US Army Corps of Engineers ®
Walla Walla District
BUILDING STRONG®

# CITY OF VALE WATERLINE INSTALLATION
# SECTION 408 PERMISSION

**PM-EC-2016-0073**

## ENVIRONMENTAL ASSESSMENT

**August 2016**

TABLE OF CONTENTS

SECTION 1 - INTRODUCTION ..... 7

1.1 Introduction..... 7
1.2 Authority ..... 10
1.3 Description of the Proposed Action Area ..... 11
1.3 Purpose and Need ..... 12

SECTION 2 - ALTERNATIVES ..... 13

2.1 Introduction..... 13
2.2 Alternatives..... 13
2.2.1 Alternative 1. No Action (Current Facilities)..... 13
2.2.2 Alternative 2. Directionally Drill the Waterline Under the Levees Along The Malheur River (Proposed Action/Requester's Preferred Alternative) ..... 13
2.2.3 Alternative 3. Connect the Waterline to the Lytle Boulevard Bridge Over the Levees Along the Malheur River ..... 15
2.2.4 Trench the Waterline through the Levees along the Malheur River (Open Trench Method)..... 17

SECTION 3 - AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES..... 18

3.1 Introduction..... 18
3.2 Socioeconomics ..... 20
3.2.1 Affected Environment..... 20
3.2.2 Environmental Consequences ..... 20
3.2.2.1 Alternative 1. No Action..... 20
3.2.2.2 Alternative 2. Directionally Drill the Waterline under the Levees along the Malheur River (Proposed Action/ Requester's Preferred Alternative) ..... 21
3.2.2.3 Alternative 3. Connect the Waterline to the Lytle Boulevard Bridge over the Levees and Malheur River ..... 22
3.3 Hazardous/Toxic Materials ..... 23
3.3.1 Affected Environment..... 23
3.3.2 Environmental Consequences ..... 23
3.3.2.1 Alternative 1. No Action..... 23
3.3.2.2 Alternative 2. Directionally Drill the Waterline under the Levees along the Malheur River (Proposed Action/ Requester's Preferred Alternative)..... 23

3.3.2.3 Alternative 3. Connect the Waterline to the Lytle Boulevard Bridge over the Levees and Malheur River ..... 24
3.4 Water Quality ..... 24
3.4.1 Affected Environment ..... 24
3.4.2 Environmental Consequences ..... 25
3.4.2.1 Alternative 1. No Action ..... 25
3.4.2.2 Alternative 2. Directionally drill the Waterline under the Levees along the Malheur River (Proposed Action/ Requester's Preferred Alternative) ..... 25
3.4.2.3 Alternative 3. Connect the Waterline to the Lytle Boulevard Bridge over the Levees and Malheur River ..... 26
3.5 Aquatic Environment ..... 26
3.5.1 Affected Environment ..... 26
3.5.2 Environmental Consequences ..... 27
3.5.2.1 Alternative 1. No Action ..... 27
3.5.2.2 Alternative 2. Directionally Drill the Waterline Under the Levees Along the Malheur River (Proposed Action/ Requester's Preferred Alternative) ..... 27
3.5.2.3 Alternative 3. Grant Section 408 Permission to Connect the Waterline to the Lytle Boulevard Bridge Over the Levees and Malheur River ..... 27
3.6 Wetlands ..... 27
3.6.1 Affected Environment ..... 27
3.6.2 Environmental Consequences ..... 28
3.6.2.1 Alternative 1. No Action ..... 28
3.6.2.2 Alternative 2. Directionally Drill the Waterline Under the Levees Along the Malheur River (Proposed Action/ Requester's Preferred Alternative) ..... 28
3.6.2.3 Alternative 3. Connect the Waterline to the Lytle Boulevard Bridge Over the Levees and Malheur River ..... 28
3.7 Cultural Resources ..... 28
3.7.1 Affected Environment ..... 28
3.7.2 Environmental Consequences ..... 28
3.7.2.1 Alternative 1. No Action ..... 28
3.7.2.2 Alternative 2. Directionally Drill the Waterline under the Levees along the Malheur River (Proposed Action/ Requester's Preferred Alternative) ..... 29
3.7.2.3 Alternative 3. Grant 408 Permission to Connect the Waterline to the Lytle Boulevard Bridge Over the Levees and Malheur River ..... 29
3.8 Climate Change ..... 29
3.8.1 Affected Environment ..... 29
3.8.2 Environmental Consequences ..... 31

3.8.2.1 Alternative 1. No Action ..... 31
3.8.2.2 Alternative 2. Directionally Drill the Waterline under the Levees Along the Malheur River (Proposed Action/ Requester's Preferred Alternative) ..... 31
3.8.2.3 Alternative 3. Connect the Waterline to the Lytle Boulevard Bridge Over the Levees and Malheur River ..... 31
3.9 Cumulative Effects ..... 32
3.9.1 Introduction ..... 32
3.9.2 Resources Considered ..... 32
3.9.3 Geographic and Temporal Scope of Cumulative Effects Analysis . 33
3.9.4 Past, Present, and Reasonably Foreseeable Future Actions and Implications for Resources ..... 34
3.9.4.1 Past Actions ..... 34
3.9.4.2 Effects of Past Actions on Resources ..... 35
3.9.4.3 Present Actions ..... 35
3.9.4.4 Effects of Present Actions on Resources ..... 36
3.9.4.5 Reasonably Foreseeable Future Actions ..... 37
3.9.4.6 Effects of Reasonably Foreseeable Future Actions on Resources ..... 38
3.9.5 Summary of Cumulative Effects of Past, Present, and Reasonably Foreseeable Future Actions on Resources ..... 38

SECTION 4 - COMPLIANCE WITH APPLICABLE ENVIRONMENTAL LAWS AND REGULATIONS ..... 38

4.1 National Environmental Policy Act ..... 38
4.2 Endangered Species Act ..... 39
4.3 National Historic Preservation Act ..... 39
4.4 Native American Graves Protection and Repatriation Act ..... 40
4.5 Clean Water Act ..... 40
4.6 Migratory Bird Treaty Act ..... 40
4.7 Clean Air Act ..... 41
4.8 Watershed Protection and Floodplain Management Act ..... 41
4.9 Comprehensive Environmental Response, Compensation and Liability Act of 1980 and 2006 (CERCLA) ..... 42
4.10 Magnuson-Stevens Fishery Conservation and Management Act ..... 42
4.11 Noise Control Act ..... 42
4.12 Resource Conservation and Recovery Act of 1976 (RECRA) ..... 42
4.13 Rivers and Harbors Act of 1899, Section 10 ..... 42
4.14 Toxic Substances Control Act ..... 42
4.15 Executive Order 11988, Floodplain Management ..... 43
4.16 Executive Order 11990, Protection of Wetlands ..... 43

4.17 Executive Order 12898, Environmental Justice ..... 43
4.18 4.2.4 Executive Order 13122, Invasive Species ..... 43
4.19 CEQ Memorandum, August 19, 1980, Interagency Consultation to Avoid or Mitigate Adverse Effect on Rivers in the Nationwide Inventory ..... 43
4.20 Oregon Department of Transportation State Permit ..... 44

SECTION 5 - COORDINATION, CONSULTATION, AND PUBLIC INVOLVEMENT ..... 44

5.1 Agency Consultation ..... 44
5.1.1 Endangered Species Act ..... 44
5.2 Public Involvement ..... 44

SECTION 6 - REFERENCES ..... 45

Tables

Table 2-1. Screening Criteria for Alternative Actions. .....18
Table 3-1. Environmental Resources Not Evaluated Further .....19
Table 3-2. Recommended Fire Flows for Residential Areas .....20
Table 3-3. Geographic and Temporal Boundaries of Cumulative Effects Area .33

Figures

Figure 1-1. Location of the City Waterline and Service Area .....8
Figure 1-2. Aerial Photo of the Proposed Waterline Alignment and Leveed Area .....9
Figure 2-1. An Illustration of a Utility Line Being Installed by Directionally Drilling Under a waterbody. .....14
Figure 2-2. Profile Plans to Proposed Directionally Drill the Waterline Under the Malheur River .....15
Figure 2-3. Alternative alignment versus Proposed Alignment. .....21
Figure 3-1. Fire Flow Water Distribution Map for City of Vale .....22
Figure 3-2. Modeling the Changes of Water Circulation and Pressure Within the City Limits as a Result of Increasing the Waterline Pipe Size.

Photos

Photo 1-1. The Proposed Transmission Line Where It Crosses the Malheur River, Facing Northwest .....12
Photo 2-1. An Example of a Waterline Being Installed Using the Open Trench Method .....17

APPENDICES

Appendix A –Biological Evaluation for the City of Vale Waterline Installation

# SECTION 1 - INTRODUCTION

## 1.1 Introduction

The Walla Walla District Corps of Engineers (Corps) proposes to grant permission pursuant to 33 United States Code (USC) Section 408 (Section 408), and Engineer Circular EC 1165-2-216, for alterations to portions of the Corps-constructed levees in the City of Vale (City), Oregon (Figure 1-1). Because this proposed alteration would modify a structure constructed by the Corps, it would require Section 408 permission from the Corps.

The City proposes to replace an existing 8-inch water transmission line, known as the Rhinehart transmission line, with 14-inch water pipe to increase water capacity and pressure within the City limits. Approximately 1,300 feet of pipe would need to be replaced to connect the Rhinehart Reservoir to the City. A 371-foot section of this transmission line would be directionally drilled a minimum of 10 feet below the Malheur River to connect the new pipeline to the existing public water distribution system.

The Rhinehart transmission needs to be increased in size to increase pressure and enhance water flow and circulation capabilities. The Rhinehart transmission line is one of the main water distribution lines that supplies public water to the City. According to the distribution system evaluation completed as part of the 2015 Water System Master Plan, this line is significantly undersized, and its replacement with a larger, higher capacity line is a high priority for the City.

The Corps constructed the Malheur River Flood Risk Reduction Project (levees) in the 1960's to reduce the risk of flooding within the City and surrounding communities (Figure 1-2). The levees are located along the northern side of the Malheur River east of Saddlehorn Lane to Ash Street and along the southern side of the river from Lytle Boulevard to U.S. Hwy 26. The Corps subsequently turned over operation and maintenance of the levees to the City.

