to come up with a way to safely cross the east on and off ramps of the proposed updated interchange	Possible structures/tunnels under on and off ramps, or MSE wall on north side of Science Center Dr. along interchange aproaches
E	Anderson St. Shared Use Path	Changes Proposed	Alternative shows proposed roadway reconstruction tying in just east of railroad crossing, could implement adding proposed bike path in conjuction with changes	None	Would make it easier to implement because path construction from N Blvd to east of railroad crossing could coincide with roadway reconstruction	None	None
	Iona St. Shared Use Path	Proposed	None	None	None	None	None
	Idaho Canal Shared Use Path	Proposed	None	None	None	None	None
	Freeman Park Shared Use Paths	Existing	None	None	None	None	None
	Fremont Ave. Bike Lanes	Proposed	Opportunity to build approach/connection to proposed bike lanes beginning at Higham St.	None	Decreases difficulty due to ability to lump in aproach improvement with greater project	None	None
	N 5th West Shared Use Path	Proposed	None	None	None	None	None
	65th North Shared Use Path	Proposed	None	None	None	None	None
	Riverview Dr. Signed Bike Route	Proposed	None	None	None	None	None
	Neighborhood, School, Park sidewalks	Existing	Opportunity to add consistent sidewalk on Science Center Dr. from Fremont Ave. to N Blvd.	Mobility impacts to Temple View Elementary School with proposed footprint of SB frontage road running right over Colorado Ave Possible impacts to Antares Park as well	Temple View Elementary would require additional roadway/sidewalk approaches leading up to it, along with not impacting school with SB frontage road	Would be hard to reach Temple View school in proposed alternate conditions without additional improvements	MSE wall along west side of the SB frontage road connecting Grandview to Broadway

lobility Matrix	Matrix		Calculated by: Checked by:	BAF CCW	Date: Date:	3/1/2019 3/4/2019	
Alternative Improvement	Bike/Pedestrian Facility	Status	Facility Opportunities with Alternative	Facility Challenges with Alternative	Difficulty of Facility Implementation with Alternative	Difficulty of Traveling on Facility Through Alternative	Additional Structures Needed with Alternative
	Grandview Shared Use Path Extension to Snake River	Proposed	Facility could be built in conjuction with project alternative	Additional structure width needed for 12' path	Decreases difficulty - alternative already requires new road/structure from Saturn to Snake River	Decreases difficulty - facility could be built with project and would reduce intersection conflicts for bikes/peds	Additional structure width needed for path
	Skyline Dr. Bike Lanes	Proposed	None	None	None	None	None
	Saturn Dr. Signed Bike Route	Proposed	Improve approach at Grandview intersection with alternative	None	Decreases difficulty due to ability to lump in aproach improvement with greater project	Decreases difficulty by reducing conflicts with cars coming off of existing SB off ramp	None
	West Snake River Shared Use Path	Existing south of US-20, Proposed north of US-20	Opportunity to build proposed shared use path approach with US-20, and improve existing US-20 approach in conjuction with alternative	Shared use path will need to cross under proposed US-20 NB/EB and ramp from Fremont Ave. to Exit 119, as well as proposed new river crossings	Structures/tunnels, or floating bridges, may need to be built, along west bank of Snake River, to allow bikes/peds to cross under NB/EB US-20 and Fremont Ave. connection	Tunnels/below grade crossings create a tighter travel space that feels less comfortable and can cause safety issues	Possible structures/tunnels or floating bridges under NB/EB US-20 and Fremont Ave. connection
	East Snake River Shared Use Path	Existing south of railroad, Proposed north of railroad	Improve connection to West Snake River Shared Use Path and shared use path continuing to the east, create more permanent crossing under US-20, connect existing path to proposed Fremont Ave. bike lanes	Path will need a way to cross under the proposed new river crossings	Would make it easier to implement more permanent crossing under US-20, but difficulty added in making crossings possible under new river crossings	See above reasons/issues, though possible more permanent crossing under US-20 could make traveling along facility easier in that section	Possible structures/tunnels or floating bridges under NB/EB US-20, as well as proposed river crossing
	Science Center Shared Use Path	Proposed	Shared use path to east of US-20 could be built in conjuction with alternative, as well as improved intersection approach at N Blvd.	Shared use path must cross proposed EB on and WB off ramps	Could make it easier since path could be built in conjuction with Science Center Dr reconstruction	Would have to come up with a way to safely cross the east on and off ramps of the proposed updated interchange	Possible tunnels under on and off ramps, or MSE wall on north side of Science Center Dr. along interchange aproaches
F	Anderson St. Shared Use Path	Changes Proposed	Alternative shows proposed roadway reconstruction tying in just east of railroad crossing, could implement adding proposed bike path in conjuction with changes	None	Would make it easier to implement because path construction from N Blvd to east of railroad crossing could coincide with roadway reconstruction	None	None
	lona St. Shared Use Path	Proposed	Implement signal spot improvement in conjuction with alternative	None	Decreases difficulty due to ability to lump in aproach improvement with greater project	None	Signal poles for possible RRFB or full signalized intersection
	Idaho Canal Shared Use Path	Proposed	None	None	None	None	None
	Freeman Park Shared Use Paths	Existing	None	Proposed realigned SB US-20 and I-15 NB on ramp would run right on the south side of the Freeman Park, and the existing shared use paths	Would have to implement below grade crossings in order to keep existing paths to south open and connected to those on the north side of proposed roadways	Would cut off south part of park from the northern section - park would likely have to decrease in size by rougly 1/3	Possible tunnels for shared use paths crossing under proposed roadway/interchange ramps
	Fremont Ave. Bike Lanes	Proposed	Opportunity to build bike lanes beginning at Higham St. and ending to the north around the railroad crossing	None	Decreases difficulty due to ability to lump in aproach improvement with greater project	None	None
	N 5th West Shared Use	Proposed	None	None	None	None	None
	65th North Shared Use	Proposed	None	None	None	None	None
	Riverview Dr. Signed Bike Route	Proposed	None	None	None	None	None
	Neighborhood, School, Park sidewalks	Existing	Opportunity to add consistent sidewalk on Science Center Dr. from Fremont Ave. to N Blvd.	Large impacts to Antares Park, Temple View Elementary School and Colorado Ave proposed merge point of SB US-20 & I-15 is located directly in front of the school	School and park would likely have to be moved/relocated/closed	Would be hard to reach Temple View school in proposed alternate conditions without additional improvements	MSE wall along west side of the SB US-20

