

City of Umatilla, Oregon

Beneficial Reuse Feasibility Analysis

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LIST OF ABBREVIATIONS

ADD	Average Daily Demand
ADF	Average Daily Flow
BCA	Bilateral Compliance Agreement
BOR	Bureau of Reclamation
BRFA	Beneficial Reuse Feasibility Analysis
CDBG	Community Development Block Grant
CFS	Cubic Feet per Second
City	City of Umatilla, Oregon
CL	City Limits
CTUIR	Confederated Tribes of the Umatilla Indian Reservation
CWA	Clean Water Act
CWSRLF	Clean Water State Revolving Fund Loan funding
DEQ	Department of Environmental Quality
DMRs	Discharge Monitoring Reports
DWSRLF	Drinking Water State Revolving Loan Fund
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
FT	Feet
GPCD	gallons per capita per day
GPDU	gallons per dwelling unit
GPM	Gallons Per Minute
GWUDI	Groundwater Under the Direct Influence of Surface Water
HP	Horse Power
HUD	Housing and Urban Development
IFA	Infrastructure Finance Authority
IWW	Industrial Wastewater
LMISD	Low-to-Moderate Income Survey Data
MAO	Mutual Agreement Order
MCL	Maximum Contaminant Level
MGD	Millions Gallons a Day
NMFS	National Marine Fisheries Services
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
OAR	Oregon Administrative Rules
ODEQ	Oregon Department of Environmental Quality
OHA	Oregon Health Authority
OWRD	Oregon Water Resources Department
PDD	Peak Day Demand
PDF	Peak Daily Flow
PER	Non-Contact Cooling Water Pipeline Preliminary Engineering Report
PHD	Peak Hour Demand
PHF	Peak Hourly Flow
Port	Port of Umatilla
RAS	Return Activated Sludge
RCAC	Rural Community Assistance Corporation
SDWA	Safe Drinking Water Act
SPWF	Special Public Works Fund
UGB	Urban Growth Boundary
USACE	U.S. Army Corps of Engineers'
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
WAS	Waste Activated Sludge

LIST OF ABBREVIATIONS (CONT.)

WEID	West Extension Irrigation District
WPCF	Wastewater Pollution Control Facilities
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant

1 EXECUTIVE SUMMARY

1.1 Introduction

Decreasing groundwater supplies and development of water-intensive industries in the Port of Umatilla (Port) have prompted the City of Umatilla (City) to examine a number of possible water supply and wastewater reuse options. The importance of water conservation in the Umatilla Basin and the potential for industrial reuse underscores the City's decision to develop this Beneficial Reuse Feasibility Analysis (BRFA).

The City of Umatilla applied for a Feasibility Study Grant from the Water Resources Department in 2015 and were awarded that grant in August 2016. City Engineer, J-U-B Engineers, Inc. (J-U-B), was hired to complete the engineering and planning tasks, with Ducote Consulting LLC completing the limited environmental and funding analysis. The grant agreement was extended through September 2018.

The BRFA analyzes developing the City's 23 cubic feet per second (cfs) surface water right to supplement the dwindling groundwater supply, analyzes beneficial reuse strategies, and develops a basic layout to expand public infrastructure to the 395 Corridor. The study is intended to identify feasible steps to treat and supply potable water, and collect, treat and dispose of wastewater. Overall, the study will provide a roadmap for sustainable water and wastewater improvements to be implemented as development occurs. Subsequent preliminary engineering will be required for implementation of the projects identified in this study.

1.2 Study Area

The Study Area is comprised of approximately 5,400 acres. For purposes of this study, the west boundary of the study area is delineated by the Umatilla River; the north boundary of the study area is delineated by the Urban Growth Boundary (UGB) and Columbia River; the east boundary is delineated by Sagebrush Road, City limits, and the UGB; and the south boundary is delineated by Baggett Lane. For purposes of this study, the City of Umatilla consists of City West and City Residential study zones; the Port of Umatilla consists of Port West and Port East study zones; and the 395 Corridor consists of the 395 Corridor study zone. Figure 3-1 depicts the overall study area as well as the individual study zones.

1.3 Water Supply Alternatives

Based on existing and potential build out demands for the entire study area, it was determined the City would need to utilize their full water rights to accommodate future build out demands. Perfecting the City's surface water right may relieve the City's declining deep basalt aquifer. Five (5) water supply alternatives were developed. These alternatives include:

Alternative A-1 – No Action

While the City has adequate groundwater water rights to provide service to the current users, the existing groundwater water rights will not provide adequate capacity for build out water demands within the study area. In addition, the City's groundwater aquifer is declining rapidly. This alternative is not a viable long-term water supply solution to meet future demands.

Alternative A-2 – Increase Groundwater Capacity

The City obtains their water from the existing deep basalt aquifer by means of four wells. Based on observation of the declining aquifer and its impacts on existing infrastructure, it was determined that the deep basalt aquifer likely cannot support additional well pumping capacity on a continuous basis. Moreover, increased water rights are needed if the City's additional water capacity is obtained solely from new groundwater water rights and wells assuming current pump rates are maintained at the existing wells. New wells in the existing aquifer could potentially further threaten the existing declining aquifer, therefore, additional analysis of the existing aquifer is needed prior to implementing this alternative.

Alternative A-3 – Expand Existing Regional Water Supply Pump Station

A regional water supply system is owned and operated by the Port of Umatilla, City of Hermiston, and various private industries. This alternative examines the possibility of expanding the existing river pump station that withdraws from the Columbia River. Work of this magnitude would require the acquisition U.S. Army Corps of Engineers' (USACE) Section 10/404 permit. The permitting process would involve NOAA National Marine Fisheries Service (NMFS). Since the mid 1990's, NMFS has had a no net loss policy for water withdrawals from the Columbia River and has permanently stalled USACE permits for work in the Columbia River that include new or increased withdrawals.

Alternative A-4 – New Pump Station

This alternative looked at the construction of a new river pump station to withdraw the City's surface water right from the McNary Pool, Columbia River. The point of diversion would be located near the existing Port Well in accordance with the existing surface water right. Similar to Alternative A-3, this alternative will likely have permitting obstacles such as federal No Net Loss Policies that effect the Columbia River.

Alternative A-5 – New Hydraulically Connected Wells

This alternative involves drilling shallow vertical wells adjacent to the Columbia River to access water that is directly hydraulically connected to the Columbia River. Use of water hydraulically connected to the Columbia River would be considered a surface water source from the perspective of treatment requirements. A new water treatment plant would be required if surface water is to be used to meet potable water demand.

1.3.1 Recommended Water Supply Improvement

Alternative A-5 was selected as the recommended water supply improvement to relieve the existing deep basalt aquifer, accommodate increased water demands, and provide a reliable water source.

1.4 Reuse Alternatives

The City can generate reuse water to offset demands on their water supply sources from domestic or industrial wastewater. Wastewater reuse has two fundamental benefits: 1) Decreases effluent disposal cost and 2) Reduces the demand on potable water supplies. In furthering efforts to conserve groundwater, as well as accommodating industrial water demands and wastewater flows, domestic and industrial reuse water alternatives were developed.

1.4.1 Domestic Reuse Alternatives

Alternative B-1 – No Action, Assumes IWW Diverted for Direct Reuse

This alternative assumes the City will operate by conveying domestic wastewater to the wastewater treatment plant with no beneficial reuse but will redirect the non-contact cooling industrial wastewater (IWW) for reuse. The City treats wastewater and discharges to the Columbia River. The no action alternative is viable for the near-term, but reuse may become necessary as development occurs.

Alternative B-2 – Class A Reuse of Domestic Effluent

This alternative involves upgrading the existing wastewater treatment facility to provide up to 0.8 MGD of Class A reuse water, which is sufficient to meet the irrigation demand of nearly 100 acres (approximately the size of the golf course). Additionally, the Wastewater Treatment Plant (WWTP) will not have a daily flow greater than 0.8 MGD for 10+ years. Since the River discharge would remain, the winter flow would be discharged to the Columbia River. If summertime demand was sufficiently large, the wintertime effluent could be treated to reuse standards and stored in a large lagoon for summertime use. This option has many potential implementation phases depending on the overall value of the reuse water, the cost to create the reuse water, and the cost of new sources of potable water.

1.4.2 Non-Contact Cooling Industrial Reuse Alternatives

Alternative B-3 – No Action

While the City is currently accommodating industrial flows, there have been periods where the industrial flows have caused the City to approach their capacity limits. Taking no action would limit the current expansions planned by local industries and impede the City's ability to grow since very little capacity is available when the data center industries are discharging. For these reasons, a reuse alternative must be implemented to relieve the existing wastewater treatment plant and ensure adequate capacity for future development including an increase in domestic and industrial flows. Therefore, the no action alternative is infeasible.

Alternative B-4 – Increase WWTP Capacity (Add 3 MGD of Capacity)

While expanding the capacity of the WWTP is not a reuse alternative, this option would be necessary if IWW reuse options were not implemented and is therefore needed for comparison purposes. A 4.0 MGD treatment facility is needed for domestic flows to serve the three study zones. If IWW flows also required management, a 7.0 MGD facility would be required. This alternative involves process modifications at the existing wastewater treatment plant to increase the overall plant capacity.

Alternative B-5 – Separate Industrial Flows

The City is currently implementing this alternative by installing a reuse pipeline to convey non-contact cooling tower wastewater to the BOR Phase 1 Exchange Canal which eventually connects into the West Extension Irrigation District (WEID). Reuse water will be used for agricultural purposes. Diverting IWW from the City's WWTP will address the capacity issues at the wastewater treatment plant for the near-term. However, as other industrial users move into the area it may be necessary to install an industrial wastewater treatment plant at the Port of Umatilla to treat stronger effluent.

1.4.3 Recommended Reuse Water Improvements

Alternative B-1 and B-5 (no Domestic reuse and Divert cooling tower IWW) were selected as the recommended reuse water improvement to relieve the existing wastewater treatment plant; thereby accommodating increasing domestic wastewater flows, and provide beneficial reuse.

1.5 Water Improvement Projects

To implement the selected water supply and reuse water alternatives, various improvements are proposed. The projects are summarized below:

PDX2 Non-Potable Pipe

Vadata's PDX2 is a water-intensive industry with high industrial demands. A pipeline is proposed to convey non-potable industrial source water from the proposed shallow wells to the PDX2 site. The PDX2 site is within City limits and is currently served by City utilities. Replacing groundwater supply with surface water supply will help to conserve the City's declining deep basalt aquifer and provide a more reliable source into the future.

Distribution Main

To convey surface water from the proposed shallow wells to the water treatment plant a combination of 10-inch and 18-inch pipe is proposed. Where possible, the pipelines are located in City road right-of-ways to minimize easement acquisition costs. Replacing groundwater supply with surface water supply will help to conserve the City's declining deep basalt aquifer and provide a more reliable source into the future.

Water Treatment Plant

This improvement consists of constructing a surface water treatment plant to provide potable water within the 395 Corridor. A 6.2 million gallon per day potable water treatment plant is proposed to meet the peak day demand coupled with approximately 2.5 million gallons of storage to meet the peak hour demands. The water treatment plant location is proposed on City-owned property adjacent to the Intertie well, although other locations within the study area may also be suitable.

395 Corridor Water System

There are currently no City-owned water infrastructure facilities to serve the 395 Corridor. The City is interested in providing public utilities to the area to stimulate economic development; therefore, water utility facilities and infrastructure are needed. Furthermore, per the discussion above, additional water is available through the City's existing surface water right and development of these water rights is the preferred option to serve the 395 Corridor. All future demands for this study zone, domestic and industrial, should be served by surface water. Domestic flows will be conveyed from the hydraulically connected wells to a new water treatment plant and conveyed through a new water distribution system.

1.6 Wastewater Improvement Projects

Various improvements are recommended to provide wastewater infrastructure and accommodate growth into the future. These improvements include:

Expand Capacity of WWTP

This improvement involves upgrading the existing WWTP from 0.84 MGD to the eventual build out capacity of 4.0 MGD. An initial WWTP expansion to accommodate up to 1.68 MGD is recommended to serve a 40 year planning period. The site plan reserved space for future improvements of a similar technology up to a treatment capacity of approximately 2.52 MGD. However, the facilities plan did not consider serving the 395 Corridor and a treatment capacity of 4.0 MGD; therefore, additional space will be required at potential build out. Prior to expanding the WWTP to serve the build out flow, the facility plans should be evaluated to incorporate new technology and community values.

395 Corridor Wastewater Facilities

The 395 Corridor study zone currently does not have sewer collection. Installation of domestic sewer infrastructure is anticipated with the installation of water utilities. City sewer would be conveyed to the existing wastewater treatment plant and is anticipated to stimulate economic development by attracting new industries to the area.

1.7 Potential Funding Strategies

The recommended alternatives for the City’s water and wastewater utility will be costly and will require substantial capital over 10-20 years. There are a variety of public and private funding sources available for the City to finance the recommended alternatives. Where feasible, given the nature of the industrial development, the City should attempt to finance “growth with growth.” Whether with System Development Charges, or more direct agreements negotiated with private enterprises interested in siting, the City can accomplish more while keeping rates affordable. Table 1-1 below summarizes potential funding sources for each proposed project.

Table 1-1 – Potential Funding Sources

Funding Program	Federal Environmental Mandates?	Hydraulically Connected Wells	PDX2 Non-Potable Pipe	Distribution Main	Water Treatment Plant	395 Corridor Water System	395 Corridor Wastewater Facilities	Expand Capacity of WWTP
CWSRLF	Yes						X	X
DWSRLF	Yes	X	X	X	X	X		
CDBG	Yes					X		X
USDA-RD	Yes	X	X	X	X	X	X	X
IFA SPWF		X	X	X	X	X	X	X
Bonds	No	X	X	X	X	X	X	X
Bank Loan	No	X	X	X	X	X	X	X

2 INTRODUCTION & BACKGROUND

2.1 Introduction

The City has developed this BRFA to serve potential industrial development and manage impacts of increasing potable water demand as well as increasing wastewater flow to existing infrastructure within the UGB and surrounding areas. Rapid development of water-intensive industry at the Port of Umatilla has resulted in challenges at the WWTP. In addition, the City's primary water source, a deep basalt groundwater aquifer, has been steadily declining. Water-intensive industries located in the City use the City's water system, which currently relies on groundwater alone. This plan generally includes a long-term water supply evaluation including how the surface water will be used; a reuse water evaluation for industrial and domestic users; potential infrastructure expansion plan; improvement alternatives; environmental review; selected alternatives; an implementation plan; and funding strategies.

2.2 Authorization

On December 6, 2016 the City of Umatilla authorized J-U-B Engineers, Inc. to develop a BRFA work product. The BRFA was funded in part by the Water Resources Department through a grant awarded in August 2016. The grant agreement was extended through September 2018. The BRFA was developed in coordination with the City, Oregon Water Resources Department, and Oregon Department of Environmental Quality.

The City of Umatilla applied for a grant from the Oregon Water Resources Department in 2015 and was awarded that grant in August 2016. City Engineer, J-U-B Engineers, Inc., was hired to complete the engineering and planning tasks, with Ducote Consulting LLC completing the limited environmental and funding analysis.

2.3 History

In 2014, the City realized water-intensive industrial development in the area and recognized the need to accommodate such development in order to promote economic vitality, water conservation, and affordable, functional public utilities. This section summarizes tasks completed to date in relation to the BRFA.

In 2014, the City hired J-U-B Engineers to conduct a *Wastewater Treatment and Reuse Evaluation*, found in Appendix A (originally included as Appendix A of the *Non-Contact Cooling Water Pipeline Preliminary Engineering Report (PER)*), to provide a preliminary analysis of the City's best available options to quickly handle the increase in wastewater volume. In particular, Vadata, Inc. operates a complex of data centers in the Port. Data centers require significant amounts of water to cool machinery in the warmer months, which is termed "non-contact cooling tower water." The *Evaluation* recommended separating industrial and domestic flows, and beneficially reusing all current and future industrial flows by recycling the water into the WEID via the Bureau of Reclamation (BOR) Phase 1 Exchange Canal. The evaluation recommended four specific strategies:

- 1) Separating the industrial flows from the domestic flows.
- 2) Beneficially reusing the industrial flows by recycling the water into the WEID through the BOR Phase 1 Exchange Canal.

- 3) Beneficially reusing domestic flows by recycling water at the WWTP to irrigate grass at the Marina, City parks, and/or the “old town” area near the WWTP in collaboration with the Confederated Tribes of the Umatilla Indian Reservation (CTUIR).
- 4) Develop surface water supply options from the City’s water right to provide domestic and industrial water at the Port of Umatilla area, allowing the City to conserve water in the deep basalt aquifer.

The City immediately pursued strategies #1 and #2. The City and J-U-B began work with Oregon Department of Environmental Quality (DEQ) to develop a draft National Pollutant Discharge Elimination System (NPDES) permit. In August 2016, J-U-B completed the PER (Appendix A) to begin implementation of the permitted industrial disposal system. In late 2016, J-U-B began design on the Phase 1 IWW reuse pipeline alternative, which originates at the Port of Umatilla and discharges into the BOR Phase 1 Exchange Canal. The NPDES permit authorizing the discharge is in progress with Oregon DEQ.. Finalization of the NPDES permit and construction of the industrial wastewater reuse pipeline is anticipated in 2018.

2.4 Project Purpose and Scope

The BRFA’s purpose is to cultivate long-term projections in order to develop water and sewer utilities to accommodate current and future demands. The goal of the study is to develop a strategy for sustainable water utility service using existing surface water rights and identify the maximum beneficial reuse applications of the City’s rising flows to offset impacts to the existing wastewater treatment plant. The Study:

- Quantifies the existing and long-term water demands to evaluate water supply needs for the study area. J-U-B coordinated with the City on demand assumptions and methodology.
- Identifies strategies for exercising surface water rights for potential future users.
- Identifies and develops water supply alternatives, via groundwater, surface water, and reuse water, in adequate detail to evaluate probable costs, risks, and environmental implications.
- Identifies and develops alternatives for domestic and industrial wastewater reuse in adequate detail to evaluate probable costs, risks, and environmental implications.
- Provides recommended water supply and beneficial reuse alternatives.
- Identifies infrastructure needed to utilize the existing surface water right.
- Quantifies and evaluates wastewater flows.
- Identifies proposed infrastructure necessary for beneficial reuse purposes and expansion of the sewer system in order to support and stimulate future development.
- Provides an Implementation Plan with associated timeframes.
- Outlines potential funding strategies the City should explore during plan implementation.

2.5 Regulatory Agencies and Framework

The Oregon Department of Environmental Quality (ODEQ) is the primary regulating agency for water, wastewater and reuse. Oregon has primacy under the United States Environmental Protection Agency (EPA) to enforce the Clean Water Act.

2.5.1 Oregon Administrative Rules

The Oregon Administrative Rules (OAR) are the official law binding rules and regulations for the State of Oregon. Published in the rules are regulations related to public utilities. This report is intended to comply with applicable sections of the OARs, including but not limited to, the following:

- OAR 333 Division 61 – Public Water Systems
- OAR 340 Division 40 – Groundwater Quality Protection
- OAR 340 Division 41 – Water Quality Standards
- OAR 340 Division 45 – Regulations Pertaining to NPDES and WPCF Permits
- OAR 340 Division 50 – Land Application of Domestic Wastewater Treatment Facility Biosolids, Biosolids Derived Products, and Domestic Septage
- OAR 340 Division 55 – Recycled Water Use Rules

2.5.2 Clean Water Act

The Clean Water Act (CWA) was enacted in 1948, with a significant update occurring in 1972. The CWA regulates discharge of pollutants into U.S. waters and regulates quality standards for surface waters. The CWA encompasses pollution control programs and wastewater industry standards. The EPA is the governing agency responsible for enforcement, compliance, and implementation of the CWA. A Memorandum of Agreement exists between the ODEQ and EPA which establishes ODEQ as the agency to administer the NPDES Program.

2.5.3 Safe Drinking Water Act

The purpose of the Safe Drinking Water Act (SDWA) is to protect the quality of drinking water, from all sources, in the United States. The EPA is the governing agency responsible for enforcement, compliance, and implementation of the SDWA. In Oregon, the primary agency to administer the SDWA is the Oregon Health Authority (OHA). OHA is responsible for approving the drinking water treatment plan, establishing construction standards and operator certification standards, and enforcing rules to ensure safe drinking water.

2.5.4 Regulatory Agencies

Oregon regulatory agencies including the ODEQ, OHA, and Oregon Water Resources Department (OWRD), are responsible for enforcement of state mandated rules and regulations. These agencies are tasked with protection of the public and the environment.

The regulatory agencies encourage beneficial reuse of recycled water when conducted in accordance with established policies and procedures. Recycled water use requires the following:

- Discharge Permit – Issued by ODEQ
- Recycled Water Use plan – Submitted by Applicant and Approved by ODEQ
- Registration of Recycled Water Use – Issued by OWRD

3 PLANNING AND STUDY AREAS

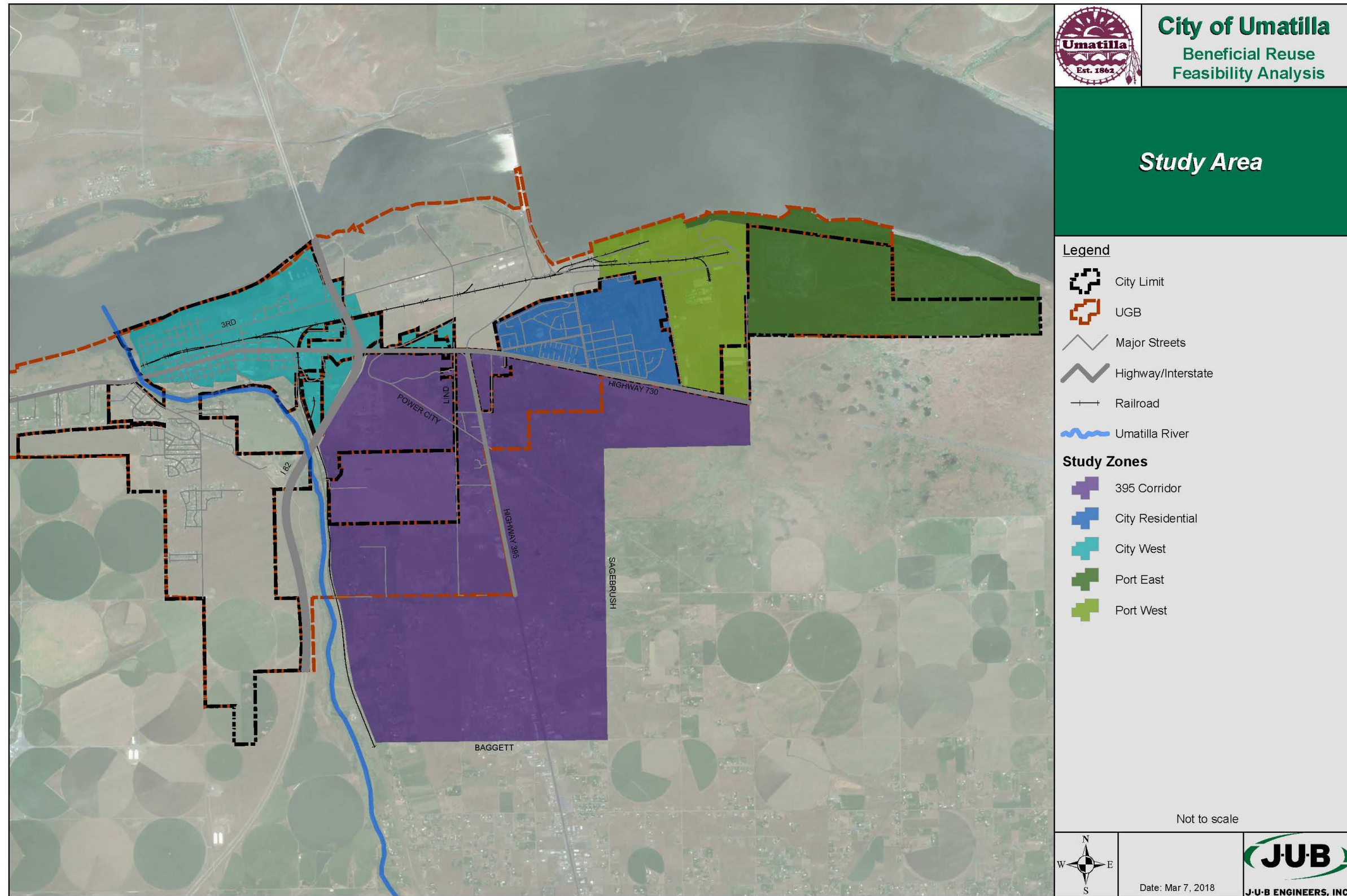
3.1 Study Area

The City of Umatilla lies within the Columbia River Basin within the northwestern section of Umatilla County in northeastern Oregon. The City limits and UGB falls within Section 13 of Township 5 North, Range 27 East; Sections 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, and 29 of Township 5 North, Range 28 East; and Section 18 of Township 5 North, 29 East. The City is intersected by Highway 730, I-82, and Highway 395. The City is bordered by the Columbia River to the north of town and is intersected by the Umatilla River which flows into the Columbia River on the west end of town. For purposes of the study, the west boundary of the study area is delineated by the Umatilla River; the north boundary of the study area is delineated by the UGB and Columbia River; the east boundary is delineated by Sagebrush Road, City limits, and the UGB; and the south boundary is delineated by Baggett Lane.

Areas outside the UGB and City limits south of town have been included in the overall study area as the City has received inquiries from developers looking to move into this area. In the future, the City plans to expand their UGB to include this area (noted in Figure 3-1) as well as install City water and wastewater services, therefore the entire 395 Corridor study zone was included for analysis. Areas of the 395 Corridor outside City limits and the UGB included in the study fall within Sections 14, 22, 27, and 28 of Township 5 North, Range 28 East.

For purposes of this study, the City of Umatilla consists of City West and City Residential study zones; the Port of Umatilla consists of Port West and Port East study zones; and the 395 Corridor consists of the 395 Corridor study zone. Figure 3-1 depicts the overall study area as well as the individual study zones.

Figure 3-1 – Study Area



3.2 Land Use

3.2.1 Existing Land Use

Zoning has been identified within the City Limits and UGB. The zoning categories within City Limits are governed by City code and the zoning categories outside City Limits are governed by County code. A summary of the existing land use zones, acres, and proximity is provided in Table 3-1 and depicted in Figure 3-2.

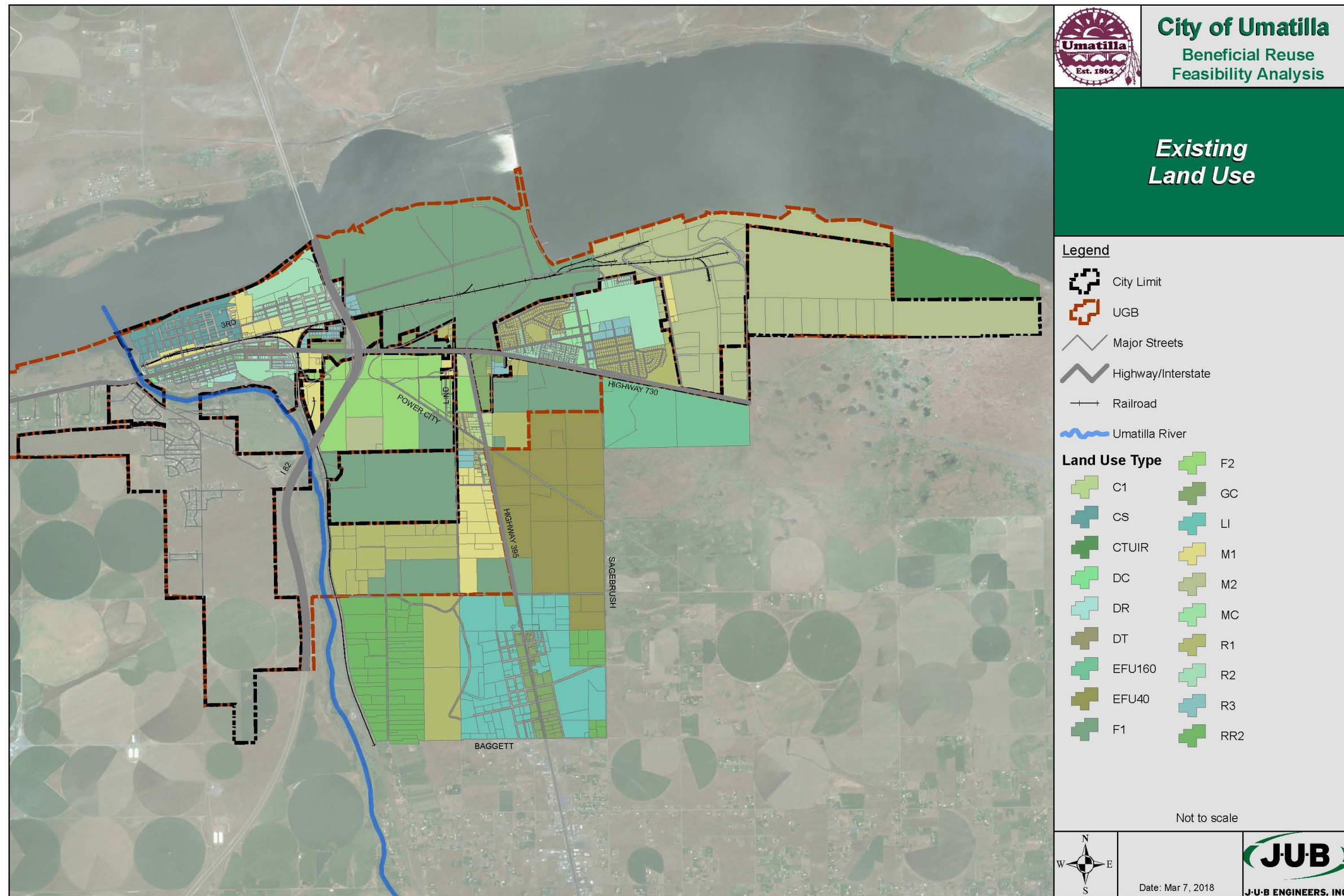
Table 3-1 – Existing Land Use within Study Area

Land Use	Zone ID	Area (Acres)
City of Umatilla¹		
Community Service	CS	88.29
Downtown Commercial	DC	16.98
Downtown Residential	DR	30.72
Downtown Transitional	DT	8.21
Exclusive Farm Use, 19 Ac.	F1	10.10
General Rural, 19 Ac.	F2	43.31
General Commercial	GC	64.33
Light Industrial	M1	103.04
Heavy Industrial	M2	12.21
McNary Commercial	MC	26.59
Residential, Single Family	R1	143.98
Residential, Multi-Family	R2	283.01
Residential, Multi-Family, Apartments	R3	40.17
Total Acres for City of Umatilla		871.81
Port of Umatilla²		
Tribal Land	CTUIR	191.51
Light Industrial	M1	10.90
Heavy Industrial	M2	1,167.60
Total Acres for Port of Umatilla		1,370.01
395 Corridor		
General Commercial	C1	30.66
Exclusive Farm Use	EFU	793.12
Exclusive Farm Use, 19 Ac.	F1	334.54
General Rural, 19 Ac.	F2	253.64
General Commercial	GC	94.89
Heavy Industrial (County)	HI	266.91
Light Industrial (County)	LI	446.09
Light Industrial (City)	M1	109.84
Heavy Industrial (City)	M2	36.82
Residential, Single Family	R1	408.94
Residential, Multi-Family, Apartments	R3	15.91
Rural Residential	RR2	346.85
Total Acres for 395 Corridor		3,138.21
Total Study Area Acres		5,380.03

¹City of Umatilla includes the City West and City Residential study zones.

²Port of Umatilla includes the Port West and Port East study zones.

Figure 3-2 – Existing Land Use



3.2.2 Potential Build Out Land Use

Potential build out land use has been developed for the study area based on assumptions made by the City of Umatilla and J-U-B. The zoning categories are loosely based off the City code and Umatilla County code but have been simplified for planning level efforts. Planning level zoning categories are summarized in Table 3-2.

Table 3-2 – Potential Build Out Zoning Categories

Zone Description	Existing Zoning ID	Potential Land Use	Potential Zoning ID
Community Service	CS	Federal, State, City, County, or Tribe Owned Land Open Space Used for Recreation or Parks	Open Space (Federal, State, City, County, Tribe Owned) Rec Parks
Exclusive Farm Use	EFU160	Exclusive Farm Use	EFU
Exclusive Farm Use	EFU40		
Exclusive Farm Use, 19 Ac.	F1		
General Rural, 19 Ac.	F2		
Downtown Commercial	DC	General Commercial	GC
General Commercial	GC		
General Commercial	C1		
McNary Commercial	MC		
Light Industrial (County)	LI	Light Industrial	LI
Light Industrial (City)	M1		
Heavy Industrial	M2	Heavy Industrial	HI
Tribal Land	CTUIR		
Downtown Residential	DR	Single Family Residential	SFR
Downtown Transitional Residential, Single Family	DT		
Residential, Single Family	R1		
Residential, Multi-Family	R2	Apartment	Apt
Residential, Multi-Family, Apartments	R3		
Rural Residential	RR2	Medium Demand Rural Residential	MDRR
		Low Demand Rural Residential	LDRR
		School	School
		Office	Office
		Church	Church

¹City of Umatilla includes the City West and City Residential study zones.

²Port of Umatilla includes the Port West and Port East study zones.

A summary of the existing land use zones, acres, and proximity is provided in Table 3-3 and depicted in Figure 3-3.

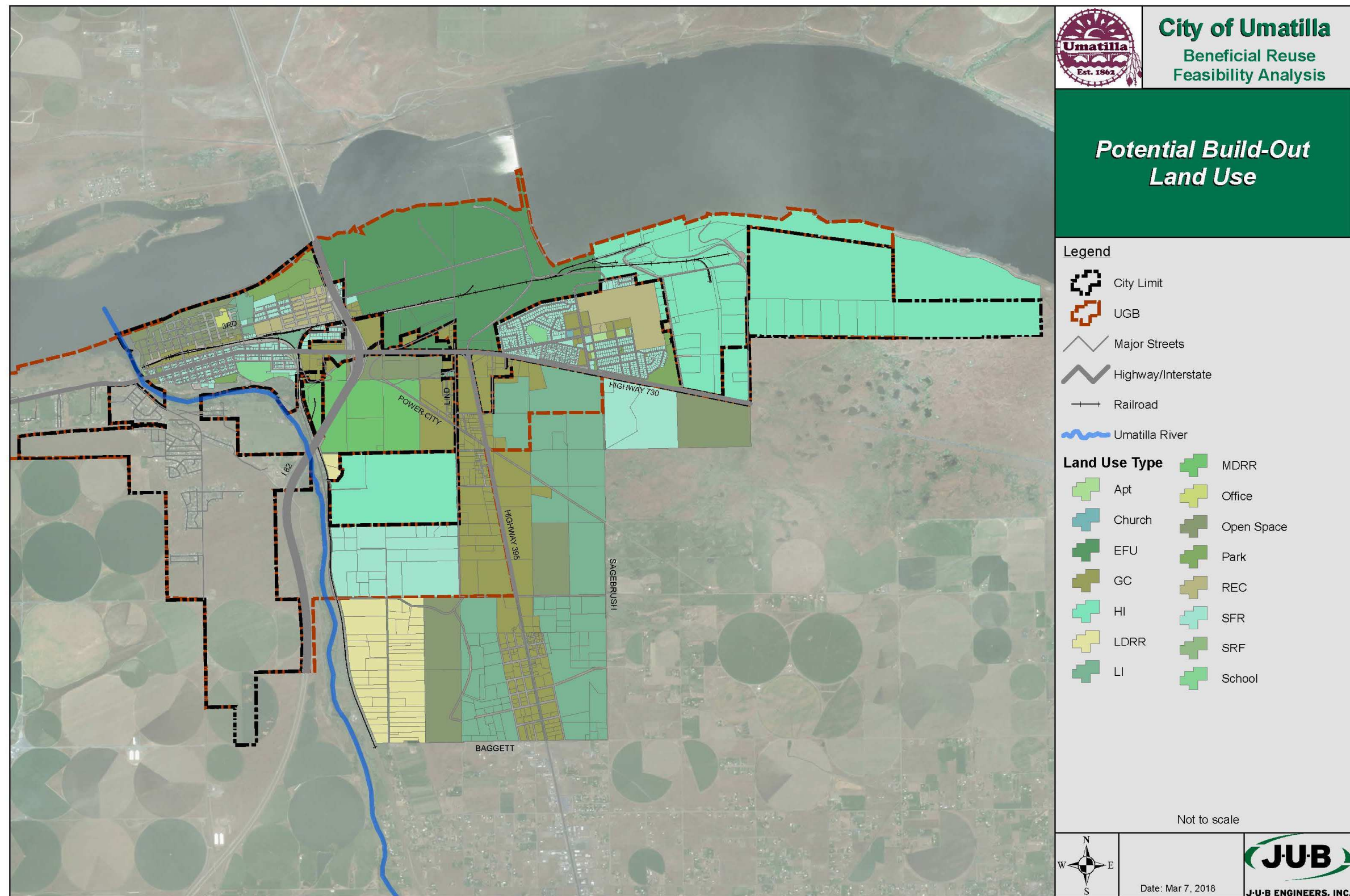
Table 3-3 – Potential Build Out Land Use within Study Area

Land Use	Zone ID	Area (Acres)
City of Umatilla¹		
Apartment	Apt	6.77
Single Family Residential	SFR	241.15
Medium Demand Rural Residential	MDRR	56.86
General Commercial	GC	144.02
Light Industrial	LI	39.28
Heavy Industrial	HI	9.88
School	School	29.53
Office	Office	5.71
Church	Church	1.59
Exclusive Farm Use	EFU	10.99
Open Space - Recreational Use	Rec	146.70
Open Space - Parks	Parks	97.46
Open Space (Federal)	Open Space (Federal)	77.94
Open Space (State)	Open Space (State)	0.52
Open Space (County)	Open Space (County)	1.98
Open Space (City)	Open Space (City)	1.42
Total Acres for Port of Umatilla		871.81
Port of Umatilla²		
Heavy Industrial	HI	1,370.01
Total Acres for Port of Umatilla		1,370.01
395 Corridor		
General Commercial	GC	659.76
Single Family Residential	SFR	419.75
Medium Demand Rural Residential	MDRR	178.67
Low Demand Rural Residential	LDRR	310.51
Light Industrial	LI	899.75
Heavy Industrial	HI	266.91
Open Space (State)	Open Space (State)	20.29
Open Space (Federal)	Open Space (Federal)	368.28
Open Space (County)	Open Space (County)	14.29
Total Acres for 395 Corridor		3,138.21
Total Study Area Acres		5,380.03

¹City of Umatilla includes the City West and City Residential study zones.

²Port of Umatilla includes the Port West and Port East study zones.

Figure 3-3 – Potential Build Out Land Use



4 WATER

4.1 Introduction

The City is pursuing options to expand potable water sources and supply due to an increase in industrial users and other demands. The City has a 23 cfs Surface Water Right Permit (Permit No. 41444, Application No, 54855) from the Columbia River. This water right would enable the City to reduce reliance on its deep groundwater wells where it currently draws the water from the deep basalt groundwater aquifer. Historical data from OWRD indicate the deep aquifer levels in this region have been decreasing over the past several years. In recent years, nearby wells have become unusable due to the declining aquifer. For long-term infrastructure sustainability, the City should not rely on the groundwater as an industrial water source.

In addition, water-intensive industries are increasing wastewater flow to existing infrastructure. Rapid development of water-intensive industry at the Port has stressed the City's WWTP. Alternative wastewater use and disposal is necessary to better manage and accommodate the increasing flows.

Perfecting the surface water right and extending services, with compliant levels of pressure, will also enable commercial development along the 395 Corridor. Development there is currently being hampered by lack of public infrastructure including fire flow. Public infrastructure along the 395 Corridor is detailed further in Section 4.8.3.

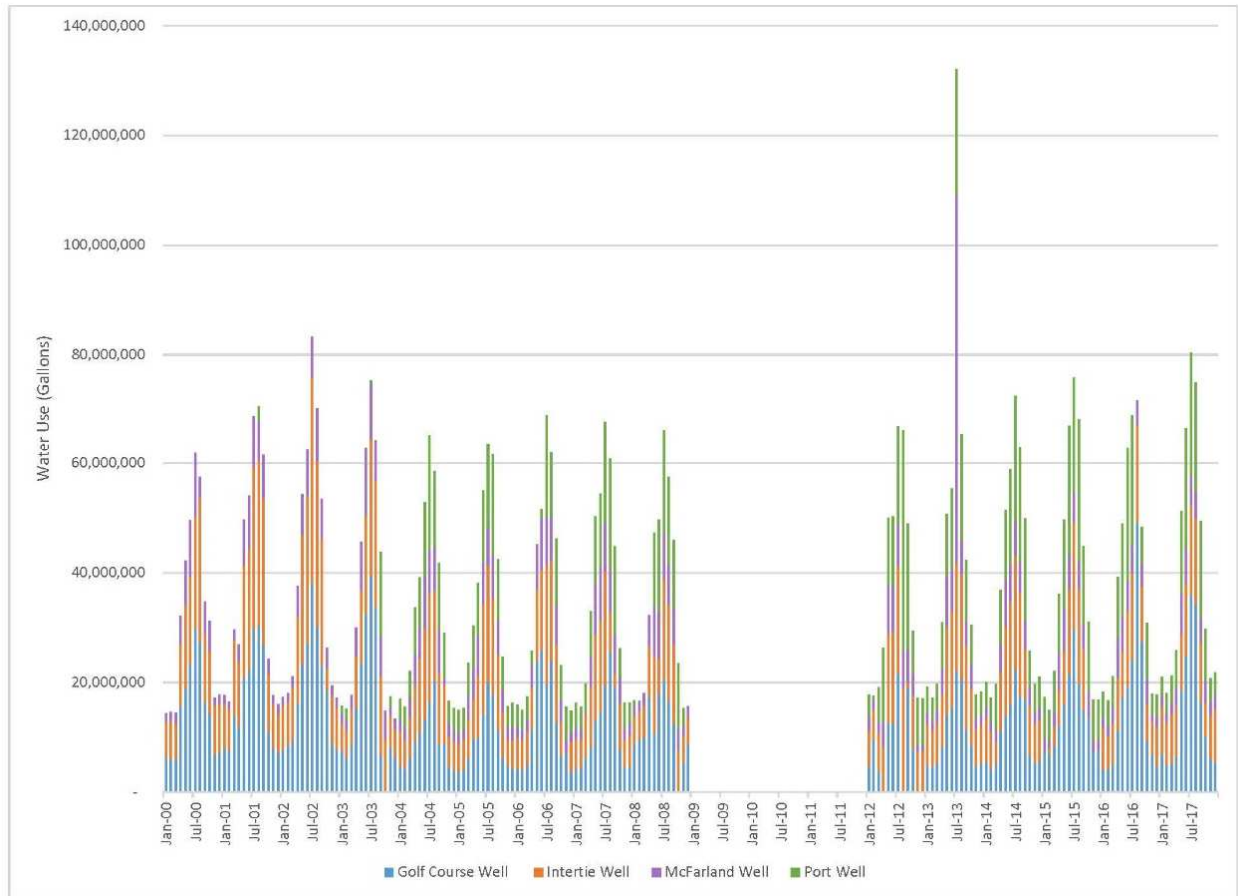
4.2 Water Demands

4.2.1 Existing Demands

The existing water demands were determined using OWRD water use records for the City as published on the OWRD website. Water use reports were reviewed from October 2000 to September 2017 for each of the City's four wells. Water use is unavailable for the Columbia River as the City has not exercised their surface water right permit in the past. Water use reports were missing for water years 2009, 2010, and 2011 for the Golf Course Well, Intertie Well, and McFarland Well. Water use reports were missing for water year 2009 for the POU well. Monthly water use for the four wells can be seen in Appendix B. The total monthly water use for the City is shown in Figure 4-1 which depicts high demands in the summer and low demands in the fall, winter, and spring. ¹The well readings in July 2013 are an assumed outlier.

Table 4-1 summarizes the average water use which is calculated by dividing the total water use per water year by the City population for each calendar year as published by Portland State University.

Figure 4-1 – Total Monthly Water Use



¹ The well readings in July 2013 are an assumed outlier.

Table 4-1 – Existing Water Demand

Water Year	Water Use (Acre Feet)	Water Use (million gallons)	Average Daily Water Demand (MGD)	Calculated Peak Day Water Demand (MGD) ²	Calculated Peak Hour Water Demand (MGD) ³	City Population ⁿ¹	Calculated Average Water Demand (GPCD)
2017	1,476.92	481.26	1.319	3.033	4.852	7,245	182
2016	1,419.94	462.69	1.268	2.916	4.665	7,220	176
2015	1,414.11	460.79	1.262	2.904	4.646	7,060	179
2014	1,399.50	456.03	1.249	2.874	4.598	7,050	177
2013	1,533.36	499.65	1.369	3.148	5.038	7,025	195
2012	1,309.37	426.66	1.169	2.689	4.302	7,015	167
2008	1,241.66	404.60	1.108	2.550	4.079	6,495	171
2007	1,292.64	421.21	1.154	2.654	4.247	6,440	179
2006	1,231.43	401.26	1.099	2.529	4.046	6,385	172
2005	2,233.37	401.89	1.101	2.532	4.052	6,370	173
2004	1,247.94	406.64	1.114	2.562	4.100	6,270	178
2003	1,277.43	416.25	1.140	2.623	4.197	6,070	188
2002	1,200.06	391.04	1.071	2.464	3.943	5,990	179
2001	1,158.74	377.58	1.034	2.379	3.807	5,750	180
2000	1,195.88	389.69	1.068	2.456	3.929	5,035	212
Average 2000-2017			1.168	2.687	4.300		180

¹ City population based on calendar year.

² 2.3 Peaking Factor ADD/PDD based on the City’s 2008 Water System Master Plan.

³ 1.6 Peaking Factor PDD/PHD based on Washington State Department of Health Water System Design Manual

The peak day demand (PDD), peak hour demand (PHD), and average daily demand (ADD) for years 2000-2017 is 4.300 Million Gallons per Day (MGD), 2.687 MGD, and 1.168 MGD/ 180 gallons per capita per day (gpcd), respectively. Since the City has seen a substantial increase in water use due to recent development of water-intensive industries, the 2017 peak hour demand of 4.852 MGD and the 2017 average water demand of 1.319 MGD / 182 gpcd were used as the existing demands for analysis.

4.2.2 Potential Build Out Demands

Water demands for the study area were determined by applying a per-acre demand (gallon per acre per day or GPAD) for non-residential land use and a demand per dwelling unit for residential land use. Water demands were based on demands from comparable water systems in the area. Table 4-2 summarizes demand assumptions based on the potential build out land use.

Table 4-2 – Average Daily Domestic Water Demands

Zoning ID	Potential Land Use	Units	Unit ADD
Apt	Apartment	GPDU	432
SFR	Single Family Residential	GPDU	432
MRRR	Medium Demand Rural Residential	GPDU	432
LDRR	Low Demand Rural Residential	GPDU	432
GC	General Commercial	GPAD	1,100
LI	Light Industrial	GPAD	1,100
HI	Heavy Industrial	GPAD	1,100
School	School	GPAD	6,600
Office	Office	GPAD	3,194
Church	Church	GPAD	3,077
EFU	Exclusive Farm Use	GPAD	0
Rec	Open Space - Recreational Use	GPAD	5,781
Park	Open Space - Parks	GPAD	5,781
Open Space ¹	Open Space	GPAD	0

¹ Includes all open spaces which will not have service - All City, State, Federal, County and CTUIR (tribal) owned properties.

4.2.2.1 City of Umatilla

The potential build out domestic water demand was calculated by multiplying the land area by the assumed unit average daily demand based on potential build out land use, as shown in Table 3-3 and Figure 3-3. Table 4-3 depicts the potential build out domestic water demand for the City of Umatilla study zones (City Residential and City West).

Table 4-3 – Potential Build Out Domestic Water Demands – City of Umatilla

Zoning ID	Area	Unit ADD (GPAD)	Total ADD (GPD)
Apt	6.77	9,504	64,335
SFR	241.15	2,160	520,886
MDRR	56.86	216	12,281
LDRR	0	86	0
GC	144.02	1,100	158,426
LI	39.28	1,100	43,211
HI	9.88	1,100	10,865
School	29.53	6,600	194,893
Office	5.71	3,194	18,252
Church	1.59	3,077	4,893
EFU	10.99	0	0
Rec	146.70	5,781	848,071
Park	97.46	5,781	563,405
Open Space ¹	81.87	0	0
Total Average Daily Demand (ADD)			2,439,518 (2.440 MGD)
Total Peak Day Demand (PDD)¹			5,610,892 (5.611 MGD)
Total Peak Hour Demand (PHD)²			8,977,427 (8.977 MGD)

¹ 2.3 Peaking Factor ADD/PDD

² 1.6 Peaking Factor PDD/PHD

No water-intensive industry development is anticipated within the City of Umatilla study zone therefore potential build out industrial water demands are zero. If other water-intensive industries do develop in the study zone, their effects on water demand should be analyzed at that time, and the user should be responsible for installing the necessary infrastructure to accommodate the added demand.

4.2.2.2 Port of Umatilla

The potential build out domestic water demand was calculated by multiplying the land area by the assumed unit average daily demand based on potential build out land use, as shown in Table 3-3 and Figure 3-3. Table 4-4 depicts the potential build out domestic water demand for the Port of Umatilla study zones (Port East and Port West).

Table 4-4 – Potential Build Out Domestic Water Demands – Port of Umatilla

Zoning ID	Area	Unit ADD (GPAD)	Total ADD (GPD)
Apt	0	9,504	0
SFR	0	2,160	0
MDRR	0	216	0
LDRR	0	86	0
GC	0	1,100	0
LI	0	1,100	0
HI	1,319.54 ³	1,100 ³	1,451,497 ³
School	0	3,194	0
Office	0	6,660	0
Church	0	3,077	0
EFU	0	0	0
Rec	0	5,781	0
Park	0	5,781	0
Open Space ¹	0	0	0
Total Average Daily Demand (ADD)			1,451,497 (1.451 MGD)
Total Peak Day Demand (PDD)¹			3,338,443 (3.338 MGD)
Total Peak Hour Demand (PHD)²			5,341,509 (5.342 MGD)

¹ 2.3 Peaking Factor ADD/PDD

² 1.6 Peaking Factor PDD/PHD

³ Vadata acreage and flows are not included and are calculated separately below as industrial demand.

June 2018

For industrial flows, demand data was provided by Vadata, Inc. for the PDX63 site. The PDX63 and PDX2 sites are assumed to have the same demands. PDX2 is expected to have five buildings at build out. The land area for the PDX2 site is 50.5 acres. Table 4-5 depicts the potential build out industrial water demand for the Port of Umatilla study zone.

Table 4-5 – Potential Build Out Industrial Water Demand – PDX2

Land Use	Description	Units	ADD ¹	PDD ²	PHD ³
HI	Heavy Industrial	GPD (MGD)	146,370 (0.146)	1,506,570 (1.507)	4,032,000 (4.032)

¹ Sum of sites annual water use (10,685,069 gallons) divided by 365 days = 29,274 gpd/building * 5 buildings = 146,370 gpd

² Peak month (July) max day demand (301,314 gpd/building) * 5 buildings = 1,506,570 gpd

³ 560 gpm/building * 5 buildings = 2,800 gpm = 4,032,000 gpd

Aside from PDX2, no other water-intensive industry development is anticipated within the POU study zone. If other water-intensive industries do develop in the POU, their effects on water demand should be analyzed at that time and the user should be responsible for installing the necessary infrastructure to accommodate the added demand.

4.2.2.3 395 Corridor

The potential build out domestic water demand was calculated by multiplying the land area by the assumed unit average daily demand based on potential build out land use, as shown in Table 3-3 and Figure 3-3. Table 4-6 depicts the potential build out domestic water demand for the 395 Corridor study zone.

Table 4-6 – Potential Build Out Domestic Water Demands – 395 Corridor

Zoning ID	Area	Unit ADD (GPAD)	Total ADD (GPD)
Apt	0	9,504	0
SFR	419.75	2,160	906,658
MDRR	178.67	216	38,592
LDRR	310.51	86	26,704
GC	659.76	1,100	725,735
LI	899.75	1,100	989,727
HI	0 ³	1,100 ³	0 ³
School	0	3,194	0
Office	0	6,660	0
Church	0	3,077	0
EFU	0	0	0
Rec	0	5,781	0
Park	0	5,781	0
Open Space ¹	402.86	0	0
		Total Average Daily Demand (ADD)	2,687,417 (2.687 MGD)
		Total Peak Day Demand (PDD)¹	6,181,060 (6.181 MGD)
		Total Peak Hour Demand (PHD)²	9,889,695 (9.890 MGD)

¹ 2.3 Peaking Factor ADD/PDD

² 1.6 Peaking Factor PDD/PHD

³ Vadata acreage and flows are not included and are calculated separately below as industrial demand.

For industrial flows, demand data was provided by Vadata for the proposed PDX63 site. PDX63 is expected to have five buildings at build out. The land area for the PDX63 site is 266.91 acres. Table 4-7 depicts the potential build out industrial water demand for the 395 Corridor study zone.

Table 4-7 – Potential Build Out Industrial Water Demand – PDX63

Land Use	Description	Units	ADD ¹	PDD ²	PHD ³
HI	Heavy Industrial	GPD (MGD)	146,370 (0.146)	1,506,570 (1.507)	4,032,000 (4.032)

¹ Sum of annual water use (10,685,069 gal) divided by 365 days = 29,274 gpd/building * 5 buildings = 146,370 gpd

² Peak month (July) max day demand (301,314 gpd/building) * 5 buildings = 1,506,570 gpd

³ 560 gpm/building * 5 buildings = 2,800 gpm = 4,032,000 gpd

Aside from PDX63, no other water-intensive industry development is anticipated within the 395 Corridor study zone. If other water-intensive industries do develop in the study zone, their effects on water demand should be analyzed at that time and the user should be responsible for installing the necessary infrastructure to accommodate the added demand.

Table 4-8 – Water Demands Summary

Demand Type	Total Demand (MGD) ¹		
	ADD	PDD	PHD
City of Umatilla			
Domestic	2.440	5.611	8.977
Port of Umatilla			
Domestic	1.451	3.338	5.342
Industrial	0.146	1.507	4.032
Port of Umatilla			
Domestic	2.687	6.181	9.890
Industrial	0.146	1.507	4.032
Total Study Area Demands	6.870	18.144	32.273

¹ See Table 4-3, Table 4-4, Table 4-5, Table 4-6, Table 4-7.

4.3 Water Rights

4.3.1 Groundwater Rights

The City obtains their water from the existing deep basalt aquifer through four groundwater wells. The aquifer is in decline, which threatens the City’s existing water source.

The City currently has four water supply wells in operation; three of which they own including the McFarland Well, the Golf Course Well, and the Intertie Well; and they lease the Port Well from the Port of Umatilla. The City provides chlorine disinfection treatment to well water from each source. At each well, chlorine is injected into the well water prior to discharging into the reservoirs. Well locations can be seen in Figure 4-2 and the existing water rights can be found in Appendix C.

- McFarland Well – 2.28 cfs

The McFarland Well is the primary supply for the Coyote and Powerline High Level Systems and the secondary supply for the Low Level System. It is located southeast of the Grant Street/McFarland Avenue intersection. It is reported to have been drilled in 1947 and is 785 feet

deep. The well is only partially cased and has several different diameters of casing. This well is located in the Buttercreek Critical Groundwater Area as determined by OWRD.

The static level in this well has varied from 155 feet to 216 feet below ground surface from the period 1998 to May 2000. The pumping level varied from 215 feet to 264 feet at 550 gpm during the same period.

McFarland Well information is provided for information only and serves an area of the City outside of the report study area. The water rights associated with this well are not considered in the report demands analysis.

- Intertie Well – 8.9 cfs

The Intertie Well and Reservoir are located directly southwest of the Highway 395/Highway 730 intersection. The well discharges directly into the Intertie Reservoir and its operation is controlled by fluctuations in the water level in the Intertie Reservoir. It is the primary supply source for the Low Level System. It can also provide water to the McNary High Level System through the McNary Booster Pump Station and to the McFarland Reservoirs through an altitude valve. The Well was constructed in 1979 and was drilled to a depth of 1,138 feet. A 20-inch casing extends to 500 feet below the surface. Declining ground water levels prompted the City to lower the pump to 650 feet in 1998.

- Golf Course Well – 8.9 cfs

The Golf Course Well is located in the Port of Umatilla Industrial Park along Bud Draper Road. This well discharges either into the McNary Reservoir or into the McNary Booster Pump Station when the reservoir is bypassed. It was constructed in 1978. The well is 989 feet deep, has a 20-inch casing to 500 feet below the surface, and is open rock hole to the bottom. The pump operates alternatively with the Port Well as the lead and lag pump automatically, based on the water levels in the 1.8 million gallons McNary Reservoir. It can also be controlled manually. The Golf Course Well is one of two sources of supply for the McNary area. The McNary area can also supply water to the Low Level System by use of a bypass and pressure reducing vault adjacent to the McNary Booster Pump Station.

- Port Well – 4.46 cfs

The Port Well is the second supply source for the McNary area. The City holds a 40-year lease (expires February 12, 2040) from the Port of Umatilla that gives the City rights to the property and use of the well for municipal use of the water. The Port Well is a deep basalt well permitted for municipal and industrial use. The well is 850 feet deep with a 24-inch casing from 99 feet down to 345 feet. Although the pump is situated near the Columbia River, it is not hydraulically connected to the surface water source.

Table 4-9 below summarize the groundwater well and booster pump station information.

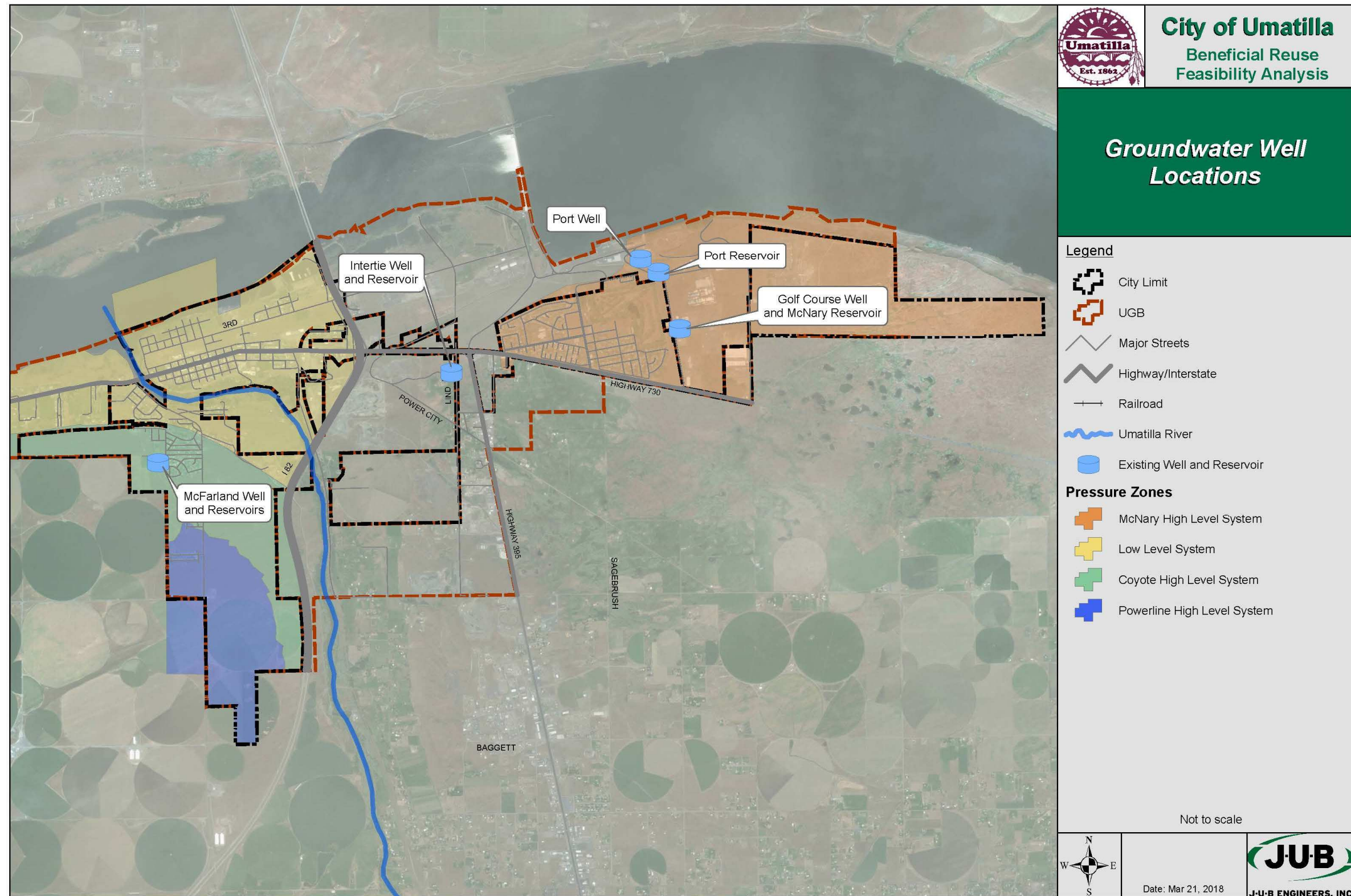
Table 4-9 – Groundwater Wells

Source	Water Right (cfs / MGD)	TDH (ft)	Rate (gpm)	Service Area
McFarland Well	2.28 / 1.474	239	560	Coyote High Level System / Powerline High Level System ¹
Intertie Well	8.90 / 5.752	626	760	Low Level System (primary) / All Systems (secondary)
Golf Course Well	8.90 / 5.752	384	1,950	McNary High Level System
Port Well	4.46 / 2.883	299	2,000	McNary High Level System
TOTAL	24.54 / 15.861		5,270	

¹ The McFarland Well serves areas outside of the report study area therefore, it is not considered in potential build out analysis.

Provided that the pumping capacity of the wells can be increased in order to maximize the water rights, continued use of the City’s groundwater wells can be used as the source for industrial and domestic water in the near-term until the water right has been maximized or the City needs the water for domestic use. Use of this water source would not require the installation of a water treatment facility. Although the use of groundwater is sufficient for the near-term, the aquifer is declining and the source is not reliable and is therefore a limiting factor for long-term use.

Figure 4-2 – Groundwater Well Locations



4.3.2 Surface Water Rights

The City currently has a 23 cfs (14.9 mgd) surface water right permit from the Columbia River, none of which is currently used. The water is designated for municipal consumption with the point of diversion located at the McNary pool. The application for permit (Application No. 54855) was made in October 1976 and the permit (Permit No. 41444) was granted in April 1977. Currently there is no existing infrastructure in place to utilize this surface water right. The extended completion date has been approved for October 1, 2055. The permit notes that the diversion will be developed using shallow “Raney type collector wells” approximately 100 feet in depth.

4.4 Potential Surface Water Users

4.4.1 City of Umatilla

The City West and City Residential study zones are currently, and will continue to be, served by the existing groundwater sources. Industrial development requiring additional water capacity is occurring outside of these areas; therefore no change in water services is anticipated in the City West and City Residential zones.

4.4.2 Port of Umatilla

The Port, which includes the Port West and Port East study zones, has had water-intensive industries move into the area in recent years. Although water rights are adequate to serve the study area, these industries are threatening the City’s current groundwater source as the existing aquifer is declining and cannot support full use of the groundwater rights. Therefore, the City is seeking to utilize their existing surface water right for industrial use. The permit notes “Municipal consumption,” which includes irrigation, power, mining, manufacturing, and domestic supplies. Infrastructure to convey non-potable surface water is necessary to be used for non-contact cooling water. Infrastructure at the POU allowing use of the surface water right will enable the City to support current and future industries at the POU without compromising the City’s declining deep basalt aquifer. Future industries should make the necessary upgrades to accommodate their added flow. The City should analyze added demands for each new user to determine if capacity exists.

4.4.3 395 Corridor

The 395 Corridor is currently served by on-site septic and private wells. The City has been approached by commercial and industrial enterprises interested in developing within the study zone, although these entities have been deterred due to lack of public utilities and fire flow concerns. The City is seeking to utilize its existing surface water right to serve the 395 Corridor. Infrastructure allowing use of the surface water right will stimulate economic development by attracting new industries to the area while enabling the City to support current and future development needs without compromising the City’s declining deep basalt aquifer. Required infrastructure would include a new water treatment plant to treat the surface water to potable water standards. Future industries will need to make the necessary upgrades to accommodate their added flow.

The Regional Water Supply currently serves water to the PDX63 site. Once the City has infrastructure in place, Vadata’s PDX63 data center will be contractually obligated to connect to City utilities, at the City’s discretion, since the facility is within City limits. Upon connection, Vadata will be required to make

necessary upgrades to accommodate their added flow. This report assumes although the City has the right to force connection, they will allow PDX63 to continue receiving water from the Regional Water Supply.

4.5 Water Needs Analysis

Based on the existing and potential build out water demands as estimated in Section 4.2 and summarized in Table 4-10 and Table 4-11 below, there is a need to utilize surface water at full build out. Analysis suggests there is enough water right capacity to serve the study area at build out, based on peak day demand. Peak hour demand needs will be accommodated via storage.

Table 4-10 – Study Area Water Capacity Analysis – Existing Conditions

Location	2017 Existing ADD (MGD) ¹	2017 Existing PDD (MGD) ¹	2017 Existing PHD (MGD) ¹	Existing Water Rights		Existing ADD Excess Capacity (MGD)	Existing PDD Excess Capacity (MGD)
				Groundwater (cfs / MGD)	Surface Water (cfs / MGD)		
Study Area	1.319	2.687	4.300	24.54 / 15.861	23.00 / 14.865	14.542 ²	13.174 ²

¹ See¹ The well readings in July 2013 are an assumed outlier.

Table 4-1 Table 4-1

² Groundwater only. Does not account for excess surface water capacity since surface water is currently unusable to the City due to lack of infrastructure.

Table 4-11 – Study Area Water Capacity Analysis – Potential Build Out Conditions

Location	Build Out PDD ¹		Existing Water Rights		Build Out PDD Excess Capacity	
	Groundwater (MGD)	Surface Water (MGD)	Groundwater (cfs / MGD) ³	Surface Water (cfs / MGD)	Groundwater (MGD)	Surface Water (MGD)
Study Area	8.949	7.688	22.26 / 14.387	23.00 / 14.865	5.438	7.177
City Of Umatilla	5.611	--	22.26 / 14.387	--	8.776	--
Domestic (Potable)	5.611 ²	--	22.26 / 14.387	--	8.776	--
Industrial (Non-Potable)	--	--	--	--	--	--
Port Of Umatilla	3.338	1.507	22.26 / 14.387	23.00 / 14.865	11.049	13.358
Domestic (Potable)	3.338 ²	--	22.26 / 14.387	--	11.049	--
Industrial (Non-Potable)	--	1.507 ²	--	23.00 / 14.865	--	13.358
395 Corridor	--	6.181	--	23.00 / 14.865	--	8.684
Domestic (Potable)	--	6.181 ²	--	23.00 / 14.865	--	8.684
Industrial (Non-Potable) ⁴	--	--	--	--	--	--

¹ See Table 4-3, Table 4-4, Table 4-5, Table 4-6, and Table 4-7

² Build out Water Demand is the total domestic and industrial demand for the entire study area. This does not include areas within City limits and the UGB west of the Umatilla River which are outside the Study Area.

³ The McFarland Well water rights were not considered in the analysis as the well serves areas outside of the report study area.

⁴ This report assumes the Regional Water Supply will continue to serve the PDX63 site with water after City utilities are expanded to the 395 corridor.

For the McFarland, Intertie, and Golf Course Wells, the pumping capacity is less than the water right. The existing pumps at the Port Well are adequate to utilize the full water right. Table 4-12 summarizes the existing water rights, pump capacity, and potential built-out water demands for individual study zones.

Table 4-12 – Groundwater Well Capacity

Source	Existing Water Right (cfs / gpm / MGD)	Build Out PDD (MGD)	Existing Pumping Rate (gpm / MGD)	Existing Unutilized Water Right (gpm/MGD) ¹	Build Out PDD Excess Pump Capacity (MGD) ¹	Service Area
McFarland Well	2.28 / 1,023 / 1.474	n/a	560 / 0.806	463 / 0.668	n/a	n/a (outside Study Area)
Intertie Well	8.9 / 3,994 / 5.752		760 / 1.094	3,234 / 4.658		City West
Golf Course Well	8.9 / 3,994 / 5.752	8.949	1,950 / 2.808	2,044 / 2.944	-2.164	Port of Umatilla
Port Well	4.46 / 2,000 / 2.883		2,000 / 2.883	0 / 0.000		Port of Umatilla

¹ Excess capacity does not take into consideration existing or build out capacity of areas within City limits and the UGB west of the Umatilla River which are outside the Study Area.

The existing well pump capacities are not adequate to accommodate potential build out demands. Pump upgrades may be considered for near-term needs but may exacerbate falling groundwater levels and therefore is not a long-term viable solution.

4.6 Potable Water Supply Alternatives Analysis

The City has three basic options to meet future water demands:

- Groundwater,
- Surface water, and
- Reuse water

Groundwater: The aquifer the City withdraws groundwater from has been declining; therefore, further development of the aquifer may not be feasible and could jeopardize future groundwater supplies. City staff have indicated that over the last two years they have witnessed a drop in the aquifer water level of approximately 50 feet. With an aquifer dropping at a rate of 25 feet per year, wells will have to be regularly deepened and their pumps replaced with larger horsepower units demanding more electricity and resulting in escalating energy cost. While the City may have to continue to chase groundwater levels lower, planning to use groundwater to meet future water needs does not appear to be a good solution unless new withdrawal locations can be established in areas where the aquifer(s) are not in decline.

Surface Water: The City currently has an undeveloped surface water right that provides an instantaneous withdrawal rate of 23 cfs from the Columbia River that should be utilized to meet current and future water needs. Developing a surface water supply option will provide an additional water supply for both domestic and industrial users, while conserving the groundwater in the deep basalt aquifer. Use of this water source for domestic purposes would require installation of a surface water treatment facility. Some industrial users may be able to use surface water with no treatment for non-contact cooling and other purposes which might limit the size of the treatment plant required. Some potable and industrial water demand may be able to be met using highly treated wastewater reuse.

Reuse Water: Reuse water is any wastewater of sufficient quality to allow for beneficial use. The potential exists to use reuse water as an irrigation water source within the City. Use of reuse water for irrigation would have a direct effect on the City's water use and potentially reduce the demand on the deep basalt aquifer. In this study, there are three sources of reuse water:

1. Highly treated domestic wastewater, and

2. Non-contact cooling tower industrial wastewater effluent that is of sufficient quality for reuse without treatment, and
3. Highly treated heavy industrial wastewater effluent. At this time, no industries that produce a high strength waste are expected.

Each of these options (and the No Action alternative) to meet future water demands are discussed further in the following paragraphs.

4.6.1 No Action

4.6.1.1 Alternative A-1 – No Action

Preliminary Opinion of Probable Cost: \$0

Permitting/Environmental Concerns: No immediate impact. The long-term impact of no action will be the City's inability to provide potable water to the expected growth area.

While the City has capacity in their existing groundwater water rights to provide service to the current users, the existing groundwater water rights will not provide adequate capacity for build out water demands within the study area without development of an additional water source. In addition, the City's groundwater aquifer is declining rapidly. This alternative is not a viable long-term water supply solution to meet future demands.

No action to develop new water supplies would limit the City's ability to grow and reliably serve users within the existing service area. Therefore, no action is not a feasible alternative for long-term sustainability.

4.6.2 Groundwater

4.6.2.1 Alternative A-2 – Increase Groundwater Capacity

Preliminary Opinion of Probable Cost: \$9.5M

Permitting/Environmental Concerns: The State has committed substantial resources to limit water withdraws from the dwindling groundwater supply in the Umatilla Basin. Further development of the groundwater would face a number of high regulatory hurdles. The Umatilla Basin is home to four of Oregon's six Critical Groundwater Areas. While the City of Umatilla is not included in any Critical Groundwater Area, they are bordered to the west and south in Irrigon and Hermiston. At current use, City staff report consistent drops in the groundwater levels in relation to City groundwater wells. Increased use, especially deeper well drilling, could threaten the already declining deep basalt aquifer. Obtaining approval from OWRD for additional groundwater rights is highly unlikely under these conditions.

The City obtains their water from the existing deep basalt aquifer by means of four wells. Currently, the Port Well is the only well capable of withdrawing the full authorized water right. Increasing the pumping capabilities of the nearby Golf Course Well and Intertie Well to utilize their full water rights would increase their capacities by 4.658 MGD and 2.944 MGD, respectively. Existing groundwater rights between the three wells total 14.387 MGD. Industrial and domestic water demands total 16.637 MGD during potential build out conditions; therefore the increased capacity is not adequate to serve the study area through projected build out. Increased pumping capacity could provide additional water to meet near-term growth demands but risks lowering the deep basalt aquifer further. Additional new groundwater wells and water rights would be required to provide an additional 2.250 MGD of capacity,

assuming upgrades and full water right use of the Golf Course and Intertie Wells. Additional water right capacity from the McFarland Well was not considered in the analysis since the well serves areas outside of the report study area.

Based on observation of the declining aquifer and its impacts on existing infrastructure, it was determined deep basalt aquifer likely cannot support additional well pumping capacity on a continuous basis. The additional pumping capacity would be beneficial from the perspective of protecting the water right and meeting short-term peak water demands or emergency demands not having long-term impacts on the aquifer level. Evaluation of well and pump upgrades at the Intertie Well and Golf Course Wells should be considered as a part of future planning and design efforts as development occurs.

An additional 9.852 MGD (6,654 gpm) of water rights is needed if the City's additional water capacity is obtained solely from existing groundwater water rights and wells assuming current pump rates are maintained at the existing wells. The 2008 Water Master Plan identified the south quarter corner of Section 12 as a recommended new deep basalt well location. However, 9.852 MGD represents a 24 hour pumping rate of 6,654 gpm (14.8 cfs) and would require multiple wells. The Section 12 location is assumed to utilize groundwater from the same aquifer as the Port, Golf Course, and Intertie Wells, which could potentially further threaten the existing declining aquifer. Drilling new wells would require land acquisition and construction of additional infrastructure including new pump stations.

Although an unlikely scenario due to the limitations noted above, this budget estimate includes increasing production at the Intertie Well and the Golf Course Well to fully produce the total groundwater right. This would involve increasing flow from the Intertie Well from 760 to 3,994 gpm and on the Golf Course Well from 1,950 to 3,994 gpm. For the purpose of this study, it was assumed that production would be increased at the Intertie Well by adding two wells with production capacity of 1,600 gpm each. Similarly, production would be increased at the Golf Course Well by adding one (1) deep basalt well with a capacity of 2,000 gpm. The increase in production to utilize the full groundwater right would result in approximately 5,278 gpm (7.600 MGD) of new production coming close to matching the additional anticipated demand of 6,654 gpm (0.582 MGD) at buildout.

In summary, deep basalt groundwater production could potentially be increased by adding additional production wells; however, with declining aquifers in the area, this option is not recommended for further action. If alternative is pursued, additional analysis of the existing aquifer is needed to determine feasibility.

4.6.3 Surface Water

Based on the capacity analysis in Table 4-11 and Table 4-12, an increased groundwater pumping capacity and use of the City's 23 cfs surface water right is needed to accommodate potential build out water demands. As was noted in the prior paragraphs, expanding pumping of the existing aquifer does not appear to be a viable option for supplying the City with additional water. Use of the City's existing surface water rights would be need to meet future buildout demands assuming well production remains unchanged to avoid further drafting of the aquifer and assuming the surface water right is developed. Alternatives to develop the City's 23 cfs surface water right are discussed below.

4.6.3.1 Alternative A-3 - Expand Existing Regional Water Supply Pump Station

Preliminary Opinion of Probable Cost: \$6.1M

Permitting/Environmental Concerns: This alternative will likely have permitting and regulatory obstacles from NOAA NMFS, U.S. Fish and Wildlife Service (USFWS), Federal Emergency Management Administration (FEMA), USACE, and EPA

as all agencies have No Net Loss policies that will affect work in the Columbia River.

Regarding USACE permitting, a Section 10 permit, which is part of the 1899 Rivers and Harbors Act, would be likely for the City to obtain as the project would not obstruct navigable waters. A Section 404 permit from USACE, a part of the Clean Water Act, would be difficult to obtain because the structure would be treated as fill materials being placed in the river. Construction of a new pump station in the river, or installation of an intake pipe into the river for a shore-based pump station, would require in-water excavation/dredging at a minimum along the shoreline. Piles and other materials placed into the river to build the pump station or intake pipe are also treated as fill materials being placed in the river. USACE's No Net Loss policy would make implementing this action very difficult, if not impossible.

USACE, EPA, and USFWS regulate and enforce a No Net Loss policy that is empowered through the Clean Water Act Section 4(b)(1) and relates to natural function, quality, and quantity of aquatic resources (wetlands, streams, rivers, etc.) that would be impacted by development in or near the river. NMFS' No Net Loss policy relates to the natural function of fisheries and is empowered through the Endangered Species Act (ESA). The Columbia River is home to many ESA species and official Critical Habitat.

FEMA's No Net Loss policy is in relation to floodplain development. Much of the City is unmapped by FEMA and development near the river would likely require survey and additional analysis of the floodplain. The various agency policies would require the City to develop mitigation for any additional withdrawal of water, and/or aquatic resources, and/or impact to wetlands, and/or ESA-protected fish species.

The Regional Water Supply system is owned and operated by the Port of Umatilla, City of Hermiston, and various private industries. Infrastructure includes a pump station that draws surface water from the Columbia River on the left bank approximately 1,700 feet upstream from McNary Dam at river mile 293. The water system provides surface water to domestic, industrial, and agricultural users downstream via a 42-inch diameter pipeline from the river pump station south.

This alternative examines the possibility of expanding the existing river pump station, that withdraws from the Columbia River, to supply the City of Umatilla's 23 cfs water right. Information provided on the existing pump deck suggests the existing pumps are at capacity and there are no spare pump holes in the deck where new pumps could be added. Without available pump holes, use of the deck would require modifications to allow for the installation of additional pumps and a separate discharge penstock. Work of this magnitude would require the acquisition USACE's Section 10/404 permit. As a part of the Corps permitting process they would initiate a consultation with NMFS to generate requirements for the permit necessary to protect ESA listed anadromous fish in the Columbia River. Since the mid 1990's, NMFS has had a no net loss policy for water withdrawals from the Columbia River and has permanently stalled USACE permits for work in the Columbia River that include new or increased withdrawals.

4.6.3.2 Alternative A-4 - New Pump Station

Preliminary Opinion of Probably Cost: \$5.5M

Permitting/Environmental Concerns: Similar to Alternative A-3, this alternative will likely have permitting obstacles such as federal No Net Loss Policies that effect the Columbia River. Endangered species exist in the Columbia River.

This alternative looked at the construction of a new river pump station to withdraw the City's surface water right from the McNary Pool, Columbia River. The point of diversion would be located near the existing Port Well in accordance with the existing surface water right. The construction of a new intake structure and pump station would require a permit from the USACE and various other agencies to work in the Columbia River. During the permitting process, the USACE would consult with other federal agencies and gather input from other state and local agencies, interested groups, and the general public. The USACE has issued numerous permits to work in the Columbia River to reconstruct and maintain existing water withdrawal facilities in recent years. The City's surface water right has not been put to beneficial use and would be considered a new withdrawal resulting in a net loss to the river's instream flows.

Implementation of this alternative would require some form of mitigation in order to secure permits. That mitigation could include purchasing water rights from upstream water users who have put their water rights to beneficial use and are now looking to sell them. If this alternative is pursued the City may want to begin exploring options for purchasing water rights that have been put to beneficial use or other mitigation means.

4.6.3.3 Alternative A-5 – Wells Hydraulically Connected to the Columbia River

Preliminary Opinion of Probable Cost: \$9.0M

Permitting/Environmental Concerns: While wells hydraulically connected to the Columbia River may result in instream flow losses in the river, they do not require a USACE permit if located off USACE property. Eliminating the need for a USACE permit may also eliminate the need to consult with NMFS and impact of their no net loss policy, providing only the City funds are used. This would eliminate the most significant hurdle to withdrawing water from the river, but the option may still require significant coordination with other agencies. If Federal or State financing is utilized, a National Environmental Policy Act-level environmental review will be required, which necessitates consultation with NOAA and USFWS.

This alternative involves drilling five (5) vertical wells adjacent to the Columbia River to access water that is directly hydraulically connected to the Columbia River. The wells would be located on property adjacent to the Columbia River that is not owned or controlled by federal agencies whose permitting requirements could render the surface water right unusable. There are numerous locations along the Columbia River, off federal property, where wells that are hydraulically connected to the river have been drilled to put surface water rights to beneficial use.

Another advantage to this method of withdrawing surface water rights is the fact that it avoids the need for fish screens and in-water work. One disadvantage is the additional pumping head required to overcome the head loss resulting from passing the water through the subsurface materials between the river and the wells.

For wells to work as a means of withdrawing surface water, subsurface geology must consist of materials with a porosity and depth sufficient to allow the movement of surface water from the river to the well in quantities that make the wells viable. The wells could be drilled into gravel or into fractured basalt as

long as the formation is connected to the river. Existing fractured basalt wells used to withdraw surface water in this area have generally produced in the range of 1,000 gpm to 2,500 gpm which suggests anywhere from about 5 to 11 vertical wells could be required to withdraw the City's 23 cfs water right.

If gravels are encountered, a Ranney style collector well could be constructed. . The current water right for 23 cfs (Application No. 548955, Permit No. 41444) authorizes withdrawal of surface water using wells hydraulically connected to the Columbia River. While Ranney Wells are specifically noted, vertical high production shallow wells were assumed to be more cost effective. The Ranney system involves drilling a large diameter (30-foot) shaft to a depth of approximately 100-feet below ground level. Horizontal wells are then drilled out from the large diameter shaft to produce high volumes of water.

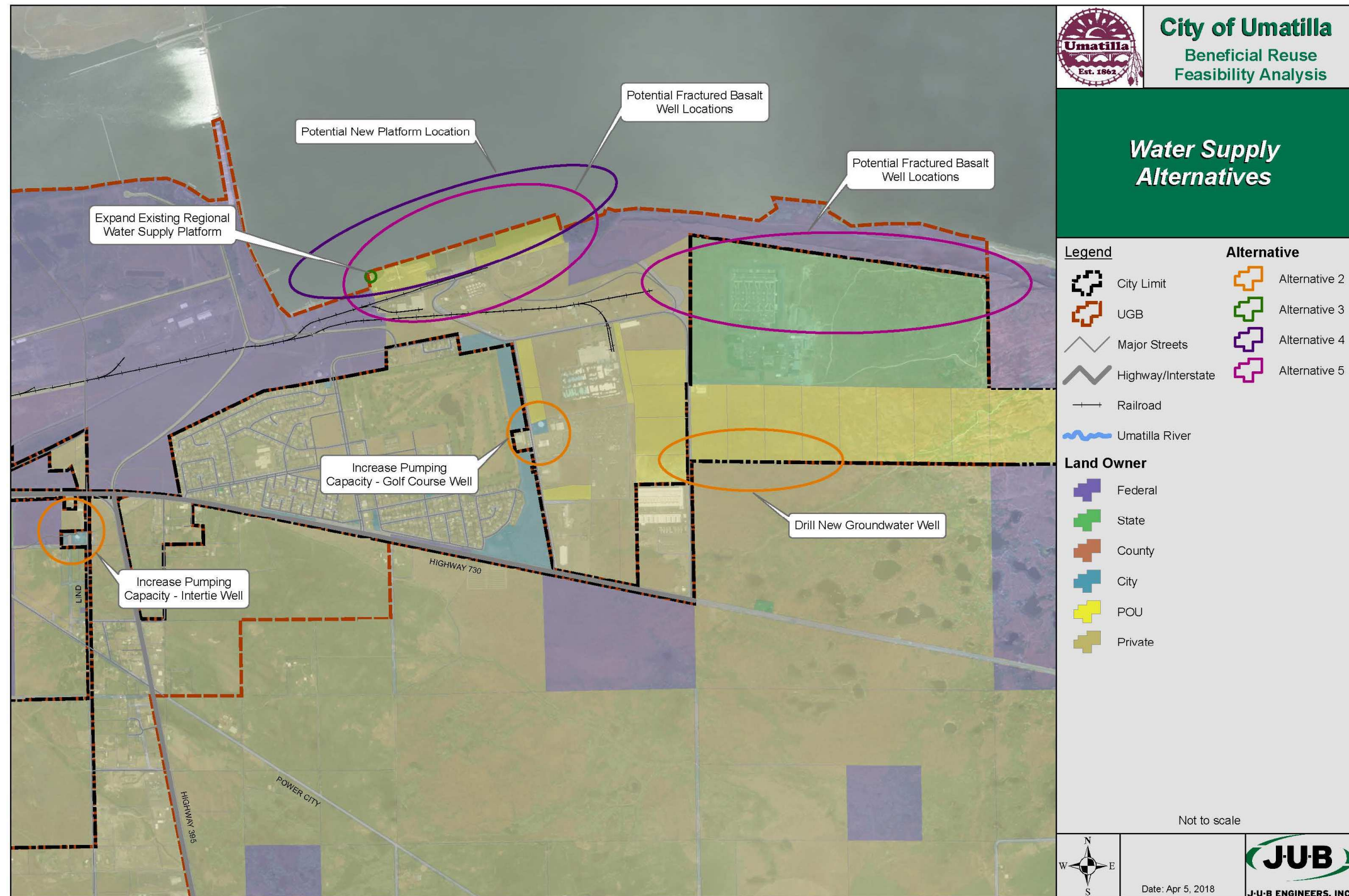
The process of establishing the viability of this option and locating the wells would begin with a geotechnical study that would likely involve subsurface geophysical survey work to establish where the right geologic conditions exist to pump water from the river. Following establishment of the potential locations, a small diameter test well would be drilled, pumped, and water samples taken for a chemical analysis to establish whether the water is river water or groundwater.

The City of Umatilla has discussed preliminary work to establish locations where water from the river may be available in the basalts. Initial analysis suggests there are potential well locations adjacent to the McNary Pool that have a high probability of hydraulic connectivity. Additional analysis and site investigation, including drilling test wells, is required to confirm capacity and hydraulic connectivity. Well locations are shown in Figure 4-3 and would require land acquisition from the POU and/or the Department of Corrections.

Use of water hydraulically connected to the Columbia River would be considered a surface water source from the perspective of treatment requirements. A new water treatment plant would be required if surface water is to be used to meet potable water demand.

These hydraulically connected wells would be considered Groundwater Under the Direct Influence of Surface Water (GWUDI) by OHA. As a result, the water would need to be treated similarly to a surface water in order to be used as a drinking water source. Costs for this option would include treating approximately 12 cfs to drinking water standards using a membrane type treatment plant with ultraviolet disinfection and chlorination prior to being pumped to storage. The remaining flow could be pumped untreated and used for non-contact cooling water or other industrial uses within the City limits.

Figure 4-3 – Water Supply Alternatives



4.6.4 Alternative Screening

Table 4-13 summarizes alternative summary and screening comparisons.

Table 4-13 – Alternative Summary and Screening Comparison

DESCRIPTION	PROS	CONS
Alternative A-1 – No Action (\$0)		
“Do Nothing” – Continue sole use of groundwater source	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> City’s groundwater aquifer is declining & is not a reliable water source. High risk.
Alternative A-2 – Increase Groundwater Capacity (\$9.5M)		
Increase pumping capacity to utilize full water right at the Golf Course and Intertie Wells and drill new groundwater wells to increase capacity to meet potential build out demand.	<ul style="list-style-type: none"> Utilize existing groundwater right. 	<ul style="list-style-type: none"> Groundwater right won’t allow for buildout water demands therefore new well are required to increase capacity. City’s groundwater aquifer is declining & is not a reliable water source. Regulatory concerns. High risk.
Alternative A-3 – Expand Existing Regional Water Supply Pump Station (\$6.1M)		
Construction infrastructure at the existing Regional Water Supply Pump Station to acquire surface water from the Columbia River.	<ul style="list-style-type: none"> Utilize existing infrastructure. 	<ul style="list-style-type: none"> Approval unlikely from the Regional Water Supply. Regulatory, Environmental, and permitting concerns.
Alternative A-4 – New Pump Station (\$5.5M)		
Construction of a new Pump Station within the McNary Pool to acquire surface water from the Columbia River.	<ul style="list-style-type: none"> None. 	<ul style="list-style-type: none"> Regulatory, Environmental, and permitting concerns.
Alternative A-5 – Wells Hydraulically Connected to the Columbia River (\$9.0M)		
Drill wells adjacent to the Columbia River to access surface water that is hydraulically connected to the Columbia River.	<ul style="list-style-type: none"> No environmental concerns. City controlled schedule. No in-water work necessary. 	<ul style="list-style-type: none"> Proof of hydraulic connectivity. Additional pumping head needed. Additional treatment water (GWI).

4.6.5 Recommend Potable Water Supply Alternative

The recommended improvement to accommodate the increased water use and alleviate the existing deep basalt aquifer is as follows:

- **Alternative A-5 – Wells Hydraulically Connected to the Columbia River** – The City’s 23 cfs surface water right has the ability to provide a more reliable water source by alleviating and reducing reliance on the declining deep basalt aquifer; provide water to water-intensive industries; and accommodate development within the study area, particularly the 395 corridor. Initial analysis suggests the well locations selected adjacent to the McNary Pool have a high probability of hydraulic connectivity to the Columbia River. Additional analysis and site investigation, including drilling test wells, is required to confirm capacity and hydraulic connectivity.

Utilization of the surface water right to accommodate the groundwater pumping capacity shortfall should be considered and would require additional infrastructure as development occurs. Pump upgrades at the existing wells may be feasibility for the near-term but is not sustainable to serve potential build out conditions. Pump upgrades at the Intertie Well and Golf Course Wells will likely compromise the declining aquifer and should be re-analyzed. The City should analyze and implement noted improvements, as necessary, to accommodate future development for long-term sustainability.

4.7 Reuse Water Alternatives

The City can generate reuse water to offset demands on their water supply sources from domestic or industrial wastewater:

1. **Domestic Wastewater Reuse**
 - a. Additional unit process could be added to the existing WWTP to produce reuse water. Depending on the quality of reuse water, the reuse water could be used for many purposes, including, but not limited to, private irrigation, park irrigation, athletic fields irrigation, green belts irrigation, golf course irrigation, cemetery irrigation, and dust control.
2. **Industrial Wastewater Reuse**
 - a. Cooling tower effluent - Non-contact cooling tower wastewater is of sufficient quality that it can be reused without treatment. The City currently receives non-contact IWW and expects to receive much more as the industry expands. In lieu of increasing capacity at the WWTP (at great expense), the City pursued reuse as a less expensive option. To that end, the City applied for a NPDES permit to discharge non-contact cooling tower IWW into a nearby irrigation canal. A permit is expected in the Fall of 2018.
 - b. Heavy Industrial wastewater reuse - Should a heavy industry locate within the study area that produces a high-strength waste, the reuse of that IWW would require the construction of a mechanical/biological treatment facility capable of producing an effluent of sufficient quality for the target reuse and effluent storage to store the reuse water in the winter for use during the irrigation season. At this time, the City not planning for any heavy industrial wastewater producers.

Wastewater reuse has two fundamental benefits:

1. Decrease effluent disposal cost - It is very costly to manage low strength non-contact cooling tower effluent through a mechanical/biological/chemical wastewater treatment facility when

none of those treatment process are needed. Therefore, direct IWW reuse has long term cost savings after the initial capital infrastructure is built.

2. Reducing the demand on potable water supplies - Every gallon of reuse water used in place of a gallon of “other” water reduces the water drawn from potable sources, in this case either the Umatilla and Columbia Rivers or groundwater.

4.7.1 Potential Reuse Water Users

4.7.1.1 City of Umatilla

Locations within the study zone may provide opportunities to utilize reuse water by land application. No cooling tower industries exist within the City of Umatilla study zones, therefore beneficial reuse would require upgrades to the existing WWTP to produce Class A water. New infrastructure to convey reuse water to the users is also necessary. Potential reuse locations include the existing wastewater treatment plant landscaped areas, existing and future City parks, the Marina landscapes areas, the golf course, the cemetery, existing and future RV parks, hillside near Interstate 82 bridge that the City would like to irrigate for aesthetic purposes, the future soccer field complex near the Marina, other existing and future recreation areas, and any future new development areas. Potential reuse areas are depicted below in Figure 4-4.

Irrigating areas with reuse water that are currently being irrigated with potable water would reduce the demand on potable water sources (groundwater and/or the Columbia River).

4.7.1.2 Port of Umatilla

Locations exist within the POU that may be suitable for land application using reuse water. These locations include existing and future City parks, other existing and future recreation areas, and new development areas. Potential reuse areas are depicted below in Figure 4-4. These areas may be served either by routing Class A reuse water from the WWTP to the POU or routing cooling tower effluent to the areas to be served.

Cooling tower effluent generated within the Port study zone could also be discharged to the BOR Phase 1 Exchange Canal for agricultural beneficial use. Infrastructure to convey reuse water from the POU to the BOR canal is necessary. This new infrastructure would enable the City to support current and future industries discharging non-contact cooling water without inundating its existing wastewater treatment plant.

4.7.1.3 395 Corridor

Similar to the discussion above, locations within the 395 Corridor study zone could be served by routing Class A reuse water from the WWTP or routing non-contact cooling tower effluent to the areas to be served. Also, non-contact cooling tower industries in the 395 Corridor study zone could discharge effluent to the WEID or BOR canals for agricultural use. Infrastructure to convey reuse water from the 395 Corridor to the canals is necessary. This new infrastructure would enable the City to support current and future industries discharging non-contact cooling water without inundating their existing wastewater treatment plant.

Other locations within the 395 Corridor may be suitable for land application using reuse water. These locations include existing and future City parks, future RV parks, other existing and future recreation areas, and new development areas.

4.7.1.4 Potential Reuse Water Summary

Potential reuse areas are depicted below in Figure 4-4. In summary, there are about 185 acres within the study zone that could potentially use up to 175 million gallons per year of reuse water (1.15 MGD average). The golf course alone could potentially use up to 113 million gallons per year of reuse water. If the golf course switched to irrigation with reuse water, approximately 113 million gallons of Columbia River water could be used for other purposes.

4.7.2 Domestic Reuse Water Alternatives Analysis

All wastewater flows, domestic and industrial, within the City limits and UGB are currently conveyed to the City's WWTP. Because the flows are combined, the entire flow is considered domestic wastewater. The City is pursuing IWW reuse options due to the negative impacts that IWW is having on the WWTP; therefore, the analysis below assumes the IWW is diverted for direct beneficial reuse and does not flow to the domestic WWTP. Developing domestic reuse options would reduce the demand on the City's existing potable water source (groundwater) and/or may have the added benefit of allowing some areas to be irrigated where no current water right exists.

4.7.2.1 Alternative B-1 - No Action, Assumes IWW Diverted for Direct Reuse

Preliminary Opinion of Probable Cost: \$0

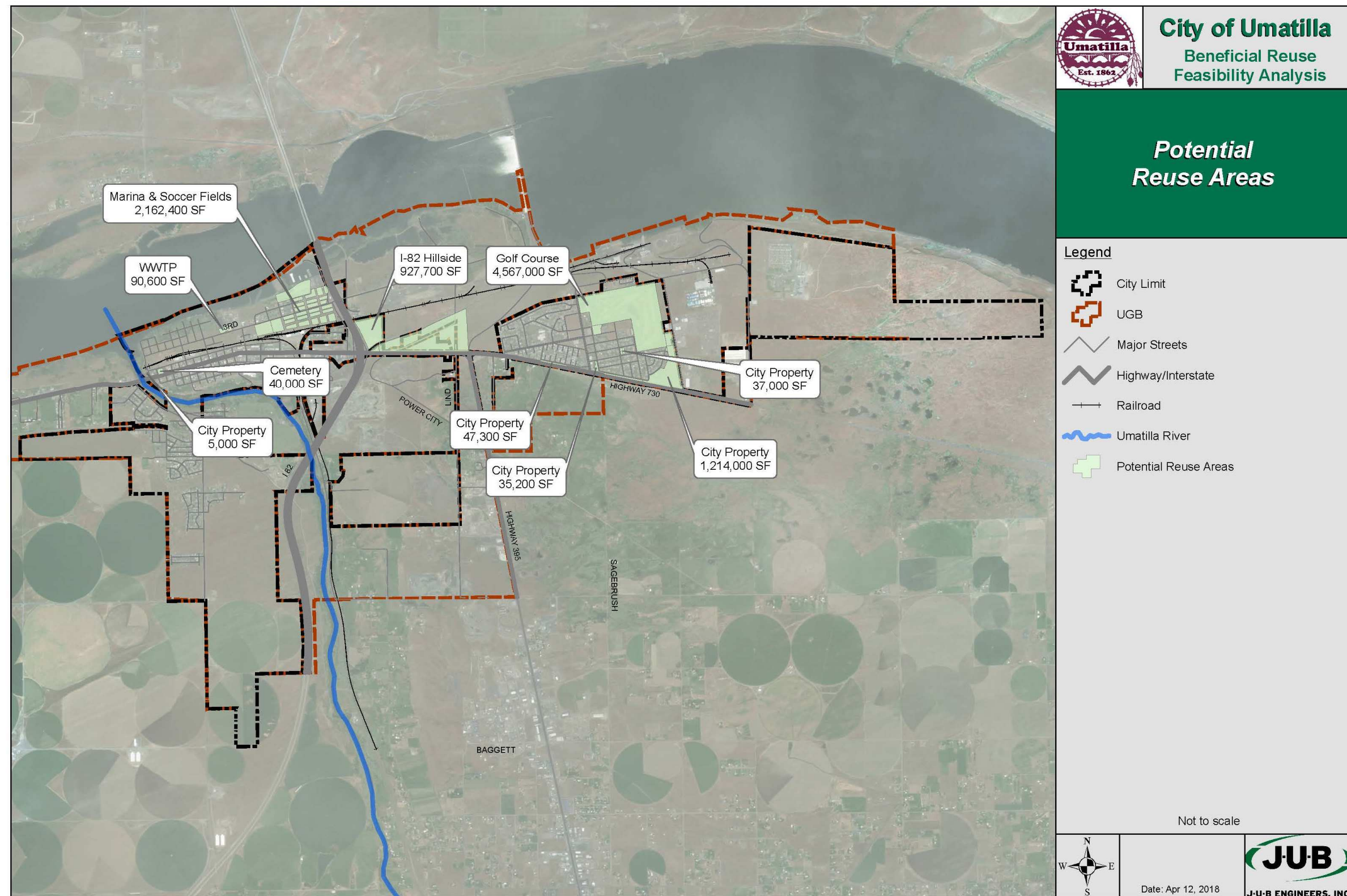
Permitting/Environmental Concerns: No immediate impacts. Possible long-term permitting concerns based on existing Columbia River discharge and the potential for more stringent discharge limits.

The City treats wastewater and discharges to the Columbia River. No effluent is currently being reused. The City is not likely to lose the ability to discharge to the River in the near-term. In the long-term, the City may be subject to more stringent discharge limits that may require more treatment to produce a higher quality effluent. At that time, the City will have to evaluate the cost associated with producing the higher quality effluent versus the cost to reuse a portion of the City's effluent on a cost of disposal basis.

As potable water sources become limited, the City may also prefer to implement domestic reuse for irrigation purposes to reduce potable water demand, as doing such would lessen their reliance on the declining groundwater aquifer.

The no action alternative is viable for the near-term but reuse may become necessary as development occurs.

Figure 4-4 – Potential Reuse Areas



4.7.2.2 Alternative B-2 – Class A Reuse of Domestic Effluent

Preliminary Opinion of Probable Cost: \$10.1M

Permitting/Environmental Concerns: Permitting of a Class A WWTP is managed by Oregon DEQ. Once a facility is able to produce Class A reuse water, that water can be distributed and used for many purposes by landowners with a bit of training. It is likely the City will create some rules regarding the use of reuse water. Producing and distributing Class A water for use takes more energy and chemicals than simply providing potable water; therefore, benefits should be weighed against other environmental concerns, e.g., declining aquifer, greenhouse gases. Upgrades and work at the existing WWTP will likely qualify for a Categorical Exclusion, or limited environmental analysis needed. Categorical Exclusions often apply when the project in question will take place on previously-developed land, owned by the City, and amounts to less than a 20% upgrade of the entire utility system.

This alternative involves converting the existing treatment facility to provide up to 0.8 MGD of Class A reuse water which is sufficient to meet the irrigation demand of nearly 100 acres (approximately the size of the golf course). Additionally, the WWTP will not have a daily flow greater than 0.8 MGD for 10+ years. Since the river discharge would remain, the winter flow would be discharged to the Columbia River. If summertime demand was sufficiently large, the wintertime effluent could be treated to reuse standards and stored in a large lagoon for summertime use. This option has many potential implementation phases depending on the overall value of the reuse water, the cost to create the reuse water, and the cost of new sources of potable water.

This alternative entails diverting treated effluent downstream of the clarifiers and directing flows to a Class A capable filtration unit process and then through an in-vessel UV disinfection system. The flows would then be conveyed to a pump station that can pump to a day-tank storage facility for constant flow reuse or directly to an irrigation system during irrigation season. During non-irrigation season, flows would discharge into Columbia River. A reuse water distribution system would have to be constructed as well as the process improvements.

4.7.3 Non-Contact Cooling Tower Effluent Industrial Reuse Water Alternatives Analysis

The City is currently pursuing industrial wastewater reuse alternatives to alleviate capacity concerns at the existing wastewater treatment plant. Implementing industrial reuse alternatives will allow further industrial development to occur within the greater Umatilla area.

4.7.3.1 Alternative B-3 - No Action

Preliminary Opinion of Probable Cost: \$0

Permitting/Environmental Concerns: If the City continues to take industrial wastewater as industries expand, the WWTP will be consistently over-loaded with volume. This would threaten reliable compliance with the City's NPDES permit related to Columbia River discharge.

While the City is currently accommodating industrial flows, there have been periods where the industrial flows have caused the City to approach their capacity limits. Taking no action would limit the industries currently expecting to expand their operation and limit the City's ability to grow since very little capacity is available when the data center industries are discharging. For these reasons, a reuse alternative must be implemented to relieve the existing wastewater treatment plant and ensure adequate capacity for

future development including an increase in domestic and industrial flows. Therefore, the no action alternative is infeasible.

4.7.3.2 Alternative B-4 – Increase WWTP Capacity (Add 3 MGD of Capacity)

Preliminary Opinion of Probable Cost: \$41.6M in addition to domestic needs

Permitting/Environmental Concerns: Compared to directly reusing non-contact cooling tower water, this option consumes a great deal of energy in the construction and operation of a WWTP where only 35% of the capacity is needed for domestic flows (for a least 50 years). Upgrades and work at the existing WWTP will likely qualify for a Categorical Exclusion, or limited environmental analysis needed. Categorical Exclusions often apply when the project in question will take place on previously-developed land, owned by the City, and amounts to less than a 20% upgrade of the entire utility system.

While expanding the capacity of the WWTP is not a reuse alternative, this option would be necessary if IWW reuse options were not implemented and is therefore needed for comparison purposes. As summarized in Table 5-9, a 4 MGD treatment facility is needed for domestic flows to serve the three study zones. If IWW flows also required management, a 7.0 MGD facility would be required.