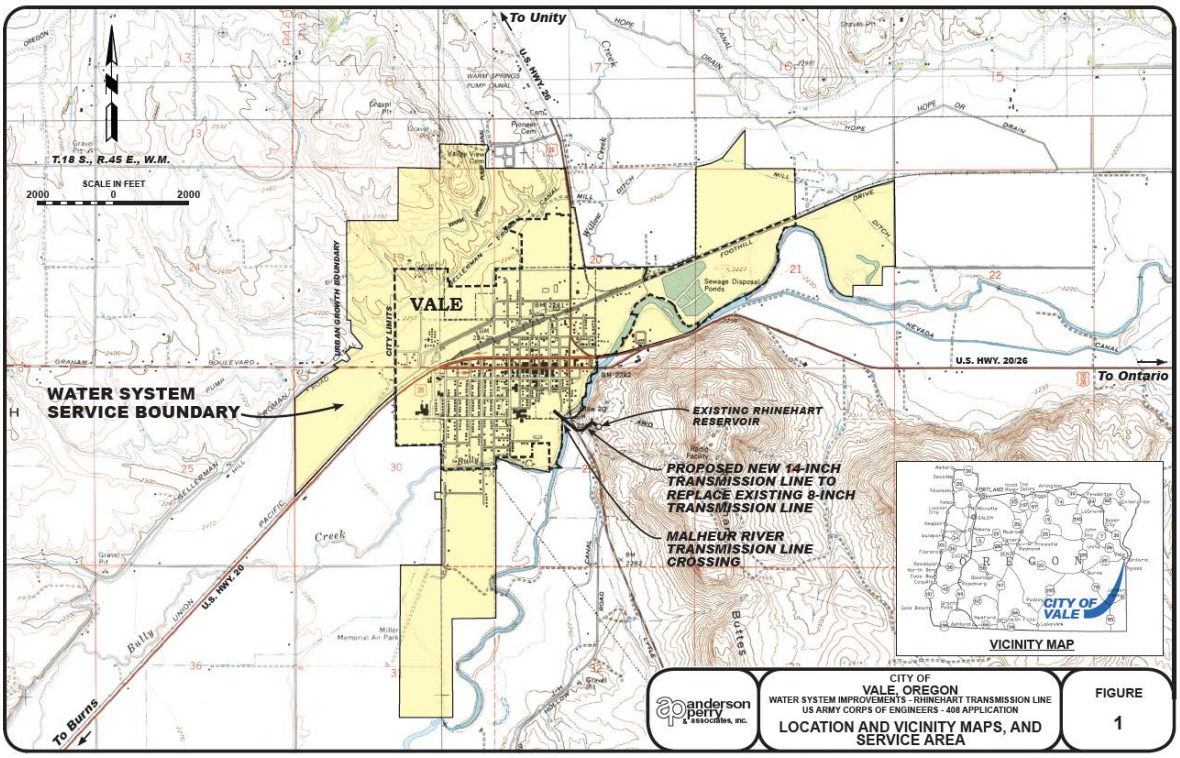


Figure 1-1. Location of the City Waterline and Service Area

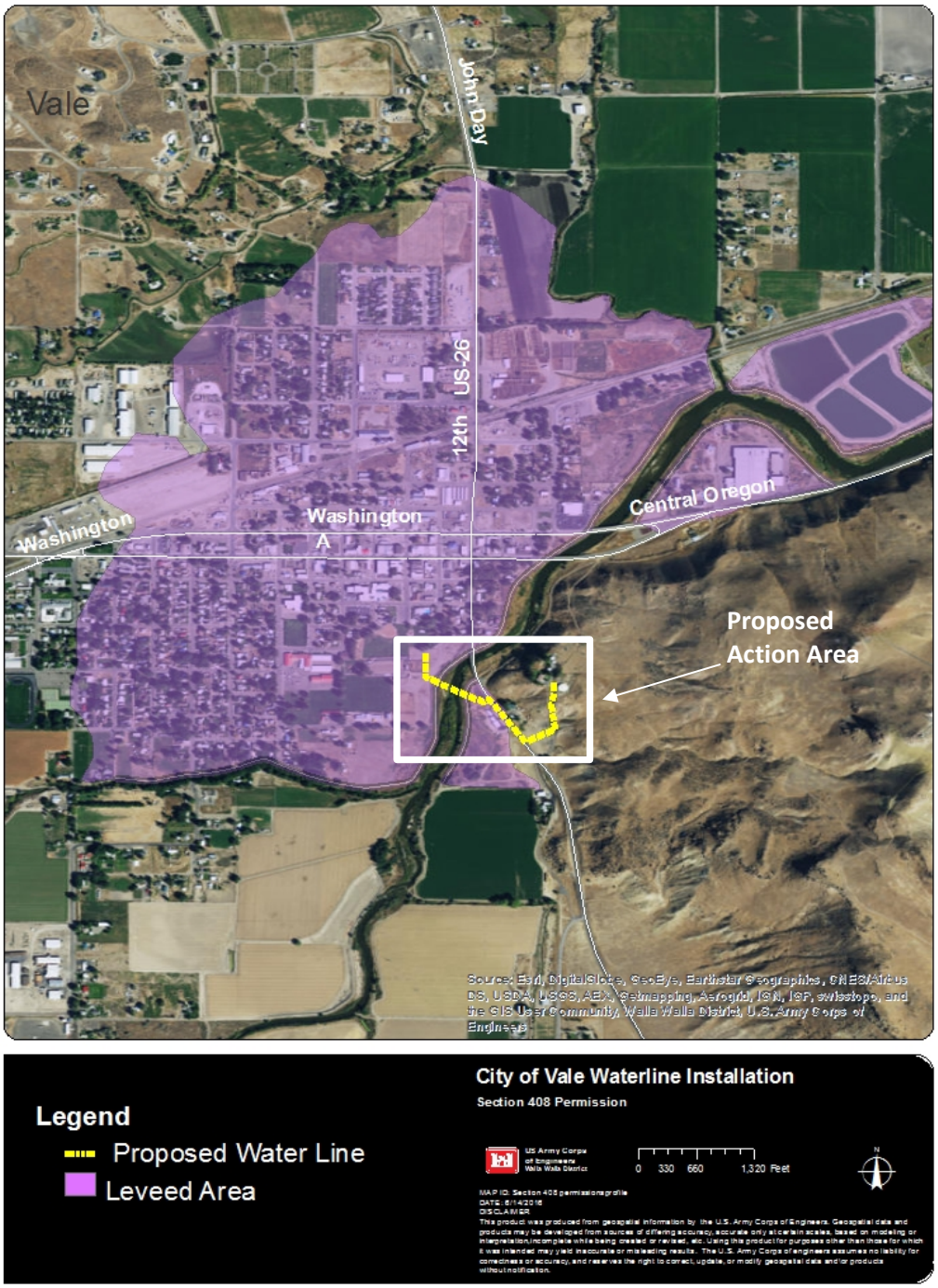


Figure 1-2. Aerial photo of the Proposed Waterline Alignment and Leveed Area

This Environmental Assessment (EA) addresses potential environmental effects associated with the granting a Section 408 permission for directionally drilling the City waterline under the Malheur River and under the City levee system, and any reasonable alternatives.

This EA was prepared in accordance with Engineer Regulation (ER) 200-2-2, *Procedures for Implementing NEPA,* and the Council on Environmental Quality (CEQ) *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (NEPA)*, Title 40 Code of Federal Regulations (CFR), Part 1500-1508. The objective of the EA is to evaluate potential environmental effects of the proposed Nursery Bridge Drop Structure Rehabilitation Project. If such effects are relatively minor, a Finding of No Significant Impact (FONSI) will be issued and the Corps will proceed with the federal action. If the environmental effects are determined to be significant, an Environmental Impact Statement (EIS) will be prepared before a decision is reached on whether to implement the proposed action. Applicable laws under which these effects will be evaluated include but are not limited to, NEPA, the Endangered Species Act, the Clean Water Act, the Clean Air Act, and the National Historic Preservation Act.

The National Environmental Policy Act is a full disclosure law, providing for public involvement in the NEPA process. All persons and organizations that have a potential interest in this proposed action – including the public, other federal agencies, state and local agencies, Native American tribes, and interested stakeholders – are encouraged to participate in the NEPA process.

## 1.2 Authority

Section 14 of the River and Harbors Act of 1899 and codified in 33 USC 408 (Section 408) gives the Corps the authority to grant permission for temporary or permanent alterations to a Corps-constructed harbor or river improvement (public work) constructed by the United States. The Secretary of the Army can grant permission for the alteration or occupation or use of a public work if the Secretary determines that the activity would not be injurious to the public interest and would not impair the usefulness of the project. A requester has the responsibility to acquire all other permissions or authorizations required by federal, state, and local laws or regulations, including any required permits from the Corps Regulatory Program (Section 10/404/103 permits). In addition, an approval under Section 408 does not grant any property rights or exclusive privileges. For Corps-constructed public works operated and maintained by a local non-federal sponsor, the requester must either be the non-federal sponsor or have the endorsement of the non-federal sponsor prior to a written request being submitted to the Corps.

The levee and channel works to protect the City and vicinity were authorized by the Flood Control Act of 1950. The project consists of channel enlargement and approximately two miles of levees from the confluence of Bully Creek and the Malheur River to from the mouth of Bully Creek at the Nevada Dam, a short distance

downstream from Vale. Construction began in 1960 and was completed the following year.

The City is the non-federal sponsor for the subject area as they operate and maintain the levee system within the subject reach of the project area. The City must receive approval for any alteration from the Corps.

### 1.3 Description of the Proposed Action Area

The Rhinehart Transmission Line project (Project) is located in Malheur County, Oregon. The legal description is Township 18 S, Range 45 E, Section 29, Willamette Meridian. The new transmission line is a perpendicular crossing of the levee and Malheur River, approximately 0.3 miles south of the Lytle Bridge in the City.

The transmission line will cross areas managed as part of the Corps Malheur River Flood Risk Reduction Project (levees). The area surrounding the project site is primarily agricultural with residential and industrial areas to the west.

The Malheur River is constrained at this location by the City levee system. The floodplain is virtually non-existent upstream and downstream from the action area for approximately two miles but is more functional upstream from the proposed crossing. Riparian habitat along the levee is marginal to absent and water quality within the Malheur River is designated as “impaired” (Photo 1-1).

For the purposes of this EA, the proposed action area is estimated to encompass approximately 70 acres around the transmission line. This area is based on any alternative alignment for a crossing of the Malheur River between the Rhinehart Reservoir and the existing distribution lines to the City. Residences and industrial surround the proposed action area. Lytle Road runs north/south directly to the north south of the action area. The actual work area is estimated to be approximately 1,300 linear feet by 20-wide utility easement (0.90 acres) located between the Rhinehart Reservoir and the City water distribution waterline.

Photo 1-1. The Proposed Water Line would cross the Malheur River at this location, (source: Anderson and Perry, 2016).

## 1.3 Purpose and Need

The Corps is proposing to grant a Section 408 permission, in accordance with Section 408 and EC 1165-2-216 (or its successor), for the alteration, occupation or use of Corps constructed levees to allow the City to install a water transmission line under the Malheur River. The purpose of the Project is to allow the City to replace the main water transmission line from the Rhinehart Reservoir to the City's distribution system. The larger size pipe is needed to improve water pressure, circulation, and water quality for the City's residents.

The Rhinehart Reservoir is located on Rhinehart Butte southeast of the City of and serves all of City through a gravity-fed distribution system. Water is pumped via the Airport Booster Pump Station back to the Rhinehart Reservoir, where it is stored. The distribution system has one pressure zone, with system pressures provided by the elevation of the existing Rhinehart Reservoir and or the Airport Booster Pump Station. The 8-inch transmission main line severely limits available fire flow capacity and creates

lower system pressures. The 14-inch line is proposed to replace the existing line to meet City's fire demand and minimum pressure criteria.

The Corps has reviewed all site-specific alteration plans to confirm compliance with Section 408 and EC 1165-2-216. To be considered for a Section 408 permission, any proposed site-specific alteration must comply with requirements and restrictions designed to protect the public interest and ensure the alteration would not harm the purpose of the levees.

# SECTION 2 - ALTERNATIVES

## 2.1 Introduction

The National Environmental Policy Act (NEPA) and 33 CFR Part 230 *Procedures for Implementing NEPA* require a reasonable range of alternatives be considered during the planning process. Three alternatives are evaluated in this EA; the No Action Alternative, directionally drilling the waterline, and attaching the waterline to the Lytle Bridge. The "no action" alternative does not satisfy the project's purpose and need, but NEPA requires analysis of the no action alternative to set the baseline from which to compare other alternatives. "No action" does not mean there would be no environmental effects from this alternative.

## 2.2 Alternatives

### 2.2.1 Alternative 1. No Action (Current Facilities)

Under the No Action alternative, the Corps would not grant the City a Section 408 permission to make any alterations to the City's levees. The City would therefore continue to utilize the existing 8-inch diameter transmission line that extends from the Rhinehart Reservoir under the Malheur River to the City. The City would continue to have water pressure issues. The increased water pressure is needed for fire hydrants, improved water circulation and improve public drinking water. This alternative would not meet the purpose and need, but is retained as required by NEPA to set the baseline from which to compare all other alternatives.

