



Worley Highway District Transportation Plan



Prepared by:

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February 2017

Worley Highway District

Transportation Plan

Draft

February 2017

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Executive Summary

The project team developed this Transportation Plan (Plan) for the Worley Highway District (WHD or the District) in general accordance with the guidelines developed in the Local Highway Technical Assistance Council's (LHTAC) *Manual on Transportation Plans*.

A summary of the outcomes from the Plan's primary components are detailed herein.

Public Involvement

In general, we heard that the District users are satisfied with how roadways are maintained and improved by WHD. Stakeholders commended WHD for the care they take in maintaining the roadway surface throughout the District and agreed that WHD cooperates with area districts to share resources and partner for projects. According to stakeholders, the top transportation issues, in no particular order, that need to be addressed by the Plan were snow removal, large trucks and seasonal restrictions, funding, and the District's relationship with the Coeur d'Alene Tribe.

The Technical Advisory Committee (TAC) provided positive feedback to the District for its maintenance and improvement operations. The group concurred that developing this Plan would provide great benefit for future District operations. The TAC assisted with refining collected data and brainstorming improvements to the District's current pavement management and capital improvement programs.

During the first open house, residents in the Cave Bay Community requested maintenance from WHD along a 0.7 mile section of Cave Bay Road. Residents near the Sun Up Bay Road and Bennion Road intersection voiced concerns regarding the planned intersection realignment project and specifically which road would be stop controlled.

The second open house was held as part of the March 2017 Commissioners' meeting and provided the public an opportunity to comment on the draft report. **Input received included:**

Land Use and Growth Trends

Land use trends and growth in the District appear relatively unchanging, which can be beneficial to planning efforts because of reduced uncertainties associated with large, variable growth. However, slow growth in employment and population can be a hindrance to available tax revenue to the District. Capitalizing on available grant funding through the State and Federal Government is critical to the District's ability to fund major projects. Based on anticipated residential developments within the District, it is recommended that potential roadway impacts continue to be monitored by the District including maintaining adequate traffic count information and potentially increasing pavement management efforts in or near the development areas.

Existing Transportation System

Upon review of the existing transportation system and processes, aspects of the network were identified which could benefit from additional evaluation or improvement. A summary of recommendations includes:

- Consider evaluating upgrades to portions of Rockford Bay Road, Loffs Bay Road, Blackwell Road and Cave Bay Road to allow all-weather truck traffic.
- Accomplishing improvements of at-grade rail crossings by applying for a grant from the Federal Railroad Administration through the Railroad Safety and Infrastructure Improvement Grants program.
- Consider requesting a functional classification change for Bennion Road, Vogel Road and Elder Road, based on traffic counts and connectivity between lakeshore developments (Bennion and Vogel) and Washington State (Elder Road) to US 95.
- Planning and budgeting to replace Watson Road bridge as a capital improvement project based on its sufficiency rating.
- Implementing a simple, but repeatable rating system for bridges within WHD that are not on the National Bridge Inventory (structures less than 20 feet long).
- Evaluate signs listed in the WHD inventory with unknown condition and request the use of LHTAC's reflectometer to assist the District in evaluation of the signs, in addition to a visual assessment. Remaining signs with conditions of fair or worse should be replaced to meet the Manual for Uniform Traffic Control Devices (MUTCD) retro-reflectivity standards by applying for another LRHIP sign grant from LHTAC.

Pavement Management Plan

The District takes great care to maintain its roadway network. To further and maximize these efforts, WHD should implement the Pavement Management Plan (PMP), presented herein, as a tool to focus maintenance goals, allow for ease in budgeting for annual maintenance efforts, and to make the most effective use of maintenance funds. Specifically, the use of a decision tree to evaluate structural deterioration and recommended treatments provides a written and repeatable process for future District use.

Capital Improvement Program

In cooperation with the TAC and WHD, updates were made to the District's existing CIP project list. Specifically, the project ranking process was refined to provide clarity on the ranking process and ease of use for current and future Commissioners, District staff and, ultimately, for ease in communicating with the public.

Implementation

To implement this Plan, the District staff and Commissioners should update the CIP list and discuss available funding opportunities on an annual basis. The District should reprioritize projects regularly based on project needs and available funding sources. The District should also make efforts to seek outside funding through grants and funding programs that align with projects identified in this Plan. Specific strategies the District may initiate to increase the likelihood of successful implementation include attending grant and funding workshops, participating in funding webinars, staying current on continuing education topics regarding road maintenance, maintaining contact with funding agencies, and investing in project development.

Introduction

Purpose

The purpose of this Transportation Plan (Plan) is to provide a guide for the Worley Highway District (referred to herein as WHD or the District) to use when allocating resources towards future roadway maintenance and improvements. Recommendations in this plan take into account regional transportation planning efforts, local transportation goals, existing conditions documented in a Geographic Information System (GIS) format, and public feedback.

While this Plan identifies specific projects, the District still has the flexibility to initiate projects based on needs and funding availability. The order in which projects are completed should be altered as funding opportunities become available or needs arise.

The Plan's primary components include:

- **Public Involvement** – Input gathered through various public input processes, including:
 - Commissioner interactions
 - Stakeholder interviews
 - Technical advisory committee meetings
 - Public open houses

- **Land Use and Growth Trends** – Information studied to understand and identify major existing trends and future changes that may affect the transportation network such as:
 - Large employers
 - Shifts in population demographics
 - Changing land use or zoning trends

- **Existing Transportation System** – Includes a compilation and evaluation of available information on the existing system, such as:
 - Published regional transportation plans
 - Network conditions inventory (road classification, bridges, signs, etc.)
 - Roadway capacity and safety analysis

- **Pavement Management Plan** – Information regarding WHD's current pavement management practices and suggestions for revisions to the District's approach.

- **Capital Improvement Program (CIP)** – Projects identified and recommended by incorporating the above information and prioritized based on WHD's input and evaluation criteria.

- **Implementation Plan** – A plan developed to help the District plan, design, and construct CIP projects as funding becomes available.

Plan Funding

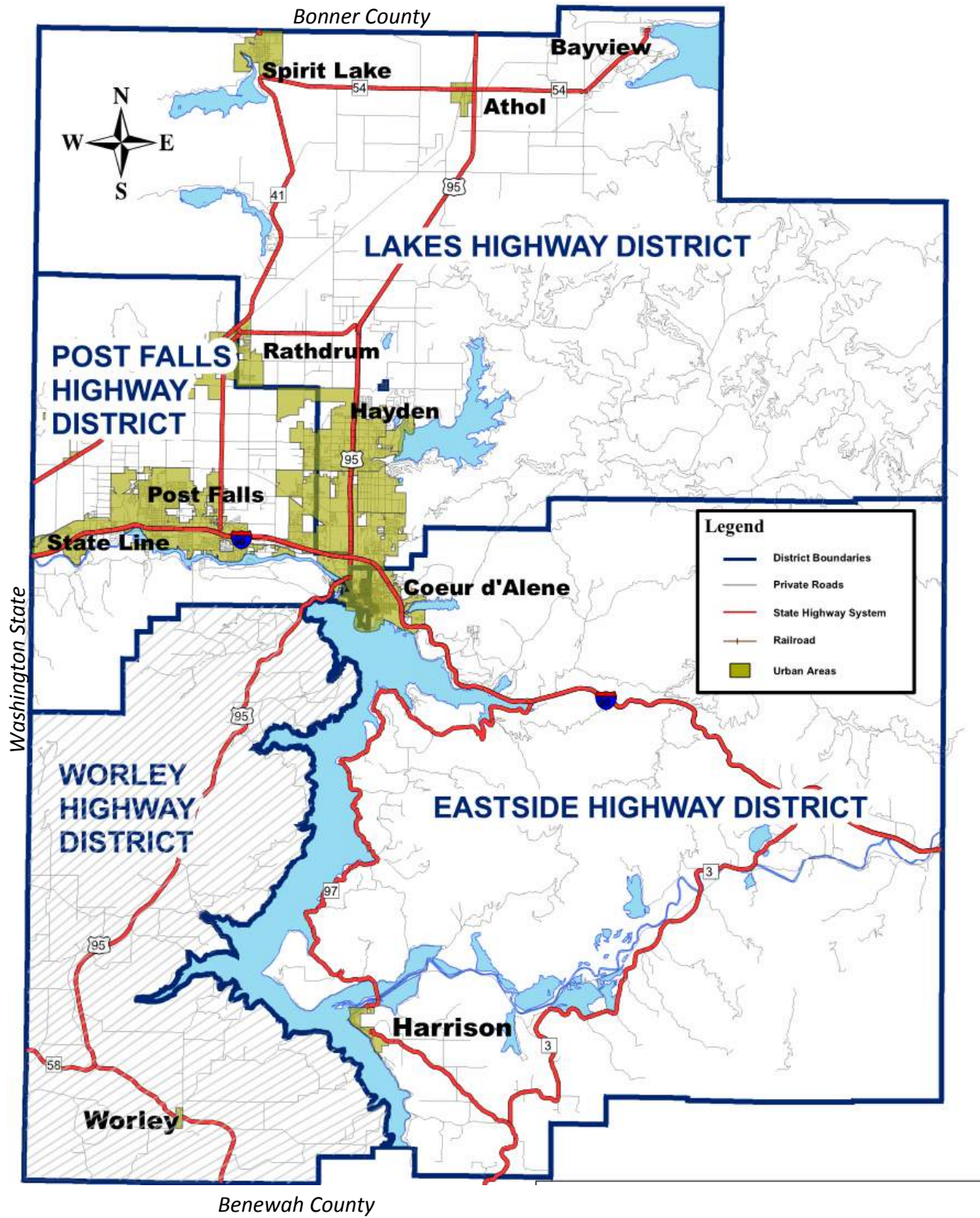
The District received funding for this Plan through the Local Rural Highway Investment Program (LRHIP) administered by LHTAC. Transportation planning is a high priority for LHTAC because it allows jurisdictions to effectively work together and improve infrastructure investment. Having a thorough, effective, managed, and updated Plan provides more opportunities for the District to understand and manage its road system and to apply for funding to complete the projects identified in this Plan.

Background

Worley Highway District was formed in the early 1970s when the State of Idaho passed a law that effectively consolidated numerous smaller roadway districts into four districts within the Kootenai County. Immediately following, the four districts formed the Associated Highway Districts (AHD) of Kootenai County, including Worley Highway District, Post Falls Highway District, East Side Highway District, and Lakes Highway District. The consolidation and formation of AHD was accomplished for the betterment of the secondary highway system in Kootenai County through the cooperation of all the Highway Districts, dissemination and sharing of knowledge, and ideas for the benefit of all the Highway Districts in Kootenai County. **Figure 1** shows the WHD jurisdiction within the AHD boundaries.

WHD is a public entity responsible for the maintenance and construction of secondary roads in the southwest portion of Kootenai County, Idaho as shown in **Figure 1**. The District boundaries generally lie north of the Benewah County line to Espinazo Drive and east of the Washington State line to the western shore of Lake Coeur d'Alene; approximately half of the District area and upwards of 75 percent of its roadways lie within the Coeur d'Alene Tribe Reservation boundary. WHD maintains 192 miles of road comprised of approximately 89 miles paved, approximately 98.5 miles of gravel, approximately four miles of dirt, and approximately 0.5 miles of unimproved roadway. The District also includes areas of unopened/unimproved right-of-way.

Figure 1 – Associated Highway Districts of Kootenai County Boundary Map



GIS Base Map

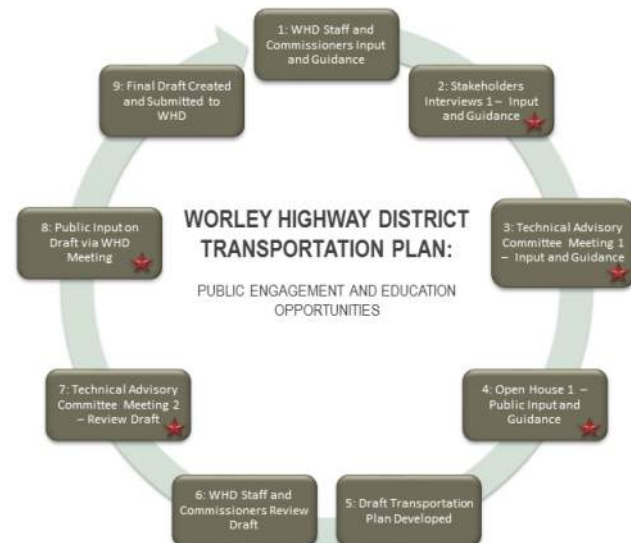
The existing WHD GIS base map was enhanced to include several layers of data to assist the District in evaluating existing conditions. Layers developed included:

- Future CIP projects
- Bridge locations and data
- Existing roadway functional classification
- Current pavement conditions (remaining service life)
- Sign locations
- 2016 Average Annual Daily Traffic (AADT)
- Peak hour traffic volumes
- Crash data (2010-2014)
- Railroad crossing locations

The District can use these GIS layers concurrently as an interactive roadway features display. This tool was used to develop the Plan and it is recommended the District periodically update the base map for future planning and project development. The extent to which this tool is useful is directly related to its maintenance and updating. **Appendix A** presents a set of printed maps for reference; however, note that the intent is to view data in the GIS system and information may not be as clear in printed form.

Public Involvement

Public involvement was a critical part of developing this Plan. The District made extensive efforts to reach as many individuals as possible to inform participants of the issues and needs and to strengthen the support of the recommendations produced in this plan. The following subsections outline the public input gathered throughout the public involvement process.



Elected Official Participation

The WHD Commissioners were involved throughout the entire planning process including a kick-off meeting, a stakeholder interview summary document, Technical Advisory Committee (TAC) meeting summary documents, public open house events, and Plan review. This process allowed the Commissioners to communicate with the public and stakeholders and to provide input on this Plan.

Stakeholder Interviews

Interviews were conducted with key stakeholders identified by District staff and Commissioners with careful consideration to include those with knowledge about the District and those with an interest in the Plan outcome. Stakeholders included Bill Roberson with Idaho Transportation Department (ITD), Glenn Miles with Kootenai County Metropolitan Planning Organization (KMPO), Jill Hill with the Coeur d'Alene Coeur d'Alene School District, Dan Sneve with Worley Fire Protection District, Jim Kackman with the Coeur d'Alene Tribe Public Works Department, Mike Morris with the City of Worley, and Terrel Anderson with Union Pacific Railroad. Each interview provided an opportunity to identify and incorporate stakeholder concerns early in the process.

Through the stakeholder interview process, several transportation-related strengths and opportunities for improvement were discussed with interviewees. Issues identified by stakeholders were then evaluated and used to develop recommendations for the Plan. Stakeholders indicated that the District does a good job with road surface maintenance and snow removal. Additionally, they felt that WHD works well with other Districts and Kootenai Metropolitan Planning Organization, which is beneficial to the local and regional transportation system. Some stakeholders expressed some concerns about items such as narrow right-of-way limits and overall lack of sufficient shoulder widths for pedestrians and bicyclists; the use of roadways by large farming trucks; and limited funding based on a small population base. There may be room for improvement in the working relationship between WHD and the Coeur d'Alene Tribe with respect to roadway ownership and regional transportation initiatives. **Appendix B** includes Stakeholder Interview Summary sheets for reference.

Technical Advisory Committee (TAC) Meetings

Two TAC meetings were held as part of the public involvement process. The TAC members consisted of diverse representatives chosen by the District. These representatives bring local knowledge and interest in the transportation arena. The TAC provided input on recommended improvements in an advisory role.

TAC Meeting No. 1

TAC Meeting No. 1 was held early in the process to gather input on the WHD Plan. (See **Figure 2**.) The meeting was structured in two segments; the first included a brief discussion and overview of the Plan process and the second portion of the meeting involved a round table discussion where TAC members reviewed compiled data and GIS maps and discussed accuracy, applicability, and impacts on the plan, with suggestions for alterations and further inquiry. Key data and maps discussed included:

- Bridges
- Crashes
- Functional Classification
- Rail Crossings
- Signs
- Traffic Counts
- WHD Projects

Input from the TAC meeting was used to develop and refine GIS map data, potential projects, and overall recommendations. Input received relative to each of the above categories is summarized in **Appendix B**.

Figure 2 - TAC Meeting No. 1; August 31, 2016



TAC Meeting No. 2

TAC Meeting No. 2 occurred shortly after publishing the Draft Transportation Plan to gather additional input on the plan content and to refine the current CIP list. The TAC workshop session generally included reviewing the distributed Draft Plan major sections with discussion and suggestions for alterations and further inquiry. Specifically, the group reviewed WHD's current CIP list and brainstormed suggestions on better defining and refining WHD's existing process to rank projects and evaluate funding.

Input from the TAC meeting was used to refine the Draft Plan into a Final Draft Plan for presentation to the Commissioners and Public. Input received at the second TAC meeting is summarized in **Appendix B**.

Public Open Houses

WHD hosted two Public Open House sessions. Open House No. 1 focused on hearing concerns from the public and providing the public with an opportunity to give input on their specific areas of concern. Open House No. 2 was held concurrent with a WHD Commissioners' meeting to present the Draft Transportation Plan to the public and Commissioners.

Public Open House No. 1

The purpose of Open House No. 1 was to gather information from the public and learn about concerns related to the transportation network. (See **Figure 3**.) The open house gave attendees the opportunity to:

- Review display boards about the process and early findings;
- Discuss the transportation plan process and specific projects with the team; and

- Provide feedback on comment forms and display boards.

Top priorities identified by the public through interactions during and after the open house included:

- Addressing gravel roadway maintenance along Cave Bay Road; and
- Further evaluation of the Sun Up Bay-Bennion Road intersection and the stop sign location and priority.

These priorities were considered when developing recommendations for this Plan. Specifically, because of input received from residents of Cave Bay, the Commissioners, J-U-B and the District staff reviewed roadway conditions along Cave Bay Road to evaluate potential maintenance opportunities. Comments received at the open house are included in **Appendix B** along with further discussion relating to Cave Bay. The WHD is now evaluating potential maintenance options and a process for this public right-of-way, but historically privately maintained road.

Figure 3 – Public Open House Meeting No. 1



Public Open House No. 2

A second public open house was scheduled to align with the March Commissioner’s meeting. Two weeks prior to the meeting, a draft report was made available to the public and the meeting was advertised to allow public input on the current draft. **This final report summarizes public input received from this second opportunity for public involvement as follows:**

Public Input Summary

In general, we heard that the District users are satisfied with how roadways are maintained and improved by WHD. Stakeholders commended WHD for the care they take in maintaining the roadway surface throughout the District and agreed that WHD cooperates with area districts to share resources and partner for projects. According to stakeholders the top transportation issues, in no particular order, that need to be addressed by the Plan were snow removal, large trucks and seasonal restrictions, population and funding, and the District's relationship with the Coeur d'Alene Tribe.

The TAC group provided positive feedback to the District for their maintenance and improvement operations and concurred that developing this Plan would provide great benefit for future District operations. The TAC assisted with refining collected data and brainstorming improvements to the District's current pavement management and capital improvement programs.

During the first open house, residents in the Cave Bay Community along a 0.7-mile section of Cave Bay Road requested maintenance from WHD. Additional information pertaining to Cave Bay Road is included in **Appendix B**. Further, residents near the Sun Up Bay/Bennion Road intersection voiced concerns over the planned intersection realignment project. Subsequent to public input regarding Sun Up Bay/Bennion Road intersection, J-U-B is working with the District to evaluate traffic counts and research the potential use and growth along each roadway segment as part of that project's preliminary design. Results from this evaluation will support the selected intersection geometry via a separate project design report.

Land Use and Growth Trends

Land Use Zoning

Kootenai County manages land use, zoning, and the Comprehensive Plan within the rural areas of the District's boundary. Changes in land use and zoning have a significant impact on the District transportation network; therefore, it is important to consider existing land use and zoning information in developing and implementing this Plan.

There is a significant amount of rural and undeveloped land within the District. Most of the existing zoning within the District is classified as rural, agriculture, ag-suburban, and restricted residential along the shores of Lake Coeur d'Alene. In addition, there is approximately 25 acres of land zoned as commercial along US 95. Finally, it should be noted that approximately half of the District's area lies within the Coeur d'Alene Tribe Reservation boundary and the Tribe does not contribute taxes to the District under their sovereign status, while non-tribal land owners within the reservation boundary do pay taxes toward the District.

Evaluating existing land use patterns and zoning provides an understanding of the current relationship between where people live, work, shop and recreate. Transportation networks are in predominately rural neighborhoods and public lands do not typically have the same needs as those within city centers. Therefore, this Plan focuses mainly on connectivity and improvement of rural road networks to major highways.

Future Land Use

Future zoning and growth patterns within Kootenai County are expected to change due to a new unified land use code that is currently being developed by the County. The District should stay apprised of the new code and review the potential impacts it could have on the transportation system.

As primarily residential development occurs within the District, the Zoning map depicted in **Figure 4** is anticipated to evolve over time to align with the Kootenai County future land use shown in **Figure 5**. It is anticipated that the most significant changes will include shoreline residential developments and agricultural and rural land purchases by the Coeur d'Alene Tribe. It appears the most likely affected roadways include Loffs Bay Road, Sun Up Bay Road, Kidd Island Road and Rockford Bay Road. All of these roadways are already included in upcoming capital improvement projects. It is recommended potential roadway impacts should be monitored by the District including maintaining adequate traffic count information and potentially evaluating an increase in pavement management.

Figure 4 – Zoning Map

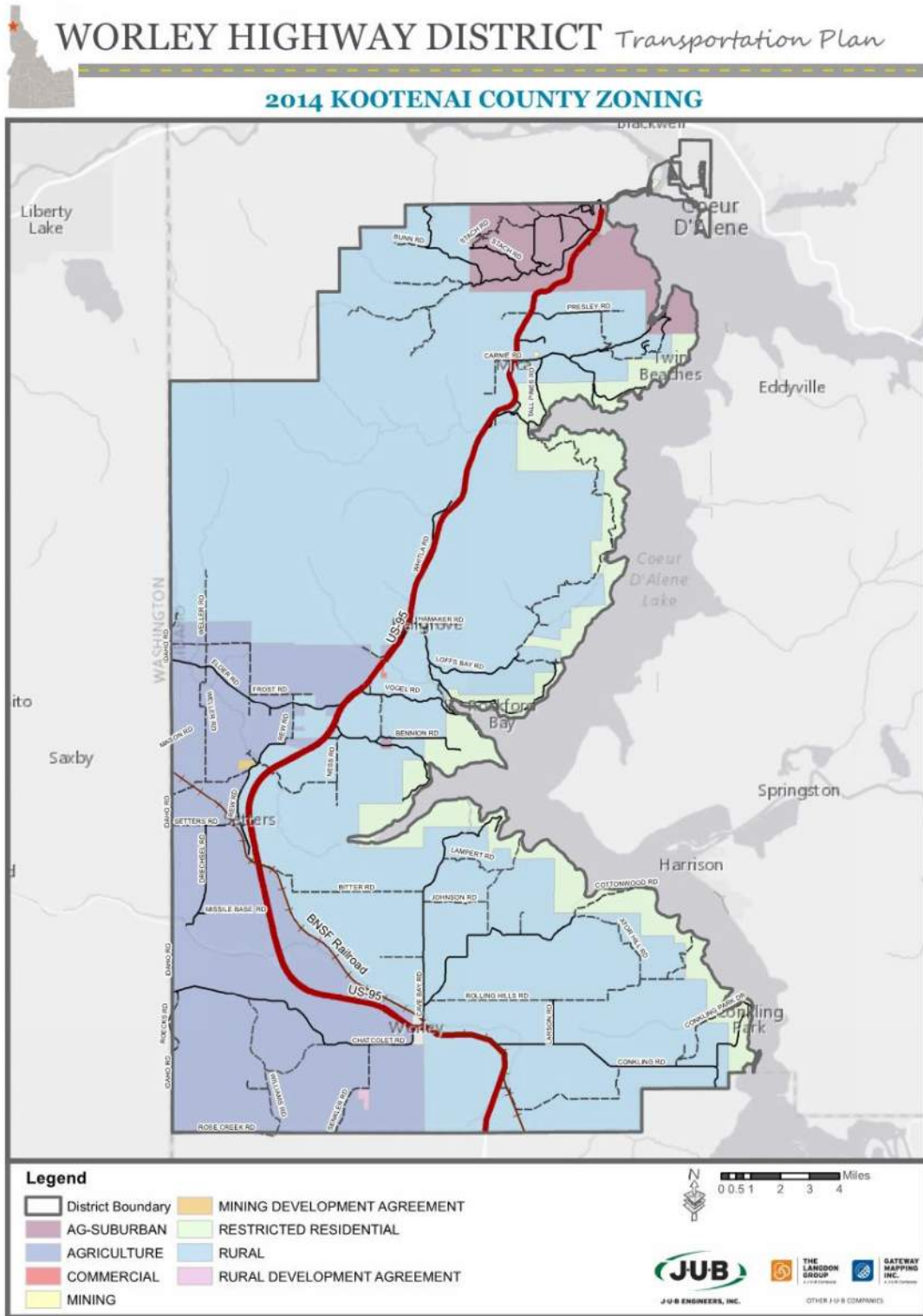
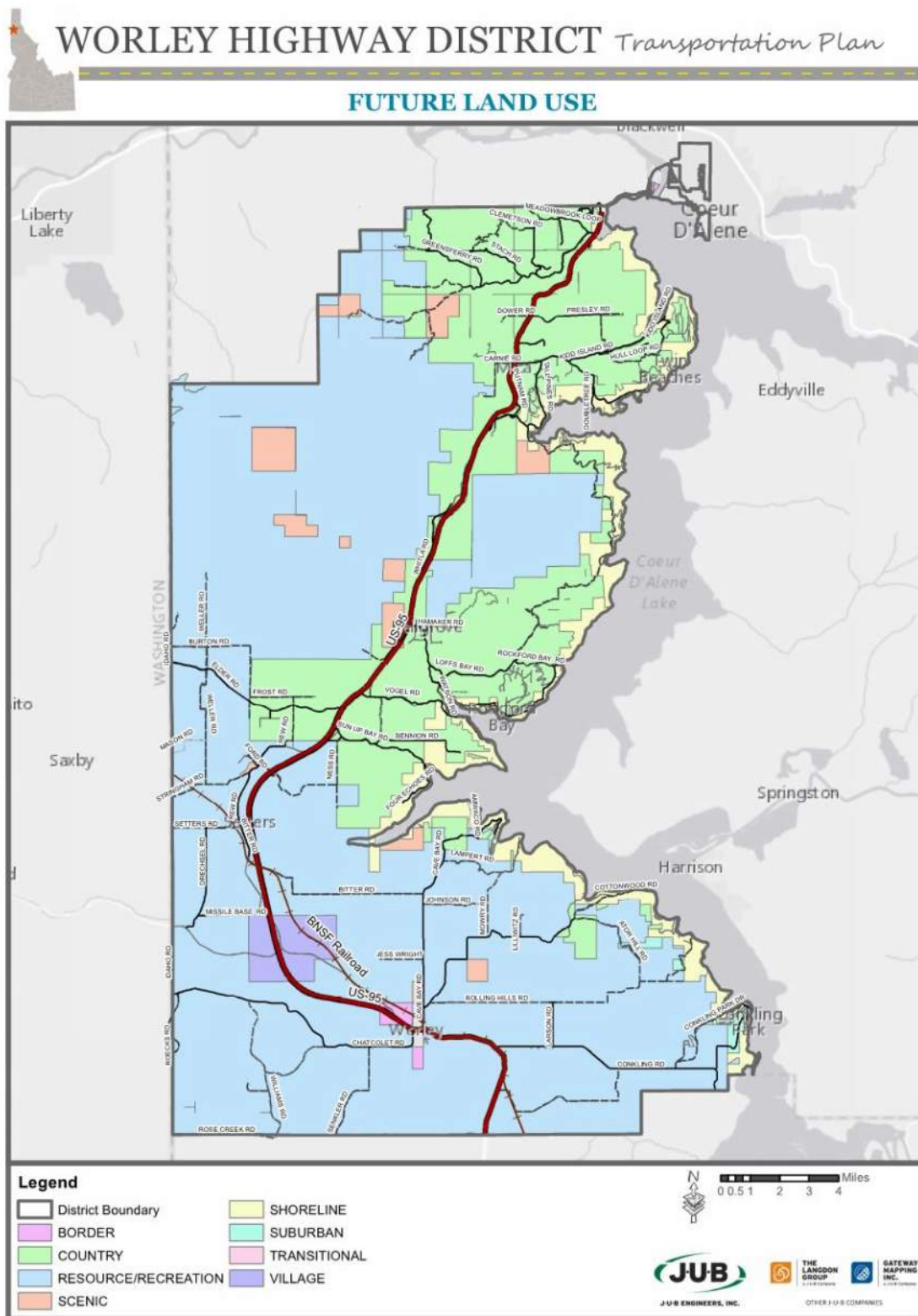