This alternative involves process modifications at the existing wastewater treatment plant to increase the overall plant capacity. Assuming an expansion would employ similarly size unit processes, a brief list of additional unit processes required to expand the WWTP from 4.0 MGD to 7.0 MGD is provided below:

- Double the size of the headworks,
- Quadruple the raw wastewater pump station capacity (assumes peak flow equalization),
- Add three more activated sludge basins (ditches) for total of 8. (likely consolidated during design),
- Add two more 60' diameter clarifiers (7 total),
- Increase capacity of ancillary equipment (RAS/WAS pump, etc.),
- Add UV disinfection, and,
- Add capacity to all solids management facilities.

It is likely the capacity to manage the IWW flow would be needed within 5 years which is before any increase in domestic flow is anticipated.

4.7.3.3 Alternative B-5 - Separate Industrial Flows

Preliminary Opinion of Probable Cost: \$3.0M

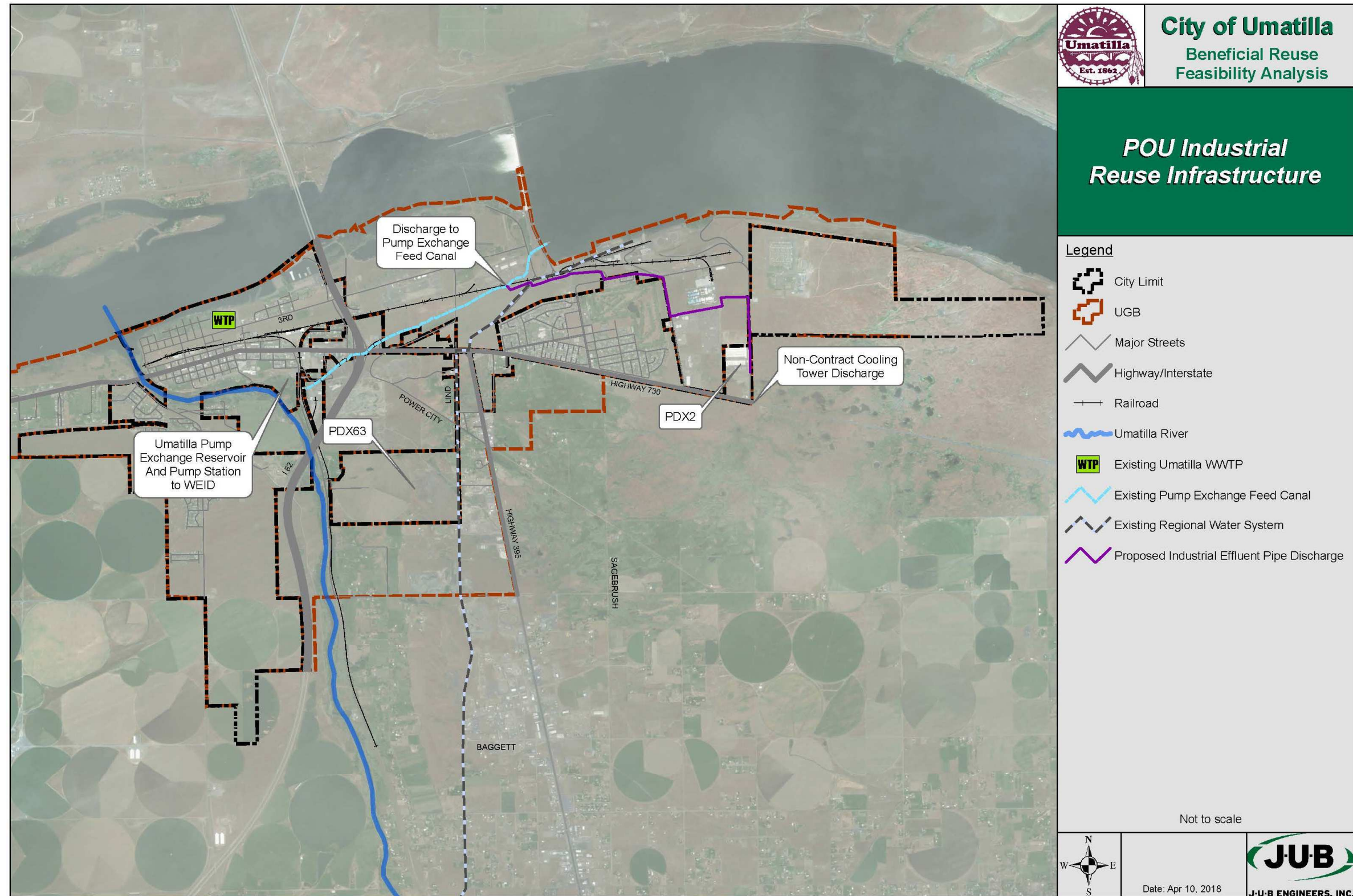
Permitting/Environmental Concerns: Ducote Consulting LLC completed the Environmental Report for the Phase 1 Recycled Industrial Water Pipeline as a part of the Clean Water State Revolving Fund Loan funding (CWSRLF) for construction, as seen in Appendix K. After review from Oregon DEQ in April/May 2017, the Report was officially published on May 24, 2017 with a Finding of No Significant Impact (FONSI) from DEQ and there were no comments. US Army Corps issued a Categorical Exclusion for the portion of the pipeline that will traverse Corps land on May 10, 2017. Extra time should be allowed for permitting as this alternative is rather new to regulators, engineers and the City trying to implement the plan. Properly operated, this alternative has the least negative environmental impacts.

The City is currently implementing this alternative by installing a reuse pipeline to convey non-contact cooling tower wastewater flows from the PDX2 data centers to the BOR Phase 1 Exchange Canal, which eventually connects into the WEID. Reuse water will be used for agricultural purposes. This non-contact cooling tower water is relatively clean and requires no treatment prior to discharging into the Canal. The City is in the process of obtaining an NPDES Waste Discharge Permit which allows a peak discharge of 0.95 MGD and an average discharge of 0.50 MGD into the Phase 1 Canal. Flow limits may need to be increased as development occurs. The proposed pipeline consists of an 18-inch PVC pipe with a length of approximately 12,000 lineal feet. The City anticipates the pipeline to be fully operational by Spring 2019. Figure 4-5 depicts the pipe alignment and outfall location for the PDX2 site.

Vadata is constructing the PDX63 site, which is expected to have similar flows to the existing PDX2 site. New infrastructure, including an industrial reuse pipeline and likely a lift station, is anticipated at the PDX63 site and will be designed and constructed by Vadata. At this time, the plan is to convey IWW from PDX63 to the IWW pipeline being planned/constructed for PDX2 and discharge both flows into the Phase 1 Canal via the same outfall structure.

Diverting IWW from the City's WWTP will address the capacity issues at the wastewater treatment plant for the near-term. However, as other industrial users move into the area it may be necessary to install an industrial wastewater treatment plant at the Port of Umatilla to treat stronger effluent, such as wastewater seen from food processing plants. The capacity of the plant should be determined upon further analysis once development occurs. Additional reuse pipelines for non-contact cooling tower water should be considered as water-intensive industries move into the area

Figure 4-5 – Industrial Reuse Pipeline



4.7.4 Alternative Screening

Table 4-14 summarizes alternative summary and screening comparisons.

Table 4-14 – Alternative Summary and Screening Comparison

DESCRIPTION	PROS	CONS
Domestic Alternatives		
Alternative B-1 – No Action (\$0)		
“Do Nothing” – Continue to discharge treated domestic wastewater to the River.	Assuming industrial flows are no longer conveyed to the existing WWTP. <ul style="list-style-type: none"> No near term cost. 	Assuming industrial flows are no longer conveyed to the existing WWTP. <ul style="list-style-type: none"> None. Discharge valuable water to the River.
Alternative B-2 – Class A Reuse of Domestic Effluent (\$10.1M)		
Upgrade WWTP to produce Class A effluent (as needed) for beneficial reuse.	<ul style="list-style-type: none"> Reduce City’s reliance on declining deep basalt aquifer. Beneficial Reuse. Utilize existing infrastructure. “New” usable water. 	<ul style="list-style-type: none"> Cost to upgrade the WWTP and install conveyance infrastructure. Regulatory and monitoring requirements.
Industrial Alternatives (Non-Contact Cooling Water)		
Alternative B-3 – No Action (\$0)		
“Do Nothing” – Continue to convey industrial wastewater to the WWTP with no beneficial reuse.	<ul style="list-style-type: none"> Single NPDES permit. 	<ul style="list-style-type: none"> WWTP capacity issues remain. Major WWTP upgrade required. Potential growth limits.
Alternative B-4 – Increase WWTP Capacity (Add 3 MGD of Capacity) (\$41.6M)		
Upgrade capacity at the existing WWTP to include IWW flow to produce Class A effluent.	<ul style="list-style-type: none"> Reduce City’s reliance on declining deep basalt aquifer. Beneficial Reuse. 	<ul style="list-style-type: none"> Significant cost to upgrade the WWTP for Class A effluent on top of cost to add treatment capacity. Regulatory and monitoring requirements. WWTP is far away from reuse sites.
Alternative B-5 – Separate Industrial Flows (\$3.0M)		
Install infrastructure to keep IWW out of domestic sewer lines. Install a conveyance pipeline to existing infrastructure for reuse. Continue conveying domestic flows to the WWTP.	<ul style="list-style-type: none"> Reduce stress on existing WWTP. Reduce size of future WWTP upgrades Beneficial Reuse. Support future development. “New” usable water. 	<ul style="list-style-type: none"> Coordination with irrigation canal owners Regulatory and monitoring requirements. Reuse permits and/or additional NPDES permits.

4.7.5 Recommend Reuse Alternatives

The recommended immediate improvements to accommodate the increased industrial flows and alleviate capacity concerns at the existing wastewater treatment plant are as follows:

- **Alternative B-5 – Separate Industrial Flows** - Based on the *Wastewater Treatment and Reuse Evaluation* the City chose to begin implementation of Alternative B-5. The Phase 1 Pipeline is currently in design, with construction scheduled for Fall 2018. Additionally, flow from the PDX63 site is also being routed to the same pipeline being built for PDX2.
- **Alternative B-1 – No Action** – The capacity issues at the WWTP are due to increased industrial flows. Implementation of Alternative B-5 alleviates immediate capacity issues at the WWTP eliminating the need for near-term WWTP capacity expansion and upgrades. Again, if domestic flows approach the WWTP capacity as development occurs, domestic reuse should be explored as a long-term viable solution.

4.7.6 Regional Reuse Discussion

An awareness of the value of reuse water is growing among regional stakeholders in part due to the limited availability of “new” agriculture water. The combination of limited irrigation water and the increased difficulty some municipalities experience discharging wastewater to surface water and/or ground water, and the City may have users looking for the supply and discharge of water. By diverting the non-contact cooling tower IWW away from the WWTP (and surface water discharge) for beneficial reuse by the farmers using Columbia and Umatilla River water, the City has mitigated some of the supply and discharge issues. As the cost to dispose of wastewater increases, reuse options will likely become cost effective. Additionally, as the cost of agricultural water increases, the value incentives to produce Class A reuse water will also increase. At some point, water will likely be too valuable and treatment too costly to discharge to a surface water.

The improvements discussed above recommend discharging winter flows to the River and only diverting summer flows for reuse; thereby, avoiding the cost for long-term storage of winter flow. As supply and disposal costs change, capturing winter flows in storage for summertime irrigation will be viable. Therefore, in the future, the City of Umatilla may build wintertime storage to capture 100% of the domestic wastewater and IWW for summertime irrigation and beneficial reuse. Because economy of scale cost savings are realized when water storage lagoons are constructed, building common storage lagoons for potential users may be a cost-effective solution. To that end, the City has been pursuing alternatives to coordinate with regional stakeholders to build common reuse water storage lagoons. The idea and effort is in its infancy but has been steadily gaining traction. A summary of the plan follows:

- Team with key stakeholders in the area:
 - BOR
 - WEID
 - Cities (Hermiston, Irrigon, and Boardman)
 - Ports (Umatilla and Morrow)
 - Tribes
 - Counties
 - Army
 - Industries
- Build approximately one billion gallons of storage near WEID’s main canal.
- **Domestic Dischargers:** As the economics of the value of water and the cost to dispose of effluent allow, each wastewater discharger will upgrade their WWTP to produce reuse water and construct facilities to discharge their reuse water into the main canal. In the summer, the reuse water will be combined with irrigation water in the canal and directly applied to crops. In the winter, the reuse water will be conveyed directly to the large storage lagoon and used in the summer to supplement irrigation water.

- **Industrial Dischargers:** Industrial Discharges will have the option to participate by treating their IWW sufficiently to discharge into the main canal or pump to storage in lieu of operating their own large storage and land application facilities.

Most of the dischargers could produce a nutrient rich reuse quality effluent ideal for agriculture use. If the effluent was used for irrigation, energy would be saved since the nutrients would not have to be removed from the effluent and the production of fertilizer would decrease. The City is actively promoting and team-building for some form of this concept and should continue to do so as development occurs.

4.8 Proposed Water Supply Infrastructure

4.8.1 City of Umatilla

The City of Umatilla will continue to be fed by groundwater from the City's existing wells. The capacity analysis summarized in Table 4-11 suggests that existing groundwater rights are adequate to serve the City of Umatilla study zones currently and into the future. As development occurs, analysis of the existing infrastructure should be completed to ensure adequate capacity exists within the existing system to accommodate potential build out demands.

Also, as development occurs, the City should consider beneficial reuse of flows to offset impacts to the declining deep basalt aquifer. Beneficial reuse will require upgrades to the existing WWTP and new infrastructure to convey water to the reuse users. See Section 4.7 for additional information on beneficial reuse options.

4.8.2 Port of Umatilla

For industrial demands, non-potable surface water will be conveyed to the water-intensive industry sites, including the PDX2 site. For domestic demands, all sites and industries within the Port of Umatilla will continue to be fed by groundwater from the City's existing wells. The capacity analysis summarized in Table 4-11 suggests the existing groundwater rights are adequate to serve the Port of Umatilla study zones currently and into the future. As development occurs, analysis of the existing infrastructure should be completed to ensure adequate capacity exists within the existing system to accommodate potential build out demands. Based on the capacity analysis in Table 4-11, the existing surface water right does not have enough capacity to serve the POU with treated water based on the proposed surface water use assumed for the potential build out scenario.

4.8.2.1 PDX2 Non-Potable Water Pipeline

Vadata's PDX2 is a water-intensive industry with high industrial demands. A 16-inch pipeline is proposed to convey non-potable industrial flows to the PDX2 site. The proposed pipeline will connect to the proposed east area pipeline near the intersection of Roxbury Road and Beach Access Road. From the point of connection, the pipeline will run south following the Beach Access Road alignment until the existing point of connection at PDX2. Approximately 4,700 feet of pipe is required to supply PDX2. The pipe was sized based on potential build out water demands derived from data provided by Vadata as shown in Table 4-5. The proposed pipe alignment is depicted in Figure E5. Non-potable flows will be used in Vadata's non-contact cooling towers. Domestic demands and fire flows for the site will continue to be supplied by the existing potable water service. The PDX2 site is within City limits and is currently served by City utilities. Replacing groundwater supply with surface water supply will help to conserve the City's declining deep basalt aquifer and provide a more reliable source into the future.

4.8.3 395 Corridor

There are currently no City-owned water infrastructure facilities to serve the 395 Corridor. The City is interested in providing public utilities to the area to stimulate economic development; therefore, water utility facilities and infrastructure are needed. Furthermore, per the discussion above, additional water is available through the City's existing surface water right, and development of these water rights is the preferred option to serve the 395 Corridor. All future demands, domestic and industrial, should be served by surface water. Domestic flows will be conveyed from the hydraulically connected wells to a new water treatment plant and conveyed through a new water distribution system.

4.8.3.1 Existing Water Facilities

The City's existing "Intertie Reservoir" and "Intertie Well" are located inside the 395 Corridor study zone. These provide water to the City's "Low Level System" Pressure Zone, which is located lower in elevation than the 395 Corridor area (see Figures E1 and E2). The area does contain some privately-owned wells. For the purpose of this study, the contribution of these existing private wells was not taken into account when sizing the future water infrastructure needs.

4.8.3.2 Surface Water Distribution Pipeline

To convey surface water from the wells to the water treatment plant a combination of 10-inch and 18-inch pipe is proposed. The proposed pipeline would connect the east and west well areas together and run to the water treatment plant. The pipeline would additionally be the point of connection for the PDX2 Non-Potable Water Pipeline. Alignments for the proposed pipelines are depicted in Figure E5. Where possible, the pipelines are located in City road right-of-ways to minimize easement acquisition costs. The east end of the pipeline originates at the east well area east of Beach Access Road as an 18-inch pipeline. Near the intersection of Roxbury Road and Beach Access Road after the connection point for the PDX2 Non-Potable Water Pipeline, the pipeline decreases to a 10-inch pipeline. The 10-inch pipeline continues along the length of Roxbury Road and a portion of Bud Draper Road until the point of connection of the east and west well area pipelines. From the west well area the pipeline originates north of the golf course. An 18-inch pipeline parallels Bud Draper Road to the point of connection of the east and west well area pipeline. From the point of connection of the well area pipelines to the water treatment plant an 18-inch pipe is required for the length of the pipeline. The 18-inch pipeline is proposed to follow Riverside Avenue west before turning south along Willamette Street, then west along Columbia Boulevard, and then continuing west paralleling Highway 730 before finally turning south and crossing Highway 730 just west of the Highway 730/Highway 395 intersection and terminating at the proposed water treatment plant. The pipelines were sized using the peak demand from the PDX2 site as well as the 395 Corridor peak day demand. In total approximately 3,100 feet of 10-inch pipe and 12,000 feet of 18-inch pipe is required for the surface water distribution.

4.8.3.3 Water Treatment Plant

The City's groundwater sources are unable to meet the potential demands of the of the 395 corridor study zone; however, the City has a 23 cfs water right from the Columbia River (upstream of the McNary Reservoir) able meet the long-term demands of the study zone. The raw river water would have to be treated to serve domestic demands. To that end, a 6.2 million gallon per day potable water treatment plant is needed to meet the peak day demand, as shown in Table 4-6, coupled with approximately 2.5 million gallons of storage to meet the peak hour demands, as shown in Table 4-16. The water treatment

plant location is proposed on City-owned property adjacent to the Intertie well, although other locations within the study area may also be suitable.

4.8.3.4 Hydraulic Modeling Spatial Scope

The 395 Corridor area consists of a 2,871 acre domestic water service area including fire suppression service but not non-industrial flows to the PDX63 site. The study zone varies in elevation from 380 feet to 670 feet. There are two properties totaling 160 acres that are both owned by the Federal Government, that were not included in this modeling effort. If in the future these two properties are developed, a separate booster pump station will be required to serve the area due to the higher elevations. See the Umatilla Butte High Pressure Zone Section below for more information on these properties. All system components located hydraulically upstream of the 395 Corridor Booster Pump Station including the water supply pumping facilities, surface water distribution pipeline, and water treatment plant were analyzed separately from the 395 Corridor water system, as detailed in previous sections, and are not in the scope of the 395 Corridor Hydraulic modeling effort.

4.8.3.5 Proposed Potable Water System

4.8.3.5.1 Pressure Zones

The 395 Corridor area was divided into different pressure zones to maintain an operable pressure difference between low and high areas. Pressure zones were created such that the pressures during typical operating conditions (ADD) are approximately 40 psi to 80 psi. The area was split into three pressure zones: the 395 Corridor Pressure Zone, Umatilla Butte Low Pressure Zone, and Umatilla Butte High Pressure Zone. See Figure E1 for a schematic of the pressure zones. See Figure E2 for an aerial view of the pressure zones.

- 395 Corridor Pressure Zone - The 395 Corridor Pressure Zone includes ground elevations from 400 feet to 490 feet. It is served by the 395 Corridor Booster Pump Station as well as the 395 Corridor Reservoir. The 395 Corridor Pressure Zone serves most of the 395 Corridor area except the southeast and encompasses approximately 2,119 acres. Both Residential and Light Industrial / Commercial land uses exist within the Pressure Zone.
- Umatilla Butte Low Pressure Zone - The Umatilla Butte Low Pressure Zone includes ground elevations from 490 feet to 580 feet. The Pressure Zone is served by the Umatilla Butte Booster Pump Station which pumps from the 395 Corridor Reservoir into the Umatilla Butte Reservoir. It serves most of the area in the southeast of the 395 Corridor Area and totals approximately 596 acres. Both Residential and Light Industrial / Commercial land uses exist within the pressure zone.
- Umatilla Butte High Pressure Zone - The highest pressure zone in the 395 Corridor is the Umatilla Butte High Pressure Zone. It includes approximately 160 acres of rocky outcropping federally-owned land with ground elevations from 580 feet to 670 feet. It is anticipated that a booster pump station would be installed near the Umatilla Butte Reservoir to boost into a closed pressure zone if the area is developed. No modeling effort was conducted for this area and it is assumed that the area will not be developed. Further investigation will be required if this area is developed in the future.

4.8.3.5.2 Pipes

All pipes in the 395 Corridor were modeled with PVC Pipe. Where possible pipelines were looped to minimize dead-end piping. Hydraulic water model piping is skeletonized and is not intended to show all of the piping required to serve the area. The piping shown is intended to be the major “Backbones” and “Loops” needed to meet pressure and fire flow requirements. The sizing criteria for the pipes is explained in Appendix D.

4.8.3.5.3 Booster Stations

Booster pump stations were sized using the criteria from Appendix D. Two booster pump stations will serve the 395 Corridor area. The 395 Corridor Booster Pump Station boosts the water discharged from the Water Treatment Facility and pumps into the 395 Corridor Pressure Zone and the 395 Corridor Reservoir. A second booster pump station, the Umatilla Butte Booster Pump Station, located adjacent to the 395 Corridor Reservoir pumps water out of the reservoir and into the Umatilla Butte Low Pressure Zone and the Umatilla Butte Reservoir. If in the future the Umatilla Butte High Pressure Zone area is developed, a third booster pump station will be required. Table 4-15 summarizes the total capacity and total minimum horsepower requirement at each pump station needed to meet the PDD. The Umatilla Butte High Booster Pump Station should be sized to meet both the PHD and the required fire flow demand if it is required in the future.

Table 4-15 – Booster Station Horsepower

Pump Station	Capacity (GPM)	Total Minimum Horsepower (HP)
395 Corridor Booster Pump Station	4,292	185
Umatilla Butte Booster Pump Station	948	35

4.8.3.5.4 Storage

Reservoirs were sized using the storage requirements discussed in Appendix D. Two reservoirs are recommended to serve the 395 Corridor area, the 395 Corridor Reservoir and the Umatilla Butte Reservoir. Tabulated calculations showing a breakdown of each of the storage components as well as reservoir levels during the different modeling scenarios are shown in Appendix F. Table 4-16 summarizes the storage requirement components for both the 395 Corridor Reservoir and the Umatilla Butte Reservoir.

Table 4-16 – Storage Requirements

Storage Component	395 Corridor Reservoir	Umatilla Butte Reservoir
	Volume of Storage Required (Gal)	
Operational Storage (OS)	30,879	13,255
Equalizing Storage (ES)	722,304	204,768
Standby Storage (SB)	969,400	274,600
Fire Suppression Storage (FSS)	540,000	540,000
Dead Storage (DS)	0	0
Total Storage Required ¹	1,722,583	758,023

¹ The lesser of the SB and FSS was nested in the other storage component.

Specific reservoir dimensions were calculated in Appendix F, and are summarized in Table 4-17 below. Based on the preliminary locations shown in Figure 5-5, the 395 Corridor Reservoir is planned to be an elevated reservoir and the Umatilla Butte Reservoir is a ground level reservoir.

Table 4-17 – Reservoir Dimensions

	395 Corridor Reservoir	Umatilla Butte Reservoir
Ground Elevation	520	671
Reservoir Storage Base	570	671
Reservoir Depth (ft)	15	15
Reservoir Diameter (ft)	145	95
Total Reservoir Storage (million gallons)	1.85	0.80

4.8.3.5.5 Model Development

Hydraulic water modeling of the potential buildout of the 395 Corridor was completed using Bentley WaterCAD V8i software. The hydraulic model was evaluated using the PDD with fire flow as well as the PHD to size pipes to meet the design criteria outlined in Appendix D. All pipes were initially set to the minimum 8-inch diameter and increased as needed to meet the criteria. Additionally an ADD Scenario was run to check that excessive pressures do not develop in the system. During all three scenarios, both the 395 Corridor Booster Pump Station as well as the Umatilla Butte Booster Pump Station were in operation. Reservoir levels were determined using the storage requirements outlined in Appendix D. Table 4-18 shows what the reservoir levels were set at during the ADD, PDD with Fire Flow, and PHD Scenarios.

Table 4-18 – Reservoir Levels During ADD, PDD with Fire Flow, and PHD Scenarios

Reservoir	ADD Scenario Depth (ft) ¹	PDD with Fire Flow Scenario Depth (ft) ²	PHD Scenario Depth (ft) ³
395 Corridor Reservoir	15.0	4.8	9.2
Umatilla Butte Reservoir	15.0	1.0	11.1

¹ Depth shown corresponds to Reservoir being full.

² Depth shown corresponds to Equalizing Storage and Fire Suppression Storage being depleted.

³ Depth shown corresponds to Equalizing Storage being depleted.

4.8.3.5.6 Results and Recommendation

Recommended pipe sizes for the 395 Corridor are shown on Figures E3 and E4. Figure E3 also displays the fire flows available during the PDD with Fire Flow Scenario as well as the fire flow requirement. Figure E4 displays the pressures during the PHD Scenario as well as the expected pressures during the ADD Scenario. The system is made up of predominately 8-inch and 10-inch pipelines. In those areas with a fire flow requirement of 3,000 gpm many of the pipelines were required to be upsized to 12-inch in order to provide the fire flow. The transmission main from the 395 Corridor Booster Pump Station to the 395 Corridor Reservoir is predominately 16-inch with some 18-inch near the water treatment facility. Table 4-19 summarizes the quantity of each pipe size for the water distribution system.

Table 4-19 – Approximate Lengths of Pipelines

Diameter (inches)	Length (feet)
8	55,179
10	28,369
12	34,268
16	12,541
18	1,476

5 WASTEWATER

5.1 Introduction

The City owns and operates an “oxidation ditch” wastewater treatment plant. The WWTP has been experiencing operational issues associated with the recent increase in non-contact cooling water industrial flows. These industrial flows are low-strength and affect the biological treatment processes at the plant making wastewater treatment less efficient. Existing data centers are expanding and new data centers are in construction, which will continue to add to the industrial demand.

5.2 Wastewater Flows

5.2.1 Existing Wastewater Flow

City Discharge Monitoring Report (DMR) data was used to analyze existing wastewater flows. DMRs are developed by the City to fulfill self-monitoring requirements for discharging to surface waters of the United States. DMR data from December 2009 to December 2017 was analyzed to characterize the flow conditions, including peaking factors. The flow characteristics of interest are:

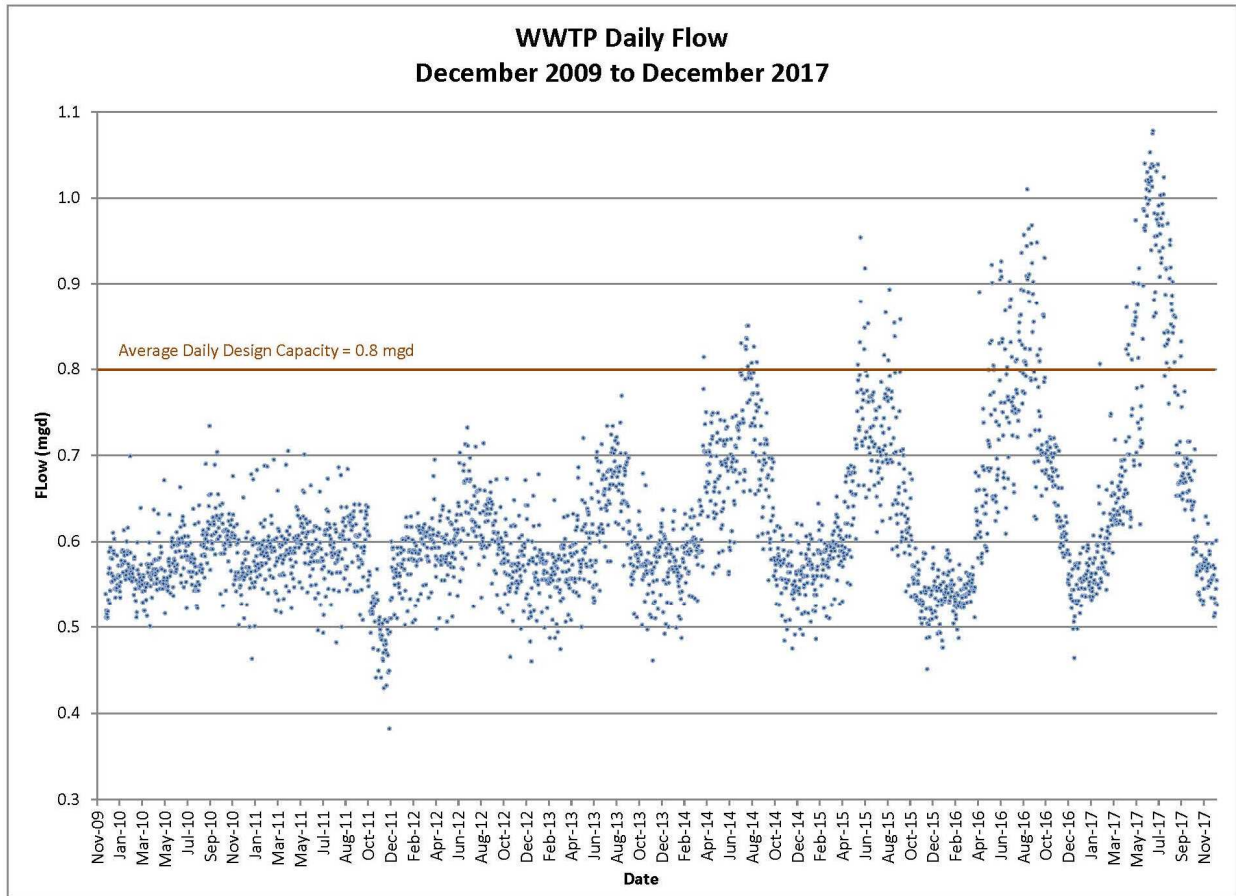
- **Average Daily Flow (ADF):** The average flow rate occurring over a 24-hour period. ADF rate is used in evaluating treatment plant capacity and developing the flow ratios used for design. The ADF rate is also used to estimate pumping and chemical costs, solids production, and organic loading rates.
- **Peak Hourly Flow (PHF):** The peak 1-hour flow rate occurring during a 24-hour period. PHF is needed for the design of pump stations, flow meters, influent screens, grit chambers, clarifiers, disinfection systems, and pipes and channels in the treatment plant.

Wastewater treatment flows are summarized in Table 5-1 and depicted in Figure 5-1.

Table 5-1 – Existing WWTP Influent Flow

Item	Influent Flows 12/2009 to 12/2017 (MGD)	2017 Population	Calculated Average Wastewater Flows (GPCD)
Average Daily Flow	0.623	7,245	86.0
Peak Daily Flow	1.078	7,245	148.8
Peaking Factor	1.73		1.73

Figure 5-1 – Existing WWTP Influent Flows



5.2.2 Potential Build Out Wastewater Flow

Wastewater flows for the study area were determined by applying a per acre flow for non-residential land use and a flow per dwelling unit for residential land use. Wastewater flows were based on flows from comparable wastewater systems in the area. Table 5-2 summarizes flow assumptions based on the potential build out land use as shown in Figure 3-3.

Table 5-2 – Average Daily Domestic Wastewater Flow

Zoning ID	Potential Land Use	Units	Unit ADF
Apt	Apartment	GPDU	174
SFR	Single Family Residential	GPDU	174
MDRR	Medium Demand Rural Residential	GPDU	174
LDRR	Low Demand Rural Residential	GPDU	174
GC	General Commercial	GPAD	1,100
LI	Light Industrial	GPAD	1,100
HI	Heavy Industrial	GPAD	1,100
School	School	GPAD	840
Office	Office	GPAD	494
Church	Church	GPAD	377
EFU	Exclusive Farm Use	GPAD	0
Rec	Open Space - Recreational Use	GPAD	21
Park	Open Space - Parks	GPAD	21
Open Space ¹	Open Space	GPAD	0

¹ Includes all open spaces which will not have service - All City, State, Federal, County and CTUIR (tribal) owned properties.

5.2.2.1 City of Umatilla

The potential build out domestic wastewater flow was calculated by multiplying the land area by the assumed unit average daily flow based on potential build out land use, as shown in Table 3-3 and Figure 3-3. The peak hour flow was calculated using a peaking factor derived from diurnal curves for each land use type. Diurnal curves are the shape of a type of sanitary flow contribution to the collection system over a 24-hour period. The diurnal curves used for this study are based on past experience with similar size cities. Table 5-3 depicts the potential build out domestic wastewater flow for the City of Umatilla study zone.

Table 5-3 – Potential Build Out Domestic Wastewater Flow – City of Umatilla

Zoning ID	Area	Unit ADF (GPAD)	Peaking Factor ¹	Unit PHF (GPAD)	Total ADF (GPD)	Total PHF (GPD)
Apt	6.77	3,828	1.794	6,869	25,913	46,498
SFR	241.15	870	1.794	1,561	209,801	376,466
MDRR	56.86	87	1.794	156	4,947	8,876
LDRR	0	35	1.794	63	0	0
GC	144.02	1,100	1.647	1,812	158,426	260,995
LI	39.28	1,100	1.846	2,031	43,211	79,774
HI	9.88	1,100	1.846	2,031	10,865	20,058
School	29.53	840	2.475	2,079	24,805	61,396
Office	5.71	494	1.750	865	2,823	4,940
Church	1.59	377	2.475	933	599	1,484
EFU	10.99	0	1.763	0	0	0
Rec	146.70	21	1.763	37	3,081	5,432
Park	97.46	21	1.763	37	2,047	3,609
Open Space ¹	81.87	0	1.763	0	0	0
Total Flow					486,517	869,527
					(0.487 MGD)	(0.869 MDG)

¹ Peaking Factor for ADF/PHF was calculated based on diurnal curves for each land use type.

The City’s wastewater treatment plant currently receives flow from the City and from the Port Area. In this analysis, the City area and Port area are separated; therefore, projected future flow for the City of Umatilla study zone does not include any flow from the Port study zone, which is why the projected flow from the City of Umatilla study zone is less than the current flow at the WWTP.

No water-intensive industry development is anticipated within the City of Umatilla study zone; therefore, potential build out industrial wastewater demands are zero. If other water-intensive industries do develop within the study zone, their effects on wastewater flows should be analyzed at that time and the user should be responsible for installing the necessary infrastructure to accommodate the added flow.

5.2.2.2 Port of Umatilla

The potential build out domestic wastewater flow was calculated by multiplying the land area by the assumed unit average daily flow based on potential build out land use, as shown in Table 3-3 and Figure 3-3. The peak hour flow was calculated using a peaking factor derived from diurnal curves for each land use type. Diurnal curves are the shape of a type of sanitary flow contribution to the collection system over a 24-hour period. The diurnal curves used for this study are based on past experience with similar size cities. Table 5-4 depicts the potential build out domestic wastewater flow for the Port of Umatilla study zone.

Table 5-4 – Potential Build Out Domestic Wastewater Flow – Port of Umatilla

Zoning ID	Area	Unit ADF (GPAD)	Peaking Factor ¹	Unit PHF (GPAD)	Total ADF (GPD)	Total PHF (GPD)
Apt	0	3,828	1.794	6,869	0	0
SFR	0	870	1.794	1,561	0	0
MDRR	0	87	1.794	156	0	0
LDRR	0	35	1.794	63	0	0
GC	0	1,100	1.647	1,812	0	0
LI	0	1,100	1.846	2,031	0	0
HI	1,319.54 ²	1,100 ²	1.846	2,031 ²	1,451,497 ²	2,679,687 ²
School	0	840	2.475	2,079	0	0
Office	0	494	1.750	865	0	0
Church	0	377	2.475	933	0	0
EFU	0	0	1.763	0	0	0
Rec	0	21	1.763	37	0	0
Park	0	21	1.763	37	0	0
Open Space ¹	0	0	1.763	0	0	0
Total Flow					1,451,497	2,679,687
					(1.451 MGD)	(2.680 MGD)

¹ Peaking Factor for ADF/PHF was calculated based on diurnal curves for each land use type.

² Vadata acreage and flows are not included and are calculated separately below as industrial demand.

For industrial flows, peak hour wastewater flow data was provided by Vadata for the PDX63 site and proved to be approximately 380 gpm/building. The PDX63 and PDX2 sites are assumed to have the same flows. PDX2 is expected to have five buildings at build out with a peak hour flow totaling approximately 2.736 MGD. The land area for the PDX2 site is 50.463 acres. Table 5-5 depicts the potential build out industrial wastewater flows for the Port of Umatilla study zone.

Table 5-5 – Potential Build Out Industrial Wastewater Flows – PDX2

Land Use	Description	Units	ADF	Peaking Factor ¹	PHF ²
HI	Heavy Industrial	GPD (MGD)	1,482,000 (1.482)	1.846	2,736,000 (2.736)

¹ Peaking Factor for ADF/PHF was calculated based on diurnal curves for each land use type.

Aside from PDX2, no other water-intensive industry development is anticipated. If other water-intensive industries do develop in the POU, their effects on wastewater flows should be analyzed at that time and the user should be responsible for installing the necessary infrastructure to accommodate the added flow.

5.2.2.3 395 Corridor

The potential build out domestic wastewater flow was calculated by multiplying the land area by the assumed unit average daily flow based on potential build out land use, as shown in Table 3-3 and Figure 3-3. Table 5-6 depicts the potential build out domestic wastewater flow for the 395 Corridor study zone.

Table 5-6 – Potential Build Out Domestic Wastewater Flow – 395 Corridor

Zoning ID	Area	Unit ADF (GPAD)	Total ADF (GPD)
Apt	0	3,828	0
SFR	419.75	870	365,182
MDRR	178.67	87	15,544
LDRR	310.51	35	10,868
GC	659.76	1,100	725,735
LI	899.75	1,100	989,727
HI	0 ²	1,100 ²	0 ²
School	0	840	0
Office	0	494	0
Church	0	377	0
EFU	0	0	0
Rec	0	21	0
Park	0	21	0
Open Space ⁴	402.86	0	0
		Total Average Daily Flow (ADF)	2,107,056 (2.107 MGD)
		Total Peak Flow^{2,3}	4,745,000 (4.745 MGD)

¹ Peaking Factor for ADF/PHF was calculated within the sewer model based on diurnal curves for each land use type.

² Vadata acreage and flows are not included and are calculated separately below as industrial demand.

³ Based on the capacity of the lift station. Peak inflow is 4.312 MGD.

For industrial flows, peak hour wastewater flow data was provided by Vadata for the PDX63 site and proved to be approximately 380 gpm/building. PDX63 is expected to have five buildings at build out with a peak hour flow totaling approximately 2.736 MGD. The land area for the PDX63 site is 266.91 acres. Table 5-7 depicts the potential build out industrial wastewater flows for the 395 Corridor study zone.

Table 5-7 – Potential Build Out Industrial Wastewater Flows – PDX63

Land Use	Description	Units	ADF	Peaking Factor ¹	PHF ²
HI	Heavy Industrial	GPD (MGD)	1,482,000 (1.482)	1.846	2,736,000 (2.736)

¹ Peaking Factor for ADF/PHF was calculated based on diurnal curves for each land use type.

Aside from PDX63, no other water-intensive industry development is anticipated. If other water-intensive industries do develop in the study zone, their effects on wastewater flow should be analyzed at that time and the user should be responsible for installing the necessary infrastructure to accommodate the added flow.

5.3 Existing Wastewater Treatment Facilities

5.3.1 Wastewater Facilities

The City owns and operates an activated sludge wastewater treatment plant with the following primary components:

- Headworks with mechanical bar screen
- Raw sewage lift station
- Oxidation ditch secondary treatment reactor
- Three secondary clarifiers (2@50' and 1@60' diameter)
- Return activated sludge pumps
- UV disinfection
- Solids management system
 - Waste activated sludge pumps
 - Aerobic digesters and blowers
 - Sludge thickener
 - Sludge drying beds

The existing facilities have an estimated capacity of:¹

- 0.84 MGD average annual flow
- 0.92 MGD maximum month flow
- 1.34 MGD maximum day flow
- 3.20 MGD peak

The City's existing wastewater treatment facility is located adjacent to the Columbia River. The treated effluent is discharged from the wastewater treatment plant into the Columbia River.

5.3.2 Wastewater Discharge Permits

5.3.2.1 WWTP Discharge Permit

Public wastewater utilities operate under permits issued by the Oregon DEQ as established in OAR 340-45-080, and in alignment with the federal CWA. The City of Umatilla wastewater treatment facility currently operates under an Oregon DEQ NPDES) Waste Discharge Permit No. 101059 which expires on September 30, 2018. The permit and permit limitations can be found in Appendix G. The permit allows treated effluent discharge into the Columbia River.

The permittee must monitor biosolids land applied or produced for sale or distribution. Samples must be representative of the quality and quantity of biosolids generated and must undergo the same treatment process use to prepare the biosolids. Monitoring frequency and sample type is as described in the DEQ-approved Biosolids Management Plan, but not less than the frequency listed in the NPDES discharge

¹ Per Sheet G2 – 1999 Record Drawings

permit Table B4. Biosolids are monitored for nutrients, pollutants, pathogen reduction, vector attraction reduction, and record of biosolids land application.

5.3.2.2 BOR Phase 1 Exchange Canal Discharge Permit

In lieu of building capacity at the WWTP the City is pursuing direct discharge of non-contact cooling tower industrial wastewater directly to an irrigation canal for beneficial reuse. The industrial reuse pipeline and discharge will operate under an Oregon DEQ NPDES Waste Discharge Permit (pending). This permit allows the discharge of non-contact cooling tower water into a BOR Phase 1 Exchange Canal for beneficial reuse via land application. The permit allows peak flow up to 0.95 MGD as long as there is sufficient flow in the canal for mixing.

5.4 Wastewater Treatment Needs Analysis

Based on the existing and potential build out wastewater flows as summarized in Table 5-8 and Table 5-9 below, there is a need for additional capacity to serve the study area.

Table 5-8 – Study Area Wastewater Capacity Analysis - Existing Conditions

WWTP Design Capacity (ADF)	WWTP Design Capacity (PHF)	Existing ADF	Existing PHF	ADF Excess Capacity (MGD)	PHF Excess Capacity (MGD)
0.840	3.20	0.623	1.078	0.177	1.172

Table 5-9 – Study Area Wastewater Capacity Analysis – Potential Build Out Conditions

Flow Type	WWTP ADF Design Capacity (MGD)	WWTP PHF Design Capacity (MGD)	Build Out ADF (MGD) ¹	Build Out PHF (MGD) ¹	ADF Excess Capacity (MGD) ²	PHF Excess Capacity (MGD) ²
Total	0.840	3.20	7.009	13.766	-3.2	-5.1
Domestic	0.840	3.20	4.045	8.294	-3.2	-5.1
Industrial	--	--	2.964	5.472	--	--

¹ Build out wastewater flow is the total domestic and industrial demand for the entire study area. This does not include areas within City limits and the UGB west of the Umatilla River which are outside the Study Area.

² Accounts only for domestic flows. Assumes industrial flows are not conveyed to the WWTP at build out.

In summary, approximately 4.0 MGD of domestic wastewater treatment capacity is needed to manage flow from the three study zones and approximately 3.0 MGD of IWW treatment capacity is needed. At this time, it is assumed all of the IWW flow is non-contact cooling tower flow.

It is important to understand that the estimated 4.0 MGD of domestic wastewater treatment capacity is needed to serve the three study zones at build out. The existing wastewater treatment plant is only serving about 16% of build out area; therefore, a substantial amount of growth is needed to reach build out conditions. The existing treatment plant has an estimated capacity of 0.84 MGD and is within ~10 years of needing an expansion. The next expansion of the existing WWTP will provide 1.68 MGD of capacity. If one assumes providing wastewater service to the un-sewered 395 Corridor initially adds 0.25 MGD of demand, and the area grows at 1.5% per year, a 1.68 MGD WWTP will be adequate for 42 years. A 4.0 MGD WWTP is likely not needed for well over 50 years, depending on growth and service area expansions.

5.5 Domestic Wastewater Treatment Expansion Plan

In lieu of adding 3 million gallons of capacity to the domestic WWTP to manage non-contact cooling IWW, the City is pursuing reuse options to beneficially reuse the IWW from cooling towers via a NPDES permit to allow discharge of non-contact cooling IWW in an irrigation canal. However, as noted in Table 5-9, 3.16 million gallons per day (ADF) of additional treatment capacity (4.0 MGD total) is still needed to meet build out domestic demands. Since the current WWTP has an average domestic capacity of 0.84 MGD ADF, significant additional facilities are needed at the WWTP to serve the three study zones at potential build out conditions. However, as justified above, for planning purposes, a 40 year planning period is used to estimate cost associated with providing wastewater treatment facilities. The required capacity at the end of the planning period is 1.68 MGD average dry weather flow.

During the last Wastewater Treatment Facilities Planning process, the City committed to an oxidation ditch type process and constructed the first phase of facilities; therefore, alternative treatment technology will not be considered at this time. As options recommended in this report are carried forward, additional facility planning may be necessary.

The site plan reserved space for future improvements of a similar technology (oxidation ditch/clarifier) up to a treatment capacity of approximately 2.52 MGD. However, the facilities plan did not consider serving the 395 Corridor and a treatment capacity of 4.0 MGD; therefore, additional space will be required at potential build out. However, in the next 40 year planning period, sufficient space is provided for a 1.68 MGD facility.

Assuming an expansion would employ similarly size unit processes, a brief list of additional unit processes required to expand the WWTP for domestic service follows:

- Update aging equipment in the headworks
- Add one activated sludge basin (ditch)
- Add one 60' diameter clarifier, optimization of performance may eliminate this clarifier (total of 2-50' and 2-60')
- Increase capacity of ancillary equipment (RAS/WAS pump, etc.)
- Double the UV disinfection system
- Add capacity to all solids management facilities

The above expansion was planned during the last major plant upgrade and would be the second phase of a three phase plan.

5.6 Proposed Wastewater Collection Facilities for the 395 Corridor

The City and Port study zones are already being serviced by existing wastewater collection pipes and facilities. However, the 395 Corridor study zone currently does not have sewer collection. Installation of domestic sewer infrastructure is anticipated with the installation of water utilities. City sewer would be conveyed to the existing wastewater treatment plant and is anticipated to stimulate economic development by attracting new industries to the area. In order to analyze future collection system needs of the 395 Corridor, a model was created based on potential flow assumptions summarized in Table 5-6 and the potential build out land use as shown in Table 3-3. For purposes of this report and to comply with OAR 660-11-0060, proposed wastewater infrastructure was planned within the UGB. A detailed description of all model assumptions for the 395 Corridor Wastewater Model are given in Appendix I.

5.6.1 Proposed Wastewater Collection System

5.6.1.1 Sewer Drainage Basins

The ability of the gravity collection system to provide sewer service within the 395 Corridor is dependent upon the areas topography. The 395 Corridor ranges from elevation of 338 feet to 690 feet. In general, flow from the 395 Corridor will need to be conveyed north to connect to the existing collection system. However, lower elevations are generally found in the middle of the area creating a depression and requiring lift stations to convey flow out of the 395 Corridor. Additionally, high elevations along Umatilla Butte create a ridge within the 395 Corridor, causing the gravity collection system to generally divide between the east and west. Considering smaller peaks, valleys, and existing roadways, the 395 Corridor was divided into 5 sewer drainage basins as depicted in Figure H1.

5.6.1.2 Pipes

Collection system pipes located within the UGB and 395 Corridor are presented in Figure H2. Sizing of these pipes was based on a full-buildout analysis of the 395 Corridor and should serve as a guide for expansion of the Umatilla collection system. Piping shown in this area is skeletonized and is not intended to show all piping required to serve the area. It is intended to show the major trunk lines of the system and the feasible size at potential buildout flows – thus ensuring the pipes will provide reserve capacity for their design life. Table 5-10 summarizes the quantity of each pipe size for the sewer collection system within the Urban Growth Boundary.

Table 5-10 – 395 Corridor Approximate Lengths of Sewer Pipe

Diameter (inches)	Length (feet)
8	17,111
10	6,737
12	3,491
15	4,004
18	1,342
27	1,319

Between the initial conceptual layout and the final model results, several alignment changes were made to provide service to the study zone extents, minimize the sewer depths, and minimize the need for lift stations. The piping layout was developed so that the majority of the future trunk pipes are at planned depths of less than 20 feet below the existing ground surface, as shown in Figure H3.

Phasing of the 395 Corridor was not taking into account in the full-buildout model. Phasing of these improvements is dependent on developments in the 395 Corridor, and should be considered when detailed design of the collection system occurs.

5.6.1.3 Lift Stations

As a general rule, the number of sewage pumping lift stations should be minimized due to the costs of operating and maintaining these facilities. Due to the topography of the 395 Corridor, two sewage pump stations would need to be constructed to serve the area. The general location of these lift stations is shown in Figure H2. The sewage pump stations are summarized in Table 5-11.

Table 5-11 – 395 Corridor Lift Stations

Name/Location	Max Total Inflow (MGD)	Proposed Capacity (MGD)	Force Main Size (in)	Force Main Length (ft)
395 East	3.763	4.140	18	4,915
395 West	0.549	0.604	6	8,876

The proposed capacity of the lift station is a result of full-buildout of the area. The lift stations convey flow north through force mains towards Highway 730, before discharging into a single gravity pipe which discharges into the existing collection system.

Phasing of the 395 Corridor lift stations and corresponding force mains was not analyzed. Further analysis should be done to properly size the lift stations based on development and growth rate within the 395 Corridor.

It should be noted that eliminating the 395 West lift station may be a possibility. Topography may allow gravity flow to continue north along the Old Highway, under I-82 and proceed towards the existing collection system. Further analysis of this option is needed to determine a feasible route and connection location. Detailed analysis of this option is outside the scope of this report, but should be considered with growth of the 395 Corridor.

5.6.1.4 Connection to Existing System

A connection point to the existing wastewater collection system was analyzed in order to convey the 395 Corridor sewer flows to the existing wastewater treatment plant. Nearby pipes with excess capacity were reviewed including the 18-inch McNary interceptor and the 12-inch sewer main, both north of Highway 730. The 18-inch interceptor serves the flows from the POU while the 12-inch main serves the residential area west of the port. Industrial flows from the PDX2 site were not included in the 18-inch interceptor capacity, as those flows will be separated and discharged to the BOR Phase 1 Exchange Canal prior to installation of the 395 Corridor public utilities. See Figure H4 for connection locations.

The remaining capacity of each pipe was calculated using build out peak hour flow to determine if enough excess capacity remains to accommodate the 395 Corridor flows. The build out peak hour flows were developed based on potential land use. Table 5-12 summarizes the projected wastewater flows at build out.

Table 5-12 – Projected Build Out Wastewater Flows

Land Use	Area at Build Out (ac)	ADF Unit Flow (GPAD)	ADF (GPAD)	Peaking Factor ¹	PHF Unit Flow (GPAD)	PHF (GPAD)
18" McNary Interceptor						
Heavy Industrial (HI) ²	1,319.54	1,100	1,451,497	1.846	2,031	2,679,687
Total			1,451,497 (1.451 MGD)			2,679,687 (2.680 MGD)
12" Sewer Main						
General Commercial (GC)	29.92	1,100	32,908	1.647	1,812	54,213
Apartment	6.64	3,828	25,424	1.794	6,869	45,621
Single Family Residential (SFR)	140.39	870	122,136	1.794	1,561	219,160
Heavy Industrial (HI)	9.96	1,100	10,953	1.846	2,031	20,222
Church	1.59	337	536	2.475	834	1,326
School	8.78	840	7,376	2.475	2,079	18,257
Recreation	108.88	21	2,287	1.763	37	4,032
Park	32.39	21	680	1.763	37	1,199
Total			202,300 (0.202 MGD)			364,030 (0.364 MGD)

¹ Peaking Factor for ADF/PHF was calculated based on diurnal curves for each land use type.

² Includes all POU flows except industrial flows from the PDX2 site which are disposed of into the BOR Phase 1 Exchange Canal for beneficial reuse.

When calculating capacity the pipe was assumed to have a d/D of 1. Inflow and infiltration was not accounted for in the analysis of existing flows in the existing system and should be included during future master planning and design efforts. Table 5-13 summarizes the capacity analysis for the 18-inch interceptor and the 12-inch main.

Table 5-13 – Capacity Analysis

Pipe	Max Capacity (MGD)	Build Out Peak Hour Flow (MGD) ¹		Excess Capacity (MGD)
		Existing Area Served ²	395 Corridor	
18" McNary Interceptor	2.800	2.679	4.745 ⁵	-4.624
12" Sewer Main	1.080	0.364	4.745 ⁵	-4.029

¹ See Table 5-12

² Existing area served for the 18" McNary Interceptor is the Port of Umatilla (Port East & Port West study zones) and for the 12" Sewer Main is the City Residential study zone.

³ Parameters: Minimum Slope downstream of POU = 0.0045 per McNary Interceptor Record Drawings, Dia= 15", Mannings n= 0.013, Flowing Full

⁴ Parameters: Minimum Slope= 0.0022 per ten state standards, Dia= 12", Mannings n= 0.013, Flowing Full

⁵ Peak flow from the east lift station equals 4.140 MGD. Peak flow from the west lift station equals 0.605 MGD. Total peak flow for the 395 Corridor equals 4.745 MGD.

The analysis determined there is not enough excess capacity in either one pipe to accommodate the build out flows of the 395 Corridor. This study only analyzed build out conditions and did not consider improvements needed for the interim. A phasing analysis should be conducted with future planning and design efforts to accommodate intermediate growth. Connection alternatives include:

- Connect to the 18-inch interceptor for the near-term.
- Secondary connection to 12-inch for additional capacity although this will not accommodate potential build out flows.
- When flows are reaching capacity of pipe consider the following:

- Upsize the 18-inch interceptor
- Install secondary line perpendicular to the 18-inch interceptor
- Construct a force main to WWTP

6 IMPLEMENTATION

6.1 Recommended Improvements Summary

As documented in Sections 4 and 5, several improvement projects to address water supply, domestic wastewater and industrial wastewater concerns are needed. These projects have been categorized as: Water Supply Projects to accommodate the greater water demand and reduce reliability on the City’s declining basalt aquifer; and Wastewater Projects to expand the capacity of the WWTP to serve the study areas and Beneficial Reuse Projects to relieve the existing WWTP of IWW and minimize plant expansion requirements and provide infrastructure to support future development. Table 6-1 summarizes these improvements in 2018 dollars.

Table 6-1 – Improvement Projects (2018 Dollars)

Project Name	Project Description	Opinion of Cost
Wells Hydraulically Connected to the Columbia River	Install hydraulically connected wells to utilize the City’s 23 cfs surface water right.	\$9.0M
PDX2 Non-Potable Pipe	Install a non-potable main from the hydraulically connected wells to the PDX2 site for non-contact cooling tower water use and fire flows.	\$0.8M
Distribution Main	Install a distribution main from the hydraulically connected wells to the plant.	\$2.5M
Water Treatment Plant	Install a 6.2 million gallon per day potable water treatment plant to meet the peak day demand.	\$24.7M
395 Corridor Water System ¹	Install City water facilities from the water treatment plant order to provide domestic surface water to the 395 Corridor, storage included.	\$39.4M+
Industrial Cooling Tower IWW Flow - Separate Industrial Flows PDX2	Install an industrial reuse pipeline from the PDX2 site to the BOR Phase 1 Exchange Canal for beneficial reuse. Permit the discharge via a NPDES permit. Allow/plan for other data center non-contact cooling tower IWW discharges to be beneficially reused in a similar manner.	\$3.0M
395 Corridor Wastewater Facilities ¹	Extend City wastewater facilities to the 395 Corridor to support development. Flows will be conveyed to the existing WWTP.	\$14.0M+
Expand Capacity of WWTP	In ~ 8 years, upgrade WWTP to 1.68 MGD for domestic growth as needed. In ~ 50 years, upgrade WWTP to 2.52 MGD for domestic growth as needed. Eventual build out capacity is ~ 4.0 MGD	\$15.2M - \$60.0M+
Total Improvement Program Cost =		\$108.6M - \$153.4M+

¹ Cost only includes the main system trunk lines and does not account for all mains, services, and connections. Actual cost is assumed to be much higher than estimated. Cost shall be reanalyzed in future planning and design efforts.

The City has and will spend a significant amount of money on utility improvements. It is imperative that a water and wastewater reserve accounts be established to allow the City to replace installed facility components as they fall into disrepair. As these improvements are installed, each project and final contract price needs to be included in the City’s replacement program to build water and sewer reserve accounts. It is recommended the City conduct a replacement analysis to establish an annual replacement cost and ensure adequate funds are being contributed to the reserves.

6.2 Implementation Plan

The BRFA is intended to develop an effective implementation plan that succeeds from a regulatory, technical, and economic standpoint. The full improvement program is intended to be development driven. Based on the City's current state, the potential implementation plan below is provided as guidance.

6.2.1.1 Near-Term (0-5 Years)

Implementation of the near-term projects is imperative to addressing the existing water supply and WWTP issues the City is experiencing. These projects should be implemented as soon as funds are available. Additional analysis and consideration is required to further develop these alternatives. Near-term projects are summarized in Table 6-2.

Table 6-2 – Near-Term Projects (2018 Dollars)

Project Name	Project Description	Opinion of Cost
Wells Hydraulically Connected to the Columbia River	Install hydraulically connected wells to utilize the City's 23 cfs surface water right.	\$9.0M
PDX2 Non-Potable Pipe	Install a non-potable main from the hydraulically connected wells to the PDX2 site for non-contact cooling tower water use and fire flows.	\$0.8M
Industrial Cooling Tower IWW Flow - Separate Industrial Flows PDX2	Install an industrial reuse pipeline from the PDX2 site to the BOR Phase 1 Exchange Canal for beneficial reuse. Permit the discharge via a NPDES permit. Allow/plan for other data center non-contact cooling tower IWW discharges to be beneficially reused in a similar manner.	\$3.0M
Total Near-Term Project Cost =		\$12.8M

6.2.1.2 Mid-Term (5-15 Years)

Implementation of the mid-term projects would allow for beneficial reuse within the study area which would relieve the City's reliance on the declining basalt aquifer. Implementation would also support development in the 395 corridor therefore providing economic stimulation. These projects should be considered by the City as funds become available. Additional analysis and consideration is required to further develop these alternatives. Mid-term projects are summarized in Table 6-3.

Table 6-3 – Mid-Term Projects (2018 Dollars)

Project Name	Project Description	Opinion of Cost
Distribution Main	Install a distribution main from the hydraulically connected wells to the plant.	\$2.5M
Water Treatment Plant	Install a 6.2 million gallon per day potable water treatment plant to meet the peak day demand.	\$24.7M
395 Corridor Water System (Interim) ¹	Install City water facilities from the water treatment plant order to provide domestic surface water to the 395 Corridor, storage included.	\$19.7M+
395 Corridor Wastewater Facilities (Interim) ¹	Extend City wastewater facilities to the 395 Corridor to support development. Flows will be conveyed to the existing WWTP.	\$7.0M+
Expand Capacity of WWTP (Interim)	In ~ 8 years, upgrade WWTP to 1.6 MGD for domestic growth as needed.	\$15.2M
Total Mid-Term Project Cost =		\$69.1M+

¹ Interim improvement costs are assumed to be half of build out costs.

6.2.1.3 Long-Term (15+ Years)

Implementation of the long-term projects would lessen the City’s reliance on the declining basalt aquifer as well as ensure the existing WWTP is operating within the permit limits by installing a second WWTP to accommodate industrial flows. These projects should be re-analyzed as significant development occurs to verify improvements are still valid. Additional analysis and consideration is required to further develop these alternatives. Long-term projects are summarized in Table 6-4.

Table 6-4 – Long-Term Projects (2018 Dollars)

Project Name	Project Description	Opinion of Cost
395 Corridor Water System (Build out)	Install City water facilities from the water treatment plant order to provide domestic surface water to the 395 Corridor, storage included.	\$39.4M+
395 Corridor Wastewater Facilities (Build out)	Extend City wastewater facilities to the 395 Corridor to support development. Flows will be conveyed to the existing WWTP.	\$14.0M+
Expand Capacity of WWTP (Build out) ¹	In ~ 30 years, upgrade WWTP to 2.25 MGD for domestic growth as needed. Eventual build out capacity is ~ 4.0 MGD	\$60.0M+
Total Long-Term Project Cost =		\$113.4M+

¹ Sum of Interim WWTP Expansion (\$15.2M) and Alt B-4 (\$41.6M), rounded.

6.3 Potential Funding Strategies

The recommended alternatives for the City’s water and wastewater utility will be costly and will require substantial capital over 10-20 years. There are a variety of public and private funding sources available for the City to finance the recommended alternatives. Given the City’s focus on environmentally beneficial utility solutions (i.e. the Phase 1 IWW pipeline), the City’s success in securing Drinking Water State Revolving Loan Fund (DWSRLF) and CWSRLF monies, and this WRD Feasibility Grant, the City should coordinate with funding agencies to find creative ways to maximize public financing. Dividing recommended alternatives into smaller (\$2.5m - \$7m) projects will optimize grant and principle forgiveness funds.

6.3.1 Funding Overview

Where feasible, given the nature of the industrial development, the City should attempt to finance “growth with growth.” Whether with System Development Charges, or more direct agreements negotiated with private enterprises interested in siting, the City can accomplish more while keeping rates affordable.

Task time to analyze funding opportunities was limited and this should not be considered a comprehensive report on available options. In the past, the City has pursued low-interest public financing options like DWSRLF and CWRLF. The Revolving Funds also offer principle forgiveness options and the City received \$500,000 in forgiveness on the construction of its \$2.3M Phase 1 Industrial Wastewater Pipeline. The City has also applied for \$4M in DWSRLF for its water utilities and that funding is intended to implement Alternative A-5, by conducting additional analysis on the hydraulic connectivity potential and drilling test wells.

Table 6-5 – Potential Funding Sources

Funding Program	Federal Environmental Mandates?	Hydraulically Connected Wells	PDX2 Non-Potable Pipe	Distribution Main	Water Treatment Plant	395 Corridor Water System	395 Corridor Wastewater Facilities	Expand Capacity of WWTP
CWSRLF	Yes						X	X
DWSRLF	Yes	X	X	X	X	X		
CDBG	Yes					X		X
USDA-RD	Yes	X	X	X	X	X	X	X
IFA SPWF		X	X	X	X	X	X	X
Bonds	No	X	X	X	X	X	X	X
Bank Loan	No	X	X	X	X	X	X	X

Industrial development and job growth will also trigger additional principle forgiveness and financing options for the City’s projects that will serve development. CDBG funds have additional limitations and requirements that are described below.

6.3.2 Community Development Block Grants

The Housing and Urban Development Community Development Block Grant (HUD-CDBG) program administered by Business Oregon is the best grant program available for public infrastructure development. It offers up to \$2,500,000 grants, per utility, every five years. In order for the City to be eligible, they must attempt to fund projects that serve a >50.1% Low-to-Moderate Income population and solve an existing utility compliance issue (Mutual Agreement Order (MAO), Bilateral Compliance Agreement (BCA), permit violation, etc). The City of Umatilla, as a population, is currently eligible for CDBG funds because the American Community Survey determined its Low-to-Moderate Income Survey Data (LMISD) is >50.1%. That figure should change every five years and can change by a substantial amount. The City should maximize its eligibility window and attempt to fund a water and wastewater project with CDBG funds immediately.

6.3.3 CWSRF Sponsorship Option

Given the long-term nature of the recommendations, and the magnitude of funding costs, finding ways to leverage public funding and identify low-interest financing will be crucial to the City’s continued growth and success. One proven method to reduce interest rates long-term is the CWSRF’s Sponsorship Option.

The Sponsorship Option allows the City to marry a Point Source project with a Nonpoint Source project. The resulting combination financing would result in a discounted interest rate. This may prove effective in development of the Hydraulically Connected Wells, where the City could create a Nonpoint Source project as mitigation or a trade-off regarding federal “No Net Loss” policies. Examples of Nonpoint Source projects that would qualify include:

- Protection or restoration of streamside (riparian) areas and wetlands,
- Acquiring riparian lands or wetlands
- Developing and acquiring conservation easements

June 2018

- Alterations to stream banks and habitat improvements
- Improvements to nonpoint source polluted runoff
- Protecting a source of drinking water

As an example, a \$2.4m treatment plant project matched with an \$800,000 Nonpoint Source project could result in an annual savings of \$20,000 and a 20-year savings of \$403,600 compared to projects financed separately.

6.3.4 Immediate Next Steps

CDBG: Develop a CDBG application for Summer 2018 for water or sewer project – a Final Design project if no project is shovel-ready. Begin working on a 2019 CDBG construction application. Line up an immediate-priority design project in mid-2018 and have that project ready for a CDBG construction application in 2019. Shovel-ready projects are more likely to be funded.

CWSRF Sponsorship: Determine if there are any priority projects that would qualify for the CWSRF's Nonpoint Source funding option. Marry that funding with another traditional CWSRF project for a decreased total interest rate on the two projects.

Table 6-6 – Basic Funding Overview

Funding Source	Deadline	Max Funding Available	Average Rates	Maximum Term	Principle Forgiveness	Notes
DWSRF	Quarterly	\$40-50m loans common	~1%	20 yr	<input checked="" type="checkbox"/>	Repayment 1 year after project completion
CWSRF	Quarterly	\$40-50m loans common	<1-1%	30 yr	<input checked="" type="checkbox"/>	
CDBG	Annual - July 2018	\$2,500,000 every 5 years per utility	N/A - Grant	N/A - Grant	N/A - Grant	Project a/b utility compliance
IFA W/W	---	\$10,000,000	3.43%	25 yr	<input checked="" type="checkbox"/>	
OR-SPWF	---	\$10,000,000	3.43%	30 yr	<input checked="" type="checkbox"/>	
RCAC Loan	---	\$2,000,000	5.5%	3 yr		Also: 1% loan fee
USDA-RD	---	\$5,000,000	2.3-3.8%	40 yr		Req. interim financing.
Private Loan (bank)	---	---	Varies	20-30 yr		
Municipal Bond	---	---	3.25-4.5%	Varies		Municipal Bond

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Appendix A – Non-Contact Cooling Water Pipeline – Preliminary Engineering Report

PLANNING DOCUMENT

NON-CONTACT COOLING WATER
PIPELINE-
PRELIMINARY ENGINEERING REPORT

**CITY OF UMATILLA
UMATILLA, OR**

August 2016

August 12, 2016 Revisions



J·U·B ENGINEERS, INC.

1201 Adams Avenue
La Grande, OR 97850
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www.jub.com

Project No. 33-16-003

PLANNING DOCUMENT

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APPENDICES

Appendix A – Wastewater Treatment & Reuse Evaluation Report

Appendix B – Opinion of Probable Construction Costs

Appendix C – NPDES Permit Application (For Information Only)

Appendix D – USBR SF 299 Permit Application

Appendix E – Environmental Review Report

Appendix F – Preliminary Design Drawings

COMMON ACRONYMS AND ABBREVIATIONS

A	Area	fps	Feet Per Second
AAF	Average Annual Flow	ft	Feet
AC	Asbestos Cement Pipe	gal	Gallons
ACOE	Army Corps of Engineers	GAO	Glycogen Accumulating Organism
ADF	Average Daily Flow	gfd	Gallons Per Square Per Day
ADWF	Average Dry Weather Flow	gpcd	Gallons Per Capita Day
AOTR	Actual Oxygen Transfer Rate	gpd	Gallons Per Day
AWWF	Average Wet Weather Flow	gph	Gallons Per Hour
BNR	Biological Nutrient Reduction	gpm	Gallons Per Minute
BOD ₅	5-Day Biochemical Oxygen Demand	HDPE	High Density Polyethylene
BPR	Biological Phosphorus Reduction	hp	Horsepower
CA	Compliance Activities	HRT	Hydraulic Residence Time
CBOD ₅	5-Day Carbonaceous Biochemical Oxygen Demand	HVAC	Heating/Ventilation/Air Conditioning
CD	Cadmium	I/I	Inflow and Infiltration
CEC	Cation Exchange Capacity	IDAPA	Idaho Administrative Procedures Act
cf (CF)	Cubic Feet	IDEQ	Idaho Department of Environmental Quality
CFR	U.S. Code of Federal Regulations	kW	Kilowatt
cfs	Cubic Feet Per Second	kwh	Kilowatt-Hour
cfu	Colony Forming Units	L	Length
CMOM	Capacity, Management, Operations, and Maintenance	L:D	Length to Depth Ratio
CMU	Concrete Masonry Units	L:W	Length to Width Ratio
COD	Chemical Oxygen Demand	lb/day	Pounds Per Day
CRF	Capital Recovery Factor	LS	Lump Sum
CUP	Conditional Use Permit	MBR	Membrane Bioreactor
D	Depth	MCC	Motor Control Center
DBP	Disinfection By-Products	MCL	Maximum Contaminant Level
DEQ	Department of Environmental Quality	MDF	Maximum/Minimum Daily Flow
DIP	Ductile Iron Pipe	MF	Micro Filtration
DMR	Discharge Monitoring Report	MG	Million Gallons
DO	Dissolved Oxygen	mg/l	Milligram Per Liter (Parts Per Million – ppm)
E. coli	Escherichia coliform bacteria	µg	Microgram Per Liter (Parts Per Billion – ppb)
EA	Each	MGD	Million Gallons Per Day
EID	Environmental Information Document	ML	Minimum Level
EPA	U.S. Environmental Protection Agency	ml	Milliliter
ERU	Equivalent Residential Unit	MLSS	Mixed Liquor Suspended Solids
ESA	Endangered Species Act	MLVSS	Mixed Liquor Volatile Suspended Solids
fpm	Feet Per Minute	MMF	Maximum Month Flow

COMMON ACRONYMS AND ABBREVIATIONS

MN	Manhole	SCFM	Standard Cubic Feet Per Minute
MPN	Most Probable Number	SCS	US Department of Agriculture Soil Conservation Service (Now RD)
MSL (msl)	Mean Sea Level	sf (SF)	Square Feet
n HRT	Nominal Hydraulic Residence Time	sf (SF)	Square Feet
N/A	Not Available or Not Applicable	SLR	Solids Loading Rate
ND	Non-Detectable	SLR	Solids Loading Rate
ng/L	Nanogram Per Liter (Parts Per Trillion – ppt)	SMP	Solids Management Plan
NH ₃ -N	Ammonia Expressed as Nitrogen	SMP	Solids Management Plan
NO ₃ -N	Nitrate Expressed as Nitrogen	SOR	Surface Overflow Rate
NOAA	National Oceanic and Atmospheric Administration	SOTR	Standard Oxygen Transfer Rate
NPDES	National Pollutant Discharge Elimination System	SRT	Solids Retention Time
O&M	Operation and Maintenance	SS	Stainless Steel
O ₂	Oxygen	STEP	Septic Tank Effluent Pump
OD	Oxidation Ditch	SVI	Sludge Volume Index
ORP	Oxidation Reduction Potential	TDH	Total Dynamic Head
OSHA	Occupational Safety and Health Administration	TKN	Total Kjeldahl Nitrogen
Pb	Lead	TMDL	Total Maximum Daily Load
PF	Peaking Factor	TMP	Trans-Membrane Pressure
pg/L	Picogram Per Liter (Parts Per Quadrillion – ppq)	TN	Total Nitrogen
PHF	Peak Hourly Flow	TOC	Total Organic Carbon
PLC	Programmable Logic Controller	TP	Total Phosphorus
POTW	Publicly Owned Treatment Work	TSS	Total Suspended Solids
ppb	Parts Per Billion (µg/L)	UF	Ultra Filtration
ppd	Pounds Per Day	USGS	United States Geological Survey
pph/sf	lb/hr/sf	UV	Ultra Violet Radiation
ppm	Parts Per Million (mg/L)	V (vol)	Volume
ppq	Parts Per Quadrillion (pf/L)	VCO	Voluntary Consent Order
ppt	Parts Per Trillion (ng/L)	VFA	Volatile Fatty Acid
PQL	Practical Quantitation Limit	VFD	Variable Frequency Drive
PVC	Polyvinyl Chloride	VOC	Volatile Organic Compounds
RAS	Return Activated Sludge	W	Width
RD	Rural Development (Division of US Department of Agriculture)	WAS	Waste Activated Sludge
SA	Surface Area	WL	Water Level
SBC	Submerged Biological Contactor	WQS	Water Quality Standards
SBR	Sequencing Batch Reactor	WWTP	Wastewater Treatment Plant
SCADA	Supervisory Control and Data Acquisition	Zn	Zinc

EXECUTIVE SUMMARY

The City of Umatilla (City) retained J-U-B Engineers, Inc. (J-U-B) through a professional services agreement dated February 10, 2016 to conduct a preliminary analysis and prepare a Preliminary Engineering Report (PER) for an industrial wastewater disposal waterline from the Port of Umatilla (POU) to the United States Bureau of Reclamation (USBR) Phase 1 Exchange canal (canal). This preliminary engineering report is required in order for the City to implement the new permitted industrial disposal system. The intent of this report is to satisfy state and federal planning and preliminary design requirements.

The City collects and treats domestic and industrial wastewater and discharges treated effluent year-round to the Columbia River in compliance with the City's NPDES Permit. The WWTP experiences maximum daily flows in excess of the permitted limit due to recent industrial growth including their arrival of VA Data at POU in 2013. Specifically, the industrial facilities utilize cooling towers during the summer months which inundates the existing wastewater system.

To mitigate excess industrial flows, the City chose to separate the domestic and industrial flows by installing a non-contact cooling water pipeline from the POU to the USBR canal, beneficially reusing the industrial water through the USBR canal into the WEID canal for agricultural use. Separating the industrial and domestic flows reduces future capital expenditures and operation and maintenance (O&M) costs to all ratepayers. Separating industrial wastewater flows also alleviates the capacity and treatment issues the City is currently experiencing at the WWTP.

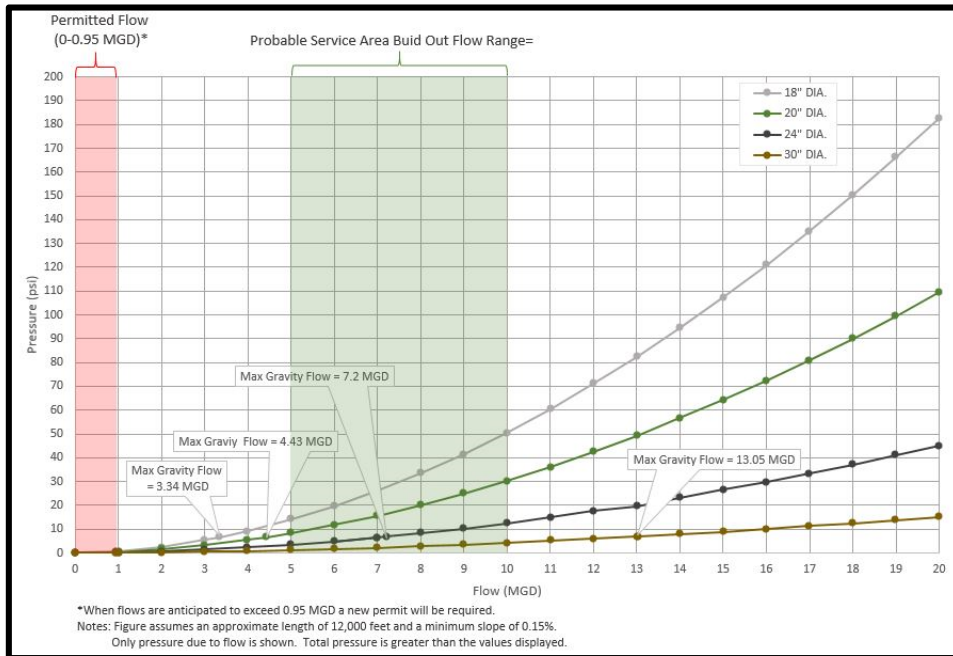
J-U-B conducted a preliminary alignment analysis on the industrial park to determine the best location for the proposed pipeline. Five alignments were developed and analyzed. The City of Umatilla selected the preferred alignment displayed in **Figure ES1.1**. The selected alignment is a direct route which meets horizontal and vertical requirements; avoids bedrock to the maximum extent possible, wetland impacts, and railroad crossings; and utilizes existing right-of-way where possible and requires three utility easements.

Figure ES1.1 – Horizontal Alignment



To estimate the potential system flows, the Port of Umatilla (POU) was compared to the Port of Morrow (POM) based on similarities in geographic region, size, and potential industrial development. Since the POU is in the early development stage, an estimated 5 MGD to 10 MGD peak daily demand flow range was assumed for full build out. The City intends to utilize gravity flow for the near term and as system flows increase, the pipe will become a low pressure force main system as development occurs. **Figure ES1.2** shows the flow vs. pressure relationship. Based on the analysis, three pipe sizes were deemed suitable for the system including 18", 20", and 24".

Figure ES1.2 – Pipe Size Analysis: Flow vs. Pressure



A preliminary estimate of probable costs was developed for each of the pipe size alternatives including 18", 20", and 24" pipe diameters. A summary of the probable costs is provided in **Table ES1.1**. The estimated design completion is Fall 2016 with construction beginning Winter 2017 and project completion in Spring 2017.

Table ES1.1 – Summary of Probable Costs

Pipe Size (in)	Cost Estimate
18	\$2,157,123
20	\$2,413,526
24	\$3,020,696

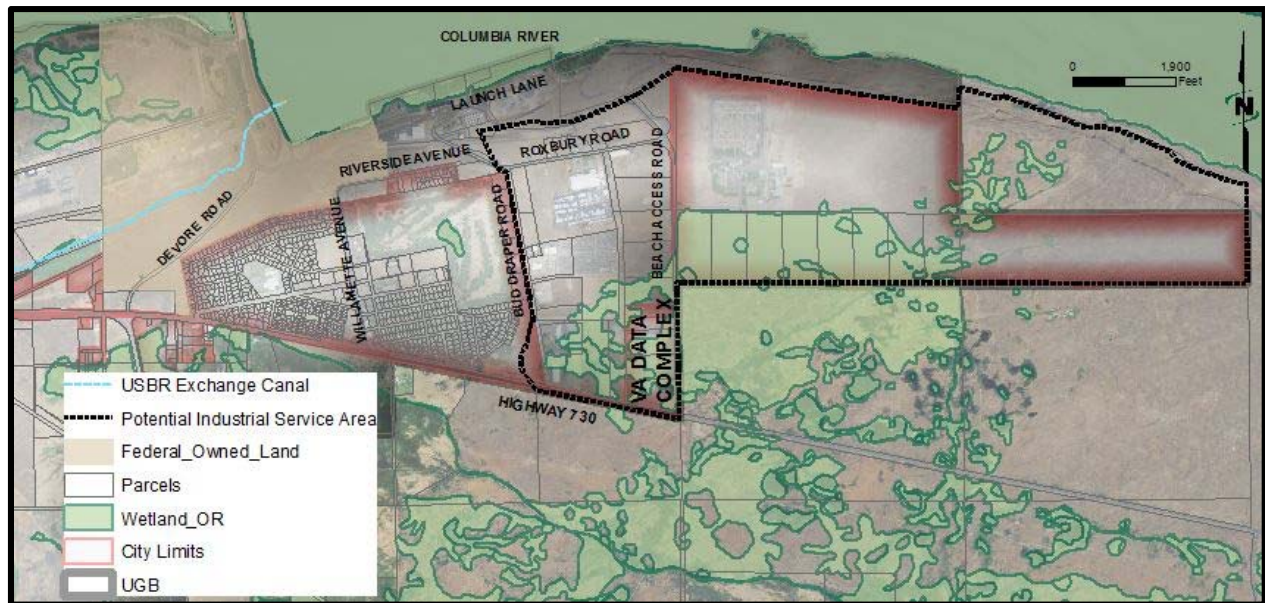
J-U-B provided assistance to the City for coordination and development of necessary permits, including USBR SF299 form to secure required USBR permits and the Draft NPDES permit application, as well as design and procurement of required temporary and permanent easements. Two new permanent utility easements, one existing easement amendment, and temporary easements along the entire alignment are needed for construction.

J-U-B and Ducote Consulting, LLC assisted the City in the development of the environmental review documentation. In coordination with a variety of agencies, the Environmental Review demonstrated compliance with cross-cutting authorities and agencies.

1 INTRODUCTION

The City of Umatilla (City) retained J-U-B Engineers, Inc. (J-U-B) through a professional services agreement dated February 10, 2016 to conduct a preliminary analysis and prepare a Preliminary Engineering Report (PER) for an industrial wastewater disposal waterline from the Port of Umatilla (POU) to the United States Bureau of Reclamation (USBR) Phase 1 Exchange canal (canal). In conjunction with planning and design, the pipeline is being permitted through the NPDES permitting process in accordance with OAR Chapter 340 Division 45. **Figure 1.1** displays a site map of the POU.

Figure 1.1 – Site Map



1.1 PURPOSE OF PER

This preliminary engineering report is required in order for the City to implement the new permitted industrial disposal system. The intent of this report is to satisfy state and federal planning and preliminary design requirements, including:

- OAR 660-11-0000 Public Facilities Planning alignment comprehensive planning that urban “facilities and services are provided in a timely, orderly and efficient arrangement as required by Goal 11.”
- May 2013 *Guidelines for Preparing Wastewater Planning Documents and Environmental Reports* for Public Utilities Finance by the IFA, ODEQ, RCAC, & USDA. Specifically, page 4 where a pre-design report can be accepted as an “engineering planning document.”

1.2 SCOPE

This report includes the planning and preliminary design of the treated effluent industrial disposal pipe, NPDES permitting assistance, and environmental review. Preliminary engineering included initial water demand analysis, hydraulic analysis, pipe sizing, geotechnical evaluation, alignment selection, monitoring and control, permitting assistance, environmental review, project schedule, and opinion of costs. Not included in this project phase was topographic survey, right-of-way retracement, test pits,

utility locates, and final design including specifications. These tasks will be completed under future task orders, including ODEQ review and approval of construction plans per OAR Chapter 340, Division 52.

2 PURPOSE & NEED OF PROJECT

This section summarizes the current issues experienced by the City and prior planning and evaluations completed to develop the preliminary design and solution to discharge industrial flows from the POU.

2.1 BACKGROUND

The City collects and treats domestic and industrial wastewater and discharges treated effluent year-round to the Columbia River in compliance with the City's NPDES Permit. The wastewater treatment plant (WWTP) has an average dry weather design capacity of 0.8 million gallons a day (MGD) and a maximum day demand of 1.3 MGD. The WWTP experiences maximum daily flows in excess of 0.8 MGD due to recent industrial growth including the arrival of VA Data at POU in 2013. Specifically, their industrial facilities utilize cooling towers during the summer months that inundates the existing wastewater system causing the facility to exceed its current permit limits. Industrial wastewater from VA Data is non-contact cooling tower water.

The City's wastewater facility plan provides for future upgrades to accommodate increased flow and loads, however, development at the POU is increasing faster than the City can update the existing wastewater system causing an immediate need for alternative actions and solutions.

2.2 SUMMARY OF PRIOR PLANNING & EVALUATIONS

In November 2014, J-U-B was hired by the City to develop potential non-contact cooling water scenarios to offset clean industrial flows from entering the City's wastewater facilities, develop beneficial recycling goals for the City's domestic and industrial flows, and prepare a memorandum detailing the study findings. The developed goals included:

- Separate the industrial wastewater flows from the domestic wastewater flows, because the industrial wastewater has other available regulatory permitting options.
- Beneficially recycling the industrial flows by recycling the water into the West Extension Irrigation District (WEID) for agricultural use.
- Beneficially recycling the domestic flows by recycling the water at the WWTP to irrigate the Marina, City parks, and/or the "old town" area.
- Develop surface water supply options from the City's water right, to provide domestic and industrial water at the POU area, allowing the City to conserve water from the deep basalt aquifer.

This non-contact cooling water pipeline project will accomplish the first two goals of separating the domestic and industrial flows and reusing the industrial flows by recycling the water into the WEID canal via the USBR canal for beneficial use by the agricultural community. As detailed in the evaluation, there are several other avenues of beneficial recycling, in addition to the non-contact cooling water pipeline project, which can better the system and benefit the City. Other alternatives will be pursued as funding becomes available. The Wastewater Treatment and Reuse Evaluation is an integral part of this report and is provided in Appendix A.

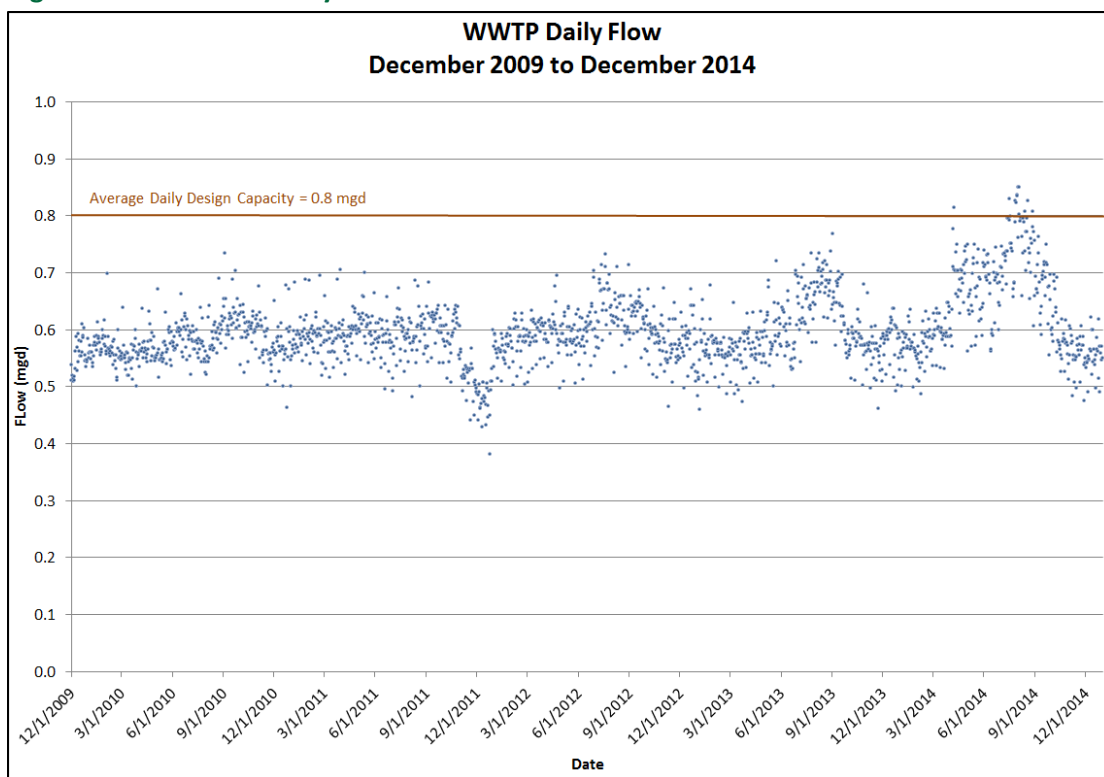
EXISTING SYSTEM

Oregon Department of Environmental Quality (ODEQ) completed a NPDES permit evaluation Report on June 22, 2013 as part of the City's NPDES permit renewal. The evaluation report concluded the "facility currently has adequate capacity." This conclusion was based on a review of flows from November 2006 to January 2013 where the average monthly flow was 0.575 MGD with a maximum daily flow of 0.645 MDG compared to the average dry weather design flow of 0.8 MGD.

Since January 2013, industrial flows from VA Data Center have increased during ongoing installation of the facilities, which contributes up to 0.25 MGD of flow and increases the average dry weather flow above the design flow of 0.8 MGD. Currently, the existing domestic WWTP receives all cooling tower flows. Three additional facilities are planned and in the process of construction, totaling five facilities within the VA Data complex at full buildout, which could increase total discharge flows up to 1 MGD.

Figure 2.1 illustrates the impact at the WWTP from one of the five Data Center buildings, beginning in January 2013 thru December 2014.

Figure 2.1 – WWTP Daily Flows



In May of 2017 two of the five planned facilities will be brought online. To reduce the impacts to the City's deep aquifer and the domestic WWTP, a reverse osmosis (RO) treatment process was installed allowing multiple passes and limiting the potential buildout flows. To limit the potential buildout flows to approximately 0.5 MGD or less. Six passes through the RO system are necessary, which is costly and causes increased water quality issues. As a means of waste management, the reject water is sent to a holding pond where over time it is diluted then discharged into the City's domestic wastewater system. The installation of the non-contact cooling water pipeline will reduce the number of passes through the RO system, increasing the effluent's water quality through less reject water, reducing energy

consumption and operational costs, and allowing the beneficial recycling of water for agricultural purposes.

ALTERNATIVES CONSIDERED

The Wastewater Treatment and Reuse Evaluation explored several alternatives to mitigate the current wastewater issues experienced by the City. The following list provides a summary of the various improvement alternatives.

- **No Action:** This alternative involves maintaining the existing WWTP as is and receiving future flows, both industrial and domestic. This alternative is not feasible for the wastewater system to function efficiently and for the City to meet the current permit requirements. Implementation of the no action alternative will result in permit violations and future enforcement actions.
- **Upgrade WWTP to Accommodate Industrial Flow:** This alternative involves either converting the existing facility to provide non-contact cooling water or increasing the overall capacity of the existing facility from 0.8 MGD to 3.0 MGD.

0.8 MGD Facility Conversion Alternative Cost: \$5.8M to \$7.5M

3.0 MGD Facility Upgrade Alternative Cost: \$22M to \$25M

- **Non-Contact Cooling Water Pipeline:** This alternative requires new facilities to convey flow to an industrial wastewater treatment facility and disposal system. The various components of a non-contact cooling water pipeline include:
 - **Disposal Alternatives:** Entails disposal of industrial non-contact cooling water via the City of Umatilla, Land Application, WEID canal via the USBR Phase 1 Exchange canal, Regional Water System Pipe (RWS), or Treatment Wetlands.
 - **Treatment Alternatives:** Based on level of disposal options available, treatment options and levels include a new City of Umatilla WWTP, utilize the RO system at the VA Data Center facility, or installation of a regional industrial treatment plant.
 - **Industrial Water Source Alternatives:** Industrial water sources include City of Umatilla existing groundwater, the Port of Umatilla's regional water supply, or the City's surface water right for 23 cubic feet per second from the Columbia River.

Additional detail on these alternatives considered can be found in Appendix A.

2.3 OVERVIEW OF SELECTED ALTERNATIVE

The City selected the alternative to separate the domestic and industrial flows by installing a non-contact cooling water pipeline from the POU to the USBR canal, beneficially reusing the industrial water through the USBR canal into the WEID canal for agricultural use. Separating the industrial and domestic flows reduces future capital and operation and maintenance (O&M) costs to all ratepayers. Separating industrial wastewater flows also alleviates the capacity and treatment issues the City is currently experiencing at the WWTP. The project will reduce water competition in the Umatilla Basin between industrial and agricultural users and will create infrastructure to support dual-use recycled industrial wastewater. This mutually beneficial relationship will reduce conflict over waning water resources in the Basin. Other project benefits include:

- Less water drawn from the Columbia River and Umatilla River by WIED to meet irrigation needs due to the additional water discharged by the proposed industrial waterline.
- Saved monetary resources for WEID as recycled water is less expensive than alternatives.
- Sustainable infrastructure to support 75 years of economic development and growth.

Selection and implementation of the alternative does not impact current wastewater facilities, therefore, updates to the current facility and master planning document are not needed at this time.

3 PRELIMINARY DESIGN

This section discusses the preliminary design elements of the pipeline, including the alignment selection, potential system flows, sizing, costs, and schedule. J-U-B assessed all the historical data provided by the City of Umatilla, the Port of POU, and facilities located within the POU. J-U-B also reviewed data from the POM to use as a reference for expected growth and development of the POU due to the similarities in size, geographic proximity, and similar industrial development potential of the two industrial parks. Elements in this section are subject to modification as the project proceeds to final design and growth occurs within the industrial park. Preliminary design drawings are provided in Appendix F.

3.1 ALIGNMENT SELECTION

J-U-B conducted a preliminary alignment analysis on the industrial park to determine the best location for the proposed pipeline. The following factors were key in analyzing and selecting a feasible alignment:

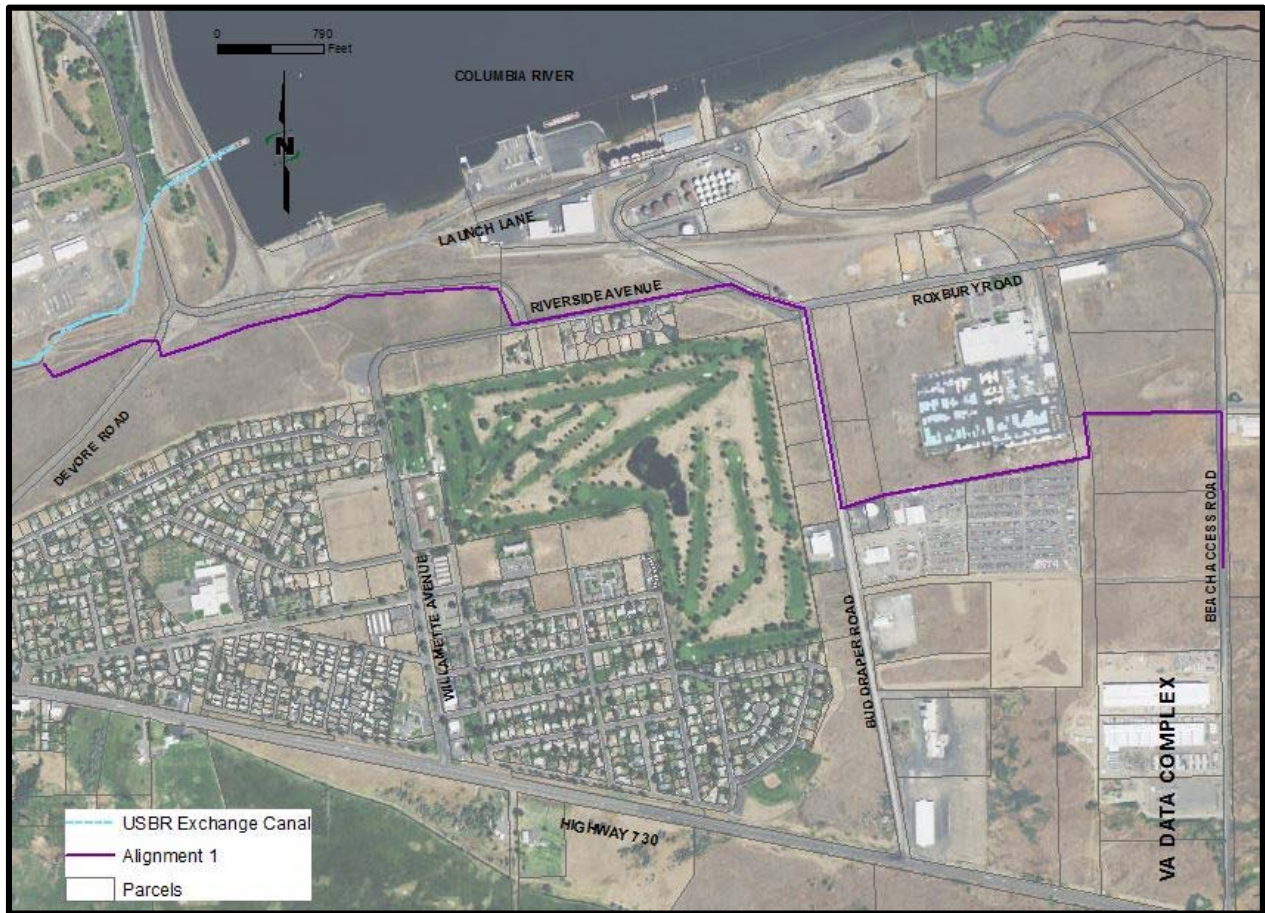
- Ability to serve the POU and Confederated Tribes of the Umatilla Indian Reservation (CTUIR) areas.
- Direct route;
- Minimize pipe length and depth;
- Remain above existing bedrock;
- Remain within existing right-of-way to the maximum extent possible with minimal easement acquisition;
- Avoid crossing the existing railroad; and
- Avoid impacts to wetlands and other environmental factors;

Five alignments were developed and analyzed with input from the City of Umatilla.

HORIZONTAL ALIGNMENT 1

Alignment 1 is displayed in **Figure 3.1**.

Figure 3.1 – Horizontal Alignment 1

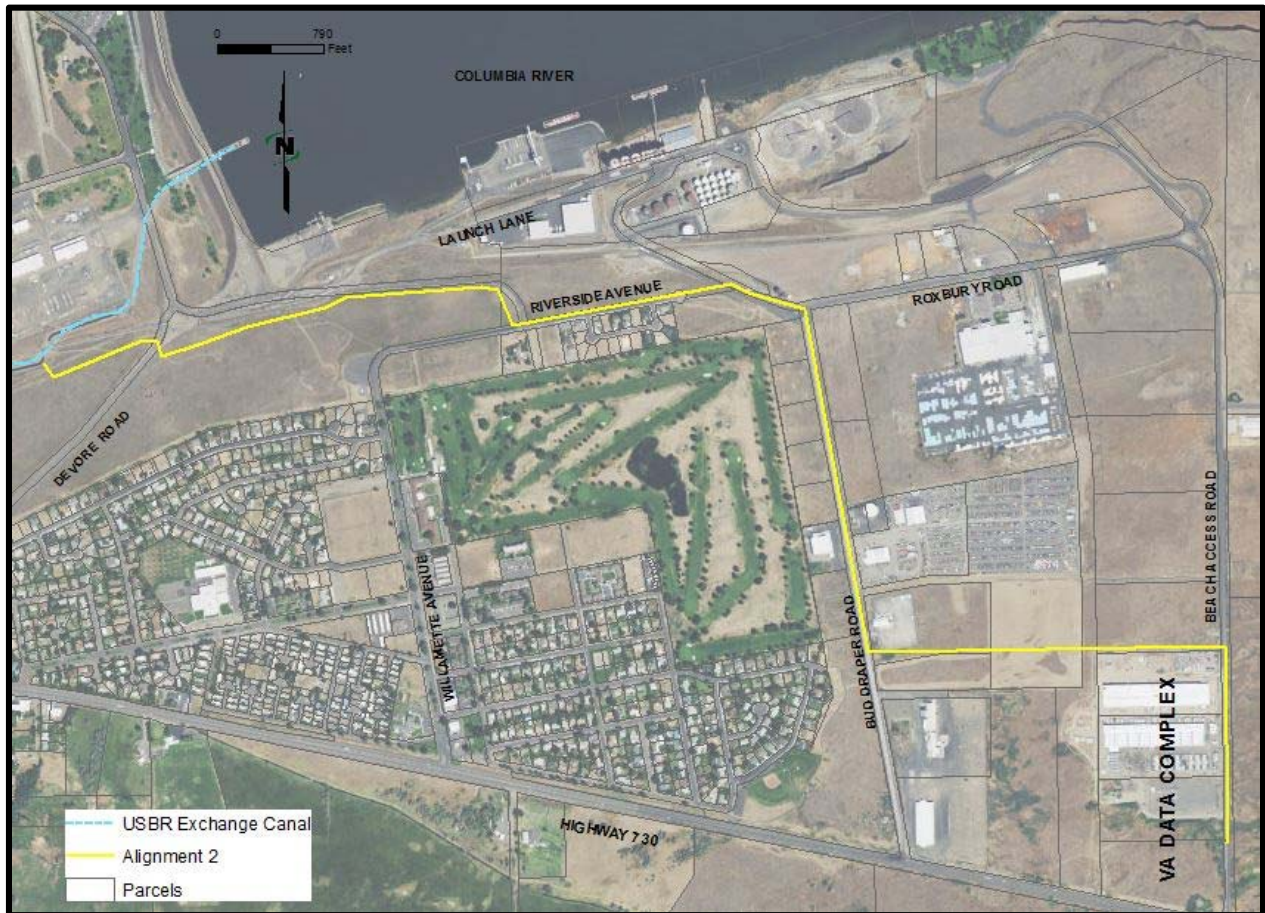


Alignment 1 begins at the outfall into the open channel portion of the USBR canal at the canal jog south of the railroad crossing located west of Devore Road. The alignment proceeds east along the amended 40-foot easement crossing federal land managed by the USCOE between the USBR canal and Riverside Avenue. This first easement begins at the outfall location and heads west where it intersects the existing utility easement housing the McNary interceptor pipeline. The easement then parallels the existing utility easement west of Devore Road to Riverside Avenue. The alignment follows Riverside Avenue right-of-way to the cul-de-sac where another 20-foot utility is needed between Riverside Avenue and Bud Draper Road. Road right-of-way is utilized along Bud Draper Road until it reaches a point on Bud Draper Road approximately 2,600 feet north of the Highway 730 intersection. The alignment departs to the east along a second new 20-foot easement traversing POU and private land between Beach Access Road and Bud Draper Road. At Beach Access Road the alignment moves south within roadway right-of-way and terminates at the existing manhole on Beach Access Road where VA Data discharges into the City's existing wastewater system, approximately 2,600 feet north of the Highway 730 intersection. There are no wetland impacts or railroad crossings associated with this alignment.

HORIZONTAL ALIGNMENT 2

Alignment 2 is displayed in **Figure 3.2**.

Figure 3.2 – Horizontal Alignment 2

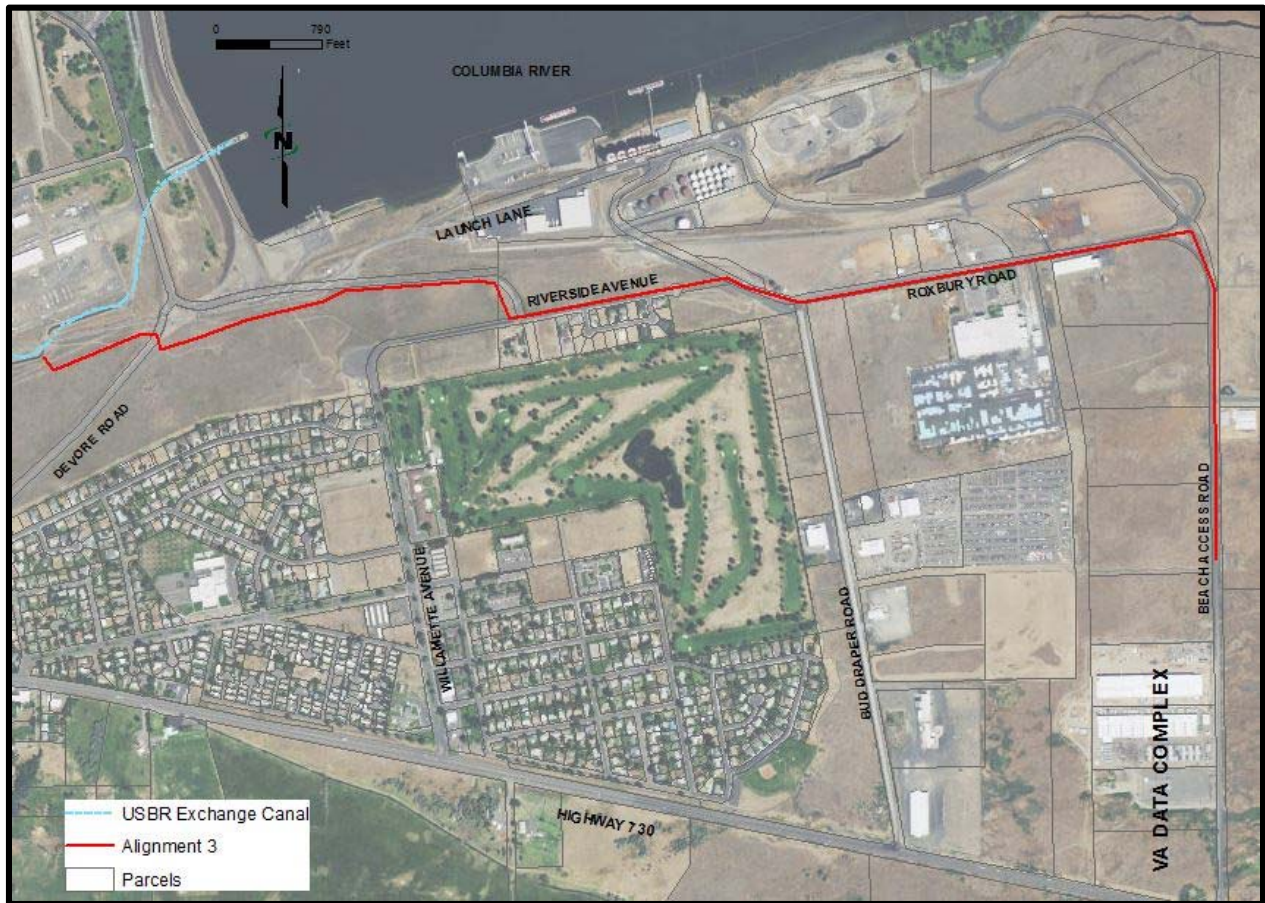


Alignment 2 follows the same route as Alignment 1 from the USBR canal outfall location to the location where Alignment 1 departs Bud Draper Road to the east. Alignment 2 continues south within Bud Draper Road right-of-way another 1,100 feet prior to departing to the east. A new 20-foot easement, across private land, is required between Bud Draper Road and the existing easement adjacent to Beach Access Road. The alignment utilizes the existing easement east to Beach Access Road and road right-of-way heading south to the VA Data property where it connects into the existing system 600' north of the Highway 730 intersection. This alignment does not require a railroad crossing but may have some wetland impacts which reduces the alignment feasibility.