### 2.2.2 Alternative 2. Directionally Drill the Waterline Under the Levees Along The Malheur River (Proposed Action/Requester's Preferred Alternative)

Under the proposed action, the Corps would grant the City a Section 408 permission to directionally drill the new transmission line under the Corps Constructed levees and Malheur River. The action would be based on the preliminary plans, labeled *City of Vale Water System Improvements*, Rhinehart Transmission Line, dated 2016, submitted to the Corps on April 20, 2016.

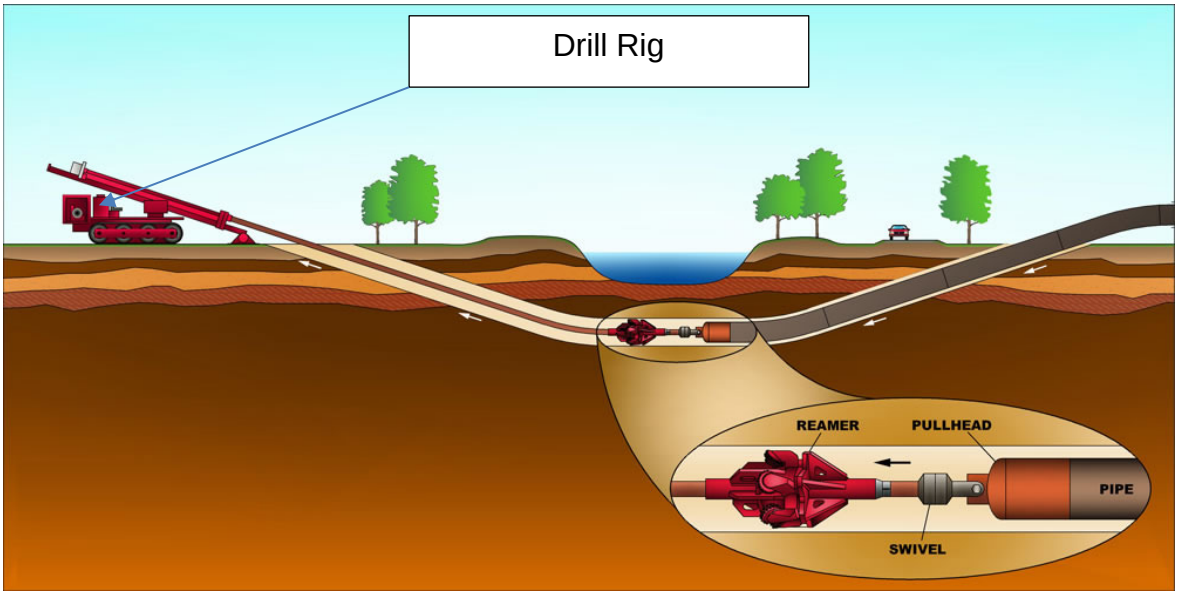

Figure 2-1. An illustration of a utility line being installed by directionally drilling under a waterbody (source: Construction review Online: http://contructionreviewonline.com).

The City would bore two pits, one on each side of the river, approximately 15 feet outside of the existing levees (Figure 2-1). The new transmission line would be drilled under the levees and the Malheur River for approximately 371 feet. To protect the existing river levees, the City would not excavate any closer to the levees than the limits defined on the drawings (Figure 2-2). The City would maintain a minimum depth of 10 feet below the bottom of the Malheur River. The waterline from the Rhinehart Reservoir to this levee and from the levee to the City waterlines would be installed using the traditional open trench method.

Directionally drilling the line would include the following sequence at the Malheur River crossing:

1) Abandoning existing 8-inch water line and filling the ends with concrete
2) Boring two pits, one on either side of the river
3) Boring the new transmission line under the river
4) Installation of 1-inch water service line to connect waterline to new water meter.
5) Installing new fire hydrant assembly
6) Connecting to new transmission line to existing distribution system

Total linear length of open trench would be approximately 1,300 linear feet

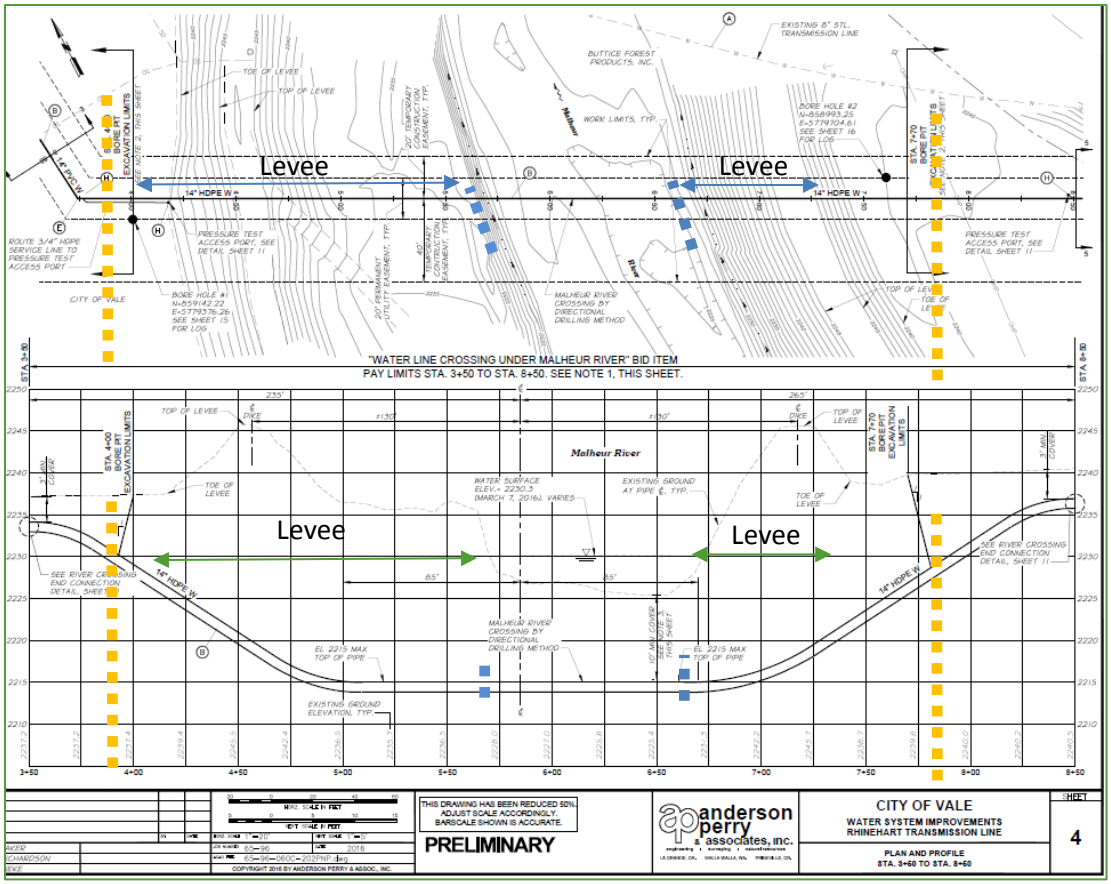


Figure 2-2. Profile plans to proposed directionally drill the waterline under the Malheur River

### 2.2.3 Alternative 3. Connect the Waterline to the Lytle Boulevard Bridge Over the Levees Along the Malheur River

Under this alternative, the City of Vale would install the new transmission main line to the Lytle Boulevard Bridge where it crosses the Malheur River. The new waterline would be trenched from the existing reservoir to the west towards the Malheur River and then trenched to the north, paralleling the river and the levees, where it would daylight and be attached to the Lytle Boulevard Bridge at the Malheur River crossing (Figure 2-3). The line would then be installed in an open trench along the western side of the bridge, on the landward side of the levee to the south to connect to the existing distribution system. The total length of proposed open trench from the Rhinehart Reservoir to the City of Vale would be approximately 2,500 linear feet.

Because this line would be partially exposed to adverse weather conditions and has a higher risk of being damaged by the public, the City does not consider this their preferred alternative; however, this alternative will be carried through the environmental analysis as a viable alternative for comparison purposes only.

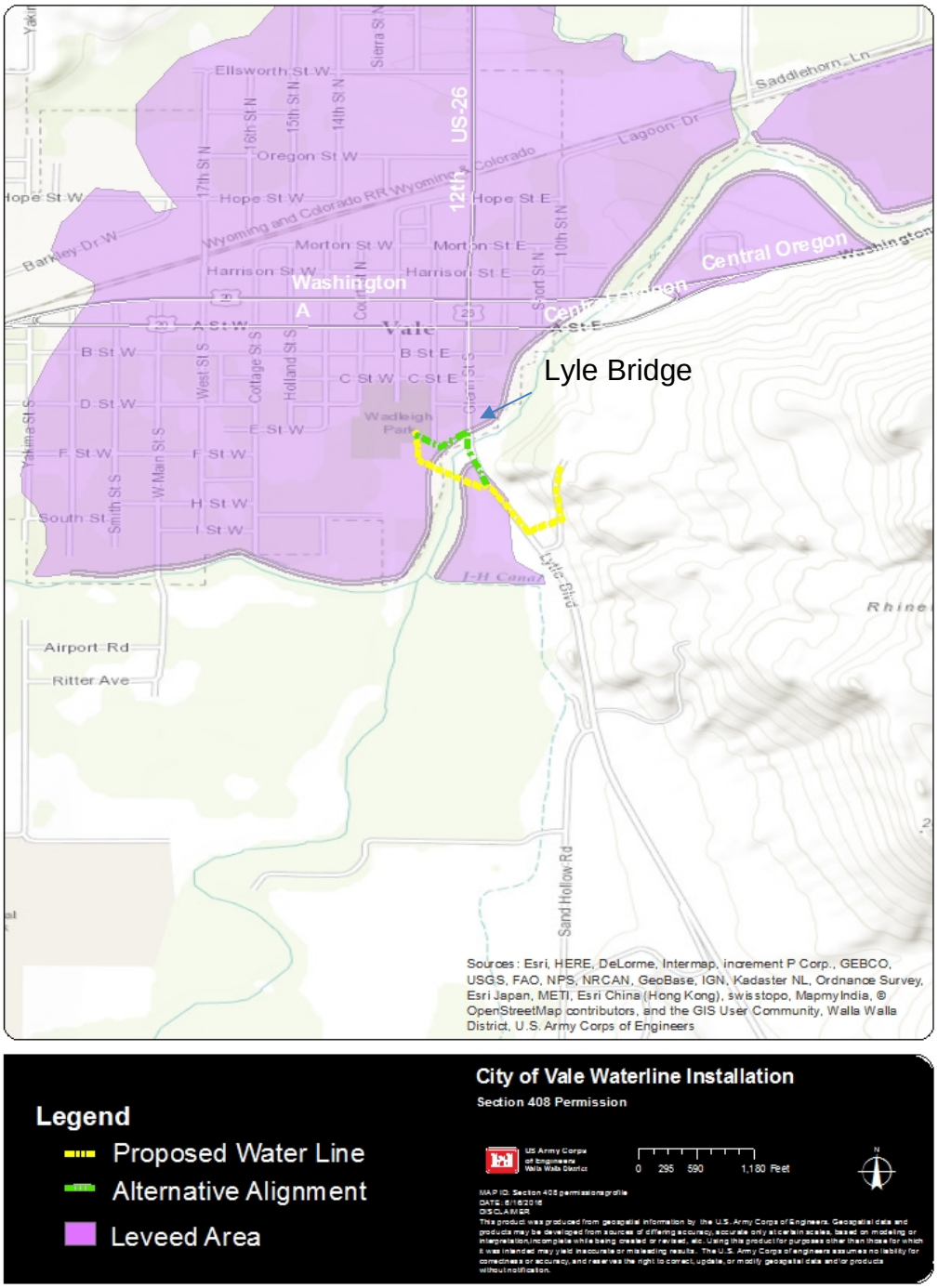


Figure 2-3. Alternative Alignment Versus Proposed Alignment.

