City of LA PINE

City of

La Pine, Oregon

WATER SYSTEM STUDY UPDATE

2016

anderson perry & associates, inc.

engineering · surveying · natural resources

267 NE Second Street Suite 200 · Prineville, Oregon 97754
(541) 362-8682
www.andersonperry.com

WATER SYSTEM STUDY UPDATE

FOR

CITY OF LA PINE, OREGON

2016

SIGNED 01-11-16

The City of La Pine, Oregon, has reviewed this Water System Study Update and adopted it.

Signature and Title

1/11/16
Date

This Project was funded through the Water/Wastewater Financing Program administered by the Oregon Business Development Department - Infrastructure Finance Authority and the City of La Pine.

ANDERSON PERRY & ASSOCIATES, INC.

Prineville, Oregon
La Grande, Oregon
Walla Walla, Washington

Job No. 33-05

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Executive Summary

Introduction

This Executive Summary briefly summarizes the results of the Water System Study (WSS) Update prepared by Anderson Perry & Associates, Inc. (AP) for the City of La Pine, Oregon. The recommendations outlined hereafter have been developed in cooperation with the La Pine City Council and City staff. The focus of this WSS Update has been on the overall water system, including the water supply, storage, and distribution systems, most notably the existing system's ability to serve the potential addition of the Cagle and Glenwood Acres areas. This WSS Update includes an analysis of the existing system and its performance, evaluation of system needs, evaluation of improvement alternatives, and development of a financial plan and project implementation plan. Included in this Executive Summary is a brief discussion of the existing water system, the water system improvements selected by the City Council, the current financial status of the Water Department, and a preliminary project implementation plan. For a more detailed discussion of the information presented in this Executive Summary, please refer to the individual chapters of this WSS Update.

Present Water Supply

Water Supply Source

The City has two water supply wells (Wells 1A and 2B), both located adjacent to the 1.2 million gallon (MG) reservoir on Finley Butte Road (Finley Butte Reservoir). Each well has a pumping capacity of 600 gallons per minute (gpm). The wells are located on City-owned property, approximately 1.5 miles east of La Pine. The locations of the wells are shown on Figure 1-1, Location and Vicinity Maps, in Chapter 1. According to well log data, the wells are 251 and 254 feet deep, respectively, and have been the sole water source for the City (formerly the La Pine Water District) for the past 13 years. When pump tested, the wells were each capable of providing 1,300 gpm of water, with drawdown depths of 24 and 13 feet, respectively. If both wells are pumped at the same time, even at the current capacity of 600 gpm each, it could have a negative impact on the aquifer. If demands require utilizing both wells at once, the City should closely monitor the impacts to static water levels in the aquifer.

Water Rights

The City of La Pine holds several water rights issued by the State of Oregon for its groundwater sources. A summary of the water right information follows:

TABLE ES-1
WATER RIGHTS

Application Number	Permit Number	Water Right Certificate	Transfer Number	Water Source*	Allowed Flow Volume (cfs/gpm)	Priority Date	Allowed Use
G-13552	G-13444	---	T-9241	Well 1A Well 2B	2.23/1,000	November 8, 1993	Quasi-Municipal
G-17422**	---	---	---	Well 1A Well 2B	1.4/628	September 13, 2010	Municipal
G-12500***	G-12545	---	---	Well 1 Well 2	0.22/100	June 20, 1996	Irrigation

cfs = cubic feet per second

**Wells 1A and 2B are the City's main supply source, located adjacent to the 1.2 MG reservoir on Finley Butte Road.*

***Due to the Deschutes Basin Mitigation Program, the City is required to provide 405.2 mitigation credits before a permit will be issued on this application.*

****Wells 1 and 2 are located at the City of La Pine's wastewater treatment facility and were used to supplement irrigation. These wells are not currently being used.*

For further discussion on the City's water rights, refer to Chapter 3.

Existing Water Storage

The City of La Pine's existing municipal water storage consists of an approximately 1.2 MG ground-level welded steel reservoir (Finley Butte Reservoir) and an approximately 250,000-gallon bolted steel reservoir (Public Works Reservoir).

Finley Butte Reservoir

The Finley Butte Reservoir was constructed in 2002 for the La Pine Water District and serves all of La Pine by gravity flow. The reservoir has a base elevation of approximately 4311 feet above mean sea level (MSL) and is located near Finley Butte, east of La Pine. The reservoir is 60 feet tall with a diameter of approximately 60 feet and holds approximately 1.2 MG. Wells 1A and 2B discharge directly into the Finley Butte Reservoir. A 16-inch transmission main line conveys water from the Finley Butte Reservoir to the distribution system.

Public Works Reservoir

The Public Works Reservoir is a bolted steel tank located next to the City of La Pine Public Works shop in south La Pine. The Public Works Reservoir was formerly used to supply water to the Public Works booster pump station, which formerly provided water and system pressure to the distribution system. When the water level in the Public Works Reservoir reached a depth of 26 feet, a valve on site was opened to refill the reservoir from the Finley Butte Reservoir. The Public Works Reservoir has a base elevation of 4241 feet above MSL. The reservoir is 30 feet tall with a diameter of 38 feet and holds approximately 250,000 gallons. This reservoir is currently not utilized due to issues with leaks. The City is currently evaluating bringing the Public Works Reservoir and adjacent

booster pump system back on line for a short-term emergency storage and distribution system pressure option.

Existing Distribution System

The City's entire distribution system piping is composed of 6-inch or larger diameter main lines with the majority (approximately 38 percent) being 12-inch pipe. With the exception of some ductile iron yard piping at the Wells 1A and 2B and Finley Butte Reservoir site, the distribution system is composed entirely of polyvinyl chloride pipe.

In general, the distribution system is fairly well looped. There are some areas with dead-end and/or undersized main lines, which can limit capacity and water circulation in the system. The configuration of the City also creates challenges related to distribution system hydraulics, primarily in the north La Pine area, which is isolated from the wells, reservoir, transmission line, and main distribution system. The City has indicated that water main lines in the distribution system are generally in good condition.

The existing distribution system layout, including fire hydrant and valve locations and pipe size and locations, is shown on the Water System Map contained in a pocket at the end of this WSS Update.

Service Population and Planning Period

To estimate the demands that may be placed on a municipal water system, a determination of the population to be served must be made. Population estimates must be made with reference to time. Projections are usually made on the basis of an annual percentage increase estimated from past growth rates, tempered by future expectations. It is very difficult to accurately predict the population of a small community over an extended period of time. For the purposes of this WSS Update, a planning period of 20 years is used, extending to 2035.

The certified 2014 population of the City of La Pine was 1,670 according to Portland State University's Population Research Center. This agency is the official source of population data available in Oregon between the official Census data generated at the beginning of each decade. For the purpose of this WSS, 1,670 is used as the current total population. According to the City's 2009 Water Capital Facilities Plan, there are approximately 275 homes in the Cagle and Glenwood Acres areas. For planning purposes, a value of 2.5 people per home was used to estimate a total population of 688 in the Cagle and Glenwood Acres areas. The current estimated population being served by the water system is 982 since the Cagle and Glenwood Acres areas are not connected to the existing water system.

Historical population information for the City of La Pine is limited, as the City was incorporated in 2007. According to the City of La Pine Comprehensive Plan, an annual growth of 2.2 percent was used for planning purposes to the year 2025. In discussions with the City, it was decided to use an annual population growth rate of 2.2 percent for the purposes of this WSS Update.

CHART ES-1
HISTORICAL AND PROJECTED POPULATION

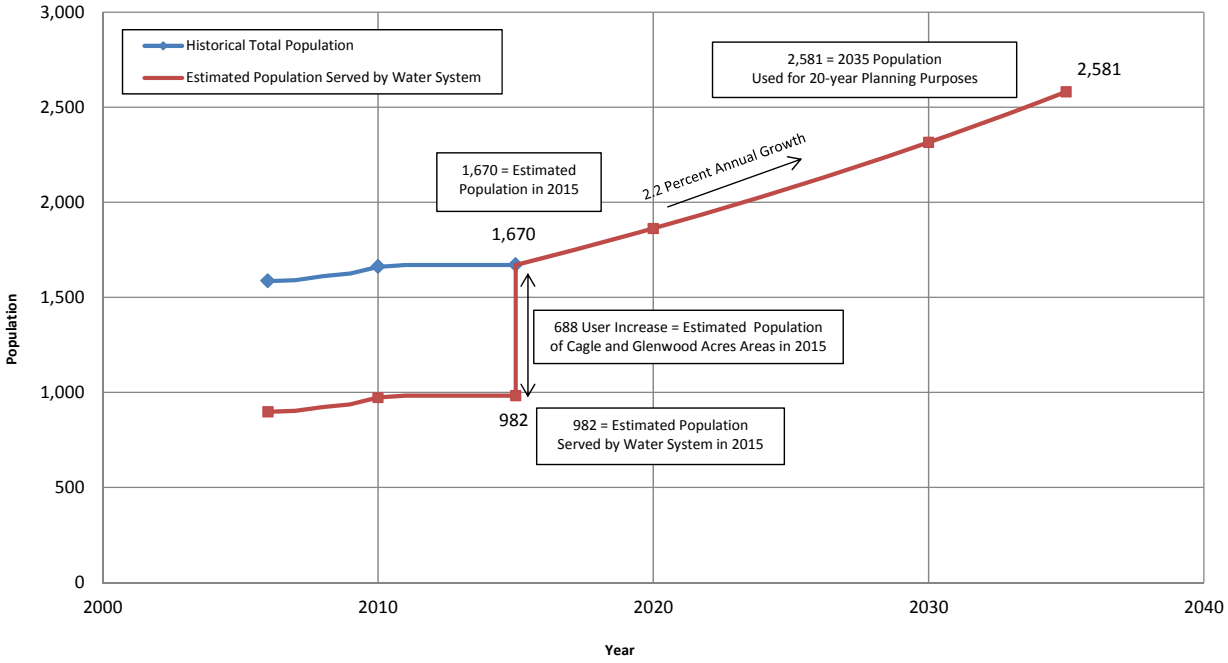


Chart ES-1 shows the impact to the City of La Pine's water system when the Cagle and Glenwood Acres areas are added to the system and a steady population growth of 2.2 percent per year occurs over the next 20 years. The chart assumes that the Cagle and Glenwood Acres areas would be added in 2015, adding approximately 688 users to the system instantaneously. The 20-year population for the City of La Pine, including the Cagle and Glenwood Acres areas, is 2,581 people.

Summary of Supply, Storage, and Distribution System Needs

Supply

Chapter 2 presents a summary of the design criteria utilized for preparation of this WSS Update. The required water supply to properly meet demands if the Cagle and Glenwood Acres areas are added should be approximately 1,080 gpm to meet the peak daily demands (PDD) and 1,670 gpm in order to meet year 2035 PDD. Additional water supply is needed to meet the anticipated PDD and to provide water supply redundancy and reliability. The water supply recommendations are summarized in Chapter 3.

Storage

As presented with the design criteria in Chapter 2, the City's storage needs by the year 2035 will be approximately 1,529,180 gallons. Currently, the City has a storage capacity of 1,200,000 gallons. Additional storage is also needed for redundancy and hydraulic efficiency purposes as well as bringing the City into compliance with Oregon Health Authority - Drinking Water Services pressure requirements. The water storage recommendations are summarized in Chapter 4.

Distribution System

The City of La Pine is pursuing adding the Cagle and Glenwood Acres areas to the City's water system. To do so, distribution system improvements in the Cagle and Glenwood Acres areas are needed to serve the residents in that area. Other miscellaneous distribution system needs have been identified to more effectively serve the residents of La Pine over the 20-year planning period. These needed improvements are summarized in Chapter 5 of this WSS Update.

Further discussion on the City's existing water supply, storage, and distribution systems and the evaluation of these systems can be found in Chapters 3, 4, and 5 of this WSS Update.

Selected Water System Improvements

The selected water system improvements discussed in this WSS Update are briefly summarized hereafter. Work sessions were held with the City Council and City staff to discuss improvement alternatives, potential impacts to future user rates, and possible funding opportunities. The proposed project improvements summarized below address the City's needs related to the addition of the Cagle and Glenwood Acres areas, as well as for the 20-year design population needs.

Water Supply Improvements

The City of La Pine currently relies on basalt Wells 1A and 2B, which are adjacent to the Finley Butte Reservoir, to meet system demands. These wells are the only supply source for the City and are capable of producing 600 gpm each. To help ensure continued water system performance, it is recommended the City construct an additional supply source. It is recommended this new source be located on the north side of the City to better serve the overall system and to be at a separate location from Wells 1A and 2B. This would provide enough supply to meet future demands once the Cagle and Glenwood Acres areas are added to the system and would also provide redundancy in the City's system.

Water Storage Improvements

The City's existing water storage reservoir currently meets the City's immediate operational, equalization, fire reserve, and emergency reserve storage needs, as presented in Chapter 4. The City also appears to have enough storage to serve the addition of the Cagle and Glenwood Acres areas. Additional storage is needed to serve the Cagle and Glenwood Acres areas and meet the 20-year estimated population of 2,581. The City is currently served by only one reservoir and one transmission line. The City recently experienced an incident where the transmission line was compromised, and the City was forced to curtail water since another storage reservoir and transmission line were not available. The 250,000-gallon Public Works Reservoir is still in fair condition, with some leaking. If a new reservoir and transmission line are pursued, it is not recommended that the City pursue rehabilitation of the Public Works Reservoir due to the high cost of rehabilitation for limited storage capacity and the high cost to operate and maintain a booster pump system. To provide additional storage for future growth, improved pressure conditions to north La Pine, improved fire flows to the northern portions of the City, and redundancy for the water system, it is recommended that a new 500,000-gallon reservoir be constructed near the north end of La Pine, adjacent to the proposed new well.

Water Distribution System Improvements

In general, the City's distribution piping system is in good condition. There are some areas in the distribution system with dead-end lines, where new lines are proposed to provide enhanced looping and circulation capabilities. Proposed distribution lines are also recommended to serve the Cagle and Glenwood Acres areas. These improvements are shown on Figure 6-1.

Summary of Estimated Costs for Proposed Improvements

The year 2015 estimated costs for the proposed water system improvements are outlined below. These estimated costs are summarized in greater detail in Chapters 3, 4, 5, and 6 of this WSS Update. The total estimated project cost includes construction, administrative, legal, engineering, and contingencies together with other project costs.

Estimated Improvement Costs		
New Northside Well and Pump Station Improvements	$	1,075,000
New Northside Reservoir and Transmission Main Line Improvements		2,483,000
Cagle and Glenwood Acres Distribution System Improvements		4,103,000
Highway 97 Distribution System Improvements		274,000
Miscellaneous Distribution System Improvements		900,000
Total Estimated Improvements Costs (2015 Dollars)[1]	**$**	**8,835,000**
Other Estimated Project Costs		
Legal	$	50,000
Administration		50,000
Easements		20,000
Environmental Review Report		30,000
Archaeological Report		15,000
Cultural Resource Monitoring		70,000
Oregon Department of Transportation Permit(s)		5,000
Regulatory Agency Reporting and Review Fees		3,000
New Supply Source Testing		10,000
Subtotal Other Project Costs (2015 Dollars)	**$**	**253,000**
Total Estimated Project Cost (2015 Dollars)	**$**	**9,088,000**
Total Estimated Project Cost (2017 Dollars)[2]	**$**	**10,019,000**

[1] *Total estimated improvements costs include construction contingency, preliminary and final design, and construction engineering costs.*

[2] *Total project cost projected to 2017, assuming 5 percent annual inflation.*

Current Financial Status

The annual cost of operating and maintaining the City of La Pine's water system is summarized on Figure 7-1 in Chapter 7. A graphical plot of the City of La Pine's water system budget for the Water Department funds, showing total revenue and total expenditures, is provided on Chart 7-1. If current expenditures are inflated at approximately 3 percent per year, expenditures will likely increase to $360,000 in the budget year 2017-18. This trend in expenditure increase will likely continue and will need to be reflected in future budgeting. It is recommended that the City continue to allocate funds to cover future maintenance and replacement costs of equipment and facilities. Pump replacement, water meter repairs, reservoir repairs, etc., are all items that require funds from time to time in order to maintain a healthy water system.

A major financial commitment will be required on the part of the City to implement part or all of the proposed water system improvements outlined in this WSS Update. An increase in water rates will be required to fund part or all of the proposed system improvements.

Proposed Improvement Implementation Plan

Should the City wish to proceed with the proposed water system improvements, the following implementation plan outlines the key steps the City would need to undertake. It is important to note that it usually takes approximately 2 to 3 years, at a minimum, from the date a city decides to proceed with an improvements project until the project is completed and serving the community. The following implementation plan uses winter 2015-16 as a starting date and assumes a three-year implementation schedule. It should be noted that these implementation steps, as presented hereafter, may be different if the City elects to delay the project and pursue improvements in the future.

	Item	Completion Date
1.	Complete a Letter of Interest for the Safe Drinking Water Revolving Loan Fund project priority list.	Winter 2015-16
2.	Initiate funding discussions with the Oregon Business Development Department - Infrastructure Finance Authority (IFA) and USDA Rural Development. Hold a One-Stop meeting with agencies.	Winter 2015-16
3.	Public outreach and education program.	Spring 2016
4.	Work with IFA to submit a Project Notification and Intake Form (if IFA funding is identified as a potential source of funds).	Spring 2016
5.	Submit funding application(s) to agencies.	Spring 2016
6.	Finalize project funding.	Summer/Fall 2016
7.	Design system improvements.	Fall 2016 to Winter 2017-18
8.	Complete Environmental and Cultural Resource Reports.	Spring to Fall 2017
9.	Complete water right applications/transfers.	Spring to Fall 2017
10.	Bid and award construction contract.	Winter 2017-18 to Spring 2018
11.	Construct system improvements.	Spring 2018 to Fall 2019
12.	Close out project.	Winter 2019

The key to implementing the City of La Pine's water system improvements is the City's ability to acquire funding that will allow water rates to remain as low as possible. The City should work closely with its citizens through public meetings to inform them of the system needs and the necessity for increased water user costs. To reduce the financial impact to rate payers, it will be vital that the City seek low interest loans coupled with grant funds. It is also good practice to increase rates, as required, to adequately fund operation and maintenance of the existing and improved water system and to keep up with inflation.

The water system improvements outlined herein are anticipated to provide La Pine with a higher quality water system with significantly improved reliability. The identified distribution system improvements will help improve water circulation, improve distribution system water quality and pressure, and significantly improve fire flow capacities in several key areas of the City, as well as provide service to an additional 275 connections inside the City limits. Overall, the proposed water system improvements will provide a much improved and more reliable water system that should serve the City of La Pine for many years.

Chapter 1 - Introduction

Purpose of Study

This Water System Study (WSS) Update is intended to provide current information related to the City of La Pine's water system. A Water Capital Facilities Plan (WCFP) was completed in 2009, by HGE, Inc., for what was then the La Pine Water District (District). Since that time, several improvements have been made to the water system, and the City of La Pine now owns the water system. Figure 1-1 shows the location and vicinity of the City and major water system components.

This WSS Update is intended to update information provided in the 2002 study and analyze the capacity of the existing water system to provide water to the City of La Pine's customers for the next 20 years. Currently, the City of La Pine is considering extending water service to neighborhoods inside the City limits that are not currently connected to the City's water system. These neighborhoods, known as the Cagle and Glenwood Acres areas, are shown on Figure 2-1 at the end of Chapter 2. This WSS Update provides the City of La Pine with a list of improvements and associated costs required to include the Cagle and Glenwood Acres areas into the City of La Pine's service area and to serve the entire City for at least a 20-year design criteria period.

Where applicable, this WSS Update references information from the 2009 HGE study.

Organization of Study

This WSS Update is divided into seven main chapters with an Executive Summary. Specifically, the WSS Update includes the following:

1. The Executive Summary of the overall WSS Update describes water quality and service goals (design criteria), present and future water system deficiencies, the City's selected improvements for achieving the goals and correcting the deficiencies, and the recommended implementation schedule and financing program for constructing improvements.

2. Chapter 1, "Introduction," discusses the objectives of the WSS Update, describes the community and environment, and provides a brief history of the past development and operation of the City of La Pine's water system.

3. Chapter 2, "Water System Requirements," develops the data upon which recommended improvements to the water system are based. Data relating to elements such as service area, population, land use, water use, fire flows, state and federal regulations, and the design criteria developed for this WSS Update are presented. A description of the water quality and level of service goals (design criteria) for the water system considering existing and anticipated future regulatory requirements, non-regulatory water quality needs of water users, flow and pressure requirements, capacity needs related to water use, and fire flow needs is also provided.

4. Chapter 3, "Water Supply," discusses the operation, capacity, and quality of the existing water supply system with respect to existing and future system demands and regulations. Information concerning water rights and permits for the appropriation of water from various sources is

presented. A comparison of alternatives to obtain additional water supply sources is also provided.

5. Chapter 4, "Water Storage," discusses existing storage reservoirs, presents the four primary components of water storage relative to the City's design criteria, evaluates alternative storage facilities, and provides recommendations for storage improvements.

6. Chapter 5, "Distribution System," presents information related to the existing distribution system facilities, water quality test results, and fire protection information. Existing deficiencies and deficiencies likely to develop during the planning period are identified. Improvements including specific areas of piping, a water meter replacement program, and water conservation efforts are recommended.

7. Chapter 6, "Selected Water System Improvements," presents information related to water supply, storage, and distribution system improvements developed through the analysis of the system. Cost estimates are developed for each of the recommended water system improvements.

8. Chapter 7, "Project Financing and Implementation," provides a description of alternatives to finance water system improvements including local financing such as user rates, taxes, and financing assistance programs. Operation, maintenance, and replacement costs are projected for both the existing system and future system improvements. The number of residential, commercial, and industrial equivalent dwelling units is provided. Potential water rate needs are developed and rate implementation procedures are identified. A recommended water system improvement implementation process, including an evaluation of financing alternatives and identification of key implementation steps, is also provided.

The Appendices contain key materials referenced in this WSS Update, which are provided for future reference by City staff. This information includes well log and water rights information, testing results, applicable ordinances, and other pertinent water system information.

Sources of Information

The conclusions and recommendations outlined in this WSS Update are based on data, information, and records provided by the City. This information includes, in part, past flow records (supply and usage); financial data (operational cost, revenues, and cost distribution); descriptions of system operation, condition of system components, and identification of problem areas; water quality data; and system layout and sizing. The recommendations and conclusions are, therefore, dependent on the completeness and accuracy of the base information provided.

Review and Updating of Study

This WSS Update should be reviewed and updated periodically in order to stay current with population growth, water system demands, and changing state and federal regulations. It is recommended that this WSS Update be reviewed at 5-year intervals and be updated at 10-year intervals, or as growth and/or regulations dictates.

Objectives of Study

The primary objectives of this WSS Update are to provide the following information:

1. Establish planning criteria including service area boundaries; population growth projections; past, present, and future water usage patterns; fire flow requirements; federal and state standards; system pressures; and service goals.

2. Analyze the individual components of the existing water supply system considering capacity, compliance with current water quality standards, water rights, condition of components, operational dependability, and cost of operation. Develop the water supply needs for the planning period and identify cost-effective alternatives for meeting long-term water supply needs. Outline general operation and maintenance requirements for the water supply system.

3. Analyze the existing water storage facilities considering capacity, condition of the reservoirs, and distribution system pressures. Assess the City's storage capacity considering emergency storage, operational storage, equalization storage, and fire flow storage. Identify the storage requirements of the water system for the planning period.

4. Utilizing existing distribution system maps and City records, review the condition and adequacy of the distribution system piping. Identify system deficiencies and alternatives for meeting current and future system needs. Provide estimated costs for implementation of recommended improvements.

5. Analyze the hydraulic capacity and system pressures in the existing water distribution system under average daily and peak daily demand conditions using a computer model. Identify distribution system deficiencies such as low system pressures, low fire flow capacities, dead-end or undersized lines, etc. Identify opportunities for distribution system improvements to address any noted deficiencies.

6. Review the status of the existing Water Department financial condition considering historical water system revenues, operational and maintenance costs, and debt service including the adequacy of existing water user fees. Project the future cost of operation and maintenance, capital improvement investments, and debt service for the water system. Develop a financing plan for meeting long-term system needs including general user rate charges and outside financial assistance.

7. Provide information on potential state and federal grant and loan programs that may be available to assist the City in implementing any needed system improvements.

8. Prepare a summary identifying current and future water system needs with their associated estimated costs. Make recommendations for meeting the water system needs for the planning period.

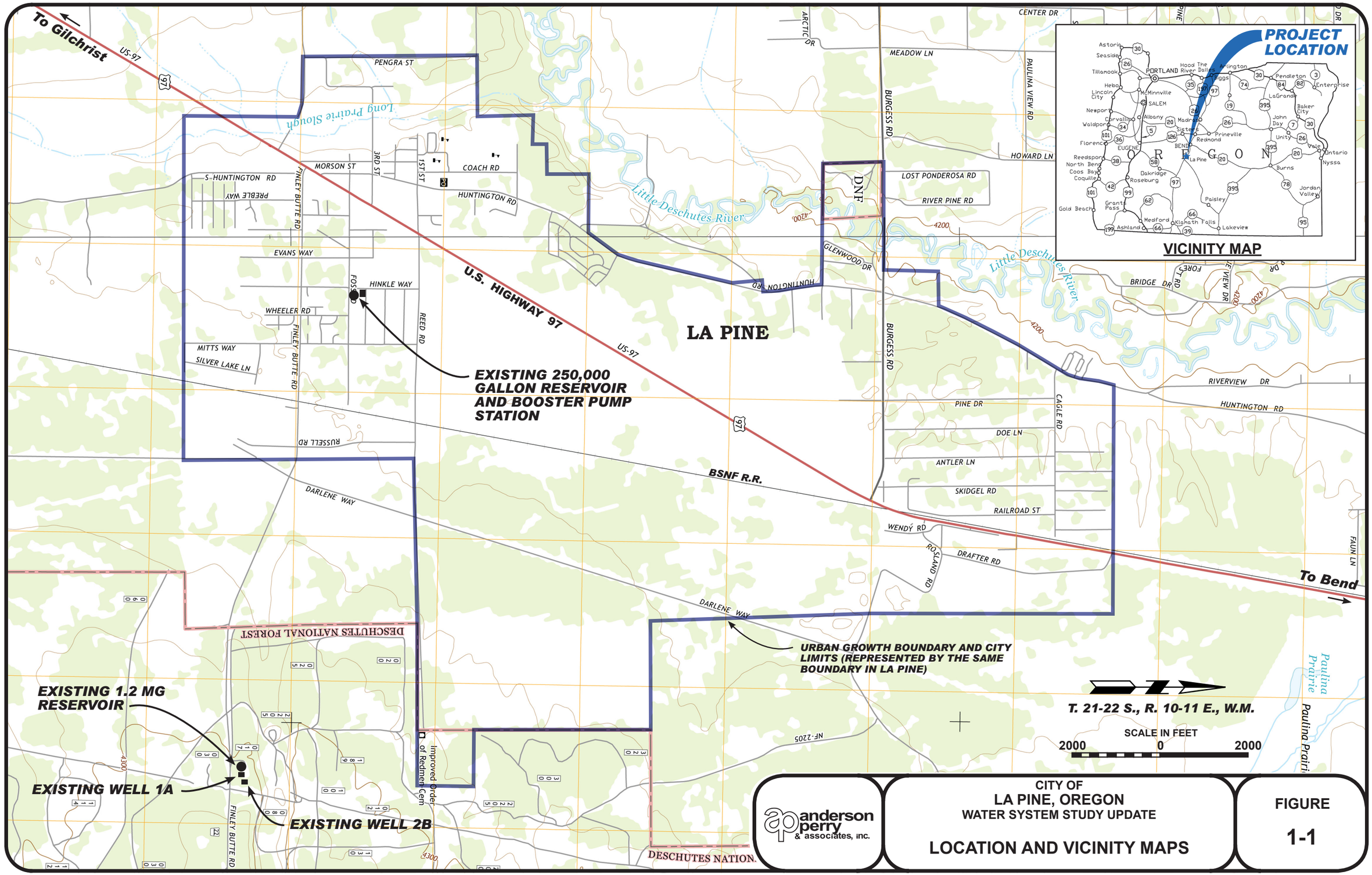
9. Provide an implementation schedule for recommended water system improvements outlining the key steps the City would need to take to implement the improvements.

Location

The City of La Pine is located in southern Deschutes County, approximately 30 miles south of Bend. The City is located on State Highway 97 and is adjacent to the Little Deschutes River. The general location of the community is shown on Figure 1-1.

Water System History

The City of La Pine was incorporated in 2007 and took ownership of the District's water system in 2012. The District had accumulated several small, privately owned water systems over the years, and in 2002 completed improvements that included two 600 gallon per minute basalt supply wells, a 1.2 million gallon (MG) reservoir, and distribution system improvements. Both supply wells discharge into the adjacent 1.2 MG reservoir. A 16-inch diameter transmission line serves the entire City. The City also has a 250,000-gallon bolted steel reservoir and a booster pump system, located in the southern portion of the City, that are currently in a state of disrepair and are not operating. For more information on the water system history, the reader is encouraged to review the 2009 WCFP.



CITY OF
LA PINE, OREGON
WATER SYSTEM STUDY UPDATE

anderson perry & associates, inc.

LOCATION AND VICINITY MAPS

FIGURE
1-1

Job# 33-05-020 Jul. 2, 2015 lbauer

Chapter 2 - Water System Requirements

Introduction

This chapter presents information from which criteria have been developed for evaluating the City of La Pine's existing water system and for defining and sizing the required components of the system for the 20-year planning period. Information concerning the service area, population projections, water use, and state and federal requirements is presented.

Service Area

The term "service area" refers to the area being served with water from the City's water system. Both the present and future service areas are considered in this Water System Study (WSS) Update. The present service area primarily consists of the developed lands within the boundaries of the City limits and urban growth boundary. However, the existing service area does not include the Cagle and Glenwood Acres areas. These areas are included in the future service area, which comprises all areas within the City limits. Figure 2-1 shows both the existing and proposed service areas.

Service Population and Planning Period

To estimate the demands that may be placed on a municipal water system, a determination of the population to be served must be made. Population estimates must be made with reference to time. Projections are usually made on the basis of an annual percentage increase estimated from past growth rates, tempered by future expectations. It is very difficult to accurately predict the population of a small community over an extended period of time. For the purposes of this WSS Update, a planning period of 20 years is used, extending to 2035.

The certified 2014 population of the City of La Pine was 1,670 according to Portland State University's Population Research Center. This agency is the official source of population data available in Oregon between the official Census data generated at the beginning of each decade. For the purpose of this WSS Update, 1,670 is used as the current total population. According to the Water Capital Facilities Plan, there are approximately 275 homes in the Cagle and Glenwood Acres areas. For planning purposes, a value of 2.5 people per home was used to estimate a total population of 688 in the Cagle and Glenwood Acres areas. The current estimated population being served by the water system is 982 since the Cagle and Glenwood Acres areas are not connected to the existing water system.

Historical population information for the City of La Pine is limited, as the City was incorporated in 2007. According to the City of La Pine Comprehensive Plan, an annual growth of 2.2 percent was used for planning purposes to the year 2025. In discussions with the City, it was decided to use an annual population growth rate of 2.2 percent for this WSS Update.

CHART 2-1
HISTORICAL AND PROJECTED POPULATION

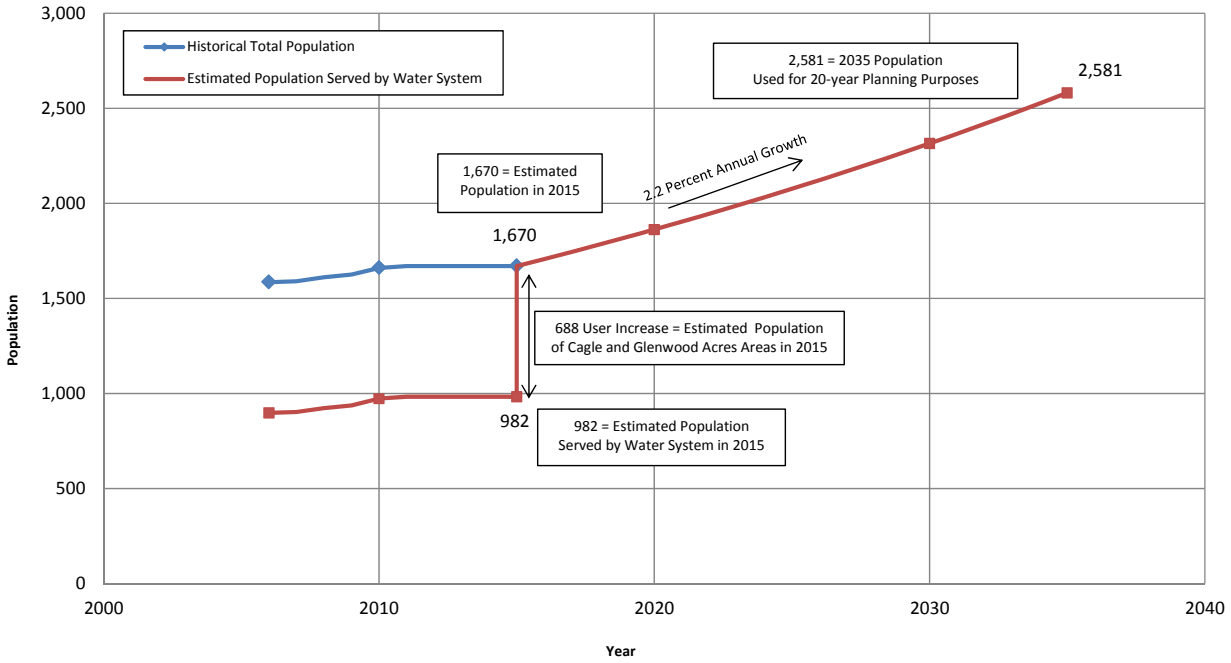


Chart 2-1 shows the estimated population impact to the City of La Pine's water system when the Cagle and Glenwood Acres areas are added to the system and a steady growth of 2.2 percent per year occurs over the next 20 years. The chart assumes that the Cagle and Glenwood Acres areas would be added in 2015, adding approximately 688 users to the system instantaneously.