HORIZONTAL ALIGNMENT 3

Alignment 3 is displayed in **Figure 3.3**.

Figure 3.3 – Horizontal Alignment 3



Alignment 3 follows the same route as Alignment 1 from the USBR canal outfall location to the intersection of Bud Draper Road and Roxbury Road. The alignment departs to the east within Roxbury Road right-of-way where it meets Beach Access Road and heads south within road right of way. Alignment 3 terminates at the existing manhole on Beach Access Road approximately 2,600 feet from the Highway 730 intersection. The alignment has no wetland impacts and no railroad crossings, however, the alignment does not provide adequate service to the parcels along Bud Draper Road. A second pipe would be required within Bud Draper Road right-of-way between Roxbury Road and Highway 730 to sufficiently service the entire industrial area, therefore, this alignment was deemed infeasible.

HORIZONTAL ALIGNMENT 4

Alignment 4 is displayed in **Figure 3.4**.

Figure 3.4 – Horizontal Alignment 4

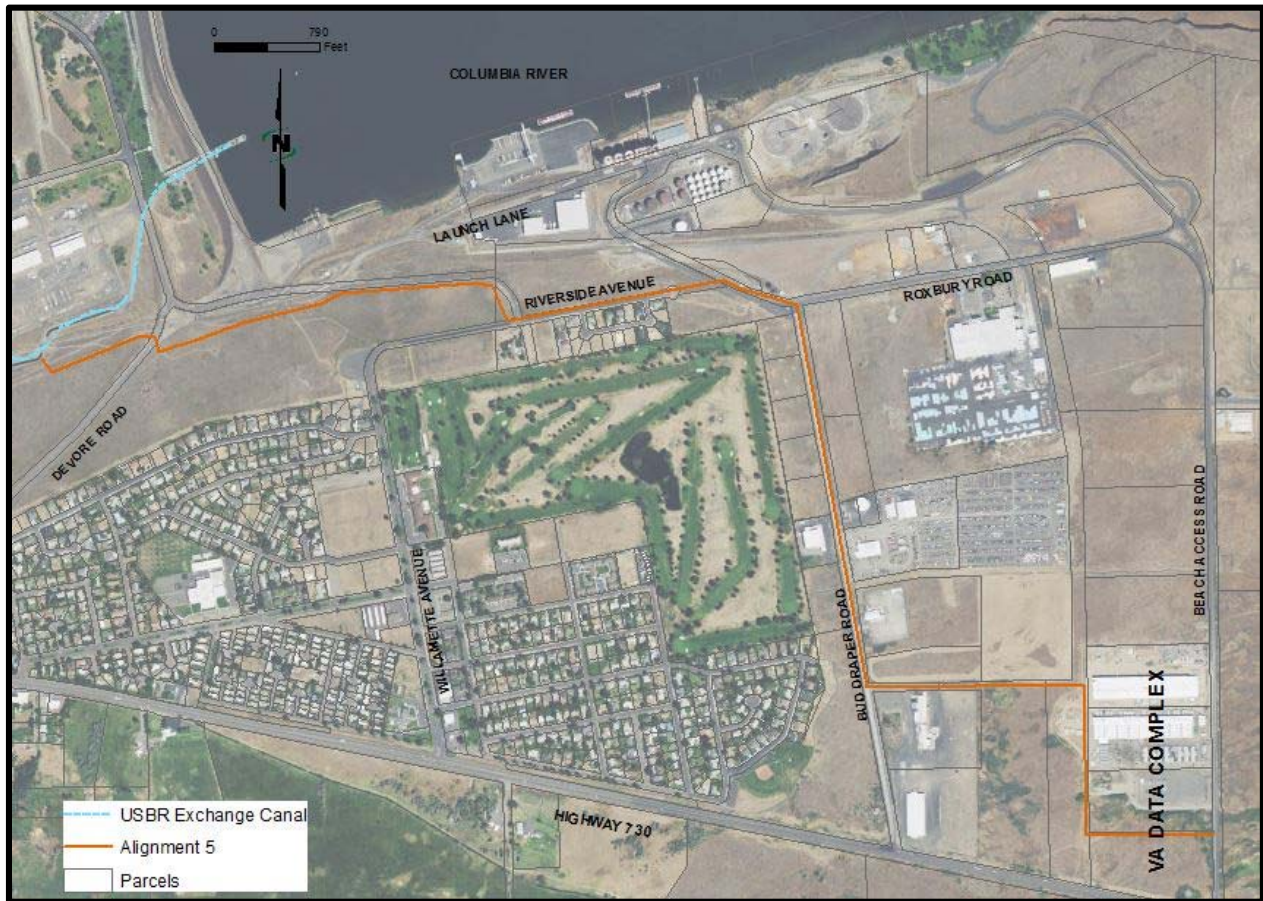


This alignment alternative was originally proposed in the Wastewater Treatment and Reuse Evaluation. Alignment 4 begins at the closed pipe USBR canal outfall location approximately 900 feet northeast of the open channel outfall location previously discussed. The alignment moves east along a new 20-foot easement paralleling the railroad easement between the outfall location and Bud Draper Road. The alignment then utilizes the Bud Draper Road right-of-way as it moves south to a point 1,200 feet north of the Highway 730 intersection. The alignment heads east within an existing easement to a short section requiring a new 20-foot utility easement traveling east then south where it meets and follows an existing easement east to Beach Access Road. At this location the alignment connects into the existing system at the VA Data property, 600' north of the Highway 730 intersection. This alignment has minimal wetland impacts. A railroad crossing would be necessary for this alternative reducing the alignment feasibility.

HORIZONTAL ALIGNMENT 5

Alignment 5 is displayed in **Figure 3.5**.

Figure 3.5 – Horizontal Alignment 5



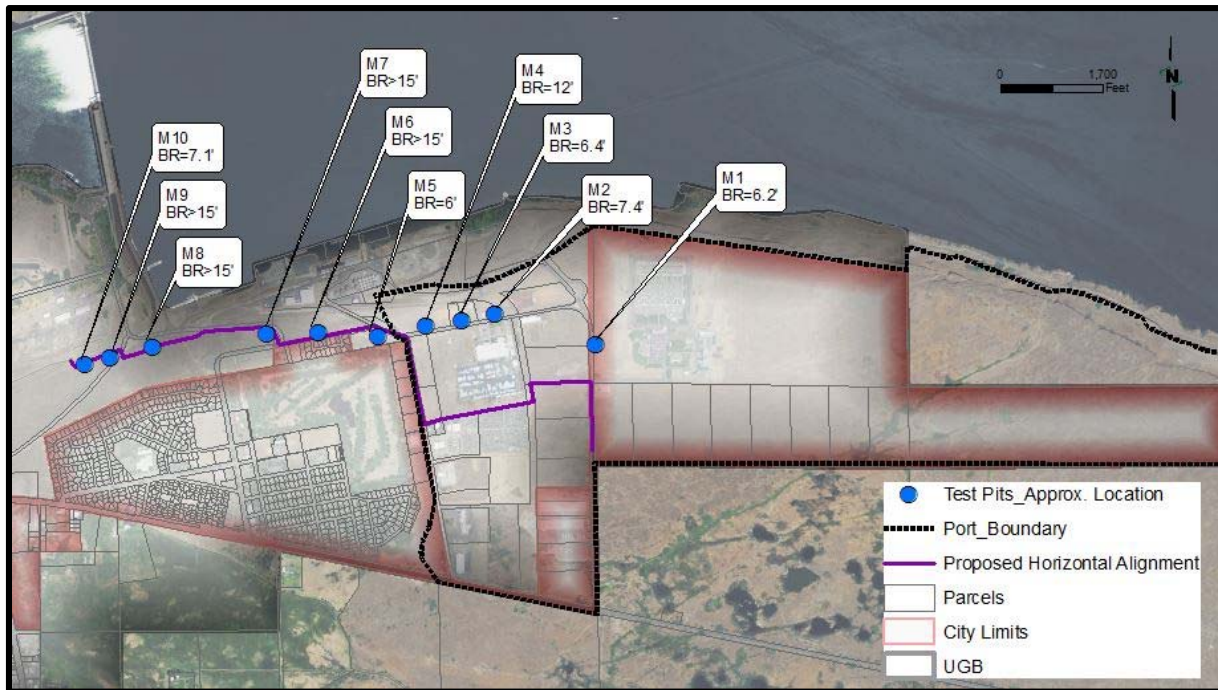
Alignment 5 follows the same route as Alignment 1 from the USBR canal outfall location to the point on Bud Draper Road approximately 1,200 feet north of the Highway 730 intersection. Alignment 5 then follows the same route as Alignment 4 utilizing two existing easements between Bud Draper Road and Beach Access Road and requiring a new 20-foot easement between the two existing easements. At Beach Access Road the alignment connects into the existing system at the VA Data property, 600' north of the Highway 730 intersection. This alignment does not require a railroad crossing but does have some wetland impacts which reduces the alignment feasibility.

VERTICAL ALIGNMENT

Test pit information was obtained from the McNary Industrial Park Interceptor Improvements record drawings from 1999. The test pits, where provided, were used to determine bedrock depth along sections of the horizontal alignments. Bedrock depths range from 6 feet to greater than 15 feet. To meet ODEQ requirements, a minimum pipe cover of 3 feet, is proposed in order to remain above the existing bedrock in addition to minimizing excavation and pipe installation costs. All horizontal alignments are able to meet the depth and pipe cover design requirements based on the available bedrock and existing ground information. Segments of the alignment may encounter bedrock and will be refined during final design. Additional test pit information will be obtained as part of final design to verify historic test pits and to determine bedrock depths along sections of the alignment which lack

historic information, primarily the eastern half of the alignments. Historic test pits used for the analysis are found in **Figure 3.6**. The elevation difference between the USBR canal outfall and the existing manhole on beach access road is approximately 175 feet.

Figure 3.6 – Test Pit Locations and Bedrock Depths

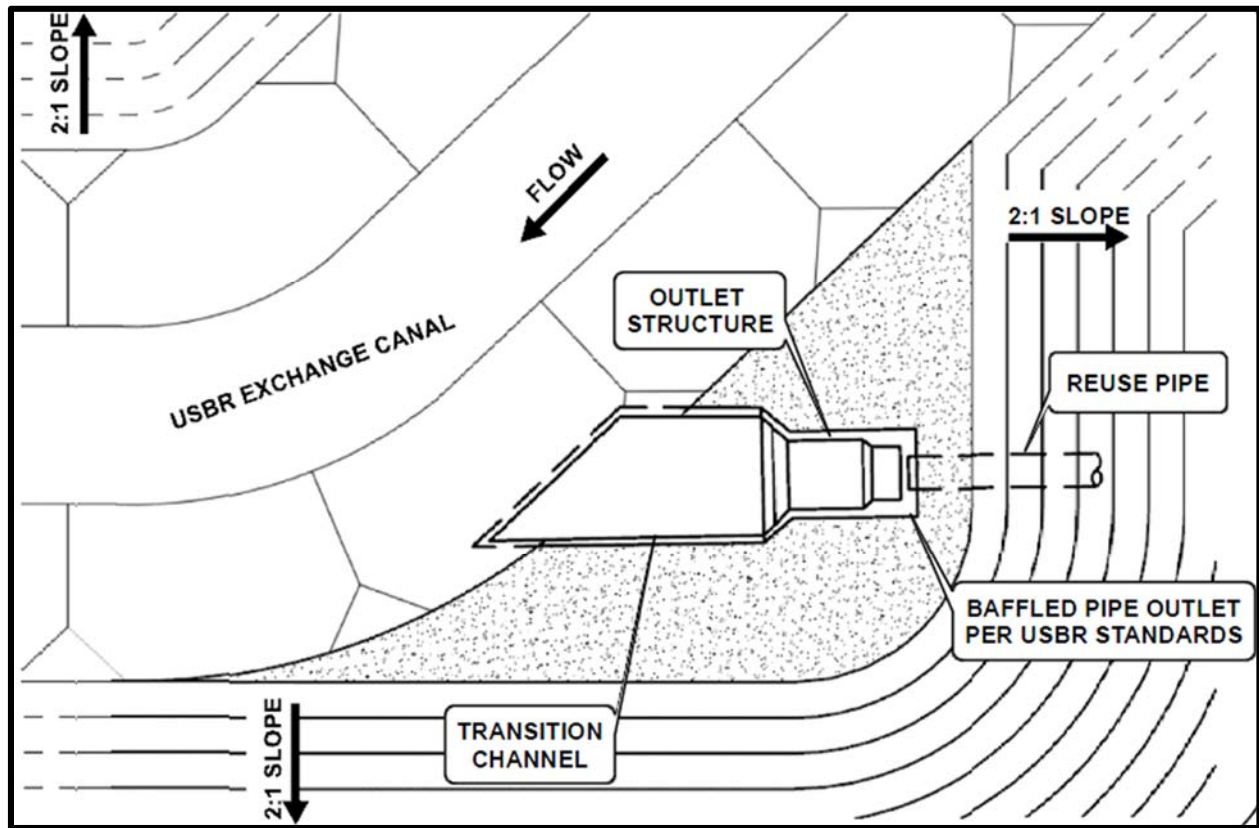


PROPOSED ALIGNMENT SUMMARY

Alignments 1 and 3 meet all factors for feasibility. J-U-B and the City of Umatilla met to discuss feasible alternatives. Considering all key elements for the alignment analysis as well as City input, Alignment 1 was determined the most feasible alternative. Alignment 1 is a direct route which meets horizontal and vertical requirements; avoids bedrock to the maximum extent possible, wetland impacts, and railroad crossings; and utilizes existing right-of-way where possible and requires three utility easements. Therefore, Alignment 1 was selected by the City and will be referred to as the proposed alignment in the remainder of the report. Preliminary design drawings can be found in Appendix F.

The outfall will discharge to the open channel USBR canal by means of a baffled outfall structure encased in concrete, similar to other outfalls into the WEID system. The pipe outlet will be designed and constructed per USBR standards. **Figure 3.7** depicts the draft canal baffled outlet structure.

Figure 3.7 – Draft Canal Baffled Outlet Structure



3.2 POTENTIAL SYSTEM FLOWS

To estimate the potential non-contact cooling water system flows, the Port of Umatilla (POU) was compared to the Port of Morrow (POM) based on similarities in geographic region, size, and potential industrial development. The POM is reaching capacity and currently receives 1,875 million gallons of flow which equates to an annual average daily flow of 5.14 MGD. Since the POU is in the early development stage, an estimated 5 MGD to 10 MGD peak daily demand flow range was assumed for full build out. 5 MGD assumes growth similar to the POM including a comparable mix of facilities while 10 MGD assumes aggressive growth with a high concentration of wet industry users such as data centers and food processing plants. **Table 3.1** summarizes the estimated flows used to analyze the POU industrial park. These flows supersede volume approximations noted in the Environmental Review.

Table 3.1 – Estimated Flows

Facility Type	Approximate Area (acres)	Estimated Flow (gpd/acre)	Estimated Peak Daily Demand (MGD)
Industrial Park Total	1,012	4,941 – 9,882	5.00 – 10.00
Data Center	40	25,633	1.02
Food Processor*	55	25,267	0.97

*No food processing plants are planned or included in the NPDES application. The facility type is solely used to estimate pipe diameter sizing for potential build out flows within the useful life of the pipe (75 years). If food processing plants are developed at the POU within the pipeline useful life, ODEQ will require a new NPDES with treatment facilities and an industrial pre-treatment program.

3.3 PIPELINE SIZING

The potential non-contact cooling water flows were used to determine a suitable pipe size for current and future conditions. Based on the analysis, an 18” diameter pipe was deemed the minimum potential pipe size which will accommodate a flow of 10 MGD at full buildout under a reasonable pressure and velocity conditions to maximize the useful life of the installed pipe.

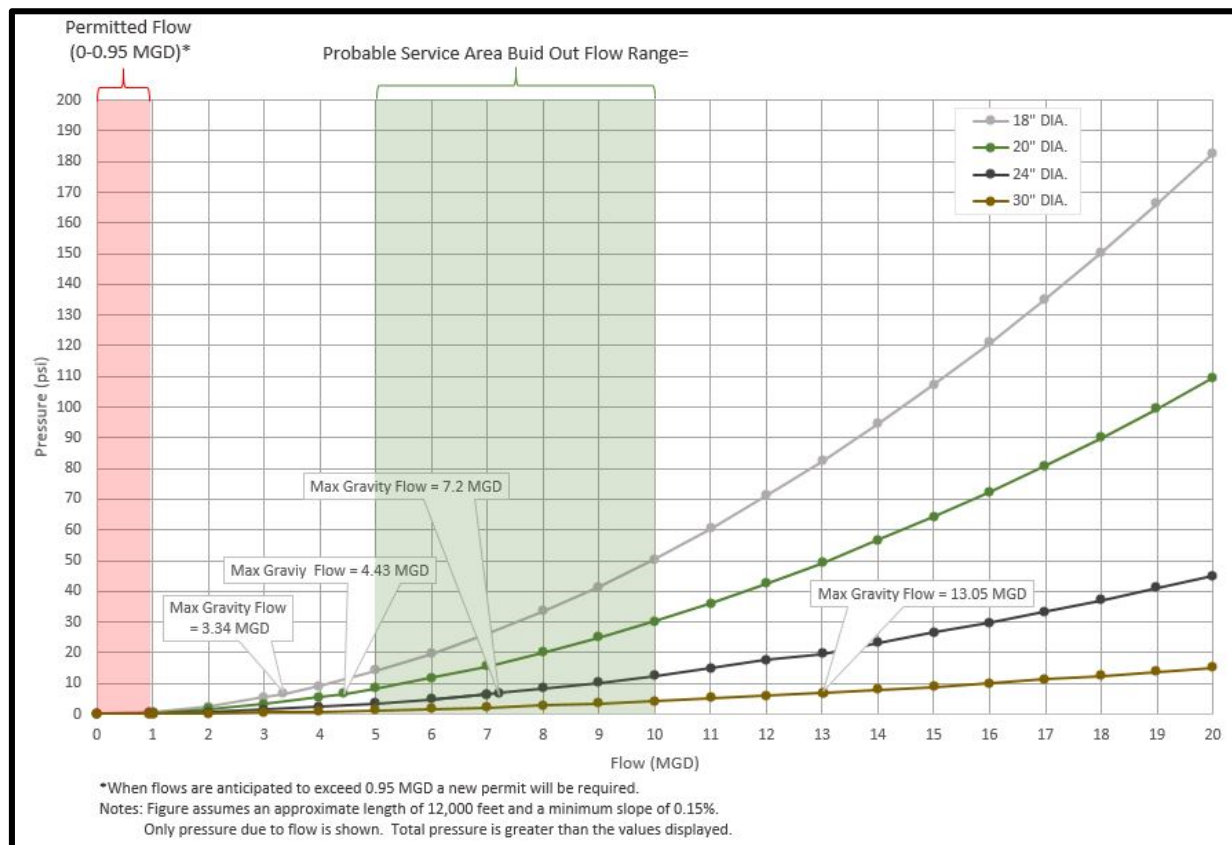
The analysis was also conducted by modeling the system as both a gravity and pressure system. A minimum slope of 0.15% was utilized to allow the system to remain under gravity for a longer period of time while maintaining minimal depth below existing ground to avoid bedrock encounters to the maximum extent possible. **Table 3.2** summarizes the flow limit where the system would transition from a gravity system to a pressure system for the applicable pipe sizes.

Figure 3.8 displays the flow limit graphically and shows the relationship between flow and pressure. The pressure shown on the graph is solely the flow pressure and does not account for other pressure contributors such as the gravity head.

Table 3.2 – Pipe Sizing Analysis: Maximum Gravity Flow

Pipe Size (in)	Gravity Velocity (fps)	Maximum Gravity Flow (MGD)
18	3.00	3.34
20	3.22	4.43
24	3.63	7.20
30	4.22	13.05

Figure 3.8 – Pipe Sizing Analysis: Flow vs. Pressure



The City intends to utilize gravity flow for the near term and as system flows increase, the pipe will become a low pressure force main system as development occurs. Initially, the pipe will be permitted up to 0.95 MGD which will gravity flow at a minimum velocity of approximately 2 ft/sec. The proposed pipeline will lack solids and function as a water discharge pipe therefore a minimum velocity of approximately 2 ft/sec is acceptable. Based on the gravity flow analysis, a 24" pipe diameter is the maximum reasonable pipe size where the system will transition to a pressure force main system. All larger pipe sizes will function more as a gravity sewer system and not as a force main system, unreasonably increasing costs.

Due to the unknown future development and future planning boundary expansions over the life of the pipe, the City will provide available space within the proposed easements and existing right-of-way for a second pipeline to be installed adjacent to the proposed pipeline cost effectively, should the need occur.

3.4 OPINION OF PROBABLE CONSTRUCTION COSTS

A preliminary estimate of probable costs was developed for each of the pipe size alternatives including 18", 20", and 24" pipe diameters. A summary of the probable costs is provided in **Table 3.3**. Detailed estimates for each pipe size can be found in Appendix B.

Table 3.3 – Summary of Probable Costs

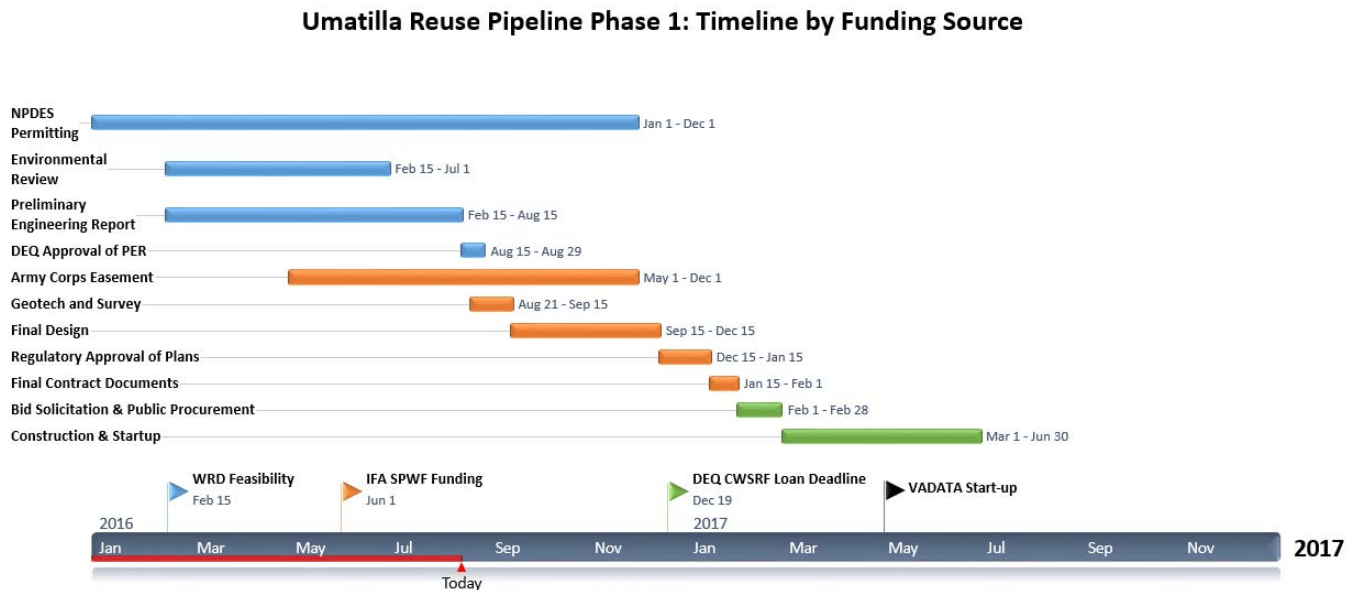
Pipe Size (in)	Cost Estimate
18	\$2,157,123
20	\$2,413,526
24	\$3,020,696

Future improvements which are not included in this estimate are the secondary force main if future development occurs differently than anticipated, and pump system that can be installed to maximize the flow greater than 10 MGD and/or allow time to install a second parallel pipeline should the non-contact cooling water demand warrant. It is assumed future users will be required to pay all costs associated with connecting to the system, including hot taps and valve vaults with check valves.

3.5 PROPOSED SCHEDULE

The next steps towards project implementation are detailed in **Figure 3.9**.

Figure 3.9 – Timeline by Funding Source



Continued coordination between J-U-B, the City and regulating agencies, including ODEQ, USBR, WEID, and EPA, is necessary through project completion.

4 REGULATORY PERMITS & EASEMENTS

J-U-B provided assistance to the City with coordination and development of necessary permits as well as design and procurement of required temporary and permanent easements. The permitting and easement acquisition process is occurring in conjunction with the planning and design process as separate but parallel tasks. J-U-B and the City of Umatilla are working closely with landowners and regulatory agencies to define permit parameters, complete permits on schedule, and efficiently acquire easements. The proposed pipeline will not be constructed until all necessary permits and easements are obtained.

4.1 PERMITS

NPDES PERMIT APPLICATION

A new NPDES permit is required in order to discharge the industrial effluent in to the USBR canal. In conjunction with planning and design, the pipeline is being permitted through the NPDES permitting process in accordance with OAR Chapter 340 Division 45. DEQ is in the process of defining the receiving stream water quality standards. The proposed effluent will meet all water quality standards as defined in the final permit. J-U-B assisted the City with coordination and development of the NPDES permitting application of the non-contact cooling tower water from the VA Data center flows. J-U-B and the City met with ODEQ personnel on March 10, 2016 to discuss the project and the permitting process. The permit is based on actual flows and does not account for an increase in future flows. The City expressed interest in an accelerated timeline due to the continued POU development and current capacity issues. The NPDES Permit Application has been develop submitted to ODEQ for approval on July 6, 2016; with a supplemental technical document provided on July 17, 2016. A finalized permit is required prior to the start of construction. The application is provided in Appendix C.

USBR SF299 FORM

A USBR SF299 form was completed to secure required USBR permits. The permits are required to install the outfall structure on the USBR canal and to discharge flows into the canal. J-U-B and the City met with USBR personnel on March 10, 2016 to discuss the project, particularly the outfall of non-contact cooling water to the USBR canal. USBR stated similar facilities have been installed on their system and didn't foresee any issues that may hold up the discharge permit process. An alteration to a short section of the USBR canal which is required to construct the baffled pipe outlet structure. The USBR SF299 form has been submitted and is undergoing review at this time. The application is provided in Appendix D. A finalized permit is required prior to the start of construction.

4.2 EASEMENTS

EXISTING EASEMENT AMENDMENT

A width amendment from 20-feet to 60-feet is needed along the existing utility easement through federally owned land managed by the United States Corps of Engineers (USCOE). The width increase would be located on the south edge of the existing easement between Riverside Avenue and the where the easement is adjacent to the USBR canal easement at which location the proposed easement

amendment would redirect north and terminate where it meets the USBR canal easement. Final easement acquisition will be conducted during the final design process.

NEW PERMANENT EASEMENTS

A new 20-foot-wide utility easement between Bud Draper Road and Beach Access Road is necessary for the construction of the pipeline. The easement crosses POU land and private land owned by JM Pipe and VA Data. An additional 20-foot-wide utility easement is necessary spanning POU land between Riverside Avenue and Bud Draper Road. The City has coordinated with the POU on procuring necessary utility easements and the POU appears amenable and willing to work with the City on their public infrastructure needs. Final easement acquisition will be conducted during the final design process.

TEMPORARY CONSTRUCTION EASEMENTS

Temporary construction easements will be acquired adjacent to the permanent utility easements. Temporary construction easements will extend an additional 50 to 75 feet on either side of the permanent easement. Temporary construction easements are intended for an increased work area as well as storage of equipment and materials during construction. All temporary construction easements will be removed following construction completion and approval of work. Final temporary easement acquisition will be conducted during the final design process.

4.3 OTHER STAKEHOLDER COORDINATION

Since November 2014, J-U-B and the City have City conducted stakeholder coordination with public, private, and regulatory stakeholders to discuss the technical criteria, discussing potential impacts to downstream structures, and potential impacts to stakeholder owned structures. No fatal flaws or detrimental hurdles existing with implementing, operating, and maintain this project.

Most recently J-U-B and the City met with WEID personnel on March 10, 2016 to discuss the project, particularly the increased flow which will be added to the WEID canal via the USBR canal for agricultural land application. WEID was amenable to the project and the increased flows.

Also on March 10, 2016, J-U-B and the City met with VA Data personnel to discuss current flow data and proposed operation plans. VA Data confirmed site development plans, bringing new buildings online in early 2017 and in the near future.

Coordination with WEID, VA Data, and all stakeholders will continue through the design and construction of the pipeline, to project completion.

5 ENVIRONMENTAL REVIEW

J-U-B and Ducote Consulting, LLC assisted the City in the development of the environmental review documentation in alignment with Oregon’s State Environmental Review Process (*State Guide to the State Environmental Review Process* 2012). In coordination with a variety of agencies, the Environmental Review demonstrated compliance with cross-cutting authorities and agencies. **Table 5.1** summarizes the environmental reviews conducted and necessary mitigation.

Table 5.1 – Summary of Reviews

Environmental Resource	Agency that Reviewed	Mitigation?
Cultural/Historical	SHPO	Yes
Tribal	LCIS and Tribes	No
Wetlands	DSL and City of Umatilla	No
Floodplains	Umatilla County & FEMA FIRM	No
Land Use/Farmland	Umatilla County and NRCS	No
Coastal Resources	N/A	No
Wild & Scenic Rivers	N/A	No
Biological Resources	EPA	Yes
Clean Air Act	DEQ AQ	Yes
Safe Drinking Water Act	DEQ DWS	No

5.1 SUMMARY OF CONSTRUCTION MITIGATION FOR ALIGNMENT WITH ENVIRONMENTAL REVIEW

HISTORICAL

- ORS 358.905 and 97.74:
 - Because of a high-probability of finding human remains in the project area, contractor must cease work immediately and contact Oregon State Police if human remains are discovered.
 - Because of a high-probability of finding archaeological artifacts in the project area, contractor must use extreme caution during “project related ground disturbing activities.” If such objects are located, the contract must immediately contact a professional archaeologist.
- SHPO records indicated a possible segment of Oregon Railway and Navigation Company railroad grade close to the project area. If present, the railroad grade should be evaluated and the effect to the project determined.
- USBR deferred ACHP Section 106 Compliance to the US Army Corps of Engineers who manage all of the Federal Land, aside from the 60’ easement where the McNary Interceptor and future non-contact cooling water pipeline are located.
 - Archaeological survey may be required under Section 106 compliance. The City will continue to coordinate with USCOE.

BIOLOGICAL RESOURCES

- Avoid working during migratory bird nesting season (March 1-August 31), if possible. If work must be accomplished during nesting season, use these mitigation efforts:
 - If an occupied nest is encountered in harm's way, no action may occur that will result in the unauthorized take of eggs/chicks or adult birds. Contractor should contact the USFWS through the Construction Manager as soon as possible for instruction on how to proceed.
 - If a take occurs of a migratory bird, this occurrence must be documented by the Construction Manager and reported to the USFWS.

AIR QUALITY

- To comply with Division 208 emissions (dust) rules:
 - Water will be used to control dust from the work site. Water bars can be used to spray both sides of trucks leaving the worksite, which will wash the dirt off the truck tires.
 - If the City uses crushed rock or asphalt for the project, they will confirm the owner and operator of the rock crusher or asphalt plant has an air permit.
 - During excavation, if the project comes across Cement Asbestos Pipe removal will following DEQ regulations described in Division 248. The City will notify

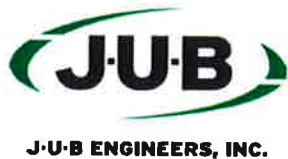
The Environmental Review and exhibits, including agency-issued memorandums, are provided in Appendix E.

6 REFERENCES

1. 1997 City of Umatilla Wastewater System Study.
2. 1998 WWTP Design Memorandum No. 1 Design Loadings and Permit Requirements.
3. 1999 WWTP Record Drawings
4. 1999 McNary Interceptor Record Drawings
5. July 22, 2013 NPDES Permit Evaluation Report and Fact Sheet
6. October 11, 2013 NPDES Waste Discharge Permit
7. February 29, 2012 Beach Access Road Sewer Extension Design Memo
8. June 2011 Beach Access Road Sewer Extension Record Drawings
9. 2012 State Guide to the State Environmental Review Process
10. April 27, 2012 Port of Morrow Process Water Feasibility Study
11. May 2013 Oregon Guidelines for Preparing Wastewater Planning Documents and Environmental Reports for Public Utilities
12. 201410 States Standards
13. 2015 Umatilla Wastewater Treatment and Reuse Evaluation Memorandum
14. Oregon DEQ Rules and Regulations

APPENDIX A

WASTEWATER TREATMENT AND REUSE EVALUATION REPORT



J-U-B COMPANIES



THE
LANGDON
GROUP



GATEWAY
MAPPING
INC.

MEMORANDUM

DATE: January 8, 2016
TO: Russ Pelleberg, City of Umatilla Public Works Director
FROM: John Garlitz, P.E.
SUBJECT: Wastewater Treatment and Reuse Evaluation
PROJECT: Wastewater Facilities Initial Review
PROJECT NO.: 33-14-004



The City of Umatilla (City) authorized J-U-B ENGINEERS, Inc. (J-U-B) to prepare this memorandum through a professional services agreement dated November 6, 2014.

1. PURPOSE AND OVERVIEW

The City collects and treats municipal and industrial wastewater and discharges treated effluent year-round to the Columbia River in compliance with the City's NPDES Permit. The wastewater treatment plant (WWTP) has an average dry weather design capacity of 0.8 million gallons a day (mgd) and a maximum day demand of 1.3 mgd. Due to recent industrial growth at the Port of Umatilla (Port), the WWTP experiences maximum daily flow in excess of 0.8 MGD during the summer months.

While expansions of wastewater facilities are completed through a wastewater facility plan to meet existing and future flow and loads, the City requires an immediate, initial evaluation to define potential beneficial water reuse options within the City's urban growth boundary. This memo summarizes:

- Budgetary engineer's opinion of probable costs:
 - To reuse the current 0.8 mgd flows from the existing WWTP, and
 - To expand the current 0.8 mgd WWTP to 3.0 mgd, Class A reuse facility.
- Document water reuse scenarios that may be available for the industrial flows from the Port.

This information will assist City staff with ongoing discussions with various stakeholders related to increased industrial flows, beneficial water reuse, in order to document and illustrate the need for water reuse needs within the City for funding applications.

2. WASTEWATER TREATMENT PLANT

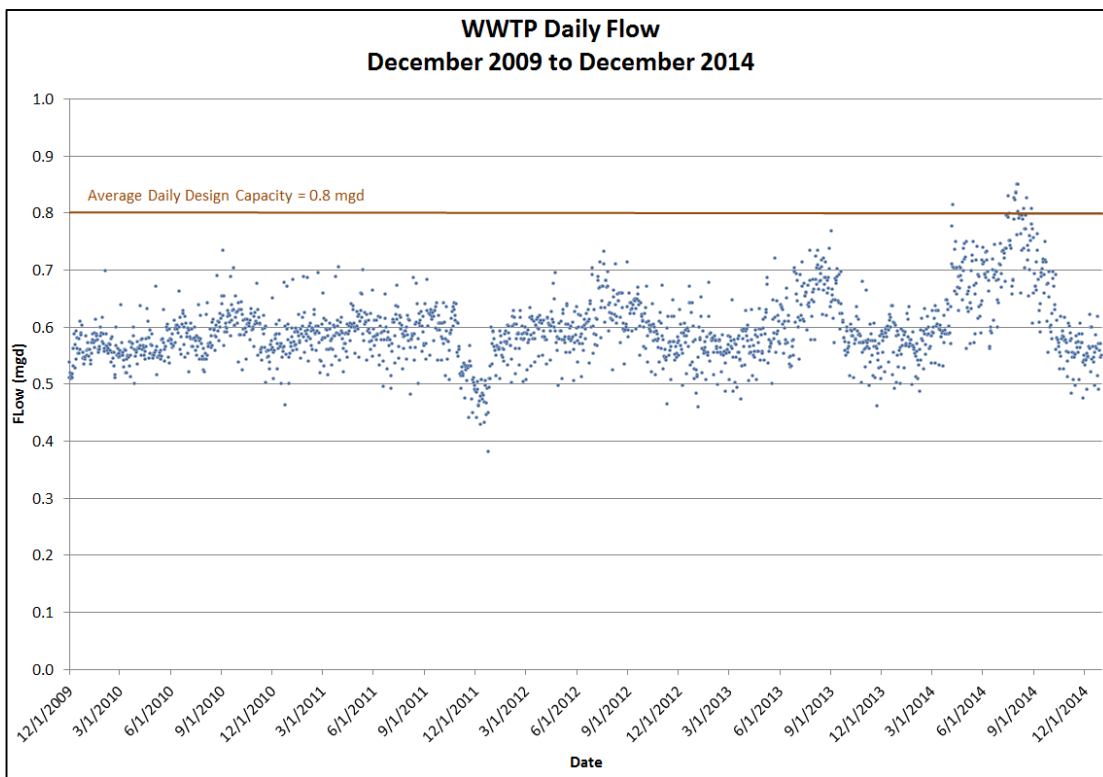
Oregon Department of Environmental Quality (ODEQ) completed a NPDES permit evaluation Report on June 22, 2013 as part of the City's NPDES permit renewal. The evaluation report concluded the "facility currently has adequate capacity." This conclusion was based on a review of flows from November 2006 to January 2013

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where the average monthly flow was 0.575 mgd with a maximum daily flow was 0.645 mgd compared to the average dry weather design flow of 0.8 mgd.

Since January 2013, the recent and ongoing installation of the VA Data Center facilities in the Port discharges large volumes of industrial flows into the McNary Industrial Interceptor, which can contribute up to 0.25 mgd of flow from the data center single-pass cooling system. An additional 4 facilities are planned and being constructed, which could increase the discharge flows up to 1 mgd. However, the VA Data Center is installing a use multiple cooling system with a reverse osmosis (RO) treatment process to limit the buildout flows to approximately the current level of discharge flows. A visual representation of the impact of the Data Center is illustrated in Figure 2.1. Note the increase in flows after January 2013.

Figure 2.1 – WWTP Daily Flows



Install Upgrades to Current 0.8 mgd Facility for Class A Reuse

Engineers Opinion of Probable Budget: \$5.8M to \$7.5M

J-U-B reviewed options to convert the existing treatment facility to provide Class A reuse water. Treated effluent can be diverted downstream of the clarifiers and directed to a Class A capable filtration unit process, an in-vessel UV disinfection system, then conveyed to a pump station that can pump to a storage facility for constant reuse or directly to an irrigation system during irrigation season and discharge into Columbia River during non-irrigation season. These upgrades are visually represented in Figure 2.2 on the next page.

Constant reuse water production would require a 5.3 million gallon storage facility with the ability to irrigate 20 acres. The City can install reuse water pipe from the treatment facility and connect to the irrigation system at the Marina and/or install underground irrigation system at the soccer fields utilizing the current irrigation well at the Marina for make-up water if the storage facility is not to be installed. An illustration of the areas for reuse water irrigation is provided in Figure 2.3 on the next page.

Figure 2.2 – Required WWTP Upgrades

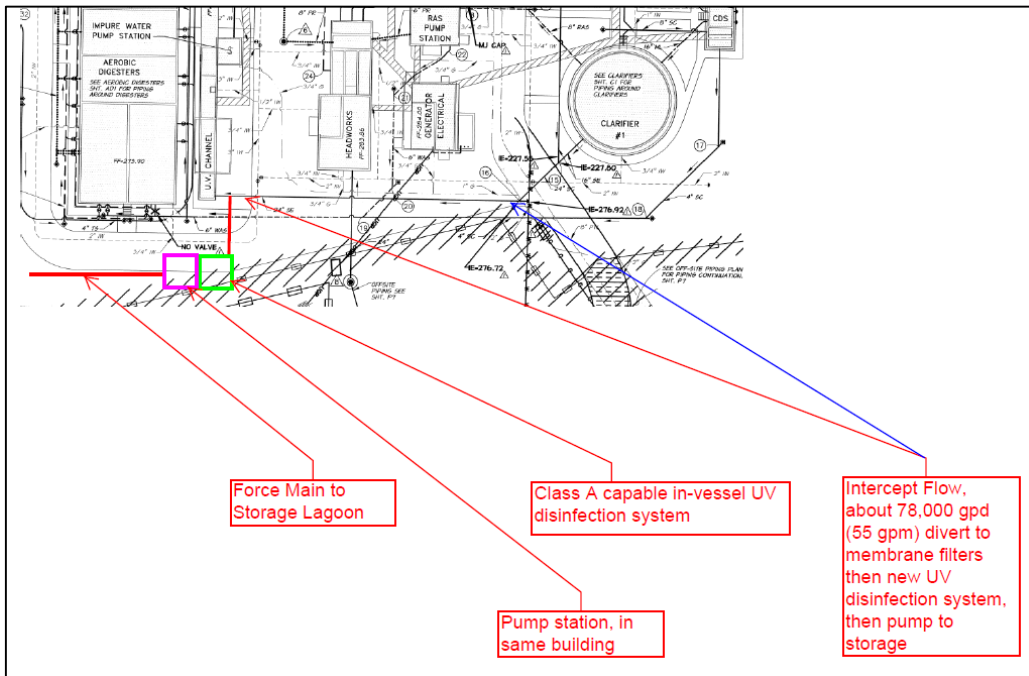


Figure 2.3 – 0.8 mgd Reuse Water Option: Marina Park Irrigation



Upgrade Current 0.8 mgd WWTP to 3.0 mgd Class A WWTP

Engineers Opinion of Probable Budget: \$22M to \$25M

Industrial growth in the area has triggered an interest in increasing the capacity of the Cities WWTP to accommodate more flow. J-U-B reviewed the major unit process at the plant and estimated the cost to increase the overall capacity from 0.8 mgd to 3 mgd. The cost estimate is a Class C planning level type estimate and should be updated during feasibility and facilities planning analysis to confirm ancillary process capacity.

The current facility has components that can hydraulically convey 3.0 mgd, but not treat an average annual flow of 3.0 mgd with typical peaking factors. At this point, it was assumed that a capacity increase to 3 mgd (annual average) would need to pass a peak hour flow of 8 mgd which is typical for domestic flow; however, the projected flow should be evaluated to confirm peaking factors. A brief summary of unit process modifications follows:

- Headworks
 - Outfit manual rake channel with mechanical screen
 - Add third channel for bypass
- Raw Sewage Pumping
 - Increase pumping capacity 350%
- Splitter Box
 - Increase splits from 3 to 4
- Oxidation Ditches
 - Add three basins and supporting equipment

- Secondary Clarifiers
 - Add a fourth clarifier (60' diameter)
- RAS pumping
 - Install pumps in reserve spots
- Disinfection
 - Outfit second channel
- Aerobic Digesters
 - Add 4 basins
- Dewatering
 - Increase runtime to 30 hours per week
- Outfall
 - Assumed adequate, for cost estimating purposes, effluent disposal was assumed to remain to the Columbia River; however, reuse disposal options near the WWTP for a portion of the flow are provided above.

3. OPTIONS FOR REUSE

Industrial growth in the area has triggered an interest in wastewater treatment and disposal options in addition to the option of increasing the capacity of the WWTP. Development interest in the Port area allows the opportunity to investigate beneficial use disposal options for the beneficial reuse of industrial flows. Domestic flows from the Port area as well as flow from the correctional facility would continue to be conveyed to the City's WWTP for treatment and disposal. Industrial treatment and reuse disposal options require new facilities to:

- Convey flow (separate collection pipe) to an,
- Industrial wastewater treatment facility (separate treatment plant) and
- Disposal system
 - Pipe to disposal system
 - Disposal system (land application via crop irrigation)

Alternative treatment and disposal systems would negate the need to upgrade the City WWTP while allowing for industrial growth.

Disposal Options

Options to dispose of industrial reuse water were reviewed and include:

- City of Umatilla
Flows can continue to be conveyed to the City's WWTP and disposed of in the Columbia River. Continued Class B treatment levels are required.
- Land Application
Flows can be used as irrigation to grow a crop with the recycled water providing valuable nutrients at agronomic rates. Reuse water allows more land to be irrigated because it can be used on land without water rights. Class C treatment levels are the minimum required.

- West Extension Irrigation District (WEID)
Treated industrial wastewater flows can be conveyed to the WEID through the Umatilla Pump Exchange for disposal via land application. Since reuse is generally unrestricted, typical Class A treatment levels are required.
- Regional Water System Pipe (RWS)
Flows can be injected into the RWS pipeline and then conveyed to industrial, agricultural, and municipal users downstream. Class A treatment levels are required for this option due to the downstream municipal and industrial connection.
- Treatment Wetlands
Treatment Wetlands is considered an indirect discharge to a surface water via groundwater or hyporheic flows. This method of effluent disposal contains compliance risks with the Clean Water Act and unknown future environmental litigation if the groundwater is determined to be hydraulically connected to an impaired receiving stream or water body. The US Environmental Protection Agency (USEPA) and Northwest Environmental Advocates (NWEA) have concerns about compliance with federal NPDES regulations when discharges are permitted into hyporheic zones. If cooling or chemical quality of the discharge is the main objective, it is best to have the treatment wetlands located away from receiving stream. However, since groundwater flows are laminar and do not readily mix, the location of the treatment wetland would have to be located where groundwater is being driven away from the receiving stream in order to be considered a potential long term, viable option.

Treatment Options

The level of treatment required is a function of disposal. Based on the disposal options available, treatment options and levels include:

- City of Umatilla WWTP
Treatment of the industrial flows can be accomplished at the existing WWTP after increasing the capacity to 3.0 mgd.
- Existing system at the VA Data Center facility
The newly installed reverse osmosis (RO) system is sufficient to provide Class A treatment for discharge to the WEID, RWS or wetland. The RO system may be expandable to accommodate growth or if water quality is adequate, direct discharge from the non-contact cooling tower may be an option.
- Install a regional industrial treatment plant at a location in the Port
A new regional plant can be installed to allow treatment to Class C or Class A levels. Class C treatment is more affordable to treat than Class A and provide nutrients in the irrigation water, reducing the need to apply fertilizer on crops. Class A is more expensive, but provides the ability to utilize other disposal options, should the downstream user need a higher treatment level.

Industrial Water Source Options

Sources for industrial water were reviewed and include:

- City of Umatilla
Continued use of the City's drinking water can be used as the source for industrial water until the water right has been maximized or the City needs the water for domestic use. Use of this water source would not require the installation of a water treatment facility.

- Port of Umatilla's Regional Water Supply
The Port's regional water system currently draws surface water from the Columbia River and provides surface water to domestic, industrial, and agricultural user downstream. The Port's facility has adequate capacity and surface water rights to provide industrial flows. Additional raw water can be withdrawn from River, treated in a water treatment facility to industrial requirements and then conveyed to the industrial users at the Port.
- New City Surface Water Supply
The City currently has 25 cfs of surface water rights from the Columbia River which can be a potential water source.

4. RECOMMENDED GOALS FOR BENEFICIALLY REUSING WATER

Based on the City's existing wastewater facilities, potential disposal and treatment options, and current environmental conditions, we recommend the City incorporate the following water reuse goals:

- Separate the industrial wastewater flows from the domestic wastewater flows.
Separating industrial and domestic flows reduce future capital and operation & maintenance costs to both domestic and industrial ratepayers.
- Beneficially reuse the industrial flows by recycling the water into the West Extension Irrigation District (WEID) through the Umatilla Feed Canal for agricultural use.
Utilizing the WEID likely provides the least cost to the current and future industrial ratepayers.
- Beneficially reuse the domestic flows by recycling the water at the WWTP to irrigate the Marina, City parks, and/or the "old town" area near the WWTP.
Implementing reuse near the current WWTP likely provides for the least cost to current and future domestic ratepayers.
- Develop surface water supply options from the City's water right to provide domestic and industrial water at the Port of Umatilla area, allowing the City to conserve water from the deep basalt aquifer.
While the City has capacity in their current groundwater water rights to provide service to the current and future industrial users, the groundwater water right will not allow for buildout water demands within the City's urban growth boundary (UGB). Developing a surface water supply option will provide an adequate water supply for industrial users, while conserving the groundwater in the deep basalt aquifer.

5. INITIAL REUSE ALTERNATIVE DEVELOPMENT & STAKEHOLDER OUTREACH

Through an amendment, the City directed J-U-B to develop a potential reuse alternative that can be advanced to a feasibility stage. Based on the options, the following approach was developed:

- Immediate Needs: Install a separate industrial disposal system to mitigate capacity issues at the WWTP.
- i. Install a discharge line from the non-contact cooling tower water to the Umatilla feed canal, disposing of the cooling tower water through a NPDES permit. This will mitigate capacity limitations experienced by the City's WWTP during the summer months when the cooling tower water is used and allow for the beneficial reuse of the water.

Near Term Needs: Mitigate water supply bottlenecks and install industrial treatment to allow for industrial economic development.

- ii. Install a surface water treatment plant, removing the water supply as a potential bottleneck while allowing conservation of the City's deep aquifer water right
- iii. Install a regional industrial wastewater treatment plant (WWTP), allowing treatment of future process to water quality levels required for an NPDES permit into the Umatilla feed canal.
- iv. Install local or regional storage to allow non-irrigation season discharges from industrial users.

This approach will mitigate capacity impacts at the City's WWTP, beneficially reuse treated effluent, and provide for economic development with the City, Port, and potentially the Wanapa Industrial Site.

These steps can be developed to economically and regulatory stand-alone. Beyond the first step, the order is unknown and dependent on current and prospective industrial user's needs. A graphical illustration of this approach is provided in Figure 4.1, which is Attachment A.

6. STAKEHOLDER & REGULATORY OUTREACH

This reuse approach was discussed with the WEID, BOR, ODEQ, Confederate Tribes of the Umatilla Indian Reservation (CUTIR), Port of Umatilla (POU), Northeast Oregon Water Association (NEOWA), and VA Data. Discussions with these stakeholders are provided below:

- On August 20, 2015, the City and J-U-B met with the WEID and the US Bureau of Reclamation (USBOR). WEID stated that the District has the capacity to accept water the City can discharge into the Umatilla Feed Canal. USBOR stated the USBOR does not have issues in accepting recycled water into the feed canal through a NPDES permit. There will likely be technical issues such as adjustment to canal flow controls and pumps to address during design and construction.
- On October 15, 2015, the City and J-U-B met with the Oregon Department of Environmental Quality (ODEQ) to discuss regulatory compliance items when discharging into the Umatilla feed canal. ODEQ stated that the discharge into the WEID would be similar in nature to the City of Hermiston NPDES permit. ODEQ would research if the Use Attainability Analysis (UAA) completed for the WEID to remove fish and recreation as beneficial uses included the Umatilla feed canal.
- On October 15, 2015, the City and J-U-B met with the CUTIR, POU, NEOWA, and VA Data to provide general information to all potential stakeholders, obtain feedback, and gain support. All stakeholders expressed interest in
- On October 28, 2015, the City and J-U-B met with ODEQ in Pendleton, OR. ODEQ stated that the Umatilla feed canal was not included in the UAA, and currently includes fish and recreation as beneficial uses due to blanket beneficial uses attributed to all natural and man-made water bodies in Oregon. However, the water quality standards for discharge of non-contact cooling tower can be met without modifying the UAA. ODEQ will internally discuss the best approach to include the feed canal in the UAA, which is required before subsequent steps can advance.

Discussions with regulatory, private, and public stakeholders indicates that there is support for the City to provide beneficial reuse of industrial wastewater.

7. RECOMMENDED NEXT STEPS

The recommended next steps for the City include:

- I. Initiate beneficial reuse by irrigating the treated effluent within the City's WWTP facility as a demonstration project.
- II. Initiate NPDES permitting and preliminary design report (topographic survey, sizing, hydraulic analysis, alignment, and monitoring/control upgrades), and a financial plan of the non-contact cooling tower water disposal into the Umatilla Feed Canal for current industrial users.
- III. Complete a Feasibility analysis that:
 - Evaluates existing and long-term water supply requirements.
 - Evaluates recycled water demands.
 - Develops the domestic and industrial alternatives in adequate detail to evaluate probable costs, risk, environmental, and social implications for each step listed in Section 5.
 - Develops an Implementation Plan for the remaining steps that provide trigger points for each step based on population, flow, and/or loads.
 - Develops a Financial and Funding Plan to determine the best feasible approach to execute the Implementation Plan so that each phase stand on their own from a technical, regulatory, and economic standpoint.
 - Adopts the Feasibility Analysis for implementation and incorporation into future master planning efforts.
- IV. Complete Final Design, Bidding, and Installation of the non-contact cooling tower disposal pipe.
- V. Obtain an NPDES permit for the non-contact cooling tower water.
- VI. Begin discharging the non-contact cooling tower water.
- VII. Evaluate and determine which step of the domestic and industrial reuse alternatives to execute next based on the actual conditions, financial and funding, and stakeholder collaboration.

8. REFERENCES

1. 1998 WWTP Design Memorandum No. 1 Design Loadings and Permit Requirements.
2. 1999 WWTP Record Drawings
3. 1999 McNary Interceptor Record Drawings
4. July 22, 2013 NPDES Permit Evaluation Report and Fact Sheet
5. October 11, 2013 NPDES Waste Discharge Permit
6. February 29, 2012 Beach Access Road Sewer Extension Design Memo
7. June 2011 Beach Access Road Sewer Extension Record Drawings
8. July 26, 2013 Letter from Northwest Environmental Advocates to US Environmental Protection Agency, RE: Use of Hyporheic Flows for the Cooling of Thermal Discharges
9. August 10, 2015 Letter from the US Environmental Protection Agency to Oregon Department of Environmental Quality RE: City of Prineville's Hyporheic Zone Discharge Permit Modification, NPDES No. 101433.











ATTACHMENTS

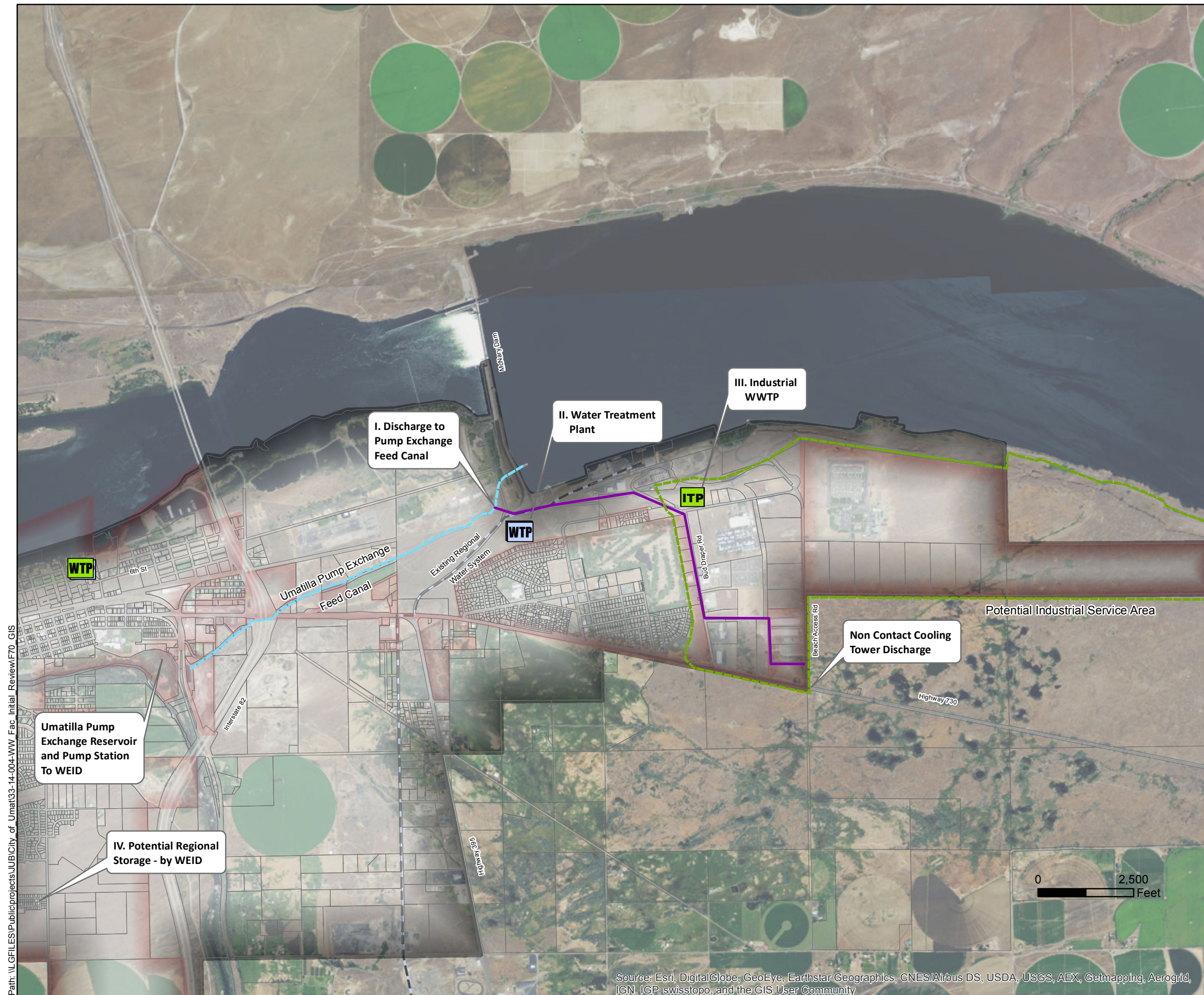
Attachment A Figure 4.1 – Initial Beneficial Reuse Alternatives

**CITY OF UMATILLA
WASTEWATER FACILITIES INITIAL REVIEW**

**FIGURE 4.1
INITIAL INDUSTRIAL BENEFICIAL REUSE
ALTERNATIVES**

LEGEND

-  Parcels
-  City Limits
-  UGB
-  Existing Umatilla WWTP
-  Existing Umatilla Pump Exchange Feed Canal
-  Existing Regional Water System
-  Potential Industrial Service Area (1.9 SQ MI.)
-  Proposed Industrial Effluent Pipe Discharge
-  Proposed Industrial Waste Water Treatment Plant Location TBD
-  Proposed Water Treatment Plant-Connect to Exst Water Distribution System Location TBD



Path: \\GFILES\public\projects\JUB\City of Umat\33-14-004-WW_Fac_Initial_Review\F70_GIS

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Revision Date: 12/1/2015



APPENDIX B

OPINION OF PROBABLE CONSTRUCTION COST

CITY OF UMATILLA - NON-CONTACT COOLING WATER PIPELINE

Opinion of Probable Construction Cost

PRELIMINARY ENGINEERING REPORT - Client Review Draft

May 20, 2016



J-U-B ENGINEERS, INC.



THE LANGDON GROUP
a J-U-B Company



GATEWAY MAPPING INC.
a J-U-B Company

OTHER J-U-B COMPANIES

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	Mobilization & Demobilization (Not to Exceed 5% of Total)	LS	1	\$ 73,840	\$ 73,840
2	Traffic Control	LS	1	\$ 10,000	\$ 10,000
3	Erosion & Sedimentation Control	LS	1	\$ 10,000	\$ 10,000
4	Clearing and Grubbing	LS	1	\$ 10,000	\$ 10,000
5	18" DR 32.5 C905 PVC Pipe	LF	5,885	\$ 30	\$ 176,550
6	18" DR 25 C905 PVC Pipe	LF	6,145	\$ 35	\$ 215,075
7	Saw Cutting	LF	4,752	\$ 1	\$ 4,752
8	Trench Excavation	CY	15,513	\$ 10	\$ 155,130
9	Rock Excavation	CY	1,849	\$ 150	\$ 277,350
10	Trench Backfill	CY	8,651	\$ 15	\$ 129,765
11	Pipe Bedding	CY	963	\$ 45	\$ 43,335
12	Pipe Zone Material	CY	5,112	\$ 45	\$ 230,040
13	HMA Trench Surface Restoration	LF	4,752	\$ 10	\$ 47,520
14	Hydroseed Surface Restoration	LF	7,278	\$ 1	\$ 7,278
15	Connect to Existing Manhole	EA	1	\$ 1,000	\$ 1,000
16	Air Release Valve & Vault	EA	1	\$ 4,000	\$ 4,000
17	Electrical & Controls	LS	1	\$ 100,000	\$ 100,000
18	Outfall Structure & Canal Improvements	LS	1	\$ 55,000	\$ 55,000
				Subtotal	\$ 1,550,635
				Construction Contingency (10%)	\$ 155,063
				CONSTRUCTION TOTAL	\$ 1,705,698
				Survey and Geotech (3%)	\$ 51,171
				Legal, Easements, & Administration (2%)	\$ 34,114
				Final Design (10%)	\$ 170,570
				Cultural Monitoring	\$ 25,000
				Construction Engineering and Administration (10%)	\$ 170,570
				PROJECT TOTAL (2016 Dollars)	\$ 2,157,123

CITY OF UMATILLA - NON-CONTACT COOLING WATER PIPELINE

Opinion of Probable Construction Cost

PRELIMINARY ENGINEERING REPORT - Client Review Draft

May 20, 2016



J-U-B ENGINEERS, INC.



THE LANGDON GROUP
a J-U-B Company



GATEWAY MAPPING INC.
a J-U-B Company

OTHER J-U-B COMPANIES

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	Mobilization & Demobilization (Not to Exceed 5% of Total)	LS	1	\$ 82,720	\$ 82,720
2	Traffic Control	LS	1	\$ 10,000	\$ 10,000
3	Erosion & Sedimentation Control	LS	1	\$ 10,000	\$ 10,000
4	Clearing and Grubbing	LS	1	\$ 10,000	\$ 10,000
5	18" DR 32.5 C905 PVC Pipe	LF	5,885	\$ 35	\$ 205,975
6	18" DR 25 C905 PVC Pipe	LF	6,145	\$ 42	\$ 258,090
7	Saw Cutting	LF	4,752	\$ 1	\$ 4,752
8	Trench Excavation	CY	16,685	\$ 10	\$ 166,850
9	Rock Excavation	CY	2,248	\$ 150	\$ 337,200
10	Trench Backfill	CY	9,012	\$ 15	\$ 135,180
11	Pipe Bedding	CY	1,004	\$ 45	\$ 45,180
12	Pipe Zone Material	CY	5,697	\$ 45	\$ 256,365
13	HMA Trench Surface Restoration	LF	4,752	\$ 10	\$ 47,520
14	Hydroseed Surface Restoration	LF	7,278	\$ 1	\$ 7,278
15	Connect to Existing Manhole	EA	1	\$ 1,000	\$ 1,000
16	Air Release Valve & Vault	EA	1	\$ 4,000	\$ 4,000
17	Electrical & Controls	LS	1	\$ 100,000	\$ 100,000
18	Outfall Structure & Canal Improvements	LS	1	\$ 55,000	\$ 55,000
				Subtotal	\$ 1,737,110
				Construction Contingency (10%)	\$ 173,711
				CONSTRUCTION TOTAL	\$ 1,910,820
				Survey and Geotech (3%)	\$ 57,325
				Legal, Easements, & Administration (2%)	\$ 38,216
				Final Design (10%)	\$ 191,082
				Cultural Monitoring	\$ 25,000
				Construction Engineering and Administration (10%)	\$ 191,082
				PROJECT TOTAL (2016 Dollars)	\$ 2,413,526

CITY OF UMATILLA - NON-CONTACT COOLING WATER PIPELINE

Opinion of Probable Construction Cost

PRELIMINARY ENGINEERING REPORT - Client Review Draft

May 20, 2016



J-U-B ENGINEERS, INC.



THE LANGDON GROUP
a J-U-B Company



GATEWAY MAPPING INC.
a J-U-B Company

OTHER J-U-B COMPANIES

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	Mobilization & Demobilization (Not to Exceed 5% of Total)	LS	1	\$ 101,128	\$ 101,128
2	Traffic Control	LS	1	\$ 10,000	\$ 10,000
3	Erosion & Sedimentation Control	LS	1	\$ 10,000	\$ 10,000
4	Clearing and Grubbing	LS	1	\$ 10,000	\$ 10,000
5	18" DR 32.5 C905 PVC Pipe	LF	5,885	\$ 50	\$ 294,250
6	18" DR 25 C905 PVC Pipe	LF	6,145	\$ 60	\$ 368,700
7	Saw Cutting	LF	4,752	\$ 1	\$ 4,752
8	Trench Excavation	CY	19,870	\$ 10	\$ 198,700
9	Rock Excavation	CY	2,969	\$ 150	\$ 445,350
10	Trench Backfill	CY	10,338	\$ 15	\$ 155,070
11	Pipe Bedding	CY	700	\$ 45	\$ 31,500
12	Pipe Zone Material	CY	7,432	\$ 45	\$ 334,440
13	HMA Trench Surface Restoration	LF	4,752	\$ 10	\$ 47,520
14	Hydroseed Surface Restoration	LF	7,278	\$ 1	\$ 7,278
15	Connect to Existing Manhole	EA	1	\$ 1,000	\$ 1,000
16	Air Release Valve & Vault	EA	1	\$ 4,000	\$ 4,000
17	Electrical & Controls	LS	1	\$ 100,000	\$ 100,000
18	Outfall Structure & Canal Improvements	LS	1	\$ 55,000	\$ 55,000
				Subtotal	\$ 2,178,688
				Construction Contingency (10%)	\$ 217,869
				CONSTRUCTION TOTAL	\$ 2,396,557
				Survey and Geotech (3%)	\$ 71,897
				Legal, Easements, & Administration (2%)	\$ 47,931
				Final Design (10%)	\$ 239,656
				Cultural Monitoring	\$ 25,000
				Construction Engineering and Administration (10%)	\$ 239,656
				PROJECT TOTAL (2016 Dollars)	\$ 3,020,696

APPENDIX C

NPDES PERMIT APPLICATION (FOR INFORMATION ONLY)

FORM 1 GENERAL	U.S. ENVIRONMENTAL PROTECTION AGENCY GENERAL INFORMATION Consolidated Permits Program <i>(Read the "General Instructions" before starting.)</i>	I. EPA I.D. NUMBER S _____ T/A _____ C _____ F _____ D _____ 1 2 _____ 13 14 15 _____
LABEL ITEMS	PLEASE PLACE LABEL IN THIS SPACE	GENERAL INSTRUCTIONS If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent (<i>the area to the left of the label space lists the information that should appear</i>), please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, and VI (<i>except VI-B which must be completed regardless</i>). Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.
I. EPA I.D. NUMBER		
III. FACILITY NAME		
V. FACILITY MAILING ADDRESS		
VI. FACILITY LOCATION		
II. POLLUTANT CHARACTERISTICS		
INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms .		
SPECIFIC QUESTIONS	Mark "X" YES NO FORM ATTACHED	Mark "X" YES NO FORM ATTACHED
A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> FORM ATTACHED	B. Does or will this facility (<i>either existing or proposed</i>) include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)
C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> FORM ATTACHED	D. Is this a proposed facility (<i>other than those described in A or B above</i>) which will result in a discharge to waters of the U.S.? (FORM 2D)
E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> FORM ATTACHED	F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> FORM ATTACHED	H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)
I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> FORM ATTACHED	J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)
III. NAME OF FACILITY		
C 1	SKIP Umatilla Recycled Water Facility	69
IV. FACILITY CONTACT		
A. NAME & TITLE (<i>last, first, & title</i>)		B. PHONE (<i>area code & no.</i>)
C 2	Pelleberg, Russ, City Manager	(541) 922-3226
V. FACILITY MAILING ADDRESS		
A. STREET OR P.O. BOX		
C 3	P.O. Box 130	
B. CITY OR TOWN		
C 4	Umatilla	D. ZIP CODE
15 16	40 41 42	47 48 49 50 51
VI. FACILITY LOCATION		
A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER		
C 5	This is pipeline. no specific address	
B. COUNTY NAME		
C. CITY OR TOWN		
C 6	D. STATE	E. ZIP CODE
15 16	40 41 42	47 48 49 50 51
F. COUNTY CODE (<i>if known</i>)		
70		

CONTINUED FROM THE FRONT

VII. SIC CODES (4-digit, in order of priority)			
A. FIRST		B. SECOND	
C	7	(specify)	(specify)
15	16	18	19
C. THIRD		D. FOURTH	
C	7	(specify)	(specify)
15	16	18	19

VIII. OPERATOR INFORMATION			
A. NAME			B. Is the name listed in Item VIII-A also the owner?
C	8 City of Umatilla Oregon		<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
15	16	55	66
C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box: if "Other," specify.)			D. PHONE (area code & no.)
F = FEDERAL	M = PUBLIC (other than federal or state)	M	(specify)
S = STATE	O = OTHER (specify)	56	
P = PRIVATE			
			A (541) 922-3226
15	16	18	19
21	22	26	

E. STREET OR P.O. BOX	
P.O. Box 130	
26	55

F. CITY OR TOWN		G. STATE	H. ZIP CODE	IX. INDIAN LAND
C	B Umatilla	OR	97882	Is the facility located on Indian lands?
15	16	40	41	42
47	51	52		<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

X. EXISTING ENVIRONMENTAL PERMITS			
A. NPDES (Discharges to Surface Water)		D. PSD (Air Emissions from Proposed Sources)	
C	T	I	
9	N	101059	9 P
15	16	17	18
B. UIC (Underground Injection of Fluids)		E. OTHER (specify)	
C	T	I	
9	U		(specify)
15	16	17	18
C. RCRA (Hazardous Wastes)		E. OTHER (specify)	
C	T	I	
9	R		(specify)
15	16	17	18

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers, and other surface water bodies in the map area. See instructions for precise requirements.

XII. NATURE OF BUSINESS (provide a brief description)

This project will collect (separately from domestic waste) and convey non-contact cooling water) in a dedicated recycled water pipe from the source to the exchange pump station feed canal. The dedicated recycled water pipe will convey the non-contact cooling water directly to the canal (point of discharge) without treatment.

The non-contact cooling water is currently discharged to the City of Umatilla's wastewater treatment plant (WWTP) where it is processed and discharged to the Columbia River. Removing this flow from domestic sewer will "recover" a significant amount of capacity within the WWTP for domestic use and allow an increase in evaporative cooling water use without the need to increase WWTP capacity.

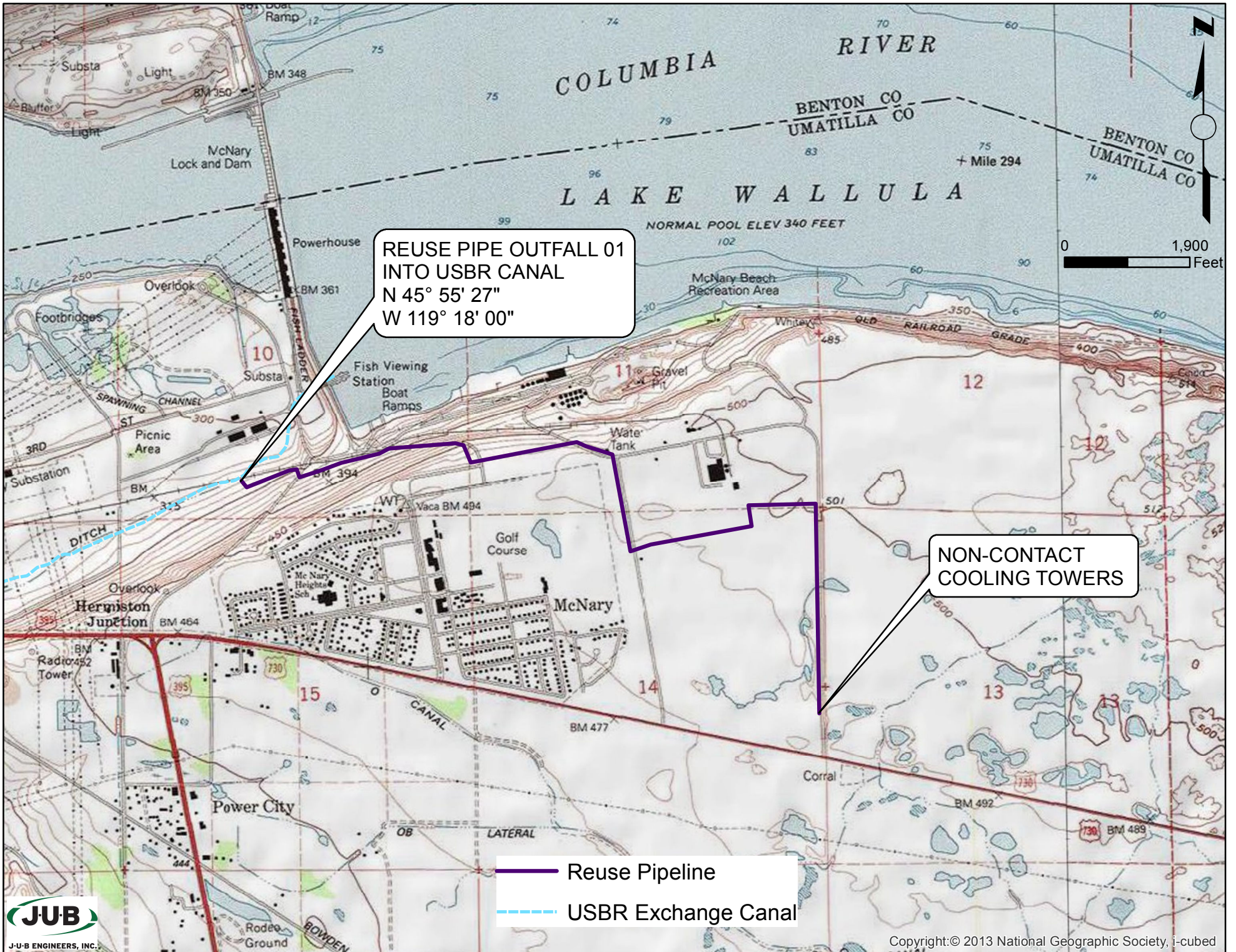
The non-contact cooling water is only discharged in the summer when it is necessary to cool the buildings; therefore, discharge will occur every year during the summer for about 5 months.

XIII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE (type or print)	B. SIGNATURE	C. DATE SIGNED
--	--------------	----------------

COMMENTS FOR OFFICIAL USE ONLY	
C	
15	16
55	



FORM 2E NPDES **Facilities Which Do Not Discharge Process Wastewater**

I. RECEIVING WATERS

For this outfall, list the latitude and longitude, and name of the receiving water(s).

Outfall Number (list)	Latitude			Longitude			Receiving Water (name)
	Deg	Min	Sec	Deg	Min	Sec	
001	45.00 +	55.00 +	27.00 +	119.00 +	18.00 +	0.00	Brownell Ditch (WEID Feed Canal)

II. DISCHARGE DATE (If a new discharger, the date you expect to begin discharging)
05/05/2017

III. TYPE OF WASTE

A. Check the box(es) indicating the general type(s) of wastes discharged.

Sanitary Wastes
 Restaurant or Cafeteria Wastes
 Noncontact Cooling Water
 Other Nonprocess Wastewater (Identify)

B. If any cooling water additives are used, list them here. Briefly describe their composition if this information is available.

1. AntiChlor 427 - Liquid Sodium Bisulfate to remove chlorine
2. RoClean P303 - Organid Acids and Inorganic Salts (Low pH cleaner to remove metal foulants)
3. RoClean P112 - Silicant and Citrate Compounts, Polyphosphate, Surfactant (cleander to remove silt and organic foulants)
4. Vitec 4000 - Organic Acid, Terpolymer, (Antiscalant/Antifoulant)

IV. EFFLUENT CHARACTERISTICS

A. Existing Sources — Provide measurements for the parameters listed in the left-hand column below, unless waived by the permitting authority (see instructions).

B. New Dischargers — Provide estimates for the parameters listed in the left-hand column below, unless waived by the permitting authority. Instead of the number of measurements taken, provide the source of estimated values (see instructions).

Pollutant or Parameter	(1) Maximum Daily Value (include units)		(2) Average Daily Value (last year) (include units)		(3)	(or)	(4)
	Mass	Concentration	Mass	Concentration	Number of Measurements Taken (last year)	Source of Estimate (if new discharger)	
	Biochemical Oxygen Demand (BOD)	16 lb	<2 mg/l	6.8 lb			
Total Suspended Solids (TSS)	158 lb	<20 mg/l	68 lb	<20 mg/l	1.00	Existing	
Fecal Coliform (if believed present or if sanitary waste is discharged)						Discharge	
Total Residual Chlorine (if chlorine is used)						from	
Oil and Grease	12 lb	1.51 mg/l	5.1 lb	1.51 mg/l	1.00	Data	
*Chemical oxygen demand (COD)	400 lb	<50 mg/l	170 lb	<50 mg/l	1.00	Center	
*Total organic carbon (TOC)	0.4 lb	0.05 mg/l	0.17 lb	0.05 mg/l	1.00	"	
Ammonia (as N)	7.7 lb	0.97 mg/l	3.3 lb	0.97 mg/l	1.00	"	
Discharge Flow	Value 0.95 MGD		0.45 MGD			Estimated	
pH (give range)	Value 8.48, 1 measurement						
Temperature (Winter)		°C		°C			
Temperature (Summer)		°C		°C			

*If noncontact cooling water is discharged

V. Except for leaks or spills, will the discharge described in this form be intermittent or seasonal?	
If yes, briefly describe the frequency of flow and duration.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<p>The non-contact cooling water is only discharged in the summer when it is necessary to cool the buildings; therefore, discharge will occur every year during the 5 summer months.</p>	
VI. TREATMENT SYSTEM (Describe briefly any treatment system(s) used or to be used)	
<p>The non-contact cooling water will be collected separately from domestic waste and discharged into a dedicated recycled water pipe. The dedicated recycled water pipe will convey the non-contact cooling water directly to the canal (point of discharge) without treatment.</p>	
VII. OTHER INFORMATION (Optional)	
<p>Use the space below to expand upon any of the above questions or to bring to the attention of the reviewer any other information you feel should be considered in establishing permit limitations. Attach additional sheets, if necessary.</p>	
<p>The TDS concentration is expected to range between 1000 and 1500 mg/l depending on how the cooling towers are operated. The feed canal water TDS concentration is around 100 mg/l. Therefore, the allowable discharge with respect to maintaining a TDS concentration less than 450 mg/l in the canal (after mixing) varies depending on how much flow is in the canal and the TDS concentration. For example, at 1 MGD in the canal the allowable discharge could be 0.35 MGD if the discharge TDS concentration was 1000 mg/l or 0.23 MGD if the TDS concentration was 1500 mg/l. Additionally, at 20 MGD in the canal the allowable discharge could be 7 MGD if the discharge TDS concentration was 1000 mg/l or 4.67 MGD if the TDS concentration was 1500 mg/l. Typically, the flow in the canal between June 1st and October 31st is greater than 20 MGD.</p>	
VIII. CERTIFICATION	
<p><i>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</i></p>	
A. Name & Official Title	B. Phone No. (area code & no.)
C. Signature	D. Date Signed



LAND USE COMPATIBILITY STATEMENT

What is a land use compatibility statement?

A LUCS is a form developed by DEQ to determine whether a DEQ permit or approval will be consistent with local government comprehensive plans and land use regulations.

Why is a LUCS required?

DEQ and other state agencies with permitting or approval activities that affect land use are required by Oregon law to be consistent with local comprehensive plans and have a process for determining consistency. DEQ activities affecting land use and the requirement for a LUCS may be found in Oregon Administrative Rules (OAR) Chapter 340, Division 18.

When is a LUCS required?

A LUCS is required for nearly all DEQ permits and certain approvals of plans or related activities that affect land use prior to issuance of a DEQ permit or approval. These permits and activities are listed in section 1.D on p. 2 of this form. A single LUCS can be used if more than one DEQ permit or approval is being applied for concurrently.

Permit modifications or renewals also require a LUCS when any of the following applies:

1. Physical expansion on the property or proposed use of additional land;
2. Alterations, expansions, improvements or changes in method or type of disposal at a solid waste disposal site as described in OAR 340-093-0070(4)(b);
3. A significant increase in discharges to water;
4. A relocation of an outfall outside of the source property; or
5. Any physical change or change of operation of an air pollutant source that results in a net significant emission rate increase as defined in OAR 340-200-0020.

How to complete a LUCS:

Step	Who Does It?	What Happens?
1	Applicant	Applicant completes Section 1 of the LUCS and submits it to the appropriate city or county planning office.
2	City or County Planning Office	City or county planning office completes Section 2 of the LUCS to indicate whether the activity or use is compatible with the acknowledged comprehensive plan and land use regulations, attaches written findings supporting the decision of compatibility, and returns the signed and dated LUCS to the applicant.
3	Applicant	Applicant submits the completed LUCS and any supporting information provided by the city or county to DEQ along with the DEQ permit application or approval request.

Where to get help:

For questions about the LUCS process, contact the DEQ staff responsible for processing the permit or approval. DEQ staff may be reached at 1-800-452-4011 (toll-free, inside Oregon) or 503-229-5630. For general questions, please contact DEQ land use staff listed at: www.deq.state.or.us/pubs/permithandbook/lucs.htm.

CULTURAL RESOURCES PROTECTION LAWS: Applicants involved in ground-disturbing activities should be aware of federal and state cultural resources protection laws. ORS 358.920 prohibits the excavation, injury, destruction, or alteration of an archeological site or object or removal of archeological objects from public and private lands without an archeological permit issued by the State Historic Preservation Office. 16 USC 470, Section 106, National Historic Preservation Act of 1966 requires a federal agency, prior to any undertaking, to take into account the effect of the undertaking that is included on or eligible for inclusion in the National Register. For further information, contact the State Historic Preservation Office at 503-378-4168, ext. 232.

**Oregon Department of Environmental Quality
LAND USE COMPATIBILITY STATEMENT (LUCS)**

p. 1 of 2

SECTION 1 - TO BE COMPLETED BY APPLICANT

1A. Applicant Name: City of Umatilla, Oregon	1B. Project Name: Umatilla Industrial Reuse Facility
Contact Name: Russ Pelleberg	Physical Address:
Mailing Address: P.O. Box 130	City, State, Zip:
City, State, Zip: Umatilla, OR 97882	Tax Lot #:
Telephone: 541 922 3226	Township: Range: Section:
Tax Account #:	Latitude: (Discharge Point) N 45° 55'27"
	Longitude: W 119° 18'00"

1C. Describe the project, include the type of development, business, or facility and services or products provided (attach additional information if necessary):

This project will construct a pipe to convey non-contact cooling water from a data storage facility to an irrigation canal. See Attached Figure. This project will remove the non-contact cooling water from the City's wastewater treatment facility which was nearing capacity due to the peak flows from the data storage facility. Removing cooling water flow from the sewer will allow the data storage facility to expand without being limited by the City's wastewater treatment plant and recover treatment plant capacity for domestic use.

1D. Check the type of DEQ permit(s) or approval(s) being applied for at this time.

- | | |
|---|--|
| <input type="checkbox"/> Air Quality Notice of Construction | <input type="checkbox"/> Pollution Control Bond Request |
| <input type="checkbox"/> Air Contaminant Discharge Permit (<i>excludes portable facility permits</i>) | <input type="checkbox"/> Hazardous Waste Treatment, Storage, or Disposal Permit |
| <input type="checkbox"/> Air Quality Title V Permit | <input type="checkbox"/> Clean Water State Revolving Fund Loan Request |
| <input type="checkbox"/> Air Quality Indirect Source Permit | <input type="checkbox"/> Wastewater/Sewer Construction Plan/Specifications (<i>includes review of plan changes that require use of new land</i>) |
| <input type="checkbox"/> Parking/Traffic Circulation Plan | <input checked="" type="checkbox"/> Water Quality NPDES Individual Permit |
| <input type="checkbox"/> Solid Waste Land Disposal Site Permit | <input type="checkbox"/> Water Quality WPCF Individual Permit (<i>for onsite construction-installation permits use the DEQ Onsite LUCS form</i>) |
| <input type="checkbox"/> Solid Waste Treatment Facility Permit | <input type="checkbox"/> Water Quality NPDES Stormwater General Permit (<i>1200-A, 1200-C, 1200-CA, 1200-COLS, and 1200-Z</i>) |
| <input type="checkbox"/> Solid Waste Composting Facility Permit (includes Anaerobic Digester) | <input type="checkbox"/> Water Quality General Permit (<i>all general permits, except 600, 700-PM, 1700-A, and 1700-B when they are mobile.</i>) |
| <input type="checkbox"/> Conversion Technology Facility Permit | <input type="checkbox"/> Water Quality 401 Certification for federal permit or license |
| <input type="checkbox"/> Solid Waste Letter Authorization Permit | |
| <input type="checkbox"/> Solid Waste Material Recovery Facility Permit | |
| <input type="checkbox"/> Solid Waste Energy Recovery Facility Permit | |
| <input type="checkbox"/> Solid Waste Transfer Station Permit | |
| <input type="checkbox"/> Waste Tire Storage Site Permit | |

1E. This application is for: Permit Renewal New Permit Permit Modification Other:

SECTION 2 - TO BE COMPLETED BY CITY OR COUNTY PLANNING OFFICIAL

Instructions: Written findings of fact for all local decisions are required; written findings from previous actions are acceptable. For uses allowed outright by the acknowledged comprehensive plan, DEQ will accept written findings in the form of a reference to the specific plan policies, criteria, or standards that were relied upon in rendering the decision with an indication of why the decision is justified based on the plan policies, criteria, or standards.

2A. The project proposal is located: Inside city limits Inside UGB Outside UGB

2B. Name of the city or county that has land use jurisdiction (the legal entity responsible for land use decisions for the subject property or land use):
City of Umatilla Oregon

**Oregon Department of Environmental Quality
LAND USE COMPATIBILITY STATEMENT (LUCS)**

p. 2 of 2

SECTION 2 - TO BE COMPLETED BY CITY OR COUNTY PLANNING OFFICIAL		
Applicant Name: City of Umatilla, Oregon	Project Name: Umatilla Industrial Reuse Facility	
2C. Is the activity allowed under Measure 49 (2007)? <input checked="" type="checkbox"/> No, Measure 49 is not applicable <input type="checkbox"/> Yes; if yes, then check one:		
<input type="checkbox"/> Express; approved by DLCD order #:		
<input type="checkbox"/> Conditional; approved by DLCD order #:		
<input type="checkbox"/> Vested; approved by local government decision or court judgment docket or order #:		
2D. Is the activity a composting facility? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes; Senate Bill 462 (2013) notification requirements have been met.		
2E. Is the activity or use compatible with your acknowledged comprehensive plan as required by OAR 660-031? <i>Please complete this form to address the activity or use for which the applicant is seeking approval (see 1.C on the previous page). If the activity or use is to occur in multiple phases, please ensure that your approval addresses the phases described in 1.C. For example, if the applicant's project is described in 1.C as a subdivision and the LUCS indicates that only clearing and grading are allowed outright but does not indicate whether the subdivision is approved, DEQ will delay permit issuance until approval for the subdivision is obtained from the local planning official.</i>		
<input type="checkbox"/> The activity or use is specifically exempt by the acknowledged comprehensive plan; explain:		
<input type="checkbox"/> YES , the activity or use is pre-existing nonconforming use allowed outright by <i>(provide reference for local ordinance)</i> :		
<input checked="" type="checkbox"/> YES , the activity or use is allowed outright by <i>(provide reference for local ordinance)</i> : The pipe line supports City Zoning M2 (heavy industrial) and Urban Growth Boundary Zone M2 (heavy industrial)		
<input type="checkbox"/> YES , the activity or use received preliminary approval that includes requirements to fully comply with local requirements; findings are attached.		
<input type="checkbox"/> YES , the activity or use is allowed; findings are attached.		
<input type="checkbox"/> NO , see 2.C above, activity or use allowed under Measure 49; findings are attached.		
<input type="checkbox"/> NO , <i>(complete below or attach findings for noncompliance and identify requirements the applicant must comply with before compatibility can be determined)</i> : Relevant specific plan policies, criteria, or standards: Provide the reasons for the decision:		
Additional comments (attach additional information as needed):		
Planning Official Signature:		Title:
Print Name:	Telephone #:	Date:
<i>If necessary, depending upon city/county agreement on jurisdiction outside city limits but within UGB:</i>		
Planning Official Signature:		Title:
Print Name:	Telephone #:	Date:

APPLICATION FOR TRANSPORTATION AND
UTILITY SYSTEMS AND FACILITIES
ON FEDERAL LANDS

FORM APPROVED
OMB Control Number: 0596-0082
Expiration Date: 10/31/2012

FOR AGENCY USE ONLY

NOTE: Before completing and filing the application, the applicant should completely review this package and schedule a preapplication meeting with representatives of the agency responsible for processing the application. Each agency may have specific and unique requirements to be met in preparing and processing the application. Many times, with the help of the agency representative, the application can be completed at the preapplication meeting.

Application Number

Date Filed

1. Name and address of applicant (*include zip code*)

City of Umatilla
700 Sixth St. Umatilla, OR 97882

2. Name, title, and address of authorized agent if
different from item 1 (*include zip code*)

Russ Pelleberg
PO Box 130
Umatilla, OR 97882

3. Telephone (area code)

541-922-3226

Applicant

City of Umatilla

Authorized Agent

Russ Pelleberg

4. As applicant are you? (*check one*)

- a. Individual
- b. Corporation*
- c. Partnership/Association*
- d. State Government/State Agency
- e. Local Government
- f. Federal Agency

* If checked, complete supplemental page

5. Specify what application is for: (*check one*)

- a. New authorization
- b. Renewing existing authorization No.
- c. Amend existing authorization No.
- d. Assign existing authorization No.
- e. Existing use for which no authorization has been received *
- f. Other*

* If checked, provide details under item 7

6. If an individual, or partnership are you a citizen(s) of the United States? Yes No

7. Project description (describe in detail): (a) Type of system or facility, (*e.g., canal, pipeline, road*); (b) related structures and facilities; (c) physical specifications (*Length, width, grading, etc.*); (d) term of years needed; (e) time of year of use or operation; (f) Volume or amount of product to be transported; (g) duration and timing of construction; and (h) temporary work areas needed for construction (*Attach additional sheets, if additional space is needed.*)

(a) The City of Umatilla plans to construct approximately 2.5 miles of pipeline to convey industrial wastewater from VADATA, Inc. to a new discharge structure in the USBR Phase 1 Exchange Canal for beneficial reuse by areas served by the West Extension Irrigation District. Project will cross Federal Lands to the west of intersection of Riverside Ave./ Willamette St. Flows will originate from the Port of Umatilla - see attached project map.

(b) Pipeline, discharge structure, monitoring equipment, flow meter, air/vacuum release valves

(c) Baffled outlet (discharge structure), pipeline specs and dimensions to be determined after engineering evaluation.

(d) The project is planned to serve the City and Port for at least 75 years.

(e) VADATA only requires disposal during warmer weather, or April-October.

(f) 1.0 million gallons a day of non-contact cooling water (industrial wastewater)

(g) 5 months.

(h) Construction will take place on Federal Lands surrounding the USBR Phase 1 Exchange Canal. That is the only area of Federal Land in the project area.

8. Attach a map covering area and show location of project proposal

9. State or Local government approval: Attached Applied for Not Required

10. Nonreturnable application fee: Attached Not required

11. Does project cross international boundary or affect international waterways? Yes No (*if "yes," indicate on map*)

12. Give statement of your technical and financial capability to construct, operate, maintain, and terminate system for which authorization is being requested.

The applicant is the City of Umatilla, which is an incorporated municipal with taxing authority that owns and operates public utilities. The City of Umatilla employs certified operators to manage their collection systems.

13a. Describe other reasonable alternative routes and modes considered.

J-U-B Engineers has considered different alignments between VADATA (source) and different discharge structure locations (outfall). The preferred route (see attached figure) was selected to ease construction and reduce cost.

b. Why were these alternatives not selected?

Current proposed alignment avoids crossing the Union-Pacific railroad and maximizes construction along City right of ways/easements. Alternate alignments would require additional easements from the railroad or private land owners.

c. Give explanation as to why it is necessary to cross Federal Lands.

The Feed Canal is a USBR facility on Federal Land and this project has to cross federal land to discharge into the canal.

14. List authorizations and pending applications filed for similar projects which may provide information to the authorizing agency. (Specify number, date, code, or name)

USBR approved a similar project designed and constructed by the City of Hermiston to reuse wastewater in WEID.

15. Provide statement of need for project, including the economic feasibility and items such as: (a) cost of proposal (construction, operation, and maintenance); (b) estimated cost of next best alternative; and (c) expected public benefits.

(a) Approximately \$3 million to complete final design and construction of the pipeline. (b) If the VADATA continues to discharge to the City's domestic WWTP, the City will require a \$20-30 million upgrade to the wastewater treatment facility. VADATA discharge is taking up hydraulic capacity of current WWTP.

16. Describe probable effects on the population in the area, including the social and economic aspects, and the rural lifestyles.

See Attached Supplemental Information

17. Describe likely environmental effects that the proposed project will have on: (a) air quality; (b) visual impact; (c) surface and ground water quality and quantity; (d) the control or structural change on any stream or other body of water; (e) existing noise levels; and (f) the surface of the land, including vegetation, permafrost, soil, and soil stability.

See Attached Supplemental Information

18. Describe the probable effects that the proposed project will have on (a) populations of fish, plantlife, wildlife, and marine life, including threatened and endangered species; and (b) marine mammals, including hunting, capturing, collecting, or killing these animals.

(a) Construction may temporarily displace species, but analysis of USFWS GIS databases indicates no threatened or endangered species habitat will be impacted by the project footprint on Federal Lands. (b) No marine life in the USBR Canal or WEID.

19. State whether any hazardous material, as defined in this paragraph, will be used, produced, transported or stored on or within the right-of-way or any of the right-of-way facilities, or used in the construction, operation, maintenance or termination of the right-of-way or any of its facilities.

"Hazardous material" means any substance, pollutant or contaminant that is listed as hazardous under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. 9601 et seq., and its regulations. The definition of hazardous substances under CERCLA includes any "hazardous waste" as defined in the Resource Conservation and Recovery Act of 1976 (RCRA), as amended, 42 U.S.C. 6901 et seq., and its regulations. The term hazardous materials also includes any nuclear or byproduct material as defined by the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2011 et seq. The term does not include petroleum, including crude oil or any fraction thereof that is not otherwise specifically listed or designated as a hazardous substance under CERCLA Section 101(14), 42 U.S.C. 9601(14), nor does the term include natural gas.

The project, in general, is for the transportation of irrigation water to the feed canal. The irrigation water will not contain hazardous material.

20. Name all the Department(s)/Agency(ies) where this application is being filed.

US Bureau of Reclamation

I HEREBY CERTIFY, That I am of legal age and authorized to do business in the State and that I have personally examined the information contained in the application and believe that the information submitted is correct to the best of my knowledge.

Signature of Applicant

Date

Title 18, U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious, or fraudulent statements or representations as to any matter within its jurisdiction.

Attached Supplemental Information

#16

The City's domestic WWTP exceeded its hydraulic capacity in the summer of 2013 because of VADATA wastewater discharge. Without a solution that redirects the VADATA discharge, the City would finance a \$20-30m upgrade of the WWTP to accommodate industrial flows. The discharge pipeline will accommodate substantial expansion at the Port and CTUIR's Wanapa site. There is currently a bottleneck for further industrial growth in the City's domestic wastewater treatment plant. By diverting the discharge to WEID as reuse, that bottleneck is alleviated, which enables substantial growth and development while conserving and reusing wastewater.

#17

(a and b) Not treating and discharging non-contact cooling water through a municipal wastewater treatment plant will eliminate air quality and visual impacts environmental effects associated with domestic wastewater treatment.

(b) The pipeline and discharge structure will be buried, no visual impacts.

(c) Beneficial reuse of industrial wastewater within WEID reduces surface water demand; thereby; increasing quality and quantity downstream of the normal withdraw point.

(d) A discharge structure will be installed adjacent to the Feed Canal.










(e) No increase in noise level on Federal Land is expected.

(f) Soil and vegetation will be disturbed to install pipeline, but no federally classified species are impacted. No permafrost is in the area. The facilities will be buried; therefore, no permeant soil stability features are needed.

DRAFT REVISION DATE 3/17/16

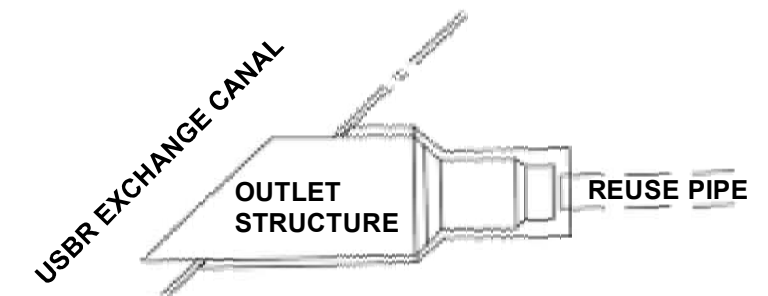
FIGURE 1
SITE MAP

LEGEND

-  USBR Exchange Canal
-  Potential Industrial Service Area
-  Alignment_Alt1
-  Township Range (1:500K)
-  Sections
-  New_UT_Ease
-  Parcels
-  City Limits
-  UGB

BEGIN PROJECT

END PROJECT



DRAFT CANAL BAFFLED
OUTFALL STRUCTURE DETAIL

0 1,700
Feet

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, Oregon Geospatial Enterprise Office

Revision Date: 3/17/2016



FIGURE #1

Path: \\gfiles\public\F:\JUB\Umatilla

GENERAL INFORMATION
ALASKA NATIONAL INTEREST LANDS

This application will be used when applying for a right-of-way, permit, license, lease, or certificate for the use of Federal lands which lie within conservation system units and National Recreation or Conservation Areas as defined in the Alaska National Interest lands Conservation Act. Conservation system units include the National Park System, National Wildlife Refuge System, National Wild and Scenic Rivers System, National Trails System, National Wilderness Preservation System, and National Forest Monuments.

Transportation and utility systems and facility uses for which the application may be used are:

1. Canals, ditches, flumes, laterals, pipes, pipelines, tunnels, and other systems for the transportation of water.
2. Pipelines and other systems for the transportation of liquids other than water, including oil, natural gas, synthetic liquid and gaseous fuels, and any refined product produced therefrom.
3. Pipelines, slurry and emulsion systems, and conveyor belts for transportation of solid materials.
4. Systems for the transmission and distribution of electric energy.
5. Systems for transmission or reception of radio, television, telephone, telegraph, and other electronic signals, and other means of communications.
6. Improved right-of-way for snow machines, air cushion vehicles, and all-terrain vehicles.
7. Roads, highways, railroads, tunnels, tramways, airports, landing strips, docks, and other systems of general transportation.

This application must be filed simultaneously with each Federal department or agency requiring authorization to establish and operate your proposal.

In Alaska, the following agencies will help the applicant file an application and identify the other agencies the applicant should contact and possibly file with:

Department of Agriculture
Regional Forester, Forest Service (USFS)
Federal Office Building,
P.O. Box 21628
Juneau, Alaska 99802-1628
Telephone: (907) 586-7847 (or a local Forest Service Office)

Department of the Interior
Bureau of Indian Affairs (BIA)
Juneau Area Office
Federal Building Annex
9109 Mendenhall Mall Road, Suite 5
Juneau, Alaska 99802
Telephone: (907) 586-7177

Department of the Interior
Bureau of Land Management
222 West 7th Avenue
P.O. Box 13
Anchorage, Alaska 99513-7599
Telephone: (907) 271-5477 (or a local BLM Office)

U.S. Fish & Wildlife Service (FWS) Office of the Regional Director 1011 East Tudor Road Anchorage, Alaska 99503 Telephone: (907) 786-3440	National Park Service (NPA) Alaska Regional Office, 2225 Gambell St., Rm. 107 Anchorage, Alaska 99502-2892 Telephone: (907) 786-3440
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Note - Filings with any Interior agency may be filed with any office noted above or with the Office of the Secretary of the Interior, Regional Environmental Office, P.O. Box 120, 1675 C Street, Anchorage, Alaska 9513.

Department of Transportation
Federal Aviation Administration
Alaska Region AAL-4, 222 West 7th Ave., Box 14
Anchorage, Alaska 99513-7587
Telephone: (907) 271-5285

NOTE - The Department of Transportation has established the above central filing point for agencies within that Department. Affected agencies are: Federal Aviation Administration (FAA), Coast Guard (USCG), Federal Highway Administration (FHWA), Federal Railroad Administration (FRA).

OTHER THAN ALASKA NATIONAL INTEREST LANDS

Use of this form is not limited to National Interest Conservation Lands of Alaska.

Individual department/agencies may authorize the use of this form by applicants for transportation and utility systems and facilities on other Federal lands outside those areas described above.

For proposals located outside of Alaska, applications will be filed at the local agency office or at a location specified by the responsible Federal agency.

SPECIFIC INSTRUCTIONS
(Items not listed are self-explanatory)

- 7 Attach preliminary site and facility construction plans. The responsible agency will provide instructions whenever specific plans are required.
- 8 Generally, the map must show the section(s), township(s), and range(s) within which the project is to be located. Show the proposed location of the project on the map as accurately as possible. Some agencies require detailed survey maps. The responsible agency will provide additional instructions.
- 9, 10, and 12 The responsible agency will provide additional instructions.
- 13 Providing information on alternate routes and modes in as much detail as possible, discussing why certain routes or modes were rejected and why it is necessary to cross Federal lands will assist the agency(ies) in processing your application and reaching a final decision. Include only reasonable alternate routes and modes as related to current technology and economics.
- 14 The responsible agency will provide instructions.
- 15 Generally, a simple statement of the purpose of the proposal will be sufficient. However, major proposals located in critical or sensitive areas may require a full analysis with additional specific information. The responsible agency will provide additional instructions.
- 16 through 19 Providing this information in as much detail as possible will assist the Federal agency(ies) in processing the application and reaching a decision. When completing these items, you should use a sound judgment in furnishing relevant information. For example, if the project is not near a stream or other body of water, do not address this subject. The responsible agency will provide additional instructions.

Application must be signed by the applicant or applicant's authorized representative.