ility Matrix	Aatrix		Calculated by: BAF Checked by: CCW		Date: Date:	3/1/2019 3/4/2019	
Alternative Improvement	Bike/Pedestrian Facility	Status	Facility Opportunities with Alternative	Facility Challenges with Alternative	Difficulty of Facility Implementation with Alternative	Difficulty of Traveling on Facility Through Alternative	Additional Structures Needed with Alternative
	Grandview Shared Use Path Extension to Snake River	Indiview Shared Use Extension to Snake RiverProposedFacility could be built in conjunction with project alternative, Old US-20 becomes local street, more width for other modesCoordinate with at-grade improvements, allocate space on existing John's Hole bridge or add more widthSeparate from I-15 and US-20 project, may be implemented by City separatelyD		Decreases difficulty - facility could be built with project and would reduce intersection conflicts for bikes/peds	Additional structure width needed for path		
	Skyline Dr. Bike Lanes	Proposed	None	None	None	None	None
	Saturn Dr. Signed Bike Route	Proposed	None	None	None	None	None
	West Snake River Shared Use Path	Existing south of US-20, Proposed north of US-20	Opportunity to build shared use path along/under proposed new river crossings in alternative	Path will need a way to cross under the proposed new river crossings	Decreases difficulty due to ability to lump in path construction with greater project	None	None
	East Snake River Shared Use Path	Existing south of railroad, Proposed north of railroad	Opportunity to build shared use path along/under proposed new river crossings in alternative	Path will need a way to cross under the proposed new river crossings, as well as cross/pass through at-grade intersection	Decreases difficulty due to ability to lump in path construction with greater project	Path would have to pass through possible signalized intersection at Old US-20 and Fremont Ave.	None
	Science Center Shared Use Path	Proposed	Approaches of shared use path to proposed at-grade intersection of Old US- 20 & Science Center Dr. could be built in conjuction with alernative	Shared use path must cross/pass through at-grade intersection	Approaches of path could be easy to build in association with the conversion of the junction to an at-grade intersection	Path may have to pass through signalized intersection at Old US-20 and Science Center Dr.	None
G	Anderson St. Shared Use Path	Changes Proposed	None	None	None	None	None
	Iona St. Shared Use Path	Proposed	None	None	None	None	None
	Idaho Canal Shared Use Path	Proposed	None	None	None	None	None
	Freeman Park Shared Use Paths	Existing	None	None	None	None	None
	Fremont Ave. Bike Lanes	Proposed	Roughly quarter mile section of proposed bike lanes, starting at Pemero Dr. and continuing south, could be built in conjuction with alternative	None	Decreases difficulty due to ability to lump in improvement with greater project	None	None
	N 5th West Shared Use Path	Proposed	None	None	None	None	None
	65th North Shared Use Path	Proposed	None	None	None	None	None
	Riverview Dr. Signed Bike Route	Proposed	None	None	None	None	None
	Neighborhood, School, Park sidewalks	Existing	Opportunity to add sidewalk along Lewisville Hwy. north of existing US-20 and N 15th south of existing US-20	None	None	None	None

obility Matrix			Calculated by: Checked by:	BAF CCW	Date: Date:	3/1/2019 3/4/2019	
Alternative Improvement	Bike/Pedestrian Facility	Status	Facility Opportunities with Alternative	Facility Challenges with Alternative	Difficulty of Facility Implementation with Alternative	Difficulty of Traveling on Facility Through Alternative	Additional Structures Needed with Alternative
	Grandview Shared Use Path Extension to Snake River		Facility could be built in conjunction with project alternative, Old US-20 becomes local street, more width for other modes	Coordinate with at-grade improvements, allocate space on existing John's Hole bridge or add more width	Separate from I-15 and US-20 project, may be implemented by City separately	Decreases difficulty - facility could be built with project and would reduce intersection conflicts for bikes/peds	Additional structure width needed for path
	Skyline Dr. Bike Lanes	Proposed	None	None	None	None	None
	Saturn Dr. Signed Bike Route	Proposed	None	None	None	None	None
	West Snake River Shared Use Path	Existing south of US-20, Proposed north of US-20	Opportunity to build shared use path along/under proposed new river crossings in altenative	Path will need a way to cross under the proposed new river crossings	Decreases difficulty due to ability to lump in path construction with greater project	None	None
	East Snake River Shared Use Path	Existing south of railroad, Proposed north of railroad	Opportunity to build shared use path along/under proposed new river crossings in altenative	Path will need a way to cross under the proposed new river crossings, as well as cross/pass through at-grade intersection	Decreases difficulty due to ability to lump in path construction with greater project	Path would have to pass through possible signalized intersection at Old US-20 and Fremont Ave.	None
	Science Center Shared Use Path	Proposed	Approaches of shared use path to proposed at-grade intersection of Old US- 20 & Science Center Dr. could be built in conjuction with alernative	Shared use path must cross/pass through at-grade intersection	Approaches of path could be easy to build in association with the conversion of the junction to an at-grade intersection	Path may have to pass through signalized intersection at Old US-20 and Science Center Dr.	None
	Anderson St. Shared Use Path	Changes Proposed	None	None	None	None	None
н	Iona St. Shared Use Path	Proposed	None	None	None	None	None
	Idaho Canal Shared Use Path	Proposed	None	None	None	None	None
	Freeman Park Shared Use Paths	Existing	None	None	None	None	None
	Fremont Ave. Bike Lanes	Proposed	Roughly quarter mile section of proposed bike lanes, starting at Pemero Dr. and continuing south, could be built in conjunction with at grade intersection alternative	None	Decreases difficulty due to ability to lump in improvement with greater project	None	None
	N 5th West Shared Use Path	Proposed	None	None	None	None	None
	65th North Shared Use Path	Proposed	None	None	None	None	None
	Riverview Dr. Signed Bike Route	Proposed	None	None	None	None	None
	Neighborhood, School, Park sidewalks	Existing	Opportunity to add sidewalk along Lewisville Hwy. north of existing US-20 and N 15th south of existing US-20, and along E 49th N in front of Telford Academy (public school)	None	None	None	None

obility Matrix			Calculated by: Checked by:	BAF CCW	Date: Date:	3/1/2019 3/4/2019	
Alternative Improvement	Bike/Pedestrian Facility	Status	Facility Opportunities with Alternative	Facility Challenges with Alternative	Difficulty of Facility Implementation with Alternative	Difficulty of Traveling on Facility Through Alternative	Additional Structures Needed with Alternative
	Grandview Shared Use Path Extension to Snake River	Proposed	Facility could be built in conjunction with project alternative, Old US-20 becomes local street, more width for other modes	Coordinate with at-grade improvements, allocate space on existing John's Hole bridge or add more width	Separate from I-15 and US-20 project, may be implemented by City separately	Decreases difficulty - facility could be built with project and would reduce intersection conflicts for bikes/peds	Additional structure width needed for path
	Skyline Dr. Bike Lanes	Proposed	None	None	None	None	None
	Saturn Dr. Signed Bike Route	Proposed	None	None	None	None	None
	West Snake River Shared Use Path	Existing south of US-20, Proposed north of US-20	Opportunity to build shared use path along/under proposed new river crossings in alternative	Path will need a way to cross under the proposed new river crossings	Decreases difficulty due to ability to lump in path construction with greater project	Possible tunnels/below grade crossings create a tighter travel space that feels less comfortable and can cause safety issues	Possible structures/tunnels under proposed river crossings, though crossing will likely require long above grade bridge spans that would provide clearance
	East Snake River Shared Use Path	Existing south of railroad, Proposed north of railroad	Opportunity to build shared use path along/under proposed new river crossings in altenative	Path will need a way to cross under the proposed new river crossings, as well as cross/pass through at-grade intersection	Decreases difficulty due to ability to lump in path construction with greater project	Possible tunnels/below grade crossings create a tighter travel space that feels less comfortable and can cause safety issues - Path would also have to pass through possible signalized intersection at Old US- 20 and Fremont Ave.	Possible structures/tunnels under proposed river crossings, though crossing will likely require long above grade bridge spans that would provide clearance
1	Science Center Shared Use Path	Proposed	Approaches of shared use path to proposed at-grade intersection of Old US- 20 & Science Center Dr. could be built in conjuction with alernative	Shared use path must cross/pass through at-grade intersection	Approaches of path could be easy to build in association with the conversion of the junction to an at-grade intersection	Path may have to pass through signalized intersection at Old US-20 and Science Center Dr.	None
	Anderson St. Shared Use Path	Changes Proposed	None	None	None	None	None
	Iona St. Shared Use Path	Proposed	None	None	None	None	None
	Idaho Canal Shared Use Path	Proposed	None	None	None	None	None
	Freeman Park Shared Use Paths	Existing	None	None	None	None	None
	Fremont Ave. Bike Lanes	Proposed	Roughly quarter mile section of proposed bike lanes, starting at Pemero Dr. and continuing south, could be built in conjuction with alternative	None	Decreases difficulty due to ability to lump in improvement with greater project	None	None
	N 5th West Shared Use Path	Proposed	None	None	None	None	None
	65th North Shared Use Path	Proposed	None	None	None	None	None
	Riverview Dr. Signed Bike Route	Proposed	None	None	None	None	None
	Neighborhood, School, Park sidewalks	Existing	Opportunity to add sidewalk along Lewisville Hwy. north of existing US-20 and N 15th south of existing US-20	None	None	None	None