### 2.2.4 Trench the Waterline through the Levees along the Malheur River (Open Trench Method)

Under this alternative, the City would install a transmission main line by digging an open trench from the existing reservoir, adjacent to the existing transmission line (Figure 2-4). The line would travel southwest down the hill from the reservoir. An open trench would be excavated through the river and levee system for placement of the new transmission main line and then up the riverbank to connect to the existing distribution system located on the west side of the river.

The City would excavate through the levees and the Malheur River, creating a significant level of environmental disturbance. To minimize water quality impacts, this alternative would require diversion of the Malheur River to a temporarily constructed channel.

Photo 2-1. An Example of a Waterline Being Installed Using the Open Trench Method (Source ODEQ, 2010).

## 2.3 Screening Alternatives

To be considered for a Section 408 permission, any proposed site-specific alteration must comply with requirements and restrictions designed to protect the public interest and ensure the alteration would not harm the purpose of the Corps constructed levees. Reasonable alternatives must be those that are feasible, accomplish the underlying purpose and need of the project/alteration and satisfy the requirements of Section 408.

In addition, the alternatives were screened to determine level of practicability which includes the alternative must be available and capable of being done after taken into consideration cost, existing technology and logistics in light of overall project purposes (Table 2-1).

The “No action” alternative would not meet the purpose and need, but is retained as required by NEPA to set the baseline from which to compare all other alternatives. Alternatives 2 and 3 are feasible, accomplish the City’s purpose and need and have been determined to protect the public interest and ensure the alteration would not harm the purpose of the levees. Alternatives 2 and 3 are, therefore, carried forward for further analysis.

Alternative 4 is not carried forward for further analysis, as it would likely pose a significant affect to the structural integrity of the levee and involve a high level of disturbance to the Malheur River.

Table 2-1. Screening Criteria for Alternative Actions.

| Alternative | Available Design and Engineering Methods | Reasonable Cost | Insignificant Level of Disturbance to Levees and Environment |
|---|---|---|---|
| Alternative 1 (No Action) | Yes | Yes | Yes |
| Alternative 2 (Preferred Alternative) | Yes | Yes | Yes |
| Alternative 3 (Viable Alternative) | Yes | Yes | Yes |
| Alternative 4 (Non-Viable Alternative) | Yes | No | No |

# SECTION 3 - AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

## 3.1 Introduction

This section describes the environmental resource areas the Corps determined are relevant to the alternatives being considered and evaluates the effect of the alternatives on those resources. The Corps considered, but did not identify, any potential effects to terrestrial environment, noise pollution, air quality, recreation, aesthetics, or socioeconomics threatened or endangered species, and therefore did not address them further in this section.

This section describes the existing affected environment (existing condition of resources) and evaluates potential environmental effects on those resources for each alternative. Although only relevant resource areas are specifically evaluated for

impacts, the Corps did consider all resources in the proposed action area and made a determination as to which could be eliminated from further review based on minimal or no effect (Table 3-1).

Table 3-1. Environmental Resources Not Evaluated Further.

| Environmental Component | Explanation |
|---|---|
| Aesthetics/Visual Quality | The City would install a utility line within an existing easement and either directionally drill under the Malheur River or attach the waterline to a bridge. The area between the levees and within the easement is already highly disturbed and only visible upon close inspection. |
| Air Quality | The City is in attainment for Oregon's ambient air quality standards. Air quality would be negligibly impacted by the action**.** |
| Environmental Justice | The action would have no negative impacts (e.g. economically) on any minority/ethnic group or social class. |
| Noise | The action is located at the edge of Vale in rural Malheur County and would occur in the confines of noise blocking levees or along roadside easements. The nearest homes are 100 yards from the site. |
| Threatened and Endangered Species | There are no known populations of species listed under the Endangered Species Act within the vicinity of the action area. |
| Terrestrial Environment | The proposed action will occur within the City utility easement for the waterline crossing. There are no terrestrial resources within the action area. |
| Recreation | No noteworthy recreation activities are pursued at the site. |

The following resource areas were evaluated: Water Quality, Aquatic Resources, Wetlands, Cultural Resources, Socioeconomics, and Cumulative Effects. The Corps determined it was not necessary to conduct additional evaluation of Aesthetics/Visual Quality, Air Quality, Environmental Justice, Noise, Threatened and Endangered Species, Terrestrial Environment, and Recreation as implementation of the proposed action would not affect these resources.

## 3.2 Socioeconomics

### 3.2.1 Affected Environment

The Flow rates for fire suppression in residential commercial and industrial areas within developed communities are usually determined from the size, density, and occupancy of buildings, type of construction materials, and desired fire insurance rating. Incorporated cities and some rural areas are given a fire suppression rating by Insurance Services Office, Inc. (ISO). The Rating is used by insurance companies to determine the cost for providing fire insurance to home and business owners. ISO's fire suppression rating schedule is used to review those features of available public fire protection that have significant influence on minimizing damage once a fire has begun. These features include the receiving and handling of fire alarms; the fire district's manpower, equipment and training; and the capability of the water system to provide the needed fire flows.

ISO also recommends fire flows for various conditions in both residential and commercial settings. Recommended fire flows for residential areas are set forth in the 2012 ISO Schedule as shown below (Table 3-2).

Table 3-2. Recommended Fire Flows for Residential Areas (Anderson and Perry, 2015)

| Distance Between Buildings | Required Fire Flows |
|---|---|
| Over 30 feet | 500 gpm |
| 21 to 30 feet | 750 gpm |
| 11 to 20 feet | 1,000 gpm |
| 10 feet or less | 1,500 gpm |

### 3.2.2 Environmental Consequences

#### 3.2.2.1 Alternative 1. No Action

Under the No Action, the waterline would not be replaced and the City would rely on the undersized pipe for their water distribution system.

The City's water system is in need of improvement provide adequate fire flows to several areas. The City's water system is limited in its capacity to meet a fire flow of 1,500 to 2,500 gallons per minute in all areas of the City (Figure 3-1). Several areas of the City have fire flows less than 500 gallons per minute. These areas are out of compliance with Drinking Water Services (DWS) regulations and Oregon Fire Code requirements for fire flows. All flows are less than the maximum recommended ISO fire flow of 3,500 gallons per minute for commercial areas and 4,000 gallons per minute for schools while maintaining 20 psi in the system.

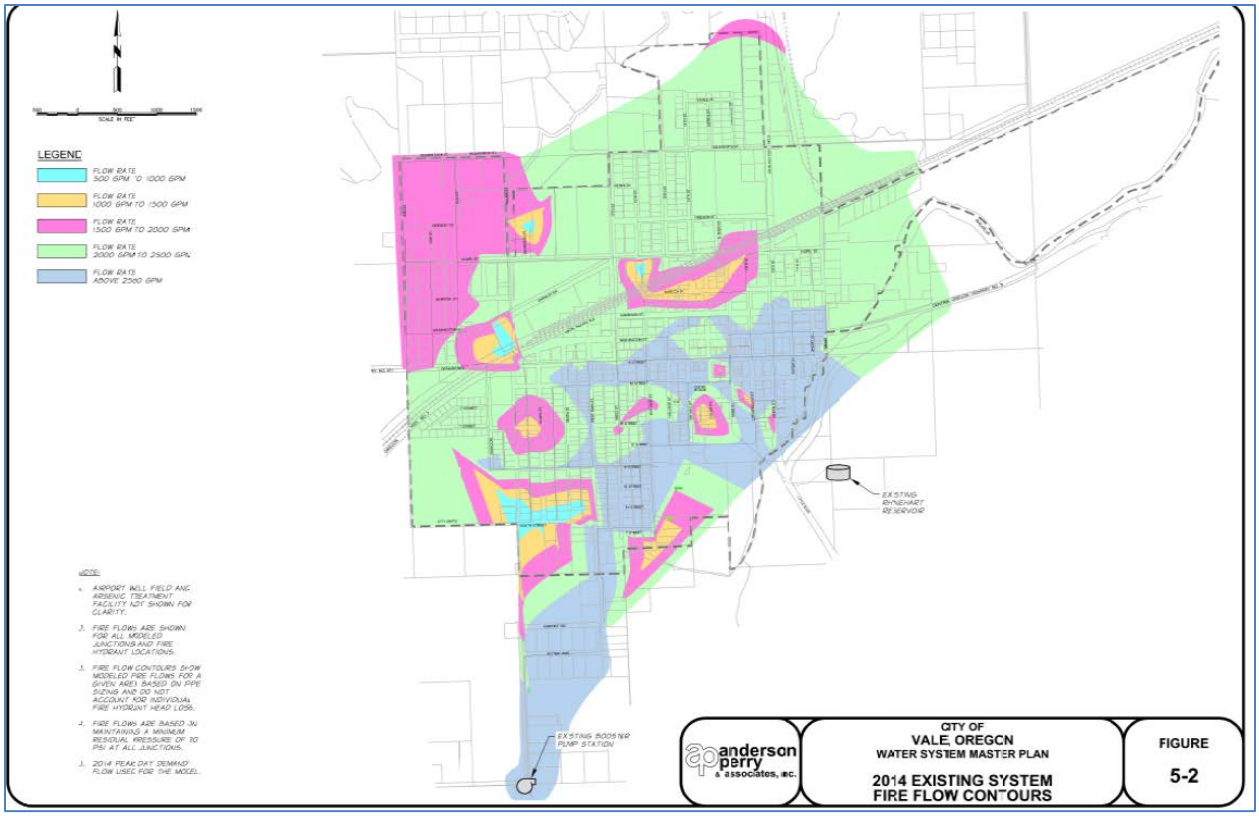

Figure 3-1. Existing Fire Flow Water Distribution Map for City of Vale.

The No Action Alternative would result in a negative effect to the City from the potential loss of home and business fire protection. Homes and businesses within those affected areas would be vacated due to inadequate fire protection and high cost of fire insurance.

#### 3.2.2.2 Alternative 2. Directionally Drill the Waterline under the Levees along the Malheur River (Proposed Action/Requester's Preferred Alternative)

Under Alternative 2, the existing 8-inch waterline would be replaced with a 14-inch waterline.

Fire flows would improve throughout the city limits as the new pipes would increase the water pressure and circulation throughout the City. The overall effect to social economics would be a net benefit, as most homes and businesses would have adequate fire protection and lower fire insurance costs.

Based on the City's modeling provided in the Water System Master Plan (2015), most fire flows would meet the maximum recommended ISO fire flow of 3,500 gallons per minute for commercial areas and 4,000 gallons per minute for schools while maintaining 20 psi in the system (Figure 3-2). Therefore, there would be a net benefit to replacement of the waterline with a larger 14-inch waterline.

Figure 3-2. Modeling the Changes of Water Circulation and Pressure Within the City Limits as a Result of Increasing Waterline Pipe Size (Anderson Perry, 2015).

Under Alternative 2, the City would receive a net benefit to the fire flow and water circulation within the water distribution system. No areas of the City would be negatively affected.

#### 3.2.2.3 Alternative 3. Connect the Waterline to the Lytle Boulevard Bridge over the Levees and Malheur River

Under Alternative 3, the existing 8-inch waterline would be replaced with a 14-inch waterline.

