Appendix A.
FHWA Planning and Environmental Linkages Questionnaire

Federal Highway Administration Planning and Environmental Linkages Questionnaire

Project Identification

1. Background

A. Who is the sponsor of the PEL study? (State DOT, Local Agency, Other):

Idaho Transportation Department (ITD)

B. What is the name of the PEL study document and other identifying project information (e.g. sub-account or STIP numbers, long-range plan, or transportation improvement program years)?

- **PEL Study Name:** I-15/US-20 Connector Planning and Environmental Linkages (PEL) Study
- **Study Name:** I-15/US-20 Connector Study
- **Project Number:** A020(065)
- **Key Number:** 20065

C. Who was included on the study team (Name and title of agency representatives, consultants, etc.)?

Team Member	Title	Organization and Department
Lisa Applebee	Operations Engineer	Federal Highway Administration (FHWA), Idaho Division
Brent Inghram	Environmental Program Manager	Federal Highway Administration (FHWA), Idaho Division
Jason Minzghor	District Engineer	Idaho Transportation Department, District 6
Karen Hiatt	Engineering Manager	Idaho Transportation Department, District 6
Drew Meppen	Engineering Manager	Idaho Transportation Department, District 6
Ryan Day	Project Manager	Idaho Transportation Department, District 6
Tim Cramer	Sr. Environmental Planner	Idaho Transportation Department, District 6
Michele Fikel	Sr. Environmental Planner	Idaho Transportation Department, Headquarters
Wendy Terlizzi	Environmental Services Manager	Idaho Transportation Department, Headquarters
Wade Allen	Operation Manager	Idaho Transportation Department, District 6
Lance Bates	Public Works Director	Bonneville County
Darrell West	Executive Director	Bonneville Metropolitan Planning Organization (BMPO)
Chris Canfield	Assistant Public Works Director	City of Idaho Falls
Tracy Ellwein	Consultant Project Manager	HDR
Cameron Waite	Consultant Traffic Lead	HDR
Stephanie Borders	Consultant Public Involvement Lead	HDR
Corrie Hugaboom	Consultant Environmental Lead	HDR
Frank Pisani	Consultant GIS Lead	HDR
Jason Longsdorf	Consultant PEL Specialist Lead	HDR

Team Member	Title	Organization and Department
Kelly Hoopes	Consultant Design Lead	Horrocks
Mike Seely	Consultant Traffic Support	Horrocks

D. Provide a description of the existing transportation facility within the corridor, including project limits, modes, functional classification, number of lanes, shoulder width, access control and type of surrounding environment (urban vs. rural, residential vs. commercial, etc.):

Interstate 15 (I-15) in the study area is a four-lane interstate with two grade-separated interchanges. US-20 is a four-lane facility that connects to I-15 at Exit 118 and continues as a co-signed facility for less than a mile to Exit 119. US-20 in the study area then continues northeast as a separate four-lane expressway with four additional grade-separated interchanges. The study area is primarily urban with a mix of commercial, industrial, and residential neighborhoods.

The I-15/U.S. 20 Planning and Environmental Linkages Study includes six interchanges:

- I-15, Exit 118, Broadway Street, Historic Downtown
- I-15, Exit 119, US-20, Grandview Dr.
- US-20, Exit 307, Lindsay Boulevard
- US-20, Exit 208 Riverside Drive/City Center
- US-20, Exit 309 Science Center Drive
- US-20, Exit 310, Lewisville Highway

E. Provide a brief chronology of the planning activities (PEL study) including the year(s) the studies were completed.

- I-15/US-20 Public Involvement Plan – October 2017
- Development of Purpose and Need – May 2018
- I-15 Exit 119 Interim Improvements Analysis Results and Recommendations Memo – November 2018
- 20065 I-15/US-20 Safety and Mobility Study - Level One Alternative Screening Summary – April 2019
- 20065 I-15/US-20 Safety and Mobility Study - Level Two Alternative Screening Summary – August 2019
- I-15/US-20 Connector Cost Risk Assessment and Value Engineering Report – December 2019
- PEL Level 3 2045 Updated Alternatives Operational Analysis Technical Memo – March 2020

- 20065 I-15/US-20 Safety and Mobility Study - Level Three Alternative Screening Summary – June 2020
- I-15/US-20 Connector Planning and Environmental Linkages (PEL) Study - 2020

F. Are there recent, current, or near future planning studies or projects in the vicinity? What is the relationship of this project to those studies/projects?

- *2040 Long Range Transportation Plan*, BMPO, 2016 – Identified existing and future multimodal transportation deficiencies, problems, and needs of the area and prioritized projects to best address the deficiencies, problems, and needs taking into account available and potential funding resources. The PEL study area is within the BMPO jurisdiction.
- *Idaho Transportation Department Statewide Freight Strategic Plan,* Idaho Transportation Department, 2017 – Provided guidance to improve Idaho's freight system mobility for industries to transport goods safely to market efficiently. I-15 and US-20 are considered to provide crucial links in Idaho and connections to national destinations and were discussed in the Strategic Plan as important highway infrastructure for Idaho.
- *Transportation System Alternatives Study,* BMPO, 2011 – Examined the short-, medium- and long-term transportation investments needed to meet the area's vision for economic development and quality of life and to explore alternative ways to address those needs. The PEL study area is within the BMPO jurisdiction and the I-15/US-20 interchange was included as part of the study.
- *Idaho Falls Arterial Loop: Economic Assessment,* Idaho Transportation Department, 2014 – Identified the economic impacts of the Idaho Falls Arterial Loop Project. This study included a strategic assessment of economic development opportunities associated with the improvements with quantitative modeling analysis of the overall regional impact of the "Arterial Loop" Project. The PEL study area falls within the Super Arterial Loop Assessment area, and the assessment is applicable to the PEL.
- *BMPO Bicycle and Pedestrian Plan,* BMPO, 2008 - Provided the framework necessary for developing the physical facilities, such as bikeways and pedestrian walks, as well as education and encouragement programs that will increase social awareness of non-motorized travel and provide the essential elements for success. The PEL study area is within the Bonneville Metropolitan Planning Organization jurisdiction.
- *City of Idaho Falls Comprehensive Plan,* City of Idaho Falls, 2013 – Provided guidance to the future of Idaho Falls to coordinate planning decisions. Intended to provide Idaho Falls with the guidance to plan for the city's future while having an efficient roadway system of boulevards that moves cross-city traffic quickly from one quadrant to another. The PEL study area is within the City of Idaho Falls city limits.

- *City of Idaho Falls City Core Master Plan and Implementation Strategy,* City of Idaho Falls, 2019 – Created a coordinated vision and implementation strategy for central Idaho Falls. The PEL study area is within the City of Idaho Falls city limits.
- *Idaho Public Transportation Plan,* Idaho Transportation Department, 2018 – The goal of the Idaho Public Transportation Plan is to provide a framework for creating an integrated public transportation system that meets the mobility needs of Idahoans. The Plan identifies programs and projects in line with the Idaho Transportation Department's mission of Your Safety, Your Mobility, Your Economic Opportunity. The PEL study area is within ITD's jurisdiction.
- *Public Transit-Human Service Plan* (BMPO and TRPTA, 2017) – A blueprint for future discussions and efforts in the region to improve mobility. The plan's focus was coordination of public transit services and human services transportation. Since the study was completed, the Targhee Regional Public Transportation Authority (TRPTA) was dissolved.
- *Connecting Our Community: A Plan for Connecting the Idaho Falls Area Through Walking and Biking,* City of Idaho Falls and BMPO, 2014 – Outlined a network of bicycle, pedestrian, and trails needs for the City of Idaho Falls. The plan provides recommendations for several facilities and intersection improvements within the PEL study area which the planning team used to inform the criteria and the screening during alternatives analysis.

2. Methodologies Used

A. What was the scope of the PEL study and the reason for completing it?

ITD District 6, along with the City of Idaho Falls, Bonneville County, and the BMPO conducted a PEL to study ways to improve I-15 and US-20 to better serve Idaho Falls and the growing region, including six interchanges within a two-mile area that have outlived their usefulness and service capacity. The project team identified acute safety and congestion concerns at I-15 Exit 119, as well as substandard conditions at the exits and along the corridors of I-15 and US-20 north and south of this area.

The scope of the PEL was to develop a vision for long-range transportation improvements and an implementation plan to identify those elements that could be further developed in the near future. The study included existing conditions data collection, development of a Purpose and Need, three rounds of alternatives development and screening, high level review of environmental impacts, agency coordination, and public engagement activities.

B. Did you use NEPA-like language? Why or why not?

Yes, NEPA-like language was used to be consistent with the NEPA process and to facilitate the adoption of recommendations into future NEPA studies.

C. What were the actual terms used and how did you define them? (Provide examples or list)

- Purpose and Need Statement
  - Defined the project intent and the problems to be addressed
- Recommended Alternatives
  - Alternatives selected for further analysis and to advance to a future NEPA study
- No Build Alternative
  - Alternative that would leave the transportation system as it currently is without any improvements
- Screening Criteria
  - Evaluation measures derived to assess an alternative's ability to address the Purpose and Need of the project
- Mitigation Strategies
  - Describes the anticipated requirements to address community and environmental resources impacted by the Recommended Alternative
- Advanced
  - Alternative concepts carried forward during evaluation to determine the ability to meet Purpose and Need
- Not Advanced
  - Alternative concepts were removed from consideration

D. How do you see these terms being used in NEPA documents?

These terms will be used in NEPA documents in a similar fashion as they were used in the PEL study.

E. What were the key steps and coordination points in the PEL decision-making process? Who were the decision-makers and who else participated in those key steps? For example, for the corridor vision, the decision was made by state DOT and the local agency, with buy-in from FHWA, the USACE, and USFWS and other resource/regulatory agencies.

ITD consulted with FHWA to obtain concurrence on the Purpose and Needs and project goals, alternatives development and screening results, and the Recommended Alternatives.

ITD worked collaboratively with the entities identified in the table below to develop the Purpose and Need, public outreach plan, screening criteria, alternatives, screening rationale, and final recommendations.

Specific coordination/decision points are listed here:

Coordination/Decision Points	Agencies Involved
Purpose and Need	Endorsed by FHWA May 8, 2018
Project Vision	ITD, City of Idaho Falls, Bonneville County, BMPO
Environmental Resources Scoping	Environmental Resources Committee: ITD, FHWA, U.S. Fish and Wildlife Service (USFWS), U.S. Army Corps of Engineers (USACE), City of Idaho Falls, Bonneville County, and the BMPO
Alternatives Screening Criteria	FHWA, City of Idaho Falls, Bonneville County, BMPO
Level One Alternatives Evaluation and Screening	Analysis Team: ITD, FHWA, City of Idaho Falls, Bonneville County, and the BMPO
Level Two Alternatives Evaluation and Screening	Analysis Team: ITD, FHWA, City of Idaho Falls, Bonneville County, and the BMPO
Level Three Alternatives Evaluation and Screening	Analysis Team: ITD, FHWA, City of Idaho Falls, Bonneville County, the BMPO, and one citizen representative Environmental Resources Committee: ITD, FHWA, USFWS, USACE, City of Idaho Falls, Bonneville County, and the BMPO
Recommended Alternatives	Analysis Team: ITD, FHWA, City of Idaho Falls, Bonneville County, and the BMPO

F. How should the PEL information be presented in NEPA?

The PEL information should be presented in NEPA in a similar fashion as it was used in the PEL study.

3. Agency Coordination

A. Provide a synopsis of coordination with Federal, tribal, state and local environmental, regulatory and resource agencies. Describe their level of participation and how you coordinated with them.

At ITD's invitation, FHWA, the City of Idaho Falls, Bonneville County, and the BMPO participated in the coordination meetings for the study's visioning and kickoff, Purpose and Need development, risk assessment, screening criteria, alternatives development and screening, and the Community Working Group meetings and public open houses.

Regulatory and resource agencies were informed about the project and invited to an agency scoping meeting, including the USACE, USFWS, U.S. Environmental Protection Agency, Idaho Department of Lands, Idaho Department of Water Resources, National Park Service, the State Historic Preservation Office, Idaho Department of Fish and Game, Idaho Department of Water Resources, and the Idaho Department of

Environmental Quality Idaho Falls Regional Office. These agencies were kept informed through ongoing project communications.

ITD consulted with several resource agencies during scoping and again during the alternatives development and screening process. In addition, agency coordination occurred as needed through the PEL Study to solicit information about local resources, identify issues of concern, provide updates, and receive feedback on study deliverables. Information related to study initiation, summary of past studies, initial Purpose and Need, and identification of issues of concern was mailed to agencies; and meetings were held to solicit feedback on the study.

An Environmental Resources Committee met in Rigby at ITD's District 6 office on January 16, 2018; July 9, 2019; and March 11, 2020. The committee included ITD and FHWA staff, representatives of USFWS, USACE, City of Idaho Falls, Bonneville County, and the BMPO. The Committee's purpose was to participate in project development and provide input regarding the project and environmental resources under their jurisdiction. Between meetings, agencies were kept engaged in the process, including requests for reviews of draft Purpose and Needs and project goals, and alternatives screening documentation. A separate meeting was held with the USACE to coordinate on floodplain, water resources, and wetlands issues and to clarify future coordination points. Subsequent correspondence responded to the USACE request to clarify rationale for the Level Two screening results. The USACE also provided scoping-level comments and guidance for a future Section 404 permitting process in a letter dated June 22, 2020.

ITD sent a letter to the Shoshone-Bannock Tribe on February 12, 2018, informing them of the PEL study. The letter included the draft Purpose and Needs and an overview of the study.

More information can be found in Appendix N: Agency Coordination of the PEL Study Report.

B. What transportation agencies (e.g. for adjacent jurisdictions) did you coordinate with or were involved during the PEL study?

- Federal Highway Administration
- Idaho Transportation Department
- City of Idaho Falls
- Bonneville County
- Bonneville Metropolitan Planning Organization
- Idaho Falls Regional Airport
- Targhee Regional Public Transportation Authority

C. What steps will need to be taken with each agency during NEPA scoping?

Once ITD determines which project(s) it wants to move forward, the agency will need to coordinate with FHWA to determine the class of NEPA action for each project. Once that is determined, the level of agency coordination will be determined during scoping. If certain projects or project elements include improvements to facilities owned by the City or County or would be enhancements to other off-highway transportation systems, the agencies will need to coordinate during pre-scoping activities to determine who should lead those projects.

FHWA. Will assist ITD in determining the class of NEPA action that will be developed for the corridor and/or individual projects. It will also be a lead agency during the NEPA process for the project(s).

ITD. Will be the lead agency for individual projects developed within the corridor.

City of Idaho Falls. Will assist ITD as a technical and/or financial partner.

Bonneville County. Will assist ITD as a technical and/or financial partner.

BMPO. Will assist ITD as a technical and/or financial partner.

USACE. Will assist ITD as wetland delineations are developed, impacts are assessed and mitigation determined.

USFWS. Will provide guidance on endangered species survey work and impact assessment if needed.

National Park Service (NPS). Will be involved to review impacts to Section 6(f) properties and determine sufficiency of mitigation

SHPO. Will review Section 106 surveys, eligibility and effects determinations and mitigation plans.

Federal Aviation Administration (FAA). Will review recommended alternatives to determine if there are issues associated with the airport's runway protection zone(s).

Local agencies with jurisdiction over Section 4(f) properties. Will review impacts and develop mitigation as needed.

4. Public coordination

A. Provide a synopsis of your coordination efforts with the public and stakeholders.

Public coordination included public meetings, a Community Working Group, and individual meetings with neighborhood organizations and other interested groups.

The Community Working Group was made up of approximately 20 representatives from local governments, the metropolitan planning organization, freight and trucking industry, transit/bus services, law enforcement and emergency responders, hotels and the business community, economic development, major employers, and the Hispanic community, as well as ITD and the consultant team.

Highlights of the public coordination included:

- January 31, 2018: Community Working Group #1
  - Project introduction and scoping
- May 9, 2018: Public Meeting #1 / Community Kickoff
  - Project introduction and scoping
- June 20, 2018: Community Working Group #2
  - Review of comments from May 9 public meeting
- August 23, 2018: Community Working Group #3
  - Gather feedback on Level One alternatives
- September 5, 2018: Public Meeting #2 / Open House
  - Presentation of Level One alternatives
- November 8, 2018: 81st Street Neighborhood Meeting
  - Neighborhood-level review of alternatives that may impact the 81st Street neighborhood
- April 29, 2019: Community Working Group #4
  - Presentation of Level Two alternatives
- May 16, 2019: Public Meeting #3 / Open House
  - Guided tour of Level Two Alternatives
- June 10, 2019: 49th Street Neighborhood Meeting (Alternative H)
  - Neighborhood-level review of Level Two Alternative H
- February 27, 2020: Community Working Group #5
  - Presentation of Level Three alternatives updated from the CRAVE workshop
- July 20, 2020: Community Working Group #6
  - Presentation of the two Recommended Alternatives and the No Build Alternative to be carried forward to a NEPA study
- August 6-24, 2020: Public Meeting #4 / Virtual Meeting
  - **http://i15us20connector.com/onlinemeeting/**
  - Presentation of the Level Three alternatives and the two Recommended Alternatives and No Build Alternative that will be carried forward to a NEPA study

Section 5.0 of the PEL study summarizes the community and public involvement activities. More information can be found in Appendix M: Community and Public Involvement of the PEL Study Report.

B. What was the scope of the PEL study and the reason for completing it?

The scope of the PEL study was:

- Study of six interchanges within a two-mile area that have outlived their usefulness and service capacity.
- Develop a vision for long-range transportation improvements and an implementation plan to identify those elements that could be further developed in the near future.
- The study of existing conditions data collection, development of a Purpose and Need, three rounds of alternatives development and screening, agency coordination, and public engagement activities.

Several studies by the ITD and the BMPO and their member agencies have determined that the interchanges on I-15 at Exits 118 and 119, as well as the interchanges on US-20 with Lindsay Boulevard, Riverside Drive, and Science Center Drive have reached the end of their useful life. These studies have identified this project as a top priority and documented that this stretch of roadway is a bottleneck to the state system and is a safety concern. The majority of the traffic traveling north on I-15 exits at Exit 119 to travel to destinations between Idaho Falls and Yellowstone National Park. The amount of traffic traveling the US-20 corridor from Idaho Falls to Montana has grown exponentially, and the projections show that the area will be in gridlock within the next 10 years. The traffic north of Exit 119 on I-15 drops off significantly, emphasizing that the northbound off-ramp has the highest volume of traffic on any ramp along I-15 in Idaho.

C. Provide the purpose and need statement, or the corridor vision and transportation goals and objectives to realize that vision.

Project Purpose

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

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

- Address unsafe travel conditions on I-15 and US-20
  - Traffic backs up at exit ramps
  - Substandard lane change / merge space between exits
  - 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
    - High volumes of freight traffic
    - High volumes of peak hour local commuter traffic
    - Limited crossings of railroad and river funnel traffic to the I-15/US-20 corridor
- Provide pedestrian and bicycle mobility within the I-15 and US-20 corridors
    - Built and natural barriers limit safe connectivity to adjacent facilities and the river and adjacent multiuse trails
    - According to the 2008 BMPO Bicycle and Pedestrian plan the corridor's "existing facilities are either inadequate, deficient, or associated with various problems."
- Address future travel demand forecasts
    - Current infrastructure will not accommodate travel demands of increasing local growth and regional tourism
    - 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

- 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.
- In addition to improvements to pedestrian and bicycle facilities in the corridor, seek to provide additional connections to the surrounding multi-modal network.
- Provide improvements that serve all types of travelers including local commuters, freight, and regional tourism.
- Consider new infrastructures impacts to local roads through coordination with Idaho Falls and Bonneville County.
- 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.

D. What steps will need to be taken during the NEPA process to make this a project-level purpose and need statement?

The PEL Purpose and Need will be used as an initial draft for the project-level NEPA Purpose and Need statement(s). FHWA and ITD will determine the class of action and prepare a project-level Purpose and Need.

5. Range of alternatives:

A. What types of alternatives were looked at? (Provide a one or two sentence summary and reference document.)

Alternatives were developed to address safety and capacity concerns by assessing different ways to improve roadway geometry; interchange spacing; and accommodation for pedestrians, bicycles, and transit. Options included improvements on the existing centerline, as well as new alignments. Alternatives and each screening process are described in greater detail in Section 3.0 of the PEL Study Report.

B. How did you select the screening criteria and screening process?

ITD and the consultant team developed draft screening criteria based on the Purpose and Need and then identified relevant evaluation measures. These were then reviewed and modified through a workshop with the following agency participants to make sure that the needs and concerns of the stakeholders and broader community would be considered in the alternatives development and evaluation process.

- FHWA
- City of Idaho Falls
- Bonneville County
- BMPO

Three steps of screening took place—each with a set of defined evaluation criteria. At each step in the screening process (Levels One, Two, and Three), the criteria and evaluation tools were assessed and modified to make sure they were clear to the stakeholders, and meaningful in differentiating alternatives.

C. For alternative(s) that were screened out, briefly summarize the reasons for eliminating the alternative(s). (During the initial screenings, this generally will focus on fatal flaws.)

An analysis team made up of individuals representing ITD, FHWA, City of Idaho Falls, Bonneville County, and the BMPO participated in the alternative screening meetings.

In Level One screening, the analysis team reviewed the 14 concept alternatives. Of these alternatives four were “not recommended” to advance into Level Two because they did not address the Purpose and Need, including decreasing local connectivity or the inability to address through traffic demands.

In Level Two screening, the analysis team evaluated the performance of the nine alternatives advanced from Level One, plus one alternative that was developed during the Community Working Group Meeting #3. Six alternatives were "not recommended" to advance to Level Three. The alternatives were not advanced because they did not address the Purpose and Needs and project goals after further analysis was completed, including travel demand modeling for traffic forecasting, connectivity options for pedestrians and bicycles, and the benefit cost analysis.

The Level Two alternatives were refined in a Cost Risk Assessment and Value Engineering (CRAVE) workshop completed December 9-12, 2019. At the workshop, Alternative E.1 and E.2 were combined into a single alternative. Subsequently, an operational analysis was conducted for the three updated alternatives. In Level Three screening, the analysis team evaluated the three updated alternatives. One of the alternatives was "not recommended" to be carried into NEPA evaluation because of constructability challenges, poorer traffic operations than the other two alternatives, and decreasing local connectivity.

A summary of the alternatives evaluation and screening process is included in Section 3.0 of the PEL Study Report. Full documentation of each screening level is included in separate appendices for Level One, Two, and Three.

D. Which alternatives should be brought forward into NEPA and why?

The following build alternatives meet the Purpose and Need of the project and provided better performance and fewer negative impacts than the other alternatives studied and will be brought into a future NEPA process, along with the No Build Alternative:

- Alternative E3
- Alternative H2

E. Did the public, stakeholders, and agencies have an opportunity to comment during this process?

After each round of alternative screening, the alternatives and screening results were presented to the Community Working Group and at public meetings where the public and stakeholders had an opportunity to provide comments and input to the refinement of the alternatives.

An Environmental Resources Committee that included ITD and FHWA staff, representatives of USFWS, USACE, City of Idaho Falls, Bonneville County, and the BMPO met over the course of the study to discuss updates on the project development process, develop the Purpose and Need, and discuss the alternatives development and screening process. Members of the Environmental Resources Committee also reviewed and provided input to the Environmental Scan Technical Memo.

F. Were there unresolved issues with the public, stakeholders, and/or agencies?

The unresolved issues include constraints associated with the runway protection zones on the airport property, FAA approval of release of land on the airport, historic property identification, impacts and mitigation, effects to parks (some protected by Section 4[f] and one also protected by Section 6[f]), traffic noise impacts and possible noise abatement, possible endangered species impacts and mitigation and wetland impacts and mitigation. All of these will be addressed in future NEPA process(es).

6. Planning assumptions and analytical methods:

A. What is the forecast year used in the PEL study?

2045 was the planning horizon year.

B. What method was used for forecasting traffic volumes?

The TransCAD® travel demand model and Vissim travel simulation model were used during the study.

C. Are the planning assumptions and the corridor vision/purpose and need statement consistent with each other and with the long-range transportation plan? Are the assumptions still valid?

Yes and yes.

D. What were the future year policy and/or data assumptions used in the transportation planning process related to land use, economic development, transportation costs, and network expansion?

The PEL Study used the same assumptions that the BMPO's *2040 Long Range Transportation Plan* established regarding population and employment. Below are the specific planning studies that relate to the planning process; all relevant planning studies are noted in question 1F.

Transportation

- *BMPO Bicycle and Pedestrian Plan*
- *Idaho Public Transportation Plan*
- *Transportation System Alternatives Study*
- *Public Transit-Human Service Plan*
- *Connecting Our Community: A Plan for Connecting the Idaho Falls Area Through Walking and Biking*

Land Use

- *2040 Long Range Transportation Plan* (BMPO)
- *City of Idaho Falls Comprehensive Plan*

- *City of Idaho Falls City Core Master Plan and Implementation Strategy*

Economic Development

- *City of Idaho Falls City Core Master Plan and Implementation Strategy*
- *City of Idaho Falls Comprehensive Plan*

Transportation Cost

- *Idaho Falls Arterial Loop: Economic Assessment*
- *2040 Long Range Transportation Plan* (BMPO)

Network Expansion

- *2040 Long Range Transportation Plan* (BMPO)
- *Transportation System Alternatives Study*
- *Idaho Falls Arterial Loop: Economic Assessment*
- *Idaho Transportation Department Statewide Freight Strategic Plan*

7. Environmental resources (wetlands, cultural, etc.) reviewed. For each resource or group of resources reviewed, provide the following:

A. In the PEL study, at what level of detail was the resource reviewed and what was the method of review?

Most resources were reviewed via desktop or windshield survey. See Table 1 ("Methodology/Data Source Used" column) for details on level of detail for all resources.

Additional surveys were conducted for historic resources, Ute Ladies' Tresses orchids, and aquatic resources.

The review for historic resources included:

- A search for historic properties in the study area (those listed in or eligible for listing in the National Register of Historic Places (NRHP).
- A records review conducted at the Idaho State Historic Preservation Office (SHPO).
- A review of assessors records to assess the general age of neighborhoods in the study area.
- *I-15/US-20 Corridor Study – Historic Architecture Screening* report completed by Horrocks Engineers in November 2019 which is included as Appendix L to the PEL Study Report.

The project team conducted field inspections at the Warm Springs Bottom Element Occurrence population to look for Ute Ladies' tresses habitat. The visit on August 21, 2019, identified a marginally suitable habitat, but no individuals were found. A second

visit on August 21, 2020, to that same area indicated that it was still not a suitable habitat and no individuals were found.

On October 8 and 9, 2019, a wetlands scientist conducted an abbreviated field investigation to verify the spatial and categorical status of aquatic resources, including wetlands and other waters, within the alternatives that were under consideration after Level Two screening (Alternatives C, E.1, E.2, and H). The results are included in the *I-15/US20 Safety and Mobility Study (KN20065) Aquatic Resource Delineation and Preliminary Impact Assessment Memorandum* included as Appendix K to the PEL Study Report.

B. Is this resource present in the area and what is the existing environmental condition for this resource?

Yes, the resources are present in the area, and those that were reviewed are presented in Table 1 ("Present in Study Area/Impacts" column).

C. What are the issues that need to be considered during NEPA, including potential resource impacts and potential mitigation requirements (if known)?

For the alternatives that will be carried into NEPA, impacts to historic resources and parks could require additional coordination with the State Historic Preservation Office and the National Park Service (related to Section 6[f]), the City of Idaho Falls, and Bonneville County. Horrocks Engineers completed a Historic Architecture Screening in November 2019 that detailed areas of concern, including the Antares Park neighborhood, grain elevators on the Union Pacific Railroad tracks, and a farmstead on 49th North. This screening will be used in the conversation with agencies moving forward. Large multitier bridge structures may also require coordination for visual and traffic noise impacts.

The potential constraints associated with the airport's runway protection zone(s) constitute another issue to be addressed. Design refinements may be needed to meet FAA restrictions for these areas.

Additional issues for specific resources are identified in Table 1 ("Next Steps" column).

D. How will the planning data provided need to be supplemented during NEPA?

The planning data collected during the PEL study is intended to be used as a resource for future NEPA documentation. Each resource evaluated in Section 4.0 of the PEL study report has a section with next steps, discussing specific actions that will need to be taken when moving into the NEPA phase. A summary is included in the NEPA Considerations table.

Table 1. NEPA Considerations

Resource	Methodology/Data Source Used	Present in Study Area?/ Impacts	Next Steps
Operational – Transportation, Bicycle/Pedestrian	Secondary data (such as website and database research) plus field data and coordination on bike and pedestrian information with a representative from Community Pathways & Idaho Walk Bike Alliance.	Yes/Yes	• Confirm what bicycle and pedestrian improvements will be provided. • Conduct impact assessment.
Operational – Right-of-Way	Secondary data review	Yes/Yes	• A parcel map will be developed, and once alternatives are developed, a general summary of acquisitions needed will be developed. • Impact assessment will address residential or commercial/industrial displacements • This information will be critical to the analysis of environmental justice impacts.
Operational – Stormwater/Water Quality	Secondary data review	Yes/Yes	• Once alternatives are developed, ITD will evaluate what type of stormwater treatment facilities that may be required. • A Sole Source Aquifer Assessment is needed.
Operational – Utilities	Secondary data review	Yes/Yes	• Idaho Falls Power has a Federal Energy Regulatory Commission (FERC) license along the Snake River through the study area that may require consideration during alternatives development.
Operational – Energy	Secondary data review	Yes/No	• No rail transit is planned for the area at this time. Since energy usage is not considered a resource that will influence alternative screening, no further research will be done for the PEL.
Operational – Access Control	Secondary data review	Yes/No	• No new access control is expected to be added to these facilities. Access impacts to local properties will be assessed during NEPA analysis. .
Cultural Resources	Secondary data review and Historic Architecture	Yes/Yes	• Obtain agreement from SHPO on the Area of Potential Effect.

Table 1. NEPA Considerations

Resource	Methodology/Data Source Used	Present in Study Area?/ Impacts	Next Steps
	Screening completed November 25, 2019		• Conduct architectural history, archaeological and paleontological surveys. • Determine eligibility and effects and submit to the SHPO for concurrence. • If an adverse effect occurs, will prepare a Memorandum of Agreement.
Section 4(f)	Secondary data review	Yes/Yes	• Assess potential impact to parks and historic resources. • Coordinate with the Official with Jurisdiction over the affected park to review impacts and determine if mitigation is needed. • Coordinate with SHPO to determine if any effects to historic resources are adverse. • Assess whether a future Section 4(f) evaluation may be a *de minimis* finding or a Section 4(f) Exception, such as a temporary occupancy, or may require a full individual evaluation.
Section 6(f)	Secondary data review	Yes/Yes	• Ongoing assessment as alternatives are further developed to determine if land or improvements that were developed using Land and Water Conservation Funds are to be acquired or impacted • Coordination with NPS representatives to review mitigation plans • Obtain NPS concurrence as needed.
Hazardous Materials	Secondary data review plus field survey	Yes/Yes	• Feedback received at the environmental scoping meeting suggested that the PEL study consider a ranking of severity in screening for hazardous materials, such as: • The property is expected to have little or no history of hazardous material use. • The property has been observed to have had potential historic hazardous material use but is not listed in any database.

Table 1. NEPA Considerations

Resource	Methodology/Data Source Used	Present in Study Area?/ Impacts	Next Steps
			• The property is listed in a hazardous materials database, but no violations have been noted. • The property is listed in a hazardous materials database, violations are noted and/or contamination is known to be present. • Conduct an Initial Site Assessment to determine the significance of any impacts to hazardous materials • Determine mitigation
Floodplains	Review of secondary data	Yes/Yes	• Determine impact to the floodplain • Identify mitigation (such as designing bridge abutments outside the floodplain) • Coordinate with the Bonneville County floodplain administrator
Endangered Species	Review of secondary data and two field surveys for Ute Ladies' tresses habitat (August 2019 and August 2020)	Yes/Yes	• Field survey of potential habitat for Ute Ladies'-tresses orchid and yellow billed cuckoo • If habitat is found, conduct impact assessment and coordinate with USFWS • Prepare Biological Assessment and request a Biological Opinion if necessary
Airport	Review of secondary data	Yes/Yes	• Clearly define all constraint areas within the runway protection zone • Identify issues associated with release of land from the airport • Refine Alternative E3 as appropriate to minimize impact to the runway protection zone • Coordinate with airport personnel and FAA as needed to resolve any issues associated with runway protection zone or release of land
Traffic Noise	Review of secondary data	Yes/Yes	• A review of potential noise receptors in the study area and field work to establish baseline noise levels in the area.

Table 1. NEPA Considerations

Resource	Methodology/Data Source Used	Present in Study Area?/ Impacts	Next Steps
			• Conduct a full noise impact analysis • If noise impacts are found, evaluate possible noise abatement
Air Quality	Review of secondary data	No/No	• The study area is not located in an area of concern, nor in a wilderness area of exceptional air quality in need or protection. Therefore, air quality analysis will not be performed.
Environmental Justice	Census data plus high-level field review and review of neighborhood services	Yes/Yes	• Finalize impact assessment and update based on the 2020 census data • Identify positive and negative impacts to possible environmental justice populations • Assess mitigation needs • Determine if any disproportionately high and adverse impacts occur to environmental justice populations. • Conduct target outreach.
Visual/Aesthetics	High-level field review	Yes/Yes	• Conduct visual impact analysis. • Determine mitigation needs
General Land Use	Secondary data review	Yes/Yes	• Confirm impact assessment.
Land Form and Soils	Secondary data review of the Natural Resources Conservation Service Web Soil Survey for prime farmland, geological fault lines, and soil types within the study area.	Yes/Yes	• Confirm impact assessment. • Coordinate with Natural Resources Conservation Service to receive concurrence on the Prime Farmland Assessment
Recreation	High-level field survey	Yes/Yes	• Finalize impact assessment. • Determine if any impacts are adverse. • Conduct a bicycle/pedestrian analysis.
Wetlands	Review of secondary data and abbreviated field visit on October 8 and 9, 2019	Yes/Yes	• Complete field mapping and delineation studies to determine boundaries of wetlands • GIS overlays to identify acres of impact by alternative. • Finalize impact assessment. • Determine mitigation, together with the USACE.