EFFECT OF NOT PROVIDING INFORMATION: Disclosure of the information is voluntary. If all the information is not provided, the application may be rejected.

DATA COLLECTION STATEMENT

The Federal agencies collect this information from applicants requesting right-of-way, permit, license, lease, or certification for the use of Federal lands. The Federal agencies use this information to evaluate the applicant's proposal. The public is obligated to submit this form if they wish to obtain permission to use Federal lands.

SUPPLEMENTAL

NOTE: The responsible agency(ies) will provide instructions	CHECK APPROPRIATE BLOCK	
I - PRIVATE CORPORATIONS	ATTACHED	FILED*
a. Articles of Incorporation	<input type="checkbox"/>	<input type="checkbox"/>
b. Corporation Bylaws	<input type="checkbox"/>	<input type="checkbox"/>
c. A certification from the State showing the corporation is in good standing and is entitled to operate within the State	<input type="checkbox"/>	<input type="checkbox"/>
d. Copy of resolution authorizing filing	<input type="checkbox"/>	<input type="checkbox"/>
e. The name and address of each shareholder owning 3 percent or more of the shares, together with the number and percentage of any class of voting shares of the entity which such shareholder is authorized to vote and the name and address of each affiliate of the entity together with, in the case of an affiliate controlled by the entity, the number of shares and the percentage of any class of voting stock of that affiliate owned, directly or indirectly, by that entity, and in the case of an affiliate which controls that entity, the number of shares and the percentage of any class of voting stock of that entity owned, directly or indirectly, by the affiliate.	<input type="checkbox"/>	<input type="checkbox"/>
f. If application is for an oil or gas pipeline, describe any related right- of-way or temporary use permit applications, and identify previous applications.	<input type="checkbox"/>	<input type="checkbox"/>
g. If application is for an oil and gas pipeline, identify all Federal lands by agency impacted by proposal.	<input type="checkbox"/>	<input type="checkbox"/>
II - PUBLIC CORPORATIONS		
a. Copy of law forming corporation	<input type="checkbox"/>	<input type="checkbox"/>
b. Proof of organization	<input type="checkbox"/>	<input type="checkbox"/>
c. Copy of Bylaws	<input type="checkbox"/>	<input type="checkbox"/>
d. Copy of resolution authorizing filing	<input type="checkbox"/>	<input type="checkbox"/>
e. If application is for an oil or gas pipeline, provide information required by item "I - f" and "I - g" above.	<input type="checkbox"/>	<input type="checkbox"/>
III - PARTNERSHIP OR OTHER UNINCORPORATED ENTITY		
a. Articles of association, if any	<input type="checkbox"/>	<input type="checkbox"/>
b. If one partner is authorized to sign, resolution authorizing action is	<input type="checkbox"/>	<input type="checkbox"/>
c. Name and address of each participant, partner, association, or other	<input type="checkbox"/>	<input type="checkbox"/>
d. If application is for an oil or gas pipeline, provide information required by item "I - f" and "I - g" above.	<input type="checkbox"/>	<input type="checkbox"/>

*If the required information is already filed with the agency processing this application and is current, check block entitled "Filed." Provide the file identification information (e.g., number, date, code, name). If not on file or current, attach the requested information.

NOTICES

Note: This applies to the Department of Agriculture/Forest Service (FS)

This information is needed by the Forest Service to evaluate the requests to use National Forest System lands and manage those lands to protect natural resources, administer the use, and ensure public health and safety. This information is required to obtain or retain a benefit. The authority for that requirement is provided by the Organic Act of 1897 and the Federal Land Policy and Management Act of 1976, which authorize the secretary of Agriculture to promulgate rules and regulations for authorizing and managing National Forest System lands. These statutes, along with the Term Permit Act, National Forest Ski Area Permit Act, Granger-Thye Act, Mineral Leasing Act, Alaska Term Permit Act, Act of September 3, 1954, Wilderness Act, National Forest Roads and Trails Act, Act of November 16, 1973, Archeological Resources Protection Act, and Alaska National Interest Lands Conservation Act, authorize the Secretary of Agriculture to issue authorizations or the use and occupancy of National Forest System lands. The Secretary of Agriculture's regulations at 36 CFR Part 251, Subpart B, establish procedures for issuing those authorizations.

BURDEN AND NONDISCRIMINATION STATEMENTS

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0596-0082. The time required to complete this information collection is estimated to average 8 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, 1400 Independence Avenue, SW, Washington, DC 20250-9410 or call toll free (866) 632-9992 (voice). TDD users can contact USDA through local relay or the Federal relay at (800) 877-8339 (TDD) or (866) 377-8642 (relay voice). USDA is an equal opportunity provider and employer.

The Privacy Act of 1974 (5 U.S.C. 552a) and the Freedom of Information Act (5 U.S.C. 552) govern the confidentiality to be provided for information received by the Forest Service.

MEMORANDUM -- TECHNICAL SUPPORT DOCUMENT

DATE: July 15, 2016
TO: Duane Smith, Oregon DEQ
FROM: Brett M. Converse, PE, Ph.D.
SUBJECT: **NPDES Permit Application Support Document A**
RE: Discharge Window, and Tier II Justification

Background:

- The non-contact cooling water is expected to have maximum TDS of 1500 mg/l.
- The non-contact cooling water flow is expected to be:
 - 0.95 MGD (peak flow) when ambient temp exceeds 100 degrees F,
 - Less than 0.45 MGD when ambient temperature is less than 80 degrees F.
- Columbia River water TDS concentration is expected to be 100 mg/l or less.
- The maximum allowable TDS concentration in the irrigation water is 450 mg/l.

Dilution Calculation:

Given the above data:

- 3 parts of Columbia River water are needed per part of cooling water to keep the TDS concentration to 450 mg/l or less.
$$\frac{(3 \text{ MGD} \cdot 100 \text{ mg/l}) + (1 \text{ MGD} \cdot 1500 \text{ mg/l})}{(3 \text{ MGD} + 1 \text{ MGD})} = 450 \text{ mg/L}$$
- The irrigation water could be up to 25% cooling water, $(1/(1+3)) = 0.25$

Therefore, if the expected peak day discharge from Amazon is 0.95 MGD, the feed canal has to have a least 2.85 MGD therein to keep the irrigation water TSD concentration less than 450 mg/l as shown in the following calculation:

$$\frac{(2.85 \text{ MGD} \cdot 100 \text{ mg/l}) + (0.95 \text{ MGD} \cdot 1500 \text{ mg/l})}{(2.85 \text{ MGD} + 0.95 \text{ MGD})} = 450 \text{ mg/L}$$

Historical Feed Canal Flow:

The historical flow in the feed canal, since 1999, was available on the following USBR's website:

<http://www.usbr.gov/pn/hydromet/umatilla/umawebhydreadarc.html>

Using:

- WEPO – WEID Exchange Pump Plant near Hermiston OR, and
- QJ – average daily canal flow CFS

The available data are shown graphically in Figure 1. The data were converted to MGD and formatted for analysis on a daily basis. The average daily flows between 1999 and 2016 are shown in Figure 2. The 10 day rolling average of the daily averaged (2008-2016)¹ flows are shown in Figure 3.

Seasonal Discharge Timeframe:

In general, there is little flow in the canal between November 1st, and April 1st. Typically, by April 12th the 10 day rolling average flow in the canal exceeds 3 MGD thereby providing sufficient dilution for the expected peak discharge of 0.95 MGD of non-contact cooling water (See Figure 3). Flow in the feed canal remains high until mid-October when flow quickly drops to less than 3 MGD, typically by November 1st, when there is insufficient flow in the feed canal to dilute cooling water TSD.

Peak cooling water flows are not expected unless the ambient temperature is more than 100 degrees. Typically, the area does not experience extreme maximum temperatures greater than 100 degrees until June 1st (www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?orherm) as shown in Figure 4.

The extreme maximum temperature around April 1st is about 80 degrees in which case the expected cooling water discharge is less than 0.45 MGD. A cooling water discharge of 0.45 MGD would require 1.35 MGD of flow in the feed canal. Flow in the feed canal is typically greater than 1.35 MGD on April 9th (only 3 days earlier than the date needed for max day dilution).

Proposed Discharge Timeframe:

The proposed timeframe to discharge up to 0.95 MGD of non-contact cooling water into the feed canal is from April 12th to November 1st.

Tier II Justification

OAR 340-045-075 establishes the Tier 1 and Tier 2 industrial facility classification rules. Section (3)(a), (b) and (c) are reproduced below with justification (in red) as to why the proposed facility is a Tier 2 facility.

Section (3)(a) and (b) and (c):

(3) The department must consider the following criteria when classifying a facility for determining applicable fees. For industrial sources that discharge to surface waters, discharge flowrate refers to the system design capacity. For industrial sources that do not discharge to surface waters, discharge flow refers to the total annual flow divided by 365:

(a) Tier 1 industry. A facility is classified as a Tier 1 industry if the facility:

¹ A lot of data was missing prior to 2008; therefore, data prior to 2008 was not included in this analysis.

- A. Discharges at a flowrate that is greater than or equal to 1 mgd; or
 - Peak day design flow is 0.95 MGD
 - Average day design flow is 0.45 MGD
 - Discharge from April 12th to November 1st
- B. Discharges large biochemical oxygen demand loads; or
 - BOD < 2.0 mg/l
- C. Is a large metals facility; or
 - Only non-contact cooling water
- D. Has significant toxic discharges; or
 - Discharge in not significantly toxic
- E. Has a treatment system that will have a significant adverse impact on the receiving stream if not operated properly; or
 - Since discharge is only non-contact cooling water, there are no treatment systems to operate
- F. Needs special regulatory control, as determined by the department.
 - No special tasks required for regulatory control
 - Regulatory control will likely be established by:
 - i. A seasonal discharge window (April 12th to November 1st)
 - ii. Monitoring requirement (sampling)

(b) Tier 1 domestic facility. A facility is classified as a Tier 1 domestic facility if the facility:

- A. Has a dry weather design flow of 1 mgd or greater; or
- B. Serves an industry that can have a significant impact on the treatment system.

(c) Tier 2 industry or domestic facility: does not meet Tier 1 qualifying factors.

Section (3)(c) establishes classification since the industrial facility does not meet Tier 1 qualifying factors and is therefore a Tier 2 facility.

Please call with questions or comments regarding the overall application or if additional information is required,


Brett M. Converse P.E., Ph.D.
208 661-2964 cell



Estimated Flow in the Feed Canal as Measured at the Exchange Pump Station, CFS

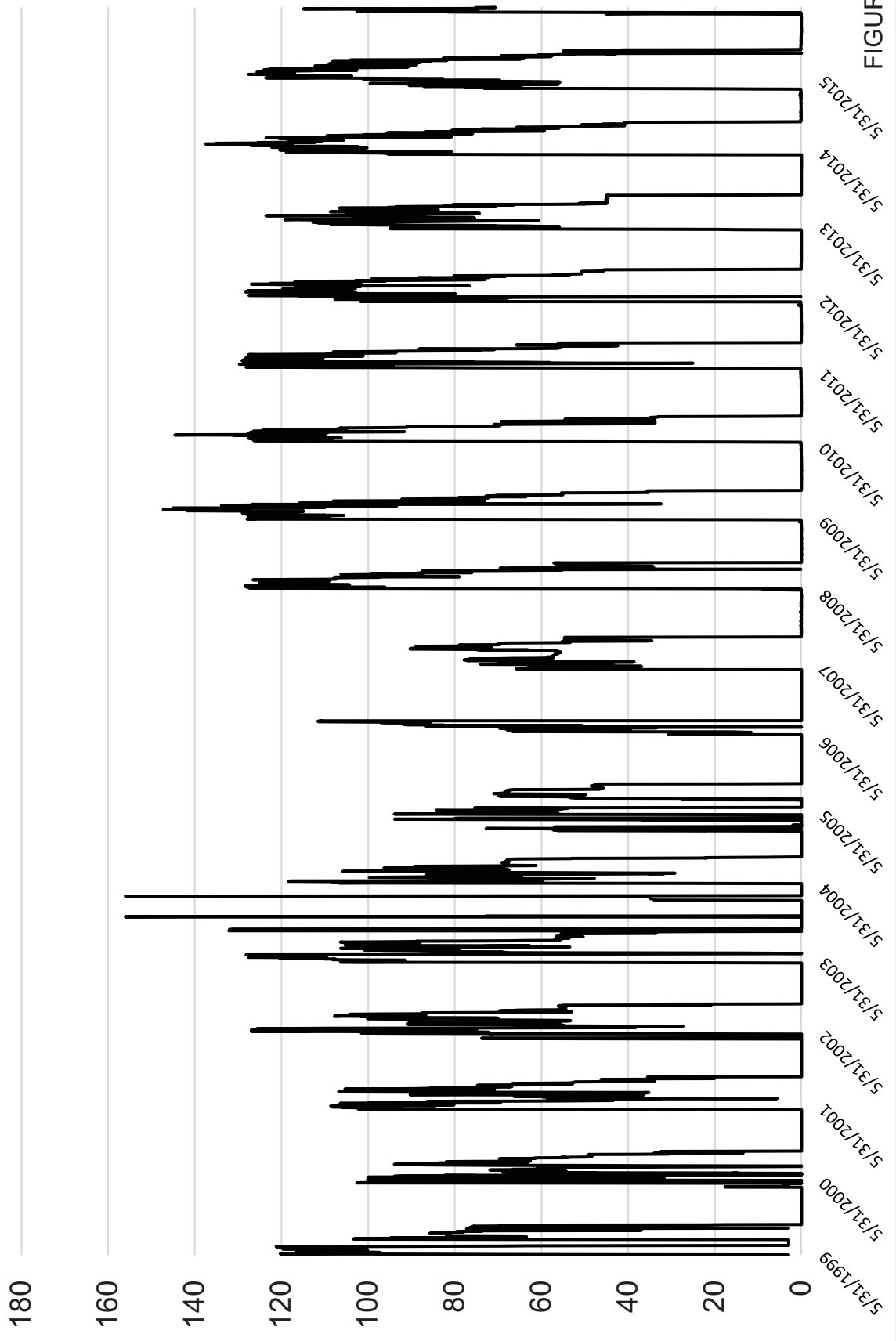


FIGURE 1

WEID FEED CANAL AVERAGE FLOW, (1999 to 2016) MGD

- Average Flow, MGD (1999-2016)
- 10 per. Mov. Avg. (Average Flow, MGD (1999-2016))

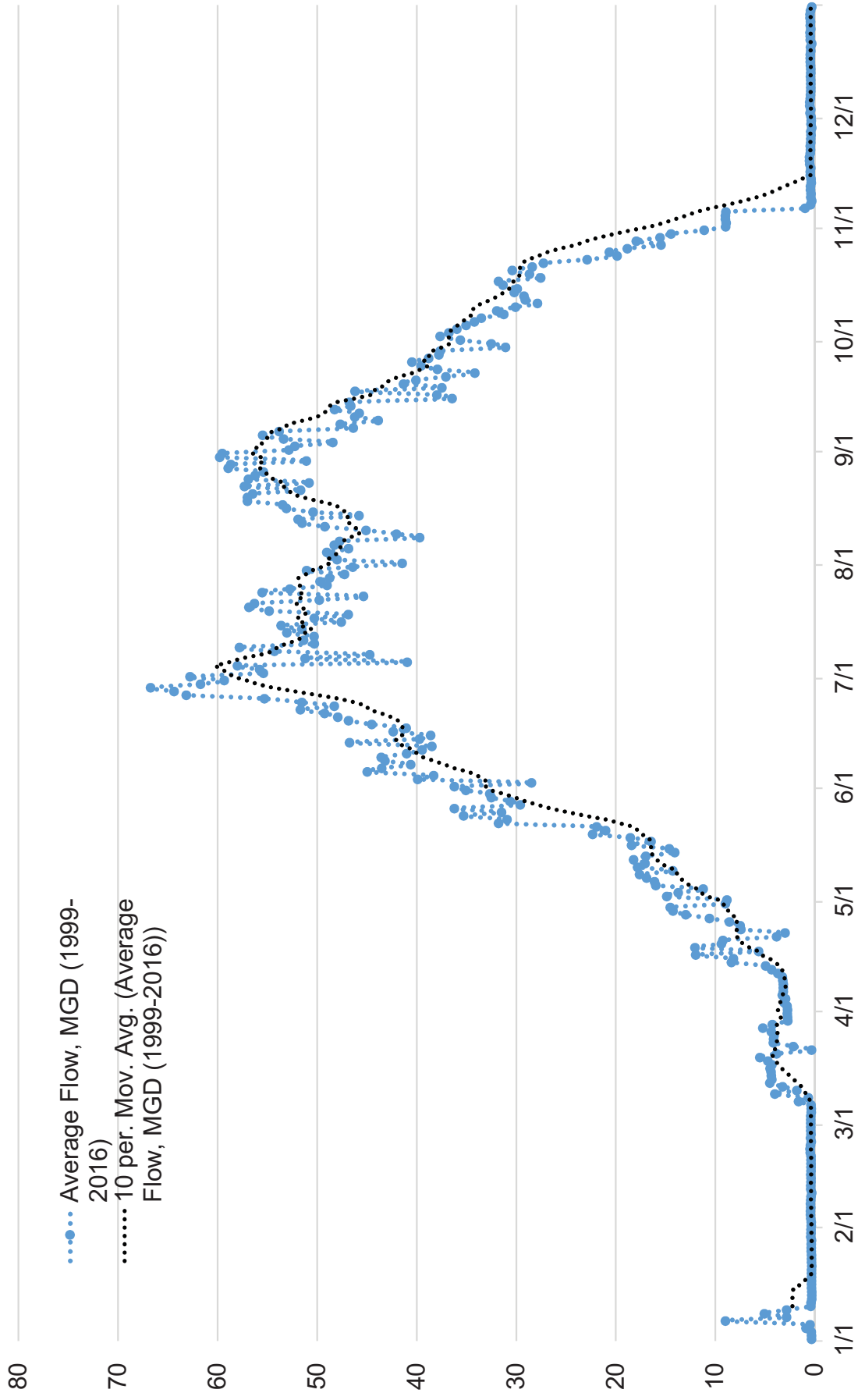


FIGURE 2

Feed Canal 10 Day Moving Average Flow, 2008-2016

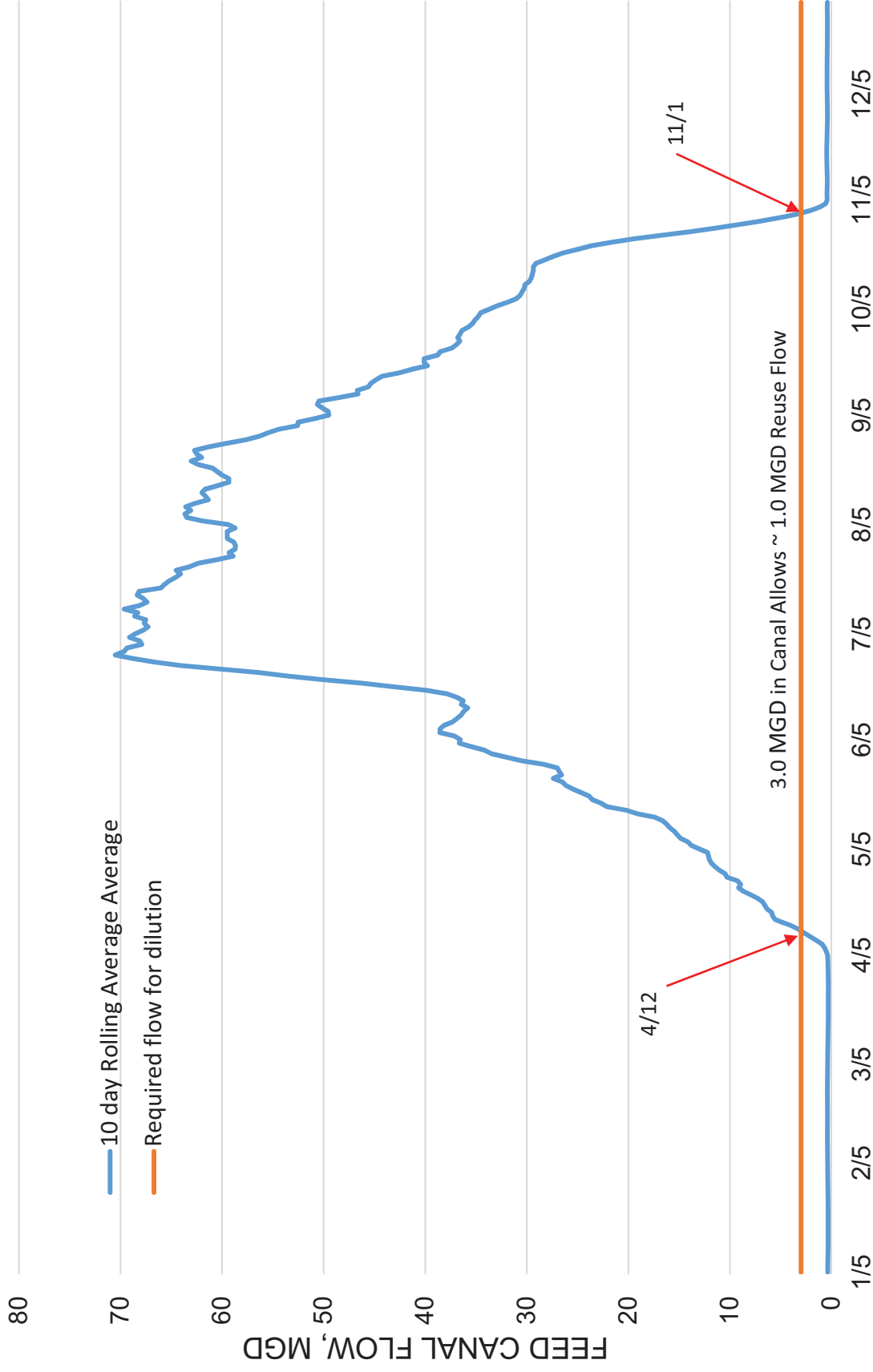
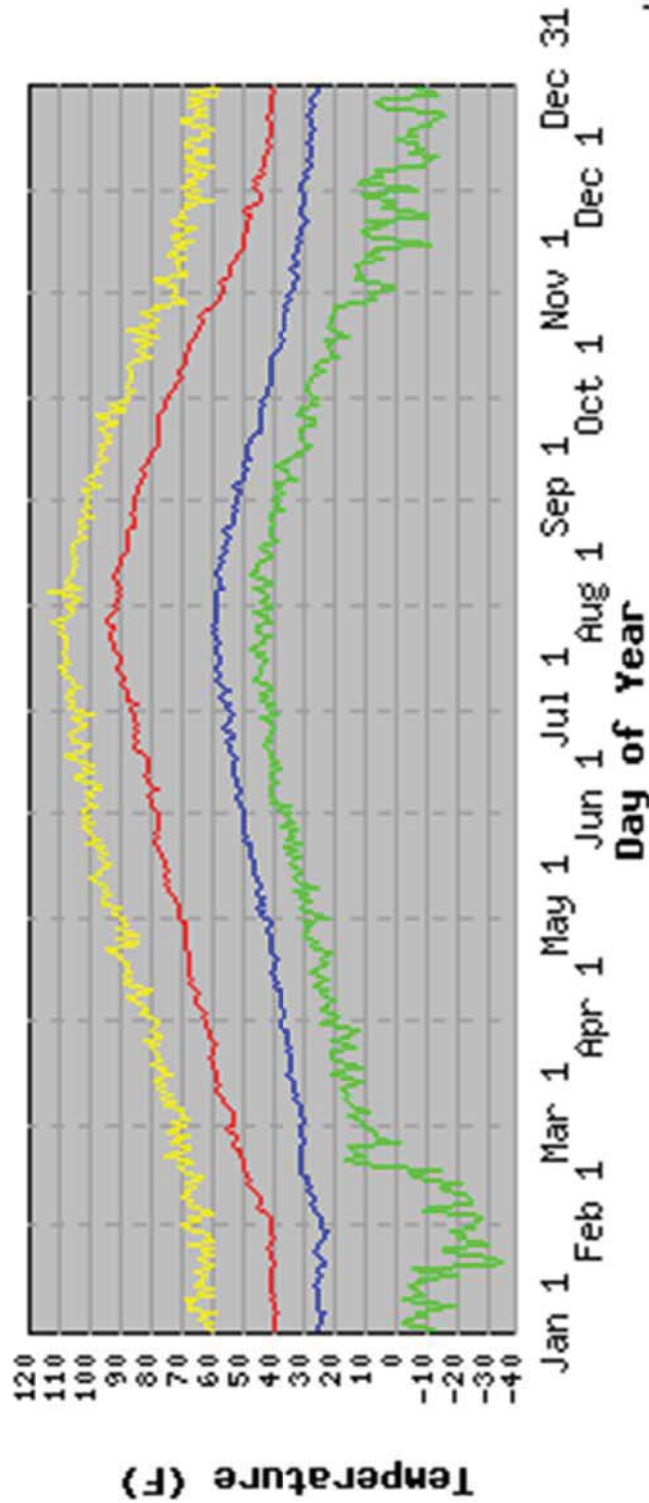


FIGURE 3

HERMISTON 2 S, OREGON (353847)

Period of Record : 1/ 1/1928 to 12/31/2005



Western
Regional
Climate
Center

Extreme Max — Ave Max — Ave Min — Extreme Min

Figure 4

APPENDIX D

USBR SF 299 PERMIT APPLICATION

APPLICATION FOR TRANSPORTATION AND
UTILITY SYSTEMS AND FACILITIES
ON FEDERAL LANDS

FORM APPROVED
OMB Control Number: 0596-0082
Expiration Date: 10/31/2012

FOR AGENCY USE ONLY

NOTE: Before completing and filing the application, the applicant should completely review this package and schedule a preapplication meeting with representatives of the agency responsible for processing the application. Each agency may have specific and unique requirements to be met in preparing and processing the application. Many times, with the help of the agency representative, the application can be completed at the preapplication meeting.

Application Number

Date Filed

1. Name and address of applicant (*include zip code*)

City of Umatilla
700 Sixth St. Umatilla, OR 97882

2. Name, title, and address of authorized agent if different from item 1 (*include zip code*)

Russ Pelleberg
PO Box 130
Umatilla, OR 97882

3. Telephone (area code)

541-922-3226

Applicant

City of Umatilla

Authorized Agent

Russ Pelleberg

4. As applicant are you? (*check one*)

- a. Individual
b. Corporation*
c. Partnership/Association*
d. State Government/State Agency
e. Local Government
f. Federal Agency

* If checked, complete supplemental page

5. Specify what application is for: (*check one*)

- a. New authorization
b. Renewing existing authorization No.
c. Amend existing authorization No.
d. Assign existing authorization No.
e. Existing use for which no authorization has been received *
f. Other*

* If checked, provide details under item 7

6. If an individual, or partnership are you a citizen(s) of the United States? Yes No

7. Project description (describe in detail): (a) Type of system or facility, (*e.g., canal, pipeline, road*); (b) related structures and facilities; (c) physical specifications (*Length, width, grading, etc.*); (d) term of years needed; (e) time of year of use or operation; (f) Volume or amount of product to be transported; (g) duration and timing of construction; and (h) temporary work areas needed for construction (*Attach additional sheets, if additional space is needed.*)

(a) The City of Umatilla plans to construct approximately 2.5 miles of pipeline to convey industrial wastewater from VADATA, Inc. to a new discharge structure in the USBR Phase 1 Exchange Canal for beneficial reuse by areas served by the West Extension Irrigation District. Project will cross Federal Lands to the west of intersection of Riverside Ave./ Willamette St. Flows will originate from the Port of Umatilla - see attached project map.

(b) Pipeline, discharge structure, monitoring equipment, flow meter, air/vacuum release valves

(c) Baffled outlet structure (discharge) and pipeline to be designed after initial engineering evaluation. Plans and specification will be submitted to USBR for review. See figure one for a conceptual layout.

(d) The project is planned to serve the City and Port for at least 75 years.

(e) VADATA only requires disposal during warmer weather, or April-October.

(f) 1.0 million gallons a day of non-contact cooling water (industrial wastewater)

(g) 5 months.

(h) Construction will take place on Federal Lands surrounding the USBR Phase 1 Exchange Canal. That is the only area of Federal Land in the project area.

8. Attach a map covering area and show location of project proposal

9. State or Local government approval: Attached Applied for Not Required

10. Nonreturnable application fee: Attached Not required

11. Does project cross international boundary or affect international waterways? Yes No (*if "yes," indicate on map*)

12. Give statement of your technical and financial capability to construct, operate, maintain, and terminate system for which authorization is being requested.

The applicant is the City of Umatilla, which is an incorporated municipal with taxing authority that owns and operates public utilities. The City of Umatilla employs certified operators to manage their collection systems.

13a. Describe other reasonable alternative routes and modes considered.

J-U-B Engineers has considered different alignments between VADATA (source) and different discharge structure locations (outfall). The preferred route (see attached figure) was selected to ease construction and reduce cost.

b. Why were these alternatives not selected?

Current proposed alignment avoids crossing the Union-Pacific railroad and maximizes construction along City right of ways/easements. Alternate alignments would require additional easements from the railroad or private land owners.

c. Give explanation as to why it is necessary to cross Federal Lands.

The Feed Canal is a USBR facility on Federal Land and this project has to cross federal land to discharge into the canal.

14. List authorizations and pending applications filed for similar projects which may provide information to the authorizing agency. (Specify number, date, code, or name)

USBR approved a similar project designed and constructed by the City of Hermiston to discharge into WEID through the USBR canal.

15. Provide statement of need for project, including the economic feasibility and items such as: (a) cost of proposal (construction, operation, and maintenance); (b) estimated cost of next best alternative; and (c) expected public benefits.

(a) Approximately \$3 million to complete final design and construction of the pipeline. (b) If the VADATA continues to discharge to the City's domestic WWTP, the City will require a \$20-30 million upgrade to the wastewater treatment facility. VADATA discharge is taking up hydraulic capacity of current WWTP.

16. Describe probable effects on the population in the area, including the social and economic aspects, and the rural lifestyles.

See Attached Supplemental Information

17. Describe likely environmental effects that the proposed project will have on: (a) air quality; (b) visual impact; (c) surface and ground water quality and quantity; (d) the control or structural change on any stream or other body of water; (e) existing noise levels; and (f) the surface of the land, including vegetation, permafrost, soil, and soil stability.

See Attached Supplemental Information

18. Describe the probable effects that the proposed project will have on (a) populations of fish, plantlife, wildlife, and marine life, including threatened and endangered species; and (b) marine mammals, including hunting, capturing, collecting, or killing these animals.

(a) Construction may temporarily displace species, but analysis of USFWS GIS databases indicates no threatened or endangered species habitat will be impacted by the project footprint on Federal Lands. (b) No marine life in the USBR Canal or WEID.

19. State whether any hazardous material, as defined in this paragraph, will be used, produced, transported or stored on or within the right-of-way or any of the right-of-way facilities, or used in the construction, operation, maintenance or termination of the right-of-way or any of its facilities.

"Hazardous material" means any substance, pollutant or contaminant that is listed as hazardous under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. 9601 et seq., and its regulations. The definition of hazardous substances under CERCLA includes any "hazardous waste" as defined in the Resource Conservation and Recovery Act of 1976 (RCRA), as amended, 42 U.S.C. 6901 et seq., and its regulations. The term hazardous materials also includes any nuclear or byproduct material as defined by the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2011 et seq. The term does not include petroleum, including crude oil or any fraction thereof that is not otherwise specifically listed or designated as a hazardous substance under CERCLA Section 101(14), 42 U.S.C. 9601(14), nor does the term include natural gas.

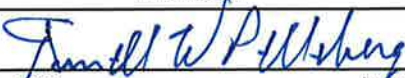
The project, in general, is for the transportation of irrigation water to the feed canal. The irrigation water will not contain hazardous material.

20. Name all the Department(s)/Agency(ies) where this application is being filed.

US Bureau of Reclamation

I HEREBY CERTIFY, That I am of legal age and authorized to do business in the State and that I have personally examined the information contained in the application and believe that the information submitted is correct to the best of my knowledge.

Signature of Applicant



Date

3-21-2016

Title 18, U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious, or fraudulent statements or representations as to any matter within its jurisdiction.

Attached Supplemental Information

#16

The City's domestic WWTP exceeded its hydraulic capacity in the summer of 2013 because of VADATA wastewater discharge. Without a solution that redirects the VADATA discharge, the City would finance a \$20-30m upgrade of the WWTP to accommodate industrial flows. The discharge pipeline will accommodate substantial expansion at the Port and CTUIR's Wanapa site. There is currently a bottleneck for further industrial growth in the City's domestic wastewater treatment plant. By diverting the discharge to WEID as reuse, that bottleneck is alleviated, which enables substantial growth and development while conserving and reusing wastewater.

#17

(a and b) Not treating and discharging non-contact cooling water through a municipal wastewater treatment plant will eliminate air quality, visual impacts, and environmental effects associated with domestic wastewater treatment.

(b) The pipeline and discharge structure will be buried, no visual impacts.

(c) Beneficial reuse of industrial wastewater within WEID reduces surface water demand; thereby; increasing quality and quantity downstream of the normal withdraw point.

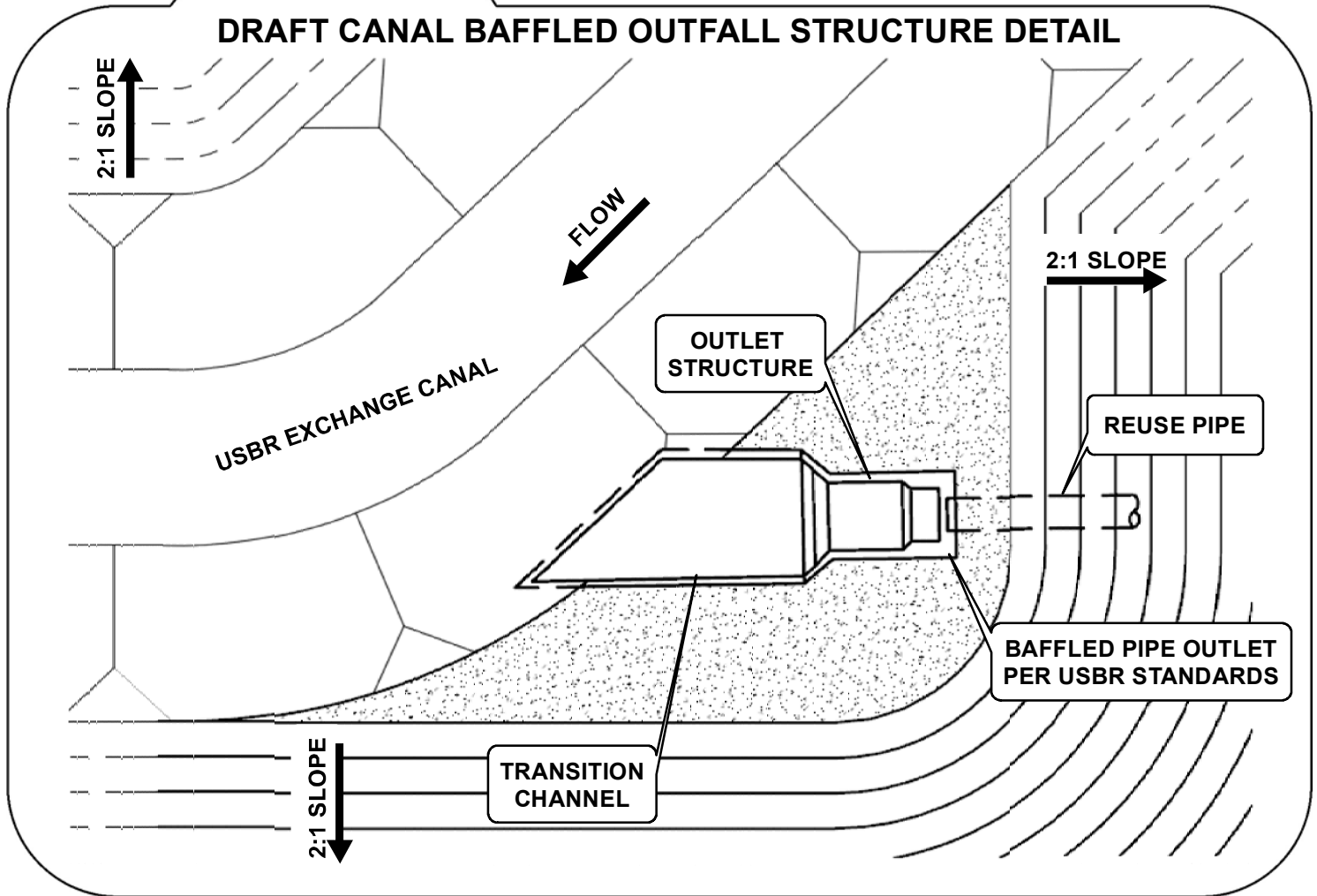
(d) A discharge structure will be installed adjacent to the Feed Canal.

(e) No increase in noise level on Federal Land is expected.

(f) Soil and vegetation will be disturbed to install pipeline, but no federally classified species are impacted. No permafrost is in the area. The facilities will be buried; therefore, no permeant soil stability features are needed.



DRAFT CANAL BAFFLED OUTFALL STRUCTURE DETAIL



CITY OF UMATILLA		SITE MAP	
<p>DRAFT REVISION DATE 3/21/16</p>		<p>LEGEND</p>	
		<p>— Alignment_Alt1</p> <p>- - - USBR Exchange Canal</p> <p>□ Township Range (1:500K)</p> <p>□ Sections</p>	<p>□ Federal_Owned_Land</p> <p>□ Parcels</p> <p>□ New_UT_Ease</p>
<p>J-U-B ENGINEERS, INC.</p>	<p>FIGURE #1</p>		

GENERAL INFORMATION
ALASKA NATIONAL INTEREST LANDS

This application will be used when applying for a right-of-way, permit, license, lease, or certificate for the use of Federal lands which lie within conservation system units and National Recreation or Conservation Areas as defined in the Alaska National Interest lands Conservation Act. Conservation system units include the National Park System, National Wildlife Refuge System, National Wild and Scenic Rivers System, National Trails System, National Wilderness Preservation System, and National Forest Monuments.

Transportation and utility systems and facility uses for which the application may be used are:

1. Canals, ditches, flumes, laterals, pipes, pipelines, tunnels, and other systems for the transportation of water.
2. Pipelines and other systems for the transportation of liquids other than water, including oil, natural gas, synthetic liquid and gaseous fuels, and any refined product produced therefrom.
3. Pipelines, slurry and emulsion systems, and conveyor belts for transportation of solid materials.
4. Systems for the transmission and distribution of electric energy.
5. Systems for transmission or reception of radio, television, telephone, telegraph, and other electronic signals, and other means of communications.
6. Improved right-of-way for snow machines, air cushion vehicles, and all-terrain vehicles.
7. Roads, highways, railroads, tunnels, tramways, airports, landing strips, docks, and other systems of general transportation.

This application must be filed simultaneously with each Federal department or agency requiring authorization to establish and operate your proposal.

In Alaska, the following agencies will help the applicant file an application and identify the other agencies the applicant should contact and possibly file with:

Department of Agriculture
Regional Forester, Forest Service (USFS)
Federal Office Building,
P.O. Box 21628
Juneau, Alaska 99802-1628
Telephone: (907) 586-7847 (or a local Forest Service Office)

Department of the Interior
Bureau of Indian Affairs (BIA)
Juneau Area Office
Federal Building Annex
9109 Mendenhall Mall Road, Suite 5
Juneau, Alaska 99802
Telephone: (907) 586-7177

Department of the Interior
Bureau of Land Management
222 West 7th Avenue
P.O. Box 13
Anchorage, Alaska 99513-7599
Telephone: (907) 271-5477 (or a local BLM Office)

U.S. Fish & Wildlife Service (FWS) Office of the Regional Director 1011 East Tudor Road Anchorage, Alaska 99503 Telephone: (907) 786-3440	National Park Service (NPA) Alaska Regional Office, 2225 Gambell St., Rm. 107 Anchorage, Alaska 99502-2892 Telephone: (907) 786-3440
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Note - Filings with any Interior agency may be filed with any office noted above or with the Office of the Secretary of the Interior, Regional Environmental Office, P.O. Box 120, 1675 C Street, Anchorage, Alaska 9513.

Department of Transportation
Federal Aviation Administration
Alaska Region AAL-4, 222 West 7th Ave., Box 14
Anchorage, Alaska 99513-7587
Telephone: (907) 271-5285

NOTE - The Department of Transportation has established the above central filing point for agencies within that Department. Affected agencies are: Federal Aviation Administration (FAA), Coast Guard (USCG), Federal Highway Administration (FHWA), Federal Railroad Administration (FRA).

OTHER THAN ALASKA NATIONAL INTEREST LANDS

Use of this form is not limited to National Interest Conservation Lands of Alaska.

Individual department/agencies may authorize the use of this form by applicants for transportation and utility systems and facilities on other Federal lands outside those areas described above.

For proposals located outside of Alaska, applications will be filed at the local agency office or at a location specified by the responsible Federal agency.

SPECIFIC INSTRUCTIONS
(Items not listed are self-explanatory)

- 7 Attach preliminary site and facility construction plans. The responsible agency will provide instructions whenever specific plans are required.
- 8 Generally, the map must show the section(s), township(s), and range(s) within which the project is to be located. Show the proposed location of the project on the map as accurately as possible. Some agencies require detailed survey maps. The responsible agency will provide additional instructions.
- 9, 10, and 12 The responsible agency will provide additional instructions.
- 13 Providing information on alternate routes and modes in as much detail as possible, discussing why certain routes or modes were rejected and why it is necessary to cross Federal lands will assist the agency(ies) in processing your application and reaching a final decision. Include only reasonable alternate routes and modes as related to current technology and economics.
- 14 The responsible agency will provide instructions.
- 15 Generally, a simple statement of the purpose of the proposal will be sufficient. However, major proposals located in critical or sensitive areas may require a full analysis with additional specific information. The responsible agency will provide additional instructions.
- 16 through 19 Providing this information in as much detail as possible will assist the Federal agency(ies) in processing the application and reaching a decision. When completing these items, you should use a sound judgment in furnishing relevant information. For example, if the project is not near a stream or other body of water, do not address this subject. The responsible agency will provide additional instructions.

Application must be signed by the applicant or applicant's authorized representative.

EFFECT OF NOT PROVIDING INFORMATION: Disclosure of the information is voluntary. If all the information is not provided, the application may be rejected.

DATA COLLECTION STATEMENT

The Federal agencies collect this information from applicants requesting right-of-way, permit, license, lease, or certification for the use of Federal lands. The Federal agencies use this information to evaluate the applicant's proposal. The public is obligated to submit this form if they wish to obtain permission to use Federal lands.

SUPPLEMENTAL

NOTE: The responsible agency(ies) will provide instructions	CHECK APPROPRIATE BLOCK	
I - PRIVATE CORPORATIONS	ATTACHED	FILED*
a. Articles of Incorporation	<input type="checkbox"/>	<input type="checkbox"/>
b. Corporation Bylaws	<input type="checkbox"/>	<input type="checkbox"/>
c. A certification from the State showing the corporation is in good standing and is entitled to operate within the State	<input type="checkbox"/>	<input type="checkbox"/>
d. Copy of resolution authorizing filing	<input type="checkbox"/>	<input type="checkbox"/>
e. The name and address of each shareholder owning 3 percent or more of the shares, together with the number and percentage of any class of voting shares of the entity which such shareholder is authorized to vote and the name and address of each affiliate of the entity together with, in the case of an affiliate controlled by the entity, the number of shares and the percentage of any class of voting stock of that affiliate owned, directly or indirectly, by that entity, and in the case of an affiliate which controls that entity, the number of shares and the percentage of any class of voting stock of that entity owned, directly or indirectly, by the affiliate.	<input type="checkbox"/>	<input type="checkbox"/>
f. If application is for an oil or gas pipeline, describe any related right- of-way or temporary use permit applications, and identify previous applications.	<input type="checkbox"/>	<input type="checkbox"/>
g. If application is for an oil and gas pipeline, identify all Federal lands by agency impacted by proposal.	<input type="checkbox"/>	<input type="checkbox"/>
II - PUBLIC CORPORATIONS		
a. Copy of law forming corporation	<input type="checkbox"/>	<input type="checkbox"/>
b. Proof of organization	<input type="checkbox"/>	<input type="checkbox"/>
c. Copy of Bylaws	<input type="checkbox"/>	<input type="checkbox"/>
d. Copy of resolution authorizing filing	<input type="checkbox"/>	<input type="checkbox"/>
e. If application is for an oil or gas pipeline, provide information required by item "I - f" and "I - g" above.	<input type="checkbox"/>	<input type="checkbox"/>
III - PARTNERSHIP OR OTHER UNINCORPORATED ENTITY		
a. Articles of association, if any	<input type="checkbox"/>	<input type="checkbox"/>
b. If one partner is authorized to sign, resolution authorizing action is	<input type="checkbox"/>	<input type="checkbox"/>
c. Name and address of each participant, partner, association, or other	<input type="checkbox"/>	<input type="checkbox"/>
d. If application is for an oil or gas pipeline, provide information required by item "I - f" and "I - g" above.	<input type="checkbox"/>	<input type="checkbox"/>

*If the required information is already filed with the agency processing this application and is current, check block entitled "Filed." Provide the file identification information (e.g., number, date, code, name). If not on file or current, attach the requested information.

NOTICES

Note: This applies to the Department of Agriculture/Forest Service (FS)

This information is needed by the Forest Service to evaluate the requests to use National Forest System lands and manage those lands to protect natural resources, administer the use, and ensure public health and safety. This information is required to obtain or retain a benefit. The authority for that requirement is provided by the Organic Act of 1897 and the Federal Land Policy and Management Act of 1976, which authorize the secretary of Agriculture to promulgate rules and regulations for authorizing and managing National Forest System lands. These statutes, along with the Term Permit Act, National Forest Ski Area Permit Act, Granger-Thye Act, Mineral Leasing Act, Alaska Term Permit Act, Act of September 3, 1954, Wilderness Act, National Forest Roads and Trails Act, Act of November 16, 1973, Archeological Resources Protection Act, and Alaska National Interest Lands Conservation Act, authorize the Secretary of Agriculture to issue authorizations or the use and occupancy of National Forest System lands. The Secretary of Agriculture's regulations at 36 CFR Part 251, Subpart B, establish procedures for issuing those authorizations.

BURDEN AND NONDISCRIMINATION STATEMENTS

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0596-0082. The time required to complete this information collection is estimated to average 8 hours hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720- 2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, 1400 Independence Avenue, SW, Washington, DC 20250-9410 or call toll free (866) 632-9992 (voice). TDD users can contact USDA through local relay or the Federal relay at (800) 877-8339 (TDD) or (866) 377-8642 (relay voice). USDA is an equal opportunity provider and employer.

The Privacy Act of 1974 (5 U.S.C. 552a) and the Freedom of Information Act (5 U.S.C. 552) govern the confidentiality to be provided for information received by the Forest Service.

APPENDIX E

ENVIRONMENTAL REVIEW REPORT

City of Umatilla's Recycled Industrial Water Project Environmental Review

For: Oregon Department of Environmental
Quality, Clean Water State Revolving Fund

Prepared by: Nicholas Ducote, Ducote
Consulting LLC; Exhibits by J-U-B Engineers.

July 15, 2016

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1.0 Purpose and Need of the Proposal

1. Purpose of the Environmental Review

This Environmental Review is intended to demonstrate compliance with Federal and State cross-cutting authorities and the proposed project's potential impact to environmental cultural, and historic resources. Methodology followed the *Applicant's Guide to the State Environmental Review Process* and mitigation follows agency recommendations.

2. Need for Project

The purpose of the proposed project is discharge recycled industrial water from the Port of Umatilla into the West Extension Irrigation District canal via the USBR Phase 1 Exchange Canal. The project is intended to alleviate hydraulic capacity at the domestic wastewater treatment plant, reduce water competition in the Umatilla Basin, and create infrastructure to support dual-use recycled industrial water.

The need for the project is to alleviate capacity bottleneck in City of Umatilla's domestic wastewater treatment plant (WWTP), which currently processes the discharge from VA Data, and to provide additional water resources for WEID without further taxing surface or ground-water in order to irrigate the same acreage. The WWTP has a capacity of 0.8 MGD and max daily flows exceeded that capacity in Summer 2013. VA Data discharge accounts for approximately 0.25 MGD and will grow to at least 1.0 MGD in the next three years. The City's discharge from the WWTP into the Columbia is limited and alleviating both capacity issues is vital to growth at the Port and in the City.

VA Data centers come online in the near future with a flow of 0.1-0.25 MGD each, the WWTP will need an immediate \$20,000,000-30,000,000 upgrade without a recycle alternative. By diverting the discharge to WEID as recycle, that bottleneck is alleviated, which enables substantial growth and development while conserving water and recycling wastewater.

Implementation of a recycle pipeline between the Port and WEID enables the City to separate and beneficially recycle industrial water to benefit local agriculture, without over-burdening the WWTP. The proposed project is not only a cost-effective solution to the WWTP bottleneck, but will also create value by recycling industrial water for irrigation needs.

3. Proposed Action

The City of Umatilla plans to construct approximately 2.5 miles of buried pipeline to accommodate industrial water from the VA Data Inc. Data center at the Port of Umatilla to the West Extension Irrigation District via the USBR Phase 1 Exchange Canal. Construction along existing right-of-ways and easements will be maximized.

When the project is completed, the Recycled Industrial Water from the VA Data center will be immediately discharged into the new pipeline and into the WEID via the USBR Exchange Canal. As VA Data, industry at the Port, and the CTUIR's Wanapa Industrial Site continue to expand, recycled water volumes will only increase.

With the exception of two segments, the pipeline will be routed through existing City easement corridors. The excepted segments include the run between Beach Access Rd. and Bud Draper Rd. along a dirt path and the run from Riverside Ave. to the Exchange Canal. The Beach Access-Draper segment will

route between two active businesses at the Port along a dirt path. The Riverside-Exchange Canal segment routes through US Corps of Engineers and US Bureau of Reclamation property at the McNary Dam and near the Union-Pacific Railroad. The City owns an easement through the Corps of Engineers' land currently, but the project will require an easement amendment of 40'x3,900' to the South of the existing corridor. The pipeline will discharge into the US Bureau of Reclamation Phase 1 Canal ~0.42 miles (2,200 ft.) downstream from the McNary Pool intake.

This project will result in ability for WEID to draw less from the Columbia and Umatilla to meet the same irrigation needs, saved monetary resources for WEID as recycle water is less expensive than alternatives, and sustainable infrastructure to support 75 years of economic development.

2.0 Alternatives to the Proposed Action

1. Solutions to WWTP Capacity Bottleneck
 - a. J-U-B Engineers prepared a Wastewater Treatment and Reuse Evaluation, stamped on January 8, 2016, which analyzed alternate solutions to the domestic WWTP capacity bottleneck. Alternatives considered included:
 - o Recycling all, or part of, current 0.8 mgd flows from the existing WWTP.
Cost: \$5.8-7.5M
 - o Expanding current WWTP to accommodate 3.0 mgd, Class A reuse facility.
Cost: \$22-25M
2. Alternate Routing
 - a. Chosen solution: install a Recycled Industrial Water disposal pipeline to transport Industrial Recycled Water from the Port of Umatilla to the West Extension Irrigation District via the USBR Phase 1 Exchange Canal. *Cost: \$3M*
 - b. Alternative 1: Routing
 - c. Alt 2: Routing
 - d. Alt 3: Routing

3.0 Affected Environment/Environmental Consequences

Environmental Resource	Agency that Reviewed	Mitigation?
Cultural/Historical	SHPO	Yes
Tribal	LCIS and Tribes	No
Wetlands	DSL & City of Umatilla	No
Floodplains	Umatilla County & FEMA FIRM	No
Land Use/Farmland	Umatilla County & NRCS	No
Coastal Resources	N/A	No
Wild & Scenic Rivers	N/A	No
Biological Resources	EPA	Yes
Clean Air Act	DEQ Air Quality	Yes
Safe Drinking Water Act	DEQ Drinking Water Program	No

3.1 Historic/Cultural Resources

1. Much of the proposed project is in existing City of Umatilla easements. Roughly 40% of the project will route through 3,900' of US Army Corps of Engineers' and 35' of USBR land. The City has an easement on this land, but will need to amend the easement an additional 40' width along 3,900' to accommodate the discharge pipeline.
2. National Register.
 - a. No National Historic Landmarks in Umatilla County. Referenced the *National Register of Historic Places* spreadsheets and Databases.
 - b. There is one National Historic Place in City of Umatilla, Umatilla County and the address is restricted ("Umatilla Site, 35 UM 1"). Referenced the National Register of Historic Places spreadsheets and Databases. SHPO's Jason Allen confirmed the project area is not near the site.
3. Oregon's SHPO
 - a. Determination from Oregon SHPO included in Exhibit B
 - b. There are ten (10) Historic Places on the Oregon SHPO list in the City of Umatilla. Map included in Exhibit B.

SHPO Historic Places	Affected?
Sunset Hill Cemetery	No
Umatilla Bridge	No
Umatilla River Bridge #00624A	No
Bonneville-McNary Relocation House (57 Rio Senda St.)	No
300 Stephens Ave	No
314 Stephens Ave	No
328 Stephens Ave	No
300 Tucker Ave	No
326 Tucker Ave	No
356 Tucker Ave	No

4. Tribal Resources
 - a. Karen Quigley of Legislative Commission on Indian Services recommended contacting: Nez Pearce, Confederated Tribes of the Umatilla Indian Reservation, Yakama Nation, Confederated Tribes of Warm Springs.
 - b. For copy, see Exhibit B.
5. Tribes Contacted – Emails were available for all but the Yakama Nation. Voicemails were left for Yakama cultural resources. For copies, see Exhibit B.
 - a. Confederated Tribes of Warm Springs – Response on June 2, 2016: CTWS defers Section 106 compliance to CTUIR and requests to be copied on any cultural resource studies or archaeological surveys.
 - b. Nez Pearce – No response
 - c. Confederated Tribes of the Umatilla Indian Reservation – No response
 - d. Yakama Nation – No response
6. Submission to DEQ
 - a. Exhibit B
 - b. Mitigation measures
 - Regarding ORS 358.905 and 97.74: Human remains and artifacts. Because of a high-probability of finding human remains in the project area, contractor must cease work immediately and contact Oregon State Police if human remains are discovered.
 - Because of a high-probability of finding archaeological artifacts in the project area, contractor must use extreme caution during “project related ground disturbing activities.” If such objects are located, the contract must immediately contact a professional archaeologist.
 - SHPO records indicated a possible segment of Oregon Railway and Navigation Company railroad grade close to the project area. If present, the railroad grade should be evaluated and the effect to the project determined.
 - USBR deferred ACHP Section 106 Compliance to the US Army Corps of Engineers who manage all but 20’ of the Federal Land the pipeline will

be built on. Archaeological survey may be required under Section 106 compliance. The City will continue to coordinate with USCOE.

3.2 Protection of Wetlands

1. Information submitted via email, per instructions from Christine Stevenson.
2. Ducote Consulting submitted project documents and materials to Christine Stevenson of the Department of State Lands (DSL) for review. She replied: "I have reviewed the information we have on this area and I am not seeing any jurisdictional wetlands or waters within the project boundary. Please let me know if you need any other information." (See Exhibit C)
3. No additional measures needed.

3.3 Floodplains

1. Referenced the FEMA NFHL, none within project area (Exhibit D).
2. Umatilla City Planner confirmed there are no locally identified floodplains or wetlands in the project area. Umatilla County Planning Department identified part of the project area as "Zone D, 'Areas in which flood hazards are undetermined, but possible.'"
3. According to Oregon's SFHA, the 100-year floodplains only include areas immediately surrounding the Umatilla River, which the construction will not approach.
4. N/A
5. Submission (See Exhibit C)
 - a. FIRM Maps
 - b. Floodplain Manager (Umatilla County)
 - c. Verification docs
 - d. No mitigation.

3.4 Farmland Protection Policy

1. Project footprint will be entirely within City easements and previously disturbed land at the Port of Umatilla.
2. Umatilla County Planning department confirmed the project area is fully within the UGB. "Although there is F-1, Exclusive Farm Use, zoning (County 1972 Zoning Code) applied to the area where the project begins this zoning is no longer under Statewide Planning Goal 3 due it's inclusion in the City's Urban Growth Boundary (UGB)."
 - a. As a utility facility, the project is an "outright" use.
3. Ducote Consulting communicated with Ron Raney of the NRCS, who concluded: "After our discussion and reviewing attached information, this project will not permanently convert any lands subject to Farm Protection Policy Act. An evaluation and an AD-1006 is not necessary."
4. No Important or High-Value Farmland identified on desktop survey. Referenced the USDA Web Soil Survey tool with NRCS maps.

5. Maps and emails included in Exhibit E.

3.5 Coastal Resources

1. N/A – Only applies to Clatsop, Columbia, Tillamook, Washington, Yamhill, Lincoln, Polk, Benton, Lane, Douglas, Coos, and Curry counties.

3.6 Wild & Scenic Rivers

1. No Wild or Scenic Rivers within project footprint. No Wild and Scenic Rivers in Umatilla County. Neither Umatilla or Columbia River (near project) are included.

3.7 Biological Resources

1. ESA Listed Species, Critical Habitat, and Essential Fish Habitat
 - a. Communicated with Rob Pederson of the EPA and submitted a Species Evaluation on 4/14/2016 (Exhibit F).
 - b. EPA responded with an official review on 4/27/2016 and ruled that “Based on the information provided, the EPA has determined that the proposed project, as described, will have **no effect** on ESA listed species or their designated critical habitat and will have **no adverse effect** on designated essential fish habitat” (Exhibit F).
 - c. EPA must be notified immediately if: 1) new information reveals the action may affect listed species or designated critical habitat; 2) the action is modified in a manner that causes an effect to listed species or designated critical habitat; or 3) a new species is listed or critical habitat designated, that may be affected by the proposed actions. (Exhibit F).
2. Mitigation Summary
 - a. Avoid working during migratory bird nesting season. If work must be accomplished during nesting season, use these mitigation efforts:
 - If an occupied nest is encountered in harm’s way, no action may occur that will result in the unauthorized take of eggs/chicks or adult birds. Contractor should contact the USFWS through the Construction Manager as soon as possible for instruction on how to proceed.
 - If a take occurs of a migratory bird, this occurrence must be documented by the Construction Manager and reported to the USFWS.

3.8 Clean Air Act

1. DEQ’s Frank Messina (Exhibit G) concluded “no permits are required from the DEQ Air Quality Program to conduct this project” (Exhibit G).
2. Frank Messina provided the following mitigation comments regarding the City’s project:
 - a. To comply with Division 208 emissions (dust) rules:

- Water will be used to control dust from the work site. Water bars can be used to spray both sides of trucks leaving the worksite, which will wash the dirt off the truck tires.
- If the City uses crushed rock or asphalt for the project, they will confirm the owner and operator of the rock crusher or asphalt plant has an air permit.
- During excavation, if the project comes across Cement Asbestos Pipe removal will following DEQ regulations described in Division 248. The City will notify DEQ's Air Quality Division if asbestos piping is located.

3.9 Safe Drinking Water

1. In consultation with DEQ's Carrie Gentry on 5/4/2016, there is no need for a Water Quality Review because the proposed project does not effect or involve drinking water. Because the project relates to industrial water and will not be discharged into drinking water sources, no review was required.
2. The City and J-U-B Engineers is working with VA Data, DEQ and USBR regarding the quality of the industrial discharge. The City is in the process of acquiring an NPDES permit for discharge in the USBR Phase 1 Exchange Canal and ultimately West Extension Irrigation District.

4.0 Mitigation Summary

Historical:

- ORS 358.905 and 97.74:
 - Because of a high-probability of finding human remains in the project area, contractor must cease work immediately and contact Oregon State Police if human remains are discovered.
 - Because of a high-probability of finding archaeological artifacts in the project area, contractor must use extreme caution during “project related ground disturbing activities.” If such objects are located, the contract must immediately contact a professional archaeologist.
- SHPO records indicated a possible segment of Oregon Railway and Navigation Company railroad grade close to the project area. If present, the railroad grade should be evaluated and the effect to the project determined.
- USBR deferred ACHP Section 106 Compliance to the US Army Corps of Engineers who manage all but 20’ of the Federal Land the pipeline will be built on.
 - Archaeological survey may be required under Section 106 compliance. The City will continue to coordinate with USCOE.

Biological Resources:

- Avoid working during migratory bird nesting season (March 1-August 31), if possible. If work must be accomplished during nesting season, use these mitigation efforts:
 - If an occupied nest is encountered in harm’s way, no action may occur that will result in the unauthorized take of eggs/chicks or adult birds. Contractor should contact the USFWS through the Construction Manager as soon as possible for instruction on how to proceed.
 - If a take occurs of a migratory bird, this occurrence must be documented by the Construction Manager and reported to the USFWS.

Air Quality:

- To comply with Division 208 emissions (dust) rules:
 - Water will be used to control dust from the work site. Water bars can be used to spray both sides of trucks leaving the worksite, which will wash the dirt off the truck tires.
 - If the City uses crushed rock or asphalt for the project, they will confirm the owner and operator of the rock crusher or asphalt plant has an air permit.
 - During excavation, if the project comes across Cement Asbestos Pipe removal will following DEQ regulations described in Division 248. The City will notify

Environmental Review References:

Applicant Guide to the State Environmental Review Process. ODEQ, DEQ 12-WQ-025, April 2012.

Essential Fish Habitat. National Oceanic and Atmospheric Administration/ National Marine Fisheries Service.

Information for Planning and Conservation (IPaC), US Fish and Wildlife Service. Accessed April 2016.

National Flood Hazard Layer. Federal Emergency Management Agency. Accessed April 2016.

Oregon Historic Sites Map. Oregon State Historic Preservation Office. Accessed April 2016.

Oregon Special Flood Hazard Area Map. Department of Land Conservation and Development. April 2016.

Oregon Risk Map. Department of Land Conservation and Development.

“Rare, Threatened, and Endangered Species of Oregon,” Oregon Biodiversity Information Center, Oregon State University, April 2016.

Wetlands Layer (*National Wetlands Inventory*), *National Spatial Data Infrastructure*. FIRM Wetlands Mapper. US Fish and Wildlife Service. Accessed March 2016.

Wetland Inventory Map. Oregon Division of State Lands. Accessed March 2016.

Species Review References:

Areas of Known Wolf Activity – 2015. Oregon Department of Fish and Wildlife.

“Attachment P-6: Wildlife Monitoring and Mitigation Plan,” *Cascade Crossing Transmission Project Wildlife Monitoring and Mitigation Plan*, Tetra Tech, March 2013.

Betts, Geographic distribution and habitat preferences of Washington ground squirrels (*Spermophilus washingtoni*). *Northwestern Naturalist* 71 (1990), 27-37.

Betts, “Current status of Washington ground squirrels in Oregon and Washington” *Northwestern Naturalist* no. 80 (1999), 35-38

“Exhibit P-8D – Washington Ground Squirrel Surveys Technical Report,” *Boardman to Hemingway Transmission Line Project*, Tetra Tech, December 2011.

Oregon Wolf Conservation and Management 2015 Annual Report. Oregon Department of Fish and Wildlife. 2016.

Rickart and Yensen, “Mammalian Species *Spermophilus washingtoni*,” *American Society of Mammalogists* no. 371 (April 12, 1991), pg 1-5.

“Washington Ground Squirrel Potential Range Map,” US Fish and Wildlife Service, November 2012.

Watson, Vander Haegen, and Chang, *Occupancy Modeling and Detection of Washington Ground Squirrels (*Spermophilus washingtoni*)*, Washington Department of Fish and Wildlife Wildlife Program Wildlife Science Division, January 2009.

Yensen and P.W. Sherman, "Ground-dwelling squirrels of the Pacific Northwest," Boise, ID. April 28, 2003.

Exhibits - Environmental Review, City of Umatilla Reuse Project May 31, 2016

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 - Project map

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 - Project Map with Wetlands

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 - NRCS, Ron Raney review comments
 - USDA Web Soil Survey map

- F. 3.7 - Biological Resources, Page 32
 - Ducote Consulting Species Evaluation
 - Environmental Protection Agency Biological Evaluation review comments










- G. 3.8 - Clean Air Act, Page 40
 - Communication with DEQ's Frank Messina

Exhibit A

Project Information

FIGURE 1
PROPOSED PROJECT VICINITY MAP

LEGEND

-  USBR Exchange Canal
-  Potential Industrial Service Area
-  Proposed Alignment
-  Federal_Owned_Land
-  Township Range (1:500K)
-  Sections
-  Parcels
-  City Limits
-  UGB

Revision Date: 3/23/2016



FIGURE #1



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGR, swisstopo, and the GIS User Community, Oregon Geospatial Enterprise Office

Path: \\gfiles\public\F:\JUB\Umatilla

Exhibit B

3.1 Historic/Cultural Resources



Oregon

Kate Brown, Governor

Parks and Recreation Department

State Historic Preservation Office

725 Summer St NE Ste C

Salem, OR 97301-1266

Phone (503) 986-0690

Fax (503) 986-0793

www.oregonheritage.org



April 26, 2016

Mr. Nicholas Ducote
Ducote Consulting LLC
PO Box 596
La Grande, OR 97850

RE: SHPO Case No. 16-0565
City of Umatilla, Wastewater Reuse Project
3 mile pipeline
, Umatilla, Umatilla County

Dear Mr. Ducote:

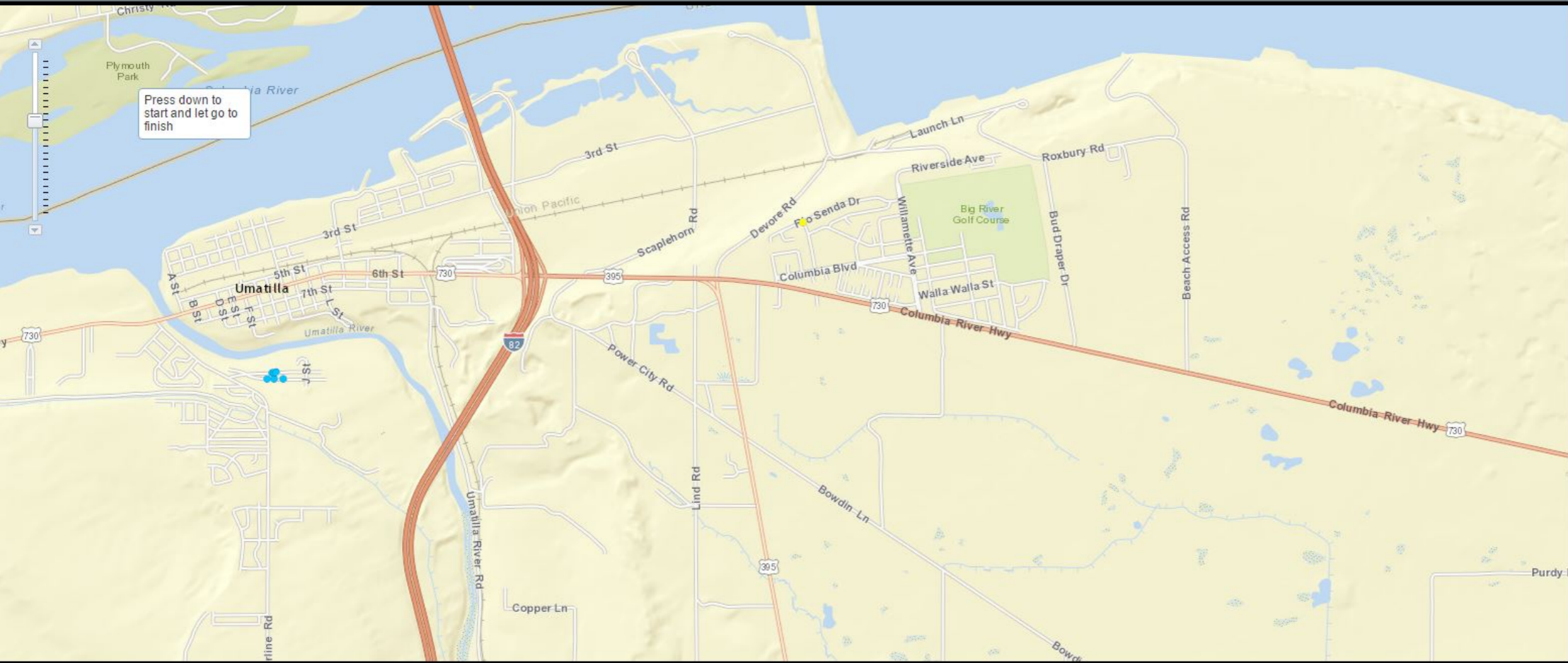
Our office recently received a request to review your application for the project referenced above. In checking our statewide archaeological database, it appears that there have been no previous surveys completed near the proposed project area. However, the project area lies within an area generally perceived to have a high probability for possessing archaeological sites and/or buried human remains. Our records do show that there is a possible segment of railroad grade associated with the Oregon Railway and Navigation Company that is close to your project area. Based on the maps provided it is difficult to determine if this grade is present in your project area. If present, this segment of railroad grade should be evaluated and the effect of the project determined. In the absence of sufficient knowledge to predict the location of cultural resources within the project area, extreme caution is recommended during project related ground disturbing activities. Under state law (ORS 358.905 and ORS 97.74) archaeological sites, objects and human remains are protected on both state public and private lands in Oregon. If archaeological objects or sites are discovered during construction, all activities should cease immediately until a professional archaeologist can evaluate the discovery. If you have not already done so, be sure to consult with all appropriate Indian tribes regarding your proposed project. If the project has a federal nexus (i.e., federal funding, permitting, or oversight) please coordinate with the appropriate lead federal agency representative regarding compliance with Section 106 of the National Historic Preservation Act (NHPA). If you have any questions about the above comments or would like additional information, please feel free to contact our office at your convenience. In order to help us track your project accurately, please reference the SHPO case number above in all correspondence.

Sincerely,

Ross Curtis
SHPO Archaeologist
(503) 986-0676
ross.curtis@oregon.gov



Oregon Historic Sites Map



Select Sites / Legend

Select

- Legend**
- Eligible/Listed
 - Eligible
 - Not Eligible/Listed
 - Not Eligible
 - Undetermined/Listed
 - Undetermined
 - Demolished/Listed
 - Demolished

Measurement

Switch Basemap

Resource ID	Name	Address	City	County	Eligibility	Nat. Register Status	Yr Built
-------------	------	---------	------	--------	-------------	----------------------	----------

Karen Quigley
Executive Director
Oregon Legislative Commission on Indian Services
Karen.Quigley@state.or.us
(503)986-1068

Karen,

The City of Umatilla is preparing to use federal Clean Water State Revolving Funds (SRF) through the Oregon Department of Environmental Quality to build an approximately 3 mile wastewater reuse pipeline at the following site:

Project name: City of Umatilla Phase 1 Reuse
Property address: 82800 Beach Access Rd. Umatilla, OR (currently no exact on proposed pipeline)
County: Umatilla
Nearest city: Umatilla

The City of Umatilla is constructing an industrial wastewater reuse pipeline to free hydraulic capacity of the City's Domestic wastewater treatment plant and provide water for use by the West Extension Irrigation District.

In accordance with state law, I would like to notify the appropriate tribal governments of DEQ's proposed action and request their review of this project from a cultural resources perspective. Attached is a description of the project and maps showing the project location. Could you please let me know which tribal governments to contact for a cultural resources review? If you need additional information about this site, its history or City of Umatilla proposed work, please let me know.

I am requesting this information as directed by Oregon DEQ as part of an application for the SRF program, which is funded by the EPA and subject to requirements of the National Historic Preservation Act. If you would like more information about the SRF program and/or federal cultural resource protection requirements related to the SRF, please contact [Shanna Hamilton, 541-278-8681] or David Carcia, EPA CWSRF Coordinator at (206) 553-0890. Thank you for your assistance.

Signed,



Russell Pelleberg, City Manager (or other appropriate title)
City of Umatilla
700 Sixth St. Umatilla, Oregon 97882
Telephone: 541-922-3226
Russell@umatilla-city.org



Nick Ducote <ducoteconsulting@gmail.com>

SERP for City of Umatilla Reuse Project

6 messages

Nick Ducote <ducoteconsulting@gmail.com>
To: karen.quigley@state.or.us

Mon, Apr 11, 2016 at 9:31 AM

Karen, attached is the SERP template letter signed by Umatilla City Manager Russ Pelleberg. Please let me know if you need any additional information.

Karen Quigley
Executive Director
Oregon Legislative Commission on Indian Services
Karen.Quigley@state.or.us
(503)986-1068

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Signed,

Russell Pelleberg, City Manager (or other appropriate title)
City of Umatilla
700 Sixth St. Umatilla, Oregon 97882
Telephone: 541-922-3226
Russell@umatilla-city.org

Thank you,

—
-Nicholas Ducote
Ducote Consulting LLC

Ducote
consulting, llc

Mail Delivery Subsystem <mailer-daemon@googlemail.com>
To: ducoteconsulting@gmail.com

Mon, Apr 11, 2016 at 9:31 AM

Delivery to the following recipient failed permanently:

karen.quigley@state.or.us

Technical details of permanent failure:

Google tried to deliver your message, but it was rejected by the server for the recipient domain [state.or.us](mailto:karen.quigley@state.or.us) by smtp1.state.or.us. [159.121.105.150].

The error that the other server returned was:

550 5.1.1 <karen.quigley@state.or.us>... User unknown

----- Original message -----

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Mon, 11 Apr 2016 09:31:01 -0700 (PDT)

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Date: Mon, 11 Apr 2016 09:31:01 -0700

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Subject: SERP for City of Umatilla Reuse Project

From: Nick Ducote <ducoteconsulting@gmail.com>

To: karen.quigley@state.or.us

Content-Type: multipart/related; boundary=001a11c36fa2ff075305303811bc

Karen, attached is the SERP template letter signed by Umatilla City Manager Russ Pelleberg. Please let me know if you need any additional information.

[image: Inline image 1]

Thank you,

-
-Nicholas Ducote
Ducote Consulting LLC

Nick Ducote <ducoteconsulting@gmail.com>
To: karen.m.quigley@state.or.us

Mon, Apr 11, 2016 at 9:32 AM

Karen, attached is the SERP template letter signed by Umatilla City Manager Russ Pelleberg. Please let me know if you need any additional information.

Karen Quigley
Executive Director
Oregon Legislative Commission on Indian Services
karen.quigley@state.or.us
(503)986-1068

Karen,

The City of Umatilla is preparing to use federal Clean Water State Revolving Funds (SRF) through the Oregon Department of Environmental Quality to build an approximately 3 mile wastewater reuse pipeline at the following site:

Project name: City of Umatilla Phase 1 Reuse
Property address: 82800 Beach Access Rd. Umatilla, OR (currently no exact on proposed pipeline)
County: Umatilla
Nearest city: Umatilla

The City of Umatilla is constructing an industrial wastewater reuse pipeline to free hydraulic capacity of the City's Domestic wastewater treatment plant and provide water for use by the West Extension Irrigation District.

In accordance with state law, I would like to notify the appropriate tribal governments of DEQ's proposed action and request their review of this project from a cultural resources perspective. Attached is a description of the project and maps showing the project location. Could you please let me know which tribal governments to contact for a cultural resources review? If you need additional information about this site, its history or City of Umatilla proposed work, please let me know.

I am requesting this information as directed by Oregon DEQ as part of an application for the SRF program, which is funded by the EPA and subject to requirements of the National Historic Preservation Act. If you would like more information about the SRF program and/or federal cultural resource protection requirements related to the SRF, please contact [Shanna Hamilton, 541-278-8681] or David Garcia, EPA CWSRF Coordinator at (206) 553-0890. Thank you for your assistance.

Signed,



Russell Pelleberg, City Manager (or other appropriate title)
City of Umatilla
700 Sixth St. Umatilla, Oregon 97882
Telephone: 541-922-3226
Russell@umatilla-city.org

Thank you,

--

-Nicholas Ducote
Ducote Consulting LLC

Ducote
consulting, llc

Quigley Karen M <karen.m.quigley@state.or.us>
To: "ducoteconsulting@gmail.com" <ducoteconsulting@gmail.com>

Mon, Apr 11, 2016 at 10:47 AM

Hello Nick,

There are two Oregon tribal governments that should be notified for this project: Confederated Tribes of Warm Springs and Confederated Tribes of Umatilla. Because of the proximity to the Columbia River and the fact that this project is using federal funds, you most likely also will need to contact the Yakama Indian Nation (WA) and the Nez Perce Tribe (ID).

Thank you.

Sincerely,
Karen

Karen Quigley, Executive Director

karen.m.quigley@state.or.us



Legislative Commission on Indian Services

From: Nick Ducote [mailto:ducoteconsulting@gmail.com]

Sent: Monday, April 11, 2016 9:33 AM

To: Quigley Karen M <QuigleK@leg.state.or.us>
Subject: Fwd: SERP for City of Umatilla Reuse Project

Karen, attached is the SERP template letter signed by Umatilla City Manager Russ Pelleberg. Please let me know if you need any additional information.

Karen Quigley
Executive Director
Oregon Legislative Commission on Indian Services
Karen.Quigley@olc.leg.state.or.us
(503)986-1068

Karen,

The City of Umatilla is preparing to use federal Clean Water State Revolving Funds (SRF) through the Oregon Department of Environmental Quality to build an approximately 3 mile wastewater reuse pipeline at the following site:

Project name: City of Umatilla Phase 1 Reuse
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In accordance with state law, I would like to notify the appropriate tribal governments of DEQ's proposed action and request their review of this project from a cultural resources perspective. Attached is a description of the project and maps showing the project location. Could you please let me know which tribal governments to contact for a cultural resources review? If you need additional information about this site, its history or City of Umatilla proposed work, please let me know.

I am requesting this information as directed by Oregon DEQ as part of an application for the SRF program, which is funded by the EPA and subject to requirements of the National Historic Preservation Act. If you would like more information about the SRF program and/or federal cultural resource protection requirements related to the SRF, please contact [Shanna Hamilton, 541-278-8661] or David Garcia, EPA CWSRF Coordinator at (206) 553-0890. Thank you for your assistance.

Signed,



Russell Pelleberg, City Manager (or other appropriate title)
City of Umatilla
700 South St, Umatilla, Oregon 97882
Telephone: 541-922-3226
Russell@umatilla-city.org

--
-Nicholas Ducote

Ducote Consulting LLC

Ducote
consulting, llc

Nick Ducote <ducoteconsulting@gmail.com>
To: Quigley Karen M <karen.m.quigley@state.or.us>

Mon, Apr 11, 2016 at 10:50 AM

Karen, thank you for the rapid reply. Is there a specific point person for each tribe I should reach out to?

Also, is there a protocol or template for the SERP communications with the tribes?

-Nick Ducote

On Apr 11, 2016 10:47 AM, "Quigley Karen M" <karen.m.quigley@state.or.us> wrote:

Hello Nick,

There are two Oregon tribal governments that should be notified for this project: Confederated Tribes of Warm Springs and Confederated Tribes of Umatilla. Because of the proximity to the Columbia River and the fact that this project is using federal funds, you most likely also will need to contact the Yakama Indian Nation (WA) and the Nez Perce Tribe (ID).

Thank you.

Sincerely,
Karen

Karen Quigley, Executive Director

karen.m.quigley@state.or.us



Legislative Commission on Indian Services

From: Nick Ducote [mailto:ducoteconsulting@gmail.com]

Sent: Monday, April 11, 2016 9:33 AM

To: Quigley Karen M <QuigleK@leg.state.or.us>

Subject: Fwd: SERP for City of Umatilla Reuse Project

Karen, attached is the SERP template letter signed by Umatilla City Manager Russ Pelleberg. Please let me know if you need any additional information.

--
-Nicholas Ducote

Ducote Consulting LLC

Ducote
consulting, llc

Quigley Karen M <karen.m.quigley@state.or.us>
To: Nick Ducote <ducoteconsulting@gmail.com>

Mon, Apr 11, 2016 at 10:58 AM

Hi Nick,

I deal with the Oregon Tribes, so I can provide that contact info:

Warm Springs: Kathleen.Sloan@ctwsbnr.org, Cultural Resources/Geovision

And Bobby Brunoe, Robert.brunoe@ctwsbnr.org, Natural resources Manager

And for Umatilla:

TearaFarrowferman@ctuir.org, Cultural Resources Program Manager

For the out of state Tribes, I suggest you contact John Pouley at SHPO: john.pouley@oregon.gov

(or look at the tribal governments' contacts on their respective websites).

Thanks,

Karen

Karen Quigley, Executive Director

karen.m.quigley@state.or.us



Legislative Commission on Indian Services



Nick Ducote <ducoteconsulting@gmail.com>

City of Umatilla Reuse Project SERP

1 message

Nick Ducote <ducoteconsulting@gmail.com>

Fri, Apr 22, 2016 at 7:55 AM

To: Kathleen.Sloan@ctwsbnr.org, Robert.brunoe@ctwsbnr.org

Kathleen, Robert, or appropriate staff,

I am contacting you because the City of Umatilla is pursuing federal funding (Clean Water State Revolving Fund) for construction of an industrial wastewater discharge pipeline. Through Oregon's State Environmental Review Process, I contacted Karen Quigley of Oregon's Legislative Commission on Indian Services who identified your tribe as necessary to notify.

I have attached a map of the proposed alignment for the ~2.5 mile pipeline. Flows will originate from the Port of Umatilla, specifically from the VADATA center at the Port, and will be discharged into the US Bureau of Reclamation Phase 1 Exchange Canal for use throughout the West Extension Irrigation District. The City is in discussions with USBR and DEQ regarding the wastewater discharge.

With the exception of two segments, the pipeline will be routed through existing City right-of-ways and infrastructure corridors. Those segments include the run between Beach Access Rd. and Bud Draper Rd. along a dirt path and the run from Riverside Ave. to the Exchange Canal. The Beach Access-Draper segment will route between two active businesses at the Port along a dirt path. The Riverside-Exchange Canal segment routes through USBR property at the McNary Dam and near the Union-Pacific Railroad. The pipeline will discharge into the USBR Phase 1 Canal ~0.42 miles (2,200 ft.) downstream from the McNary Pool intake.

Please let me know if the map and information I have attached is sufficient to review the project or if you need further explanation. I am available via email or my cell: (541) 805-5543

Thank you,

—

-Nicholas Ducote
Ducote Consulting LLC

Ducote
consulting, llc

 **Vicinity_Map.pdf**
1056K



Nick Ducote <ducoteconsulting@gmail.com>

City of Umatilla Reuse SERP

2 messages

Nick Ducote <ducoteconsulting@gmail.com>

Mon, Apr 25, 2016 at 8:10 AM

To: veras@nezperce.org

Vera, or appropriate staff,

I am contacting you because the City of Umatilla is pursuing federal funding (Clean Water State Revolving Fund) for construction of an industrial wastewater discharge pipeline. Through Oregon's State Environmental Review Process, I contacted Karen Quigley of Oregon's Legislative Commission on Indian Services who identified your tribe as necessary to notify.

I have attached a map of the proposed alignment for the ~2.5 mile pipeline. Flows will originate from the Port of Umatilla, specifically from the VADATA center at the Port, and will be discharged into the US Bureau of Reclamation Phase 1 Exchange Canal for use throughout the West Extension Irrigation District. The City is in discussions with USBR and DEQ regarding the wastewater discharge.

With the exception of two segments, the pipeline will be routed through existing City right-of-ways and infrastructure corridors. Those segments include the run between Beach Access Rd. and Bud Draper Rd. along a dirt path and the run from Riverside Ave. to the Exchange Canal. The Beach Access-Draper segment will route between two active businesses at the Port along a dirt path. The Riverside-Exchange Canal segment routes through USBR property at the McNary Dam and near the Union-Pacific Railroad. The pipeline will discharge into the USBR Phase 1 Canal ~0.42 miles (2,200 ft.) downstream from the McNary Pool intake.

Please let me know if the map and information I have attached is sufficient to review the project or if you need further explanation. I am available via email or my cell: [\(541\) 805-5543](tel:5418055543)

Thank you,

--

-Nicholas Ducote
Ducote Consulting LLC

Ducote
consulting, llc

 **Vicinity_Map.pdf**
1056K

Nick Ducote <ducoteconsulting@gmail.com>

Mon, Apr 25, 2016 at 8:13 AM

To: kate@yakama.com, johnson@yakama.com

Kate, Johnson, or appropriate staff,

I am contacting you because the City of Umatilla is pursuing federal funding (Clean Water State Revolving Fund) for construction of an industrial wastewater discharge pipeline. Through Oregon's State Environmental Review Process, I contacted Karen Quigley of Oregon's Legislative Commission on Indian Services who identified your tribe as necessary to notify.

I have attached a map of the proposed alignment for the ~2.5 mile pipeline. Flows will originate from the Port of Umatilla, specifically from the VADATA center at the Port, and will be discharged into the US Bureau of Reclamation Phase 1 Exchange Canal for use throughout the West Extension Irrigation District. The City is in discussions with USBR and DEQ regarding the wastewater discharge.

With the exception of two segments, the pipeline will be routed through existing City right-of-ways and infrastructure corridors. Those segments include the run between Beach Access Rd. and Bud Draper Rd. along a dirt path and the run from Riverside Ave. to the Exchange Canal. The Beach Access-Draper segment will route between two active businesses at the Port along a dirt path. The Riverside-Exchange Canal segment routes through USBR property at the McNary Dam and near the Union-Pacific Railroad. The pipeline will discharge into the USBR Phase 1 Canal ~0.42 miles (2,200 ft.) downstream from the McNary Pool intake.

Please let me know if the map and information I have attached is sufficient to review the project or if you need further explanation. I am available via email or my cell: [\(541\) 805-5543](tel:5418055543)

Thank you,

—

-Nicholas Ducote
Ducote Consulting LLC

Ducote
consulting, llc



Nick Ducote <ducoteconsulting@gmail.com>

City of Umatilla Reuse SERP

1 message

Nick Ducote <ducoteconsulting@gmail.com>

Fri, Apr 22, 2016 at 7:56 AM

To: TearaFarrowferman@ctuir.org

Teara, or appropriate CTUIR staff,

I am contacting you because the City of Umatilla is pursuing federal funding (Clean Water State Revolving Fund) for construction of an industrial wastewater discharge pipeline. The City has been working with CTUIR throughout the design of the project, mostly through Ryan Degroff. Through Oregon's State Environmental Review Process, I contacted Karen Quigley of Oregon's Legislative Commission on Indian Services who identified your tribe as necessary to notify.

I have attached a map of the proposed alignment for the ~2.5 mile pipeline. Flows will originate from the Port of Umatilla, specifically from the VADATA center at the Port, and will be discharged into the US Bureau of Reclamation Phase 1 Exchange Canal for use throughout the West Extension Irrigation District. The City is in discussions with USBR and DEQ regarding the wastewater discharge.

With the exception of two segments, the pipeline will be routed through existing City right-of-ways and infrastructure corridors. Those segments include the run between Beach Access Rd. and Bud Draper Rd. along a dirt path and the run from Riverside Ave. to the Exchange Canal. The Beach Access-Draper segment will route between two active businesses at the Port along a dirt path. The Riverside-Exchange Canal segment routes through USBR property at the McNary Dam and near the Union-Pacific Railroad. The pipeline will discharge into the USBR Phase 1 Canal ~0.42 miles (2,200 ft.) downstream from the McNary Pool intake.

Please let me know if the map and information I have attached is sufficient to review the project or if you need further explanation. I am available via email or my cell: (541) 805-5543

Thank you,

—

-Nicholas Ducote
Ducote Consulting LLC

Ducote
consulting, llc

 **Vicinity_Map.pdf**
1056K

Exhibit C

3.2 Wetlands



Nick Ducote <ducoteconsulting@gmail.com>

City of Umatilla SERP

STEVENSON Christine <christine.stevenson@state.or.us>

Tue, May 3, 2016 at 8:13 AM

To: Nick Ducote <ducoteconsulting@gmail.com>

Nick,

I have reviewed the information we have on this area and I am not seeing any jurisdictional wetlands or waters within the project boundary. Please let me know if you need any other information.

Chris

From: Nick Ducote [mailto:ducoteconsulting@gmail.com]**Sent:** Tuesday, April 05, 2016 1:54 PM**To:** STEVENSON Christine**Subject:** Re: City of Umatilla SERP

Chris,

I am conducting the State Environmental Review Process for a wastewater reuse project in the City of Umatilla. As a cross-cutting authority, the City needs to make contact with your agency and determine if there are any impacts to relevant resources within the project footprint. I have attached the proposed alignment for the ~3 mile pipeline. Flows will originate from the Port of Umatilla, specifically for now from the VADATA center at the Port, and be discharged in the USBR Phase 1 Exchange Canal for use throughout the West Extension Irrigation District. The City is in discussions with USBR and DEQ regarding the wastewater discharge.

Where the project is near the wetlands (in the Port area), the construction would begin under Beach Access Road and the pipeline would be routed west from there.

Please let me know if the map I have attached is insufficient to begin this process or if you need further explanation of the project. I am available via email or my cell: [541-805-5543](tel:541-805-5543)

Thank you,

Nick Ducote

On Mon, Apr 4, 2016 at 12:58 PM, Nick Ducote <ducoteconsulting@gmail.com> wrote:

Chris, I just left a voicemail on your phone and scrambled a digit on my phone number - my apologies. The correct number is: [541-805-5543](tel:541-805-5543)

I am trying to find out who to contact with a project map to conduct the initial review to determine any resource impacts. It's for the City of Umatilla in Umatilla County. I conducted a desktop review with federal and state maps in GIS, but want to know if there's an official contact and review that needs to take place. In this case, the City is pursuing CWSRF funding.

Thank you,

--

-Nicholas Ducote

Ducote Consulting LLC

[Redacted]

--

-Nicholas Ducote











Ducote Consulting LLC

[Redacted]

DRAFT REVISION DATE 3/23/16

FIGURE 1
PROPOSED PROJECT VICINITY MAP

LEGEND

-  USBR Exchange Canal
-  Potential Industrial Service Area
-  Proposed Alignment
-  Federal_Owned_Land
-  Township Range (1:500K)
-  Sections
-  Parcels
-  Wetland_OR
-  City Limits
-  UGB

Revision Date: 3/23/2016



FIGURE #1



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, Oregon Geospatial Enterprise Office

Path: \\gfiles\public\F:\JUB\Umatilla

Exhibit D

3.3 Floodplains



FEMA NFHL



Google earth





Nick Ducote <ducoteconsulting@gmail.com>

City of Umatilla Reuse SERP

2 messages

Nick Ducote <ducoteconsulting@gmail.com>

Mon, May 16, 2016 at 11:00 AM

To: planning@umatillacounty.net

Umatilla County Planning,

I am conducting the State Environmental Review Process for a wastewater reuse project in the City of Umatilla. As a cross-cutting authority, the City needs to make contact with your agency and determine if:

1. Is there an Exclusive Farm Use zone in the project area?
2. Is the project area exclusively on previously disturbed land?
3. Is there a 100 or 500-year floodplain in the project area?

I have attached the proposed alignment for the ~3 mile pipeline in both a PDF map and a shapefile. Flows will originate from the Port of Umatilla, specifically for now from the VADATA center at the Port, and be discharged in the USBR Phase 1 Exchange Canal for use throughout the West Extension Irrigation District.

Please let me know if the map I have attached is insufficient to begin this process or if you need further explanation of the project. I am available via email or my cell: 541-805-5543

-

-Nicholas Ducote
Ducote Consulting LLC

Ducote
consulting, llc

2 attachments

 **PipeShapefile.zip**
2K

 **Vicinity_Map.pdf**
1056K

Carol Johnson <carol.johnson@umatillacounty.net>

Tue, May 17, 2016 at 12:41 PM

To: ducoteconsulting@gmail.com

Cc: Brandon Seitz <brandon.seitz@umatillacounty.net>, Tamra Mabbott <tamra.mabbott@umatillacounty.net>, Julie

Alford <julie.alford@umatillacounty.net>, Robert Waldher <robert.waldher@umatillacounty.net>

May 17, 2016

Good afternoon Nick,

Here are responses to the questions posed concerning a future water reuse project in the vicinity of the City of Umatilla.

1. Although there is F-1, Exclusive Farm Use, zoning (County 1972 Zoning Code) applied to the area where the project begins this zoning is no longer under Statewide Planning Goal 3 due it's inclusion in the City's Urban Growth Boundary (UGB).
2. An on-site visit or contact with the underlying property owner(s) may provide information on whether the areas proposed for the pipeline have been previously disturbed. Umatilla County would encourage an on-the-ground survey for this information.
3. The area appears to be in Zone D, "Areas in which flood hazards are undetermined, but possible."

The proposed pipeline is shown crossing not only areas zoned F-1, Exclusive Farm Use, but also two additional zones, the City of Umatilla's M-1, Industrial Zone, and the County's M-2, Heavy Industrial Zone. A color coded zoning map of the area is attached. A review of permitted uses in the County's F-1 and M-2 zoning reveals that a utility facility is an "outright" use in the County F-1 Zone and a Conditional Use Permit in the County M-2 Zone. Utility Facilities allowed within the City's M-1 Zone would be better discussed with Bill Searles, Planner for the City of Umatilla. Bill's contact information is 541-922-3226. Under the City-County Joint Management Agreement the County is authorized to process land use permits for areas located in the City of Umatilla's UGB. Therefore, the County, through coordination with the City, would be the lead for processing a land use permit in the UGB area.

Please let me know if you have additional questions or if I can be of further assistance.

Best Regards,
Carol Johnson

On Mon, May 16, 2016 at 4:00 PM, Tamra Mabbott <tamra.mabbott@umatillacounty.net> wrote:

Carol - please reply to this request. Feel free to ask Brandon or Julie to help with maps if necessary. Appreciate a copy on your reply.

Thank you.

[Quoted text hidden]

-
-

Tamra Mabbott, Planning Director

Umatilla County Department of Land Use Planning

216 SE 4th ST | Pendleton, OR 97801

Phone: 541-278-6246 | Fax: 541-278-5480

<http://www.umatillacounty.net/planning> - Visit our website for copies of planning documents, permit applications and other helpful information.

Please Be Aware - Documents such as emails, letters, maps, reports, etc. sent from or received by the Umatilla County Department of Land Use Planning are subject to Oregon Public Records law and are NOT CONFIDENTIAL. All such documents are available to the public upon request; costs for copies may be collected. This includes materials that may contain sensitive data or other information, and Umatilla County will not be held liable for its distribution.



Carol Johnson, *Senior Planner*

Umatilla County Department of Land Use Planning

216 SE 4th ST, Pendleton, OR 97801

Phone: 541-278-6301 | Fax: 541-278-5480

<http://www.umatillacounty.net/planning>

Visit the County's website for application forms, planning documents, and other helpful information.

Please Be Aware - Documents such as emails, letters, maps, reports, etc. sent from or received by the Umatilla County Department of Land Use Planning are subject to Oregon Public Records law and are NOT CONFIDENTIAL. All such documents are available to the public upon request; costs for copies may be collected. This includes materials that may contain sensitive data or other information, and Umatilla County will not be held liable for its distribution.



UmatillaZoning_PortArea_2016 (1).pdf

203K

Exhibit E

3.4 Farmland Protection Policy



Nick Ducote <ducoteconsulting@gmail.com>

SERP for City of Umatilla Project

5 messages

Nick Ducote <ducoteconsulting@gmail.com>

Mon, Apr 4, 2016 at 9:32 AM

To: ron.raney@or.usda.gov

Ron Raney, or relevant NRCS personnel,

I am conducting the State Environmental Review Process for a wastewater reuse project in the City of Umatilla. As a cross-cutting federal authority, the City needs to make contact with your agency and determine if there are any impacts to relevant resources within the project footprint. At this point, I have conducted a desktop review of agency data and maps and put together some cursory lists. Is there an estimated timeframe for the agency to conduct their review?

I have attached the proposed alignment for the ~3 mile pipeline. Flows will originate from the Port of Umatilla, specifically for now from the VADATA center at the Port, and be discharged in the USBR Phase 1 Exchange Canal for use throughout the West Extension Irrigation District. The City is in discussions with USBR and DEQ regarding the wastewater discharge.

Please let me know if the map I have attached is insufficient to begin this process or if you need further explanation of the project. I am available via email or my cell: [541-805-5543](tel:541-805-5543)

—
-Nicholas Ducote
Ducote Consulting LLC

Ducote
consulting, llc

 **Vicinity_Map.pdf**
1056K

Nick Ducote <ducoteconsulting@gmail.com>

Thu, Apr 14, 2016 at 10:54 AM

To: ron.raney@or.usda.gov

Ron, I wanted to follow up on my initial request regarding the City of Umatilla Reuse Pipeline SERP. You are listed as the contact for Important Farmland - are you the appropriate contact to clear this portion of the SERP? If not, feel free to pass my email along.

Thank you,
Nicholas Ducote
[Quoted text hidden]

Raney, Ron - NRCS, Portland, OR <ron.raney@or.usda.gov>

Thu, Apr 14, 2016 at 10:55 AM

To: Nick Ducote <ducoteconsulting@gmail.com>

Nick Ducote, (I was just writing you)

NRCS has responsibility to provide soils technical information and assistance with the Farm Protection Policy Act (FPPA). This federal legislation concerns permanent conversions of potential farmlands.

I have a few questions to start and clarify our role in this project.

- Is there federal funding in this project?
- It appears that the only development is a pipeline; is this on road right-of-way or will it restrict future uses over the pipeline?

If there are conversions, an AD-1006 should be completed that would include a detailed footprint including acres of the project area.

If the pipeline route does not cause federally funded conversions of farmlands or potential farmlands then you would not need a FPPA evaluation. Please call me and we can talk through this.

Ron Raney

Soil Quality Specialist

StateSoils/Technology Staff

USDA, Natural Resources Conservation Service

1201 NE Lloyd Blvd, Suite 900

Portland, OR 97232

[503-414-3263](tel:503-414-3263)

Don't treat your soil like dirt.

From: Nick Ducote [mailto:ducoteconsulting@gmail.com]

Sent: Monday, April 04, 2016 9:32 AM

To: Raney, Ron - NRCS, Portland, OR <ron.raney@or.usda.gov>

Subject: SERP for City of Umatilla Project

[Quoted text hidden]

This electronic message contains information generated by the USDA solely for the intended recipients. Any unauthorized interception of this message or the use or disclosure of the information it contains may violate the law and subject the violator to civil or criminal penalties. If you believe you have received this message in error, please notify the sender and delete the email immediately.

Nick Ducote <ducoteconsulting@gmail.com>
To: "Raney, Ron - NRCS, Portland, OR" <ron.raney@or.usda.gov>

Thu, Apr 21, 2016 at 8:24 AM

Ron, thanks for speaking with me on the phone and ironing out the details here. Impact on NRCS resources is highly unlikely given the nature of the project, but having some sort of formal statement of that would be helpful. You mentioned that additional details would be helpful. I have attached a longer description, the vicinity map, and a shape file for GIS.

Thanks,
Nick Ducote

Project Description:

The City of Umatilla plans to construct approximately 2.5 miles of waterline to accommodate industrial wastewater from the VADATA Inc. data center at the Port of Umatilla to the West Extension Irrigation District (WEID) via the USBR Phase 1 Exchange Canal. The project is needed to alleviate capacity bottleneck in City of Umatilla's WWTP, which currently processes Class A industrial wastewater, and to provide additional water resources for WEID without further taxing surface or ground-water in order to irrigate the same acreage. The WWTP has a capacity of 0.8 MGD and max daily flows exceeded that capacity in Summer 2013. VADATA centers at the Port are water-intensive and, as more VADATA centers come online in the near future with a flow of 0.25 MGD each, the WWTP will need an immediate \$20,000,000-30,000,000 upgrade without a disposal alternative. By diverting the discharge to WEID as reuse, that bottleneck is alleviated, which enables substantial growth and development while conserving water and reusing wastewater.

When the project is completed, the industrial wastewater from the VADATA center will be immediately discharged into the new pipeline and into the WEID via the USBR Exchange Canal. The volume of discharge will range from 54.3-325.8 million gallons and will meet 100% of irrigation needs on 41.6-249.9 acres. The wide range accounts for an on-site Reverse Osmosis filter used by VADATA - zero passes means 325.8 MG and six passes results in 54.3 MG of reuse water. As VADATA, industry at the Port, and the CTUIR's Wanapa Industrial Site continue to expand, recycled water volumes will only.

With the exception of two segments, the pipeline will be routed through existing City right-of-ways and infrastructure corridors. Those segments include the run between Beach Access Rd. and Bud Draper Rd. along a dirt path and the run from Riverside Ave. to the Exchange Cana. The Beach Access-Draper segment will route between two active businesses at the Port along a dirt path. The Riverside-Exchange Canal segment routes through USBR property at the McNary Dam and near the Union-Pacific Railroad. The pipeline will discharge into the US Bureau of Reclamation Phase 1 Canal ~0.42 miles (2,200 ft.) downstream from the McNary Pool intake.

[Quoted text hidden]

2 attachments **PipeShapefile2.rar**
2K **Vicinity_Map.pdf**
1056K

Raney, Ron - NRCS, Portland, OR <ron.raney@or.usda.gov>
To: Nick Ducote <ducoteconsulting@gmail.com>
Cc: "Winter, Jericho - NRCS, Oregon City, OR" <jericho.winter@or.usda.gov>

Thu, Apr 21, 2016 at 10:10 AM

Nick Ducote,

After our discussion and reviewing attached information, this project will not permanently convert any lands subject to Farm Protection Policy Act. An evaluation and an AD-1006 is not necessary.

Thank you,

Ron Raney

Soil Quality Specialist

StateSoils/Technology Staff

USDA, Natural Resources Conservation Service

1201 NE Lloyd Blvd, Suite 900

Portland, OR 97232

[503-414-3263](tel:503-414-3263)

Don't treat your soil like dirt.

From: Nick Ducote [mailto:ducoteconsulting@gmail.com]
Sent: Thursday, April 21, 2016 8:24 AM
To: Raney, Ron - NRCS, Portland, OR <ron.raney@or.usda.gov>
Subject: Re: SERP for City of Umatilla Project

[Quoted text hidden]

Exhibit F

3.7 Biological Resources

From: Nicholas Ducote, Ducote Consulting LLC
To: Rob Pederson, EPA
Subject: Initial Review of ESA/EFH for City of Umatilla Reuse SERP
Date: April 14, 2016

Project Description:

The City of Umatilla plans to construct approximately 3 miles of waterline to accommodate industrial wastewater from the VADATA Inc. data center at the Port of Umatilla to the West Extension Irrigation District (WEID) via the USBR Phase 1 Exchange Canal.

The need for the project is to alleviate capacity bottleneck in City of Umatilla's WWTP, which currently processes Class A industrial wastewater, and to provide additional water resources for WEID without further taxing surface or ground-water in order to irrigate the same acreage. The WWTP has a capacity of 0.8 MGD and max daily flows exceeded that capacity in Summer 2013. VADATA centers at the Port are water-intensive and, as more VADATA centers come online in the near future with a flow of 0.25 MGD each, the WWTP will need an immediate \$20,000,000-30,000,000 upgrade without a reuse alternative. By diverting the discharge to WEID as reuse, that bottleneck is alleviated, which enables substantial growth and development while conserving water and reusing wastewater.

When the project is completed, the industrial wastewater from the VADATA center will be immediately discharged into the new water line and into the WEID via the USBR Exchange Pump. The volume of discharge will range from 54.3-325.8 million gallons and will meet 100% of irrigation needs on 41.6-249.9 acres. The wide range accounts for an on-site Reverse Osmosis filter used by VADATA - zero passes means 325.8 MG and six passes results in 54.3 MG of reuse water. As VADATA, industry at the Port, and the Wanapa Industrial Site continue to expand, recycled water volumes will only grow over the next decades.