Fire flows would improve throughout the city limits as the new pipes would increase the water pressure and circulation throughout the City. The overall effect to social economics would be a net benefit, as most homes and businesses would have adequate fire protection and lower fire insurance costs.

The City's water system is limited in its capacity to meet a fire flow of 1,500 to 2,500 gallons per minute in all areas of the City. Most flows would meet the maximum recommended ISO fire flow of 3,500 gallons per minute for commercial areas and 4,000 gallons per minute for schools while maintaining 20 psi in the system.

Under Alternative 3, the City would receive a net benefit to the fire flow and water circulation within the water distribution system. No areas of the City would be negatively affected.

## 3.3 Hazardous/Toxic Materials

### 3.3.1 Affected Environment

According to the EPA's database "My Environment" (source: (https://www3.epa.gov/enviro /myenviro/) and NEPAassist (source: https://www.epa.gov/nepa/nepassist) there are no designated "Superfund" sites being managed under Environmental Protection Area Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), two sites were identified as hazardous waste generators managed under Real Estate Capital Resources Association (RECRA), two areas identified as "Brownfield Sites" under the management of the Assessment, Cleanup and Redevelopment Exchange System (ACRES) within the City of Vale. The two hazardous waste sites are small generators of fertilizer and pesticides (i.e. Soybean Farming, J.R. Simplot Company Incorporated). The Oregon Department of Environmental Quality (ODEQ) has investigated two Brownfield Sites (i.e. Goodman Oil Exxon and a former Vale Service Station) and their files are now closed. None of these sites are directly within the project area.

The ODEQ database (source http://www.deq.state.or.us/lq/ECSI/ecsi.htm), identified 27 Environmental Cleanup sites managed by the state within the immediate vicinity of the City. None of those sites are directly within the action area. The closest site, the Vale Disposal Site (Site ID 519) is approximately 1.3 miles from the proposed action. Therefore, there is no known areas of toxic material contamination directly known within the immediate vicinity of the action area.

### 3.3.2 Environmental Consequences

#### 3.3.2.1 Alternative 1. No Action

Under the No Action, there would be no land disturbance to the project area and no risk of encountering contaminated sediment/hazardous waste materials. Therefore, the no action would result in no effect determination.

#### 3.3.2.2 Alternative 2. Directionally Drill the Waterline under the Levees along the Malheur River (Proposed Action/Requester's Preferred Alternative)

This alternative would be expected to have less than significant effects to hazardous waste contamination by implementing these best management practices:

- The waterline alignment for this crossing provides the minimum land disturbance within an existing waterline easement. Using the existing utility alignment provides lower risk of disturbing contaminated soils.

- The City would implement a hazardous waste plan for any spill during construction.

- In the event that the City encounters visibly contaminated soils they would test the soils for contaminants and consult with ODEQ to determine a remediation plan.

#### 3.3.2.3 Alternative 3. Connect the Waterline to the Lytle Boulevard Bridge over the Levees and Malheur River

Attaching the waterline to the Lytle Boulevard Bridge would involve more open trench ground disturbance both to approach the Lytle Boulevard Bridge and to reconnect with the existing distribution system. Therefore, the larger level of ground disturbance and trenching within a new alignment increases the potential risk of disturbing contaminated soils that may be presently unknown within the alignment. However, implementing these Best Management Practices would result in less than significant effects from potential hazardous waste contamination:

- The City of Vale would implement a hazardous waste plan for any spill during construction.

- In the event that the City encounters visibly contaminated soils they would test the soils for contaminants and consult of ODEQ to determine a remediation plan.

## 3.4 Water Quality

### 3.4.1 Affected Environment

The Malheur River Basin has been placed on the current 303(d) list of water quality limited waterbodies (303(d) list) due to a variety of pollution-related problems including bacteria, chlorophyll-a, toxics (the pesticides DDT and Dieldrin), low dissolved oxygen, and temperature. Federal law requires individual states to manage waterbodies that appear on the 303(d) list to meet the state water quality standards.

The Bureau of Reclamation has eight water monitoring sites within the vicinity of the City located in Willow Creek, Bully Creek, and the lower Malheur River. These monitoring sites have detected Escherichia coli, ammonia, nitrates, and sulfates, most likely deriving from agricultural, urban, and residential land runoff. Large bacteria contributions to the Lower Malheur River occur in Vale where Bully Creek and Willow Creek discharge to the Malheur River, along with significant contributions from irrigation return drains in the area. High water temperatures are to be moderated primarily through improvements in riparian vegetation. Streamside vegetation buffers also absorb fertilizer and manure runoff, reduce flood erosion, filter sediment, provide habitat for birds and other wildlife, and may help protect streams from pesticide drift.

Oregon has implemented Total Maximum Daily Loads (TMDL's) to limit phosphorous and sediment discharge into the Malheur and Snake River, primarily through reduction in sediment in irrigation return flows. Cleaner return flows to the Malheur River also reduces bacteria levels.

### 3.4.2 Environmental Consequences

#### 3.4.2.1 Alternative 1. No Action

The No Action Alternative would have no effect on water quality in the Malheur River as no construction activities would be performed.

#### 3.4.2.2 Alternative 2. Directionally drill the Waterline under the Levees along the Malheur River (Proposed Action/Requester's Preferred Alternative)

Directionally drilling the waterline under the Malheur River, the City of Vale avoids direct contact with the Malheur River and its floodplain. Directionally drilling activities would start and stop on the landward side of the levee system thereby separating construction stormwater runoff from the river system. The drilling fluids is generally a mixture of bentonite clay and water. Drilling fluids are pumped into the receiving hole forcing drill cuttings back into the receiving hole forcing drill cuttings back to the surface where they are either allowed to settle out in a pit or removed mechanically in a recovery system. Drill cuttings are primarily earthen material removed from the drilling/boring process. Spent drilling fluids and drilling additives are products that may not be as being as the drill cuttings. Standard practice in the industry is to recycle or recover as much of the drilling fluids as possible at the location. However, once the project is complete disposal of these spent drilling fluids is also necessary. Any drill cuttings and spent drilling fluids generated from activity would be appropriately managed by implementing the following best management practices:

If burying the material on site:

1) The material would be fully contained within the right-of way of the waterline.
2) Spent drilling fluids and drill cuttings would be buried in either an excavated pit or mixed with top soil removed from the utility right-of-way during utility line construction/ installation purposes at a ratio of one to one.
3) The burial location would not be located in sensitive hydrogeological areas (i.e. shallow groundwater, shallow sand, gravel lenses or fractured bedrock).
4) The burial location would be located at least 100 feet from any permanent surface water.
5) The burial location would be located a minimum of 100 feet from any potable water supply well and 300 feet from any large supply public water supply well.
6) Upon completion, burial site would be seeded and stabilized.

If the material is applied to lands:

1) The material would not be applied to land during a precipitation event or when a significant rain event is forecast within 24 hours.
2) The material would not be applied in a fashion that would result in ponding on the surface of the ground.
3) The material would not be applied on property with a slope greater than fifteen percent.
4) The material would not be applied on frozen or snow covered ground.
5) The material would not be applied within 50 feet of any surface waters of the state (i.e. river, stream, ditch, swale, pond).
6) Land application area should not be located in sensitive hydrological areas such as shallow ground water, wetlands, shallow sand and gravel lenses, or fractured bedrock).
7) Material should not be applied within 100 feet of any private or public potable water source.

All construction activities would be conducted in uplands on the landward side of the levees, outside of the Malheur River and its floodplain. Appropriate best management practices would be implemented to prevent the release of sediment and other contaminants from entering surface waters during construction and subsequent operation of the proposed wastewater system improvements. Therefore, this alternative would result in less than significant effect to water quality.

#### 3.4.2.3 Alternative 3. Connect the Waterline to the Lytle Boulevard Bridge over the Levees and Malheur River

Attaching the waterline to the Lytle Boulevard Bridge would involve a larger area of ground disturbance both to approach the Lytle Boulevard Bridge and to reconnect with existing lines in the city of Vale. The larger level of ground disturbance increases the potential for sediment to enter the Malheur River, thereby increasing the concern of turbidity. Sediment control measures and stormwater management plan would need to be implemented along the alignment to prevent sediment from entering the Malheur River. Therefore, implementing Alternative 3 would result in less than significant effect to water quality.

## 3.5 Aquatic Environment

### 3.5.1 Affected Environment

There are no state or federal designated protected aquatic species within the immediate vicinity of the project area.

Appropriate best management practices would be implemented to prevent the release of sediment and other contaminants from entering surface wters during construction and subsequent operaiton of the proposed wastewater system improvements.

### 3.5.2 Environmental Consequences

#### 3.5.2.1 Alternative 1. No Action

Under the No Action Alternative, there would be no effect to the aquatic habitat. Aquatic species would continue may drift or migrate through the Malheur River to higher quality environments upstream and downstream of the channel.

#### 3.5.2.2 Alternative 2. Directionally Drill the Waterline Under the Levees Along the Malheur River (Proposed Action/Requester's Preferred Alternative)

Under the preferred alternative, there would be no significant effect to the water quality of the aquatic environment as the project drills from the landward side of the levee, outside of the Malheur River floodplain and ten feet below the riverbottom. All generated waste would be disposed of in accordance with applicable local, state, and Federal regulations. The City would implement a stormwater pollution prevention plan to implement erosion and sediment control measure to prevent turbidity from entering streams, rivers, and waterbodies.

#### 3.5.2.3 Alternative 3. Grant Section 408 Permission to Connect the Waterline to the Lytle Boulevard Bridge Over the Levees and Malheur River

Attaching the waterline to the Lytle Boulevard Bridge would have no significant effect to the aquatic environment. The waterline would be attached to the bridge, thereby exposing it to possible damage from the weather and public. There is the potential that the line may break due to exposure to cold, thereby discharging public drinking water into the Malheur River.

The discharge could have a minor temporary effect to the aquatic environment by increasing turbidity and changing water temperature, as well as possible discharge of chlorinated water which could temporarily disrupt the benthic micro-organism community.

## 3.6 Wetlands

### 3.6.1 Affected Environment

The National Wetland Inventory (NWI) Maps indicate that a palustrine emergent (PEM) and palustrine scrub-shrub (PSS) wetlands may be present along the Malheur River and within the action area.

The City of Vale has conducted a wetland delineation for the proposed Rhinehart Transmission line alignment, using the U.S. Army Corps of Engineers Wetland Delineation Manual and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). During that site visit, it was determined that there were no wetlands present within the proposed alignment.

### 3.6.2 Environmental Consequences

#### 3.6.2.1 Alternative 1. No Action

Under the No Action Alternative there would be no effect to wetlands, as there would be no activities conducted within the levee system. Wetlands would remain in place.

#### 3.6.2.2

Under the Proposed Action there would be no effect on wetlands. Areas within the NWI maps have been identified as uplands and any areas between the levees will be avoided by the proposed directionally drilling under the wetlands. The waterline would be directionally drilled under the levee and Malheur River to a minimum depth of 10 feet below the river bottom.

#### 3.6.2.3 Alternative 3. Connect the Waterline to the Lytle Boulevard Bridge Over the Levees and Malheur River

During the site visit, there were no wetlands identified within this alignment. The City would along the Lytle Boulevard alignment and attach the waterline to the Bridge.

## 3.7 Cultural Resources

### 3.7.1 Affected Environment

The City prepared a Phase I Cultural Resource Inventory Report, titled "*Cultural Resource Inventory for the City of Vale, Oregon Water System Improvements-Rhinehart Transmission Line, Malheur County, Oregon*", dated May 24, 2016, and subsequently submitted their findings and recommendations to the Oregon State Historic Preservation Office (OSHPO) for concurrence. In summary, the City of Vale has found "no historic properties affected" pursuant to 36 Code of Federal Regulations (CFR) 800 and has recommended no further work or protection be implemented. Concurrence of findings is forthcoming. The Corps will make their final decision regarding cultural resources upon OSHPO's letter of submittal of concurrence from OSHPO and report would report the decision in the FONSI.