Table 1. NEPA Considerations

Resource	Methodology/Data Source Used	Present in Study Area?/ Impacts	Next Steps
Cumulative Impacts	Review airport master plan, the BMPO planning documents, and City of Idaho Falls Comprehensive Plan.	Yes/Yes	• Conduct impact assessment.

8. List environmental resources you are aware of that were not reviewed in the PEL study and why. Indicate whether or not they will need to be reviewed in NEPA and explain why.

All of the environmental resources were reviewed in the PEL study. However, many of them were not reviewed to the extent typically done in a NEPA analysis.

9. Were cumulative impacts considered in the PEL study? If yes, provide the information or reference where the analysis can be found.

Cumulative impacts were not evaluated during this PEL study process. The resources subject to a cumulative impact assessment will be determined on a case-by-case basis early in the NEPA process, generally as part of early coordination or scoping.

Reasonably foreseeable future projects can be derived from review of:

- Airport master plan
- BMPO planning documents
- City of Idaho Falls *Policy Statements: City of Idaho Falls Comprehensive Plan* (City of Idaho Falls, 2013)
- ITD Statewide Transportation Improvement Program (STIP) and long-range plans

10. Describe any mitigation strategies discussed at the planning level that should be analyzed during NEPA.

Mitigation strategies that were discussed for wetland impacts include on-site mitigation or potential in-lieu fee options. Floodplain impact mitigation strategies that were discussed include designing bridge abutments outside the Snake River floodplain. Pilings may need to be driven for bridge supports.

11. What needs to be done during NEPA to make information from the PEL study available to the agencies and the public? Are there PEL study products which can be used or provided to agencies or the public during the NEPA scoping process?

This PEL study was intended to provide the framework for the long-term implementation of the Recommended Alternative as funding is available, and to be used as a resource for future NEPA documentation. During the NEPA scoping period, information from the

PEL study will be provided to the public and agencies along with information regarding how this information is intended to be used during the NEPA process,

12. Are there any other issues a future project team should be aware of?

Issues and next steps are discussed in the response to Question 7C and Table 3.

Appendix B.
Data Collection, Existing Conditions, Forecast No Build Conditions Memo

KN20065 I-15/US-20 Safety and Mobility Study Operational and Safety Analysis

Data Collection, Existing Conditions, & Forecast No Build Conditions

April 12, 2018

Prepared for

Prepared by

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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). HDR and Horrocks are the consulting team developing this study for ITD, who along with the Bonneville Metropolitan Planning Organization (BMPO) and member agencies in the BMPO have identified the need to improve the I-15/US-20 connection and adjacent six interchanges. This report summarizes the data collection, existing conditions, and initial Phase A planning effort.

The purpose of the Phase A effort is to collect existing travel demand and crash data, identify trends and operational capacity, develop planning year forecasts under No-Build conditions, and identify operational deficiencies. Existing operational deficiencies and crash patterns were identified, identifying areas along the highways and interchanges that are coming close to capacity now. Planning year 2045 forecasts were analyzed under no-build conditions to identify where failure may occur in this transportation system and to identify appropriate improvements to serve future travel demand. An origin/destination study was also completed using Bluetooth technology that identified a general split between local and regional traffic using the system.

The results of these efforts will help identify screening criteria for Phase B alternatives that meet the project goals. Data collected will eventually be used to support a NEPA document, develop a capital improvement plan to phase the work over multiple years to assist with securing funding, and support the design of improvements to prepare PS&E documents for construction. **Figure 1** presents the initial study area and project vicinity. It is also possible that components of the overall solution may also include a connector between I-15 and US-20 at some undefined location north of the areas shown.

Observed Trends

From these initial efforts, the team has identified trends which should be the basis for subsequent phases of this study. All future potential alternatives should at a minimum address the trends outlined in this report. Screening criteria for refining alternatives should also address how the implementation of future alternatives impact the existing system data and the trends discussed herein. These safety and mobility analyses, trends, and results include:

- **Macrosimulation Travel Demand –** The team coordinated with BMPO to use the Bonneville County macrosimulation travel demand model to identify existing and future travel demand on study roadways. This model was refined to replicate existing conditions as close as possible and for forecasting future traveled demand in the planning year 2045. Initial findings indicate that as the northbound traffic on I-15 connecting to and progressing on US-20 north of Idaho Falls continues to increase, this becomes the controlling movement that impacts all local and regional traffic in the area and on the study system. The same is true for the US-20 southbound traffic flows connecting to I-15 southbound.

- **Existing and 2045 No-Build Operational & Capacity Analysis –** A current existing conditions operational analysis was completed by developing a microsimulation VISSIM traffic model to identify operational capacity issues, deficiencies, roadway friction, and conflicts due to the numerous connections and close interchange spacing along both I-15 and US-20. Initial findings of existing conditions indicate that during the a.m. and p.m. peak hours, efficient flow and smooth progression between interchanges and intersections degrade and congestion and delay increase. Delays and system failures are evident now to the local public and will only continue to degrade as travel demand increases based on the 2045 No-Build operational analysis. Failures in the traffic flow are the largest contributors to the crashes and incidents along this roadway. Evaluating solutions using these VISSIM models, updated with forecast travel demand and alternative improvement treatments, will help to describe the benefits, costs, and impacts to the existing system, adjacent property and features, and the traveling public as time progresses.

- **Origin and Destination Analysis -** The team implemented an array of Bluetooth sensor stations throughout the Idaho Falls area from August through September 2017. The data collected was analyzed to identify the Origin/Destination trends of the study area system as well as adjacent roadways and highways, including identifying some of the most preferred routes for local drivers. Typical traffic travel times on I-15 and US-20 were developed for use in calibrating the existing conditions VISSIM model. This data and analysis revealed two very important trends:

    - Regardless of distance or roadway types, drivers will in almost all cases chose the path of least delay. Simply put, if the main roadways appear to be delayed even slightly by congestion, the traffic will jump onto the local roads in attempt to minimize delay.

    - The data collected shows the split between “local” and “regional” trips that impact the transportation system through Idaho Falls. Local trips were defined as those trips that originate or end within Idaho Falls while regional trips travel through Idaho Falls without stopping. A trend was identified that most of the trips in the study area are generally split 60% local and 40% regional. In future alternatives, the team should keep the needs of these two trip generators a priority in the screening criteria.

- **Multimodal Facilities –** Vehicle traffic on roadways is currently the primary cause of safety and mobility concerns. Pedestrian traffic is also increasing as new facilities are developed and made available, including the Idaho Falls Snake River Greenbelt and all of the pedestrian facilities that connect to it. These facilities and additional connections are a very high priority for this study. At some locations, the existing pedestrian and bicycle system can be enhanced to improve safety and connectivity while other areas have a lack of any facilities. Future system alternatives must include new connectivity for bicycles and pedestrians as well as enhancements to existing facilities.

- **Connector Alternatives -** Each of the safety and mobility trends studied in Phase A include recommendations and limitations for future use in evaluating alternatives in the

Planning with Environmental Linkages (PEL) study. As these trends were analyzed, it became apparent that potential connector alternatives between I-15 and US-20 should be investigated. Some high level connector alternatives were developed in Phase A to help determine the scope of Phase B and were not studied in depth. This initial analysis was called the Phase A North Connector Sensitivity Analysis and though not fully developed, it indicated that both a high capacity connector roadway as well as modifications to the existing I-15/US-20 roadways in Idaho Falls can provide benefits to serve future travel demand. The outcomes from this Sensitivity Analysis should be combined with the results and recommendations of this report to develop screening criteria for alternatives developed in Phase B of the overall Safety and Mobility Study.

Next Steps

The primary purposes of Phase A was to collect data and prepare the traffic model to better inform project planning decisions in future phases. Phase A work will feed into the PEL for Phase B. The PEL represents a collaborative and integrated approach to transportation decision-making that;

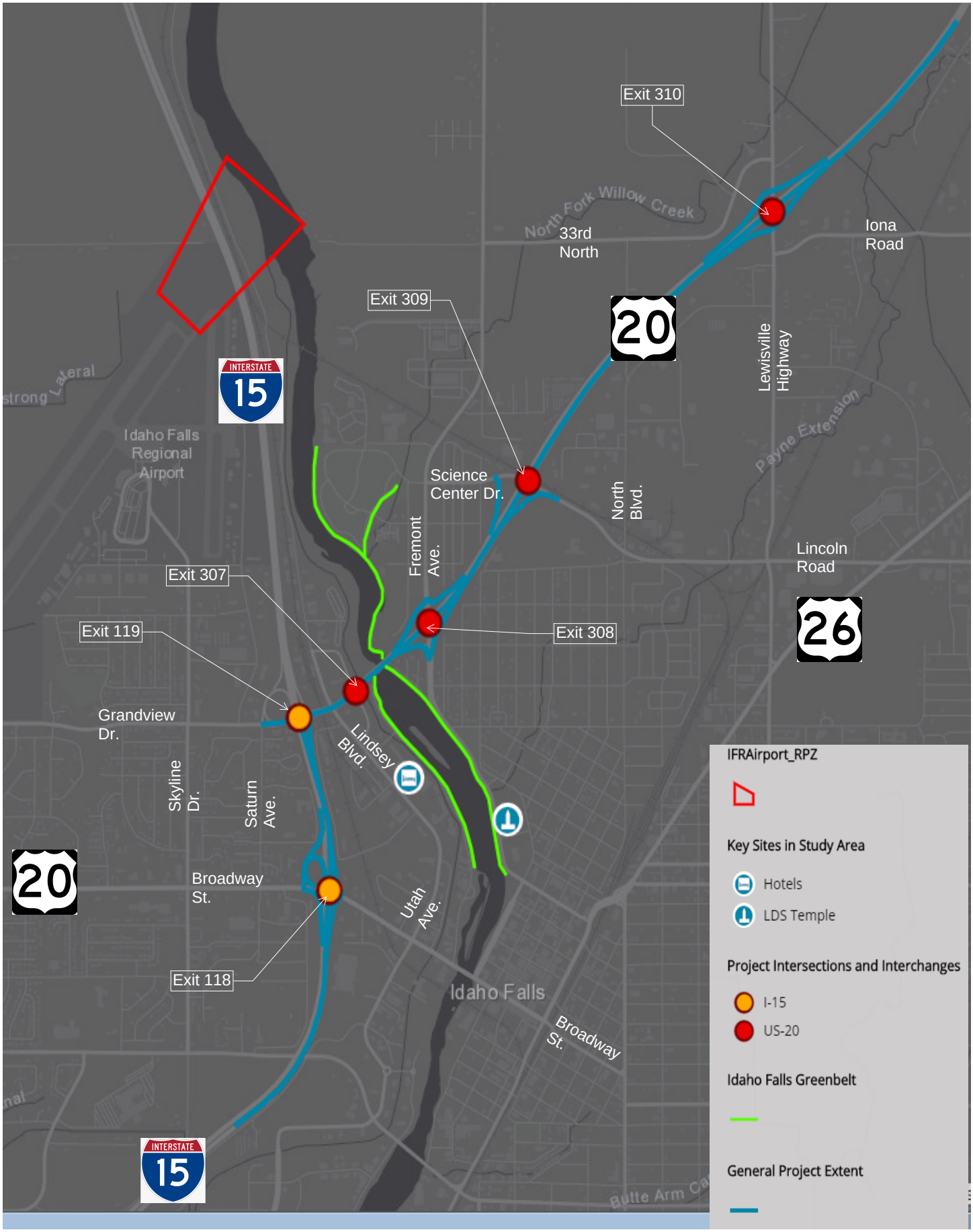
1. Considers environmental, community, and economic goals early in the transportation planning process, and
2. Uses the information, analysis, and products developed during planning to inform the environmental review process.

1 Introduction

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). HDR and Horrocks are the consulting team developing this study for ITD, who along with the Bonneville Metropolitan Planning Organization (BMPO) and member agencies in the BMPO have identified the need to improve the I-15/US-20 connection and adjacent six interchanges. This report summarizes the data collection, existing conditions, and initial Phase A planning effort.

The purpose of the Phase A effort is to collect existing travel demand and crash data, identify trends and operational capacity, develop planning year forecasts under No-Build conditions, and identify operational deficiencies. Existing operational deficiencies and crash patterns were identified, identifying areas along the highways and interchanges that are coming close to capacity now. Planning year 2045 forecasts were analyzed under no-build conditions to identify where failure may occur in this transportation system and to identify appropriate improvements to serve future travel demand. An origin/destination study was also completed using Bluetooth technology that identified a general split between local and regional traffic using the system.

The results of these efforts will help identify screening criteria for Phase B alternatives that meet the project goals. Data collected will eventually be used to support a NEPA document, develop a capital improvement plan to phase the work over multiple years to assist with securing funding, and support the design of improvements to prepare PS&E documents for construction. Figure 1 presents the initial study area and project vicinity. It is also possible that components of the overall solution may also include a connector between I-15 and US-20 at some undefined location north of the areas shown.


Exit 310
North Fork Willow Creek
33rd North
Iona Road
Exit 309
20
Lewisville Highway
INTERSTATE 15
Idaho Falls Regional Airport
Payne Extension
Science Center Dr.
North Blvd.
Fremont Ave.
Lincoln Road
Exit 307
26
Exit 119
Exit 308
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Skyline Dr.
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Key Sites in Study Area
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I-15
US-20
Idaho Falls Greenbelt
General Project Extent

2 Existing Transportation System

2.1 Roadways

The roadway network is presented in **Table 1**. Details are found in **Appendix A**.

Table 1. Existing Roadways

Roadway	Functional Classification	Posted Speed Limit	Median	Travel Lanes in each direction	Sidewalk, Curb, & Gutter
I-15	Interstate	65 mph	Varies from 25 feet to 35 feet	2	None
US-20	United States Highway	35 mph between I-15 and Exit 307 45 mph between Exit 307 and Exit 308 55 mph between Exit 308 and Exit 309 70 mph north Exit 309	Raised concrete median separating both directions from Exit 307 to Exit 308 30 foot wide median east of Exit 308	2	None
Broadway St.	Principal Arterial	35 mph	two-way left turn lane (TWLTL)	2	Yes on both sides of road
Skyline Dr.	Minor Arterial	35 mph	None	1	Yes on both sides of road
Saturn Ave.	Local Street	25 mph	None	1	Yes on both sides of the road, not continuous
Utah Ave.	Minor Arterial	25 mph north of Broadway 35 mph south of Broadway	None north of Broadway St. TWLTL south of Broadway St.	1	Yes on both sides of road
Grandview Dr.	Minor Arterial	35 mph	TWLTL	2	Yes on both sides of road

Table 1. Existing Roadways

Roadway	Functional Classification	Posted Speed Limit	Median	Travel Lanes in each direction	Sidewalk, Curb, & Gutter
Lindsay Blvd.	Minor Arterial	35 mph	TWLTL	1	Yes on both sides of the road south of US-20
Fremont Ave.	Minor Arterial	35 mph	TWLTL north of Higham Raised concrete median from Higham to Elmore	2	Yes on both sides of the road with connections to trails
Science Center Dr.	Principal Arterial east of US-20 Minor Arterial west of US-20	35 mph	TWLTL east of North Blvd. Painted median west of North Blvd.	2	Yes on both sides of the road
North Blvd.	Major Collector north of Science Center Local Street south of Science Center	25 mph	None	1	Yes on both sides of the road
Lewisville Highway	Principal Arterial	45 mph	TWLTL south of 33rd South None north of 33rd South	2 south of 33rd South 1 north of 33rd South	Yes on both sides of the road south of 33rd South
33rd North	Minor Arterial	35 mph	None	1	Yes on both sides of the road
Iona Rd.	Minor Arterial	35 mph	None	1	Almost none

2.2 Interchanges

The study interchanges are presented in **Table 2**. Details are found in **Appendix A**.

Table 2. Existing Interchanges

Roadway	Exit Number	Type	Ramps	Cross Street	Distance to next Interchange
I-15	118	Partial clover leaf	NB off NB on SB off SB on SB loop on	Broadway St. east US-20 west	2.65 miles south 0.56 miles north
	119	Hybrid partial cloverleaf / diamond	NB off NB on SB off SB loop on	US-20 east Grandview Dr. west	0.56 miles south 8.42 miles north
US-20	307	Hybrid diamond	EB off EB on WB off WB on	Lindsay Blvd.	0.12 miles west 0.42 miles east
	308	Diamond	EB off EB on WB off WB on	Fremont Ave.	0.42 miles west 0.58 miles east
	309	Partial Diamond	EB off WB on	Science Center Dr.	0.58 miles west 1.18 miles east
	310	Diamond	EB off EB on WB off WB on	Lewisville Highway	1.18 miles west 1.48 miles east

The interchange spacing on I-15 and US-20 within the study area was analyzed following section 6.2.2 of the Federal Highway Administration's (FHWA) Interstate System Access Informational Guide, which refers to AASHTO's Interstate Access Guide. The guide states that the minimum spacing for urban interchanges is one mile, and three miles for rural interchanges. Starting at Exit 118, four interchanges lie within a one-mile distance on I-15 and US-20, far closer than the standard allows. The only interchange within the study area that is not within a one mile distance of another interchange is Exit 310.

2.3 Intersections

The study intersections are presented in **Table 3**. Details are found in **Appendix A**.

Table 3. Existing Intersections

Roadway	Intersection	Control	Lanes			
			EB leg	WB Leg	NB Leg	SB Leg
Broadway St.	Skyline Dr.	Signal	1 LT 2 thru 1 RT	1 LT 2 thru 1 RT	1 LT 1 thru 1 RT	1 LT 1 thru 1 RT
	Saturn Ave.	Signal	2 thru 1 RT	2 thru 1 RT	1 LT 1 thru/ RT	1 LT 1 thru/ RT
	Exit 118 SB Ramps	Signal	2 thru 1 RT	2 thru 1 RT	N/A	1 LT 1 RT
	Exit 118 NB Ramps	Signal	1 LT 2 thru	1 thru 1 thru/ RT	1 LT/ thru 1 RT	N/A
	Utah Ave.	Signal	1 LT 2 thru 1 RT	1 LT 2 thru 1 RT	1 LT 1 thru 1 RT	1 LT 1 thru 1 RT
Grandview Dr.	Skyline Dr.	Signal	1 LT 1 thru 1 RT	1 LT 1 thru 1 RT	1 LT 1 thru 1 RT	1 LT 1 thru 1 RT
	Saturn Ave. / Exit 119 SB Ramps	Stop for off ramp and Saturn Ave.	1 LT 1 thru 1 thru/ RT	1 LT 1 thru 1 thru/ RT	1 LT/ thru/ RT	1 LT/ thru/ RT
	Exit 119 NB Ramps	Signal	1 LT 2 thru	1 thru 1 thru/ RT	1 LT/ thru 1 RT	N/A
Lindsay Blvd.	Exit 307 WB Ramps	Stop for off ramp	N/A	1 LT/ RT	1 thru/ RT	1 LT/ thru
	Exit 307 EB Ramps	Stop for off ramp	1 LT/ thru/ RT	1 LT/ RT	1 LT 1 thru/ RT	1 LT 1 thru/ RT
Fremont Ave.	Exit 308 WB Ramps	Stop for off ramp	N/A	1 LT/ thru 1 RT	1 LT 2 thru	1 thru 1 thru/ RT
	Exit 308 EB Ramps	Stop for off ramp	1 LT/ thru 1 RT	N/A	1 thru 1 thru/ RT	1 LT 2 thru

Table 3. Existing Intersections

Roadway	Intersection	Control	Lanes			
			EB leg	WB Leg	NB Leg	SB Leg
Science Center Dr.	Fremont Ave.	Signal	1 LT 1 thru/ RT	1 LT 1 thru/ RT	1 LT 1 thru 1 thru/ RT	1 LT 1 thru 1 thru/ RT
	Exit 309 WB Ramps	Yield	1 thru/ RT	1 LT 1 thru	N/A	N/A
	Exit 309 EB Ramps	Stop for off ramp	1 thru	2 thru	1 LT 1 RT	N/A
	North Blvd.	Signal	1 LT 1 thru 1 thru/ RT	1 LT 1 thru 1 thru/ RT	1 LT/ thru/ RT	1 LT 1 thru/ RT
Lewisville Highway	33rd North	Stop for 33rd North	N/A	1 LT 1 thru/ RT	1 thru 1 thru/ RT	1 LT 2 thru
	Exit 310 WB Ramps	Signal	N/A	1 LT 1 thru 1 RT	1 LT 2 thru	1 thru 1 thru/ RT
	Exit 310 EB Ramps	Stop for off ramp	1 LT 1 RT	N/A	1 thru 1 thru/ RT	1 LT 2 thru
	Iona Road	Signal	N/A	1 LT 1 thru/ RT	1 thru 1 thru/ RT	1 LT 2 thru

2.4 Pedestrian & Bicycle Facilities

The Idaho Falls Greenbelt Trail is a pedestrian and bicycle facility that travels along the Snake River within Idaho Falls. It starts on the east side of the river in the south at Sunnyside Road, continuing north to connect to Pancheri Drive. From here the trail exists on both sides of the river and connects to Broadway Street. The trail continues along the west side of the river north to a parking area and trail head south of US-20. The trail along the east side of the river continues north and crosses under US-20 at Johns Hole on a floating bridge that is only open during the summer months. This trail continues north and connects with the university complex.

Broadway Street on both sides of Exit 118 has sidewalks on either side of the roadway and marked pedestrian crosswalks at both ramp terminal intersections, and at the intersections of Skyline Drive, Saturn Avenue, and Utah Avenue. Pedestrian and bicycle facilities on Broadway Street continue east and allow access to the Idaho Falls Greenbelt Trail.

Grandview Drive has a detached sidewalk on the north side of the road from Skyline Drive to Foote Drive and attached sidewalk to the Exit 119 southbound off ramp. There is a shared-use

pathway on the south side from Skyline Drive to Saturn Avenue with a narrow sidewalk that continues east over I-15 and along US-20 through Exit 307 and over the John's Hole bridge before connecting with the Idaho Falls Greenbelt. The only pedestrian crosswalks along Grandview Drive to allow pedestrians to travel across the roadway are found at the Skyline Drive intersection.

The Idaho Falls Greenbelt Trail travels along the west side of Fremont Avenue under US-20 at Exit 308. There is also a detached sidewalk along the east side of Fremont Avenue through the interchange to the Higham intersection. North of Elva the Greenbelt follows the Snake River to the west and there are segments of detached sidewalk on the west and east sides of the roadway up to Exit 308. North of Higham Street, there is attached sidewalk on both sides of the roadway. There is a marked pedestrian crosswalk with flashing beacons on Fremont Street south of Exit 308.

3 Data Collection

3.1 Data Provided

ITD provided the following data:

- Crash data for the years 2011 to 2016
- Current signalized intersection signal timing

BMPO provided the following data:

- TransCAD travel demand model, which includes the estimated land uses for the years 2014, 2025, and 2040.

3.2 Collected Data

L2 Data Collection (L2) collected weekday turning movement counts from 7 a.m. to 9 a.m. and 4 p.m. to 6 p.m. on Wednesday September 27, 2018 and Thursday September 28, 2018 at the following intersections:

- I-15 Exit 118
    - I-15 northbound (NB) Ramps and Broadway St.
    - I-15 southbound (SB) Ramps and Broadway St.
- I-15 Exit 119
    - I-15 NB Ramps and US-20
    - I-15 SB Ramps and Grandview St. /Saturn Ave.
- US-20 Exit 307

  - US-20 eastbound (EB) Ramps and Lindsay Blvd.
  - US-20 westbound (WB) Ramps and Lindsay Blvd.
- US-20 Exit 308
  - US-20 eastbound (EB) Ramps and Fremont Ave.
  - US-20 westbound (WB) Ramps and Fremont Ave.
- US-20 Exit 309
  - US-20 eastbound (EB) Ramps and Science Center Dr.
  - US-20 westbound (WB) Ramps and Science Center Dr.
- US-20 Exit 310
  - US-20 eastbound (EB) Ramps and Lewisville Rd.
  - US-20 westbound (WB) Ramps and Lewisville Rd.
- Broadway St. intersections
  - Skyline Dr.
  - Saturn Ave.
  - Utah Ave.
- Grandview Dr. intersections
  - Skyline Dr.
  - Saturn Ave.
  - Science Center Dr. intersections
  - N Blvd.
  - Fremont Ave.
- Lewisville Rd. intersections
  - E Iona Rd.
  - E 33rd N

Daily counts at the following locations on the same dates:

- I-15

  - Exit 118 ramps
  - Exit 119 ramps
  - Mainline south of Exit 118
  - Mainline north of Exit 119
- US-20
  - Exit 307 ramps
  - Exit 308 ramps
  - Exit 309 ramps
  - Exit 310 ramps
  - Mainline west of Exit 307
  - Mainline east of Exit 310
- Broadway St.
  - West of I-15
  - East of I-15
- Grandview Dr.
  - West of I-15
- Lindsay Blvd.
  - Between US-20 ramp intersections
- Fremont Ave.
  - North of US-20
  - South of US-20
- Science Center Dr.
  - North of US-20
  - South of US-20
- Lewisville Rd.
  - North of US-20
  - South of US-20

HDR retrieved peak hour (a.m. and p.m.) and annual average daily traffic (AADT) data from ITD's automatic traffic recorders (ATRs) in the study area for the same days and time periods turning movement counts were collected. The ATR locations include:

- ATR #176 – New Sweden, I-15 @ milepost (MP) 114.645 (.015 miles north of New Sweden School Road underpass)
- ATR #131– Johns Hole Bridge, US-20 @ MP 307.835 (0.1 miles west of Lindsay Blvd. IC)
- ATR #76– Johns Hole Bridge, US-20 @ MP 310.400 (0.5 miles north of Lewisville Highway IC)

All existing traffic count data is presented in **Appendix B.**

4 Origin/Destination Study

The Origin/Destination study was conducted to identify where drivers using the study system were coming from and traveling to, how many are from the local area versus outside the local area, and some of the most preferred routes for local drivers. The results of these items will indicate how the I-15 and US-20 system is being used and what improvements will do to serve the different users of that system.

4.1 Bluetooth Sensor Data Collection

The study area is defined by trips moving through a network to reach destinations in the region as well as in Idaho Falls. The origin of the trips as either local or regional is not easily defined by only looking at count data. For this reason, Bluetooth sensors were selected as the preferred method for collecting and analyzing the data.

Bluetooth readers were strategically located throughout the study area and included 30 readers dedicated specifically for the purposes of collecting data for this study. Eight sensors were set in the study area prior to beginning this effort. Twenty-two additional sensors were temporarily set up for this study in August 2017 and data was continually being collected through the end of September of 2017. The data collectors were set up by a Salt Lake City firm called Blyncsy (www.blyncsy.com) which was hired by ITD to collect the data from these sensors. The data and processing programs developed by Blyncsy were made available to the team for the origin and destination study as well as for use in the companion traffic studies.

Each time a vehicle with a Bluetooth signal passes within range of a sensor, it records a unique identifier of that signal and the time that the signal was read. As the vehicle proceeds on its route the same unique identifier can be read at other deployed sensors and the time recorded. Reviewing data from each sensor allows a "match" to be made and a specific time of travel can be identified between the sensors. As subsequent sensors and travel times between them are added onto the trip taken by the vehicle, a defined route can be established with the specific travel time of that route.

One of the weaknesses of this procedure is the relatively low percent of capture of the total trips traveling through the system. Normally less than 10% of vehicles will have an active Bluetooth signal. The sensors were not paired with actual traffic counters, although a few were located fairly close to ITD ATR stations where actual traffic counts are recorded. Actual percent of capture could be determined only at these locations and the data extracted from these sensors should not be used as an indicator of trip counts.

Blyncsy stored data collected for the O&D study in the cloud and have developed proprietary software to read and analyze the immense amount of data as trips. The period of time selected for analysis was a continuous period between August 27, 2017 and September 24, 2017 when all of the sensors in the study were functioning and collecting data. During that time, there were millions of "matches" discovered. Through the process of data reduction there were sufficient matches for the team to be able to answer a few very important questions relating to the origin and destination of the travelers in the study area.

4.2 Origin/Destination Study Analysis

The data reduction software developed by Blyncsy applies filtering and summing algorithms to determine the trends that address two questions:

- When two locations are chosen as an origin and a destination, what is the primary route taken and travel time experienced by vehicles to get from the origin to the destination?
- What is the percentage of trips that have origination or destination within the Idaho Falls area (local trips) versus those trips that have originations and destinations outside of the Idaho Falls area (regional trips)?

4.2.1 Local Origin/Destination Trip Routes

Five typical routes were chosen as defined origins and destinations within the network of sensors in the study area. These routes were chosen as typical routes used by travelers to get in and around the Idaho Falls area and include the following:

1. Origin/Destination Pair 1 – US-20 west of Idaho Falls/Lincoln Road east of Woodruff Avenue
2. Origin/Destination Pair 2 – US-20 west of Idaho Falls/Sunnyside Road and US-91 intersection
3. Origin/Destination Pair 3 – US-20 west of Idaho Falls/US-26 northeast of Idaho Falls
4. Origin/Destination Pair 4 – I-15 south of Idaho Falls/ US-26 northeast of Idaho Falls
5. Origin/Destination Pair 5 – I-15 north of Idaho Falls/ US-26 northeast of Idaho Falls

Traffic "bottlenecks" created by barriers including the Snake River, I-15, US-20, and the railroad make vehicle route selection critical as congestion on the arterial routes can alter typical driving route selection. Essentially, the congestion and connectivity challenges in the project area are beginning to push drivers into choosing alternative routes. Streets intended

to be collectors are often being used as arterials by drivers trying to avoid the congestion challenges and some signed arterial routes are not being used as intended.

The arterial streets connecting I-15 traffic south of Idaho Falls to US-26 east of Idaho Falls is a great example of this issue. The signed route on I-15 directs drivers to use the Sunnyside Road exit and travel the Yellowstone Highway through Idaho Falls to access US-26. However, the analysis of travel routes using the Blyncsy data showed this is the route least used by drivers for this trip. Trip planning tools available on smart phones show drivers the fastest routes possible and take them to those other routes. The most used route results from the Bluetooth sensor analysis often follow the suggested routes shown by smart phone applications.

The results of the five routes chosen to be analyzed by the team can be reviewed with the exhibits prepared and included in **Appendix C**. Based on the results of this study, the following criteria should be considered for any alternatives.

- The route that requires the least amount of travel time will always be the preferred route regardless of trip length. The TransCad travel demand model developed for this project gives priority to the fastest path for allocating generated trips. This origin/destination study gives validity to that assumption making the TransCad travel demand model a good tool for forecasting future trips.
- Even when a high capacity arterial is available in a given route, this route will not be preferred by motorists unless it clearly saves time and minimizes delays. Collector and minor arterial streets are being used if time can be saved on the overall trip.
- New traffic congestion apps on smart phones appear to be impacting driver route choice over street and guide signs. Whether drivers are following the advice of these apps or they are simply learning to predict the same congestion by the time of day, future alternative scenario screening should consider the impacts evident by this phenomenon.
- A controlling traffic element in the existing system that has impact of driver route selection is the signal located at the exit 119 interchange connecting I-15 and US-20.

The five routes selected for the origin/destination study are not intended to be all inclusive. While they are believed to be most important traffic routes that show the traffic pattern trends affecting the study area, they are only a start for screening future alternatives. It is recommended that as alternatives are developed in Phase B, designers should consider the impact of the alternative to these five routes. At a minimum, any alternative considered viable should have positive impacts on some if not all of them. Additionally, the screening should consider if other analysis scenarios should be considered using the data collected and still available throughout this study.

4.2.2 Local versus Regional Origin/Destination Splits

As the traffic in the project area has continued to grow over the past decade, the question of “where is the traffic coming from” has been debated. It is known that some of the traffic in the

project study area is local users and many of the trips have both the origin and destination in Idaho Falls. Many drivers on these local trips use I-15 and US-20 to save time and cross the barriers such as the bridge at John's Hole on US-20.

Much of the traffic using I-15 and US-20 in the project area have origins and destinations outside the Idaho Falls area. These regional trips use these highways to simply pass through the study area.

The needs of local drivers and regional drivers vary based on their goals in traveling through the study area. Local drivers need good access to local streets through the interchanges on I-15 and US-20 to travel over the barriers described above. However, these closely spaced interchanges and intersections cause much of the delay, especially to the regional drivers who are just trying to travel through the study area.

The Bluetooth data collected was analyzed to identify local vs. regional trends using the origin/destination filters developed by Blyncsy. Generally, the split between regional and local traffic is 60% local and 40% regional and was found to be consistent through repeated tests with different sensor origin/destination analysis points and various manual inclusion points. See the Blyncsy step by step origin/destination analysis procedure in **Appendix C**. Additionally, this split was tested at different times of the year and while it varied with the analysis pairs chosen, it generally did not vary more than 5%. There tended to be a higher regional split during the summer months when tourist and agricultural regional trips increase. The percentage of local trips tended to increase during the fall months as the regional trip volumes reduced.

It is recommended that alternatives developed in Phase B should be evaluated for their appropriateness to serve both the local and regional traffic. The data is available to test local vs. regional splits throughout the duration of the study. Tests using this data should be aware of the following limitations:

- All 30 sensors will provide good results only between August 27th and September 30th of 2017.
- Sensors 27, 28, 29, 41, 39, 49 and 50 can be used for analyzing the summer months during 2017.
- The solar eclipse was a significant event in East Idaho on August 21, 2017. The traffic patterns were significantly impacted by this event for a few days prior and a few days following the eclipse.

Determining the local versus regional split is an imperfect science. This analysis technique determines the origin or destination for any given test point; however, local trips that use I-15 or US-20 in the study area and have not passed by either the analysis point or a manual inclusion point are not included in the local versus regional split. These local trips may be under-represented in the split due to vehicles using only a short segment within the project study area.