With the exception of two segments, the pipeline will be routed through existing City right-of-ways and infrastructure corridors. Those segments include the run between Beach Access Rd. and Bud Draper Rd. and the run from Riverside Ave. to the Exchange Canal. The Beach Access-Draper segment will route between two active businesses at the Port along a dirt path. The Riverside-Exchange Canal segment routes through USBR property at the McNary Dam and near the Union-Pacific Railroad. The pipeline will discharge into the US Bureau of Reclamation Phase 1 Canal ~0.42 miles (2,200 ft.) downstream from the McNary Pool intake.

Biological Evaluation

USFWS Online Critical Habitat for Threatened and Endangered Species mapping tool indicated Critical Habitat for three fish species – Chinook, Steelhead, and Bull Trout, near the project in the Columbia River and Umatilla River. NOAA Fisheries Essential Fish Habitat Maps identified three types of Salmon EFH near the project – West Coast Salmon, West Coast Coho Salmon, and West Coast Chinook Salmon.

The proposed pipeline will have no effect on either the Umatilla or Columbia Rivers or the biological resources of those waterways. The project will have no effect on ESA resources in the Columbia or

Umatilla Rivers. The USBR Canal travels underneath the Umatilla River in route to the West Extension Irrigation District. There is no discharge into fish-bearing waterways.

1. Steelhead (*Oncorhynchus mykiss*)
 - Steelhead is federally listed as Threatened and its Critical Habitat includes the Columbia River and Umatilla River.
2. Bull Trout (*Salvelinus confluentus*)
 - Bull Trout is federally listed as Threatened and there is Critical Habitat in the Columbia River and Umatilla River.
3. West Coast Chinook Salmon
 - Chinook Salmon is federally listed as Endangered and there is Critical Habitat in the Columbia River.
4. West Coast Salmon
 - There is Essential Fish Habitat for West Coast Salmon species in the Columbia River.
5. West Coast Coho Salmon
 - There is Essential Fish Habitat for West Coast Coho Salmon species in the Columbia River.

USFWS IPaC tool indicated an additional two (2) mammal species protected by the ESA with habitat near the project area. The project will have no effect on the Gray Wolf and will likely have no effect on the Washington Ground Squirrel because the project area would make for poor habitat for the squirrels.

6. Washington Ground Squirrel (*Urocitellus washingtoni*)
 - Became a Candidate Species in 1999. No Critical Habitat for the species currently. ODFW Potential range includes much of Umatilla County and would include the proposed project area.
 - While the ODFW Potential Range includes most of the Columbia Basin of north-central Oregon. This ground squirrel occupies shrub-steppe habitat of the Columbia Basin ecosystem (USFWS 2004). It is most abundant in areas of high grass cover, on deep soils with low clay content (Betts 1990) and high silt content (Greene 1999).
 - Populations have been observed and documented in the Boardman Bombing Range, Boardman Conservation Area, with more recent surveys near Stateline and Leaning Juniper (Morgan and Nugent 1999, Marr 2004).
 - NRCS Web Soil Survey data indicates that soil in the project area is composed of: 94A (Starbuck-Rock outcrop complex, 1 to 5 percent slopes), 93B (Starbuck very fine sandy loam, 2 to 20 percent slopes), 1B (Adkins fine sandy loam, 0 to 5 percent slopes), and 75E (Quincy loamy fine sand, 5 to 25 percent slopes) soils.
 - Brush patterns in the project area are sparse and inconsistent. Given the Squirrels' preference for grassland and shrub-steppe, the project area would give virtually no cover for the species.
 - Soils, brush patterns, and existing development around the project area make for exceptionally poor habitat for the Washington Ground Squirrel.
7. Gray Wolf

- Gray wolves in Oregon were delisted by ODFW in November 2015, but wolves in Eastern Oregon (east of Highways 395-78-95) remain listed by the ESA. Despite delisting, Oregon's Wolf Plan still protects the species.
- The project will take place near the western border of the Eastern Wolf Management Zone. There are no Areas of Known Wolf Activity near the project area. Some AKWAs near the project area include the Umatilla River Pack, which travels throughout Umatilla County and the Umatilla National Forest southeast of Milton-Freewater, which is over fifty (50) miles from Umatilla. The Walla Walla and Meacham packs also traverse the Umatilla National Forest and surrounding isolated mountain range, but there are no AKWA near the project.
- The project will have no effect on Gray Wolves.

Migratory Birds – There are seventeen (17) species of migratory birds identified through IPaC. None are listed under the ESA, but all are birds of conservation concern with the highest priority of conservation. All thirteen species below are also protected under the Migratory Bird Treaty Act. Breeding season may be avoided entirely by project construction as the deadline for completion is May 2017 and the Preliminary Engineering Report and Environmental Review will not be completed until Summer 2016.

The species are:

- Bald Eagle - (year-round) Bald eagles were classified as endangered in 1967, reclassified as threatened in 1995, and delisted in 2007. Critical habitat is not designated. Eagles are also protected by the Bald and Golden Eagle Protection Act and the Lacey Act. Generally, bald eagle habitat occurs in undeveloped areas with little human activity and the proposed pipeline will be constructed through the Port of Umatilla and the City of Umatilla which is a highly developed urban area. There are no tall trees in the project area, only brush and shrubs.
- Brewer's Sparrow (*Spizella breweri*)
- Calliope Hummingbird (*Stellula calliope*)
- Eared Grebe (*Podiceps nigricollis*)
- Ferruginous Hawk (*Buteo regalis*)
- Flammulated Owl (*Otus flammeolus*)
- Fox Sparrow (*Passerella iliaca*)
- Loggerhead Shrike (*Lanius ludovicianus*)
- Long-billed Curlew (*Numenius americanus*)
- Peregrine Falcon (*Falco peregrinus*)
- Rufous Hummingbird (*Selasphorus rufus*)
- Sage Thrasher (*Oreoscoptes montanus*)
- Short-eared Owl (*Asio flammeus*)
- Swainson's Hawk (*Buteo swainsoni*)
- Western Grebe (*Aechmophorus occidentalis*)
- White Headed Woodpecker (*Leuconotopicus albolarvatus*)
- Willow Flycatcher (*Empidonax traillii*)

Contractor will implement the following measures to comply with federal law regarding migratory birds:

- If an occupied nest is encountered in harm's way, no action may occur that will result in the unauthorized take of eggs/chicks or adult birds. Contractor should contact the USFWS through the Construction Manager as soon as possible for instruction on how to proceed.
- If a take occurs of a migratory bird, this occurrence must be documented by the Construction Manager and reported to the USFWS.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10

1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

OFFICE OF
WATER AND WATERSHEDS

Nick Ducote
Ducote Consulting, LLC
PO Box 596
La Grande, OR 97850

April 27, 2016

Re: Endangered Species Act Section (ESA) 7 Consultation for the City of Umatilla, OR
Water Reuse Project.

Dear Mr. Ducote:

The Environmental Protection Agency has reviewed the supporting information for a Biological Evaluation (BE) prepared by Ducote Consulting, LLC for the Umatilla wastewater diversion/reuse project. Based upon the information provided, the EPA has determined that the proposed project, as described, will have *no effect* on ESA listed species or their designated critical habitat and will have *no adverse effect* on designated essential fish habitat.

Project Description

The project consists of constructing approximately 2.5 miles of waterline to accommodate industrial wastewater (non-contact cooling water) from the VADATA, Inc. data center (server farm) at the Port of Umatilla to the West Extension Irrigation District (WEID) via the U.S. Bureau of Reclamation (USBR) Phase 1 Exchange Canal. The project is needed to alleviate a capacity issue in the City's wastewater treatment plant (WWTP) which processes Class A industrial wastewater. The data centers are water-intensive with more centers expected to come on line at the Port (estimated flow of 0.25 mgd each; the WWTP capacity is 0.8 mgd).

VADATA wastewater will be immediately discharged into the new pipeline and into the WEID via the USBR Exchange Canal. The discharge volume will range from 54.3 to 325.8 mgd and will meet the irrigation needs (41.6 to 249.9 acres) without further taxing surface or groundwater supplies for irrigation. The biggest irrigation demand is from April to October. Most of the pipeline will be routed through existing City right-of-ways. The pipeline will discharge in the USBR Phase 1 Canal 2,200 feet downstream from the McNary Pool intake. The USBR Canal runs underneath the Umatilla River in route to the WEID. No in water work is proposed.

Summary of ESA and MSA Effects Determinations

The proposed pipeline is within the general range of several ESA listed species. The following ESA regulated species may occur within the vicinity of the construction area:

Common Name	Scientific Name	ESA Status	Jurisdiction	Designated Critical Habitat in Project Area?
Washington Ground Squirrel	<i>Urocitellus washingtoni</i>	Candidate	USFWS	No
Gray Wolf	<i>Canis lupus</i>	Endangered	USFWS	No

Washington Ground Squirrel: Brush patterns in the project area are sparse and inconsistent. Given the squirrels’ preference for grassland and shrub-steppe, the project area would give virtually no cover for the species. Soils, brush patterns, and existing development around the project area make for poor habitat for the Washington Ground Squirrel. No effect.

Gray Wolf: There are no Areas of Know Wolf Activity near the project area. The Umatilla River Pack and the Walla Walla and Meacham packs traverse the Umatilla National Forest but are more than 50 miles from the project site. No effect.

The project will have no effect on aquatic species because no in water work is proposed. The project is in the vicinity of the Umatilla and Columbia River.

- Steelhead Trout are Threatened and have Critical Habitat in the Columbia River.
- Bull Trout are Threatened and have Critical Habitat in the Columbia and Umatilla River.
- West Coast Chinook Salmon are Endangered and have Critical Habitat in the Columbia River.
- West Coast Salmon have Essential Fish Habitat in the Columbia River.
- West Coast Coho Salmon have Essential Fish Habitat in the Columbia River.

Migratory Birds

There are 17 species of migratory birds potentially in or near the project area. If there are potential construction impacts to migratory bird habitats or flyways, the applicant should review the Migratory Bird Treaty Act and follow the best management practices. Also avoid working during the nesting season.

The EPA has determined that the proposed project, as described, will have *no effect*, on ESA listed species or their critical habitat and will have *no adverse effect* on designated essential fish habitat (EFH). No in water work is proposed, impacts from proposed construction activities are expected to be short term, insignificant, and discountable.

These determinations of effect are based, in part, upon the information submitted by Ducote Consulting, LLC. The project proponents must immediately notify EPA if: 1) new information reveals the action may affect listed species or designated critical habitat; 2) the action is modified in a manner that causes an effect to listed species or designated critical habitat; or 3) a new species is listed or critical habitat designated, that may be affected by the proposed actions.

If you have any questions please do not hesitate to contact me at (206) 553-1646 or by email at pedersen.rob@epa.gov.

Sincerely,



Rob Pedersen
Environmental Engineer

cc: Evan Haas, ODEQ

Exhibit G

3.8 Clean Air Act



Nick Ducote <ducoteconsulting@gmail.com>

SERP for City of Umatilla Project

4 messages

Nick Ducote <ducoteconsulting@gmail.com>

Mon, Apr 4, 2016 at 9:42 AM

To: Messina.Frank@deq.state.or.us

Frank, or relevant personnel,

I am conducting the State Environmental Review Process for a wastewater reuse project in the City of Umatilla. As a cross-cutting federal authority, the City needs to make contact with your agency and determine if there are any impacts to relevant resources within the project footprint. At this point, I have conducted a desktop review of agency data and maps and put together some cursory lists. Is there an estimated timeframe for the agency to conduct their review?

I have attached the proposed alignment for the ~3 mile pipeline. Flows will originate from the Port of Umatilla, specifically for now from the VADATA center at the Port, and be discharged in the USBR Phase 1 Exchange Canal for use throughout the West Extension Irrigation District. The City is in discussions with USBR and DEQ regarding the wastewater discharge.

Please let me know if the map I have attached is insufficient to begin this process or if you need further explanation of the project. I am available via email or my cell: [541-805-5543](tel:541-805-5543)

—
-Nicholas Ducote
Ducote Consulting LLC

Ducote
consulting, llc

 **Vicinity_Map.pdf**
1056K

MESSINA Frank <MESSINA.Frank@deq.state.or.us>

Mon, Apr 4, 2016 at 2:50 PM

To: "ducoteconsulting@gmail.com" <ducoteconsulting@gmail.com>

Cc: MESSINA Frank <MESSINA.Frank@deq.state.or.us>

Here are comments from the DEQ, Air Quality Program regarding your waste water project in the City of Umatilla

There are dust rules that do apply during excavation and/or demolition work.

DEQ Rules:

<http://www.deq.state.or.us/regulations/rules.htm>

- Look at Division 208 VISIBLE EMISSIONS AND NUISANCE REQUIREMENTS

Water is usually used to control dust from the work site.

Also make sure that dirt is not dragged on to the pavement because that can cause a dust problem. I would suggest installing water bars to spray both sides to the truck will wash the dirt off of the tires of the trucks.

- For the installation of piping systems you may need crushed rock and asphalt. The owner and operator of the rock crusher and asphalt plant will need an air permit to operate. Ask the rock crusher operator and asphalt plant operator if they have an air permit-if any questions give them my name and phone number.
- During excavation on this project may come across Cement Asbestos Pipe (nonfriable asbestos pipe), used as pipe in years past. Old water piping systems may contain asbestos you may want to test the pipe before you start your project to know if the pipe contains asbestos.
- If demolition is going to be done on any structure during this project an asbestos survey is required to insure asbestos containing building materials are identified and removed according to the regulations. Look at the DEQ Building Survey Requirement: <http://www.deq.state.or.us/aq/factsheets/06-NWR-008-ASBSurvey.pdf>

DEQ regulates and removal and disposal of asbestos containing materials.

Division 248

Take a look at the DEQ Asbestos Program website:

<http://www.deq.state.or.us/aq/asbestos/index.htm>

Here is the site on How to deal with Asbestos Water Pipe:

<http://www.deq.state.or.us/aq/asbestos/docs/ASBPIPE.pdf>

<http://www.deq.state.or.us/aq/asbestos/remove.htm>

Look at How to Remove Non-Friable Asbestos-Containing AC Water Pipe. If asbestos pipe is going to be removed DEQ needs to be informed through the Notification ASN-6.

If you run across this give me a call. Do not brake the asbestos pipe up remove it according to the regulations!

If you have questions regarding Air Quality or Asbestos regulations feel free to contact me by phone or email

Suggestion: I would highly suggest getting OSHA involved with the construction project under a consultation. Give OSHA a call.

In conclusion no permits are required from the DEQ Air Quality Program to conduct this project.

Hope this information is helpful

Frank Messina

DEQ Eastern Region Bend Office

475 NE Bellevue Drive, Suite 110

Bend, OR 97701

Office: (541) 388-6146

Direct Phone: (541) 633-2019

Fax: (541) 388-8283

Email: messina.frank@deq.state.or.us

From: Nick Ducote [<mailto:ducoteconsulting@gmail.com>]

Sent: Monday, April 04, 2016 9:43 AM

To: MESSINA Frank

Subject: SERP for City of Umatilla Project

Frank, or relevant personnel,

I am conducting the State Environmental Review Process for a wastewater reuse project in the City of Umatilla. As a cross-cutting federal authority, the City needs to make contact with your agency and determine if there are any impacts to relevant resources within the project footprint. At this point, I have conducted a desktop review of agency data and maps and put together some cursory lists. Is there an estimated timeframe for the agency to conduct their review?

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APPENDIX F

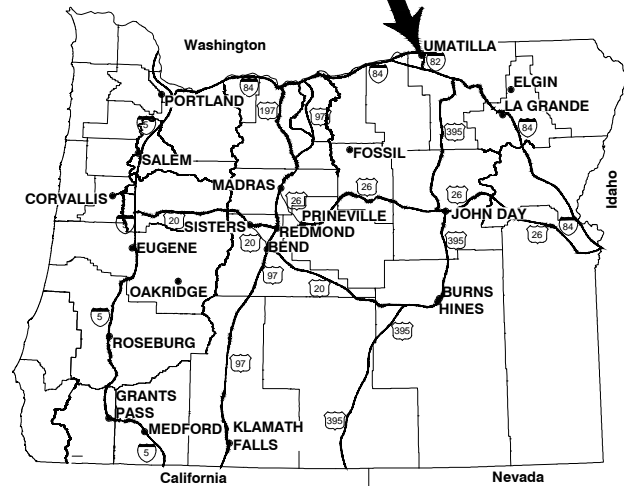
PRELIMINARY DESIGN DRAWINGS

CITY OF UMATILLA

NON-CONTACT COOLING WATER PIPELINE

AUGUST 2016

PROJECT LOCATION



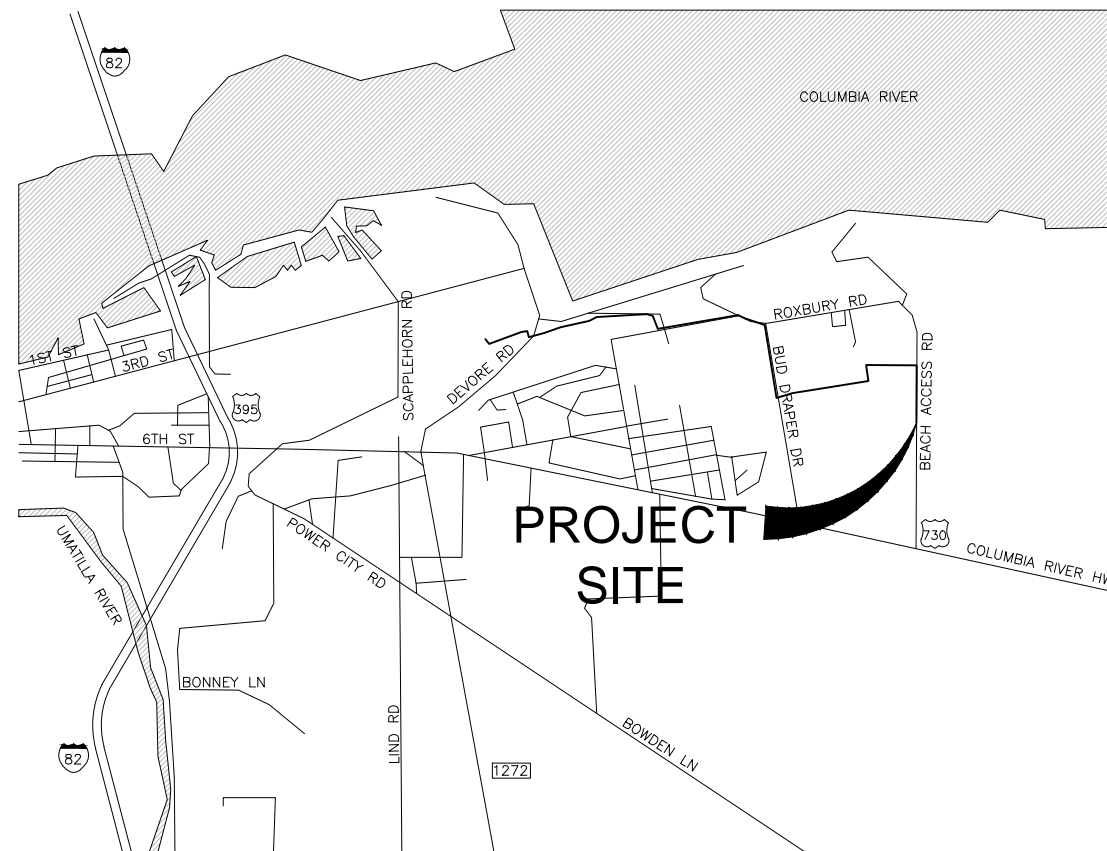
OWNER

CITY OF UMATILLA
UMATILLA, OREGON

MAYOR:
DAVID TROTT

CITY COUNCIL:
MARY DEDRICK
SHARON FARNSWORTH
ROAK TENYCK
MELVIN RAY
DAVID LOUGEE
MARK RIBICH

CITY MANAGER:
RUSS PELLEBERG



VICINITY MAP

SHEET LIST TABLE	
SHEET NUMBER	SHEET TITLE
G-001	COVER
C-101	PLAN AND PROFILE
C-102	PLAN AND PROFILE
C-103	PLAN AND PROFILE
C-104	PLAN AND PROFILE
C-105	PLAN AND PROFILE



CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

NOTE

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AGENCY AND ENTITY CONTACTS:

CITY OF UMATILLA	(541)922-3226
POLICE	911
AMBULANCE	911
DIGLINE	1-800-332-2344
OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY	1-800-452-4011

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PROJECT NO. 33-16-005

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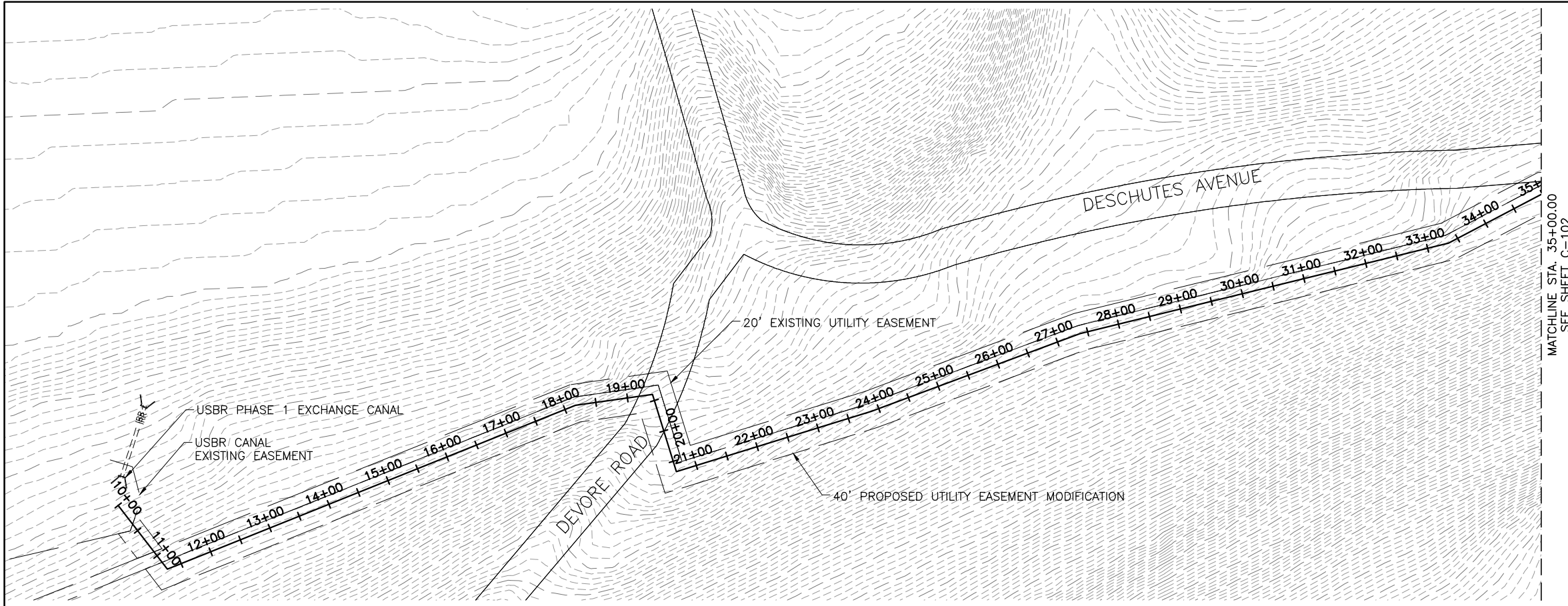
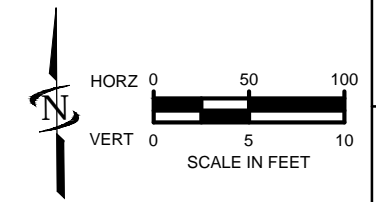
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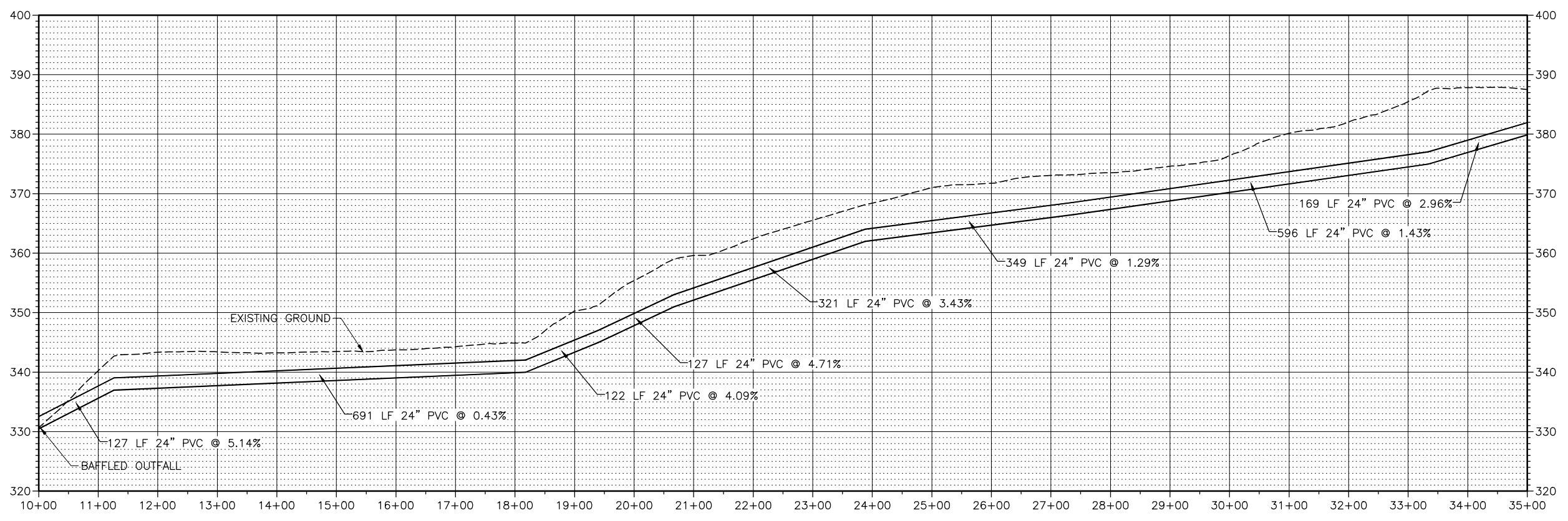
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 SEE SHEET C-102

PRELIMINARY
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REVISION

NO.	DESCRIPTION	BY	DATE

PH 1 NPDES PERMIT, PRELIM. ENGR. & ENV. REVIEW
 CITY OF UMATILLA
 PLAN AND PROFILE



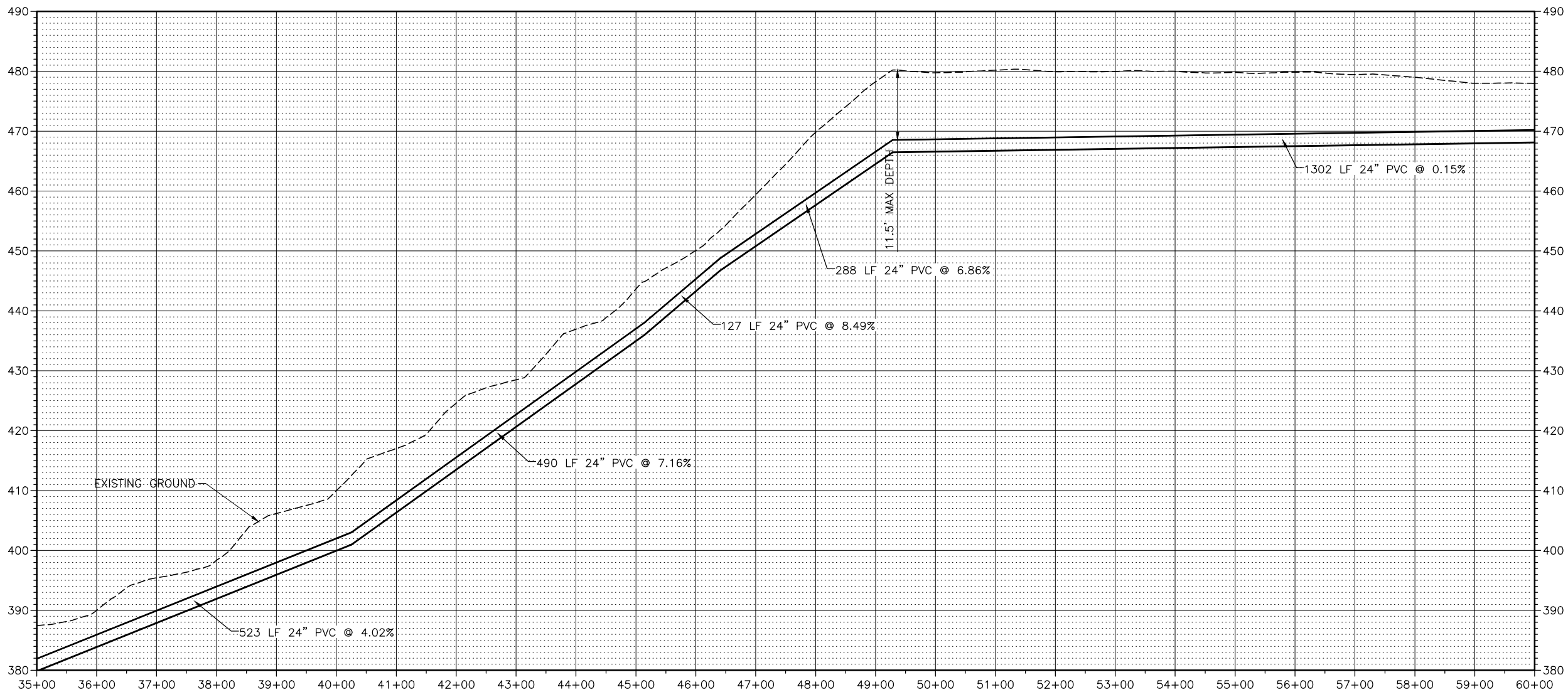
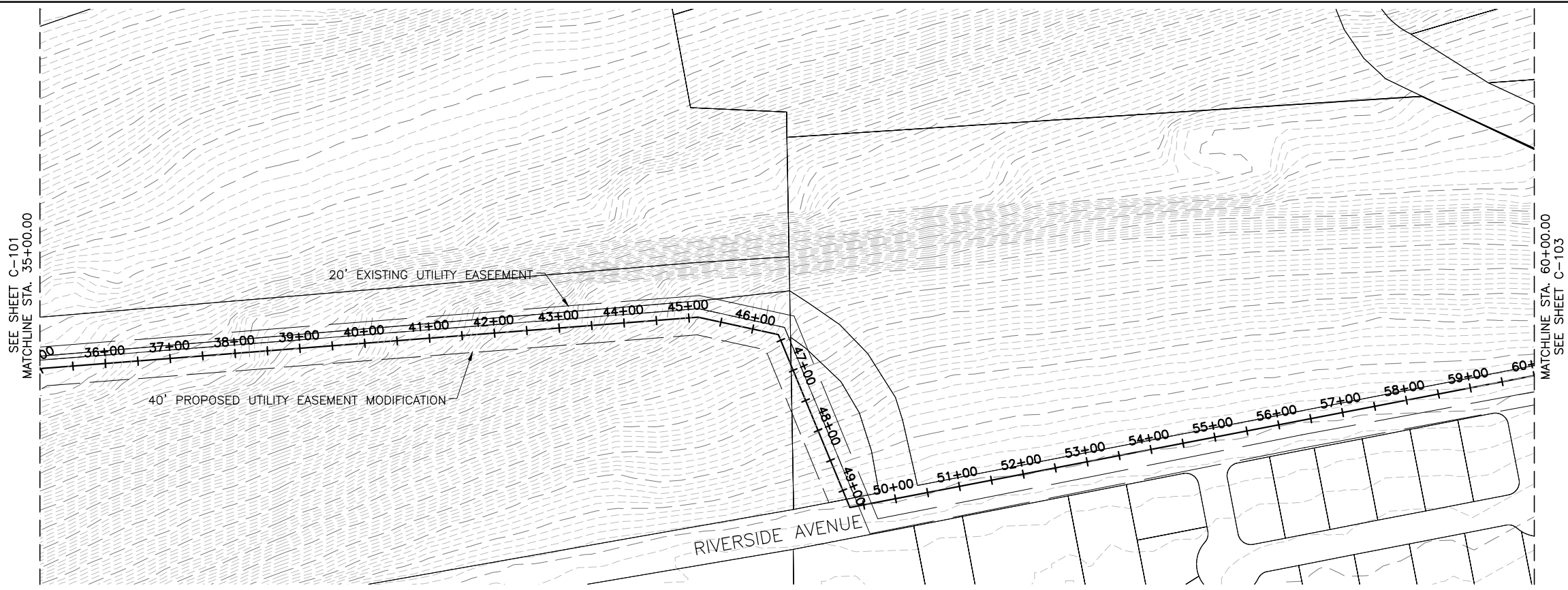
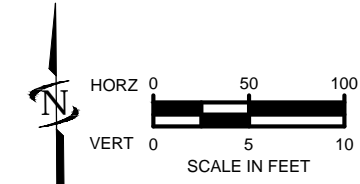
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LAST UPDATED: 5/20/2016
SHEET NUMBER: C-101



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PRELIMINARY PLANS
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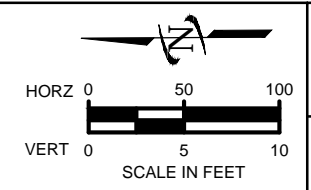
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CITY OF UMATILLA
PLAN AND PROFILE

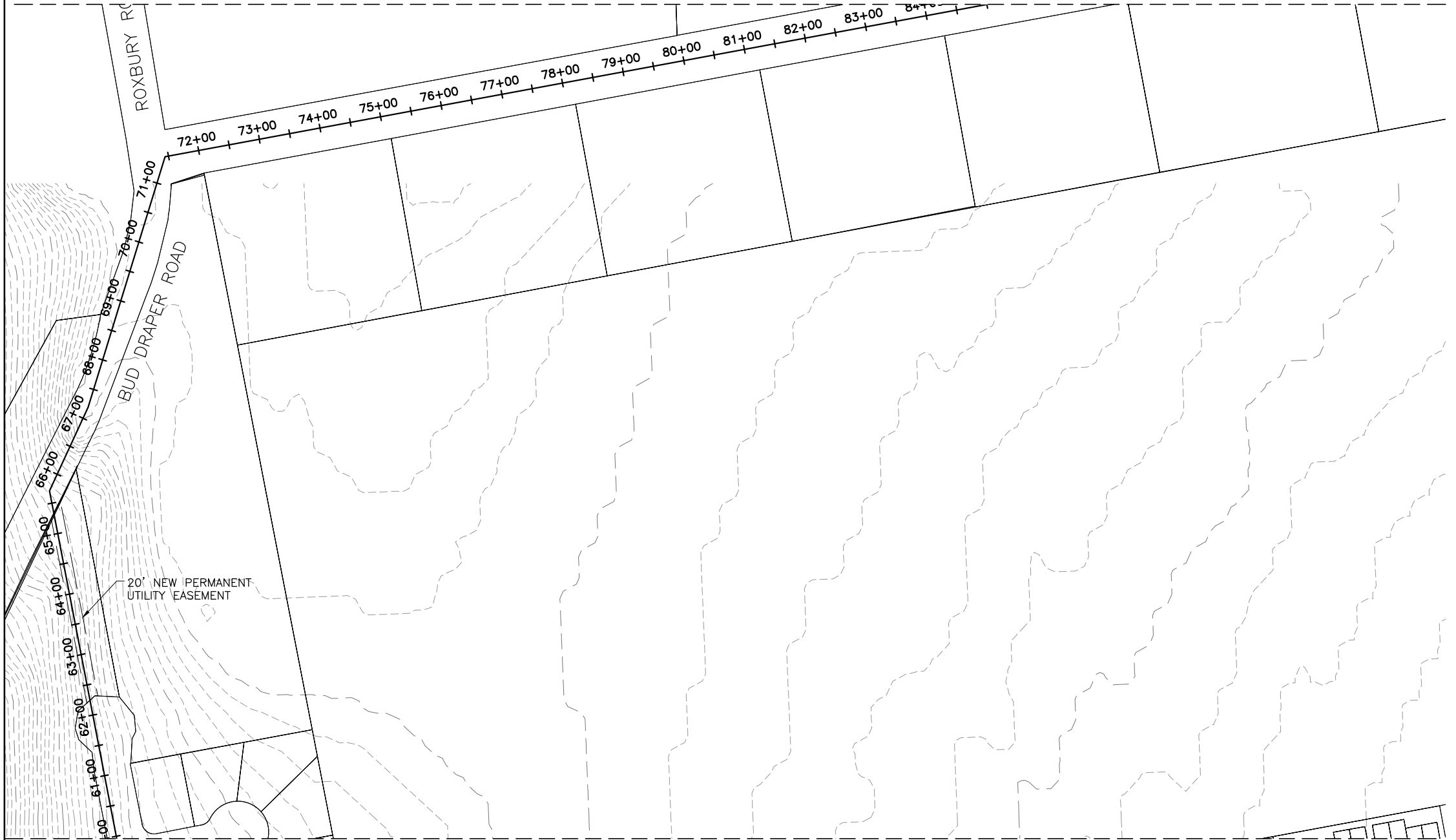
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SHEET NUMBER:
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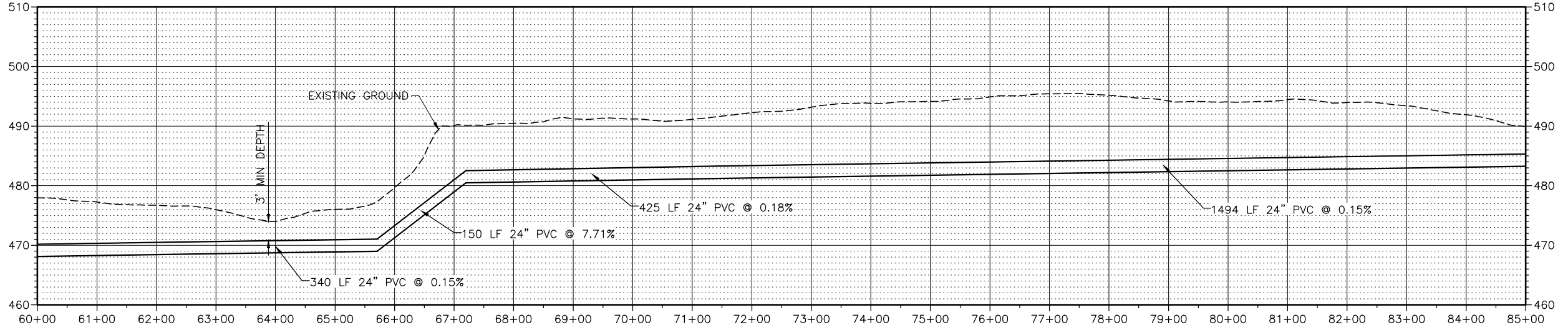
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CITY OF UMATILLA

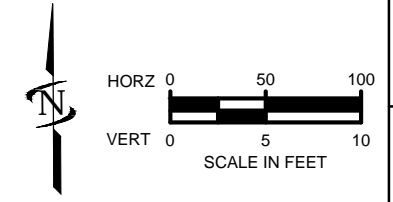
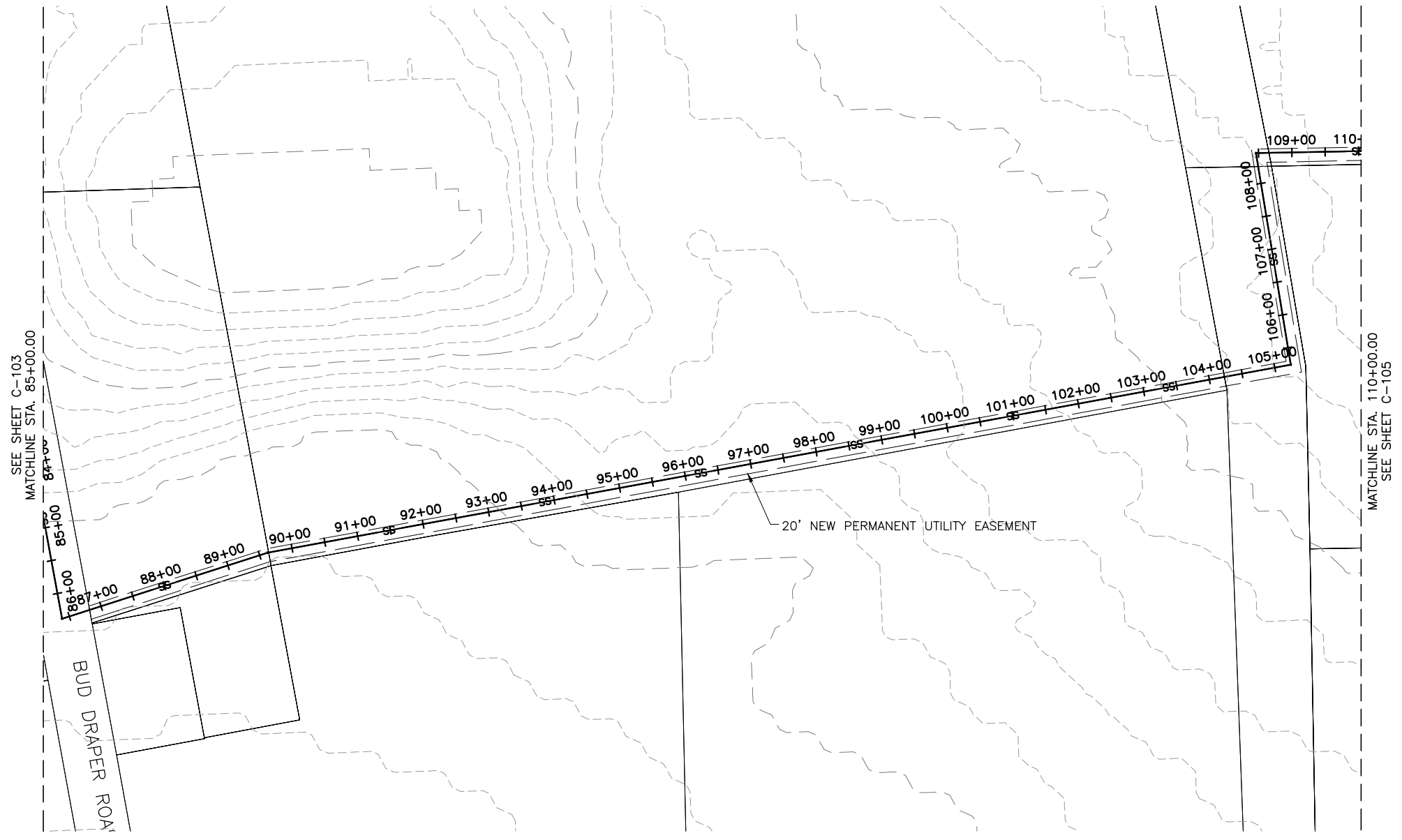
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LAST UPDATED: 5/20/2016

SHEET NUMBER:
C-103

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 Date Created: 5/20/2016 11:53 AM Project: SUBCITY OF UMATILLA PH 1 NPDES PERMIT CAD SHEET: 33-16-003 C-104.DWG



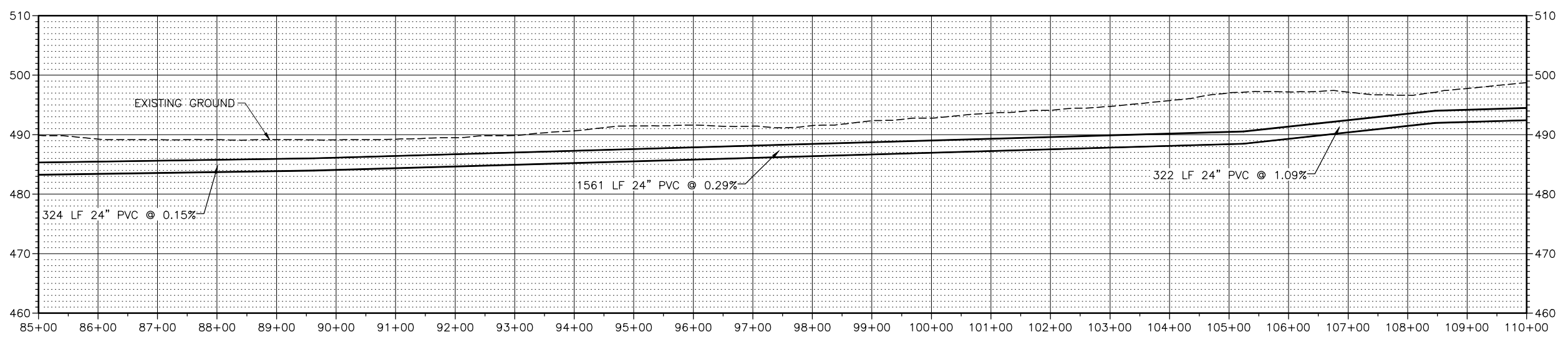
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 J-U-B ENGINEERS, INC.
 1201 Adams Avenue
 La Grande, OR 97850
 Phone: 541-963-7100
 www.jub.com

PRELIMINARY PLANS
 NOT FOR CONSTRUCTION

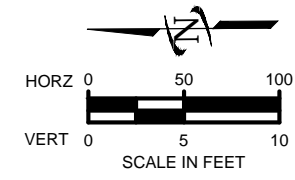
REUSE OF DRAWINGS
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NO.	REVISION	DESCRIPTION	BY	DATE

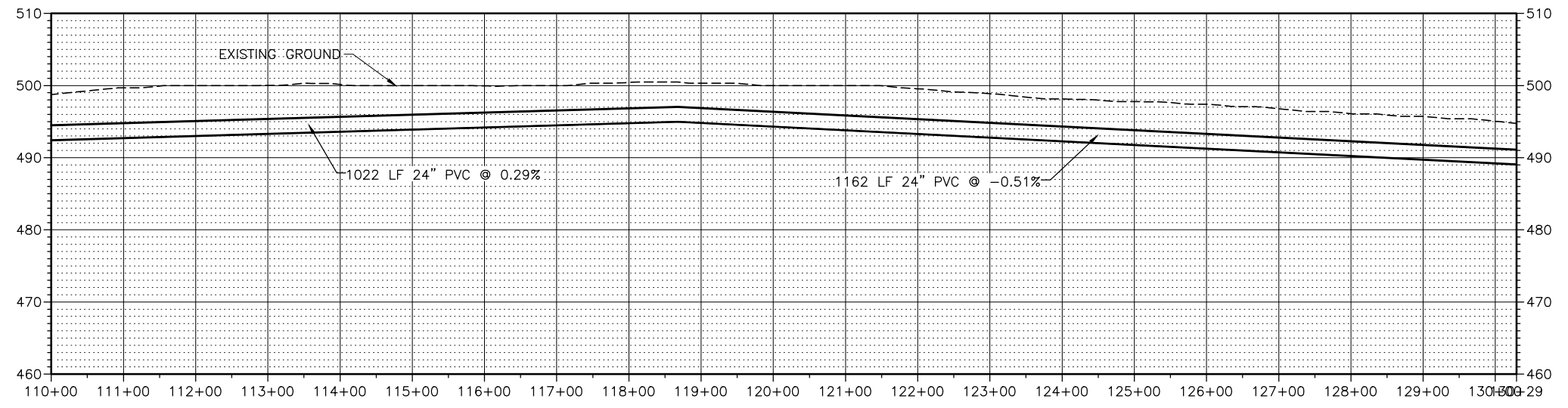
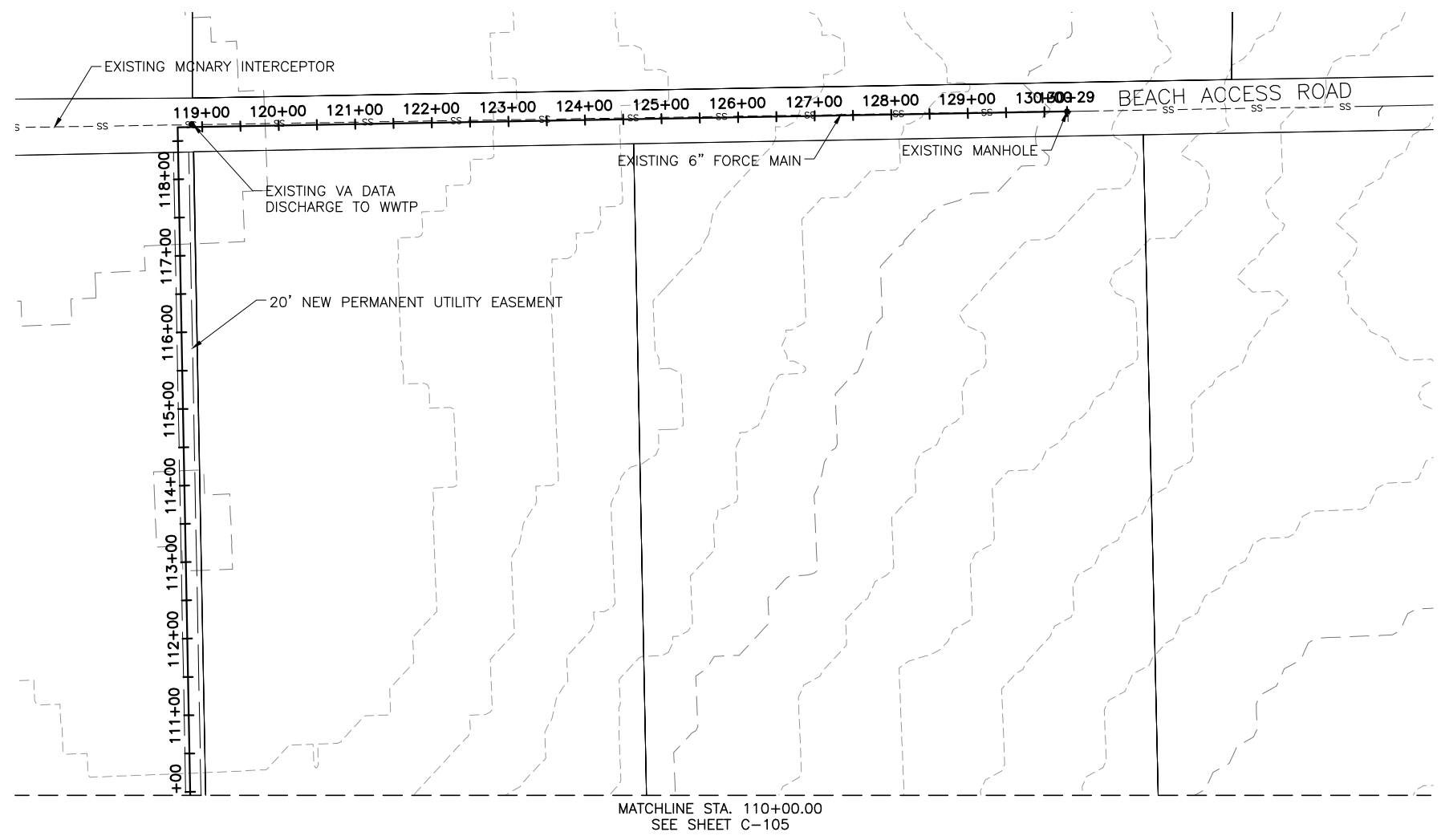
PH 1 NPDES PERMIT, PRELIM. ENGR. & ENV. REVIEW
 CITY OF UMATILLA
 PLAN AND PROFILE



FILE: 33-16-003 C-104
 ITD PROJ #:
 KEY NUMBER:
 JUB PROJ #: 33-16-003
 DRAWN BY: SZ
 DESIGN BY: ##
 CHECKED BY: ##
 ONE INCH
 AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY
 LAST UPDATED: 5/20/2016
 SHEET NUMBER:
C-104



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PRELIMINARY
 PLANS
 NOT FOR
 CONSTRUCTION

REVISION

NO.	DESCRIPTION	BY	DATE

PH 1 NPDES PERMIT, PRELIM. ENGR. & ENV. REVIEW
 CITY OF UMATILLA
 PLAN AND PROFILE

FILE: 33-16-003 C-105
 ITD PROJ #:
 KEY NUMBER:
 JUB PROJ #: 33-16-003
 DRAWN BY: SZ
 DESIGN BY: ##
 CHECKED BY: ##
 AT FULL SIZE, IF NOT ONE
 INCH SCALE ACCORDINGLY
 LAST UPDATED: 5/20/2016
 SHEET NUMBER:
C-105

Plot Date: 5/20/2016 10:51 AM Plotted By: Shae Zimmo
 Date Created: 5/20/2016 10:51 AM Project: SUBCITY OF UMATILLA PH 1 NPDES PERMIT CAD SHEET: 33-16-003 C-105.DWG

Appendix B – OWRD Existing Water Use Reports

Facility Water Use Report



COLUMBIA R
Report ID 12288

COLUMBIA RIVER;
 2860 FEET NORTH AND 3000 FEET EAST FROM SW CORNER, SECTION 11
 (5N-28E-11-SW NE)
[Permit: S 41444 *](#)
[CITY OF UMATILLA](#)

Records per page:

<u>Water Year*</u>	<u>Method of Measurement</u>	<u>Acre-feet (AF) of Water Used</u>												<u>Total Water Used</u>	<u>Irrigated Acres</u>
		<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>		
2017	OTH	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	OTH	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	OTH	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2008		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2007		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2006		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2000		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1999		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

12

*The water year is named for the calendar year in which it ends. Example: the 2014 water year begins Oct. 1, 2013 and ends Sep. 30, 2014.

Method(s) of Measurement:

OTH no water use at this time (2017)

- Monthly amounts indicate:
 - For diverted rights, the total amount diverted during the month;
 - For storage rights, the amount generally stored in the reservoir/pond during the month, as represented by the volume of water impounded on approximately the same day each month.
- Water Use amounts have all been converted to "acre-feet" (AF), regardless of the original measurement unit reported. One AF is the volume of water that will cover an acre of ground one foot deep = 325,850 gallons.
- Zeroes indicate that a report was received, stating that no water was used during those months; if a year is not listed, no report of water use was received for that year.

Facility Water Use Report



GOLF COURSE WELL (UMAT 3347) Report ID 12289

GOLF COURSE WELL;
825 FEET SOUTH AND 2550 FEET EAST FROM NW CORNER, SECTION 14
(5N-28E-14-NE NW)
[Permit: G 8042 *](#)
[CITY OF UMATILLA](#)

Records per page:

Acre-feet (AF) of Water Used

<u>Water Year*</u>	<u>Method of Measurement</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>	<u>Total Water Used</u>	<u>Irrigated Acres</u>
2017	FMT	30.99	18.62	16.27	21.31	15.34	15.97	19.70	56.79	76.03	110.19	104.79	50.62	536.62	
2016	FMT	28.52	20.51	14.27	12.71	12.36	15.76	34.62	52.68	59.38	73.75	150.94	84.02	559.52	
2015	FMT	41.47	22.26	22.97	23.73	21.34	25.59	37.21	49.19	65.86	91.50	60.74	46.24	508.09	
2014	FMT	20.76	16.54	17.17	17.44	12.92	16.10	34.04	42.40	48.99	68.82	53.88	52.31	401.37	
2013		26.07	14.40	15.73	15.31	13.89	16.35	25.07	42.87	47.42	67.99	63.38	34.98	383.46	
2012		24.07	0.00	0.00	14.31	29.09	11.70	0.00	38.96	38.13	66.27	0.33	57.79	280.65	
2008		0.04	16.58	26.85	27.43	29.38	30.48	53.18	33.00	55.08	63.02	51.01	38.16	424.20	
2007		23.54	13.87	14.16	13.13	13.72	19.33	24.98	39.78	44.63	59.58	78.63	58.72	404.07	
2006		20.37	22.12	10.94	13.13	12.54	15.15	34.74	73.71	79.29	60.90	73.02	38.96	454.88	
2005		19.30	14.57	13.09	10.80	12.64	19.26	29.65	30.71	43.07	61.49	54.64	34.81	344.03	
2004		27.07	14.29	12.40	14.69	13.00	19.21	28.53	33.54	40.91	50.48	62.60	26.45	343.16	
2003			25.20	19.68	23.43	19.46	26.32	46.92	72.04	99.86	120.98	103.27	20.69	577.85	
2002		56.78	27.14	23.64	24.23	25.35	29.12	49.39	72.00	83.06	116.53	92.62	70.93	670.79	
2001		33.13	24.58	21.93	24.69	22.98	42.52	36.40	63.55	68.31	91.00	92.98	82.16	604.23	
2000		43.70	20.91	22.16	19.85	18.27	23.80	47.99	57.94	70.91	91.74	84.33	50.23	551.83	

12

*The water year is named for the calendar year in which it ends. Example: the 2014 water year begins Oct. 1, 2013 and ends Sep. 30, 2014.

Method(s) of Measurement:

FMT Flowmeter (recording monthly readings and then reporting the difference between one month's reading and the next)

- Monthly amounts indicate:
 - For diverted rights, the total amount diverted during the month;
 - For storage rights, the amount generally stored in the reservoir/pond during the month, as represented by the volume of water impounded on approximately the same day each month.
- Water Use amounts have all been converted to "acre-feet" (AF), regardless of the original measurement unit reported. One AF is the volume of water that will cover an acre of ground one foot deep = 325,850 gallons.
- Zeroes indicate that a report was received, stating that no water was used during those months; if a year is not listed, no report of water use was received for that year.

Facility Water Use Report



INTERTIE WELL (UMAT 3361) Report ID 12290

INTERTIE WELL;
2515 FEET SOUTH AND 140 FEET WEST FROM NE CORNER, SECTION 16
(5N-28E-16-SE NE)
[Permit: G 8042 *](#)
[CITY OF UMATILLA](#)

Records per page:

Acre-feet (AF) of Water Used

<u>Water Year*</u>	<u>Method of Measurement</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>	<u>Total Water Used</u>	<u>Irrigated Acres</u>
2017	FMT	19.37	24.39	30.39	26.70	23.75	27.91	28.68	32.05	41.14	49.96	48.34	33.09	385.78	
2016	FMT	20.85	19.12	22.00	23.19	18.82	22.73	29.59	26.01	42.28	49.42	55.05	31.29	360.36	
2015	FMT	0.69	0.00	0.14	0.00	3.30	10.78	19.63	29.76	47.73	59.44	52.83	33.70	257.99	
2014	FMT	27.73	21.64	23.42	24.19	21.03	12.09	33.83	50.04	57.51	63.30	58.07	27.79	420.63	
2013		31.73	21.01	21.65	23.00	20.69	23.10	30.00	49.43	54.26	60.55	59.28	47.02	441.71	
2012		30.25	22.23	23.19	20.64	16.80	21.20	25.81	49.57	52.01	59.94	57.50	3.58	382.73	
2008		23.06	14.70	14.92	15.36	15.78	17.83	29.17	43.96	19.56	56.40	54.01	44.76	349.49	
2007		26.53	15.34	17.60	17.18	15.76	24.28	33.89	48.30	51.02	64.03	22.11	7.72	343.77	
2006		19.37	0.64	17.23	17.52	16.28	18.59	24.16	40.00	45.17	65.73	57.19	43.72	365.59	
2005		25.85	15.16	16.02	16.05	17.17	21.06	22.94	34.73	62.43	65.59	53.79	42.40	393.17	
2004		32.73	16.52	16.36	19.05	16.22	22.63	31.02	41.34	50.87	61.03	50.75	40.58	399.10	
2003		30.03	17.29	15.81	15.24	15.63	19.83	29.66	41.07	55.34	77.32	71.17	44.52	432.91	
2002		12.36	20.82	18.53	19.03	16.62	20.68	32.33	39.50	50.09	6.61	61.81	53.11	351.49	
2001		26.07	22.13	18.94	18.80	16.56	2.67	20.61	43.16	47.67	71.42	57.28	26.15	371.47	
2000		35.76	27.85	27.01	19.39	21.72	20.30	34.90	47.00	49.66	62.08	80.67	38.58	464.91	

12

*The water year is named for the calendar year in which it ends. Example: the 2014 water year begins Oct. 1, 2013 and ends Sep. 30, 2014.

Method(s) of Measurement:

FMT Flowmeter (recording monthly readings and then reporting the difference between one month's reading and the next)

- Monthly amounts indicate:
 - For diverted rights, the total amount diverted during the month;
 - For storage rights, the amount generally stored in the reservoir/pond during the month, as represented by the volume of water impounded on approximately the same day each month.
- Water Use amounts have all been converted to "acre-feet" (AF), regardless of the original measurement unit reported. One AF is the volume of water that will cover an acre of ground one foot deep = 325,850 gallons.
- Zeroes indicate that a report was received, stating that no water was used during those months; if a year is not listed, no report of water use was received for that year.

Facility Water Use Report



MCFARLAND WELL (UMAT 50632) Report ID 12291

WELL 2;
30 FEET SOUTH AND 30 FEET WEST FROM NE CORNER, SECTION 19
(5N-28E-19-NE NE)
[Cert:76316 RR *](#)
[CITY OF UMATILLA](#)

Records per page:

Acre-feet (AF) of Water Used

<u>Water Year*</u>	<u>Method of Measurement</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>	<u>Total Water Used</u>	<u>Irrigated Acres</u>
2017	FMT	12.28	7.75	7.87	6.14	5.28	6.06	10.41	23.05	19.49	16.95	14.82	13.72	143.83	
2016	FMT	14.20	4.20	6.04	6.08	5.98	9.21	22.29	19.76	16.76	15.19	13.91	12.61	146.22	
2015	FMT	14.39	6.46	6.30	6.34	3.88	8.68	20.70	23.32	19.12	17.09	15.35	14.28	155.90	
2014	FMT	11.19	6.78	6.62	6.32	5.93	7.13	14.91	26.64	21.26	19.18	17.02	16.06	159.03	
2013		14.10	5.69	5.68	6.36	5.67	6.36	14.64	28.39	24.05	205.96	18.36	13.69	348.96	
2012		12.23	4.28	3.08	6.97	6.00	6.59	13.43	27.77	25.08	23.97	21.01	18.55	168.95	
2008		11.78	6.14	6.21	5.84	5.78	6.94	16.71	27.21	26.14	25.35	22.20	20.03	180.34	
2007		13.50	6.60	6.35	6.37	5.36	1.03	17.13	29.16	30.30	27.17	24.69	22.07	189.74	
2006		11.76	6.45	5.73	5.93	5.66	7.30	12.83	24.84	28.60	27.58	23.75	21.78	182.19	
2005		11.99	6.71	7.19	5.59	5.41	13.48	17.30	22.57	23.57	20.79	23.54	18.85	176.99	
2004		3.77	7.81	6.39	6.87	6.34	11.07	18.16	17.65	28.63	24.25	23.96	23.66	178.55	
2003		15.16	5.75	5.52	5.44	5.44	8.14	15.40	27.02	37.78	31.00	22.98	22.01	201.62	
2002		11.61	5.30	5.44	4.79	4.50	6.41	16.55	22.77	25.73	22.26	30.20	22.22	177.78	
2001		8.49	5.11	5.17	4.82	4.50	6.03	9.82	25.39	29.23	29.15	22.74	24.61	175.06	
2000		16.32	4.17	5.32	4.91	4.90	5.98	15.79	24.69	31.52	36.20	11.36	17.99	179.14	

12

*The water year is named for the calendar year in which it ends. Example: the 2014 water year begins Oct. 1, 2013 and ends Sep. 30, 2014.

Method(s) of Measurement:

FMT Flowmeter (recording monthly readings and then reporting the difference between one month's reading and the next)

- Monthly amounts indicate:
 - For diverted rights, the total amount diverted during the month;
 - For storage rights, the amount generally stored in the reservoir/pond during the month, as represented by the volume of water impounded on approximately the same day each month.
- Water Use amounts have all been converted to "acre-feet" (AF), regardless of the original measurement unit reported. One AF is the volume of water that will cover an acre of ground one foot deep = 325,850 gallons.
- Zeroes indicate that a report was received, stating that no water was used during those months; if a year is not listed, no report of water use was received for that year.

Facility Water Use Report



PORT WELL
Report ID 12977

A WELL;
2045 FEET NORTH AND 1790 FEET EAST FROM SW CORNER, SECTION 11
(5N-28E-11-NE SW)
[Permit: G 3112 *](#)
[PORT OF UMATILLA](#)

Records per page:

Acre-feet (AF) of Water Used

<u>Water Year*</u>	<u>Method of Measurement</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>	<u>Total Water Used</u>	<u>Irrigated Acres</u>
2017	FMT	28.78	13.13	12.45	10.33	11.04	15.38	20.65	45.24	67.36	69.70	62.15	54.48	410.69	
2016	FMT	31.20	11.20	12.13	13.96	14.08	16.94	33.89	51.76	74.97	73.21	0.00	20.51	353.84	
2015	FMT	38.81	23.06	22.40	23.06	17.41	22.66	33.53	50.29	72.80	64.43	80.17	43.51	492.13	
2014	FMT	19.24	15.52	17.35	13.41	12.75	24.96	30.38	38.89	53.19	71.11	64.59	57.08	418.47	
2013		21.68	13.38	12.96	14.49	12.63	14.53	25.25	35.23	44.39	70.93	59.69	34.07	359.23	
2012		23.57	26.36	26.19	12.65	1.83	19.09	41.64	37.41	38.98	54.93	124.09	70.29	477.04	
2011		18.24	12.14	13.41	13.81	11.85	12.24	18.87	39.16	55.54	55.60	62.26	42.80	355.94	
2010		20.73	13.92	12.09	15.05	12.09	16.22	21.37	30.15	30.68	62.57	53.42	36.93	325.21	
2008		36.81	9.71	0.00	2.57	0.00	0.00	0.00	41.14	51.64	58.20	49.36	38.20	287.63	
2007		17.00	14.24	11.77	13.09	12.78	15.99	25.08	36.96	40.95	56.89	61.18	49.14	355.06	
2006		19.44	18.56	11.68	12.11	11.47	12.45	7.29	0.00	5.11	57.12	36.21	37.33	228.77	
2005		18.47	11.78	13.72	13.28	11.93	18.71	23.23	29.27	39.93	47.54	57.09	34.22	319.18	
2004		25.66	12.21	11.74	11.31	12.03	14.82	25.54	27.67	42.06	64.40	42.37	37.33	327.13	
2003		0.17	5.22	0.00	4.34	6.06	0.00	0.00	0.00	0.13	1.91	0.15	47.08	65.05	
2002		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2001		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.98	0.00	7.98	
2000		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

12

*The water year is named for the calendar year in which it ends. Example: the 2014 water year begins Oct. 1, 2013 and ends Sep. 30, 2014.

Method(s) of Measurement:

FMT Flowmeter (recording monthly readings and then reporting the difference between one month's reading and the next)

- Monthly amounts indicate:
 - For diverted rights, the total amount diverted during the month;
 - For storage rights, the amount generally stored in the reservoir/pond during the month, as represented by the volume of water impounded on approximately the same day each month.
- Water Use amounts have all been converted to "acre-feet" (AF), regardless of the original measurement unit reported. One AF is the volume of water that will cover an acre of ground one foot deep = 325,850 gallons.
- Zeroes indicate that a report was received, stating that no water was used during those months; if a year is not listed, no report of water use was received for that year.

Appendix C – Water Rights



Contact Information (Click to Collapse...)

▼ **Current contact information**

OWNER:
 CITY OF UMATILLA
 PO BOX 130
 UMATILLA, OR 97882

Water Right Information (Click to Collapse...)

Status: Non-Cancelled
County: Umatilla
File Folder Location: Salem
[Watermaster District:](#) 5

Workflow (Click to Collapse...)

▶ **Application: G 8592**

▼ **Permit: G 8042** [document](#) , [paper map](#)

▶ Signature: 5/11/1978

Permit Workflow

Action	Date	Result	Completed By
Completion Date [C Date]	10/1/1999		
CBU Received	3/19/2003		MICHAEL POSADA

▼ **Order(s)**

Order	Origin	Volume-Page	Signature	Description
	Special	35-142	8/27/1981	EXTENDS TIME LIMITS FOR MULTIPLE PERMITS
▶	Special	39-40	2/20/1985	EXTENSION OF TIME ORDER
	Special	44-53	2/16/1990	EXTENSION ORDER
	Special	49-66	2/22/1995	EXTENDS TIME LIMITS ON CERTAIN PERMITS

- ▶ [View right with Web Mapping](#)
- ▶ [View Places of Use from Water Rights in the Same Area](#)
- ▶ [View Reported Water Use](#)

Scanned Documents (Click to Expand...)

Point(s) of Diversion (Click to Collapse...)

- ▶ [POD 1 - INTERTIE WELL > \(View Groundwater Site Info\)](#)
- ▶ [POD 2 - GOLF COURSE WELL > \(View Groundwater Site Info\)](#)

Place(s) of Use (Click to Collapse...)

[Add TRS grouping](#)

- ▶ **Use - MUNICIPAL USES**
 (Primary); Priority Date: 12/28/1977

Water Right Genealogy (Click to Collapse...)

.....No genealogy records available for this water right, try the family link below instead.

[View Water Rights in same Family](#) [Report Errors with Water Right Data](#)

6. The amount of water which the applicant intends to apply to beneficial use is cubic feet per second or 8,000.. gallons per minute. (4,000 gallons per minute per well.)

7. The use to which the water is to be applied ismunicipal consumption.....

8. If the flow to be utilized is artesian, the works to be used for the control and conservation of the supply when not in use must be described.

N/A

9. If the location of the well, or other development work is less than one-fourth mile from a natural stream channel, give the distance to the channel and the difference in elevation between the stream bed and the ground surface at the source of development.

N/A

10.

DESCRIPTION OF WORKS

Include length and dimensions of supply ditch or pipeline, size and type of pump and motor, type of irrigation system to adequately describe the proposed distribution system.

Both wells will utilize deep well vertical turbine

type pumps capable of pumping approximately 4000 GPM.

The actual sizing of the pump equipment is to be

determined from well pumping test information. The

water will be conducted to the City's distribution

system via 16-inch diameter water pipe.

11. Construction work will begin on or before..... February 1978

12. Construction work will be completed on or before..... June 1979

13. The water will be completely applied to the proposed use on or before..... June 1979

14. If the ground water supply is supplemental to an existing supply, identify the supply and existing water right..... City of Umatilla G-2560

Application No. G-8592

Permit No. G 8042

U 8042

Application for a Permit
 To Appropriate Ground Water-attachment

FOR: City of Umatilla

2. The Golf Course Well is to be located 825 feet south and 2,550 feet east from the northwest corner of Section 14, being within the northeast 1/4 of the northwest 1/4 of Section 14, TP 5N R 28E, W.M., in the county of Umatilla.

The Intertie Well is to be located 2,515 feet south and 140 feet west from the northeast corner of Section 16 being within the southeast 1/4 of the northeast 1/4 of Section 16 TP 5N, R 28E, W.M., in the county of Umatilla.

3. LOCATION OF AREA TO BE IRRIGATED, OR PLACE OF USE.....

Township North or South	Range, E. or W. of Willamette Meridian	Section	Government Subdivision	Number of Acres to be Irrigated
5 N.	27 E., W.M.	13	NEL/4 SEL/4, SEL/4 SEL/4, SEL/4 NEL/4	80
5 N.	28 E., W.M.	8	SEL/4 SEL/4, SWL/4 SEL/4, NEL/4 SEL/4	46
		9	SEL/4, SWL/4, SEL/4 NEL/4, Lot 1 SWL/4 NEL/4 Lot 2	364
		10	SWL/4, SEL/4, SWL/4 NWL/4, SEL/4 NWL/4	320
		11	SEL/4, SWL/4, SEL/4 NEL/4, Lot 1 SWL/4 NEL/4 Lot 2	273
		12	SEL/4, SWL/4	339
		13	All	640
		14	All	640
		15	All	640
		16	All	640
		17	All	633
		18	SWL/4, SEL/4, SEL/4 NWL/4, Lot 1 SWL/4 NWL/4, Lot 2 SEL/4 NEL/4, Lot 1 SWL/4 NWL/4, Lot 2 NEL/4 NEL/4	461
		19	All	640
		20	All	640
		21	All	640
		22	All	640
		23	All	640
		24	All	640
		27	NEL/4 NWL/4	160
		28	NEL/4 NWL/4	160
		29	NEL/4 NWL/4	160
		30	NEL/4	160
5 N.	29 E., W.M.	7	SWL/4, SEL/4 SEL/4, Lot 1 SWL/4 SEL/4, Lot 2 NWL/4 SEL/4 Lot 3 SWL/4 SWL/4, Lot 1 SEL/4 SWL/4 Lot 2	212
		8	SWL/4 SWL/4, Lot 1 SEL/4 SWL/4 Lot 2	26
		17	All	614
		18	All	640
		19	All	640
		20	NEL/4 NEL/4, NWL/4 NEL/4, NEL/4 NWL/4, NWL/4 NWL/4	80

RECEIVED

MAR 14 1978

WATER RESOURCES DEPT.
 SALEM, OREGON

Application No. 68593
 Permit No. G 8042

Remarks:.....

Randy Hoffman - CH2M Hill
Signature of Applicant
for City of Umatilla

This is to certify that I have examined the foregoing application, together with the accompanying maps and data, and return the same for..... completion

In order to retain its priority, this application must be returned to the Water Resources Director with corrections on or before April 24, 1978

WITNESS my hand this 22nd day of February, 1978

James E. Sexson Water Resources Director

By Larry Tell

RECEIVED
MAR 14 1978
WATER RESOURCES DEPT.
SALEM, OREGON

This instrument was first received in the office of the Water Resources Director at Salem, Oregon, on the 28th day of December, 1977, at 11:00 o'clock a.m.

Application No. G-8592

Permit No. G 8042



Contact Information (Click to Collapse...)

▼ **Current contact information**

OWNER:
 ▸ CITY OF UMATILLA
 CITY HALL
 UMATILLA, OR 97882

Water Right Information (Click to Collapse...)

Status: Non-Cancelled
County: Umatilla
File Folder Location: Salem
[Watermaster District:](#) 5

Workflow (Click to Collapse...)



- **Application: G 2755**
- **Permit: G 2560** [document](#)
- ▼ **Certificate: 76316** [document](#) , [paper map](#)
 - Signature: 10/26/1999
 - Type: Remaining

▼ **Order(s)**

Order Origin	Volume-Page	Signature	Description
Special	53-1368	10/26/1999	APPROVES T-8264
Special	79-406	8/12/2009	BUTTER CREEK ALLOCATION GW FOR CERT. 76316
Special	82-236	7/26/2010	BUTTER CREEK ALLOCATION GW FOR CERT. 76316
Special	86-121	8/9/2011	APPROVING ALLOCATION OF GROUND WATER FOR BUTTER CREEK CERT. 76316
Special	87-1065	7/24/2012	BUTTER CREEK, ALLOCATING GROUNDWATER, CERT 76316
Special	90-713	7/31/2013	BUTTER CREEK, ALLOCATING GROUNDWATER, CERT 76316
▸ Special	97-157	7/27/2015	BUTTER CREEK PROPOSED ORDER APPROVING GROUNDWATER ALLOCATION FOR CERTIFICATE 76316
Special	102-157	7/28/2016	BUTTER CREEK PROPOSED ORDER APPROVING GW ALLOCATION FOR CERTIFICATE 76316
Special	106-182	8/9/2017	CITY OF UMATILLA-- SNP_ID 128631- CERTIFICATE 76316; 2018 ANNUAL ALLOCATION OF GROUNDWATER IN THE BUTTER CREEK CRITICAL GROUNDWATER AREA, NORTH SUBAREA, UMATILLA COUNTY, OREGON.

▼ **Transfer(s)**

Transfer	Transfer type	Status
T8264 (Remaining)	Regular	Approved
<ul style="list-style-type: none"> ▷ View right with Web Mapping ▷ View Places of Use from Water Rights in the Same Area ▷ View Reported Water Use 		

Scanned Documents (Click to Expand...)

Point(s) of Diversion (Click to Collapse...)



▶ [POD 1 - WELL 2 > UMATILLA RIVER](#) [\(View Groundwater Site Info\)](#)

Place(s) of Use (Click to Collapse...)

[Add TRS grouping](#)



▶ **Use - MUNICIPAL USES**
(Primary); Priority Date: 12/24/1963

Water Right Genealogy (Click to Collapse...)



[Cert:34523 OR CN](#)

┆ [Inchoate: T 8264 CF \(REG\) *](#)

┆ [Cert:76316 RR *](#)

[View Water Rights in same Family](#)

[Report Errors with Water Right Data](#)

RECEIVED
BY DEC 10 1963
STATE ENGINEER
DIVISION

Permit No. G-2560

APPLICATION FOR A PERMIT

To appropriate the Ground Waters of the State of Oregon

X THE CITY OF UMATILLA, (Name of applicant)

of City Hall, county of Umatilla, (Postoffice Address)

state of Oregon, do hereby make application for a permit to appropriate the following described ground waters of the state of Oregon, SUBJECT TO EXISTING RIGHTS:

If the applicant is a corporation, give date and place of incorporation

1915, County of Umatilla, State of Oregon

1. Give name of nearest stream to which the well, tunnel or other source of water development is situated Umatilla River (Name of stream)

a tributary of the Columbia River

2. The amount of water which the applicant intends to apply to beneficial use is 2.28 cubic feet per second or 1,000 gallons per minute.

3. The use to which the water is to be applied is municipal use for the City of Umatilla

4. The well or other source is located 30 ± ft. S. and 30 ± ft. W. from the corner of Section 19 (N. or S.) (E. or W.)

(If preferable, give distance and bearing to section corner)

(If there is more than one well, each must be described. Use separate sheet if necessary)

being within the NE 1/4 of NE 1/4 of Sec. 19, Twp. 5 N., R. 28 E., W. M., in the county of Umatilla, Oregon

5. The pipe line to be 1 1/2 to 2 miles in length, terminating in the SE 1/4 of SE 1/4 of Sec. 8, Twp. 5 N., R. 28 E., W. M., the proposed location being shown throughout on the accompanying map.

6. The name of the well or other works is City of Umatilla Well No. 2

DESCRIPTION OF WORKS

7. If the flow to be utilized is artesian, the works to be used for the control and conservation of the supply when not in use must be described.

8. The development will consist of a well having a diameter of 16 to 8 inches and an estimated depth of 785 feet. It is estimated that 400 feet of the well will require 16 to 8 inch casing. Depth to water table is estimated 117 (1947) 255 ft. (estimated 1963).

CANAL SYSTEM OR PIPE LINE—

9. (a) Give dimensions at each point of canal where materially changed in size, stating miles from headgate. At headgate: width on top (at water line) feet; width on bottom feet; depth of water feet; grade feet fall per one thousand feet.

(b) At miles from headgate: width on top (at water line) feet; width on bottom feet; depth of water feet; grade feet fall per one thousand feet.

(c) Length of pipe, ft.; size at intake, in.; in size at ft. from intake in.; size at place of use in.; difference in elevation between intake and place of use, ft. Is grade uniform? Estimated capacity, sec. ft.

10. If pumps are to be used, give size and type Peerless No. 46273 - 10" estimated.

Give horsepower and type of motor or engine to be used 100 HP General Electric

11. If the location of the well, tunnel, or other development work is less than one-fourth mile from a natural stream or stream channel, give the distance to the nearest point on each of such channels and the difference in elevation between the stream bed and the ground surface at the source of development

See attached map.

12. Location of area to be irrigated, or place of use See attached map.

Township N. or S.	Range E. or W. of Willamette Meridian	Section	Party-acre Tract	Number Acres To Be Irrigated
5 N	2 R E	8	SE 1/4, SE 1/4	Municipal use
"	"	8	SW 1/4, SE 1/4	"
"	"	8	SE 1/4, SW 1/4	"
"	"	17	The NE 1/4 & NW 1/4 Sec 17	320 Acres
"	"	17	NE 1/4, SW 1/4	Municipal use
"	"	17	NW 1/4, SW 1/4	"
5 N	"	17	SW 1/4, SW 1/4	"
"	"	18	NE 1/4, NE 1/4	"
"	"	18	SE 1/4, NE 1/4	"
"	"	18	NE 1/4, SE 1/4	"

(If more space required, attach separate sheet)

Character of soil

Kind of crops raised

MUNICIPAL SUPPLY—

12. To supply the city of Umatilla
in Umatilla county, having a present population of 605
and an estimated population of 1,000 in 1970.

ANSWER QUESTIONS 14, 15, 16, 17 AND 18 IN ALL CASES

- 14. Estimated cost of proposed works, \$ 12,500.00
- 15. Construction work will begin on or before completed - 1947
- 16. Construction work will be completed on or before completed - 1947
- 17. The water will be completely applied to the proposed use on or before new in use

18. If the ground water supply is supplemental to an existing water supply, identify any application for permit, permit, certificate or adjudicated right to appropriate water, made or held by the applicant. Another well located near the Umatilla River in the NE 1/4 of the SW 1/4 of Section 17, Township 5 North, Range 28 East.

Warren W. Aney
(Signature of applicant) Mayor

Remarks: This application is to place the well on records that should have been completed many years ago.

STATE OF OREGON, }
County of Marion, } ss.

This is to certify that I have examined the foregoing application, together with the accompanying maps and data, and return the same for

In order to retain its priority, this application must be returned to the State Engineer, with corrections on or before, 19.....

WITNESS my hand this day of, 19.....

By STATE ENGINEER
ASSISTANT

STATE OF OREGON, }
County of Marion, }

PERMIT

This is to certify that I have examined the foregoing application and do hereby grant the same, SUBJECT TO EXISTING RIGHTS and the following limitations and conditions:

The right herein granted is limited to the amount of water which can be applied to beneficial use and shall not exceed 2.0 cubic feet per second measured at the point of diversion from the well or source of appropriation, or its equivalent in case of rotation with other water users, from well No. 2

The use to which this water is to be applied is municipal

If for irrigation, this appropriation shall be limited to - - of one cubic foot per second or its equivalent for each acre irrigated and shall be further limited to a diversion of not to exceed - - acre feet per acre for each acre irrigated during the irrigation season of each year;

and shall be subject to such reasonable rotation system as may be ordered by the proper state officer.

The well shall be cased as necessary in accordance with good practice and if the flow is artesian the works shall include proper capping and control valve to prevent the waste of ground water.

The works constructed shall include an air line and pressure gauge or an access port for measuring line, adequate to determine water level elevation in the well at all times.

The permittee shall install and maintain a weir, meter, or other suitable measuring device, and shall keep a complete record of the amount of ground water withdrawn.

The priority date of this permit is December 24, 1963

Actual construction work shall begin on or before March 10, 1965 and shall thereafter be prosecuted with reasonable diligence and be completed on or before October 1, 1965

Complete application of the water to the proposed use shall be made on or before October 1, 1966

WITNESS my hand this 10th day of March, 1964

Chris L. Winkler
STATE ENGINEER

Application No. G-2755

Permit No. G-2560

PERMIT

TO APPROPRIATE THE GROUND WATERS OF THE STATE OF OREGON

This instrument was first received in the office of the State Engineer at Salem, Oregon, on the 24th day of December, 1963 at 8:00 o'clock A. M.

Returned to applicant:

Approved:

March 10, 1964
10 of

Recorded in book No. 2560
Ground Water Permits on page

CHRIS L. WINKLER
STATE ENGINEER

Drainage Basin No. 7 page 53



Contact Information (Click to Collapse...)

Current contact information

APPLICANT:
 PORT OF UMATILLA
 PO BOX 879
 UMATILLA, OR 97882
 OWNER:
 PORT OF UMATILLA
 PO BOX 879
 UMATILLA, OR 97882
 OWNER:
 CITY OF UMATILLA
 PO BOX 130
 UMATILLA, OR 97882

Water Right Information (Click to Collapse...)

Status: Non-Cancelled
 County: Umatilla
 File Folder Location: Salem
 Watermaster District: 5

Scanned Documents (Click to Expand...)

Point(s) of Diversion (Click to Collapse...)

POD 1 - A WELL > COLUMBIA RIVER (View Groundwater Site Info)

Place(s) of Use (Click to Collapse...)

Add TRS grouping

Use - MUNICIPAL USES
 (Primary); Priority Date: 8/10/1966

Water Right Genealogy (Click to Collapse...)

Permit: G 3112
 Inchoate: T 8701 CF (AMN)
 Permit: G 3112 *

Workflow (Click to Collapse...)

- Application: G 3612
- Permit: G 3112 document, paper map
- Signature: 11/3/1966

Permit Workflow

Action	Date	Result	Completed By
Permit Issued	11/3/1966		
Extension Application Received	9/20/1999		ANN REECE
Extension PFO 315 Issued	1/22/2002		ANN REECE
Extension FO Issued	6/11/2002		
CBU Received	1/14/2003		MICHAEL POSADA
Extension Checkpoint 320 Received	8/3/2007		ANN REECE
Extension Checkpoint 315 Public Notice	8/14/2007		KIM FRENCH
Extended Completion Date [Extension C Date]	10/1/2029		ANN REECE

Order(s)

Order	Origin	Volume-Page	Signature	Description
Special		19-204	4/1/1970	ORDER APPROVING THE CHANGE IN PLACE OF USE FROM DESCHUTES RIVER IN THE NAMES OF FAY A., OMA C. AND DONALD YOUNG (COID) Y-8
Special		22-310	11/20/1972	EXTENSIONS OF TIME
Special		25-100	9/16/1974	ORDER EXTENDING TIME IN WHICH TO COMPLETE CONSTRUCTION AND MAKE COMPLETE APPLICATION OF WATER UNDER CERTAIN PERMITS
Special		28-299	2/14/1977	EXTENDS TIME, CERTAIN PERMITS
Special		30-668	5/24/1978	EXTENDS TIME FOR CERTAIN PERMITS
Special		33-702	9/22/1980	EXTENDS TIME FOR B & C ON 212 PERMITS
Special		39-40	2/20/1985	EXTENSION OF TIME ORDER
Special		45-78	1/29/1991	ORDER EXTENDING TIME LIMIT ON PERMITS
Special		49-205	6/12/1995	EXTENDS TIME LIMITS ON CERTAIN PERMITS
Special		56-718	7/29/2002	APPROVING T-8701 - AMEN

Transfer(s)

Transfer	Transfer type	Status
T8701 (Confirming)	Permit Amendment	Approved

- View right with Web Mapping
- View Places of Use from Water Rights in the Same Area
- View Reported Water Use

RECEIVED
AUG 17 1966

STATE ENGINEER
ON

Permit No. G- G 3112

APPLICATION FOR A PERMIT

To appropriate the Ground Waters of the State of Oregon

I, Port of Umatilla (Name of applicant)

of P. O. Box 408, McNary, Oregon, county of Umatilla (Postoffice Address)

state of Oregon, do hereby make application for a permit to appropriate the following described ground waters of the state of Oregon, SUBJECT TO EXISTING RIGHTS:

If the applicant is a corporation, give date and place of incorporation

1. Give name of nearest stream to which the well, tunnel or other source of water development is situated Columbia River (Name of stream)

tributary of --

2. The amount of water which the applicant intends to apply to beneficial use is 4.46 cubic feet per second or 2,000 gallons per minute.

3. The use to which the water is to be applied is Municipal Water Supply

4. The well or other source is located 2,045 ft. N. and 1,790 ft. E from the SW corner of Section 11, Township 5 North, Range 28 East, W.M. (N. or S.) (E. or W.) (Section or subdivision)

(If preferable, give distance and bearing to section corner)

(If there is more than one well, each must be described. Use separate sheet if necessary)

being within the NE 1/4 of SW 1/4 of Sec. 11, Twp. 5 N., R. 28 E., W. M., in the county of Umatilla

5. The connecting pipeline to be 0.4 miles (Canal or pipe line) in length, terminating in the SE 1/4 of SW 1/4 of Sec. 11, Twp. 5 N., R. 28 E., W. M., the proposed location being shown throughout on the accompanying map. (Smallest legal subdivision)

6. The name of the well or other works is Port of Umatilla Well No. 1

DESCRIPTION OF WORKS

7. If the flow to be utilized is artesian, the works to be used for the control and conservation of the supply when not in use must be described.

Do not expect to encounter free flowing artesian water.

8. The development will consist of one well (Give number of wells, tunnels, etc.) having a diameter of 18 inches and an estimated depth of 800 feet. It is estimated that 350 feet of the well will require steel casing. Depth to water table is estimated 170 (Feet) (Kind)

T-8701 Δ POU v.56p.718

Continuation of Item 12 of Application for a Permit

G 31-12
 RECEIVED
 AUG 25 1966
 CIVIL ENGINEER
 OREGON

To Appropriate the Ground Waters of the State of Oregon

T. N. or S.	Range E. or W. of Willamette Mer.	Section	Forty-acre Tract	Number Acres To Be Irrigated
5 N.	28 E.	12	NE 1/4 of SE 1/4	--
5 N.	28 E.	12	NW 1/4 of SE 1/4	--
5 N.	28 E.	12	SE 1/4 of SE 1/4	--
5 N.	28 E.	12	SW 1/4 of SE 1/4	--
5 N.	28 E.	12	NE 1/4 of SW 1/4	--
5 N.	28 E.	12	NW 1/4 of SW 1/4	--
5 N.	28 E.	12	SE 1/4 of SW 1/4	--
5 N.	28 E.	12	SW 1/4 of SW 1/4	--
5 N.	28 E.	14	NE 1/4 of NE 1/4	--
5 N.	28 E.	14	NW 1/4 of NE 1/4	--
5 N.	28 E.	14	SE 1/4 of NE 1/4	--
5 N.	28 E.	14	SW 1/4 of NE 1/4	--
5 N.	28 E.	14	NE 1/4 of NW 1/4	--
5 N.	28 E.	14	SE 1/4 of NW 1/4	--
5 N.	28 E.	14	NE 1/4 of SE 1/4	--
5 N.	28 E.	14	NW 1/4 of SE 1/4	--
5 N.	28 E.	14	NE 1/4 of SW 1/4	--

CANAL SYSTEM OR PIPE LINE—

6.5+2

9. (a) Give dimensions at each point of canal where materially changed in size, stating miles from headgate. At headgate: width on top (at water line) ----- feet; width on bottom ----- feet; depth of water ----- feet; grade ----- feet fall per one thousand feet.

(b) At ----- miles from headgate: width on top (at water line) ----- feet; width on bottom ----- feet; depth of water ----- feet; grade ----- feet fall per one thousand feet.

(c) Length of pipe, 2,100+ ft.; size at ~~intake~~ well intake, 12 in.; in size at 2,100+ ft. from intake 12 in.; size at place of use 12 in.; difference in elevation between well and place of use, Variable ft. Is grade uniform? Pressure system Estimated capacity, 5.0 sec. ft.

10. If pumps are to be used, give size and type 2,000 gpm Vertical Turbine Well Pump

Give horsepower and type of motor or engine to be used 450 horsepower Electric Motor

11. If the location of the well, tunnel, or other development work is less than one-fourth mile from a natural stream or stream channel, give the distance to the nearest point on each of such channels and the difference in elevation between the stream bed and the ground surface at the source of development

Distance to Columbia River - 400 feet +

Difference in elevation between stream bed and ground surface at well - 40+ ft.

12. Location of area to be irrigated, or place of use -----

Township N. or S.	Range E. or W. of Willamette Meridian	Section	Forty-acre Tract	Number Acres To Be Irrigated
5 N.	28 E.	10	NE 1/4 of SE 1/4	---
5 N.	28 E.	10	SE 1/4 of SE 1/4	--
5 N.	28 E.	11	SW 1/4 of NE 1/4	--
5 N.	28 E.	11	SE 1/4 of NW 1/4	--
5 N.	28 E.	11	NE 1/4 of SE 1/4	--
5 N.	28 E.	11	NW 1/4 of SE 1/4	--
5 N.	28 E.	11	SE 1/4 of SE 1/4	--
5 N.	28 E.	11	SW 1/4 of SE 1/4	--
5 N.	28 E.	11	NE 1/4 of SW 1/4	--
5 N.	28 E.	11	NW 1/4 of SW 1/4	--
5 N.	28 E.	11	SE 1/4 of SW 1/4	--
5 N.	28 E.	11	SW 1/4 of SW 1/4	--

(Continued on attached sheet)

(If more space required, attach separate sheet)

Character of soil -----

Kind of crops raised -----

MUNICIPAL SUPPLY—

13. To supply the city of Port of Umatilla
in Umatilla county, having a present population of NA
and an estimated population of NA in 19

ANSWER QUESTIONS 14, 15, 16, 17 AND 18 IN ALL CASES

14. Estimated cost of proposed works, \$ 190,000

15. Construction work will begin on or before 15 September 1966

16. Construction work will be completed on or before 1 October 1967, 10-1-94

17. The water will be completely applied to the proposed use on or before 1 October 1970, 10-1-94

18. If the ground water supply is supplemental to an existing water supply, identify any application for permit, permit, certificate or adjudicated right to appropriate water, made or held by the applicant.

Howittore
Secretary (Signature of applicant)

Remarks:

STATE OF OREGON, }
County of Marion, } ss.

This is to certify that I have examined the foregoing application, together with the accompanying maps and data, and return the same for completion

In order to retain its priority, this application must be returned to the State Engineer, with corrections on or before October 12, 1966.

WITNESS my hand this 12th day of August, 1966

RECEIVED
AUG 25 1966

CHRIS L. WHEELER

STATE ENGINEER
OREGON

By

Tony W. Housek
ASSISTANT

County of Marion,

ss.

This is to certify that I have examined the foregoing application and do hereby grant the same, SUBJECT TO EXISTING RIGHTS and the following limitations and conditions:

The right herein granted is limited to the amount of water which can be applied to beneficial use and shall not exceed 4.46 cubic feet per second measured at the point of diversion from the well or source of appropriation, or its equivalent in case of rotation with other water users, from a well

The use to which this water is to be applied is municipal

If for irrigation, this appropriation shall be limited to of one cubic foot per second or its equivalent for each acre irrigated and shall be further limited to a diversion of not to exceed acre feet per acre for each acre irrigated during the irrigation season of each year;

and shall be subject to such reasonable rotation system as may be ordered by the proper state officer.

The well shall be cased as necessary in accordance with good practice and if the flow is artesian the works shall include proper capping and control valve to prevent the waste of ground water.

The works constructed shall include an air line and pressure gauge or an access port for measuring line, adequate to determine water level elevation in the well at all times.

The permittee shall install and maintain a weir, meter, or other suitable measuring device, and shall keep a complete record of the amount of ground water withdrawn.

The priority date of this permit is August 10, 1966

Actual construction work shall begin on or before November 3, 1967 and shall

thereafter be prosecuted with reasonable diligence and be completed on or before October 1, 1968

Complete application of the water to the proposed use shall be made on or before October 1, 1969

WITNESS my hand this 3rd day of November, 1966

"B" Ext. to: 10-1-2029

"C" Ext. to: 10-1-2029

Chris L. Wheeler

STATE ENGINEER

Application No. G-3612
Permit No. G-3112

PERMIT

TO APPROPRIATE THE GROUND WATERS OF THE STATE OF OREGON

This instrument was first received in the office of the State Engineer at Salem, Oregon, on the 10th day of August, 1966, at 1:00 o'clock P. M.

Returned to applicant:

Approved: November 3, 1966

Recorded in book No. of Ground Water Permits on page G 3112

CHRIS L. WHEELER STATE ENGINEER

Drainage Basin No. 7 page 57

State Printing

Extended to October 1, 1968, 10-1-68

DC



Contact Information (Click to Collapse...)

▼ **Current contact information**

OWNER:
 CITY OF UMATILLA
 PO BOX 130
 UMATILLA, OR 97882

Water Right Information (Click to Collapse...)

Status: Non-Cancelled
County: Umatilla
File Folder Location: Salem
[Watermaster District:](#) 5

Scanned Documents (Click to Expand...)

Point(s) of Diversion (Click to Collapse...)

▶ [POD 1 - COLUMBIA RIVER > PACIFIC OCEAN](#)

Place(s) of Use (Click to Collapse...)

[Add TRS grouping](#)

▶ **Use - MUNICIPAL USES**
 (Primary); Priority Date: 10/5/1976

Water Right Genealogy (Click to Collapse...)

...No genealogy records available for this water right, try the family link below instead.

[View Water Rights in same Family](#) [Report Errors with Water Right Data](#)

Workflow (Click to Collapse...)

- ▶ **Application: S 54855**
- ▼ **Permit: S 41444** [document](#) , [paper map](#)
- ▶ Signature: 4/27/1977

Permit Workflow

Action	Date	Result	Completed By
Permit Issued	4/27/1977		
Completion Date [C Date]	10/1/1999		
▶ Extension Application Received	3/19/2003		ANN REECE
▶ Extension Comment Period Ends	3/25/2003		ANN REECE
Extension PFO 315 Issued	6/26/2012	Propose to Approve	ANN REECE
Extension PFO Protest Period Ends	8/10/2012		ANN REECE
Extension FO Issued	8/24/2012	Extended	ANN REECE
Extended Completion Date [Extension C Date]	10/1/2055		ANN REECE

▼ **Order(s)**

Order Origin	Volume-Page	Signature	Description
Special	37-232	5/4/1983	EXTENDS PERMIT 41444
▶ Special	38-593	1/28/1985	EXTENDS PERMIT 41444
Special	44-63	2/14/1990	EXTENSION ORDER FOR CITY OF UMATILLA
Special	49-12	2/2/1995	EXTENDS TIME LIMITS ON CERTAIN PERMITS

- ▶ [View right with Web Mapping](#)
- ▶ [View Places of Use from Water Rights in the Same Area](#)
- ▶ [View Reported Water Use](#)

*APPLICATION FOR PERMIT

To Appropriate the Public Waters of the State of Oregon

I, City of Umatilla (Name of applicant) of P. O. Box 130 (Mailing address), Umatilla (City), State of Oregon 97882 (Zip Code), do hereby make application for a permit to appropriate the following described public waters of the State of Oregon, SUBJECT TO EXISTING RIGHTS:

If the applicant is a corporation, give date and place of incorporation

Does not apply

1. The source of the proposed appropriation is Columbia River (Name of stream), a tributary of Pacific Ocean

2. The amount of water which the applicant intends to apply to beneficial use is 23 cubic feet per second (If water is to be used from more than one source, give quantity from each)

3. The use to which the water is to be applied is Municipal consumption (Irrigation, power, mining, manufacturing, domestic supplies, etc.)

4. The point of diversion is located 2860 ft. N. and 3000 ft. E. from the S.W. corner of Section 11 (Section or subdivision)

(If preferable, give distance and bearing to section corner)

(If there is more than one point of diversion, each must be described. Use separate sheet if necessary)

being within the SW 1/4 N.E. 1/4 of Sec. 11, Tp. 5 N., R. 28 E., W. M., in the county of Umatilla, Oregon

5. The pipeline to be 0.50 in length, terminating in the S.W. 1/4 of Sec. 11, Tp. 5 N., R. 28 E., W. M., the proposed location being shown throughout on the accompanying map.

DESCRIPTION OF WORKS

Diversion Works—

6. (a) Height of dam N/A feet, length on top N/A feet, length at bottom N/A feet; material to be used and character of construction N/A (Loose rock, concrete, masonry, rock and brush, timber crib, etc., wasteway over or around dam)

(b) Description of headgate N/A (Timber, concrete, etc., number and size of openings)

(c) If water is to be pumped give general description Development consists of a Ranney type collector well. Estimated depth of 100 feet with estimated depth to water table of 50 feet from surface.

* A different form of application is provided where storage works are contemplated. Such forms can be secured without charge, together with instructions, by addressing the State Engineer, Salem, Oregon 97310.

Application for Permit -
To Appropriate the Public Waters of the State of Oregon

FOR: City of Umatilla

8. LOCATION OF AREA TO BE IRRIGATED, OR PLACE OF USE

<u>Township</u> <u>North or South</u>	<u>Range, E. or W. of</u> <u>Willamette Meridian</u>	<u>Section</u>	<u>Government</u> <u>Subdivision</u>	<u>Number of Acres</u> <u>to be Irrigated</u>
5 N.	27 E., W.M.	13	E ½, SE ¼	80
5 N.	28 E., W.M.	8	All southerly of Columbia River	46
		9	All southerly of Columbia River	364
		10	All southerly of Columbia River	320
		11	All southerly of Columbia River	273
		12	All southerly of Columbia River	339
		13	All	640
		14	All	640
		15	All	640
		16	All	640
		17	All	633
		18	All southerly of Columbia River	461
		19	All	640
		20	All	640
		21	All	640
		22	All	640
		23	All	640
		24	All	640
		27	NE ¼	160
			NW ¼	160
		28	NE ¼	160
			NW ¼	160
		29	NE ¼	160
			NW ¼	160
		30	NE ¼	160
5 N.	29 E., W.M.	7	All southerly of Columbia River	212
		8	All southerly of Columbia River	26
		17	All	614
		18	All	640
		19	All	640
		20	N ½, NE ¼	80
			N ½, NW ¼	80

RECEIVED
MAY 19 1913
WATER RECORDS DEPT
OREGON

Application No. 54855
Permit No. 41444

10. (a) To supply the city of Umatilla and the industrial area of Port of Umatilla Umatilla County, having a present population of 2,300 (Name of)

and an estimated population of 11,000 in 2000, plus the industrial development area of the Port, including the Johns-Manville plant site and the Alumax plant site.

(b) If for domestic use state number of families to be supplied 4,800 families, plus industrial.

(Answer questions 11, 12, 13, and 14 in all cases)

- 11. Estimated cost of proposed works, \$ 800,000
12. Construction work will begin on or before January 1, 1977
13. Construction work will be completed on or before January 1, 1980
14. The water will be completely applied to the proposed use on or before the Year 2000

(Signature of applicant)

Mayor

Remarks:

STATE OF OREGON, }
County of Marion, } ss.

This is to certify that I have examined the foregoing application, together with the accompanying maps and data, and return the same for

In order to retain its priority, this application must be returned to the State Engineer, with corrections on or before, 19.

WITNESS my hand this day of, 19.

STATE ENGINEER

By

ASSISTANT

PERMIT

STATE OF OREGON, }
County of Marion, } ss.

41414

This is to certify that I have examined the foregoing application and do hereby grant the same, SUBJECT TO EXISTING RIGHTS and the following limitations and conditions:

The right herein granted is limited to the amount of water which can be applied to beneficial use and shall not exceed 23.0 cubic feet per second measured at the point of diversion from the stream, or its equivalent in case of rotation with other water users, from Columbia River

The use to which this water is to be applied is municipal purposes

If for irrigation, this appropriation shall be limited to of one cubic foot per second or its equivalent for each acre irrigated

and shall be subject to such reasonable rotation system as may be ordered by the proper state officer.

The priority date of this permit is October 5, 1976

Actual construction work shall begin on or before April 27, 1978 and shall thereafter be prosecuted with reasonable diligence and be completed on or before October 1, 1978

Complete application of the water to the proposed use shall be made on or before October 1, 1979

WITNESS my hand this 27th day of April 1977

James E. [Signature]
WATER RESOURCES DIRECTOR

Application No. 54855
Permit No. 41414

PERMIT
TO APPROPRIATE THE PUBLIC
WATERS OF THE STATE
OF OREGON

This instrument was first received in the office of the State Engineer at Salem, Oregon, on the 5th day of October 1976, at 8 o'clock A. M.

Returned to applicant:

Approved:

Recorded in book No. 41414 of Permits on page

STATE ENGINEER

Drainage Basin No. 7 page 26
Fees 79.00

Appendix D – 395 Corridor Water Model Assumptions

Contents

D.1 Introduction	2
D.2 Model Assumptions and Design Criteria	2
D.2.1 Average Daily Demand (ADD).....	2
D.2.2 Peaking Factors.....	3
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D.2.4 Determining Minimum Pipe Sizes.....	4
D.2.5 Booster Pump Station Design.....	4
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Appendix D – Water Model Assumptions

D.1 Introduction

The hydraulic water modeling effort for the 395 Corridor was completed at a feasibility level of detail. The assumptions and design criteria used herein should be reviewed and refined during future master planning and again during design efforts. Hydraulic water modeling of the potential buildout of the 395 Corridor was completed using Bentley WaterCAD V8i software. Assumptions and design criteria used in the model are described below.