### 3.7.2 Environmental Consequences

#### 3.7.2.1 Alternative 1. No Action

The No Action Alternative would have no effect to cultural resources as there would be no change to the project area.

#### 3.7.2.2 Alternative 2. Directionally Drill the Waterline under the Levees along the Malheur River (Proposed Action/Requester's Preferred Alternative)

Cultural resources within the Rhinehart transmission corridor have been determined as not meeting the NRHP criteria. The City has submitted their report to the Oregon State Historic Preservation Office (OSHPO) for concurrence of findings. This new alignment follows the previous water transmission easement. In the event that a cultural resource is found during construction activities, OSHPO would be contacted. Therefore, there would be no significant effect to historic resources.

#### 3.7.2.3 Alternative 3. Grant 408 Permission to Connect the Waterline to the Lytle Boulevard Bridge Over the Levees and Malheur River

The Cultural Resources investigation for the Rhinehart transmission corridor did not include the alternative alignment. This alignment would diverge from the Rhinehart transmission corridor to connect to the Lytle Boulevard Bridge which would be new areas of disturbance, increasing the likelihood of a discovery of new cultural resources.

Sixteen cultural surveys have been conducted within 2 miles of the action area, resulting in discovery of eight cultural resource sites or isolated debris piles. A survey was conducted within the Lytle Boulevard Bridge area (Leary 2012). This survey resulted in a discovery of numerous archaeological sites and historic resources. Therefore, the discovery or likelihood of discovering cultural resources within the alternative alignment is moderately high. However, the City would coordinate the findings with OSHPO. Therefore, this action would be no significant effect to historic resources.

## 3.8 Climate Change

### 3.8.1 Affected Environment

The climate is semi-arid with hot, dry summers and cold winters. Summer high temperatures average between 85 to 950 Fahrenheit (F) and can be higher than 1000 F. Winter high temperatures average in the 20s and can dip to -450 F. Precipitation averages 8 to 40 inches annually, depending on location and elevation. Most precipitation falls during the winter as snow, and this mountain snowpack is an important source of water for irrigation, fish, wildlife, livestock, domestic water supply and other uses.

The area is prone to sudden, short but intense storms. These storms can cause erosion to and high amounts of runoff. Despite the dams in the watershed, flooding occurs in the Vale and Ontario areas. Flooding also occurs higher up in the basin. For example the town of Drewsey experiences floods as often as every 10 years. The primary cause of flooding is rain-on-snow events, when rain falls on snow, exceeds soil water infiltration rates, and water quickly reaches streams and rivers. Soil water infiltration rates are extremely low when soil is wet and frozen, as occurred during the

rain-on snow event that caused the flood of 1993. Floodwaters can scour stream banks and damage riparian vegetation.

Climate change refers to long-term changes in temperature, precipitation, wind, and other elements of the earth's climate. However, evidence suggests that changes in climate are currently being accelerated by human-caused greenhouse gas (GHG) emissions, primarily carbon dioxide ($CO_2$) (USFS 2009). Many climate models predict a trend of warmer, dryer conditions in the inland Pacific Northwest and northern Rocky Mountains as a result of climate change. The Columbia River basin, which includes Malheur River, is predicted to experience a shift as to when and in what form precipitation occurs with resulting effects on stream flows.

Collaborative research and analysis by the agencies responsible for managing water resources in the Columbia River basin estimates a future shift in flow regimes to lower summer flows and higher high flows occurring earlier in the year than have historically occurred (Reclamation et al 2011). These studies predict that air temperatures are likely to increase by 2 to 5 degrees Fahrenheit by 2059. Predicted changes in annual precipitation are expected to change slightly; however, models predict that there are likely to be notable shifts in when precipitation occurs and what form it takes (e.g., more rain and less snow). Models indicate more winter precipitation would fall as rain than presently occurs, producing more runoff earlier in the winter and spring and less in the summer months. The River Management Joint Operating Committee's summary report (Reclamation et al 2011) notes that, because of the uncertainties associated with climate change analysis, the full extent of potential effects of climate change on the Columbia River system requires further analysis.

Potential long-term effects of climate change on the Columbia River basin that were identified include:

- Increased winter/early spring runoff and decreased summer runoff may result in irrigation water supply reductions, increased flood risk in winter/early spring, and decreased hydropower generation in summer.
- Warmer conditions may increase stress on fisheries and aquatic environments.
- Increased plant growth induced by increased precipitation as rain, combined with warmer, drier summers, may increase forest fire risk. (Reclamation 2011)

The *Third National Climate Change Assessment* (Mote, P.A. et. al, 2014) includes information on climate change in the Northwest. Key findings presented in that document include:

- Changes in timing of streamflow related to snowmelt would continue, with peak flows occurring earlier in the year.
- Hydrologic responses to climate change would depend on the dominant form of precipitation within a particular watershed. Watersheds with mixed precipitation are likely to see less variation from historic patterns of flow conditions than those dominated by snowmelt.

- Summer flows for snowmelt-driven watersheds are predicted to be substantially reduced when compared to historic levels. Modeling studies indicate that these conditions would "…with near 100 percent likelihood…" occur by 2050.

### 3.8.2 Environmental Consequences

#### 3.8.2.1 Alternative 1. No Action

The No Action Alternative would have no effect on climate change. Any GHG emissions from the ongoing operation of equipment during channel maintenance activities would be temporary and of low quantities, falling well short of the annual emissions thresholds in the Environmental Protection Agency's (EPA's) GHG reporting rule.

Malheur River is a snowmelt- and mixed precipitation-driven watershed and may experience a combination of predicted effects from climate change with respect to shifts in streamflow timing and reduced summer flows. In general, changes in the timing and magnitude of high- and low-flow periods could adversely affect the life cycles of salmonids downstream, including disruptions to overwintering juvenile fish and incubating eggs in streambeds (Bisson 2008).

Under the no action alternative, the City water pressure would be inadequate for fire suppression. The number of wildfires would be expected to increase in the future as the climate with the decline in annual rainfall and snow. In addition, it would be expected that there would be more demand on a public water supply during times of high outside temperatures to meet drinking and irrigation demands.

#### 3.8.2.2 Alternative 2. Directionally Drill the Waterline under the Levees Along the Malheur River (Proposed Action/Requester's Preferred Alternative)

The proposed action would have minimal effect on climate change. Any GHG emissions from the operation of construction equipment would be temporary and of low quantities, falling well short of the annual emissions thresholds in EPA's GHG reporting rule.

The effect of climate change would have a smaller effect on the proposed action as under the No Action Alternative. The City would have a larger transmission line which would improve the water demand for both fire suppression as well as enable the City to meet public water demands.

#### 3.8.2.3 Alternative 3. Connect the Waterline to the Lytle Boulevard Bridge Over the Levees and Malheur River

The proposed action would have minimal effect on climate change. Any GHG emissions from the operation of construction equipment would be temporary and of low quantities, falling well short of the annual emissions thresholds in EPA's GHG reporting rule.

The effect of climate change would have the same effect under the proposed action as under the Alternative 3.

## 3.9 Cumulative Effects

### 3.9.1 Introduction

The National Environmental Policy Act (NEPA) and the Council on Environmental Quality (CEQ) regulations implementing the Act require federal agencies to consider the cumulative effects of their actions. Cumulative effects are defined as effects "on the environment which result from incremental impact of an action when added to other past, present and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time" (40 CFR § 1508.7).

The primary goal of a cumulative effects analysis is to determine the magnitude and significance of the environmental consequences of the proposed action in the context of the cumulative effects of other past, present, and reasonably foreseeable future actions.

The Corps used the technical analysis conducted in this EA to identify and focus on cumulative effects that are "truly meaningful" in terms of local and regional importance. While the EA addresses the effects of alternatives on the range of resources representative of the human and natural environment, not all of those resources need to be included in the cumulative effects analysis – just those that are relevant to the decision to be made on the proposed action. The Corps has identified Water Quality and Aquatic Environment as the only two resources that is notable for its importance to the area and potential for cumulative effects.

### 3.9.2 Resources Considered

The Corps used the technical analysis conducted in this EA to identify and focus on cumulative effects that are "truly meaningful" in terms of local and regional importance. While the EA addresses the effects of alternatives on the range of resources representative of the human and natural environment, not all of those resources need to be included in the cumulative effects analysis – just those that are relevant to the decision to be made on the proposed action. The Corps has identified the following resources that are notable for their importance to the area and potential for cumulative effects. Those resources are:

Water Quality
Aquatic Environment

Resources are discussed in terms of their cumulative effect boundary (spatial and temporal), the historic condition and impacts to the resources, present condition and impacts to the resources, reasonably foreseeable future actions that may affect the

resources, and the effects to the resource by the various installation of rip rap on the gabion mattress when added to other past, present, and future actions.

This section evaluates the cumulative effects of actions that could potentially affect the same environmental resources as those discussed earlier in this EA. The scope of this analysis extends beyond the City of Vale Waterline Installation Project to other areas that sustain the resources of concern. A resource may be differentially impacted in both time and space. The implication of those impacts depends on the characteristics of the resource, the magnitude and scale of the project's impacts, and the environmental setting (EPA 1999).

### 3.9.3 Geographic and Temporal Scope of Cumulative Effects Analysis

Guidance for setting appropriate boundaries for a cumulative effect analysis is available from CEQ (1997) and EPA (1999). Generally, the scope of cumulative effects analysis should be broader than the scope of analysis used in assessing direct or indirect effects. "Geographic boundaries and time periods used in cumulative impact analysis should be based on all resources of concern and all of the actions that may contribute, along with the project effects, to cumulative impacts" (EPA 1999). The analysis should delineate appropriate geographic areas including natural ecological boundaries, whenever possible, and should evaluate the time period of the project's effects.

Discussed below are the past, present, and reasonability foreseeable future actions that were considered for the cumulative effects analysis, the effects of the actions on the resources assessed, and the summary of the cumulative effects of the alternatives. Table 1 summaries the geographic and temporal boundaries used in the cumulative effects analysis.

Table 3-3. Geographic and Temporal Boundaries of Cumulative Effects Area

| Resource | Geographic Boundary | Temporal Boundary |
|---|---|---|
| Water Quality | Malheur River Flood Risk Reduction Project | 20 years |
| Aquatic Environment | | |

The geographic boundary for the cumulative effects analysis for hazardous/toxic materials, water quality, and aquatic environment within the Malheur River watershed. The timeframe of 20 years was identified based on an approximate construction start of the Malheur River Flood Risk Reduction Project in 1960's. A timeframe of five years into the future has been considered. Only actions that are reasonably foreseeable are included. To be reasonably foreseeable, there must be a strong indication that an action/event would occur or be conducted.

### 3.9.4 Past, Present, and Reasonably Foreseeable Future Actions and Implications for Resources

The following sections present summaries of past, present, and reasonably foreseeable future actions considered in this cumulative effects analysis, and the effects of those actions on the resources considered.

#### 3.9.4.1 Past Actions

In 1912 the City installed its first public drinking water distribution system, which was composed mainly of steel pipe. Approximately 70 percent of the pipes range from 6-inch to 8-inch in size. The remaining 20 percent of the distribution mains consist of pipe ranging in size form 1-inch to 4-inch. None of these current pipe diameters are adequately sized to serve public's present water supply demands or the meet the water pressure demands to adequately support local fire hydrants.