During the Phase A sensitivity analysis conducted using the TransCad travel demand model, the model revealed some indications of local versus regional splits. These splits tended toward a 1/3 regional and 2/3 local split. The data source for the TransCad model and the Bluetooth

results were independent and did not rely on any shared data. The results of the Origin/Destination study provide a level of confidence that results and trends of the travel demand model reflect the current nature of the existing system.

5 Existing Operational & Capacity Analysis

Capacity is defined as the maximum rate at which vehicles can pass through a given point in an hour under prevailing conditions. Intersection capacity is measured by evaluating the critical lane groups that experience the most delay for stop controlled or signalized intersections. A volume to capacity (v/c) ratio less than 0.85 generally indicates that adequate capacity is available and vehicles are not expected to experience significant queues or delays. As the v/c ratio approaches 1.0, traffic flow may become unstable and significant delay and queuing conditions may occur. Once the demand exceeds capacity, defined as a v/c ratio greater than 1.0, traffic flow is unstable and excessive delay and queuing is expected.

The concept of level of service (LOS) was developed to correlate numerical traffic operational data to subjective descriptions of traffic performance at intersections. LOS is defined as the system of six designated ranges, from “A” (best) to “F” (worst), used to evaluate performance. **Table 4** presents the HCM 2010 LOS thresholds at stop-controlled and signalized intersections.

Table 4. LOS Thresholds for Motor Vehicles at Intersections

LOS	Stop-controlled Intersection Control Delay (s/veh)	Signalized Intersection Control Delay (s/veh)
A	<= 10	<= 10
B	10-15	10-20
C	15-25	20-35
D	25-35	35-55
E	35-50	55-80
F	>50	>80

HDR estimated the LOS for the weaving segments, and on and off ramps within the study area following the HCM 2010 procedures for freeway weave, and merging and diverging segments. **Table 5** presents the LOS criteria for weave, merge, and diverge segments along a freeway.

Table 5. LOS Thresholds Motor Vehicles on Freeway Weave, Merge, and Diverge Segments

LOS	Density (pc/mi/ln)
A	<= 10
B	10-20
C	20-28
D	28-35
E	>35
F	Demand exceeds capacity

To identify intersection and highway segment capacity deficiencies and improvement needs, HDR identified those facilities that operated at LOS E or F. Normally LOS D is acceptable for peak hour operations in urban/suburban areas.

VISSIM software was used to model and analyze study area highway segments, interchanges, and intersections under current conditions. HCM 2010 analysis methods were used to produce the analysis reports. The overall intersection LOS and delay were recorded, as well as the v/c ratios, delays and LOS for each relevant turning movement for each intersection.

5.1 Results

Capacity analysis results are presented below and detailed reports from the capacity analyses are presented in **Appendix D**. Results were found for the existing a.m. and p.m. peak hour operations.

5.1.1 A.M. Peak Hour

Intersection results are presented in **Table 6** with details presented in **Appendix D.** During the weekday a.m. peak hour, all intersections within the study area, apart from one, are estimated to operate at an overall intersection average LOS C or better. The Lindsay Boulevard & Exit 307 westbound ramp terminal intersection is estimated to operate at an overall LOS E with an average of 36.9 seconds of delay. The turning movements from the off ramp experience significant delay waiting for acceptable gaps to enter the traffic lanes on Lindsay Boulevard and are estimated to operate at LOS F.

According to HCM 2010 standards, all weave, merging, and diverging segments on I-15 and US-20 is estimated to operate at LOS C or better. Only three segments are estimated to operate at LOS C: the Exit 307 westbound on ramp, the Exit 308 westbound off ramp, and the Exit 309 westbound on ramp.

Table 6. Existing A.M. Peak Hour Intersection Analysis Results

Roadway	Intersection	LOS	Delay (s/veh)	Movements that fail
Broadway St.	Skyline Dr.	C	22.1	N/A
	Saturn Ave.	A	8.2	N/A
	Exit 118 SB Ramps	B	11.9	N/A
	Exit 118 NB Ramps	B	11.9	N/A
	Utah Ave.	B	16.7	N/A
Grandview Dr.	Skyline Dr.	B	15.9	N/A
	Saturn Ave. / Exit 119 SB Ramps	A	2.7	N/A
	Exit 119 NB Ramps	C	20.6	N/A
Lindsay Blvd.	Exit 307 WB Ramps	E	36.9	WB LT & RT
	Exit 307 EB Ramps	A	1.9	N/A
Fremont Ave.	Exit 308 WB Ramps	A	6.3	N/A
	Exit 308 EB Ramps	A	2.6	N/A
Science Center Dr.	Fremont Ave.	A	3.8	N/A
	Exit 309 WB Ramps	A	6.6	N/A
	Exit 309 EB Ramps	A	1.3	N/A
	North Blvd.	A	8.7	N/A
Lewisville Highway	33rd North	A	1.9	N/A
	Exit 310 WB Ramps	B	12.9	N/A
	Exit 310 EB Ramps	A	1.6	N/A
	Iona Road	A	7.0	N/A

5.1.2 P.M. Peak Hour

Intersection results are presented in **Table 7** with details presented in **Appendix D.** During the weekday p.m. peak hour, all intersections within the study area are estimated to operate at an overall intersection average LOS D or better. The intersections of Broadway Street & Skyline Drive, Broadway Street & Utah Avenue, Grandview Drive & Skyline Drive, Grandview Drive & Exit 119 southbound ramp terminal, and Grandview Drive & Exit 119 northbound ramp terminal are all estimated to operate at LOS D.

At Broadway Street & Skyline Drive, all southbound Skyline Drive movements are estimated to operate at LOS E or lower, with through and right turn movements estimated to operate at LOS F. At Broadway Street & Utah Avenue, the northbound Utah Avenue left turn and through movements are estimated to operate at LOS E.

Table 7. Existing P.M. Peak Hour Intersection Analysis Results

Roadway	Intersection	LOS	Delay (s/veh)	Movements that fail
Broadway St.	Skyline Dr.	D	37.2	All SB
	Saturn Ave.	B	19.7	N/A
	Exit 118 SB Ramps	A	7.7	N/A
	Exit 118 NB Ramps	B	12.7	N/A
	Utah Ave.	D	40.0	NB LT & thru
Grandview Dr.	Skyline Dr.	D	36.1	EB thru
	Saturn Ave. / Exit 119 SB Ramps	C	23.4	All EB, NB RT, & all SB
	Exit 119 NB Ramps	D	52.2	EB LT & thru
Lindsay Blvd.	Exit 307 WB Ramps	A	8.7	N/A
	Exit 307 EB Ramps	A	4.7	N/A
Fremont Ave.	Exit 308 WB Ramps	A	1.6	N/A
	Exit 308 EB Ramps	A	2.7	N/A
Science Center Dr.	Fremont Ave.	A	9.5	N/A
	Exit 309 WB Ramps	A	4.7	N/A
	Exit 309 EB Ramps	A	1.0	N/A
	North Blvd.	B	14.2	EB LT & SB thru
Lewisville Highway	33rd North	A	2.5	N/A
	Exit 310 WB Ramps	B	10.5	N/A
	Exit 310 EB Ramps	A	2.1	N/A
	Iona Road	A	8.8	N/A

At Grandview Drive & Skyline Drive, the eastbound through movement is estimated to operate at LOS E. The intersection of Grandview Drive & Exit 119 Southbound Ramps/Saturn Avenue is estimated to have all eastbound movements operate at LOS E as well as the northbound right, and southbound left and right movements. The southbound left turn movement is estimated to operate at LOS F. As Grandview Drive transitions to become US-20 at the Exit 119 northbound ramps, all eastbound movements are estimated to operate at LOS F. The northbound ramp terminal intersection becomes a bottleneck and queues from this intersection extend east and west to disrupt the operations at adjacent intersections. This intersection is estimated to operate at an overall intersection average LOS D but the average delay at the intersection is 52 seconds during the p.m. peak hour, which is 3 seconds lower than the LOS E threshold of 55 seconds for signalized intersections

At the intersection of Science Center Drive & North Boulevard, the Science Center eastbound left movement is estimated to operate at LOS E, as well as the North Boulevard southbound through movement.

According to HCM 2010 standards, all weave, merging, and diverging segments on I-15 and US-20 are estimated to operate at LOS B or better.

6 Crash Analysis

Crash data for the study area for the six year period from 2011-2016 was provided by ITD.

During that time period, 59 crashes occurred on I-15, 87 crashes occurred along US-20, 56 crashes occurred on the interchange on and off ramps, and 178 crashes occurred at the study intersections. The Exit 119 northbound off ramp had by far the most crashes with a total of 14, the majority of which were rear-end. The majority of crashes that occurred on I-15 and US-20 were fixed object or rear end crashes, mainly due to following too close or traveling too fast for the conditions. The Broadway Street & Exit 118 Northbound Ramps, Broadway Street & Utah Avenue and US-20 & Exit 119 Northbound Ramps intersections each experienced more than 20 crashes. The bulk of crashes at intersections are made up of rear-end and angle turning crashes, mainly due to inattention, failing to yield, and following too close. The crash types, contributing circumstances, and other data for all crashes pertinent crashes that occurred in the study from 2011-2016 can be found in **Appendix E**.

6.1 Crash Rates

Crash rates at the intersections, freeway exit ramps, and freeway segments were calculated using the Highway Safety Manual (HSM) Critical Rate screening method to determine the intersections with the greatest crash concerns. The annual average daily traffic (AADT) on each leg of each intersection, each exit ramp, and each segment of highway was determined and tabulated. The number of entering vehicles (in millions) for each intersection and on and off-ramp were estimated over the six years of the crash history, as well as the number of vehicle miles traveled (in millions) for the interstate segments. Crash rates were then calculated for each intersection, each exit ramp, and each highway segment in the study area. The average crash rate was calculated for stop-controlled intersections, interstate exit ramps, and interstate segments, respectively. A critical crash rate or threshold value was calculated for each intersection, exit ramp, and interstate segment and compared to the respective observed crash rate. Sites with an observed crash rate greater than their critical crash rate were flagged for further investigation. Crash rates were also compared to the statewide average crash rate for the specific roadway or intersection type. Each of the calculated crash rates and critical crash rates for the freeway segments, on and off ramps and intersections within the study area can be found in **Appendix F**.

Four freeway segments, two on I-15 and two on US-20, were found to have crash rates higher than their calculated critical crash rates. These segments were I-15 (northbound) south of Exit 118, I-15 (northbound) between the Exit 119 ramps, US-20 (eastbound) between the Exit 308 ramps, and US-20 (eastbound) between the Exit 310 ramps. I-15 northbound segments south of

Exit 118, between Exit 118 ramps and between Exit 119 ramps and southbound segments between Exit 119 ramps and north of Exit 119 had calculated crash rates higher than the state average. The US-20 eastbound segment between the Exit 310 ramps was found to have a crash rate higher than the state average crash rate as well.

Four freeway ramps were found to have crash rates above their calculated critical crash rates: the Exit 118 southbound loop on ramp, the Exit 119 northbound off ramp and southbound off ramp, and the Exit 307 eastbound on ramp. Many ramps were found to have crash rates higher than the statewide average. All five Exit 118 ramps and all Exit 119 ramps, apart from the northbound on ramp, had higher crash rates than the statewide average. The Exit 307 eastbound off and on ramps and westbound off ramp, the Exit 308 eastbound on ramp, and the Exit 310 eastbound on and westbound off ramps all were found to also have crash rates above the statewide average.

Two intersections within the study area were found to have crash rates higher than their calculated critical crash rates: Grandview Drive & Exit 119 Southbound Ramps/Saturn Avenue and Science Center Drive & Exit 309 Westbound Ramps. Two intersections were also found to have crash rates higher than the statewide average crash rate: Broadway Street & Colorado Avenue (in between Saturn Avenue and the Exit 118 southbound ramps) and Broadway Street & Exit 118 Northbound Ramps.

6.2 Fatal, Pedestrian and Bicycle Crashes

The list below describes all fatal, pedestrian, and bicycle crashes that occurred within the study area during the analysis years.

6.2.1 Fatal Crashes

- 1 fatal crash. A pedestrian crossed US-20 west of the Saturn intersection and was hit by a car in September 2016. No crosswalk is present in this location, and the driver was cited with inattention.

6.2.2 Pedestrian Crashes

- 2 pedestrian crashes occurred on US-20 west of Saturn. One resulted in fatality and is described above. The other also occurred in September 2016 and injured the pedestrian, who was determined to be alcohol or drug impaired.
- 1 pedestrian crash at US-20/Skyline intersection in May 2011. Pedestrian was hit while in crosswalk.
- 1 pedestrian crash occurred at US-20/Saturn intersection in February 2016. Pedestrian was hit while in crosswalk and was determined to have failed to yield to the vehicle.
- 1 pedestrian crash occurred at US-20/Exit 118 SB off-ramp intersection in April 2011. Pedestrian was hit while in crosswalk and the vehicle was determined to have failed to yield to the pedestrian.

- 2 pedestrian crashes occurred at the Broadway/Utah intersection. Both resulted in injuries to the pedestrians. Both pedestrians were in the crosswalk and the vehicles did not yield to them. One occurred in August 2015 and the other in September 2016.
- 1 pedestrian crash occurred at the Lindsay/Exit 307 EB off-ramp intersection in March 2011. The pedestrian crossed in front of the vehicle and was not in a crosswalk. The pedestrian was injured and was determined to be alcohol or drug impaired.
- 1 pedestrian crash occurred at the Fremont/Exit 308 EB off-ramp intersection in January 2011. The pedestrian was standing outside a parked car and was hit by a passing car making an improper lane change. The pedestrian was injured.

6.2.3 Bicycle Crashes

- 1 bicycle crash occurred at US-20/Exit 118 SB off-ramp intersection in June 2013. The bicyclist was hit while in crosswalk and the vehicle driver was determined to have failed to yield to the pedestrian and was alcohol impaired.
- 1 bicycle crash occurred at Grandview/Exit 119 NB off-ramp intersection in June 2012. The bicyclist was hit while in crosswalk and the vehicle driver was determined to have failed to obey the traffic signal.
- 1 bicycle crash occurred at Lindsay/Exit 307 EB off-ramp intersection in November 2013. The bicyclist was hit while in crosswalk and the vehicle driver was determined to have failed to yield to the pedestrian.

7 2045 No-Build Operational & Capacity Analysis

7.1 Planning Year

The planning year of 2045 was agreed upon through discussions with the Technical Leadership and Project Management Teams for this study. The Team members discussed the planning year with the Environmental Resources Team, which includes representatives from ITD District 6, Headquarters, FHWA, BMPO, and the City of Idaho Falls. The purpose of this planning year is to provide a large enough design window of opportunity for the PEL process and the proposed phased approach to developing improvements.

7.2 Forecast Travel Demand Volumes

7.2.1 Coordination with BMPO & Member Land Use Agencies

The team has coordinated with BMPO to obtain a copy of their TransCAD travel demand model, which includes the estimated land uses for the years 2014, 2025, and 2040. Socioeconomic data for other years (e.g. 2017 and 2045) was obtained by straight line interpolation/ extrapolation of the data included with the model.

7.2.2 2017 Existing Year Traffic Data and Traffic Factors

Using data from the existing 2017 counts and ITD's ATRs, adjustment factors were determined to apply to the travel demand model forecasts, including:

- Monthly seasonal factor (MSF) = monthly average daily traffic (September) / AADT
- K-factors = proportion of AADT occurring in a.m. and p.m. peak hours, respectively
- D-factors = percentage of two-way peak hour traffic that occurs in each direction in the a.m. and p.m. peak hours, respectively
- T_f = the percentage of truck traffic occurring during the peak hours
- Peak Hour Factor (PHF) = the peak hourly volume of the day divided by 4 times the peak 15-minute flow rate within the peak hour

These factors were used to verify and adjust the existing 2017 counts to estimate AADT as well as estimate peak hour volumes from daily travel demand forecasts.

7.2.3 Forecast Methodology

The 2045 no-build travel demand volumes were developed using the TransCAD model as described below. The forecast travel demand models created for this study are specific for these analyses and investigations and are not official BMPO models and should not be used for any other purpose.

Design year forecasts were developed for the study roadways and intersections through the following steps:

1. Incremental volume increases on each roadway segment in the study area were developed by comparing the project specific TransCAD 2017 travel demand model output to the estimated daily forecast from the 2045 TransCAD model. These increases were added to the 2017 existing counts on these roadway segments to develop the 2045 forecast travel demand.
2. Calculated K-factors and D-factors were applied to the 2045 forecasts to provide peak hour volumes on each segment entering and exiting the study intersections. These volumes were reviewed and balanced.
    a. Some local roadway segment volumes were adjusted to balance through intersections and interchanges using engineering judgment and comparisons to the model output. The balancing efforts are necessary so all intersections have the same volume entering and exiting and the interchange volumes balance on and off-ramp volumes.
3. Using the balanced forecasts for each leg of each intersection, turning movements were developed following the methodologies recommended by the National Cooperative Highway Research Program (NCHRP) Report 765; Analytical Travel Forecasting Approaches for Project-Level Planning and Design.

These processes assumed no changes to the I-15 or US-20 access or interchange types and included the following programmed improvement projects:

- Widen the Old Butte Road to Pancheri Drive connection to 5 lanes
- Widen 600 feet of 5th West to University Blvd. to 5 lanes
- Widen Hitt Road from Sunnyside Road to 49th South to 5 lanes
- Widen 65th South from Yellowstone Highway to Hitt Road to 5 lanes
- Widen Holmes Avenue from Sunnyside Road to 65th South to 5 lanes
- Widen 1st Street from Ammon Rd to 45th East to 5 lanes
- Widen St. Leon Road from Lincoln Road to US-20 to 5 lanes
- Widen 25th East from Lincoln Road to US-26 to 5 lanes

7.3 2045 No-Build Results

VISSIM software was used to model and analyze study area highway segments, interchanges, and intersections under 2045 No-Build conditions P.M. peak hour conditions consistent with the BMPO models and as the heaviest traffic volume portion of the day. Details of this analysis are found in **Appendix F.**

7.3.1 P.M. Peak hour

Intersection results are presented in **Table 8** with details presented in **Appendix F.** During the forecast no-build, p.m. peak hour only 11 out of 20 intersections within the study area are estimated to operate at at an overall intersection average LOS D or better. The intersections of Broadway Street & Skyline Drive, Broadway Street & Exit 118 Northbound Ramps, Broadway & Utah Avenue, US-20 & Exit 119 Northbound Ramps, Lewisville Highway & 33rd North and Lewisville Highway & Exit 310 Eastbound Ramps are all estimated to operate at LOS E overall. The intersections of Broadway Street & Utah Avenue, Grandview Drive & Skyline Drive, Grandview Drive & Exit 119 Southbound Ramps/Saturn Avenue, and Lindsay Boulevard & Exit 307 Westbound Ramps are all estimated to operate at LOS F overall.

Amongst intersections that are estimated to operate at LOS D or better, there are still movements that are estimated to operate below LOS D. The eastbound left turn and through movements at Broadway Street & Saturn Avenue are estimated to operate at LOS E, as well as the southbound left turn movement. The westbound through and southbound left turn movements at Lindsay Boulevard & Exit 307 Eastbound Ramps are both estimated to operate at LOS E. At Science Center Drive & Exit 309 Eastbound Ramps, the northbound left movement coming off the off ramp is estimated to operate at LOS F. Further down the roadway at the intersection of Science Center Drive & North Boulevard, both the eastbound and southbound left turn movements are estimated to operate at LOS E.

Table 8. 2045 No-Build P.M. Peak Hour Intersection Analysis Results

Roadway	Intersection	LOS	Delay (s/veh)	Movements that fail
Broadway St.	Skyline Dr.	E	72.9	All EB & SB
	Saturn Ave.	D	43.6	EB LT & thru, SB LT
	Exit 118 SB Ramps	C	20.4	N/A
	Exit 118 NB Ramps	E	54.3	EB LT, NB LT & RT
	Utah Ave.	F	108.3	All movements
Grandview Dr.	Skyline Dr.	F	264.5	All but WB LT
	Saturn Ave. / Exit 119 SB Ramps	F	73.3	All EB, NB, & SB
	Exit 119 NB Ramps	F	74.6	All EB & NB
Lindsay Blvd.	Exit 307 WB Ramps	F	107.1	All WB
	Exit 307 EB Ramps	A	9.2	WB thru & SB LT
Fremont Ave.	Exit 308 WB Ramps	A	2.9	N/A
	Exit 308 EB Ramps	A	4.1	N/A
Science Center Dr.	Fremont Ave.	B	11.0	N/A
	Exit 309 WB Ramps	C	18.0	N/A
	Exit 309 EB Ramps	A	3.9	NB LT
	North Blvd.	B	14.9	EB LT & SB LT
Lewisville Highway	33rd North	E	41.0	All EB
	Exit 310 WB Ramps	B	20.0	N/A
	Exit 310 EB Ramps	E	45.0	All EB
	Iona Road	C	31.3	N/A

According to HCM 2010 standards, all weave, merging, and diverging segments on I-15 and US-20 are estimated to operate at LOS C or better. At Exit 118, the northbound off ramp and both southbound on ramps are estimated to operate at LOS C. The Exit 307 westbound on ramp is estimated to operate at LOS C, as well as the eastbound on and westbound off ramps at Exit 308, and the westbound on and eastbound off ramps at Exit 309. However, the poor performance at the interchange ramp terminals will affect the operations of adjacent intersections and the queues may extend along ramps far enough to reduce the LOS of weaving areas.

8 Next Steps

The primary purposes of Phase A was to collect data and prepare the traffic model to better inform project planning decisions in future phases. Phase A work will feed into the PEL for Phase B. 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 review process.

8.1 Phase B – PEL

The PEL process will occur over a 14-month process where alternatives will be developed and refined. An initial Level 1 alternative development will be the first round of alternative development based on data collected in Phase A as well as stakeholder, public involvement and project team inputs. Criteria for evaluating the effectiveness and impacts of each alternative will be developed as part of the initial steps of Phase B and will include right-of-way impacts, environmental impacts, future growth planning, traffic flow, ability to meet the purpose and need of the project, and other factors. Both the TransCad and VISSIM models created in Phase A will be refined in Phase B to determine the effectiveness of moving the traveling public through each alternative. The PEL process will include three levels of development and screening to eliminate less effective alternatives and determine feasible alternatives.

8.2 Phase B - Traffic Model Refining

Based on the results of the Phase A analysis, the most likely alternatives stemming from the PEL Level 1 screening process will include the addition of roadways and/or the modification of existing roadways. A high level determination of the effectiveness of Level 1 alternatives will be based on addressing the system deficiencies found in the travel demand model forecasts and the Phase A sensitivity analysis. Subsequent refinement in developing Level 2 and Level 3 alternatives will require modifications of the TransCad and VISSIM models to predict travel demand pattern changes for a given alternative. No further refinement of the Origin/Destination study will be required but, as alternatives are developed, the team should consider how the each alternative may affect route selection for both regional and local traffic.

8.3 Phase B - Public Involvement

During the PEL process, understanding the concerns and desires of the community as well as helping stakeholders and the public understand the positive and negative impacts each “build” alternative could bring to the community will be key. As alternatives are selected and advanced through the screening process, the travel demand model outputs for each must be correctly interpreted by the team and clearly understood by the public.

Prior to going to the general public alternatives will go through a rigorous internal review process by the project executive team, community working group, and major key stake holders. To provide well vetted alternatives to share with the public, the team should build alternatives based on factors such as:

- Models of existing conditions,
- Studies developed in Phase A,
- Updated travel demand models for alternatives,
- The Bluetooth Origin/Destination study,
- Socioeconomic factors,
- Future community planning documents and land use documents,
- Environmental constraints
- Microsimulation traffic model results of the top alternatives passing screening.

This process will provide a foundation on which environmental and design decisions can be made and supported.

Appendix C.
Methods and Assumptions for Forecasting Traffic Volumes

Memo

Date:	Wednesday, December 20, 2017
Project:	KN20065 I-15/US-20 Safety and Mobility Study
To:	Karen Hiatt, PE Planning and Engineering Resources, ITD District 6
From:	Cameron Waite, PE, PTOE Kelly Hoopes, PE Jayson Cluff, PE, PTOE
Subject:	Methods and Assumptions for Forecasting Traffic Volumes

Introduction

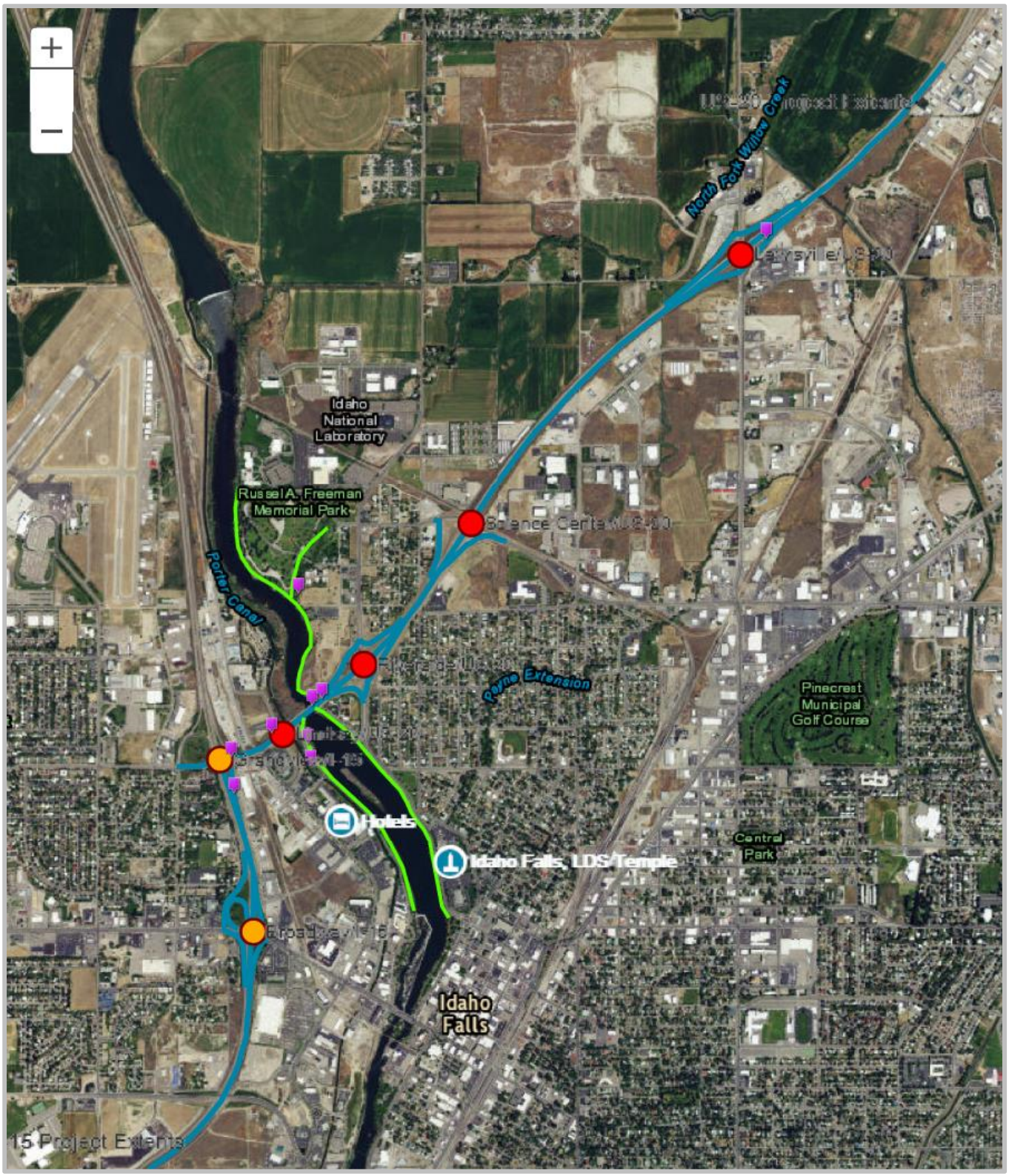
This memo describes the methods and assumptions underlying the travel demand forecasting for the Interstate 15 (I-15) and United States Highway 20 (US-20) Safety and Mobility Study (Project No. A020(065), Key No. 20065) HDR and Horrocks are developing for the Idaho Transportation Department (ITD) District 6. ITD, the Bonneville Metropolitan Planning Organization (BMPO) and member agencies in the BMPO have identified the need to improve the I-15/US-20 connection and adjacent interchanges. The purpose of the project is to complete a planning study to identify and screen possible alternatives that meet the project goals, complete a NEPA document to obtain environmental clearance for a selected alternative, develop a capital improvement plan to phase the work over multiple years to assist with securing funding, and complete the design of improvements to prepare PS&E documents for construction. **Figure 1** presents the study area and vicinity.

Travel demand forecasts will be used to perform traffic capacity and safety analyses of the I-15 and US-20 mainline, interchanges, and adjacent cross street intersections. The analyses will determine:

- Estimated traffic volume loadings for the design year
- Operational capacity at all interchanges
- Alternative improvements to serve future travel demand

The purpose of this memo is for ITD, BMPO, and the Federal Highway Administration (FHWA) to confirm and approve the methodology for travel demand forecasting, distribution and turning movement volumes before HDR and Horrocks proceed with these tasks.

Figure 1. Vicinity Map and Study Area



Planning Year

The planning year of 2045 was agreed upon through discussions with ITD environmental staff as well as the Technical Leadership and Project Management Teams for this study. The Team members discussed the planning year with representatives from ITD District 6, Headquarters, FHWA, BMPO, and the City of Idaho Falls. The purpose of this planning year is to provide a large enough design window of opportunity for the PEL process and the proposed phased approach to developing improvements.

Sensitivity Analysis

The planning year for this work is set to provide reasonable forecasts for the future needs of the study system. However, as improvements may be phased and not all installed at one time, additional capacity may be needed beyond the 2045 estimates. For this purpose a sensitivity analysis will be performed to determine the excess capacity proposed improvements may have beyond 2045 estimated travel demand. The sensitive analysis will increase the forecast travel demand in set increments (5%, 10%, 15%, etc.) to allow them to be analyzed and determine how much the travel demand can increase before the improvements may not operate at acceptable levels.

Data Collection

L2 Data Collection collected current weekday turning movement counts from 7 a.m. to 9 a.m. and 4 p.m. to 6 p.m. on Wednesday or Thursday September 27th and 28th at the following intersections:

- I-15 Exit 118
  - I-15 northbound (NB) Ramps and Broadway St.
  - I-15 southbound (SB) Ramps and Broadway St. (US-20)
  - Broadway St. and Utah Ave.
  - Broadway St. and Saturn Ave.
  - Broadway St. and Skyline Dr.
- I-15 Exit 119
  - I-15 NB Ramps and Grandview Dr.
  - I-15 SB Ramps and US-20
  - Grandview Dr. and Skyline Dr.
- US-20 Exit 307
  - US-20 eastbound (EB) Ramps and Lindsey Blvd.
  - US-20 westbound (WB) Ramps and Lindsey Blvd.
- US-20 Exit 308
  - US-20 EB Ramps and Riverside Dr.
  - US-20 WB Ramps and Riverside Dr.
- US-20 Exit 309
  - US-20 EB Off-Ramp and Science Center Dr.
  - US-20 WB On-Ramp and Science Center Dr.
  - Science Center Dr. and Fremont Ave.

    - Science Center Dr. / Anderson Dr. and N Blvd.
- US-20 Exit 310
    - US-20 20 EB Ramps and Lewisville Rd.
    - US-20 WB Ramps and Lewisville Rd.
    - Lewisville Rd. and E. Iona Rd.
    - Lewisville Rd. and 33rd N

L2 Data Collection collected current weekday daily counts on Wednesday September 27th at the following locations:

- I-15 mainline south of Exit 118
- I-15 Exit 118 ramps
- I-15 mainline north of Exit 119
- I-15 Exit 119 ramps
- US-20 mainline west of Exit 307
- US-20 Exit 307 ramps
- US-20 Exit 308 ramps
- US-20 Exit 309 ramps
- US-20 Exit 310 ramps
- US-20 mainline east of Exit 310
- Broadway St. east of I-15 Exit 118
- Broadway St. west of I-15 Exit 118
- Grandview Dr. west of I-15 Exit 119
- Lindsay Blvd. between Exit 307 ramp terminals
- Fremont Ave. north of US-20 Exit 308
- Riverside Dr. south of US-20 Exit 308
- Science Center Dr. north of US-20 Exit 309
- Science Center Dr. south of US-20 Exit 309
- Lewisville Rd. north of US-20 Exit 310
- Lewisville Rd. south of US-20 Exit 310

HDR will retrieve peak hour (a.m. and p.m.) and annual average daily traffic (AADT) volume data for the same days and time periods turning movement counts were collected. The automatic traffic recorders (ATRs) include:

- ATR #176 – New Sweden, I-15 @ milepost (MP) 114.645
- ATR #131 – Johns Hole Bridge, US-20 @ MP 307.835
- ATR #76 – Idaho Canal, US-20 @ MP 310.400

Horrocks will collect travel times on study corridors for use in model calibration.

- I-15 between Exit 116 and Exit 119 in each direction during peak hours
- US-20 between I-15 and Lewisville Road Interchange in each direction during peak hours

2017 Existing Year Traffic Data and Traffic Factors

Using data from the existing 2017 counts and ITD's ATRs, adjustment factors will be determined to apply to the travel demand model forecasts, including:

- Monthly seasonal factor (MSF) = monthly average daily traffic (September) / AADT
- K-factors = proportion of AADT occurring in a.m. and p.m. peak hours, respectively

- D-factors = percentage of two-way peak hour traffic that occurs in each direction in the a.m. and p.m. peak hours, respectively
- T_f = the percentage of truck traffic occurring during the peak hours
- Peak Hour Factor (PHF) = the peak hourly volume of the day divided by 4 times the peak 15-minute flow rate within the peak hour

These factors will be used to verify and adjust the existing 2017 counts to estimate AADT as well as estimate peak hour volumes from daily travel demand forecasts.