D.2 Model Assumptions and Design Criteria

This section summarizes the water demand assumptions and design criteria for the hydraulic water model.

D.2.1 Average Daily Demand (ADD)

Discussion:

No historical data exists for the City of Umatilla regarding the water demand for each land use. Residential demands are based on comparable water systems in the area. Residential land use was divided into three categories; Single Family Residential (SFR), Medium Demand Rural Residential (MDRR) and Low Demand Rural Residential (LDRR). The average number of assumed residential dwelling units per acre for the 395 Corridor are shown in Table 1.

Table 1 – Residential Dwelling Units per Acre

Land Use	Dwelling Units/Acre
SFR	5
MDRR	0.5
LDRR	0.2

Planning for commercial and industrial water demands is difficult because of the wide range of potential water needs. For the purpose of this study commercial and industrial water demands were assumed to be the same as the sewer demands. It is recommended that each potential non-residential user be analyzed separately at the time of development. Table 2 below summarizes the potential Average Daily Demand (ADD) for each land use in the 395 Corridor. The PDX63 site's industrial demand is not included in the 395 Corridor system.

Table 2 – Average Daily Demands

Zone Description	Existing Zoning ID
Commercial (CG)	1,100
Single Family Residential (SFR) ¹	2,160
Medium Demand Rural Residential (MDRR) ¹	216
Low Demand Rural Residential (LDRR) ¹	86
Light Industrial (LI)	1,100
Open Space	0

¹Based on 432 GPD/Dwelling

Model Assumption: Water demands were based on demands from comparable water systems in the area. Average ADD demand data from Table 2 was applied on a gross acreage basis.

D.2.2 Peaking Factors

Parameter: Peak Daily Demand (PDD)

Discussion: PDD represents the peak demand expected for a single day out of the year. The PDD/ADD peaking factor is consistent with the City’s 2008 Water System Master Plan. The 2008 Master Plan peaking factor is based on existing city wide daily consumption data.

Model Assumptions:

The peaking factor is:

$$PDD = 2.3 * ADD$$

Parameter: Peak Hourly Demand (PHD)

Discussion: PHD represents the highest water distribution demand during a single hour of the year. The PHD/PDD peaking factor used in the City’s 2008 Water System Master Plan was 2.5 and was based on engineering judgement. For the hydraulic water modeling of the 395 Corridor and calculations for the remainder of the study area, the PHD was calculated using the Washington State Department of Health Water System Design Manual (WSDM) Equation 5-1. Equation 5-1 is worked out below:

$$PHD = (PDD/1,440) * (C * N + F) + 18$$

PDD = Peak Daily Demand (GPD/ERU) = 994 GPD/ERU

C = Coefficient associated with ranges of ERUs = 1.6, for over 500 ERUs

N = Number of ERUs = 6,221 (Based on SFR demand of 432 GPD)

F = Factor associated with ranges of ERUs = 225, for over 500 ERUs

Umatilla Beneficial Reuse Feasibility Analysis

PHD = 7,519 GPM

Once a PHD is established for the entire system it is divided by the systems PDD (4,292 GPM) to get a peaking factor.

Model Assumptions:

The PHD peaking factor is:

$$PHD = 1.6 * PDD$$

D.2.3 Fire Flows

Discussion:

In order to determine if pipes are adequately sized for fire flow events a fire flow analysis was conducted using the modeling software. The following flow and duration requirements in **Table 2** were assumed.

Model Assumptions:

Table 2 – Fire Flows

Fire Demand Land Use	Rate of Flow (gpm)	Duration (hours)
Residential	1,500	2
Commercial/Industrial	3,000	3
PDX63	2,500	2

D.2.4 Determining Minimum Pipe Sizes

Discussion:

Four main criteria were used to determine the minimum pipe size required to maintain a safe and reliable system. The first two criteria are taken from the WSDM. The 3rd and 4th criteria (velocity and headloss) were also used to properly size pipe. The requirements are listed below.

Model Assumptions:

1. Maintain 30 psi in pressure zone during PHD with equalizing storage depleted,
2. Maintain 20 psi in pressure zone during fire flows and PDD with equalizing storage and fire suppression storage depleted and the largest zone source turned off,
3. Maintain velocities less than 10 ft/s during fire flows and PDD, and
4. Maintain headloss gradients of less than 5 ft/ 1000 ft in transmission mains.

D.2.5 Booster Pump Station Design

Parameter: Booster Pump Station Types

Discussion:

Booster pumps are recommended to at least be sized to meet the PDD of the pressure zone. Increasing the size of the booster pump(s) has an effect on the sizing requirements for reservoir storage. For pressure

Umatilla Beneficial Reuse Feasibility Analysis

zones with no storage the peak demands and fire flows must be supplied with the booster.

Model Assumptions: Booster pumps were sized to meet the PDD for each zone, except for the Umatilla Butte High System, which is sized to meet the PHD.

D.2.6 Storage Requirements

Parameter: Required Storage Volume

Discussion: Storage requirements are generally listed by the Federal EPA and the Oregon State Drinking Water Program (DWP). The volume criteria listed in the WSDM were used since these meet the minimum Federal EPA and Oregon State DWP requirements. Water system storage consists of five components: operational, equalizing, standby, fire suppression, and dead storage.

Operational storage (OS) is the volume of the reservoir devoted to supplying the water system while, under normal operating conditions, the sources are not delivering water. All of the sources are called to turn on or off by elevation level readings of the reservoirs. The OS is calculated as the larger of the volume required to prevent excessive cycling of the pump(s) or the sensitivity of the water level sensors.

Equalizing storage (ES) is the volume needed when source pumping capacity cannot keep up with the peak demands. This is determined by the difference between the PHD and the source capacity to fill the reservoir. The equalizing storage ensures that the peak instantaneous demands of the water system can always be met. Equation 9-1 from the WSDM was used in developing the ES requirements for the 395 Corridor in each zone. As an added safety factor, ES was assumed equal to at least 15% of PDD. This exceeds the WSDOH criteria for reservoir sizing guidelines.

Equation 9-1:

$$ES = (PHD - Q_s) * (150 \text{ min}), \text{ but not less than zero}$$

Where:

ES = equalizing storage component, in gallons

PHD = Peak Hourly Demand, in gpm

Q_s = Sum of all installed and active source of supply capacities, except emergency sources of supply, in gpm

Standby Storage (SB) provides a measure of reliability should sources of supply fail or unusually high demand occur. Water systems served by multiple sources should have adequate SB volume to meet the water system's ADD for two days with the pressure zone's largest capacity

Umatilla Beneficial Reuse Feasibility Analysis

source unavailable. At a minimum, SB volume in each zone should be 200 gallons per ERU. Equation 9-3 from the WSDM was used in developing the SB requirements for the 395 Corridor in each zone.

Equation 9-2:

$$SB = (2 \text{ days}) * [(ADD) * (N) - t_m(Q_S - Q_L)]$$

Where:

SB = Total standby storage, in gallons

ADD = Average Daily Demand, in gpd/ERU

N = Number of ERUs

Q_S = Sum of all installed and continuously available supply source capacities, except emergency sources, in gpm

Q_L = The largest capacity source available to the pressure zone, in gpm

T_m = Time the remaining sources are pumped on the days when the largest source is not available; 1,440 minutes

Fire Suppression Storage (FSS) is required for public water systems. The required FSS volume is calculated as the product of the required flow rate multiplied by the flow duration. WSDM Equation 9-4 was used in developing the FSS requirements for the 395 Corridor in each zone.

Equation 9-4:

$$FSS = (FF) * (t_m)$$

Where:

FF = Highest required fire flow rate in the zone, in gpm.

t_m = Longest duration of fire flow rate in the zone, in gpm.

For the water storage analysis it was assumed that nesting of the SB and FSS is permitted. Meaning, the smaller volume of SB or FSS is contained within the larger of FSS or SB.

Dead Storage (DS) is the volume of storage water not available to all consumers at the minimum design pressure. This dead storage is excluded from the volume needed to supply OS, ES, SB, and FSS.

Parameter: Reservoir Levels

Discussion:

The water level in the reservoirs directly affects the pressures in the model. The guidelines set for modeling reservoir levels in the WSDM were used.

Model Assumptions:

The reservoir water levels are outlined below for each model scenario.

Umatilla Beneficial Reuse Feasibility Analysis

April 2018

ADD – Storage water level set with Reservoir full.

PDD – Storage water level set with E.S. and F.S.S. depleted.

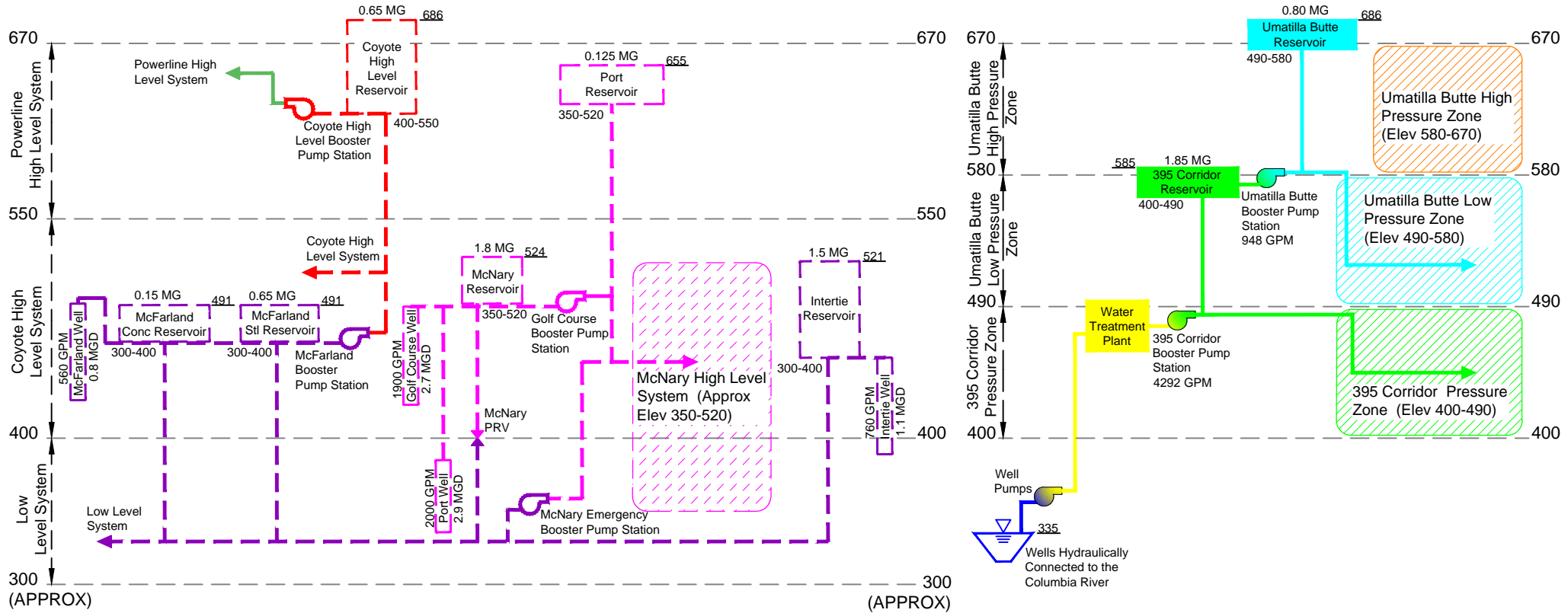
PHD – Storage water level set with E.S. depleted.

Umatilla Beneficial Reuse Feasibility Analysis

Appendix E – Water Figures

EXISTING

PROPOSED



Legend

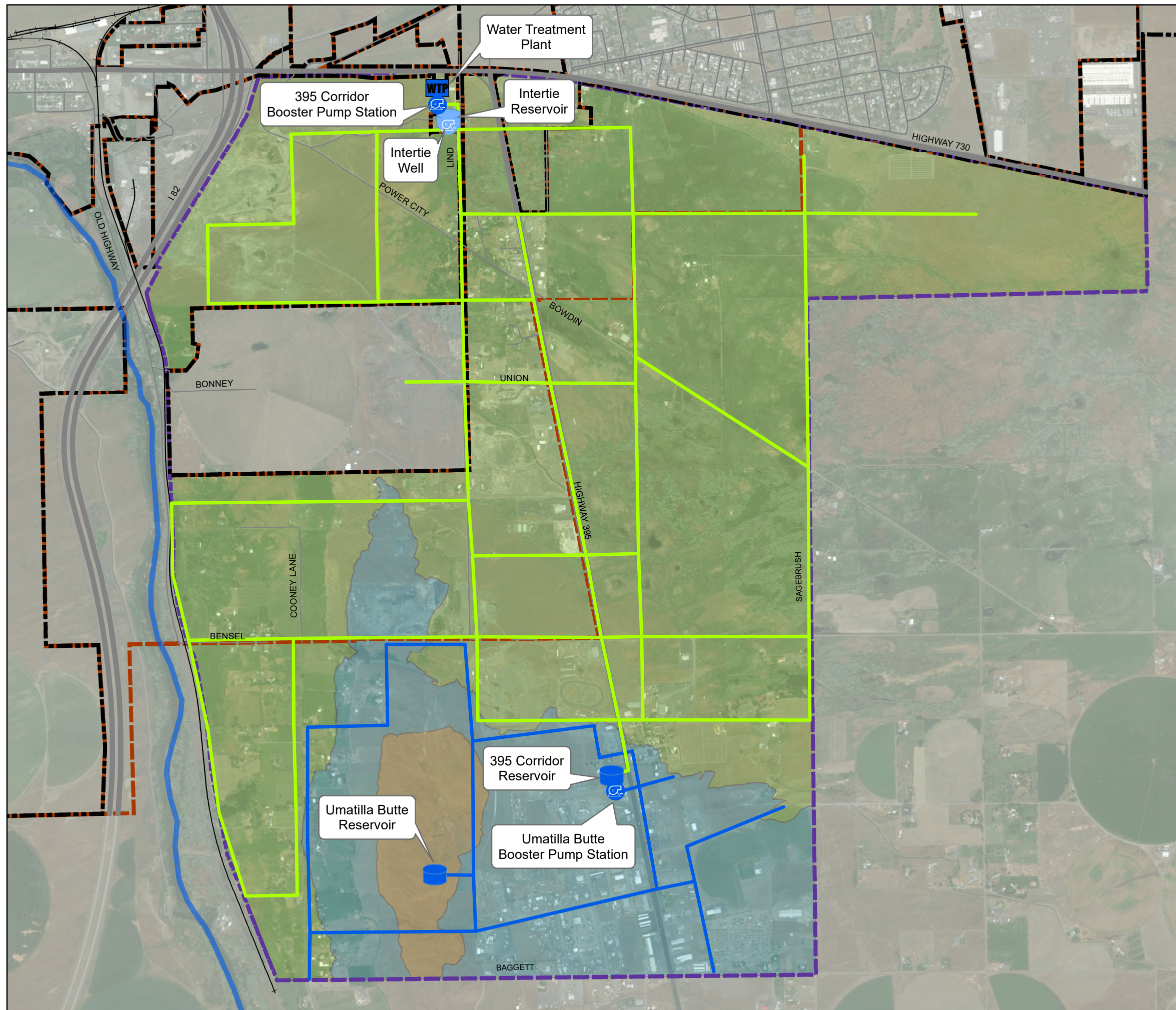
	Booster Pump Station (Pumping Capacity)		Water System Well (Pumping Capacity)
	Reservoir (Overflow Elevation)		Pressure Regulating Valve (PRV)
	Water Transmission Main		

City of Umatilla
Beneficial Reuse Feasibility Analysis
Figure E1
Water System
Hydraulic Profile Schematic



Figure E2

Pressure Zones And Facilities



Legend

- City Limit
- UGB
- 395 Corridor
- Major Streets
- Highway/Interstate
- Railroad
- Umatilla River
- New Pump Station
- Existing Well
- New Reservoir
- Existing Reservoir
- Water Treatment Plant
- 395 Corridor Pressure Zone Pipe
- Umatilla Butte Low Pressure Zone Pipe

Pressure Zones

- 395 Corridor Pressure Zone
- Umatilla Butte Low Pressure Zone
- Umatilla Butte High Pressure Zone

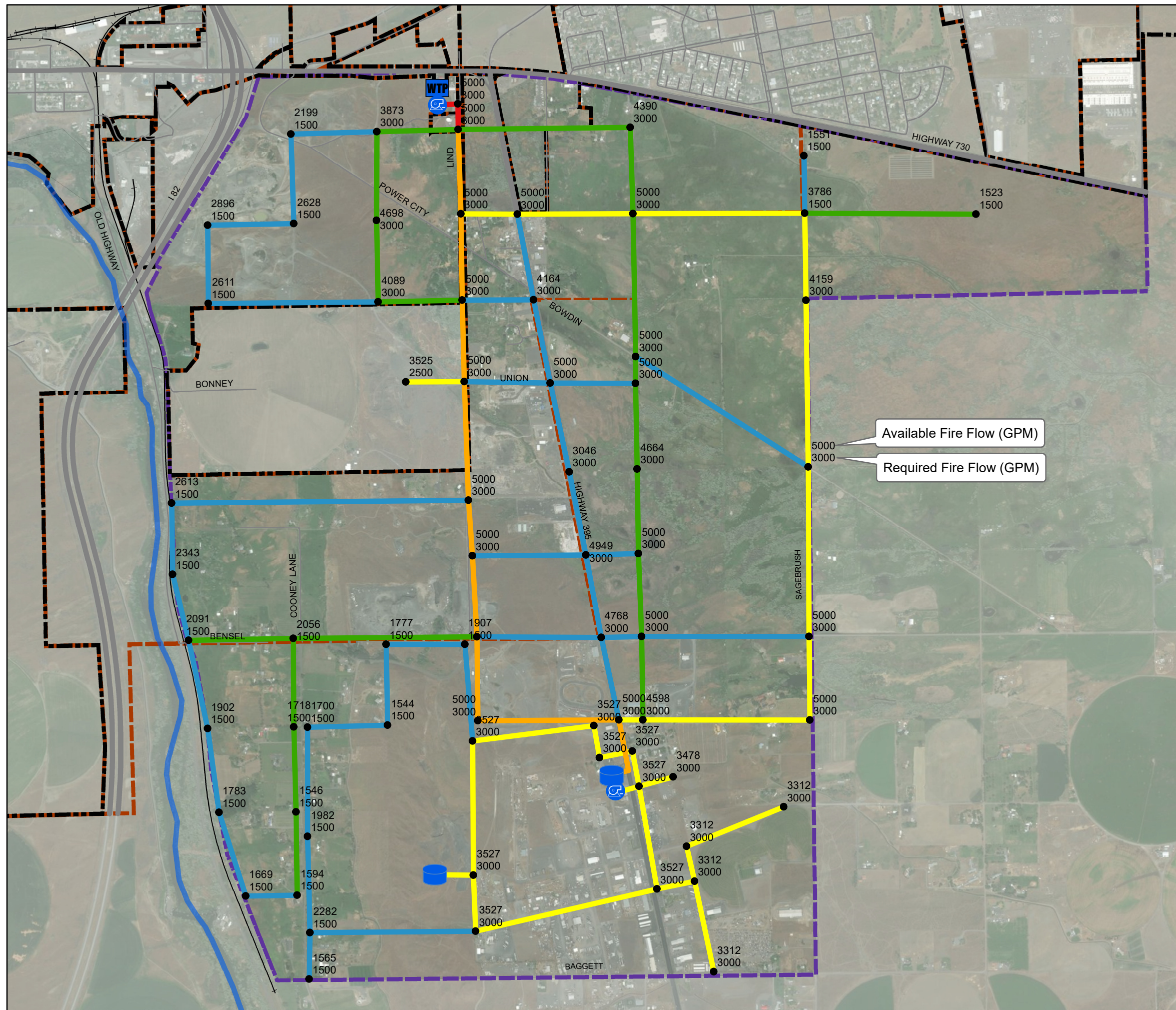
0 1,500 3,000 ft





Figure E3

Pipe Sizes And Fire Flow



Legend

- City Limit
- UGB
- 395 Corridor
- Major Streets
- Highway/Interstate
- Railroad
- Umatilla River
- Pump Station
- Reservoir
- Water Treatment Plant

Pipe Size (in)

- 8
- 10
- 12
- 16
- 18

Available Fire Flow (GPM)

Required Fire Flow (GPM)

0 1,500 3,000 ft



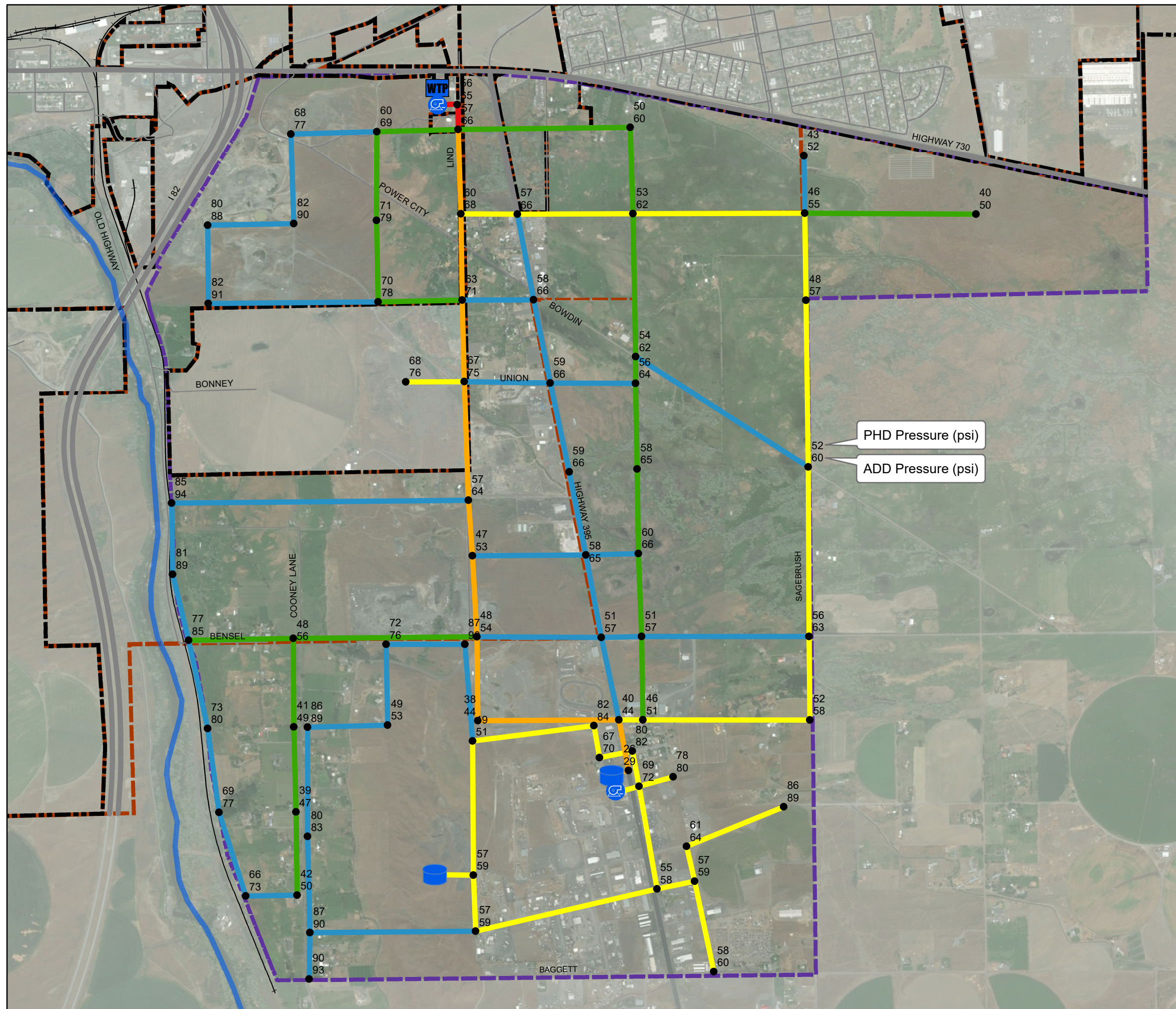
Date: Apr 3, 2018





Figure E4

Pipe Sizes With PHD And ADD Pressures



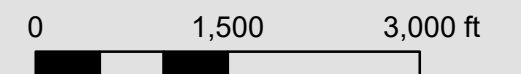
Legend

- City Limit
- UGB
- 395 Corridor
- Major Streets
- Highway/Interstate
- Railroad
- Umatilla River
- Pump Station
- Reservoir
- Water Treatment Plant

Pipe Size (in)

- 8
- 10
- 12
- 16
- 18

PHD Pressure (psi)
ADD Pressure (psi)



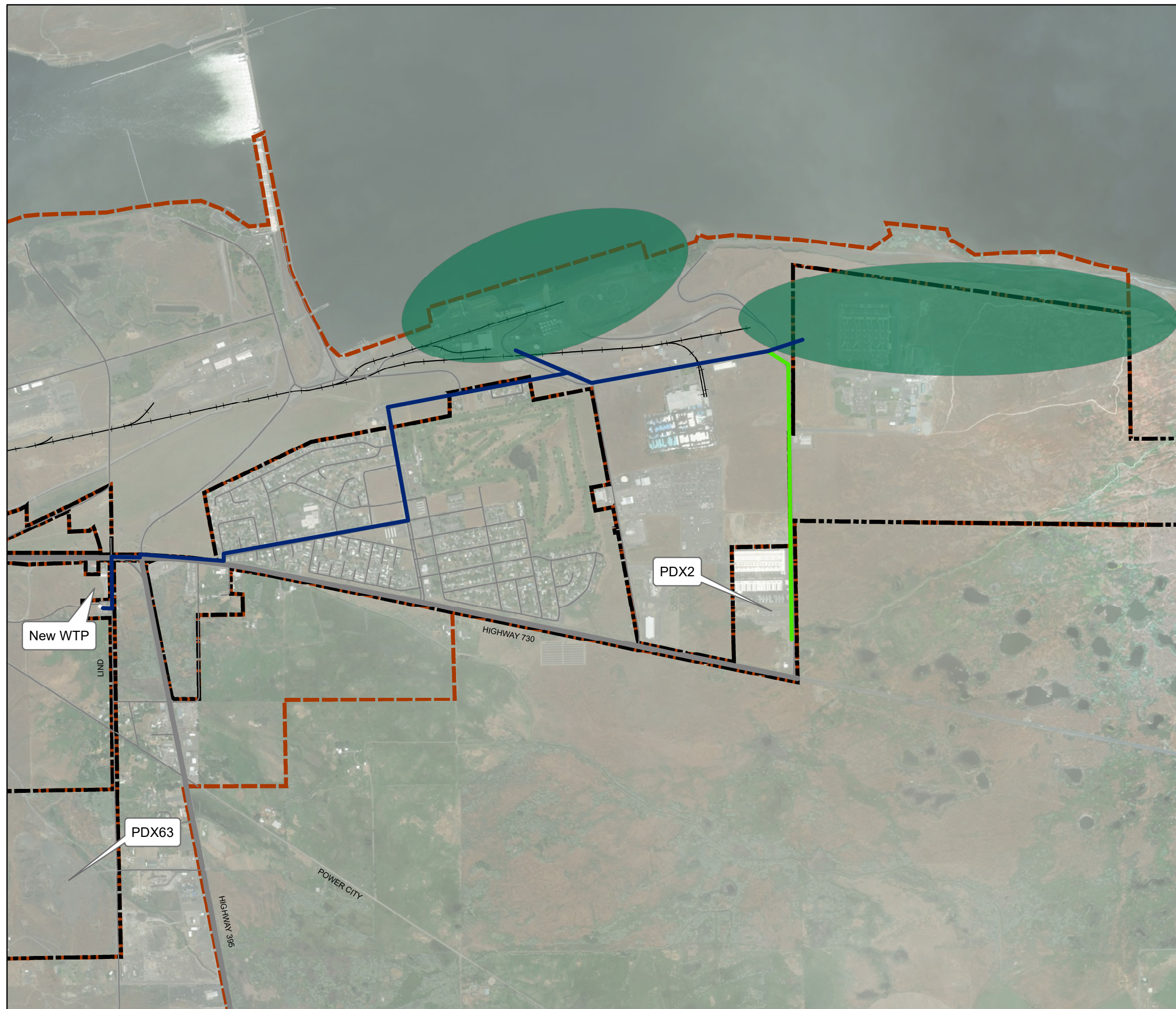
Date: Apr 3, 2018





Figure E5

Surface Water Distribution



Legend

- City Limit
- UGB
- Major Streets
- Highway/Interstate
- Railroad
- Umatilla River

Water Supply Alignments

- Surface Water Distribution Pipeline
- PDX2 Non-Potable Water Pipeline

Alternative

- Alternative 6 - Fractured Basalt Wells



Appendix F – 395 Corridor Water Calculations



395 CORRIDOR WATER CALCULATIONS

Demand Calculations

PROJECT:	Beneficial Reuse Feasibility Analysis	ITEM:	Pressure Zone Demands	PAGE:	1 of 3
Client:	City of Umatilla, OR	CHK:	BBH	DATE:	1/15/2018
FILE:	395 Corridor Water Calcs.xlsx	BY:	GWM	DATE:	12/28/2017

DESIGN REFERENCE: Water System Design Manual, December 2009
 Chapter 9: Reservoir Design and Storage Volume

AVERAGE DAILY DEMAND (ADD)

DESCRIPTION: The average daily demand was applied for each land use type in the 395 Corridor. The City of Umatilla's 2008 Water System Master Plan (WSMP) gave a system wide ADD/capita for the City of Umatilla of 210 gallons per capita day (GPCD). The 2008 Plan however did not break the demands down by land use. The demands for each land use for our report therefore are based on comparable water systems in the area. Below is a table of each land use with the water demand (ADD).

ADD PER LAND USE:

Land Use	Description	ADD (GPAD)
CG	General Commercial	1,100
SFR†	Single Family Residential	2,160
MDRR†	Medium Demand Rural Residential	216
LDRR†	Low Demand Rural Residential	86
LI	Light Industrial	1,100
O	Open Space	0

* Includes all open spaces which will not have service - All State, Federal, County, and CTUIR owned properties.

† Demands for Residential land use are based on 432 gal/day per dwelling unit. SFR = 5 DU/AC, MDRR = 1 DU/2 AC, LD RR = 1 DU/5 AC. Residential dwellings are expected to have low irrigation demand.

SYSTEM WIDE ADD

DESCRIPTION: A system wide ADD was calculated by determining the number of acres of each land use from the land use shapefile and then multiplying by the ADD (GPAD) and then summing the individual ADD's for each land uses.

SYSTEM WIDE ADD CALCULATION:

Land Use	ADD (GPAD)	Land Use Acres	ADD (GPD)
CG	1,100	659.76	725,736
SFR	2,160	419.75	906,660
MDRR	216	178.67	38,593
LDRR	86	310.51	26,704
LI	1,100	899.75	989,725
Open Space	0	402.86	0
Total		2,871.30	2,687,418

System Wide ADD = 2,687,418 GPD 1,866 GPM

EQUIVALENT RESIDENTIAL UNITS (ERU)

DESCRIPTION: An ERU is the amount of water consumed by a typical full-time single-family residence. All other land use types can be expressed in the number of ERUs they represent per unit area. For the Umatilla 395 Corridor one ERU is set equal to the demand of one SFR Dwelling Unit (DU). By dividing the ADD / ERU by the system wide ADD a system wide number of ERUs

ERU CALCULATION:

1 ERU = 432 GPD
 System Wide ADD = 2,687,418 GPD
Total # ERUs = 6,221



395 CORRIDOR WATER CALCULATIONS

Demand Calculations

PROJECT:	Beneficial Reuse Feasibility Analysis	ITEM:	Pressure Zone Demands	PAGE:	2 of 3
CLIENT:	City of Umatilla, OR	CHK:	BBH	DATE:	1/15/2018
FILE:	395 Corridor Water Calcs.xlsx	BY:	GWM	DATE:	12/28/2017

PEAK DAILY DEMAND (PDD)

DESCRIPTION: The peak daily demand (PDD) is calculated by scaling up the ADD using a peaking factor. The peaking factor used is from the 2008 WSMP. The peaking factor is 2.3. The Table below provides the PDD for each Land Use as well as the system wide

PDD CALCULATION:

ADD = 432 GPD/ERU
 PDD / ADD = 2.3 ADD To PDD Peaking Factor
 PDD = 994 GPD/ERU

Land Use	ADD (GPAD)	ADD to PDD Peaking Factor	PDD (GPAD)	Land Use Acres	PDD (GPD)
CG	1,100	2.3	2,530	659.76	1,669,193
SFR	2,160	2.3	4,968	419.75	2,085,318
MDRR	216	2.3	497	178.67	88,799
LDRR	86	2.3	198	310.51	61,481
LI	1,100	2.3	2,530	899.75	2,276,368
Open Space	0	2.3	0	402.86	0
Total				2,871.30	6,181,159

System Wide PDD = 6,181,159 GPD 4,292 GPM

PEAK HOURLY DEMAND (PHD)

DESCRIPTION: The Peak Hourly Demand (PHD) is calculated by scaling up the PDD using a peaking factor. The PDD to PHD peaking factor for the 395 Corridor was calculated using the Washington State Dept of Health Water System Design Manual (WSDOH WSDM) Equation 5-1. The Table below provides the PHD for each land use as well as the System Wide PHD.

PHD CALCULATION:

PHD = [(PDD/1,440)*(C*N+F)]+18
 Where:

[Water System Design Manual, Eqn 5-1]

PDD = Peak Hourly Demand in GPD/ERU
 C = Coefficient associated with ranges of ERUs (from WSDM)
 N = Total Number of ERUs
 F = Factor associated with ranges of ERUs (from WSDM)

PDD = 994 GPD/ERU
 N = 6221
 C = 1.6 (from WSDM for over 500 ERUs)
 F = 225 (from WSDM for over 500 ERUs)
 PHD = 7044 GPM
 PDD = 4292 GPM

PHD / PDD = 1.6

Land Use	PDD (GPAD)	PDD to PHD Peaking Factor	PHD (GPAD)	Land Use Acres	PHD (GPD)
CG	2,530	1.6	4,048	659.76	2,670,708
SFR	4,968	1.6	7,949	419.75	3,336,593
MDRR	497	1.6	795	178.67	142,043
LDRR	198	1.6	317	310.51	98,432
LI	2,530	1.6	4,048	899.75	3,642,188
Open Space	0	1.6	0	402.86	0
Total				2,871.30	9,889,964

System Wide PHD = 9,889,964 GPD 6,868 GPM



395 CORRIDOR WATER CALCULATIONS

Demand Calculations

PROJECT: Beneficial Reuse Feasibility Analysis	ITEM: Pressure Zone Demands	PAGE: 3 of 3
CLIENT: City of Umatilla, OR	CHK: BBH	DATE: 1/15/2018
FILE: 395 Corridor Water Calcs.xlsx	BY: GWM	DATE: 12/28/2017

PRESSURE ZONE DEMANDS

DESCRIPTION: The 395 Corridor was split into pressure zones to prevent excessively high and low pressures within the system. Once pressure zones were established based on elevation bands each property could then be attributed to a pressure zone based on spatial location and elevation. Demands for each property was determined based on the properties land use and acreage. Total demands per pressure zone are determined by summing the demands for each property in the pressure zone.

<u>Pressure Zone</u>	<u>ADD (GPM)</u>	<u>PDD (GPM)</u>	<u>PHD (GPM)</u>
395 Corridor	1,454	3,344	5,351
Umatilla Butte Low	412	948	1,517
Umatilla Butte High	0	0	0

Appendix G – Discharge Permits



**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
WASTE DISCHARGE PERMIT**

Oregon Department of Environmental Quality
Eastern Region – Pendleton Office
700 SE Emigrant, Suite 330, Pendleton, OR 97801
Telephone: (541) 276-4063

Issued pursuant to ORS 468B.050 and The Federal Water Pollution Control Act (The Clean Water Act)

ISSUED TO:

City of Umatilla
P.O. Box 130
Umatilla, OR 97882-0130

SOURCES COVERED BY THIS PERMIT:

Type of Waste	Outfall Number	Location
Treated Wastewater	001	Columbia River, RM 285
Biosolids	N/A	Specified in Land Application Plan

FACILITY TYPE AND LOCATION:

Activated Sludge Facility
1205 Third Street
Umatilla, OR 97882

RECEIVING STREAM INFORMATION:

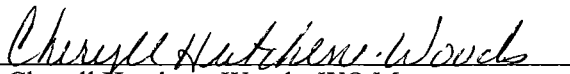
WRD Basin: Umatilla
USGS Subbasin: Middle Columbia/Lake Wallula
Receiving Stream: Columbia River
LLID: 1240483462464 - RM 285
Lat/Long: 45.923531/-119.341282
County: Umatilla

Treatment System Class Level: III

Collection System Class Level: II

EPA REFERENCE #: OR-002230-6

Issued in response to Application #971931 received April 15, 2009 and based on the land use compatibility statement in the permit record.


Cheryll Hutchens-Woods, WQ Manager
Eastern Region

October 11, 2013
Signature Date

October 31, 2013
Effective Date

PERMITTED ACTIVITIES

Until this permit expires or is modified or revoked, the permittee is authorized to: 1) operate a wastewater collection, treatment, control and disposal system; and 2) discharge treated wastewater to waters of the state only from the authorized discharge point or points in Schedule A in conformance with the requirements, limits, and conditions set forth in this permit.

Unless specifically authorized by this permit, by another NPDES or WPCF permit, or by Oregon statute or administrative rule, any other direct or indirect discharge of pollutants to waters of the state is prohibited.

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**SCHEDULE A
 Waste Discharge Limits**

1. Treated Effluent Outfall 001

a. BOD₅ and TSS

- i. May 1 – October 31: During this time period the permittee must comply with the limits in the following table:

Table A1: BOD₅ and TSS Limits

Parameter	Average Effluent Concentrations, mg/L		Monthly Average lbs/day	Weekly Average lbs/day	Daily Maximum lbs
	Monthly	Weekly			
BOD ₅	20	30	130	200	260
TSS	20	30	130	200	260

- ii. November 1 – April 30: During this time period the permittee must comply with the limits in the following table:

Table A2: BOD₅ and TSS Limits

Parameter	Average Effluent Concentrations, mg/L		Monthly Average lbs/day	Weekly Average lbs/day	Daily Maximum Lbs
	Monthly	Weekly			
BOD ₅	30	45	200	300	400
TSS	30	45	200	300	400

- iii. Additional information for the limits in Tables A1 and A2 above.

Average dry weather design flow to the facility equals 0.8 MGD. Mass load limits are based on 0.8 MGD.

- b. Additional Parameters. Permittee must comply with the limits in the following table (year round):

Table A3: Limits for Additional Parameters

Parameters	Limits
BOD ₅ and TSS Removal Efficiency	May not be less than 85% monthly average for BOD ₅ and TSS
<i>E. coli</i> Bacteria (see Note a.)	Monthly log mean may not exceed 126 organisms per 100 ml. No single sample may exceed 406 organisms per 100 ml.
pH	May not be outside the range of 6.0 to 9.0 S.U.
Notes:	
a. No single <i>E. coli</i> sample may exceed 406 organisms per 100 mL; however, DEQ will not cite a violation of this limit if the permittee takes at least five consecutive re-samples at four hour intervals beginning within 28 hours after the original sample was taken and the log mean of the five re-samples is less than or equal to 126 <i>E. coli</i> organisms/100 mL.	

2. Regulatory Mixing Zone

No wastes may be discharged or activities conducted that cause or contribute to a violation of water quality standards in OAR Chapter 340, Division 41 applicable to the Main Stem Columbia River, except within the following regulatory mixing zone:

The allowable mixing zone is defined as that portion of Columbia River within a radius of 50 feet from the point of discharge. The Zone of Immediate Dilution (ZID) is defined as that portion of the Columbia River within a radius of five feet from the point of discharge.

3. Groundwater Protection

The permittee may not conduct any activities that could cause an adverse impact on existing or potential beneficial uses of groundwater. All wastewater and process related residuals must be managed and disposed of in a manner that will prevent a violation of the Groundwater Quality Protection Rules (OAR Chapter 340, Division 40).

4. Biosolids

The permittee may land apply biosolids or provide biosolids for sale or distribution, subject to the following conditions:

- a. The permittee must manage biosolids in accordance with its DEQ-approved Biosolids Management Plan and Land Application Plan.
- b. Except when used for land reclamation and approved by DEQ, biosolids must be applied at or below the agronomic rate required for maximum crop yield.
- c. The permittee must obtain written site authorization from DEQ for each land application site prior to land application (see Schedule D, Condition 4) and follow the site-specific management conditions in the DEQ-issued site authorization letter.
- d. Biosolids must meet one of the pathogen reduction standards under 40 CFR §503.32 and one of the vector attraction reduction standards under 40 CFR §503.33.
- e. Pollutants in biosolids may not exceed the ceiling concentrations shown in Table A4 below. Biosolids exceeding the pollutant concentrations in Table A4 must be applied at a rate that does not exceed the corresponding cumulative pollutant loading rates.

Table A4: Biosolids Limits

Pollutant	Ceiling concentrations¹ (mg/kg)	Pollutant concentrations¹ (mg/kg)	Cumulative pollutant loading rates¹ (kg/ha)
Arsenic	75	41	41
Cadmium	85	39	39
Copper	4300	1500	1500
Lead	840	300	300
Mercury	57	17	17
Molybdenum	75	N/A	N/A
Nickel	420	420	420
Selenium	100	100	100
Zinc	7500	2800	2800

Note:
 Biosolids pollutant limits are described in 40 CFR Part 503.13, which uses the terms *ceiling concentrations*, *pollutant concentrations*, and *cumulative pollutant loading rates*. Biosolids containing pollutants in excess of the ceiling concentrations may not be applied to the land. Biosolids containing pollutants in excess of the pollutant concentrations, but below the ceiling concentrations, may be applied to the land; however, the total quantity of biosolids applied may not exceed the cumulative pollutant loading rates.

5. Septage Requirements

Permittee may not accept septage at this facility for treatment or processing without written approval from DEQ.

6. Chlorine Usage

No chlorine or chlorine compounds may be used for disinfection purposes and no chlorine residual resulting from chlorine used for maintenance purposes may be allowed in the effluent.

SCHEDULE B
Minimum Monitoring and Reporting Requirements

1. Monitoring and Reporting Protocols

a. Quality Assurance and Quality Control (QA/QC)

The permittee must develop and implement a written QA/QC program to verify the accuracy of sample analysis as specified in 40 CFR Part 136. The QA/QC program must conform to the requirements of 40 CFR Part 136.7. For additional requirements on proper sampling techniques, test methods and QA/QC procedures, see Schedule F, Sections B.1 and C.

b. Re-analysis, Re-sampling and Reporting of Data if QA/QC Requirements Not Met

If QA/QC requirements are not met for any analysis, the permittee must have the sample re-analyzed. If the sample cannot be re-analyzed, the permittee must re-sample as soon as possible. If a sample result does not meet QA/QC requirements, the result must be included in the DMR along with a notation explaining how it does not meet QA/QC requirements, but must not be used in any calculation required by the permit.

c. Reporting Procedures

i. Significant Figures

The permittee must report the same number of significant digits as the permit limit for a given parameter. Regardless of the rounding conventions used by the permittee (such as , rounding 5 up for the calculated results or, in the case of measured values, rounding 5 to the nearest even number), the permittee must use the convention consistently, and must ensure that laboratories employed by the permittee use the same convention.

ii. Calculating Mass Loads

The permittee must calculate mass loads on a daily basis as follows:

$$\text{Flow (in MGD)} \times \text{Concentration (in mg/L)} \times 8.34 = \text{Pounds per day}$$

2. Influent Monitoring and Reporting Requirements

The permittee must monitor influent at the grit removal chamber and report results as listed below.

Table B1: Influent Monitoring

Item or Parameter	Time Period	Minimum Frequency	Sample Type/Required Action	Report
Total Flow (MGD) (Before the grit chamber)	Year-round	Daily	Measurement	Daily totals Monthly max Monthly average Monthly min Monthly total
Flow Meter Calibration	Year-round	Annual	Verification	Report that calibration was completed.
BOD ₅ and TSS (mg/L)	Year-round	2/Week	24-hour composite	Daily values Monthly average Weekly averages Max weekly average Monthly max
pH (S.U.)	Year-round	3/Week	Grab	Daily values Maximum daily value Minimum daily value

3. Effluent Monitoring and Reporting Requirements

The permittee must monitor final effluent for Outfall 001 after the effluent Parshall flume and report results as listed below.

Table B2: Effluent Monitoring

Item or Parameter	Time Period	Minimum Frequency	Sample Type/Required Action	Report
Total Flow (MGD) (After UV disinfection)	Year-round	Daily	Measurement	Daily totals Monthly max Monthly average Monthly min Monthly total
Flow Meter Calibration	Year-round	Annual	Verification	Report that calibration was completed.
BOD ₅ and TSS (mg/L)	Year-round	2/Week	24-hour composite	Daily values Monthly average Weekly averages Maximum weekly average Maximum daily value
BOD ₅ and TSS Mass Load (lb/day)	Year-round	2/Week	Calculation	Daily values Monthly average Weekly averages Maximum weekly average Maximum daily value
BOD ₅ and TSS Percent Removal (%)	Year-round	Monthly	Calculation	Monthly average

Item or Parameter	Time Period	Minimum Frequency	Sample Type/Required Action	Report
pH (S.U.)	Year-round	3/Week	Grab	Daily values Maximum daily value Minimum daily value
Temperature (°C)	Year round	3/Week	Grab	7 day moving average Maximum 7 day moving average Average Maximum
<i>E. coli</i> (MPN/100mL)	Year round	2/Week	Grab	Daily values Maximum daily value Monthly geometric mean Re-sample geometric mean
Total Residual Chlorine (mg/L)	Year-round	Daily, when chlorine has been used at the plant and may be present in the effluent	Grab	Daily values
UV Dose (mJ/cm ²)	Year-round	Daily	Reading and recording	Daily average values Monthly minimum Monthly maximum Monthly average
UV Intensity (mW/cm ²)	Year-round	Daily	Reading and recording	Daily average values Monthly minimum Monthly maximum Monthly average
UV Transmittance (%)	Year-round	Daily	Reading and recording	Daily average values Monthly minimum Monthly maximum Monthly average

4. Effluent Toxics Characterization Monitoring

The permittee must analyze 24-hour composite effluent samples for alkalinity (as CaCO₃) and ammonia (as N). Samples must be collected after disinfection in February 2014, September 2014, February 2015 and September 2015.

DEQ will evaluate the results of effluent toxics characterization monitoring to determine whether the permittee will be required to conduct additional ambient water quality and/or effluent monitoring. DEQ will notify the permittee of its determination through a written "Monitoring Action Letter."

a. Sampling Plan

If additional monitoring is needed, the permittee must submit a sample and analysis plan to DEQ for approval within 3 months of receipt of the DEQ Monitoring Action Letter. The sampling plan must include the following:

- i. Characterization of ambient water quality for any pollutants identified as having the reasonable potential to exceed the water quality criterion.

- ii. Sampling locations for receiving water must be located as far upstream from outfall location as necessary to insure that samples contain no effluent.

b. **Implementation**

The permittee must implement the approved plan within 12 months of approval.

5. Biosolids Monitoring Requirements

The permittee must monitor biosolids land applied or produced for sale or distribution as listed in the tables below. The samples must be representative of the quality and quantity of biosolids generated and must undergo the same treatment process used to prepare the biosolids.

Table B3: Biosolids Monitoring

Item or Parameter	Minimum Frequency	Sample Type
Nutrient and conventional parameters (% dry weight unless otherwise specified): 1) Total Kjeldahl Nitrogen (TKN) 2) Nitrate-Nitrogen (NO ₃ -N) 3) Ammonium Nitrogen (NH ₄ -N) 4) Total Phosphorus (P) 5) Potassium (K) 6) pH (S.U.) 7) Total Solids 8) Volatile Solids	As described in the DEQ-approved Biosolids Management Plan, but not less than the frequency in Table B4.	As described in the DEQ-approved Biosolids Management Plan
Pollutants: As, Cd, Cu, Hg, Mo, Pb, Ni, Se, Zn, mg/kg dry weight	As described in the DEQ-approved Biosolids Management Plan, but not less than the frequency in Table B4.	As described in the DEQ-approved Biosolids Management Plan
Pathogen reduction	As described in the DEQ-approved Biosolids Management Plan, but not less than the frequency in Table B4.	As described in the DEQ-approved Biosolids Management Plan
Vector attraction reduction	As described in the DEQ-approved Biosolids Management Plan, but not less than the frequency in Table B4.	As described in the DEQ-approved Biosolids Management Plan
Record of biosolids land application: date, quantity, location.	Each event	Record the date, quantity, and location of biosolids land applied on site location map or equivalent electronic system, such as GIS.

Table B4: Biosolids Minimum Monitoring Frequency

Quantity of biosolids land applied or produced for sale or distribution per calendar year		Minimum Sampling Frequency
(dry metric tons)	(dry U.S. tons)	
Less than 290	Less than 320	Once per year
290 to 1,500	320 to 1,653	Once per quarter (4x/year)
1500 to 15,000	1,653 to 16,535	Once per 60 days (6x/year)
15,000 or more	16,535 or more	Once per month (12x/year)

6. Permit Application Monitoring Requirements

The following information is provided for the convenience of the permit holder and does not represent a requirement under the current permit. The renewal application for this permit requires 3 scans for the parameters listed in the table below. This data may be collected up to 4.5 years in advance of submittal of the renewal application. DEQ recognizes that some facilities may find it difficult to collect 3 scans that are representative of the seasonal variation in the discharge from each outfall, and is therefore calling attention to this permit application requirement within this permit.

Table B5: Effluent Monitoring Required for NPDES Permit Application

Parameter
Ammonia (as N)
Chlorine (Total Residual, TRC)
Dissolved Oxygen
Total Kjeldahl Nitrogen (TKN)
Nitrate Plus Nitrite Nitrogen
Oil and Grease

7. Minimum Reporting Requirements

The permittee must report monitoring results as listed below.

Table B6: Reporting Requirements and Due Dates

Reporting Requirement	Frequency	Due Date	Report Form (unless otherwise specified in writing)	Submit To:
1. Table B1: Influent Monitoring 2. Table B2: Effluent Monitoring	Monthly	15 th day of the month following data collection	DEQ-approved discharge monitoring report (DMR) form. (See Notes a. and b.)	DEQ Regional Office

Reporting Requirement	Frequency	Due Date	Report Form (unless otherwise specified in writing)	Submit To:
Effluent Toxics Characterization	Once (see Note c.)	End of the 25th month of this permit term	DEQ - approved electronic summary template and 1 hard copy	DEQ Regional Office
Wastewater solids annual report describing quality, quantity, and use or disposal of wastewater solids generated at the facility.	Annually	February 19	2 hard copies	One each to: <ul style="list-style-type: none"> • DEQ Regional Office • DEQ Biosolids Program Coordinator
1. Biosolids land application annual report describing solids handling activities for the previous year and includes the information described in OAR 340- 050-0035(6)(a)-(e). 2. Table B3: Biosolids Monitoring	Annually	February 19	2 hard copies	One each to: <ul style="list-style-type: none"> • DEQ Regional Office • DEQ Biosolids Program Coordinator
Notes: a. Name, certificate classification, and grade level of each responsible principal operator as well as identification of each system classification must be included on DMRs. b. Equipment breakdowns and bypass events must be noted on DMRs. c. Though the characterization only needs to be performed once during the permit cycle, it includes four sampling events.				

SCHEDULE D Special Conditions

1. Emergency Response and Public Notification Plan

The permittee must develop and maintain an Emergency Response and Public Notification Plan (the Plan) per Schedule F, Section B, Conditions 7 and 8. The permit holder must develop the plan within six months of permit issuance and update the Plan annually to ensure that telephone and email contact information for applicable public agencies are current and accurate. The permittee must notify the DEQ Eastern Region - Pendleton Office at (541) 276-4063 in accordance with the response times noted in the General Conditions of this permit. An updated copy of the plan must be kept on file at the wastewater treatment facility for Department review. The latest plan revision date must be listed on the Plan cover along with the reviewer's initials or signature.

2. Exempt Wastewater Reuse at the Treatment System

- a. The permittee is exempt from the recycled water use requirements in OAR 340-055 when recycled water is used at the wastewater treatment system for landscape irrigation or for in-plant processes at a wastewater treatment system and all of the following conditions are met:
 - ii. The recycled water is an oxidized and disinfected wastewater.
 - iii. The recycled water is used at the wastewater treatment system site where it is generated or at an auxiliary wastewater or sludge treatment facility that is subject to the same NPDES or WPCF permit as the wastewater treatment system. Contiguous property to the parcel of land upon which the treatment system is located is considered the wastewater treatment system site if under the same ownership.
 - iv. Spray or drift or both from the use does not occur off the site.
 - v. Public access to the site is restricted.

3. Biosolids Management Plan

The permittee must maintain a Biosolids Management Plan meeting the requirements in OAR 340-050-0031(5). The permittee must keep the plan updated and submit substantial modifications to an existing plan to DEQ for approval at least 60 days prior to making the proposed changes. Conditions in the plan are enforceable requirements under this permit.

4. Land Application Plan

a. Plan Contents

The permittee must maintain a land application plan that contains the information listed below. The land application plan may be incorporated into the Biosolids Management Plan.

- i. All known DEQ-approved sites that will receive biosolids while the permit is effective.
- ii. The geographic location, identified by county or smaller unit, of new sites which are not specifically listed at the time of permit application.
- iii. Criteria that will be used in the selection of new sites.
- iv. Management practices that will be implemented at new sites authorized by the DEQ.
- v. Procedures for notifying property owners adjacent to proposed sites of the proposed activity prior to the start of application.

b. Site Authorization

The permittee must obtain written authorization from DEQ for each land application site prior to its use. Conditions in site authorizations are enforceable requirements under this permit. The permittee may land apply biosolids to a DEQ-approved site only as described in the site authorization, while this permit is effective and with the written approval of the property owner. DEQ may modify or revoke a site authorization following the procedures for a permit modification described in OAR 340-045-0055.

c. Public Participation

- i. No DEQ-initiated public notice is required for continued use of sites identified in the DEQ-approved land application plan.
- ii. For new sites that fail to meet the site selection criteria in the land application plan or that are deemed by DEQ to be sensitive with respect to residential housing, runoff potential, or threat to groundwater, DEQ will provide an opportunity for public comment as directed by OAR 340-050-0015(10).
- iii. For all other new sites, the permittee must provide for public participation following procedures in its DEQ-approved land application plan.

d. Exceptional Quality (EQ) Biosolids

The permittee is exempt from the requirements in Condition 4.b and 4.c above if:

- i. Pollutant concentrations of biosolids are less than the pollutant concentration limits in Schedule A, Table A4;
- ii. Biosolids meet one of the Class A pathogen reduction alternatives in 40 CFR §503.32(a); and
- iii. Biosolids meet one of the vector attraction reduction options in 40 CFR §503.33(b)(1) through (8).

5. **Wastewater Solids Transfers**

- a. *Within state.* The permittee may transfer wastewater solids including Class A and Class B biosolids, to another facility permitted to process or dispose of wastewater solids, including but not limited to: another wastewater treatment facility, landfill, or incinerator. The permittee must monitor, report, and dispose of solids as required under the permit of the receiving facility.
- b. *Out of state.* If wastewater solids, including Class A and Class B biosolids, are transferred out of state for use or disposal, the permittee must obtain written authorization from DEQ, meet Oregon requirements for the use or disposal of wastewater solids, notify in writing the receiving state of the proposed use or disposal of wastewater solids, and satisfy the requirements of the receiving state.

6. **Hauled Waste Control**

The permittee may accept hauled wastes at discharge points designated by the POTW after receiving written DEQ approval of a hauled waste control plan. Hauled wastes may include wastewater solids from another wastewater treatment facility, septage, grease trap wastes, portable and chemical toilet wastes, landfill leachate, groundwater remediation wastewaters and commercial/industrial wastewaters. Wastewater solids from out-of-state facilities must not exceed the ceiling concentration limits in Schedule A, Table A4: Biosolids Limits.

7. **Operator Certification**

a. Definitions

- i. "Supervise" means to have full and active responsibility for the daily on site technical operation of a wastewater treatment system or wastewater collection system.
- ii. "Supervisor" or "designated operator", means the operator delegated authority by the permittee for establishing and executing the specific practice and procedures for operating the wastewater treatment system or wastewater collection system in accordance with the policies of the owner of the system and any permit requirements.
- iii. "Shift Supervisor" means the operator delegated authority by the permittee for executing the specific practice and procedures for operating the wastewater treatment system or wastewater collection system when the system is operated on more than one daily shift.
- iv. "System" includes both the collection system and the treatment systems.

- b. The permittee must comply with OAR Chapter 340, Division 49, "Regulations Pertaining to Certification of Wastewater System Operator Personnel" and designate a supervisor whose certification corresponds with the classification of the collection and/or treatment system as specified on p. 1 of this permit.
- c. The permittee must have its system supervised on a part-time or full-time basis by one or more operators who hold a valid certificate for the type of wastewater treatment or wastewater collection system the operator is supervising and at a grade equal to or greater than the wastewater system's classification specified on page one of this permit.
- d. The permittee's wastewater system may not be without the designated supervisor for more than 30 days. During this period, there must be another person available to supervise who is certified at no more than one grade lower than the classification of the wastewater system. The permittee must delegate authority to this operator to supervise the operation of the system.
- e. If the wastewater system has more than one daily shift, the permittee must have another properly certified operator available to supervise operation of the system. Each shift supervisor, if any, must be certified at no more than one grade lower than the system classification.
- f. The permittee is not required to have a supervisor on site at all times; however, the supervisor must be available to the permittee and operator at all times.
- g. The permittee must notify DEQ in writing of the name of the system supervisor. The permittee may replace or re-designate the system supervisor with another properly certified operator at any time and must notify DEQ in writing within 30 days of replacement or re-designation of operator in charge. As of this writing, the notice of replacement or re-designation must be sent to Water Quality Division, Operator Certification Program, 2020 SW 4th Avenue, Suite 400, Portland, OR 97201.
- h. Upon written request, DEQ may grant the permittee reasonable time, not to exceed 120 days, to obtain the services of a qualified person to supervise the wastewater system. The written request must include a justification for the time needed, schedule for recruiting and hiring, date the system supervisor availability ceased, and name of the alternate system supervisor as required by above.

**SCHEDULE F
NPDES GENERAL CONDITIONS – DOMESTIC FACILITIES**

SECTION A. STANDARD CONDITIONS

A1. Duty to Comply with Permit

The permittee must comply with all conditions of this permit. Failure to comply with any permit condition is a violation of Oregon Revised Statutes (ORS) 468B.025 and the federal Clean Water Act and is grounds for an enforcement action. Failure to comply is also grounds for DEQ to terminate, modify and reissue, revoke, or deny renewal of a permit.

A2. Penalties for Water Pollution and Permit Condition Violations

The permit is enforceable by DEQ or EPA, and in some circumstances also by third-parties under the citizen suit provisions 33 USC § 1365. DEQ enforcement is generally based on provisions of state statutes and Environmental Quality Commission (EQC) rules, and EPA enforcement is generally based on provisions of federal statutes and EPA regulations.

ORS 468.140 allows DEQ to impose civil penalties up to \$10,000 per day for violation of a term, condition, or requirement of a permit. The federal Clean Water Act provides for civil penalties not to exceed \$32,500 and administrative penalties not to exceed \$11,000 per day for each violation of any condition or limitation of this permit.

Under ORS 468.943, unlawful water pollution, if committed by a person with criminal negligence, is punishable by a fine of up to \$25,000, imprisonment for not more than one year, or both. Each day on which a violation occurs or continues is a separately punishable offense. The federal Clean Water Act provides for criminal penalties of not more than \$50,000 per day of violation, or imprisonment of not more than 2 years, or both for second or subsequent negligent violations of this permit.

Under ORS 468.946, a person who knowingly discharges, places, or causes to be placed any waste into the waters of the state or in a location where the waste is likely to escape into the waters of the state is subject to a Class B felony punishable by a fine not to exceed \$250,000 and up to 10 years in prison per ORS chapter 161. The federal Clean Water Act provides for criminal penalties of \$5,000 to \$50,000 per day of violation, or imprisonment of not more than 3 years, or both for knowing violations of the permit. In the case of a second or subsequent conviction for knowing violation, a person is subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than 6 years, or both.

A3. Duty to Mitigate

The permittee must take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment. In addition, upon request of DEQ, the permittee must correct any adverse impact on the environment or human health resulting from noncompliance with this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

A4. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and have the permit renewed. The application must be submitted at least 180 days before the expiration date of this permit.

DEQ may grant permission to submit an application less than 180 days in advance but no later than the permit expiration date.

A5. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause including, but not limited to, the following:

- a. Violation of any term, condition, or requirement of this permit, a rule, or a statute.
- b. Obtaining this permit by misrepresentation or failure to disclose fully all material facts.
- c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.
- d. The permittee is identified as a Designated Management Agency or allocated a wasteload under a total maximum daily load (TMDL).
- e. New information or regulations.
- f. Modification of compliance schedules.

- g. Requirements of permit reopener conditions
- h. Correction of technical mistakes made in determining permit conditions.
- i. Determination that the permitted activity endangers human health or the environment.
- j. Other causes as specified in 40 CFR §§ 122.62, 122.64, and 124.5.
- k. For communities with combined sewer overflows (CSOs):
 - (1) To comply with any state or federal law regulation for CSOs that is adopted or promulgated subsequent to the effective date of this permit.
 - (2) If new information that was not available at the time of permit issuance indicates that CSO controls imposed under this permit have failed to ensure attainment of water quality standards, including protection of designated uses.
 - (3) Resulting from implementation of the permittee's long-term control plan and/or permit conditions related to CSOs.

The filing of a request by the permittee for a permit modification, revocation or reissuance, termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

A6. Toxic Pollutants

The permittee must comply with any applicable effluent standards or prohibitions established under Oregon Administrative Rule (OAR) 340-041-0033 and section 307(a) of the federal Clean Water Act for toxic pollutants, and with standards for sewage sludge use or disposal established under section 405(d) of the federal Clean Water Act, within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

A7. Property Rights and Other Legal Requirements

The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege, or authorize any injury to persons or property or invasion of any other private rights, or any infringement of federal, tribal, state, or local laws or regulations.

A8. Permit References

Except for effluent standards or prohibitions established under section 307(a) of the federal Clean Water Act and OAR 340-041-0033 for toxic pollutants, and standards for sewage sludge use or disposal established under section 405(d) of the federal Clean Water Act, all rules and statutes referred to in this permit are those in effect on the date this permit is issued.

A9. Permit Fees

The permittee must pay the fees required by OAR.

SECTION B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

B1. Proper Operation and Maintenance

The permittee must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

B2. Need to Halt or Reduce Activity Not a Defense

For industrial or commercial facilities, upon reduction, loss, or failure of the treatment facility, the permittee must, to the extent necessary to maintain compliance with its permit, control production or all discharges or both until the facility is restored or an alternative method of treatment is provided. This requirement applies, for example, when the primary source of power of the treatment facility fails or is reduced or lost. It is not a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

B3. Bypass of Treatment Facilities

a. Definitions

- (1) "Bypass" means intentional diversion of waste streams from any portion of the treatment facility. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, provided

the diversion is to allow essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs b and c of this section.

- (2) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
- b. Prohibition of bypass.
- (1) Bypass is prohibited and DEQ may take enforcement action against a permittee for bypass unless:
 - i. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 - ii. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventative maintenance; and
 - iii. The permittee submitted notices and requests as required under General Condition B3.c.
 - (2) DEQ may approve an anticipated bypass, after considering its adverse effects and any alternatives to bypassing, if DEQ determines that it will meet the three conditions listed above in General Condition B3.b.(1).
- c. Notice and request for bypass.
- (1) Anticipated bypass. If the permittee knows in advance of the need for a bypass, a written notice must be submitted to DEQ at least ten days before the date of the bypass.
 - (2) Unanticipated bypass. The permittee must submit notice of an unanticipated bypass as required in General Condition D5.

B4. Upset

- a. Definition. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operation error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.
- b. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of General Condition B4.c are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
- c. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - (1) An upset occurred and that the permittee can identify the causes(s) of the upset;
 - (2) The permitted facility was at the time being properly operated;
 - (3) The permittee submitted notice of the upset as required in General Condition D5, hereof (24-hour notice); and
 - (4) The permittee complied with any remedial measures required under General Condition A3 hereof.
- d. Burden of proof. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

B5. Treatment of Single Operational Upset

For purposes of this permit, a single operational upset that leads to simultaneous violations of more than one pollutant parameter will be treated as a single violation. A single operational upset is an exceptional incident that causes simultaneous, unintentional, unknowing (not the result of a knowing act or omission), temporary noncompliance with more than one federal Clean Water Act effluent discharge pollutant parameter. A single operational upset does not include federal Clean Water Act violations involving discharge without a NPDES permit or noncompliance to the extent caused by improperly designed or inadequate treatment facilities. Each day of a single operational upset is a violation.

B6. Overflows from Wastewater Conveyance Systems and Associated Pump Stations

- a. Definition. "Overflow" means any spill, release or diversion of sewage including:
 - (1) An overflow that results in a discharge to waters of the United States; and
 - (2) An overflow of wastewater, including a wastewater backup into a building (other than a backup caused solely by a blockage or other malfunction in a privately owned sewer or building lateral), even if that overflow does not reach waters of the United States.

- b. Prohibition of overflows. Overflows are prohibited. DEQ may exercise enforcement discretion regarding overflow events. In exercising its enforcement discretion, DEQ may consider various factors, including the adequacy of the conveyance system's capacity and the magnitude, duration and return frequency of storm events.
- c. Reporting required. All overflows must be reported orally to DEQ within 24 hours from the time the permittee becomes aware of the overflow. Reporting procedures are described in more detail in General Condition D5.

B7. Public Notification of Effluent Violation or Overflow

If effluent limitations specified in this permit are exceeded or an overflow occurs that threatens public health, the permittee must take such steps as are necessary to alert the public, health agencies and other affected entities (for example, public water systems) about the extent and nature of the discharge in accordance with the notification procedures developed under General Condition B8. Such steps may include, but are not limited to, posting of the river at access points and other places, news releases, and paid announcements on radio and television.

B8. Emergency Response and Public Notification Plan

The permittee must develop and implement an emergency response and public notification plan that identifies measures to protect public health from overflows, bypasses, or upsets that may endanger public health. At a minimum the plan must include mechanisms to:

- a. Ensure that the permittee is aware (to the greatest extent possible) of such events;
- b. Ensure notification of appropriate personnel and ensure that they are immediately dispatched for investigation and response;
- c. Ensure immediate notification to the public, health agencies, and other affected public entities (including public water systems). The overflow response plan must identify the public health and other officials who will receive immediate notification;
- d. Ensure that appropriate personnel are aware of and follow the plan and are appropriately trained;
- e. Provide emergency operations; and
- f. Ensure that DEQ is notified of the public notification steps taken.

B9. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters must be disposed of in such a manner as to prevent any pollutant from such materials from entering waters of the state, causing nuisance conditions, or creating a public health hazard.

SECTION C. MONITORING AND RECORDS

C1. Representative Sampling

Sampling and measurements taken as required herein must be representative of the volume and nature of the monitored discharge. All samples must be taken at the monitoring points specified in this permit, and must be taken, unless otherwise specified, before the effluent joins or is diluted by any other waste stream, body of water, or substance. Monitoring points must not be changed without notification to and the approval of DEQ.

C2. Flow Measurements

Appropriate flow measurement devices and methods consistent with accepted scientific practices must be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices must be installed, calibrated and maintained to insure that the accuracy of the measurements is consistent with the accepted capability of that type of device. Devices selected must be capable of measuring flows with a maximum deviation of less than ± 10 percent from true discharge rates throughout the range of expected discharge volumes.

C3. Monitoring Procedures

Monitoring must be conducted according to test procedures approved under 40 CFR part 136 or, in the case of sludge use and disposal, approved under 40 CFR part 503 unless other test procedures have been specified in this permit.

C4. Penalties of Tampering

The federal Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit may, upon conviction, be punished by a fine of not more than \$10,000 per violation, imprisonment for not more than two years, or both. If a conviction of a person is for a violation committed after a first conviction of such person, punishment is a fine not more than \$20,000 per day of violation, or by imprisonment of not more than four years, or both.

C5. Reporting of Monitoring Results

Monitoring results must be summarized each month on a discharge monitoring report form approved by DEQ. The reports must be submitted monthly and are to be mailed, delivered or otherwise transmitted by the 15th day of the following month unless specifically approved otherwise in Schedule B of this permit.

C6. Additional Monitoring by the Permittee

If the permittee monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 CFR part 136 or, in the case of sludge use and disposal, approved under 40 CFR part 503, or as specified in this permit, the results of this monitoring must be included in the calculation and reporting of the data submitted in the discharge monitoring report. Such increased frequency must also be indicated. For a pollutant parameter that may be sampled more than once per day (for example, total residual chlorine), only the average daily value must be recorded unless otherwise specified in this permit.

C7. Averaging of Measurements

Calculations for all limitations that require averaging of measurements must utilize an arithmetic mean, except for bacteria which must be averaged as specified in this permit.

C8. Retention of Records

Records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities must be retained for a period of at least 5 years (or longer as required by 40 CFR part 503). Records of all monitoring information including all calibration and maintenance records, all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit and records of all data used to complete the application for this permit must be retained for a period of at least 3 years from the date of the sample, measurement, report, or application. This period may be extended by request of DEQ at any time.

C9. Records Contents

Records of monitoring information must include:

- a. The date, exact place, time, and methods of sampling or measurements;
- b. The individual(s) who performed the sampling or measurements;
- c. The date(s) analyses were performed;
- d. The individual(s) who performed the analyses;
- e. The analytical techniques or methods used; and
- f. The results of such analyses.

C10. Inspection and Entry

The permittee must allow DEQ or EPA upon the presentation of credentials to:

- a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- d. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by state law, any substances or parameters at any location.

C11. Confidentiality of Information

Any information relating to this permit that is submitted to or obtained by DEQ is available to the public unless classified as confidential by the Director of DEQ under ORS 468.095. The permittee may request that information be classified as confidential if it is a trade secret as defined by that statute. The name and address of the permittee, permit applications, permits, effluent data, and information required by NPDES application forms under 40 CFR § 122.21 are not classified as confidential [40 CFR § 122.7(b)].

SECTION D. REPORTING REQUIREMENTS

D1. Planned Changes

The permittee must comply with OAR 340-052, "Review of Plans and Specifications" and 40 CFR § 122.41(l)(1). Except where exempted under OAR 340-052, no construction, installation, or modification involving disposal systems, treatment works, sewerage systems, or common sewers may be commenced until the plans and specifications are submitted to and approved by DEQ. The permittee must give notice to DEQ as soon as possible of any planned physical alternations or additions to the permitted facility.

D2. Anticipated Noncompliance

The permittee must give advance notice to DEQ of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements.

D3. Transfers

This permit may be transferred to a new permittee provided the transferee acquires a property interest in the permitted activity and agrees in writing to fully comply with all the terms and conditions of the permit and EQC rules. No permit may be transferred to a third party without prior written approval from DEQ. DEQ may require modification, revocation, and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under 40 CFR § 122.61. The permittee must notify DEQ when a transfer of property interest takes place.

D4. Compliance Schedule

Reports of compliance or noncompliance with, or any progress reports on interim and final requirements contained in any compliance schedule of this permit must be submitted no later than 14 days following each schedule date. Any reports of noncompliance must include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirements.

D5. Twenty-Four Hour Reporting

The permittee must report any noncompliance that may endanger health or the environment. Any information must be provided orally (by telephone) to the DEQ regional office or Oregon Emergency Response System (1-800-452-0311) as specified below within 24 hours from the time the permittee becomes aware of the circumstances.

a. Overflows.**(1) Oral Reporting within 24 hours.**

- i. For overflows other than basement backups, the following information must be reported to the Oregon Emergency Response System (OERS) at 1-800-452-0311. For basement backups, this information should be reported directly to the DEQ regional office.

- (a) The location of the overflow;
- (b) The receiving water (if there is one);
- (c) An estimate of the volume of the overflow;
- (d) A description of the sewer system component from which the release occurred (for example, manhole, constructed overflow pipe, crack in pipe); and
- (e) The estimated date and time when the overflow began and stopped or will be stopped.

- ii. The following information must be reported to the DEQ regional office within 24 hours, or during normal business hours, whichever is earlier:

- (a) The OERS incident number (if applicable); and
- (b) A brief description of the event.

(2) Written reporting within 5 days.

- i. The following information must be provided in writing to the DEQ regional office within 5 days of the time the permittee becomes aware of the overflow:

- (a) The OERS incident number (if applicable);
- (b) The cause or suspected cause of the overflow;
- (c) Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the overflow and a schedule of major milestones for those steps;
- (d) Steps taken or planned to mitigate the impact(s) of the overflow and a schedule of major milestones for those steps; and
- (e) For storm-related overflows, the rainfall intensity (inches/hour) and duration of the storm associated with the overflow.

DEQ may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

b. Other instances of noncompliance.**(1) The following instances of noncompliance must be reported:**

- i. Any unanticipated bypass that exceeds any effluent limitation in this permit;
- ii. Any upset that exceeds any effluent limitation in this permit;
- iii. Violation of maximum daily discharge limitation for any of the pollutants listed by DEQ in this permit; and
- iv. Any noncompliance that may endanger human health or the environment.

- (2) During normal business hours, the DEQ regional office must be called. Outside of normal business hours, DEQ must be contacted at 1-800-452-0311 (Oregon Emergency Response System).
- (3) A written submission must be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission must contain:
 - i. A description of the noncompliance and its cause;
 - ii. The period of noncompliance, including exact dates and times;
 - iii. The estimated time noncompliance is expected to continue if it has not been corrected;
 - iv. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance; and
 - v. Public notification steps taken, pursuant to General Condition B7.
- (4) DEQ may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

D6. Other Noncompliance

The permittee must report all instances of noncompliance not reported under General Condition D4 or D5 at the time monitoring reports are submitted. The reports must contain:

- a. A description of the noncompliance and its cause;
- b. The period of noncompliance, including exact dates and times;
- c. The estimated time noncompliance is expected to continue if it has not been corrected; and
- d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

D7. Duty to Provide Information

The permittee must furnish to DEQ within a reasonable time any information that DEQ may request to determine compliance with the permit or to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit. The permittee must also furnish to DEQ, upon request, copies of records required to be kept by this permit.

Other Information: When the permittee becomes aware that it has failed to submit any relevant facts or has submitted incorrect information in a permit application or any report to DEQ, it must promptly submit such facts or information.

D8. Signatory Requirements

All applications, reports or information submitted to DEQ must be signed and certified in accordance with 40 CFR § 122.22.

D9. Falsification of Information

Under ORS 468.953, any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, is subject to a Class C felony punishable by a fine not to exceed \$125,000 per violation and up to 5 years in prison per ORS chapter 161. Additionally, according to 40 CFR § 122.41(k)(2), any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit including monitoring reports or reports of compliance or non-compliance will, upon conviction, be punished by a federal civil penalty not to exceed \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

D10. Changes to Indirect Dischargers

The permittee must provide adequate notice to DEQ of the following:

- a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of the federal Clean Water Act if it were directly discharging those pollutants and;
- b. Any substantial change in the volume or character of pollutants being introduced into the POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
- c. For the purposes of this paragraph, adequate notice must include information on (i) the quality and quantity of effluent introduced into the POTW, and (ii) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

SECTION E. DEFINITIONS

- E1. *BOD* or *BOD₅* means five-day biochemical oxygen demand.
- E2. *CBOD* or *CBOD₅* means five-day carbonaceous biochemical oxygen demand.
- E3. *TSS* means total suspended solids.
- E4. *Bacteria* means but is not limited to fecal coliform bacteria, total coliform bacteria, *Escherichia coli* (*E. coli*) bacteria, and *Enterococcus* bacteria.

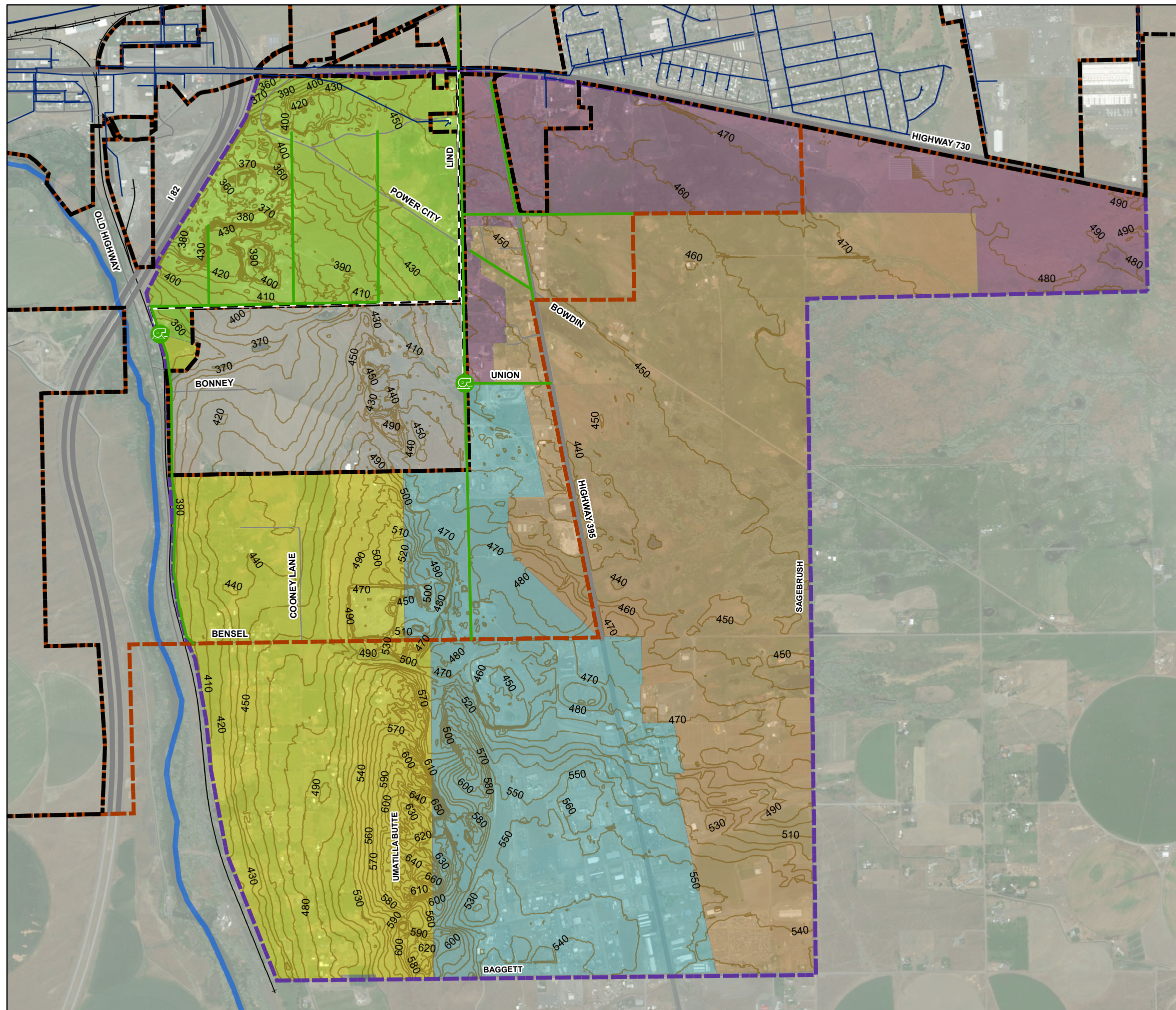
- E5. *FC* means fecal coliform bacteria.
- E6. *Total residual chlorine* means combined chlorine forms plus free residual chlorine
- E7. *Technology based permit effluent limitations* means technology-based treatment requirements as defined in 40 CFR § 125.3, and concentration and mass load effluent limitations that are based on minimum design criteria specified in OAR 340-041.
- E8. *mg/l* means milligrams per liter.
- E9. *µg/l* means microgram per liter.
- E10. *kg* means kilograms.
- E11. *m³/d* means cubic meters per day.
- E12. *MGD* means million gallons per day.
- E13. *Average monthly effluent limitation* as defined at 40 CFR § 122.2 means the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.
- E14. *Average weekly effluent limitation* as defined at 40 CFR § 122.2 means the highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.
- E15. *Daily discharge* as defined at 40 CFR § 122.2 means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the daily discharge must be calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge must be calculated as the average measurement of the pollutant over the day.
- E16. *24-hour composite sample* means a sample formed by collecting and mixing discrete samples taken periodically and based on time or flow. The sample must be collected and stored in accordance with 40 CFR part 136.
- E17. *Grab sample* means an individual discrete sample collected over a period of time not to exceed 15 minutes.
- E18. *Quarter* means January through March, April through June, July through September, or October through December.
- E19. *Month* means calendar month.
- E20. *Week* means a calendar week of Sunday through Saturday.
- E21. *POTW* means a publicly-owned treatment works.

Appendix H – Wastewater Figures



Figure H1

395 Corridor Sewer Basins



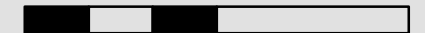
Legend

- City Limit
- UGB
- 395 Corridor
- Major Streets
- Highway/Interstate
- Railroad
- Umatilla River
- Proposed Sewer Lift Station
- Existing Sewer
- Proposed Sewer
- Force Main

Sewer Basin

- A
- B
- C
- D
- E

0 1,500 3,000 ft



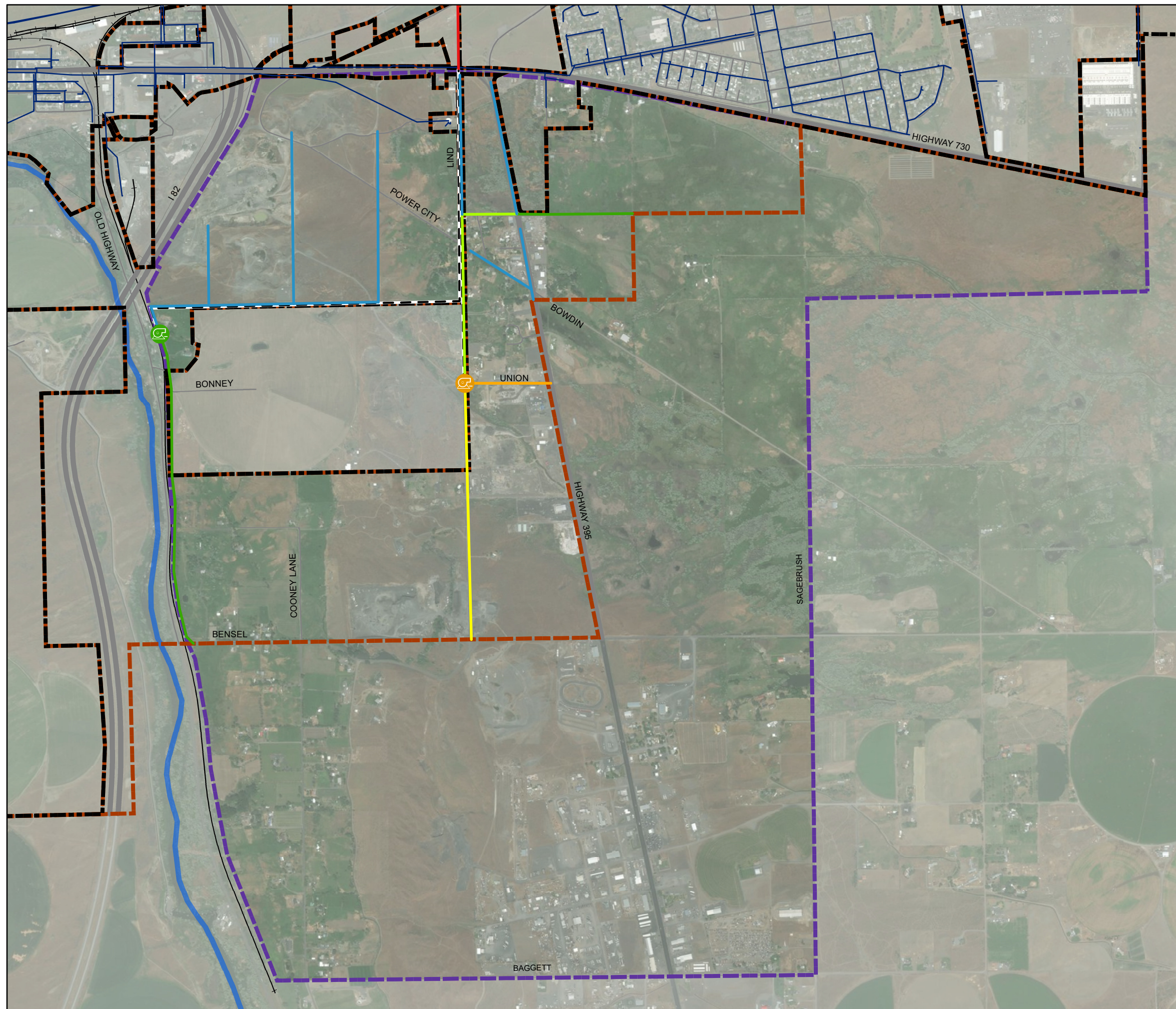
Date: Apr 3, 2018





Figure H2

395 Corridor Sewer Pipe Sizes



Legend

- City Limit
- UGB
- 395 Corridor
- Major Streets
- Highway/Interstate
- Railroad
- Umatilla River
- Existing Sewer
- 395 West Sewer Lift Station
- 395 East Sewer Lift Station

Pipe Size (in)

- 8
- 10
- 12
- 15
- 18
- 27

Force Main

0 1,500 3,000 ft



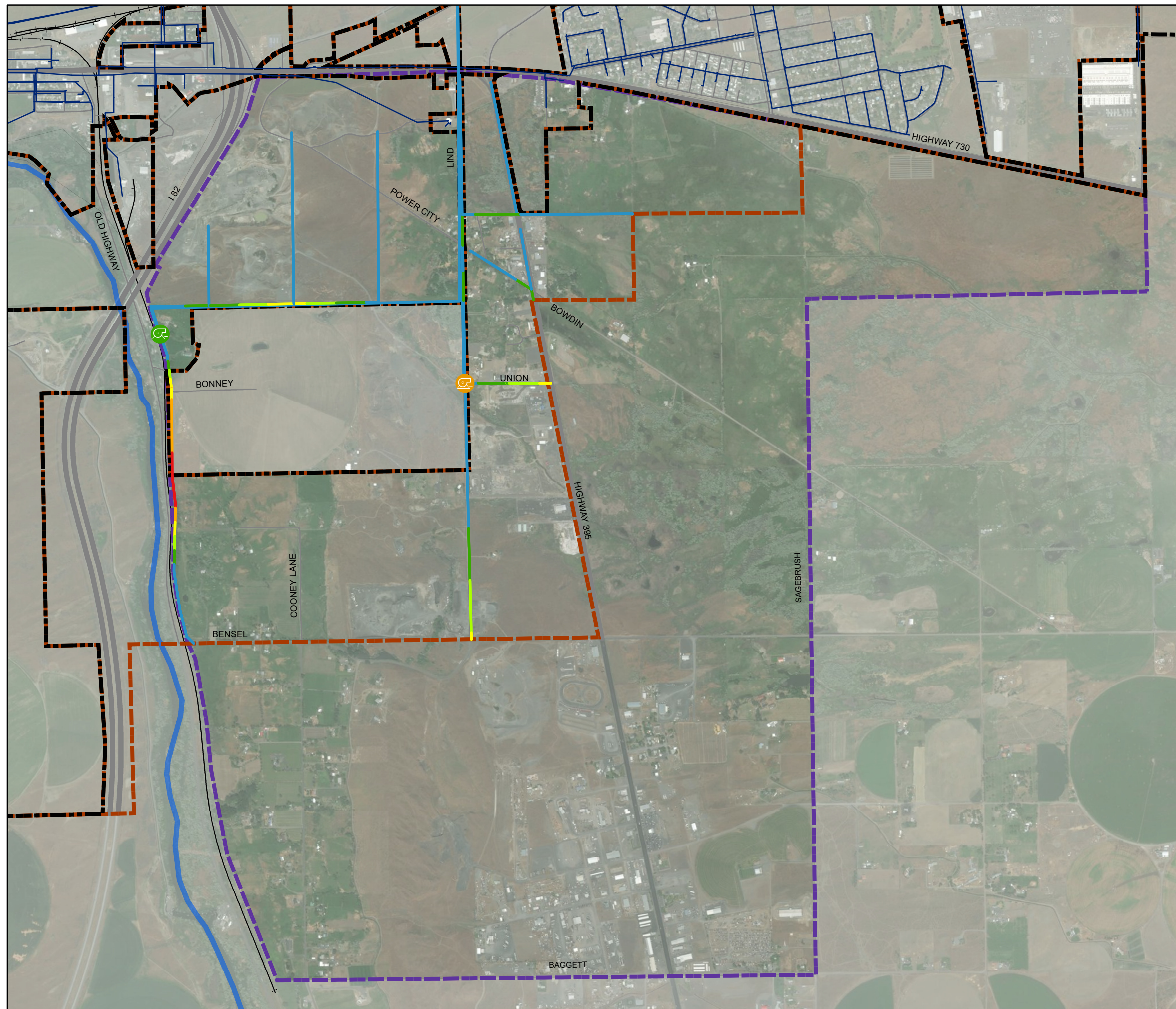
Date: Apr 3, 2018





Figure H3

395 Corridor Sewer Pipe Depth

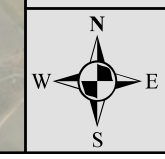
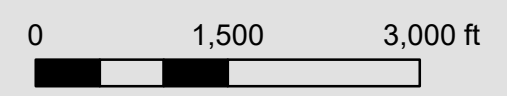


Legend

- City Limit
- UGB
- 395 Corridor
- Major Streets
- Highway/Interstate
- Railroad
- Umatilla River
- Existing Sewer
- 395 West Sewer Lift Station
- 395 East Sewer Lift Station

Pipe Depth

- 5'-10'
- 10'-15'
- 15'-20'
- 20'-25'
- 25'-30'
- 30'-35'



Date: Apr 3, 2018

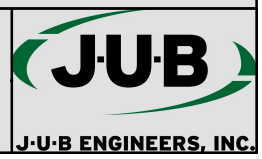
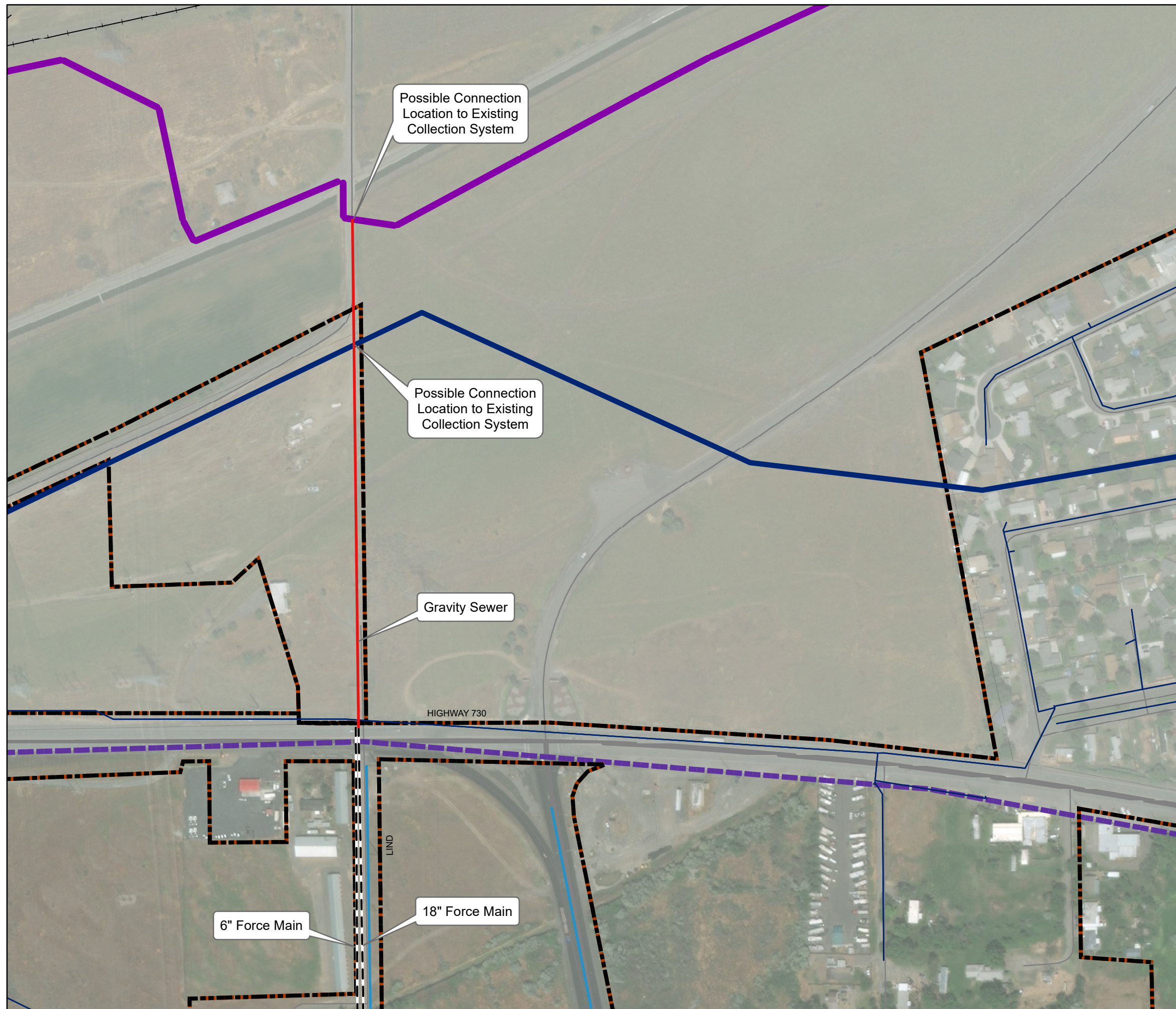




Figure H4

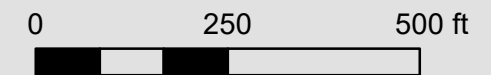
395 Corridor Force Main Connection Locations



Legend

	City Limit	Pipe Size (in)
	UGB	8
	395 Corridor	10
	Major Streets	12
	Highway/Interstate	15
	Railroad	18
	Umatilla River	27
	395 West Sewer Lift Station	Force Main
	395 East Sewer Lift Station	
	Existing Sewer Pipe	

Note: Connection of the 395 Corridor sewer to the existing Umatilla sewer system is schematic. At the full build-out condition. Neither the existing 12" sewer main, nor the existing 18" McNary Interceptor have adequate capacity for full buildout flows from the 395 corridor. A phasing analysis should be conducted with future planning and design efforts to accommodate intermediate growth.



Date: Apr 3, 2018



Appendix I – 395 Corridor Wastewater Model Assumptions

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Appendix I – 395 Corridor Wastewater Model Assumptions

I.1 Introduction

The hydraulic sewer modeling effort for the 395 Corridor was completed at a feasibility level of detail. The assumptions and design criteria used should be reviewed and refined during future master planning efforts, and again during design efforts. The intent is to provide a reasonable understanding of how the sewer system may be expanded into the Study limits based on general assumptions. Hydraulic sewer modeling of the 395 Corridor was completed using the InnoVyz InfoSWMM Software. The assumptions and design criteria are explained below.

I.2 Model Assumptions and Design Criteria

This section summarizes the assumptions made while developing the hydraulic sewer model.

I.2.1 System Layer

Parameter: Manning's "n"

Discussion:

The roughness factor is used in the Manning's formula $Q = (1.49/n)AR^{2/3}S_0^{1/2}$. The Manning's formula relates flow in a pipe (Q) with the cross-section area of flow (A), hydraulic radius of the flow (R), and the energy slope (S_0). Typical "n" values range from 0.009 for very smooth glass or new plastic to greater than 0.016 for unfinished concrete. For sewer pipes, however, a slime layer develops on any sewer material in contact with sewage and provides relatively consistent roughness regardless of material.

ASCE Manual No. 60 "Gravity Sanitary Sewer: Design and Construction" provides a table of recommended Manning's "n" values based on size and condition. For pipes installed and maintained with 'extra care' they suggest a Manning's "n" range from 0.0092 to 0.0107 for sizes 6" to 60" respectively. For 'typical' installations Manning's "n" range from 0.0106 to 0.0123 for sizes 6" to 60" respectively. For 'substandard' installations Manning's "n" range from 0.0120 to 0.0139 for sizes 6" to 60" respectively.

The Washington Department of Ecology (WDOE) Criteria for Sewage Works Design (C1-4.3) suggests using a Manning's "n" value of 0.013 for the design of all sewer facilities regardless of pipe material.

Model Assumption:

Used a Manning's "n" of 0.013 regardless of material, size and age.

Parameter: Design Pipe Sizing Methodology (for future pipes)

Discussion:

This parameter is used to size future pipes. The maximum depth of flow/diameter of pipe (d/D) is an indicator of how much of the pipe capacity is being used. When the flow in a pipe reaches the point where the d/D ratio is greater than the maximum d/D ratio, the pipe diameter

Umatilla Beneficial Reuse Feasibility Analysis

will increase to the next size. Buildout flows were used to size future sewer lines. These flows included minor inflow from the design rainfall event, as well as minor infiltration.

We have used a graduated scale for maximum d/D dependent on the size of the pipe. The scale originated with the ASCE Manual “Design and Construction of Sanitary Sewers,” which recommended master planning sewer systems at a d/D of less than 0.5 for sewers less than 18” in diameter and 0.75 for larger sewers. This allows for a larger safety factor for smaller sewers where variations in land use and extensions of the service area can have large impacts on the available capacity of the sewer. The larger sewer lines have a smaller safety factor because variations in land use tend to balance out over the larger area served by the large sewer.

Model Assumption: Used a graduated scale for the maximum d/D as listed in Table 1 below:

Table 1 – Depth Over Diameter Ratios for Design Pipes

Size	d/D	Resultant Safety Factor
8”	0.5	2.00
10”	0.55	1.71
12”	0.60	1.49
15”	0.65	1.32
≥18”	0.75	1.10

Parameter: Design Pipe Slope Determination

Discussion: The Oregon Administrative Rules (OAR) Chapter 340 Division 52, Appendix A list minimum pipe slopes for 6” and 8” pipe sizes. This guidance will be followed and supplemented with The Ten State Standards, which list the minimum pipe slopes for sizes 8” to 21”. For pipes larger than 21”, a slope of 0.10% was maintained because slopes smaller than 0.10%, constructability becomes difficult.

Model Assumption: Used Ten State Standards minimum slopes as modified and shown below in Table 2.

Table 2 – Minimum Design Pipe Slopes

Size	Slope
8”	0.40%
10”	0.28%
12”	0.22%
15”	0.15%
18”	0.12%
≥21”	0.10%

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Parameter: Design Pipe Sewer Match Point

Discussion: When two sewer pipes of different sizes meet at a manhole, the match point can affect pipe hydraulics. Convention and some sewer standards require the design to match the pipe crowns or to match the design depths of the sewers to keep from surcharging the smaller pipe.

Model Assumption: Matched pipe crowns for simplicity during design and construction and to reduce the potential of surcharging smaller pipes when larger pipes are flowing full.

Parameter: Allowable Decreases

Discussion: This allows for smaller diameter pipes to be constructed downstream of larger diameter pipes where additional capacity is gained in the smaller pipe due to an increased pipe slope.

Decreases are not recommended in smaller pipes (< 24") due to the tendency of upstream obstructions to lodge at locations where trunk pipes decrease in size. Decreases may be necessary when connecting a master planned pipe into an existing trunk line, but should be avoided for future pipes.

Model Assumption: Decreases in diameter were not allowed.

Parameter: Constant Speed Pump Cycle Volume

Discussion: The cycle volume of a pump station is the volume of the wet well between the pump off and pump on settings.

The model performs its calculations in discrete time increments. The results can be provided in time increments down to 1 second or less. A lift station with a cycle time less than the analysis time increment will result in a peak flow that has been reduced.

Model Assumption: Set calculation time increment to 1 minute or less.

Parameter: Future Pump Station Capacity

Discussion: The capacity of each lift station in the model is set individually. Lift stations tend to be designed based on assumptions that are more conservative and yield peak flows higher than a system wide model. A safety factor for the lift station is desirable to reduce the chance of overloading the lift station.

Model Assumption: Set the lift station capacity at least 10% higher than the incoming flow.

I.2.2 Flow Generation Layers

Parameter: Buildout Model Flows Assumptions

Discussion: Buildout Model flows represent the maximum flows anticipated in the system when the 395 Corridor is fully developed.

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Model Assumption:

Buildout Model flows are generated by the unit flows for each land use type in this report. Based on recorded data from similar sized cities with similar land uses, the following flow assumptions were made for the 395 Corridor:

- Undeveloped Areas – Areas within the 395 Corridor that are currently undeveloped were assumed to be built out according to the potential demands land use map in this report.
- Gross Areas of Development - Gross Area for each land use type was assumed for developments along the 395 Corridor. Future roadways were not taken into account.
- Parcels on Septic Systems - Parcels currently on septic systems were assumed to be converted to the City Sewer System. Flows were assigned based on the potential demands land use map shown in this Plan.
- Residential - Residential land use was divided into three categories; Single Family Residential (SFR), Medium Demand Rural Residential (MDRR) and Low Demand Rural Residential (LDRR). The average number of assumed residential dwelling units per acre for the 395 Corridor are shown in Table 3.

Table 3 – Residential Dwelling Units per Acre

Land Use	Dwelling Units/Acre
SFR	5
MDRR	0.5
LDRR	0.2

- Open Space - If a parcel had a land use of "Open Space", it was assumed that the land would remain undeveloped and that Sanitary flows would not be generated from this area.

Parameter: Diurnal Curves

Discussion:

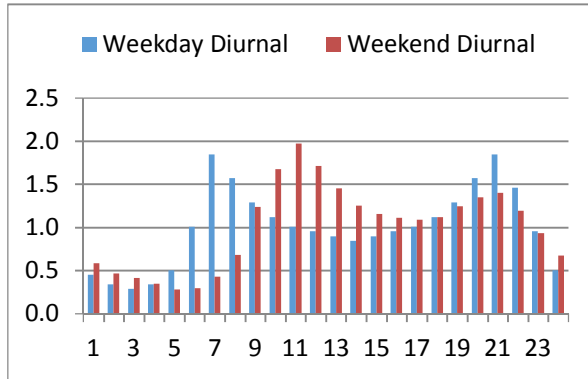
A diurnal curve is the shape of a type of sanitary flow contribution to the collection system over a 24-hour period. Diurnal curves differ for each type of land use. Diurnal curves are based on past experience with similar size cities.