Land Use

The current zoning in the City of La Pine is shown on Figure 2-2. As designated in the City of La Pine Comprehensive Plan, ten land use classifications have been identified. The southern area of La Pine consists of a large share of the residential, commercial, and industrial areas of the City. The Wickiup Junction area to the north comprises the majority of the remaining residential, commercial, and industrial areas in La Pine. Between these two areas is a large, mostly vacant area designated as Master Plan Residential and Public Facilities. This area is approximately 370 acres of developable land.

Regulatory Requirements

The City of La Pine water system comes under the jurisdiction of the Oregon Health Authority - Drinking Water Services (DWS). The DWS assumed primacy (responsibility) from the U.S. Environmental Protection Agency (EPA) in February 1986 for enforcement of the federal Safe Drinking Water Act (SDWA). Therefore, the City of La Pine is currently, and will principally be, working with the DWS as the regulating agency with regard to their water system.

Regulatory Background

The SDWA was originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply. The law was amended in 1986 and 1996 and requires many actions to protect drinking water and its sources (rivers, lakes, reservoirs, springs, and groundwater wells). The primary regulations associated with the SDWA address requirements concerning trace minerals, compounds, and micro-organisms that may affect the health of water consumers. The SDWA provides for monitoring, testing requirements, reporting, recordkeeping, and public notification procedures in the event of non-compliance.

The 1986 amendments to the SDWA included provisions for wellhead protection, new monitoring for certain substances, filtration for certain surface water systems, disinfection for certain groundwater systems, and restrictions on lead content in pipe solder and plumbing.

The 1996 amendments to the SDWA included provisions for consumer confidence reporting, stronger protection for microbial contaminants and disinfection byproducts, operator certification, lowering maximum contaminant levels (MCLs), and source water assessments.

Enacted in 1981, the Oregon Drinking Water Quality Act established statutes, which have been amended periodically, and subsequent administrative rules to enforce, at a minimum, the federal SDWA requirements. The DWS administers and enforces drinking water quality standards for public water systems in the State of Oregon. The agency focuses resources in the areas of highest public health benefit and promotes voluntary compliance with state and federal drinking water standards. The DWS also emphasizes prevention of contamination through source water protection, provides technical assistance to water system owners, and provides water system operator training. They also work closely with public water systems to make sure public notification is made in accordance with regulatory guidelines, when required. If the City is unaware of their compliance status or in need of regulatory guidance, it is recommended that the regional DWS office be contacted.

Recent Regulatory History (Last Five Years)

Following is a list of regulations that have been enacted in the past five years:

1. **Reduction of Lead in Drinking Water Act**, which requires any new installation or purchase of materials used in potable locations to be "lead-free." Lead-free has been redefined as "(A) not containing more than 0.2 percent lead when used with respect to solder and flux; and (B) not more than a weighted average of 0.25 percent lead when used with respect to the wetted surfaces of pipes, pipe fittings, plumbing fittings, and fixtures." This law was enacted on January 4, 2014. Oregon requires drinking water components to be National Sanitation Foundation/American National Standards Institute Standard 61 compliant in order to meet the intent of this law.

2. **Stage 2 Disinfectants and Disinfection Byproduct Rule (D/DBPR)**, which focuses on public health protection by limiting exposure to disinfection byproducts. The D/DBPR specifically targets total trihalomethanes and five haloacetic acids, which can form in water through disinfectants used to control microbial pathogens. This rule applies to all community water systems (CWSs) and non-transient non-community (NTNC) water systems that add a primary

or residual disinfectant other than ultraviolet light. Stage 2 of the D/DBPR was enacted in 2012 for large CWSs and NTNCs and in October 2013 for all CWSs and NTNC water systems.

3. **Unregulated Contaminant Monitoring Rule (UCMR)**. The EPA uses the UCMR program to collect data for contaminants suspected to be present in drinking water but that do not have health-based standards set under the SDWA. Every five years, the EPA develops a new list of UCMR contaminants, largely based on the Contaminant Candidate List. Oregon Administrative Rule 333-061-0043 requires CWSs to report detection of unregulated contaminants in their annual Consumer Confidence Report.

Upcoming Regulatory Changes

The following rule will be enacted in the near future:

1. **Revised Total Coliform Rule**, which requires that total coliform samples be collected, according to a written sample site identification plan subject to state review and revision, by public water systems at sites that are representative of water quality throughout the distribution system. The rule goes into effect on April 1, 2016. The City should work with the DWS to develop the required sampling plan prior to April 1, 2016.

Potential Regulatory Changes

Following is a list of regulations that may be enacted in the future:

1. **Radon in Drinking Water Rule**, which would attempt to reduce airborne and waterborne radon concentrations to limit exposure levels. This rule would apply to CWSs that use groundwater or mixed groundwater and surface water.

2. **Third Contaminant Candidate List (CCL3) Regulatory Determinations**. The EPA has made a preliminary determination to regulate strontium. After public comment, the EPA is expected to release a final determination in 2015. The Fourth Contaminant Candidate List is currently in draft form and is expected to be published in 2015.

3. **Carcinogenic Volatile Organic Chemicals (cVOC) Rule**. The EPA is developing a proposed national primary drinking water regulation for a group of 16 known cancer-causing compounds, including eight currently regulated cVOCs and up to eight from the CCL3.

4. **Perchlorate Rule**. The EPA is developing a proposed national primary drinking water regulation for perchlorate. Perchlorate may cause adverse health effects. Scientific research indicates that this contaminant can disrupt the thyroid's ability to produce hormones needed for normal growth and development.

5. **Hexavalent Chromium**. The EPA currently regulates hexavalent chromium as part of the total chromium drinking water standard. New information on health effects has become available since the original standard was set, and the EPA is reviewing this information to determine whether new health risks need to be addressed. The State of California has already implemented a hexavalent chromium specific MCL.

6. **Fluoridation**. Fluoride MCLs may be lowered in the future as the health impacts of fluoride are fully realized. The current MCL of 4 parts per million could be reduced to 1 or less. This lower MCL could require systems with naturally occurring fluoride above the MCL to treat to reduce levels. The City of La Pine appears to consistently have fluoride levels around 0.2 parts per million.

7. **Cybersecurity**. Executive Order 13636: Improving Critical Infrastructure Cybersecurity, was established in February 2013. The order calls for the development of a voluntary, risk-based cybersecurity framework. The EPA will make an evaluation as to whether any additional authority and/or regulations to address cybersecurity in the water sector are needed.

Regulatory Violations

According to the DWS website, the City of La Pine has had only one violation since 2003. This was a minor reporting violation, and the City has not triggered any enforcement action by the DWS.

Regulatory Requirements Summary

In summary, many regulations affect operation of the City of La Pine's water system. The information presented herein is intended to provide the City with a brief summary of the regulations and possible future regulations that will likely affect operation of the City's water system. These regulations continue to expand and will require careful attention to maintain compliance.

Water Demand

Future water demands, for the purpose of identifying needed future water system improvements, can be estimated from past water use data and population projections. Water use data are usually expressed in terms of various rates of water used for various periods of time. This allows components of the water system to be sized for the maximum demands that will be placed on them. The rates of water use that are important in evaluation of a water supply system are the average daily demand (ADD), which is the total amount of water used during a one-year period divided by 365 days; the peak daily demand (PDD), which is the maximum total amount of water used during any 24-hour period; and the peak hour or peak instantaneous demand, which is a measure of the maximum flow of water at any given time.

Water supply facilities are normally designed for PDD. As a rule, a well would be sized for supplying the needed water during the PDD without continuous 24-hour operation. For example, if the water usage during high demand summer months required a well pump to operate 18 hours or more per day to keep up with the PDD, the situation may warrant the addition of another well or other water supply source in order to provide some backup capability and to not over-stress the well pumping equipment. Booster pumps and distribution pipelines are generally sized to deliver peak instantaneous demands because they must be capable of meeting the highest demand. Storage reservoirs are sized to make up the difference between water supply capacity and peak water use rates, at a minimum. Additional capacity (reserve) is usually provided in water storage reservoirs for both emergencies and fire suppression.

Per Capita Water Use

In order to be utilized for projecting future water demands, past water use data must be converted to a per capita (per person) rate of use. This is done by dividing the average day, peak day, and peak instantaneous water use rates by the number of people being served by the water system. These water demand rates are then expressed as gallons per capita per day (gpcd). These values, multiplied by a population projected for some future year, would then give estimated total demand rates for that year.

Historical Average Water Use

To determine current water demands, production records for the water supply system, as reported to the Oregon Water Resources Department, were reviewed from 2007 through 2014. Population data for the same time frame were also utilized. Monthly well production data for the City of La Pine's Wells 1A and 2B are shown on Charts 2-2 and 2-3. Chart 2-4 shows the combined total of both wells.

CHART 2-2
WELL 1A PRODUCTION

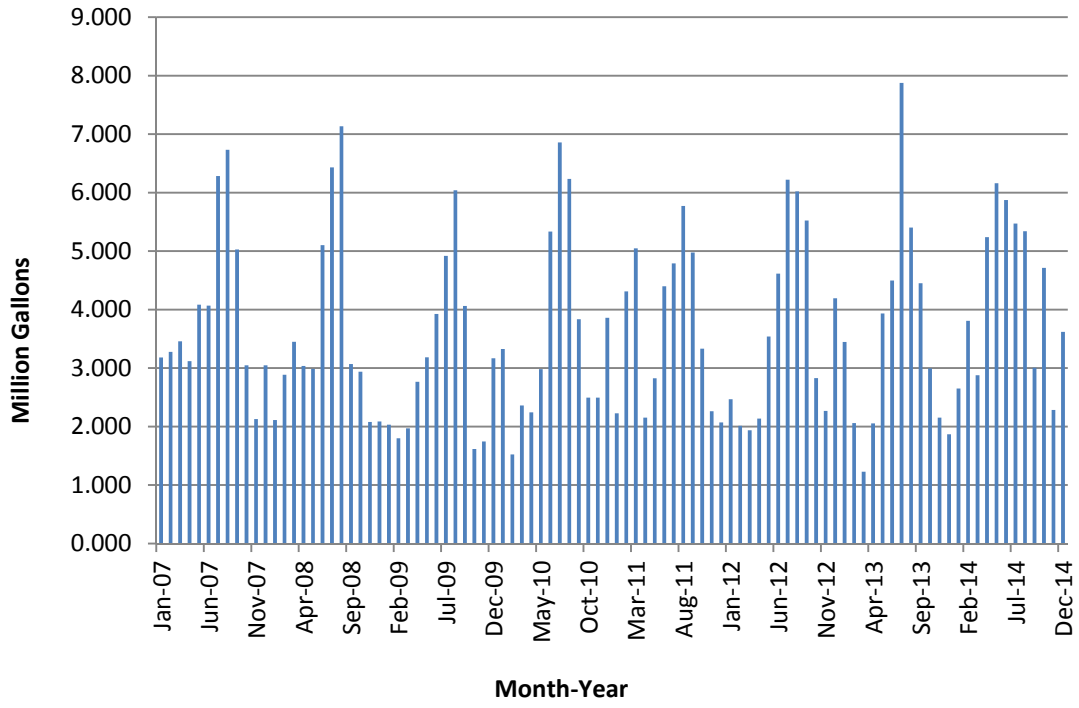


CHART 2-3
WELL 2B PRODUCTION

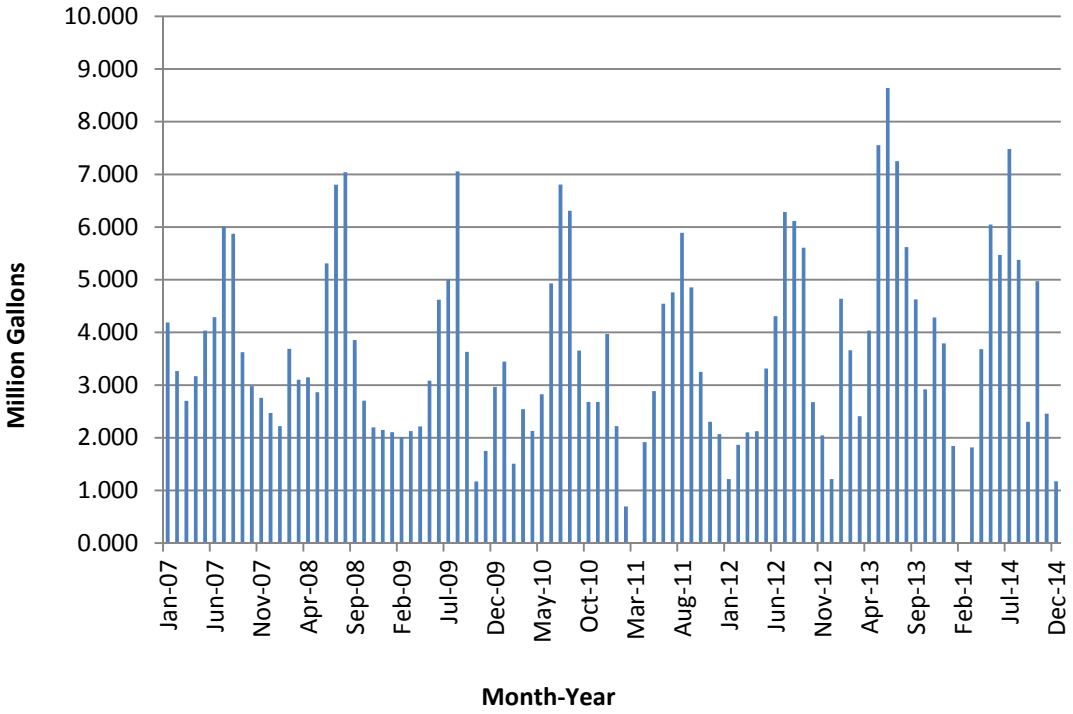
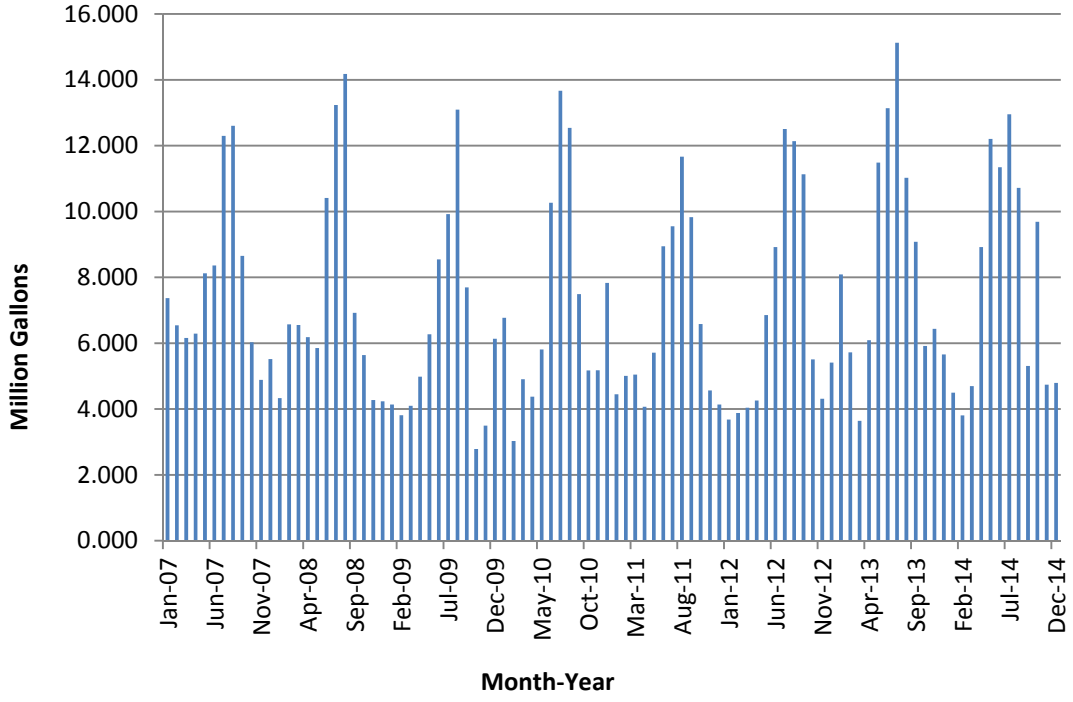
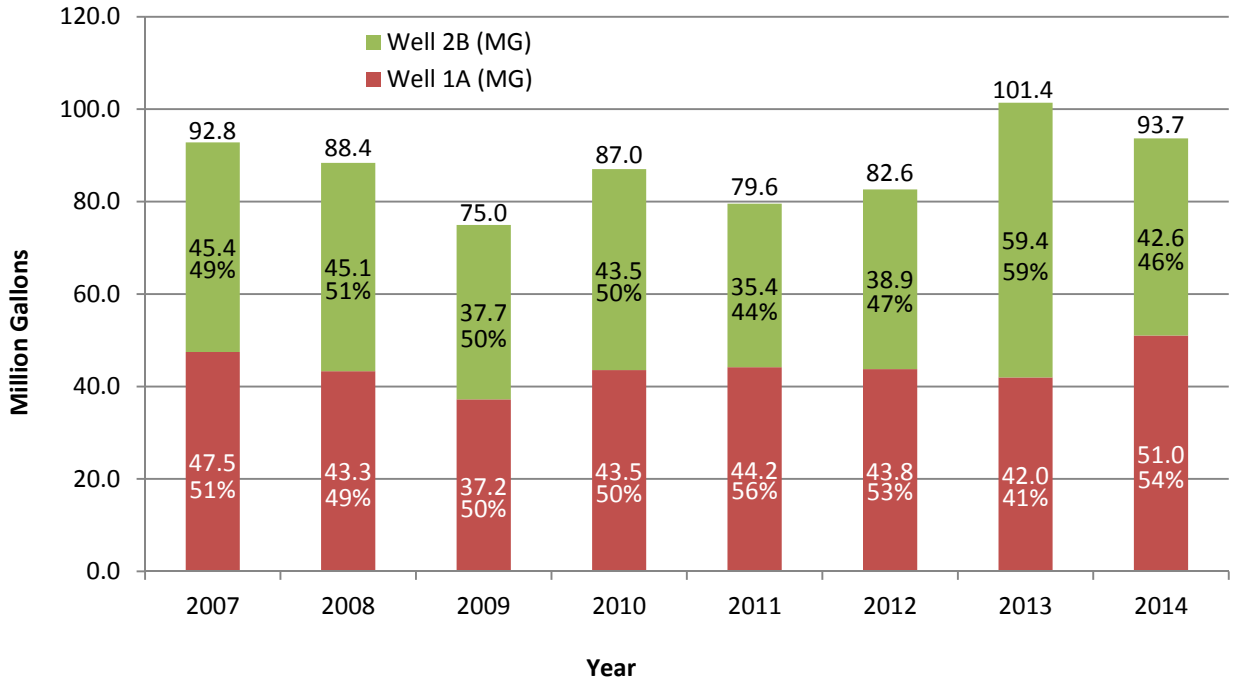


CHART 2-4
TOTAL PRODUCTION



It can be seen from the monthly data that the City of La Pine experiences high demand during the summer months and lower demands during the winter months, which is a typical pattern. The monthly demand during the summer is nearly three times the monthly demand during the winter. The City's wells are programmed to alternate operation. Therefore, each well should operate roughly 50 percent of the time. Chart 2-5, which shows total annual flow from both supply sources, shows that this is generally true.

CHART 2-5
TOTAL ANNUAL WATER PRODUCTION



Average Daily Demands

Utilizing the data compiled on Charts 2-2 through 2-5 and population data for the same time period, Table 2-1 was developed to estimate ADD expressed in gpcd or gallons per person per day.

TABLE 2-1
HISTORICAL WATER DEMANDS

Year	Total Water Production (MG)	Estimated Population Served by Water System	ADD (gpcd)
2007	92.820	902	282
2008	88.391	922	263
2009	74.957	937	219
2010	87.030	972	245
2011	79.553	982	222
2012	82.632	982	231
2013	101.392	982	283
2014	93.664	982	261

In the past eight years, the ADD has varied from a low of 219 gpcd in 2009 to a high of 283 gpcd in 2013. For planning purposes and to be conservative, an ADD of 280 gpcd will be used.

Peak Daily Demands

PDD usually occur during a particular day between June and September, which is when water use is normally at its greatest due to irrigation and other summer uses. PDD can occur in other months, but normally occur during the hottest period of the year. For planning purposes, a peaking factor was assumed to estimate a PDD. Peaking factors (a ratio of ADD to PDD) typically range anywhere from 2.0 to 3.5. For the purpose of this WSS Update, a peaking factor of 2.5 was assumed, which is a typical average peaking factor. This value provides a corresponding PDD value of 700 gpcd.

The ADD and PDD assumed for planning purposes are summarized in the following table. These demands have also been summarized as a flow rate to provide the basis for comparison to water supply capacity.

TABLE 2-2
YEAR 2015 AVERAGE AND PEAK DAILY DEMAND DATA

Parameter	System Demand (gpcd)	Estimated Population Served by Water System	Total Demand (gpm)	Percentage of System Capacity (Assumed Total Capacity of 1,200 gpm)*
ADD	290	982	198	16
PDD	700	982	477	40

gpm = gallons per minute

**Current combined capacity of Wells 1A and 2B is approximately 1,200 gpm.*

Fire Demand

Fire Protection Ratings

Flow rates for fire suppression in residential, commercial, and industrial areas within developed communities are usually determined from the size, density, and occupancy of buildings, type of construction materials, and desired fire insurance rating. Incorporated cities and some rural areas are given a fire suppression rating by Insurance Services Office, Inc. (ISO). The rating is used by

insurance companies to determine the cost for providing fire insurance to home and business owners. ISO's fire suppression rating schedule is used to review those features of available public fire protection that have a significant influence on minimizing damage once a fire has begun. These features include the receiving and handling of fire alarms; the fire district's manpower, equipment and training; and the capability of the water system to provide the needed fire flows.

ISO periodically evaluates fire suppression capabilities of incorporated cities and rural fire districts. The numerical ratings range from Class 1 to Class 10, with Class 1 indicating the highest fire suppression capability and Class 10 the lowest. A Class 10 rating is reserved for unprotected areas that have no fire department and no water supply system. Most protected areas outside of cities have a Class 9 rating, and most small rural cities with municipal water systems are rated Class 7, 6, or 5, depending on the strength of their water system and fire department. The ISO rating for La Pine, based on the 2012 evaluation, is Class 4, which is a relatively high score for a rural community.

ISO's fire suppression rating schedule evaluates the City's fire department capabilities and the domestic water supply capacity on an approximately equal basis (50 percent and 40 percent of the rating schedule, respectively). To reduce the cost of fire insurance in a community, improvements usually must be made to the fire department, the water system, or both, depending on their present condition. It is difficult to determine possible fire insurance savings on commercial buildings because the insurance costs are determined by many other factors related to the type of occupancy and the type of building construction. The City of La Pine has a good rating compared to other rural Oregon communities.

Recommended Fire Flows

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

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

Recommended fire flows for commercial buildings are based on many factors including building size, construction materials used, and what is housed in the building.

The International Fire Code (IFC) requires a minimum flow of 1,000 gpm in residential areas and a minimum of 1,500 gpm for a minimum of two hours in all other occupancies. These requirements increase with square footage of the building and can be quite large for commercial and institutional buildings (schools). These fire flows must be maintained with a system-wide minimum of 20 pounds per square inch residual pressure. Attaining the required fire flows for commercial areas may not be realistically achievable. The IFC has an allowance for decreases in fire flows for small communities (if approved by the local fire chief), where development of full fire flows is impractical.

The 2012 ISO Hydrant Flow Data Summary recommends needed fire flow protection rates for both residential and commercial districts to receive full credit ratings. ISO does not consider needed fire flows over 3,500 gpm in determining the Public Protection classification for cities. The fire flow design criterion for this WSS Update is based on the typical maximum fire flow recommended by ISO, which is 3,500 gpm for a 2-hour duration. This maximum fire flow is typically recommended for school areas and other high-density development.

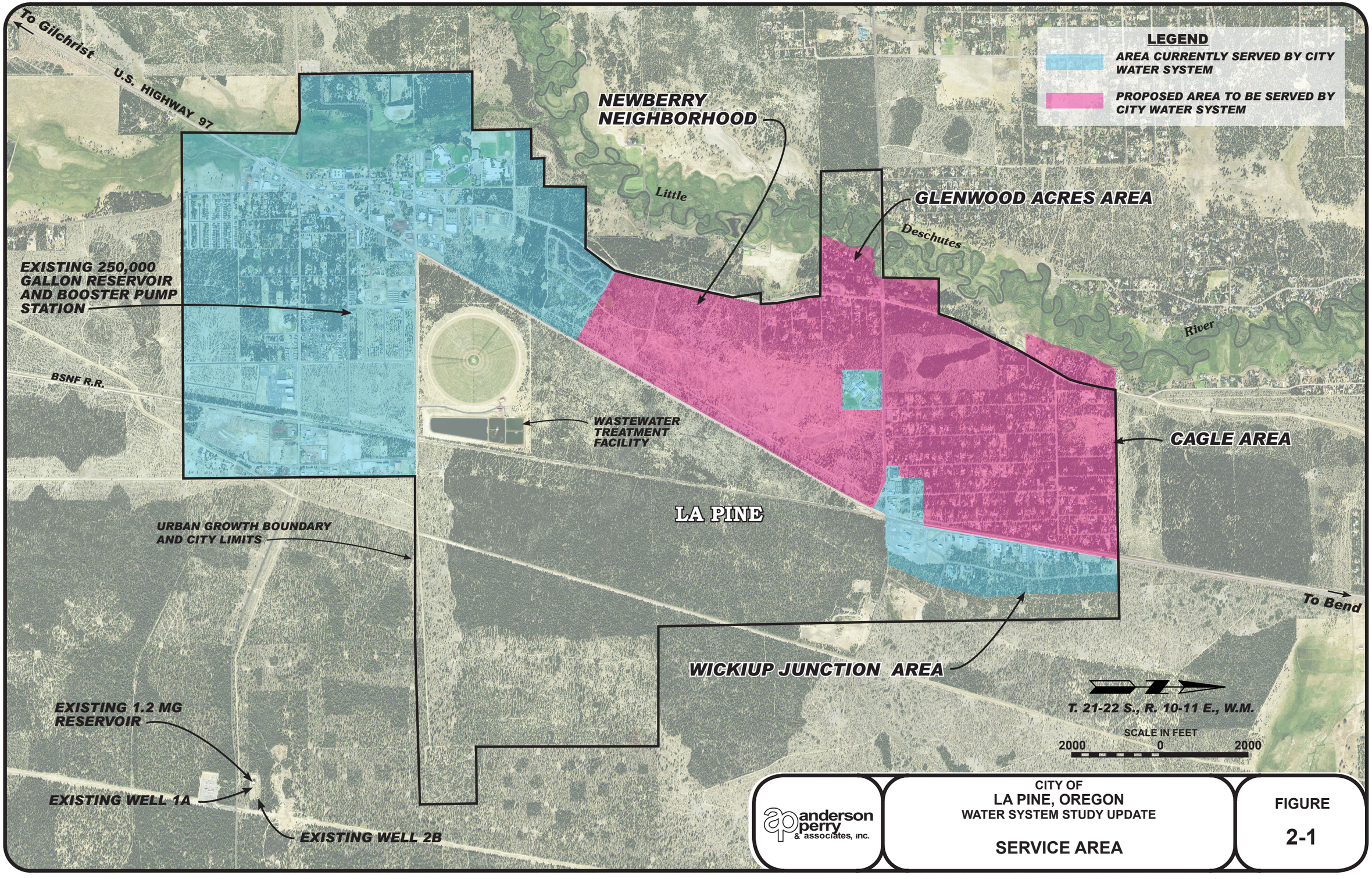
Available Fire Flow

As part of the 2012 ISO Public Protection Classification Summary Report, hydrant flow tests were completed. These tests show that in most parts of the City of La Pine, adequate fire flows are available. The distribution system and available fire flows are discussed in more detail in Chapter 5, Distribution System.

Design Criteria

In establishing design standards for a water system, primary consideration must be given to state and federal rules and regulations governing water quality and construction standards for water systems. These regulations, as previously stated, are set by both the EPA and DWS. In addition to these public health and safety requirements, many other factors control the design parameters for municipal water systems. The City must evaluate factors such as financial feasibility, philosophy and policies of the City Council, past system performance and service, and expectations of the water users. All of these factors are important and can influence the standards by which water system improvements are made.

Figure 2-3 presents a summary of the water system design criteria for evaluating the existing water system and developing improvements to satisfy present and future needs. Application of these criteria is discussed further in the specific chapters that address the water supply, storage, and distribution system facilities. The figure presents design criteria for three situations (three columns shown on Figure 2-3). First, the design criteria are shown based on the estimated present service population of 982. Second, the design criteria are shown to include the current and expanded service population of 1,670 to include the addition of the Cagle and Glenwood Acres areas. Design criteria are finally shown for the year 2035 including all areas based on a 2.2 percent growth rate per year in the City. Storage volumes are derived from calculations summarized in Chapter 4. The design criteria presented on Figure 2-3 are used as base information and discussed in greater detail in later chapters for evaluating existing and future system needs and capability.



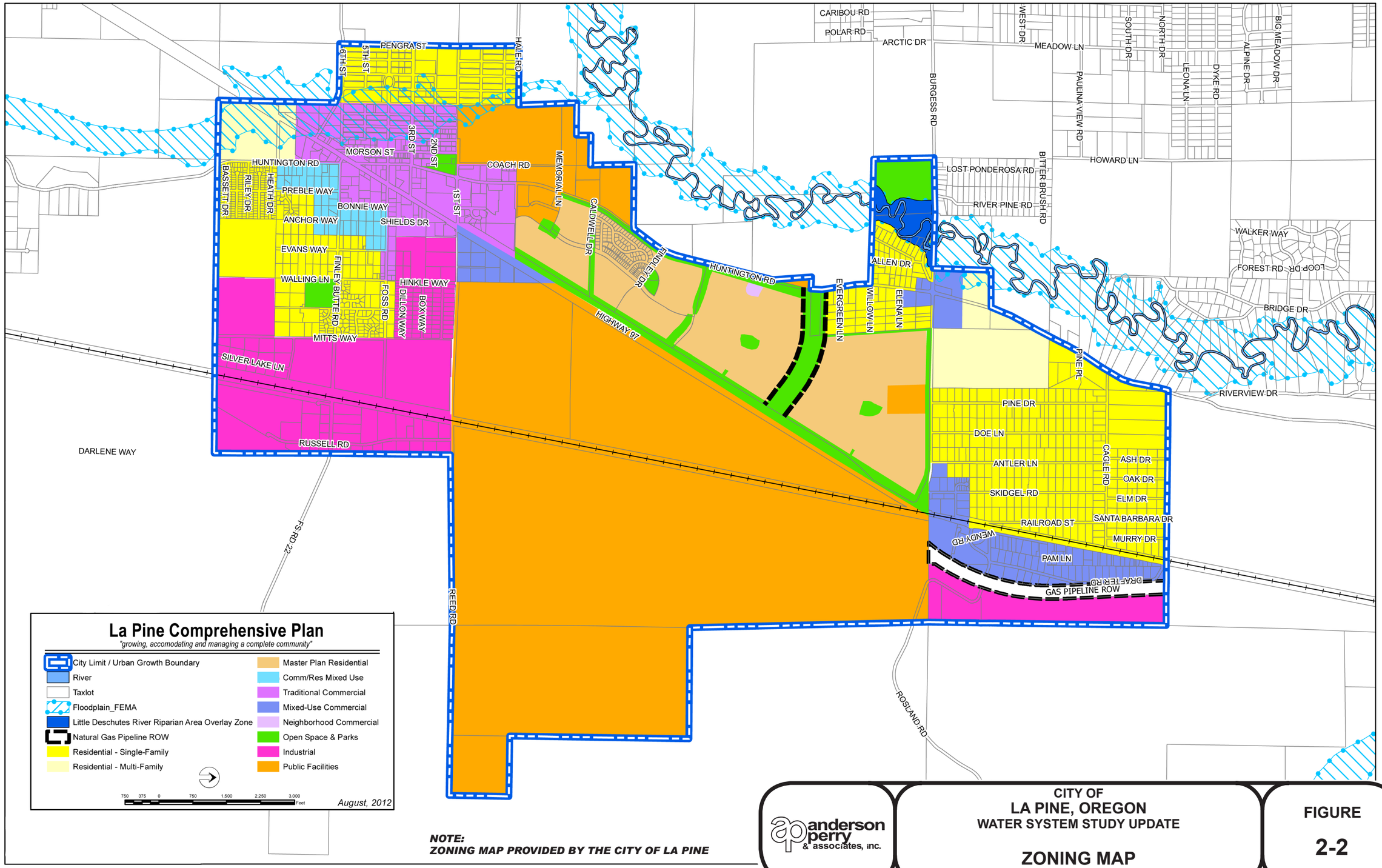
CITY OF
LA PINE, OREGON
WATER SYSTEM STUDY UPDATE

SERVICE AREA

FIGURE
2-1

anderson perry & associates, inc.