Travel Demand Model

BMPO maintains a travel demand model developed using TransCAD software. This model includes a 2014 "base" year model run that has been developed, calibrated, and updated using current count data. BMPO has also developed 2025 and 2040 forecasts with the land use and infrastructure assumptions for future growth and programmed transportation improvement projects from the member land use and transportation agencies, including the cities of Ammon, Idaho Falls, Iona and Ucon, Bonneville County, the Targhee Regional Public Transportation Authority (TRPTA) and ITD..

Existing Origin/Destination Data

The Support Team has worked with Blyncsy to place Bluetooth data recorders at key locations throughout the study area to identify origin and destination (O/D) travel. Blyncsy uses big data and location analytics to understand travel habits and trends. More information can be found at their website: http://www.blyncsy.com/

Data derived from Blyncsy will be analyzed to provide O/D travel patterns for drivers using the I-15 and US-20 system as well determining how local traffic crosses the barriers of the Snake River, the Union and Pacific Railroad (UPRR), US-20, and I-15 to access destinations on either side within the City of Idaho Falls. Data was collected for time periods in August 2017 to capture some of the summer traffic patterns and in September/October 2017 to capture the travel patterns when school is in session, specifically BYU-Idaho. The peak tourist season and overall volumes on I-15 and US-20 are typically in July as shown in ITD's ATR historical data. Some Blyncsy sensors deployed with separate projects may capture the July peak and allow us to identify patterns in July.

This data will be useful in future phases in identifying how alternative concepts will serve different users of the system, including regional traffic and local traffic.

Forecast Travel Demand Volumes

COORDINATION WITH BMPO & MEMBER LAND USE AGENCIES

Horrocks has coordinated with BMPO to obtain a copy of their TransCAD travel demand model, which includes the estimated land uses for the years 2014, 2025, and 2040. Socioeconomic data for other years (e.g. 2017 and 2045) will be obtained by straight line interpolation/ extrapolation of the data included with the model. The Technical Leadership Team will verify the member land use agency programmed projects are included in the forecast models developed for this study.

METHODS TO DEVELOP 2045 TRAVEL DEMAND VOLUMES

A preliminary 2045 model was developed by straight line interpolation/ extrapolation of the socioeconomic data. The Technical Leadership Team worked with BMPO to verify which TAZ's are considered to be built out by 2040 and so were not increased in the 2045 model. This method was compared with an alternative 2045 model using a method developed by growing travel demand volumes from the 2040 model using growth rates calculated between the BMPO provided 2025 and 2040 model runs. The 2045 travel demand volumes results from each methodology were compared and were found to be very similar. Most of the study roadway volumes were calculated to be within two percent of each other which is a very small difference for travel demand forecasts.

The GEH Statistic is a formula used in traffic forecasting to compare two sets of traffic volumes. The GEH formula was developed by Geoffrey E. Havers, a transportation planner in London, England. His formula is an empirical formula used for a variety of traffic analysis purposes.

Often simply reviewing the differences in percentages to compare two sets of volumes is not a good evaluation of how close the methodology's are because of the wide variation of volumes on different roadways, such as mainline I-15 versus on-ramps and off-ramps. A single percentage of variation would not be applicable or realistic for these different facilities.

Because the GEH statistic is non-linear, a single acceptance threshold based can be used for different facilities with very different traffic volumes. Typically, a GEH of less than 5.0 is considered a good match between the two compared hourly volumes for the same facility. If the GEH is greater than 10.0, the correlation between the two sets of volumes is not acceptable. The use of GEH as an acceptance criterion for travel demand forecasting models is recognized by several transportation agencies in England and the United States.

The GEH statistic for the comparison of the 2045 travel demand volumes developed using the straight line methodologies for this project (socioeconomic data versus volume) was less than 5 for all roadways within the study area, which indicates a good match between methodologies. Most comparison values were less than 3. Results are shown in **Table 1**.

Table 1. Comparison of Two Methodologies for 2045 Traffic Projections Vicinity Map and Study Area

Roadway Facility	2025	2040	2045	2045	% Change (2(/(1) -1	GEH Statistic
	TDM	TDM	Grow Volumes (1)	Grow SE Data (2)		
I-15 South of Broadway	28,058	38,192	41,570	41,348	-0.5%	1.1
Broadway East of I-15	29,649	35,215	37,070	36,676	-1.1%	2.1
Broadway West of I-15	22,688	26,751	28,110	28,323	0.8%	1.3
I-15 Between Broadway and US-20	24,980	31,983	34,320	33,809	-1.5%	2.8
US-20 West of I-15	21,598	26,167	27,690	27,241	-1.6%	2.7
US-20 East of I-15	39,685	50,078	53,540	52,945	-1.1%	2.6
US-20 East of Lindsay	44,850	57,280	61,420	61,184	-0.4%	1.0
US-20 East of Fremont	40,452	50,976	54,480	54,265	-0.4%	0.9
US-20 East of Science	28,914	36,886	39,540	39,528	0.0%	0.1
US-20 East of Lewisville	24,235	29,236	30,900	31,107	0.7%	1.2
Lewisville North of US-20	9,156	16,450	18,880	18,713	-0.9%	1.2
Lewisville South of US-20	16,890	23,443	25,630	25,529	-0.4%	0.6
Science West of US-20	5,560	6,049	6,210	6,471	4.2%	3.3
Science East of US-20	17,098	20,139	21,150	21,209	0.3%	0.4
Freemont North of US-20	11,611	16,380	17,970	17,926	-0.2%	0.3
Fremont South of US-20	10,157	12,644	13,470	13,430	-0.3%	0.3
Lindsay North of US-20	2,320	3,094	3,350	3,419	2.1%	1.2
Lindsay South of US-20	6,335	8,136	8,740	9,093	4.0%	3.7
I-15 North of US-20	8,588	10,318	10,890	10,888	0.0%	0.0

PROPOSED METHODOLOGY

Based on the very similar results from these two methodologies and the ease of developing alternative concepts with the 2045 TransCAD model with straight line increases socioeconomic data, the 2045 travel demand volumes for each alternative will be developed using the TransCAD model as described. The forecast travel demand models created for this study are specific for these analyses and investigations and are not official BMPO models and should not be used for any other purpose.

The existing daily counts will be divided by the September MSF to develop AADT volumes for comparison to the base year BMPO travel demand model volumes. Design year forecasts will be developed for the study roadways and intersections through the following steps:

1. Develop incremental volume increases on each link in the study area by comparing the project specific TransCAD 2017 travel demand model output to the estimated daily forecast from the 2045 TransCAD model. These increases will be added to the 2017 existing counts on these links to develop the 2045 forecast travel demand.

2. Apply the calculated K-factors and D-factors to the 2045 forecasts to provide peak hour volumes on each segment entering and exiting the study intersections. These volumes will be reviewed and balanced.
    a. Some local road link volumes may need to be adjusted to balance through intersections and interchanges using engineering judgment and comparisons to the model output. The balancing efforts are necessary so all intersections have the same volume entering and exiting and the interchange volumes balance on and off-ramp volumes.
3. Using the balanced forecasts for each leg of each intersection, develop turning movements following the methodologies recommended by the National Cooperative Highway Research Program (NCHRP) Report 765; Analytical Travel Forecasting Approaches for Project-Level Planning and Design.

This process will develop travel demand forecasts for the No-Build Alternative, which assumes no changes to the I-15 or US-20 access or interchange types, but will include any programmed improvement projects.

Alternative Concept Development

The 2045 TransCAD model will be used to investigate the different alternative concept improvements by developing the resulting travel demand on the I-15 and US-20 study corridors. The travel demand output will be adjusted as described above for each alternative concept that is carried forward. Operational analyses can be completed with these forecast volumes for the various alternative concepts.

The concept alternatives that will be investigated as part of the first phase of the study will include the No-Build alternative and a High Capacity Roadway (HCR) alternative based on previous BMPO work. The potential HCR's in the vicinity of I-15/US-20 include a north leg between 97th North and 65th North in the vicinity of 81st North and a west leg between 35th West and 65th West in the vicinity of 45th West. These will be included in the travel demand modeling for this alternative and the effects to the travel demand on I-15 and US-20 and the associated interchanges will be evaluated.

Later phases will look at additional alternative concepts that address identified operational and safety deficiencies and coordinate with the study environmental work to ultimately identify a preferred alternative.

Traffic Operational Analysis

The operational analysis for the first phase will demonstrate how each alternative operates in the design year 2045 and identify deficiencies and opportunities for improvements as well as identify how the HCR affect travel demand for the study corridors. Traffic operational analysis will be performed using PTV Group's VISSIM software:

- Micro-simulation models will be developed to evaluate the level of service (LOS) on the I-15 and US-20 mainlines, ramp merges and diverges, and study intersections.
    - These models will be based on an existing conditions baseline model developed using existing traffic counts and existing traffic control and lane configurations.

The baseline model will be calibrated by comparing existing counts to model volumes, comparing existing travel times to model travel times, and modifying the model to match existing conditions as closely as feasible.

Traffic operations in the study area as depicted in **Figure 1**, including the system between I-15 Exit 118 (Broadway) and US-20 Exit 310 (Lewisville), will be analyzed for the following travel demand scenarios:

- No Build
- HCR Alternative Concept

Additional alternative concepts will be modeled and analyzed in future phases as they are developed.

Approval and Next Steps

After the Technical Leadership and Project Management Teams have reviewed and approved this memo, Horrocks and HDR will develop travel demand volumes and analyze traffic operations for study intersections, ramps, mainline segments, and highway segments for existing conditions, 2045 No Build, and 2045 HCR Alternative Concept conditions.

Appendix D.
Alternatives Evaluation Matrix with Questions for Levels One, Two, and Three

I-15/US-20 PEL Evaluation Questions

Evaluation Questions

Needs, Goals, and Objectives	Level 1 Criteria Questions	Level 1 Responses	Level 2 Criteria Questions	Level 2 Responses (all responses include qualitative discussion)	Level 3 Criteria Questions	Level 3 Responses (quantitative data and qualitative discussion)
Safety	Does the alternative improve bike, pedestrian and vehicle safety on I-15 and US-20, including the interchange on or off-ramps?	Better/Good/Fair/Negative	Does the alternative reduce backups on the exit ramps?	Better/Good/Neutral/Fair/Worse	How well do ramp signals operate?	Ramp signal LOS
			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 provide adequate weave distance?	What is the total weave distance provided between consecutive ramps?
					Does the alternative provide standard 12-foot lane widths?	What is the total number of corridor lane-miles that are narrower than 12 feet?
			Does the alternative address substandard interchange spacing on I-15 and US-20?	Better/Good/Neutral/Fair/Worse	Does the design option provide adequate distance between ramps?	What is the total distance between ramps?
			Are changes in access (closures or relocations) expected to reduce crashes?	Better/Good/Neutral/Fair/Worse	Does the alternative reduce merges and diverges?	What is the total number of predicted crashes based on HSM analysis?
Congestion	Does the alternative reduce congestion on I-15 and US-20?	Better/Good/Fair/Negative	Does the alternative increase the capacity of I-15 and US-20?	Better/Good/Neutral/Fair/Worse	What is the capacity of I-15/US-20 in the alternative?	What is the total number of vehicles able to be moved through the corridor in a given peak period?
			Does the alternative separate regional through trips and local destination trips?	Better/Good/Neutral/Fair/Worse	Does the alternative reduce end-to-end travel times through the corridor?	What is the end to end travel time in the corridor?
			Does the alternative improve freight movement?	Better/Good/Neutral/Fair/Worse	How does the alternative affect freight traffic?	What are the out of direction movements and/or total delay for high volume freight routes?

I-15/US-20 PEL Evaluation Questions

Evaluation Questions

Needs, Goals, and Objectives	Level 1 Criteria Questions	Level 1 Responses	Level 2 Criteria Questions	Level 2 Responses (all responses include qualitative discussion)	Level 3 Criteria Questions	Level 3 Responses (quantitative data and qualitative discussion)
			Does the alternative provide improved, alternative, or additional crossings of railroad and river?	Better/Good/Neutral/Fair/Worse	Is there an alternative or redundant crossing provided in the alternative?	How many lanes cross the railroad and river?
					Does the alternative affect traffic volumes on parallel facilities?	What are the projected volumes and LOS on parallel facilities?
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	Does the alternative support current and future bicycle connection needs in the Study area?	What are the number of bicycle crossings and new trail provided?
					Does the alternative support current and future pedestrian connection needs across I-15 and US-20?	What are the total number of pedestrian crossings and/or new sidewalk or multiuse trails that meet BMPO current Bike/Ped plan standards?
					Does the alternative support current and future transit connection needs across I-15 and US-20?	What connections are supported?
					Does the alternative support current and future local vehicle connection needs across I-15/US-20?	What connections are supported?
					Does the alternative improve connections/transfers to surrounding multi-modal network?	What connections are supported?
Future Travel Demand	Does the alternative improve travel time reliability on I-15 and US-20 in the study area?	Better/Good/Fair/Negative	Does the alternative provide capacity improvements to address projected population and tourism growth?	Better/Good/Neutral/Fair/Worse	Does the alternative address 2045 peak hour congestion?	What are the 2045 peak hour congestion rates?
			Does the alternative provide LOS improvements to adequately address future growth as identified in adopted City, County, and MPO land use and comprehensive plans?	Better/Good/Neutral/Fair/Worse	Does the alternative operate at a 2045 LOS consistent with existing BMPO planning documents (LOS A-D is acceptable)?	How well does the alternative accommodate future local land use and

I-15/US-20 PEL Evaluation Questions

Evaluation Questions

Needs, Goals, and Objectives	Level 1 Criteria Questions	Level 1 Responses	Level 2 Criteria Questions	Level 2 Responses (all responses include qualitative discussion)	Level 3 Criteria Questions	Level 3 Responses (quantitative data and qualitative discussion)
			*(Acceptable LOS per BMPO Long Range Transportation Plan = LOS A-D)			population changes?
					Does the alternative provide flexibility to accommodate increases in volume beyond the planning year?	Yes/No
Environmental	Does the alternative meet the purpose and need of the project?	Better/Good/Fair/Negative	Will the environmental impacts require additional agency approvals or permits?	Better/Good/Neutral/Fair/Worse	What environmental impacts have been identified?	Identify environmental impacts.
			Does the alternative create any problematic or unmitigatable impacts to environmental resources?	Better/Good/Neutral/Fair/Worse	Are necessary mitigations for any environmental impacts likely to limit design flexibility or affect the overall schedule and cost?	Identify agency approvals and permits required (especially for 404, Section 106, 4f, 6f, etc.)
			Does the alternative provide enhancement to local environmental resources?	Better/Good/Neutral/Fair/Worse	What enhancements would the alternative provide?	Identify enhancements.
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	Not addressed in Level 2, no new additional information.		Qualitatively, what economic and demographic impacts can be anticipated with the alternative in the short-term (through construction) and the long-term (beyond 5 years)?	
Public Support			Does the alternative create any controversial issues?	Better/Good/Neutral/Fair/Worse	What are the obvious public concerns the project will have to address?	Identify public perception/support issues.
Cost/ Constructability	Does the alternative provide options for phased improvements?	Better/Good/Fair/Negative	Does the project provide logical and sequential phasing?	Better/Good/Neutral/Fair/Worse	Would phased improvements include throwaway improvements?	Identify improvements might be thrown away at a later phase of design.

I-15/US-20 PEL Evaluation Questions

Evaluation Questions

Needs, Goals, and Objectives	Level 1 Criteria Questions	Level 1 Responses	Level 2 Criteria Questions	Level 2 Responses (all responses include qualitative discussion)	Level 3 Criteria Questions	Level 3 Responses (quantitative data and qualitative discussion)
			Does the Alternative provide a reasonable cost/benefit?	Better/Good/Neutral/Fair/Worse		
					Would the alternative redirect traffic to other local roads?	Identify impacts to alternative local roads.
					What is the Benefit Cost Ratio of the alternative?	Identify BCR alternative.
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	Is the improved access to local resources beneficial to the intent/use of the local resource?	Describe the change to the access and the likely impact on the resource.
					Does the alternative reduce access to local resources?	Describe how the access is reduced and the likely impact on the resource.

Level Three Evaluation Screening Matrix

Grading Scale				
◉	◓	○	◒	●
Better	<<<<<<<	<<<>>>	>>>>>>>	Worse

		Evaluation Criteria 1						Evaluation Criteria 2					
Needs, Goals, and Objectives		Safety	Safety	Safety	Safety	Safety		Congestion	Congestion	Congestion	Congestion	Congestion	
Alternatives		How well do ramp signals operate?	Does the alternative provide adequate weave distance?	Does the alternative provide standard 12-foot lane widths?	Does the design option provide adequate distance between ramps?	Does the alternative reduce merges and diverges?	**Safety Summary**	What is the capacity of I-15/US-20 in the alternative?	Does the alternative reduce end-to-end travel times through the corridor?	How does the alternative affect freight traffic?	Is there an alternative or redundant crossing provided in the alternative?	Does the alternative affect traffic volumes on parallel facilities?	**Congestion Summary**
C3	*Answer*												
	Comments												
E3	*Answer*												
	Comments												
H2	*Answer*												
	Comments												

Level Three Evaluation Screening Matrix

Needs, Goals, and Objectives / Alternatives		Evaluation Criteria 3						Evaluation Criteria 4			
		Local bicycle, pedestrian, transit and vehicle connectivity	Local bicycle, pedestrian, transit and vehicle connectivity	Local bicycle, pedestrian, transit and vehicle connectivity	Local bicycle, pedestrian, transit and vehicle connectivity	Local bicycle, pedestrian, transit and vehicle connectivity	**Local bicycle, pedestrian, transit and vehicle connectivity summary**	Future Travel Demand	Future Travel Demand	Future Travel Demand	**Future Travel Demand Overall**
		Does the alternative support current and future bicycle connection needs in the Study area?	Does the alternative support current and future pedestrian connection needs across I-15 and US-20?	Does the alternative support current and future transit connection needs across I-15 and US-20?	Does the alternative support current and future local vehicle connection needs across I-15/US-20?	Does the alternative improve connections/transfers to surrounding multi-modal network?		Does the alternative address 2045 peak hour congestion?	Does the alternative operate at a 2045 LOS consistent with existing BMPO planning documents (LOS A-D is acceptable)?	Does the alternative provide flexibility to accommodate increases in volume beyond the planning year?	
C3	*Answer*										
	Comments										
E3	*Answer*										
	Comments										
H2	*Answer*										
	Comments										

Level Three Evaluation Screening Matrix

Needs, Goals, and Objectives / Alternatives		Evaluation Criteria 5				Evaluation Criteria 6	Evaluation Criteria 7			
		Environmental	Environmental	Environmental		Public Support	Cost/Constructability	Cost/Constructability	Cost/Constructability	
		What environmental impacts have been identified?	Are necessary mitigations for any environmental impacts likely to limit design flexibility or affect the overall schedule and cost?	What enhancements would the alternative provide?	**Environmental Summary**	What are the obvious public concerns the project will have to address?	Would phased improvements include throwaway improvements?	Would the alternative redirect traffic to other local roads?	What is the Benefit Cost Ratio of the alternative?	**Constructability Summary**
C3	*Answer*									
	Comments									
E3	*Answer*									
	Comments									
H2	*Answer*									
	Comments									

Level Three Evaluation Screening Matrix

Needs, Goals, and Objectives / Alternatives		Evaluation Criteria 8			Evaluation Criteria 9			
		Access	Access	**Access Summary**	Economics/Demographics	Economics/Demographics	**Economics/Demographics Summary**	**Alternative Overall**
		Is the improved access to local resources beneficial to the intent/use of the local resource?	Does the alternative reduce access to local resources?		What economic and demographic impacts can be anticipated with the alternative in the short-term (through construction)?	What economic and demographic impacts can be anticipated with the alternative in the long-term (beyond 5 years)?		
C3	*Answer*							
	Comments							
E3	*Answer*							
	Comments							
H2	*Answer*							
	Comments							

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

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

Level One Alternative Screening

January 8, 2019

Prepared for

Your Safety · Your Mobility · Your Economic Opportunity
IDAHO TRANSPORTATION DEPARTMENT

Prepared by

HDR

HORROCKS ENGINEERS

Table of Contents

Appendices

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). HDR Engineering, Inc. (HDR) and Horrocks Engineers are the consulting team developing this study for ITD, who 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.

Phase A of the project included development of a Planning for 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 review process.

The PEL will include three levels of screening for alternatives to develop recommended alternatives to advance into a NEPA document, once funding allows. Utilizing the data collected from the initial Phase A of the project, the team moved into Phase B, which includes development of the evaluation criteria matrix, concept level alternatives, alternative analysis and screening, on-going public outreach and the PEL. This report summarizes the Universe of Alternatives development and Level One alternatives screening process and results.

Level One Summary

Detailed notes of the universe of alternatives brainstorming meeting and the Level One screening meeting are included in Appendices. Below is a summary.

- The universe of alternatives brainstorming exercise developed fourteen alternatives. At this brainstorming exercise, the Analysis Team included nineteen individuals representing ITD, BMPO, City of Idaho Falls, Bonneville County, BYU-Idaho professor and technical team members from the engineering consultants, HDR and Horrocks Engineers.
- The fourteen concept alternatives were categorized as either “on-alignment” or “off-alignment” and each was given a unique name and shown over aerial maps as sketches.
- The purpose and need and project goals, sketch concept alternative maps, alternative descriptions and the evaluation criteria matrix were provided to the Analysis Team and others from the agencies to be used for review prior to for the Level One Screening meeting.
- At the Level One Screening meeting, nine of the fourteen alternatives were recommended to advance to Level Two analysis.
- The Level One alternatives and the results from the screening meeting were presented to the public at a public meeting on September 5, 2018.
- Input from Community Working Group Meeting #3 was used in developing a new alternative (US-20 one way couplet) that will be added to the other concept alternatives and considered in Level Two.

Next Steps

For Level Two, the Technical Team will:

- Complete a design criteria matrix to aid in the coarse development of geometrical layouts of each alternative.
- Complete the travel demand modeling for the planning year, 2045, for each concept alternative.
- For each alternative, identify bridge locations, major utility conflicts, ped/bike/multi-modal routing/connections, right of way needs, local access roads connections; review of land use planning, freight plans, identify environmental concerns/constraints, future developments/economics.
- Meet the Analysis Team to review and screen the alternatives against the Level Two evaluation criteria matrix.
- Present a draft Level Two Alternatives and draft screening results to the public in spring of 2019.

A

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
2. 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

Evaluation Criteria Matrix

I-15/US-20 Connector – Level 1 PEL Evaluation Matrix

Better | Good | Fair | Negative | Not Applicable N/A

Criteria	Improves Safety	Improves Congestion	Enhances Ped/Bike Opportunity	Accommodates Future Travel Demand	Minimizes Environmental Impacts	Economic, Demographics, and Market impacts	B/C Analysis and/or comparison of lifecycle costs and constructability	Improves Access	Notes
Level 1 Screening Question	*Does the alternative improve bike, pedestrian, and vehicle safety on I-15 and US-20 including the interchange on and off-ramps?*	*Does the alterative reduce congestion on I-15 and US-20?*	*Does the alternative enhance or improve bicycle, pedestrian, transit and vehicle connectively throughout the I-15/US-20 study area?*	*Does the alternative improve travel time reliability on I-15 and US-20 in the study area?*	*Does the alternative meet the purpose and need of the project?*	*Does the alternative enhance or improve economic, demographic, and market conditions in accordance with City, County,and MPO land use and comprehensive plan objectives and goals?*	*Does the alternative provide options for phased improvements?*	*Does the alternative improve access to local resources including schools, recreational facilities, and commercial areas?*	
No Action Alternative							N/A		
I.A ***On Alignment*** Split Access for IC 118/119									
I.B ***On Alignment*** Free Flow for 118/119 Interchanges									
I.C ***On Alignment*** Free Flow for 118, 119 & Fremont Interchanges									

I-15/US-20 Connector – Level 1 PEL Evaluation Matrix

Better | Good | Fair | Negative | Not Applicable N/A

Criteria	Improves Safety	Improves Congestion	Enhances Ped/Bike Opportunity	Accommodates Future Travel Demand	Minimizes Environmental Impacts	Economic, Demographics, and Market impacts	B/C Analysis and/or comparison of lifecycle costs and constructability	Improves Access	Notes
I.D ***On Alignment*** Increase Capacity for Interchanges									
II.A ***Off Alignment*** Anderson Street Connector									
I.B ***Off Alignment*** 33rd Avenue/Iona Rd Connector									
II.C ***Off Alignment*** 49th N/Telford Rd Connector									
I.D ***Off Alignment*** 49th N/Telford Rd Connector with West Extension to 45th W and East to US-26									

I-15/US-20 Connector – Level 1 PEL Evaluation Matrix

Better | Good | Fair | Negative | Not Applicable
N/A

Criteria	Improves Safety	Improves Congestion	Enhances Ped/Bike Opportunity	Accommodates Future Travel Demand	Minimizes Environmental Impacts	Economic, Demographics, and Market impacts	B/C Analysis and/or comparison of lifecycle costs and constructability	Improves Access	Notes
I.E ***Off Alignment*** 65th N Connector with West Extension to 45th W and East to US-26									
I.F ***Off Alignment*** 73 N Connector with West Extension to 45th W and East to US-26									
I.G ***Off Alignment*** 81 N Connector with West Extension to 45th W and East to US-26									

C

Universe of Alternatives Brainstorming Meeting Summary; Evaluation Questions; Alternative Descriptions and Exhibits

Meeting Minutes

Project:	I-15/US-20 Connector
Subject:	Level 1 Universe of Alternative Brainstorming Meeting
Date:	June 7-8th, 2018
Location:	ITD District 6 office, Rigby

Attendees:		
	Lance Bates – Bonneville County	Karen Hiatt, ITD
	Nick Contos – Bonneville County	Drew Meppen – ITD
	Chris Canfield – City of Idaho Falls	Ryan Day – ITD
	Curtis Calderwood – ITD	Darrell West – BMPO
	Tim Cramer – ITD	Derek Noyes - ITD
	Mark Layton – ITD	Kelly Hoopes – Horrocks
	Brad Richards – ITD	Ben Burke – Horrocks
	Jesse Barrus – ITD	Tracy Ellwein – HDR
	Jim Lawrence – BYU Idaho	Cameron Waite - HDR
		Jason Longsdorf – HDR

Day 1 – June 7th (10:30 – 4:30)

The purpose of the meeting was for the Analysis Team to identify a universe of alternatives to address the study's purpose and need and goals. To prepare the analysis team, the team was provided background information ahead of the meeting. The information provided included:

1. Project Purpose and Need (*KN20065-M_20180314_Purpose and Need.pdf*)
2. Aerial maps of project study area
3. Environmental Scan Document by HDR, dated May 29th, 2018
4. Meeting Agenda

The meeting started with Tracy explaining what we need to accomplish in identifying alternatives, at a very high level, to meet the project purpose and need and goals. This is the initial step of the range of alternatives development. Jason next discussed the screening process which includes three levels of alternative screening leading to several recommended alternatives to be advanced into a NEPA study. Jason provided an overview of the environmental scan and environmental resource that were identified.

These include wetlands and water resources, land use, Section 4(f) properties, cultural resources, environmental justice, hazardous material, recreational areas, and biological resources.

Kelly and Cameron provided an overview of the existing traffic conditions, planning year forecast and the level of service for the planning year 2045 no build condition. Included in the traffic study was an origin and destination study that shows that split between local and regional traffic is 60% local and 40% regional. Consideration in alternative development needs to include supporting the regional (pass-through) traffic. They also discussed the sensitivity analysis of possible interchange locations north of Exit 119 and connector roads to the east that would have an impact on the study area traffic models.

Three groups were created with three to four team members in each group. Team members were a diverse mix to include agency staff and design team staff. The three teams spent the rest of the meeting brainstorming and exploring alternatives and sketching them on the provided maps. At the end of the day, each team presented their ideas to the group.

Following the group presentation, Tracy, Kelly, Cameron and Jason took all the alternatives and categorized them into broad concept ideas, combining those that were similar and assigned each distinct alternative a name.

Day 2 – June 8th (8:30 – 3:00)

The group was asked to share any new ideas they may have considered since the previous day. The groups were mixed up to refine the broad range of concepts developed the previous day, different than the ones they were involved with the day before. Each group advanced the concepts further, developed a list of hybrid alternatives and developed alternative descriptions.

In summary,

- The Analysis Team developed 14 alternatives
- The alternatives were categorized as either “on-alignment” or “off-alignment”
- Each alternative was given an unique name and a description
- Each concept was then drawn over aerial maps with the alternative name
- The sketch concept alternative maps and alternative description was sent to the analysis team and others from the agencies to be used for the Level One Screening meeting (July 24, 2018).

I-15/US-20 PEL DRAFT Evaluation Questions

DRAFT Evaluation Questions

June 1, 2018

Needs, Goals, and Objectives	Level 1 Criteria Questions	Level 1 Responses	Level 2 Criteria Questions	Level 2 Responses (all responses include qualitative discussion)	Level 3 Criteria Questions	Level 3 Responses (quantitative data and qualitative discussion)
Safety	Does the alternative improve safety on I-15 and US-20, including the interchange on or off-ramps?	Yes/No	Does the alternative reduce backups on the exit ramps?	Yes (identify which)/No	How well do ramp signals operate?	Ramp signal LOS
			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?	Yes/No		
					Does the alternative provide adequate weave distance?	What is the total weave distance provided between consecutive ramps?
					Does the alternative provide standard 12-foot lane widths?	What is the total number of corridor lane-miles that are narrower than 12 feet?
			Does the alternative address substandard interchange spacing on I-15 and US-20?	Yes/No	Does the design option provide adequate distance between ramps?	What is the total distance between ramps?
			Are changes in access (closures or relocations) expected to reduce crashes?	Yes/No	Does the alternative reduce the number of predicted crashes?	What is the total number of predicted crashes based on HSM analysis?
Congestion	Does the alternative reduce congestion on I-15 and US-20?	Yes/No	Does the alternative increase the capacity of I-15 and US-20?	Yes/No	What is the capacity of I-15/US-20 in the alternative?	What is the total number of vehicles able to be moved through the corridor in a given peak period?
			Does the alternative separate regional through trips and local destination trips?	Yes/No	Does the alternative reduce end-to-end travel times through the corridor?	What is the end to end travel time in the corridor?
			Does the alternative improve freight movement?	Yes/No	How does the alternative affect freight traffic?	What are the out of direction movements and/or total delay for high volume freight routes?
			Does the alternative provide improved, alternative, or additional crossings of railroad and river?	Yes/No	Is there an alternative or redundant crossing provided in the alternative?	How many lanes cross the railroad and river?
					Does the alternative affect traffic volumes on parallel facilities?	What are the projected volumes and LOS on parallel facilities?
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 project area?	Yes/No	Does the alternative enhance or improve bicycle, pedestrian, transit and vehicle connectivity throughout the I-15/US-20 project area?	Yes/No	Does the alternative support current and future bicycle connection needs in the Study area?	What are the number of bicycle crossings and new trail provided?
					Does the alternative support current and future pedestrian connection needs across I-15 and US-20?	What are the total number of pedestrian crossings and/or new sidewalk or multiuse trails that meet BMPO 2008 Bike/Ped plan standards?
					Does the alternative support current and future transit connection needs across I-15 and US-20?	What connections are supported?
					Does the alternative support current and future local vehicle connection needs across I-15/US-20?	What connections are supported?

I-15/US-20 PEL DRAFT Evaluation Questions

DRAFT Evaluation Questions

June 1, 2018

Needs, Goals, and Objectives	Level 1 Criteria Questions	Level 1 Responses	Level 2 Criteria Questions	Level 2 Responses (all responses include qualitative discussion)	Level 3 Criteria Questions	Level 3 Responses (quantitative data and qualitative discussion)
					Does the alternative improve connections/transfers to surrounding multi-modal network?	What connections are supported?
Future Travel Demand	Does the alternative improve travel time reliability on I-15 and US-20 in the Study area?	Yes/No	Does the alternative provide capacity improvements to address projected population and tourism growth?	Yes/No	Does the alternative address 2045 peak hour congestion?	What are the 2045 peak hour congestion rates?
			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)*	Yes/No	Does the alternative operate at a 2045 LOS consistent with existing BMPO planning documents (LOS A-D is acceptable)?	How well does the alternative accommodate future local land use and population changes?
					Does the alternative provide flexibility to accommodate increases in volume beyond the planning year?	Yes/No
Environmental	Does the alternative meet the purpose and need of the project?	Yes/No	Will the environmental impacts require additional agency approvals or permits?	Yes/No	What environmental impacts have been identified?	Identify environmental impacts.
			Does the alternative create any unavoidable impacts to environmental resources?	Yes/No and list the resources and type of impact.	Are necessary mitigations for any environmental impacts likely to limit design flexibility or affect the overall schedule and cost?	Identify agency approvals and permits required (especially for 404, Section 106, 4f, 6f, etc.)
			Does the alternative provide enhancement to local environmental resources?	Yes/No	What enhancements would the alternative provide?	Identify enhancements.
Public Support			Does the alternative create any controversial issues?	Yes/No	What are the obvious public concerns the project will have to address?	Identify pubic perception/support issues.
Cost/ Constructability	Does the alternative provide options for phased improvements?	Yes/No			Would phased improvements include throwaway improvements?	Identify improvements might be thrown away at a later phase of design.
					Would the alternative redirect traffic to other local roads?	Identify impacts to alternative local roads.
					What is the lifecycle cost of the alternative?	Identify lifecycle cost of alternative.
Access	Does the alternative improve access to local resources including schools, recreational	Yes/No			Is the improved access to local resources beneficial to the intent/use of the local resource?	Describe the change to the access and the likely impact on the resource.
					Does the alternative reduce access to local resources?	Describe how the access is reduced and the likely impact on the resource.