Figure 5 – Kootenai County Future Land Use Map



Development Activity

At this time, four developments are expected to occur in the near future in and around the District. These developments include:

1. Rock Creek Club of Idaho – Major residential development located near Loffs Bay Road with approximately 200 new homes located on approximately 1,100 acres.
2. Kidd Island Estates – Residential development near Kidd Island Road with approximately 14 new homes situated on 68 acres.
3. The Estates at Black Rock – Major residential development located north of Rockford Bay with approximately 350 new homes on more than 800 acres.
4. Coeur d’Alene Tribe Development – The Coeur d’Alene Tribe may have plans to develop a separate tribal community within District boundaries at an unknown future date and to an unknown extent.

Based on the above developments, WHD has implemented and is planning future improvements to address the anticipated future growth. Specifically:

- As part of the Rock Creek Club development, WHD required the developer to improve a segment of Loffs Bay Road to WHD standards, which will receive additional traffic due to the planned development;
- Ongoing development along Kidd Island Road, including the above listed Kidd Island Estates, resulted in the District submitting for, and successfully receiving, Federal STP funding to reconstruct a two mile segment of Kidd Island Road; and
- The District plans to submit for Federal grant funding in 2017 to reconstruct 2 miles of Rockford Bay Road to address substandard roadway geometry aspects and address future traffic growth.

Population Demographics

Historic and Current Population and Age

Census population data was reviewed to evaluate historic and current population within the County.

Table 1 summarizes the historic population growth trends by urban (cities) and unincorporated (rural/county) areas within Kootenai County. The census data indicated that the overall annual population growth rate in unincorporated areas between 1990 and 2010 was approximately 1.8 percent with the County average of 3.5 percent.

Table 1 – Historic Population Trends in Kootenai County

	1990 Census Population	2000 Census Population	1990-2000 Annual Growth Rate	2010 Census Population	2000-2010 Annual Growth Rate	1990-2010 Annual Growth Rate
Urban Areas	42,047	72,028	5.53%	98,822	3.21%	4.4%
Unincorporated Areas	27,748	36,657	2.82%	39,672	0.79%	1.8%
Total	69,795	108,685	4.53%	138,494	2.45%	3.5%

Source: US Census Bureau

In 2010, KMPO estimated the population of WHD to be approximately 8,600 people. It is important to note that the majority of people living within the WHD area live in the northern part of the District. The District has a moderate population of seasonal residents that do not count toward population census data.

Historic and current age and population demographics were reviewed using Census data for Kootenai County and the State of Idaho. **Table 2** shows the overall population and median age from 1990 to 2010. The median age in Kootenai County has been higher than the median age for Idaho for the past 20 years and is continuing to rise. According to the 2010 Census Data, the median age of those living in Kootenai County is just under 39 years old, whereas, the median age for the state is around 34.6 years. The elevated average age of the County places greater emphasis on the need for planning Americans with Disabilities Act (ADA) compliant facilities as well as addressing assisted/public transportation needs.

Table 2 – Kootenai County and State of Idaho Demographic Trends

Year	Kootenai County			State of Idaho		
	1990	2000	2010	1990	2000	2010
County Population	69,795	108,685	138,494	1,006,749	1,293,953	1,567,582
Median Age	35	36.1	38.5	31.5	33.2	34.6

Source: US Census Bureau

Future Population Projections

Future population growth projections from KMPO and the County were reviewed to estimate the appropriate 20-year population forecast within the District. KMPO estimates an overall 2.4 percent average annual growth rate within the County for a 25-year period from 2010 to 2035. KMPO estimates population growth for unincorporated areas within the County at approximately 0.794 percent over the same 25-year period. KMPO’s future growth projections within the District boundary reflect a growth from 8,606 people in 2010 to 8,793 people in 2035, which is a difference of 187 people or a 0.086 percent average annual growth rate.

It should be noted that KMPO’s growth projection is less than the planned development anticipated from the research conducted for this Plan. Assuming an average household size of 2.5 persons per household, the added population could be in excess of 1,400 persons based on planned residential developments alone (not including potential Tribe development). Assuming this growth results in full-time residents, the average annual growth rate could be as high as 0.65 percent, which is closer to the County wide unincorporated KMPO projections

Employment Characteristics

Existing Employment Characteristics

Employment characteristics are an important consideration in transportation planning because industrial and manufacturing businesses have different transportation needs than recreational, destination, or retail businesses. Within the District, major employers include The Coeur d’Alene Casino located at the intersection of US 95 and SH 58, various agricultural and timber entities, and lakeshore and rural commercial businesses. In addition, but to a lesser extent, nearby areas such as Coeur d’Alene, Plummer, and St. Maries provide additional employment opportunities.

Future Employment Characteristics

Future employment projections play a role in planning the future transportation network. Based on information collected from stakeholders and through research, economic growth opportunities in the District are somewhat limited. Available information was collected primarily by “word-of-mouth” from agencies and stakeholders within the District. Potential drivers for future employment include:

- A 15,000 square-foot food distribution center at an unknown location within the District;
- Tribal business recruitment for resort/hospitality business to complement casino operations;
- Limited manufacturing, retail, and franchise establishments;
- Commercial real estate development;
- Tribal credit union;
- Continued growth in Coeur d’Alene and Spokane

Land Use and Growth Trends Summary

Land use trends and growth in the District appear relatively unchanging, which can be beneficial to planning efforts because of reduced uncertainties associated with large, variable growth. However, slow growth in employment and population can be a hindrance to available tax revenue to the District. As such, capitalizing on available grant funding through the State and Federal Government is critical to the District’s ability to fund major projects. Based on anticipated residential developments within the District, it is recommended that potential roadway impacts be monitored by the District including maintaining adequate traffic count information and potentially increasing pavement management efforts in or near the development areas.

Existing Transportation System

Existing Plans

In addition to the District’s Capital Improvement Project list, several existing regional plans were collected and reviewed as part of this planning process. These regional plans were used to understand future improvements planned in the area and to align proposed District projects with existing projects, whenever possible. Regional plans collected and analyzed as part of this Plan included:

- City of Coeur d’Alene
 - Comprehensive Plan
 - Bike Plan
- Kootenai County
 - Comprehensive Plan
- Kootenai Metropolitan Planning Organization
 - Transportation Plan
 - Transportation Improvement Plan
 - Regional Non-Motorized Transportation Plan



- Post Falls Highway District
 - Transportation Plan
- Coeur d’Alene Tribe
 - Tourism Plan
 - Economic Development Study
 - Public Transit and Human Services Transportation Plan
- Spokane County
 - Comprehensive Plan
- Idaho Transportation Department
 - Five-Year Transportation Investment Plan



This plan was developed in coordination with current planning efforts completed by adjoining and surrounding jurisdictions and associations, including ITD and KMPO. The remaining plans listed above did not include projects specific to the District. Coordination reduces project redundancy and facilitates the timing of projects located near each other. **Table 3** shows planned projects previously identified by the District and categorized in the CIP. **Table 4** shows planned projects located within the District boundary identified by ITD and KMPO in their planning documents.

Table 3 – Projects Planned by Worley Highway District’s CIP

Federally Funded		
Project	Description	Application Year¹
Kidd Island Road, US 95 to Hull	Rebuild	Funded
Rockford Bay Road, US 95 to Marina	Rebuild	2018
Bitter Road, Cave Bay to End	Rebuild	2029
Sun Up Bay Road, Ness Road to Boat Launch	Rebuild	2032
State Funded		
Project	Description	Application Year¹
Transportation Plan	Planning	Funded (LHRIP)
WHD Funded		
Project	Description	Construction Year
Bennion and Finnebott Intersection	Reconstruction, Sight Distance Improvements	2020
Sun Up Bay and Bennion Intersection	Reconstruction, Eliminate "Y" Intersection	2020
Loffs Bay Road, Tall Pines Road	Rebuild 0.41 mi	2022
Rockford Bay Road, Solitaire to Loffs Bay	Rebuild	2026
Watson Road	Reconstruction	2032
Conkling Park Road	Rebuild 0.5 miles	2034
WHD Funded (Maintenance)		
Project	Description	Construction Year
Loffs Bay Slide	Repair	2017
Tall Pines and Loffs Bay Intersection	Sight Distance Improvements	2017
Burton Road	Culvert Replacement	2017
Dower Road	Pavement Restoration	2018
Thompson Road	Improve Sight Distance and Base, Increase Curve Radii	2019
Hamker Road	Pavement Restoration	2020
Hull Loop	Pavement Restoration	2021
Williams Bridge	Bridge Replacement	2022
Cougar Gulch Road	Rebuild	2023
Ness Road	Safety Improvements	2024
Cougar Gulch Road	Rebuild	2026
Carnie Road, 1.5 miles from US 95	Rebuild	2029
Rolling Hills	Rebuild Larson to Bloomsburg	2029

1) Calendar year in which WHD should plan to allocate funds toward preparing a funding application.

Table 4 – Projects Identified in ITD and KMPO Plans

Agency	Project	Description	Year
ITD	X US 95, Cougar Creek to Blackwell Slough	Pavement Preservation	2018
ITD	X US 95, Benewah County Line to Worley	Pavement Restoration, Minor Widening	2017
KMPO	X Ator Hill Road, Rolling Hills to 0.25 mi North	Rebuild	2015
KMPO*	Clemetson, Meadowbrook Lp to Reynolds	Rebuild	2030
KMPO*	Cougar Gulch, Thompson to 1.5 mi East	Reconstruct	2030
KMPO*	Loffs Bay, Tall Pine to 0.9 mi South	Reconstruct	2030
KMPO*	Carnie Road, US 95 to 1.5 mi West	Rebuild	2030
KMPO*	Rockford Bay Road, Solitaire to Loffs Bay	Reconstruct	2030
KMPO*	Rockford Bay Road, US 95 to Marina	Reconstruct	2030
KMPO	Bitter, US 95 to Cave Bay	Reconstruct	2030
KMPO	X Francis Faire Road, Elder to 1.3 mi North	Reconstruct	2030
KMPO	X Stringham Road, US 95 to 1.96 mi West	Reconstruct	2030
KMPO*	Sun Up Bay Road, Ness to Boat Launch	Rebuild	2030
KMPO*	Conkling Park Drive, End of Pavement to 0.5 mi	Reconstruct	2030
KMPO*	Rolling Hills Drive, Larson to Bloomsburg	Reconstruct	2030
KMPO*	Sun Up Bay Road and Bennion Road	Intersection Reconstruction, Eliminate 'Y'	2030
KMPO*	Bennion Road and Finnebott Road	Intersection Reconstruction, Improve Sight Distance	2030

X - Indicates project not listed on WHD CIP

As shown in **Table 3** and **Table 4**, the District’s CIP list includes some, but not all KMPO projects and the KMPO lists projects that the District does not include in its CIP. As part of this plan, the District should align the CIP with projects identified by KMPO or inform KMPO the District’s priorities no longer include these projects.

Inter-Modal Transportation Facilities Inventory

Inter-modal transportation includes bus/transit routes, pedestrian and bicycle facilities, vanpools, airport facilities, freight and truck traffic, and rail facilities, all of which exist within WHD. Various resources used to collect inventory for inter-modal transportation options included:

- The CityLink bus service operated by Kootenai County and the Coeur d’Alene Tribe
- Regional truck and heavy vehicle generating entities, including private enterprises, school districts, and the Kootenai County Waste Management Department
- The KMPO Non-Motorized Transportation Plan
- Published Maps



Information was collected from each of these entities and sources to understand the inter-modal transportation network including service areas and routes.

Transit

The Coeur d'Alene Tribe and Kootenai County operate public transit in Kootenai County. The current system is complex due to multiple funding, operations, administration, and planning agencies and the various and differing demands and goals. Because Kootenai County includes several urban areas and a large rural area, transit demands exceed transit availability. Currently, one fixed route operates within the District providing commuter service between Plummer and Coeur d'Alene. Bus operation occurs during morning and evening hours, and the route along US 95 is designed to encourage the use of public transportation as a means of commuting to work. Paratransit service to elderly patients and low-income residents is also available to District residents on an as-needed basis, as provided by Kootenai Health.

Bike and Pedestrian Facilities

Bike and pedestrian facilities were inventoried using the 2009 Kootenai Metropolitan Planning Organization Non-Motorized Regional Transportation Plan (KNM RTP). The plan identifies existing and future priority bike and pedestrian facilities throughout Kootenai County. Bicycle facilities located within the District are limited. Existing bicycle facilities are limited to shared-use roadways including US 95 and SH-58. No future bicycle or pedestrian facilities are identified within the District by the KNM RTP.

Airport Facilities

The nearest airport to the District is the Coeur d'Alene Airport (COE). COE is designated as a general aviation (GA) airport by the Federal Aviation Administration and is operated by an Airport Board appointed by the Kootenai County Commissioners. COE released its new Master Plan in 2012. According to the Airport Master Plan, the airport identified a goal of incorporating commercial flights that would serve as a Spokane International Airport (GEG) alternative for business travelers headed to Boise, Idaho. Additional commercial flights could increase traffic volumes along US 95 through the District, but are not expected to impact traffic volumes on District roadways.

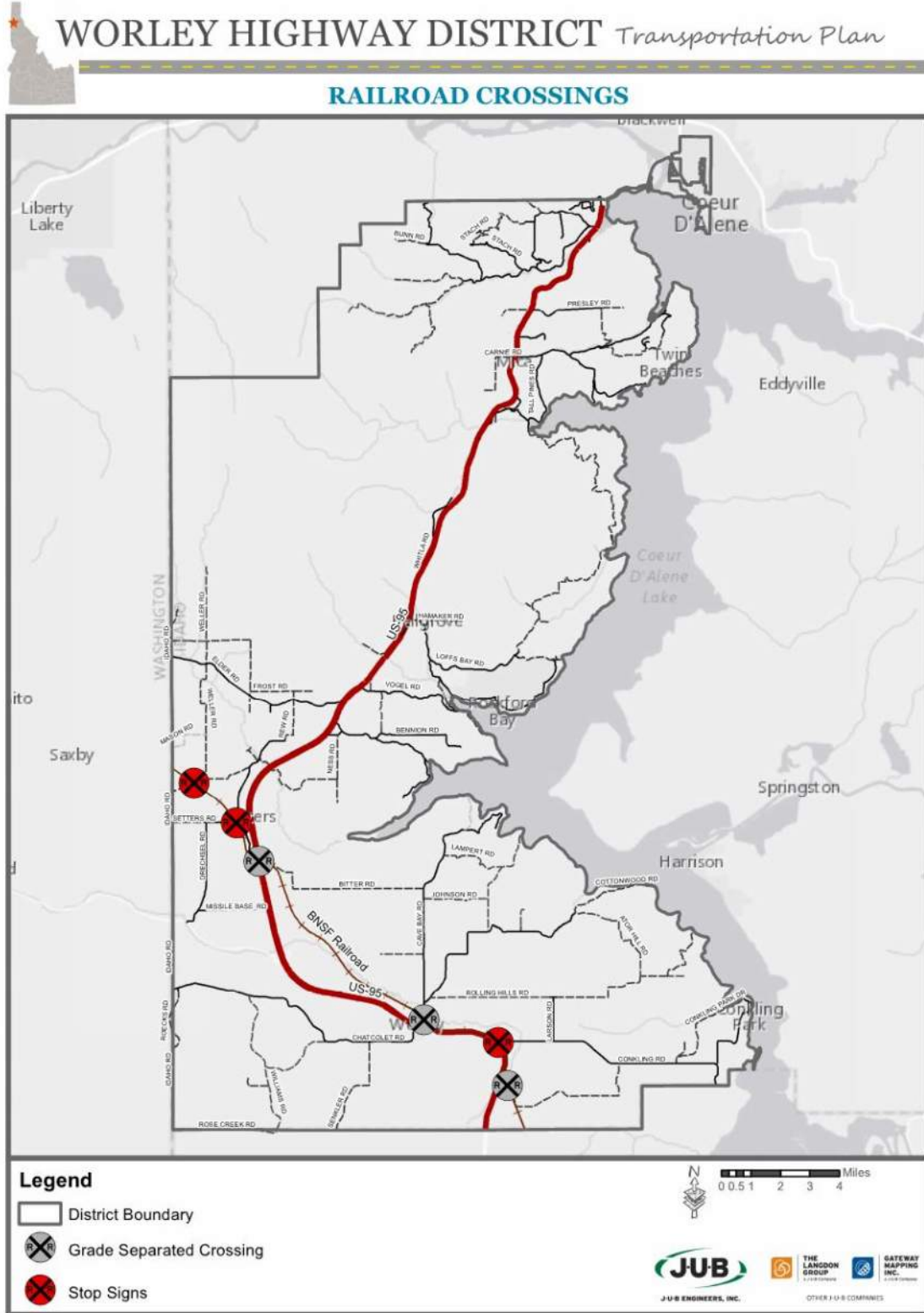
All-Weather Truck Routes

Standard roads in the District have weight limits posted sometime between late December and late January, restricting trucks with heavy loads from using those routes. Currently, the only all-weather road within the District is US 95. All-weather truck routes provide year-round hauling routes for businesses. These routes provide access to and from industrial sites, mills, retail sites, and waste management pickup locations year-round. Major stakeholders with interest in truck routes include CHS Primeland, Seeds Inc., developers, local farmers and loggers. Typically, load restrictions are lifted beginning in late February through late April, depending on the road and weather conditions. Based on 2015-2016 traffic counts and estimated percent trucks, WHD roadways accessed frequently (ADT greater than 100) and by large vehicles (percent trucks greater than 15) that could benefit from upgrades to all-weather routes include portions of Rockford Bay Road, Loffs Bay Road, Blackwell Road and Cave Bay Road.

Rail

Rail lines located within the District are operated by Union Pacific Railroad and are typically used for the movement of goods. There are three at-grade crossings and three grade-separated crossings within WHD's boundary. The crossing treatments at each rail crossing are summarized in **Table 5** and can be located in **Figure 6**.

Figure 6 – Railroad Crossings



It is recommended that the District improve at grade crossings by evaluating eligible crossings and applying for grants from the Federal Railroad Administration through the Railroad Safety and Infrastructure Improvement Grants program.

Table 5 – Railroad Crossing Treatment Summary

Agency	Intersecting Road	Existing Infrastructure	Likely Grant Eligible
WHD	W Stringham Rd	Stop Signs	X
WHD	W Setters Rd	Stop Signs	X
ITD	US 95	Grade Separated Crossing	
WHD	S Cave Bay Rd	Grade Separated Crossing	
WHD	Conkling Rd	Stop Signs	X
WHD	Sunny Slopes Rd	Grade Separated Crossing	

Roadway Network

Functional Classification

The concept of functional classification is that it defines the role that a particular roadway segment plays in serving the flow of traffic through the transportation network. Roadways are assigned to one of several possible functional classifications within a hierarchy corresponding to the character of travel service each roadway provides. The hierarchy of roadways is used to efficiently and effectively channel movements through a network.

Roadways serve two primary travel needs: 1) access to/a way out of specific locations; and 2) travel mobility. While these two concepts lie at opposite ends of the continuum of roadway function, most roadways provide some combination of both access and mobility.

- Roadway Mobility: Provides few opportunities for entry and exit and therefore low friction from vehicle access/egress
- Roadway Accessibility: Provides many opportunities for entry and exit, potentially creating higher friction due to vehicle access/egress.

Table 6 describes each functional classification, as defined by the Federal Highway Administration (FHWA), with definitions addressing mobility and accessibility.