Job# 33-05-020 Dec. 28, 2015 lbauer



La Pine Comprehensive Plan

"growing, accomodating and managing a complete community"

- City Limit / Urban Growth Boundary
- River
- Taxlot
- Floodplain_FEMA
- Little Deschutes River Riparian Area Overlay Zone
- Natural Gas Pipeline ROW
- Residential - Single-Family
- Residential - Multi-Family
- Master Plan Residential
- Comm/Res Mixed Use
- Traditional Commercial
- Mixed-Use Commercial
- Neighborhood Commercial
- Open Space & Parks
- Industrial
- Public Facilities

750 375 0 750 1,500 2,250 3,000 Feet

August, 2012

NOTE:
ZONING MAP PROVIDED BY THE CITY OF LA PINE

anderson perry & associates, inc.

CITY OF
LA PINE, OREGON
WATER SYSTEM STUDY UPDATE

ZONING MAP

FIGURE
2-2

Job# 33-05-020 May 26, 2015 lbauer

SUMMARY OF DESIGN CRITERIA

	Year 2015	Year 2015, with Cagle and Glenwood Acres Areas	Year 2035, 2.2 Percent Per Year Growth
Water System Users	982	1,670	2,581
Supply			
Average Daily Demand (gpcd)	280	280	280
Average Daily Flow (gpd)	274,960	467,600	722,680
Average Daily Flow (gpm)	191	325	502
Peak Daily Demand[1] (gpcd)	700	700	700
Peak Daily Flow[1] (gpd)	687,400	1,169,000	1,806,700
Peak Daily Flow (gpm)	477	812	1,255
Peak Hourly Flow[2] (gpm)	1,193	2,030	3,137
Estimated Supply Flow Available[3] (gpm)	1,200	1,200	1,200
Estimated Supply Flow Required[4] (gpm)	636	1,082	1,673
Fire Demand			
Residential (gpm)	1,000	1,000	1,000
Commercial/Public (gpm)	3,500	3,500	3,500
Duration (hour)	2	2	2
Minimum Residual Line Pressure Under Peak Demands Plus Fire Flow (psi)	20	20	20
Storage			
Equalization Storage[5] (gal)	0	124,400	290,500
Operating Storage[6] (gal)	96,000	96,000	96,000
Fire Reserve[7] (gal)	420,000	420,000	420,000
Emergency Reserve[8] (gal)	274,960	467,600	722,680
Total Recommended Storage (gal)	790,960	1,108,000	1,529,180
Total Existing Storage[9] (gal)	1,200,000	1,200,000	1,200,000
Potential Storage Need (gal)	0	0	329,180

gpd = gallons per day
gpcd = gallons per capita per day
gpm = gallons per minute
gal = gallons
psi = pounds per square inch

[1] = 2.5 times average daily demand.
[2] = 2.5 times peak daily flow.
[3] = Well 1A and Well 2B each have a capacity of 600 gpm.
[4] = Total capacity required to operate well pumps a maximum of 18 hours per day and meet peak demands.
[5] = Difference between peak hourly flow and available supply for a 2.5-hour period.
[6] = Reservoir operating level is between 96 and 88 percent. Resulting 8 percent of 1.2 MG equals 96,000 gallons.
[7] = 3,500 gpm flow for two-hour duration, assuming only storage is used.
[8] = One-day supply at average daily demand, assuming only storage is used.
[9] = Available existing storage is approximately 1,200,000 gallons. 250,000-gallon bolted reservoir considered non-operational.

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CITY OF
LA PINE, OREGON
WATER SYSTEM STUDY UPDATE

SUMMARY OF DESIGN CRITERIA

FIGURE 2-3

Chapter 3 - Water Supply

Introduction

This chapter includes a description of the City of La Pine's present water supply system and a discussion of its capacity to meet present and future needs. The current water supply system consists of two basalt wells. The City does not currently disinfect its drinking water and has had few issues meeting water quality standards. Needs and concerns associated with the water supply facilities are discussed. Water rights are also addressed.

Present Water Supply

General

The City has two water supply wells, both located adjacent to the 1.2 million gallon (MG) reservoir on Finley Butte Road (Finley Butte Reservoir). The wells are located on City-owned property, approximately 1.5 miles east of La Pine. The locations of the wells are shown on Figure 1-1, Location and Vicinity Maps, in Chapter 1. The City of La Pine does not have any interconnections with other water systems.

Critical Groundwater Areas

The City's wells are not located in an area designated by the Oregon Water Resources Department (OWRD) as critical groundwater or groundwater limited.

Wells 1A and 2B

According to well log data, Wells 1A and 2B are 251 and 254 feet deep, respectively, and have been the sole water source for the City (formerly the La Pine Water District) for the past 13 years. The well logs for Wells 1A and 2B are located in Appendix A. When pump tested, the wells were each capable of providing 1,300 gallons per minute (gpm) of water, with drawdown depths of 24 and 13 feet, respectively. If both wells are pumped at the same time, it could have a negative impact on the aquifer. If demands require utilizing both wells at once, the City should closely monitor the impacts to static and pumping water levels in the aquifer.

Disinfection and Treatment

The City of La Pine has had few issues with water quality in the past, and the City's water does not require treatment. Currently, water from Wells 1A and 2B is not chlorinated prior to entering the storage reservoir and, ultimately, the distribution system. In the past 13 years, the system has only had one alert, one violation, and zero enforcement actions from the Oregon Health Authority - Drinking Water Services (DWS).

System Operational Controls

The water system operates based on the water level in the 1.2 MG Finley Butte Reservoir. When the water level in the Finley Butte Reservoir drops to a depth of approximately 54.5 feet (or 88 percent of capacity), a low reservoir signal activates the well pumps. Each well is operated individually in

alternating fashion. The 250,000-gallon bolted steel reservoir located in south La Pine (the Public Works Reservoir, which is discussed in more detail in Chapter 4) and accompanying booster pump station are not currently used.

Well Monitoring and Maintenance

Static Water Level Trends

The static water level is the depth to water in a well when the well is not in use, in a static condition. Over time, static water levels can be the best indicator of the status and condition of the underlying aquifer. According to well logs, the static water level in Wells 1A and 2B ranged from 116 to 118 feet below ground surface when the wells were initially drilled. A reduction in static water levels could indicate the aquifer is being depleted faster than it can be recharged. It is very important to observe any trends in static and pumping water levels in the City's wells. Data collected can then be plotted over time (several years) to observe any trends.

Well Capacity

To keep functioning properly and working efficiently, wells require periodic maintenance. Many wells have a tendency to lose efficiency over time. The result of lost efficiency is either decreased yield (gpm) or greater pumping drawdown. This results in higher pumping costs and loss of production.

Specific capacity (production in gpm per foot of drawdown) is a measure of the well's ability to yield water. Wells can lose efficiency and capacity for a variety of reasons, including mechanical clogging, bacterial clogging, and loss of pump efficiency. Observing changes in a well's specific capacity over time will alert a well owner of developing well efficiency problems.

It is recommended that the City perform simple specific capacity pumping tests either annually or biannually on each well. The results should be recorded and plotted on a graph over time. A specific capacity test is easily performed by pumping the well using the existing well pump and documenting static water levels, drawdown, and pumping rate of the well. This is best performed during a period when the well has been sitting idle for a few weeks. The idle time is needed to normalize the well's static water level. Noting a reduction in specific capacity will indicate problems with the well and the need to take corrective action before the problem becomes more difficult to address and/or potentially irreversible. If specific capacity has not decreased but pumping rates have, this may indicate a problem with the pump rather than the well.

Rehabilitation work may include a variety of approaches depending on the nature of efficiency loss. Rehabilitation work may be accomplished using mechanical cleaning or non-mechanical methods such as shocking with percussion apparatuses, chemical addition, or chlorination. In some cases, it may be necessary to use a combination of mechanical and non-mechanical methods. Generally, the longer rehabilitation work is delayed, the greater the risk that lost capacity can be recovered. Tracking well production over time by performing this relatively easy specific capacity test provides good information to project forward and budget for a maintenance activity that may be required on the well.

Water Rights

The City of La Pine holds several water rights issued by the State of Oregon for its groundwater sources. Copies of the City's water right permits and applications are presented in Appendix B. A summary of the water right information follows:

TABLE 3-1
WATER RIGHTS

Application Number	Permit Number	Water Right Certificate	Transfer Number	Water Source*	Allowed Flow Volume (cfs/gpm)	Priority Date	Allowed Use
G-13552	G-13444	---	T-9241	Well 1A Well 2B	2.23/1,000	11/8/1993	Quasi-Municipal
G-17422**	---	---	---	Well 1A Well 2B	1.4/628	9/13/2010	Municipal
G-12500***	G-12545	---	---	Well 1 Well 2	0.22/100	6/20/1996	Irrigation

cfs = cubic feet per second

**Wells 1A and 2B are the City's main supply source, located adjacent to the 1.2 MG reservoir on Finley Butte Road.*

***Due to the Deschutes Basin Mitigation Program, the City is required to provide 405.2 mitigation credits before a permit will be issued on this application.*

****Wells 1 and 2 are located at the City of La Pine's wastewater treatment facility (WWTF) and were used to supplement irrigation. These wells are not currently being used.*

Municipal Water Rights

Permit G-13444 allows for an instantaneous flow of 1,000 gpm (2.23 cfs). Currently, the City can use approximately 120 percent of this water right with the existing pumping capacity of Wells 1A and 2B (approximately 600 gpm each). The City has pending water rights applications, as discussed below. Permit G-13444 was transferred from an old well located in the same vicinity as Wells 1A and 2B, which was abandoned once Wells 1A and 2B were constructed.

Application G-17422 requests an additional 628 gpm (1.4 cfs) of instantaneous flow from Wells 1A and 2B. In 1999, a collaboration of agencies began creating what would become the Deschutes Basin Mitigation Program. To describe the program briefly, a study found that the vast majority of flow in the Middle Deschutes River comes from groundwater in the Deschutes Basin that enters surface water near the Pelton Dam. Due to the economic and social importance of the Deschutes River, the Deschutes Basin Mitigation Program was instituted in order to create a system of mitigation for any new groundwater permits acquired through the state. Since the City of La Pine applied for 1.4 cfs of additional groundwater rights in the Deschutes Basin, they are required to provide mitigation for that flow. Mitigation can occur through the purchase of mitigation credits or by completing a project that conserves the amount of flow being requested, among other potential options. If the City does not provide mitigation within 5 years of the approval of the application, the application will be withdrawn.

Permit G-12545 allows for an instantaneous flow of 100 gpm (0.22 cfs). The points of appropriation are Wells 1 and 2, both of which are located at the City's WWTF. These wells were used to supplement irrigation of the 75-acre field utilized to dispose of treated effluent.

It appears that none of the City's groundwater permits are certificated. Where possible, it is recommended the City complete a Claim of Beneficial Use (COBU) to obtain a certificate of water rights. This should be completed for Wells 1A and 2B as soon as reasonably possible. A certificated water right is more secure when compared to a permit.

Water Supply Analytical Testing

General Supply Well Testing Data

Summaries of analytical data related to the City's water quality testing were obtained from the DWS' website. The City's wells have been sampled for the constituents required by the DWS, including total and fecal coliforms, volatile organic compounds, synthetic organic compounds, inorganic compounds, radiological agents, pesticides, fluoride, nitrates, nitrites, arsenic, asbestos, and several metals. As shown in the City's testing data, most constituents were either not detected or levels were below the corresponding U.S. Environmental Protection Agency (EPA) primary drinking water maximum contaminant levels.

Distribution System Water Quality Testing

Although the distribution system is discussed in greater detail in Chapter 5, a brief discussion of distribution system sample analytical testing is presented herein for completeness. The City routinely obtains samples from the distribution system for analysis of total coliforms and *E. coli.* In the past 7 years, the system has not tested positive for total coliforms or *E. coli.* Total coliform bacteria are commonly found in the environment (e.g., soil or vegetation) and are generally harmless. When only total coliform bacteria are detected in drinking water, the likely source is environmental, and fecal contamination is not likely. However, if environmental contamination is able to enter the system, this may indicate that there is a way for pathogens to enter the system and, therefore, it is important to find the source and resolve the issue. The City has had an excellent water quality record, and no environmental contamination appears to be occurring in the City's system.

The City also obtains samples from the distribution system for chemical analysis of lead, copper, and radionuclides. From 2002 through 2012, all detected concentrations of lead, copper, and radionuclides were less than their corresponding EPA action levels. Results from the City's coliform, lead, copper, and radionuclide tests are summarized in DWS' water quality testing summaries in Appendix C.

Water Supply Design Criteria

As presented in Chapter 2, the planning period for this Water System Study Update extends to the year 2035. The 2014 certified population of La Pine is 1,670. For planning purposes, this population has been assumed as the current population. With the addition of the Cagle and Glenwood Acres areas and the assumed 2.2 percent per year population growth, the projected population for the year 2035 is 2,581. Based on this population data and the City's current water use characteristics, the average daily demand

(ADD) and peak daily demand (PDD) are shown on Table 3-2. These values assume that the Cagle and Glenwood Acres areas are added to City's system as soon as reasonably possible.

TABLE 3-2
PROJECTED WATER DEMANDS

Year	Population Served by Water System	Average Daily Flow (gpm)	Peak Daily Flow (gpm)
2015	1,670	325	812
2035	2,581	502	1,255

Water supply facilities are normally designed to meet PDD without having to provide 24-hour service. The current total production capability of the City's water system is in the range of 1,200 gpm. The capacity of Wells 1A and 2B is approximately 600 gpm each. These wells are currently able to meet the current PDD during summer months and appear to be able to meet the ADD in the year 2035 but would require nearly continuous operation of the well pumps.

It should be noted that future changes in the City's projected population, water use characteristics, and/or available supply could affect these assumptions. The City should periodically review this information to ensure additional water supply flows beyond those recommended herein is not needed sooner than anticipated to meet City demands.

Water Supply Reliability

The reliability of the water supply is one of the most important components of any water system. Because the health and safety of the community depends on a reliable water source, high priority should be given to help ensure a municipal water system always has the ability to meet the water needs of its customers. A number of factors, such as mechanical failures, water quality concerns, power outages, primary water transmission line failures, etc., can affect the reliability of a water supply. It is nearly impossible to ensure 100 percent reliability of any system. However, having proper system components can reduce the risk of a water supply failure.

The City of La Pine uses two basalt wells for their water supply. In general, a groundwater well source is less susceptible to seasonal fluctuations in weather patterns, drought, or contamination than a surface water source. Although the City's water sources have been reliable, certain events could affect La Pine's water supply. When evaluating the system's performance, several potential weaknesses were identified as follows:

1. Transmission line failure
2. Source contamination
3. Equipment failure at the well site
4. Contamination in reservoir

While the City's supply has been reliable in the past, the wells are located near one another. Should an issue occur at the site, including equipment failure, the City could be forced to rely entirely on storage reserves to serve the City. In the event of a power outage, the City has a generator located inside the

Well 1A pump station building. This will allow the City to continue to serve its customers during a power outage from Well 1A.

However, if contamination at the well site or in the Finley Butte Reservoir were to occur, the City would not be able to supply water to customers. In fact, the fire hydrant located near the Finley Butte Reservoir was damaged by a vehicle earlier this year, which also damaged the transmission line to the City of La Pine. This damaged fire hydrant partially drained the Finley Butte Reservoir and caused a large amount of sediment to enter the distribution system. The City had to curtail water and issue a boil order.

Currently, the existing water system components do not provide the City with an adequate degree of redundancy. There is a limited redundancy provided in the water supply system since Wells 1A and 2B are the only supply sources for the City, and the Finley Butte Reservoir is the only storage available to serve the City, all located adjacent to each other. As discussed earlier, the Public Works Reservoir is currently not utilized due to leaking. All water delivered to the City of La Pine must pass through a single 16-inch transmission line. If a transmission line failure were to occur, the City would be unable to supply water to customers.

Potential contamination in the reservoir is discussed in more detail in Chapter 4.

Water Supply Alternatives

At this time, the City has enough water supply source capacity to meet current and future ADD. As discussed earlier, it is desirable to design a system with enough source capacity to provide for the PDD without requiring the well pumps to operate for 24 hours a day. Considering this, it appears the City will need to provide additional source capacity to meet the PDD in the 20-year planning period. As shown on Figure 2-3, the 2035 PDD flow requirement is estimated to be 1,255 gpm. The current capacity from Wells 1A and 2B is 1,200 gpm. It is recommended the City increase its supply capacity in order to provide for anticipated demands without continuous well operation. The following alternatives were considered to meet this objective.

Existing Well Site Expansion Alternative

As discussed earlier in this chapter, the existing well site currently consists of two basalt wells. Expanding the existing well site was considered for the purpose of providing additional source capacity for the system. The current wells at the Finley Butte Reservoir site can produce approximately 600 gpm each. While it would be beneficial to place an additional well at this site, due to the fact that the City of La Pine owns the land, it would not provide redundancy to the system since all the wells would be at one location. It should also be noted that the wells in close proximity to one another could have a negative impact on well capacity if multiple wells are required to operate continuously.

New Northside Well Improvements Alternative

As discussed earlier, it is desirable for redundancy purposes to have an additional source that is removed from existing Wells 1A and 2B. An additional well, located on the north side of the City, could provide additional source capacity, as well as a separate supply source. A new well would preferably be located adjacent to a new reservoir, east of the City at a high enough elevation. The

land in the vicinity of the proposed well on the north side of the City and east of the City is owned by the Bureau of Land Management (BLM). The City would need to either purchase land or obtain an easement from the BLM to place the new well. A schematic drawing and cost estimate for this Northside Well alternative are included in Figures 4-1 and 4-2 in Chapter 4. Additionally, a reservoir could be constructed adjacent to the Northside Well, to provide a fully functioning alternative water supply source and storage component. This proposed reservoir is discussed further in Chapter 4.

The benefit of having the proposed well adjacent to the proposed reservoir is improved water quality via water circulation. This is often done by connecting a well source directly to the reservoir, much like the City's existing Wells 1A and 2B. When the water level in the reservoir drops, the well turns on and fills the reservoir, providing a continuous fresh supply of water from the reservoir into the water system. The proposed reservoir and well is discussed further in Chapter 4.

Recommendations

Water Supply Recommendations

To provide further redundancy for the City's water supply and to meet anticipated demands, the City should develop a supply source separate from the existing wells. It is recommended that the City drill a new well on the north end of the City of La Pine and east of the City at a similar elevation to the existing wells. The total estimated cost to drill a new basalt supply well, including a new pump station and all required controls and equipment, is $1,075,000, as shown on Figure 3-1. The option of expanding the existing well site may or may not be able to produce the water needed to meet the City's demands. The City also expressed concern with all of the City's supply coming from one source location.

Water from the proposed Northside Well will need a pump station and should be paired with a reservoir, as discussed previously and in further detail in following chapters. A dedicated pipeline constructed from the Northside Well to the distribution system would also be required.

Water Rights Recommendations

As mentioned previously in this chapter, the City is permitted to withdraw only 1,000 gpm under existing water right permits. To provide additional source from the Northside Well, additional water rights will need to be pursued. The City has already applied for these rights and will need to acquire mitigation credits in order to receive a permit for those rights. These credits should be pursued as soon as possible. It is possible for municipalities to obtain credits incrementally, so they could be purchased over time. Information regarding the Deschutes Basin Groundwater Mitigation Program is included in Appendix D.

The City should also add the proposed well north of the City as an additional point of appropriation to Permit G-13442 and Application G-17422 to provide operational flexibility for the system.

The City should also complete a COBU for Wells 1A and 2B to obtain a certificated water right from the OWRD.

Summary

The City of La Pine is currently relying on Wells 1A and 2B to meet system demands. It appears the City has enough supply capacity to meet current demands as well as estimated demands once the Cagle and Glenwood Acres areas are added to the system, as long as both Wells 1A and 2B are fully operational. However, the location and lack of redundancy in the City's existing water supply system warrants the addition of a well on the north side of the City. This new well is also needed to meet 20-year anticipated demands. This well will also help benefit the City's storage and distribution system hydraulic deficiencies, which are discussed in detail in Chapters 4 and 5.

CITY OF LA PINE, OREGON
WATER SYSTEM STUDY UPDATE
NEW NORTHSIDE WELL AND PUMP STATION
IMPROVEMENTS PRELIMINARY COST ESTIMATE
(Year 2015 Costs)

NO.	DESCRIPTION	UNIT	UNIT PRICE	ESTIMATED QUANTITY	TOTAL PRICE
1	Mobilization/Demobilization	LS	$ 39,000	All Req'd	$ 39,000
2	Project Safety and Quality Control	LS	5,000	All Req'd	5,000
3	New Well Including Drilling, Casing, Testing, Well Pump	LS	205,000	All Req'd	205,000
4	Pump Station Site Work Including Security Fencing	LS	30,000	All Req'd	30,000
5	Pump Station Building (Approximately 400 Square Foot Block with Metal Roofing)	LS	80,000	All Req'd	80,000
6	Pump Station Piping, Valves, and Fittings	LS	125,000	All Req'd	125,000
7	Pump Station Electrical, Controls, and Instrumentation	LS	300,000	All Req'd	300,000
8	Telemetry and Supervisory Control and Data Acquisition Development	LS	30,000	All Req'd	30,000
				Subtotal Estimated Construction Cost	**$ 814,000**
				Construction Contingency (10%)	81,500
				Total Estimated Construction Cost	**$ 895,500**
				Design and Construction Engineering (20%)	179,500
				TOTAL ESTIMATED IMPROVEMENTS COST (2015 DOLLARS)[1]	**$ 1,075,000**

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CITY OF
LA PINE, OREGON
WATER SYSTEM STUDY UPDATE
NEW NORTHSIDE WELL AND PUMP STATION IMPROVEMENTS PRELIMINARY COST ESTIMATE

FIGURE
3-1

Chapter 4 - Water Storage

Introduction

This chapter presents information on the City of La Pine's water storage facilities. The purpose for storage in municipal water systems is discussed. The condition and needs of the City's existing storage reservoirs are outlined, and recommended storage requirements to meet 2035 design criteria are presented. The types of storage facilities generally available are outlined. Cost estimates for storage reservoir improvement alternatives are presented at the end of this chapter.

General

Water storage facilities are constructed to serve several purposes. First, storage reservoirs are often used to provide control for well or booster pump system operation. When a reservoir drops a few feet or more from the full level, the water level can be used as a control for well pump or booster pump activation. The amount of storage required for this type of control is called "operating storage." Second, stored water is used to supply water during periods in which the demand for water exceeds the available water supply. This reserve is called "equalization storage." Third, reserve storage is usually provided to supply unusually high, short duration demands, such as fire flows. This is referred to as "fire reserve." Finally, reserve storage is also often provided for emergencies that may arise and interfere with production from water supply sources. Such emergencies could be created by power outages, mechanical equipment failure, or water supply source contamination. The amount of storage to be provided for an emergency depends on the likelihood and the impact of such an occurrence. The amount of emergency storage provided usually becomes a balance between what is needed and what can be afforded. This storage allowance is usually called "emergency reserve."

Storage facilities can be located at approximately the same elevation as the water distribution system. Storage facilities of this type require continuous operation of a booster pump system to maintain distribution system pressure. Storage facilities can also be elevated, in which case the water is stored at an elevation considerably above the distribution system in order to generate adequate system pressure. For example, a water elevation of 120 feet above a distribution system would be required to generate a distribution system static pressure of approximately 50 pounds per square inch (psi). Reservoirs may be constructed to this elevation by locating them on natural ground above the service area or by construction on top of a steel support frame.

Storage reservoirs are generally constructed of either steel or reinforced or prestressed concrete. The choice is usually based on an economic analysis made for the particular installation. Reservoirs may be constructed either aboveground or buried, with the choice made based on cost, location, and community acceptance. The remainder of this chapter reviews the City's existing storage facilities, presents a discussion of future storage needs, and provides alternatives for satisfying those needs.

Existing Facilities

The City of La Pine's existing municipal water storage consists of an approximately 1.2 million gallon (MG) ground-level welded steel reservoir (Finley Butte) and an approximately 250,000-gallon ground-level bolted steel (Public Works) reservoir.

Finley Butte Reservoir

The Finley Butte Reservoir was constructed in 2002 for the La Pine Water District and serves all of La Pine through a gravity-fed system. The tank has a base elevation of approximately 4311 feet above mean sea level (MSL) and is located near Finley Butte, east of La Pine. The reservoir is 60 feet tall with a diameter of approximately 60 feet and holds approximately 1.2 MG. Wells 1A and 2B discharge directly into the Finley Butte Reservoir. A 16-inch transmission main line conveys water from the Finley Butte Reservoir to the distribution system.

Public Works Reservoir

The Public Works Reservoir is a bolted steel tank located next to the City of La Pine Public Works shop in the south area of La Pine. The Public Works Reservoir is used to supply water to the Public Works booster pump station, which provides water to the distribution system. When the water level in the Public Works Reservoir reaches a depth of 26 feet, a valve on site is opened to refill the reservoir from the Finley Butte Reservoir. The Public Works Reservoir has a base elevation of 4241 feet above MSL. The reservoir is 30 feet tall with a diameter of 38 feet and holds approximately 250,000 gallons. This reservoir is currently not utilized due to issues with leaks. The City is currently evaluating bringing the Public Works Reservoir and booster pump system back on line for a short-term emergency storage and distribution system pressure option.

Distribution System Pressure

The City of La Pine has one pressure zone serving the distribution system, with the system pressure provided by the elevation of the Finley Butte Reservoir. Although the distribution system is discussed in greater detail in Chapter 5, distribution system pressures are discussed briefly hereafter as they relate to the storage reservoirs. Fire flow capabilities, as well as other distribution system issues, are discussed in Chapter 5.

Ground elevations in the current City limits of La Pine range from a low of approximately 4215 feet above MSL to a high of 4250 feet above MSL, which is a difference of only 35 feet. The difference in elevation results in a static water pressure range from the existing low to high elevation users of approximately 15 psi. Currently, the lowest elevation users in the City have static water pressures up to 55 psi. Static water pressure is the pressure in the system when no water is flowing, which is nearly the case during low demand periods. As water demands increase, the velocity of the water in the distribution system pipes increases. This increase in velocity results in pressure losses in the system. These higher velocity scenarios typically occur during fire flow demands.

The water model (refer to Chapter 5 for a comprehensive discussion of the water modeling performed as part of this Water System Study [WSS] Update) shows that during fire flow demands, the northern areas of the City could experience pressures below 20 psi. The Oregon Health Authority - Drinking Water Services has a minimum residual pressure requirement of 20 psi in the distribution system under all demand conditions, including fire flows. This decrease in pressure is not due to an increased elevation. In fact, the north end of La Pine is at a lower elevation than the majority of the City, which provides higher static pressure. The lower pressure is a result of pressure losses from higher demands flowing to the far reaching edges of the distribution system through smaller diameter pipes. As discussed in Chapter 5, this limits the amount of fire flow available in these areas. These low distribution system pressures during fire flow events should be addressed to meet state rules.

Storage Requirements

Water storage is usually provided for several purposes. Various methods are used to calculate the volumes of each type of storage component required. Most involve a rational approach to estimating the volume of each storage component consisting of equalization, operational, fire reserve, and emergency. The decision can then be made as to which component controls and which storage volumes will actually be necessary. For example, the decision may be made to provide storage for equalization, operational, and fire reserve only, assuming any emergency storage would be available from the fire reserve. If this option were selected, there may not be adequate fire storage available if there is a sustained power outage or if a well pump is out of service for some reason. Considering the City's potential growth and the desire to continue providing customers with a high level of service, it is recommended that all four of the storage components listed below be considered when evaluating the City's potential storage needs.

Equalization Storage

Equalization storage is provided to balance the difference between peak hour demand and water supply capacity during a peak day demand period. An empirical method for estimating the amount of equalization storage needed uses the difference between the peak hour flow and the peak water supply availability for a specific number of peak hours per day. Based on providing the current estimated peak hourly flow of 1,193 gallons per minute (gpm) for 2.5 hours and using the current supply available, equalization storage is not needed, since the supply available exceeds the demand. Once the Cagle and Glenwood Acres areas are added to the system, it is estimated that the peak hourly flow will be 2,030 gpm. To provide this flow, approximately 124,000 gallons of equalization storage will be needed to assist Wells 1A and 2B to meet peak hourly demands. For the year 2035 design criteria, it was assumed the available water supply would remain 1,200 gpm due to water right restrictions. Based on the year 2035 estimated peak hourly flow of approximately 3,137 gpm for 2.5 hours, the City's year 2035 equalization storage needs to be approximately 290,000 gallons. If a new well were to be drilled that would add source capacity to the system, the amount of equalization storage needed could be reduced.

Operating Storage

Operating storage is generally provided to facilitate operation of wells or booster pumps in a water system. For example, when water system demands result in the water level lowering in a reservoir, the water level will reach a certain point that can be used to trigger activation of well pumps to refill the reservoir. The storage needed to activate water supply sources is typically referred to as operating storage. This zone of operation can be set as desired, but is often set to help ensure circulation occurs during each pump run cycle, allowing water to cycle through the reservoir to help maintain water quality while keeping the reservoir as full as possible.

As previously discussed, the Finley Butte Reservoir holds approximately 1.2 MG. The wells are currently set to operate between 88 and 96 percent of capacity of the Finley Butte Reservoir. This means that the wells begin operating when the reservoir is at 88 percent of capacity, and they stop when it reaches 96 percent of capacity. Operating storage is 8 percent of the total volume, or approximately 96,000 gallons. If a new reservoir is added to the system, additional operating storage in the new reservoir would be needed to provide a means to control operation of a new adjacent well.

Fire Reserve

Reserve storage for fire suppression is usually determined from either Insurance Services Office, Inc. (ISO) -recommended fire flow or the fire flow recommended by the City's fire chief. Based on the typical maximum fire flow recommended by ISO, a 3,500 gpm fire flow with a 2-hour duration has been set as the design fire flow for La Pine. A total of 420,000 gallons of fire reserve storage is needed to sustain this fire flow.

Emergency Reserve

Emergency storage is usually provided for a minimum of 1 to 3 days' supply in the event of a power outage, mechanical problems, or other problems that would interrupt the reliable supply of water. In most cases, this would be the minimum amount of time to repair or replace a well pump or other equipment. The City of La Pine has an emergency power supply to operate Well 1A and, therefore, would not be completely reliant on storage reserves in the event of a power outage. However, in the event of well equipment failure or other emergency, the City should be able to supply the City from its emergency storage reserves. In order to serve the City for a full day at the average daily demand, 274,960 gallons would be needed for existing emergency reserve, 467,600 gallons once Cagle and Glenwood Acres areas are added to the system, and 722,680 gallons for the year 2035.

Storage Requirements Summary

Totaling all four storage components indicates that a total of 790,960 gallons of storage is needed to meet current demands, 1,108,000 gallons to serve the existing system with the addition of the Cagle and Glenwood Acres areas, and 1,529,180 gallons of storage to meet the year 2035 design criteria, assuming that source capacity remains 1,200 gpm. Currently, the City's 1.2 MG storage capacity meets the total recommended storage for equalization storage, operating storage, fire reserve, and emergency reserve of 1,108,000 gallons, to serve the existing system as well as the Cagle and Glenwood Acres areas. Additional storage capacity is projected to be needed to meet future storage needs for the City. However, it should be noted that the amount of redundancy and reliability in the City's storage system is limited. Since only the Finley Butte Reservoir is available for storage, if it were to become compromised from contamination or damaged, the City would be without equalization, operating, fire and emergency reserves and would be forced to rely completely on its wells to supply water to the City. The wells also use a common transmission line to supply the City, so if a transmission line failure occurs as did earlier this year, then the City would be without water completely. Another storage reservoir and transmission line at a different location would provide needed system redundancy as well as additional storage volume.