lity Matrix	/ Matrix		Calculated by:	BAF	Date:	3/1/2019	
			checked by.				
Alternative Improvement	Bike/Pedestrian Facility	Status	Facility Opportunities with Alternative	Facility Challenges with Alternative	Difficulty of Facility Implementation with Alternative	Difficulty of Traveling on Facility Through Alternative	Additional Structures Needed with Alternative
	Grandview Shared Use Path Extension to Snake River	Proposed	Facility could be built in conjuction with project alternative	Additional structure width needed for 12' path	Decreases difficulty - alternative already requires new road/structure from Saturn to Snake River	Decreases difficulty - facility could be built with project and would reduce intersection conflicts for bikes/peds	Additional structure width needed for path
	Skyline Dr. Bike Lanes	Proposed	None	None	None	None	None
	Saturn Dr. Signed Bike Route	Proposed	Improve approach at Grandview intersection with alternative	None	Decreases difficulty due to ability to lump in aproach improvement with greater project	Facility currently does not exist, opportunity to improve with alternative	None
	West Snake River Shared Use Path	Existing south of US-20, Proposed north of US-20	Opportunity to build proposed shared use path approach with realigned I-15, and improve current approach south of existing US-20	Shared use path will need to cross under realigned I-15, direct ramp (connecting Lindsey to US-20), as well as realigned section of I-15 to the north	Structures/tunnels, or floating bridges, may need to be built to allow bikes/peds to cross realigned segments of I-15 and direct ramp	Tunnels/below grade crossings create a tighter travel space that feels less comfortable and can cause safety issues	Possible structures/tunnels or floating bridges under realigned I-15 and direct ramp
	East Snake River Shared Use Path	Existing south of railroad, Proposed north of railroad	Improve connection to West Snake River Shared Use Path and shared use path continuing to the east, as well as create more permanent crossing realigned I-15 (existing US-20)	Shared use path will need to cross under proposed direct ramp (connecting Lindsey to US-20), as well as realigned section of I- 15 to the north	Would make it easier to implement more permanent crossing under existing US-20, but difficulty added in additional needed crossings	See above reasons/issues, though possible more permanent crossing under existing US-20 could make traveling along facility easier in that section	Possible structures/tunnels or floating bridges under realigned I-15 and direct ramp
	Science Center Shared Use Path	Proposed	Shared use path could be built along with needed improvements to railroad and Science Center Dr. with proposed I-15 and US-20 realignments	None	None	None	None
L	Anderson St. Shared Use Path	Changes Proposed	None	None	None	None	None
	Iona St. Shared Use Path	Proposed	None	None	None	None	None
	Idaho Canal Shared Use Path	Proposed	None	None	None	None	None
	Freeman Park Shared Use Paths	Existing	None	None	None	None	None
	Fremont Ave. Bike Lanes	Proposed	Build section of bike lanes south of 33rd N with needed improvements to Fremont Ave. with proposed I-15 realignment	None	Decreases difficulty due to ability to lump in improvement with greater project	None	None
	N 5th West Shared Use Path	Proposed	None	None	None	None	None
	65th North Shared Use Path	Proposed	None	None	None	None	None
	Riverview Dr. Signed Bike Route	Proposed	None	None	None	None	None
	Neighborhood, School, Park sidewalks	Existing	None	Temple View Elementary School could be largely impacted by alternative, including sidewalk, Colorado Ave. and possibly the building itself	Temple View Elementary would require modified/additional roadway/sidewalk approaches leading up to it, along with mitigating impacts to school building with alternative	Would be hard to reach Temple View school in proposed alternate conditions without additional improvements	MSE wall along west side of realigned I-15

y Matrix	Matrix		Calculated by: Checked by:	Calculated by: BAF Checked by: CCW		3/1/2019 3/4/2019	
Alternative Improvement	Bike/Pedestrian Facility	Status	Facility Opportunities with Alternative	Facility Challenges with Alternative	Difficulty of Facility Implementation with Alternative	Difficulty of Traveling on Facility Through Alternative	Additional Structures Needed with Alternative
	Grandview Shared Use Path Extension to Snake River	Proposed	Facility could be built in conjunction with project alternative, Old US-20 becomes local street, more width for other modes	Coordinate with at-grade improvements, allocate space on existing John's Hole bridge or add more width	Separate from I-15 and US-20 project, may be implemented by City separately	Decreases difficulty - facility could be built with project and would reduce intersection conflicts for bikes/peds	Additional structure width needed for path
	Skyline Dr. Bike Lanes	Proposed	None	None	None	None	None
	Saturn Dr. Signed Bike Route	Proposed	None	None	None	None	None
	West Snake River Shared Use Path	Existing south of US-20, Proposed north of US-20	None	None	None	None	None
	East Snake River Shared Use Path	Existing south of railroad, Proposed north	None	Path will need to cross/pass through at- grade intersection	Decreases difficulty due to ability to lump in path construction with greater project	Path would have to pass through possible signalized intersection at Old US-20 and Fremont Ave.	None
	Science Center Shared Use Path	Proposed	Approaches of shared use path to proposed at-grade intersection of Old US- 20 & Science Center Dr. could be built in conjuction with alternative	Shared use path must cross/pass through at-grade intersection	Approaches of path could be easy to build in association with the conversion of the junction to an at-grade intersection	Path may have to pass through signalized intersection at Old US-20 and Science Center Dr.	None
К	Anderson St. Shared Use Path	Changes Proposed	None	None	None	None	None
	Iona St. Shared Use Path	Proposed	None	None	None	None	None
	Idaho Canal Shared Use Path	Proposed	None	None	None	None	None
	Freeman Park Shared Use Paths	Existing	None	None	None	None	None
	Fremont Ave. Bike Lanes	Proposed	None	None	None	None	None
	N 5th West Shared Use Path	Proposed	None	None	None	None	None
	65th North Shared Use Path	Proposed	None	None	None	None	None
	Riverview Dr. Signed Bike Route	Proposed	None	None	None	None	None
	Neighborhood, School, Park sidewalks	Existing	None	None	None	None	None