Model Assumption:

The following diurnal curves were used for the land use types listed below:

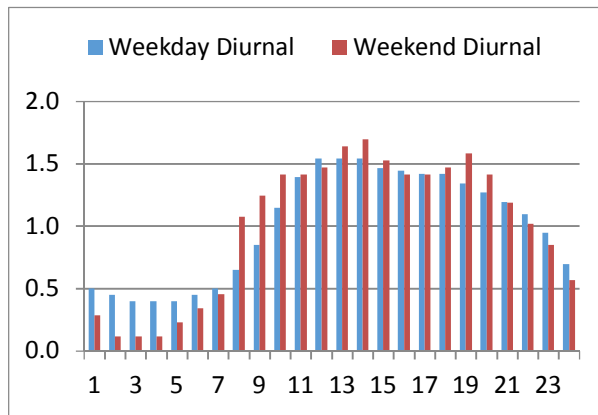
Umatilla Beneficial Reuse Feasibility Analysis

Residential

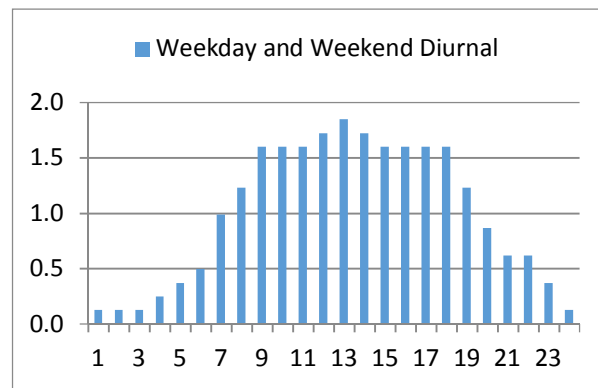


Includes Single Family Residential, Medium Demand Rural Residential, and Low Demand Rural Residential

General Commercial



Light Industrial



Parameter: Residential Unit Flows (GPDU)

Discussion:

Residential unit flows are measured in gallons per dwelling unit (GPDU). The composite GPDU for each residential density was estimated from recorded data of cities similar in size and land use to the City of Umatilla.

Model Assumption:

Table 4 – Residential Unit Flows

Land Use	Unit Flow (GPDU) ¹	ADD (GPAD)
Single Family Residential	174	870
Medium Demand Rural Residential	174	87
Low Demand Rural Residential	174	35

¹See Table 3 for Residential Dwelling Units per Acre

Parameter: Non-Residential Unit Flows (GPAD)

Discussion:

Non-residential unit flows are measured in gallons per acre per day (GPAD). Master Planning of sanitary sewer service for non-residential land uses is difficult because of the wide range of potential discharges. According to the reference manual Wastewater Engineering: Treatment and Reuse, by Metcalf & Eddy, gross-area sewer flows for light industrial areas are estimated to be between 1,000 GPAD and 1,500 GPAD. The unit flow for each non-residential land use type was estimated from recorded data of Cities similar in size and land use to the City of Umatilla and gross area.

Model Assumptions:

Table 5 – Non-Residential Unit Flows

Land Use	ADD (GPAD)
General Commercial	1,100
Light Industrial	1,100
Open Space	0

I.2.3 Flow Injection Method

Parameter: Sewer Service Connection Point

Discussion:

Flows for each sewer service were assigned to the corresponding parcel. Each parcel was then assigned a point on the system where it connects to the collection system. The connection point can affect the sizing of the trunk pipes. To ensure the pipe is large enough for all the connections between manholes, all flow injections were added at the upstream manhole.

Model Assumption:

Connect each parcel to the nearest collector pipes and inject the flow in the model to the upstream manhole.

I.2.4 Infiltration and Inflow

Parameter: Design Storm

Discussion:

The NOAA Atlas 2, Precipitation-Frequency Atlas of the Western United States, Volume X was used as a basis for a design storm in the City of

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Umatilla. The 2-year 24-hour duration storm will be used in the model to evaluate its impacts on the sewer system.

Model Assumption: 24-hour storm with 2-year return period and a total precipitation equal to 1.0 inches. The peak of the storm hydrograph is timed to occur when the peak sanitary flow occurs.

Parameter: Inflow

Discussion: Inflow describes the flow that enters the sewer collection system as a direct result of a storm event. Typical sources of illegal connections to the sanitary sewer include sump pumps, roof drains, yard drains, and storm drains. Inflow values are described by square feet of pervious area per manhole (SF/Manhole).

Model Assumption: Inflow assigned to each sewer sub-basin based on 0.005 acres/manhole.

I.2.5 Elevation and Datum Assumptions

Parameter: Vertical Datum

Discussion: A different vertical datum can cause differences in elevations at the same point by many feet. LIDAR data used to create contours of the Umatilla area used the North American Vertical Datum of 1988 (NAVD 88).

Model Assumptions: NAVD 88

Parameter: Coordinate System

Discussion: The North American Datum of 1983 (NAD 83) is the base for many coordinate systems. The NAD 83 State Plane system consists of several coordinate systems for each state. LIDAR and Survey data used to create contours and record utility locations used NAD83 State Plane Oregon North Zone in International Feet.

Model Assumptions: NAD83 State Plane Oregon North Zone

Appendix J – Preliminary Cost Estimates

**Alternative A-2 - Increase Groundwater Capacity
PLANNING LEVEL ESTIMATE
Umatilla Beneficial Reuse Feasibility Study**



Item No.	Item Description	Unit	Quantity	Adjusted Bid Prices	
				Unit Price (\$)	Amount (\$)¹
1	Mobilization²	LS	1	\$375,000	\$375,000
2	Traffic Control³	LS	1	\$30,000	\$30,000
3	Drilling⁴	LS	1	\$2,400,000	\$2,400,000
4	Wellhouse Building⁵	LS	1	\$800,000	\$800,000
5	Well Pump and Motor	LS	1	\$300,000	\$300,000
6	Chlorination System	LS	1	\$650,000	\$650,000
7	Yard Piping⁶	LS	1	\$200,000	\$200,000
8	Site Work⁷	LS	1	\$250,000	\$250,000
9	Electrical and Controls⁸	LS	1	\$600,000	\$600,000
SUBTOTAL 1				\$5,610,000	
CONSTRUCTION CONTINGENCY⁹				35%	\$1,963,500
SUBTOTAL 2				\$7,570,000	
ENGINEERING AND CONSTRUCTION ADMINISTRATION¹⁰				20%	\$1,514,000
TOPOGRAPHIC, BOUNDARY, AND UTILITY SURVEY¹¹				2%	\$151,400
LEGAL AND CITY ADMINISTRATIVE¹²				2%	\$151,400
CONSTRUCTION SURVEY¹³				2%	\$151,400
TOTAL IMPROVEMENT COST¹⁴				\$9,500,000	

¹ Cost estimates are provided in 2018 dollars. All dollar amounts are rounded for planning purposes.

² Mobilization includes the contractor's administrative and direct expenses to mobilize equipment, materials, and labor to the project site.

³ Traffic control includes all labor and material expenses associated with safely moving traffic through the work zone including signage, flagging, temporary

⁴ Includes equipment, labor, and materials for drilling, casing, screen, filter pack, test pump, well development, testing, and monitoring.

⁵ Includes cost of equipment, labor, and materials for the structure, HVAC, interior piping, and apurtenances.

⁶ Includes equipment, labor, and materials for fittings, trench excavation, bedding, backfill, and surface restoration.

⁷ Includes equipment, labor, and materials for earthwork, drainage, landscaping, fencing, and gate.

⁸ Electrical design and electrical system integration.

⁹ A contingency of 35 percent was used due to the high degree of unknown factors. Assumes AACEI Class 4.

¹⁰ Engineering and Construction Administration includes all administrative and direct expenses to develop plans, specifications, and an engineer's estimate for construction.

¹¹ Topographic, Boundary, and Utility Survey includes all labor, equipment, and travel expenses to obtain existing survey information for planning and design

¹² Legal and City Administration includes all expenses associated with financial and legal oversight by the City.

¹³ Construction survey includes all expenses, including labor and equipment, to conduct construction staking and construction verification/quality control checks.

¹⁴ The Total Improvement Option Cost reflects an estimate of potential overall project costs based on preliminary estimates, and should not be considered an actual cost or encompassing all scenarios and circumstances.

**Alternative A-3 - Expand Existing Regional Water Supply Pump Station
PLANNING LEVEL ESTIMATE
Umatilla Beneficial Reuse Feasibility Study**



Item No.	Item Description	Unit	Quantity	Adjusted Bid Prices	
				Unit Price (\$)	Amount (\$)¹
1	Mobilization²	LS	1	\$180,000	\$180,000
2	Traffic Control³	LS	1	\$22,000	\$22,000
3	Easement/Land Acquisition⁴	LS	1	\$30,000	\$30,000
4	Permitting⁵	LS	1	\$60,000	\$60,000
5	Environmental⁶	LS	1	\$110,000	\$110,000
6	Deck Structure	LS	1	\$475,000	\$475,000
7	Intake Pipe and Screens⁷	LS	1	\$710,000	\$710,000
8	Site Piping⁸	LS	1	\$860,000	\$860,000
9	Building	LS	1	\$300,000	\$300,000
10	Pump and Motors⁹	LS	1	\$300,000	\$300,000
11	Electrical	LS	1	\$290,000	\$290,000
12	Site Improvements	LS	1	\$12,000	\$12,000
13	Telemetry/Controls	LS	1	\$240,000	\$240,000
SUBTOTAL 1				\$3,590,000	
CONSTRUCTION CONTINGENCY¹⁰				35%	\$1,256,500
SUBTOTAL 2				\$4,850,000	
ENGINEERING AND CONSTRUCTION ADMINISTRATION¹¹				20%	\$970,000
TOPOGRAPHIC, BOUNDARY, AND UTILITY SURVEY¹²				2%	\$97,000
LEGAL AND CITY ADMINISTRATIVE¹³				2%	\$97,000
CONSTRUCTION SURVEY¹⁴				2%	\$97,000
TOTAL IMPROVEMENT COST¹⁵				\$6,100,000	

¹ Cost estimates are provided in 2018 dollars. All dollar amounts are rounded for planning purposes.

² Mobilization includes the contractor's administrative and direct expenses to mobilize equipment, materials, and labor to the project site.

³ Traffic control includes all labor and material expenses associated with safely moving traffic through the work zone including signage, flagging, temporary

⁴ Easement/land acquisition includes the cost of obtaining additional land or access to land to construct the proposed improvements. Assume a 10' easement

⁵ Permitting includes all costs associated with coordination and obtaining required permits from the necessary regulatory agencies.

⁶ Environmental includes all costs, labor, and materials associated with environmental mitigation and protection as required by the regulatory agencies.

⁷ The Intake Pipe and Screens bid item assumes a short intake pipe (100'±) and the use of ISI mechanically cleaned screens.

⁸ Pipe is assumed to be ductile iron.

⁹ Assumes four 200 hp vertical turbine pumps.

¹⁰ A contingency of 35 percent was used due to the high degree of unknown factors. Assumes AACEI Class 4.

¹¹ Engineering and Construction Administration includes all administrative and direct expenses to develop plans, specifications, and an engineer's estimate for

¹² Topographic, Boundary, and Utility Survey includes all labor, equipment, and travel expenses to obtain existing survey information for planning and design

¹³ Legal and City Administration includes all expenses associated with financial and legal oversight by the City.

¹⁴ Construction survey includes all expenses, including labor and equipment, to conduct construction staking and construction verification/quality control checks.

¹⁵ The Total Improvement Option Cost reflects an estimate of potential overall project costs based on preliminary estimates, and should not be considered an actual cost or encompassing all scenarios and circumstances.

**Alternative A-4 - New Pump Station
PLANNING LEVEL ESTIMATE
Umatilla Beneficial Reuse Feasibility Study**



Item No.	Item Description	Unit	Quantity	Adjusted Bid Prices	
				Unit Price (\$)	Amount (\$)¹
1	Mobilization²	LS	1	\$218,000	\$218,000
2	Traffic Control³	LS	1	\$22,000	\$22,000
3	Easement/Land Acquisition⁴	LS	1	\$30,000	\$30,000
4	Permitting⁵	LS	1	\$60,000	\$60,000
5	Environmental⁶	LS	1	\$110,000	\$110,000
6	Intake Pipe and Screens⁷	LS	1	\$900,000	\$900,000
7	Site Piping⁸	LS	1	\$690,000	\$690,000
8	Building	LS	1	\$330,000	\$330,000
9	Pump and Motors⁹	LS	1	\$300,000	\$300,000
10	Electrical	LS	1	\$290,000	\$290,000
11	Site Improvements	LS	1	\$36,000	\$36,000
12	Telemetry/Controls	LS	1	\$240,000	\$240,000
SUBTOTAL 1				\$3,230,000	
CONSTRUCTION CONTINGENCY¹⁰				35%	\$1,130,500
SUBTOTAL 2				\$4,360,000	
ENGINEERING AND CONSTRUCTION ADMINISTRATION¹¹				20%	\$872,000
TOPOGRAPHIC, BOUNDARY, AND UTILITY SURVEY¹²				2%	\$87,200
LEGAL AND CITY ADMINISTRATIVE¹³				2%	\$87,200
CONSTRUCTION SURVEY¹⁴				2%	\$87,200
TOTAL IMPROVEMENT COST¹⁵				\$5,500,000	

¹ Cost estimates are provided in 2018 dollars. All dollar amounts are rounded for planning purposes.

² Mobilization includes the contractor's administrative and direct expenses to mobilize equipment, materials, and labor to the project site.

³ Traffic control includes all labor and material expenses associated with safely moving traffic through the work zone including signage, flagging, temporary

⁴ Easement/land acquisition includes the cost of obtaining additional land or access to land to construct the proposed improvements. Assume a 10' easement width.

⁵ Permitting includes all costs associated with coordination and obtaining required permits from the necessary regulatory agencies.

⁶ Environmental includes all costs, labor, and materials associated with environmental mitigation and protection as required by the regulatory agencies.

⁷ The Intake Pipe and Screens bid item assumes a short intake pipe (100'±) and the use of ISI mechanically cleaned screens.

⁸ Pipe is assumed to be ductile iron.

⁹ Assumes four 200 hp vertical turbine pumps.

¹⁰ A contingency of 35 percent was used due to the high degree of unknown factors. Assumes AACEI Class 4.

¹¹ Engineering and Construction Administration includes all administrative and direct expenses to develop plans, specifications, and an engineer's estimate for

¹² Topographic, Boundary, and Utility Survey includes all labor, equipment, and travel expenses to obtain existing survey information for planning and design

¹³ Legal and City Administration includes all expenses associated with financial and legal oversight by the City.

¹⁴ Construction survey includes all expenses, including labor and equipment, to conduct construction staking and construction verification/quality control checks.

¹⁵ The Total Improvement Option Cost reflects an estimate of potential overall project costs based on preliminary estimates, and should not be considered an actual cost or encompassing all scenarios and circumstances.

**Alternative A-5 - Wells Hydraulically Connected to the Columbia River
PLANNING LEVEL ESTIMATE
Umatilla Beneficial Reuse Feasibility Study**



Item No.	Item Description	Unit	Quantity	Adjusted Bid Prices	
				Unit Price (\$)	Amount (\$)¹
1	Mobilization²	LS	1	\$500,000	\$500,000
2	Traffic Control³	LS	1	\$20,000	\$20,000
3	Easement/Land Acquisition⁴	LS	1	\$50,000	\$50,000
4	Drilling⁵	LS	1	\$500,000	\$500,000
5	Wellhouse Building⁶	LS	1	\$1,500,000	\$1,500,000
6	Well Pump and Motor	LS	1	\$750,000	\$750,000
7	Yard Piping⁷	LS	1	\$250,000	\$250,000
8	Site Work⁸	LS	1	\$500,000	\$500,000
9	Electrical and Controls⁹	LS	1	\$1,250,000	\$1,250,000
SUBTOTAL 1				\$5,320,000	
CONSTRUCTION CONTINGENCY¹⁰				35%	\$1,862,000
SUBTOTAL 2				\$7,180,000	
ENGINEERING AND CONSTRUCTION ADMINISTRATION¹¹				20%	\$1,436,000
TOPOGRAPHIC, BOUNDARY, AND UTILITY SURVEY¹²				2%	\$143,600
LEGAL AND CITY ADMINISTRATIVE¹³				2%	\$143,600
CONSTRUCTION SURVEY¹⁴				2%	\$143,600
TOTAL IMPROVEMENT COST¹⁵				\$9,000,000	

¹ Cost estimates are provided in 2018 dollars. All dollar amounts are rounded for planning purposes.

² Mobilization includes the contractor's administrative and direct expenses to mobilize equipment, materials, and labor to the project site.

³ Traffic control includes all labor and material expenses associated with safely moving traffic through the work zone including signage, flagging, temporary

⁴ Easement/land acquisition includes the cost of obtaining additional land or access to land to construct the proposed improvements. Assume a 10' easement

⁵ Includes equipment, labor, and materials for drilling, casing, screen, filter pack, test pump, well development, testing, and monitoring.

⁶ Includes cost of equipment, labor, and materials for the structure, HVAC, interior piping, and appurtenances.

⁷ Includes equipment, labor, and materials for fittings, trench excavation, bedding, backfill, and surface restoration.

⁸ Includes equipment, labor, and materials for earthwork, drainage, landscaping, fencing, and gate.

⁹ Electrical design and electrical system integration.

¹⁰ A contingency of 35 percent was used due to the high degree of unknown factors. Assumes AACEI Class 4.

¹¹ Engineering and Construction Administration includes all administrative and direct expenses to develop plans, specifications, and an engineer's estimate for

¹² Topographic, Boundary, and Utility Survey includes all labor, equipment, and travel expenses to obtain existing survey information for planning and design

¹³ Legal and City Administration includes all expenses associated with financial and legal oversight by the City.

¹⁴ Construction survey includes all expenses, including labor and equipment, to conduct construction staking and construction verification/quality control checks.

¹⁵ The Total Improvement Option Cost reflects an estimate of potential overall project costs based on preliminary estimates, and should not be considered an actual cost or encompassing all scenarios and circumstances.

**Alternative B-2 - Class A Reuse of Domestic Effluent
PLANNING LEVEL ESTIMATE
Umatilla Beneficial Reuse Feasibility Study**



Item No.	Item Description	Unit	Quantity	Adjusted Bid Prices	
				Unit Price (\$)	Amount (\$)¹
1	Mobilization²	LS	1	\$400,000	\$400,000
2	Filtration Skid Unit (Complete, Freight Included)	EA	2	\$1,100,000	\$2,200,000
3	Building with HVAC, Odor Control	SF	1,200	\$350	\$420,000
4	Mechanical Piping	LS	1	\$55,000	\$55,000
5	Yard Piping	FT	500	\$135	\$67,500
6	UV Disinfection Unit (In-Vessel)	EA	2	\$90,000	\$180,000
7	Day Tank, Peak Day	GAL	500,000	\$1.25	\$625,000
8	Irrigation Lift Station (1,100 gpm)	LS	1	\$350,000	\$350,000
9	Distribution Piping System	LS	5,700	\$85	\$484,500
10	Irrigation System	AC	12	\$2,000	\$24,800
11	Site Work	LS	1	\$165,000	\$165,000
12	Electrical and Instrumentation	LS	1	\$970,000	\$970,000
SUBTOTAL 1				\$5,940,000	
CONSTRUCTION CONTINGENCY³				35%	\$2,079,000
SUBTOTAL 2				\$8,020,000	
ENGINEERING AND CONSTRUCTION ADMINISTRATION⁴				20%	\$1,604,000
TOPOGRAPHIC, BOUNDARY, AND UTILITY SURVEY⁵				2%	\$160,400
LEGAL AND CITY ADMINISTRATIVE⁶				2%	\$160,400
CONSTRUCTION SURVEY⁷				2%	\$160,400
TOTAL IMPROVEMENT COST⁸				\$10,100,000	

¹ Cost estimates are provided in 2018 dollars. All dollar amounts are rounded for planning purposes.

² Mobilization includes the contractor's administrative and direct expenses to mobilize equipment, materials, and labor to the project site.

³ A contingency of 35 percent was used due to the high degree of unknown factors. Assumes AACEI Class 4.

⁴ Engineering and Construction Administration includes all administrative and direct expenses to develop plans, specifications, and an engineer's estimate for

⁵ Topographic, Boundary, and Utility Survey includes all labor, equipment, and travel expenses to obtain existing survey information for planning and design

⁶ Legal and City Administration includes all expenses associated with financial and legal oversight by the City.

⁷ Construction survey includes all expenses, including labor and equipment, to conduct construction staking and construction verification/quality control checks.

⁸ The Total Improvement Option Cost reflects an estimate of potential overall project costs based on preliminary estimates, and should not be considered an actual cost or encompassing all scenarios and circumstances.

Alternative B-4 - Increase WWTP Capacity (Add 3 MGD of Capacity)
PLANNING LEVEL ESTIMATE
Umatilla Beneficial Reuse Feasibility Study



Item No.	Item Description	Unit	Quantity	Adjusted Bid Prices	
				Unit Price (\$)	Amount (\$)¹
1	Mobilization²	LS	1	\$1,650,000	\$1,650,000
2	Oxidation Ditch	Gal	2,400,000	\$4	\$9,600,000
3	Oxidation Equipment	LS	3	\$950,000	\$2,850,000
4	Power Supply	LS	1	\$75,000	\$75,000
5	60' Clarifier	Gal	600,000	\$5	\$3,000,000
6	Clarifier Equipment, outfitting	EA	2	\$120,000	\$240,000
7	Ancillary Equipment Upgrades	LS	2	\$500,000	\$1,000,000
8	UV Disinfection Upgrades	LS	3	\$650,000	\$1,950,000
9	Solids Management Upgrades	LS	3	\$775,000	\$2,325,000
10	Yard Piping	LS	1	\$316,000	\$316,000
11	Site Work	LS	1	\$421,000	\$421,000
12	Electrical and Instrumentation	LS	1	\$1,052,000	\$1,052,000
SUBTOTAL 1				\$24,480,000	
CONSTRUCTION CONTINGENCY³				35%	\$8,568,000
SUBTOTAL 2				\$33,050,000	
ENGINEERING AND CONSTRUCTION ADMINISTRATION⁴				20%	\$6,610,000
TOPOGRAPHIC, BOUNDARY, AND UTILITY SURVEY⁵				2%	\$661,000
LEGAL AND CITY ADMINISTRATIVE⁶				2%	\$661,000
CONSTRUCTION SURVEY⁷				2%	\$661,000
TOTAL IMPROVEMENT COST⁸				\$41,600,000	

¹ Cost estimates are provided in 2018 dollars. All dollar amounts are rounded for planning purposes.

² Mobilization includes the contractor's administrative and direct expenses to mobilize equipment, materials, and labor to the project site.

³ A contingency of 35 percent was used due to the high degree of unknown factors. Assumes AACEI Class 4.

⁴ Engineering and Construction Administration includes all administrative and direct expenses to develop plans, specifications, and an engineer's estimate for

⁵ Topographic, Boundary, and Utility Survey includes all labor, equipment, and travel expenses to obtain existing survey information for planning and design purposes.

⁶ Legal and City Administration includes all expenses associated with financial and legal oversight by the City.

⁷ Construction survey includes all expenses, including labor and equipment, to conduct construction staking and construction verification/quality control checks.

⁸ The Total Improvement Option Cost reflects an estimate of potential overall project costs based on preliminary estimates, and should not be considered an actual cost or encompassing all scenarios and circumstances.

**Alternative B-5 - Separate Industrial Flows
PLANNING LEVEL ESTIMATE
Umatilla Beneficial Reuse Feasibility Study**



Item No.	Item Description	Unit	Quantity	Adjusted Bid Prices	
				Unit Price (\$)	Amount (\$)¹
1	Mobilization²	LS	1	\$120,000	\$120,000
2	Traffic Control³	LS	1	\$200,000	\$200,000
3	Easement/Land Acquisition⁴	LS	1	\$30,000	\$30,000
4	Saw Cutting	LF	5,000	\$1	\$5,000
5	18" C905 PVC Pipe⁵	LF	12,100	\$100	\$1,210,000
12	HMA Trench Surface Restoration	LF	4,800	\$10	\$48,000
13	Hydroseed Surface Restoration	LF	7,300	\$1	\$7,300
14	Connect to Existing Manhole	EA	1	\$1,000	\$1,000
15	Air Release Valve & Vault	EA	1	\$4,000	\$4,000
16	Electrical & Controls	LS	1	\$100,000	\$100,000
17	Outfall Structure & Canal Improvements	LS	1	\$55,000	\$55,000
SUBTOTAL 1				\$1,780,000	
CONSTRUCTION CONTINGENCY⁶				35%	\$623,000
SUBTOTAL 2				\$2,400,000	
ENGINEERING AND CONSTRUCTION ADMINISTRATION.⁷				20%	\$480,000
TOPOGRAPHIC, BOUNDARY, AND UTILITY SURVEY⁸				2%	\$48,000
LEGAL AND CITY ADMINISTRATIVE⁹				2%	\$48,000
CONSTRUCTION SURVEY¹⁰				2%	\$48,000
TOTAL IMPROVEMENT COST¹¹				\$3,000,000	

¹ Cost estimates are provided in 2018 dollars. All dollar amounts are rounded for planning purposes.

² Mobilization includes the contractor's administrative and direct expenses to mobilize equipment, materials, and labor to the project site.

³ Traffic control includes all labor and material expenses associated with safely moving traffic through the work zone including signage, flagging, temporary barriers,

⁴ Easement/land acquisition includes the cost of obtaining additional land or access to land to construct the proposed improvements. Assume a 10' easement

⁵ Pipe cost includes the cost of equipment, materials, and labor of trench excavation, rock excavation, pipe bedding, piping, backfill, and restoration to existing

⁶ A contingency of 35 percent was used due to the high degree of unknown factors. Assumes AACEI Class 4.

⁷ Engineering and Construction Administration includes all administrative and direct expenses to develop plans, specifications, and an engineer's estimate for

⁸ Topographic, Boundary, and Utility Survey includes all labor, equipment, and travel expenses to obtain existing survey information for planning and design

⁹ Legal and City Administration includes all expenses associated with financial and legal oversight by the City.

¹⁰ Construction survey includes all expenses, including labor and equipment, to conduct construction staking and construction verification/quality control checks.

¹¹ The Total Improvement Option Cost reflects an estimate of potential overall project costs based on preliminary estimates, and should not be considered an actual cost or encompassing all scenarios and circumstances.

**Water Project - Non-Potable Pipe - PDX2
PLANNING LEVEL ESTIMATE
Umatilla Beneficial Reuse Feasibility Study**



Item No.	Item Description	Unit	Quantity	Adjusted Bid Prices	
				Unit Price (\$)	Amount (\$)¹
1	Mobilization²	LS	1	\$23,000	\$23,000
2	Traffic Control³	LS	1	\$42,000	\$42,000
3	16 Inch C905 PVC Pipe⁴	LF	4,680	\$89	\$416,520
SUBTOTAL 1				\$480,000	
CONSTRUCTION CONTINGENCY⁵				35%	\$168,000
SUBTOTAL 2				\$650,000	
ENGINEERING AND CONSTRUCTION ADMINISTRATION⁶				20%	\$130,000
TOPOGRAPHIC, BOUNDARY, AND UTILITY SURVEY⁷				2%	\$13,000
LEGAL AND CITY ADMINISTRATIVE⁸				2%	\$13,000
CONSTRUCTION SURVEY⁹				2%	\$13,000
TOTAL IMPROVEMENT COST¹⁰				\$800,000	

¹ Cost estimates are provided in 2018 dollars. All dollar amounts are rounded for planning purposes.

² Mobilization includes the contractor's administrative and direct expenses to mobilize equipment, materials, and labor to the project site.

³ Traffic control includes all labor and material expenses associated with safely moving traffic through the work zone including signage, flagging, temporary barriers, temporary pavement markings, and lane delineators.

⁴ Pipe cost includes the cost of all pipe, pipe installation, earthwork, valves, fittings, pavement repair, and connection costs associated with the project.

⁵ A contingency of 35 percent was used due to the high degree of unknown factors. Assumes AACEI Class 4.

⁶ Engineering and Construction Administration includes all administrative and direct expenses to develop plans, specifications, and an engineer's estimate for construction.

⁷ Topographic, Boundary, and Utility Survey includes all labor, equipment, and travel expenses to obtain existing survey information for planning and design purposes.

⁸ Legal and City Administration includes all expenses associated with financial and legal oversight by the City.

⁹ Construction survey includes all expenses, including labor and equipment, to conduct construction staking and construction verification/quality control checks.

¹⁰ The Total Improvement Option Cost reflects an estimate of potential overall project costs based on preliminary estimates, and should not be considered an actual cost or encompassing all scenarios and circumstances.

**Water Project - Surface Water Distribution Pipeline
PLANNING LEVEL ESTIMATE
Umatilla Beneficial Reuse Feasibility Study**



Item No.	Item Description	Unit	Quantity	Adjusted Bid Prices	
				Unit Price (\$)	Amount (\$)¹
1	Mobilization²	LS	1	\$10,000	\$10,000
2	Traffic Control³	LS	1	\$19,000	\$19,000
3	10 Inch C900 PVC Pipe⁴	LF	3,082	\$61	\$188,002
4	18 Inch C905 PVC Pipe⁴	LF	12,027	\$104	\$1,244,907
SUBTOTAL 1				\$1,460,000	
CONSTRUCTION CONTINGENCY⁵				35%	\$511,000
SUBTOTAL 2				\$1,970,000	
ENGINEERING AND CONSTRUCTION ADMINISTRATION⁶				20%	\$394,000
TOPOGRAPHIC, BOUNDARY, AND UTILITY SURVEY⁷				2%	\$39,400
LEGAL AND CITY ADMINISTRATIVE⁸				2%	\$39,400
CONSTRUCTION SURVEY⁹				2%	\$39,400
TOTAL IMPROVEMENT COST¹⁰				\$2,500,000	

¹ Cost estimates are provided in 2018 dollars. All dollar amounts are rounded for planning purposes.

² Mobilization includes the contractor's administrative and direct expenses to mobilize equipment, materials, and labor to the project site.

³ Traffic control includes all labor and material expenses associated with safely moving traffic through the work zone including signage, flagging, temporary barriers, temporary pavement markings, and lane delineators.

⁴ Pipe cost includes the cost of all pipe, pipe installation, earthwork, valves, fittings, pavement repair, boring costs, and connection costs associated with the project.

⁵ A contingency of 35 percent was used due to the high degree of unknown factors. Assumes AACEI Class 4.

⁶ Engineering and Construction Administration includes all administrative and direct expenses to develop plans, specifications, and an engineer's estimate for construction.

⁷ Topographic, Boundary, and Utility Survey includes all labor, equipment, and travel expenses to obtain existing survey information for planning and design purposes.

⁸ Legal and City Administration includes all expenses associated with financial and legal oversight by the City.

⁹ Construction survey includes all expenses, including labor and equipment, to conduct construction staking and construction verification/quality control checks.

¹⁰ The Total Improvement Option Cost reflects an estimate of potential overall project costs based on preliminary estimates, and should not be considered an actual cost or encompassing all scenarios and circumstances.

**Water Project - Water Treatment Plant
PLANNING LEVEL ESTIMATE
Umatilla Beneficial Reuse Feasibility Study**



Item No.	Item Description	Unit	Quantity	Adjusted Bid Prices	
				Unit Price (\$)	Amount (\$)¹
1	Mobilization²	LS	1	\$730,000	\$730,000
2	6.2 MGD Water Treatment Plant, New Greenfield Site³	GAL	6,200,000	\$2	\$12,400,000
3	Off-Site Power Supply⁴	LS	1	\$25,000	\$25,000
4	Off-Site Access Route⁵	LS	1	\$60,000	\$60,000
5	Yard Piping⁶	LS	1	\$300,000	\$300,000
6	Site Work⁷	LS	1	\$300,000	\$300,000
7	Electrical and Instrumentation⁸	LS	1	\$730,000	\$730,000
SUBTOTAL 1				\$14,550,000	
CONSTRUCTION CONTINGENCY⁹				35%	\$5,092,500
SUBTOTAL 2				\$19,640,000	
ENGINEERING AND CONSTRUCTION ADMINISTRATION¹⁰				20%	\$3,928,000
TOPOGRAPHIC, BOUNDARY, AND UTILITY SURVEY¹¹				2%	\$392,800
LEGAL AND CITY ADMINISTRATIVE¹²				2%	\$392,800
CONSTRUCTION SURVEY¹³				2%	\$392,800
TOTAL IMPROVEMENT COST¹⁴				\$24,700,000	

¹ Cost estimates are provided in 2018 dollars. All dollar amounts are rounded for planning purposes.

² Mobilization includes the contractor's administrative and direct expenses to mobilize equipment, materials, and labor to the project site.

³ Includes equipment, labor, and materials cost of the structure and all necessary mechanical and electrical equipment.

⁴ Includes cost of equipment, labor, and materials to route nearby power to the site.

⁵ Includes equipment, labor, and materials of earthwork, surfacing material, and compaction.

⁶ Includes equipment, labor, and materials for fittings, trench excavation, bedding, backfill, and surface restoration.

⁷ Includes equipment, labor, and materials for earthwork, drainage, landscaping, fencing, and gate.

⁸ Electrical design and SCADA integration.

⁹ A contingency of 35 percent was used due to the high degree of unknown factors. Assumes AACEI Class 4.

¹⁰ Engineering and Construction Administration includes all administrative and direct expenses to develop plans, specifications, and an engineer's estimate for

¹¹ Topographic, Boundary, and Utility Survey includes all labor, equipment, and travel expenses to obtain existing survey information for planning and design

¹² Legal and City Administration includes all expenses associated with financial and legal oversight by the City.

¹³ Construction survey includes all expenses, including labor and equipment, to conduct construction staking and construction verification/quality control checks.

¹⁴ The Total Improvement Option Cost reflects an estimate of potential overall project costs based on preliminary estimates, and should not be considered an actual cost or encompassing all scenarios and circumstances.

**Water Project - 395 Corridor Water System
PLANNING LEVEL ESTIMATE
Umatilla Beneficial Reuse Feasibility Study**



Item No.	Item Description	Unit	Quantity	Adjusted Bid Prices	
				Unit Price (\$)	Amount (\$)¹
1	Mobilization²	LS	1	\$1,104,000	\$1,104,000
2	Traffic Control³	LS	1	\$1,238,000	\$1,238,000
3	Easement Acquisition⁴	SF	604,000	\$1	\$604,000
4	Land Acquisition⁵	SF	87,120	\$3	\$261,360
5	8 Inch C900 PVC Pipe⁶	LF	55,179	\$70	\$3,862,530
6	10 Inch C900 PVC Pipe⁶	LF	28,369	\$77	\$2,184,413
7	12 Inch C900 PVC Pipe⁶	LF	34,268	\$85	\$2,912,780
8	16 Inch C905 PVC Pipe⁶	LF	12,541	\$107	\$1,341,887
9	18 Inch C905 PVC Pipe⁶	LF	1,476	\$119	\$175,644
10	395 Corridor Reservoir⁷	LS	1	\$6,700,000	\$6,700,000
11	Umatilla Butte Reservoir⁷	LS	1	\$1,600,000	\$1,600,000
12	395 Corridor Booster Pump Station⁸	LS	1	\$730,000	\$730,000
13	Umatilla Butte Booster Pump Station⁸	LS	1	\$460,000	\$460,000
SUBTOTAL 1				\$23,170,000	
CONSTRUCTION CONTINGENCY⁹				35%	\$8,109,500
SUBTOTAL 2				\$31,280,000	
ENGINEERING AND CONSTRUCTION ADMINISTRATION¹⁰				20%	\$6,256,000
TOPOGRAPHIC, BOUNDARY, AND UTILITY SURVEY¹¹				2%	\$625,600
LEGAL AND CITY ADMINISTRATIVE¹²				2%	\$625,600
CONSTRUCTION SURVEY¹³				2%	\$625,600
TOTAL IMPROVEMENT COST¹⁴				\$39,400,000	

¹ Cost estimates are provided in 2018 dollars. All dollar amounts are rounded for planning purposes.

² Mobilization includes the contractor's administrative and direct expenses to mobilize equipment, materials, and labor to the project site.

³ Traffic control includes all labor and material expenses associated with safely moving traffic through the work zone including signage, flagging, temporary barriers, temporary pavement markings, and lane delineators.

⁴ Easement acquisition includes the cost of obtaining access to land to construct the proposed improvements. Assume a 10' easement width

⁵ Land acquisition includes the cost of obtaining additional land to construct the proposed improvements. Assume each site requiring land acquisition is half an acre in size.

⁶ Pipe cost includes the cost of all pipe, pipe installation, earthwork, valves, fittings, fire hydrants, pavement repair, and hydroseeding associated with the project.

⁷ Reservoir costs include the costs of all work associated with reservoir construction including, reservoir construction, site work, foundations, and yard piping.

⁸ Booster pump station costs include the costs of all work associated with construction of the booster pump station including, booster pumps, site work, building construction, yard piping, electrical and controls, and HVAC system.

⁹ A contingency of 35 percent was used due to the high degree of unknown factors. Assumes AACEI Class 4.

¹⁰ Engineering and Construction Administration includes all administrative and direct expenses to develop plans, specifications, and an engineer's estimate for construction.

¹¹ Topographic, Boundary, and Utility Survey includes all labor, equipment, and travel expenses to obtain existing survey information for planning and design purposes.

¹² Legal and City Administration includes all expenses associated with financial and legal oversight by the City.

¹³ Construction survey includes all expenses, including labor and equipment, to conduct construction staking and construction verification/quality control checks.

¹⁴ The Total Improvement Option Cost reflects an estimate of potential overall project costs based on preliminary estimates, and should not be considered an actual cost or encompassing all scenarios and circumstances. This does not reflect the cost of all pipes and services which will increase the overall cost.

**Wastewater Project - 395 Corridor Wastewater
PLANNING LEVEL ESTIMATE
Umatilla Beneficial Reuse Feasibility Study**



Item No.	Item Description	Unit	Quantity	Adjusted Bid Prices	
				Unit Price (\$)	Amount (\$) ¹
1	Mobilization ²	LS	1	\$391,000	\$391,000
2	Traffic Control ³	LS	1	\$508,500	\$508,500
3	Easement ⁴	SF	226054	\$1	\$226,054
4	8 Inch ASTM D3034 PVC Pipe, 5'-10' Depth ⁶	LF	13,849	\$63	\$872,487
5	8 Inch ASTM D3034 PVC Pipe, 10'-15' Depth ⁶	LF	1,743	\$67	\$116,781
6	8 Inch ASTM D3034 PVC Pipe, 15'-20' Depth ⁶	LF	915	\$72	\$65,880
7	8 Inch ASTM D3034 PVC Pipe, 20'-25' Depth ⁶	LF	606	\$76	\$46,056
8	10 Inch ASTM D3034 PVC Pipe, 5'-10' Depth ⁶	LF	3,493	\$71	\$248,003
9	10 Inch ASTM D3034 PVC Pipe, 10'-15' Depth ⁶	LF	422	\$75	\$31,650
10	10 Inch ASTM D3034 PVC Pipe, 15'-20' Depth ⁶	LF	365	\$80	\$29,200
11	10 Inch ASTM D3034 PVC Pipe, 20'-25' Depth ⁶	LF	532	\$85	\$45,220
12	10 Inch ASTM D3034 PVC Pipe, 25'-30' Depth ⁶	LF	1,059	\$89	\$94,251
13	10 Inch ASTM D3034 PVC Pipe, 30'-35' Depth ⁶	LF	868	\$94	\$81,592
14	12 Inch ASTM D3034 PVC Pipe, 5'-10' Depth ⁶	LF	1,899	\$78	\$148,549
15	12 Inch ASTM D3034 PVC Pipe, 10'-15' Depth ⁶	LF	1,594	\$83	\$132,661
16	15 Inch ASTM D3034 PVC Pipe, 5'-10' Depth ⁶	LF	2,266	\$96	\$217,536
17	15 Inch ASTM D3034 PVC Pipe, 10'-15' Depth ⁶	LF	817	\$102	\$83,334
18	15 Inch ASTM D3034 PVC Pipe, 15'-20' Depth ⁶	LF	817	\$108	\$88,236
19	15 Inch ASTM D3034 PVC Pipe, 20'-25' Depth ⁶	LF	107	\$114	\$12,198
20	18 Inch ASTM F679 PVC Pipe, 5'-10' Depth ⁶	LF	206	\$114	\$23,484
21	18 Inch ASTM F679 PVC Pipe, 10'-15' Depth ⁶	LF	478	\$122	\$58,316
22	18 Inch ASTM F679 PVC Pipe, 15'-20' Depth ⁶	LF	484	\$129	\$62,436
23	18 Inch ASTM F679 PVC Pipe, 20'-25' Depth ⁶	LF	176	\$137	\$24,112
24	27 Inch ASTM F679 PVC Pipe, 5'-10' Depth ⁶	LF	1,319	\$172	\$226,868
25	48 Inch Manholes, 5-10 Feet	EA	77	\$3,000	\$231,000
26	48 Inch Manholes, 10-15 Feet	EA	17	\$3,500	\$59,500
27	48 Inch Manholes, 15-20 Feet	EA	9	\$5,000	\$45,000
28	60 Inch Manholes, 20-25 Feet	EA	5	\$7,500	\$37,500
29	60 Inch Manholes, 25-30 Feet	EA	4	\$12,500	\$50,000
30	60 Inch Manholes, 30-35 Feet	EA	3	\$15,000	\$45,000
31	6 Inch C-900 PVC Forcemain ⁷	LF	8,876	\$81	\$718,956
32	18 Inch C-905 PVC Forcemain ⁷	LF	4,916	\$140	\$688,240
33	395 Corridor East Lift Station ⁸	LS	1	\$2,000,000	\$2,000,000
34	395 Corridor West Lift Station ⁸	LS	1	\$500,000	\$500,000
SUBTOTAL 1				\$8,210,000	
CONSTRUCTION CONTINGENCY ⁹				35%	\$2,873,500
SUBTOTAL 2				\$11,080,000	
ENGINEERING AND CONSTRUCTION ADMINISTRATION ¹⁰				20%	\$2,216,000
TOPOGRAPHIC, BOUNDARY, AND UTILITY SURVEY ¹¹				2%	\$221,600
LEGAL AND CITY ADMINISTRATIVE ¹²				2%	\$221,600
CONSTRUCTION SURVEY ¹³				2%	\$221,600
TOTAL IMPROVEMENT COST¹⁴				\$14,000,000	

¹ Cost estimates are provided in 2018 dollars. All dollar amounts are rounded for planning purposes.

² Mobilization includes the contractor's administrative and direct expenses to mobilize equipment, materials, and labor to the project site.

³ Traffic control includes all labor and material expenses associated with safely moving traffic through the work zone including signage, flagging, temporary barriers, temporary pavement markings, and lane delineators.

⁵ Easement includes the cost of obtaining access to land to construct the proposed improvements. Assume a 10' easement width

⁶ Pipe cost includes the cost of equipment, materials, and labor of trench excavation, pipe bedding, piping, backfill, and restoration to existing conditions

⁷ Pipe cost includes the cost of equipment, materials, and labor of trench excavation, pipe bedding, piping, restrained joints, air valves, pressure cleanouts, backfill, and restoration to existing conditions.

⁸ Lift station cost includes the cost of equipment, materials, and labor of sitework, submersible lift station, precast structures, and electrical and controls

⁹ A contingency of 35 percent was used due to the high degree of unknown factors. Assumes AACEI Class 4.

¹⁰ Engineering and Construction Administration includes all administrative and direct expenses to develop plans, specifications, and an engineer's estimate for

¹¹ Topographic, Boundary, and Utility Survey includes all labor, equipment, and travel expenses to obtain existing survey information for planning and design purposes.

¹² Legal and City Administration includes all expenses associated with financial and legal oversight by the City.

¹³ Construction survey includes all expenses, including labor and equipment, to conduct construction staking and construction verification/quality control checks

¹⁴ The Total Improvement Option Cost reflects an estimate of potential overall project costs based on preliminary estimates, and should not be considered an actual cost or encompassing all scenarios and circumstances. This does not reflect the cost of all pipes and services which will increase the overall cost.

**Wastewater Project - 0.84 MGD WWTP Expansion to 1.64 MGD
PLANNING LEVEL ESTIMATE
Umatilla Beneficial Reuse Feasibility Study**



Item No.	Item Description	Unit	Quantity	Adjusted Bid Prices	
				Unit Price (\$)	Amount (\$)¹
1	Mobilization²	LS	1	\$480,000	\$480,000
2	Oxidation Ditch	\$/g	800,000	\$4	\$3,200,000
3	Oxidation Equipment	LS	1	\$950,000	\$950,000
4	Power Supply	LS	1	\$75,000	\$75,000
5	60' Clarifer	\$/g	300,000	\$5	\$1,500,000
6	Clarifier Equipment, outfitting	\$/ft	60	\$2,000	\$120,000
7	Ancillary Equipment Upgrades	LS	1	\$500,000	\$500,000
8	UV Disinfection Upgrades	LS	1	\$650,000	\$650,000
9	Solids Management Upgrades	LS	1	\$775,000	\$775,000
10	Yard Piping	LS	1	\$117,000	\$117,000
11	Site Work	LS	1	\$155,000	\$155,000
12	Electrical and Instrumentation	LS	1	\$400,000	\$400,000
SUBTOTAL 1				\$8,920,000	
CONSTRUCTION CONTINGENCY³				35%	\$3,122,000
SUBTOTAL 2				\$12,040,000	
ENGINEERING AND CONSTRUCTION ADMINISTRATION⁴				20%	\$2,408,000
TOPOGRAPHIC, BOUNDARY, AND UTILITY SURVEY⁵				2%	\$240,800
LEGAL AND CITY ADMINISTRATIVE⁶				2%	\$240,800
CONSTRUCTION SURVEY⁷				2%	\$240,800
TOTAL IMPROVEMENT COST⁸				\$15,200,000	

¹ Cost estimates are provided in 2018 dollars. All dollar amounts are rounded for planning purposes.

² Mobilization includes the contractor's administrative and direct expenses to mobilize equipment, materials, and labor to the project site.

³ A contingency of 35 percent was used due to the high degree of unknown factors. Assumes AACEI Class 4.

⁴ Engineering and Construction Administration includes all administrative and direct expenses to develop plans, specifications, and an engineer's estimate for

⁵ Topographic, Boundary, and Utility Survey includes all labor, equipment, and travel expenses to obtain existing survey information for planning and design

⁶ Legal and City Administration includes all expenses associated with financial and legal oversight by the City.

⁷ Construction survey includes all expenses, including labor and equipment, to conduct construction staking and construction verification/quality control checks.

⁸ The Total Improvement Option Cost reflects an estimate of potential overall project costs based on preliminary estimates, and should not be considered an actual cost or encompassing all scenarios and circumstances.

Appendix K – Recycled Industrial Water Project Environmental Review

City of Umatilla's Recycled Industrial Water Project Environmental Review

For: Oregon Department of Environmental
Quality, Clean Water State Revolving Fund

Prepared by: Nicholas Ducote, Ducote
Consulting LLC; Exhibits by J-U-B Engineers.

Ver 1.0: July 15, 2016 (submitted to DEQ)

Ver 1.1: April 20, 2017 (reviewed by DEQ-CWSRF)

Ver 1.2: July 3, 2017 (incorporated USACE comments)

External reviews of the Environmental Review, and associated issues, completed by Oregon Department of Environmental Quality on June 23, 2017 and by United State Army Corps of Engineers on June 17, 2017. Communications included in Exhibit H – External Review.

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1.0 Purpose and Need of the Proposal

1. Purpose of the Environmental Review

This Environmental Review is intended to demonstrate compliance with Federal and State cross-cutting authorities and the proposed project's potential impact to environmental cultural, and historic resources. Methodology followed the *Applicant's Guide to the State Environmental Review Process* and mitigation follows agency recommendations.

2. Need for Project

The purpose of the proposed project is discharge recycled industrial water from the Port of Umatilla into the West Extension Irrigation District canal via the USBR Phase 1 Exchange Canal. The project is intended to alleviate hydraulic capacity at the domestic wastewater treatment plant, reduce water competition in the Umatilla Basin, and create infrastructure to support dual-use recycled industrial water.

The need for the project is to alleviate capacity bottleneck in City of Umatilla's domestic wastewater treatment plant (WWTP), which currently processes the discharge from VA Data, and to provide additional water resources for WEID without further taxing surface or ground-water in order to irrigate the same acreage. The WWTP has a capacity of 0.8 MGD and max daily flows exceeded that capacity in Summer 2013. VA Data discharge accounts for approximately 0.25 MGD and will grow to at least 1.0 MGD in the next three years. The City's discharge from the WWTP into the Columbia is limited and alleviating both capacity issues is vital to growth at the Port and in the City.

VA Data centers come online in the near future with a flow of 0.1-0.25 MGD each, the WWTP will need an immediate \$20,000,000-30,000,000 upgrade without a recycle alternative. By diverting the discharge to WEID as recycle, that bottleneck is alleviated, which enables substantial growth and development while conserving water and recycling wastewater.

Implementation of a recycle pipeline between the Port and WEID enables the City to separate and beneficially recycle industrial water to benefit local agriculture, without over-burdening the WWTP. The proposed project is not only a cost-effective solution to the WWTP bottleneck, but will also create value by recycling industrial water for irrigation needs.

3. Proposed Action

The City of Umatilla plans to construct approximately 2.5 miles of buried pipeline to accommodate industrial water from the VA Data Inc. Data center at the Port of Umatilla to the West Extension Irrigation District via the USBR Phase 1 Exchange Canal. Construction along existing right-of-ways and easements will be maximized.

When the project is completed, the Recycled Industrial Water from the VA Data center will be immediately discharged into the new pipeline and into the WEID via the USBR Exchange Canal. As VA Data, industry at the Port, and the CTUIR's Wanapa Industrial Site continue to expand, recycled water volumes will only increase.

With the exception of two segments, the pipeline will be routed through existing City easement corridors. The excepted segments include the run between Beach Access Rd. and Bud Draper Rd. along a dirt path and the run from Riverside Ave. to the Exchange Canal. The Beach Access-Draper segment will

route between two active businesses at the Port along a dirt path. The Riverside-Exchange Canal segment routes through US Corps of Engineers and US Bureau of Reclamation property at the McNary Dam and near the Union-Pacific Railroad. The City owns an easement through the Corps of Engineers' land currently, but the project will require an easement amendment of 40'x3,900' to the South of the existing corridor. The pipeline will discharge into the US Bureau of Reclamation Phase 1 Canal ~0.42 miles (2,200 ft.) downstream from the McNary Pool intake.

This project will result in ability for WEID to draw less from the Columbia and Umatilla to meet the same irrigation needs, saved monetary resources for WEID as recycle water is less expensive than alternatives, and sustainable infrastructure to support 75 years of economic development.

2.0 Alternatives to the Proposed Action

1. Solutions to WWTP Capacity Bottleneck
 - a. J-U-B Engineers prepared a Wastewater Treatment and Reuse Evaluation, stamped on January 8, 2016, which analyzed alternate solutions to the domestic WWTP capacity bottleneck. Alternatives considered included:
 - o Recycling all, or part of, current 0.8 mgd flows from the existing WWTP.
Cost: \$5.8-7.5M
 - o Expanding current WWTP to accommodate 3.0 mgd, Class A reuse facility.
Cost: \$22-25M
2. Alternate Routing
 - a. Chosen solution: install a Recycled Industrial Water disposal pipeline to transport Industrial Recycled Water from the Port of Umatilla to the West Extension Irrigation District via the USBR Phase 1 Exchange Canal. *Cost: \$3M*
 - b. Alternative 1: Routing
 - c. Alt 2: Routing
 - d. Alt 3: Routing

3.0 Affected Environment/Environmental Consequences

Environmental Resource	Agency that Reviewed	Mitigation?
Cultural/Historical	SHPO	Yes
Tribal	LCIS and Tribes	No
Wetlands	DSL & City of Umatilla	No
Floodplains	Umatilla County & FEMA FIRM	No
Land Use/Farmland	Umatilla County & NRCS	No
Coastal Resources	N/A	No
Wild & Scenic Rivers	N/A	No
Biological Resources	EPA	Yes
Clean Air Act	DEQ Air Quality	Yes
Safe Drinking Water Act	DEQ Drinking Water Program	No

3.1 Historic/Cultural Resources

1. Much of the proposed project is in existing City of Umatilla easements. Roughly 40% of the project will route through 3,900' of US Army Corps of Engineers' and 35' of USBR land. The City has an easement on this land, but will need to amend the easement an additional 40' width along 3,900' to accommodate the discharge pipeline.
2. National Register.
 - a. No National Historic Landmarks in Umatilla County. Referenced the *National Register of Historic Places* spreadsheets and Databases.
 - b. There is one National Historic Place in City of Umatilla, Umatilla County and the address is restricted ("Umatilla Site, 35 UM 1"). Referenced the National Register of Historic Places spreadsheets and Databases. SHPO's Jason Allen confirmed the project area is not near the site.
3. Oregon's SHPO
 - a. Determination from Oregon SHPO included in Exhibit B
 - b. There are ten (10) Historic Places on the Oregon SHPO list in the City of Umatilla. Map included in Exhibit B.

SHPO Historic Places	Affected?
Sunset Hill Cemetery	No
Umatilla Bridge	No
Umatilla River Bridge #00624A	No
Bonneville-McNary Relocation House (57 Rio Senda St.)	No
300 Stephens Ave	No
314 Stephens Ave	No
328 Stephens Ave	No
300 Tucker Ave	No
326 Tucker Ave	No
356 Tucker Ave	No

4. Tribal Resources
 - a. Karen Quigley of Legislative Commission on Indian Services recommended contacting: Nez Pearce, Confederated Tribes of the Umatilla Indian Reservation, Yakama Nation, Confederated Tribes of Warm Springs.
 - b. For copy, see Exhibit B.
5. Tribes Contacted – Emails were available for all but the Yakama Nation. Voicemails were left for Yakama cultural resources. For copies, see Exhibit B.
 - a. Confederated Tribes of Warm Springs – Response on June 2, 2016: CTWS defers Section 106 compliance to CTUIR and requests to be copied on any cultural resource studies or archaeological surveys.
 - b. Nez Pearce – No response
 - c. Confederated Tribes of the Umatilla Indian Reservation – No response
 - d. Yakama Nation – No response
6. Submission to DEQ
 - a. Exhibit B
 - b. Mitigation measures
 - Regarding ORS 358.905 and 97.74: Human remains and artifacts. Because of a high-probability of finding human remains in the project area, contractor must cease work immediately and contact Oregon State Police if human remains are discovered.
 - Because of a high-probability of finding archaeological artifacts in the project area, contractor must use extreme caution during “project related ground disturbing activities.” If such objects are located, the contract must immediately contact a professional archaeologist.
 - SHPO records indicated a possible segment of Oregon Railway and Navigation Company railroad grade close to the project area. If present, the railroad grade should be evaluated and the effect to the project determined.
 - USBR deferred ACHP Section 106 Compliance to the US Army Corps of Engineers who manage all but 20’ of the Federal Land the pipeline will

be built on. Archaeological survey may be required under Section 106 compliance. The City will continue to coordinate with USCOE.

3.2 Protection of Wetlands

1. Information submitted via email, per instructions from Christine Stevenson.
2. Ducote Consulting submitted project documents and materials to Christine Stevenson of the Department of State Lands (DSL) for review. She replied: "I have reviewed the information we have on this area and I am not seeing any jurisdictional wetlands or waters within the project boundary. Please let me know if you need any other information." (See Exhibit C)
3. No additional measures needed.

3.3 Floodplains

1. Referenced the FEMA NFHL, none within project area (Exhibit D).
2. Umatilla City Planner confirmed there are no locally identified floodplains or wetlands in the project area. Umatilla County Planning Department identified part of the project area as "Zone D, 'Areas in which flood hazards are undetermined, but possible.'"
3. According to Oregon's SFHA, the 100-year floodplains only include areas immediately surrounding the Umatilla River, which the construction will not approach.
4. N/A
5. Submission (See Exhibit C)
 - a. FIRM Maps
 - b. Floodplain Manager (Umatilla County)
 - c. Verification docs
 - d. No mitigation.

3.4 Farmland Protection Policy

1. Project footprint will be entirely within City easements and previously disturbed land at the Port of Umatilla.
2. Umatilla County Planning department confirmed the project area is fully within the UGB. "Although there is F-1, Exclusive Farm Use, zoning (County 1972 Zoning Code) applied to the area where the project begins this zoning is no longer under Statewide Planning Goal 3 due it's inclusion in the City's Urban Growth Boundary (UGB)."
 - a. As a utility facility, the project is an "outright" use.
3. Ducote Consulting communicated with Ron Raney of the NRCS, who concluded: "After our discussion and reviewing attached information, this project will not permanently convert any lands subject to Farm Protection Policy Act. An evaluation and an AD-1006 is not necessary."
4. No Important or High-Value Farmland identified on desktop survey. Referenced the USDA Web Soil Survey tool with NRCS maps.

5. Maps and emails included in Exhibit E.

3.5 Coastal Resources

1. N/A – Only applies to Clatsop, Columbia, Tillamook, Washington, Yamhill, Lincoln, Polk, Benton, Lane, Douglas, Coos, and Curry counties.

3.6 Wild & Scenic Rivers

1. No Wild or Scenic Rivers within project footprint. No Wild and Scenic Rivers in Umatilla County. Neither Umatilla or Columbia River (near project) are included.

3.7 Biological Resources

1. ESA Listed Species, Critical Habitat, and Essential Fish Habitat
 - a. Communicated with Rob Pederson of the EPA and submitted a Species Evaluation on 4/14/2016 (Exhibit F).
 - b. EPA responded with an official review on 4/27/2016 and ruled that “Based on the information provided, the EPA has determined that the proposed project, as described, will have **no effect** on ESA listed species or their designated critical habitat and will have **no adverse effect** on designated essential fish habitat” (Exhibit F).
 - c. EPA must be notified immediately if: 1) new information reveals the action may affect listed species or designated critical habitat; 2) the action is modified in a manner that causes an effect to listed species or designated critical habitat; or 3) a new species is listed or critical habitat designated, that may be affected by the proposed actions. (Exhibit F).
2. Mitigation Summary
 - a. Avoid working during migratory bird nesting season. If work must be accomplished during nesting season, use these mitigation efforts:
 - If an occupied nest is encountered in harm’s way, no action may occur that will result in the unauthorized take of eggs/chicks or adult birds. Contractor should contact the USFWS through the Construction Manager as soon as possible for instruction on how to proceed.
 - If a take occurs of a migratory bird, this occurrence must be documented by the Construction Manager and reported to the USFWS.

3.8 Clean Air Act

1. DEQ’s Frank Messina (Exhibit G) concluded “no permits are required from the DEQ Air Quality Program to conduct this project” (Exhibit G).
2. Frank Messina provided the following mitigation comments regarding the City’s project:
 - a. To comply with Division 208 emissions (dust) rules:

- Water will be used to control dust from the work site. Water bars can be used to spray both sides of trucks leaving the worksite, which will wash the dirt off the truck tires.
- If the City uses crushed rock or asphalt for the project, they will confirm the owner and operator of the rock crusher or asphalt plant has an air permit.
- During excavation, if the project comes across Cement Asbestos Pipe removal will following DEQ regulations described in Division 248. The City will notify DEQ's Air Quality Division if asbestos piping is located.

3.9 Safe Drinking Water

1. In consultation with DEQ's Carrie Gentry on 5/4/2016, there is no need for a Water Quality Review because the proposed project does not effect or involve drinking water. Because the project relates to industrial water and will not be discharged into drinking water sources, no review was required.
2. The City and J-U-B Engineers is working with VA Data, DEQ and USBR regarding the quality of the industrial discharge. The City is in the process of acquiring an NPDES permit for discharge in the USBR Phase 1 Exchange Canal and ultimately West Extension Irrigation District.

4.0 Mitigation Summary

General Environmental Requirements

- (USACE Land) SITE SPECIFIC CONDITION ON GENERAL ENVIRONMENTAL RESOURCES
 - a. The Grantee will implement an Integrated Pest Management Program (IPMP) on the Premises to reduce the risk of introducing and/or spreading invasive or exotic plant species. The Grantee's IPMP must adhere fully to condition 18.a. of this easement, "ENVIRONMENTAL PROTECTION."
 - b. A Construction General Permit for storm-water must be obtained by the Grantee from the State of Oregon, Department of Environmental Quality 811 SW Sixth Avenue, Portland, OR 97204, 503-229-5279 before commencing construction on the Premises.
 - c. Before commencing construction, the Grantee shall prepare a Stormwater Pollution Prevention Plan which shall be provided to the State of Oregon, Department of Environmental Quality.
 - d. For further guidance, see:
<http://www.deq.state.or.us/wq/wqpermit/docs/general/npdes1200c/permit.pdf>

Historical:

- ORS 358.905 and 97.74:
 - Because of a high-probability of finding human remains in the project area, contractor must cease work immediately and contact Oregon State Police if human remains are discovered.
 - Because of a high-probability of finding archaeological artifacts in the project area, contractor must use extreme caution during "project related ground disturbing activities." If such objects are located, the contract must immediately contact a professional archaeologist.
- SHPO records indicated a possible segment of Oregon Railway and Navigation Company railroad grade close to the project area. If present, the railroad grade should be evaluated and the effect to the project determined.
- USBR deferred ACHP Section 106 Compliance to the US Army Corps of Engineers who manage all but 20' of the Federal Land the pipeline will be built on.
 - Archaeological survey may be required under Section 106 compliance. The City will continue to coordinate with USCOE.

Biological Resources:

- Avoid working during migratory bird nesting season (March 1-August 31), if possible. If work must be accomplished during nesting season, use these mitigation efforts:
 - If an occupied nest is encountered in harm's way, no action may occur that will result in the unauthorized take of eggs/chicks or adult birds. Contractor should contact the USFWS through the Construction Manager as soon as possible for instruction on how to proceed.

- If a take occurs of a migratory bird, this occurrence must be documented by the Construction Manager and reported to the USFWS.

(USACE Land) SITE SPECIFIC CONDITION ON BIOLOGICAL RESOURCES

- a. No actions will take place on or affecting the Premises that will result in unauthorized take of a nest, eggs/chicks or adult birds. "Take" is defined as pursuing, hunting, capturing or killing migratory birds and includes feathers, eggs and nests.
- b. If an active bird nest is found, the Grantee and/or the Grantee's construction manager must contact the U.S. Fish and Wildlife Service at 503-231-6125 as soon as possible for instructions on how to proceed.
- c. If take of a migratory bird, active nest, eggs or chicks occurs, the Grantee and/or the construction manager must document the take and report it to the U.S. Fish and Wildlife Service at 503-231-6125.
- d. Upon completion of construction or ground-disturbing activities on the Premises, the Grantee will restore disturbed areas by revegetating with native grasses in accordance with the guidance contained in Exhibit C, attached hereto and made a part hereof.

Air Quality:

- To comply with Division 208 emissions (dust) rules:
 - Water will be used to control dust from the work site. Water bars can be used to spray both sides of trucks leaving the worksite, which will wash the dirt off the truck tires.
 - If the City uses crushed rock or asphalt for the project, they will confirm the owner and operator of the rock crusher or asphalt plant has an air permit.
 - During excavation, if the project comes across Cement Asbestos Pipe removal will following DEQ regulations described in Division 248. The City will notify

Federal and State Review

External reviews of the Environmental Review, and associated issues, completed by Oregon Department of Environmental Quality on June 23, 2017 and by United State Army Corps of Engineers on June 17, 2017. Communications included in Exhibit H – External Review.

Environmental Review References:

Applicant Guide to the State Environmental Review Process. ODEQ, DEQ 12-WQ-025, April 2012.

Essential Fish Habitat. National Oceanic and Atmospheric Administration/ National Marine Fisheries Service.

Information for Planning and Conservation (IPaC), US Fish and Wildlife Service. Accessed April 2016.

National Flood Hazard Layer. Federal Emergency Management Agency. Accessed April 2016.

Oregon Historic Sites Map. Oregon State Historic Preservation Office. Accessed April 2016.

Oregon Special Flood Hazard Area Map. Department of Land Conservation and Development. April 2016.

Oregon Risk Map. Department of Land Conservation and Development.

“Rare, Threatened, and Endangered Species of Oregon,” Oregon Biodiversity Information Center, Oregon State University, April 2016.

Wetlands Layer (*National Wetlands Inventory*), *National Spatial Data Infrastructure*. FIRM Wetlands Mapper. US Fish and Wildlife Service. Accessed March 2016.

Wetland Inventory Map. Oregon Division of State Lands. Accessed March 2016.

Species Review References:

Areas of Known Wolf Activity – 2015. Oregon Department of Fish and Wildlife.

“Attachment P-6: Wildlife Monitoring and Mitigation Plan,” *Cascade Crossing Transmission Project Wildlife Monitoring and Mitigation Plan*, Tetra Tech, March 2013.

Betts, Geographic distribution and habitat preferences of Washington ground squirrels (*Spermophilus washingtoni*). *Northwestern Naturalist* 71 (1990), 27-37.

Betts, “Current status of Washington ground squirrels in Oregon and Washington” *Northwestern Naturalist* no. 80 (1999), 35-38

“Exhibit P-8D – Washington Ground Squirrel Surveys Technical Report,” *Boardman to Hemingway Transmission Line Project*, Tetra Tech, December 2011.

Oregon Wolf Conservation and Management 2015 Annual Report. Oregon Department of Fish and Wildlife. 2016.

Rickart and Yensen, “Mammalian Species *Spermophilus washingtoni*,” *American Society of Mammalogists* no. 371 (April 12, 1991), pg 1-5.

“Washington Ground Squirrel Potential Range Map,” US Fish and Wildlife Service, November 2012.

City of Umatilla, Recycled Industrial Water Pipeline
Environmental Review

Ducote Consulting LLC

Watson, Vander Haegen, and Chang, *Occupancy Modeling and Detection of Washington Ground Squirrels (*Spermophilus washingtoni*)*, Washington Department of Fish and Wildlife Wildlife Program Wildlife Science Division, January 2009.










Yensen and P.W. Sherman, "Ground-dwelling squirrels of the Pacific Northwest," Boise, ID. April 28, 2003.

Exhibit A

Project Information

FIGURE 1
PROPOSED PROJECT VICINITY MAP

LEGEND

-  USBR Exchange Canal
-  Potential Industrial Service Area
-  Proposed Alignment
-  Federal_Owned_Land
-  Township Range (1:500K)
-  Sections
-  Parcels
-  City Limits
-  UGB

Revision Date: 3/23/2016



FIGURE #1



BEGIN PROJECT

END PROJECT

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGR, swisstopo, and the GIS User Community, Oregon Geospatial Enterprise Office

Exhibit B

3.1 Historic/Cultural Resources



Oregon

Kate Brown, Governor

Parks and Recreation Department

State Historic Preservation Office

725 Summer St NE Ste C

Salem, OR 97301-1266

Phone (503) 986-0690

Fax (503) 986-0793

www.oregonheritage.org



April 26, 2016

Mr. Nicholas Ducote
Ducote Consulting LLC
PO Box 596
La Grande, OR 97850

RE: SHPO Case No. 16-0565
City of Umatilla, Wastewater Reuse Project
3 mile pipeline
, Umatilla, Umatilla County

Dear Mr. Ducote:

Our office recently received a request to review your application for the project referenced above. In checking our statewide archaeological database, it appears that there have been no previous surveys completed near the proposed project area. However, the project area lies within an area generally perceived to have a high probability for possessing archaeological sites and/or buried human remains. Our records do show that there is a possible segment of railroad grade associated with the Oregon Railway and Navigation Company that is close to your project area. Based on the maps provided it is difficult to determine if this grade is present in your project area. If present, this segment of railroad grade should be evaluated and the effect of the project determined. In the absence of sufficient knowledge to predict the location of cultural resources within the project area, extreme caution is recommended during project related ground disturbing activities. Under state law (ORS 358.905 and ORS 97.74) archaeological sites, objects and human remains are protected on both state public and private lands in Oregon. If archaeological objects or sites are discovered during construction, all activities should cease immediately until a professional archaeologist can evaluate the discovery. If you have not already done so, be sure to consult with all appropriate Indian tribes regarding your proposed project. If the project has a federal nexus (i.e., federal funding, permitting, or oversight) please coordinate with the appropriate lead federal agency representative regarding compliance with Section 106 of the National Historic Preservation Act (NHPA). If you have any questions about the above comments or would like additional information, please feel free to contact our office at your convenience. In order to help us track your project accurately, please reference the SHPO case number above in all correspondence.

Sincerely,

Ross Curtis
SHPO Archaeologist
(503) 986-0676
ross.curtis@oregon.gov



Oregon Historic Sites Map



Select Sites / Legend

Select

- Legend**
- Eligible/Listed
 - Eligible
 - Not Eligible/Listed
 - Not Eligible
 - Undetermined/Listed
 - Undetermined
 - Demolished/Listed
 - Demolished

Measurement

Switch Basemap

Resource ID	Name	Address	City	County	Eligibility	Nat. Register Status	Yr Built
-------------	------	---------	------	--------	-------------	----------------------	----------

Karen Quigley
Executive Director
Oregon Legislative Commission on Indian Services
Karen.Quigley@state.or.us
(503)986-1068

Karen,

The City of Umatilla is preparing to use federal Clean Water State Revolving Funds (SRF) through the Oregon Department of Environmental Quality to build an approximately 3 mile wastewater reuse pipeline at the following site:

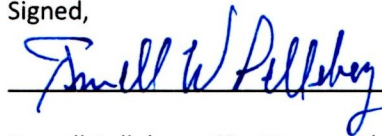
Project name: City of Umatilla Phase 1 Reuse
Property address: 82800 Beach Access Rd. Umatilla, OR (currently no exact on proposed pipeline)
County: Umatilla
Nearest city: Umatilla

The City of Umatilla is constructing an industrial wastewater reuse pipeline to free hydraulic capacity of the City's Domestic wastewater treatment plant and provide water for use by the West Extension Irrigation District.

In accordance with state law, I would like to notify the appropriate tribal governments of DEQ's proposed action and request their review of this project from a cultural resources perspective. Attached is a description of the project and maps showing the project location. Could you please let me know which tribal governments to contact for a cultural resources review? If you need additional information about this site, its history or City of Umatilla proposed work, please let me know.

I am requesting this information as directed by Oregon DEQ as part of an application for the SRF program, which is funded by the EPA and subject to requirements of the National Historic Preservation Act. If you would like more information about the SRF program and/or federal cultural resource protection requirements related to the SRF, please contact [Shanna Hamilton, 541-278-8681] or David Carcia, EPA CWSRF Coordinator at (206) 553-0890. Thank you for your assistance.

Signed,



Russell Pelleberg, City Manager (or other appropriate title)
City of Umatilla
700 Sixth St. Umatilla, Oregon 97882
Telephone: 541-922-3226
Russell@umatilla-city.org



Nick Ducote <ducoteconsulting@gmail.com>

SERP for City of Umatilla Reuse Project

6 messages

Nick Ducote <ducoteconsulting@gmail.com>
To: karen.quigley@state.or.us

Mon, Apr 11, 2016 at 9:31 AM

Karen, attached is the SERP template letter signed by Umatilla City Manager Russ Pelleberg. Please let me know if you need any additional information.

Karen Quigley
Executive Director
Oregon Legislative Commission on Indian Services
Karen.Quigley@state.or.us
(503)986-1068

Karen,

The City of Umatilla is preparing to use federal Clean Water State Revolving Funds (SRF) through the Oregon Department of Environmental Quality to build an approximately 3 mile wastewater reuse pipeline at the following site:

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Signed,

Russell Pelleberg, City Manager (or other appropriate title)
City of Umatilla
700 Sixth St. Umatilla, Oregon 97882
Telephone: 541-922-3226
Russell@umatilla-city.org

Thank you,

—
-Nicholas Ducote
Ducote Consulting LLC

Ducote
consulting, llc

Mail Delivery Subsystem <mailer-daemon@googlemail.com>
To: ducoteconsulting@gmail.com

Mon, Apr 11, 2016 at 9:31 AM

Delivery to the following recipient failed permanently:

karen.quigley@state.or.us

Technical details of permanent failure:

Google tried to deliver your message, but it was rejected by the server for the recipient domain [state.or.us](mailto:karen.quigley@state.or.us) by smtp1.state.or.us. [159.121.105.150].

The error that the other server returned was:

550 5.1.1 <karen.quigley@state.or.us>... User unknown

----- Original message -----

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Mon, 11 Apr 2016 09:31:01 -0700 (PDT)

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Date: Mon, 11 Apr 2016 09:31:01 -0700

Message-ID: <CALGVBq4t1JFXgfiypr9cmHRv=1O_i-9a3AXJceTZH23TXQosew@mail.gmail.com>

Subject: SERP for City of Umatilla Reuse Project

From: Nick Ducote <ducoteconsulting@gmail.com>

To: karen.quigley@state.or.us

Content-Type: multipart/related; boundary=001a11c36fa2ff075305303811bc

Karen, attached is the SERP template letter signed by Umatilla City Manager Russ Pelleberg. Please let me know if you need any additional information.

[image: Inline image 1]

Thank you,

-
-Nicholas Ducote
Ducote Consulting LLC

Nick Ducote <ducoteconsulting@gmail.com>
To: karen.m.quigley@state.or.us

Mon, Apr 11, 2016 at 9:32 AM

Karen, attached is the SERP template letter signed by Umatilla City Manager Russ Pelleberg. Please let me know if you need any additional information.

Karen Quigley
Executive Director
Oregon Legislative Commission on Indian Services
karen.quigley@state.or.us
(503)986-1068

Karen,

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Project name: City of Umatilla Phase 1 Reuse
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I am requesting this information as directed by Oregon DEQ as part of an application for the SRF program, which is funded by the EPA and subject to requirements of the National Historic Preservation Act. If you would like more information about the SRF program and/or federal cultural resource protection requirements related to the SRF, please contact [Shanna Hamilton, 541-278-8681] or David Garcia, EPA CWSRF Coordinator at (206) 553-0890. Thank you for your assistance.

Signed,



Russell Pelleberg, City Manager (or other appropriate title)
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700 Sixth St. Umatilla, Oregon 97882
Telephone: 541-922-3226
Russell@umatilla-city.org

Thank you,

--

-Nicholas Ducote
Ducote Consulting LLC

Ducote
consulting, llc

Quigley Karen M <karen.m.quigley@state.or.us>
To: "ducoteconsulting@gmail.com" <ducoteconsulting@gmail.com>

Mon, Apr 11, 2016 at 10:47 AM

Hello Nick,

There are two Oregon tribal governments that should be notified for this project: Confederated Tribes of Warm Springs and Confederated Tribes of Umatilla. Because of the proximity to the Columbia River and the fact that this project is using federal funds, you most likely also will need to contact the Yakama Indian Nation (WA) and the Nez Perce Tribe (ID).

Thank you.

Sincerely,
Karen

Karen Quigley, Executive Director

karen.m.quigley@state.or.us



Legislative Commission on Indian Services

From: Nick Ducote [mailto:ducoteconsulting@gmail.com]

Sent: Monday, April 11, 2016 9:33 AM

To: Quigley Karen M <QuigleK@leg.state.or.us>
Subject: Fwd: SERP for City of Umatilla Reuse Project

Karen, attached is the SERP template letter signed by Umatilla City Manager Russ Pelleberg. Please let me know if you need any additional information.

Karen Quigley
Executive Director
Oregon Legislative Commission on Indian Services
Karen.Quigley@olcis.leg.or.us
(503)986-1068

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Signed,



Russell Pelleberg, City Manager (or other appropriate title)
City of Umatilla
700 South St, Umatilla, Oregon 97882
Telephone: 541-922-3226
Russell@umatilla-city.org

--
-Nicholas Ducote

Ducote Consulting LLC

Ducote
consulting, llc

Nick Ducote <ducoteconsulting@gmail.com>
To: Quigley Karen M <karen.m.quigley@state.or.us>

Mon, Apr 11, 2016 at 10:50 AM

Karen, thank you for the rapid reply. Is there a specific point person for each tribe I should reach out to?

Also, is there a protocol or template for the SERP communications with the tribes?

-Nick Ducote

On Apr 11, 2016 10:47 AM, "Quigley Karen M" <karen.m.quigley@state.or.us> wrote:

Hello Nick,

There are two Oregon tribal governments that should be notified for this project: Confederated Tribes of Warm Springs and Confederated Tribes of Umatilla. Because of the proximity to the Columbia River and the fact that this project is using federal funds, you most likely also will need to contact the Yakama Indian Nation (WA) and the Nez Perce Tribe (ID).

Thank you.

Sincerely,
Karen

Karen Quigley, Executive Director

karen.m.quigley@state.or.us



Legislative Commission on Indian Services

From: Nick Ducote [mailto:ducoteconsulting@gmail.com]

Sent: Monday, April 11, 2016 9:33 AM

To: Quigley Karen M <QuigleK@leg.state.or.us>

Subject: Fwd: SERP for City of Umatilla Reuse Project

Karen, attached is the SERP template letter signed by Umatilla City Manager Russ Pelleberg. Please let me know if you need any additional information.

--
-Nicholas Ducote

Ducote Consulting LLC

Ducote
consulting, llc

Quigley Karen M <karen.m.quigley@state.or.us>
To: Nick Ducote <ducoteconsulting@gmail.com>

Mon, Apr 11, 2016 at 10:58 AM

Hi Nick,

I deal with the Oregon Tribes, so I can provide that contact info:

Warm Springs: Kathleen.Sloan@ctwsbnr.org, Cultural Resources/Geovision

And Bobby Brunoe, Robert.brunoe@ctwsbnr.org, Natural resources Manager

And for Umatilla:

TearaFarrowferman@ctuir.org, Cultural Resources Program Manager

For the out of state Tribes, I suggest you contact John Pouley at SHPO: john.pouley@oregon.gov

(or look at the tribal governments' contacts on their respective websites).

Thanks,

Karen

Karen Quigley, Executive Director

karen.m.quigley@state.or.us



Legislative Commission on Indian Services



Nick Ducote <ducoteconsulting@gmail.com>

City of Umatilla Reuse Project SERP

1 message

Nick Ducote <ducoteconsulting@gmail.com>

Fri, Apr 22, 2016 at 7:55 AM

To: Kathleen.Sloan@ctwsbnr.org, Robert.brunoe@ctwsbnr.org

Kathleen, Robert, or appropriate staff,

I am contacting you because the City of Umatilla is pursuing federal funding (Clean Water State Revolving Fund) for construction of an industrial wastewater discharge pipeline. Through Oregon's State Environmental Review Process, I contacted Karen Quigley of Oregon's Legislative Commission on Indian Services who identified your tribe as necessary to notify.

I have attached a map of the proposed alignment for the ~2.5 mile pipeline. Flows will originate from the Port of Umatilla, specifically from the VADATA center at the Port, and will be discharged into the US Bureau of Reclamation Phase 1 Exchange Canal for use throughout the West Extension Irrigation District. The City is in discussions with USBR and DEQ regarding the wastewater discharge.

With the exception of two segments, the pipeline will be routed through existing City right-of-ways and infrastructure corridors. Those segments include the run between Beach Access Rd. and Bud Draper Rd. along a dirt path and the run from Riverside Ave. to the Exchange Canal. The Beach Access-Draper segment will route between two active businesses at the Port along a dirt path. The Riverside-Exchange Canal segment routes through USBR property at the McNary Dam and near the Union-Pacific Railroad. The pipeline will discharge into the USBR Phase 1 Canal ~0.42 miles (2,200 ft.) downstream from the McNary Pool intake.

Please let me know if the map and information I have attached is sufficient to review the project or if you need further explanation. I am available via email or my cell: (541) 805-5543

Thank you,

--

-Nicholas Ducote
Ducote Consulting LLC

 Vicinity_Map.pdf
1056K



Nick Ducote <ducoteconsulting@gmail.com>

City of Umatilla Reuse SERP

2 messages

Nick Ducote <ducoteconsulting@gmail.com>

Mon, Apr 25, 2016 at 8:10 AM

To: veras@nezperce.org

Vera, or appropriate staff,

I am contacting you because the City of Umatilla is pursuing federal funding (Clean Water State Revolving Fund) for construction of an industrial wastewater discharge pipeline. Through Oregon's State Environmental Review Process, I contacted Karen Quigley of Oregon's Legislative Commission on Indian Services who identified your tribe as necessary to notify.

I have attached a map of the proposed alignment for the ~2.5 mile pipeline. Flows will originate from the Port of Umatilla, specifically from the VADATA center at the Port, and will be discharged into the US Bureau of Reclamation Phase 1 Exchange Canal for use throughout the West Extension Irrigation District. The City is in discussions with USBR and DEQ regarding the wastewater discharge.

With the exception of two segments, the pipeline will be routed through existing City right-of-ways and infrastructure corridors. Those segments include the run between Beach Access Rd. and Bud Draper Rd. along a dirt path and the run from Riverside Ave. to the Exchange Canal. The Beach Access-Draper segment will route between two active businesses at the Port along a dirt path. The Riverside-Exchange Canal segment routes through USBR property at the McNary Dam and near the Union-Pacific Railroad. The pipeline will discharge into the USBR Phase 1 Canal ~0.42 miles (2,200 ft.) downstream from the McNary Pool intake.

Please let me know if the map and information I have attached is sufficient to review the project or if you need further explanation. I am available via email or my cell: [\(541\) 805-5543](tel:5418055543)

Thank you,

--

-Nicholas Ducote
Ducote Consulting LLC

Ducote
consulting, llc

 **Vicinity_Map.pdf**
1056K

Nick Ducote <ducoteconsulting@gmail.com>

Mon, Apr 25, 2016 at 8:13 AM

To: kate@yakama.com, johnson@yakama.com

Kate, Johnson, or appropriate staff,

I am contacting you because the City of Umatilla is pursuing federal funding (Clean Water State Revolving Fund) for construction of an industrial wastewater discharge pipeline. Through Oregon's State Environmental Review Process, I contacted Karen Quigley of Oregon's Legislative Commission on Indian Services who identified your tribe as necessary to notify.

I have attached a map of the proposed alignment for the ~2.5 mile pipeline. Flows will originate from the Port of Umatilla, specifically from the VADATA center at the Port, and will be discharged into the US Bureau of Reclamation Phase 1 Exchange Canal for use throughout the West Extension Irrigation District. The City is in discussions with USBR and DEQ regarding the wastewater discharge.

With the exception of two segments, the pipeline will be routed through existing City right-of-ways and infrastructure corridors. Those segments include the run between Beach Access Rd. and Bud Draper Rd. along a dirt path and the run from Riverside Ave. to the Exchange Canal. The Beach Access-Draper segment will route between two active businesses at the Port along a dirt path. The Riverside-Exchange Canal segment routes through USBR property at the McNary Dam and near the Union-Pacific Railroad. The pipeline will discharge into the USBR Phase 1 Canal ~0.42 miles (2,200 ft.) downstream from the McNary Pool intake.

Please let me know if the map and information I have attached is sufficient to review the project or if you need further explanation. I am available via email or my cell: [\(541\) 805-5543](tel:5418055543)

Thank you,

—

-Nicholas Ducote
Ducote Consulting LLC

Ducote
consulting, llc



Nick Ducote <ducoteconsulting@gmail.com>

City of Umatilla Reuse SERP

1 message

Nick Ducote <ducoteconsulting@gmail.com>

Fri, Apr 22, 2016 at 7:56 AM

To: TearaFarrowferman@ctuir.org

Teara, or appropriate CTUIR staff,

I am contacting you because the City of Umatilla is pursuing federal funding (Clean Water State Revolving Fund) for construction of an industrial wastewater discharge pipeline. The City has been working with CTUIR throughout the design of the project, mostly through Ryan Degroff. Through Oregon's State Environmental Review Process, I contacted Karen Quigley of Oregon's Legislative Commission on Indian Services who identified your tribe as necessary to notify.

I have attached a map of the proposed alignment for the ~2.5 mile pipeline. Flows will originate from the Port of Umatilla, specifically from the VADATA center at the Port, and will be discharged into the US Bureau of Reclamation Phase 1 Exchange Canal for use throughout the West Extension Irrigation District. The City is in discussions with USBR and DEQ regarding the wastewater discharge.

With the exception of two segments, the pipeline will be routed through existing City right-of-ways and infrastructure corridors. Those segments include the run between Beach Access Rd. and Bud Draper Rd. along a dirt path and the run from Riverside Ave. to the Exchange Canal. The Beach Access-Draper segment will route between two active businesses at the Port along a dirt path. The Riverside-Exchange Canal segment routes through USBR property at the McNary Dam and near the Union-Pacific Railroad. The pipeline will discharge into the USBR Phase 1 Canal ~0.42 miles (2,200 ft.) downstream from the McNary Pool intake.

Please let me know if the map and information I have attached is sufficient to review the project or if you need further explanation. I am available via email or my cell: (541) 805-5543

Thank you,

—

-Nicholas Ducote
Ducote Consulting LLC

Ducote
consulting, llc

 **Vicinity_Map.pdf**
1056K

Exhibit C

3.2 Wetlands



Nick Ducote <ducoteconsulting@gmail.com>

City of Umatilla SERP

STEVENSON Christine <christine.stevenson@state.or.us>

Tue, May 3, 2016 at 8:13 AM

To: Nick Ducote <ducoteconsulting@gmail.com>

Nick,

I have reviewed the information we have on this area and I am not seeing any jurisdictional wetlands or waters within the project boundary. Please let me know if you need any other information.

Chris

From: Nick Ducote [mailto:ducoteconsulting@gmail.com]**Sent:** Tuesday, April 05, 2016 1:54 PM**To:** STEVENSON Christine**Subject:** Re: City of Umatilla SERP

Chris,

I am conducting the State Environmental Review Process for a wastewater reuse project in the City of Umatilla. As a cross-cutting authority, the City needs to make contact with your agency and determine if there are any impacts to relevant resources within the project footprint. I have attached the proposed alignment for the ~3 mile pipeline. Flows will originate from the Port of Umatilla, specifically for now from the VADATA center at the Port, and be discharged in the USBR Phase 1 Exchange Canal for use throughout the West Extension Irrigation District. The City is in discussions with USBR and DEQ regarding the wastewater discharge.

Where the project is near the wetlands (in the Port area), the construction would begin under Beach Access Road and the pipeline would be routed west from there.

Please let me know if the map I have attached is insufficient to begin this process or if you need further explanation of the project. I am available via email or my cell: [541-805-5543](tel:541-805-5543)

Thank you,

Nick Ducote

On Mon, Apr 4, 2016 at 12:58 PM, Nick Ducote <ducoteconsulting@gmail.com> wrote:

Chris, I just left a voicemail on your phone and scrambled a digit on my phone number - my apologies. The correct number is: [541-805-5543](tel:541-805-5543)

I am trying to find out who to contact with a project map to conduct the initial review to determine any resource impacts. It's for the City of Umatilla in Umatilla County. I conducted a desktop review with federal and state maps in GIS, but want to know if there's an official contact and review that needs to take place. In this case, the City is pursuing CWSRF funding.

Thank you,

--

-Nicholas Ducote

Ducote Consulting LLC

[Redacted]

--

-Nicholas Ducote











Ducote Consulting LLC

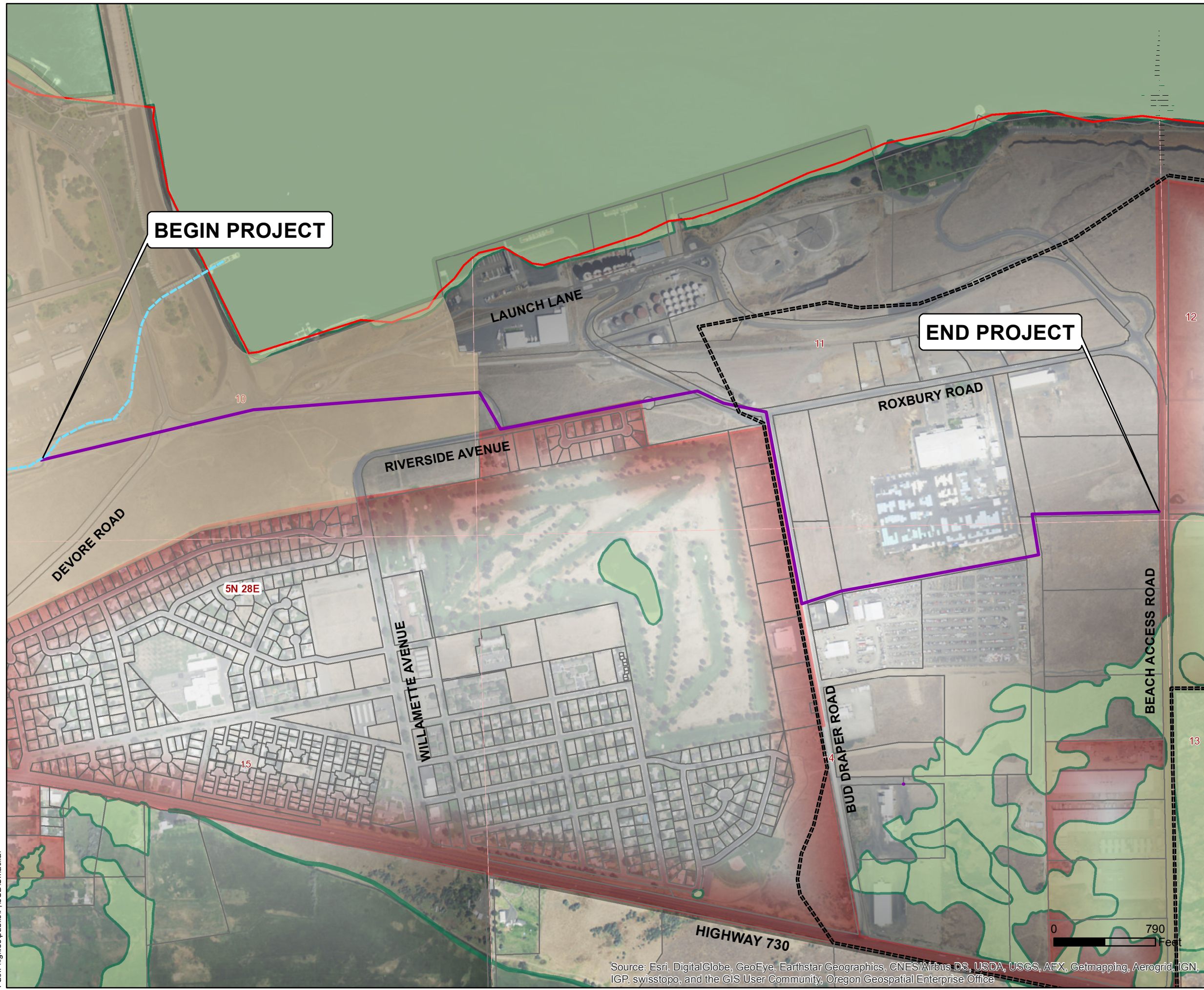
[Redacted]

DRAFT REVISION DATE 3/23/16

FIGURE 1
PROPOSED PROJECT VICINITY MAP

LEGEND

-  USBR Exchange Canal
-  Potential Industrial Service Area
-  Proposed Alignment
-  Federal_Owned_Land
-  Township Range (1:500K)
-  Sections
-  Parcels
-  Wetland_OR
-  City Limits
-  UGB



Revision Date: 3/23/2016



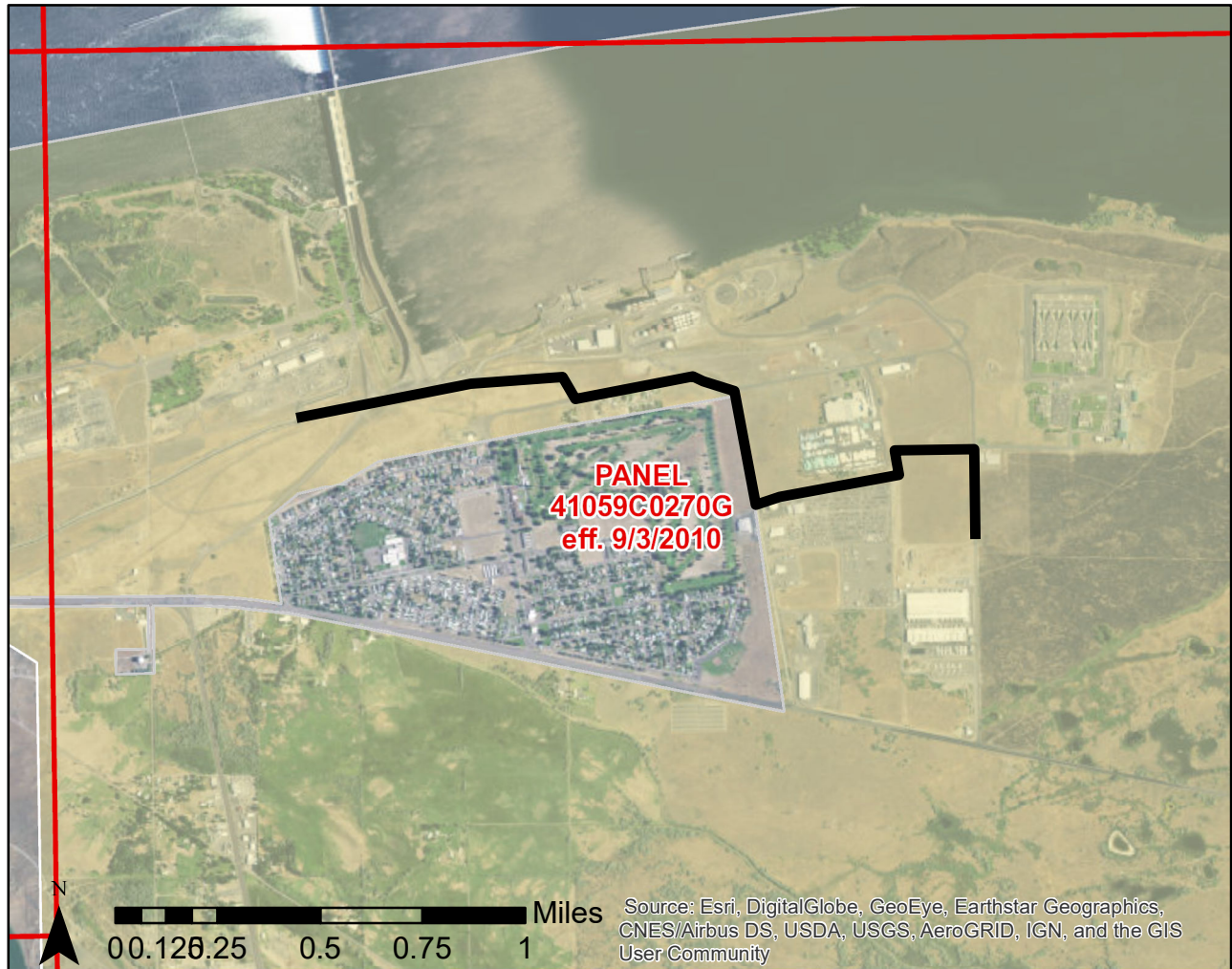
FIGURE #1

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community, Oregon Geospatial Enterprise Office

Exhibit D

3.3 Floodplains

City of Umatilla Reuse Pipeline, NFHL Map



Legend

Final_Align	Zone Type
FIRM Panels	1% Annual Chance Flood Hazard
Flood Hazard Boundaries	Regulatory Floodway
Other Boundaries	Special Floodway
Line Type	Area of Undetermined Flood Hazard
Limit Lines	0.2% Annual Chance Flood Hazard
SFHA / Flood Zone Boundary	Future Conditions 1% Annual Chance Flood Hazard
Flood Hazard Zones	Area with Reduced Risk Due to Levee
	Citations



Nick Ducote <ducoteconsulting@gmail.com>

Floodplain and Reuse Pipeline

Bill Searles <bills@umatilla-city.org>
To: Nick Ducote <ducoteconsulting@gmail.com>

Wed, Apr 19, 2017 at 2:16 PM

Hi Nick,

To the best of my knowledge, the only information the City has to go by concerning flood zones is the FEMA map of the area. I was not able to find a copy of a FEMA map of the area, and according to FEMA's website, the area in question appears to be within a "Non-printed Flood Map Boundary." The only areas we have mapped as being in a flood zone are within a short distance of the Umatilla River and barely along the edge of the Columbia River. Based on my knowledge of the area you identified for the pipeline, I do not believe there is any risk of flooding.

I apologize that I could not provide you with any better information.

Bill Searles

Umatilla City Planner

700 Sixth Street

PO Box 130

Umatilla, OR 97882

(541) 922-3226 ext. 101

From: Nick Ducote [mailto:ducoteconsulting@gmail.com]

Sent: Tuesday, April 11, 2017 11:50 AM

To: Bill Searles <bills@umatilla-city.org>

Subject: Floodplain and Reuse Pipeline

[Quoted text hidden]



Nick Ducote <ducoteconsulting@gmail.com>

City of Umatilla Reuse SERP

2 messages

Nick Ducote <ducoteconsulting@gmail.com>

Mon, May 16, 2016 at 11:00 AM

To: planning@umatillacounty.net

Umatilla County Planning,

I am conducting the State Environmental Review Process for a wastewater reuse project in the City of Umatilla. As a cross-cutting authority, the City needs to make contact with your agency and determine if:

1. Is there an Exclusive Farm Use zone in the project area?
2. Is the project area exclusively on previously disturbed land?
3. Is there a 100 or 500-year floodplain in the project area?

I have attached the proposed alignment for the ~3 mile pipeline in both a PDF map and a shapefile. Flows will originate from the Port of Umatilla, specifically for now from the VADATA center at the Port, and be discharged in the USBR Phase 1 Exchange Canal for use throughout the West Extension Irrigation District.

Please let me know if the map I have attached is insufficient to begin this process or if you need further explanation of the project. I am available via email or my cell: 541-805-5543

-

-Nicholas Ducote
Ducote Consulting LLC

Ducote
consulting, llc

2 attachments

 **PipeShapefile.zip**
2K

 **Vicinity_Map.pdf**
1056K

Carol Johnson <carol.johnson@umatillacounty.net>

Tue, May 17, 2016 at 12:41 PM

To: ducoteconsulting@gmail.com

Cc: Brandon Seitz <brandon.seitz@umatillacounty.net>, Tamra Mabbott <tamra.mabbott@umatillacounty.net>, Julie

Alford <julie.alford@umatillacounty.net>, Robert Waldher <robert.waldher@umatillacounty.net>

May 17, 2016

Good afternoon Nick,

Here are responses to the questions posed concerning a future water reuse project in the vicinity of the City of Umatilla.

1. Although there is F-1, Exclusive Farm Use, zoning (County 1972 Zoning Code) applied to the area where the project begins this zoning is no longer under Statewide Planning Goal 3 due it's inclusion in the City's Urban Growth Boundary (UGB).
2. An on-site visit or contact with the underlying property owner(s) may provide information on whether the areas proposed for the pipeline have been previously disturbed. Umatilla County would encourage an on-the-ground survey for this information.
3. The area appears to be in Zone D, "Areas in which flood hazards are undetermined, but possible."

The proposed pipeline is shown crossing not only areas zoned F-1, Exclusive Farm Use, but also two additional zones, the City of Umatilla's M-1, Industrial Zone, and the County's M-2, Heavy Industrial Zone. A color coded zoning map of the area is attached. A review of permitted uses in the County's F-1 and M-2 zoning reveals that a utility facility is an "outright" use in the County F-1 Zone and a Conditional Use Permit in the County M-2 Zone. Utility Facilities allowed within the City's M-1 Zone would be better discussed with Bill Searles, Planner for the City of Umatilla. Bill's contact information is 541-922-3226. Under the City-County Joint Management Agreement the County is authorized to process land use permits for areas located in the City of Umatilla's UGB. Therefore, the County, through coordination with the City, would be the lead for processing a land use permit in the UGB area.

Please let me know if you have additional questions or if I can be of further assistance.

Best Regards,
Carol Johnson

On Mon, May 16, 2016 at 4:00 PM, Tamra Mabbott <tamra.mabbott@umatillacounty.net> wrote:

Carol - please reply to this request. Feel free to ask Brandon or Julie to help with maps if necessary. Appreciate a copy on your reply.

Thank you.

[Quoted text hidden]

-
-

Tamra Mabbott, Planning Director

Umatilla County Department of Land Use Planning

216 SE 4th ST | Pendleton, OR 97801

Phone: 541-278-6246 | Fax: 541-278-5480

<http://www.umatillacounty.net/planning> - Visit our website for copies of planning documents, permit applications and other helpful information.

Please Be Aware - Documents such as emails, letters, maps, reports, etc. sent from or received by the Umatilla County Department of Land Use Planning are subject to Oregon Public Records law and are NOT CONFIDENTIAL. All such documents are available to the public upon request; costs for copies may be collected. This includes materials that may contain sensitive data or other information, and Umatilla County will not be held liable for its distribution.



Carol Johnson, *Senior Planner*

Umatilla County Department of Land Use Planning

216 SE 4th ST, Pendleton, OR 97801

Phone: 541-278-6301 | Fax: 541-278-5480

<http://www.umatillacounty.net/planning>

Visit the County's website for application forms, planning documents, and other helpful information.

Please Be Aware - Documents such as emails, letters, maps, reports, etc. sent from or received by the Umatilla County Department of Land Use Planning are subject to Oregon Public Records law and are NOT CONFIDENTIAL. All such documents are available to the public upon request; costs for copies may be collected. This includes materials that may contain sensitive data or other information, and Umatilla County will not be held liable for its distribution.



UmatillaZoning_PortArea_2016 (1).pdf

203K

Exhibit E

3.4 Farmland Protection Policy



Nick Ducote <ducoteconsulting@gmail.com>

SERP for City of Umatilla Project

5 messages

Nick Ducote <ducoteconsulting@gmail.com>

Mon, Apr 4, 2016 at 9:32 AM

To: ron.raney@or.usda.gov

Ron Raney, or relevant NRCS personnel,

I am conducting the State Environmental Review Process for a wastewater reuse project in the City of Umatilla. As a cross-cutting federal authority, the City needs to make contact with your agency and determine if there are any impacts to relevant resources within the project footprint. At this point, I have conducted a desktop review of agency data and maps and put together some cursory lists. Is there an estimated timeframe for the agency to conduct their review?

I have attached the proposed alignment for the ~3 mile pipeline. Flows will originate from the Port of Umatilla, specifically for now from the VADATA center at the Port, and be discharged in the USBR Phase 1 Exchange Canal for use throughout the West Extension Irrigation District. The City is in discussions with USBR and DEQ regarding the wastewater discharge.

Please let me know if the map I have attached is insufficient to begin this process or if you need further explanation of the project. I am available via email or my cell: [541-805-5543](tel:541-805-5543)

—
-Nicholas Ducote
Ducote Consulting LLC

Ducote
consulting, llc

 **Vicinity_Map.pdf**
1056K

Nick Ducote <ducoteconsulting@gmail.com>

Thu, Apr 14, 2016 at 10:54 AM

To: ron.raney@or.usda.gov

Ron, I wanted to follow up on my initial request regarding the City of Umatilla Reuse Pipeline SERP. You are listed as the contact for Important Farmland - are you the appropriate contact to clear this portion of the SERP? If not, feel free to pass my email along.

Thank you,
Nicholas Ducote
[Quoted text hidden]

Raney, Ron - NRCS, Portland, OR <ron.raney@or.usda.gov>

Thu, Apr 14, 2016 at 10:55 AM

To: Nick Ducote <ducoteconsulting@gmail.com>

Nick Ducote, (I was just writing you)

NRCS has responsibility to provide soils technical information and assistance with the Farm Protection Policy Act (FPPA). This federal legislation concerns permanent conversions of potential farmlands.

I have a few questions to start and clarify our role in this project.

- Is there federal funding in this project?
- It appears that the only development is a pipeline; is this on road right-of-way or will it restrict future uses over the pipeline?

If there are conversions, an AD-1006 should be completed that would include a detailed footprint including acres of the project area.

If the pipeline route does not cause federally funded conversions of farmlands or potential farmlands then you would not need a FPPA evaluation. Please call me and we can talk through this.

Ron Raney

Soil Quality Specialist

StateSoils/Technology Staff

USDA, Natural Resources Conservation Service

1201 NE Lloyd Blvd, Suite 900

Portland, OR 97232

[503-414-3263](tel:503-414-3263)

Don't treat your soil like dirt.