Storage Reservoir Alternatives

For the purposes of this Water System Study (WSS) Update, three options for meeting long-term storage capacity needs and current distribution system pressure needs of the City were considered, including rehabilitation of the existing Public Works Reservoir, construction of a new reservoir at the Finley Butte Reservoir location, and building a new Northside Reservoir. A brief description of each of these options is included herein.

Rehabilitation of Public Works Reservoir

The existing Public Works Reservoir located near the public works building on William Foss Road is in poor condition, and the reservoir has not been in use due to problems with leaks. The bolted steel reservoir was constructed in 2000-01 as part of the La Pine Industrial Group industrial park. Rehabilitation of this bolted steel reservoir could be costly, and the reservoir would likely require continual maintenance to prevent leaking in the future. Rehabilitation of this existing reservoir would provide enough additional storage to meet the City's current and future storage requirements; however, it would require the use of the Public Works booster pump station to serve the distribution system. This would create additional power and maintenance costs to the system.

The Public Works Reservoir and booster pump station are located in the southern portion of La Pine. If this storage was utilized to serve the City, water would still need to be "pushed" to the far north end of La Pine. During high demand periods, this would result in high velocities and low distribution system pressures, much like in the current system.

Additional Finley Butte Reservoir

The prior WSS identified a new 1.2 MG reservoir to be located adjacent to the existing Finley Butte Reservoir. While this new reservoir would provide the additional storage required by the City of La Pine well beyond the 20-year planning period, it would not provide the reliability and redundancy that a new reservoir on the north side of La Pine would. This additional reservoir at the Finley Butte site would not provide the hydraulic benefits that a new Northside Reservoir would provide unless a transmission line was built from the Finley Butte site to the north side of La Pine. This transmission line would be approximately 2.5 miles longer than a new transmission line from the proposed Northside Reservoir to the distribution system, which would be less economically feasible.

New Northside Reservoir

The option of constructing a new 500,000-gallon reservoir on the north side of the City was considered. Since 1,200,000 gallons of storage is available at the Finley Butte Reservoir, 500,000 gallons would provide a total 1,700,000 gallons of total storage. This would provide adequate storage for future population growth and would also provide better hydraulic efficiency for the water system. The new reservoir would be located at a full elevation equal to the existing Finley Butte Reservoir. Water from this reservoir would be gravity-fed into the distribution system at the north end of La Pine near the Wickiup Junction area. The advantages of this alternative include being able to meet the City's storage requirements, being able to create an additional storage source, increasing the fire flow capacity, and meeting state distribution system pressure requirements for the north end of La Pine utilizing gravity pressure. This alternative is shown schematically on Figure 4-1. A cost estimate for the new reservoir, including a 16-inch transmission line to the north end of the City, is $2,483,000, as shown on Figure 4-2.

Recommended Improvement

While all alternatives discussed provide the necessary storage requirements, the Northside Reservoir alternative is considered the best long-term option considering reliability and redundancy. It is recommended that the City pursue this alternative to provide adequate storage and fire flow capacity for both existing and future customers.

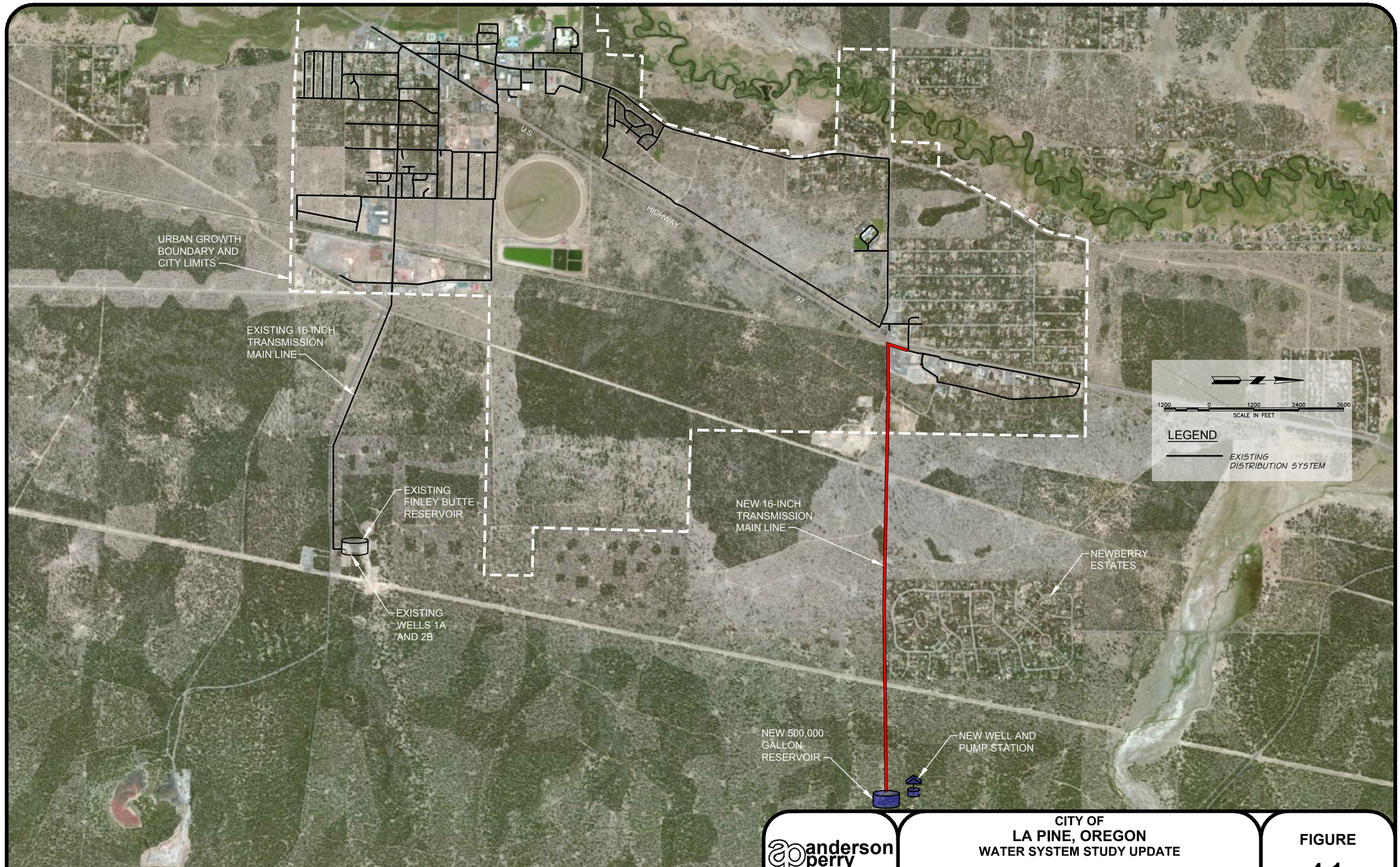
The existing Public Works Reservoir is in poor condition and would need to be maintained or replaced in the near future, regardless of improvements. The City is currently evaluating the option of putting the Public Works Reservoir online as a short-term emergency backup. The reservoir has not been used in several years, and with the construction of a new gravity-fed reservoir, the Public Works Reservoir would not be needed.

Summary

The City of La Pine currently has one operating storage reservoir, the 1,200,000-gallon Finley Butte Reservoir. The storage needed to provide equalization, operating, fire, and emergency reserve storage for the addition of the Cagle and Glenwood Acres areas is approximately 1,108,000 gallons and the storage needed for the 2035 design population is approximately 1,529,180 gallons. This is approximately 330,000 gallons more than the existing available storage.

System pressure is currently provided by the elevation of the Finley Butte Reservoir. Water system users in the northern portion of the City experience low water pressures during high demand periods and are limited to the amount of fire flow capacity available. These low pressures occur primarily because of excessive head loss created due to the distance of these areas in relation to the existing Finley Butte Reservoir and the remaining distribution system.

A new 500,000-gallon storage reservoir and 16-inch diameter transmission line on the north end of the City would address the needed storage, low pressures, and fire flow needs on the north end of the City. This new reservoir would also provide needed storage and supply system redundancy and reliability.



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CITY OF
LA PINE, OREGON
WATER SYSTEM STUDY UPDATE

PROPOSED SUPPLY AND STORAGE IMPROVEMENTS

FIGURE
4-1

CITY OF LA PINE, OREGON
WATER SYSTEM STUDY UPDATE
NEW NORTHSIDE RESERVOIR
IMPROVEMENTS PRELIMINARY COST ESTIMATE
(Year 2015 Costs)

NO.	DESCRIPTION	UNIT	UNIT PRICE	ESTIMATED QUANTITY	TOTAL PRICE
1	Mobilization/Demobilization (5%)	LS	$ 90,000	All Req'd	$ 90,000
2	Project Safety and Quality Control	LS	5,000	All Req'd	5,000
3	Site Improvements	LS	65,000	All Req'd	65,000
4	Reservoir Foundation	LS	40,000	All Req'd	40,000
5	500,000-gallon Reservoir	LS	450,000	All Req'd	450,000
6	Piping, Valves, and Fittings	LS	50,000	All Req'd	50,000
7	Reservoir Painting	LS	95,000	All Req'd	95,000
8	Fencing	LS	20,000	All Req'd	20,000
9	Electrical Work	LS	30,000	All Req'd	30,000
10	Controls and Instrumentation Work	LS	25,000	All Req'd	25,000
11	Reservoir Power Conduit and Conductors	LS	65,000	All Req'd	65,000
12	Reservoir Access Road Improvements	LS	100,000	All Req'd	100,000
13	16-inch Polyvinyl Chloride Pipe	LF	65	12,600	819,000
14	Asphalt Surface Restoration	SY	60	200	12,000
15	Gravel Surface Restoration	SY	10	1,500	15,000
				Subtotal Estimated Construction Cost	**$ 1,881,000**
				Construction Contingency (10%)	188,000
				Total Estimated 2015 Construction Cost	**$ 2,069,000**
				Design and Construction Engineering (20%)	414,000
				TOTAL ESTIMATED IMPROVEMENTS COST (2015 DOLLARS)	**$ 2,483,000**

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CITY OF
LA PINE, OREGON
WATER SYSTEM STUDY UPDATE
NEW NORTHSIDE RESERVOIR
IMPROVEMENTS
PRELIMINARY COST ESTIMATE

FIGURE
4-2

Chapter 5 - Distribution System

Introduction

This chapter discusses the City of La Pine's existing water distribution system, which delivers water to residential, commercial, and other users. Components of the distribution system include pipelines, valves, water meters, water service lines, and fire hydrants. The majority of the existing system was constructed in 2002. The distribution system has been evaluated for both present and future City needs. Alternatives have been developed to address existing identified deficiencies and provide future service to help meet both requirements of the Oregon Health Authority - Drinking Water Services (DWS) and fire flow requirements of the Insurance Services Office, Inc. (ISO). Cost estimates for the recommended distribution system improvements are presented at the end of this chapter.

Existing System

Information for the City's water distribution system was obtained from City water system geographic information system (GIS) maps developed by Anderson Perry & Associates, Inc. (AP). These maps were developed from historical maps, design drawings, and as-built drawings provided by the City.

According to the maps, the entire distribution system piping is composed of 6-inch or larger diameter main lines with the majority (approximately 38 percent) being 12-inch pipe. With the exception of some ductile iron yard piping at the Wells 1A and 2B and Finley Butte Reservoir site, the distribution system is entirely composed of polyvinyl chloride pipe.

In general, the distribution system is fairly well looped. There are some areas with dead-end and/or undersized main lines, which can limit capacity and water circulation in the system. The configuration of the City also creates challenges related to distribution system hydraulics. These areas are discussed in more detail later in this chapter. The City has indicated that water main lines in the distribution system are generally in good condition.

The existing distribution system layout, including fire hydrant and valve locations and pipe size and locations, is shown on the Water System Map contained in a pocket at the end of this Water System Study (WSS) Update. The Water System Map was prepared by AP using information from the City of La Pine. Available resources were utilized to make the map as accurate as possible. There may be inaccuracies in the depiction of the water distribution system layout, and the possibility exists that water distribution system lines and other features are present at locations not shown on the map or are not positioned as shown. The Water System Map has been prepared electronically in GIS format. If distribution system main lines or other system features are added in the future, the map can easily be updated as improvements occur, so the City always has the most accurate map available for City staff use.

Distribution System Pressure

As discussed in Chapter 4, the City of La Pine has one pressure zone serving the distribution system with system pressures provided by the water level in the existing Finley Butte Reservoir. The Finley Butte Reservoir provides distribution system static pressures (i.e., no demand) ranging from approximately

48 to 55 pounds per square inch (psi). According to the results from the water model developed as part of this WSS Update, low pressure situations in the City's distribution system also occur due to pressure losses resulting from high flows, such as fire flows. System pressures are further discussed in more detail, with system improvement alternatives, later in this chapter.

Fire Protection

General

The City's existing water supply, storage, and distribution system provides adequate fire protection to the majority of the system, although there are certain areas of the City that do not have adequate fire protection and some areas that experience low pressures during fire flow events. The DWS' regulations and the Oregon Fire Code require the entire water system remain above 20 psi residual pressure while fire flow demands are placed on the system. A computer model incorporating system fire flows, along with improvement alternatives to address the deficiencies in fire flows, is discussed in more detail later in this chapter.

Fire Hydrant Flow Tests

As part of the ISO Public Protection Classification Summary Report, fire hydrant flow tests were completed on several fire hydrants in the distribution system. Based on the individual hydrant flow test results completed by ISO, the City of La Pine's water system is able to deliver fire flows from 1,400 gallons per minute (gpm) up to 2,800 gpm. These flows are estimated from the measured flows observed during flow tests.

Theoretical Fire Flows

In some cases, such as in ISO fire hydrant flow capacity reporting, the available flow from a fire hydrant is calculated using a theoretical formula. The formula assumes the water supply "feeding" the tested area is generally not limited and the 20 psi residual pressure resulting from the fire flow occurs where the hydrants are being tested. In reality, there are likely other connections in the distribution system, such as users in the City on small-diameter main lines or at higher elevation areas, that would fall below 20 psi sooner than the formula predicts. Considering this, the theoretical formula can overestimate available fire flows.

Fire Hydrant Limitations

The fire flow tests completed by the City are generally conducted by opening one fire hydrant at a time, while ISO fire flow tests are conducted by opening multiple fire hydrants at one time. If large enough main lines are present, individual fire hydrants can typically provide flows in the range of 800 to 1,200 gpm from a small port and nearly 2,000 gpm from both small ports and the larger "pumper" port, assuming the hydrant has a large port. For the La Pine system, the system residual pressures, main line sizes, and looping likely dictate what fire flows are available as opposed to the physical limitations of the fire hydrants. During a fire there will be some water use from others on the system, so the actual available flow out in the distribution system will be less due to other uses and pipeline pressure losses resulting from higher flows.

Generally, the City's water system provides good fire flows. There are some areas in need of improvements to provide adequate fire flows to areas within the City limits. The City's water system appears limited in its capacity to meet recommended fire flows in the northern areas of the City. These areas are out of compliance with DWS regulations and Oregon Fire Code requirements for fire flows. The current available flows in these areas are less than the maximum recommended ISO fire flow of 3,500 gpm for commercial areas and 4,000 gpm for schools while maintaining 20 psi in the system.

Overview of the Computer Model of Water System

Prior to this WSS Update, a detailed water model of the City's water system was developed to analyze system pressures, hydraulic capacity, and available fire flows from the City's fire hydrants for an evaluation of the City's industrial park area. This model was utilized and updated for the purposes of this WSS Update. A general description and the results of each computer run performed for both the existing and improved water systems are described herein.

In order to develop the model, the Water System Map (included at the end of this WSS Update) was first produced showing all pipes (location and size), pipe interconnections, and hydrant locations. On the water model maps, each pipe was assigned a number for reference (e.g., P-45). Junctions at pipeline intersections and at key locations, such as hydrants, were assigned junction numbers (e.g., J-50). The label given to the junctions and pipelines allowed the model to sort the system elements into groups for easier identification of element locations within the system.

Elevations at the locations of water system features such as reservoirs, pipe connections, wells, hydrants, etc., were obtained from a digital elevation model obtained from the U.S. Geological Survey. Where additional elevations were required for the model, Google Earth elevations were used.

The computer model evaluated pressure and flows in the distribution system pipes during a simulated water use demand. Available fire flows were then determined under different demand conditions. Typical water system demands used for the computer model include the following:

- Average Daily Demand (ADD) - This is the typical average demand the water system experiences, which represents the average demand over a one-year period. Winter demands are typically less than the ADD, and summer demands are typically higher than the ADD.
- Peak Daily Demand (PDD) - This is the peak demand the water system experiences, which is intended to represent the highest demand day of the year, not considering fire flow demands. The PDD usually occurs during a summer period when irrigation and other summer-related water uses are highest.

Junctions are identified in the water model, which allows the model to know where and at what elevation pipe intersections occur. Water demands can then be placed on the distribution system at each junction (node) to simulate ADD or PDD use demands.

The model was configured to determine system pressures and fire flow capacity of the distribution system during the PDD condition to represent available fire flows under the highest demand scenario.

Existing System Model Results

Once the model was set up, it was used to evaluate existing system conditions, the impact the addition of the Cagle and Glenwood Acres areas would have on the system, and the effect of the proposed improvement alternatives. The model results showed that, during current PDD, water system pressures are between 48 and 55 psi throughout the City. However, during a fire flow event, pressures in the northern part of the City drop below 20 psi. This pressure is below the minimum threshold allowed by DWS regulations. The model showed that the northern part of the City, which includes a large commercial area and a school, is limited in its fire flow capacity. The results of three water model scenarios for the existing system, the existing system plus the addition of Cagle and Glenwood Acres areas, and the system with the addition of Cagle and Glenwood Acres areas at 2035 flows, are shown on Figures 5-1 through 5-3.

The available fire flows for the existing system are shown on Figure 5-1, which shows that the majority of the City has at least 1,500 gpm of fire flow available. However, the northern portion of the City, in the Wickiup Junction area, only has 1,000 to 1,500 gpm of fire flow available. This is of concern, because the Wickiup Junction is a commercial area, which typically requires up to a maximum of 3,000 gpm of available fire flow. Figure 5-2 represents the available fire flow for the existing system, once the Cagle and Glenwood Acres areas are added to the City's water system. It can be seen from the figure that the vast majority of the area north of Burgess Road, as well as the Rosland Elementary School would have less than 1,500 gpm of available fire flow. Figure 5-3 shows that the area of lower fire flow availability extends farther south into La Pine as the 2035 population demand is placed on the system. What these figures show is that if fire flow demands are higher than what is available, then the residual pressure in the system will fall below the 20 psi pressure minimum required by the DWS.

Proposed Improvements and Model Results

To determine if the proposed improvements would provide the required fire flows to bring the City's water system into compliance and to address the deficiencies identified by the water modeling, an additional water model was run with the proposed improvements included.

Improvements included providing for the 2035 conditions with distribution system improvements and a new north side 500,000-gallon reservoir and associated well, as discussed in Chapters 3 and 4, to help serve northern areas of the City. This would require installation of a new transmission line from the new reservoir to the distribution system.

The impact of a new Northside Reservoir and transmission line on the existing distribution system was analyzed. Estimated system fire flow capacities with the proposed Northside Reservoir and distribution system improvements are shown on Figure 5-4. Other improvements would include distribution system improvements in key areas of the system to improve flow and pressure. Based on the model results with the proposed system improvements, the City would be able to provide fire flows above 3,000 gpm, with only very small areas having fire flows from 2,000 gpm to 3,000 gpm, and a few areas having less than 2,000 gpm. The water model confirmed that the City's existing distribution system, with some key system improvements, is capable of delivering required fire flows while meeting DWS pressures criteria if water can be delivered to the system from both a north and south water storage reservoir.

Limitations of Water Model Results

It is important to note that reported fire flows from the water model analysis indicate theoretical distribution system piping capacity. Actual field conditions and headloss in fire hydrants may reduce fire flows beyond what is indicated. Individual fire hydrants generally also have a maximum capacity of 1,000 to 1,500 gpm, so multiple hydrants may need to be operated to attain the flows indicated by the model.

Undersized Main Lines

For the purpose of this WSS Update, undersized mains have been defined as those mains that do not allow the fire demand and minimum pressure criteria shown on Figure 2-3 in Chapter 2 to be met. There are few areas within the City's distribution system that fall below these criteria. Upgrading several areas, mostly by creating loops with existing main lines in the system will substantially increase available fire flows. The smallest diameter pipe in the system is 6-inch, which, when looped properly can carry a substantial amount of flow at an adequate pressure.

- U.S. 97 - Currently, the entire north end of La Pine is served through one 12-inch diameter main line located on Huntington Road. This pipe creates a potential "bottleneck" in the distribution system. An additional 12-inch main line is proposed from near the intersection of U.S. 97 and 1st Street, running north along U.S. 97 and connecting with the existing 12-inch diameter main line east of Caldwell Drive. This would provide an additional path for water to flow to the north end of La Pine, greatly increasing hydraulic efficiency and water circulation in the system. This proposed 12-inch pipeline is shown (blue line) on the left side of Figure 5-5.

Dead-End Main Lines

The City of La Pine's distribution system is fairly well looped and there are few areas in the distribution system with dead-end main lines. It is difficult to eliminate all dead-end water mains from a system. Physical limitations, such as stream crossings, undeveloped land, or other limitations, such as no customers in the area, can result in dead-end lines. Often, these lines are eventually looped as expansion occurs. The areas where new mains are proposed for additional looping are as follows:

- Quinn River Lane/Spring Butte Lane - There are currently dead-end main lines on Evans Way, Walling Lane, and Wheeler Road that all dead-end at or near the future Quinn River Lane. A 10-inch diameter main line is proposed from Anchor Way east to Mitts Way, looping the dead-end lines. In order to create additional looping, it is also proposed that 10-inch diameter main lines be constructed west of Spring Butte Lane and south of Walling Lane in order to most effectively serve the La Pine Industrial Park and the Wheeler Development areas. These improvements should be implemented prior to substantial development of the industrial park and Wheeler Development areas. All of these proposed improvements are shown schematically on the left portion of Figure 5-5.

Recommended Distribution System Improvements

In general, the City's distribution system is well looped. Based on the water system model, there are some dead-end main lines that result in fire flow capacity limitations and water circulation issues in the system. Some of these lines have been recommended for upgrading where improved fire flow capacities

are needed. The City will also need to extend main lines into the Cagle and Glenwood Acres areas in order to serve the new areas. It is recommended the City complete improvements to the distribution system to loop the dead-end main lines and provide improved system pressures and fire flow capacities in areas lacking adequate fire flows. Key main line improvements have been identified to meet the following objectives:

1. Priority No. 1 Improvements - Extend main lines into the Cagle and Glenwood Acres areas. The total estimated cost for the Priority No. 1 improvements is $4,103,000, as shown on Figure 5-6.
2. Priority No. 2 Improvements - Increase water circulation in the system to meet minimum agency pressure requirements (Highway 97 12-inch line). The total estimated cost for the Priority No. 2 improvements is $274,000, as shown on Figure 5-6.
3. Priority No. 3 Improvements - Eliminate critical dead-end main lines to improve water main flow and circulation capacities (south La Pine improvements). The total estimated cost for the Priority No. 3 improvements is $900,000, as shown on Figure 5-6.

The recommended distribution system improvements are shown on Figure 5-5. The improvements are shown as Priorities No. 1, No. 2, and No. 3 improvements.

Summary

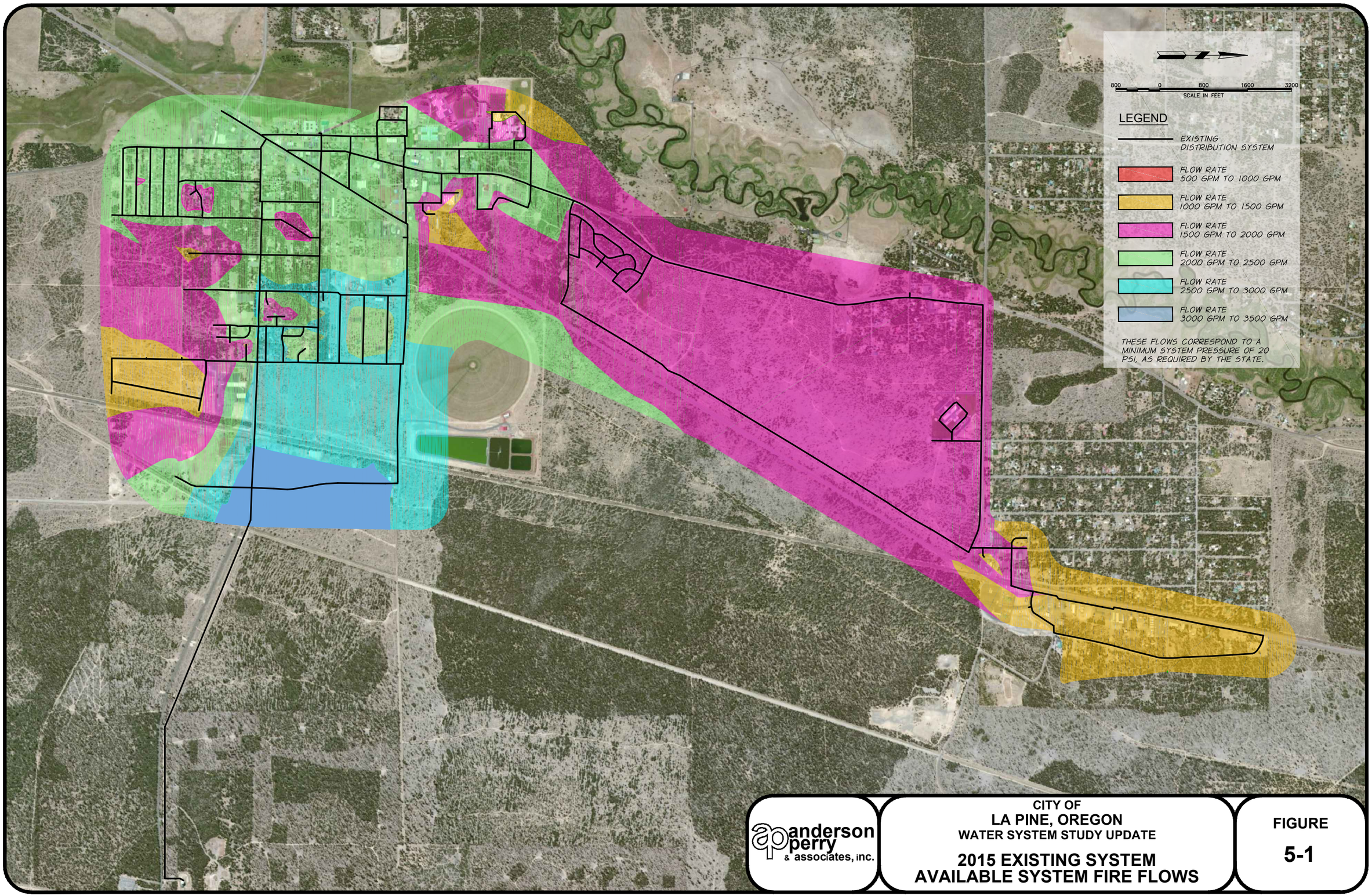
In general, the City's distribution piping system is in relatively good condition. Improvements outlined in this chapter include installing water main lines to serve the Cagle and Glenwood Acres areas and improve looping, circulation, and bringing the system into compliance with DWS standards. The following table outlines the available fire flows, the potential fire flows, and the resulting system pressures when the potential fire flows are realized.

TABLE 5-1
FIRE FLOW COMPARISON

Limiting Location	Available Fire Flow (gpm)	Needed Fire Flow (gpm)
Existing System		
Wickiup Commercial Area	1,000 to 1,500	2,500 to 3,500
Existing System with Cagle and Glenwood Acres Areas		
Wickiup Commercial Area, Rosland Elementary School, and Cagle and Glenwood Acres Areas	1,000 to 1,500	2,500 to 3,500
Existing System with Cagle and Glenwood Acres Areas, Plus Recommended Improvements		
All Areas North of and Including the Newberry Neighborhood	1,000 to 1,500	2,500 to 3,000

The table shows that with the existing system, a high demand event such as a fire flow in the Wickiup commercial area would exceed available fire flows, which would cause the system to drop below the DWS requirement of 20 psi of pressure. However, when the proposed improvements are implemented, the City will have significantly improved fire flow capabilities and will be in compliance with the state's

rules. These improvements were selected to address key areas of concern to improve fire flow capacity and pressures in the system.