In 1930 the local governments began constructing irrigation ditches and canals to aid farmers in crop production. This led to a rapid increase in the Malheur county population between 1930 and 1950. All cities in the county have gained in population: Ontario grew rapidly, increasing 35 percent; Nyssa, Vale, and Adrian increased more slowly, at 9 percent, 8 percent, and 5 percent, respectively; and Jordan Valley made the most dramatic gain, increasing 141 percent due to the opening of the DeLamar silver mine. The population of the county's unincorporated areas grew from 12,227 to 13,022, an increase of almost 7 percent, due to increased construction activity, growth of local firms, and increasing members of the elderly who find the area an attractive place to retire.

In 1977 the City constructed the Rhinehart Reservoir, the main City reservoir that serves all of Vale through a gravity-fed system. The tank was at base elevation of approximately 2,384 feet above mean sea level (MSL) and is located on the Rhinehart Butte, south of Vale, across the Malheur River. The reservoir holds approximately 750,000 gallons of water. Water from the Airport Booster Pump Station discharges directly into the public water distribution system. Any water provided by the booster pump station not used in the distribution system flows into back to the reservoir.

In 2002, the City constructed a second reservoir known locally as the Airport Reservoir as part of the Water System Improvements project. The Airport Reservoir is used to supply supplemental water to the Airport Booster Pump Station as well as to control the Airport Well Field. When the water level in the Airport Reservoir reaches a depth of 28 feet, the Airport Well Field is activated. The Airport Reservoir holds approximately 200,000 gallons of water.

The current water supply for the City consists of two sources. The first source, the Airport Well Field, is a group of seven wells located about one mile south of the City, at the airport. The wells are located on City-owned property. The collected water is sent

through the arsenic treatment facility, chlorinated, and then routed into the adjacent Airport Reservoir. A booster pump station located at the Airport Reservoir is used to serve the City, as well as ill the Rhinehart Reservoir when demand increases. Flow data is sent by telemetry to the City's supervisory control and data acquisition system.

The second source, referred to as the Washington Street Well, is a 30-foot deep well, hand-dug in 1912, located within the City limits in the northwest part of the City. The Washington Street Well had not been used form 2003 to 2014 and was designated as an emergency backup supply source. However, the well was brought back on line in July 2014 to help mitigate water quality concerns.

On January 22, 2001 the EPA adopted new standards for arsenic in drinking water, changing it from 50 parts per billion (ppb) to 10 ppb. As a result, Vale's water did not meet the new EPA guidelines coming in at around 13 ppb. Vale was selected by the EPA as a pilot city to test new water purification methods to remove arsenic from its water supply and bring it within EPA guidelines. The Vale Water Project is a result of the water treatment plant that is currently being used.

#### 3.9.4.2 Effects of Past Actions on Resources

**Water Quality**

There are multiple sources of water pollution includes agricultural practices, improper sewage, construction activities, and naturally occurring heavy metals within the soils (i.e. arsenic). The Malheur River is currently listed on the 303(d) list of water quality limited waterbodies because of its high levels of bacteria, chlorophyll-a, and pesticides such as DDT and Dieldrin. Much of these pollutants enter the waterbody from stormwater runoff.

**Aquatic Environment**

Channelization, siltation, overgrazing, irrigation withdrawal, and nonpoint pollution have destroyed much of the fishery values of the tributaries of the Malheur River. In some cases the bed load is shifting and streams cutting a deeper channel. Most of the beneficial fishery production of these streams have been lost.

A few wild trout still existing in the uppermost portions of the Bully Creek watershed, immediately below Bully Creek Dam where they have escaped the reservoir during the irrigation season.

#### 3.9.4.3 Present Actions

In their efforts to comply with current EPA guidelines, the City has completed their Water System Master Plan (WSMP). The City recognizes that the current water distribution system is deficient on meeting current and as well as long-term water system needs. Therefore, the City plans to improve the water supply, treatment, storage, and distribution systems over the next 20 years, as they secure funding. The

City has evaluated the water source, flow, distribution, treatment (water quality), pressure and storage needs, as well as outlined improvements that would be required to address those needs. The City is coordinating their plans with the Oregon Health Authority to identify the best source, treatment, storage and delivery options available. Arsenic and nitrate levels have been above EPA guidance and therefore, the City is looking into better ways to reduce these two pollutants. The City would continue to monitor the arsenic levels and report those results to water users as well as the Oregon Health Authority on a quarterly basis.

Because of previous and current agricultural practices, the Malheur River Basin has been placed on the current 303(d) list of water quality limited waterbodies due to a variety of pollution-related problems including bacteria, chlorophyll-a, toxics (the pesticides DDT and Dieldrin), low dissolved oxygen, and temperature. Federal law requires individual states to manage waterbodies that appear on the 303(d) list to meet the state water quality standards.

The Bureau of Reclamation monitors eight water monitoring sites within the vicinity of the City located in Willow Creek, Bully Creek, and the lower Malheur River. These monitoring sites have detected Escherichia coli, ammonia, nitrates, and sulfates, most likely deriving from agricultural, urban, and residential land runoff. Large bacteria contributions to the Lower Malheur River occur in Vale where Bully Creek and Willow Creek discharge to the Malheur River, along with significant contributions from irrigation return drains in the area. High water temperatures are to be moderated primarily through improvements in riparian vegetation. Streamside vegetation buffers also absorb fertilizer and manure runoff, reduce flood erosion, filter sediment, provide habitat for birds and other wildlife, and may help protect streams from pesticide drift.

#### 3.9.4.4 Effects of Present Actions on Resources

**Water Quality**

Oregon has implemented Total Maximum Daily Loads to limit phosphorous and sediment discharge into the Malheur and Snake River, primarily through reduction in sediment in irrigation return flows. Cleaner return flows to the Malheur River would also reduce bacteria levels.

The City has been unable to meet water quality parameters set by the State of Oregon (and EPA) for arsenic and nitrate levels in the public drinking water supply. The existing arsenic treatment system is not adequately removing arsenic from the City's source water. The City must be able to reliably and constantly remove arsenic to concentration below 10 parts per billion to meet EPA standards.

**Aquatic Environment**

The tributaries of the Malheur River, with either perennial or intermittent flows are considered sensitive areas and management should consider water flows adequate to maintain fish production, riparian vegetation, channel integrity, meanders and stable,

non-eroding banks that would protect water quality while at the same time preserving fish habitat and providing for a variety of recreational aesthetic values.

The tributary system within the vicinity of the City is heavily degraded, due to channelization, agriculture, and urbanization. As such, it supports a low quality aquatic environment for fish species.

#### 3.9.4.5 Reasonably Foreseeable Future Actions

According to ECONNorthwest, the City would experience a 1.48 percent population growth between the period of 2005 and 2026 (Anderson and Perry, 2015). Based on that projected growth, the City's population of 1,890 in 2013 would increase to 2,536 in 2034.

Therefore, additional storage capacity would be needed. To meet the anticipated increase in population, an additional 200,000 gallons would be needed.

To meet this increase on demand and improve water quality City is considering making the following improvements over the next 20 years:

1) The 8-inch transmission lines (Rhinehart Transmission line) to polyvinyl chloride and high density polyethylene pipes to increase water pressure throughout the distribution system.

2) Replace the old steel water distribution pipes to polyvinyl chloride/high density polyethylene pipes within the City's limits.

3) Improve the arsenic treatment for the public water supply before it enters the distribution system. The City has selected to construct a designated pipeline to provide water directly from the Washington Street Well to the arsenic treatment facility located at the Airport. This would allow the City to treat and utilize the full amount of water provided from both the Airport Well Field and the Washington Street Well.

4) Remove the 200,000-gallon bolted steel Airport Reservoir and replace it with an improved system.

5) Implement an alternative storage reservoir. The city has considered rehabilitating the existing 105,000-gallon reservoir, building a new Airport Reservoir to replace the existing Airport Reservoir, and construction of a new reservoir on the north side of the City.

#### 3.9.4.6 Effects of Reasonably Foreseeable Future Actions on Resources

**Water Quality**

The City would have improved water quality and storage of public drinking water for arsenic, nitrate, and bacteria. Water quality for the city public water would improve over time.

**Aquatic Environment**

Fish and benthic macroinvertebrate community would improve as water quality improves. Improving the water quality would increase dissolved oxygen which would create an environment more conducive to fish.

### 3.9.5 Summary of Cumulative Effects of Past, Present, and Reasonably Foreseeable Future Actions on Resources

In accordance with the 2015 Water System Master Plan, the City has various anticipated improvements to the public water supply that are to be performed over the next 20 years. Resizing the Rhinehart transmission waterline is one of the top priorities for the City presently. By upsizing the transmission waterline, the City water pressure will increase and provide adequate water pressure for the City fire hydrants. In addition, the City plans to make improvements to water quality by improving the water treatment for arsenic, chlorination, and increasing the water supply to 200,000 gallons.

The overall effect to these improvements will be an improvement to public drinking water and possibly some improvement to the Malheur River.

## SECTION 4 - COMPLIANCE WITH APPLICABLE ENVIRONMENTAL LAWS AND REGULATIONS

Section 4 identifies the legal, policy, and regulatory requirements that could affect each proposed alternative. The implications for each requirement are discussed with respect to the proposed project. Summaries of compliance and coordination activities for each of the laws, policies, or regulation are also provided.

### 4.1 National Environmental Policy Act

As required by NEPA and subsequent implementing regulations promulgated by the Council on Environmental Quality, this EA was prepared in order to determine whether the proposed action constitutes a "…major Federal action significantly affecting the quality of the human environment…" and whether an EIS is required. This EA documents the evaluation and consideration of potential environmental effects associated with the proposed action.

The Corps prepared this EA and will circulate it to other state and federal agencies and the public for review and comment. The Corps identified no impacts significantly

affecting the quality of the human environment prior to distribution of the EA. If no such impacts are identified during the public review process, compliance with NEPA would be achieved upon the signing of a Finding of no Significant Impact (FONSI). However, if such impacts are identified during the public review, an EIS would be required. Completion of an EIS and the signing of a Record of Decision would then achieve compliance with NEPA.

## 4.2 Endangered Species Act

The Endangered Species Act (ESA) established a national program for the conservation of threatened and endangered fish, wildlife and plants and the habitat upon which they depend. Section 7(a)(2) of the ESA requires Federal agencies to consult with the USFWS and NMFS, as appropriate, to ensure that their actions are not likely to jeopardize the continued existence of endangered or threatened species or adversely modify or destroy their critical habitats. Section 7(c) of the ESA and the Federal regulations on endangered species coordination (50 CFR §402.12) require that Federal agencies prepare biological assessments of the potential effects of major actions on listed species and critical habitat.

The Corps reviewed the City of Vale's biological evaluation, dated May 2016 and agreed that there no known populations of threatened and endangered listed species (ESA) within the vicinity of the City project area. This is further documented in the Corps review of the USFWS Information for Planning and Conservation Database (IPAC) and report (Consultation Code 01EWFW00-2016-SLI-0281). Therefore, there would be no effect to any federally protected threatened, endangered or candidate listed species or their critical habitat and no further action is warranted.

## 4.3 National Historic Preservation Act

The NHPA of 1966 as amended directs federal agencies to assume responsibility for all cultural resources under their jurisdiction. Section 106 of NHPA requires agencies to consider the potential effect of their actions on properties that are listed, or are eligible for listing, on the National Register of Historic Places. The NHPA implementing regulations, 36 Code of Federal Regulations (CFR) Part 800, requires that the federal agency consult with the State Historic Preservation Office (SHPO), Tribes and interested parties to ensure that all historic properties are adequately identified, evaluated and considered in planning for proposed undertakings.