From: Nick Ducote [mailto:ducoteconsulting@gmail.com]

Sent: Monday, April 04, 2016 9:32 AM

To: Raney, Ron - NRCS, Portland, OR <ron.raney@or.usda.gov>

Subject: SERP for City of Umatilla Project

[Quoted text hidden]

This electronic message contains information generated by the USDA solely for the intended recipients. Any unauthorized interception of this message or the use or disclosure of the information it contains may violate the law and subject the violator to civil or criminal penalties. If you believe you have received this message in error, please notify the sender and delete the email immediately.

Nick Ducote <ducoteconsulting@gmail.com>
To: "Raney, Ron - NRCS, Portland, OR" <ron.raney@or.usda.gov>

Thu, Apr 21, 2016 at 8:24 AM

Ron, thanks for speaking with me on the phone and ironing out the details here. Impact on NRCS resources is highly unlikely given the nature of the project, but having some sort of formal statement of that would be helpful. You mentioned that additional details would be helpful. I have attached a longer description, the vicinity map, and a shape file for GIS.

Thanks,
Nick Ducote

Project Description:

The City of Umatilla plans to construct approximately 2.5 miles of waterline to accommodate industrial wastewater from the VADATA Inc. data center at the Port of Umatilla to the West Extension Irrigation District (WEID) via the USBR Phase 1 Exchange Canal. The project is needed to alleviate capacity bottleneck in City of Umatilla's WWTP, which currently processes Class A industrial wastewater, and to provide additional water resources for WEID without further taxing surface or ground-water in order to irrigate the same acreage. The WWTP has a capacity of 0.8 MGD and max daily flows exceeded that capacity in Summer 2013. VADATA centers at the Port are water-intensive and, as more VADATA centers come online in the near future with a flow of 0.25 MGD each, the WWTP will need an immediate \$20,000,000-30,000,000 upgrade without a disposal alternative. By diverting the discharge to WEID as reuse, that bottleneck is alleviated, which enables substantial growth and development while conserving water and reusing wastewater.

When the project is completed, the industrial wastewater from the VADATA center will be immediately discharged into the new pipeline and into the WEID via the USBR Exchange Canal. The volume of discharge will range from 54.3-325.8 million gallons and will meet 100% of irrigation needs on 41.6-249.9 acres. The wide range accounts for an on-site Reverse Osmosis filter used by VADATA - zero passes means 325.8 MG and six passes results in 54.3 MG of reuse water. As VADATA, industry at the Port, and the CTUIR's Wanapa Industrial Site continue to expand, recycled water volumes will only.

With the exception of two segments, the pipeline will be routed through existing City right-of-ways and infrastructure corridors. Those segments include the run between Beach Access Rd. and Bud Draper Rd. along a dirt path and the run from Riverside Ave. to the Exchange Cana. The Beach Access-Draper segment will route between two active businesses at the Port along a dirt path. The Riverside-Exchange Canal segment routes through USBR property at the McNary Dam and near the Union-Pacific Railroad. The pipeline will discharge into the US Bureau of Reclamation Phase 1 Canal ~0.42 miles (2,200 ft.) downstream from the McNary Pool intake.

[Quoted text hidden]

2 attachments **PipeShapefile2.rar**
2K **Vicinity_Map.pdf**
1056K

Raney, Ron - NRCS, Portland, OR <ron.raney@or.usda.gov>
To: Nick Ducote <ducoteconsulting@gmail.com>
Cc: "Winter, Jericho - NRCS, Oregon City, OR" <jericho.winter@or.usda.gov>

Thu, Apr 21, 2016 at 10:10 AM

Nick Ducote,

After our discussion and reviewing attached information, this project will not permanently convert any lands subject to Farm Protection Policy Act. An evaluation and an AD-1006 is not necessary.

Thank you,

Ron Raney

Soil Quality Specialist

StateSoils/Technology Staff

USDA, Natural Resources Conservation Service

1201 NE Lloyd Blvd, Suite 900

Portland, OR 97232

[503-414-3263](tel:503-414-3263)

Don't treat your soil like dirt.

From: Nick Ducote [mailto:ducoteconsulting@gmail.com]
Sent: Thursday, April 21, 2016 8:24 AM
To: Raney, Ron - NRCS, Portland, OR <ron.raney@or.usda.gov>
Subject: Re: SERP for City of Umatilla Project

[Quoted text hidden]

Exhibit F

3.7 Biological Resources

From: Nicholas Ducote, Ducote Consulting LLC
To: Rob Pederson, EPA
Subject: Initial Review of ESA/EFH for City of Umatilla Reuse SERP
Date: April 14, 2016

Project Description:

The City of Umatilla plans to construct approximately 3 miles of waterline to accommodate industrial wastewater from the VADATA Inc. data center at the Port of Umatilla to the West Extension Irrigation District (WEID) via the USBR Phase 1 Exchange Canal.

The need for the project is to alleviate capacity bottleneck in City of Umatilla's WWTP, which currently processes Class A industrial wastewater, and to provide additional water resources for WEID without further taxing surface or ground-water in order to irrigate the same acreage. The WWTP has a capacity of 0.8 MGD and max daily flows exceeded that capacity in Summer 2013. VADATA centers at the Port are water-intensive and, as more VADATA centers come online in the near future with a flow of 0.25 MGD each, the WWTP will need an immediate \$20,000,000-30,000,000 upgrade without a reuse alternative. By diverting the discharge to WEID as reuse, that bottleneck is alleviated, which enables substantial growth and development while conserving water and reusing wastewater.

When the project is completed, the industrial wastewater from the VADATA center will be immediately discharged into the new water line and into the WEID via the USBR Exchange Pump. The volume of discharge will range from 54.3-325.8 million gallons and will meet 100% of irrigation needs on 41.6-249.9 acres. The wide range accounts for an on-site Reverse Osmosis filter used by VADATA - zero passes means 325.8 MG and six passes results in 54.3 MG of reuse water. As VADATA, industry at the Port, and the Wanapa Industrial Site continue to expand, recycled water volumes will only grow over the next decades.

With the exception of two segments, the pipeline will be routed through existing City right-of-ways and infrastructure corridors. Those segments include the run between Beach Access Rd. and Bud Draper Rd. and the run from Riverside Ave. to the Exchange Canal. The Beach Access-Draper segment will route between two active businesses at the Port along a dirt path. The Riverside-Exchange Canal segment routes through USBR property at the McNary Dam and near the Union-Pacific Railroad. The pipeline will discharge into the US Bureau of Reclamation Phase 1 Canal ~0.42 miles (2,200 ft.) downstream from the McNary Pool intake.

Biological Evaluation

USFWS Online Critical Habitat for Threatened and Endangered Species mapping tool indicated Critical Habitat for three fish species – Chinook, Steelhead, and Bull Trout, near the project in the Columbia River and Umatilla River. NOAA Fisheries Essential Fish Habitat Maps identified three types of Salmon EFH near the project – West Coast Salmon, West Coast Coho Salmon, and West Coast Chinook Salmon.

The proposed pipeline will have no effect on either the Umatilla or Columbia Rivers or the biological resources of those waterways. The project will have no effect on ESA resources in the Columbia or

Umatilla Rivers. The USBR Canal travels underneath the Umatilla River in route to the West Extension Irrigation District. There is no discharge into fish-bearing waterways.

1. Steelhead (*Oncorhynchus mykiss*)
 - Steelhead is federally listed as Threatened and its Critical Habitat includes the Columbia River and Umatilla River.
2. Bull Trout (*Salvelinus confluentus*)
 - Bull Trout is federally listed as Threatened and there is Critical Habitat in the Columbia River and Umatilla River.
3. West Coast Chinook Salmon
 - Chinook Salmon is federally listed as Endangered and there is Critical Habitat in the Columbia River.
4. West Coast Salmon
 - There is Essential Fish Habitat for West Coast Salmon species in the Columbia River.
5. West Coast Coho Salmon
 - There is Essential Fish Habitat for West Coast Coho Salmon species in the Columbia River.

USFWS IPaC tool indicated an additional two (2) mammal species protected by the ESA with habitat near the project area. The project will have no effect on the Gray Wolf and will likely have no effect on the Washington Ground Squirrel because the project area would make for poor habitat for the squirrels.

6. Washington Ground Squirrel (*Urocitellus washingtoni*)
 - Became a Candidate Species in 1999. No Critical Habitat for the species currently. ODFW Potential range includes much of Umatilla County and would include the proposed project area.
 - While the ODFW Potential Range includes most of the Columbia Basin of north-central Oregon. This ground squirrel occupies shrub-steppe habitat of the Columbia Basin ecosystem (USFWS 2004). It is most abundant in areas of high grass cover, on deep soils with low clay content (Betts 1990) and high silt content (Greene 1999).
 - Populations have been observed and documented in the Boardman Bombing Range, Boardman Conservation Area, with more recent surveys near Stateline and Leaning Juniper (Morgan and Nugent 1999, Marr 2004).
 - NRCS Web Soil Survey data indicates that soil in the project area is composed of: 94A (Starbuck-Rock outcrop complex, 1 to 5 percent slopes), 93B (Starbuck very fine sandy loam, 2 to 20 percent slopes), 1B (Adkins fine sandy loam, 0 to 5 percent slopes), and 75E (Quincy loamy fine sand, 5 to 25 percent slopes) soils.
 - Brush patterns in the project area are sparse and inconsistent. Given the Squirrels' preference for grassland and shrub-steppe, the project area would give virtually no cover for the species.
 - Soils, brush patterns, and existing development around the project area make for exceptionally poor habitat for the Washington Ground Squirrel.
7. Gray Wolf

- Gray wolves in Oregon were delisted by ODFW in November 2015, but wolves in Eastern Oregon (east of Highways 395-78-95) remain listed by the ESA. Despite delisting, Oregon's Wolf Plan still protects the species.
- The project will take place near the western border of the Eastern Wolf Management Zone. There are no Areas of Known Wolf Activity near the project area. Some AKWAs near the project area include the Umatilla River Pack, which travels throughout Umatilla County and the Umatilla National Forest southeast of Milton-Freewater, which is over fifty (50) miles from Umatilla. The Walla Walla and Meacham packs also traverse the Umatilla National Forest and surrounding isolated mountain range, but there are no AKWA near the project.
- The project will have no effect on Gray Wolves.

Migratory Birds – There are seventeen (17) species of migratory birds identified through IPaC. None are listed under the ESA, but all are birds of conservation concern with the highest priority of conservation. All thirteen species below are also protected under the Migratory Bird Treaty Act. Breeding season may be avoided entirely by project construction as the deadline for completion is May 2017 and the Preliminary Engineering Report and Environmental Review will not be completed until Summer 2016.

The species are:

- Bald Eagle - (year-round) Bald eagles were classified as endangered in 1967, reclassified as threatened in 1995, and delisted in 2007. Critical habitat is not designated. Eagles are also protected by the Bald and Golden Eagle Protection Act and the Lacey Act. Generally, bald eagle habitat occurs in undeveloped areas with little human activity and the proposed pipeline will be constructed through the Port of Umatilla and the City of Umatilla which is a highly developed urban area. There are no tall trees in the project area, only brush and shrubs.
- Brewer's Sparrow (*Spizella breweri*)
- Calliope Hummingbird (*Stellula calliope*)
- Eared Grebe (*Podiceps nigricollis*)
- Ferruginous Hawk (*Buteo regalis*)
- Flammulated Owl (*Otus flammeolus*)
- Fox Sparrow (*Passerella iliaca*)
- Loggerhead Shrike (*Lanius ludovicianus*)
- Long-billed Curlew (*Numenius americanus*)
- Peregrine Falcon (*Falco peregrinus*)
- Rufous Hummingbird (*Selasphorus rufus*)
- Sage Thrasher (*Oreoscoptes montanus*)
- Short-eared Owl (*Asio flammeus*)
- Swainson's Hawk (*Buteo swainsoni*)
- Western Grebe (*Aechmophorus occidentalis*)
- White Headed Woodpecker (*Leuconotopicus albolarvatus*)
- Willow Flycatcher (*Empidonax traillii*)

Contractor will implement the following measures to comply with federal law regarding migratory birds:

- If an occupied nest is encountered in harm's way, no action may occur that will result in the unauthorized take of eggs/chicks or adult birds. Contractor should contact the USFWS through the Construction Manager as soon as possible for instruction on how to proceed.
- If a take occurs of a migratory bird, this occurrence must be documented by the Construction Manager and reported to the USFWS.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10

1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

OFFICE OF
WATER AND WATERSHEDS

Nick Ducote
Ducote Consulting, LLC
PO Box 596
La Grande, OR 97850

April 27, 2016

Re: Endangered Species Act Section (ESA) 7 Consultation for the City of Umatilla, OR
Water Reuse Project.

Dear Mr. Ducote:

The Environmental Protection Agency has reviewed the supporting information for a Biological Evaluation (BE) prepared by Ducote Consulting, LLC for the Umatilla wastewater diversion/reuse project. Based upon the information provided, the EPA has determined that the proposed project, as described, will have *no effect* on ESA listed species or their designated critical habitat and will have *no adverse effect* on designated essential fish habitat.

Project Description

The project consists of constructing approximately 2.5 miles of waterline to accommodate industrial wastewater (non-contact cooling water) from the VADATA, Inc. data center (server farm) at the Port of Umatilla to the West Extension Irrigation District (WEID) via the U.S. Bureau of Reclamation (USBR) Phase 1 Exchange Canal. The project is needed to alleviate a capacity issue in the City's wastewater treatment plant (WWTP) which processes Class A industrial wastewater. The data centers are water-intensive with more centers expected to come on line at the Port (estimated flow of 0.25 mgd each; the WWTP capacity is 0.8 mgd).

VADATA wastewater will be immediately discharged into the new pipeline and into the WEID via the USBR Exchange Canal. The discharge volume will range from 54.3 to 325.8 mgd and will meet the irrigation needs (41.6 to 249.9 acres) without further taxing surface or groundwater supplies for irrigation. The biggest irrigation demand is from April to October. Most of the pipeline will be routed through existing City right-of-ways. The pipeline will discharge in the USBR Phase 1 Canal 2,200 feet downstream from the McNary Pool intake. The USBR Canal runs underneath the Umatilla River in route to the WEID. No in water work is proposed.

Summary of ESA and MSA Effects Determinations

The proposed pipeline is within the general range of several ESA listed species. The following ESA regulated species may occur within the vicinity of the construction area:

Common Name	Scientific Name	ESA Status	Jurisdiction	Designated Critical Habitat in Project Area?
Washington Ground Squirrel	<i>Urocitellus washingtoni</i>	Candidate	USFWS	No
Gray Wolf	<i>Canis lupus</i>	Endangered	USFWS	No

Washington Ground Squirrel: Brush patterns in the project area are sparse and inconsistent. Given the squirrels’ preference for grassland and shrub-steppe, the project area would give virtually no cover for the species. Soils, brush patterns, and existing development around the project area make for poor habitat for the Washington Ground Squirrel. No effect.

Gray Wolf: There are no Areas of Know Wolf Activity near the project area. The Umatilla River Pack and the Walla Walla and Meacham packs traverse the Umatilla National Forest but are more than 50 miles from the project site. No effect.

The project will have no effect on aquatic species because no in water work is proposed. The project is in the vicinity of the Umatilla and Columbia River.

- Steelhead Trout are Threatened and have Critical Habitat in the Columbia River.
- Bull Trout are Threatened and have Critical Habitat in the Columbia and Umatilla River.
- West Coast Chinook Salmon are Endangered and have Critical Habitat in the Columbia River.
- West Coast Salmon have Essential Fish Habitat in the Columbia River.
- West Coast Coho Salmon have Essential Fish Habitat in the Columbia River.

Migratory Birds

There are 17 species of migratory birds potentially in or near the project area. If there are potential construction impacts to migratory bird habitats or flyways, the applicant should review the Migratory Bird Treaty Act and follow the best management practices. Also avoid working during the nesting season.

The EPA has determined that the proposed project, as described, will have *no effect*, on ESA listed species or their critical habitat and will have *no adverse effect* on designated essential fish habitat (EFH). No in water work is proposed, impacts from proposed construction activities are expected to be short term, insignificant, and discountable.

These determinations of effect are based, in part, upon the information submitted by Ducote Consulting, LLC. The project proponents must immediately notify EPA if: 1) new information reveals the action may affect listed species or designated critical habitat; 2) the action is modified in a manner that causes an effect to listed species or designated critical habitat; or 3) a new species is listed or critical habitat designated, that may be affected by the proposed actions.

If you have any questions please do not hesitate to contact me at (206) 553-1646 or by email at pedersen.rob@epa.gov.

Sincerely,



Rob Pedersen
Environmental Engineer

cc: Evan Haas, ODEQ

Exhibit G

3.8 Clean Air Act



Nick Ducote <ducoteconsulting@gmail.com>

SERP for City of Umatilla Project

4 messages

Nick Ducote <ducoteconsulting@gmail.com>

Mon, Apr 4, 2016 at 9:42 AM

To: Messina.Frank@deq.state.or.us

Frank, or relevant personnel,

I am conducting the State Environmental Review Process for a wastewater reuse project in the City of Umatilla. As a cross-cutting federal authority, the City needs to make contact with your agency and determine if there are any impacts to relevant resources within the project footprint. At this point, I have conducted a desktop review of agency data and maps and put together some cursory lists. Is there an estimated timeframe for the agency to conduct their review?

I have attached the proposed alignment for the ~3 mile pipeline. Flows will originate from the Port of Umatilla, specifically for now from the VADATA center at the Port, and be discharged in the USBR Phase 1 Exchange Canal for use throughout the West Extension Irrigation District. The City is in discussions with USBR and DEQ regarding the wastewater discharge.

Please let me know if the map I have attached is insufficient to begin this process or if you need further explanation of the project. I am available via email or my cell: [541-805-5543](tel:541-805-5543)

—
-Nicholas Ducote
Ducote Consulting LLC

Ducote
consulting, llc

 **Vicinity_Map.pdf**
1056K

MESSINA Frank <MESSINA.Frank@deq.state.or.us>

Mon, Apr 4, 2016 at 2:50 PM

To: "ducoteconsulting@gmail.com" <ducoteconsulting@gmail.com>

Cc: MESSINA Frank <MESSINA.Frank@deq.state.or.us>

Here are comments from the DEQ, Air Quality Program regarding your waste water project in the City of Umatilla

There are dust rules that do apply during excavation and/or demolition work.

DEQ Rules:

<http://www.deq.state.or.us/regulations/rules.htm>

- Look at Division 208 VISIBLE EMISSIONS AND NUISANCE REQUIREMENTS

Water is usually used to control dust from the work site.

Also make sure that dirt is not dragged on to the pavement because that can cause a dust problem. I would suggest installing water bars to spray both sides to the truck will wash the dirt off of the tires of the trucks.

- For the installation of piping systems you may need crushed rock and asphalt. The owner and operator of the rock crusher and asphalt plant will need an air permit to operate. Ask the rock crusher operator and asphalt plant operator if they have an air permit-if any questions give them my name and phone number.
- During excavation on this project may come across Cement Asbestos Pipe (nonfriable asbestos pipe), used as pipe in years past. Old water piping systems may contain asbestos you may want to test the pipe before you start your project to know if the pipe contains asbestos.
- If demolition is going to be done on any structure during this project an asbestos survey is required to insure asbestos containing building materials are identified and removed according to the regulations. Look at the DEQ Building Survey Requirement: <http://www.deq.state.or.us/aq/factsheets/06-NWR-008-ASBSurvey.pdf>

DEQ regulates and removal and disposal of asbestos containing materials.

Division 248

Take a look at the DEQ Asbestos Program website:

<http://www.deq.state.or.us/aq/asbestos/index.htm>

Here is the site on How to deal with Asbestos Water Pipe:

<http://www.deq.state.or.us/aq/asbestos/docs/ASBPIPE.pdf>

<http://www.deq.state.or.us/aq/asbestos/remove.htm>

Look at How to Remove Non-Friable Asbestos-Containing AC Water Pipe. If asbestos pipe is going to be removed DEQ needs to be informed through the Notification ASN-6.

If you run across this give me a call. Do not brake the asbestos pipe up remove it according to the regulations!

If you have questions regarding Air Quality or Asbestos regulations feel free to contact me by phone or email

Suggestion: I would highly suggest getting OSHA involved with the construction project under a consultation. Give OSHA a call.

In conclusion no permits are required from the DEQ Air Quality Program to conduct this project.

Hope this information is helpful

Frank Messina

DEQ Eastern Region Bend Office

475 NE Bellevue Drive, Suite 110

Bend, OR 97701

Office: (541) 388-6146

Direct Phone: (541) 633-2019

Fax: (541) 388-8283

Email: messina.frank@deq.state.or.us

From: Nick Ducote [<mailto:ducoteconsulting@gmail.com>]

Sent: Monday, April 04, 2016 9:43 AM

To: MESSINA Frank

Subject: SERP for City of Umatilla Project

Frank, or relevant personnel,

I am conducting the State Environmental Review Process for a wastewater reuse project in the City of Umatilla. As a cross-cutting federal authority, the City needs to make contact with your agency and determine if there are any impacts to relevant resources within the project footprint. At this point, I have conducted a desktop review of agency data and maps and put together some cursory lists. Is there an estimated timeframe for the agency to conduct their review?

I have attached the proposed alignment for the ~3 mile pipeline. Flows will originate from the Port of Umatilla, specifically for now from the VADATA center at the Port, and be discharged in the USBR Phase 1 Exchange Canal for use throughout the West Extension Irrigation District. The City is in discussions with USBR and DEQ regarding the wastewater discharge.

Please let me know if the map I have attached is insufficient to begin this process or if you need further explanation of the project. I am available via email or my cell: [541-805-5543](tel:541-805-5543)

Exhibit H
External Reviews (DEQ & USACE)



Nick Ducote <ducoteconsulting@gmail.com>

NEPA Documentation for Umatilla Wastewater Reuse Pipeline Proposal

HABERMAN Bob <bob.haberman@state.or.us>
To: Nick Ducote <ducoteconsulting@gmail.com>
Cc: City of Umatilla PW Director Russ Pelleberg <Russell@umatilla-city.org>

Fri, May 12, 2017 at 9:07 AM

Hi, Nick,

In order for DEQ to accept the Corps' environmental determination (CE) as our own, we also need the documentation from them regarding the federal cross-cutters review that I'm sure they completed. With those two things, their environmental determination and their cross-cutters review docs (or at least statements regarding each cross-cutter and how it was addressed), we can proceed. But my experience with the COE has not been good; they just don't respond to requests for information. So, since DEQ has already completed our review and found that the pipeline project will not have a significant environmental impact (FONSI), we will complete our review with that finding and publish that finding, thus completing the environmental component of the project, at the completion of the 30-day comment period. I'll keep you updated regarding public notice dates, comment periods, etc.

If you have questions about any of this, please give me a call.

--Bob

Bob Haberman, Clean Water SRF Project Officer

Oregon Department of Environmental Quality

165 E. 7th Ave. Suite 100

Eugene, OR 97401

(541)687-7359 fax: (541)686-7551

email: haberman.bob@deq.state.or.us

From: Nick Ducote [mailto:ducoteconsulting@gmail.com]

Sent: Monday, May 08, 2017 7:40 AM

To: HABERMAN Bob <bob.haberman@state.or.us>; Colter, Anneli K CIV USARMY CENWW (US) <Anneli.K.Colter@usace.army.mil>; Tice, Benjamin J CIV USARMY CENWW (US) <Ben.J.Tice@usace.army.mil>

Cc: City of Umatilla PW Director Russ Pelleberg <Russell@umatilla-city.org>

Subject: Re: NEPA Documentation for Umatilla Wastewater Reuse Pipeline Proposal

[Quoted text hidden]

[Quoted text hidden]

[Quoted text hidden]



Nick Ducote <ducoteconsulting@gmail.com>

30-day public comment period ended 6-23-2017

HABERMAN Bob <bob.haberman@state.or.us>

Mon, Jun 26, 2017 at 8:47 AM

To: Russ Pelleberg <Russell@umatilla-city.org>

Cc: Nick Ducote <ducoteconsulting@gmail.com>, ESTES Kathy <kathy.estes@state.or.us>

Hi, Russ,

I want to remind you that the 30-day public comment period for the Umatilla Industrial Recycled Water Pipeline project ended last Friday, 6-23-2017. I received no comments regarding the project. Since all prerequisites have been met by the City, it is free to enter into a loan agreement with DEQ's Clean Water State Revolving Fund program. You should contact Kathy Estes, SRF's lead loan analyst, to proceed.

Thank you,

--Bob

Bob Haberman, Clean Water SRF Project Officer

Oregon Department of Environmental Quality

165 E. 7th Ave. Suite 100

Eugene, OR 97401

(541)687-7359 fax: (541)686-7551

email: haberman.bob@deq.state.or.us



Nick Ducote <ducoteconsulting@gmail.com>

\$7,000.00 Payment Receipt

Shampine, Paul S CIV USARMY CENWW (US) <Paul.S.Shampine@usace.army.mil> Wed, Jun 21, 2017 at 1:23 PM

To: Nick Ducote <ducoteconsulting@gmail.com>

Cc: Russell Pelleberg <Russell@umatilla-city.org>, John Garlitz <jgarlitz@jub.com>, Shae Zanto <szanto@jub.com>, "KENDALL, DEBRA D CIV USARMY CENWW (US)" <Debra.D.Kendall@usace.army.mil>, "Carter, Annette N CIV USARMY CENWW (US)" <Annette.N.Carter@usace.army.mil>, "Colter, Anneli K CIV USARMY CENWW (US)" <Anneli.K.Colter@usace.army.mil>, "Tice, Benjamin J CIV USARMY CENWW (US)" <Ben.J.Tice@usace.army.mil>, "Wernick, Christopher D CIV USARMY CENWW (US)" <Christopher.D.Wernick@usace.army.mil>

Nick, et al -

* We have a satisfactory legal description from JUB and the related survey drawings.

* The environmental is wrapped up and the basic easement has been written. There are a couple of site specific conditions contained in the easement which everyone needs to be aware of. I believe that 27.b and 27.c. have the most potential to create construction scheduling issues; they follow:

27. SITE SPECIFIC CONDITION ON GENERAL ENVIRONMENTAL RESOURCES

a. The Grantee will implement an Integrated Pest Management Program (IPMP) on the Premises to reduce the risk of introducing and/or spreading invasive or exotic plant species. The Grantee's IPMP must adhere fully to condition 18.a. of this easement, "ENVIRONMENTAL PROTECTION."

b. A Construction General Permit for storm-water must be obtained by the Grantee from the State of Oregon, Department of Environmental Quality 811 SW Sixth Avenue, Portland, OR 97204, [503-229-5279](tel:503-229-5279) before commencing construction on the Premises.

c. Before commencing construction, the Grantee shall prepare a Stormwater Pollution Prevention Plan which shall be provided to the State of Oregon, Department of Environmental Quality.

d. For further guidance, see: <http://www.deq.state.or.us/wq/wqpermit/docs/general/npdes1200c/permit.pdf>

28. SITE SPECIFIC CONDITION ON BIOLOGICAL RESOURCES

a. No actions will take place on or affecting the Premises that will result in unauthorized take of a nest, eggs/chicks or adult birds. "Take" is defined as pursuing, hunting, capturing or killing migratory birds and includes feathers, eggs and nests.

b. If an active bird nest is found, the Grantee and/or the Grantee's construction manager must contact the U.S. Fish and Wildlife Service at [503-231-6125](tel:503-231-6125) as soon as possible for instructions on how to proceed.

c. If take of a migratory bird, active nest, eggs or chicks occurs, the Grantee and/or the construction manager must document the take and report it to the U.S. Fish and Wildlife Service at [503-231-6125](tel:503-231-6125).

d. Upon completion of construction or ground-disturbing activities on the Premises, the Grantee will restore disturbed areas by revegetating with native grasses in accordance with the guidance contained in Exhibit C, attached hereto and made a part hereof.

* Regarding appraisal, see the attached letter sent out Monday via Certified Mail requesting funding for the appraisal. The city's provision of the funds requested, combined with the submission of the funds to the US Army Corps of Engineers (USACE) finance center in Millington, TN, plus the schedule of our appraisal services office in the USACE Seattle District, Real Estate Division will be the controlling factor on finishing up the easement.

Please advise if you have any other questions.

Thank you,

Paul

Paul S. Shampine
Realty Specialist
Real Estate Division

Walla Walla District
US Army Corps of Engineers
201 North 3rd Avenue
Walla Walla, WA 99362-1876

509-527-7324

Paul.S.Shampine@usace.army.mil

Areas of Responsibility: Mill Creek Project & McNary Lock & Dam Projects Including Franklin County, Richland, Pasco & Portions of Benton & Walla Walla Counties, Washington & Umatilla County, Oregon

-----Original Message-----

From: Nick Ducote [mailto:ducoteconsulting@gmail.com]

Sent: Wednesday, June 21, 2017 9:20 AM

To: Shampine, Paul S CIV USARMY CENWW (US) <Paul.S.Shampine@usace.army.mil>

Cc: Russell Pelleberg <Russell@umatilla-city.org>; John Garlitz <jgarlitz@jub.com>; Shae Zanto <szanto@jub.com>;

KENDALL, DEBRA D CIV USARMY CENWW (US) <Debra.D.Kendall@usace.army.mil>; Carter, Annette N CIV

USARMY CENWW (US) <Annette.N.Carter@usace.army.mil>; Colter, Anneli K CIV USARMY CENWW (US)

<Anneli.K.Colter@usace.army.mil>; Tice, Benjamin J CIV USARMY CENWW (US) <Ben.J.Tice@usace.army.mil>;

Wernick, Christopher D CIV USARMY CENWW (US) <Christopher.D.Wernick@usace.army.mil>

Subject: [Non-DoD Source] Re: [EXTERNAL] Re: \$7,000.00 Payment Receipt

Paul and Staff, I know your initial estimate was that the Army Corps wouldn't wrap up til August at best, but I was hoping for a general status update. It seems like the legal descriptions and exhibits have been finalised with JUB? Has the environmental wrapped up or been given an official determination? Is there a scheduled time for the appraisal?

Thanks!
Nick Ducote

On Wed, Mar 1, 2017 at 12:05 PM, Shampine, Paul S CIV USARMY CENWW (US) <Paul.S.Shampine@usace.army.mil> wrote:

Nick -

Typically, once we have labor funding available, we allow at least a 30 calendar-day period for our reviewing offices to comment on a proposed new Outgrant and at least get started on any consultations needed. If the review starts around March 15th, the 30 days will end on April 14th.

That stated, I cannot guarantee that at the end of 30 days that we will have a product from the review offices as they have a large work load other than real estate work and are frequently driven by priorities of the District other than real estate actions. Also, not knowing what type of concerns may be raised by any outside agencies contacted during the review adds another unknown. In this case, I am hoping that there are no endangered species concerns raised; however, given the location and nature of the action, cultural reviews may become more of a factor than in other locations and for other types of actions.

I will attempt to concurrently get the appraisal action started to the extent possible at the beginning of the review. However, our appraisal office (which is in Seattle, WA) sometimes needs to consider the completed environmental review documentation before they can properly arrive at the fair market value of the property to be encumbered.

In any case, I would not expect this project to be wrapped up for several more months. If I was a betting man, I would not be willing to say that this action would be finished before the end of August but that's just based on my experience....

Let me know if you have other questions.

Thank you,

Paul

Appendix L – BRFA Preliminary Environmental Review

Preliminary Environmental Report for

City of Umatilla's

Beneficial Reuse Feasibility Analysis
(BRFA)

Prepared by:
Nicholas Ducote, Ducote Consulting LLC

April 9, 2018

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Attachment and Exhibit List

Attachment 1 – Historical Properties

1-A: Historic Properties and Recommended Alternatives

Attachment 2 – Wetlands

2-A: 395 Corridor Wastewater Facilities

2-B: 395 Water System

2-C: PDX2 Non-Potable Pipe

Attachment 3 – Farmlands/EFU

3-A: 395 Corridor Wastewater Facilities

3-B: 395 Water System

3-C: PDX2 Non-Potable Pipe

Attachment 4 – Biological Resources/ESA

4-A: iPac Species List

Attachment 5 – Floodplains

5-A: FIRM maps: #41059C0262G, #41059C0270G, #41059C0265G

1. Introduction

This Preliminary Environmental Report accompanies J-U-B Engineer's *Beneficial Reuse Feasibility Analysis* (BRFA) for the City of Umatilla (City). The City applied for a Feasibility Study Grant from the Water Resources Department in 2015 and were awarded that grant in August 2016. City Engineer, J-U-B Engineers, Inc., was hired to complete the engineer and planning tasks, with Ducote Consulting LLC completing the limited environmental and funding analysis. The grant agreement was extended through July 2018.

2. Scope

This Preliminary Environmental Report will produce basic environmental documentation to demonstrate anticipated roadblocks or time-consuming obstacles to implementation of the recommended alternatives. This is not intended to function as a full Environmental Assessment, or Environmental Review Record, for compliance with Federal and State cross-cutters. Ducote Consulting LLC conducted broad, basic queries of state and federal databases for anticipated compliance, mitigation, or permitting requirements. As a part of the full BRFA, Ducote Consulting also provided limited environmental analysis of the alternatives in Sections 4.6 and 4.7.

This report provides:

- The potential environmental obstacles to full implementation (construction), based on data collection, GIS analysis, and limited agency consultation of the new utility facilities mapped out by J-U-B Engineers in the BRFA;
- The backbone of an Environmental Report document, a developed GIS database, and mapped resources (exhibits) to speed future steps in the environmental approval process;
 - Section 5: Maps and analysis of publicly-available historical properties;
 - Section 6: Analysis of project intersection with wetlands;
 - Section 7: Soil, Zoning, and Prime Farmland analysis;
 - Section 8: Evaluation of potential impacts to Endangered and/or Threatened Species;
 - Section 9: FEMA-identified floodplains and project interaction;
 - Section 10: Miscellaneous Environmental Resources
- Section 11 concludes the report with identification and summary of potential federal and state environmental permitting, mitigation, additional investigations, or authorizations needed for construction projects.
- The Attachments include various maps of environmental resources and project elements.

There was no communication with federal and state agencies about the recommended alternatives or implementation projects. The recommended next step is for the City and Project Team (J-U-B, Ducote Consulting, etc.) to consult with federal and state agencies about the immediate design/construction projects the City would like to implement before pursuing funding in the case of potential fatal environmental flaws. Detailed descriptions of recommended alternatives and exhibits of various alignments and projects elements are available in the BRFA.

3. Methodology

The environmental resources reviewed for potential project impacts include those typically required by Oregon’s State Environmental Review Process (SERP) or federal National Environmental Protection Act (NEPA) environmental documents. This Preliminary Report focuses on the potential environmental issues associated with the recommended alternatives and did not fully screen all alternatives. Limited review of rejected alternatives was provided in the BRFA Sections 4.6 and 4.7. Because of the broad scope and lengthy time-frame associated with the BRFAs recommended alternatives (1-15 years), environmental resources will change, and this analysis will need to be updated during future planning and design phases.

In reviewing the recommended alternatives, this Report does not focus on upgrades to the existing wastewater treatment plant or construction of a new water treatment plant. The projects to upgrade the existing wastewater facility will likely qualify for a Categorical Exclusion (Cat-Ex), which will result in a highly limited environmental review process. The new water treatment plant will involve construction, but the location has not been determined. A projection of potential levels of environmental review, from Categorical Exclusion, and Environmental Assessment, to Environmental Impact Statement is included in Table 1.

Table 1 - Recommended Alternatives and Likely Environmental Analysis Needed

Recommended Alternative	Likely Level of Review
<i>Wells Hydraulically Connected to the Columbia River</i>	EA/EIS
<i>PDX2 Non-Potable Pipe</i>	EA or wetland delineation
<i>Distribution Main</i>	Cat-Ex or EA
<i>Water Treatment Plant</i>	Cat-Ex or EA
<i>395 Corridor Water System</i>	EA
<i>Industrial Cooling Tower IWW Flow - Separate Industrial Flows PDX2</i>	EA/SERP completed with Cat-Ex from USACE and FONSI from DEQ
<i>395 Corridor Wastewater Facilities</i>	EA
<i>Expand Capacity of WWTP</i>	Cat-Ex

In large part, the chosen funding source for the City’s projects will determine the level of environmental analysis needed to release those funds. As of the Spring of 2018, the City is pursuing funding from the Drinking Water State Revolving Fund (DWSRF), which will require approval thru the State Environmental Review Process (SERP) before funding agents will fully release the funds. The City has also expressed interest in obtaining a Community Development Block Grant (CDBG) from Housing and Urban Development. CDBG funding would require a NEPA document, but DEQ/EPA and HUD will typically accept each other’s documents as long as the Environmental Report is comprehensive and includes all potential issues. Full analysis of Funding Alternatives is included in Section 7 of the BRFA.

4. Purpose and Need of the Proposal

A. Purpose of Project

The BRFA analyzes developing the City's 23 cubic feet per second (cfs) surface water right to supplement the dwindling groundwater supply, analyzes beneficial reuse strategies, and develops a basic layout to expand public infrastructure to the 395 Corridor. The study is intended to develop feasible steps to treat and supply potable water, and collect, treat and dispose of wastewater that are technically, environmentally, and economically sound. Overall, the study will provide a roadmap for sustainable water and wastewater improvements to be implemented as development occurs.

Historical data from the Oregon Water Resources Department (OWRD) indicates the deep aquifer levels in this region have been decreasing over the past several years. In recent years, nearby wells have become unusable due to the declining aquifer. The City has made upgrades to various existing wells to maintain its water source. For long-term infrastructure sustainability, the City must not rely on the groundwater as an industrial water source.

Rapid development of water-intensive industries resulted in operational issues at the existing wastewater treatment plant. Existing data centers are expanding while new data centers are in construction which will continue to add to the industrial demand. Alternative wastewater uses and disposal are necessary to better manage and accommodate the increasing flows.

B. Need for Project

Decreasing groundwater supplies and development of water-intensive industry in the Port of Umatilla, prompted the City to examine a number of possible water supply and wastewater reuse options. The importance of water conservation in the Umatilla Basin and the potential for industrial reuse underscores the City's decision to develop the BRFA.

The City's groundwater aquifer is in decline and further development of the aquifer may not be feasible because it would jeopardize future groundwater supplies. City staff have indicated that over the last two years they have witnessed a drop in the aquifer water level of approximately 50 ft. With an aquifer dropping at a rate of 25 ft per year or more, wells will have to be regularly deepened and their pumps replaced with larger horsepower units demanding more electricity and resulting in escalating energy cost. Planning to use groundwater to meet future water needs does not appear to be a good solution unless new withdrawal locations can be established in areas where the aquifer(s) are not in decline.

The City's wastewater treatment plant capacity is exceeded during the summer due to industrial cooling tower flows generated by the Vadata Center site at the Port of Umatilla. Vadata will also be developing an additional site in the 395 corridor, as discussed in the BRFA.

The BRFA quantifies water demands, permitting, treatment, and reuse requirements for current, and potential build-out flows from all potential industrial uses in the City, Port, and 395 Corridor. Further, the study is intended to develop feasible steps to treat and supply potable water, and collect, treat and dispose of wastewater that are technically, environmentally, and economically sound. Overall, the study will provide a roadmap for sustainable water and wastewater improvements to be implemented as development occurs. After the conclusion of the BRFA, the City anticipates taking steps to implement the recommendations outlined by in the BRFA.

C. Proposed Actions (recommended Alternatives)

J-U-B Engineering’s BRFA recommended a number of feasible alternatives for further analysis, design, and implementation. The recommended alternatives include:

1. Wells Hydraulically Connected to the Columbia River to utilize the City’s untapped 23 cfs water right;
2. Non-Potable Pipe between new Wells and PDX2 at the Port of Umatilla to provide surface water for non-contact cooling water use;
3. Distribution Main from the new Wells to the new Water Treatment Plant;
4. Water Treatment Plant located on a City-owned lot to treat the surface water to potable water standards;
5. 395 Corridor Water System and Wastewater Facilities to provide public utility service;
6. Expand Capacity of WWTP to create Class A Reuse.

For more information and detail on the project descriptions, see the study and Exhibits included within this Report and the BRFA.

The following sections provide cursory review of potential environmental concerns regarding each recommended alternative.

5. Cultural/Historic Resources

Official consultation with Oregon’s State Historic Preservation Office/Tribal Historic Preservation Officers SHPO/THPOs was not conducted as a part of this Environmental Analysis. However, consultation with the public database for Oregon’s SHPO revealed no designated historic properties near the project area. See Attachment 1 for map.

SHPO Historic Properties Database Query		
ObjectID	Address	City
Sunset Hills Cemetery		Umatilla
Umatilla Bridge		Umatilla
(35-UM-1) Umatilla Site	ADDRESS RESTRICTED	Umatilla vcty
Umatilla River Bridge #00624A	Columbia River Hwy	Umatilla
Bonneville-McNary Relocation House	57 Rio Senda	Umatilla
House	300 Stephens Ave	Umatilla
House	314 Stephens Ave	Umatilla
House	328 Stephens Ave	Umatilla
House	300 Tucker Ave	Umatilla
House	326 Tucker Ave	Umatilla

A. Recommended Next Steps

The “35-UM-1” site is located somewhere in the Umatilla vicinity and excavation locations should be cleared with SHPO to avoid disturbing this site.

Historical consultation will not be needed unless the City receives state or federal funding. In that case, and where excavation occurs, the City will initiate a National Historic Preservation Act Section 106

consultation. They will submit project descriptions and maps to the Oregon SHPO and relevant Tribal Historic Preservation Officers and determine the level of compliance needed to advance the project. Compliance steps may include archaeological survey and/or cultural monitoring during excavation.

6. Wetlands

Much of the land in the 395 Corridor area intended for public utilities development has been identified as either Freshwater Emergent or Freshwater Forested/Shrub wetlands by the National Wetlands Inventory. Table 2 summarizes the scope of wetland impacts and the length of pipeline planned that intersects with various wetland areas. If the construction project impacts more than 50 cubic feet of wetlands, the project will likely require an Oregon Department of State Lands permit. Any wetland impact will also likely trigger an Army Corps Section 404 Permit. See Attachment 2 for map.

Table 2 - Sewer and Water Lines in the Wetlands

Project Area in Wetlands		
<i>Project Element</i>	<i>Wetland Type</i>	<i>Length</i>
395 Corridor Wastewater Facilities	Freshwater Emergent	1.61 miles
	Freshwater Forested/Shrub	0.46 miles
395 Corridor Water System	Freshwater Emergent	1.9 miles
	Freshwater Forested/Shrub	0.83 miles
PDX2 Non-Potable & Hydraulically Connected Wells Alternative	Freshwater Emergent	N/A
	Freshwater Forested/Shrub	0.41 miles

A. Recommended Next Steps

Conduct a wetland delineation survey of the project area 1-2 years before construction is planned. The Study Area will be very large and will likely require a large budget. The City may consider writing a grant for a Local Wetlands Inventory or coordination with the County, Tribe, and State on funding such a large study. The City may have to develop a “Eight-Step Process” document that provides a strict process for public agencies when engaging in projects that may have floodplain or wetland impacts.

7. Farmlands/EFU

Development in the 395 Corridor with public utilities will intersect with a large portion of land zoned Exclusive Farm Use (EFU) that sits on Prime Farmland or Farmland of Statewide Importance. Evaluation of potential impact to land identified by the State of Oregon and Federal Government as important Farmland include review of State and Federal databases, including:

- National Resource Conservation Service *Web Soil Survey* and corresponding geospatial data,
- United States Department of Agriculture’s *Prime Farmland List for Oregon*,

- Oregon’s *Statewide Planning Goal 3* (OAR 660-015-0000(3)), and
- Oregon Department of Land Conservation and Development Farmland Protection Program (ORS 215.243).¹

Oregon’s *Goal 3* limits development and land use on soil Classes I-VI in eastern Oregon. National Resource Conservation Service’s (NRCS) Prime Farmland is considered Class I and II, with Statewide Importance considered III and IV. Web Soil Survey indicated a number of soil types in the project area, of which eight (8) are identified as “Prime farmland if irrigated” or “Farmland of statewide importance.”² Exhibits in the attachments identify the pipeline portions that will be routed through area that is both Statewide Important *and* EFU zoned or Prime Farmland *and* EFU zoned. Table 3 illustrates the length of the proposed new public utilities that intersects Prime/EFU and Statewide/EFU. See Attachment 3 for map.

Table 3 - EFU and Farmland Intersections

Project Area in Prime/Statewide Importance Soils and EFU Zones			
Project Element	Soil Classification	Zone	Length
395 Corridor Wastewater Facilities	Prime (Federal)	EFU	0.97 miles
	Statewide Importance	EFU	4.37 miles
395 Corridor Water System	Prime (Federal)	EFU	0.56 miles
	Statewide Importance	EFU	3.26 miles
PDX2 Non-Potable & Hydraulically Connected Wells Alternative	Prime (Federal)	EFU	N/A
	Statewide Importance	EFU	N/A

A. State Law (DLCD)

Per DLCD, EFU Zones are considered conservation zones that restrict certain types of land use. The Umatilla Basin has been specially designated and identified throughout State and regional planning as a potential area of high value farmland. However, “utility facility service lines” are an authorized use in an Exclusive Farm Use zone per ORS.³ Authorization of some uses may require notice and the opportunity for a hearing because the authorization qualifies as a land use decision pursuant to ORS Chapter 197. Minimum standards for uses in the table that include a numerical reference are specified in OAR 660-33-130. Oregon’s *Statewide Planning Goal 3* is described in OAR 660-015-0000(3) and Oregon DLCD’s Farmland Protection Program is found in ORS 215.243. Counties may prescribe additional limitations and requirements to meet local concerns as authorized by law.

B. Federal Designation – High Value Farmland/NRCS

¹ Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at the following link: <https://websoilsurvey.sc.egov.usda.gov/>. Accessed [12/20/2017]; *Prime Farmland List for Oregon*, USDA, March 2015;

² All soils in the project area: 1B, 2B, 2C, 3A, 3C, 14B, 70, 75B, 75E, 85F, 93B, 94A, 119A, 122B, and W.

³ OREGON ADMINISTRATIVE RULES, CHAPTER 660, DIVISION 033, RULE 0120, TABLE 1

Preserving and conserving prime farmland is a high priority for NRCS and U.S. Department of Agriculture (USDA) because it meets the country's need for food and fiber. High-quality farmland is limited and some proposed land uses require permitting, or conflict with established policy.

Prime farmland, as defined by the USDA, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil quality, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied.

C. Recommended Next Steps

Consult with NRCS and USDA regarding exemptions and exceptions to land use requirements in these areas. Determine if the project is exempt from permitting or mitigation. If the project is not exempt, USDA may request on-site investigation, survey of soils, and determination of whether any hazard or limitation deems the land/soil not Prime Farmland. Consultation with NRCS and USDA will determine if the City will be required to file a Corridor Analysis Form with NRCS (NRCS-CPA-106, 7 CFR § 658.7[c]) or a Farmland Conversion Impact Rating with USDA (AD-1006).

8. Biological Resource Review

Any use of Federal or State funding will come with the requirement that the City screen biological resources for potential project impacts. Because the recommended steps in the BRFA are broad in scope and magnitude, it is likely that a number of species will be included in mandatory biological evaluation.

U.S. Fish and Wildlife Service's (USFWS) Online Critical Habitat for Threatened and Endangered Species (iPac) mapping tool indicated Critical Habitat for two fish species, Steelhead and Bull Trout, near the project in the Columbia River and Umatilla River. National Oceanic and Atmospheric Administration (NOAA) Fisheries Essential Fish Habitat Maps identified three types of Salmon Essential Fish Habitat (EFH) near the project, West Coast Salmon, West Coast Coho Salmon, and West Coast Chinook Salmon.

Experience with the City's Phase 1 Industrial Wastewater Pipeline Environmental Report demonstrated that migratory birds, ground squirrels, and gray wolves were cleared for No Effect without difficulty. Unless the City avoids state and federal financing for the Hydraulically Connected Wells, a NOAA/USFWS consultation under Section 7 will likely be required for that work. In that situation, work that effects the rivers (withdraws surface water) will require a Biological Evaluation to justify effect determinations from the City to receive NOAA's concurrence.

There are also seventeen (17) species of migratory birds identified through IPaC. None are listed under the Endangered Species Act (ESA), but all are birds of conservation concern with the highest priority of conservation.⁴ All species are protected under the Migratory Bird Treaty Act. The City has had success in

⁴The 17 species are: Bald Eagle, Brewer's Sparrow (*Spizella breweri*), Clark's Grebe (*Aechmophorus clarkia*), Golden Eagle (*Aquila chrysaetos*), Green-tailed Towhee (*Pipilo chlorurus*), Lesser Yellowlegs (*Tringa flavipes*), Lewis's Woodpecker (*Melanerpes lewis*), Long-billed Curlew (*Numenius americanus*), Marbled Godwit (*Limosa fedoa*), Olive-sided Flycatcher (*Contopus cooperi*), Pinyon Jay (*Gymnorhinus cyanocephalus*), Sage Thrasher (*Oreoscoptes montanus*), Sagebrush Sparrow (*Artemisiospiza nevadensis*), Tricolored Blackbird (*Agelaius tricolor*), White Headed

the past receiving a no effect concurrence from USFWS regarding migratory birds with the inclusion of simple mitigation measures.

Table 4 provides an overview of the likely effect determinations that would result from a full environmental review of the various recommended alternatives (NLAA is Not Likely to Adversely Affect and LAA is Likely to Adversely Affect).

Table 4 - Potential Effects Determinations by Recommended Alternative

Species/ Resource	Recommended Alternatives and Potential Effects on ESA Species						
	Wells Hydraulically Connected to the Columbia River	PDX2 Non- Potable Pipe	Distribution Main	Water Treatment Plant	395 Corridor Water System	395 Corridor Wastewater Facilities	Expand Capacity of WWTP
Gray Wolf	No effect	No effect	No Effect	No effect	No Effect	No Effect	No effect
Bull Trout	NLAA/LAA	No effect	No Effect	No effect	No Effect	No Effect	No effect
Steelhead	NLAA/LAA	No effect	No Effect	No effect	No Effect	No Effect	No effect
Umatilla River CFH	No effect	No effect	No Effect	No effect	No Effect/ NLAA	No Effect/ NLAA	No effect
Columbia River CFH	NLAA/LAA	No effect	No Effect	No effect	No Effect	No Effect	No effect
Migratory Birds	No effect, w/mitigation	No effect, w/mitigation	No effect, w/mitigation	No effect, w/mitigation	No effect, w/mitigation	No effect, w/mitigation	No effect, w/mitigation

A. Recommended Next Steps

All Federal funding, including Drinking Water State Revolving Fund, Community Development Block grant, USDA-Rural Development, and others, will trigger SERP or NEPA requirements on new construction, which would obligate the City to Section 7 consultations. The City will likely have to submit a Biological Evaluation to USFWS, NOAA, and potentially EPA depending on funding source, after evaluating potential impacts to Critical Fish Habitat and protected species.

9. Floodplains

No project elements are located in floodplains identified by Federal Emergency Management Agency (FEMA). However, most of the eastern and southern portions of the project area are mapped with a Zone D – undetermined risk. Federal funding will not allow buildings or utility facilities to be constructed in identified floodplains. See Attachment 5 for map.

A. Recommended Next Steps

Woodpecker (*Leuconotopicus albolarvatus*), Williamson's Sapsucker (*Sphyrapicus thyroideus*), and Willow Flycatcher (*Empidonax traillii*).

Depending on the funding source that the City acquires to implement the various recommended alternatives, the City may have to develop an “Eight-Step Process” document that provides a strict process for public agencies when engaging in projects that may have floodplain or wetland impacts.

10. Miscellaneous: Airports, Coastal Zones, Clean Air, Sole Source Aquifers, Wild and Scenic Rivers

There are no issues with nearby Airport Hazards, Coastal Resources, Coastal Management Zones, Sole Source Aquifers, or Wild and Scenic Rivers. GIS analysis was performed, but maps were not included for brevity.

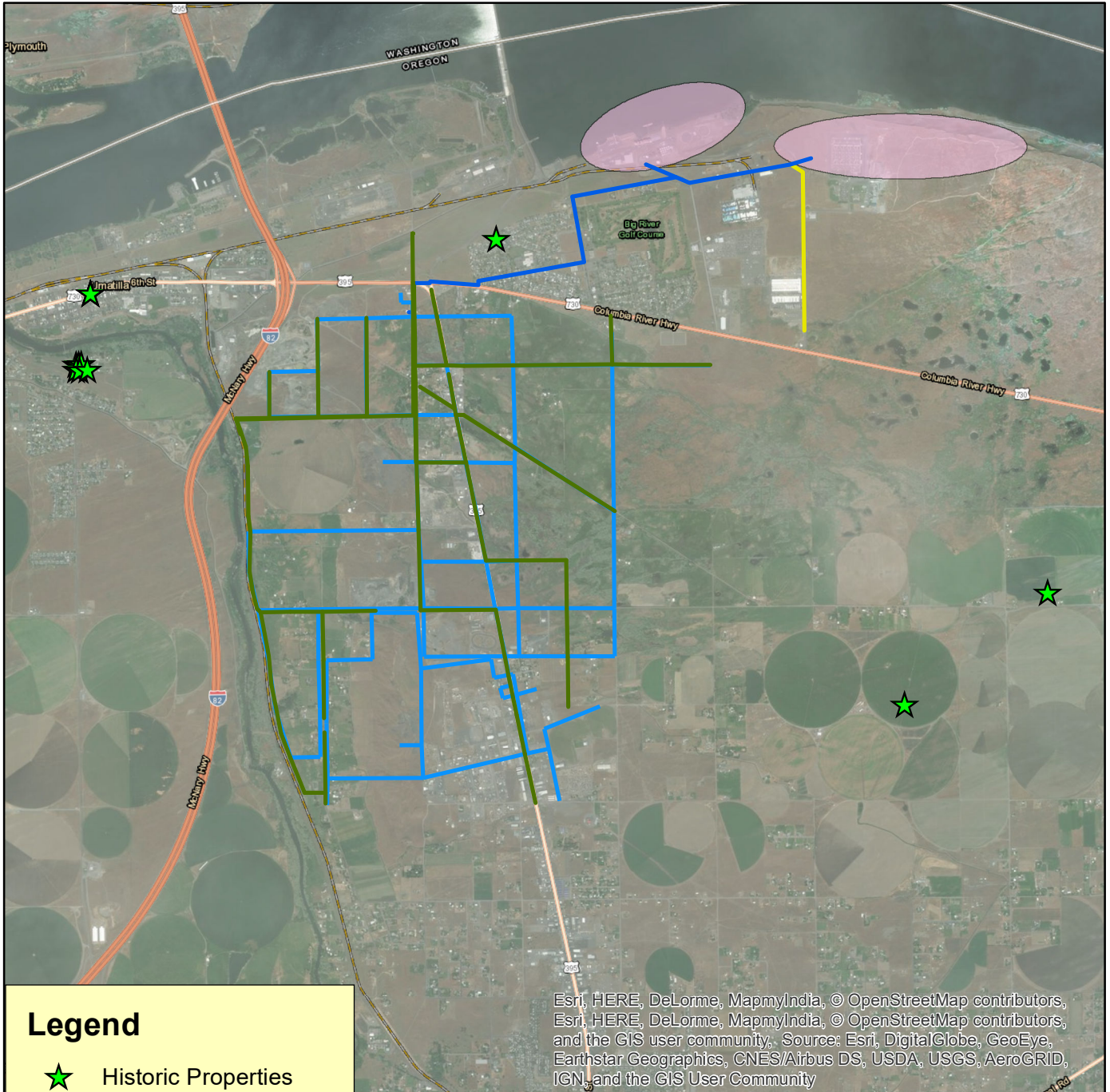
11. Summary of Potential Permitting

Table 5 provides a cursory overview of potential permitting and compliance processes that may be needed to advance portions of the recommended alternatives that intersect with various environmental resources. As explained in the Scope and Methodology, some of these cross-cutters and requirements will only be triggered if the City utilizes State or Federal funding. Other requirement, like disturbing wetlands and farmland conversion/development, will be obligatory depending on agency consultations regarding the nature of the project.

Table 5 - Potential Permitting Needs

Environmental Resources and Anticipated Permits			
Environmental Resource	Information Reviewed	Anticipated Permits/ Authorizations?	Triggered by Funding?
Cultural/Historical	SHPO – Historic Properties Database	Contact SHPO, if excavating.	X
Tribal	----- N/A -----	Contact THPOs, if excavating.	
Wetlands	USFWS NWI	Army Corps 404 Permit	
		DSL Remove-and-Fill Permit	
		Wetland Delineation	
Land Use/Farmland	DLCD	Utility lines exempt, N/A.	
	NRCS	NRCS-CPA-106 & Conversion Analysis	
	USDA	AD-1006 & Farmland Conversion Rating	
ESA and Biological Resources	EPA, NOAA, & USFWS	Contact USFWS/NOAA/EPA	X
Floodplains	Umatilla County & FEMA FIRM	Not anticipated	X
Coastal Resources	----- N/A -----	----- N/A -----	X
Wild & Scenic Rivers	Wild & Scenic River Map	----- N/A -----	X
Clean Air Act	DEQ Air Quality	----- N/A -----	X
Sole Source Aquifers	Sole Source Aquifer Map	----- N/A -----	X
Airport Hazards	NAICS	----- N/A -----	X

Exhibit 1-A: Recommended Alternatives City of Umatilla, BRFA - Historic Properties



Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community, . Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

- ★ Historic Properties
- 395_Sewer Pipe
- 395_Water Pipes

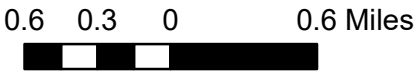
Name

- PDX2 Non-Potable
- Surf_Water_Dist_Pipe

Alt_Type

- Hydraul_Wells

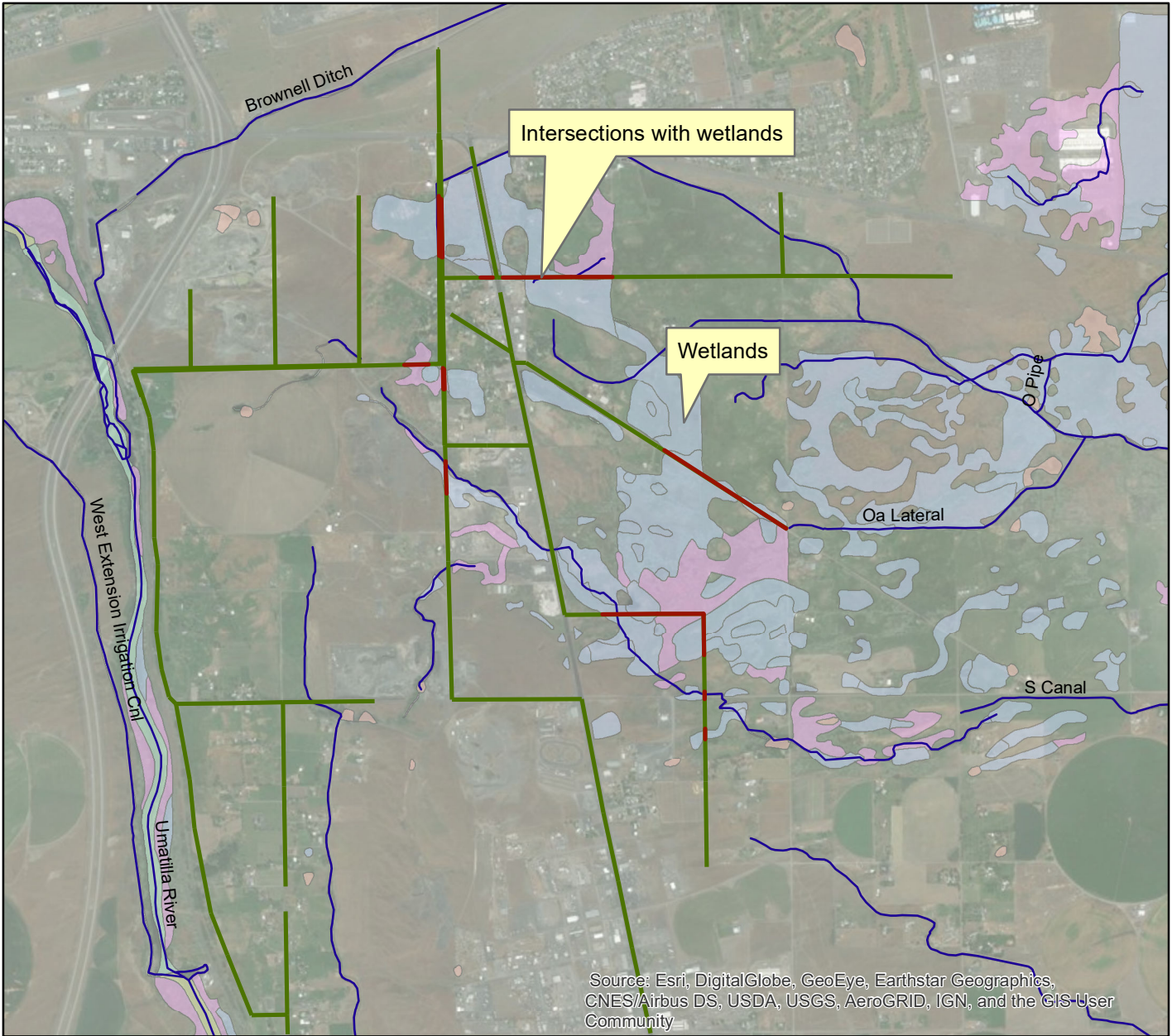
Citations



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Exhibit 2-A: 395 Corridor Sewer Facilities City of Umatilla, BRFA - Wetlands Impact



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

- 395_Sewer_Wetlands
- 395_Sewer Pipe
- Hydrography_Statewide_Streams_Fp

**OR_Wetlands_East
WETLAND_TY**

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine

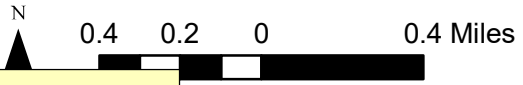
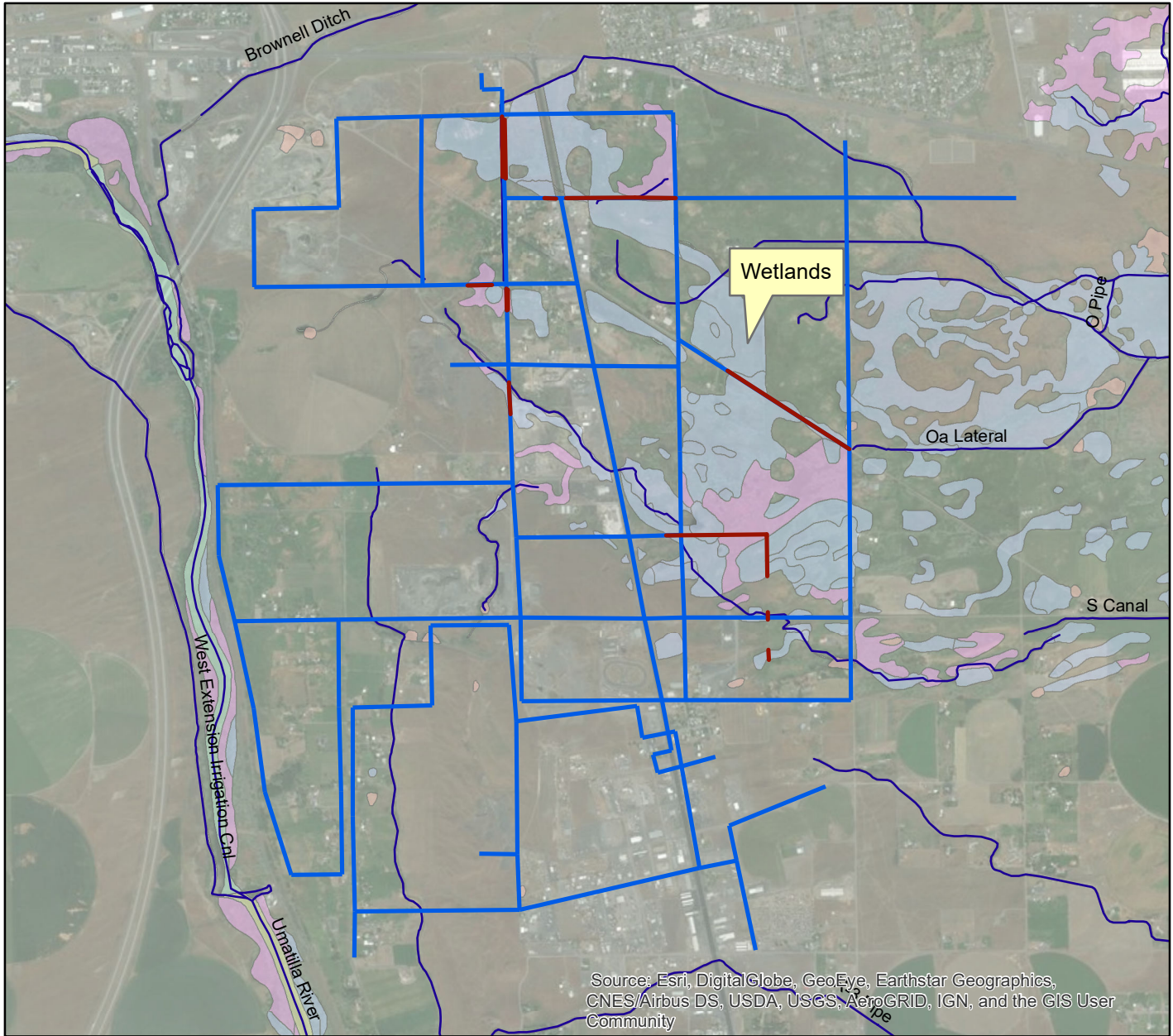
Citations

0.35 0.175 0 0.35 Miles



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consulting, llc

Exhibit 2-B: 395 Corridor Water Facilities City of Umatilla, BRFA - Wetlands Impact



Legend

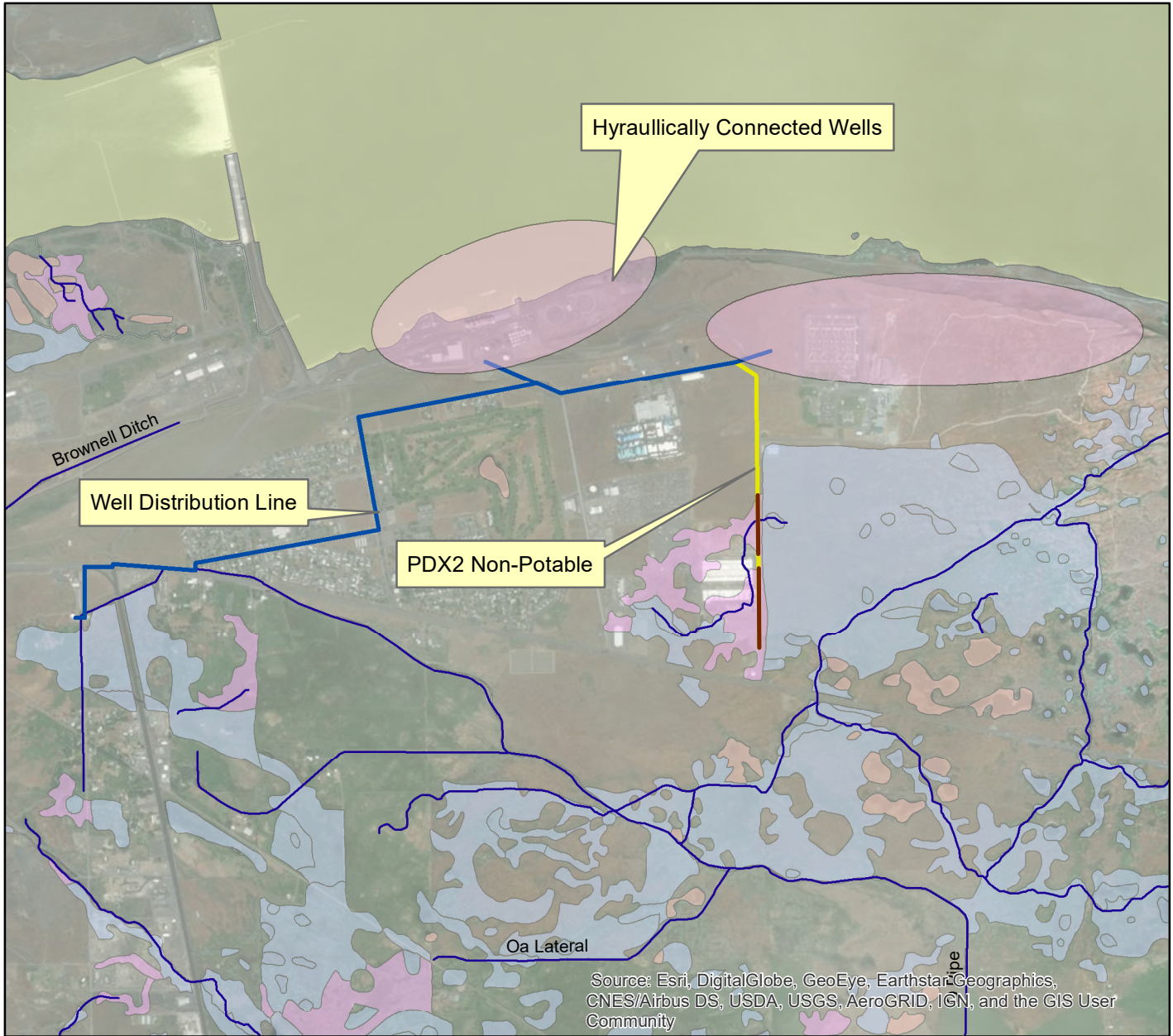
- 395_Water_Wetlands
- 395_Water Pipes
- Hydrography_Statewide_Streams_Fp

**OR_Wetlands_East
WETLAND_TY**

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine
- Citations



Exhibit 2-C: Hydraulically Connected Wells, PDX2 Supply, and Main City of Umatilla, BRFA - Wetlands Impact



Legend

— Wetlands_PDX2

Alt_Type

Hydraul_Wells

Name

PDX2 Non-Potable

Surf_Water_Dist_Pipe

Hydrography_Statewide_Streams_Fp

OR_Wetlands_East

WETLAND_TY

Freshwater Emergent Wetland

Freshwater Forested/Shrub Wetland

Freshwater Pond

Lake

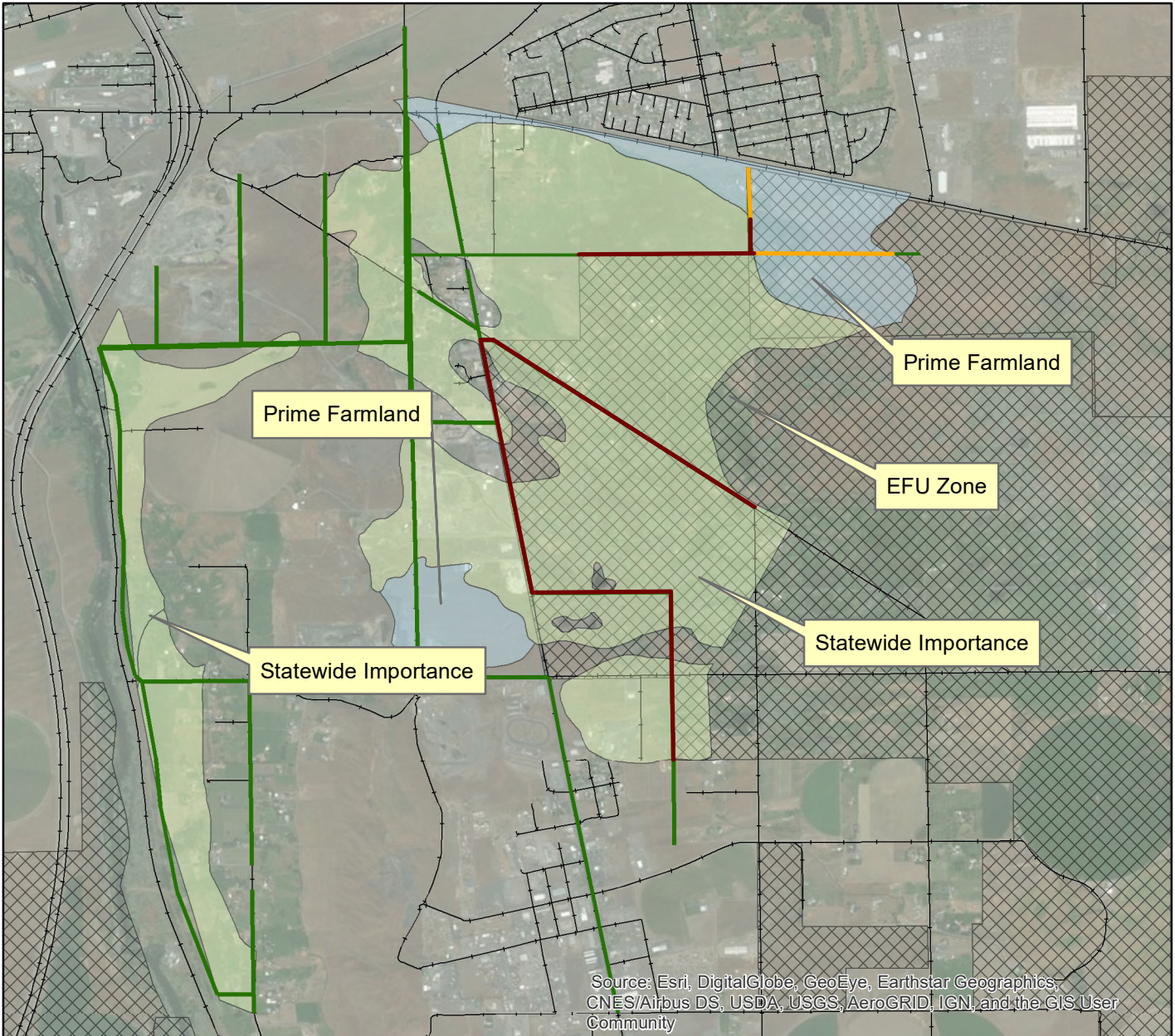
Riverine

Citations

0.35 0.175 0 0.35 Miles

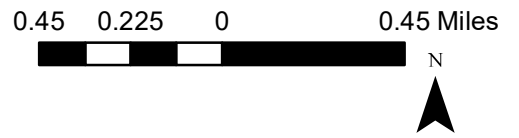


Exhibit 3-A: 395 Corridor Wastewater Facilities City of Umatilla, BRFA - Farmlands and EFU



Legend

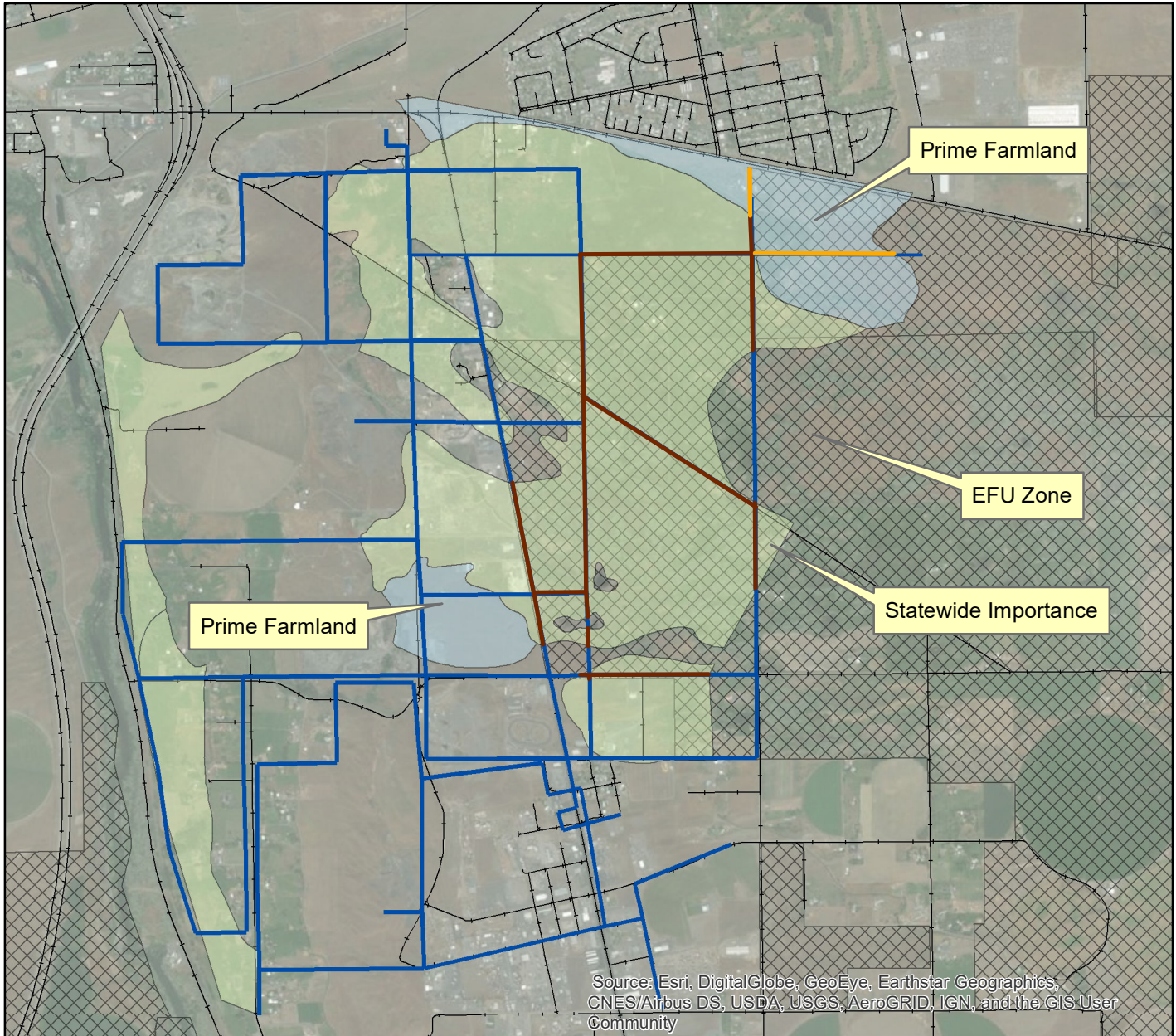
PrimeState	OregonZoning_09_24_2014
— Prime	<all other values>
— Statewide	orZCode
— 395_Sewer Pipe	▨ EFU160
Prime_Type	▨ EFU40
▭ Prime	Citations
▭ Statewide	
— streets_id	



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Exhibit 3-B: 395 Corridor Water Facilities City of Umatilla, BRFA - Farmlands and EFU



Legend

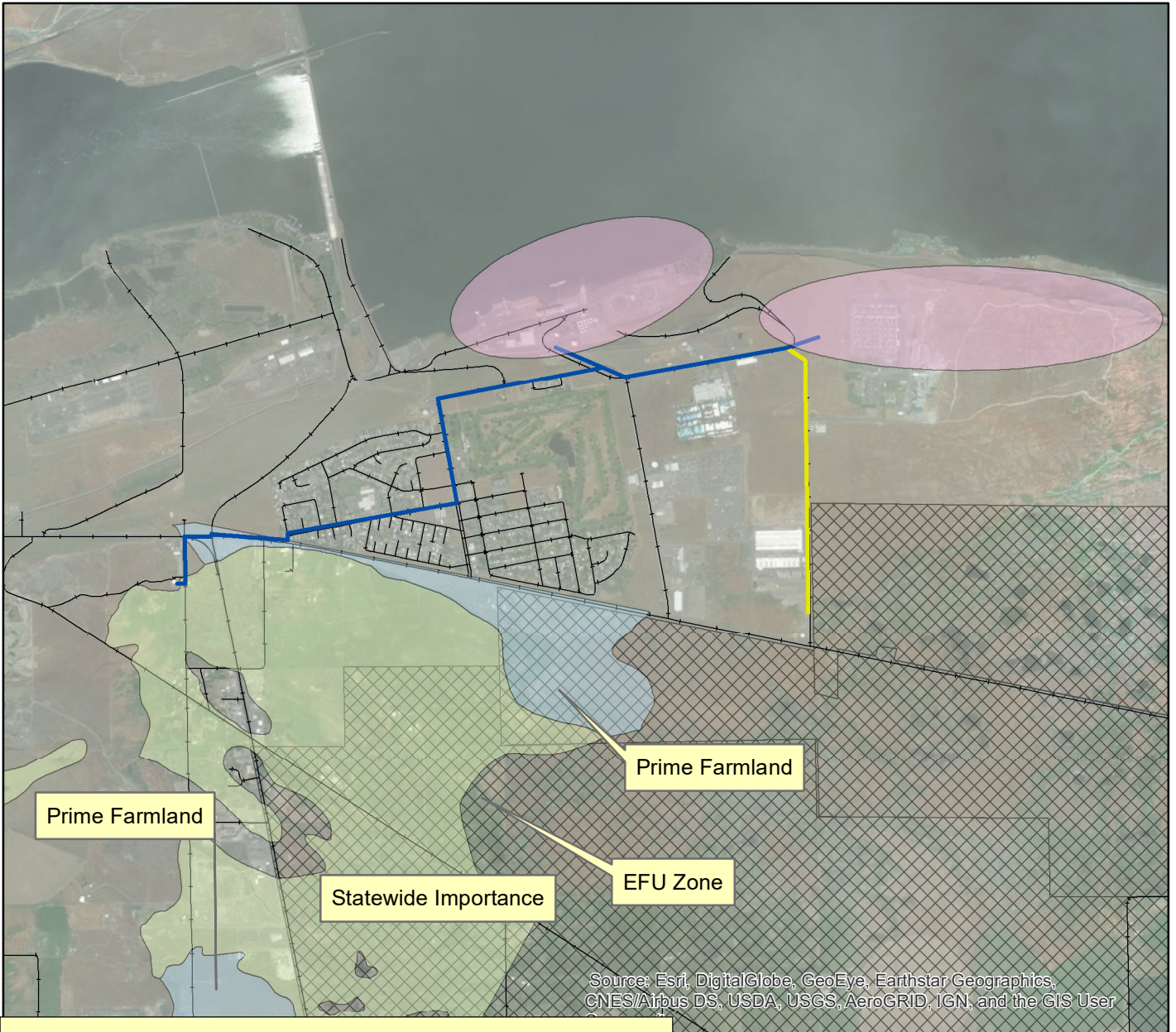
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— Prime	<all other values>
— Statewide	orZCode
— 395_Water Pipes	▨ EFU160
Prime_Type	▨ EFU40
□ Prime	Citations
□ Statewide	
— streets_id	



Ducote
consulting, llc

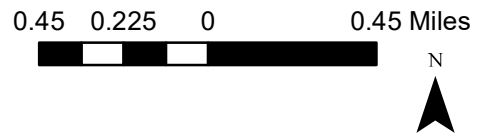
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Exhibit 3-C: Hydraulically Connected Wells, PDX2 Supply, and Main City of Umatilla, BRFA - Farmlands and EFU



Legend

Alt_Type	OregonZoning_09_24_2014
Hydraul_Wells	<all other values>
Name	orZCode
PDX2 Non-Potable	EFU160
Surf_Water_Dist_Pipe	EFU40
Prime_Type	Citations
Prime	
Statewide	
streets_id	



Ducote
consulting, llc

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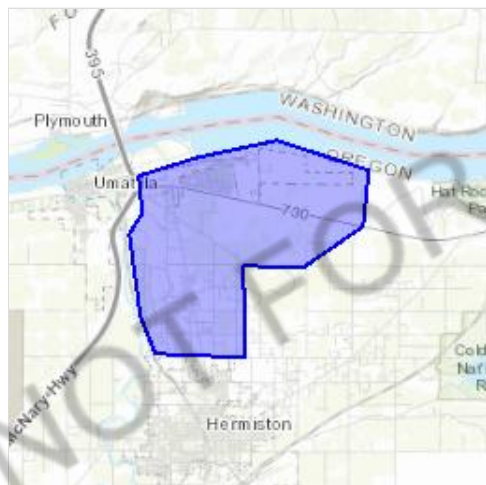
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Umatilla County, Oregon



Local office

Oregon Fish And Wildlife Office

☎ (503) 231-6179

📠 (503) 231-6195

2600 Southeast 98th Avenue, Suite 100
Portland, OR 97266-1398

<https://www.fws.gov/oregonfwo/articles.cfm?id=149489416>

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please [contact NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME

STATUS

Gray Wolf *Canis lupus*

Endangered

There is **final** critical habitat for this species. The location of the critical habitat is not available.

<https://ecos.fws.gov/ecp/species/4488>

Fishes

NAME	STATUS
Bull Trout <i>Salvelinus confluentus</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8212	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ

[below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see maps of where birders and the general public have sighted birds in and around your project area, visit E-bird tools such as the [E-bird data mapping tool](#) (search for the name of a bird on your list to see specific locations where that bird has been reported to occur within your project area over a certain timeframe) and the [E-bird Explore Data Tool](#) (perform a query to see a list of all birds sighted in your county or region and within a certain timeframe). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
<p>Bald Eagle <i>Haliaeetus leucocephalus</i></p> <p>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.</p> <p>https://ecos.fws.gov/ecp/species/1626</p>	Breeds Dec 1 to Aug 31
<p>Brewer's Sparrow <i>Spizella breweri</i></p> <p>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p> <p>https://ecos.fws.gov/ecp/species/9291</p>	Breeds May 15 to Aug 10
<p>Clark's Grebe <i>Aechmophorus clarkii</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds Jan 1 to Dec 31

- Golden Eagle** *Aquila chrysaetos* Breeds Dec 1 to Aug 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
<https://ecos.fws.gov/ecp/species/1680>
- Green-tailed Towhee** *Pipilo chlorurus* Breeds May 1 to Aug 10
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
<https://ecos.fws.gov/ecp/species/9444>
- Lesser Yellowlegs** *Tringa flavipes* Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
<https://ecos.fws.gov/ecp/species/9679>
- Lewis's Woodpecker** *Melanerpes lewis* Breeds Apr 20 to Sep 30
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
<https://ecos.fws.gov/ecp/species/9408>
- Long-billed Curlew** *Numenius americanus* Breeds Apr 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
<https://ecos.fws.gov/ecp/species/5511>
- Marbled Godwit** *Limosa fedoa* Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
<https://ecos.fws.gov/ecp/species/9481>
- Olive-sided Flycatcher** *Contopus cooperi* Breeds May 20 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
<https://ecos.fws.gov/ecp/species/3914>
- Pinyon Jay** *Gymnorhinus cyanocephalus* Breeds Feb 15 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
<https://ecos.fws.gov/ecp/species/9420>
- Sage Thrasher** *Oreoscoptes montanus* Breeds Apr 15 to Aug 10
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
<https://ecos.fws.gov/ecp/species/9433>

<p>Tricolored Blackbird <i>Agelaius tricolor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3910</p>	Breeds Mar 15 to Aug 10
<p>White Headed Woodpecker <i>Picoides albolarvatus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9411</p>	Breeds May 1 to Aug 15
<p>Williamson's Sapsucker <i>Sphyrapicus thyroideus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8832</p>	Breeds May 1 to Jul 31
<p>Willow Flycatcher <i>Empidonax traillii</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/3482</p>	Breeds May 20 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in your project's counties during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the counties of your project area. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

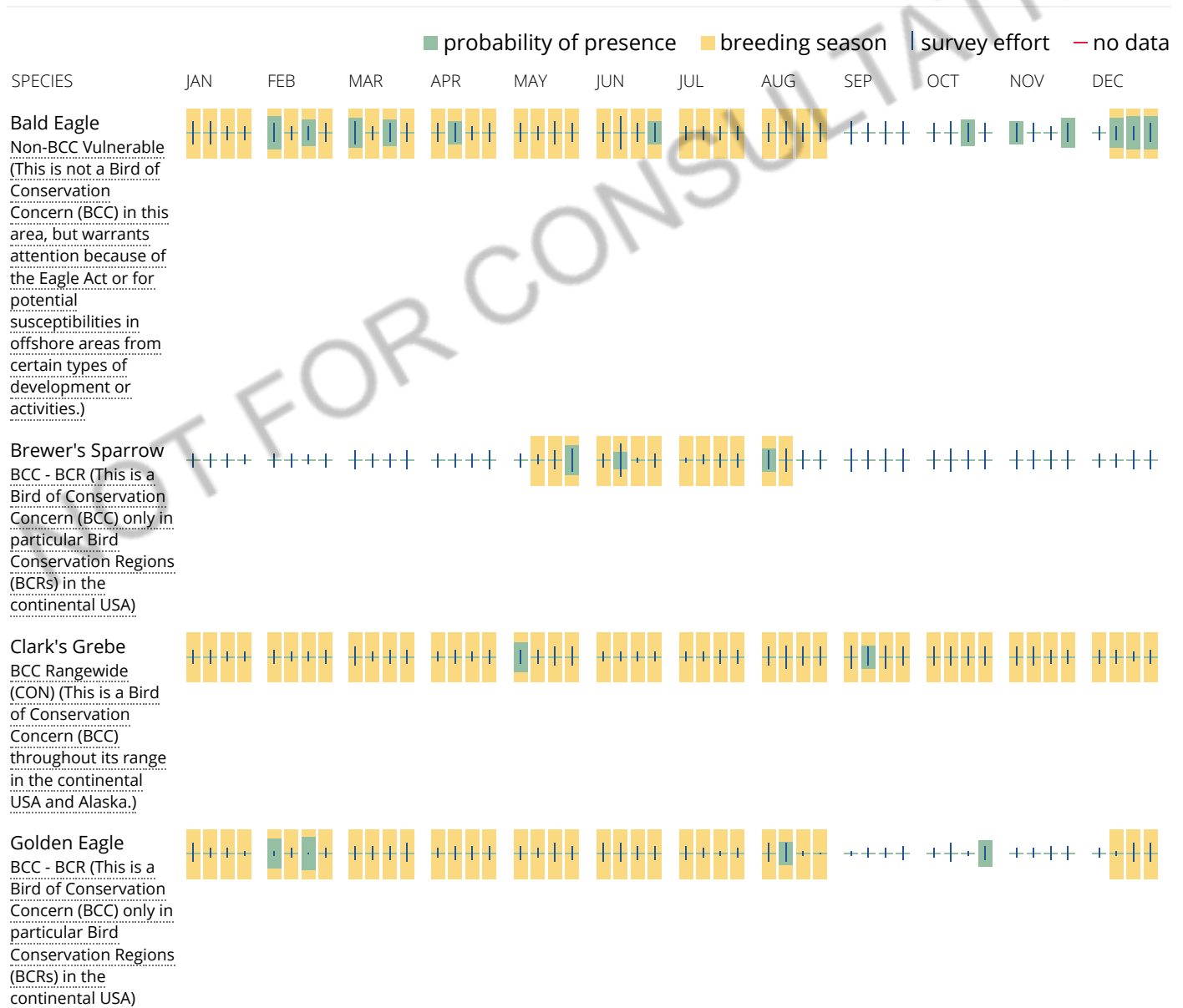
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

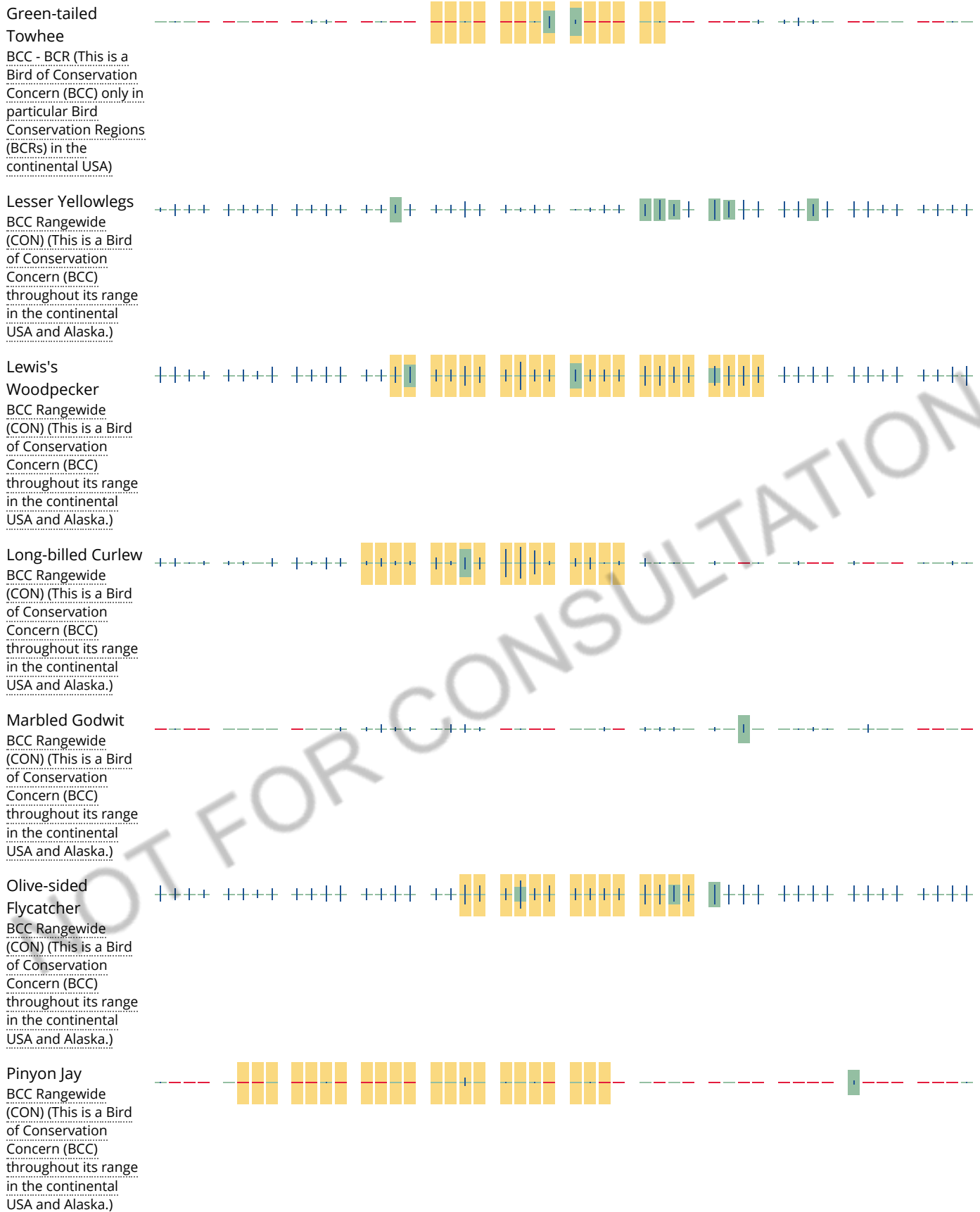
No Data (—)

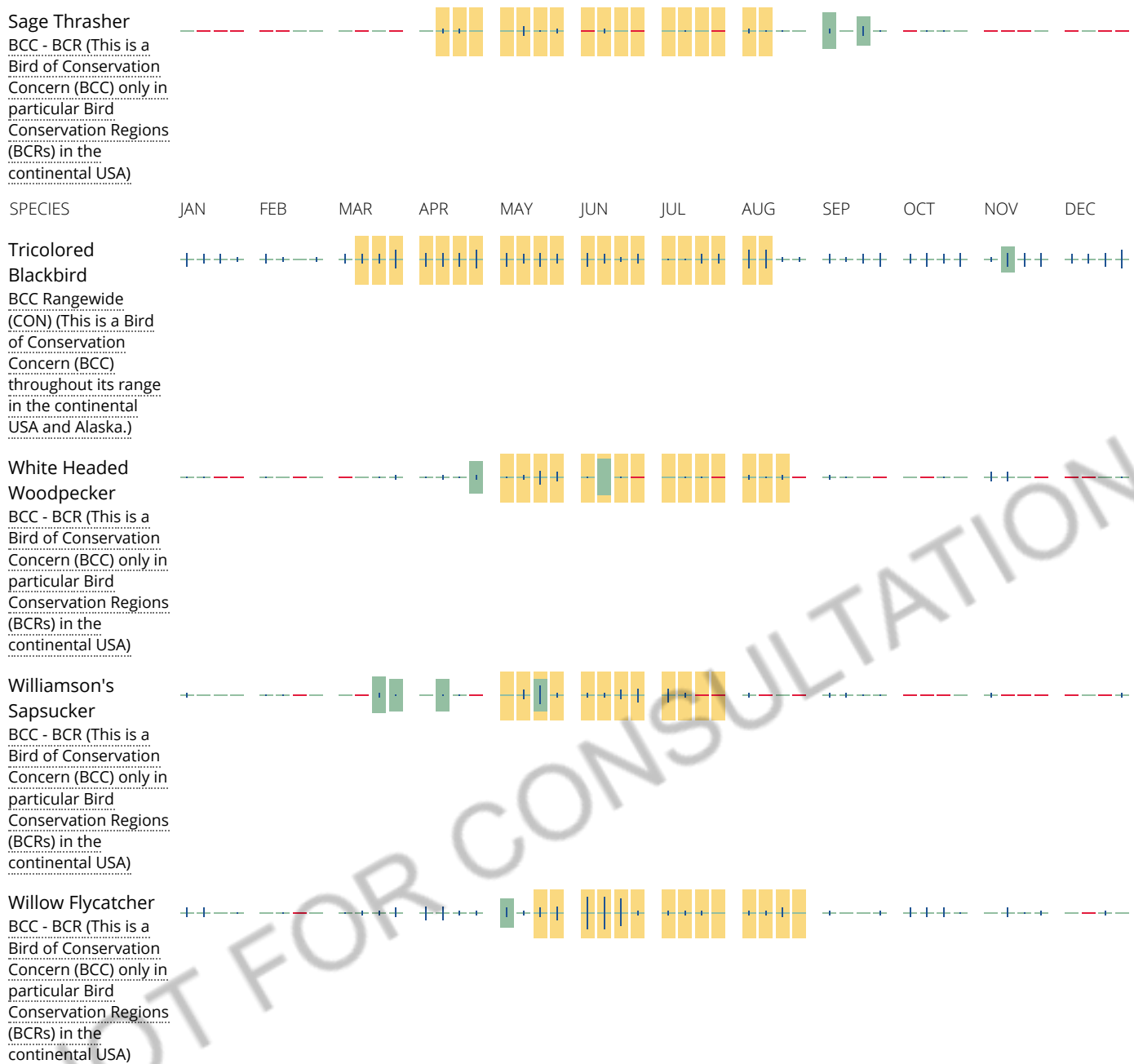
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information.







Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the counties which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [E-bird Explore Data Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird entry on your migratory bird species list indicates a breeding season, it is probable that the bird breeds in your project's counties at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the BGEPA should such impacts occur.

Facilities

Wildlife refuges and fish hatcheries

REFUGE AND FISH HATCHERY INFORMATION IS NOT AVAILABLE AT THIS TIME

Wetlands in the National Wetlands Inventory

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

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

[PEM1C](#)

[PEM1Cd](#)

[PEM1Fd](#)

[PEM1F](#)

[PEM1/UBF](#)

[PEM1/AB4F](#)

[PEM1A](#)

FRESHWATER FORESTED/SHRUB WETLAND

[PFO/EM1C](#)

[PSS/EM1AD](#)

[PFO1C](#)

[PSS1Cd](#)

[PFO1A](#)

[PFO1Ad](#)

[PSS/EM1C](#)
[PFO1Cd](#)
[PFO/EM1CD](#)

FRESHWATER POND

[PUBF](#)
[PUBH](#)
[PUB/EM1F](#)
[PUBHx](#)
[PUBHh](#)
[PAB4F](#)
[PUB/EM1FH](#)
[PAB4/UBF](#)

LAKE

[L1UBHh](#)

OTHER

[PUSCx](#)

A full description for each wetland code can be found at the National Wetlands Inventory website:
<https://ecos.fws.gov/ipac/wetlands/decoder>

Data limitations

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

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

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

Data exclusions

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

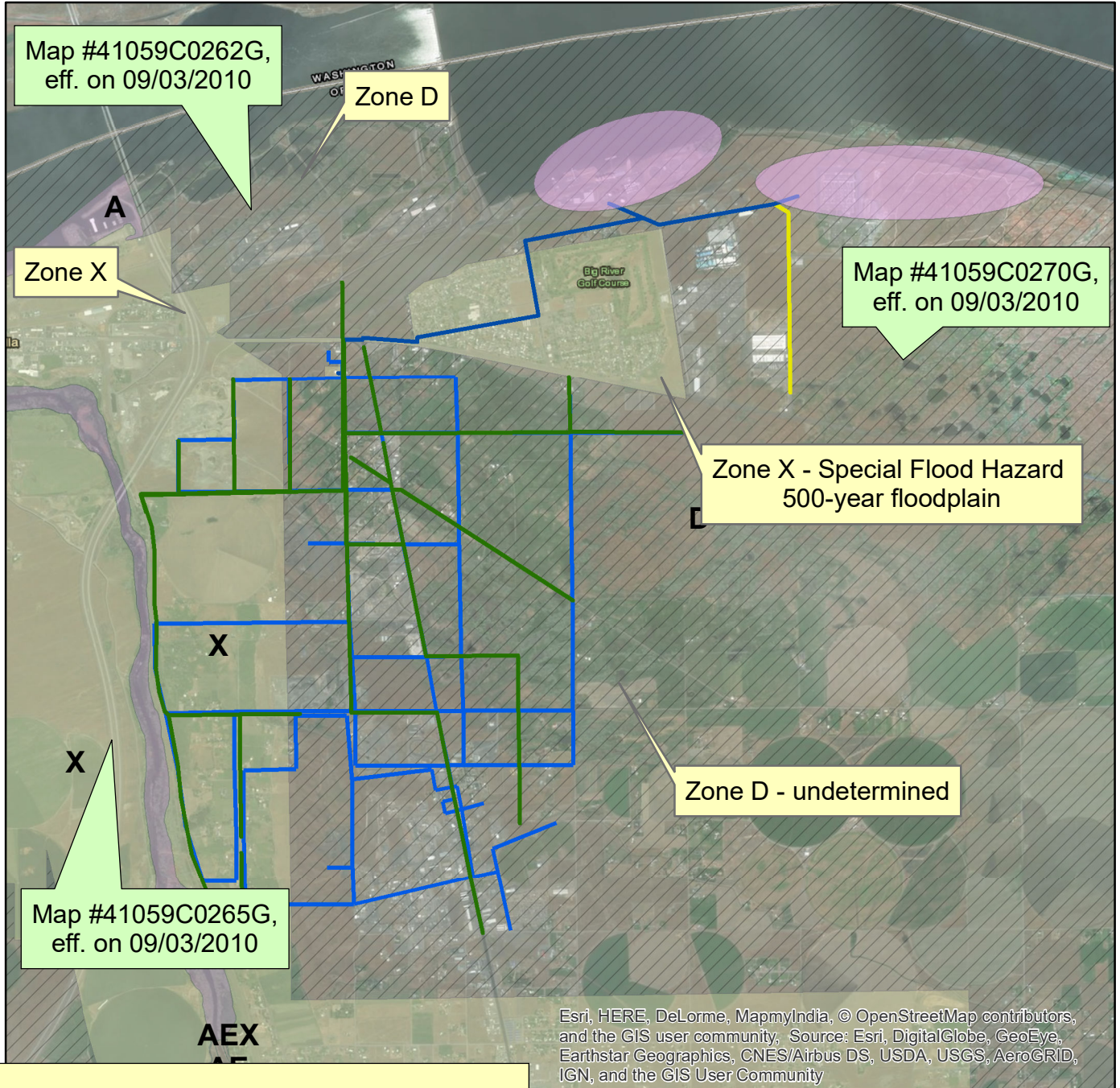
Data precautions

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

state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.










NOT FOR CONSULTATION

Exhibit 5-A: Recommended Alternatives & FIRM Maps City of Umatilla, BRFA - Floodplains



Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

 395_Sewer Pipe	FLD_ZONE
 395_Water Pipe	 A
Alt_Type	 AE
 Hydraul_Wells	 D
Name	 X
 PDX2 Non-Potable	Citations
 Surf_Water_Dist_Pipe	

0.85 0.425 0 0.85 Miles



Ducote
consulting, llc