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CITY OF
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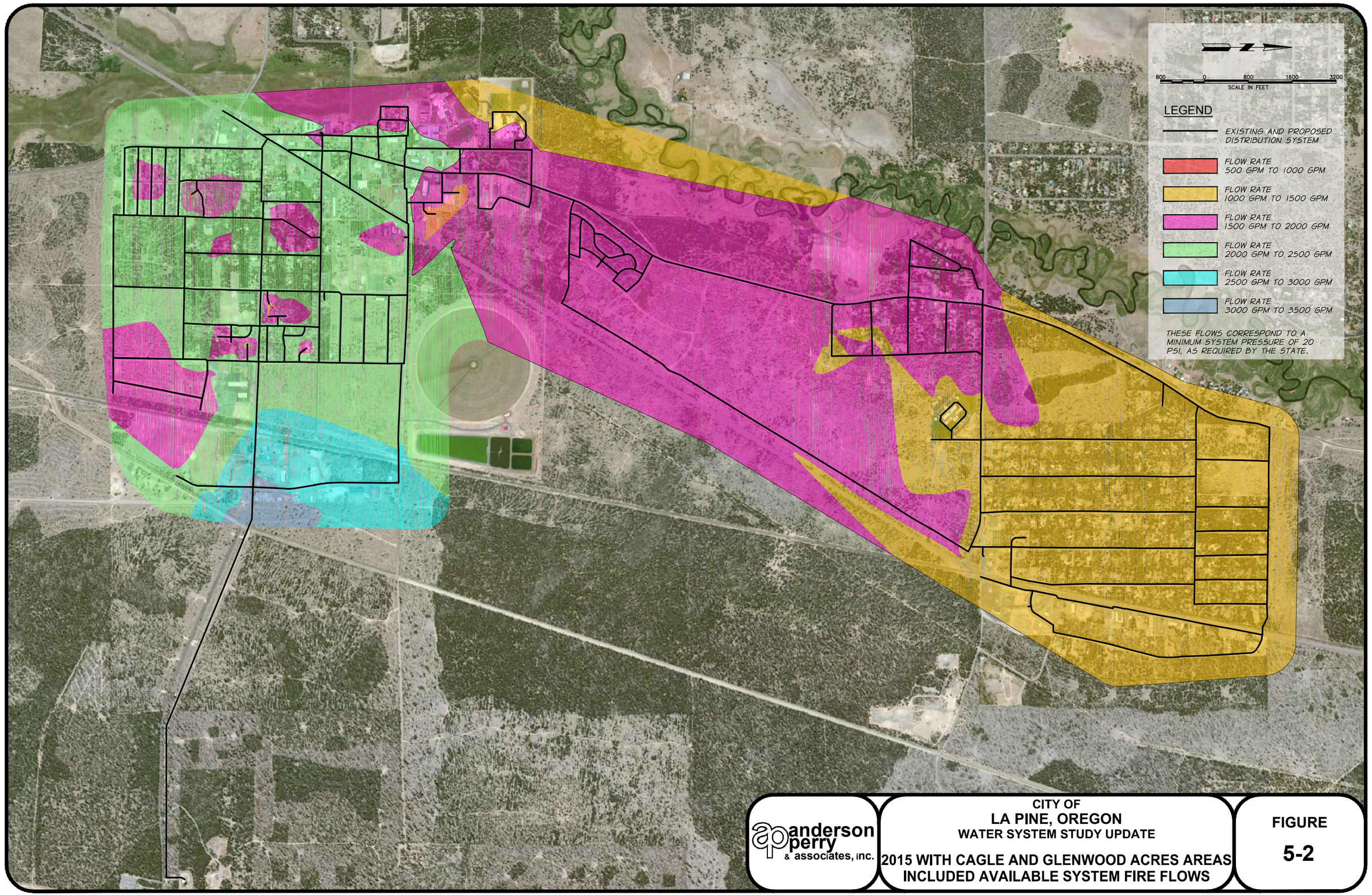
WATER SYSTEM STUDY UPDATE

2015 EXISTING SYSTEM AVAILABLE SYSTEM FIRE FLOWS

FIGURE
5-1



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WATER SYSTEM STUDY UPDATE

2015 WITH CAGLE AND GLENWOOD ACRES AREAS INCLUDED AVAILABLE SYSTEM FIRE FLOWS

FIGURE
5-2

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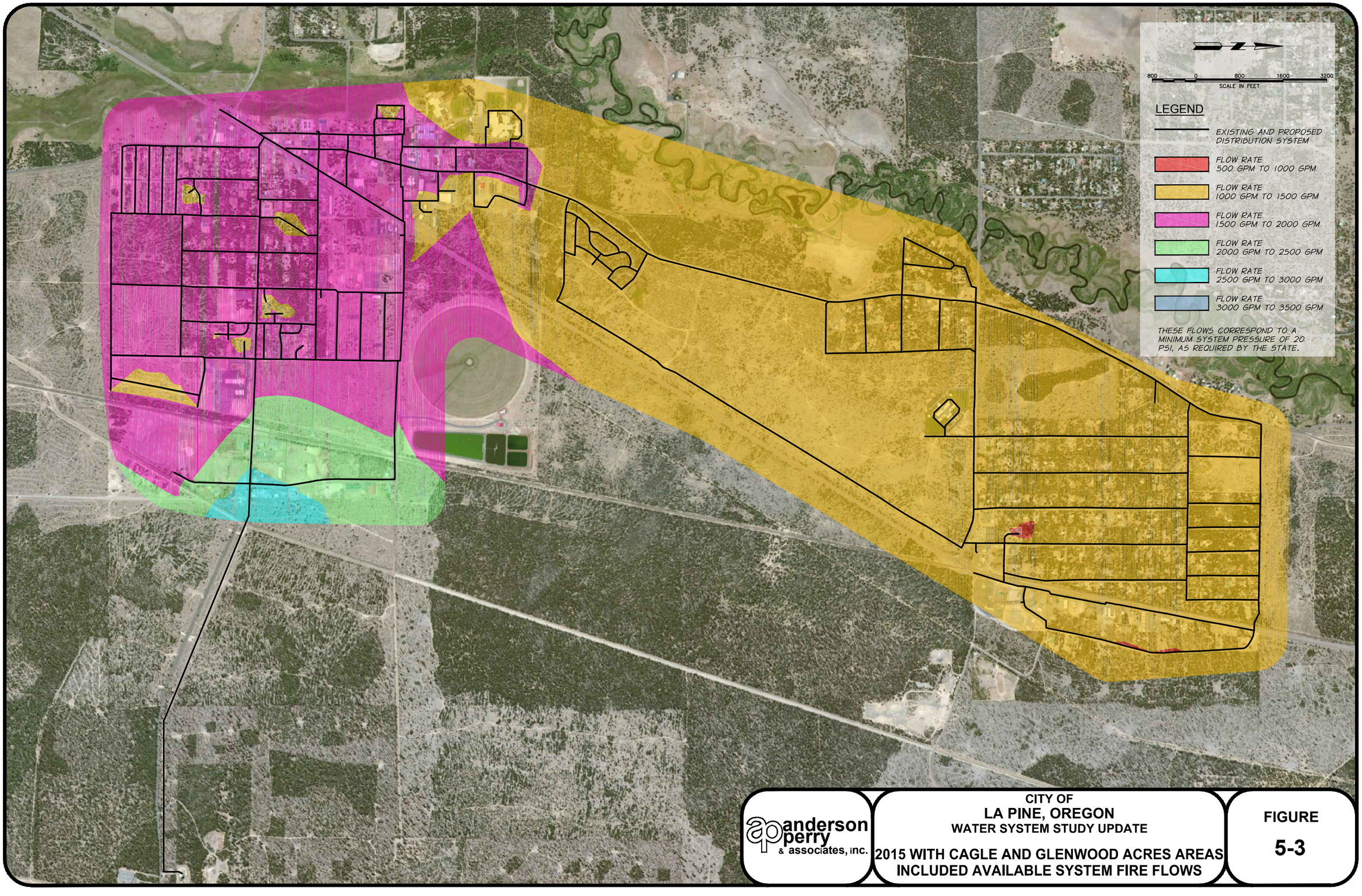

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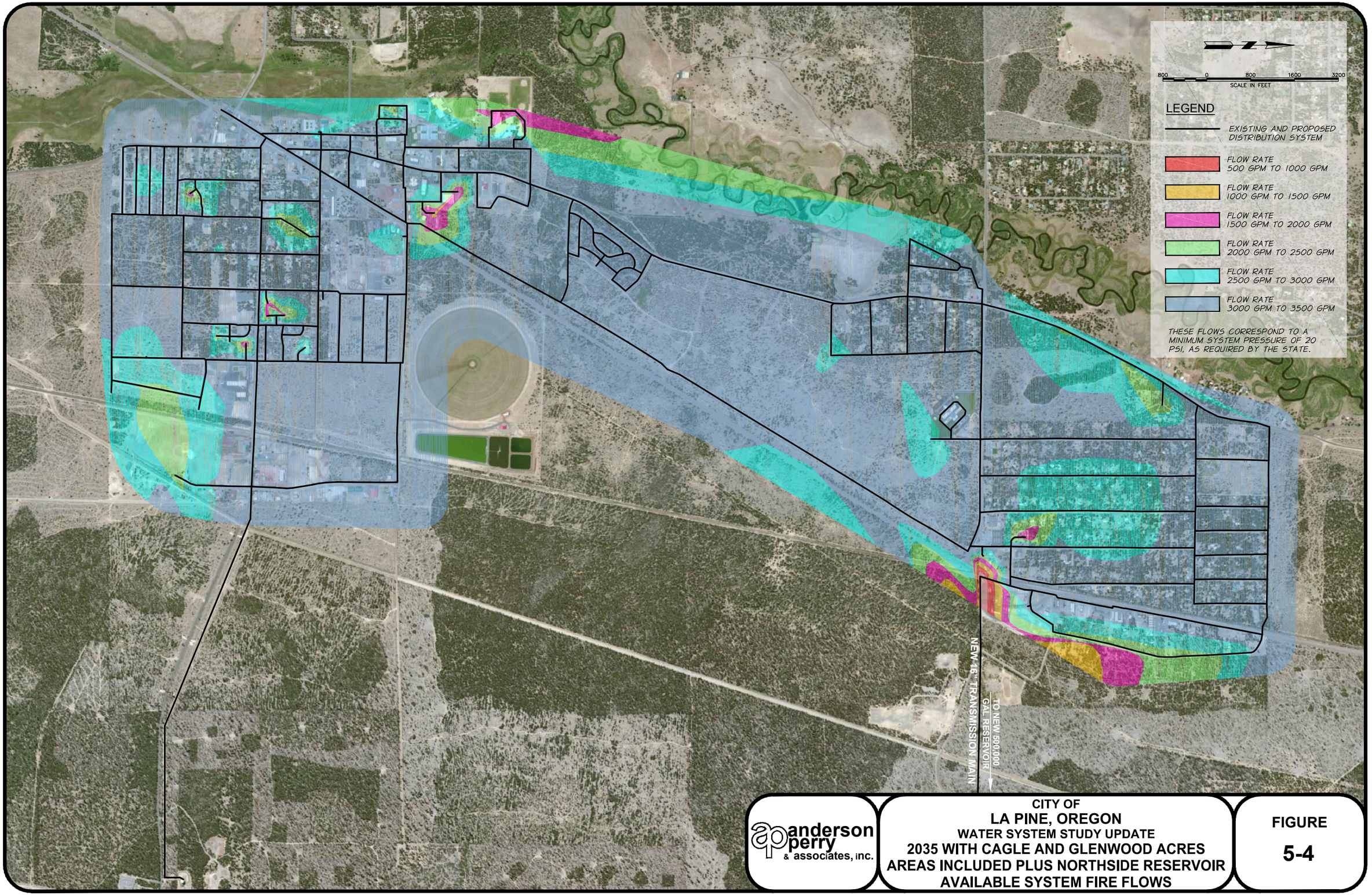
WATER SYSTEM STUDY UPDATE

2015 WITH CAGLE AND GLENWOOD ACRES AREAS INCLUDED AVAILABLE SYSTEM FIRE FLOWS

FIGURE
5-3



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WATER SYSTEM STUDY UPDATE
2035 WITH CAGLE AND GLENWOOD ACRES AREAS INCLUDED PLUS NORTHSIDE RESERVOIR AVAILABLE SYSTEM FIRE FLOWS

FIGURE
5-4

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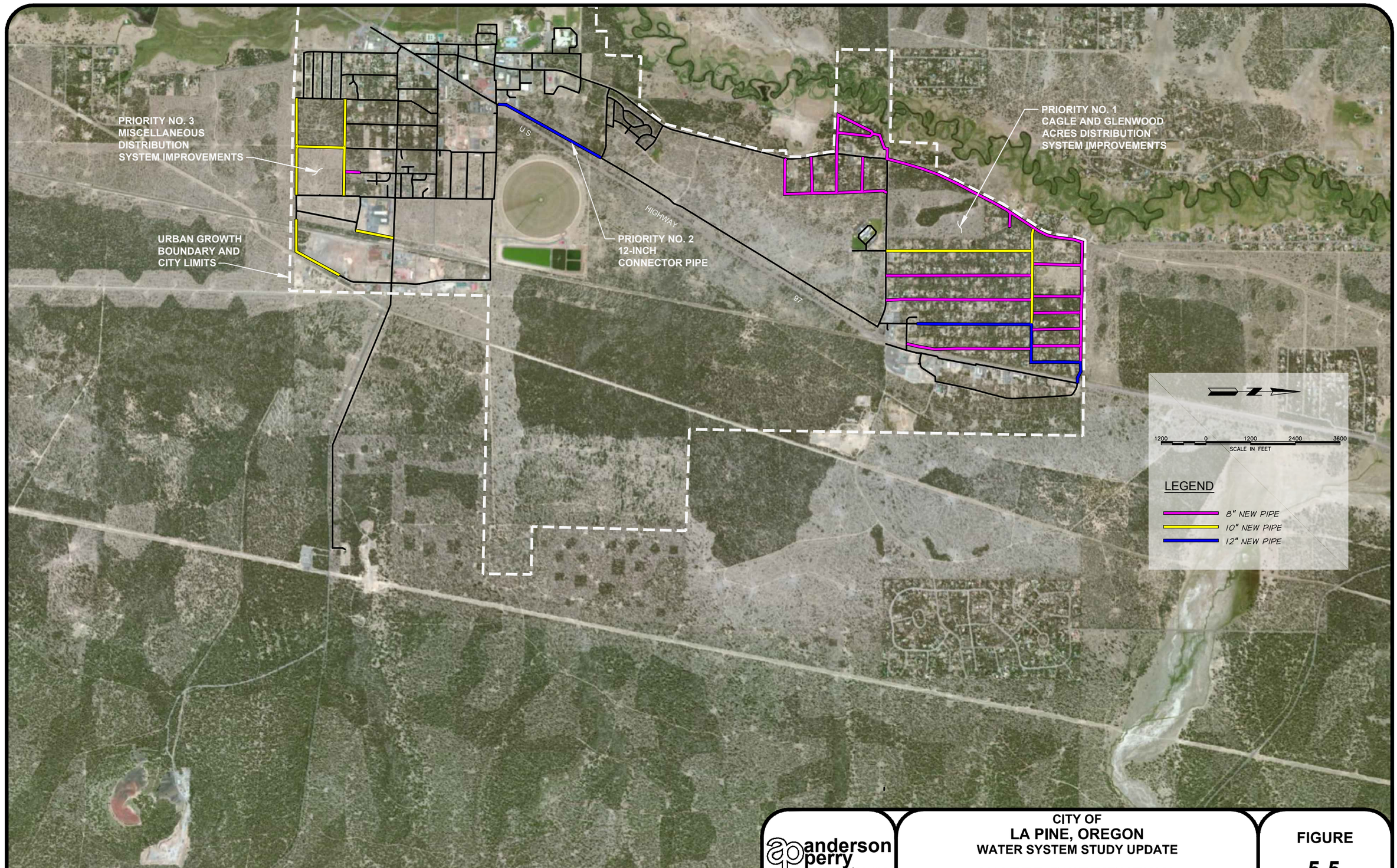

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CITY OF
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WATER SYSTEM STUDY UPDATE

WATER DISTRIBUTION SYSTEM IMPROVEMENTS

FIGURE
5-5

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CITY OF LA PINE, OREGON
WATER SYSTEM STUDY UPDATE
RECOMMENDED DISTRIBUTION SYSTEM IMPROVEMENTS
PRELIMINARY COST ESTIMATE
(Year 2015 Costs)

NO.	DESCRIPTION	UNIT	UNIT PRICE	ESTIMATED QUANTITY	TOTAL PRICE
Cagle and Glenwood Acres Distribution System Improvements, Priority No. 1					
1	Mobilization/Demobilization (5%)	LS	$ 156,000	All Req'd	$156,000
2	Temporary Protection and Direction of Traffic/Project Safety and Quality Control	LS	12,500	All Req'd	12,500
3	8-inch Polyvinyl Chloride (PVC) Water Line, including Valves	LF	40	37,600	1,504,000
4	10-inch Replacement PVC Water Line, including Valves	LF	45	6,500	292,500
5	12-inch PVC Water Line, including Valves	LF	50	6,000	300,000
6	Connection to Existing Main Line	Each	1,500	11	16,500
7	Fire Hydrant and Auxiliary Valve	Each	4,000	86	344,000
8	Service Connection and Meter Assembly	Each	500	275	137,500
9	1-inch Water Service Line	LF	15	8,500	127,500
10	Highway 97 Boring	Each	40,000	1	40,000
11	Asphalt Surface Restoration	SY	60	1,630	97,800
12	Gravel Surface Restoration	SY	6	41,330	248,000
	Cagle and Glenwood Acres Subtotal Estimated Construction Cost				**$ 3,108,000**
	Construction Contingency (10%)				311,000
	Total Estimated Construction Cost				**$ 3,419,000**
	Design, and Construction Engineering (20%)				684,000
	TOTAL ESTIMATED IMPROVEMENTS COST (2015 DOLLARS)[1]				**$ 4,103,000**
12-inch Highway 97 Connection Pipe, Priority No. 2					
13	Mobilization/Demobilization (5%)	LS	$ 12,000	All Req'd	$12,000
14	Temporary Protection and Direction of Traffic/Project Safety and Quality Control	LS	25,000	All Req'd	25,000
15	12-inch PVC Water Line, including Valves	LF	50	3,200	160,000
16	Connection to Existing Main Line	Each	1,500	2	3,000
17	Fire Hydrant and Auxiliary Valve	Each	4,000	6	24,000
18	Highway Gravel Surface Restoration	SY	8	2,500	20,000
	12-inch Connection Pipe Subtotal Estimated Construction Cost				**$ 207,000**
	Construction Contingency (10%)				21,000
	Total Estimated Construction Cost				**$ 228,000**
	Design, and Construction Engineering (20%)				46,000
	TOTAL ESTIMATED IMPROVEMENTS COST (2015 DOLLARS)[1]				**$ 274,000**

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CITY OF
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WATER SYSTEM STUDY UPDATE
RECOMMENDED DISTRIBUTION SYSTEM IMPROVEMENTS
PRELIMINARY COST ESTIMATE

FIGURE
5-6

Miscellaneous Distribution System Improvements, Priority No. 3

1	Mobilization/Demobilization (5%)	LS	$	35,000	All Req'd	$35,000
2	Temporary Protection and Direction of Traffic/Project Safety and Quality Control	LS		12,500	All Req'd	12,500
17	8-inch PVC Water Line, including Valves	LF		40	570	22,800
18	10-inch Replacement PVC Water	LF		45	6,500	292,500
19	Connection to Existing Main Line	Each		1,500	9	13,500
20	Fire Hydrant and Auxiliary Valve	Each		4,000	14	56,000
21	Gravel Surface Restoration	SY		6	49,500	297,000

Miscellaneous Subtotal Estimated Construction Cost	**$**	**682,000**
Construction Contingency (10%)		68,000
Total Estimated Construction Cost	**$**	**750,000**
Design, and Construction Engineering (20%)		150,000
TOTAL ESTIMATED IMPROVEMENTS COST (2015 DOLLARS)[1]	**$**	**900,000**

[1] See Figure 6-2 for a Summary of Preliminary Estimated Project Costs and other project costs for the selected improvements.

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CITY OF
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WATER SYSTEM STUDY UPDATE
RECOMMENDED DISTRIBUTION SYSTEM IMPROVEMENTS
PRELIMINARY COST ESTIMATE

FIGURE
5-6
Cont'd.

Chapter 6 - Selected Water System Improvements

Introduction

This chapter summarizes the water system improvements selected by the City of La Pine and outlines the estimated costs of the improvements. The City has indicated that improvements summarized in this chapter will be pursued for implementation. Depending on final project funding, other improvements discussed in this Water System Study (WSS) Update may be considered for future implementation. Detailed descriptions of the selected improvements for the water supply system, storage system, and distribution system are summarized in Chapters 3, 4, and 5, respectively. Figure 6-1 shows the proposed water system improvements.

During development of this WSS Update, close consultation with the City was emphasized. Various aspects of the City's existing water system and potential improvement options were discussed at City Council work sessions and presentations. As a result of these discussions, this chapter of the WSS Update was developed.

Summary of Selected System Improvements

As outlined in previous chapters, a number of system improvements are identified to enhance the capacity and reliability of the City of La Pine's water system. The City-selected improvements are summarized hereafter.

Water Supply Improvements

The City of La Pine currently relies on Wells 1A and 2B to meet system demands. These wells are the only supply source for the City and are capable of producing 600 gallons per minute each. However, these two wells are very close to one another, which could result in a reduced combined capacity if both wells are operated at the same time. To help ensure continued water system performance, it is recommended the City construct an additional supply source. It is recommended this new source be located on the north side of the City to better serve the overall system. This would provide enough supply to meet future demands once the Cagle and Glenwood Acres areas are added to the system, would provide redundancy in the City's system, and would provide a water supply source associated with the storage improvements discussed below.

Water Storage Improvements

The City's existing water storage reservoir currently meets the City's immediate operational, equalization, fire reserve, and emergency reserve storage needs, as presented in Chapter 4. The City also appears to have enough storage capacity to serve the additional water demands of the Cagle and Glenwood Acres areas. However, the City is served by only one reservoir and one transmission line. The City recently experienced an incident where the transmission line was compromised, and the City was forced to curtail water use since there was not a redundant storage reservoir or transmission main to provide water when the transmission main had to be shut down. The 250,000-gallon Public Works Reservoir is still in fair condition, but has some issues with leaks. If a new

reservoir is pursued, it is not recommended that the City pursue rehabilitation of the Public Works Reservoir due to the higher cost of rehabilitation for limited storage capacity and the high annual operation and maintenance costs associated with operating the existing booster pump station to pressurize the system with water from this reservoir. To provide additional storage for future growth and redundancy for the water system, it is recommended that a new 500,000-gallon reservoir be constructed near the north end of La Pine, adjacent to the proposed new well.

Water Distribution System Improvements

In general, the City's distribution piping system is in good condition. There are some areas in the distribution system with dead-end lines, where new lines are proposed to provide enhanced looping and circulation capabilities. Proposed distribution lines are also recommended to serve the Cagle and Glenwood Acres areas. Currently, minimum system pressures of 20 pounds per square inch, as required by Oregon Health Authority - Drinking Water Services regulations, cannot be maintained during fire flow conditions in the north La Pine commercial area. The primary purpose of these improvements is to provide the needed pipeline capacity so minimum pressure conditions can be met while also providing improved fire flows. These improvements are shown on Figure 6-1.

Cost Summary

The year 2015 estimated costs for the selected water system improvements are $9,088,000, as summarized on Figure 6-2. These costs have been projected to the year 2017 assuming a 5 percent per year inflation rate for a year 2017 total estimated cost of $10,019,000. Detailed cost estimates for each component of the system (i.e., water supply, storage, etc.,) are included at the end of Chapters 3, 4, and 5. The total project cost includes budget-level estimates for construction, administrative, legal, engineering, contingencies, some anticipated permitting, and other costs. If the City does not complete the proposed improvements in 2017, it is recommended the estimated costs be increased by an appropriate annual inflation rate to account for potential increases in project costs.

PRIORITY NO. 3
MISCELLANEOUS
DISTRIBUTION
SYSTEM
IMPROVEMENTS

URBAN GROWTH
BOUNDARY AND
CITY LIMITS

EXISTING 16-INCH
TRANSMISSION
MAIN LINE

EXISTING
FINLEY BUTTE
RESERVOIR

EXISTING
WELLS 1A
AND 2B

U.S.

HIGHWAY

97

PRIORITY NO. 2
12-INCH
CONNECTOR PIPE

PRIORITY NO. 1
CAGLE AND
GLENWOOD ACRES
DISTRIBUTION
SYSTEM
IMPROVEMENTS

NEW 16-INCH
TRANSMISSION
MAIN LINE

NEW NORTHSIDE
RESERVOIR, WELL,
AND TRANSMISSION
LINE

NEW 500,000
GALLON
RESERVOIR

NEW WELL AND
PUMP STATION

1200 0 1200 2400 3600
SCALE IN FEET

LEGEND

- 8" NEW PIPE
- 10" NEW PIPE
- 12" NEW PIPE
- 16" NEW PIPE

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CITY OF
LA PINE, OREGON
WATER SYSTEM STUDY UPDATE

PROPOSED WATER SYSTEM IMPROVEMENTS

FIGURE
6-1

R:\LaPINE\33-05 LaPine WSU\dwg\FF figs\Fig 6-1.dwg, fig 6, 1/4/2016 12:23:50 PM, prichardson

CITY OF LA PINE, OREGON
WATER SYSTEM STUDY UPDATE
PROPOSED WATER SYSTEM IMPROVEMENTS
PRELIMINARY COST ESTIMATE
(Year 2015 Costs)

NO.	DESCRIPTION		ESTIMATED PROJECT COST
1	New Supply Well and Well Pump Station	$	1,075,000
2	New Northside Reservoir and Transmission Line*		2,483,000
3	Cagle and Glenwood Acres Distribution System, Distribution System Priority No. 1*		4,103,000
4	12-inch Highway 97 Connection Pipe, Distribution System Priority No. 2*		274,000
5	Miscellaneous Distribution System Improvements, Distribution System Priority No. 3*		900,000
	Total Estimated Project Cost	**$**	**8,835,000**
	Legal		50,000
	Administration		50,000
	Easements		20,000
	Environmental Review Report		30,000
	Archaeological Report		15,000
	Cultural Resource Monitoring		70,000
	Oregon Department of Transportation Permit(s)		5,000
	Regulatory Agency Reporting and Review Fees		3,000
	New Supply Source Testing		10,000
	TOTAL ESTIMATED IMPROVEMENTS COST (2015 DOLLARS)	**$**	**9,088,000**
	TOTAL ESTIMATED IMPROVEMENTS COST (2017 DOLLARS)**	**$**	**10,019,000**

*Refer to Figure 4-2 in Chapter 4 and Figure 5-6 in Chapter 5 for more detailed cost estimates.
**Assumes 5 percent annual inflation.

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CITY OF
LA PINE, OREGON
WATER SYSTEM STUDY UPDATE
SELECTED WATER SYSTEM IMPROVEMENTS
PRELIMINARY COST ESTIMATE

FIGURE 6-2

Chapter 7 - Project Financing and Implementation

Introduction

This chapter evaluates the financial status of the City's Water Department and outlines alternatives for financing La Pine's water system improvements. A summary of state and federal funding programs is presented, including a review of funding options potentially available to the City for the water system improvements. To construct some or all of the proposed improvements, a financing plan acceptable to the City of La Pine must be developed to complete the improvements. Because of the estimated cost of the improvements, financing resources will need to include a low interest loan coupled with grant funds, if available.

Although a detailed analysis of La Pine's current water rate structure is beyond the scope of this Water System Study (WSS) Update, some discussion of the existing rate structure and current and future water system budgets is included. As a general rule, most utility rate structures include funding for periodic, minor system improvements and maintenance, staff payroll costs, and a set-aside for future improvements. The set-aside is typically for smaller items, such as a new well pump, new meters, etc.

Current Water Use Rates and Revenue

Operation and maintenance of the existing water system is financed through the City's annual budget. Revenue is obtained from water user and connection fees.

Water Use Rates

The current base water rate for residential and commercial services inside the City limits is $28.90 per month. This base rate is then multiplied by a meter capacity equivalent (MCE) factor. In addition to this base rate, a consumptive charge is also included for each user. Water rates, effective May 2015, are presented on Table 7-1. The City's Resolution No. 2015-02, approving the May 2015 rate structure, can be found in Appendix E.

TABLE 7-1
WATER RATE INFORMATION

Fixed Monthly Charge			
Meter Size	**(MCE) Factor**	**Monthly Charge**	
5/8-inch	1	$28.90	
3/4-inch	1	$28.90	
1-inch	2.5	$72.24	
1-1/2-inch	5	$144.48	
2-inch	8	$231.16	
3-inch	16	$462.33	
4-inch	25	$722.39	
6-inch	50	$1,444.77	
Consumptive Monthly Charge (per 1,000 gallons)			
	0 to 3,600 gallons	**3,601 to 7,200 gallons**	**Greater than 7,200 gallons**
Residential	$1.20	$1.80	$3.00
Commercial	$2.50	$2.50	$2.50

The State of Oregon Infrastructure Finance Authority (IFA) uses 7,500 gallons for a typical monthly residential use. Under La Pine's rate structure, 7,500 gallons would cost $40.60.

The percentage breakdown by account type in the City of La Pine is provided on Table 7-2.

TABLE 7-2
WATER ACCOUNT INFORMATION

Account Type	Number of Accounts	Percent of Total Accounts	Percent of Water Use in 2014
Residential	431	71	46.4
Commercial	176	29	53.6
TOTAL	**607**	**100**	**100**

The commercial users shown on Table 7-2 consist of schools, churches, City property, and businesses. As shown on the table, residential water users account for approximately 71 percent of the total water system accounts in the City of La Pine, while commercial accounts represent approximately 29 percent. However, residential water use accounts for approximately 46 percent of water use, while commercial water use accounts for the remaining 54 percent.

The revenue generated from the City's water rates, interest income, connection fees, turn-on fees, and franchise fees is presented on Table 7-3. Water rate revenue generated in fiscal year 2013-14 was $581,971. Using an annual user fee revenue amount of $581,971, and assuming 607 billed accounts, the City currently has an average monthly water user fee of approximately $80.72 per account.

TABLE 7-3
WATER DEPARTMENT REVENUE[1]

Fiscal Year	Water Rate Revenue	Total Revenue[2]
2012-13	$550,272	$552,403
2013-14	$581,971	$590,278

[1]Information obtained from financial reports for the City of La Pine. Financial reports completed for the La Pine Water District were not used.

[2]Total revenue calculated by adding domestic water sales, water connection/extension fees, and other miscellaneous income.

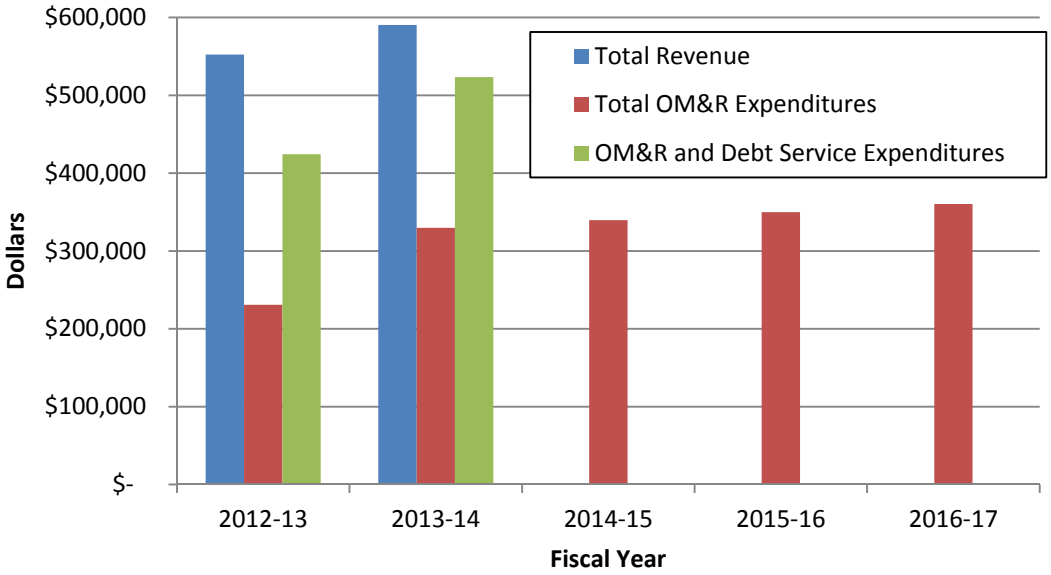
Current Financial Status

The annual cost of operating and maintaining the City of La Pine's water system is summarized on Figure 7-1. The costs presented were obtained from the City's financial reports and include all costs for the water system, such as operation, maintenance, and equipment replacement (OM&R) and staff payroll.

Historical and Project Budget Trends

The City's Water Department revenues have exceeded annual OM&R and debt service expenditures for both years for which data were available. A graphical plot of the City of La Pine's water system budget for the Water Department funds, showing total revenue and total expenditures, is found on Chart 7-1. It is worth noting that the total OM&R expenditures shown do not include interdepartmental and interfund transfers.

CHART 7-1
HISTORICAL AND PROJECTED CITY WATER BUDGET



By inflating the 2013-14 total expenditures by an estimated 3 percent per year, the total expenditures in a future year can be estimated, assuming no changes to the water system occur. Using this annual inflation of costs, OM&R expenditures are expected to reach approximately $360,000 by budget year 2017-18.

Transfers to Other Funds

In the past, the City has had large transfers into and out of the Water Department Fund, including transfer of funds from the La Pine Water District to the City, and several others. These large transfers will likely no longer occur and, therefore, were not included in this analysis.

Existing Debt

There are currently two revenue bonds being paid by the Water Department Fund. Figure 7-2 shows the typical annual interest and principal payments for each loan.

Water System Improvements Funding

In order to pursue the selected water system improvements discussed in Chapter 6, the City will need to obtain outside funding assistance. A number of state and federal grant and loan programs can provide assistance on municipal improvement projects to utility districts, cities, and counties. These programs offer various levels of funding aimed at different types of projects. These include programs administered by Rural Development (RD) under the U.S. Department of Agriculture, the U.S. Economic Development Administration (EDA), the Oregon Business Development Department - Infrastructure Finance Authority (IFA), and others.

These agencies can provide low interest loan funding and possibly grant funding for assisting rural communities with public works projects. Some of the funding programs provide funding only if the improvements address documented water quality compliance issues. A summary of potential funding programs follows.

Summary of Potential Funding Programs

The following section briefly summarizes the primary funding programs available to assist the City with a water system improvements project. Most of these agencies will require an increase in water rates to support a loan for water system improvements both as a condition of receiving monies and prior to being considered for grant funds. It should be noted that the monthly user rates discussed in this section can represent a combination of monthly usage fees and taxes.

Federal Grant and Loan Programs

U.S. Department of Agriculture Rural Development

This agency can provide financial assistance to communities with a population under 10,000 through both loans and direct grants. Under the loan program, the agency purchases local bonds. The interest rate for these bonds is dependent on the median household income (MHI) of the community and other factors and varies from year to year based on other economic factors nationally. The interest rate is generally about 4.0 percent with a repayment period of up

to 40 years. Applying for this type of funding is a fairly lengthy process involving development of an environmental report and a detailed funding application.

The agency presently requires communities to establish average residential user costs in the range of similar systems with similar demographics. The user costs must provide sufficient revenue to pay for all system OM&R costs and pay for the local debt service incurred as a result of the project. All project costs above this level may be paid for by grant funds, up to given limits, which are usually not more than 45 percent of the total project cost. The objective of the RD loan/grant program is to keep the cost for utilities in small, rural communities at a level that is similar to what other communities are paying.

Another of the agency's requirements is that loan recipients establish a reserve fund of 10 percent of the bond repayment during the first 10 years of the project, which can make the net interest rate higher. The RD program requires either revenue or general obligation bonds to be established through the agency for the project (refer to the Local Financing Options section of this chapter for further discussion). These bonds can usually be purchased for a period of 40 years if grant funding is also received. A combination loan and grant from RD may be an option for the City to implement water system improvements. In 2003 and 2005, the La Pine Water District obtained water system improvement funding from RD.

Economic Development Administration

The EDA has grant and loan funds similar to those available through the IFA's Special Public Works Fund (SPWF) program discussed later in this chapter. Monies are available to public agencies to fund projects that stimulate the economy of an area, and the overall goal of the program is to create or retain jobs. The EDA has invested a great deal of money in Oregon to fund public works improvement projects in areas where new industries are locating or plan to locate in the future. In addition, the agency has a program known as the Public Works Impact Program to fund projects in areas with extremely high rates of unemployment. This program is targeted toward creating additional jobs and reducing the unemployment rate in the area. Unless the City's water system improvements can be linked directly to industrial expansion or job retention, the City will not be in a competitive position to receive funding under these EDA programs.

State Grant and Loan Programs - Oregon Business Development Department - Infrastructure Finance Authority

Safe Drinking Water Revolving Loan Fund

This is primarily a loan program for the construction and/or improvement of public and private water systems to address regulatory compliance issues. This is accomplished through two separate programs: the Safe Drinking Water Revolving Loan Fund (SDWRLF) for collection, treatment, distribution, and related infrastructure, and the Drinking Water Protection Loan Fund (DWPLF) for protection of sources of drinking water prior to system intake. The SDWRLF program normally lends up to $6 million per project. Loan amounts greater than $6 million may be approved by the IFA board. The standard SDWRLF loan term is 20 years or the useful life of project assets, whichever is less. Loan terms up to 30 years may be available for "disadvantaged communities." This program offers subsidized interest rates for all successful projects. Interest

rates for a standard loan start at 80 percent of the state/local bond rate. Interest rates for loans to disadvantaged communities are based on a sliding scale between the interest rate for a standard loan and 1 percent. Communities may be eligible for some of the principal on their SDWRLF loan to be "forgiven." This forgivable loan feature is similar to a grant and is offered to disadvantaged communities. Special consideration, including partial principal forgiveness, is provided to projects qualifying or having Green Project Reserve components. The SDWRLF is a good source of low interest loan funds for the City's proposed improvements.