	Needs,				Environment	tal Resources		
	Goals, and		Section 4(f)	Hazardous Materials	Wetland Impacts	Biological Resources	Noise	Enviro
Alternative	Objectives	Level 2 Criteria Questions	Comments	Comments	Comments	Comments	Comments	Comments
в	Environmental	Will the environmental impacts require additional agency approvals	11 impacts to structures >50 yrs plus "half 1970 condos @ Vega Cir. 2 rec impacts (greenbelt + boat dock) 1 potential rec impact (datacc)	May have to coordinate with IDEQ on sites to be encroached	2 new river crossings 2 new Porter Canal crossings	Impacts to migratory bird or raptor species in river corridor will require coordination with USFWS and/or IDFG. Yellow- billed cuckoo (listed threatened) thought to be outside project area, but confirmedities with the convision	1 likely neighborhood impact 1 possible neighborhood impact 1 likely school impact 1 jusely park impact 1 possible park impact 1 possible work impact	Approx. 14 res. displacements Plus ~2/3 condos at Vega Cir. Approx. 11 bus. Displacements 1. schend direalexement
в	Environmental	Does the alternative create any problematic or unmitigatable impacts to environmental resources?	Rec impacts could be de minimis if rec features not diminished Historic impact extent not yet known	2 impacts to closed LUSTs 1 impact to RCRA site	No wetland mitigation bank available; mitigation will take time and resources	New river crossings may impact bird habitat.	Few noise impacts to 1-2 house groups that would likely be unmitigatable	School has high minority and low-income enrollment
В	Environmental	Does the alternative provide enhancement to local environmental resources?	Possible enhanced greenbelt connectivity to US-20	No haz mat enhancements	No wetland enhancements	No enhancements to biological resources	No noise enhancements	Enhanced bicycle/ped connectivity
c	Environmental	Will the environmental impacts require additional agency approvals or permits?	16 impacts to structures >50 yrs plus "half 1970 condos @ Vega Cir. 2 rec impacts (greenbelt + boat dock) 1 potential rec impact (Antares)	May have to coordinate with IDEQ on sites to be encroached upon	3 new river crossings 3 new Forter Canal crossings Will require louit permit	Impacts to migratory bird or raptor species in river corridor will require coordination with USFWS and/or IDFG. Yellow- billed cuckoo (listed threatened) thought to be outside project area, but confirmation may be required.	3 likely neighborhood impacts 1 possible neighborhood impact 1 likely school impact 1 likely park impact 1 possible park impact 1 possible park impact	Approx. 25 res. displacements Plus ~2/3 condos at Vega Cir. Possible RV Park impact Approx. 13 bus. Displacements 1 school displacement
с	Environmental	Does the alternative create any problematic or unmitigatable imaacts to environmental resources?	Rec impacts could be de minimis if rec features not diminished Historic impact extent not yet known	1 impacts to closed LUSTs 1 impact to RCRA site	No wetland mitigation bank available; mitigation will take time and resources	New river crossings may impact bird habitat.	Few noise impacts to 1-2 house groups that would likely be unmitizatable	School has high minority and low-income enrollment
с	Environmental	Does the alternative provide enhancement to local environmental resources?	Possible enhanced greenbelt connectivity to US-20	No haz mat enhancements	No wetland enhancements	No enhancements to biological resources	No noise enhancements	Enhanced bicycle/ped connectivity
D	Environmental	Will the environmental impacts require additional agency approvals or permits ²	15 impacts to structures >50 yrs plus "third 1970 condos @ Vega Cir. 1 impact to Airport Hist. Dist. 3 rec impacts (Russ Freeman + greenbelt + boat dock) 1 potential rec impact (antares)	May have to coordinate with IDEQ on sites to be encroached	4 new river crossings 4 new Porter Canal crossings 1 large embankment in canal 1 new Willow Creek crossing Will require light nermit	Impacts to migratory bird or raptor species in river corridor will require coordination with USFWS and/or IDFG. Yellow- billed cuckoo (listed threatened) thought to be outside project area, but confirmation may be required	3 likely neighborhood impacts 1 possible neighborhood impact 1 likely school impact 2 likely park impacts 1 possible park impact 2 likely church impacts 1 onssible church impacts	Approx. 30 res. displacements Plus ~1/2 condos at Vega Cir. And 1/3 apts on Jefferson Approx. 15 bus. Displacement 1 school displacement 2 church displacements
D	Environmental	Does the alternative create any problematic or unmitigatable impacts to environmental resources?	Major impacts to Russ Freeman Park and Airport Hist. Dist have to show no feasible/ prudent alternative Greenbelt/boat doc impacts could be de minimis if rec features not diminished Historic impact extent not yet known	1 impacts to closed LUSTs 6 impacts to RCRA sites	No wetland mitigation bank available; mitigation will take time and resources	New river crossings may impact bird habitat.	Few noise impacts to 1-2 house groups that would likely be unmitigatable	School has high minority and low-income enrollment
D	Environmental	Does the alternative provide enhancement to local environmental resources?	Major impact to Russ Freeman Park and Airport Hist. Dist.	No haz mat enhancements	No wetland enhancements	No enhancements to biological resources	No noise enhancements	Enhanced bicycle/ped connectivity
E	Environmental	Will the environmental impacts require additional agency approvals or permits?	17 impacts to structures >50 yrs plus "half 1970 condos @ Vega Cir. 2 rec impacts (Antares, greenbelt) 1 potential rec impact (boat dock)	May have to coordinate with IDEQ on sites to be encroached upon	3 new river crossings 3 new Porter Canal crossings 1 large embankment in canal Will require joint permit	Impacts to migratory bird or raptor species in river corridor will require coordination with USFWS and/or IDFG. Yellow- billed cuckoo (listed threatened) thought to be outside project area, but confirmation may be required.	3 likely neighborhood impacts 1 possible neighborhood impact 1 likely school impact 1 likely park impact 1 possible park impact	Approx. 15 res. displacements Plus ~2/3 condos at Vega Cir. And 2/3 of RV Park Approx. 16 bus. Displacements
E	Environmental	Does the alternative create any problematic or unmitigatable impacts to environmental resources?	As currently drawn, impact to Antares not de minimis - have to show no feasible/ prudent alternative Greenbelt/boat doc impacts could be de minimis if rec features not diminished Historic impact extent not yet known	1 impacts to closed LUSTs 6 impacts to RCRA sites	No wetland mitigation bank available; mitigation will take time and resources	New river crossings may impact bird habitat.	Few noise impacts to 1-2 house groups that would likely be unmitigatable	Alternative as drawn appears to skirt the school
E	Environmental	Does the alternative provide enhancement to local environmental resources?	If impacts to Antares reduced to de minimis, possible enhanced greenbelt connectivity to US-20	No haz mat enhancements	No wetland enhancements	No enhancements to biological	No noise enhancements	Enhanced bicycle/ped