Table 6 – Federal Highway Administration Functional Classification Definitions

Functional Classification	Definition
Rural minor arterial	<p>Link cities and larger towns (and other major destinations such as resorts capable of attracting travel over long distances) and form an integrated network providing interstate and inter-county service.</p> <p>Be spaced at intervals, consistent with population density, so that all developed areas within the State are within a reasonable distance of an Arterial roadway.</p> <p>Provide service to corridors with trip lengths and travel density greater than those served by Rural Collectors and Local Roads and with relatively high travel speeds and minimum interference to through movement.</p>
Rural major collector	<p>Provide service to any county seat not on an Arterial route, to the larger towns not directly served by the higher systems, and to other traffic generators of equivalent intra-county importance such as consolidated schools, shipping points, county parks, and important mining and agricultural areas.</p> <p>Link these places with nearby larger towns and cities or with Arterial routes.</p> <p>Serve the most important intra-county travel corridors.</p>
Rural minor collector	<p>Be spaced at intervals, consistent with population density, to collect traffic from Local Roads and bring all developed areas within reasonable distance of a collector.</p> <p>Provide service to smaller communities not served by a higher-class facility.</p> <p>Link locally important traffic generators with their rural hinterlands.</p>
Residential/Local streets - Rural	<p>Serve primarily to provide access to adjacent land.</p> <p>Provide service to travel over short distances as compared to higher classification categories.</p> <p>Constitute the mileage not classified as part of the Arterial and Collector systems.</p>

The District maintains a paved road network that contains approximately 63 miles of rural major collectors, approximately 20 miles of rural minor collectors, and approximately seven miles of residential/local streets. Jurisdictions are charged by FHWA to ensure that the functional classification of their roadways is kept up-to-date. FHWA recommends continual updates to the functional classification system as the roadway system and land use developments change. FHWA recommends that systems be reviewed every ten years to coincide with the United States Census and adjusted urban area boundary update cycle. Changes may involve the following:

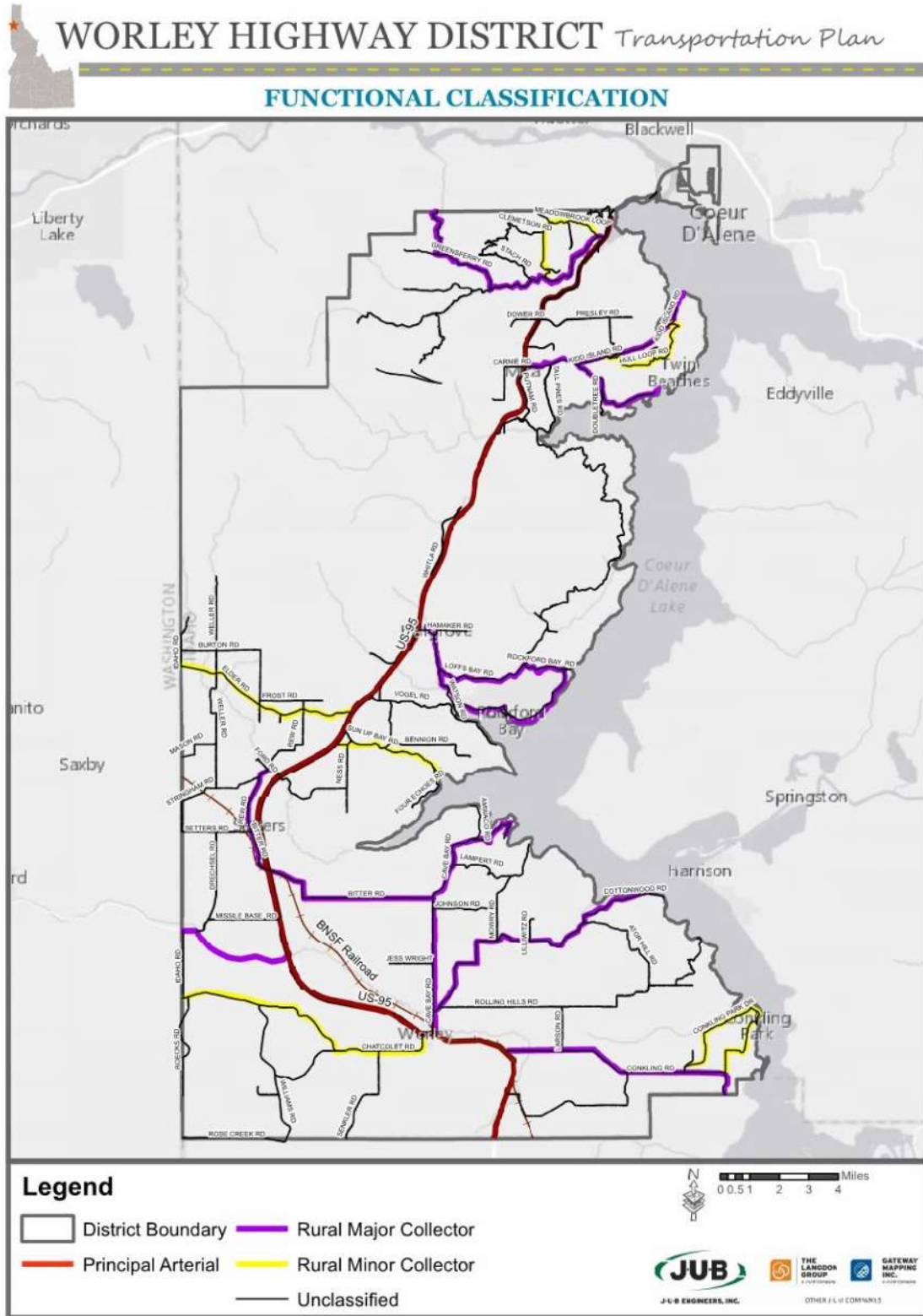
- Adding newly constructed or extended roadways to the network, which can in turn affect the functional classification of connecting or nearby roadways
- Upgrading the functional classification of an existing roadway due to land use changes or an improvement made to the roadway
- Downgrading the functional classification of an existing roadway due to land use changes, traffic controls that discourage through traffic or other controls that limit the speed and capacity of a road

The following questions are useful to ask when considering a functional classification change:

- Have new significant roadways been constructed that may warrant Arterial or Collector status?
- Has any previously non-divided Principal Arterial roadway been reconstructed as a divided facility?
- Has any new major development (such as an airport, regional shopping center or major medical facility) been built in a location that has caused traffic patterns to change?
- Has there been significant overall growth that may have caused some roadways to serve more access or mobility needs than they did previously?
- Have any Arterial or Collector roadways been extended or realigned in such a way to attract more through trip movements?
- Has a particular roadway experienced a significant growth in daily traffic volumes?

Based on our review of the District roadways, the District includes roadways that are currently unclassified, as shown in **Figure 7**.

Figure 7 – Functional Classifications



It is recommended the District consider requesting a functional classification change by submitting the Idaho Functional Classification/Urban Boundary Change Request Form (found on the ITD website) for Bennion Road (minor collector), Vogel Road (minor collector) and Elder Road (upgrade to major collector), based on traffic counts and connectivity between lakeshore developments (Bennion and Vogel) and Washington State (Elder Road) to US 95. This effort should be coordinated with KMPO and AHD to garner concurrence, as ITD will review any affect the change will have on the States' percentage of major and minor collector roadway mileage compared to FHWA guidelines for rural states. FHWA indicates a major collector mileage range of 8-19% and a minor collector mileage range of 3-15% for rural states. It is possible, if proposed changes alter the State's overall percentage, other roadways could come under inspection for classification changes.

Bridge Inventory

Under Idaho’s Bridge Inspection Program, all bridges in Idaho greater than 20 feet in length must be inspected on a regular basis. The National Bridge Inventory (NBI) includes a complete condition list of each bridge and its condition. An inspector from ITD assigns each bridge structure a sufficiency rating based on findings from the last inspection. Bridge structures within the District were reviewed to determine potential bridge repair and/or replacement projects based on sufficiency rating and AADT. The NBI database describes a bridge sufficiency rating as, “... an overall rating of a bridge’s fitness for the duty that it performs based on factors derived from over 20 data fields, including fields that describe the structural evaluation, functional obsolescence, and its essentiality to the public. A low sufficiency rating may be due to structural defects, narrow lanes, low vertical clearance, or any of many possible issues.”

The District is responsible for the maintenance of 18 bridge structures. Ten of the 18 bridges maintained by the District are greater than 20 feet in length and therefore have sufficiency ratings from NBI. According to 2014 data, two bridges were listed as “structurally deficient” (McAvoy Road over Cougar Creek and Watson Road over Rockford Creek) and Poirer Road bridge over Lake Creek is listed as “functionally obsolete”. Structurally deficient status is used to describe a bridge that has one or more structural defects that require attention. However, the status does not indicate the severity of the defect, but rather that a defect is present. Functionally obsolete status is used for bridges that do not have adequate lane widths, shoulder widths or vertical clearances to serve current traffic demand, or those that may occasionally flood; this status does not communicate anything of a structural nature.

Table 7 presents an inventory of District bridges, sufficiency ratings, AADT, and year built. Upon receiving 2014 sufficiency ratings, we requested additional information from WHD on the McAvoy Road/Cougar Creek and Watson Road/Rockford Creek bridges. **Table 7** presents 2015 and 2016 sufficiency ratings based on more recent inspection reports WHD provided. Based on improvements the District accomplished to the McAvoy Road/Cougar Creek bridge, its sufficiency rating improved, from its 2014 rating, and its deficiency status changed to functionally obsolete. Based on the most current inspection, Watson Road/Rockford Creek bridge still remains structurally deficient.

Table 7 - National Bridge Inventory Summary

Location	Sufficiency Rating	2014 AADT	Year Built
Watson Road/Rockford Creek	26.4% ¹	101	1950
McAvoy Road/Cougar Creek	72.4% ²	10	1940
Poirier Road/Lake Creek	79.4% ³	10	1950
Chatcolet Road/Rock Creek	82.3% ³	1000	1952
Roecks Road/Rock Creek	89.0% ³	80	1990
Loffs Bay Road/Mica Creek	91.2% ³	250	1962
Elder Road/Bozard Creek	96.3% ³	670	1955
Rose Creek Road/Rose Creek	97.0% ³	20	1960
Conkling Road/Rock Creek	97.6% ³	450	1962
Tall Pines Road/Mica Creek	97.9% ³	200	2008

Source: National Bridge Inventory

1) Based on 2016 Inspection Report

2) Based on 2015 Inspection Report

3) Based on 2014 Inspection Report

It is recommended that the District include replacing Watson Road bridge as a capital improvement project based on its sufficiency rating. Further, it is recommended that the District implement a simple, but repeatable rating system for bridges within WHD that are not on the National Bridge Inventory. It is recommended that the District develop a basic rating scale that includes a list of conditions and rating descriptors that can be used to determine a simple rating such as ‘Good,’ ‘Fair’ or ‘Poor’ and this information be added to the GIS database. **Appendix C** includes a recent article published by LHTAC regarding bridge inspection and maintenance that includes helpful suggestions for the District’s reference.

Sign Inventory

According to MUTCD, public agencies or officials having jurisdiction shall use an assessment or management method that is designed to maintain sign retro-reflectivity at or above the minimum levels as listed in the MUTCD standards Section 2A.22. In addition to bringing signs up to MUTCD standards to improve nighttime sign visibility, warning and regulatory signs and posts should be evaluated for overall condition to determine if replacement is necessary. (See **Figure 8**.)

Figure 8 – Typical Warning Sign



The District manages its sign inventory using iWorQ software and visual assessments and performs sign maintenance on an “as-needed” basis while inventorying and assessing the condition of all signs annually. As shown in **Table 8**, the District is responsible for maintaining approximately 1,081 signs. The sign inventory indicates that a significant majority of signs are in good to excellent condition, while approximately five percent of the District’s signs have a condition of fair or worse.

Table 8 – Sign Inventory Summary

Sign Type	Condition						Total Number of Signs
	Excellent	Good	Fair	Poor	Replace	Unknown	
Object Marker	43					63	106
Regulatory	369	57	11	4	4	32	477
Warning	394	62	17	12	6	7	498
Miscellaneous/Other	1						
Totals	807	119	28	16	10	102	1081

It is recommended the District evaluate the signs listed with unknown condition. Further, it is recommended the District request the use of LHTAC’s reflectometer to assist the District in evaluating signs, in addition to a visual assessment. Remaining signs with conditions of fair or worse should be replaced to meet the MUTCD retro-reflectivity standards by applying for another LRHIP sign grant from LHTAC.

Roadway Capacity Analysis

Level of Service (LOS) Analysis

There are several methods used to evaluate capacity within the roadway network system including reviewing level of service at various points or intersection configurations (traffic signal, 2-way stop-controlled, roundabout, etc.), road segments, facilities, areas, corridors, etc. The Highway Capacity Manual (HCM) defines capacity as, “...the maximum sustainable hourly flow rate at which persons or vehicles reasonably can be expected to traverse a point or a uniform section of a lane or roadway during a given time period under prevailing roadway, environmental, traffic, and control conditions.” It is important to evaluate capacity issues to discover which intersections and segments within the District currently operate below reasonable expectations and/or are expected to decline in the future.

Level of Service (LOS) is a traffic engineering term used to describe the quality of traffic flow. It ranges from the optimum level, LOS A, which represents little or no delay, to the lowest or worst level, LOS F, consisting of extreme delay and congestion. **Table 9** defines LOS A through F.

Table 9 – Level of Service Descriptions¹

Level of Service	Description
A	Free-flow operations at posted speed limit, vehicles are unimpeded by maneuvering within traffic stream.
B	Relatively unimpeded at posted speed limit, only slightly restricted maneuvering within traffic stream.
C	Relatively stable traffic operations, more restricted maneuvering at mid-block locations than LOS B, individual cycle failures at traffic signals may begin to appear.
D	Small increases in traffic flow may cause substantial delay and decrease in travel speed.
E	Poor travel speeds with slow progression and high delay.
F	Extremely slow travel speeds with queues forming behind breakdowns; brief periods of movement are followed by stoppages, considered unacceptable by most drivers.

The KMPO Metropolitan Transportation Plan² (2010-2035) was reviewed, specifically the current and future District traffic network model, to identify intersections and/or segments with high volume-to-capacity (v/c) ratios to determine the level of service at potential problem intersections/segments. There were no intersections or segments with high v/c ratios identified within the District boundary, either currently or in the future, and it was determined that no further evaluation was necessary.

¹ Source: *Highway Capacity Manual (2010)*, Transportation Research Board National Research of the National Academies, Washington DC

² KMPO – <http://www.kmpo.net/MTP.html> (Sections 3 and 4)

Safety Analysis

Crash Analysis Methodology

The methodology recommended in the Transportation Investment Generating Economic Recovery (TIGER) Resource Guide was used to analyze the crash data within WHD. These methods are summarized in **Appendix D**.

Crash Data and Analysis

Crash data was obtained from ITD for crashes occurring over a 5-year period (2011-2015). At the beginning of this study, 2014 was the most recent full calendar year of published data. Using five years of historic data is an acceptable industry standard for performing crash analyses on roadways.

Table 10 summarizes crash data for the 16 areas or intersections with the highest number of crashes.

Table 10 – Summary of Crashes by Severity (2010-2014)

Street 1	Street 2	Total Number of Crashes	Number of Fatal Crashes	Number of Injury A Crashes	Number of Injury B Crashes	Number of Injury C Crashes	Number of Property Damage Crashes
Bella Vista	Conkling	2				2	
Cave Bay	Bitter Rd	4			1		3
Cougar Gulch	Meadowbrook	12			1	1	10
Thompson	Cougar Gulch	5		1	2	1	1
Elder	US 95	6			2	3	1
Elder	Weller	4		1		2	1
Greensferry	Bunn	3					3
Greensferry	Ridge Line	4				1	2
Hull	Tumblestone	1					1
Hull	Kidd Island	4				1	3
Loffs Bay	Tall Pines	2					2
Loffs Bay	Aerie	3				1	2
Rockford Bay	Loffs Bay	5					5
Rew	Elder	2					2
Rosenberry	River	2					2
Valhalla	Lutherhaven	3		1	1		1
Rolling Hills	Cottonwood	1	1				
Totals		63	1	3	7	12	39

Using the methodology provided in **Appendix D**, crash locations were ranked according to the total monetized crash value as shown in **Table 11**.

Table 11 – Priority Crash Locations Prioritized Based on Crash Analysis

Ranking	Street 1	Street 2	Crash Cost
1	Rolling Hills	Cottonwood	\$ 9,400,000.00
2	Thompson	Cougar Gulch	\$ 760,136.26
3	Elder	Weller	\$ 577,771.09
4	Valhalla	Lutherhaven	\$ 575,167.39
5	Elder	US 95	\$ 435,629.37
6	Cougar Gulch	Meadowbrook	\$ 216,643.12
7	Cave Bay	Bitter Rd	\$ 131,946.95
8	Bella Vista	Conkling	\$ 125,048.39
9	Hull	Kidd Island	\$ 72,026.47
10	Greensferry	Ridge Line	\$ 68,859.04
	Loffs Bay	Aerie	\$ 68,859.04
	Rockford Bay	Loffs Bay	\$ 15,837.12
	Greensferry	Bunn	\$ 9,502.27
	Loffs Bay	Tall Pines	\$ 6,334.85
	Rew	Elder	\$ 6,334.85
	Rosenberry	River	\$ 6,334.85
	Hull	Tumblestone	\$ 3,167.42

Based on a review of the crash data, no significant trends were identified. The Rolling Hills/Cottonwood fatality contributing circumstances included alcohol, driving left of center and inattention on a straight stretch of the gravel road resulting in the vehicle overturning during icy conditions at night; the District reviewed the location following the accident and determined the crash circumstances were outside of the District’s control via safety improvements. The locations with the highest number of crashes involve Cougar Gulch Road. However, the District has recently completed a Road Safety Audit for Cougar Gulch Road that identified potential safety improvements for consideration and is currently implementing recommendations.

Existing Transportation System Summary

As presented in previous report sections, aspects of the existing roadway network were identified, which could benefit from additional evaluation or improvement. To summarize, recommendations relating to the roadway network include:

- It is recommended the District consider evaluating upgrades to portions of Rockford Bay Road, Loffs Bay Road, Blackwell Road and Cave Bay Road to allow all-weather truck traffic.
- The District should improve at-grade rail crossings by applying for a grant from the Federal Railroad Administration through the Railroad Safety and Infrastructure Improvement Grants program. Specifically, the Stringham Road rail crossing consists of wood planking rather than the more common concrete planking. This roadway segment is listed on KMPO’s potential project

lists for the year 2030. These improvements could be combined and considered a safety improvement for users along this roadway segment however, at this time, crash data does not support LHSIP grant funding this crossing. This recommendation is discussed further in the Capital Improvement Program section of this plan.

- It is recommended the District consider requesting a functional classification change by submitting the Idaho Functional Classification/Urban Boundary Change Request Form (found on the ITD website) for Bennion Road, Vogel Road and Elder Road, based on traffic counts and connectivity between lakeshore developments (Bennion and Vogel) and Washington State (Elder Road) to US 95. We further recommend this effort be coordinated with KMPO and AHD to garner concurrence.
- It is recommended that the District include replacing Watson Road bridge as a capital improvement project based on its sufficiency rating. Further, it is recommended that the District implement a formal rating system for bridges within WHD that are not on the National Bridge Inventory. It is recommended that the District develop a basic rating scale that includes a list of conditions and rating descriptors that can be used to determine a simple rating such as 'Good,' 'Fair' or 'Poor' and this information be added to the GIS database.
- It is recommended the District evaluate the signs listed as unknown. Further, it is recommended the District request the use of LHTAC's reflectometer to assist the District in evaluating all signs, in addition to a visual assessment. Remaining signs with conditions of fair or worse should be replaced to meet the MUTCD retro-reflectivity standards by applying for a LRHIP sign grant from LHTAC.

Pavement Management

Current Pavement Management

WHD maintains all roads within District boundaries with the exception of US 95, SH-58 and roadways within the Cities of Coeur d'Alene and Worley. There are approximately 90 miles of paved roadways within the District, 83 of which are classified as collectors and the rest are not classified. There are no arterials within the District other than US 95.

The District has not developed a formal Pavement Management Plan (PMP), but does perform pavement maintenance and management on an annual basis through visual assessments, documenting remaining service life, conducting surface treatments, and performing capital improvements. According to District staff, WHD currently maintains a preventative maintenance schedule that includes:

- Visually evaluating the pavement surface distress annually.
- Conducting pre-chip seal activities such as patching, seal coating, placing leveling courses or placing thin overlays.
- Accomplishing chip sealing on approximately thirteen miles of roadway each year.

This generally results in each paved section of roadway being routinely chip sealed every six years. The District typically allocates approximately \$500,000 per year for this type of pavement management.

As the population of the District and surrounding areas continues to grow, the demands on the roadway will intensify and it is important that the District successfully implement a plan to manage its investment in the roadway network and maximize the use of available maintenance funds. Having the capability to analyze the road network further prior to applying maintenance treatments allows the District to identify and take actions in a strategic manner. The following sections provide suggestions to assist the District with more formally identifying pavement management goals by developing a Pavement Management Plan, which can be documented and followed by future District staff.

Pavement Management Plan Overview

A PMP will provide the District with a better opportunity to understand the state of its paved road network. The goal is to provide a clear and effective PMP that uses condition data and produces a treatment strategy to preserve the roadway in a cost-effective manner based on its condition and remaining service life (RSL). A successful PMP will allow the District to define the necessary budget required to meet the goals for the District road network. A direct relationship between budget, repair strategies, and RSL will be apparent by implementing a PMP. Proper identification of fund allocation is an imperative step towards meeting the District's goals for road network management.

The PMP creates a simple informational and tracking system for the District to use when budgeting for maintenance and repair projects. The development of the PMP involves the following steps:

- Mapping (GIS) Road Network – This step is already accomplished through completion of this Plan.
- Basic Roadway Information – This step is similar to the process the District is now taking to compile existing RSL information into iWorQ.
- Decision Tree on Structural Deterioration – This step takes the existing process and re-focuses the maintenance goal on further evaluating which treatment is suitable based on the roadway condition. This element is further discussed below.
- Recommended Treatment – This includes considering options outside of current chip seal applications.
- Implementation – A successful PMP must be accompanied by guidelines that can be referenced year-after-year to ensure the continuity of the data.

Decision Tree on Structural Deterioration

By evaluating and recording the structural deterioration of the road network in the decision tree spreadsheet, the District can begin to more systematically evaluate maintenance needs and seek optimal value for pavement management funds. The decision tree shown in **Appendix E** will help the District personnel go through a more systematic process to assign a treatment number to each road segment to help determine the recommended treatment needed. The four main categories of repair/maintenance strategies include:

1. Routine Maintenance (Crack Seal and/or Crack Seal and Chip Seal).
2. Preventative Maintenance (Crack Seal and Overlay).
3. Rehabilitation (Pulverize and Overlay and/or CRABS and overlay).
4. Reconstruction (Total Reconstruction).

Treatments recommended in the decision tree should be evaluated and adjusted to align with treatments that are appropriate for the District roads and AHD Standards.

Pavement Management Summary

The District takes great care to maintain its roadway network. To maximize these efforts further, WHD should implement this PMP as a tool to focus maintenance goals, to allow for ease in budgeting for annual maintenance efforts, and to make the most effective use of maintenance funds.

Capital Improvement Program

Existing CIP

The Capital Improvement Program (CIP) serves as the guiding tool for planning future transportation improvement projects. At the onset of the planning process, WHD maintained a list of potential CIP projects to which the District Commissioners and Roadway Supervisor assigned points based on various parameters. WHD kept the information in a MS Excel spreadsheet that includes rules for using the spreadsheet, a place for questions and comments, the priority/point value assignments to each project parameter, the ranked CIP project list, estimated project costs, and additional financial information. The project parameters evaluated by the District included:

- Roadway ADT.
- Project right-of-way conditions.
- Available supplemental funding.
- Whether the project has been initiated.
- What impact the project would have.

Response to the parameters were assigned points and added together to rank and prioritize the projects and evaluate available budgets. Based on budgets and anticipate project costs, the projects were then assigned into four funding/construction categories:

- Federally funded and/or fully contracted construction.
- State funded and WHD construction.
- WHD funded and contracted construction.
- WHD funded and WHD construction

Periodically, based on estimated budgets and available supplemental funding, projects were moved between categories. In addition, new projects were added to the list and ranked as identified by WHD.

CIP Goals and Objectives

As part of the second TAC Meeting and subsequent discussions with the District, the above parameters were expanded upon to include considering refining the goals and evaluation items and better formalize the current CIP project ranking process to be more objective. Based on numerous equal point value projects, it was further recommended the District alter its point value system to reduce project “ties” in

ranking. Finally, it was recommended the District review the ranked project list as a whole, prior to re-organizing projects into funding categories.

These suggestions have been incorporated as summarized in **Table 12**, and it is recommended the District utilize a detailed summary table in its CIP spreadsheet narrative to provide better transparency to the public and provide consistent communication as District staff and Commissioners change over time.

Table 12 - Proposed CIP Parameters and Point Values

Parameter	Value	Points Assigned
Traffic Volume	ADT	Between 1 and 10; increasing with increasing ADT
Right-of-Way Conditions	Number of parcels required	Between 0 and 10; increasing with decreasing number of parcels
Anticipated Funding	% Federally funded	Between 1 and 10; increasing with increasing % Federal funds
Project Status	Not started	0
	Engineering completed	5
	Construction started	10
Project Impact	Improved road	1
	Eliminates and inconvenience to traveling public	3
	Eliminates minor to moderate safety hazard	8
	Eliminates a moderate to severe safety hazard	10
Project Estimated Cost	Dollars	Between 1 and 10; increasing with decreasing cost

In addition to revisions to the rating parameters, the group recommended altering the funding categorization to identify specifically the general maintenance projects solely performed by the District using available, non-supplemental revenue. Further, it was recommended that the spreadsheet could include design and construction start dates separate from each other to assist with evaluating grant funding and overall project timing. Finally, it is recommended altering the category language to specify who is administering the project funds, rather than who will “construct” projects.

Revised CIP Project List

As a result of the previously described recommendations, the District has revised their CIP process and updated the current CIP as of December, 2016. **Table 13** presents a revised CIP project list in rank order based on the revised point system.

Table 13 - Proposed Revised CIP

Project	Description	Total Points
Loffs Bay Slide	Repair slide	49
Rockford Bay/Loffs Bay Intersection	Right-of-way purchase	48
Kidd Island Road	Rebuilding US 95 to Hull Loop	46
Sun Up Bay and Bennion Road Intersection	Engineering	44
Bennion and Finnebott Road Intersection	Engineering	43
Rockford Bay Road	Rebuild from US 95 to Marina	42
Burton Road	Culvert replacement	39
Kidd Island Road	Right-of-way purchase	39
Tall Pines Road at Loffs Bay Intersection	Sight distance improvement	39
Bennion and Finnebott Road Intersection	Sight distance improvement	34
Rockford Bay Road	Engineering	34
Hull Loop	Pavement restoration	33
Clemetson Road	Rebuild from Meadowbrook to Reynolds	32
Cougar Gulch Road	Station 75+50 to 89+00	32
Sun Up Bay and Bennion Road Intersection	Rebuild to eliminate "Y" configuration	32
Cougar Gulch Road	Station 31+00 to 45+00	31
Carnie Road	Rebuild 1.5 miles from US 95	28
Williams Bridge	Replacement	28
Rockford Bay Road	Right-of-way purchase	26
Watson Road	Rebuild	26
Watson Bridge	Replacement	24
Bitter Road	Rebuild from end of asphalt to Cave Bay Road	21
Sun Up Bay Road	Rebuild Ness Road to Boat Launch	19
Conkling Park	Rebuild from end of pavement along Carey Bay	18
Dower Road	Pavement Restoration	18
Hamaker Road	Rebuild 0.84 miles	18
Rockford Bay Road	Rebuild from Solitaire to Loffs Bay	14
Loffs Bay Road	Rebuild from Tall Pines for 0.41 miles	10
Thompson Road	Improve base, sight distance and curve radii 1.8 miles	10
Rolling Hills Road	Rebuild from Larson to Bloomsburg	7

Table 14 presents the CIP project list grouped into possible funding categories.