I-15/US-20 PEL DRAFT Evaluation Questions

DRAFT Evaluation Questions

June 1, 2018

Needs, Goals, and Objectives	Level 1 Criteria Questions	Level 1 Responses	Level 2 Criteria Questions	Level 2 Responses (all responses include qualitative discussion)	Level 3 Criteria Questions	Level 3 Responses (quantitative data and qualitative discussion)
	facilities, and commercial areas?					

I. On Alignment Alternatives			
	I.A Split Access for IC 118/119	**I.B- Free Flow for IC 118/119**	**I.C Free flow 118/119 & Fremont**
Description	Exits 118 and 119 become one single split interchange with one-way collector – distributor (CD) roads that connect Broadway and Grandview/US-20. The CD Roads would be one-way traveling in the same direction as the I-15 divided lanes (east side CD travels northbound [NB], west side CD travels southbound [SB]). • Texas turnarounds provided for U-turns between the NB and SB CD roads at each exit. Vehicles can access Grandview or Broadway at signalized intersections. • Lindsay Blvd. interchange is removed and a new local road connection from Lindsay to the system is provided. Two potential locations are shown in the drawing. • This system can be combined with direct connection flyover ramps from I-15 to US-20 or any options to reconfigure the Fremont and Science Center interchanges. • May be companioned and/or staged with other options presented. • New Pedestrian Crossing over I-15 between 118 and 119.	• New free-flow connector ramps are constructed between I-15 near exit 118 connecting to US-20 before the Fremont interchange, separating all through traffic from all interchanges. Fremont, Science and Lewisville interchanges remain in their current configurations. • These free-flow connector ramps are full access control and elevated with grade separations. • Modify Broadway Interchange and Grandview Interchange to high capacity interchange. • Remove the Lindsay Interchange and replace with a local road connection between Fremont and Lindsay over the river. • New Pedestrian Crossing over I-15 between 118 and 119.	• Same alternative as I.B with the addition of a high capacity interchange at Fremont and extension of the free-flow connector ramps beyond the Fremont interchange..
Safety	• Eliminates weaving and acceleration issues on I-15 between Exits 118 and 119. • Moves queues from the Exit 119 NB off-ramp so they do not back up onto I-15. • Removes Lindsay interchange ramps, increasing weaving and acceleration distances between interchanges in the system. • New Lindsay connections allow new, separate ped/bike facilities away from I-15 and US-20. • CD roads allow traffic going to different destinations to weave and change lanes at lower speed (35-45 mph vs. 65 mph), separate from I-15 traffic	• Reduces traffic on the NB 119 off-ramp, which removes the potential for queuing back to I-15. • Reduces volume of traffic at the weaving location between Exits 118 and 119. • Conversion of existing US-20 at the connection to I-15 allows for improved ped/bike accommodations.	• Same alternative as I.B • Remove pedestrian conflict points with the at-grade ped/bike crossings at the ramps with new Fremont interchange.
Congestion	• Remove queues from backing onto I-15, more room for queues on CD road. • Allow U-turns at each exit for full access to CD roads, improves mobility through the system. • Signal timing with adjacent signals on Broadway to move traffic. • CD roads allow traffic going to different destinations to weave and change lanes at lower speed (35-45 mph vs. 65 mph), separate from I-15 traffic, reducing conflict. • Allows dual left turn lanes from WB US-20 to SB CD and from Broadway to NB CD, reducing queues and moving more cars per signal cycle.	• Removes through traffic accessing US-20 from 118/119 interchanges. • Reduces travel times.	• Same alternative as I.B
Future Travel Demand	• Can be a short term solution to serve demand until it grows, then in 2030 or 2035 add flyovers, NB connector, etc., to move I-15 to US-20 demand from the split diamond. The split diamond would serve the reduced demand for local connections. • Limited by the number of turn lanes provided at signalized intersections. • Need to evaluate need for additional capacity on local “US-20 alignment”.	• Long-term solution however not expandable at Exits 118 and 119. • The free flow connector ramps can be expanded to travel through Fremont and Science Center (Alt I.C)	• Long-Term solution through however not expandable at Science Center interchange.
Environmental	• Potential new crossing over river and railroad for a Lindsay connection alternative. • Temple View Elementary on west and industrial area and railroad on the east could be impacted by CD roads. • Noise impacts • Visual effects	• New crossings over river, railroad, Lindsay, US-20 and I-15. • Elevated roads cause visual and audible impacts.	• Same as I.B

Cost/Constructability	• Could be built mostly within existing ROW, require significant staging of existing traffic during construction. • Replace I-15 bridge over Broadway to allow more lanes and Texas turnaround lanes. • Expand or replace Grandview bridge over I-15 to allow more lanes and Texas turnaround lanes. • One Lindsay Alternative (north) requires 2 new bridges over railroad and river. • Addresses immediate needs and allows more time to develop flyovers, NB connector, etc., to move I-15 to US-20 demand. The split diamond can continue to serve the reduced demand that is more “local” traffic while the long term solution serves “regional” traffic.	• Difficult staging for on-alignment work • High impact to mobility during construction • Numerous new structures, some elevated in two and three levels over existing and proposed roadways	• Same as I.B
Access	• Maintains all existing connections from I-15 and US-20 to local streets, with the Lindsay interchange removed and new local street connections to access I-15 and US-20.	• Separates regional vs local access at three interchanges. Provide a new access for Lindsay from local road. • Lindsay to become a local road connection with a new river bridge.	• Same as I.B

	I.D Increase Capacity		
Description	• Reconstruct and expand system in same corridor with lane expansion on I-15, US-20, and the interchanges. • Rebuild 118 interchange, 119 interchange, and Science Center interchange into high capacity interchanges. • Close Lindsay interchange and provide a new Lindsay local connection with a new local system bridge north of US-20. • Convert Fremont from an interchange to an overpass • Make Science Center a full interchange. Traffic using the Fremont interchange will use the Science Center interchange.		
Safety	• Removes 4 conflict points with removal of 2 interchange’s • Eliminates weaving issues between the Exit 119, Lindsay, and Fremont interchanges. • Removes vehicles slowing to exit at Fremont and Lindsay from US-20, reducing speed differences between vehicles		
Congestion	• Reduces congestion associated with vehicles entering and exiting Lindsay and Fremont interchange’s	.	
Future Travel Demand	• Not expandable. No possibility to connect US-20 to US-26		
Environmental	• New US-20 bridge over the canal • Maintain the same footprint for US-20 • New Lindsay Blvd. connection over the canal and the river		
Cost/Constructability	• Difficult staging for on-alignment work • High impact to mobility during construction • New structures over railroad for Science Center interchange		
Access	• Removes access points to local roads with removal of Lindsay and Fremont interchange’s. Provide a new access for Lindsay from local road.		

II. Off Alignment Alternatives			
	II.A – Anderson Street Connector	**II.B – 33rd Avenue/Iona Rd. Connector**	**II.C - 49th N/Telford Rd Connector**
Description	Provide a system interchange to the north of Exit 119 interchange with a new river crossing, railroad crossing, Canal Crossing South of Freeman Park, and Science Center Drive. • Intent of this option is to fully separate the through I-15/US-20 traffic from the local roadway network while maintaining access for local traffic across the existing railroad, canal and river crossings. May be companioned/staged with other options presented. • Move connection of US-20 to I-15 to the north as described. • US-20 between the Grandview exit 119 and Science Center becomes a local road. • Install US-20 EB entrance ramp and WB exit ramp at Science Center to US-20. • Remove the connection of US-20 between Fremont Drive/Riverside and Science Center and install a frontage road to connect to Science Center. • Address ped/bike crossings with all new roads and establish options for separated traffic on the old US-20 alignment between Grandview and Science Center Drive.	New US-20 alignment travels west from the Lewisville interchange aligned with 33rd/Iona Rd and connects to I-15 with a system interchange north of Exit 119. (33rd could eventually be connected all the way across to US-26.). • Exit 118 and 119 are improved together (see I.A Split Access for interchange 118/119) • WB US-20 movement flies over I-15 and then has the option to merge onto I-15 (north of Grandview) or exit at Grandview – which also provides access to CD road to exit at Broadway – only way to get to Broadway. • Existing US-20 alignment becomes a new commercial route. Existing improvements remain intact across the river. Lindsay connection remains as is. US-20 comes down to grade at Fremont (could be signalized or a roundabout). Provide a similar at grade intersection treatment at Science Center Drive. • Carry existing old US-20 alignment north of Science Center Drive and provide a new connection midway between Anderson and Iona to Holmes.	New US-20 alignment travels west from north of the Lewisville interchange aligned with 49th N/Telford Road and connects to I-15 with a system interchange north of Exit 119. (This alignment could eventually be connected all the way across to US-26.). • US-20 rejoins the current alignment at the St Leon interchange. • Requires a river crossing, 5 new structures over county roads, and 2 structures over the railroad. • Existing US-20 will be severed at 15th and connects with county roads. • Existing US-20 to be downgraded to a local roadway.
Safety	• Eliminates stop control for NB I-15 to EB US-20. • Increases the distance for vehicles to make merge/weave movements for the I-15/US-20 traffic interface. • Conversion of existing US-20 allows for improved ped and bike accommodations. • Eliminates weaving issues between the Exit 119, Lindsay, and Fremont interchanges. • There will be a relatively short weaving section between Exit 119 and the new US-20 interchange on I-15	• Eliminates stop control for NB I-15 to EB US-20 and WB US-20 to SB I-15. • Eliminates several weave movements, extends the weaving distance for others, and provides adequate acceleration and deceleration lengths on I-15, US-20, and old US-20. • Conversion of existing US-20 allows for improved ped and bike accommodations.	• Eliminates stop control for NB I-15 to EB US-20. • Eliminates several weave movements, extends the weaving distance for others, and provides adequate acceleration and deceleration lengths on I-15, US-20, and old US-20. • Conversion of existing US-20 allows for improved ped and bike accommodations.
Congestion	• Highest volumes are served without stop control or traveling through an interchange. • East/west Grandview movements no longer in conflict with US-20 traffic across I-15.	• Highest volumes are served without stop control or traveling through an interchange. • East/west Grandview movements no longer in conflict with US-20 traffic across I-15.	• Highest volumes are served without stop control or traveling through an interchange. • Uninterrupted traffic flow between US-20 and I-15. • Separates local traffic from regional through traffic.
Future Travel Demand	• US-20/I-15 connection could be widened in the future. • Additional options can be implemented for weaving/merge concerns between 118 and 119. • Can be implemented with Alternatives II.D-E.	• Provides an alignment to eventually connect US-20 to US-26.	• Existing US-20 will need additional travel lanes for local traffic growth. • New connector provides interchange opportunities for growing development north of Idaho Falls.
Environmental	• New crossings over the river, railroad, and canal. • Alignment/impacts to park and low-income neighborhoods to be addressed. • Noise impacts • Visual effects.	• New crossings over the river and railroad. • Temple View Elementary could be impacted by frontage road. • Noise impacts • Visual effects.	• New crossings over river and railroad. • Prime farm ground. • Near Hatch Pit (construction material dump). • Near golf course. • Noise impacts to subdivisions. • Visual effects.

Cost/Constructability	• Either long span or multiple bridges over I-15, railroad and river. • The new river crossing can be constructed with no existing traffic traveling through the work zone	• Either long span or multiple bridges over I-15, railroad and river. • New overpass bridge for River Road and 5th West. • US-26 extension requires new railroad overpass and a new interchange near Hitt. • Phasing issues: New US-20 alignment could be built first, frontage road and ramps would be next and require challenging intersection construction on Broadway and Grandview.	• Either long span or multiple bridges over I-15, railroad, river and county roads. • System interchange for US-20.
Access	• Provides new full access system interchange for I-15 and US-20. • Keeps existing US-20 / Grandview interchange for local access • Connects old US-20 at Science Center Drive as a local road only. • Fremont interchange is removed.	• Provides new full access interchange at I-15 and US-20. • Existing US-20 becomes a local access road, connecting to a local road south of the Lewisville interchange area. • Lewisville interchange is modified to connect to new US-20 alignment.	• Same as II.B except that existing US-20 connects to a local road south of the St. Leon interchange. • St. Leon interchange is removed.

	II.D Alternative II.C with West Extension of 49th N to 45th W	II.E – 65th N/Telford Road Extension	II.F – 73rd North
Description	II.C Alternative with the addition of a West alignment along 45th W to 49th N to I-15. • New I-15 interchange is included in the II.C alternative • New US-20 alignment starting west of Idaho Falls travels north on 45th West, connects with 49th North, then heads east to connect with I-15 at the new interchange constructed with Alternative II.C. Extend US-20 connector east to US-26 • Requires 5 new structures over county roads and 2 structures over the railroad.	New US-20 alignment starting west of Idaho Falls and heading north on 45th West, connecting with 65th North, then heading east to connect with I-15. • New interchange with I-15. • Extend 65th North to the east to connect to existing US-20 with a new interchange. • Requires two new river crossings, 5 new structures over county roads and 2 structures over the railroad. • New grade separated intersection at the Lewisville Highway. • New interchange at US-20 and US-26 if connection is desired. • US-20 meanders to avoid farm land, golf course and landfill and then rejoins the existing alignment at Woodruff interchange. • Existing US-20 alignment becomes a new commercial route. Existing improvements remain intact across the river. Lindsay connection remains as is. Carry existing US-20 alignment north to an intersection at Holmes.	• New US-20 alignment starting west of Idaho Falls heading north on 45th West, connecting with 73rd North, then heading east to connect with I-15. • New Interchange with I-15 • Extend 73rd North to the east to connect to existing US-20 with a new interchange. • Requires two new river crossings, 5 new structures over county roads and 2 structures over the railroad. • US-20 could eventually be connected all the way across to US-26 • Includes a new overpass at Lewisville Highway. • Existing US-20 alignment becomes a new commercial route. Existing improvements remain intact across the river. Lindsay connection remains as is. US-20 comes down to grade at Fremont (could be signalized or a roundabout). Provide a similar at grade treatment at Science Center Drive - but end US-20 at Science Center. • Carry existing US-20 alignment north to an intersection at Lewisville Highway.
Safety	• Eliminates stop control for NB I-15 to EB US-20. • Conversion of existing US-20 allows for improved ped and bike accommodations	• Eliminates stop control for NB I-15 to EB US-20. • Conversion of existing US-20 allows for improved ped and bike accommodations.	• Eliminates stop control for NB I-15 to EB US-20. • Conversion of existing US-20 allows for improved ped and bike accommodations
Congestion	• Highest volumes are served without stop control or traveling through an interchange.	• Highest volumes are served without stop control or traveling through an interchange.	• Highest volumes are served without stop control or traveling through an interchange. •
Future Travel Demand	• Need to evaluate need for additional capacity on local “US-20 alignment” • Provides an alignment to eventually connect to US-26.	• Need to evaluate need for additional capacity on local “US-20 alignment” • Provides an alignment to eventually connect to US-26.	• Need to evaluate need for additional capacity on local “US-20 alignment” • Provides an alignment to eventually connect to US-26.
Environmental	• Same as II.C	• Same as II.C.	• Same as II.C except for the golf course and Hatch pit conflicts.
Cost/Constructability	• Either long span or multiple bridges over I-15, railroad and river. • New overpass bridge East River Road (5th East), 5th West, System interchange at existing US-20 and 15th East. • US-26 extension requires new railroad overpass and two more overpasses to the east to connect to US-26. • Phasing issues:Phasing issues: - New US-20 alignment could be built first.	Same as II.D.	• Same as II.D.

	- Reconstruction and decommissioning of US-20 must occur very soon after.		
Access	• Provides new full access interchange at I-15 and US-20. • US-20 to become a local access road with access points remaining as-is. • New overpasses as main local roads	Same as II.D	Same as II.D

	II.G – Ririe Outlet (North of 81st)		
Description	• New US-20 alignment starting west of Idaho Falls and heading north on 45th West, then connecting with 81st North heading east to connect with I-15. • New interchange with I-15 and a new connection to existing US-20 to the east. • A new system interchange to connect US-20 and new US-26. • Requires a river crossing and 5 new structures over county roads and 2 structures over the railroad. • Flyover for US-26 and new US-26B connection. • Existing US-20 will be severed at 25th and connects with county roads. • Existing US-20 to be downgraded to a local roadway.		
Safety	• Eliminates stop control for NB I-15 to EB US-20. • Eliminates several weave movements – and extends the weaving distance for others and provides adequate accel/decel lengths. • Conversion of existing US-20 allows for improved ped and bike accommodations. • Continuity between west and east side of I-15 traffic flow for US-20.		
Congestion	• Highest volumes are served without stop control or traveling through an interchange. • Uninterrupted E/W traffic flow between US-20, US-26, and I-15. • Separates local from through traffic.		
Future Travel Demand	• Existing US-20 will need additional travel lanes for local traffic growth. • West leg of US-20 will need grade separated intersections as area develops.		
Environmental	• Same as II.CSame		
Cost/Constructability	• Either long span or multiple bridges over I-15, railroad, river and county roads. • System interchange for US-20 and US-26. • US-26 extension requires new railroad overpass and a new interchange near St. Leon. • Longest option.		

I-15/US-20 SAFETY AND MOBILITY (KN 20065)

PEL: LEVEL 1 - UNIVERSE ALTERNATIVES

On Alignment Alternative (Ramp Modifications)

I.A Split Access for IC 118/119

I-15

US-20

FREMONT AVE

LINDSAY BLVD

GRANDVIEW DR

US-20/BROADWAY

Possible Lindsay Blvd Connector

Lindsay Blvd. Exit 307 removed from US-20
New connections to local street provided as shown

Exit 119
TEXAS TURNAROUND
(Grade separated)

Exits 118 and 119 Become on single split interchange
One-Way Connector-Distributor (CD) roads that connect them

Exit 118
TEXAS TURNAROUND
(Grade separated)

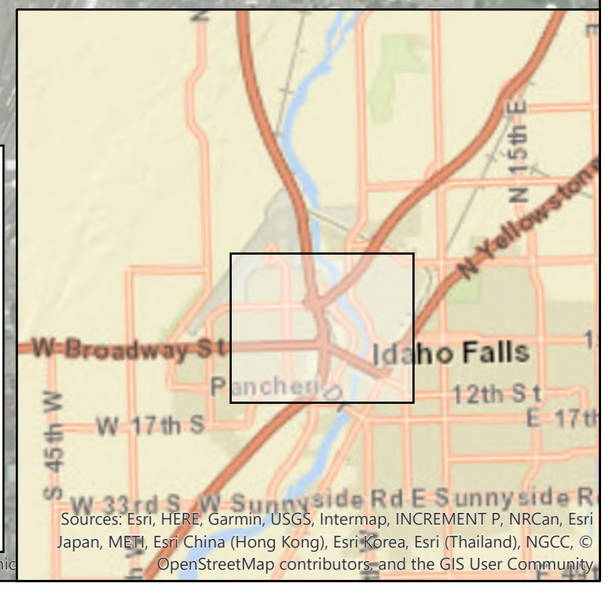
Possible Lindsay Blvd Connector

0 0.13 0.25 0.5 Miles

1:10,000

LEGEND

- System to System Interchange
- Grade-Separated Intersection
- At-Grade Intersection
- Bridge/Overpass
- Additional Roadway
- Bike/Ped Improvement



I-15/US-20 SAFETY AND MOBILITY (KN 20065)

PEL: LEVEL 1 - UNIVERSE ALTERNATIVES

On Alignment Alternative (Ramp Modifications)

I.B Free Flow for IC 118/119

I-15

US-20

FREMONT AVE

LINDSAY BLVD

GRANDVIEW DR

US-20/BROADWAY

Possible Lindsay Blvd Connector

Lindsay Blvd. Exit 307 removed from US-20
New connections to local street provided as shown

Free-Flow connector ramps between I-15 and US-20
One-Way Connector-Distributor (CD) roads that connect I-15 and US-20 traffic without stop control intersections for Exit 118 and Exit 119

NB C-D RAMP

SB C-D RAMP

MODIFIED RAMPS

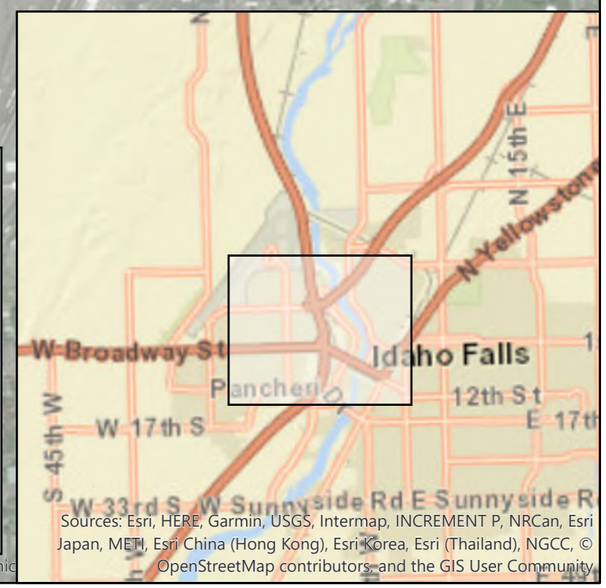
I-15

0 0.13 0.25 0.5 Miles

1:10,000

LEGEND

- System to System Interchange
- Grade-Separated Intersection
- At-Grade Intersection
- Bridge/Overpass
- Additional Roadway
- Bike/Ped Improvement



I-15/US-20 SAFETY AND MOBILITY (KN 20065)

PEL: LEVEL 1 - UNIVERSE ALTERNATIVES

On Alignment Alternative (Ramp Modifications)

I.C Free Flow 118/119 & Fremont

I-15

US-20

Possible Lindsay Blvd Connector

FREMONT AVE

GRANDVIEW DR

LINDSAY BLVD

Free-Flow connector ramps between I-15 and US-20

One-Way Connector-Distributor (CD) roads that connect I-15 and US-20 traffic without stop control intersections for Exit 118, Exit 119 and Fremont Interchange

NB C-D RAMP

SB C-D RAMP

US-20/BROADWAY

MODIFIED RAMPS

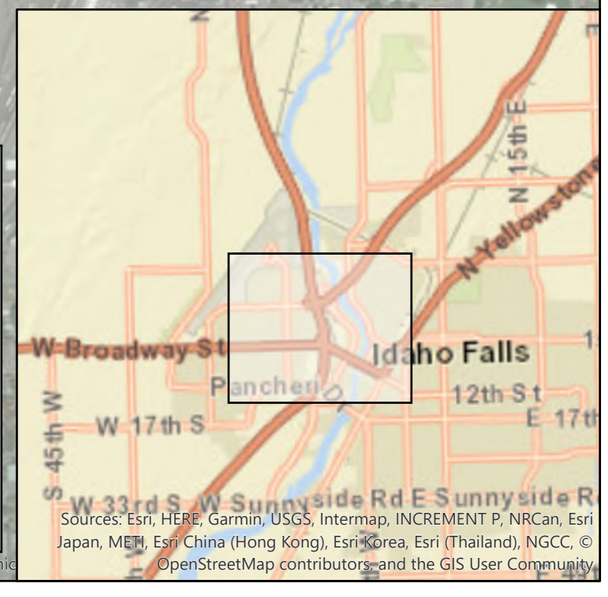
I-15

0 0.13 0.25 0.5 Miles

1:10,000

LEGEND

- System to System Interchange
- Grade-Separated Intersection
- At-Grade Intersection
- Bridge/Overpass
- Additional Roadway
- Bike/Ped Improvement



I-15/US-20 SAFETY AND MOBILITY (KN 20065)

PEL: LEVEL 1 - UNIVERSE ALTERNATIVES

On Alignment Alternative

I.D

I-15

US-20

Convert Science Center Blvd to full interchange

33rd N

IONA RD

Improve to High Capacity IC in Existing Alignment @ Exit 119

PORTER CANAL

Possible Lindsay Blvd Connector

ANDERSON ST

Remove Fremont Exit 308
Overpass maintained

GRANDVIEW DR

Remove Lindsay Blvd. Exit 307
New connections to local street provided as shown

LINDSAY BLVD

SNAKE RIVER

Improve to High Capacity IC in Existing Alignment @ Exit 118

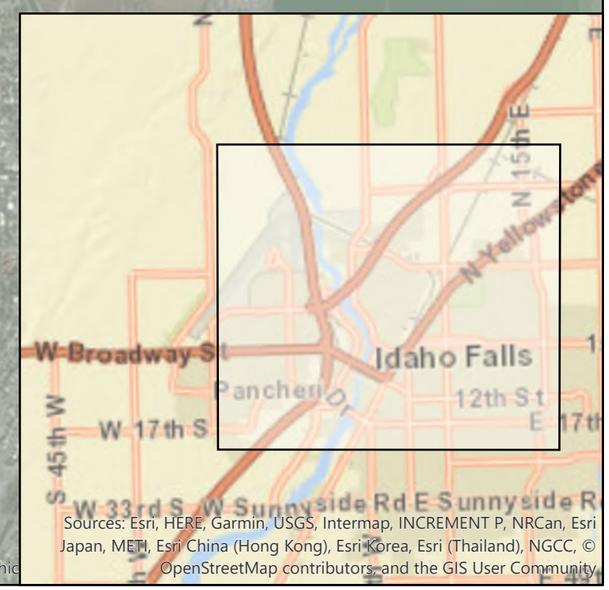
US-20/BROADWAY

0 0.25 0.5 1 Miles

1:20,000

LEGEND

- System to System Interchange
- Grade-Separated Intersection
- At-Grade Intersection
- Bridge/Overpass
- Existing Roadway
- Bike/Ped Improvement



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographic

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I-15/US-20 SAFETY AND MOBILITY (KN 20065)

PEL: LEVEL 1 - UNIVERSE ALTERNATIVES

Off Alignment Alternative

II.A Anderson Street Connector

I-15/US-20 Connector (Anderson St Extension)
New roadway to become the new US-20, existing US-20 between Lindsay Blvd and Fremont IC to be converted to local roadway

Ramps added to Science Center IC. Converted to Full interchange

Two-Way Frontage Road Connected to converted US-20

Existing divided US-20 connection between Fremont and Science Center to be removed

Existing US-20 to be converted to local city street for local traffic

Provide System to System Interchange

I-A: Exits 118 and 119 Become on single split interchange
May be used in conjunction with I-15/US-20 Connector

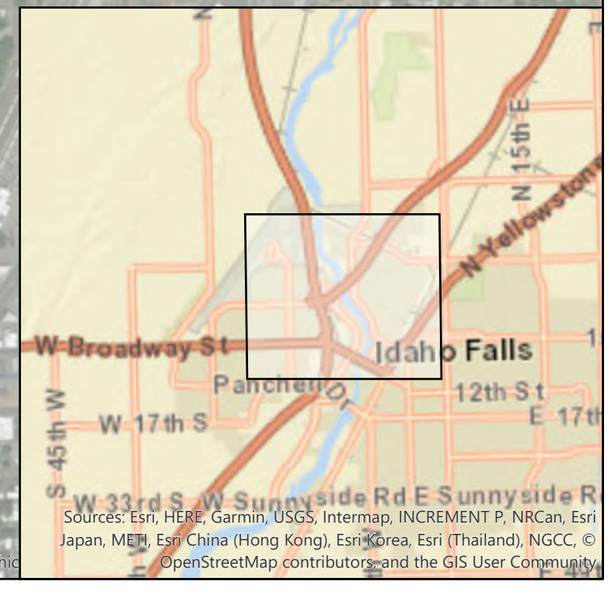
I-15
PORTER CANAL
RR Xing
US-20
SCIENCE CENTER DR
ANDERSON ST
FREMONT AVE
SNAKE RIVER
LINDSAY BLVD

LEGEND

- System to System Interchange
- Grade-Separated Intersection
- At-Grade Intersection
- Bridge/Overpass
- Additional Roadway
- Existing road conversion to local

0 0.13 0.25 0.5 Miles

1:10,000



I-15/US-20 SAFETY AND MOBILITY (KN 20065)

PEL: LEVEL 1 - UNIVERSE ALTERNATIVES

Off Alignment Alternative

II.B 33rd/Iona Rd Connector

I-15/US-20 Connector (33RD St Extension)
New roadway to become the new US-20, existing US-20 between Lindsay Blvd and Fremont IC to be converted to local roadway

Provide System to System Interchange

RR Xing

TIE US-20 INTO LOCAL ROAD SYSTEM

Existing divided US-20 connection just south of existing Lewisville IC to be removed.

Existing US-20 corridor in this reach to be converted to a local city street

I-15

US-20

US-26

SCIENCE CENTER DR

PORTER CANAL

ANDERSON ST

GRANDVIEW DR

SNAKE RIVER

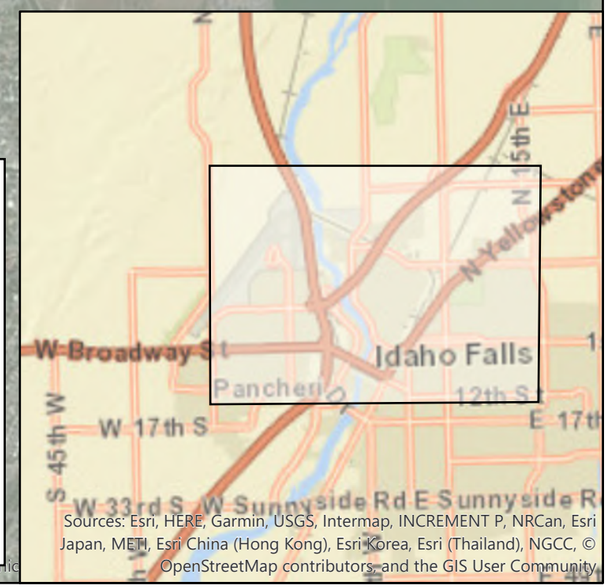
US-20/BROADWAY

0 0.25 0.5 1 Miles

1:20,000

LEGEND

- System to System Interchange
- Grade-Separated Intersection
- At-Grade Intersection
- Bridge/Overpass
- Additional Roadway
- Existing road conversion to local



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics

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I-15/US-20 Connector
(49th N/Telford Rd Extension)
New roadway to become the new US-20, existing US-20 between Lindsay Blvd and Fremont IC to be converted to local roadway

Provide System to System Interchange

TIE US-20 INTO LOCAL ROAD SYSTEM

Existing divided US-20 connection just south of existing St Leon IC to be removed.

Existing US-20 corridor in this reach to be converted to a local city street

I-15
LEWISVILL HWY
US-20
TELFORD RD
US-26
49th N
33rd N
SCIENCE CENTER DR
15th E/St Leon (Woodruff)
25th E (Hitt)
IONA RD
PORTER CANAL
ANDERSON ST
HOLMES AVE
SNAKE RIVER
GRANDVIEW DR
US-20/BROADWAY

0 0.4 0.8 1.6 Miles
1:30,000

I-15/US-20 SAFETY AND MOBILITY (KN 20065)

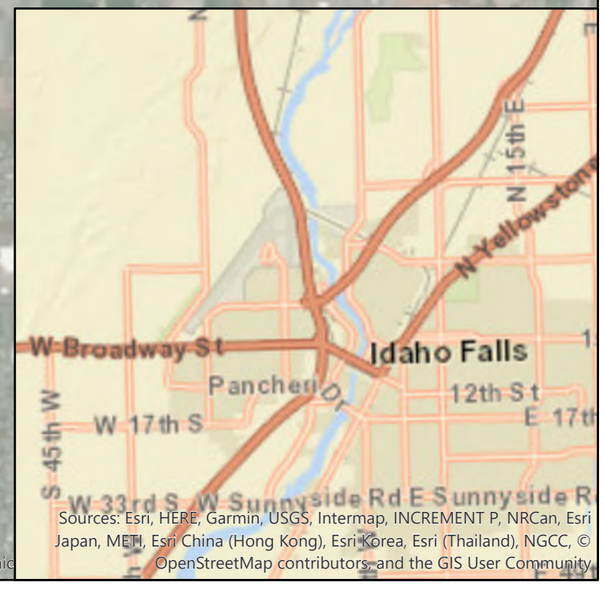
PEL: LEVEL 1 - UNIVERSE ALTERNATIVES

Off Alignment Alternative

II.C 49th/Telford Rd Connector

LEGEND

- System to System Interchange
- Grade-Separated Intersection
- At-Grade Intersection
- Bridge/Overpass
- Additional Roadway
- Existing road conversion to local



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographic

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I-15/US-20 SAFETY AND MOBILITY (KN 20065)

PEL: LEVEL 1 - UNIVERSE ALTERNATIVES

Off Alignment Alternative

II.D-G Connectors with Extension to 45th W and East to US-26

81st N

I-15

LEWISVILL HWY

US-20

II.G I-15/US-20 Connector (81st N)

73rd N (approximate)

II.F I-15/US-20 Connector (73rd N)

RIVER RD

Ririe Connector: Connection from US-20 to US-26

65th N

US-26

II.E I-15/US-20 Connector (65th N/Telford Rd Extension)

TELFORD RD

49th N

II.D I-15/US-20 Connector (49th N/Telford Rd Extension)

IONA RD

35th E (Ammon)

33rd N

45 W

HOLMES AVE

15th E/St Leon (Woodruff)

25th E (Hitt)

PORTER CANAL

GRANDVIEW DR

Existing US-20 corridor in remaining reach to be converted to a local city street

GRANDVIEW DR

SNAKE RIVER

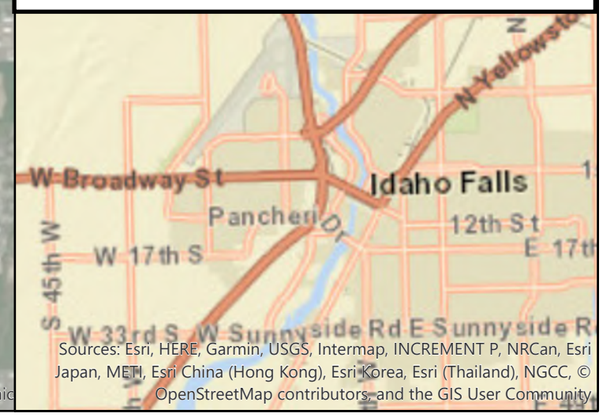
US-20/BROADWAY

US-20/BROADWAY

LEGEND

- System to System Interchange
- Grade-Separated Intersection
- At-Grade Intersection
- Bridge/Overpass
- Additional Roadway
- Existing road conversion to local

Note: II.D-G are not intended to show actual alignment alternatives but rather general vicinity locations where potential roadways could be developed. Variations of alignment relative to actual features should be anticipated.