	Needs,		Environmental Resources					
	Goals, and		Section 4(f)	Hazardous Materials	Wetland Impacts	Biological Resources	Noise	Enviro
Alternative	Objectives	Level 2 Criteria Questions	Comments	Comments	Comments	Comments	Comments	Comments
F	Environmental	Will the environmental impacts require additional agency approvals or permits?	16 impacts to structures >50 yrs plus "half 1970 condos @ Vega Cir. 1 impact to Airport Hist. Dist. 4 rec impacts (Russ Freeman + Antares + greenbelt + boat dock)	May have to coordinate with IDEQ on sites to be encroached upon	4 new river crossings 4 new Porter Canal crossings 1 large embankment in canal 1 new Willow Creek crossing Will require joint permit	Impacts to migratory bird or raptor species in river corridor will require coordination with USFWS and/or IDFG. Yellow- billed cuckoo (listed threatened) thought to be outside project area, but confirmation may be required.	2 likely neighborhood impacts 2 possible neighborhood impacts 1 likely school impact 3 likely park impacts	Approx. 26 res. displacements Plus ~2/3 condos at Vega Cir. Approx. 23 bus. Displacement 1 school displacement 1 church displacement
F	Environmental	Does the alternative create any problematic or unmitigatable impacts to environmental resources?	Major impacts to Russ Freeman Park, Antares Park, and Airport Hist. Dist have to show no feasible/ prudent alternative. Greenbelt/boat doc impacts could be de minimis if rec features not diminished Historic impact extent not yet known	1 impacts to closed LUSTs 5 impacts to RCRA sites	No wetland mitigation bank available; mitigation will take time and resources	New river crossings may impact bird habitat.	Few noise impacts to 1-2 house groups that would likely be unmitigatable	School has high minority and low-income enrollment
F	Environmental	Does the alternative provide enhancement to local environmental	Major impact to Russ Freeman Park, Antares Park, and Airport			No enhancements to biological		Enhanced bicycle/ped
		resources?	Hist. Dist.	No haz mat enhancements	No wetland enhancements	resources	No noise enhancements	connectivity
G	Environmental	Will the environmental impacts require additional agency approvals or permits?	6 impacts to structures >50 yrs No rec impacts	May have to coordinate with IDEQ on sites to be encroached upon	4 new river crossings 1 new Idaho Canal crossing 1 new Willow Creek crossing Will require joint permit	Impacts to migratory bird or raptor species in river corridor will require coordination with USFWS and/or IDFG. Vellow- billed cuckoo (listed threatened) thought to be outside project area, but confirmation may be required.	1 likely neighborhood impact	Approx. 5 res. displacements Approx. 2 bus. displacements
G	Environmental	Does the alternative create any problematic or unmitigatable impacts to environmental resources?	No rec impacts Historic impact extent not yet known	1 Brownfields impact (Snake R. Animal Shelter) 1 SWLF impact (Hatch Pit)	No wetland mitigation bank available; mitigation will take time and resources	New river crossings may impact bird habitat.	Some noise impacts to 1-2 house groups that would likely be unmitigatable	
G	Environmental	Does the alternative provide enhancement to local environmental resources?	No enhancements to 4(f) resources	No haz mat enhancements	No wetland enhancements	No enhancements to biological resources	No noise enhancements	
н	Environmental	Will the environmental impacts require additional agency approvals or eremits?	10 impacts to structures >50 yrs No rer impacts	May have to coordinate with IDEQ on sites to be encroached	2 new river crossings 1 new Idaho Canal crossing 1 new Willow Creek crossing Will require loint permit	Impacts to migratory bird or raptor species in river corridor will require coordination with USFWS and/or IDFG. Yellow- billed cuckoo (listed threatened) thought to be outside project area, but confirmation may be required.	1 likely neighborhood impact	Approx. 8 res. displacements Approx. 7 hus. displacements
н	Environmental	Does the alternative create any problematic or unmitigatable impacts to environmental resources?	No rec impacts Historic impact extent not yet known	2 impacts to RCRA sites 1 SWLF impact (Hatch Pit)	No wetland mitigation bank available; mitigation will take time and resources	New river crossings may impact bird habitat.	Many noise impacts to 1-2 house groups that would likely be unmitigatable	
н	Environmental	Does the alternative provide enhancement to local environmental resources?	No enhancements to 4(f) resources	No haz mat enhancements	No wetland enhancements	No enhancements to biological resources	No noise enhancements	
I	Environmental	Will the environmental impacts require additional agency approvals or permits?	15 impacts to structures >50 yrs incl 1890 homestead at Sunnyide int. 1 impact to Airport Hist. Dist. No rec impacts	May have to coordinate with IDEQ on sites to be encroached upon	3 new river crossings 1 new Idaho Canal crossing 1 new Villow Creek crossing Will require joint permit	Impacts to migratory bird or raptor species in river corridor will require coordination with USFWS and/or JDFG. Yellow- billed cuckoo (listed threatened) thought to be outside project area, but confirmation may be required.	1 likely neighborhood impact	Alignment appears off, but estimated approx. 18 res. displacements.
I	Environmental	Does the alternative create any problematic or unmitigatable impacts to environmental resources?	No rec impacts Historic impact extent not yet known	1 Brownfields impact (Snake R. Animal Shelter) 2 SWLF impacts (Hansen Farms, Hatch Pit)	No wetland mitigation bank available; mitigation will take time and resources	New river crossings may impact bird habitat.	Many noise impacts to 1-2 house groups that would likely be unmitigatable	
I	Environmental	Does the alternative provide enhancement to local environmental resources?	No enhancements to 4(f) resources	No haz mat enhancements	No wetland enhancements	No enhancements to biological resources	No noise enhancements	
ſ	Environmental	Will the environmental impacts require additional agency approvals or permits?	22 impacts to structures >50 yrs plus possible impacts to 1970 condos @ Vega Cir. 2 rec impacts (greenbelt + bote dock) Ber impacts could be de	May have to coordinate with IDEQ on sites to be encroached upon	1 new river crossing 3 new Willow Creek crossings Will require joint permit	Impacts to migratory bird or raptor species in river corridor will require coordination with US/WS and/or IDFG. Yellow- billed cuckoo (listed threatened) thought to be outside project area, but confirmation may be required.	3 likely neighborhood impacts 0 possible neighborhood impact 1 likely school impact 0 likely park impact 2 possible park impacts 3 likely church impacts 0 possible church impact	Alignment appears off, but estimated approx. 10 res. displacements and 2 bus. Displacements
J	Environmental	Does the alternative create any problematic or unmitigatable impacts to environmental resources? Does the alternative created	minimis if rec features not diminished Historic impact extent not yet known	1 impacts to closed LUSTs 2 impacts to RCRA sites	No wetland mitigation bank available; mitigation will take time and resources	New river crossings may impact bird habitat.	Many noise impacts to 1-2 house groups that would likely be unmitigatable	
J	Environmental	enhancement to local environmental resources?	Possible enhanced greenbelt connectivity to US-20	No haz mat enhancements	No wetland enhancements	No enhancements to biological resources	No noise enhancements	

Needs,			Level 2 Responses				
Goals, and			Public Opinion/Support Risk	Enviro Justice/Neighborhood			
Alternative	Objectives	Level 2 Criteria Questions	Comments	Comments			
В	PI	Do we anticipate issues with the public due to impacts of this alternative?	The number of displacements could raise the level of controversy and risk of having to go to condemnation to acquire what's needed for construction. It is hard to determine the exact risk without talking to the individuals who would be displaced.	Approx. 14 res. displacements Plus ~2/3 condos at Vega Cir. Approx. 11 bus. Displacements 1 school displacement			
C	PI	Do we anticipate issues with the public due to impacts of this alternative?	The number of displacements could raise the level of controversy and possibly condemnation to acquire what's needed for construction. On going public outreach with individuals who would be displaced will help with quantifying the controversy. The school displacement is one of the more severe impacts that could ignite public controversy. If the school was displaced, a new facitly would be needed.	Approx. 25 res. displacements Plus ~2/3 condos at Vega Cir. Possible RV Park impact Approx. 13 bus. Displacements 1 school displacement			
D	PI	Do we anticipate issues with the public due to impacts of this alternative?	Highest number of business and residential replacements. Raises risk of having to go to condemnation. School and church displacements are complicating factors and could lead to petitions etc.	Approx. 30 res. displacements Plus ~1/2 condos at Vega Cir. And 1/3 apts on Jefferson Approx. 15 bus. Displacements 1 school displacement 2 church displacements			
E	PI	Will the environmental impacts require additional agency approvals or permits?	Business and property relocations/ROW acquisitions. RV park is a bit of a wildcard too. The school not being affected could help mitigate the impacts.	Approx. 15 res. displacements Plus ~2/3 condos at Vega Cir. And 2/3 of RV Park Approx. 16 bus. Displacements			
F	PI	Do we anticipate issues with the public due to impacts of this alternative?	Big impact to both residents and businesses. Highest number of business impacts and could become political. Same school and church issues as with a couple of other alternatives. It will require one-on-one conversations to determine the appetite for relocation.	Approx. 26 res. displacements Plus ~2/3 condos at Vega Cir. Approx. 23 bus. Displacements 1 school displacement 1 church displacement			
G	PI	Do we anticipate issues with the public due to impacts of this alternative?	Fewer displacements but landfill and golf course issues are potential. Alternative crosses what appears to be a working agricultural site.	Approx. 5 res. displacements Approx. 2 bus. displacements			
н	PI	Do we anticipate issues with the public due to impacts of this alternative?	Impacts to agricultural areas. Possible sensitvity of routing a road on active farmland.	Approx. 8 res. displacements Approx. 7 bus. displacements			
I	PI	Do we anticipate issues with the public due to impacts of this alternative?	Possible strong oposition based on previous public outreach for Old Butte Road. Long term property owners in the area with strong ties to agriculture.	Alignment appears off, but estimated approx. 18 res. displacements.			
J	PI	Do we anticipate issues with the public due to impacts of this alternative?	Impacts to businesses and residents is lower than other alternatives.	Alignment appears off, but estimated approx. 10 res. displacements and 2 bus. Displacements			
к	PI	Do we anticipate issues with the public due to impacts of this alternative?	Neighborhood has expressed it's opposition to an alignment on 81st.				






