Table 14 - Proposed Revised CIP with Proposed Funding Categories

Federal Funding		
Project	Description	Total Points
Kidd Island Road	Rebuilding US 95 to Hull Loop	46
Rockford Bay Road	Rebuild from US 95 to Marina	42
Kidd Island Road	Right-of-way purchase	39
Rockford Bay Road	Engineering	34
Rockford Bay Road	Right-of-way purchase	26
Bitter Road	Rebuild from end of asphalt to Cave Bay Road	21
Sun Up Bay Road	Rebuild Ness Road to Boat Launch	19
WHD Funding		
Loffs Bay Slide	Repair slide	49
Rockford Bay/Loffs Bay Intersection	Right-of-way purchase	48
Sun Up Bay and Bennion Road Intersection	Engineering	44
Bennion and Finnebott Road Intersection	Engineering	43
Burton Road	Culvert replacement	39
Tall Pines Road at Loffs Bay Intersection	Sight distance improvement	39
Bennion and Finnebott Road Intersection	Sight distance improvement	34
Hull Loop	Pavement restoration	33
Cougar Gulch Road	Station 75+50 to 89+00	32
Sun Up Bay and Bennion Road Intersection	Rebuild to eliminate "Y" configuration	32
Cougar Gulch Road	Station 31+00 to 45+00	31
Williams Bridge	Replacement	28
Watson Road	Rebuild	26
Watson Bridge	Replacement	24
Conkling Park	Rebuild from end of pavement along Carey Bay	18
Rockford Bay Road	Rebuild from Solitaire to Loffs Bay	14
Loffs Bay Road	Rebuild from Tall Pines for 0.41 miles	10
WHD Enhanced Maintenance		
Clemetson Road	Rebuild from Meadowbrook to Reynolds	32
Carnie Road	Rebuild 1.5 miles from US 95	28
Dower Road	Pavement Restoration	18
Hamaker Road	Rebuild 0.84 miles	18
Thompson Road	Improve base, sight distance and curve radii 1.8 miles	10
Rolling Hills Road	Rebuild from Larson to Bloomsburg	7

CIP Funding Options

The District should implement the capital improvement projects identified through this Plan when funding is available either through the annual District budget or through funding mechanisms, including, but not limited to, LHTAC grants, Federal grants, ITD grants, and other funding opportunities. Capital improvement projects should be re-prioritized based on available funding resources. In the event that a specific project aligns better with a funding source than a higher prioritized project, the District should seek funding for the project that is most likely to receive funding.

Table 15 identifies specific funding resources the District could use to help implement this Plan. It should be noted that funding opportunities will vary annually based on legislation, this is not an exhaustive list, and available funding sources should be updated periodically to include new or modified opportunities.

Table 15 - Potential Funding Sources

Agency	Funding Source	Type of Project	Funding Amount ¹	Minimum Local Match	Application Date
County/Highway District	Property Tax Levy	No Restrictions	N/A	N/A	N/A
LHTAC	STP ² Rural Funding	Planning, Design, Construction	\$13.4 million Available Statewide	7.34%	January (every other year)
LHTAC	Federal Aid (Bridge)	Rehabilitation and Construction	\$2.8 million Available Statewide	7.34%	January
LHTAC	LHSIP ³	Safety Improvements	\$16.8 million Available Statewide	7.34%	January
LHTAC	LRHIP ⁴	Sign Replacement, Federal Aid Match, Construction	\$30,000, \$100,000, \$100,000	None Required but is Recommended	November
ITD/LHTAC	Transportation Alternatives Program (TAP)	Pedestrian, Bike, Mobility, Public Transit Improvements	\$500,000	7.34%	Varies
FHWA	TIGER	Projects to promote economic growth	\$500 million Available Nationwide	Varies	Varies
WFL⁵/LHTAC	FLAP ⁶	Surface Transportation (Roads, Trails, Pathways) Improving Access to Public Lands	\$14.7 million Available Statewide	7.34%	Varies (every other year)
IDPR⁷	Recreational Trails Program (RTP)	Walking and Biking Pathways, Bike/Pedestrian Bridges	\$1.7 million Available Statewide	20%	January
ITD	Idaho Americans with Disability Pedestrian Curb Ramp Program	ADA Improvements Along State Highways	\$60,000	None Required but is Recommended	April
IDPR	Recreational Road and Bridge Fund	Repair Roads, Bridges, and Parking Areas within and Leading to Parks and Recreation Areas	\$300,000 Available Statewide	None Required but is Recommended	December
USRA	Railroad Safety Infrastructure Improvement Grants	Acquisition, Improvement or Rehabilitation of Rail Equipment	\$25 million Available Nationwide	None Required but is Recommended	June

¹ 2016 amounts, Funding Amounts may change annually
² Surface Transportation Plan
³ Local Highway Safety Improvement Program
⁴ Local Rural Highway Investment Program
⁵ Western Federal Lands
⁶ Federal Lands Access Program
⁷ Idaho Department of Parks and Recreation

Implementation

Implementation Overview

To implement this Plan, the District staff and Commissioners should update GIS data, the CIP list and discuss available funding opportunities on an annual basis. The District should reprioritize projects regularly based on project needs and available funding sources and make efforts to seek outside funding through grants and funding programs that align with projects identified in this Plan. As discussed in this section, there are specific strategies the District may initiate to increase the likelihood of successful implementation.

Implementation Strategies – Keys to Success

Attend Annual Grant and Funding Workshops and Federal Funding Webinars

Funding agencies such as LHTAC, ITD, WFL, IDPR, etc. typically hold funding workshops annually or periodically to educate eligible applicants on upcoming funding opportunities, scoring criteria, and program changes. These sessions will help District staff establish and maintain a solid knowledge based on the status of various state and federal grant and funding programs.

Continuing Education on Roadway Maintenance

Funding agencies typically encourage roadway agency staff to be educated on roadway maintenance and roadway safety. Through LHTAC's Training and Technical Assistance (T2) program, Road Department personnel can attend courses and earn certifications. If the District can demonstrate to LHTAC that its personnel have attended and/or earned certifications through this program, WHD's proposed project and grant applications would rank higher.

Contact Funding Agencies Early and Often, Well Before the Deadline

It is good practice to inform funding agencies of a potential upcoming project well in advance of a grant application deadline. If the District desires to submit a grant application that is due in the fall or winter, it is recommended that District staff contact funding agencies as early as possible, ideally in the spring or early summer. Grant agency staff can offer invaluable advice on how to put a successful application together as well as specific ideas about the project.

Project Development

For CIP projects that the District wants to implement in the near future, it is recommended that District staff identify the next steps needed. A typical next step towards implementation involves taking a CIP project from planning to project development. Depending on the project type and location, project development may involve site investigation, survey, specific study, etc. For projects that overlap with other jurisdictions such as ITD, it is recommended that the District work closely with those partner agencies to determine the next step to move to project development; successfully initiating a project could be a matter of working with another agency that may ultimately want to sponsor and program the project.

Appendices

Appendix A – GIS Maps

Appendix B – Public Involvement Information

Appendix C – LHTAC Bridge Inspection Reference Article

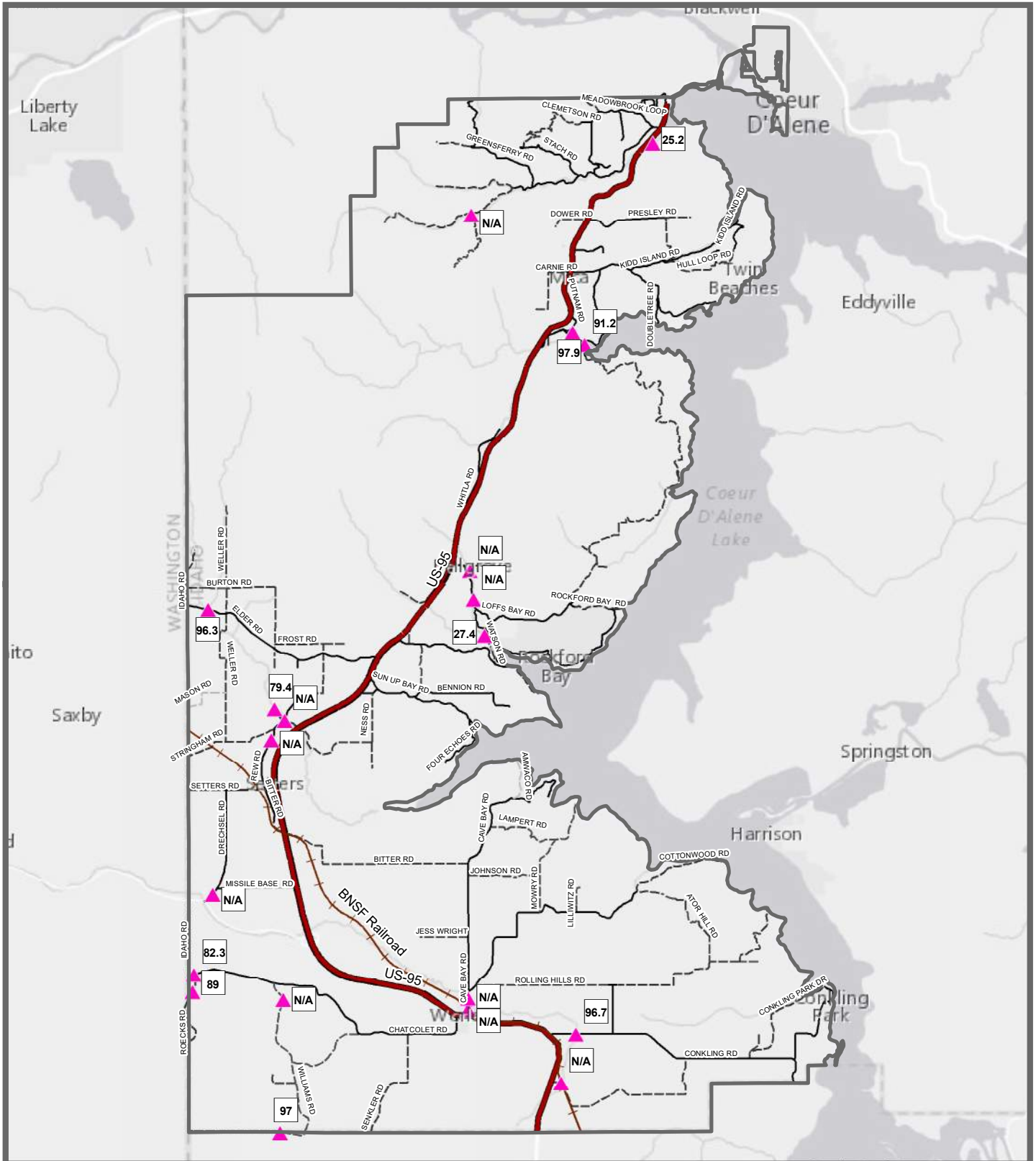
Appendix D – Crash Analysis Methodology

Appendix E – Pavement Management Decision Tree

Appendix A

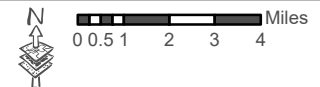
GIS Mapping Layers

BRIDGE LOCATIONS



Legend

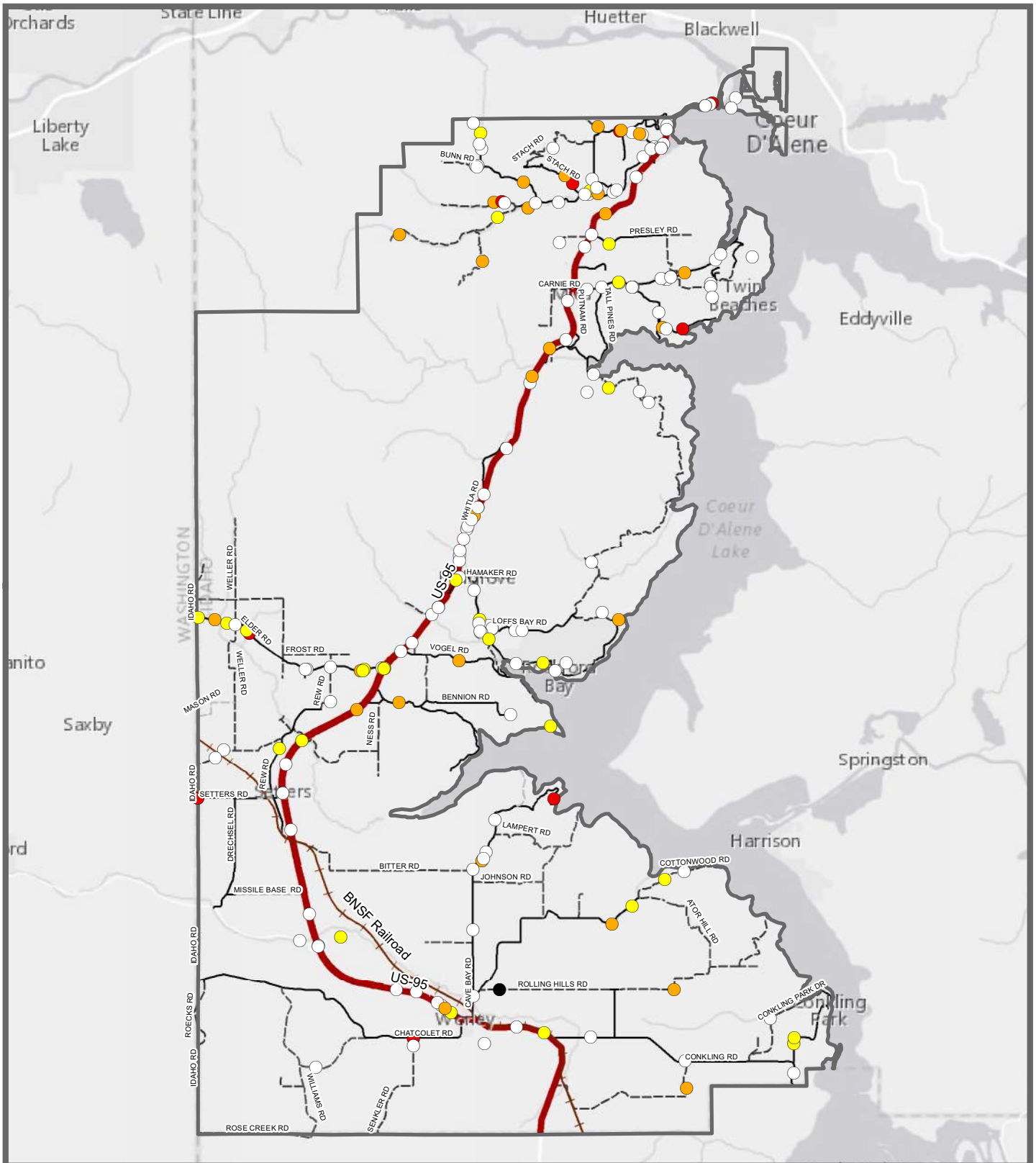
- District Boundary
- ▲ Bridge Locations and Sufficiency Rating



OTHER J-U-B COMPANIES

WORLEY HIGHWAY DISTRICT *Transportation Plan*

2011 - 2015 Crash Data



Legend

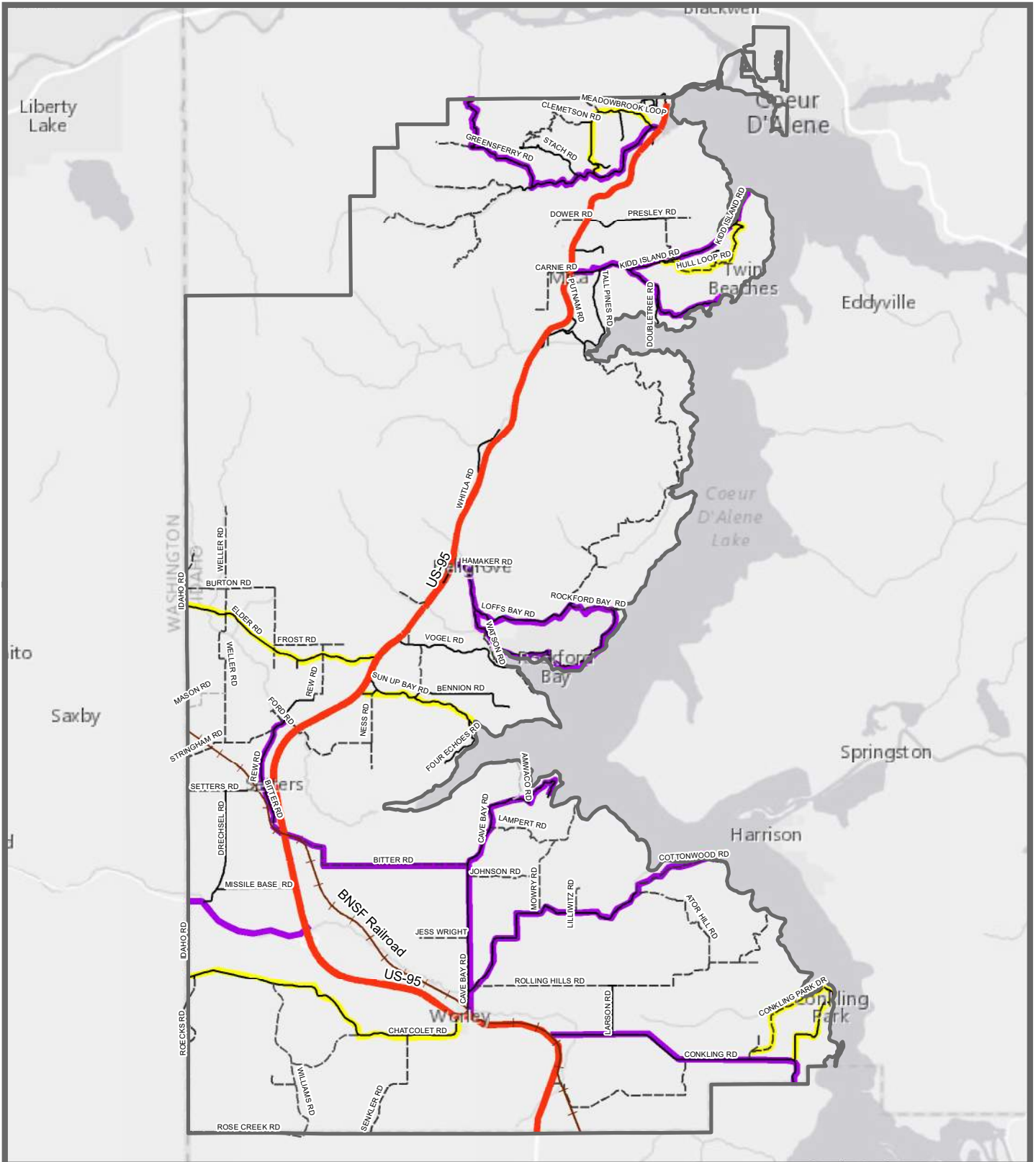
- District Boundary
- A Injury Crash
- C Injury Crash
- B Injury Crash
- Fatal Crash
- Property Dmg Report



OTHER J-U-B COMPANIES

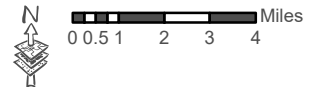
WORLEY HIGHWAY DISTRICT *Transportation Plan*

FUNCTIONAL CLASSIFICATION



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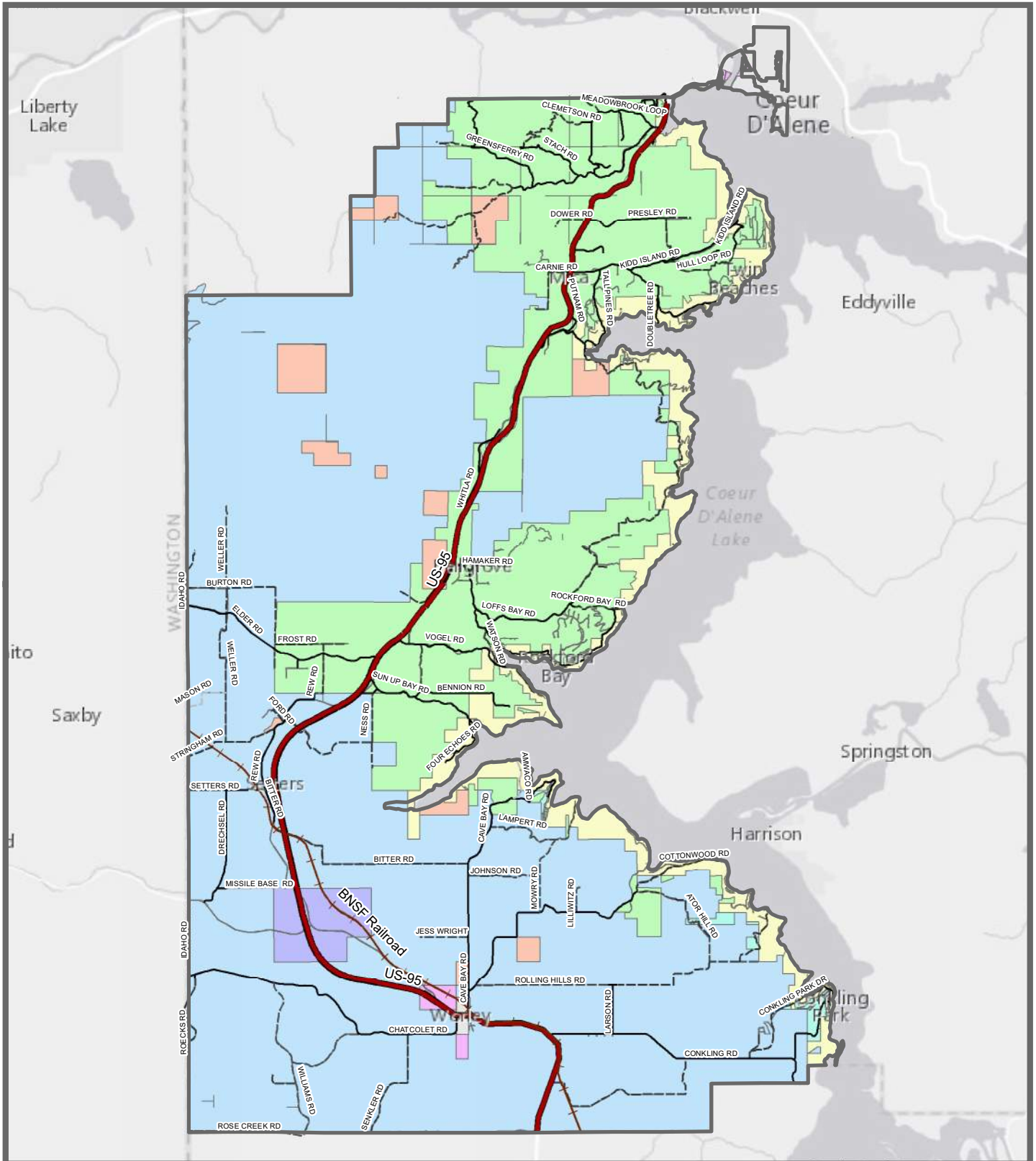
- District Boundary
- Rural Major Collector
- Principal Arterial
- Rural Minor Collector