0 0.5 1 2 Miles

1:40,000

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographic

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D

Level One Screening Meeting Summary

Meeting Minutes

Project:	I-15/US-20 Connector
Subject:	Level One Screening Meeting
Date	July 24, 2018; 10:00 am
Location:	ITD District 6 office, Rigby

Attendees:		
	Lance Bates – Bonneville County	Karen Hiatt - ITD
	Nick Contos – Bonneville County	Drew Meppen – ITD
	Chris Canfield – City of Idaho Falls	Ryan Day – ITD
	Lisa Applebee – FHWA	Darrell West – BMPO
	Curtis Calderwood – ITD	Derek Noyes - ITD
	Tim Cramer – ITD	Kelly Hoopes – Horrocks
	Mark Layton – ITD	Ben Burke – Horrocks
	Brad Richards – ITD	Tracy Ellwein – HDR
	Jet Johnstone – ITD	Cameron Waite - HDR
	Jesse Barrus – ITD	Jason Longsdorf – HDR

The purpose of the meeting was for the analysis team to review the universe of alternatives developed on June 7th & June 8th against the Level One PEL Evaluation Matrix screening criteria. A conference call was held with the analysis team on June 26, 2018 to explain and orient them on evaluation questions, the screening matrix, figures and descriptions of the alternatives developed. The upfront information provided included the following:

1. Project Purpose and Need (*KN20065-M_20180314_Purpose and Need.pdf*)
2. Universe of Alternatives Level 1 Figures *(KN20065_20180626_Level 1 Alt Figures.pdf)*
3. Alternatives Description Matrix *(KN20065_20180626_ Alternatives Descriptions.pdf)*
4. Level 1 PEL Evaluation Matrix *(KN20065_20180626_ L1 Evaluation Matrix.pdf).3*
5. *Project Storymap URL link*

http://iplan.maps.arcgis.com/apps/MapSeries/index.html?appid=c8dac0c590d2474bb545793110de0e43

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 July 24.

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. Some attendees were unclear on their initial evaluation that alternatives could be combined (such as IA and IIA), so re-visiting the evaluation matrix was valuable.

The evaluation results were compiled by alternative and by criteria to show an overall scoring. The results were shown on a PowerPoint slide show. The Analysis Team discussed the results and based on the compilation, determined of the overall scoring for each alternative relative to the evaluation criteria, what alternatives to advance to Level Two and those alternatives to not be considered further.

The Level One Screening Compilation is attached.

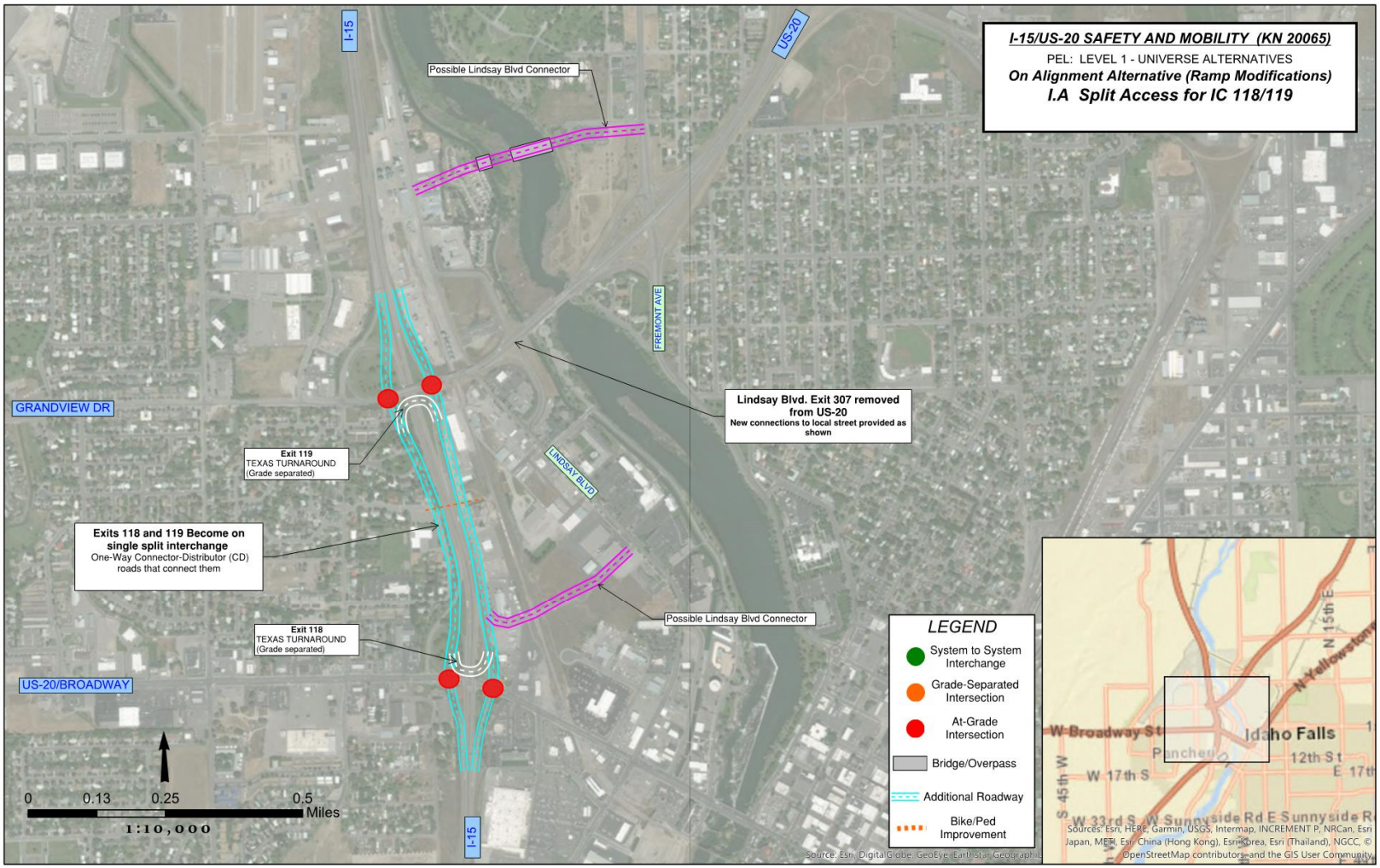
In Summary,

- Level One Screening reviewed 14 alternatives developed during the "universe of alternatives brainstorming"
- Of the 14 Level One alternatives, 9 alternatives were recommended to advance to Level Two analysis.
- The Level One alternatives and the results from the screening were presented to the public at a public meeting on September 5, 2018.
- Input from Community Working Group Meeting #3 was used in developing an additional Level Two alterative (US-20 one way couplet)
- Next steps for Level 2 analysis is a coarse development of geometrics, travel demand modeling, bridge locations, major utility conflicts, ped/bike/multi-modal routing/connections; right of way needs, local access roads connections; review of land use planning; freight plans; identify environmental concerns/constraints; future developments/economics.
- Following the analysis, the team will meet to review and screen the alternatives against the Level Two screening matrix.
- The Level Two results will be presented to the public in late winter/early spring of 2019.

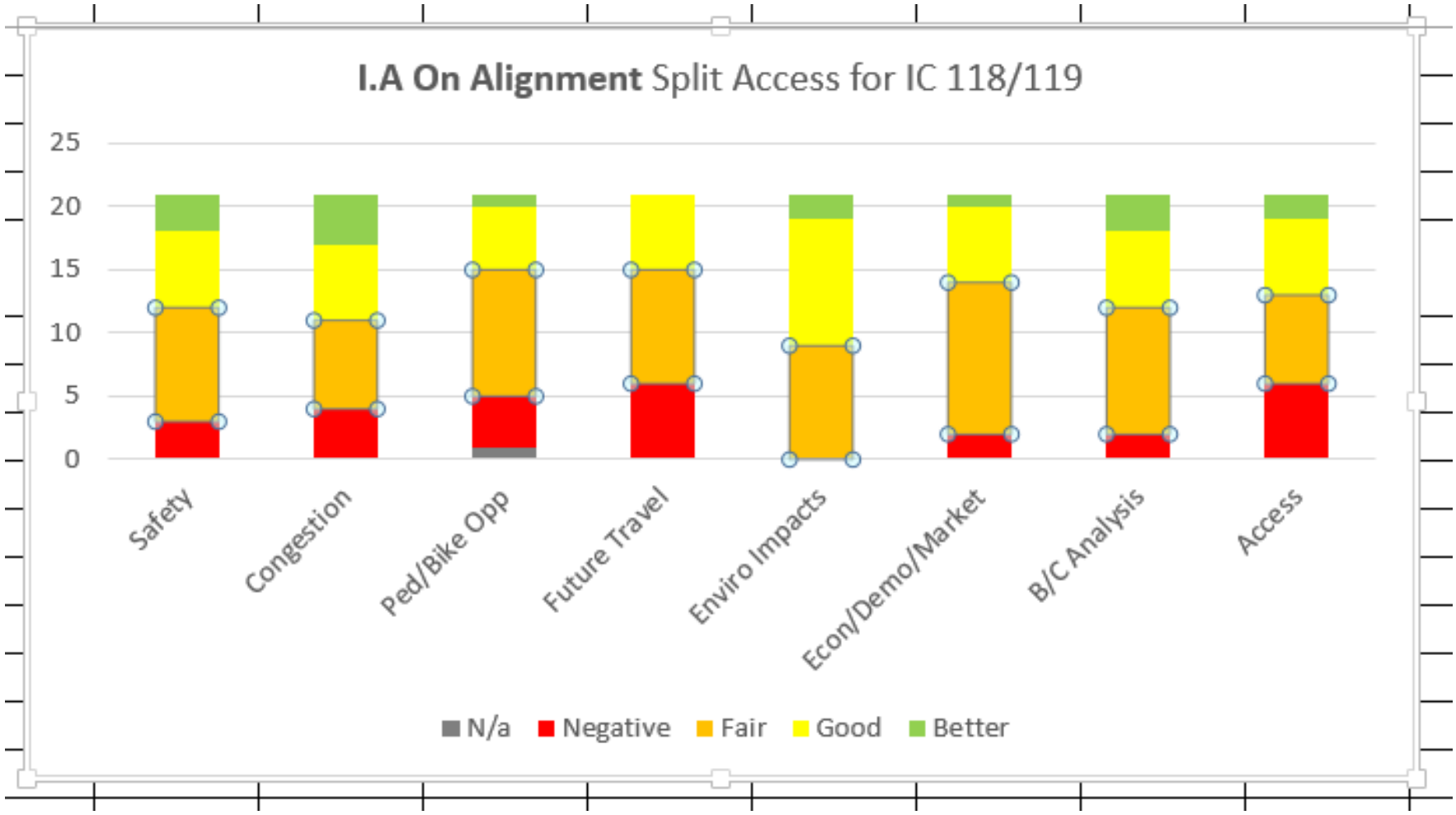
Welcome!