Project: Level 2 Screening Subject: Benefit Cost Ratio Job No.: 20065

Benefit Cost Ratio (BCR): Included in the evaluation package for the level 2 screening is a high level benefit cost analysis for the purpose of comparing the alternatives to each other for screening purposes only. There are several assumptions made in developing this analysis. Further refinement of the alternatives will increase confidence in the ratio, however, at this stage the ratio of benefit to cost does not include all impacts or considerations and should not be used as the only input to justify whether an alternative should be eliminated or retained. The traveling public is currently experiencing some delays due to congestion. As growth continues, this delay will increase without changes to the system. The reduction of travel time anticipated with the proposed alternative combined with the safety improvement benefits are the only factors considered as benefits in the BCR. Costs included in the benefit cost evaluation.

1. Traffic Benefits/Costs The travel demand model (TransCAD) of the existing system developed in previous phases of this project, has been modified for each proposed alternative. A strength of this model is that the vehicle trips can be approximated as growth occurs over the area. This helps to predict the capacity and the dissemination of trips through system. Actual delay experienced by the users at intersections is not determined in this model. Delays due to intersection congenstion and poor progression requires a more refined microsimulation (VISSIM or Synchro). This is not anticipated to be completed until future phases of the study.

Vehicle Miles Travelled (VMT) - Every alternative resulted in an increase in vehicle miles travelled. This is due either to an increase in the overall distance being travelled or that the alternative has increased the mobility, enabling more trips. If the alternative develops a decrease in the mobility of the system as compared to the existing system the result will have a negative impact on the BCR. Either insufficent connectivity is included in the alternative limiting mobility or significant out of way travel is required. The cost incurred for passenger vehicles is assumed to be \$0.17/mile and \$0.58/mile for trucks. These costs are based on current standard assumptions also being used by the ITD TREDIS benefit cost analysis. The increase in VMT compared to the no-build scenario is included as a user cost in the BCR.

VHT - A decrease in the time spent waiting in traffic by users of the system can be considered a benefit. For the purposes of this analysis it is assumed that this benefit is \$12.52/hour for passenger vehicles and \$28.55/hour for trucks . This valuation of time is based on current standard assumptions also being used by the current ITD TREDIS benefit cost analysis. A decrease in VHT compared to the no-build scenario is counted in this BCR as a benefit.

- 2. Satety Benefits Crashes from a five year peroid from 2013 to 2017 were analyzed. The current valuation of costs (using standard CMF and ITD LHSIP practices) were extrapolated to a 20 year cost (common design life). This user cost equates to just under \$27 million. The proposed alternatives would result in varying benefits that decrease this cost of crashes. Reduction in crashes is included as a user benefit.
- 3. Construction Cost A high level conceptual roadway design model was developed for each alternative. Pavement and ballast quantities, excavation and embankment quantities and structure components were modelled and totalled for each alternative. Typcial component costs were then used to develop construction costs. Traffic control, environmental improvements, drainage improvements and signing and striping costs were calculated as a percentage of the roadway model costs. For alternative cost comparison, the overall project construction cost totals are categorized as Lower (less than \$140,000,000), Mid (between \$140,000,000) and Higher (greater than \$250,000,000).
- 4. Right of Way Costs Using the high level conceptual roadway design model a footprint of the alternative impact was developed. This footprint has been placed on the current Bonneville County parcel map. The total impact to the property was then computed. For the purposes of this BCR, the following parcel acquisition costs are : Residential = \$100,000/acre; Commercial = \$750,000/acre; Public (non-roadway) = \$50,000/acre; Railroad = \$250,000; Farm = \$50,000/acre. These costs are consistent with every alternative. No appraisal information was used.

Alternative	Benefit Cost Ratio		Benefits	Cost			
	nuno	Vehicle Hours Traveled During Peak Hour	Safety Improvements	Alternative Comparison Overall Construction Cost	Vehicle Miles Traveled During Peak Hour	Right of Way Cost	
В	0.61	Peak Hour Savings: Base Year (2021) = 400 Design Year (2045) = 1100	This Alternative removes the weaving on US 20 between I-15 and Riverside IC by removing the Lindsay IC. However the weaving still existing on I-15 between Exit 118 and 119, and on US 20 between Riverside and Science Center Drive. The high capacity interchanges at Exit 118 and 119 will help with potential queues that may extend onto the mainline of freeway. The separated CD ramps will remove 40% of the volumes on the system reducing the conflicts.	Lower	Peak Hour Costs Base Year (2021) = 11,600 Design Year (2045) = 14,600	Anticipated ROW Impacts: Residential Properties: 67 Commercial Properties: 60 Public Properties: 8 Railroad Properties: 1 Farm Properties: 0	
С	0.46	Peak Hour Savings: Base Year (2021) = 400 Design Year (2045) = 1100	This Alternative removes the weaving on US 20 between I-15 and Riverside IC by removing the Lindsay IC. However the weaving still existing on I-15 between Exit 118 and 119, and on US 20 between Riverside and Science Center Drive. The high capacity interchanges on I-15 at Exit 118, 119, and on US 20 at Riverside will help with potential queues that may extend onto the mainline of freeway. The separated CD ramps will remove 40% of the volumes on the system reducing the conflicts. Some of the existing Crash Reduction factors that would apply in this Alternative, include Convert Diamond Interchange into a SPUI interchange, (33% reduction), provide an aux lane between and entrance ramp and exit ramp, (20% reduction), and provide straight ramp instead of cloverleaf ramp, (45% reduction). Based on these examples, a reduction of 30% of the crashes will be assumed by implementing this alternative.	Mid	Peak Hour Costs Base Year (2021) = 11,600 Design Year (2045) = 14,600	Anticipated ROW Impacts: Residential Properties: 176 Commercial Properties: 68 Public Properties: 4 Railroad Properties: 4 Farm Properties: 0	