OTHER J-U-B COMPANIES

WORLEY HIGHWAY DISTRICT *Transportation Plan*

FUTURE LAND USE



Legend

- District Boundary
- SHORELINE
- BORDER
- COUNTRY
- RESOURCE/RECREATION
- SCENIC
- TRANSITIONAL
- VILLAGE

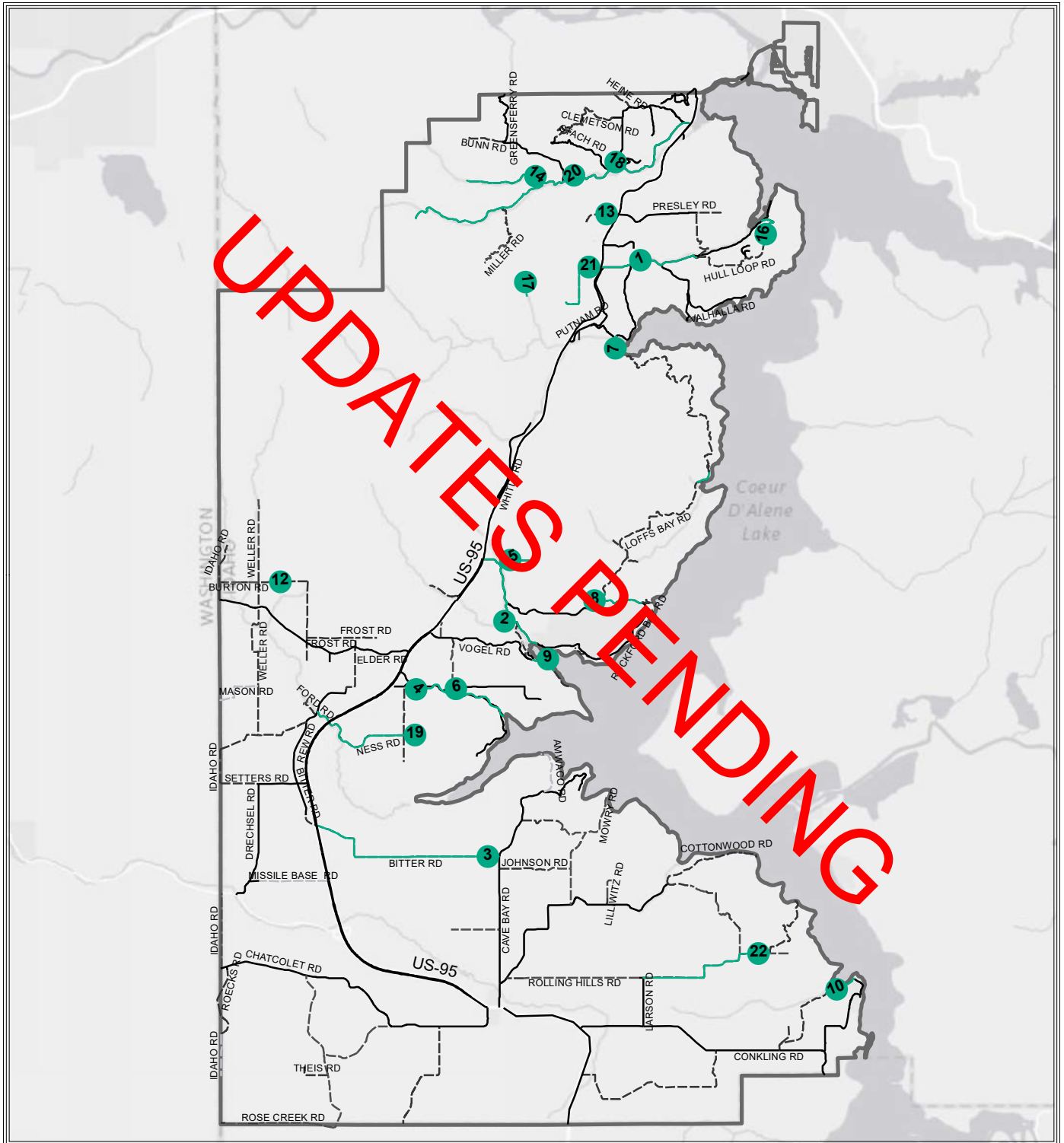


OTHER J-U-B COMPANIES



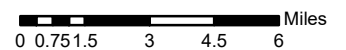
WORLEY HIGHWAY DISTRICT TRANSPORTATION PLAN

DISTRICT PLANNED PROJECTS



Legend

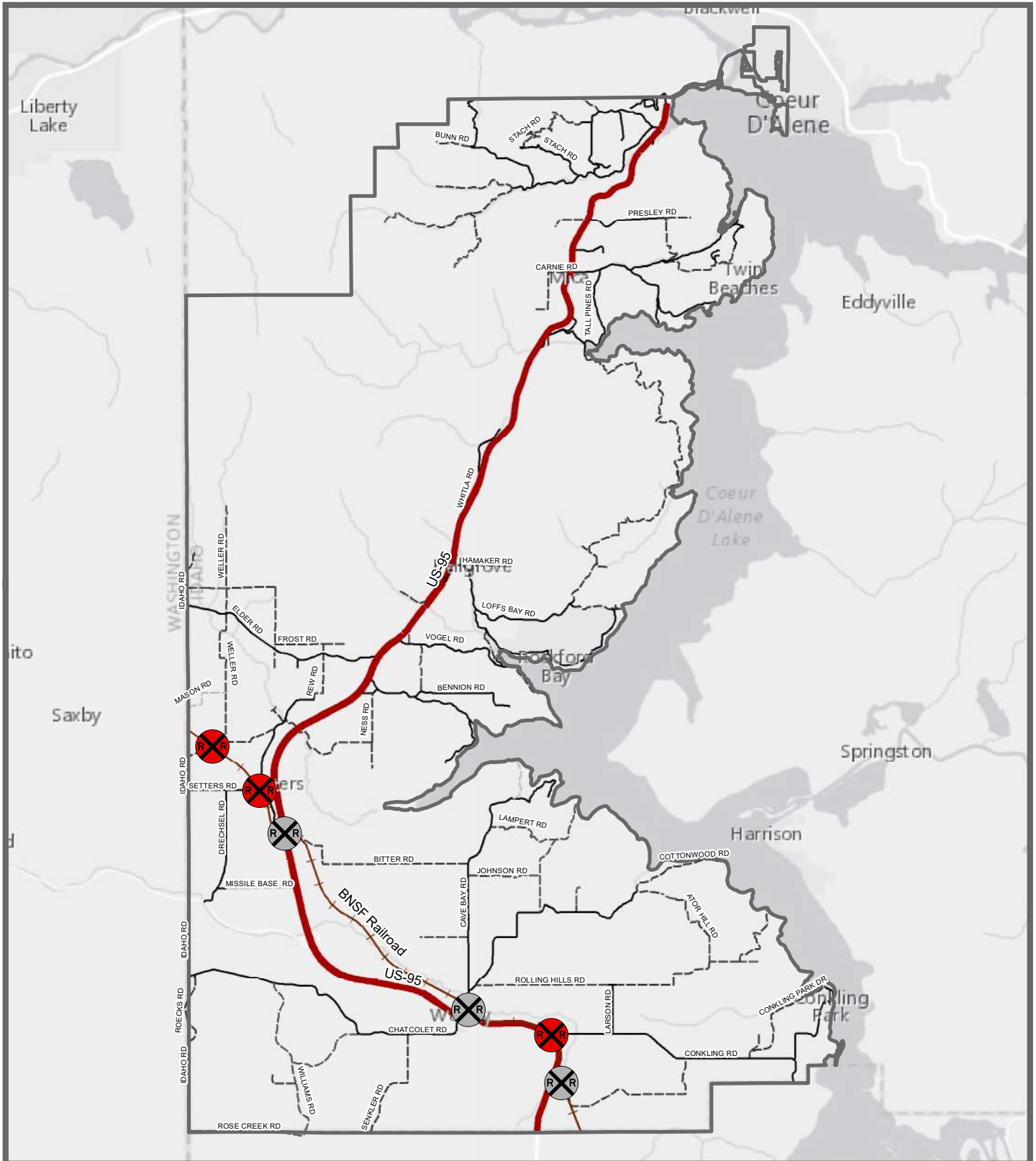
- District Planned Projects
- District Boundary








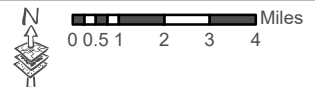
WORLEY HIGHWAY DISTRICT *Transportation Plan*

RAILROAD CROSSINGS



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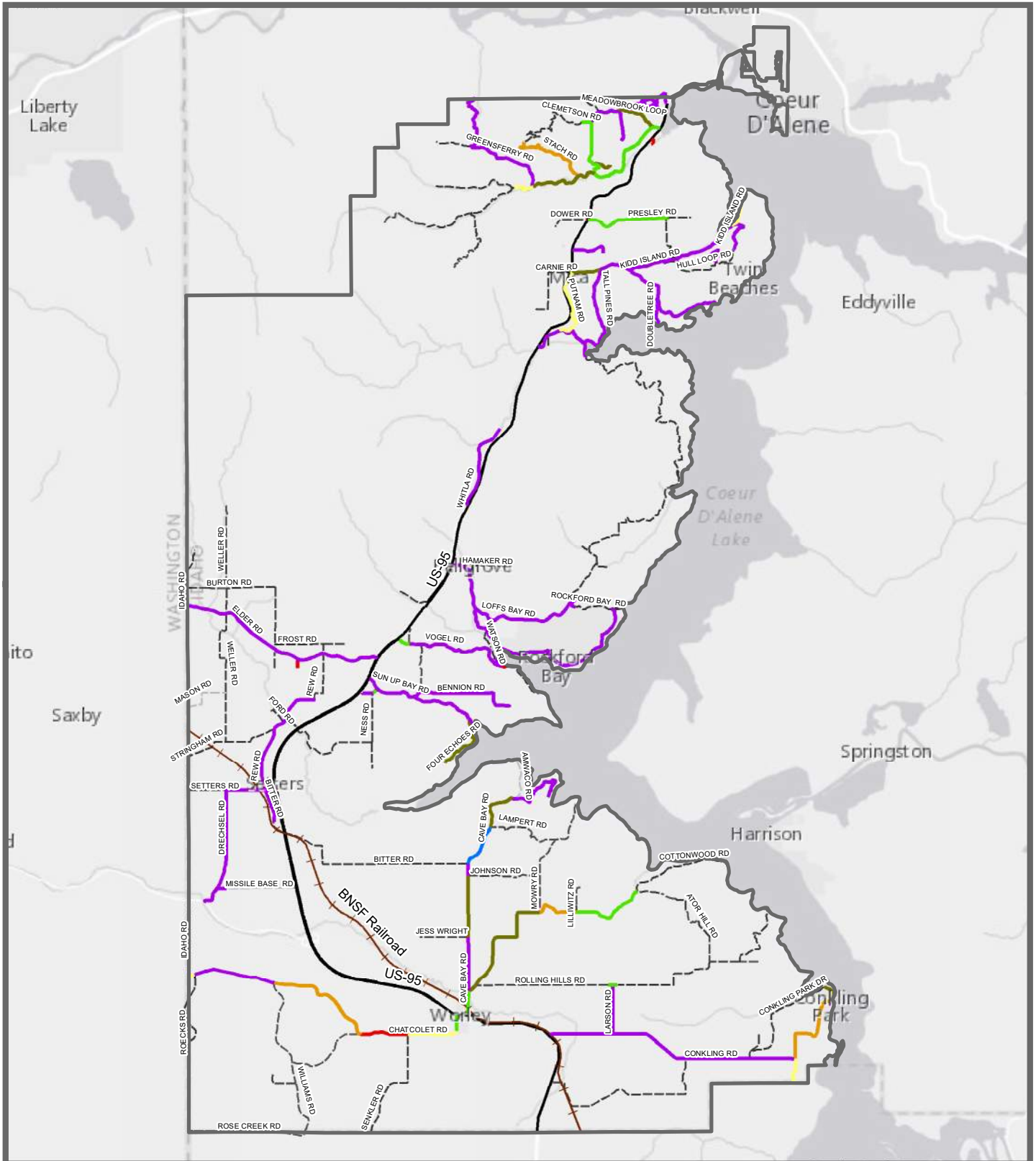
-  District Boundary
-  Grade Separated Crossing
-  Stop Signs



OTHER J-U-B COMPANIES

WORLEY HIGHWAY DISTRICT *Transportation Plan*

REMAINING SERVICE LIFE



Legend

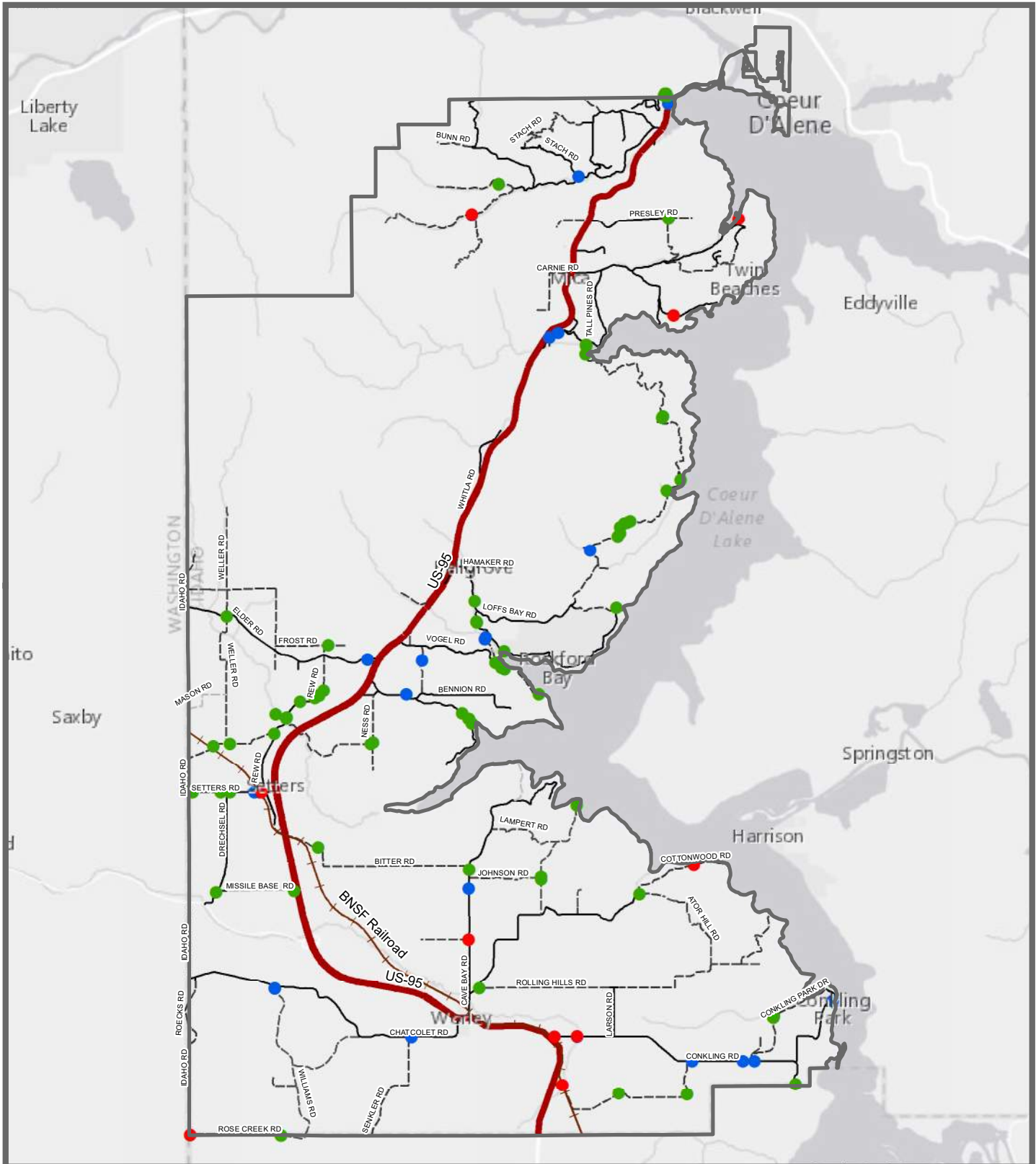
- | | | | |
|----------|----------|---------|-----------------|
| | 12 Years | 6 Years | GRADED/DRAINED |
| 20 Years | 10 Years | 4 Years | GRAVEL |
| 14 Years | 8 Years | PAVED | STABILIZED GRAV |



OTHER J-U-B COMPANIES

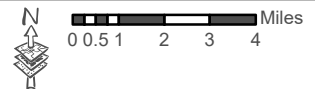
WORLEY HIGHWAY DISTRICT *Transportation Plan*

ROAD SIGNS IN NEED OF REPLACEMENT



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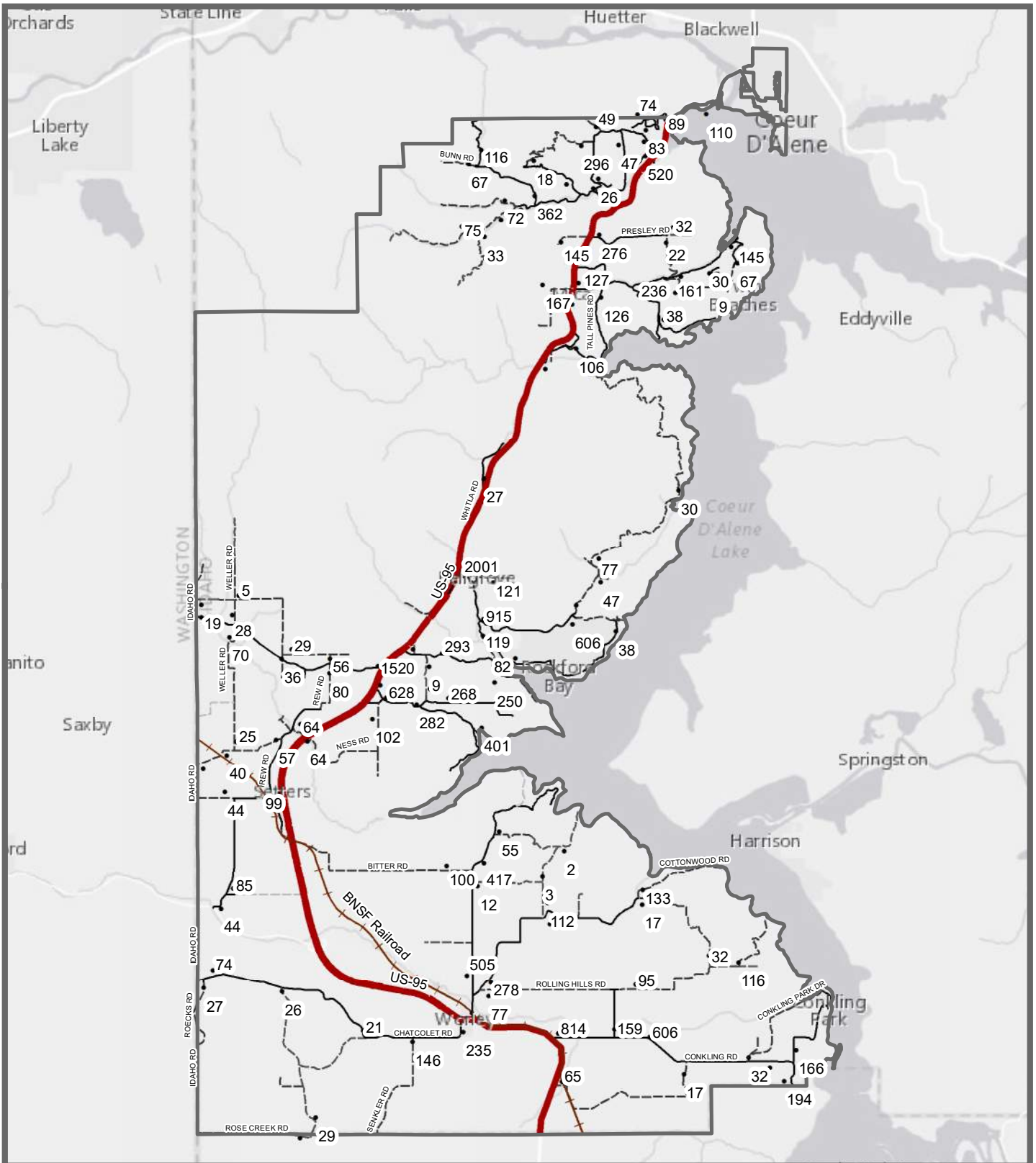
- District Boundary
- FAIR
- POOR
- UNKNOWN



OTHER J-U-B COMPANIES

WORLEY HIGHWAY DISTRICT *Transportation Plan*

2015 Average Daily Traffic Count



Legend

- District Boundary
- 2015 Average Daily Traffic Count



0 0.75 1.5 3 4.5 6 Miles



J-U-B ENGINEERS, INC.



THE LANGDON GROUP
A JUB COMPANY

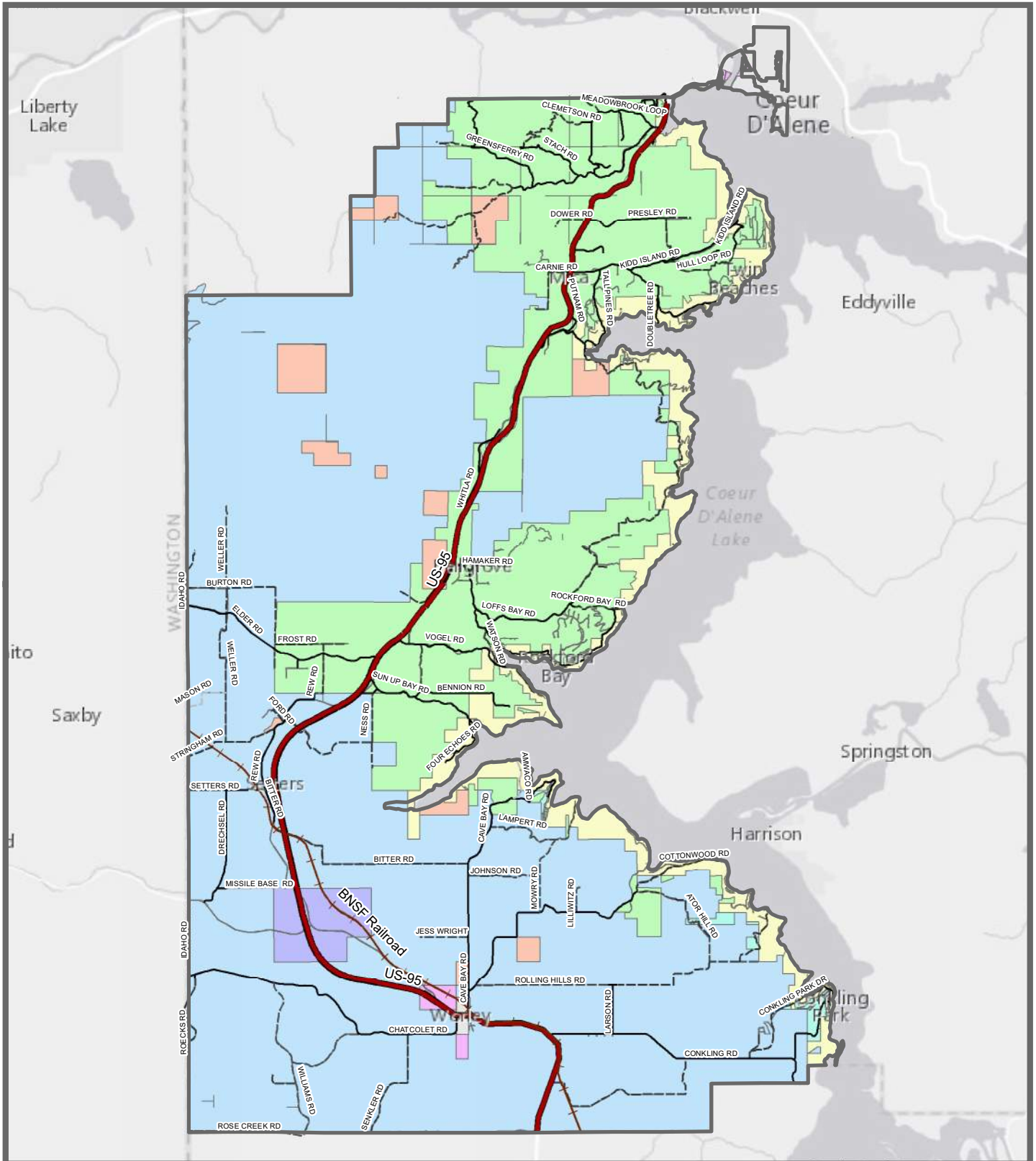


GATEWAY MAPPING INC.
A JUB COMPANY

OTHER J-U-B COMPANIES

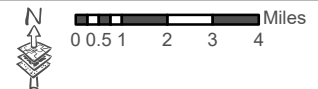
WORLEY HIGHWAY DISTRICT *Transportation Plan*

FUTURE LAND USE



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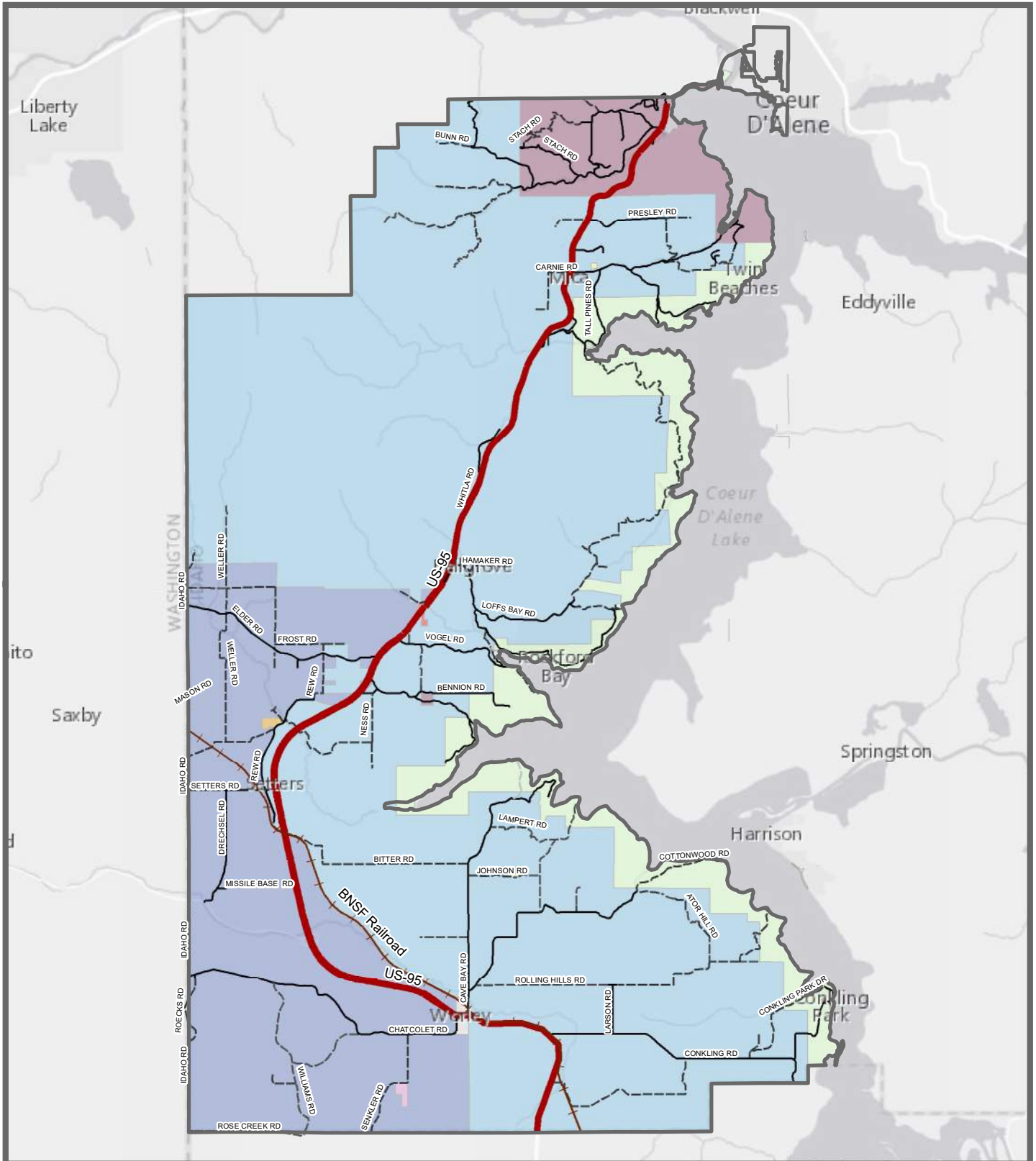
- District Boundary
- BORDER
- COUNTRY
- RESOURCE/RECREATION
- SCENIC
- SHORELINE
- SUBURBAN
- TRANSITIONAL
- VILLAGE



OTHER J-U-B COMPANIES

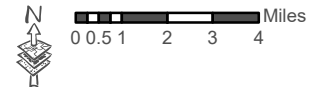
WORLEY HIGHWAY DISTRICT *Transportation Plan*

2014 KOOTENAI COUNTY ZONING



Legend

- District Boundary
- MINING DEVELOPMENT AGREEMENT
- AG-SUBURBAN
- RESTRICTED RESIDENTIAL
- AGRICULTURE
- RURAL
- COMMERCIAL
- RURAL DEVELOPMENT AGREEMENT
- MINING



OTHER J-U-B COMPANIES

Appendix B

Public Involvement Information



Worley Highway District Transportation Plan STAKEHOLDER INTERVIEW SUMMARY REPORT

August 2016

Executive Summary

The Worley Highway District (WHD) is developing a Transportation Master Plan. WHD received funding for this Transportation Plan from the Local Highway Technical Assistance Council (LHTAC) Transportation Plan Program. Transportation planning is a high priority for LHTAC because it allows jurisdictions to effectively work together and improve the investment in their highway and street infrastructure. Having a thorough, effective Transportation Plan that is managed and updated provides more opportunities for the District to apply for funding to complete projects identified in this Transportation Plan.