I-15/US-20
Level 1 Screening Meeting
July 24, 2018

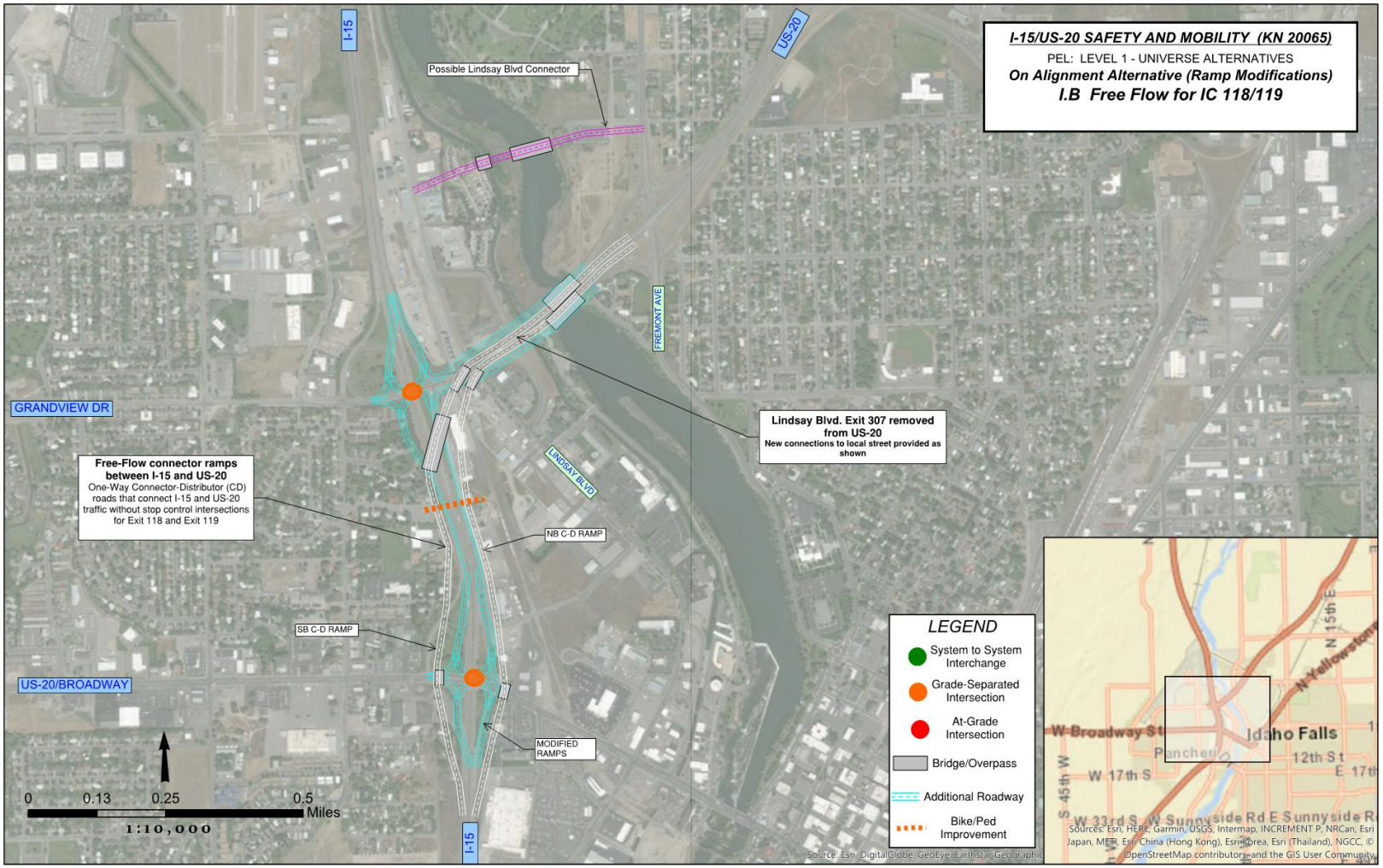
On Alignment I.A



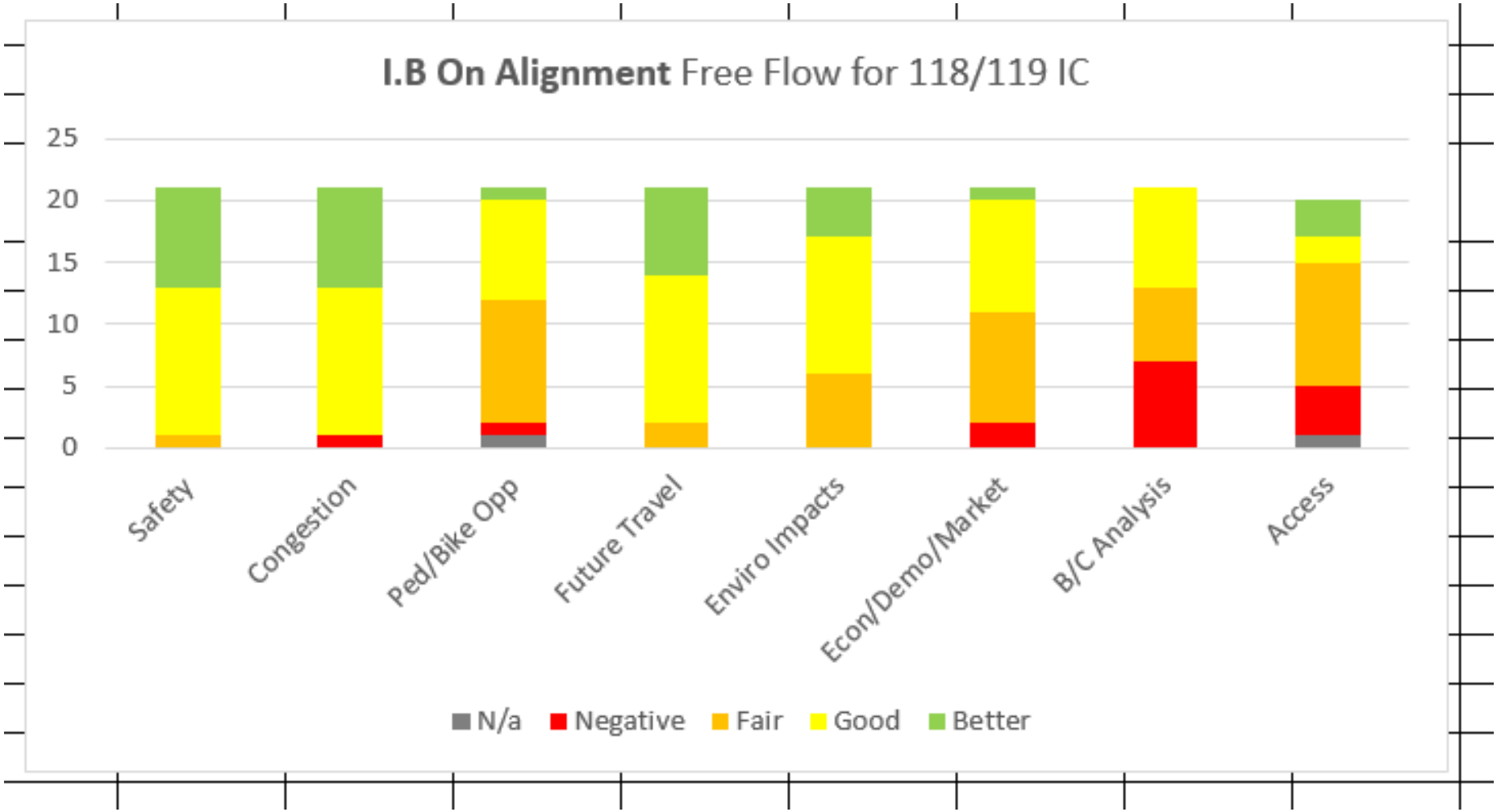
On Alignment I.A – Evaluation Matrix



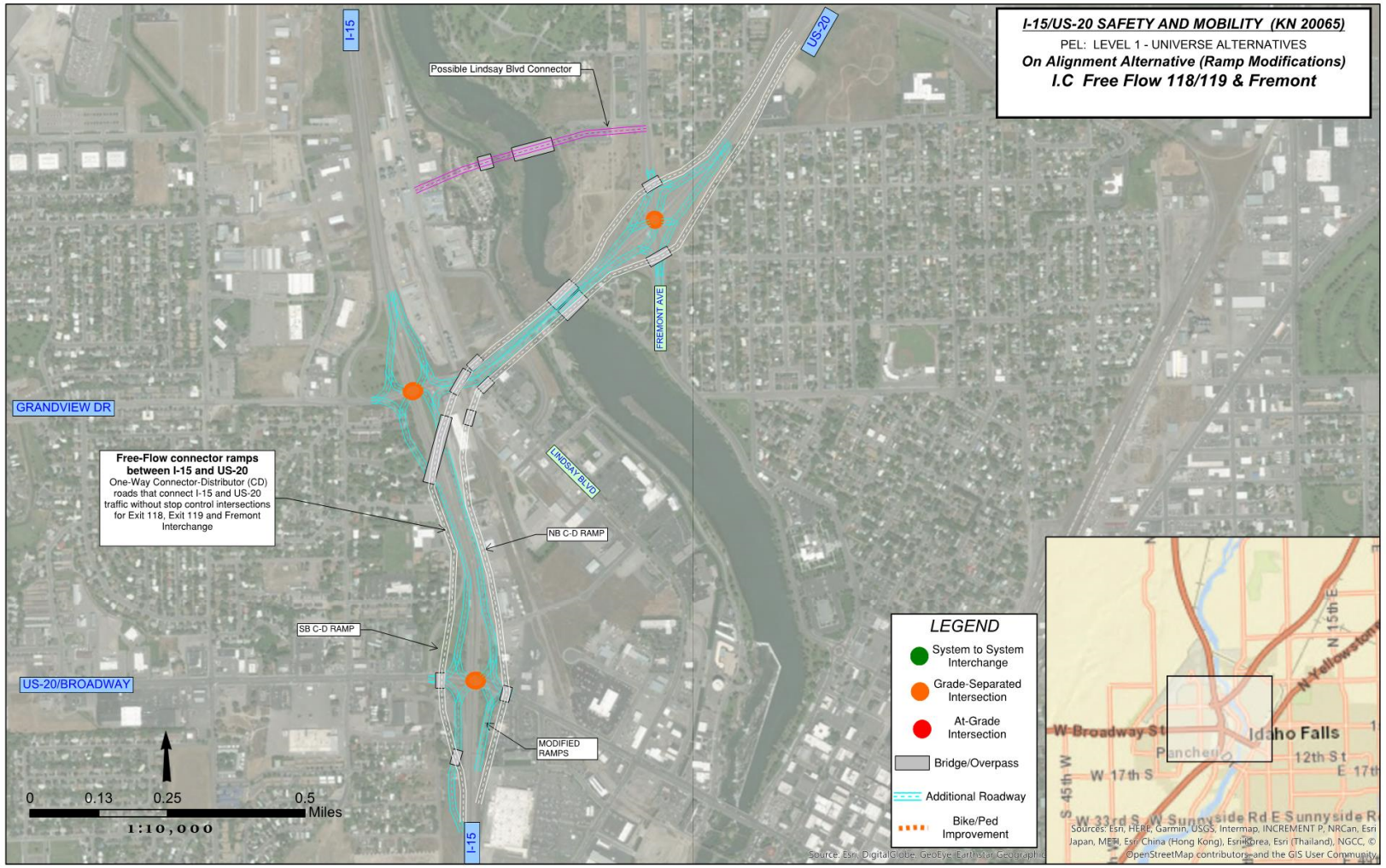
On Alignment I.B



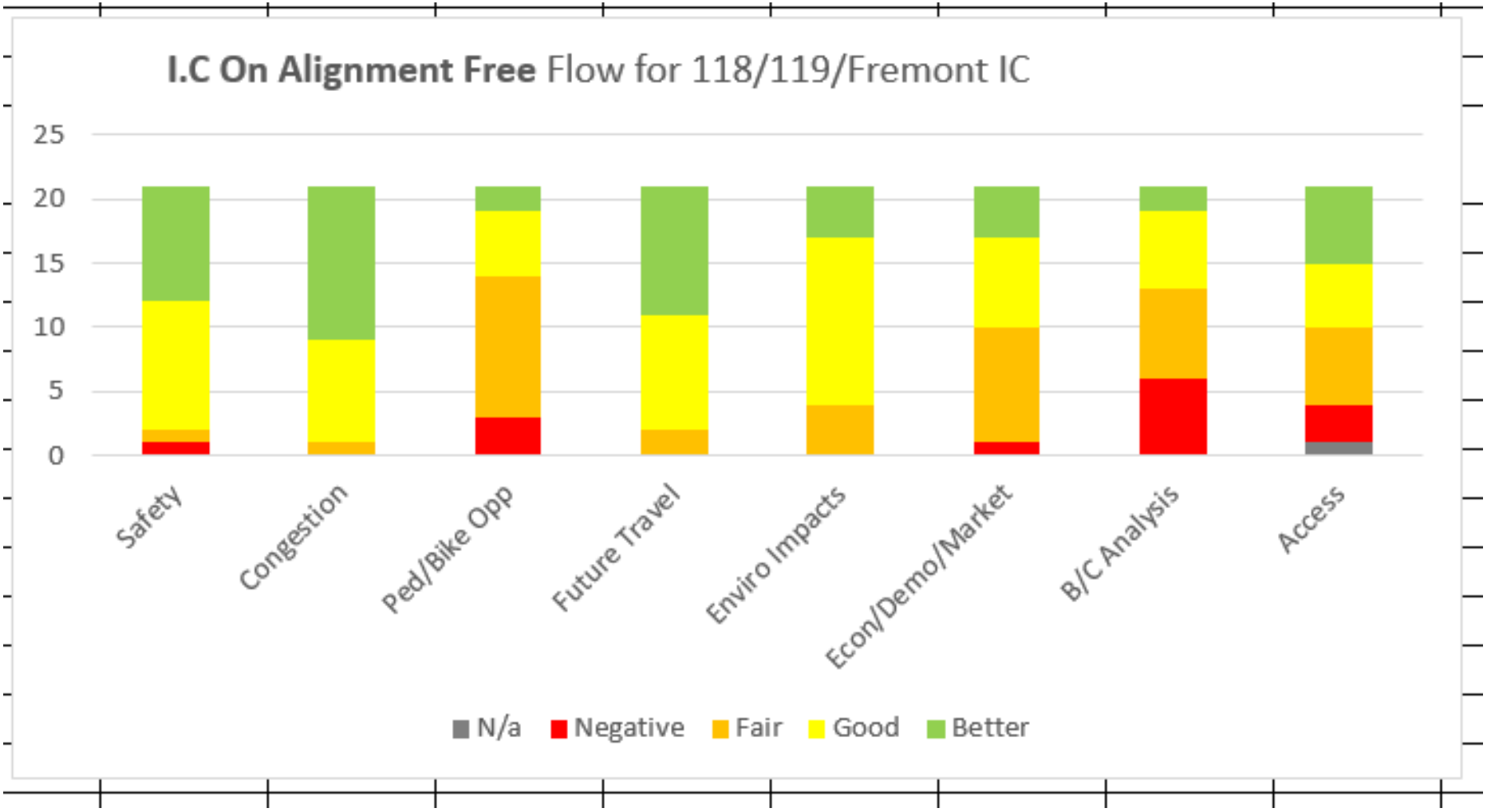
On Alignment I.B – Evaluation Matrix



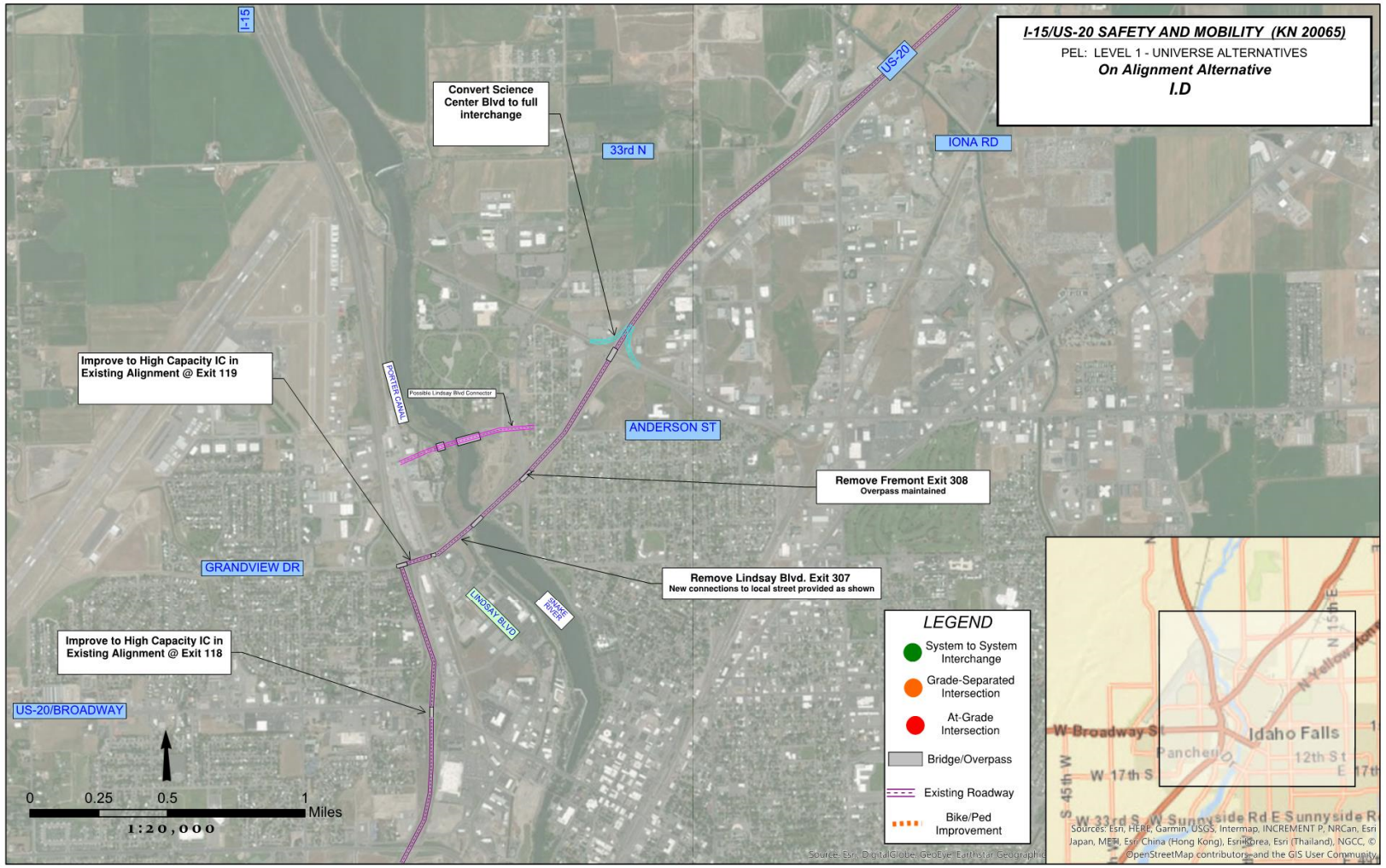
On Alignment I.C



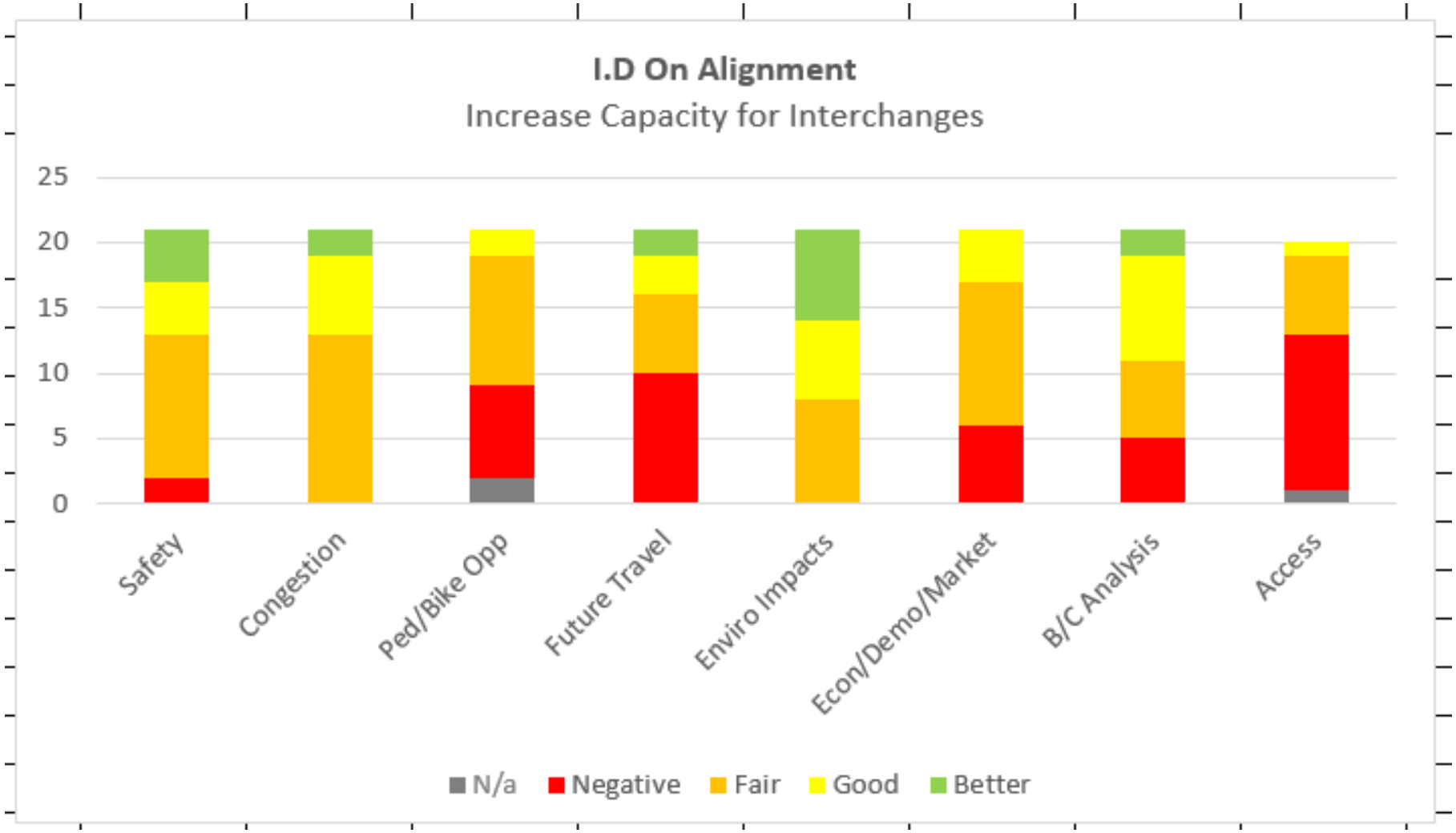
On Alignment I.C – Evaluation Matrix



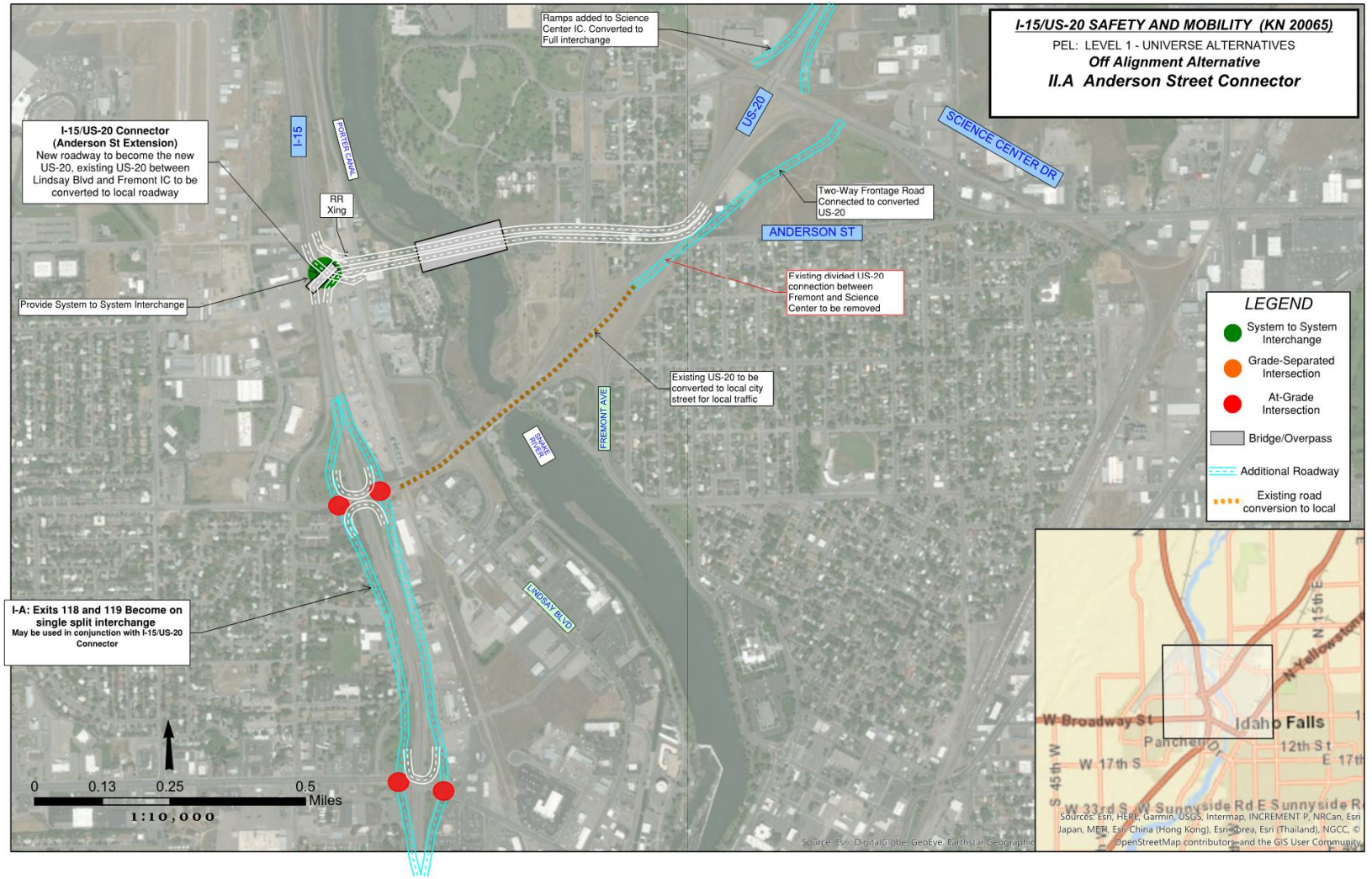
On Alignment I.D



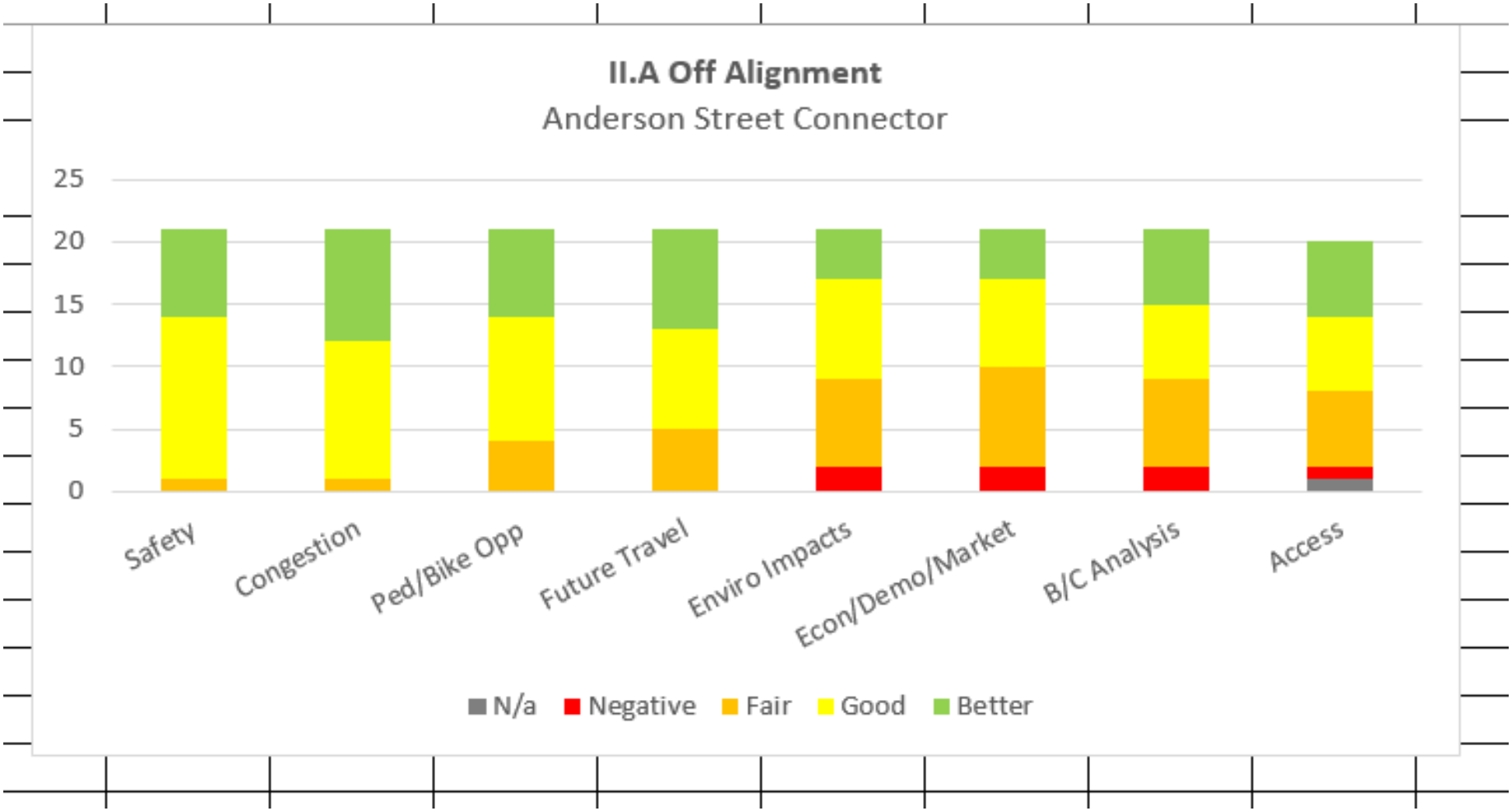
On Alignment I.D – Evaluation Matrix



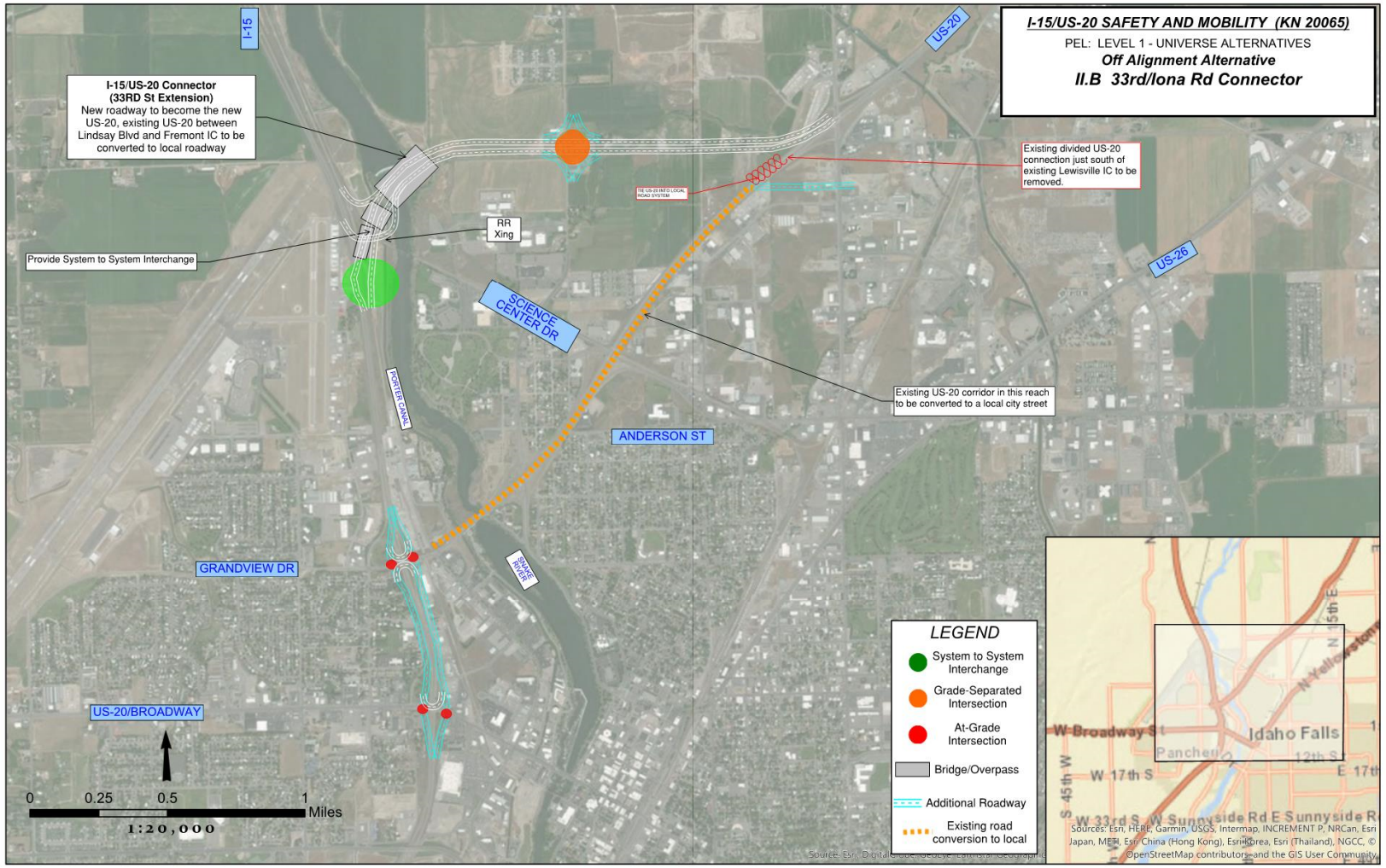
Off Alignment II.A



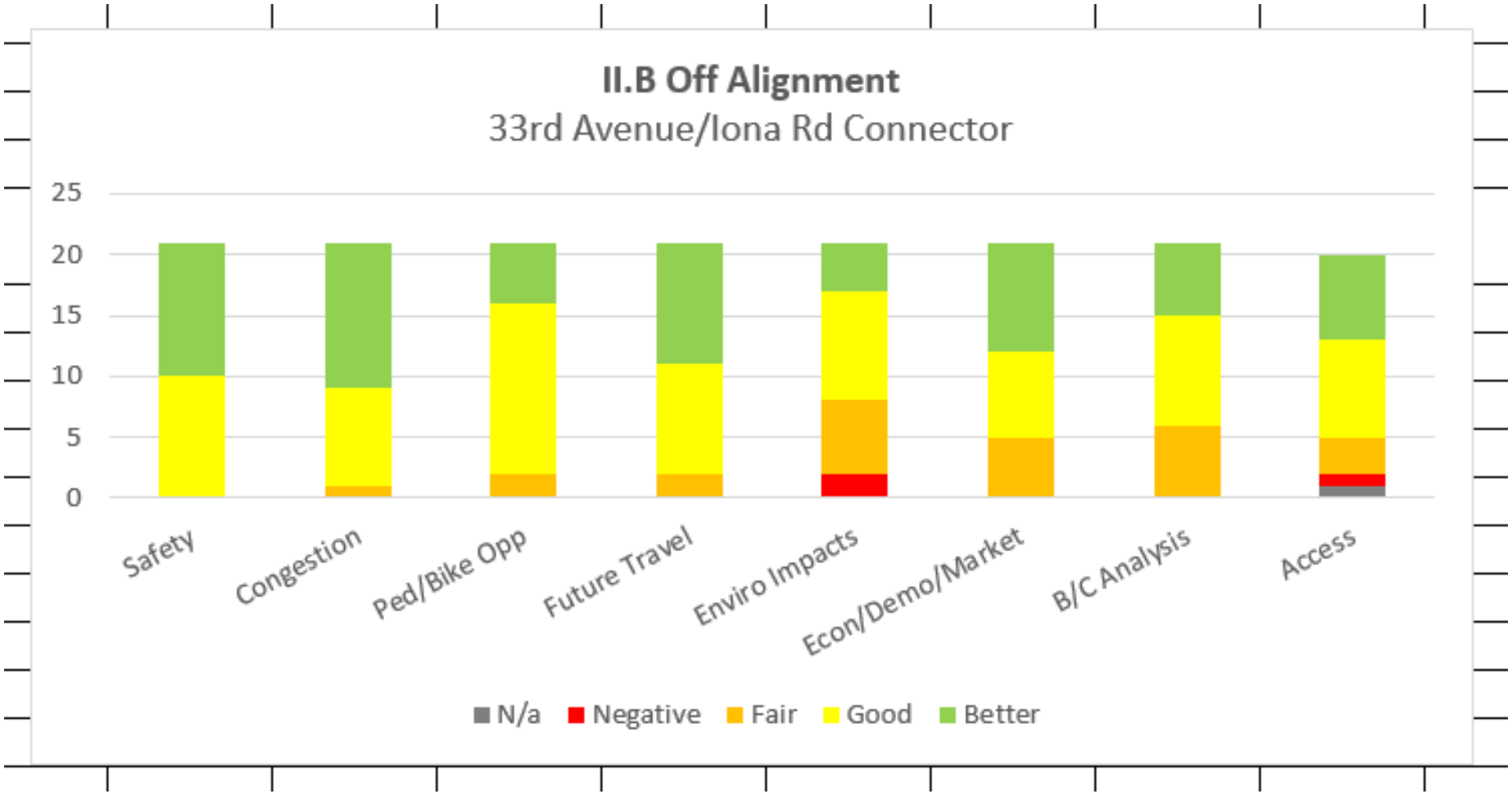
Off Alignment II.A – Evaluation Matrix



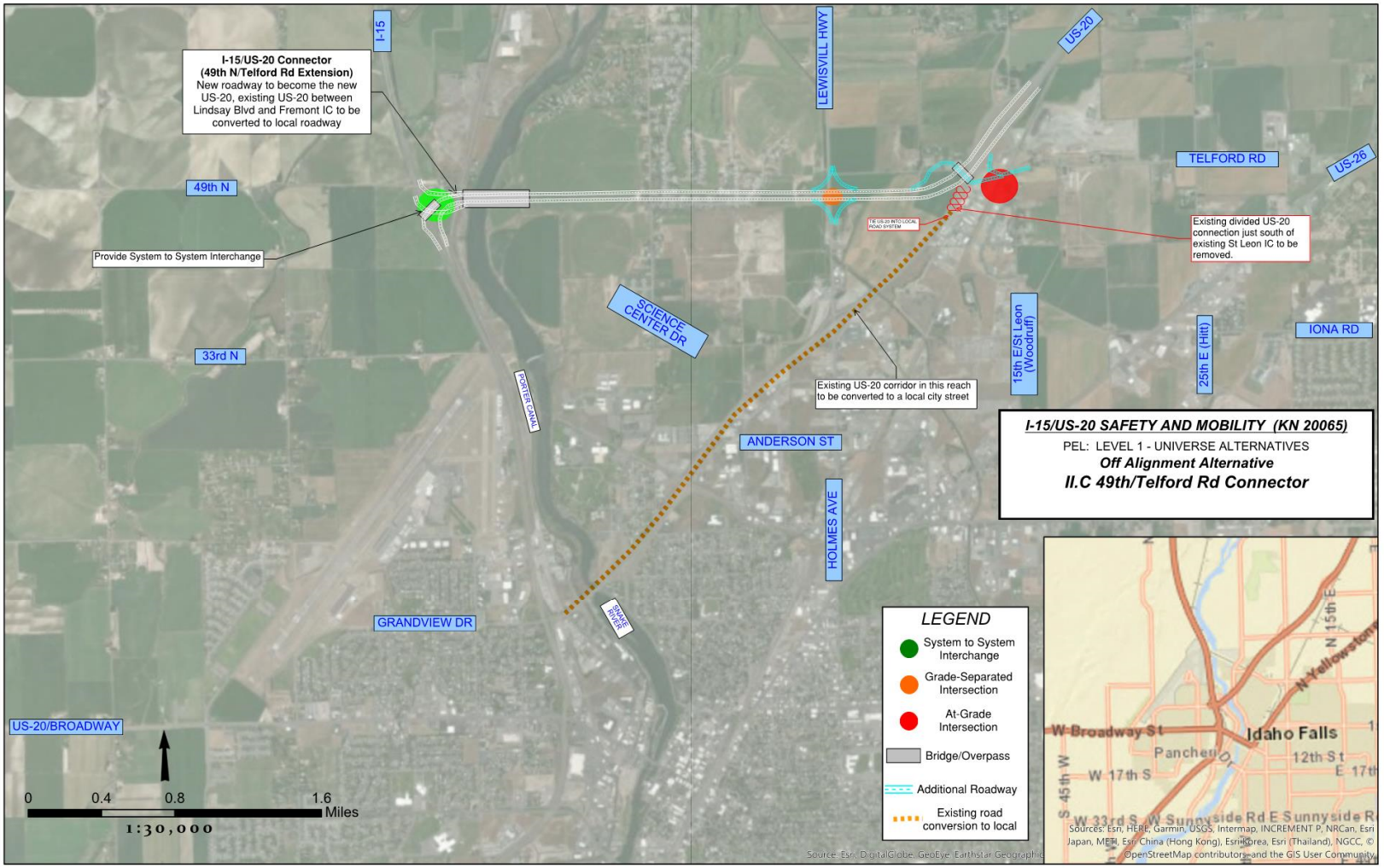
Off Alignment II.B



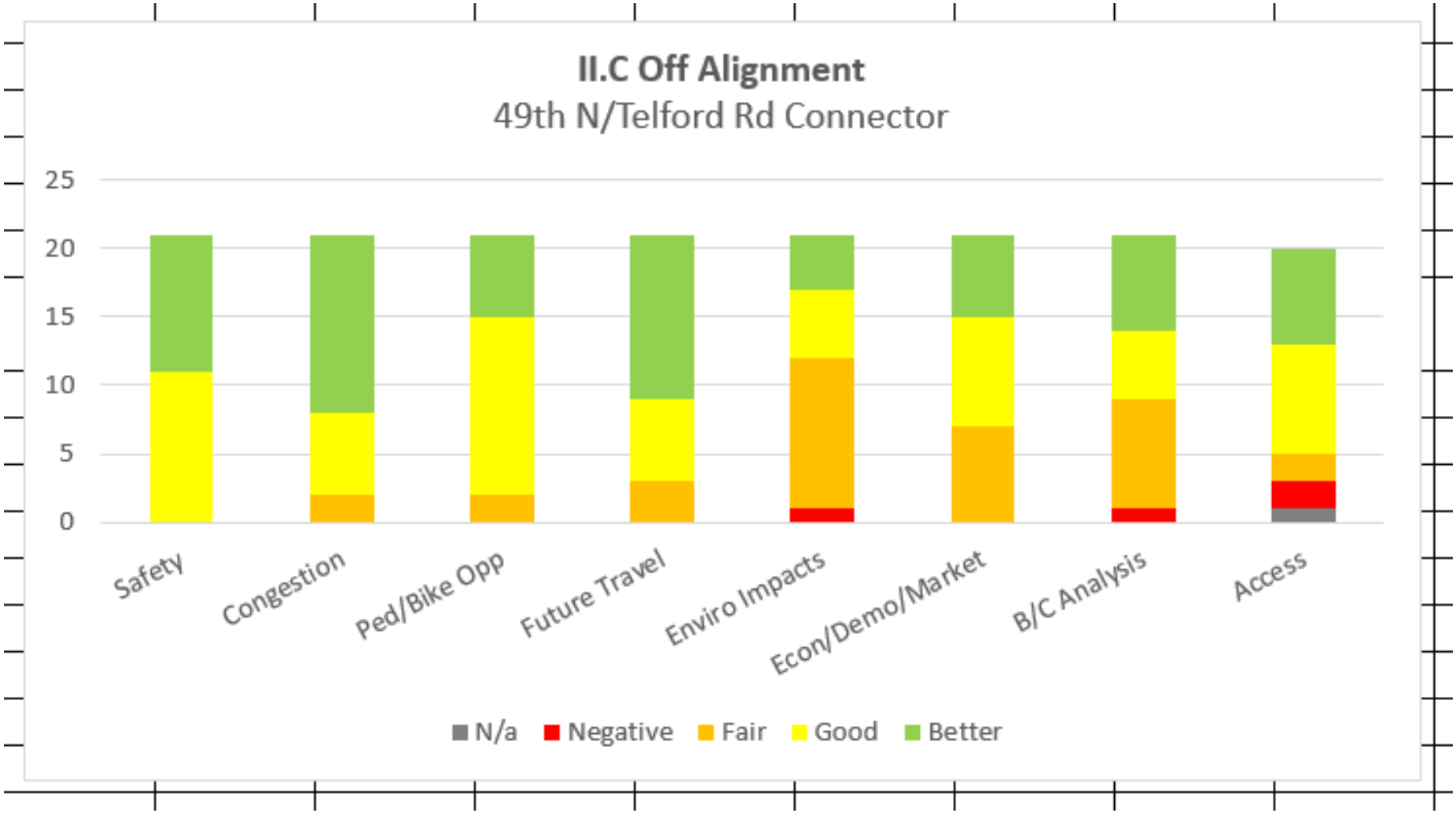
Off Alignment II.B – Evaluation Matrix



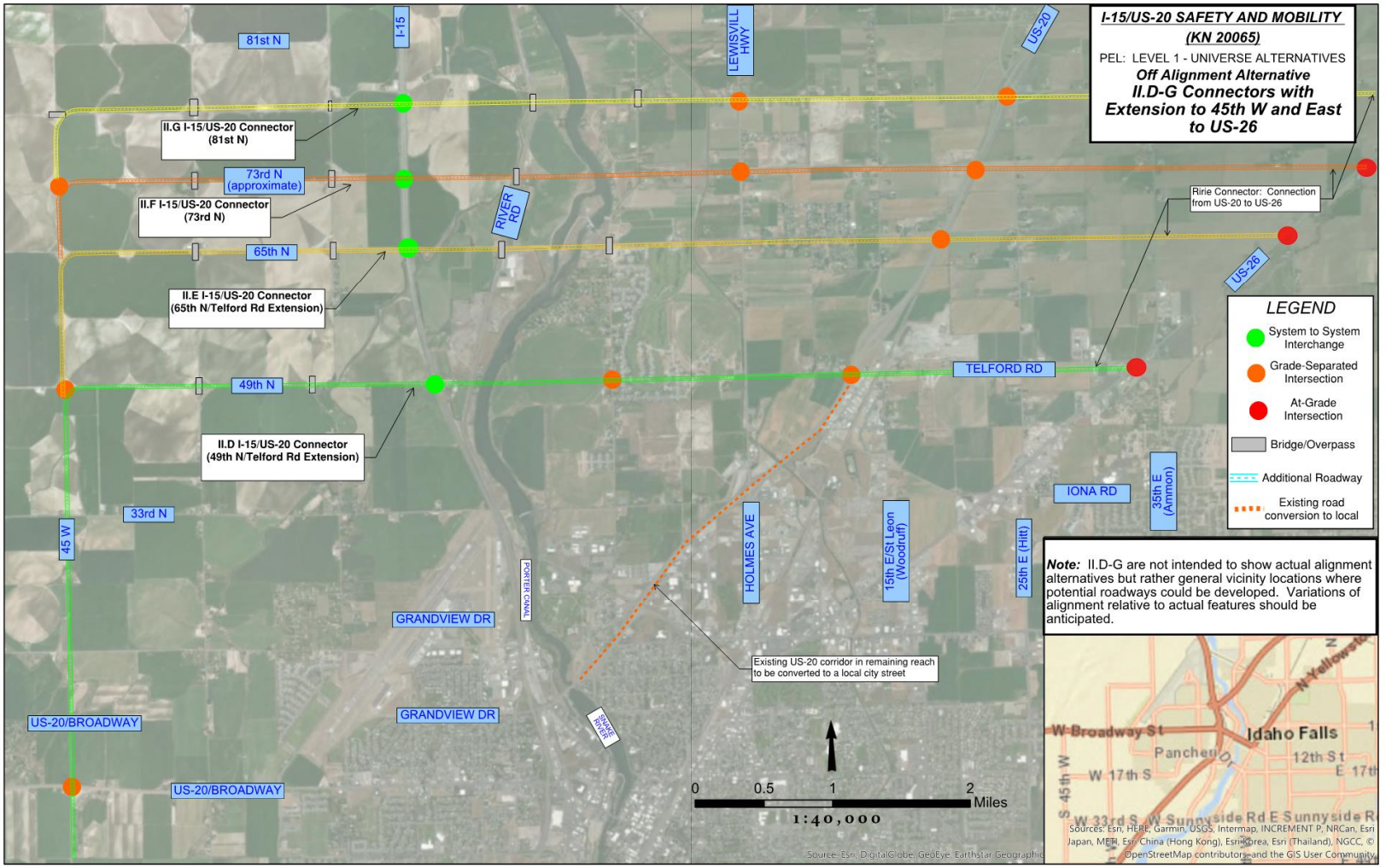
Off Alignment II.C



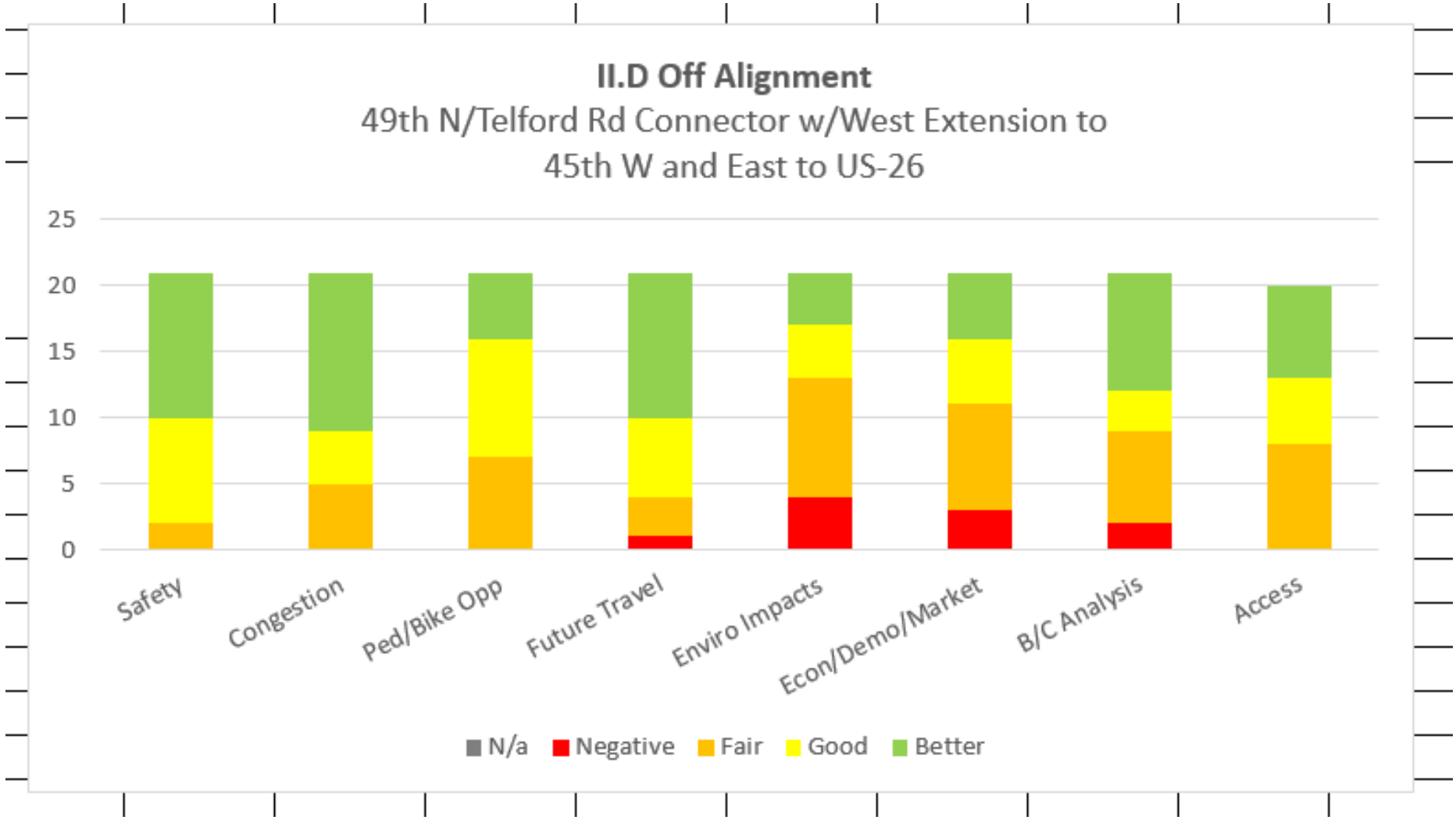
Off Alignment II.C – Evaluation Matrix



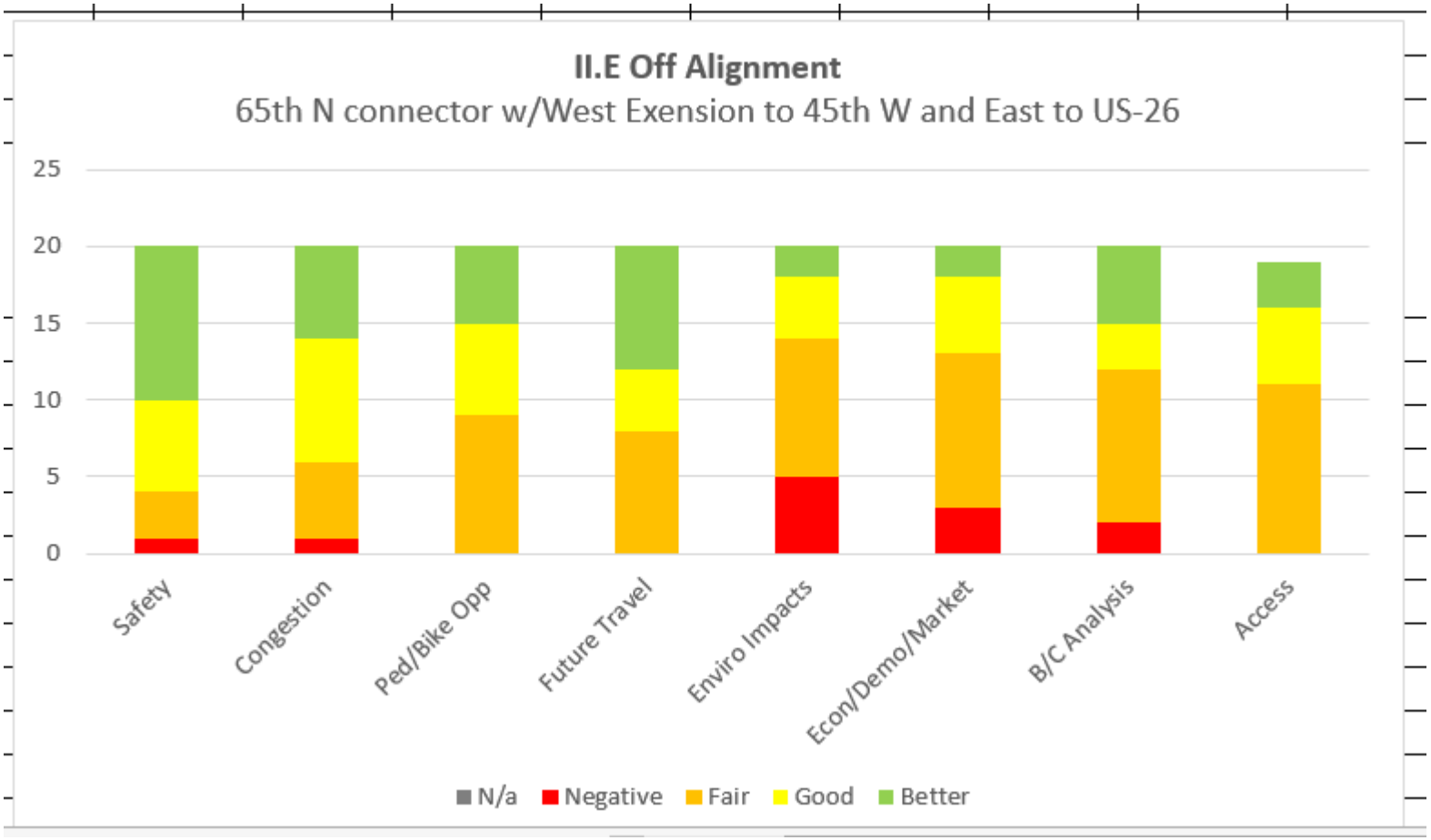
Off Alignment II.D-G



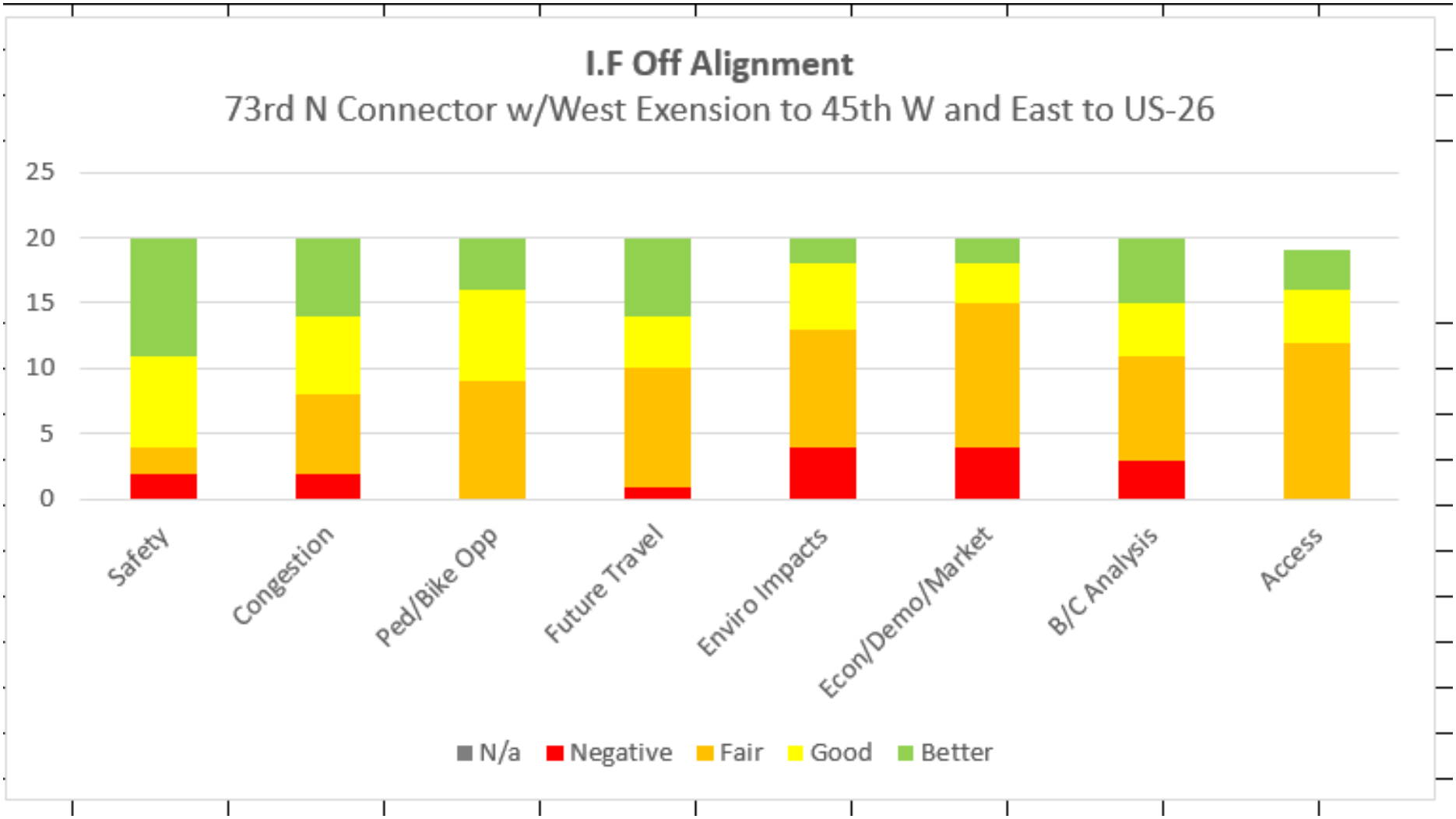
Off Alignment II.D – Evaluation Matrix



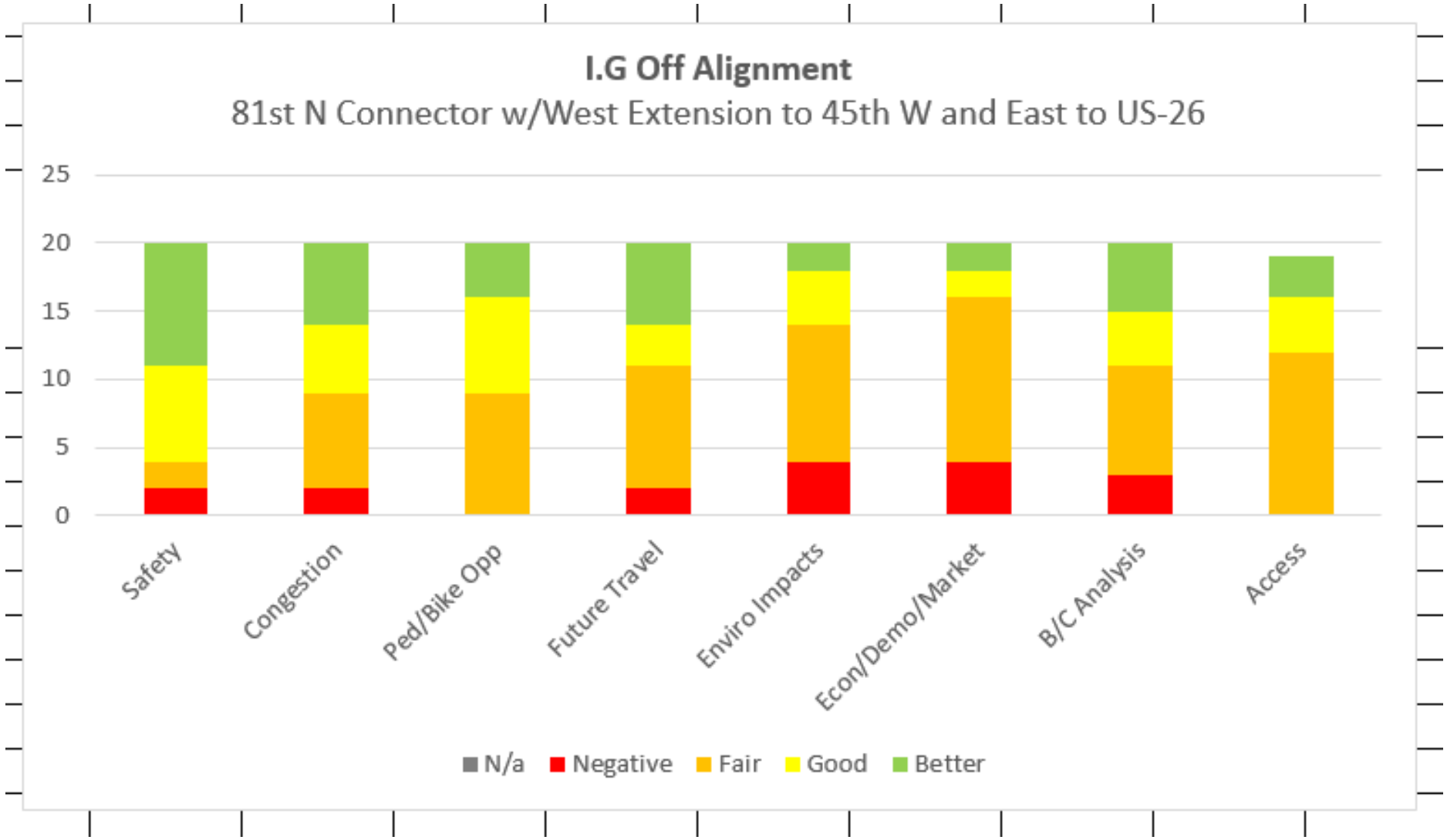
Off Alignment II.E – Evaluation Matrix



Off Alignment II.F – Evaluation Matrix



Off Alignment II.G – Evaluation Matrix



Discussion/Questions?

E

Level One Results Summary Matrix and Alternative Exhibits

I-15/US-20 SAFETY AND MOBILITY (KN 20065)
Level 1 Screening Results Compilation

	No.	Level 2 Naming	Level 1 Alternative Name	Alternative Description	Outcome of Level 1 Screening	Rationale	Comments	Next Steps to Create Level 2 Alternatives
		A - No Action						
On Alignment Alternatives	**I.A**		*Split Access for Interchange 118/119 - Ramp Modifications*	Exits 118 and 119 become one single split interchange with grade-separated Texas turnaround and new adjacent connector-distributor roads to provide access to local roadway network via at-grade intersections. A possible Lindsay Blvd connector road could be included north or south of US-20.	Not Recommended	*Does not address Purpose & Need due to inability to eliminate LOS and congestion issues*	Concern - May not eliminate the backup on I-15 for the US-20 EB traffic but rather relocate it further south. - Consider - A free flow right turn onto Eastbound US-20 may be beneficial. - Consider - Add free right from Collector-Distributor road to Lindsay Blvd. Connector (South). - Concern - Alternative does not include free flow traffic between I-15 and US-20. - Concern - Access to Lindsay Blvd. at US-20 with this configuration not desirable.	*Options:* *1. A free flow right turn onto Eastbound US-20 may be beneficial.* *2. Add free right from Collector-Distributor road to Lindsay Blvd. Connector (South).*
	I.B	**B - 118/119 Split Interchange with US-20 Direct Connect with Modified Fremont IC**	*Free Flow for Interchange 118/119 - Ramp Modifications*	Free Flow for Interchange 118/119; One-way connector-distributor roads would be built adjacent to I-15 and US-20 that connect I-15 and US-20 traffic without stop-controlled intersections for Exit 118 and 119, - this alternative would necessitate 9 bridge crossings. Additional new roadway lanes would provide additional ramp access at I-15 & Broadway, I-15 & US-20. New bridges on US-20 river crossing would provide cross-river access for additional lanes. Exit 307 - Lindsay Blvd. would be removed to streamline traffic flow headed to/from US-20 l. Northern Lindsay Blvd. Connector road and bridge possible to include. Bike/Ped improvement to cross highway planned for midway btwn Grandview and Broadway.	**Recommended to advance**		Benefit- Environmental impacts resulting from this alternative are minimal compared to other alternatives. - Consider - Extend Lindsay over I-15 for better cross town connectivity	*Options:* *Extend Lindsay over I-15 for better cross town connectivity*
	I.C	**C - 118/119 Split Interchange with US-20 Direct Connect with New Fremont IC**	*Free Flow for Interchange 118/119 & Fremont- Ramp Modifications*	Free Flow for Interchange 118/119 & Fremont; One-Way Connector-Distributor (CD) roads that connect I-15 and US-20 traffic without stop control intersections for Exit 118, Exit 119 and Fremont Interchange, the alternative would necessitate 14 bridges. Close Lindsay Blvd/US-20 connection. Possible northern Lindsay Blvd. connector route.	**Recommended to advance**		Benefit - Environmental impacts resulting from this alternative are minimal compared to other alternatives. - Consider - Likely one of the more expensive alternatives - Consider - May not solve the congestion concerns far enough north on the US-20 Corridor. - Consider - As shown with the Single Point Urban Interchange (SPUI) configuration, Bikes and Peds may need to be accommodated via alternate routes. - Consider - May be effective to keep the Lindsay overpass over I-15 as an addition to this alternative.	*Options:* *1. May be effective to keep the Lindsay overpass over I-15 as an addition to this alternative.*
	I.D		*I.D.*	Add new ramps at Science Center Blvd., converting it to a full interchange. Convert Interchange 118 & 119 to high capacity Interchange in the existing alignment. Remove Lindsay Blvd and Fremont exits. Possible northern Lindsay Blvd. connector route.	Not Recommended	*Does not address Purpose & Need due to decrease in local connectivity and significant impact to facilities including RR*	Consider - Removal of the connectivity to US-20 via the Fremont Interchange and the Lindsay Blvd. Interchange will reduce congestion for the through traffic but will reduce the connectivity for the local traffic. - Consider - Improving Interchange 118 and Interchange 119 to a more efficient type interchange such as a Single Point Urban Interchange (SPUI) or a Diverging Diamond Interchange (DDI) will require significant impacts to facilities such as the railroad with likely insufficient benefit.	
Connector Raod Alternatives	**II.A**	**D- US-20 Re-alignment with system IV at I-15 south of Freeman Park; Improvements to 118/119**	*Anderson Street Connector - original*	New roadway to become the new US-20, existing US-20 between Lindsay Blvd and Fremont IC to be converted to local roadway. New system to system interchange anticipated south of where International Way would cross I-15 - this alternative necessitates 3 bridges. Design for Broadway and Grandview would be same as Alternative I.A (become one single split interchange with grade-separated Texas turnaround and new adjacent connector-distributor roads from south of Broadway to just north of Grandview to provide access to local roadway network via at-grade intersections.) Two-way frontage road to connect to converted US-20 (old route). Ramps to be added to Science Center Interchange. Improve bike/Ped facilities at the crossing of Local US-20 (old route) and I-15.	**Recommended to advance**		Consider - May be effective without the addition of the Split Access Interchange Improvements (as shown in alternative I.A) Note the considerations of alternative I.A. - Consider - As is, the alternative may not provide sufficient access to the airport. - Consider - Adding a slip ramp onto US-20. - Consider - Ensure local traffic access to US-20 eastbound is preserved. - Consider - Future connectivity to US-26 is not benefited by the geometry of this alternative.	*Options:* *1. Removal of existing 119 Interchange as an interchange and keep it for local road access and bike/Ped crossings.* *2. Addition of a connection to the airport via the new interchange. (see **Alternative II.A. Modified**)*
	II.A (modified)	**E- US-20 Re-alignment, relocate exit 119, improvements at 118 and Grandview**	*Anderson Street Connector - modified*	New roadway to become the new US-20, existing US-20 between Lindsay Blvd and Fremont Interchange to be converted to local roadway. New grade-separated interchange anticipated south of where International Way would cross I-15 -this alternative necessitates 3 bridges. Design for I-15 Broadway and Grandview would be similar to Alternative I.A (become one single split interchange with grade-separated Texas turnaround and new adjacent connector-distributor roads from south of Broadway to north of new grade separated interchange with new US-20 to provide access to local roadway network via at-grade intersections.) Two-way frontage road to connect to converted US-20 (old route). Existing divided US-20 connection between Fremont and Science Center to be removed. Two-way frontage road connected to converted US-20. Improve bike/Ped facilities at the crossing of Local US-20 (old route). Maintain as overpass structure only.	**Recommended to advance**		Same as Alternative II.A but includes the recommeded additions.	*Options:* *1. Removal of existing 119 Interchange as an interchange and keep it for local road access and bike/Ped crossings.* *2. Addition of a connection to the airport via the new interchange. (see **Alternative II.A. Modified**)*
		F- US-20 One-way Couplet with improvements to 118/119 near 33rd	*Arose during the community working group -2 couplet options*	Option 1: I-15/US-20 Connector (Anderson St. Extension), New roadway to become the new US-20, existing US-20 between Lindsay Blvd. and Fremont IC to be converted to local roadway. Option 2:I-15/US-20 Connector (33rd St. Extension), New roadway to become the new US-20, existing US-20 between Lindsay Blvd. and Fremont IC to be converted to local roadway.	**Recommended to advance**			
	II.B.		*33rd/Iona Rd. Connector*	New roadway to become the new US-20, existing US-20 between Lindsay Blvd and Fremont Interchange to be converted to local roadway. System interchange to be included towards north end of airport. This alternative necessitates 3 bridges. Existing divided US-20 connection just south of existing Lewisville interchange to be removed. Existing US-20 corridor to be converted to local roadway. Grade separated interchange planned at new intersection of new US-20 and River Road, including new ramps.	Not Recommended	Does not address Purpose & Need *due to complexity of locatiom with RR crossing and proximity to Runway protection zone*	Concern - Crossing of the RR tracks, River. Three tier crossing. This crossing would be very complex, very costly and the committee felt the location was not sufficiently adventitious to out-weigh the concern. - Concern - The System to System interchange would be located very close to the Runway Protection Zone. There would be potential concerns with confusion and conflict with planes landing and taking off.	

	II.C	**G- US-20 Realignment with a System interchange at I-15 near 49th St.; Improvements to 118/119**	*II.C. 49th/Telford Rd Connector*	New roadway at approximately 49th North/Telford Rd. to become the new US-20, existing US-20 between Lindsay Blvd and Fremont interchange to be converted to local roadway. The alternative necessitates 3 bridges. System to system interchange planned for new US-20/I-15 connection north of airport. New grade-separated interchange anticipated at Lewisville Hwy and new US-20 alignment. Existing divided US-20 connection just south of St. Leon interchange to be removed. At grade intersection planned to connect new ramps/lanes from US-20 to local network @Telford & US-20 interchange.	**Recommended to advance**		Consider - Less complicated bridge than II.B, more separation to river, however may still be a challenging location. - Consider - Proximity to the dump may introduce challenges. - Consider - Evaluate the long-range plan for the airport master plan. Last update was 2009. - Consider - FAA regional office should be consulted. - Potential Variation - Shift I-15 westerly to provide some room and keep the structures separate. Possibly, shift the bridge northward. - Consider - Alternative allows extension to US 26 where the majority of existing "connecting" trips between US-20 and US-26. As a stand alone solution, alternative does potentially address the concerns as stated in the purpose and need, therefore it is recommended as an alternative that should be further investigated.	*Options: 1. **Alternatives I.C/II.D** – leave as is, plus these sub-alternatives (5 total) 2. Connect to US 26 3. Connect to 45th west to exit 113 4. A slight re-alignment of I-15. This could open up some recreational space by the river. 5. Consider subset with Lindsay overpass. 6. Loop at 118/119 fix from other options above*
	II.C	**H - US-20 Realignment with a System interchange at I-15 at 49th St. with extension to US-26; Improvements to 118/119**	*II.C. 49th/Telford Rd Connector - modified*	New roadway at approximately 49th North/Telford Rd. to become the new US-20, existing US-20 between Lindsay Blvd and Fremont interchange to be converted to local roadway. The alternative necessitates 3 bridges. System to system interchange planned for new US-20/I-15 connection north of airport. New grade-separated interchange anticipated at Lewisville Hwy and new US-20 alignment. Roadway will extend east to US-26. Existing divided US-20 connection just south of St. Leon interchange to be removed. At grade intersection planned to connect new ramps/lanes from US-20 to local network @Telford & US-20 interchange.	**Recommended to advance**			