D	0.49	Peak Hour Savings: Base Year (2021) = 700 Design Year (2045) = 1200	This Alternative removes the weaving on US 20 between I-15 and Riverside IC by removing the Lindsay IC. However the weaving still existing on I-15 between Exit 118 and 119, and on US 20 between Riverside and Science Center Drive. The high capacity interchanges on I-15 at Exit 118, 119, and on US 20 at Riverside will help with potential queues that may extend onto the mainline of freeway. The separated CD ramps will remove 40% of the volumes on the system reducing the conflicts. Some of the existing Crash Reduction factors that would apply in this Alternative, include Convert Diamond Interchange into a SPUI interchange, (33% reduction), provide an aux lane between and entrance ramp and exit ramp, (20% reduction), and provide straight ramp instead of cloverleaf ramp, (45% reduction). Based on these examples, a reduction of 30% of the crashes will be assumed by implementing this alternative.	Mid	Peak Hour Costs Base Year (2021) = 12,600 Design Year (2045) = 15,600	Anticipated ROW Impacts: Residential Properties: 110 Commercial Properties: 79 Public Properties: 50 Railroad Properties: 8 Farm Properties: 0
E	0.74	Peak Hour Savings: Base Year (2021) = 900 Design Year (2045) = 1600	This Alternative removes Exit 119 IC and constructs an interchange north of Grandview. This increases the distance between the interchange and allows the vehicles to weave over a longer distance. This Alternative removes the Lindsay, Riverside, and Science Center and converts US -20 into a local roadway. Some of the existing Crash Reduction factors that would apply in this Alternative, include Convert Diamond Interchange into a SPUI interchange, (33% reduction), provide an aux lane between and entrance ramp and exit ramp, (20% reduction), and provide straight ramp instead of cloverleaf ramp, (45% reduction). Based on these examples, a reduction of 40% of the crashes will be assumed by implementing this alternative.	Lower	Peak Hour Costs Base Year (2021) = 12,700 Design Year (2045) = 22,400	Anticipated ROW Impacts: Residential Properties: 74 Commercial Properties: 69 Public Properties: 1 Railroad Properties: 1 Farm Properties: 0
F	0.37	Peak Hour Savings: Base Year (2021) = 500 Design Year (2045) = 700	This Alternative removes the weaving on I-15 between Exit 118 and 119 and on US 20 between I-15 and Riverside IC. The high capacity interchanges at Exit 118 and 119 will help with potential queues that may extend onto the mainline of freeway. The separated CD ramps will remove 40% of the volumes on the local system, reducing the conflicts. Some of the existing Crash Reduction factors that would apply in this Alternative, include Convert Diamond Interchange into a SPUI interchange, (33% reduction), provide an aux lane between and entrance ramp and exit ramp, (20% reduction), provide straight ramp instead of cloverleaf ramp, (45% reduction) and Convert At-grade intersection into a grade-separated interchange (42% Reduction). Based on these examples, a reduction of 30% of the crashes will be assumed by implementing this alternative.	Mid	Peak Hour Costs Base Year (2021) = 11,200 Design Year (2045) = 18,200	Anticipated ROW Impacts: Residential Properties: 126 Commercial Properties: 113 Public Properties: 108 Railroad Properties: 2 Farm Properties: 0
G	0.11	Peak Hour Savings: Base Year (2021) = 0 Design Year (2045) = 400	This Alternative removes Exit 119 IC and constructs an interchange north of Grandview. This increases the distance between the interchanges and allows the vehicles to weave over a longer distance. This Alternative removes the Lindsay, Riverside, and Science Center and converts US -20 into a local roadway. Some of the existing Crash Reduction factors that would apply in this Alternative, include: provide an aux lare between and entrance ramp and exit ramp, (20% reduction), and provide straight ramp instead of cloverleaf ramp, (45% reduction). Based on these examples, a reduction of 35% of the crashes will be assumed by implementing this alternative.	Mid	Peak Hour Costs Base Year (2021) = 52,000 Design Year (2045) = 86,100	Anticipated ROW Impacts: Residential Properties: 12 Commercial Properties: 2 Public Properties: 12 Railroad Properties: 4 Farm Properties: 23

н	0.11	Peak Hour Savings: Base Year (2021) = 0 Design Year (2045) = 600	This Alternative removes Exit 119 IC and constructs an interchange north of Grandview. This increases the distance between the interchanges and allows the vehicles to weave over a longer distance. This Alternative removes the Lindsay, Riverside, and Science Center and converts US -20 into a local roadway. Some of the existing Crash Reduction factors that would apply in this Alternative, include: provide an aux lane between and entrance ramp and exit ramp, (20% reduction), and provide straight ramp instead of cloverleaf ramp, (45% reduction). Based on these examples, a reduction of 35% of the crashes will be assumed by implementing this alternative.	Mid	Peak Hour Costs Base Year (2021) = 57,500 Design Year (2045) = 97,400	Anticipated ROW Impacts: Residential Properties: 16 Commercial Properties: 4 Public Properties: 0 Railroad Properties: 2 Farm Properties: 60
I	0.08	Peak Hour Savings: Base Year (2021) = 100 Design Year (2045) = 800	This Alternative builds a new freeway west of I-15 and does not address any of the existing infrastructure. However, this new freeway will reduce the volumes on the existing system and move them to a new modern freeway with proper spacing between Interchanges and proper ramp lengths. A reduction of 15% of the crashes will be assumed by implementing this alternative.	Higher	Peak Hour Costs Base Year (2021) = 59,100 Design Year (2045) = 98,800	Anticipated ROW Impacts: Residential Properties: 45 Commercial Properties: 12 Public Properties: 0 Railroad Properties: 0 Farm Properties: 99
J	-0.63	Peak Hour Savings: Base Year (2021) = -1300 Design Year (2045) = -1900	This Alternative moves I-15 to the east side of the river north of Exit 118, thus increasing the distance between Exit 118 and 119. This Alternative also replaces the Lindsay IC, Riverside IC, Science Center IC, and the Lewisville IC into one System to System IC. However, access to local street network is severely hindered and thus the local road network takes a brunt of the traffic. A reduction of 45% of the crashes will be assumed by implementing this alternative.	Lower	Peak Hour Costs Base Year (2021) = 56,000 Design Year (2045) = 85,100	Anticipated ROW Impacts: Residential Properties: 110 Commercial Properties: 51 Public Properties: 38 Railroad Properties: 5 Farm Properties: 3
к	-0.06	Peak Hour Savings: Base Year (2021) = -400 Design Year (2045) = -500	This Alternative builds a new freeway west of I-15 and does not address any of the existing infrastructure. However, this new freeway will reduce the volumes on the existing system and move them to a new modern freeway with proper spacing between Interchanges and proper ramp lengths. A reduction of 15% of the crashes will be assumed by implementing this alternative.	Higher	Peak Hour Costs Base Year (2021) = 45,000 Design Year (2045) = 105,000	Anticipated ROW Impacts: Residential Properties: 127 Commercial Properties: 28 Public Properties: 0 Railroad Properties: 2 Farm Properties: 83

	Goals, and		
Alternative	Objectives	Level 2 Criteria Question	Comments
В	Access	How well does the alternative improve access to local resources including schools, recreational facilities, and commercial areas?	Maintains existing access points except for Lindsay Blvd. Exit 307. Access maintained via new river crossing north of US-20. I-15 Exits 118 and Exit 119 carry less traffic on ramps from I-15, so potentially easier to access local attractions. Local connectivity is separated fom the I-15/US-20 thru traffic at the Exit 118, Exit 119 and the west half of the City Center/Riverside Interchange.
С	Access	How well does the alternative improve access to local resources including schools, recreational facilities, and commercial areas?	Maintains existing access points except for Lindsay Blvd. Exit 307. Access maintained via new river crossing north of US-20. I-15 Exits 118 and Exit 119 carry less traffic on ramps from I-15, so potentially easier to access local attractions. Local connectivity is separated fom the I-15/US-20 thru traffic at the Exit 118, Exit 119 and all of the City Center/Riverside Interchange.
D	Access	How well does the alternative improve access to local resources including schools, recreational facilities, and commercial areas?	Maintains existing access points and Lindsay Blvd., Riverside Dr., and Science Center Dr. all accessed from old US-20 as a local road with at-grade intersections. Grandview/US-20 local traffic is separated from the thru-traffic. Merges and weaves just north of the Exit 119 interchange are very close together.
Е	Access	How well does the alternative improve access to local resources including schools, recreational facilities, and commercial areas?	One-way frontage roads between the new interchange north of Grandview and the Broadway intechange greatly enhances connectivity for local traffic. Local Grandview traffic now has a crossing of the Snake River without the connection of thru traffic. Lindsay Blvd Interchange would be able to remain unchanged. Connectivity of local traffic to US-20 would be via the existing Broadway interhcange and the new interchange on the north.
F	Access	How well does the alternative improve access to local resources including schools, recreational facilities, and commercial areas?	One-way frontage roads between Grandiview and Broadway provide opportunities for better local connectivity. Connectivity of the Grandview traffic northward on US-20 is limited. Connectivity at Science Center and the City Center/Riverside Interchanges are impacted negatively. Improvements to the Science Center interchange to make it a full interchange would be beneficial but limited by the railroad.
G	Access	How well does the alternative improve access to local resources including schools, recreational facilities, and commercial areas?	Maintains existing access points. I-15 Exits 118 and Exit 119 carry less traffic on ramps from I-15, so potentially easier to access local attractions. Connectivity of I-15 and US-20 north of the urban area helps to separate the thru traffic and the in-town traffic. Opportunities for enhance connectivity and access to the high capacity alignment would be shifted north away from the John's Hole area. This alternative does not change connectivity to US-26. The potential impact to existing Telford Road should be considered.
н	Access	How well does the alternative improve access to local resources including schools, recreational facilities, and commercial areas?	Maintains existing access points. I-15 Exits 118 and Exit 119 carry less traffic on ramps from I-15, so potentially easier to access local attractions. Connectivity of I-15 and US-20 north of the urban area helps to separate the thru traffic and the in-town traffic. Opportunities for enhance connectivity and access to the high capacity alignment would be shifted north away from the John's Hole area. This alternative also improves connectivity to US-26.
I	Access	How well does the alternative improve access to local resources including schools, recreational facilities, and commercial areas?	The existing US-20 roadway between John's Hole and the connection at 49th Street would be improved to enhance local access. This would improve the opportunity for in-town traffic connectivity, however the high capacity alignment does not draw high amounts of through traffic away the urban area according to the results of the travel demand model.
L	Access	How well does the alternative improve access to local resources including schools, recreational facilities, and commercial areas?	The realignment of I-15 limits the accessibility of local roads to get on and off of the I-15/US-20. The travel demand modelling indicates a decrease in overall system mobility.
к	Access	How well does the alternative improve access to local resources including schools, recreational facilities, and commercial areas?	The existing US-20 roadway between John's Hole and the connection at 81st Street would be reverted to local access greatly improving the opportunity for in-town traffic connectivity, however the high capacity alignment does not draw high amounts of through traffic away the urban area according to the results of the travel demand model.