WHD is working with J-U-B Engineers, Inc. (J-U-B) of Coeur d'Alene to complete a Transportation Master Plan in accordance with Idaho State Code 67-6508 (i). The plan will address and identify goals including a Capital Improvement Plan, asset management, and design requirements for new developments. J-U-B is also facilitating the public outreach efforts toward adoption of the plan.

Interview Process

In June and July 2016, J-U-B conducted interviews with a diverse set of people who simply use or are in some way connected to managing the WHD transportation system. These informal interviews provided the project team with insightful information while engaging key stakeholders. The purpose of the interviews is to:

- Communicate WHD's commitment to public involvement and the planning process
- Identify issues and concerns about the local transportation system
- Learn stakeholders' vision for the transportation system
- Identify potential issues/concerns
- Begin the plan on a personal and positive note

J-U-B staff conducted interviews at stakeholders' businesses, City Hall or by phone. The participants were given an overview of the planning process and purpose of a transportation plan and were asked the following questions:

1. What is your connection or history to WHD?
2. Thinking about how you get to [work / church / school / other], what are the ways WHD's transportation system works?
3. How could the transportation system be changed?
4. What are the three most important transportation issues that need to be addressed by this plan?
5. What are additional features that J-U-B or WHD should address in the transportation plan?
6. Who are the opinion leaders or active groups in the community?
7. Thinking about earlier efforts to involve this community, what can we learn? Is there anything we do to improve the process?
8. Who else should we talk to?
9. Is there anything else you want to tell us?



Worley Highway District Transportation Plan STAKEHOLDER INTERVIEW SUMMARY REPORT

August 2016

In all, one phone interview and 6 face-to-face interviews were conducted with a total of 7 stakeholders. Interviews were conducted with:

- Terrel Anderson, Manager Industry and Public Projects, Union Pacific Railroad (UP)
- Jill Hill, Transportation Director, Coeur d'Alene School District
- Jim Kackman, Public Works Director, Coeur d'Alene Tribe
- Glenn Miles, Executive Director, Kootenai Metropolitan Planning Organization (KMPO)
- Mike Morris, Maintenance Supervisor, City of Worley
- Bill Roberson, District 1 Planner, Idaho Transportation Department (ITD)
- Dan Sneve, Chief, Worley Fire Protection District

Attempts were made to interview other stakeholders; due to vacation schedules, business demands, conflicts and/or unreturned phone calls and e-mails, some identified stakeholders were not interviewed in this phase:

- Bob Curley, Transportation Director, Plummer-Worley School District
- Ed Huber, CHS Primeland (Business)

Feedback Summary

The following items were noted as positive themes:

1. **Excellent Maintenance** – respondents commended WHD for the care they take in maintaining the roadway surface throughout the district.
2. **Partnering** – respondents agreed that WHD cooperates with area districts to share resources and partner for projects.

The following issues were identified as recurring themes. According to stakeholders the top transportation issues, in no particular order, that need to be addressed by the Plan are:

1. **Snow Removal** – respondents expressed a need for better snow removal around driveways and intersections. A suggestion was made to spread shifts out of 24-hours during long storms, rather than only removing during the day.
2. **Large Trucks and Seasonal Restriction** – respondents indicated roadway use has changed as farming equipment has evolved over the years; WHD should consider their standard sections relating to shoulders, line of sight and weight limits as they relate to larger vehicles.
3. **Population and Funding** – respondents voiced concerns with decreasing and sparse population in the area and the affect that has on funding projects through population-based revenue. There may be funding available that can be utilized to address issues identified.
4. **Tribe Relationship** – respondents felt WHD's relationship with the Tribe has been strained due to issues that exist regarding WHD property ownership on Tribal lands.



Worley Highway District Transportation Plan STAKEHOLDER INTERVIEW SUMMARY REPORT

August 2016

Stakeholder Interview Comprehensive Summary

The comprehensive summary includes verbatim comments from all the stakeholders interviewed for this project.

1. What is your connection or history to the Worley Highway District? (ex: Commissioner, Agency, business owner, resident, etc.)

- City of Worley staff
- Resident in the District
- Emergency responder
- Education and transportation
- Public works
- State transportation planner
- Regional transportation planner
- Railroad representative

2. Thinking about how you get to [work / church / school /other], what are the ways WHD's transportation system works?

- Good maintenance, snow removal and providing safe access for residents
- WHD often partners with area districts for projects and resources
- WHD excels at roadwork with their additional staff and equipment upgrades, the roads are in great shape

3. How could the transportation system be changed?

- Roads in WHD lack standard shoulders
- Bikes and pedestrians do not have safe facilities
- Elder road was recently reconstructed with very narrow shoulders
- Snow plowing on Conklin Road leaves snow in driveways making it difficult for residents to exit their properties
- During storm events, crews could be split over a 24 hour period, rather than keeping roads clear just during the day

4. What are the three most important transportation issues that need to be addressed by this plan?

- Cars speed near the bus stop at Hamker Road
- Snow removal can sometimes be an issue at intersections
- Design standards for use by new development
- Sight distance
- Lack of standard shoulders/narrow shoulders
- Use of roads by large trucks
- Population
- Funding



Worley Highway District Transportation Plan STAKEHOLDER INTERVIEW SUMMARY REPORT

August 2016

5. What are additional features that J-U-B or WHD should address in the transportation plan (e.g. parks, trails, etc.)?

- Cave Bay railroad overpass has low clearance and is narrow for farm trucks
- Public transit – currently a collaboration between KMPO, County and Tribe. Future may involve formation of Regional Public Transit Authority
- Lack of bike/ped facilities
- Gravel roads west of Worley need grading

6. Who are the opinion leaders or active groups in the community?

- WHD Commissioners & Kevin Howard
- Bellgrove, Mica and Worley granges
- Coeur d’Alene Tribe
- City of Worley
- CHS Primeland
- Fire Districts
- Mica-Kidd Fire District
- Union Pacific Railroad
- Bike groups
- Seeds, Inc.
- Lake communities and HOAs
- Bureau of Indian Affairs
- Federal government

7. Thinking about earlier efforts to involve this community (public meetings, mailings, gathering comments) – what can we learn from this? Is there anything we can do to improve the process?

- Mica, Bellgrove and Worley granges and Casino are good places to advertise
- Golf course is shut down in fall and could be used to host events or meetings
- City of Worley can post events
- Social media – Tribe has a Facebook page
- Press releases
- WHD website

8. Who else should we talk to?

- Bike groups
- Union Pacific Railroad**
- City of Worley**
- Ag businesses who provide hauling for harvest**
- Cave Bay community
- Lake community boards and HOAs
- Bordering highway districts

**These stakeholders were added to the interview list and are incorporated herein



Worley Highway District Transportation Plan STAKEHOLDER INTERVIEW SUMMARY REPORT

August 2016

9. Is there anything else you want to tell us?

- All railroad crossings in the District must meet MUTCD requirements
- If the District identifies a railroad crossing they wish to upgrade or close, they must submit information to and work with UP on signal design (for upgrades) or closures. UP will provide signal design, install signals and pay for signal maintenance, but the District must provide all other funds
- UP operates 1 train 3 days per week in the area and has a low number of controlled crossings in the District; they always prefer closed crossings as opposed to controlled crossings.
- WHD helpful and easy to work with- will answer the phone at 4am to discuss road conditions and coordination of school closures
- There are several school children that live within WHD in “non-transportation zones”.
- WHD does excellent job of plowing and sanding roads early in the morning before bus service begins
- WHD does good job sweeping the shoulders
- US-95 is not as well-maintained during snow events as WHD
- Overall satisfied with maintenance and operations
- Tribe is able to use funds for joint projects
- Access/ROW issues exist between Tribe and WHD due to disagreement over property values. Tribe would like several pieces of property that are currently possessed by WHD, with a maintenance agreement with WHD
- District does a good job with their fiduciary responsibilities.
- There will likely be future tribal developments within the District boundaries and the Tribe will need the districts assistance; no mention of the location of this development was discussed.
- Should discuss/consider weight limits and all-weather routes within the transportation plan
- Make sure to align growth and projections with KMPO plan
- The commissioners are not as involved or available to the southern portion of the District
- Suggests using a small plow on a truck to clean up intersections, etc. that end up sloppy when plowed with the large equipment
- Funding opportunities exist with FHWA to improve access (access = economic opportunity)
- Funding opportunities exist with ITD to pave gravel roads
- Two current ITD projects within WHD: US-95 improvements (Benewah to Worley) & seal coat project through Worley
- Luminaire located on Mozart Rd that ITD would like to relinquish to WHD

Worley Highway District Transportation Plan

Stakeholder Interview		PRE-INTERVIEW INFORMATION
Name of Stakeholder	Bill Roberson	
Position/organization	Planner/ITD	
Contact details (WORK)	Phone: (208)772-1200	Fax:
	E-mail: William.Roberson@itd.idaho.gov	
Name of Interviewer(s)	Riannon Zender and Angie Comstock	
Date	7/12/2016	
PROJECT/ISSUE-RELATED QUESTIONS		
1.	What is your connection or history to the Worley Highway District? (ex: Commissioner, Agency, business owner, resident, etc.)	
	<ul style="list-style-type: none"> Little connection. Has worked with WHD during his time in the Traffic department 	
2.	Thinking about how you get to [work / church / school / _____], what are the ways Worley Highway District's transportation system works?	
	<ul style="list-style-type: none"> Not typically a WHD system user (most often uses SH-58 within District boundaries). 	
3.	How could the transportation system be changed?	
	<ul style="list-style-type: none"> No input. 	
4.	What are the three most important transportation issues that need to be addressed by this plan?	
	<ul style="list-style-type: none"> No input; agreed with what others had communicated in interviews 	
5.	What are additional features that J-U-B or Worley Highway District should address in the transportation plan (e.g. parks, trails, etc.)?	
	<ul style="list-style-type: none"> No input. 	
6.	Who are the opinion leaders or active groups in the community?	
	<ul style="list-style-type: none"> Tribe Bureau of Indian Affairs Federal government 	
7.	Thinking about earlier efforts to involve this community, (public meetings, mailings, gathering comments) – what can we learn from this? Is there anything we can do to improve the process?	
	<ul style="list-style-type: none"> Social media- Tribe had Facebook page Press releases 	
8.	Who else should we talk to?	
	<ul style="list-style-type: none"> No input. 	
9.	Is there anything else you want to tell us?	
	<ul style="list-style-type: none"> Funding opportunities exist with FHWA to improve access (access = economic opportunity) Funding opportunities exist with ITD to pave gravel roads Two current ITD projects within WHD: US-95 improvements (Benewah to Worley) & seal coat project through Worley Luminaire located on Mozart Rd that ITD would like to relinquish to WHD 	
Interviewer's comments		
	<ul style="list-style-type: none"> None. 	
FOLLOW-UP NEEDED		
None – Bill has agreed to be on the TAC for the master plan		

Worley Highway District Transportation Plan

Stakeholder Interview		PRE-INTERVIEW INFORMATION
Name of Stakeholder	Dan Snede	
Position/organization	Chief/Worley Fire District	
Contact details (WORK)	Phone: (208)686-1718	Fax: (208)686-1191
	E-mail: dsnede@worleyfire.org	
Name of Interviewer(s)	Riannon Zender and Drew Baden	
Date	7/6/2016	
PROJECT/ISSUE-RELATED QUESTIONS		
1.	What is your connection or history to the Worley Highway District? (ex: Commissioner, Agency, business owner, resident, etc.) <ul style="list-style-type: none"> Resident of District Worley Fire District Chief Fire District began in 1969, has shared commissioners with WHD 	
2.	Thinking about how you get to [work / church / school / _____], what are the ways Worley Highway District's transportation system works? <ul style="list-style-type: none"> WHD excels in roadwork- with the additional staff and upgrades to equipment, the roads are in better shape than they were ten years ago 	
3.	How could the transportation system be changed? <ul style="list-style-type: none"> During storm events (snow, wind) splitting crews into multiple shifts may be an effective way to keep roads clear throughout the storm, not just for 8 hour periods during the day 	
4.	What are the three most important transportation issues that need to be addressed by this plan? <ul style="list-style-type: none"> No major issues 	
5.	What are additional features that J-U-B or Worley Highway District should address in the transportation plan (e.g. parks, trails, etc.)? <ul style="list-style-type: none"> No other issues 	
6.	Who are the opinion leaders or active groups in the community? <ul style="list-style-type: none"> WHD Board of Commissioners CDA Tribe Conklin, Cave Bay, Harmon, Rockford Bay Home Owners Associations (HOAs) 	
7.	Thinking about earlier efforts to involve this community, (public meetings, mailings, gathering comments) – what can we learn from this? Is there anything we can do to improve the process? <ul style="list-style-type: none"> Does a good job advertising and posting minutes from meetings – there is only so much that can be done without it being too much 	
8.	Who else should we talk to? <ul style="list-style-type: none"> Community HOAs – Fire District attends meetings to gather and share information. Lots of income for Fire District from property taxes. 	
9.	Is there anything else you want to tell us? <ul style="list-style-type: none"> Suggests using a small plow on a truck to clean up intersections, etc. that end up sloppy when plowed with the large equipment 	
Interviewer's comments		
None		
FOLLOW-UP NEEDED		
None		

Worley Highway District Transportation Plan

Stakeholder Interview		PRE-INTERVIEW INFORMATION
Name of Stakeholder	Glenn Miles	
Position/organization	Executive Director/KMPO	
Contact details (WORK)	Phone: (208)930-4164	Fax:
	E-mail: gmiles@kmpo.net	
Name of Interviewer(s)	Angie Comstock and Riannon Zender	
Date	6/29/2016	
PROJECT/ISSUE-RELATED QUESTIONS		
1.	<p>What is your connection or history to the Worley Highway District? (ex: Commissioner, Agency, business owner, resident, etc.)</p> <ul style="list-style-type: none"> Executive Director of KMPO Resident of WHD. 	
2.	<p>Thinking about how you get to [work / church / school / _____], what are the ways Worley Highway District's transportation system works?</p> <ul style="list-style-type: none"> Have great surface maintenance practices Do a great job partnering and sharing resources with other highway districts Good snow removal 	
3.	<p>How could the transportation system be changed?</p> <ul style="list-style-type: none"> Roads in WHD lack standard shoulders. Bikes and peds do not have safe facilities. Elder road was recently reconstructed with very narrow shoulders 	
4.	<p>What are the three most important transportation issues that need to be addressed by this plan?</p> <ul style="list-style-type: none"> Sight distance Lack of standard shoulders/narrow shoulders 	
5.	<p>What are additional features that J-U-B or Worley Highway District should address in the transportation plan (e.g. parks, trails, etc.)?</p> <ul style="list-style-type: none"> Lack of bike/ped facilities. 	
6.	<p>Who are the opinion leaders or active groups in the community?</p> <ul style="list-style-type: none"> Bellgrove, Mica, and Worley granges Tribe: Jim Kackman, Casino (contact unknown) City of Worley Primeland Fire districts Mica-Kidd Timber Protection Union Pacific Railroad Bike groups Seeds Inc. 	
7.	<p>Thinking about earlier efforts to involve this community, (public meetings, mailings, gathering comments) – what can we learn from this? Is there anything we can do to improve the process?</p> <ul style="list-style-type: none"> The Mica, Bellgrove, and Worley Granges and Casino are good places to advertise. Golf course shuts down in fall and has facilities to host meetings 	
8.	<p>Who else should we talk to?</p> <ul style="list-style-type: none"> Bike groups Union Pacific City of Worley Ag businesses who provide hauling for harvest 	

Worley Highway District Transportation Plan

9. Is there anything else you want to tell us?

- Should discuss/consider weight limits and all-weather routes within the transportation plan
- Make sure to align growth and projections with KMPO plan; they can provide 2040 projections

Interviewer's comments

None.

FOLLOW-UP NEEDED

Discuss with District their opinion of other groups to speak with listed above.

Worley Highway District Transportation Plan

Stakeholder Interview		PRE-INTERVIEW INFORMATION
Name of Stakeholder	Jill Hill	
Position/organization	Director of School Transportation, Coeur d'Alene School District	
Contact details (WORK)	Phone: (208)667-3451	Fax:
	E-mail: jhill@cdaschools.com	
Name of Interviewer(s)	Riannon Zender and Angie Comstock	
Date	7/7/16	
PROJECT/ISSUE-RELATED QUESTIONS		
1.	What is your connection or history to the Worley Highway District? (ex: Commissioner, Agency, business owner, resident, etc.)	
	<ul style="list-style-type: none"> Director of CDA school transportation- coordinates route within WHD. 	
2.	Thinking about how you get to [work / church / school / _____], what are the ways Worley Highway District's transportation system works?	
	<ul style="list-style-type: none"> Does not live/ work within WHD, does not have much experience traveling within the system 	
3.	How could the transportation system be changed?	
	<ul style="list-style-type: none"> No issues with WHD 	
4.	What are the three most important transportation issues that need to be addressed by this plan?	
	<ul style="list-style-type: none"> Speeding near bus pick-up/drop-offs (Hamker Rd) Snow 	
5.	What are additional features that J-U-B or Worley Highway District should address in the transportation plan (e.g. parks, trails, etc.)?	
	<ul style="list-style-type: none"> None 	
6.	Who are the opinion leaders or active groups in the community?	
	<ul style="list-style-type: none"> District Commissioners 	
7.	Thinking about earlier efforts to involve this community, (public meetings, mailings, gathering comments) – what can we learn from this? Is there anything we can do to improve the process?	
	<ul style="list-style-type: none"> No input 	
8.	Who else should we talk to?	
	<ul style="list-style-type: none"> No input; agreed with what others had communicated in interviews 	
9.	Is there anything else you want to tell us?	
	<ul style="list-style-type: none"> WHD helpful and easy to work with- will answer the phone at 4am to discuss road conditions and coordination of school closures There are several school children that live within WHD in "non-transportation zones". 	
	From Bill Cecil (retired bus driver, contacted via phone):	
	<ul style="list-style-type: none"> WHD does excellent job of plowing and sanding roads early in the morning before bus service begins WHD does good job sweeping the shoulders US-95 is not as well-maintained during snow events as WHD 	
	Interviewer's comments	
	None	
FOLLOW-UP NEEDED		
None.		

Worley Highway District Transportation Plan

Stakeholder Interview		PRE-INTERVIEW INFORMATION
Name of Stakeholder	Jim Kackman	
Position/organization	Director/Coeur d'Alene Tribal Public Works Department	
Contact details (WORK)	Phone: (208)686-2066	Fax: (208)686-7219
	E-mail: jkackman@cdatribe-nsn.gov	
Name of Interviewer(s)	Riannon Zender and Drew Baden	
Date	7/6/2016	
PROJECT/ISSUE-RELATED QUESTIONS		
1.	What is your connection or history to the Worley Highway District? (ex: Commissioner, Agency, business owner, resident, etc.)	
	<ul style="list-style-type: none"> Tribal land lies within WHD 	
2.	Thinking about how you get to [work / church / school / _____], what are the ways Worley Highway District's transportation system works?	
	<ul style="list-style-type: none"> Does not access WHD roads very often, but feels they do a good job with maintenance, snow removal, and providing safe access. Does a good job partnering with area districts for chip seal projects (however, does not partner with Tribe) 	
3.	How could the transportation system be changed?	
	<ul style="list-style-type: none"> No input 	
4.	What are the three most important transportation issues that need to be addressed by this plan?	
	<ul style="list-style-type: none"> Design standards for use by new development (Tribe planning large development within WHD boundaries) 	
5.	What are additional features that J-U-B or Worley Highway District should address in the transportation plan (e.g. parks, trails, etc.)?	
	<ul style="list-style-type: none"> Cave Bay railroad overpass has low clearance and narrow width – main concern is farmers Public transit- currently collaboration between KMPO, County, Tribe. Future may involve formation of Regional Public Transit Authority (RPTA) 	
6.	Who are the opinion leaders or active groups in the community?	
	<ul style="list-style-type: none"> Jim Mangan & Kevin Howard 	
7.	Thinking about earlier efforts to involve this community, (public meetings, mailings, gathering comments) – what can we learn from this? Is there anything we can do to improve the process?	
	<ul style="list-style-type: none"> No input 	
8.	Who else should we talk to?	
	<ul style="list-style-type: none"> No input 	
9.	Is there anything else you want to tell us?	
	<ul style="list-style-type: none"> Overall satisfied with maintenance and operations Tribe is able to use funds for joint projects Access/ROW issues exist between Tribe and WHD due to disagreement over property values. Tribe would like several pieces of property that are currently possessed by WHD, with a maintenance agreement with WHD Feels the District does a good job with their fiduciary responsibilities. There will likely be future tribal developments within the District boundaries and the Tribe will need the districts assistance; no mention of the location of this development was discussed. 	
Interviewer's comments		
<hr/>		
FOLLOW-UP NEEDED		
Should the District consider Jim as a potential TAC member		

Worley Highway District Transportation Plan

Stakeholder Interview		PRE-INTERVIEW INFORMATION
Name of Stakeholder	Mike Morris	
Position/organization	Maintenance Supervisor/City of Worley	
Contact details (WORK)	Phone: (208)686-1258	Fax: (208)686-1258
	E-mail: lmm6002000@yahoo.com	
Name of Interviewer(s)	Riannon Zender and Angie Comstock	
Date	7/27/16	
PROJECT/ISSUE-RELATED QUESTIONS		
1.	What is your connection or history to the Worley Highway District? (ex: Commissioner, Agency, business owner, resident, etc.)	
	<ul style="list-style-type: none"> • Long-time resident • 10 years at City of Worley • Occasionally works with WHD in conjunction with work at City of Worley 	
2.	Thinking about how you get to [work / church / school / _____], what are the ways Worley Highway District's transportation system works?	
	<ul style="list-style-type: none"> • No input 	
3.	How could the transportation system be changed?	
	<ul style="list-style-type: none"> • Snow plows on Conklin Rd leave snow in driveways making it difficult for residents to exit their properties. • WHD does pretty well on physical maintenance. 	
4.	What are the three most important transportation issues that need to be addressed by this plan?	
	<ul style="list-style-type: none"> • Use of roads, in particular by large trucks. • Population • Funding 	
5.	What are additional features that J-U-B or Worley Highway District should address in the transportation plan (e.g. parks, trails, etc.)?	
	<ul style="list-style-type: none"> • Gravel roads west of Worley need grading 	
6.	Who are the opinion leaders or active groups in the community?	
	<ul style="list-style-type: none"> • Tribe • Lake communities • City of Worley 	
7.	Thinking about earlier efforts to involve this community, (public meetings, mailings, gathering comments) – what can we learn from this? Is there anything we can do to improve the process?	
	<ul style="list-style-type: none"> • City can advertise 	
8.	Who else should we talk to?	
	<ul style="list-style-type: none"> • Cave Bay community • Lake community boards and HOA • Bordering highway districts 	
9.	Is there anything else you want to tell us?	
	<ul style="list-style-type: none"> • Feels that the commissioners are not as involved with or available to the southern portion of the District. 	
Interviewer's comments		
None		
FOLLOW-UP NEEDED		
None.		