In accordance with Section 106 of the NHPA, the City has conducted a Phase I Cultural Resources for the potential alignment and has found trash piles that were considered not eligible. Their findings have been sent to Oregon State Historic Preservation Office (OSHPO) for concurrence of findings. The proposed waterline is set to occur completely within the confines of the existing utility easement, and with no new ground disturbance. Therefore, the project has no potential to affect historic or cultural resources. The confirmation of SHPO concurrence would be documented in the FONSI if the FONSI is deemed appropriate.

## 4.4 Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act addresses the discovery, identification, treatment, and repatriation of Native American and Native Hawaiian human remains and cultural items (i.e., associated funerary objects, unassociated funerary objects, sacred objects, and objects of cultural patrimony).

Although not expected, in the event of an inadvertent discovery during construction, work would immediately halt, and the appropriate parties would be contacted. The easement within the action area was disturbed previously during construction, and therefore discovery of human remains with this proposed action is extremely unlikely.

## 4.5 Clean Water Act

Discharge of fill material below the line of ordinary high water in the waterway would require evaluation under Section 404 of the Clean Water Act. The City of Vale has conducted a wetland delineation, in accordance with the U.S. Army Corps of Engineers Wetlands Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid Wet Region (Version 2.0) and determined the absence of wetlands within the project area The City of Vale has coordinated their findings with Corps Regulatory. A letter documenting that no Section 404 or Section 10 permit would be needed is forthcoming. The confirmation that no Section 404 or Section 10 permit is needed would be documented in the FONSI if the FONSI is deemed appropriate.

Section 402 of the Clean Water Act also regulates ground disturbance that could potentially cause stormwater run-off into waters of the U.S. The footprint of the project area is larger than one acre and therefore, would require notification to the Environmental protection Agency. The confirmation of a 402 permit would be documented in the FONSI if the FONSI is deemed appropriate.

Section 401 of the federal Clean Water Act requires that any federal activity that may result in a discharge to waters of the United State must first receive a water quality certification from the state in which the activity would occur. These would include a stormwater discharge pollution prevention plan and protection of natural resources. The confirmation of a 401 permit and stormwater discharge pollution prevention plan would be documented in the FONSI if the FONSI is deemed appropriate.

## 4.6 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 U.S.C. §§ 703-712, as amended) prohibits the taking of and commerce in migratory birds (live or dead), any parts of migratory birds, their feathers, or nests. Take is defined in the MBTA to include by any means or in any manner, any attempt at hunting, pursuing, wounding, killing, possessing or transporting any migratory bird, nest, egg, or part thereof.

A wide variety of species listed under the MBTA occur within the vicinity of the City of Vale. The project area has low potential to attract migratory nesting birds as the work would not involve cutting trees or shrubs. No nest trees or nestlings would be disturbed by the proposed action. There would be no take of migratory birds and this action would not conflict with the purposes of the MBTA. No further coordination is necessary.

## 4.7 Clean Air Act

Under the Clean Air Act, EPA establishes air quality standards to protect public health and the environment. EPA has set national air quality standards for six common air pollutants. These include:

- Carbon monoxide
- Ozone
- Lead
- Nitrogen dioxide
- Particulate matter
- Sulfur dioxide

Areas of the country where air pollution levels persistently exceed the National Ambient Air Quality Standards (NAAQS) may be designated “nonattainment”. Maintenance areas are geographic areas that had a history of nonattainment, but are not consistently meeting the National Ambient Air Quality Standard (NAAQS). Maintenance areas have been re-designated by the U.S. Environmental Protection Agency (EPA) from “nonattainment to “attainment with a maintenance plan or designated by the Environmental Quality Commission.

The City of Vale is within an “Attainment” Area. The proposed activities to be performed under the City of Vale Waterline Installation Project would have a “de minimis” effect on air quality. The proposed actions would be in compliance with the Clean Air Act.

## 4.8 Watershed Protection and Floodplain Management Act

The purpose of the Watershed Protection and Flood Prevention Act is to protect watersheds from erosion, floodwater, and sediment damages. The Act provides assistance programs to local organizations for the protection of watersheds, including flood control. The proposed project is in compliance with the Act.

The actions proposed in this project would not affect upstream watersheds or the designed levels of flood protection provided by Malheur River flood Risk Reduction Project.

## 4.9 Comprehensive Environmental Response, Compensation and Liability Act of 1980 and 2006 (CERCLA)

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) provides for the liability, compensation, cleanup and emergency response actions due to the release of hazardous substances, as well as the cleanup of inactive hazardous substances disposal sites. The Act also requires spill notification to the National Response center of reportable quantities of a hazardous substance.

The proposed action is not known to involve lands contaminated with hazardous substances. The City of Vale would perform any necessary remediation if determined necessary.

## 4.10 Magnuson-Stevens Fishery Conservation and Management Act

The proposed action would not adversely affect any Essential Fish Habitat.

## 4.11 Noise Control Act

The federal action would not result in noise emissions greater than the applicable legal limits.

## 4.12 Resource Conservation and Recovery Act of 1976 (RECRA)

The Resource Conservation and Recovery Act (RECRA) sets forth provisions to prevent or reduce pollution at the source whenever feasible. This includes recycling, treating, or disposing of waste in environmentally safe manner whenever possible. It governs the provisions for solid waste and hazardous waste disposal. Subtitle C establishes standards and procedures for the handling, storage, treatment, and disposal of hazardous waste. It also regulates transportation and tracking, storage and treatment requirements for generators, and procedures for identifying waste as hazardous. The act includes management of used oil and regulates underground storage tanks.

The proposed action may involve hazardous wastes or used oil regulated by this Act and any required environmental compliance would be performed to properly dispose of all hazardous waste. The City of Vale would be responsible for any identification of potential contaminates, hazardous waste, or spills and would coordinate with Oregon Department of Environmental Quality in the event that there is a potential contamination concern or spillage.

## 4.13 Rivers and Harbors Act of 1899, Section 10

The proposed action does not affect navigation. This is not a Section 10 water.

## 4.14 Toxic Substances Control Act

The proposed action would not involve production, importation, use, and disposal of polychlorinated biphenyls (PCB's), asbestos, radon, or lead-based paint.

## 4.15 Executive Order 11988, Floodplain Management

This Executive Order outlines the responsibilities of federal agencies in the role of floodplain management. Each agency must evaluate the potential effects of actions on floodplains and avoid undertaking actions that directly or indirectly induce development in the floodplain or adversely affect natural floodplain values. Alternatives considered for this project would maintain designed levels of flood damage reduction, and would not further alter the floodplain.

The proposed action does not change the flood plain nor encourage development within the floodplain.

## 4.16 Executive Order 11990, Protection of Wetlands

Executive Order 11990, Protection of Wetlands, directs federal agencies to provide leadership in minimizing the destruction, loss, or degradation of wetlands. Section 2 of this order states that, in furtherance of the NEPA, agencies shall avoid undertaking or assisting in new construction located in wetlands unless there is no practicable alternative. No wetlands will be impacted by the proposed project.

The proposed action does not change or encroach on wetlands. All activities would occur on the landward side of the Corps levees, outside of areas identified as wetlands.

## 4.17 Executive Order 12898, Environmental Justice

The proposed action would not adversely or disproportionately affect minority or low income populations.

## 4.18 4.2.4 Executive Order 13122, Invasive Species

The City would revegetate the disturbed areas with a native vegetation mix within 30 days of completion of the construction activities.

.

The project activities would not cause the establishment of or encourage the spread of invasive species.

## 4.19 CEQ Memorandum, August 19, 1980, Interagency Consultation to Avoid or Mitigate Adverse Effect on Rivers in the Nationwide Inventory

This segment of the Malheur River is not included in the inventory of Wild and Scenic Rivers. This proposed action would not affect a designated Wild or Scenic River.

### 4.20 Oregon Department of Transportation State Permit

Permits are required for activities along or for use of a state highway other than for normal transportation purposes in accordance with OAR 734-055-0005 et seq. This includes utility encroachment permits. Activities that may require a permit include utility installation and maintenance.

The City has obtained an ODOT permit for this encroachment into the highway right of way.

## SECTION 5 - COORDINATION, CONSULTATION, AND PUBLIC INVOLVEMENT

### 5.1 Agency Consultation

#### 5.1.1 Endangered Species Act

The Corps is not consulting with the USFWS and NMFS for potential effects to any ESA-listed species as no species were listed or critical habitat as being potentially within the action area.

### 5.2 Public Involvement

This EA would be made available to potentially interested members of the public and local, state, and federal agencies for a 30-day review and comment period. It is also available through the Walla Walla District Corps of Engineers website at www.nww.usace.army.mil/Missions/EnvironmentalCompliance.aspx. The distribution list includes the following:

Federal Agencies
U.S. Fish and Wildlife Service
National Marine Fisheries Service
Environmental Protection Agency
U.S. Army Corps of Engineers
Natural Resources Conservation Service

Oregon State Agencies
Oregon Department of Environmental Quality
Oregon Department of Fish and Wildlife
Oregon State Historic Preservation
Oregon Department of State Lands
Oregon Department of Transportation
Oregon Watershed Enhancement Board

Local Governments
Malheur County Planning Department
City of Vale

Tribes
Confederated Tribes of the Umatilla Indian Reservation
Yerington Paiute Tribe of the Yerington Colony and Campbell Ranch
Fort McDermott Paiute and Shoshone Tribes of the Fort McDermott Indian Reservation
Confederated Tribes of the Warm Springs Reservation
Pyramid Lake Paiute Tribe
Burns Paiute Tribe
Reno-Sparks Indian Colony
Shoshone-Paiute Tribes of the Duck Valley Reserve

Upon conclusion of the review period, the Corps will consider comments received and move forward in the NEPA process with a Finding of No Significant Impact (FONSI) if applicable, or on to the preparation of an Environmental Impact Statement if deemed necessary.

## SECTION 6 - REFERENCES


Anderson Perry & Associates, Inc. 2016. Cultural Resource Inventory For the City of Vale, Oregon Water System Improvements-Rhinehart Transmission Line, Malheur County, Oregon. Prepared for City of Vale, Oregon.

Anderson Perry and Associates, Inc. 2015. City of Vale, Oregon Water System Master Plan.

Bisson, P. 2008. Salmon and Trout in the Pacific Northwest and Climate Change. (June, 2008). U.S. Department of Agriculture, Forest Service, Climate Change Resource Center. www.fs.fed.us/ccrc/topics/aquatic-ecosystems/salmon-trout.shtml

Council on Environmental Quality (CEQ). 1997. Considering Cumulative Effects under the National Environmental Policy Act. [Washington, D.C.]: The Council.

Environmental Protection Agency (EPA). 1999. Consideration of Cumulative Impacts in EPA Review of NEPA Documents. U.S. Environmental Protection Agency, Office of Federal Activities. May 1999.

Littell, J.S., M. McGuire Elsner, L.C. Whitely Binder, and A.K. Snover (eds). 2009. The Washington Climate Change Impacts Assessment: Evaluating Washington's Future in a Changing Climate, (PDF 14.1 MB) Climate Impacts Group, University of Washington, Seattle, Washington.

Mote, P.A., A.K. Snover, S. Capalbo, S.D. Eigenbrode, P. Glick, J. Littell, R. Ramondi, and S. Reeded. 2014. Ch.21: Northwest – Climate Change Impacts in the United States: The Third National Climate Change Assessment. J.M. Melillo, T.C. Richmond, and G.W. Yohe, Eds., U.S. Global Changes Research Program.

U.S. Bureau of Reclamation (Reclamation). 2011. U.S. Bureau of Reclamation and USACE. 2011. *Addressing Climate Change in Long-Term Water Resources Planning and Management: User Needs for Improving Tools and Information*. January 2011.

U.S. Forest Service (USFS). 2009. Forest Service Global Change Research Strategy, 2009-2019. US Forest Service. June 2009.