The DWPLF program normally lends up to $100,000 per project. Loan amounts greater than $100,000 may be available. A grant may be available from the DWPLF for the City's proposed improvements depending on available funds.

Water/Wastewater Financing Program

This is a loan and grant program that provides for the design and construction of public infrastructure when needed to ensure compliance with the Safe Drinking Water Act (SDWA) or the Clean Water Act (CWA). To be eligible, a system must have received, or is likely to soon receive, a notice of non-compliance by the appropriate regulatory agency associated with the SDWA or CWA.

While primarily a loan program, grants are available for municipalities that meet eligibility criteria. The loan/grant amounts are determined by financial analysis of the applicant's ability to afford a loan (debt capacity, repayment sources, current and projected utility rates, and other factors). The maximum loan term is 25 years or the useful life of the infrastructure financed, whichever is less. Loan amounts are determined by financial review and may be offered through a combination of direct and/or bond-funded loans. Loans are generally repaid with utility revenues or voter-approved bond issues. A limited tax general obligation pledge may also be required. Creditworthy borrowers may be funded through sale of state revenue bonds. The maximum grant is $750,000 per project based on a financial analysis. An applicant is not eligible for grant funds if the applicant's annual MHI is equal to or greater than 100 percent of the state average MHI for the same year. The City of La Pine's annual MHI in 2013 was 55 percent of the statewide MHI, so a combination of loan and grant funding from this program may be possible.

Community Development Block Grant Program

The primary objective of the Community Development Block Grant (CDBG) program is the development of viable (livable) urban communities by expanding economic opportunities and providing decent housing and a suitable living environment principally for persons of low and moderate incomes.

This is a grant program. The state receives an annual allocation from Housing and Urban Development for the CDBG program. Grant funding is subject to applicant need, availability of funds, and any other restrictions in the state's Method of Distribution (program guidelines). It is not possible to determine if any grant funds may be awarded prior to an analysis of the application and financial information.

Eligibility for the CDBG program requires that greater than 51 percent of persons within the community fall into the low to moderate income (LMI) category. In 2014, the City of La Pine had an 82.7 LMI population, which could make the City very competitive for a CDBG grant.

Special Public Works Fund

The SPWF program was established by the Oregon Legislature in 1985 to provide primarily loan funding for municipally owned infrastructure and other facilities that support economic and community development in Oregon. Loans and grants are available to municipalities for planning, designing, purchasing, improving, and constructing municipally owned facilities.

For design and construction projects, loans are primarily available; however, grants are available for and limited to projects that will create and/or retain traded-sector jobs. A traded-sector industry sells its goods or services into nationally or internationally competitive markets. The maximum grant award is $500,000 or 85 percent of the project cost, whichever is less. The grant amount per project is based on up to $5,000 per eligible job created or retained. Loans range in size from less than $100,000 to $10 million. The SPWF is able to offer very attractive interest rates that reflect tax-exempt market rates for very good quality creditors. Loan terms can be up to 25 years or the useful life of the project, whichever is less.

For Infrastructure Finance Authority Programs - Contact Regional Coordinator

Since program eligibility and fund availability may change from year to year, potential applicants are encouraged to contact their respective Regional Coordinator to obtain the most accurate and up-to-date information for each program.

Preliminary Equivalent Dwelling Units

When projecting future revenue for a water system, an equivalent dwelling unit (EDU) analysis is usually completed. One EDU is intended to represent the average residential water use for a given city. As an example, a residential account in La Pine would represent one EDU.

The City of La Pine does not use EDUs to bill customers. The City bills according to meter size and consumption as defined in Resolution No. 2015-02 (see Appendix E). The City utilizes an MCE factor to determine the base rate for each customer. This relationship is shown on Table 7-1. Essentially, the MCE factor is multiplied by the base rate of $28.90 to determine each customer's fixed monthly base rate. For the purpose of this WSS Update, the sum of the MCE factors of each user will be considered the same as EDUs.

The City recently changed how it charges a user for consumption. Rather than having a "base volume" that is provided with the base rate, the City charges for every gallon of consumption. The base rate and consumptive charges for both residential and commercial users are shown on Table 7-1.

A list of total accounts and associated meter sizes during 2014 was provided by the City. There are an estimated 882 current EDUs. Including the Cagle and Glenwood Acres areas would add an additional 275 EDUs, for a total of 1,336 EDUs, as shown on Table 7-4. These additional EDUs have been included for the purpose of this analysis.

TABLE 7-4
ACCOUNTS BY METER SIZE

Meter Size	MCE Factor	Number of Meters on City System	Total MCE (EDU)
5/8-inch	1	**688**	688
3/4-inch	1	**85**	85
1-inch	2.5	**59**	148
1-1/2-inch	5	**17**	85
2-inch	8	**27**	216
3-inch	16	**4**	64
4-inch	25	**2**	50
6-inch	50	**0**	0
Total	-	**882**	**1,336**

Most funding agencies will use EDUs as a basis for estimating future annual revenue and debt capacity for a city. The EDU determination is intended to equitably distribute water costs among all users. The EDU determination helps funding agencies determine the maximum loan (debt) amount a city can incur prior to being considered for grant funds for a water system improvements project. The analysis presented hereafter for the City's future water rate revenue and estimated debt capacity is based on the preliminary determination of 1,336 EDUs.

Debt Capacity

To determine the City's ability to fund a water system improvements project, Figures 7-3 and 7-4 were prepared. Several assumptions were made, as follows:

1. For Figure 7-3, water user fee revenue is based on the preliminary determination of 1,336 EDUs.
2. For Figure 7-3, OM&R costs for the budget year 2017-18 were set at $360,000 per year. The budget year 2017-18 was used as this would be the time period in which a project could be under construction. The OM&R costs were estimated using the historical total expenditures and proposed inflation shown on Chart 7-1.
3. For Figures 7-3 and 7-4, future debt service was calculated based on RD financing (at 4.0 percent interest for a 40-year repayment period), the typical IFA-based loan program (at 4.0 percent interest for a 20-year period), and the SDWRLF disadvantaged community allowance (at 1.0 percent interest for 30 years), depending on which financing program is able to assist the City.

The data shown on Figure 7-3 provide a general idea of the amount of debt the City could afford to service with various average monthly user rates. The impact of various loan terms established by funding agencies on average monthly user rates is also shown on Figure 7-3. Figure 7-4 provides a general idea of the impact to property taxes for varying interest rates and loan amounts if the debt payment is supported only by property taxes.

It is important to note that the estimated debt service capacities shown on Figure 7-3 are based on the current estimate of 1,336 EDUs, which includes the Cagle and Glenwood Acres areas. The EDU figures should be updated if project funding proceeds. It should be recognized that this is only a preliminary analysis, and the financial assumptions and figures presented in this WSS Update should be refined as

project implementation proceeds in the future and in the event agreements are worked out with funding agencies. If the City incurs further debt prior to obtaining loan or grant funds, these figures will need to be adjusted accordingly to reflect the debt payment requirements for the overall City budget.

Potential Rate Requirements to Fund System Improvements

Average residential water costs of approximately $40 or higher per month are now required by RD to provide a combination of grant and loan monies for projects of this type. This indicates the City may be in a position to receive grant funds from this program, as average residential water user rates are estimated to be at or higher than $40 per month.

In 2015, IFA is using 1.25 percent of a community's five-year MHI as the basis for residential monthly water user cost requirements to be eligible for grant funding. In the City of La Pine's case, the five-year MHI is $27,736. This MHI results in a required monthly residential water user cost of $28.89 to qualify for low interest loan or grant funding. IFA's residential rate requirement is also based on an assumed residential use of 7,500 gallons per month. With the City's current rates (see Table 7-1), $28.90 is charged as a base rate and a consumptive rate is added for each gallon used. If a residential water user consumed 7,500 gallons, the associated cost would be $40.60. Therefore, the City has already reached the 1.25 percent MHI threshold and is eligible to obtain low interest loans and/or grant funds through IFA. However, additional rate increases may be required to fund the full scope of the selected water system improvements.

One Stop Meeting and Project Intake Form

To evaluate all potential project funding options, a One Stop meeting can be requested by the City. One Stop meetings are typically scheduled in Salem, where representatives of IFA and other funding agencies meet with a city to discuss the project and funding needs and identify the funding program best suited for the project. To avoid requiring city representatives to travel to Salem, IFA can hold these meetings locally. IFA utilizes a Project Notification and Intake Form (PNIF) to outline a city's project, including the needs, project requirements, affected area, estimated project cost, time frame, schedule, etc. IFA evaluates the project based on information presented on the PNIF to determine the best funding program suited to the project. The city is usually invited to submit a funding application to the best funding program(s) identified in the One Stop meeting.

Local Financing Options

Regardless of the ultimate project scope and agency from which funds are obtained, La Pine may need to develop authorization to incur debt (i.e., bonding) for the selected project improvements. The need to develop authorization to incur debt depends on funding agency requirements and provisions in the City Charter. The need for bonding by the City is not required by most state funding programs. However, if a bond election is required, there are generally two options the City may use for its bonding authority: general obligation bonds and revenue bonds. General obligation bonds require a vote of the people to give the City the authority to repay the debt service through tax assessments, water revenues, or a combination of both. The taxing authority of the City provides the guarantee for the debt. Revenue bonds are financed through revenues of the water system. Authority to issue revenue bonds can come in two forms. One would be through a local bond election similar to that needed to sell a general obligation bond, and the second would be through Council action authorizing the sale of revenue bonds,

if the City Charter allows. If citizens do not object to the bonding authority resolution during a 60-day remonstrance period, the City would have authority to sell these revenue bonds.

It should be noted that Oregon law currently requires a 50 percent voter turnout to pass a bonded debt tax measure, unless the election is held in November of an even-numbered year. These November elections in even-numbered years require only a majority of those who voted to pass a bonded debt tax measure. Due to current tax measure limitations in the State of Oregon, careful consultation with experienced, licensed bonding attorneys should be made if the City begins the process of obtaining bonding authority for the proposed water system improvements.

Project Development Action Items

The following action items will need to be completed by the City of La Pine in order to implement the desired water system improvements project. The steps outlined are general in nature and include the major steps that need to be undertaken.

1. The City will need to finalize and adopt this WSS Update and proposed improvements once agencies review the draft WSS Update.

2. The City needs to submit a Letter of Interest to the Oregon Health Authority - Drinking Water Services for the SDWRLF project priority list.

3. The City needs to contact the IFA Regional Coordinator to initiate funding discussions.

4. The City will need to schedule a One Stop meeting with IFA to discuss potential funding options for the proposed improvements.

5. If IFA funding is identified as a potential source in the One Stop meeting, the City and IFA will draft a PNIF.

6. The City will need to hold public information meetings to inform its citizens of the need for and the scope of the project, to answer questions, and to explain the need for increases in user fees. Some funding programs (such as CDBG) have specific requirements that need to be addressed in public meetings.

7. Working with the various funding agencies, the City will need to develop a funding plan for the desired improvements.

8. The City will need to prepare funding applications for the water system improvements project and submit them to the appropriate funding agencies. The City will need to budget appropriate up-front funds to go through the funding application process.

Proposed Improvement Implementation Plan

Should the City wish to proceed with the identified water system improvements, the following implementation plan outlines the key steps the City would need to undertake. It is important to note that it usually takes approximately two to three years, at a minimum, from the date a city decides to proceed with an improvements project until the project is completed and serving the community. The following implementation plan uses winter 2015-16 as a starting date and assumes a three-year

implementation schedule. It should be noted that these implementation steps, as presented hereafter, may be different if the City elects to delay the project and pursue improvements in the future.

	Item	Completion Date
1.	Complete a Letter of Interest for the Safe Drinking Water Revolving Loan Fund project priority list.	Winter 2015-16
2.	Initiate funding discussions with the Oregon Business Development Department - Infrastructure Finance Authority (IFA) and USDA Rural Development. Hold a One-Stop meeting with agencies.	Winter 2015-16
3.	Public outreach and education program.	Spring 2016
4.	Work with IFA to submit a Project Notification and Intake Form (if IFA funding is identified as a potential source of funds).	Spring 2016
5.	Submit funding application(s) to agencies.	Spring 2016
6.	Finalize project funding.	Summer/Fall 2016
7.	Design system improvements.	Fall 2016 to Winter 2017-18
8.	Complete Environmental and Cultural Resource Reports.	Spring to Fall 2017
9.	Complete water right applications/transfers.	Spring to Fall 2017
10.	Bid and award construction contract.	Winter 2017-18 to Spring 2018
11.	Construct system improvements.	Spring 2018 to Fall 2019
12.	Close out project.	Winter 2019

The key to implementing the City of La Pine's water system improvements is the ability of the City to acquire funding that will allow water rates to remain as low as possible. The City should work closely with its citizens through public meetings to inform them of the system needs and the necessity for increased water user costs. To reduce the financial impact to rate payers, it will be vital that the City seek low interest loans coupled with grant funds. It is also good practice to increase rates, as required, in order to adequately fund operation and maintenance of the existing and improved water system and to keep up with inflation.

The water system improvements outlined herein are anticipated to provide La Pine with a higher quality water system with significantly improved reliability. The identified distribution system improvements will help improve water circulation, improve distribution system water quality and pressure, and significantly improve fire flow capacities in several key areas of the City, as well as provide service to an additional 275 connections inside the City limits. Overall, the proposed water system improvements will provide a much improved and more reliable water system that should serve the City of La Pine for many years.

CITY OF LA PINE, OREGON
HISTORICAL WATER DEPARTMENT FUNDS

	Revenue			Expenditures							
Fiscal Year	Water Sales Revenue	Other Income[1]	Total Revenue	Personnel Services	Materials and Services	Capital Outlay	Total OM&R Expenditures[2]	Debt Service[3]	Transfers[4]	Total Expenditures	Net Operating Income (Loss)
2012-13	$547,462	$4,941	$552,403	$155,434	$75,376	$0	$230,810	$193,504	$0	$424,314	$128,089
2013-14	$581,971	$8,307	$590,278	$133,570	$144,282	$51,924	$329,776	$193,503	$0	$523,279	$66,999

Notes:

[1] Other income is from connection/extension charges, system development charges, and other miscellaneous income.

[2] OM&R is operation, maintenance, and replacement. Does not include transfers to other funds or debt service.

[3] Includes debt service principal and interest.

[4] Transfers from La Pine Water District to the City of La Pine and interfund transfers not included.

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CITY OF
LA PINE, OREGON
WATER SYSTEM STUDY UPDATE
HISTORICAL WATER
DEPARTMENT FUNDS

FIGURE
7-1

CITY OF LA PINE, OREGON
WATER DEPARTMENT FUND EXISTING DEBT

Financer	Project	Interest Rate	Maturity Date	2013-14 Principal	2013-14 Interest	2013-14 Balance
USDA Rural Development	2003 Water System Improvements	4.5%	November 24, 2032	$ 46,759	$ 126,789	$ 2,225,964
USDA Rural Development	2005 Water System Improvements	4.5%	February 24, 2035	7,921	12,034	267,425
			Totals	**$ 54,680**	**$ 138,823**	**$ 2,493,389**

USDA = United States Department of Agriculture

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CITY OF
LA PINE, OREGON
WATER SYSTEM STUDY UPDATE
WATER DEPARTMENT FUND
EXISTING DEBT

FIGURE
7-2

CITY OF LA PINE, OREGON
PRELIMINARY WATER RATE ANALYSIS FOR LOAN CAPACITY
2017-18 BUDGET YEAR

RATES[1,2]	REVENUE[3]				EXPENDITURES			FINANCING OPTIONS		
Base Rate	Base Rate Revenue	Residential Usage Revenue	Commercial Usage Revenue	Total Revenue	Estimated OM&R Costs[4]	Existing Debt Service [5]	Revenue Available for Future Debt Service[6]	RD Loan Capacity[7]	Typical IFA Loan Capacity[8]	SDWRLF Disadvantaged Community Capacity[9]
$ 28.90	$ 463,325	$ 69,767	$ 94,211	$ 627,303	$ 360,000	$ 193,503	$ 73,800	$ 1,315,000	$ 1,003,000	$ 1,905,000
$ 30	$ 480,960	$ 69,767	$ 94,211	$ 644,938	$ 360,000	$ 193,503	$ 91,435	$ 1,629,000	$ 1,243,000	$ 2,360,000
$ 32	$ 513,024	$ 69,767	$ 94,211	$ 677,002	$ 360,000	$ 193,503	$ 123,499	$ 2,200,000	$ 1,678,000	$ 3,187,000
$ 34	$ 545,088	$ 69,767	$ 94,211	$ 709,066	$ 360,000	$ 193,503	$ 155,563	$ 2,771,000	$ 2,114,000	$ 4,015,000
$ 36	$ 577,152	$ 69,767	$ 94,211	$ 741,130	$ 360,000	$ 193,503	$ 187,627	$ 3,342,000	$ 2,550,000	$ 4,842,000
$ 38	$ 609,216	$ 69,767	$ 94,211	$ 773,194	$ 360,000	$ 193,503	$ 219,691	$ 3,913,000	$ 2,986,000	$ 5,670,000
$ 40	$ 641,280	$ 69,767	$ 94,211	$ 805,258	$ 360,000	$ 193,503	$ 251,755	$ 4,485,000	$ 3,421,000	$ 6,497,000
$ 42	$ 673,344	$ 69,767	$ 94,211	$ 837,322	$ 360,000	$ 193,503	$ 283,819	$ 5,056,000	$ 3,857,000	$ 7,325,000
$ 44	$ 705,408	$ 69,767	$ 94,211	$ 869,386	$ 360,000	$ 193,503	$ 315,883	$ 5,627,000	$ 4,293,000	$ 8,152,000
$ 46	$ 737,472	$ 69,767	$ 94,211	$ 901,450	$ 360,000	$ 193,503	$ 347,947	$ 6,198,000	$ 4,729,000	$ 8,980,000
$ 48	$ 769,536	$ 69,767	$ 94,211	$ 933,514	$ 360,000	$ 193,503	$ 380,011	$ 6,769,000	$ 5,164,000	$ 9,807,000
$ 50	$ 801,600	$ 69,767	$ 94,211	$ 965,578	$ 360,000	$ 193,503	$ 412,075	$ 7,340,000	$ 5,600,000	$ 10,635,000

IFA = Infrastructure Finance Authority
EDU = Equivalent Dwelling Unit
OM&R = Operation, Maintenance, and Replacement
RD = Rural Development
SDWRLF = Safe Drinking Water Revolving Loan Fund

Notes:

[1] The current base water rate is $28.90. A consumptive rate is also charged; see Resolution No. 2015-02.

[2] Base rates are based on meter size. Base rate is multiplied by an MCE factor.

[3] Revenue is based on the fiscal year 2013-14 number of water billing units and consumption and assuming 275 additional billing units in the Cagle and Glenwood Acres areas. Revenue is calculated as the product of the base rate times the number of total EDUs (1,336) added to the product of the respective consumption rate times the average usage over the past four years.

[4] Estimated OM&R cost for budget year 2017-18.

[5] Existing debt service principal and interest is from the City of La Pine's Financial Report for fiscal year 2013-14.

[6] Revenue available for future debt service = revenue - estimated OM&R costs - existing debt service principal and interest.

[7] Assumes loan funding at 4.0 percent for 40 years (loan capacity determined after 10 percent reserve payment removed from revenue available for debt service). Values rounded to nearest $1,000.

[8] Assumes loan funding at 4.0 percent for 20 years. Values rounded to the nearest $1,000.

[9] Assumes loan funding at 1.0 percent for 30 years. Values rounded to the nearest $1,000.

CITY OF LA PINE, OREGON
PRELIMINARY PROPERTY TAX ANALYSIS FOR
WATER SYSTEM BONDING CAPACITY
2017-18 BUDGET YEAR

Typical Rural Development Loan

Loan Amount	Interest Rate[1]	Loan Period	Estimated Annual Payment	Estimated Annual Tax Rate Increase per $1,000[2]	Estimated Annual Tax Increase for a $100,000 Home	
					Monthly	Annual
$ 1,000,000	4.0%	40 Years	$ 50,500	$ 0.36	$ 3.00	$ 36
2,000,000	4.0%	40 Years	101,000	$ 0.72	6.00	72
3,000,000	4.0%	40 Years	151,500	$ 1.09	9.08	109
4,000,000	4.0%	40 Years	202,000	$ 1.45	12.08	145
5,000,000	4.0%	40 Years	252,500	$ 1.81	15.08	181
6,000,000	4.0%	40 Years	303,000	$ 2.17	18.08	217
7,000,000	4.0%	40 Years	353,500	$ 2.53	21.08	253
8,000,000	4.0%	40 Years	404,000	$ 2.90	24.17	290

Typical IFA Loan

Loan Amount	Interest Rate[1]	Loan Period	Estimated Annual Payment	Estimated Annual Tax Rate Increase per $1,000[2]	Estimated Annual Tax Increase for a $100,000 Home	
					Monthly	Annual
$ 1,000,000	4.0%	20 Years	$ 73,600	$ 0.53	$ 4.42	$ 53
2,000,000	4.0%	20 Years	147,200	$ 1.05	8.75	105
3,000,000	4.0%	20 Years	220,800	$ 1.58	13.17	158
4,000,000	4.0%	20 Years	294,400	$ 2.11	17.58	211
5,000,000	4.0%	20 Years	368,000	$ 2.64	22.00	264
6,000,000	4.0%	20 Years	441,600	$ 3.16	26.33	316
7,000,000	4.0%	20 Years	515,200	$ 3.69	30.75	369
8,000,000	4.0%	20 Years	588,800	$ 4.22	35.17	422

SDWRLF for Disadvantaged Community Loan

Loan Amount	Interest Rate[1]	Loan Period	Estimated Annual Payment	Estimated Annual Tax Rate Increase per $1,000[2]	Estimated Annual Tax Increase for a $100,000 Home	
					Monthly	Annual
$ 1,000,000	1.0%	30 Years	$ 38,700	$ 0.28	$ 2.33	$ 28
2,000,000	1.0%	30 Years	77,400	$ 0.55	4.58	55
3,000,000	1.0%	30 Years	116,100	$ 0.83	6.92	83
4,000,000	1.0%	30 Years	154,800	$ 1.11	9.25	111
5,000,000	1.0%	30 Years	193,500	$ 1.39	11.58	139
6,000,000	1.0%	30 Years	232,200	$ 1.66	13.83	166
7,000,000	1.0%	30 Years	270,900	$ 1.94	16.17	194
8,000,000	1.0%	30 Years	309,600	$ 2.22	18.50	222

[1] Actual loan interest rates could vary.
[2] The annual tax rate increase is based on the City of La Pine's 2015-16 assessed valuation of 139,527,002. It was also assumed that 100 percent of taxes would be collected. Typically, a small percentage of taxes are not paid, which would require the estimated tax rate to be increased slightly from what is shown here.

IFA = Infrastructure Finance Authority
SDWRLF = Safe Drinking Water Revolving Loan Fund

anderson perry & associates, inc.

CITY OF
LA PINE, OREGON
WATER SYSTEM STUDY UPDATE
PRELIMINARY PROPERTY TAX ANALYSIS
FOR BONDING CAPACITY

FIGURE
7-4

Appendices Table of Contents

APPENDIX A
Well Logs (Wells 1A and 2B)

Desc 54968 DESC 54968

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)

WELL ID # L 50208
START CARD # 82085

(1) OWNER:
Well Number: Well A
Name: LaPine Community Water District
Address: P.O. Box 2867
City: LaPine State: OR Zip: 97739

(2) TYPE OF WORK: (repair/
☒ New Well ☐ Deepening ☐ Alteration recondition) ☐ Abandonment

(3) DRILL METHOD:
☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger
☐ Other: ____

(4) PROPOSED USE:
☐ Domestic ☒ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☐ Other ____

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☒ No
Depth of Completed Well 251'
Explosives Used ☐ Yes ☒ No Type --- Amount ---

HOLE Diameter	From	To	Material	SEAL From	To	sacks or pounds
17"	0'	30'	Cement	0'	30'	66 Sacks
15"	30'	129'	Cement	30'	129'	176 Sacks
15"	129	151				
12	151	251	-	-	-	-

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E
☐ Other
Backfill placed from --- to --- Material ---
from --- to --- Material ---
Gravel placed from --- to --- Size of gravel ---

(6) CASING/LINER:
CASING:

Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
12"	+4'	151'	.250	☒	☐	☒	☐
				☐	☐	☐	☐
				☐	☐	☐	☐
				☐	☐	☐	☐

LINER:

10"	-143'	154'	.250	☒	☐	☒	☐
10"	-204'	-221'	.250	☒	☐	☒	☐

Final location of Shoe(s): ____

(7) PERFORATIONS/SCREENS:
☐ Perforations Method: ____
☒ Screen Type: 304 Material: S.S.

From	To	Slot Size	No.	Tele/pipe Diameter	size	Casing	Liner
154'	204'	100		12"	T	☐	☒
221'	251'	100		12"	T	☐	☒
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☒ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gpm	Drawdown	Drill Stem at	Time
			1 hr.
1300	24		24 hr.

Temperature of water 47 Depth Artesian Flow Found ---
Was a water analysis done? Yes By whom: JRS
Did any strata contain water not suitable for intended use? (explain)
No
Depth of Strata: N/A

(9) LOCATION OF WELL by legal description:
County: Deschutes Latitude: --- Longitude: ---
Township: 22S Range: 11E
Section: 18 NW ¼ SE ¼
Tax Lot: 300 Lot: --- Block: --- Subdivision: ---
Street Address of Well (or nearest address) ____
3 1/2 Miles East of Hwy 97 on Finly Butte Rd

(10) STATIC WATER LEVEL:
116 Ft. below land surface Date 8/30/02
Artesian pressure --- lb. per sq. in. Date ---

(11) WATER BEARING ZONES:
Depth at which water was first found 131

From	To	Est. Flow Rate	SWL
131	151	10 GPM	116
154	170	100 GPM	
191	197	350 GPM	116
228	249	350 GPM	116

(12) WELL LOG: Ground Elevation: ____

Material	From	To	SWL
Soil Med Brown	0	2	
Sand Brown Course	2	30	
Cemented Conglom Brow-Red	30	39	
Cemented Conglom Gray	39	51	
Cinders-Lava Mix Red-Green	51	74	
Cinders-Lava Mixed Red-Black	74	121	
Lava Hard Green-Black	121	129	
Lava Black Loose	129	151	
Lava Gray Hard	151	159	
Lava Med Gray-Red	159	170	
Lava Med Gray	170	191	
Lava Gray Fract	191	197	
Lava Gray Hard	197	216	
Lava Gray Fract	216	251	

RECEIVED
SEP 27 2002
WATER RESOURCES DEPT.
SALEM, OREGON

RECEIVED
JAN 03 2005
WATER RESOURCES DEPT
SALEM, OREGON

Date Started: 08/02/02 Completed: 08/30/02

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration,, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

Signed ____ WWC Number 723
Date 09/25/02

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.

Signed ____ WWC Number 723
Date 09/25/02

ORIGINAL & FIRST COPY - Water Resources Department SECOND COPY - Constructor THIRD COPY - Customer

DESC 55049

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)

WELL ID # L 50209
START CARD # 82089

(1) OWNER:
Well Number: Well B
Name: LaPine Community Water District
Address: P.O. Box 2867
City: LaPine State: OR Zip: 97739

(2) TYPE OF WORK: (repair/
☒New Well ☐Deepening ☐Alteration recondition) ☐Abandonment

(3) DRILL METHOD:
☒Rotary Air ☒Rotary Mud ☐Cable ☐Auger
☐Other: ____

(4) PROPOSED USE:
☐Domestic ☒Community ☐Industrial ☐Irrigation
☐Thermal ☐Injection ☐Livestock ☐Other ____

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐Yes ☒No
Depth of Completed Well 254'
Explosives Used ☐Yes ☒No Type --- Amount ---

HOLE Diameter	From	To	Material	SEAL From	To	sacks or pounds
16"	0	158'	Cement	0'	158'	92 Sacks
12"	158'	254'	---	---	---	---

How was seal placed: Method ☐A ☐B ☒C ☐D ☐E
☐ Other
Backfill placed from --- to --- Material ---
from--- to --- Material ---
Gravel placed from--- to --- Size of gravel ---

(6) CASING/LINER:
CASING:

Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
12"	+4	158	.250	☒	☐	☒	☐
				☐	☐	☐	☐
				☐	☐	☐	☐
				☐	☐	☐	☐

LINER:

10"	-150	-159	.250	☒	☐	☒	☐
Fig	K	150		☐	☐	☐	☐

Final location of Shoe(s): ____

(7) PERFORATIONS/SCREENS:
☐ Perforations Method: ____
☒ Screen Type: 304 Material: S.S.

From	To	Slot Size	No.	Diameter	Tele/pipe size	Casing	Liner
159'	254'	.100		12"	T	☐	☒
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☒ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gpm	Drawdown	Drill Stem at	Time
			1 hr.
1300	13		24 hr.