Extension Alternatives	**II.D**	**I - High Capacity Route near 45th West to 49th Street North; Improvements to 113, 118, & 119**	*II. D 49th N/Telford Rd. Extension*	49th N/Telford Rd. Extension; Off-Alignment; Connectors with Extension to 45th W and East to US-26	**Recommended to Advance**	As a stand alone solution, **Alternative II-D combined with Alternative II-C does potentially address the concerns as stated in the purpose and need, therefore it is recommended** as an alternative that should be further investigated.	Consider - Could decommission US-26 through town (Yellowstone Rd) as connection route between I-15 and US-26 and make that connection to I-15. Yellowstone would then become a Idaho Falls city street. - Consider - May include the Alternatives II-A,B or C together with the north legs of Alternative II-D or Alternative II-E in the long-range plan. - Concern - Any alternative constructed north of 49th N, may not solve the pass through traffic concerns and stand alone to address the purpose and need. - Consider - Although these alternatives may be beneficial for the long range plan these alternatives alone may not address the concerns today and in the future for the Interchanges 118/119.	*Options: 1. **Alternatives I.C/II.D** combination 1. Could decommission US-26 through town (Yellowstone Rd) as connection route between I-15 and US-26 and make that connection to I-15. Yellowstone would then become a Idaho Falls city street. 2. May include the **Alternatives II-A,B or C** together with the north legs of **Alternative II-D or Alternative II-E** in the long-range plan.*
	II.E		*65th N/Telford Rd Extension*	65 St. N Connector with Extension to 45th W and East to US-26. This would necessitates approximately 6 small bridges. Existing US-26 corridor and existing US-20 corridor in remaining reach to be converted to a local city street. System to system interchange at new US-20 and I-15. Grade-separated interchanges at intersections with converted US-20. At grade intersection with converted US-26.	Not Recommended	*Does not address purpose & need due to inability to address pass-through concerns*	Consider - Could decommission US-26 through town (Yellowstone Rd) as connection route between I-15 and US-26 and make that connection to I-15. Yellowstone would then become a Idaho Falls city street. - Consider - May include the Alternatives II-A,B or C together with the north legs of Alternative II-D or Alternative II-E in the long-range plan. - Concern - Any alternative constructed north of 49th N, may not solve the pass through traffic concerns and stand alone to address the purpose and need. - Consider - Although these alternatives may be beneficial for the long range plan these alternatives alone may not address the concerns today and in the future for the Interchanges 118/119.	*Options: 1. Could decommission US-26 through town (Yellowstone Rd) as connection route between I-15 and US-26 and make that connection to I-15. Yellowstone would then become a Idaho Falls city street. 2. May include the **Alternatives II-A,B or C** together with the north legs of **Alternative II-D or Alternative II-E** in the long-range plan.*
	II.F		*73rd Street N*	73 Rd. St. Connectors with Extension to 45th W and East to US-26. This would necessitates approximately 5 bridges. Existing US-26 corridor and existing US-20 corridor in remaining reach to be converted to a local city street. System to system interchange at new US-20 and I-15. Grade-separated interchanges at intersections with converted US-20 and Lewisville Hwy. At grade intersection with converted US-26.	Not Recommended	*Does not address purpose & need due to inability to address pass-through concerns*	Consider - Could decommission US-26 through town (Yellowstone Rd) as connection route between I-15 and US-26 and make that connection to I-15. Yellowstone would then become a Idaho Falls city street. - Consider - May include the Alternatives II-A,B or C together with the north legs of Alternative II-D or Alternative II-E in the long-range plan. - Concern - Any alternative constructed north of 49th N, may not solve the pass through traffic concerns and stand alone to address the purpose and need. - Consider - Although these alternatives may be beneficial for the long range plan these alternatives alone may not address the concerns today and in the future for the Interchanges 118/119.	*Options: 1. Could decommission US-26 through town (Yellowstone Rd) as connection route between I-15 and US-26 and make that connection to I-15. Yellowstone would then become a Idaho Falls city street. 2. May include the **Alternatives II-A,B or C** together with the north legs of **Alternative II-D or Alternative II-E** in the long-range plan.*
	II.G		*81st Street N*	81st N Connector with Extension to 45th W and East to US-26. This would necessitates approximately 7 bridges. Existing US-26 corridor and existing US-20 corridor in remaining reach to be converted to a local city street. System to system interchange at new US-20 and I-15. Grade-separated interchanges at intersections with converted US-20 and Lewisville Hwy. At grade intersection with converted US-26.	Should be further evaluated for the long-range plan but does not address the purpose and need by as a stand alone alternative and **should be evaluated only with other potential solutions.**		Consider - Could decommission US-26 through town (Yellowstone Rd) as connection route between I-15 and US-26 and make that connection to I-15. Yellowstone would then become a Idaho Falls city street. - Consider - May include the Alternatives II-A,B or C together with the north legs of Alternative II-D or Alternative II-E in the long-range plan. - Concern - Any alternative constructed north of 49th N, may not solve the pass through traffic concerns and stand alone to address the purpose and need. - Consider - Although these alternatives may be beneficial for the long range plan these alternatives alone may not address the concerns today and in the future for the Interchanges 118/119.	*Options: Cannot be used as a standalone solution - must be combined with other altenratives. 1. Could decommission US-26 through town (Yellowstone Rd) as connection route between I-15 and US-26 and make that connection to I-15. Yellowstone would then become a Idaho Falls city street. 2. May include the **Alternatives II-A,B or C** together with the north legs of **Alternative II-D or Alternative II-E** in the long-range plan.*

I-15/US-20 SAFETY AND MOBILITY (KN 20065)

PEL: LEVEL 2

B* – *Exits 118/119 Split Interchange with US-20 Direct Connection Ramps; a Modified Fremont Interchange

I-15

US-20

Possible Lindsay Blvd Connector (North)

FREMONT AVE

GRANDVIEW DR

Lindsay Blvd. Exit 307 removed from US-20
New connections to local street provided as shown

LINDSAY BLVD

Free-Flow connector ramps between I-15 and US-20
One-Way Connector-Distributor (CD) roads that connect I-15 and US-20 traffic without stop control intersections for Exit 118 and Exit 119

NB C-D RAMP

SB C-D RAMP

US-20/BROADWAY

MODIFIED RAMPS

0 0.13 0.25 0.5 Miles

1:10,000

I-15

LEVEL 2

LEGEND

- System to System Interchange
- Grade-Separated Intersection
- At-Grade Intersection
- Bridge/Overpass
- Existing Roads to Remain
- New Roadway Lanes/Ramps (All Solid Lines)
- Bike/Ped Improvement

I-15/US-20 SAFETY AND MOBILITY (KN 20065)

PEL: LEVEL 2

C- *Exits 118/119 Split Interchange with US-20 Direct Connection Ramps; with New Fremont Interchange*

I-15

US-20

Possible Lindsay Blvd Connector (North)

FREMONT AVE

Close Lindsay/US-20 Connection

GRANDVIEW DR

LINDSAY BLVD

Free-Flow connector ramps between I-15 and US-20

One-Way Connector-Distributor (CD) roads that connect I-15 and US-20 traffic without stop control intersections for Exit 118, Exit 119 and Fremont Interchange

NB C-D RAMP

SB C-D RAMP

US-20/BROADWAY

MODIFIED RAMPS

0 0.13 0.25 0.5 Miles

1:10,000

I-15

LEVEL 2

LEGEND

- System to System Interchange
- Grade-Separated Intersection
- At-Grade Intersection
- Bridge/Overpass
- Existing Roads to Remain
- New Roadway Lanes/Ramps (All Solid Lines)
- Bike/Ped Improvement

I-15/US-20 SAFETY AND MOBILITY (KN 20065)

PEL: LEVEL 2

D* – *US-20 Realignment with a System Interchange at I-15 south of Freeman Park; Improvements to Exits 118/119

I-15/US-20 Connector (Anderson St Extension)
New roadway to become the new US-20, existing US-20 between Lindsay Blvd and Fremont IC to be converted to local roadway

Ramps added to Science Center IC. Converted to Full interchange

Two-Way Frontage Road Connected to converted US-20

Existing divided US-20 connection between Fremont and Science Center to be removed

Existing US-20 to be converted to local city street for local traffic

Provide System to System Interchange

Improve Bike/Ped facilities at this crossing. Maintain as overpass structure only.

I-A: Exits 118 and 119 Become on single split interchange
May be used in conjunction with I-15/US-20 Connector

I-15
PORTER CANAL
RR Xing
US-20
SCIENCE CENTER DR
ANDERSON ST
FREMONT AVE
SNAKE RIVER
GRANDVIEW DR
LINDSAY BLVD

0 0.13 0.25 0.5 Miles
1:10,000

LEGEND

- System to System Interchange
- Grade-Separated Intersection
- At-Grade Intersection
- Bridge/Overpass
- Existing Roads to Remain
- New Roadway Lanes/Ramps (All Solid Lines)
- Bike/Ped Improvement

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographic

LEVEL 2

I-15/US-20 SAFETY AND MOBILITY (KN 20065)

PEL: LEVEL 2

E- US-20 Realignment, Relocate Exit 119, Improve Exit 118 and Grandview Dr.

I-15/US-20 Connector (Anderson St Extension)
New roadway to become the new US-20, existing US-20 between Lindsay Blvd and Fremont IC to be converted to local roadway

Ramps added to Science Center IC. Converted to Full interchange

Two-Way Frontage Road Connected to converted US-20

Existing divided US-20 connection between Fremont and Science Center to be removed

Existing US-20 to be converted to local city street for local traffic

Entrance/Exit Weaving distance likely not sufficient and must be evaluated before determining viability of merging before Grandview.

Improve Bike/Ped facilities at this crossing. Maintain as overpass structure only.

I-A: Exits 118 and 119 Become on single split interchange
May be used in conjunction with I-15/US-20 Connector

I-15
PORTER CANAL
RR Xing
US-20
SCIENCE CENTER DR
ANDERSON ST
SNAKE RIVER
FREMONT AVE
GRANDVIEW DR
LINDSAY BLVD

0 0.13 0.25 0.5 Miles

1:10,000

LEGEND

- System to System Interchange
- Grade-Separated Intersection
- At-Grade Intersection
- Bridge/Overpass
- Existing Roads to Remain
- New Roadway Lanes/Ramps (All Solid Lines)
- Bike/Ped Improvement

LEVEL 2

I-15/US-20 SAFETY AND MOBILITY (KN 20065)

PEL: LEVEL 2

F- US-20 One Way Couplet with Improvements to Exits 118/119 near Anderson

I-15/US-20 Connector (Anderson St Extension)
New roadway to become the new US-20, existing US-20 between Lindsay Blvd and Fremont IC to be converted to local roadway

Ramps added to Science Center IC. Converted to Full interchange

RR Xing

Improve Bike/Ped facilities at this crossing. Maintain as overpass structure only.

I-A: Exits 118 and 119 Become on single split interchange
May be used in conjunction with I-15/US-20 Connector

I-15
PORTER CANAL
US-20
SCIENCE CENTER DR
ANDERSON ST
FREMONT AVE
SNAKE RIVER
GRANDVIEW DR
LINDSAY BLVD

0 0.13 0.25 0.5 Miles

1:10,000

LEVEL 2

LEGEND

- System to System Interchange
- Grade-Separated Intersection
- At-Grade Intersection
- Bridge/Overpass
- Existing Roads to Remain
- New Roadway Lanes/Ramps (All Solid Lines)
- Bike/Ped Improvement

I-15/US-20 SAFETY AND MOBILITY (KN 20065)

PEL: LEVEL 2

G – *US-20 Realignment with a System Interchange at I-15 near W 49th N; Improvements to Exits 118/119*

I-15/US-20 Connector (49th N/Telford Rd Extension)
New roadway to become the new US-20, existing US-20 between Lindsay Blvd and Fremont IC to be converted to local roadway

Provide System to System Interchange

TIE US-20 INTO LOCAL ROAD SYSTEM

Existing divided US-20 connection just south of existing St Leon IC to be removed.

Existing US-20 corridor in this reach to be converted to a local city street

I-15
LEWISVILL HWY
US-20
TELFORD RD
US-26
49th N
33rd N
PORTER CANAL
SCIENCE CENTER DR
ANDERSON ST
HOLMES AVE
15th E/St Leon (Woodruff)
25th E (Hitt)
IONA RD
GRANDVIEW DR
SNAKE RIVER
US-20/BROADWAY

0 0.4 0.8 1.6 Miles

1:30,000

LEVEL 2

LEGEND

- System to System Interchange
- Grade-Separated Intersection
- At-Grade Intersection
- Bridge/Overpass
- Existing Roads to Remain
- New Roadway Lanes/Ramps (All Solid Lines)
- Bike/Ped Improvement

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics

I-15/US-20 SAFETY AND MOBILITY (KN 20065)

PEL: LEVEL 2

H – US-20 Realignment with a System Interchange at I-15 near W 49th N with Extension to US-26; Improvements to Exits 118/119

I-15/US-20 Connector (49th N/Telford Rd Extension)
New roadway to become the new US-20, existing US-20 between Lindsay Blvd and Fremont IC to be converted to local roadway

Provide System to System Interchange

TIE US-20 INTO LOCAL ROAD SYSTEM

Existing divided US-20 connection just south of existing St Leon IC to be removed.

Existing US-20 corridor in this reach to be converted to a local city street

I-15
LEWISVILL HWY
US-20
TELFORD RD
US-26
49th N
33rd N
PORTER CANAL
SCIENCE CENTER DR
ANDERSON ST
HOLMES AVE
15th E/St Leon (Woodruff)
25th E (Hitt)
IONA RD
GRANDVIEW DR
SNAKE RIVER
US-20/BROADWAY

0 0.4 0.8 1.6 Miles

1:30,000

LEVEL2

LEGEND

- System to System Interchange
- Grade-Separated Intersection
- At-Grade Intersection
- Bridge/Overpass
- Existing Roads to Remain
- New Roadway Lanes/Ramps (All Solid Lines)
- Bike/Ped Improvement

I-15/US-20 SAFETY AND MOBILITY (KN 20065)

PEL: LEVEL 2

I – US-20 Realignment near N 45th W and W 49th N; Improvements to Exits 113/118/119

81st N

I-15

LEWISVILL HWY

US-20

RIVER RD

65th N

Ririe Connector: Connection from US-20 to US-26

US-26

TELFORD RD

49th N

II.D I-15/US-20 Connector (49th N/Telford Rd Extension)

25th E (Hitt)

35th E (Ammon)

IONA RD

33rd N

45 W

HOLMES AVE

15th E/St Leon (Woodruff)

PORTER CANAL

GRANDVIEW DR

GRANDVIEW DR

SNAKE RIVER

US-20/BROADWAY

US-20/BROADWAY

Existing US-26 corridor in remaining reach to be converted to a local city street

Existing US-20 corridor in remaining reach to be converted to a local city street

LEGEND

- System to System Interchange
- Grade-Separated Intersection
- At-Grade Intersection
- Bridge/Overpass
- Additional Roadway (All Solid Lines)
- Existing road conversion to local

0 0.5 1 2 Miles

1:40,000

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geog

Note: Roadways are not intended to show actual alignment alternatives but rather general vicinity locations where potential roadways could be developed. Variations of alignment relative to actual features should be anticipated.

LEVEL 2