Needs,



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RESIDENTIAL	127	×				
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Level Two Screening Meeting Summary and Results; Alternative Exhibits moving to Level Three

F

Meeting Minutes

Project: I-15/US-20 Connector

Subject:	Level 2 Screening of Alternatives	
Date:	Tuesday, April 09, 2019	
Location:	ITD District 6 Office, Rigby	
Attendees:	Karen Hiatt - ITD	Tracy Ellwein - HDR
	Ryan Day – ITD	Cameron Waite - HDR
	Curtis Calderwood - ITD	Jason Longsdorf - HDR
	Brad Richards - ITD	Kelly Hoopes - Horrocks
	Tim Cramer - ITD	Ben Burke - Horrocks
	Lance Bates – Bonneville County	Mark Layton - ITD
	Jet Johnston - ITD	Darrell West - BMPO
	Michele Fikel - ITD	Lisa Applebee (on phone) - FHWA
	Jesse Barrus - ITD	Kent Fugal – City of Idaho Falls

The purpose of the meeting was for the analysis team to review the screening completed by each team member for the alternatives carried forward and refined from the Level One screening. The goal of the meeting was to review the screening results and come to a general consensus on the alternatives to carry forward to Level 3.

Each member of the analysis team reviewed the provided information to complete the evaluation matrix and sent the matrix to HDR prior to the meeting on April 9, 2019.

The meeting started with an overview of each of the alternatives with a short Q & A session. Each team member received their evaluation matrix back to review their scoring based on the presentation of the alternatives.

The off alignment options were scored lower by many team members because they assumed nothing was done to the "in town" interchanges as nothing was shown. As we discussed, these interchanges will still need adjustments with off alignment alternatives and so the rankings were updated by several team members through the discussion of each alternative.

The team spent the first day reviewing each alternative and discussing the reasoning for each member's score. Each alternative was either removed from further consideration or carried forward based on team discussion and agreement.

The second day was spent discussing how the alternatives carried forward (Alternatives C, E, and H) should be refined to serve travel demand and meet the project purpose and need. Key discussion times included how to treat the existing US-20 if it becomes a local city street, how to sever it with Alternatives E and H so it is not

attractive for through trips, and how it may function for access in the future. The team broke into three groups for several hours to refine each of the three alternatives carried forward, then we came together and presented the recommendations from each group. We updated and agreed to the refinements as a team, including providing two options for Alternative E connections to local streets.

Lastly, we discussed how to present the process and alternatives to the public at the open house in May. The team wanted to show the existing and proposed features and discuss the challenges and benefits for each alternative. Then the three alternatives being carried forward should be shown in more detail to allow the public to comment and see the process of how the alternatives were refined for deeper analysis. The proposed layouts would be presented to the Community Working Group for input prior to the open house.

In Summary:

- The Level Two screening reviewed 11 alternatives, including the No-Build as Alternative A, developed after the Level One screening. Three alternatives were recommended to advance to Level Three (Alternatives C, E, and H) with Alternative E having two options for ramp connections to local streets (Alternatives E1 and E2).
- The Level Two alternatives and the results from the screening would be presented to the public at a public meeting on May 16, 2019.
- The Level 3 analysis includes a concept development of geometrics, travel demand modeling, bridge locations, major utility conflicts, pedestrian/bike/multi-modal routing/connections, right of way needs, local access roads connections, review of land use planning, freight plans, identifying environmental concerns/constraints, and future developments/economics.
- Following the analysis, the team will meet to review and screen the alternatives against the Level Three screening matrix.
- The Level Three screening results will be presented to the public in fall of 2019 or winter of 2020.

I-15/US-20 Alternatives Summary

Calculated by:	
Checked by:	

Date: Date:

Evaluator	Alternative										
Evaluator	A	В	С	D	E	F	G	Н	1	J	К
	2.22	3.67	3.78	3.00	4.00	2.11	2.67	2.67	1.89	2.44	1.89
	1.44	2.67	3.00	3.00	3.00	2.78	4.11	4.22	3.56	2.78	3.56
	1.22	3.78	3.33	3.56	3.44	2.78	2.44	2.44	2.00	2.11	1.56
	3.00	3.33	3.11	3.22	3.33	3.22	3.00	3.00	3.00	3.33	3.00
	1.56	3.00	3.22	2.44	3.11	2.44	3.00	3.22	2.22	2.00	2.22
	1.22	3.22	3.22	3.00	3.22	2.33	2.67	2.89	2.67	2.56	2.33
	1.78	3.56	3.56	3.11	4.11	2.67	3.33	3.22	1.89	2.33	1.78
	0.00	2.67	2.67	2.22	2.89	2.56	4.33	4.67	4.44	3.11	3.00
	2.00	3.44	3.22	2.67	2.78	2.33	2.11	2.11	1.78	1.44	1.89
	3.00	3.56	3.33	3.11	3.44	3.22	3.00	3.22	3.00	2.56	2.56
	1.89	3.67	3.67	3.56	4.11	3.22	3.00	2.89	3.22	3.33	3.67
	0.00	3.44	3.33	3.11	4.00	3.00	2.56	2.44	2.11	2.78	2.11
	1.78	3.00	3.22	2.67	3.67	3.11	2.78	2.56	1.78	2.11	1.67
	1.67	2.56	2.56	2.44	2.78	2.33	3.44	3.67	3.44	2.78	3.44
	2.88	3.56	3.56	3.11	4.11	2.67	3.33	3.22	1.89	2.33	1.78
Average Rating	1.97	3.27	3.25	2.95	3.47	2.72	3.05	3.10	2.59	2.53	2.43
Std. Dev.	0.63	0.40	0.33	0.39	0.50	0.37	0.60	0.68	0.82	0.51	0.73





Alternative C - Detail View





Alternative E.1 - Detail View





Alternative E.2 - Detail View





Alternative H - Detail View





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The Split Diamond Interchange is a potential optiontoaddresstheexisting conditions. More analysis will need to be performed to develop options between I-15, Exits 118 and 119.