Temperature of water 46 Depth Artesian Flow Found ---
Was a water analysis done? --- By whom: ---
Did any strata contain water not suitable for intended use? (explain)
No
Depth of Strata: N/A

(9) LOCATION OF WELL by legal description:
County: Deschutes Latitude: --- Longitude: ---
Township: 22S Range: 11E
Section: 18 NW ¼ SE ¼
Tax Lot: 300 Lot: --- Block: --- Subdivision: ---
Street Address of Well (or nearest address) ____
3 1/2 Miles East of Hwy 97 on Finly Butte Rd

(10) STATIC WATER LEVEL:
118 Ft. below land surface Date 10/03/02
Artesian pressure --- lb. per sq. in. Date ---

(11) WATER BEARING ZONES:
Depth at which water was first found ____

From	To	Est. Flow Rate	SWL
133	179	300 GPM	118
191	254	1200 GPM	118

(12) WELL LOG: Ground Elevation: ____

Material	From	To	SWL
Soil Brown Loose	0	2	
Sand Brown Some Cobble	2	33	
Conglom Hard Black-Red	33	56	
Lava Cinder Mix	56	66	
Cinder Loose Black	66	71	
Lava Black-Red	71	76	
Lava Black Fract	76	98	
Lava Hard Black	98	118	
Basalt Very Hard	118	173	
Lava Med-Hard Gray	173	179	
Lava Hard Gray	179	228	
Lava Broken Hard	228	243	
Broken Rubble	243	254	
Lava Hard Gray	254	255	

RECEIVED
NOV 2 1 2002
WATER RESOURCES DEPT.
SALEM, OREGON

Date Started: 09/02/02 Completed: 10/03/02

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration,. or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.
WWC Number 723
Signed ____ Date 10/07/02

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
WWC Number 723
Signed ____ Date 10/07/02

ORIGINAL & FIRST COPY - Water Resources Department SECOND COPY - Constructor THIRD COPY - Customer

APPENDIX B
Water Right Permits and Applications

Water Right Information Query Results

Contact Information

Current contact information

OWNER:
CITY OF LA PINE
PO BOX 3055
51340 HWY 97
LA PINE, OR 97739

Water Right Information

Status: Non-Cancelled
County: Deschutes
File Folder Location: Salem
Watermaster District: 11

Documents

View all scanned documents

Application: G 13552 , paper map

Permit: G 13444 document

Signature: 8/12/1998

Permit Workflow			
Action	Date	Result	Completed By
Extension Received	9/6/2002		ANN REECE
Extension Comment Period Ends	9/17/2002		ANN REECE
Completion Date [C Date]	10/1/2002		
Extension Received	11/1/2007		KIM FRENCH
Extension Comment Period Ends	11/6/2007		KIM FRENCH
Extension PFO 315 Issued	12/11/2007	Propose to Approve	KIM FRENCH
Extension PFO Protest Period Ends	1/25/2008		KIM FRENCH
Extension FO Issued	2/7/2008	Extended	KIM FRENCH
Extension Received	9/10/2012		JOAN SMITH
CBU Received	9/20/2012		
Extended Completion Date [Extension C Date]	10/1/2012		KIM FRENCH
Extension Comment Period Ends	10/18/2012		JOAN SMITH
Extension PFO 315 Issued	6/24/2014	Propose to Approve	STEVE PARRETT
Extension PFO Protest Period Ends	8/8/2014	Propose to Approve	STEVE PARRETT
Extension FO Issued	8/29/2014	Extended	STEVE PARRETT
Extended Completion Date [Extension C Date]	10/1/2022		STEVE PARRETT

Order(s)

Order Origin	Volume-Page	Signature	Description
Special	74-319	3/7/2008	APPROVING POA POU T-9241
Special	93-313	9/2/2014	WMCP FOR CITY OF LA PINE

Transfer(s)

Transfer	Transfer type	Status
T9241 ()	Permit Amendment	Approved

View detail with Web Mapping
View Places of Use from Water Rights in the Same Area
View Reported Water Use

Point(s) of Diversion

POD 1 - A WELL > LONG PRAIRIE SLOUGH

Description

- Name: WELL 1A
- T-R-S-QQ: 22.00S-11.00E-18-NW SE
- Location Description: 1240.5 FEET SOUTH AND 804 FEET EAST FROM C1/4 CORNER, SECTION 18

POD Rate

Max Rate (cfs)	Rate (cfs)	Max Volume (af)	Volume (af)
2.23	1.115(est)		

QUASI-MUNICIPAL USES (Primary)

Priority Date	Max Rate (cfs)	Rate (cfs)	Max Volume (af)	Volume (af)	Rate/Acre	Duty	Start Date	End Date	Remarks
11/8/1993	2.23	1.115(est)					1/1	12/31	

POD 2 - A WELL > LONG PRAIRIE SLOUGH

Description

- Name: WELL 2B
- T-R-S-QQ: 22.00S-11.00E-18-NW SE
- Location Description: 1143 FEET SOUTH AND 1085 FEET EAST FROM C1/4 CORNER, SECTION 18

POD Rate

Max Rate (cfs)	Rate (cfs)	Max Volume (af)	Volume (af)
2.23	1.115(est)		

QUASI-MUNICIPAL USES (Primary)

Priority Date	Max Rate (cfs)	Rate (cfs)	Max Volume (af)	Volume (af)	Rate/Acre	Duty	Start Date	End Date	Remarks
11/8/1993	2.23	1.115(est)					1/1	12/31	

Place(s) of Use

Add TRS grouping

Use - QUASI-MUNICIPAL USES (Primary); Priority Date: 11/8/1993

T-R-S	QQ	DLC	Gov't Lot	Taxlot	Acres	Status	Linked PODs	Inchoate Info	Remarks
21.00S-10.00E-36	NE NE					NC			
21.00S-10.00E-36	NW NE					NC			
21.00S-10.00E-36	SW NE					NC			
21.00S-10.00E-36	SE NE					NC			
21.00S-10.00E-36	SE SW					NC			
21.00S-10.00E-36	NE SE					NC			
21.00S-10.00E-36	NW SE					NC			

21.00S-10.00E-36	SW SE					NC				
21.00S-10.00E-36	SE SE					NC				
22.00S-10.00E-1	NW NE					NC				
22.00S-10.00E-1	NE NW					NC				
22.00S-10.00E-1	NW NW					NC				
22.00S-10.00E-1	SW NW					NC				
22.00S-10.00E-1	SE NW					NC				
22.00S-10.00E-1	NW SW					NC				
22.00S-10.00E-1	SW SW					NC				
22.00S-10.00E-2	NE NE					NC				
22.00S-10.00E-2	SE NE					NC				
22.00S-10.00E-2	SE SW					NC				
22.00S-10.00E-2	NE SE					NC				
22.00S-10.00E-2	NW SE					NC				
22.00S-10.00E-2	SW SE					NC				
22.00S-10.00E-2	SE SE					NC				
22.00S-10.00E-10	NE SE					NC				
22.00S-10.00E-10	SE SE					NC				
22.00S-10.00E-11	NE NE					NC				
22.00S-10.00E-11	NW NE					NC				
22.00S-10.00E-11	SW NE					NC				
22.00S-10.00E-11	SE NE					NC				
22.00S-10.00E-11	NE NW					NC				
22.00S-10.00E-11	NW NW					NC				
22.00S-10.00E-11	SW NW					NC				
22.00S-10.00E-11	SE NW					NC				
22.00S-10.00E-11	NE SW					NC				
22.00S-10.00E-11	NW SW					NC				
22.00S-10.00E-11	SW SW					NC				
22.00S-10.00E-11	SE SW					NC				
22.00S-10.00E-11	NE SE					NC				
22.00S-10.00E-11	NW SE					NC				
22.00S-10.00E-11	SW SE					NC				
22.00S-10.00E-11	SE SE					NC				
22.00S-10.00E-12	NE NW					NC				
22.00S-10.00E-12	NW NW					NC				
22.00S-10.00E-12	SW NW					NC				
22.00S-10.00E-12	SE NW					NC				
22.00S-10.00E-12	NW SW					NC				
22.00S-10.00E-12	SW SW					NC				
22.00S-10.00E-13	NW NW					NC				
22.00S-10.00E-13	SW NW					NC				
22.00S-10.00E-13	NW SW					NC				
22.00S-10.00E-13	SW SW					NC				
22.00S-10.00E-14	NE NE					NC				
22.00S-10.00E-14	NW NE					NC				
22.00S-10.00E-14	SW NE					NC				
22.00S-10.00E-14	SE NE					NC				
22.00S-10.00E-14	NE NW					NC				
22.00S-10.00E-14	NW NW					NC				
22.00S-10.00E-14	SW NW					NC				
22.00S-10.00E-14	SE NW					NC				
22.00S-10.00E-14	NE SW					NC				
22.00S-10.00E-14	NW SW					NC				
22.00S-10.00E-14	SW SW					NC				

22.00S-10.00E-14	SE SW					NC			
22.00S-10.00E-14	NE SE					NC			
22.00S-10.00E-14	NW SE					NC			
22.00S-10.00E-14	SW SE					NC			
22.00S-10.00E-14	SE SE					NC			
22.00S-10.00E-15	NE NE					NC			
22.00S-10.00E-15	SE NE					NC			
22.00S-10.00E-15	NE SE					NC			
Sum of Acres: 0.0									

Water Right Genealogy

- Permit: G 13444
  - Inchoate: T 9241 CF (AMN)
    - Permit: G 13444 *

View Water Rights in same Family

Report Errors with Water Right Data

Return to WRIS Query

STATE OF OREGON

COUNTY OF DESCHUTES

PERMIT TO APPROPRIATE THE PUBLIC WATERS

THIS PERMIT IS HEREBY ISSUED TO

LAPINE WATER COMPANY, PAT GISLER
1470 NE 1ST STREET #100 (503)389-5800
BEND, OREGON 97701-4267

The specific limits and conditions of the use are listed below.

APPLICATION FILE NUMBER: G-13552

SOURCE OF WATER: A WELL IN THE LONG PRAIRIE SLOUGH BASIN

PURPOSE OR USE: QUASI-MUNICIPAL

MAXIMUM RATE: 2.23 CUBIC FOOT PER SECOND

PERIOD OF USE: YEAR ROUND

DATE OF PRIORITY: NOVEMBER 8, 1993

POINT OF DIVERSION LOCATION: NW 1/4 SE 1/4, SECTION 18, T22S, R11E, W.M.; 1244 FEET SOUTH & 672 FEET EAST FROM THE C 1/4 CORNER SECTION 18

THE PLACE OF USE IS LOCATED AS FOLLOWS:

SE 1/4 SE 1/4
SECTION 10

SW 1/4 SW 1/4
SE 1/4 SW 1/4
SECTION 11

NW 1/4 NW 1/4
SW 1/4 NW 1/4
NW 1/4 SW 1/4
SW 1/4 SW 1/4
SECTION 13

ALL
SECTION 14

ASSIGNED, See Misc. Rec., Vol. 8 Page 530-53 + 566

NE 1/4 NE 1/4
SE 1/4 NE 1/4
NE 1/4 SE 1/4
SECTION 15
TOWNSHIP 22 SOUTH, RANGE 10 EAST, W.M.

T 22S R11E.

Measurement, recording and reporting conditions:

A. Before water use may begin under this permit, the permittee shall install a meter or other suitable measuring device as approved by the Director. The permittee shall maintain the meter or measuring device in good working order, shall keep a complete record of the amount of water used each month and shall submit a report which includes the recorded water use measurements to the Department annually or more frequently as may be required by the Director. Further, the Director may require the permittee to report general water use information, including the place and nature of use of water under the permit.

B. The permittee shall allow the watermaster access to the meter or measuring device; provided however, where the meter or measuring device is located within a private structure, the watermaster shall request access upon reasonable notice.

If substantial interference with a senior water right occurs due to withdrawal of water from any well listed on this permit, then use of water from the well(s) shall be discontinued or reduced and/or the schedule of withdrawal shall be regulated until or unless the Department approves or implements an alternative administrative action to mitigate the interference. The Department encourages junior and senior appropriators to jointly develop plans to mitigate interferences.

Use of water under authority of this permit may be regulated if analysis of data available after the permit is issued discloses that the appropriation will measurably reduce the surface water flows necessary to maintain the free-flowing character of a scenic waterway in quantities necessary for recreation, fish and wildlife in effect as of the priority date of the right or as those quantities may be subsequently reduced.

Within 2 years of permit issuance, the permittee shall submit a water management and conservation plan consistent with OAR Chapter 690, Division 86.

STANDARD CONDITIONS

The wells shall be constructed in accordance with the General Standards for the Construction and Maintenance of Water Wells in Oregon. The works shall be equipped with a usable access port, and may also include an air line and pressure gauge adequate to determine water level elevation in the well at all times.

The use shall conform to such reasonable rotation system as may be ordered by the proper state officer.

Prior to receiving a certificate of water right, the permit holder shall submit the results of a pump test meeting the department's standards, to

the Water Resources Department. The Director may require water level or pump test results every ten years thereafter.

Failure to comply with any of the provisions of this permit may result in action including, but not limited to, restrictions on the use, civil penalties, or cancellation of the permit.

This permit is for the beneficial use of water without waste. The water user is advised that new regulations may require the use of best practical technologies or conservation practices to achieve this end.

By law, the land use associated with this water use must be in compliance with statewide land-use goals and any local acknowledged land-use plan.

The use of water shall be limited when it interferes with any prior surface or ground water rights.

The Director finds that the proposed use(s) of water described by this permit, as conditioned, will not impair or be detrimental to the public interest.

Actual construction of the well shall begin by August 12, 1999. Complete application of water to the use shall be made on or before October 1, 2002. Within one year after complete application of water to the proposed use, the permittee shall submit a claim of beneficial use, which includes a map and report, prepared by a Certified Water Rights Examiner (CWRE).

Issued August 12, 1998

Dwight French for
Martha O. Pagel, Director
Water Resources Department

BEFORE THE WATER RESOURCES DEPARTMENT
OF THE
STATE OF OREGON

In the Matter of Permit Amendment T-9241, Deschutes County	)	FINAL ORDER APPROVING CHANGES IN POINT OF APPROPRIATION AND PLACE OF USE

Authority

ORS 537.211 establishes the process in which a water right permit holder may submit a request to change the point of appropriation and/or place of use authorized under an existing water right permit.

Applicant

LAPINE WATER DISTRICT
PO BOX 2867
LAPINE, OR 97739

Findings of Fact

Background

1. On September 6, 2002, LaPine Water District, filed an application to amend the point of appropriation and place of use under Permit G-13444. The Department assigned the application number T-9241.

2. On November 27 and 30, 2007, Russ Dodge (CWRE #041) submitted a revised application and map, complete land use information and the remaining application fees, on behalf of the applicant, thus completing the permit amendment application.

3. The permit to be amended is as follows:

Permit: G-13444, in the name of LAPINE WATER DISTRICT
Use: QUASI-MUNICIPAL
Priority Date: NOVEMBER 8, 1993
Quantity: 2.23 CUBIC FEET PER SECOND (CFS)
Source: A WELL, in the Long Prairie Slough Basin
Date of Complete Application of Water: October 1, 2012

This is a final order in other than a contested case. This order is subject to judicial review under ORS 183.484. Any petition for judicial review must be filed within the 60-day time period specified by ORS 183.484(2). Pursuant to ORS 536.075 and OAR 137-004-0080, you may petition for judicial review or petition the Director for reconsideration of this order. A petition for reconsideration may be granted or denied by the Director, and if no action is taken within 60 days following the date the petition was filed, the petition shall be deemed denied.

Authorized Point of Appropriation (POA):

Twp	Rng	Mer	Sec	¼ ¼	Location
22 S	11 E	WM	18	NW SE	1244 feet South and 672 feet East from the center ¼ corner of Section 18

Authorized Place of Use:

QUASI-MUNICIPAL USE				
Twp	**Rng**	**Mer**	**Sec**	**¼ ¼**
22 S	10 E	WM	10	SE SE
22 S	10 E	WM	11	SW SW
22 S	10 E	WM	11	SE SW
22 S	10 E	WM	13	NW NW
22 S	10 E	WM	13	SW NW
22 S	10 E	WM	13	NW SW
22 S	10 E	WM	13	SW SW
22 S	10 E	WM	14	NE NE
22 S	10 E	WM	14	NW NE
22 S	10 E	WM	14	SW NE
22 S	10 E	WM	14	SE NE
22 S	10 E	WM	14	NE NW
22 S	10 E	WM	14	NW NW
22 S	10 E	WM	14	SW NW
22 S	10 E	WM	14	SE NW
22 S	10 E	WM	14	NE SW
22 S	10 E	WM	14	NW SW
22 S	10 E	WM	14	SW SW
22 S	10 E	WM	14	SE SW
22 S	10 E	WM	14	NE SE
22 S	10 E	WM	14	NW SE
22 S	10 E	WM	14	SW SE
22 S	10 E	WM	14	SE SE
22 S	10 E	WM	15	NE NE
22 S	10 E	WM	15	SE NE
22 S	10 E	WM	15	NE SE

4. Application T-9241 proposes to change the point of appropriation (well) of the permit to two new wells located as follows:

Twp	Rng	Mer	Sec	¼ ¼	Location	Approximate Distance from Authorized Well
22 S	11 E	WM	18	NW SE	**Well 1** – 1240.5 feet South and 804 feet East from the center ¼ corner of Section 18	130 feet East
22 S	11 E	WM	18	NW SE	**Well 2** – 1143 feet South and 1085 feet East from the center ¼ corner of Section 18	425 feet Northeast

5. Application T-9241 also proposes to change the place of use of the permit to:

QUASI-MUNICIPAL USE				
Twp	**Rng**	**Mer**	**Sec**	**¼ ¼**
21 S	**10 E**	**WM**	**36**	**NE NE***
21 S	**10 E**	**WM**	**36**	**NW NE***
21 S	**10 E**	**WM**	**36**	**SW NE***
21 S	**10 E**	**WM**	**36**	**SE NE***
21 S	**10 E**	**WM**	**36**	**SE SW***
21 S	**10 E**	**WM**	**36**	**NE SE***
21 S	**10 E**	**WM**	**36**	**NW SE***
21 S	**10 E**	**WM**	**36**	**SW SE***
21 S	**10 E**	**WM**	**36**	**SE SE***
22 S	**10 E**	**WM**	**1**	**NW NE***
22 S	**10 E**	**WM**	**1**	**NE NW***
22 S	**10 E**	**WM**	**1**	**NW NW***
22 S	**10 E**	**WM**	**1**	**SW NW***
22 S	**10 E**	**WM**	**1**	**SE NW***
22 S	**10 E**	**WM**	**1**	**NW SW***
22 S	**10 E**	**WM**	**1**	**SW SW***
22 S	**10 E**	**WM**	**2**	**NE NE***
22 S	**10 E**	**WM**	**2**	**SE NE***
22 S	**10 E**	**WM**	**2**	**SE SW***
22 S	**10 E**	**WM**	**2**	**NE SE***
22 S	**10 E**	**WM**	**2**	**NW SE***
22 S	**10 E**	**WM**	**2**	**SW SE***
22 S	**10 E**	**WM**	**2**	**SE SE***
22 S	**10 E**	**WM**	**10**	**NE SE***
22 S	10 E	WM	10	SE SE
22 S	**10 E**	**WM**	**11**	**NE NE***
22 S	**10 E**	**WM**	**11**	**NW NE***

QUASI-MUNICIPAL USE				
Twp	Rng	Mer	Sec	¼ ¼
22 S	**10 E**	**WM**	**11**	**SW NE***
22 S	**10 E**	**WM**	**11**	**SE NE***
22 S	**10 E**	**WM**	**11**	**NE NW***
22 S	**10 E**	**WM**	**11**	**NW NW***
22 S	**10 E**	**WM**	**11**	**SW NW***
22 S	**10 E**	**WM**	**11**	**SE NW***
22 S	**10 E**	**WM**	**11**	**NE SW***
22 S	**10 E**	**WM**	**11**	**NW SW***
22 S	10 E	WM	11	SW SW
22 S	10 E	WM	11	SE SW
22 S	**10 E**	**WM**	**11**	**NE SE***
22 S	**10 E**	**WM**	**11**	**NW SE***
22 S	**10 E**	**WM**	**11**	**SW SE***
22 S	**10 E**	**WM**	**11**	**SE SE***
22 S	**10 E**	**WM**	**12**	**NE NW***
22 S	**10 E**	**WM**	**12**	**NW NW***
22 S	**10 E**	**WM**	**12**	**SW NW***
22 S	**10 E**	**WM**	**12**	**SE NW***
22 S	**10 E**	**WM**	**12**	**NW SW***
22 S	**10 E**	**WM**	**12**	**SW SW***
22 S	10 E	WM	13	NW NW
22 S	10 E	WM	13	SW NW
22 S	10 E	WM	13	NW SW
22 S	10 E	WM	13	SW SW
22 S	10 E	WM	14	NE NE
22 S	10 E	WM	14	NW NE
22 S	10 E	WM	14	SW NE
22 S	10 E	WM	14	SE NE
22 S	10 E	WM	14	NE NW
22 S	10 E	WM	14	NW NW
22 S	10 E	WM	14	SW NW
22 S	10 E	WM	14	SE NW
22 S	10 E	WM	14	NE SW
22 S	10 E	WM	14	NW SW
22 S	10 E	WM	14	SW SW
22 S	10 E	WM	14	SE SW
22 S	10 E	WM	14	NE SE

QUASI-MUNICIPAL USE				
Twp	Rng	Mer	Sec	¼ ¼
22 S	10 E	WM	14	NW SE
22 S	10 E	WM	14	SW SE
22 S	10 E	WM	14	SE SE
22 S	10 E	WM	15	NE NE
22 S	10 E	WM	15	SE NE
22 S	10 E	WM	15	NE SE
* = *indicates proposed place of use.*				

6. Notice of the application for the permit amendment was published in the Department's weekly notice on September 17, 2002, pursuant to ORS 540.520(5). No comments were filed in response to the notices.

7. The changes would not result in injury to other water rights.

8. The proposed place of use is owned and/or controlled by the permit holder.

9. The changes do not enlarge the permit.

10. The changes do not alter any other terms of the permit.

11. The proposed place of use is contiguous to the authorized place of use.

Conclusions of Law

The changes in point of appropriation and place of use proposed by Permit Amendment Application T-9241 are consistent with the requirements of ORS 537.211.

Now, therefore, it is ORDERED:

The changes and subsequent use of water shall be subject to the following conditions:

1. The combined quantity of water diverted at the new points of appropriation shall not exceed the quantity of water lawfully available at the original point of appropriation.

2. Water shall be acquired from the same ground water source as the original point of appropriation.

3. Prior to water use from the proposed points of appropriation, the permittee shall install meters or other suitable measuring devices as approved by the Director. The permittee shall maintain the meters or measuring devices in good working order, and shall keep a complete record of the amount of water used each month and shall submit a report which includes the recorded water use measurements to the Department annually or more frequently as may be

required by the Director. Further, the Director may require the permittee to report general water use information, including the place and nature of use of water under the permit.

The permittee shall allow the watermaster access to the meter or measuring device; provided however, where the meter or measuring device is located within a private structure, the watermaster shall request access upon reasonable notice.

4. All other terms and conditions of Permit G-13444 remain the same.

5. Permit G-13444, in the name of LaPine Water District, is amended as described herein.

Dated at Salem, Oregon this 7 day of March, 2008.

Phillip C. Ward, Director

Mailing date: MAR 1 3 2008

Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, Oregon 97301
(503) 986-0900
www.wrd.state.or.us

Request for Assignment

If for multiple rights, a separate form and fee for each right will be required.

I, Scott Perkins, Manager for La Pine Water District
(Name of Applicant / Permit / Transfer Holder / License Holder/GR Certificate of Registration)

P.O. Box 2460 La Pine OR 97739
(Mailing Address) (City) (State) (Zip) (Phone #)

☑ hereby assign *all my interest* in and to application/permit/transfer/license/GR Certificate of Registration;

☐ hereby assign *all my interest* in and to a portion of application/permit/transfer/license/GR Certificate of Registration; *(You must include a map showing the portion of the application/permit/transfer/license/GR Certificate of Registration to be assigned.)*

☐ hereby assign *a portion of my interest* in and to the *entire* application/permit/transfer/license/GR Certificate of Registration:

Application # G-13552 ; Permit # G-13444 ; Transfer # T-9241
-OR-
License # ____ ; GR Statement # ____ ; GR Certificate of Registration # ____

As filed in the office of the Water Resources Director, to:

City of La Pine
(Name of New Owner)

P.O. Box 3055 La Pine OR 97739
(Mailing Address) (City) (State) (Zip) (Phone #)

Note: If there are other owners of the property described in the Application, Permit, Transfer, License, or GR Certificate of Registration, *you must provide a list of all other owners' names and mailing addresses and attach it to this form.*

I hereby certify that I have notified all other owners of the property described in this Application, Permit, Transfer, License, or GR Certificate of Registration of this Request for Assignment

Witness my hand this 30 day of May, 20 12.

Applicant/Permit Holder [signature]

Applicant/Permit Holder ____

ASSIGN 6/28/2012

DO NOT WRITE IN THIS BOX

This certifies assignment and record change at Oregon Water Resources Department effective 8:00 a.m. on date of receipt at Salem, Oregon.
Fee receipt # 106134
For Director by Jerry Sauter, Program Analyst in Water Rights Division [signature]

The completed "Request for Assignment" form *must* be submitted to the Department along with the recording fee of $75.

RECEIVED
JUN 28 2012
WATER RESOURCES DEPT
SALEM, OREGON

NOTARY ... MY COMMISSION EXP...

Notary Form

State of Oregon
County of Deschutes

Scott Perkins Personally Appeared before me on May 30, 2012 and Water Rights Transfer Assignment agreement Notarized

Rex Lesueur Notary
My Commission Expires August 26, 2014

OFFICIAL SEAL
REX R LESUEUR
NOTARY PUBLIC - OREGON
COMMISSION NO. 450200
MY COMMISSION EXPIRES AUGUST 26, 2014

RECEIVED
JUN 28 2012
WATER RESOURCES DEPT
SALEM, OREGON

OFFICIAL SEAL
REX R LESUEUR
PUBLIC - OREGON
SION NO. 450200
ES AUGUST 26, 2014

Oregon
John A. Kitzhaber, MD, Governor

Water Resources Department
North Mall Office Building
725 Summer St. NE, Suite A
Salem, OR 97301
Phone 503-986-0900
FAX 503-986-0904
www.wrd.state.or.us

June 29, 2012

Newton Consultants, Inc.
P.O. Box 1728
Redmond, Oregon 97756

Reference: Application G-12500, Permit G-12545 – Application G-13552, Permit G-13444
Application G-17422

Regarding Application G-12500, Permit G-12545 the assignment from La Pine Special Sewer District to the City of La Pine has been recorded in the records of the Water Resources Department.

Regarding Application G-13552, Permit G-13444 the assignment from La Pine Water District to the City of La Pine has been recorded in the records of the Water Resources Department.

Regarding Application G-17422 the assignment from La Pine Water District to the City of La Pine has been recorded in the records of the Water Resources Department.

The Departments records will now show the City of La Pine as the permit holder of record.

Our records have been changed accordingly and the original request is enclosed. Receipt numbers 106133, 106134, and 106135 covering the recording fees are also enclosed.

Please review the permit to be familiar with the conditions and timelines contained in the permit. These conditions and timelines will have to be met before a Certificate of Water Right can be issued.

Sincerely,

Jerry Sauter
Water Rights Program Analyst
Water Right Services Division

Enclosure: Receipts 106133, 106134, and 106135

cc: Watermaster 11
La Pine Special Sewer District
La Pine Water District
City of La Pine
Data Center, OWRD (cover letter & request)
OWRD Transfers
Hydrographics
File

Oregon Water Resources Department
Water Right Services Division

Water Rights Application
Number G-13552

Final Order
Extension of Time for Permit Number G-13444, modified by Permit Amendment T-9241
Permit Holder: City of LaPine

Permit Information

Application File:	G-13552
Permit:	G-13444, modified by Permit Amendment T-9241
Basin:	5 – Deschutes Basin / Watermaster District 11
Date of Priority:	November 8, 1993
Source of Water:	Two wells within the Long Prairie Slough Basin
Purpose or Use:	Quasi-Municipal
Maximum Rate:	2.23 Cubic Feet per Second (cfs)

This Extension of Time request is being processed in accordance with Oregon Revised Statute 537.630 and 539.010(5), and Oregon Administrative Rule Chapter 690, Division 315

Appeal Rights

This is a final order in other than a contested case. This order is subject to judicial review under ORS 183.484. A request for judicial review must be filed within the 60 day time period specified by ORS 183.484(2). Pursuant to ORS 536.075 and OAR 137-004-0080 you may either file for judicial review, or petition the Director for reconsideration of this order. A petition for reconsideration may be granted or denied by the Director, and if no action is taken within 60 days following the date the petition was filed, the petition shall be deemed denied.

Application History

Permit G-13444 was issued by the Department on August 12, 1998, and modified by Permit Amendment T-9241 on March 7, 2008. The permit called for complete application of water to beneficial use by October 1, 2002. The most recent extension authorized complete application of water to beneficial use by October 1, 2012. On September 10, 2012, City of LaPine submitted an application to the Department for an extension of time for amended Permit G-

13444. In accordance with OAR 690-315-0050(2), on June 24, 2014, the Department issued a Proposed Final Order proposing to extend the time to apply water to full beneficial use to October 1, 2022. The protest period closed August 8, 2014, in accordance with OAR 690-315-0060(1). No protest was filed.

FINDINGS OF FACT

The Department adopts and incorporates by reference the findings of fact in the Proposed Final Order dated June 24, 2014.

At time of issuance of the Proposed Final Order the Department concluded that, based on the factors demonstrated by the applicant, the permit may be extended subject to the following conditions:

CONDITIONS

1. **Development Limitations**

   The appropriation of any water beyond 1.52 cfs under Permit G-13444, modified by Permit Amendment T-9241, shall only be authorized upon issuance of a final order approving a Water Management and Conservation Plan (WMCP) under OAR Chapter 690, Division 86, that grants access to a greater rate of appropriation of water under the permit consistent with OAR 690-086-0130(7). The required WMCP shall be submitted to the Department within 3 years of this Final Order. Use of water under the amended Permit G-13444 must be consistent with this and subsequent WMCP's approved under OAR Chapter 690, Division 86, on file with the Department.

   The deadline established in this Extension Final Order for submittal of a WMCP shall not relieve a permit holder of any existing or future requirement for submittal of a WMCP at an earlier date as established through other orders of the Department. A WMCP submitted to meet the requirements of this order may also meet the WMCP submittal requirements of other Department orders.

CONCLUSION OF LAW

The applicant has demonstrated good cause for the permit extension pursuant to ORS 537.630, 539.010(5) and OAR 690-315-0080(3).

ORDER

The extension of time for Application G-13552, Permit G-13444, modified by Permit Amendment T-9241, therefore, is approved subject to conditions contained herein. The deadline for applying water to full beneficial use within the terms and conditions of the permit is extended from October 1, 2012, to October 1, 2022.

DATED: August 29, 2014

Dwight French
Water Right Services Division Administrator, for
Director, Oregon Water Resources Department

If you have any questions about statements contained in this document, please contact Steven Parrett at (503) 986-0825.

If you have other questions about the Department or any of its programs, please contact our Water Resources Customer Service Group at (503) 986-0900.

BEFORE THE WATER RESOURCES DEPARTMENT
OF THE
STATE OF OREGON

In the Matter of the Proposed Water Management and Conservation Plan for City of La Pine, Deschutes County	)))	FINAL ORDER APPROVING A WATER MANAGEMENT AND CONSERVATION PLAN

Authority

OAR Chapter 690, Division 086, establishes the process and criteria for approving water management and conservation plans required under the conditions of permits, permit extensions and other orders of the Department. An approved water management plan may authorize the diversion and use of water under a permit extended pursuant to OAR Chapter 690, Division 315.

Findings of Fact

1. The City of La Pine submitted a Water Management and Conservation Plan (plan) to the Water Resources Department (Department) on September 14, 2012. The plan was required by a condition set forth under the City's previously approved plan (*Sp. Or. Vol. 63, Pg. 175*) issued on February 1, 2005.

2. The Department published notice of receipt of the plan on September 25, 2012, as required under OAR Chapter 690, Division 086. No comments were received.

3. The Department provided written comments on the plan to the City on February 4, 2014. In response, the City submitted a final revised plan on May 5, 2014.

4. The Department reviewed the final revised plan and finds that it contains all of the elements required under OAR 690-086-0125.

5. The projections of future water needs in the plan demonstrate a need for up to 2.23 cfs of water available under Permit G-13444 to help meet anticipated peak demands during the next 20 years. These projections are reasonable and consistent with the City's land use plan.

6. The system is fully metered and the rate structure includes a base rate and volumetric charge. Water loss in the system is estimated at approximately 9.0 percent.

7. The plan includes 5-year benchmarks for continuation and/or implementation of conservation measures for: improved annual water audits, maintaining a fully metered system, and maintaining a rate structure that is based upon the amount of water metered at each service connection.

This is a final order in other than a contested case. This order is subject to judicial review under ORS 183.484. Any petition for judicial review must be filed within the 60-day time period specified by ORS 183.484(2). Pursuant to ORS 536.075 and OAR 137-004-0080, you may petition for judicial review or petition the Director for reconsideration of this order. A petition for reconsideration may be granted or denied by the Director, and if no action is taken within 60 days following the date the petition was filed, the petition shall be deemed denied.

8. The plan also includes 5-year benchmarks for development and implementation of a meter testing and maintenance program, and a public education program that encourages efficient water use and low water use landscaping. Additionally, the plan also includes a 5-year benchmark indicating that if the City's annual water audit reveals water losses exceeding 10 percent, a new leak detection/repair program will be developed and implemented.

9. The plan identifies ground water as the source of the City's water rights. These ground water sources are not located within the boundaries of any critical ground water area, as designated by the Department.

10. The water curtailment element included in the plan satisfactorily promotes water curtailment practices and includes a list of four stages of alert with concurrent curtailment actions.

11. The diversion of water under Permit G-13444 will be expanded during the next 20 years and is consistent with OAR 690-086-0130(7), as follows:

    a. As evidenced by the 5-year conservation benchmarks established by the City (*described in Findings of Fact #7 and #8 above*), the final revised plan includes a schedule for development and implementation and/or continuation of water conservation measures that would provide water at a cost that is equal to or lower than the cost of other identified sources;

    b. Increased diversion of water under Permit G-13444 is the most feasible and appropriate water supply alternative available to the City at this time, considering: water savings alone from identified conservation measures cannot fully meet the City's projected peak water demands for the City; other municipal water supply systems are not located within close enough proximity to make interconnection or cooperative regional water management a viable option for the City; and that it is unlikely a new water right permit from a surface water source could be acquired by the City; and

    c. The City is not currently required to provide any mitigation actions under state or federal law related to Permit G-13444. The superseding final order with draft permit issued by the Department on October 21, 2011, for Application G-17422, however, requires that mitigation in the Little Deschutes Zone of Impact be in place by September 2016. The City is actively pursuing mitigation credits in order to comply with the requirements associated with Application G-17422.

Conclusion of Law

The Water Management and Conservation Plan submitted by the City of La Pine is consistent with the criteria in OAR Chapter 690, Division 086.

Now, therefore, it is ORDERED:

1. The City of La Pine Water Management and Conservation Plan is approved and shall remain in effect until **September 2, 2024**, unless this approval is rescinded pursuant to OAR 690-086-0920.

2. The limitation of the diversion of water under Permit G-13444 established by the extension of time approved on February 7, 2008, and the subsequent extension of time approved on August 29, 2014, is removed. Subject to other limitations or conditions of the permit, the City of La Pine is authorized to divert up to 2.23 cfs under Permit G-13444.

3. The City of La Pine shall submit an updated plan meeting the requirements of OAR Chapter 690, Division 086 within 10 years and no later than **March 2, 2024.**

4. The City of La Pine shall submit a progress report containing the information required under OAR 690-086-0120(4) by **September 2, 2019.**

5. The deadline established herein for the submittal of an updated Water Management and Conservation Plan (consistent with OAR Chapter 690, Division 086) shall not relieve the City of La Pine from any existing or future requirement(s) for submittal of a Water Management and Conservation Plan at an earlier date as established through other final orders of the Department.

Dated at Salem, Oregon this 2 day of September, 2014.