Worley Highway District Transportation Plan

Stakeholder Interview		PRE-INTERVIEW INFORMATION
Name of Stakeholder	Terrel Anderson	
Position/organization	Manager Industry and Public Projects, Union Pacific Railroad	
Contact details (WORK)	Phone: (916) 789-5134	Fax: (402) 233-3066
	E-mail: taanders@up.com	
Name of Interviewer(s)	Angela Comstock	
Date	7/21/2016	
PROJECT/ISSUE-RELATED QUESTIONS		
1. What is your connection or history to the Worley Highway District? (ex: Commissioner, Agency, business owner, resident, etc.)		
<ul style="list-style-type: none"> • Manager for UP that includes the State of Idaho (and the District). 		
2. Thinking about how you get to [work / church / school / _____], what are the ways Worley Highway District's transportation system works?		
<ul style="list-style-type: none"> • No input 		
3. How could the transportation system be changed?		
<ul style="list-style-type: none"> • No input 		
4. What are the three most important transportation issues that need to be addressed by this plan?		
<ul style="list-style-type: none"> • No input 		
5. What are additional features that J-U-B or Worley Highway District should address in the transportation plan (e.g. parks, trails, etc.)?		
<ul style="list-style-type: none"> • No input 		
6. Who are the opinion leaders or active groups in the community?		
<ul style="list-style-type: none"> • No input 		
7. Thinking about earlier efforts to involve this community, (public meetings, mailings, gathering comments) – what can we learn from this? Is there anything we can do to improve the process?		
<ul style="list-style-type: none"> • No input 		
8. Who else should we talk to?		
<ul style="list-style-type: none"> • No input 		
9. Is there anything else you want to tell us?		
<ul style="list-style-type: none"> • All crossings in the District must meet MUTCD requirements • If the District identifies a crossing they wish to upgrade or close, they must submit information to and work with UP on signal design (for upgrades) or closures. UP will provide signal design, install signals and pay for signal maintenance, but the District must provide all other funds • UP operates only about 1 train per week in the area and has a low number of controlled crossings in the District; they always prefer closed crossings as opposed to controlled crossings. 		
Interviewer's comments		
<ul style="list-style-type: none"> • Terrel has only been the manager overseeing Idaho since December and has not dealt in the District specifically • Terrel would be the contact for any work in the District relating to crossings 		
FOLLOW-UP NEEDED		



Worley Highway District Transportation Plan TECHNICAL ADVISORY COMMITTEE

Meeting No. 1 Summary

August 31, 2016; 1:00-3:00pm

Attendees

Kevin Howard, Worley Highway District
John Pankratz, East Side Highway District
William Roberson, Idaho Transportation Department
Dan Counce, Local Highway Technical Assistance Council
Jay Hassell, J-U-B
Riannon Zender, J-U-B
Angela Comstock, J-U-B

Meeting Overview

J-U-B conducted a brief presentation and explained the overall planning process and public input received regarding the transportation plan.

The TAC workshop session generally included reviewing compiled data and GIS maps and discussing their accuracy, applicability, and impacts on the plan with suggestions for alterations and further inquiry.

Discussion Summary

Bridges

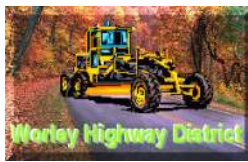
- Location with 27.4 rating should be reviewed again as it was recently improved
- McAvoy Bridge (with rating 25.2) is no longer regularly accessed by vehicles, but it can be used by emergency vehicles. Question was raised if it needs to stay on the inventory or possibly barricaded for regular traffic
- Williams Bridge is miss-located; a used replacement bridge has been purchased for this location, but there are challenges with implementing its use
- Mozart Creek overtops the Burton Rd metal culvert yearly, creating repetitive maintenance. Potential opportunity to engage the Tribe, as the overtopping creates sedimentation in Mozart Creek, which is a fish habitat
- Suggest bridges not included in NBI (less than 20-foot-length) be rated by WHD using field inspection notes (poor/good/excellent) and displayed on a separate map

Crashes

- Consider including a 'type of crash' map (single/multiple vehicle, wild animal, sideswipe, etc.) to identify potential trends

Functional Classification

- Elder Rd classification was called into question – needs review
- Bitter Road is a low volume and gravel, but classification is assigned
- District should consider re-evaluation/classification, as there may be more roads to classify and that would allow federally funded grants such as existing paved roads that are not classified



Worley Highway District Transportation Plan

TECHNICAL ADVISORY COMMITTEE

Meeting No. 1 Summary

August 31, 2016; 1:00-3:00pm

Rail Crossings

- There is no stop sign at east-bound Conkling crossing due to storage concerns on 95 however highway 95 now has a turn lane for vehicles. This crossing should be brought up to MUTCD standards including advance warning sign locations west bound (both stop and crossing)
- Stringham crossing includes wood planking and needs updated to concrete planking – potential federal/state funding opportunity

Signs

- Currently, WHD uses visual reflectivity evaluation
- Need to evaluate “unknown” sign locations/status
- Include good condition signs on a separate map and add summary table to maps
- Suggest use of reflectometer to rate signs (LHTAC has one that can be checked out)

Traffic Counts

- Currently counting locations on same day for three years in a row, then moving to a new location for 3 years – this causes skews in the 5 year average data; WHD does not stop counting over holiday weekends
- For very low traffic count areas (less than 10, as an example) WHD should consider data error or potentially stop counting as the data is unhelpful
- Truck counts could be valuable info to evaluate seasonal roadway limits

WHD Project Summary List

- WHD currently has CIP summary list of projects that are mixed between maintenance and actual improvement projects
- Consider making project prioritization clearer in the summary
- Include funding sources in the summary
- Categorize projects as maintenance or capital improvements in the summary

Other

- Strained relationship between WHD and Tribe Road Department could be improved; WHD has successfully worked with other Tribal departments with much success
- WHD is aware that the Tribe desires ownership of land including Amwaco and Rew Roads, however these roads provide WHD access to gravel and quarry pits; Tribe will not consider an easement to continue to allow access, as such, WHD is not willing to relinquish ownership



Worley Highway District Transportation Plan Open House No. 1 Summary

September, 16, 2016; 4:00-7:00pm

Summary

The Worley Highway District (WHD) hosted an Open House to gather public input for the first portion of the Transportation Plan process. The open house was advertised in several ways, including:

- A notice in the Coeur d'Alene Press on Wednesday and Thursday, September 7 and 8;
- A notice on the WHD website and Coeur d'Alene Tribe Facebook page;
- A flyer distributed to Technical Advisory Committee members and stakeholder interviewees;
- A flyer mailed to local Home Owners Associations; and
- Flyers distributed for posting at community locations such as the Worley Post Office, City Hall, Fighting Creek Gas Station, Worley and Mica Flats Granges, CHS Primeland grain elevator, Seeds Inc. and Coeur d'Alene Tribe Public Works Office

The open house was held at the Worley Highway District Board Room located at W. 12799 Ness Road, Worley, Idaho 83876 on September 15, 2016 from 4:00 PM to 7:00 PM. 22 people signed in at the event. Eight (8) display boards were used to show the public the project schedule, who pays for the projects and how, how to stay involved in the project, and maps of the District and roadways. Attendees were given the opportunity to discuss the planning process with the project team, to write input on the boards when appropriate, place stickers next to potential goals to illustrate preference for priority, and given comment forms to provide feedback. This open house generated 3 written comment forms and several comments written on the display boards.

The open house's purpose was to gather information from the public and determine where they see the need to improve the roads or safety within the District. The comments provided during this open house have been summarized below and will be used in the development of the Transportation Plan for the Worley Highway District.



Key messages communicated by the public who attended the open house included:

- Addressing gravel roadway maintenance on Cave Bay Road;
- Further evaluation of the Sunup Bay-Bennion Road intersection and stop priority



Worley Highway District Transportation Plan Open House No. 1 Summary

September, 16, 2016; 4:00-7:00pm

Public Input

The table below is a transcription of the written comment forms from the open house.

#	Name	Address, Phone, and/or Email	Comment
1	Tom Tauscher	W-11000 Sunup Bay Road Worley, Idaho 83876	<ul style="list-style-type: none"> The road crews have been always polite and informative. I think they need a raise in pay. The roads have been kept well plowed and maintained.
2	James Wright	22110 Candlelight Drive Worley, Idaho 83876 jsailboy@gmail.com	<ul style="list-style-type: none"> The final 0.8 mile of Cave Bay Road needs to be completed, leveled, paved and maintained year round. This section of roadway has always been listed as a county road.
3	Dave Kinkela	22777 S. High Drive Worley, Idaho 83876	<ul style="list-style-type: none"> My wife and I have lived in Cave Bay for 12 years. During that time we have seen roads improved all around Cave Bay. Most of these roads are gravel, but still receive maintenance including dust control. Cave Bay has a “public road” that receives no maintenance from the highway [District]. Our gravel road (Cave Bay Road) receives no maintenance work whatsoever. Road at the end of Rockford Bay receives maintenance by the highway district. Cave Bay Road is only 0.7 tenths of a mile. Couldn’t possibly be that Expensive to gravel this road and dust control. This could be done in conjunction with Bitter Road and Johnson Road. Give us the leftovers from these roads, please!

The following table is a transcription of the public input received on the ‘Potential Goals’ display boards as part of the interactive displays provided at the open house. Attendees were given stickers to place by goals they agreed with and were given an opportunity to write in goals as well. They were also given a chance to identify specific locations related to each goal.

Potential Goals	Number of Agreements	Specific Location or Issue
Improve Bike and Pedestrian Connectivity	1	<ul style="list-style-type: none"> No comment
Prepare for Future Development	9	<ul style="list-style-type: none"> Cave Bay Community Cave Bay Road
Improve Striping	1	<ul style="list-style-type: none"> Always paint white line on road edge – all of Bennion, please
Improve Gravel Road Maintenance	8	<ul style="list-style-type: none"> Cave Bay Community



Worley Highway District Transportation Plan Open House No. 1 Summary

September, 16, 2016; 4:00-7:00pm

Following the open house, to date, we received additional input via email and 1 in person meeting. The following table summarizes these additional comments.

#	Name	Address, Phone, and/or Email	Comment
4	John and Carole Wilhelm	22927 S. High Drive Worley, Idaho 83876 509-710-5715	<ul style="list-style-type: none"> • Thank you for having the open house on Thursday & giving us the opportunity to discuss our concerns about the portion of Cave Bay road in our community. • All we are asking is some maintenance because as you know, it is a county road. • And you have never done any maintenance on it. Due to lack of equipment, we are unable to maintain it properly. We have the ability to keep it plowed in the winter. • Reference attached Petition delivered by Mr. Wilhelm on September 29, 2016
5	Jerry and Louise Knobf	21231 S. Cave Bay Road Worley, Idaho 83876 425-495-7069	<ul style="list-style-type: none"> • As a Cave Bay seasonal resident for 40 years we have seen a lot of changes along the way. The gravel road from Worley into the Bay to the present paved road was an unbelievable improvement. Our kids called the old road the "road of a 100 hills" as it was very close to roller coaster quality, following every contour of the fields with a cloud of dust following us all the way. • We just became aware of the fact that Cave Bay road inside our Bay is a county road and it would be very much appreciated if we could have some maintenance performed with grading, gravel and dust control. • These are projects that are outside our ability to perform
6	Gary Morgan	7488 Adams Lane 509-521-6504	<ul style="list-style-type: none"> • We have a place out on Ben Point & know for a fact that there was a Stop Sign for the traffic coming up from Sunup Bay. • At some time in the early 1980's the intersection was changed to a Yield sign which has caused some problems when people don't obey the yield. • The through traffic needs to stay with Bennion Road and the Stop Sign for the Sunup Bay traffic should be restored
7	Stanley and Sherry Bye	8152 W Ben Pointe Road, Worley, Idaho 208-664-5689, ssbye1958@frontier.com	<ul style="list-style-type: none"> • Reference attached memorandum regarding Bennion and Sun Up Bay Road

Attachments: Event Sign-in and Written Comments received September 15, 2106
 Cave Bay Petition received via hand delivery September 29, 2016
 Bye Memorandum received via email October 5, 2016



TRANSPORTATION PLAN SIGN-IN SHEET

TRANSPORTATION PLAN PUBLIC OPEN HOUSE, LHTAC/MORLEY HIGHWAY DISTRICT
 September 15, 2016 / 4:00-7:00 PM / WHD Office

Worley Highway District monitors attendance to ensure equal opportunity. We appreciate your providing this information. This information will only be used to monitor attendance at public meetings and for affirmative action purposes, as specified by law (CFR 42.21.9).

Name (Please print or write clearly)	Title/Representing	Address (City, State, and ZIP)	Phone and E-mail	Please check the appropriate boxes (not required)							
FRID ROBERT	CAVE BAY COMMUNITY	2306 S. MAP ROAD ALB WORELEY 83876	509-999-8927 509.728.3314 msrv.com	<input checked="" type="checkbox"/> Male <input type="checkbox"/> Disabled	<input type="checkbox"/> Female	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White <input checked="" type="checkbox"/> Other	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White
Charlie Krogenbuhl	CAVE BAY Community	2138 S CAVE BAY RD WRELEY ID 83876	509 710 0590 ex.hydro @hotmail.com	<input type="checkbox"/> Male <input type="checkbox"/> Disabled	<input type="checkbox"/> Female	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input checked="" type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	
Jim and Frigga	CAVE BAY Community	22110 SANDAQUEL LN WORELEY ID 83876	509.728.3314 jsailboy@G-Worl.com	<input checked="" type="checkbox"/> Male <input type="checkbox"/> Disabled	<input type="checkbox"/> Female	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input checked="" type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	
John, Corale Wilhelme	CAVE BAY	22927 S. High Drive	509-710-5715	<input type="checkbox"/> Male <input type="checkbox"/> Disabled	<input checked="" type="checkbox"/> Female	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	
Jerry Wilhelme	CAVE BAY	22884 High Drive	509 981-8001	<input checked="" type="checkbox"/> Male <input type="checkbox"/> Disabled	<input type="checkbox"/> Female	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input checked="" type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	
Bonnie Vinga		8594 W Judywood Hayden Rd 83835	208 719.0905	<input type="checkbox"/> Male <input type="checkbox"/> Disabled	<input checked="" type="checkbox"/> Female	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input checked="" type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	
DAVE Kinkela	Cave Bay	22977 S. High Dr Woreley 83876	508-989-3829 davek@901.com	<input checked="" type="checkbox"/> Male <input type="checkbox"/> Disabled	<input type="checkbox"/> Female	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input checked="" type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	
Ricky Webster		11618 W Rockland Bay Rd	667-2879	<input checked="" type="checkbox"/> Male <input type="checkbox"/> Disabled	<input type="checkbox"/> Female	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input checked="" type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	
Bob MARYAN	CAVE BAY	22246 S CAVE BAY DR	208-631-0602	<input type="checkbox"/> Male <input type="checkbox"/> Disabled	<input type="checkbox"/> Female	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input checked="" type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	
JILL MARYAN	"	"	MARYAN@MACEGAL.COM	<input type="checkbox"/> Male <input type="checkbox"/> Disabled	<input type="checkbox"/> Female	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input checked="" type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	



TRANSPORTATION PLAN SIGN-IN SHEET

TRANSPORTATION PLAN PUBLIC OPEN HOUSE, LHTAC/MORLEY HIGHWAY DISTRICT
 September 15, 2016 / 4:00-7:00 PM / WHD Office

Worley Highway District monitors attendance to ensure equal opportunity. We appreciate your providing this information. This information will only be used to monitor attendance at public meetings and for affirmative action purposes, as specified by law (CFR 42.21.9).

Name (Please print or write clearly)	Title/Representing	Address (City, State, and ZIP)	Phone and E-mail	Please check the appropriate boxes (not required)		Please check the appropriate boxes (not required)					
Chare/Bron Richards		21980 S. Lakeview Dr. Worley	208-765-4104	<input checked="" type="checkbox"/> Male <input type="checkbox"/> Disabled	<input checked="" type="checkbox"/> Female	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input checked="" type="checkbox"/> White	<input type="checkbox"/> Hispanic <input type="checkbox"/> Other	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input type="checkbox"/> White	<input type="checkbox"/> Other	<input type="checkbox"/> Other	<input type="checkbox"/> Other
Dawn Jackie Mayer		10378 W. Bonanza Rd	Jackie29@gmail.com	<input checked="" type="checkbox"/> Male <input checked="" type="checkbox"/> Disabled	<input type="checkbox"/> Female	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input checked="" type="checkbox"/> White	<input type="checkbox"/> Hispanic <input type="checkbox"/> Other	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input checked="" type="checkbox"/> White	<input type="checkbox"/> Other	<input type="checkbox"/> Other	<input type="checkbox"/> Other
JEFF WARDIAN		21159 S. Carr Bay Rd. Worley	208-688-0345	<input type="checkbox"/> Male <input type="checkbox"/> Disabled	<input type="checkbox"/> Female	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input checked="" type="checkbox"/> White	<input type="checkbox"/> Hispanic <input type="checkbox"/> Other	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input checked="" type="checkbox"/> White	<input type="checkbox"/> Other	<input type="checkbox"/> Other	<input type="checkbox"/> Other
Stan & Sherry Beck		8152 W. Bonanza Rd Worley	208-765-6458	<input checked="" type="checkbox"/> Male <input type="checkbox"/> Disabled	<input checked="" type="checkbox"/> Female	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input checked="" type="checkbox"/> White	<input type="checkbox"/> Hispanic <input type="checkbox"/> Other	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input checked="" type="checkbox"/> White	<input type="checkbox"/> Other	<input type="checkbox"/> Other	<input type="checkbox"/> Other
Toni Lee Lee		W-1100 of Sun W. Worley Rd	7658819	<input checked="" type="checkbox"/> Male <input type="checkbox"/> Disabled	<input type="checkbox"/> Female	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input checked="" type="checkbox"/> White	<input type="checkbox"/> Hispanic <input type="checkbox"/> Other	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input checked="" type="checkbox"/> White	<input type="checkbox"/> Other	<input type="checkbox"/> Other	<input type="checkbox"/> Other
Denise Johnson		7366 W. Sander Rd	659-3570	<input type="checkbox"/> Male <input type="checkbox"/> Disabled	<input type="checkbox"/> Female	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input checked="" type="checkbox"/> White	<input type="checkbox"/> Hispanic <input type="checkbox"/> Other	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input checked="" type="checkbox"/> White	<input type="checkbox"/> Other	<input type="checkbox"/> Other	<input type="checkbox"/> Other
Meg Blankenship		20602 S. West Part	Id 83226	<input type="checkbox"/> Male <input type="checkbox"/> Disabled	<input type="checkbox"/> Female	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input checked="" type="checkbox"/> White	<input type="checkbox"/> Hispanic <input type="checkbox"/> Other	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input checked="" type="checkbox"/> White	<input type="checkbox"/> Other	<input type="checkbox"/> Other	<input type="checkbox"/> Other
Rick Blankenship		11 11	11 11	<input type="checkbox"/> Male <input type="checkbox"/> Disabled	<input type="checkbox"/> Female	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input checked="" type="checkbox"/> White	<input type="checkbox"/> Hispanic <input type="checkbox"/> Other	<input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Black <input checked="" type="checkbox"/> White	<input type="checkbox"/> Other	<input type="checkbox"/> Other	<input type="checkbox"/> Other



WORLEY HIGHWAY DISTRICT TRANSPORTATION PLAN

The following comments are submitted by (name, address, city/state, phone and /or email):

Tom Tauscher
W-11000 Sun Valley Blvd
Worley Id 83814

COMMENTS:
The road crews have been always
courteous been polite informative, & I
think they need a raise in pay.

The roads have been kept well plowed
& maintained

MAIL, FAX, OR EMAIL COMMENTS TO:

J-U-B ENGINEERS, Inc.
7825 N Meadowlark Way
Coeur d'Alene, ID 83815
FAX: 208-762-9797
EMAIL: acomstock@jub.com

PLEASE SUBMIT COMMENTS BEFORE

October 15, 2016



OTHER JUB COMPANIES



WORLEY HIGHWAY DISTRICT TRANSPORTATION PLAN

The following comments are submitted by (name, address, city/state, phone and /or email):

James Wright jsailboy@gmail.com
2210 Candylight Dr
Worley ID 83876

COMMENTS:

The final .8 mile of Cavebay Rd needs to be completed, leveled, paved and maintained year round. This section of roadway has always been listed as a county road

MAIL, FAX, OR EMAIL COMMENTS TO:

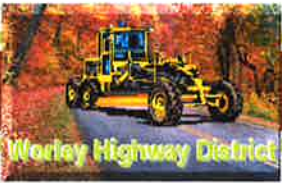
J-U-B ENGINEERS, Inc.
7825 N Meadowlark Way
Coeur d'Alene, ID 83815
FAX: 208-762-9797
EMAIL: acomstock@jub.com

PLEASE SUBMIT COMMENTS BEFORE

October 15, 2016



OTHER J-U-B COMPANIES



WORLEY HIGHWAY DISTRICT TRANSPORTATION PLAN

The following comments are submitted by (name, address, city/state, phone and /or email):

Dave Kinkela
22777 S High Dr
Worley, ID 83876

COMMENTS:

My wife & I have lived in Cave Bay for 12 yrs. During that time we have seen roads improved all around Cave Bay- Most of these roads are gravel, but still receive maintenance including dust control. Cave Bay has a "public road" that receives no maintenance from the highway. Our gravel road (Cave Bay Rd) receives no maintenance work whatsoever. Road at end of Rockford Bay receives maintenance by the highway district, Cave Bay Rd is only 7 tenths of a mile. Couldn't possibly be that expensive to gravel this road & dust control. This could be done in conjunction with Bitter Rd & Johnson Rd. Give us the leftovers from these 2 roads. PLEASE!
Thanks,
Dave Kinkela

MAIL, FAX, OR EMAIL COMMENTS TO:

J-U-B ENGINEERS, Inc.
7825 N Meadowlark Way
Coeur d'Alene, ID 83815
FAX: 208-762-9797
EMAIL: acomstock@jub.com

PLEASE SUBMIT COMMENTS BEFORE

October 15, 2016



J-U-B ENGINEERS, INC.

OTHER CONTRIBUTORS

Petition to Repair Cave Bay Road

Action petitioned for: This petition is to the Worley Highway Commissioners to repair Cave Bay Road. Repairs should include grading, graveling, and oiling the dirt portions of the road in Cave Bay and installation of "No Parking" signs on the right-of-way.

We, the undersigned, are concerned citizens who urge the Worley Highway Commissioners to act now.

Printed Name	Signature	Address	Phone Number	Date
Josiah F. Darlene		22884 High Drive ⁸³⁸⁷⁶ WORLEY	509-981-8001	9-20-16
Rube SANDY BREWER		21346 S CAVE BAY RD ^{WORLEY TN} 83978	504-710-0971	9-20-2016
LEN T BARB COEURU		20890 CAVE BAY RD	208-660-2373	9-23-16
Karen Boyle		20870 Cave Bay Rd.	208-735-9822	9-23-16
CHARLES ROBIN		23068 S MADISON AVE LP	509-499-8927	9-23-16
Carol K. Koberstein		21138 S. CAVE BAY RD	508-686-0301	9/23/16
Charles R. Koberstein		21138 S. CAVE BAY RD	509 710 0590	9/23/16
Jeff Warden		21159 S. Cave Bay Rd.	208-686-0545	9/23/16
Vince Martin		20655 Spare Bay Rd	509-997-2564	9/23/16
BJ BUELLS		4700 W Brigantine Dr.	509-991-3708	9/23/16
David Koberstein		6706 W Brigantine Dr.	509-863-4255	9/23/16
Shawn Mueller		20667 CAVE BAY RD	509 899 5112	9/24/16

Petition to Repair Cave Bay Road

This petition is to the Worley Highway Commissioners to repair Cave Bay Road. Repairs should include grading, graveling, and oiling the dirt portions of the road in Cave Bay and installation of "No Parking" signs on the right-of-way.









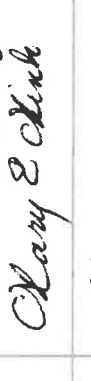
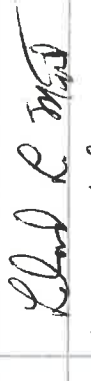

We, the undersigned, are concerned citizens who urge the Worley Highway Commissioners to act now.

Printed Name	Signature	Address	Phone Number	Date
Janet Mueller	<i>Janet Mueller</i>	Worley, ID 20667 Cave Bay Rd	509-899-5105	9/24/16
John Wilkerson	<i>John Wilkerson</i>	22927 S. HIGH DR	509-710-5715	9/24/16
LYNN Erickson	<i>Lynn Erickson</i>	Worley, ID 23338 Cave Bay Rd.	406-794-9218	9/24/16
Jean Erickson	<i>Jean Erickson</i>	" "	406-390-4220	9/24/16
PAT GERARD	<i>Pat Gerard</i>	20890 CAVEL BAY RD	208-660-1940	9/24/16
Fritz Renschman	<i>Fritz Renschman</i>	22602 S. Madrone Ln	208-659-0203	9/24/16
REBECCA PENNINGTON	<i>Rebecca Pennington</i>	22602 S. MADRONE LN	208-659-0949	9/24/16
David Moore	<i>David Moore</i>	22606 S. Madrone Ln.	208-686-8357	9/24/16
JEFF Hill	<i>Jeff Hill</i>	6045 W. Cliff Ct	208 686-9803	9/24/16
LILL MARGARET	<i>Lill Margaret</i>	22246 S. CANDLELIGHT	208-691-0602	9/24/16
ROBERT MARGARET	<i>Robert Margaret</i>	22246 S. CANDLELIGHT	208-691-0602	9/24/16
GREG MAYOR	<i>Greg Mayor</i>	22847 Madrone Loop	509-397-4441	9/25/16

Petition to Repair Cave Bay Road

Action petitioned for: This petition is to the Worley Highway Commissioners to repair Cave Bay Road. Repairs should include grading, graveling, and oiling the dirt portions of the road in Cave Bay and installation of "No Parking" signs on the right-of-way.

We, the undersigned, are concerned citizens who urge the Worley Highway Commissioners to act now.

Printed Name	Signature	Address	Phone Number	Date
Kevin Schmidt		N.1923 Spearwood Spokane Valley, WA 99016	509-953-4417	9/25/16
Shela Schmidt		"	509-993-0887	9/25/16
Scott Hill		222705 Cambridge Dr	208-686-1885	9/25/16
Phil + Beth Meyer		22401 S Cambridge Dr	509-370-0662	9/25/16
↳	Beth Meyer	↳	↳	↳
Ron Moser		22430 S. CAREOL DRIVE	509-336-3080	9/25/2016
Mariette Moser		22930 S. Carroll Drive	509-338-2932	9/25/16
Cindy Drake		21478 S CAVE BAY DR	208-415-2663	9/25/16
Edward White		2755 West Clisscourt	208-686-7060	9/26/16
Mary Mink Clary Clark		22088 S Cave Bay	208-771-0818	9-26-16
Ireland L. Mink		22088 S. Cave Bay Rd	208-699-4396	9/26/16
JAMES HATHAWAY		21873 S. CAVE BAY RD	509-950-1753	9-27-16

Petition to Repair Cave Bay Road

Action petitioned for: This petition is to the Worley Highway Commissioners to repair Cave Bay Road. Repairs should include grading, graveling, and oiling the dirt portions of the road in Cave Bay and installation of "No Parking" signs on the right-of-way.

We, the undersigned, are concerned citizens who urge the Worley Highway Commissioners to act now.

Printed Name	Signature	Address	Phone Number	Date
Corina Hathaway	Corina Hathaway	21873 Cave Bay Rd Worley, ID	509-954-9856	9-27-16
FRAN BURGESS	FRAN BURGESS	22754 MADRONA LOOP	208-686-0790	9-27-16
WAYNE HENDERSON	Wayne Henderson	22794 MADRONA LOOP	208-686-0144	9-27-16
Carla Soffle	Carla Soffle	22962 S. MADRONA LOOP	509-993-8546	9/27/16
SANDY HILLIARD	Sandy Hilliard	23160 S. MADRONA LOOP	253-221-9428	9-27-2016
LARRY EATON	Larry Eaton	Cave Bay Rd	509-948-9980	9/27/16
Michael Morris	Michael Morris	Cave Bay Rd.	208-755-5673	9/27/16
Yvette matt	Yvette matt	21573 S. Cave Bay Rd	208 987-0293	9/27/16
Dave Kinkela	Dave Kinkela	22777 S High Dr	253-229-4824	9/28/16
Pamela Kinkela	Pamela Kinkela	22777 S High Dr	253-279-9493	9/28/16
Brian Turpen	Brian Turpen	21903 S Cave Bay Rd	509 230 1599	9-28-16

MEMORANDUM

TO: Worley Highway District and J-U-D Engineers, Inc

FROM: Stanley and Sherry Bye, 8152 W Ben Pointe Road, Worley, Idaho, 208-664-5689,
ssbye1958@frontier.com

SUBJECT: Intersection revision at Bennion/Sun Up Bay Road

We are concerned about the proposed revision for the intersection at Bennion/Sun Up Bay Roads. We understand the plan is the change the road level of the intersection and to put a stop sign on Bennion Road making the Sun Up Bay Road the through road. It is surprising and upsetting that the highway district would plan such an extensive change in the road without discussing it with people who live here and use the road year around. Feedback from the residents who actually drive on the road winter and summer should be valuable to the engineers or consulting group who design the project.

When we purchased our property in the 1980s on Bennion Road, the road from highway 95 was called Bennion Road and there was a stop sign for the people coming up from Sun Up Bay. One winter, the stop sign was knocked down and after many calls from residents on Bennion Road, a "yield sign" was placed at Sun Up Bay. True, this is a dangerous intersection, especially with a yield sign, as the people coming out of Sun Up Bay pull out in front of oncoming traffic on Bennion Road. Also the Finnebott Road intersection is dangerous and that needs to be addressed.

The proposed stop sign on Bennion Road is unacceptable and a poor plan. If any of you have lived out here in the winter, you know that Bennion Road is very icy and it will be impossible for the drivers on Bennion Road to come to a stop at that point. We are permanent residents here and drove that road for many years on a daily basis in the winter and know it would be very difficult to stop above Sun Up Bay Road.

You should be aware of the population expansion on Bennion Road in the past year. Rock Creek Ridge at Sun Up Bay development has a potential for 36 homes. We understand 15 lots are sold and we know two homes are under construction and at least one is completed. Also, there are 72 properties on Ben Pointe Road (the end of Bennion Road) with permanent years around residents plus all the people who live on Bennion Road and Providence Road.

We urge you to carefully review your proposal and discuss it with the local residents. We wouldn't have known about your plan if we hadn't stopped by for the open house.

MEMORANDUM

Date: October 31, 2016
To: Worley Highway District
From: J-U-B ENGINEERS, Inc.
Subject: Cave Bay Road Public Input and Recommendations

During the first open house for Worley Highway District's (WHD) Master Plan efforts, residents in the Cave Bay Community along a 0.7 mile section of Cave Bay Road requested roadway maintenance from WHD. Specifically, the residents indicated that Cave Bay Road is a public road and privately maintained. WHD confirmed this claim and does not maintain the roadway by performing snow removal, adding gravel, accomplishing yearly gravel road grading or dust control, etc. This section of roadway was developed as part of Cave Bay Community's construction, prior to WHD forming, and the road right-of-way was deeded to Kootenai County upon completion. Subsequently, the County relinquished right-of-way jurisdiction to WHD when the District was formed in 1971. After reviewing site conditions with the District and discussing the site and ownership history, the public's concerns were categorized into 3 aspects as follows:

Snow Removal/Management

According to District staff, the primary reason the District does not perform snow removal along this roadway segment is due to equipment turn-around limitations within the existing right-of-way limits. According to the subdivision plat, the end of this segment of Cave Bay Road was to have been constructed with a 50-foot radius cul-de-sac that would have allowed equipment access to turn around, but the cul-de-sac was never constructed as platted. Additionally, the platted cul-de-sac is on a steep hillside. Subsequently, private development occurred along the road length and surrounding the cul-de-sac that now substantially encroaches into required set back areas and into WHD (public) right-of-way. At this time, constructing the cul-de-sac turn around has been deemed impractical due to right-of-way encroachment by private property and topography.

As an alternate to the cul-de-sac as a means to provide snow removal, it is suggested the District work with landowners near the intersection of Cave Bay and Madrona Loop to establish a turn around and snow storage easement on private property; based on our interactions with District staff, this area provides enough room to turn snow removal equipment around. As a condition of access, the District should request the power service line to the home on Lot 10, Block 2 be raised or relocated underground to safely provide dump truck height clearance in addition to acquiring the required easements from private property owners.

Roadway Grading/Gravelling

As with snow removal, the District currently lacks a feasible equipment turn-around to accomplish roadway grading and gravelling. By addressing this via the previously described easement, several additional challenges exist to accomplishing the requested maintenance. Specifically, portions of the existing Cave Bay Road segment appear to comprise of a recycled asphalt pavement (RAP) surfacing, as well as gravel surfacing. The existing RAP would not allow the District to accomplish typical maintenance via grading and gravelling and would require removal or mixing of the RAP prior to grading. Further, the District also has concerns relative to existing private utilities beneath the roadway and private infrastructure encroachments into the right-of-way, which could be damaged by grading and gravel operations. After the above easement is obtained, it is suggested the District establish a utility location map as well as a maintenance agreement with the residents prior to taking on additional maintenance beyond snow plowing. The agreement should indicate the District is not responsible for damage to private infrastructure not constructed to AHD standards and/or within the District's right-of-way during routine maintenance.

Capital Improvements

To re-establish Cave Bay Road fully within the current District (public) right-of-way and to bring the road up to current AHD standards would require investing in capital improvements to the area. In its current state, the roadway does not meet AHD standards for width, materials, drainage, setbacks to private developments, utility locations and possibly road structure depths, and geometry. The District should work with the current residents to establish conditions that should be met, prior to the District evaluating capital improvements. At a minimum these conditions should include, but not be limited to the following:

- Remove all private property encroaching into the District right-of-way boundary, including fences, gates, posts and structures; and
- Relocate private utilities outside of District right-of-way or to a location consistent with AHD Standards.

This Plan also acknowledges that due to the topographic nature of this road in mountainous terrain location on a hillside, improving Cave Bay Road to AHD standards may be impracticable without substantial grant funding and adverse impacts to the established community built adjacent to the road. However, once the above conditions are met, the District could seek funds to construct a smaller roadway segment to existing AHD standards and construct a turn-around within the District right-of-way at the end of Cave Bay Road.



Worley Highway District Transportation Plan

TECHNICAL ADVISORY COMMITTEE

Meeting No. 2 Summary

October 12, 2016; 1:00-3:00pm

Attendees

Kevin Howard, Worley Highway District
John Pankratz, East Side Highway District
William Roberson, Idaho Transportation Department
Dan Coonce, Local Highway Technical Assistance Council
Jay Hassell, J-U-B
Riannon Zender, J-U-B
Angela Comstock, J-U-B

Meeting Overview

J-U-B conducted a brief summary of TAC No. 1 results and public input received regarding the transportation plan via Open House No. 1.

The TAC workshop session generally included reviewing the distributed Draft Plan major sections with discussion and suggestions for alterations and further inquiry. Specifically, the group reviewed WHD's current CIP list and brainstormed suggestions on better defining and refining WHD's existing process to rank projects and evaluate funding.

Draft Report Discussion Summary

Public Involvement

- Public input summary focuses solely on Cave Bay Community; need to include summary of other input such as stakeholder and TAC groups.

Land Use and Growth Trends

- Is there any way to better define what the Tribe has planned for a new community? Consider monitoring utility installations to gauge development.
- What improvements have been made by WHD or required by developers for the ongoing residential development? Summarize WHD improvements and developer requirements set forth by WHD for these developments to show WHD is addressing increased use and growth.

Existing Transportation System

Roadway Network

- Clean up and adjust WHD CIP table for projects removed/accomplished by WHD.
- Identify Rockford Bay and Sun Up Bay projects in KMPO list as also included on WHD list.
- WHD should review KMPO projects not listed in their plan and provide input on why to include in the report – likely due to ADT.
- FHWA may have a limit on the percentage of roadways in a network that are functionally classified – Dan Coonce indicated he could send more information.
- Functional classification change requests can be made at any time.
- Including information from LHTAC's manual on bridge inspections for those under 20 feet in length.



Worley Highway District Transportation Plan

TECHNICAL ADVISORY COMMITTEE

Meeting No. 2 Summary

October 12, 2016; 1:00-3:00pm

- Recommend WHD make a decision on what to do with Watson and McAvoy bridges with low functional classifications; research why Watson rating is still low after improvements were made.

Safety Analysis

- Update crash data through 2015.
- Recommend reviewing crash data with WHD for LHSIP grant application and consider systemic solutions to similar safety situations.

Pavement Management

- First sentence is inaccurate and should reflect SH-58 and that WHD does not necessarily maintain all roadways or ROW; seek WHD map showing maintained roads, private roads, etc., in District boundary.
- Update text to better reflect the District does other types of maintenance such as patching, leveling course, seal coats, thin overlays and the like prior to chip seal applications.
- Dan C. to review and provide indication of whether what is presented is adequate to assist the District with formalizing their pavement management or if a summary of proposed roadway maintenance applications should be made by the plan

Capital Improvement Program

- Update text to better reflect project ranking conditions and goals.
- Consider an environmental/permits column, but not ranking, a simple yes or no.
- Consider a column for financial feasibility – as this decision step appears to trigger project re-prioritization and/or moving into another funding category.
- Identify projects that are truly maintenance related and divide those under the WHD funded and WHD constructed category.

Appendix C

**LHTAC Bridge Inspection Reference
Article**

Take Care of Your Bridges Now Before It's Too Late

Posted by LHTAC August 27, 2014 & filed under [T2 News](#), [Technical Articles](#).

Municipal Bridges – Maintenance Recommendations for Municipalities

By Daniel S. Crovo, P. E., District 5 Bridge Engineer

The lack of simple bridge maintenance in many Massachusetts municipalities is significantly affecting bridge structural capacity, personal safety, and overall condition. Under Federal law, MassDOT inspects, or receives inspection reports on all bridges on public highways in the state every two years. These reports must be reviewed by MassDOT within 90 days of the field inspection. The reports are then sent to each municipality.

In these biennial inspections, the MassDOT inspection crews typically find that municipal bridges and minor spans are not well maintained and very little attention is generally paid to them. If a major concern is evident, then MassDOT will immediately contact that municipality. In some cases, bridges have been closed or severe restrictions have been recommended to the local municipal officials.

It should be noted that MassDOT simply performs the inspection and makes recommendations on weight posting, repairs, or other limitations. In some cases, MassDOT may provide limited engineering services and other assistance through the District Bridge Engineers. However, the maintenance of minor spans on town ways and low-use bridges is the full responsibility of municipalities.

It is recommended that all towns budget for basic maintenance, deck repair, paint, and other minor repairs. Otherwise, it is likely that more expensive repairs or full replacement will face decision-makers in the future. Here is a checklist of basic maintenance which municipalities should perform on their bridge(s) and/or minor spans:

Annual Cleaning

Remove all sand and debris from the deck and around beams at least once a year (preferably spring). Use fire trucks to wash down and remove salt, because salt readily deteriorates concrete and corrodes steel. This activity provides you with the most benefit — at the least cost — and provides an opportunity to check the condition of the structure for needed repairs.

Erosion

Check under and around abutments to spot eroded areas (the best time to do this is when water is at its lowest in late summer). Add stone protection (rip rap) to stabilize eroded areas and provide bridge support. Remove excess winter sand from approaches to allow runoff to flow into the ditches instead of onto the bridge.

Wood Decks

Check planks for breaks, rotting, excessive wear and looseness. Replace damaged planks (“piecing in” is not recommended), re-nail planks to beams, add a waterproofing layer (tarpaper) between the beams and planks and treat with a preservative when dry.

Concrete Decks

Look for signs of leakage, cracks and rust stains from underneath. Don't pave over concrete decks (this accelerates concrete deterioration). Every two years coat exposed concrete decks with a sealer. Sealing should be done yearly for the first two years for new concrete.

Steel Beams

Remove all dirt and/or debris yearly and paint beams, as needed, to prevent corrosion. Complete painting is usually needed every 10-20 years with occasional touch-up painting in between. Touch-up painting mainly involves the beam ends and bearings.

Timber Beams

Check for deterioration. Test with a hammer and/or occasionally drill holes to sample the interior condition. Holes must be filled in after drilling to prevent further decay.

Abutments and Piers

Check for movement and stability. Look for cracks, movement of rocks, leaning or bulging, scour and undermining. Cut and remove all brush and trees growing close to the abutments to improve air flow and limit potential damage. Repair any damaged or missing stones or concrete. Remove debris that can potentially plug bridge openings from the upstream channel.

Guardrails

If none exist, install something sturdy. If wood or steel rails (or wire cables) are bent, broken, or in poor condition, replace or reinforce deteriorated parts.

Bridge Approaches

Trim all trees and bushes to create adequate sight distance, especially around signs. Fill all ruts and eroded areas. Check for a smooth transition from the road onto the bridge. Vehicles ramping and landing on a bridge deck can cause a force equal to double their weight.

Signs

Inspect, straighten and clean warning signs. If necessary, erect new signs (both at and in advance of the structure). Two conditions require additional signage — weight posting and overpass clearances of less than 14'6". All signs must meet MUTCD standards. Remove any brush that is obstructing warning signs.

Bearing Devices

Identify all fixed and moveable bearing devices. Clear any obstructions that would prevent a moveable support from functioning.

Cracks

Measure and keep a record of any cracks in — or movement of — the abutment main wall and wing walls.

Appendix D

Crash Analysis Methodology

Crash Analysis Methodology

The methodology recommended in the Transportation Investment Generating Economic Recovery (TIGER) Resource Guide was used to analyze the crash data within WHD. The value of crashes was monetized according to the maximum Abbreviated Injury Scale (AIS). In order to monetize the data, it was converted from the typical law enforcement scale referred to as KABCO (**K**, Kill (Fatal¹); **A**, Injury A²; **B**, Injury B³; **C**, Injury C⁴; **O**, Property Damage Only⁵) to the AIS scale. A comparison of the AIS scale to the KABCO scale is shown in **Table 1**.

Table 1 – KABCO and AIS Scale Comparison

KABCO Scale		AIS Scale	
O	No Injury (Property Damage Only)	0	No Injury
C	Possible Injury	1	Minor
B	Non-Incapacitating	2	Moderate
A	Incapacitating	3	Serious
K	Killed (Fatal)	4	Severe
U	Injured (Severity Unknown)	5	Critical
	N/A	6	Unsurvivable

The National Highway Traffic Safety Administration (NHTSA) developed the conversion matrix shown in **Table 2** that allows crashes reported in KABCO to be converted to the AIS scale. Each column of the conversion matrix represents a probability distribution of the different AIS-level injuries that are statistically associated with a corresponding KABCO-scale injury.

¹ *Fatal Injury (Death) – Any injury that results in the death of a person within 30 days of the crash in which the injury was sustained.*

² *Injury A - Serious Injury (Incapacitating Injury) – Any injury, other than a fatal injury, which prevents the injured person from walking, driving, or normally continuing the activities the person was capable of performing before the injury occurred.*

³ *Injury B - Visible Injury (Non-incapacitating, Evident Injury) – Any injury, other than a fatal injury or incapacitating injury, which is evident to observers at the scene of the crash in which the injury occurred.*

⁴ *Injury C - Possible Injury – Any injury reported or claimed which is not a fatal injury, incapacitating injury, or non-incapacitating, evident injury.*

⁵ *Property Damage Only – All reportable crashes that do not meet the criteria above.*

Table 2 – Statistical Conversion Factors for KABCO to AIS Conversion

AIS Scale	Crash Cost	Fatal (Killed)	A (Incapacitating)	B (Non-Incapacitating)	C (Possible Injury)	O (No Injury)
		Statistical Factors	Statistical Factors	Statistical Factors	Statistical Factors	Statistical Factors
AIS-0	\$ -	0.00000	0.03437	0.08347	0.23437	0.92534
AIS-1	\$ 28,200.00	0.00000	0.55449	0.76843	0.68946	0.07257
AIS-2	\$ 441,800.00	0.00000	0.20908	0.10898	0.06391	0.00198
AIS-3	\$ 987,000.00	0.00000	0.14437	0.03191	0.01071	0.00008
AIS-4	\$ 2,500,400.00	0.00000	0.03986	0.0062	0.00142	0
AIS-5	\$ 5,574,200.00	0.00000	0.01783	0.00101	0.00013	0.00003
Fatality	\$ 9,400,000.00	1.00000	0	0	0	0

In summary, if a crash was reported on the KABCO scale to be an Injury A (Incapacitating Injury), there is a 3.986 percent probability that the crash was severe (AIS-4), but there is a 55.449 percent probability that the crash resulted in a minor injury (AIS-1) and a 20.908 percent probability that the crash resulted in a moderate injury (AIS-2), and so on. The Guidance on Treatment of Economic Value of a Statistical Life in US Department of Transportation Analyses developed a table with the Value of a Statistical Life in relation to the AIS scale. A summary of the guidance is shown in **Table 3**.

Table 3 – Summary of Values of a Statistical Life

AIS Level	Severity	Fraction of Value of a Statistical Life	Unit Value (\$2015)
1	Minor	0.003	\$ 28,200
2	Moderate	0.047	\$ 441,800
3	Serious	0.105	\$ 987,000
4	Severe	0.266	\$ 2,500,400
5	Critical	0.593	\$ 5,574,200
6	Unsurvivable	1	\$ 9,400,000

Appendix E

Decision Tree

Structural Deterioration?

Recommended Treatment

Surface Wear Severity

Environmental Cracking Extent

Fatigue Cracking Extent

Rutting Severity

Recommended Treatment

	Recommended Treatment	Surface Wear Severity	Environmental Cracking Extent	No	Yes	Fatigue Cracking Extent	Rutting Severity	Recommended Treatment	
1	Crack Seal	Low					Low	Pulverize & 2.5" Overlay	6
2	Chip Seal	Moderate	Low			Low	Moderate	Pulverize & 3" Overlay	7
3	Crack Seal and 1.5" Overlay	High					High	5" RABS & 2" Overlay	8
3	Chip Seal	Low					Low	Pulverize & 3" Overlay	7
3	Crack Seal and 1.5" Overlay	Moderate	Moderate			Moderate	Moderate	5" RABS & 2" Overlay	8
4	Crack Seal and 2" Overlay	High					High	8" CRABS & 2" Overlay	9
3	Crack Seal and 1.5" Overlay	Low					Low	5" RABS & 2" Overlay	8
4	Crack Seal and 2" Overlay	Moderate	High			High	Moderate	8" CRABS & 2" Overlay	9
5	Crack Seal and 2.5" Overlay	High					High	Total Reconstruction	10

Structural Deterioration

If little or no structural deterioration exists, the associated treatments are directed at maintaining the functional performance and preserving the intended life of the original pavement. This is the optimum timing for applying preservation treatments. If structural deterioration (in the form of fatigue cracking or (rutting) does exist, then the associated treatments are directed more to improving the structural performance; i.e., retarding the rate of structural deterioration and extending the intended life of the original pavement.

Environmental Cracking:

This refers to the transverse, longitudinal, and block cracking that develops in an asphalt pavement as it ages and undergoes the thermal stresses associated with daily temperature cycles. Treatments for this type of distress are intended to prevent moisture intrusion and retard the rate of crack deterioration that occurs at the pavement surface. The extent levels are defined as follows:

Low - The amount of cracking is so slight that there is little question as to the feasibility of crack sealing.

Moderate - The cracking has achieved a level where sealing alone may not be cost effective.

High - The extent of cracking is so great that sealing alone would not be cost effective and other work is required.

Surface Wear:

This refers to the pavement deterioration that takes place at the asphalt pavement surface, primarily as a result of tire wear (polishing) and material degradation (raveling). Treatments for surface wear remove and/or cover up the worn surface. The severity levels are defined as follows:

Low - Surface texture and frictional resistance are minimally affected.

Moderate - Surface texture and frictional resistance are significantly affected. The potential for wet weather accidents is increased,

High - Surface texture and frictional resistance are heavily affected. The probability of wet weather accidents is near or above the unacceptable level.

Fatigue Cracking:

Wheel path cracking associated with the cumulative effects of wheel loads is a clear indication of structural deterioration and loss of load carrying capacity. Accordingly, rehabilitation strategies focus on removal and replacement of the HMA surface and base course. The extent levels are defined as follows:

Low - Less than one per cent of the wheel path area exhibits load-associated cracking, which may start as single longitudinal cracks.

Moderate - At least one and up to ten percent of the wheel path area exhibits cracking, likely in an interconnected pattern. Crack progression is increasing.

High - Ten percent or more of the wheel path exhibits load-associated cracking. Rapid progression to one hundred percent of the wheel path is likely.

Rutting:

This type of pavement deformation can take place in any of the pavement layers. If the HMA surface layer is of poor quality, rutting can be confined to the layer. If the base/subbase layer is inadequate or the pavement section is being overloaded, rutting can take place in the underlying layers and the subgrade soil. Pavement rehabilitation strategies are targeted at replacing the deteriorated/deformed layers. The rut severity levels are defined as follows:

Low - Rut depth is less than 1/4 inch. Hydroplaning and wet weather accidents are unlikely.

Moderate - Rut depth is in the range of 1/4 to 1/2 inch. Inadequate cross slope can lead to hydroplaning and wet weather accidents.

High - Rut depth is greater than 1/2 inch. Hydroplaning and wet weather accidents are significantly increased.



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