Dwight French
Water Right Services Division Administrator, for
Director
Oregon Water Resources Department

Mailing date: SEP 08 2014

Water Right Information Query Results

Contact Information

Current contact information

APPLICANT:
CITY OF LA PINE
PO BOX 3055
51340 HWY 97
LA PINE, OR 97739

Prior contact information

AGENT:
NEWTON CONSULTANTS INC.
DAVID NEWTON
PO BOX 1728
REDMOND, OR 97756

APPLICANT:
LA PINE WATER DISTRICT
DONNA ZIGLER
PO BOX 2460
LA PINE, OR 97739-2460

Documents

View all scanned documents

Application: G 17422

Received: 9/13/2010

Application Workflow			
Action	Date	Result	Completed By
Caseworker Assigned			BARBARA PARK
Application Filed	9/13/2010		HERBERT MOSGAR
Initial Review	3/11/2011	Propose to Deny	JEANA EASTMAN
IR Comment Period	4/14/2011	Propose to Deny	JONNINE SKAUG
Proposed Final Order	6/14/2011	Propose to Approve	JEANA EASTMAN
PFO Protest Period	7/29/2011	Propose to Approve	JEANA EASTMAN
Final Order	9/13/2011	Propose to Approve	JEANA EASTMAN
Final Order	10/21/2011	Propose to Approve	JEANA EASTMAN

Unable to view right in new web mapping because this water right is not currently mapped.

View Places of Use from Water Rights in the Same Area

Water Right Information

Status: Non-Cancelled

County: Deschutes

File Folder Location: Salem

Watermaster District: 11

Point(s) of Diversion

POD 1 - A WELL > LITTLE DESCHUTES RIVER

Description

- Name: WELL 1
- T-R-S-QQ: 22.00S-11.00E-18-NW SE
- Location Description: 1240 SOUTH AND 804 FEET EAST FROM C1/4 CORNER, SECTION 18

POD Rate

Max Rate (cfs)	Rate (cfs)	Max Volume (af)	Volume (af)
1.4	0.7(est)		

MUNICIPAL USES (Primary)

Priority Date	Max Rate (cfs)	Rate (cfs)	Max Volume (af)	Volume (af)	Rate/Acre	Duty	Start Date	End Date	Remarks
9/13/2010	1.4	0.7(est)					1/1	12/31	

Remarks

- DESC 54968

POD 2 - A WELL > LITTLE DESCHUTES RIVER

Description

- Name: WELL 2
- T-R-S-QQ: 22.00S-11.00E-18-NW SE
- Location Description: 1143 SOUTH AND 1085 FEET EAST FROM C1/4 CORNER, SECTION 18

POD Rate

Max Rate (cfs)	Rate (cfs)	Max Volume (af)	Volume (af)
1.4	0.7(est)		

MUNICIPAL USES (Primary)

Priority Date	Max Rate (cfs)	Rate (cfs)	Max Volume (af)	Volume (af)	Rate/Acre	Duty	Start Date	End Date	Remarks
9/3/2010	1.4	0.7(est)					1/1	12/31	

Remarks

- DESC 55049

Place(s) of Use

Add TRS grouping

Use - MUNICIPAL USES (Primary); Priority Date: 9/13/2010

T-R-S	QQ	DLC	Gov't Lot	Taxlot	Acres	Status	Linked PODs	Inchoate Info	Remarks
21.00S-10.00E-36	NE NE					NC			
21.00S-10.00E-36	NW NE					NC			
21.00S-10.00E-36	SW NE					NC			
21.00S-10.00E-36	SE NE					NC			
21.00S-10.00E-36	SE SW					NC			

21.00S-10.00E-36	NE SE					NC				
21.00S-10.00E-36	NW SE					NC				
21.00S-10.00E-36	SW SE					NC				
21.00S-10.00E-36	SE SE					NC				
22.00S-10.00E-1	NE NW					NC				
22.00S-10.00E-1	NW NW					NC				
22.00S-10.00E-1	SW NW					NC				
22.00S-10.00E-1	SE NW					NC				
22.00S-10.00E-1	NW SW					NC				
22.00S-10.00E-1	SW SW					NC				
22.00S-10.00E-2	NE NE					NC				
22.00S-10.00E-2	SE NE					NC				
22.00S-10.00E-2	NE SW					NC				
22.00S-10.00E-2	SE SW					NC				
22.00S-10.00E-2	NE SE					NC				
22.00S-10.00E-2	NW SE					NC				
22.00S-10.00E-2	SW SE					NC				
22.00S-10.00E-2	SE SE					NC				
22.00S-10.00E-10	NE SE					NC				
22.00S-10.00E-10	SE SE					NC				
22.00S-10.00E-11	NE NE					NC				
22.00S-10.00E-11	NW NE					NC				
22.00S-10.00E-11	SW NE					NC				
22.00S-10.00E-11	SE NE					NC				
22.00S-10.00E-11	NE NW					NC				
22.00S-10.00E-11	NW NW					NC				
22.00S-10.00E-11	SW NW					NC				
22.00S-10.00E-11	SE NW					NC				
22.00S-10.00E-11	NE SW					NC				
22.00S-10.00E-11	NW SW					NC				
22.00S-10.00E-11	SW SW					NC				
22.00S-10.00E-11	SE SW					NC				
22.00S-10.00E-11	NE SE					NC				
22.00S-10.00E-11	NW SE					NC				
22.00S-10.00E-11	SW SE					NC				
22.00S-10.00E-11	SE SE					NC				
22.00S-10.00E-12	SW NW					NC				
22.00S-10.00E-12	NW SW					NC				
22.00S-10.00E-12	SW SW					NC				
22.00S-10.00E-13	NW NW					NC				
22.00S-10.00E-13	SW NW					NC				
22.00S-10.00E-13	NW SW					NC				
22.00S-10.00E-13	SW SW					NC				
22.00S-10.00E-14	NE NE					NC				
22.00S-10.00E-14	NW NE					NC				
22.00S-10.00E-14	SW NE					NC				
22.00S-10.00E-14	SE NE					NC				
22.00S-10.00E-14	NE NW					NC				
22.00S-10.00E-14	NW NW					NC				
22.00S-10.00E-14	SW NW					NC				
22.00S-10.00E-14	SE NW					NC				
22.00S-10.00E-14	NE SW					NC				
22.00S-10.00E-14	NW SW					NC				
22.00S-10.00E-14	SW SW					NC				
22.00S-10.00E-14	SE SW					NC				

22.00S-10.00E-14	NE SE					NC			
22.00S-10.00E-14	NW SE					NC			
22.00S-10.00E-14	SW SE					NC			
22.00S-10.00E-14	SE SE					NC			
22.00S-10.00E-15	NE NE					NC			
22.00S-10.00E-15	SE NE					NC			
22.00S-10.00E-15	NE SE					NC			
Sum of Acres: 0.0									

Water Right Genealogy

—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

Return to WRIS Query

Oregon Water Resources Department
Water Rights Services Division

Water Rights Application
Number G-17422

Superseding Final Order

Hearing and Appeal Rights
Under the provisions of ORS 537.170 and ORS 537.622, the applicant may request a contested case hearing by submitting the information required for a protest under ORS 537.153(6) or ORS 537.621(7) to the Department within 14 days after the date of mailing of this order as shown below. If a contested case hearing is requested, the Department must schedule one. In the contested case hearing, however, only those issues based on the modifications to the Proposed Final Order may be addressed.

ORS 536.075 allows for additional appeal rights for other than contested case. This is a Final Order in other than contested case. This order is subject to judicial review under ORS 183.484. Any petition for judicial review must be filed within the 60 day time period specified by ORS 183.484(2). Pursuant to ORS 536.075 and OAR 137-004-0080 you may either petition for judicial review or petition the Director for reconsideration of this order. A petition for reconsideration may be granted or denied by the Director, and if no action is taken within 60 days following the date the petition was filed, the petition shall be deemed denied.

This statement of judicial review rights does not create a right to judicial review of this order, if judicial review is otherwise precluded by law. Where no changes have been made to a Proposed Final Order on a water right application and no protests have been filed during the protest period, the Final Order is not subject to judicial review.

Application History
On September 13, 2010, La Pine Water District submitted an application to the Department for a water use permit.

The Department issued a Proposed Final Order on June 14, 2011, concluding that with the mitigation proposed by the applicant, water is available for the proposed use, and that the proposed use would ensure the preservation of the public welfare, safety and health. The protest period closed July 29, 2011, and no protest was filed.

As required by OAR 690-505-0615, the applicant must submit proposed mitigation that meets the requirements of OAR 690-505-0610(2)-(5). Pursuant to OAR 690-505-0620, a permit shall not be issued until the applicant provides documentary evidence that mitigation water, in an amount satisfying the mitigation obligation, is legally protected instream.

The applicant submitted a mitigation proposal to provide 405.2 acre feet of mitigation water within the Little Deschutes Zone of Impact. The applicant is proposing to obtain mitigation by obtaining mitigation credits. One mitigation credit is equivalent to one acre-foot of mitigation water.

The proposed use would not impair or be detrimental to the public interest, but the Department's continuing evaluation reveals that the Proposed Final Order requires modification to correctly describe the condition below.

The Proposed Final Order contained the following condition:

> Completion of construction and application of the water shall be made within five years of the date of permit issuance. If beneficial use of permitted water has not been made before this date, the permittee may submit an application for extension of time, which may be approved based upon the merit of the application.

The condition, as modified in the attached draft permit, is:

> Completion of construction and application of the water shall be made within 20 years of the date of permit issuance. If beneficial use of permitted water has not been made before this date, the permittee may submit an application for extension of time, which may be approved based upon the merit of the application.

On September 13, 2011, the Department issued a Final Order which incorrectly identified the dates of the Proposed Final Order and the protest period deadline. The Department finds that the September 13, 2011 Final Order requires modification to correct the error.

Order

This document supersedes the September 13, 2011 Final Order for Application G-17422. The September 13, 2011 Final Order is of no further force or effect.

Application G-17422 is therefore approved with the modifications to the Proposed Final Order described above. A permit consistent with the attached draft permit shall be issued only upon the applicant providing satisfactory mitigation according to an approved incremental development plan, and submission of permit recording fees in the amount of $900.

This Final Order is issued approving Application G-17422 contingent upon the required mitigation being provided, and permit recording fees paid before a permit may be issued. This Final Order shall expire 5 years after issuance of the September 13, 2011 Final Order (being September 13, 2016) unless the required mitigation is provided. OAR 690-505-0620(2).

DATED October 21, 2011

E. Timothy Wallin, Water Rights Program Manager
for Phillip C. Ward, Director
Water Resources Department

This document was prepared by Jeana Eastman. If you have any questions about any of the statements contained in this document I am most likely the best person to answer your questions. You can reach me at 503-986-0859.

If you have questions about how to file a protest or a request for standing, please refer to the section in this Final Order entitled "Hearing and Appeal Rights". If you have previously filed a protest and want to know its status, please contact Patricia McCarty at 503-986-0820.

If you have other questions about the Department or any of its programs please contact our Customer Service Group at 503-986-0801.

Address all other correspondence to: Water Rights Section, Oregon Water Resources Department, 725 Summer St NE Ste A, Salem OR 97301-1266, Fax: 503-986-0901.

DRAFT This is not a permit. DRAFT

STATE OF OREGON

COUNTY OF DESCHUTES

DRAFT PERMIT TO APPROPRIATE THE PUBLIC WATERS

THIS DRAFT PERMIT IS HEREBY ISSUED TO

LA PINE WATER DISTRICT
PO BOX 2460
LA PINE, OR 97739-2460

The specific limits and conditions of the use are listed below.

APPLICATION FILE NUMBER: G-17422

SOURCE OF WATER: WELL 1 (DESC 54968) AND WELL 2 (DESC 55049) IN LITTLE DESCHUTES RIVER BASIN

PURPOSE OR USE: MUNICIPAL

MAXIMUM RATE: 1.4 CUBIC FEET PER SECOND, WITH A MAXIMUM ANNUAL VOLUME OF 1013.0 ACRE FEET

PERIOD OF USE: YEAR ROUND

DATE OF PRIORITY: SEPTEMBER 13, 2010

WELL LOCATIONS:

WELL 1 (DESC 54968): NW ¼ SE ¼, SECTION 18, T22S, R11E, W.M.; 1240 FEET SOUTH AND 804 FEET EAST FROM C1/4 CORNER, SECTION 18

WELL 2 (DESC 55049): NW ¼ SE ¼, SECTION 18, T22S, R11E, W.M.; 1143 FEET SOUTH AND 1085 FEET EAST FROM C1/4 CORNER, SECTION 18

THE PLACE OF USE IS LOCATED WITHIN THE LA PINE WATER DISTRICT SERVICE BOUNDARY

Measurement, recording and reporting conditions:

A. Before water use may begin under this permit, the permittee shall install a totalizing flow meter at each point of appropriation. The permittee shall maintain the meter in good working order.

B. The permittee shall keep a complete record of the amount of water diverted each month, and shall submit a report which includes the recorded report water-use measurements to the Department annually or more frequently as may be required by

the Director. Further, the Director may require the permittee to report general water-use information, including the place and nature of use of water under the permit.

C. The permittee shall allow the watermaster access to the meter; provided however, where any meter is located within a private structure, the watermaster shall request access upon reasonable notice.

D. The Director may provide an opportunity for the permittee to submit alternative measuring and reporting procedures for review and approval.

The Department requires the water user to obtain, from a qualified individual (see below), and report annual static water levels for each well on the permit. The static water level shall be measured in the month of March. Reports shall be submitted to the Department within 30 days of measurement.

The permittee shall report an initial March static water-level measurement once well construction is complete and annual measurements thereafter. Annual measurements are required whether or not the well is used. The first annual measurement will establish a reference level against which future measurements will be compared. However, the Director may establish the reference level based on an analysis of other water-level data. The Director may require the user to obtain and report additional water levels each year if more data are needed to evaluate the aquifer system.

All measurements shall be made by a certified water rights examiner, registered professional geologist, registered professional engineer, licensed well constructor or pump installer licensed by the Construction Contractors Board. Measurements shall be submitted on forms provided by, or specified by, the Department. Measurements shall be made with equipment that is accurate to at least the standards specified in OAR 690-217-0045. The Department requires the individual performing the measurement to:

A. Associate each measurement with an owner's well name or number and a Department well log ID; and
B. Report water levels to at least the nearest tenth of a foot as depth-to-water below ground surface; and
C. Specify the method of measurement; and
D. Certify the accuracy of all measurements and calculations reported to the Department.

The water user shall discontinue use of, or reduce the rate or volume of withdrawal from, the well(s) if any of the following events occur:

A. Annual water-level measurements reveal an average water-level decline of three or more feet per year for five consecutive years; or
B. Annual water-level measurements reveal a water-level decline of 15 or more feet in fewer than five consecutive years; or
C. Annual water-level measurements reveal a water-level decline of 25 or more feet; or
D. Hydraulic interference leads to a decline of 25 or more feet in any neighboring well with senior priority.

The period of restricted use shall continue until the water level rises above the decline level which triggered the action or the Department determines, based on the permittee's and/or the Department's data and analysis, that no action is necessary because the aquifer in question can sustain the observed declines without adversely impacting the resource or causing substantial interference with senior water rights. The water user shall not allow excessive decline, as defined in Commission rules, to occur within the aquifer as a result of use under this permit. If more than one well is involved, the water user may submit an alternative measurement and reporting plan for review and approval by the Department.

Use of water under authority of this permit may be regulated if analysis of data available after the permit is issued discloses that the appropriation will measurably reduce the surface water flows necessary to maintain the free-flowing character of a scenic waterway in quantities necessary for recreation, fish and wildlife in effect as of the priority date of the right or as those quantities may be subsequently reduced.

The permittee shall submit a Water Management and Conservation Plan, addressing use under this permit, consistent with OAR 690-086 within five years of permit issuance, or before use of the second increment of water development occurs, whichever is sooner. The Director may approve an extension of this time line to complete the required Water Management and Conservation Plan. No water may be diverted if a Water Management and Conservation Plan is not submitted according to the time lines described in this condition, unless such an extension has been approved. The time line for submittal of a plan under this permit does not alter the time lines for submittal of said plan under any other order of the Department.

Ground Water Mitigation Conditions:

Mitigation Obligation: 405.2 acre-feet of mitigation water in the Little Deschutes Zone of Impact.

Mitigation Source: mitigation credits

The permittee shall provide mitigation prior to each stage of development under the permit, as described in the incremental development mitigation plan on file with the Department, and in accordance with the standards of the Deschutes Ground Water Mitigation Rules, OAR Chapter 690, Division 505.

The permittee shall not increase the rate or amount of water diverted, as described in the incremental development mitigation plan, prior to increasing the corresponding mitigation.

The permittee shall seek and receive Departmental approval prior to changing the incremental mitigation development plan and related mitigation obligation for each stage of permit development.

The permittee shall report to the Department the progress of implementing the incremental mitigation development plan and related mitigation no later than April 1 of each year. The annual report shall include the annual volume of water used, the source of mitigation, and any offset used for that period. This annual notification is not necessary if the permittee has completed development and submitted a Claim of Beneficial Use to the Department.

Mitigation water must be legally protected instream in the Little Deschutes Zone of Impact for the life of the permit and subsequent certificate(s). Regulation of the use and/or cancellation of the permit, or subsequent certificate(s) will occur if the required mitigation is not maintained.

The permittee shall provide additional mitigation if the Department determines that average annual consumptive use of the subject appropriation has increased beyond the originally mitigated amount.

If mitigation is from a secondary right for stored water from a storage project not owned or operated by the permittee, the use of water under this right is subject to the maintenance and terms and conditions of a valid contract or satisfactory replacement, with the owner/operator of the storage project, a copy of which must be on file in the records of the Water Resources Department.

Failure to comply with these mitigation conditions shall result in the Department regulating the ground water permit, or subsequent certificate(s), proposing to deny any permit extension application for the ground water permit, and proposing to cancel the ground water permit, or subsequent certificate(s).

STANDARD CONDITIONS

Failure to comply with any of the provisions of this permit may result in action including, but not limited to, restrictions on the use, civil penalties, or cancellation of the permit.

If the number, location, source, or construction of any well deviates from that proposed in the permit application or required by permit conditions, this permit may be subject to cancellation, unless the Department authorizes the change in writing.

If substantial interference with a senior water right occurs due to withdrawal of water from any well listed on this permit, then use of water from the well(s) shall be discontinued or reduced and/or the schedule of withdrawal shall be regulated until or unless the Department approves or implements an alternative administrative action to mitigate the interference. The Department encourages junior and senior appropriators to jointly develop plans to mitigate interferences.

The well(s) shall be constructed in accordance with the General Standards for the Construction and Maintenance of Water Wells in Oregon. The works shall be equipped with a usable access port, and may also include an air line and pressure gauge adequate to determine water level elevation in the well at all times.

Where two or more water users agree among themselves as to the manner of rotation in the use of water and such agreement is placed in writing and filed by such water users with the watermaster, and such rotation system does not infringe upon such prior rights of any water user not a party to such rotation plan, the watermaster shall distribute the water according to such agreement.

Prior to receiving a certificate of water right, the permit holder shall submit to the Water Resources Department the results of a pump test meeting the Department's standards for each point of appropriation (well), unless an exemption has been obtained in writing under OAR 690-217. The Director may require water-level or pump-test data every ten years thereafter.

This permit is for the beneficial use of water without waste. The water user is advised that new regulations may require the use of best practical technologies or conservation practices to achieve this end.

By law, the land use associated with this water use must be in compliance with statewide land-use goals and any local acknowledged land-use plan.

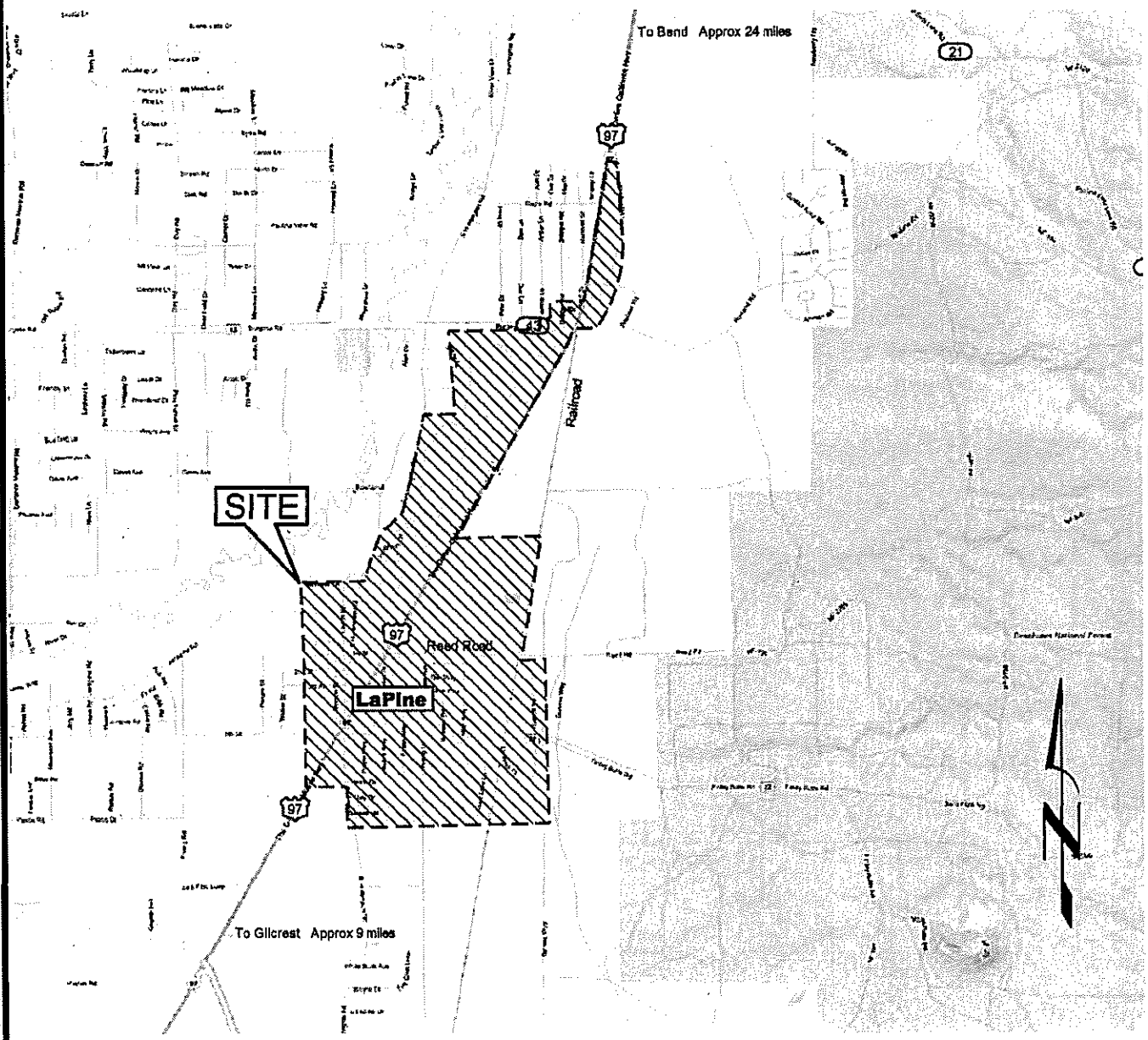
Completion of construction and application of the water shall be made within 20 years of the date of permit issuance. If beneficial use of permitted water has not been made before this date, the permittee may submit an application for extension of time, which may be approved based upon the merit of the application.

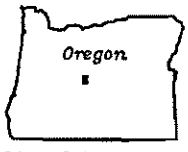
Within one year after making beneficial use of water, the permittee shall submit a claim of beneficial use, which includes a map and report, prepared by a Certified Water Rights Examiner.

Issued

DRAFT - THIS IS NOT A PERMIT

E. Timothy Wallin, Water Rights Program Manager
for Phillip C. Ward, Director
Water Resources Department





Bing Internet Map

0' 5,000' 10,000'

SCALE: 1" = 5,000'

RECEIVED
SEP 13 2010
WATER RESOURCES DEPT
SALEM, OREGON

NEWTON CONSULTANTS INC.
Earth, Water and Rock Specialists
Ph: 541 504-9080 Fax: 541 504-9061

Vicinity Map
LaPine Water District
Deschutes County, Oregon

DESIGNED BY:	DRAWN BY:	DATE:	PROJECT NO.	FIGURE
K.Turner	S.Schenck	AUG 2010	1103-101	1

G:\1100\1103 LaPine\101\Cad\Water\Wr1103101_F1_VicMap POU 15:30 07/28/2010 SS

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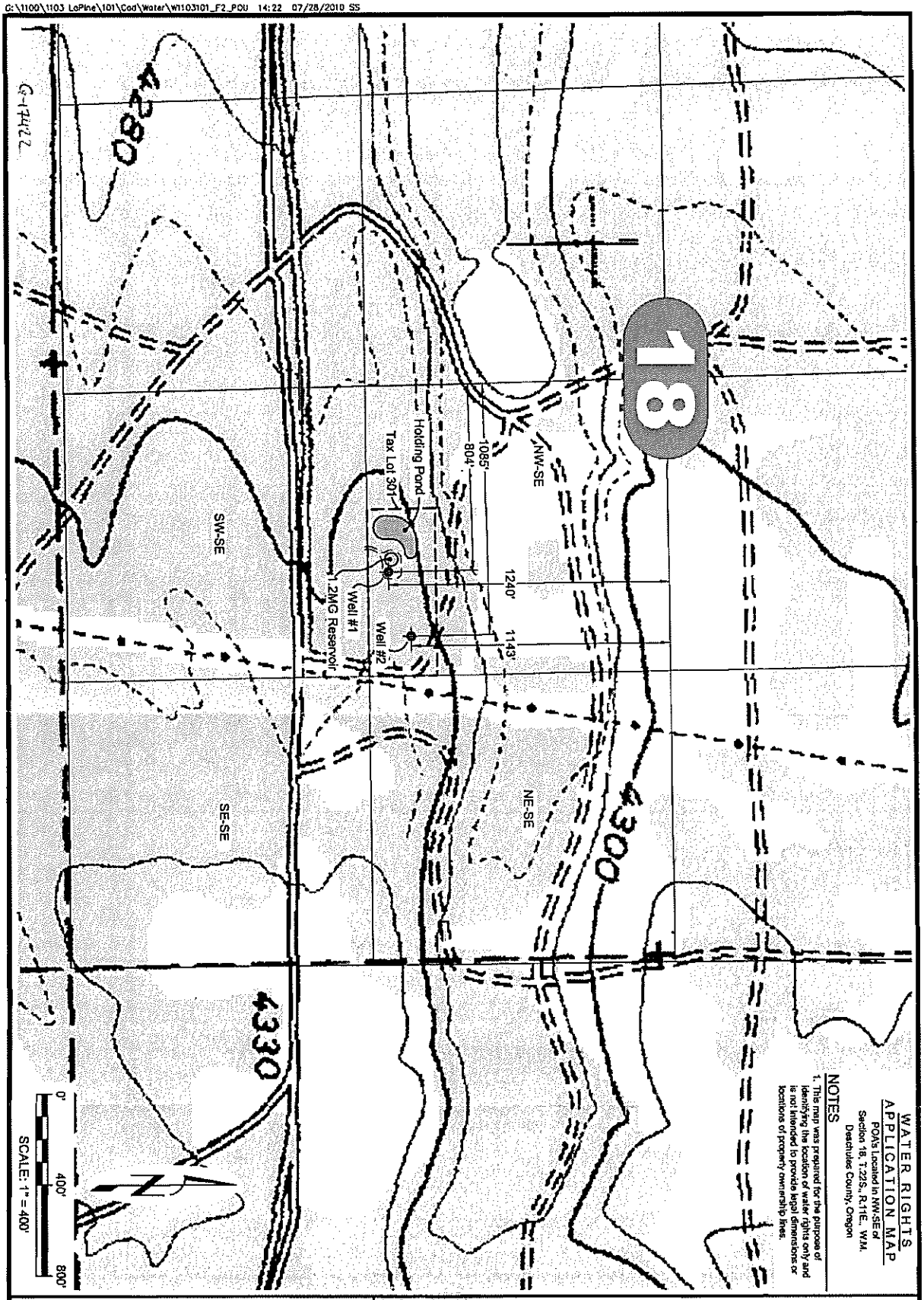


NEWTON CONSULTANTS INC.
Earth, Water and Rock Specialists
Ph 541 504-9950 Fax 541 504-9951

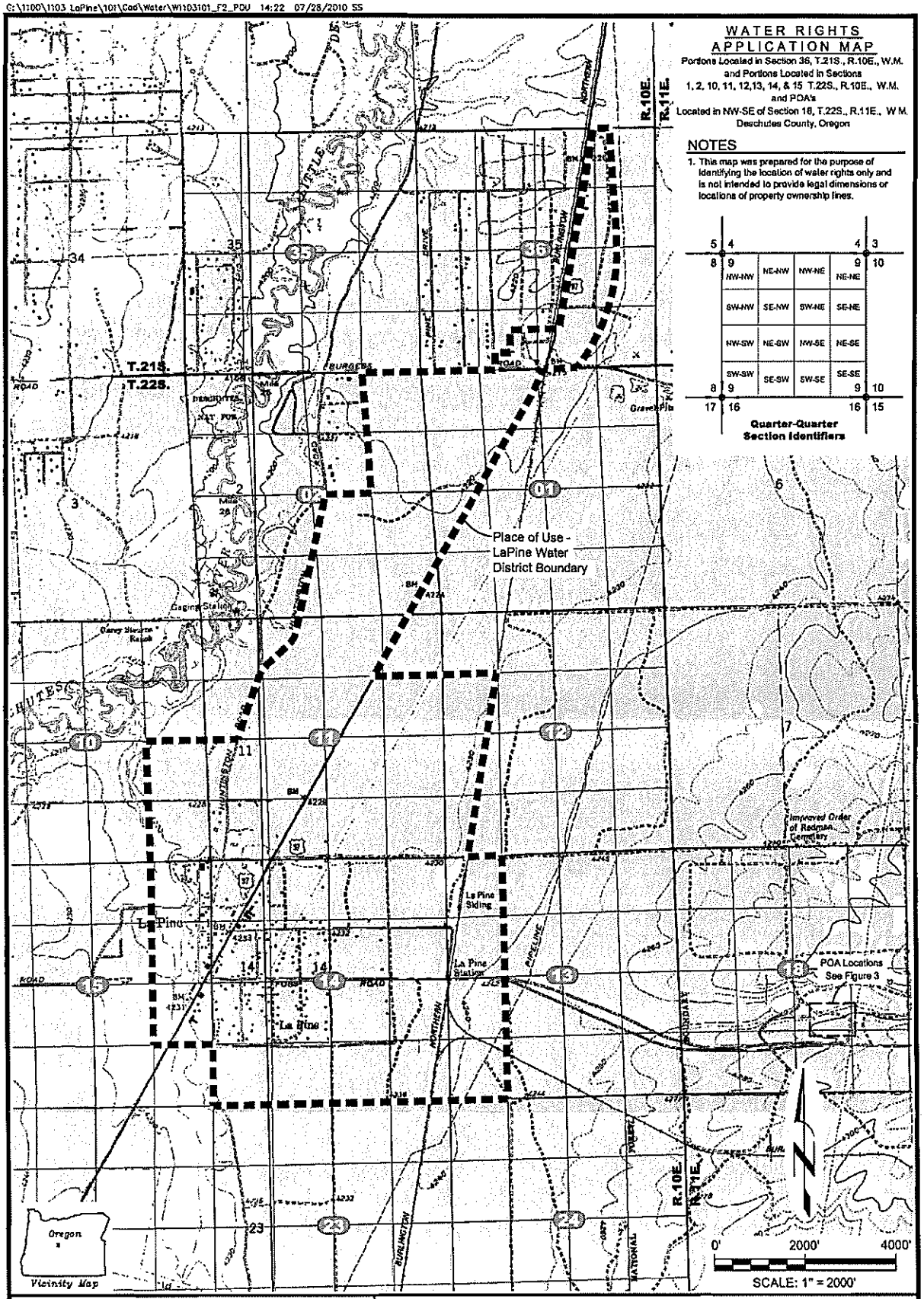
RECEIVED
... 13 2010
WATER RESOURCES DEPT

POA's - Wells 1 & 2 Location Map

LaPine Water District
Deschutes County, Oregon

DESIGNED BY:	DRAWN BY:	DATE:	PROJECT NO.	FIGURE
K.Turner	S.Schenck	AUG 2010	1103-101	3

C:\1100\1103 LaPine\101\Cad\Water\W1D3101_F2_PDU 14:22 07/28/2010 SS



NEWTON CONSULTANTS INC.
Earth, Water and Rock Specialists
Ph: 541 504-9960 Fax: 541 504-9961

RECEIVED

Water Rights Application Map

LaPine Water District
Deschutes County, Oregon

G-17422

DESIGNED BY:	DRAWN BY:	DATE:	PROJECT NO.	FIGURE
K.Turner	S.Schenck	AUG 2010	1103-101	2

Oregon
John A. Kitzhaber, MD, Governor

Water Resources Department
North Mall Office Building
725 Summer St. NE, Suite A
Salem, OR 97301
Phone 503-986-0900
FAX 503-986-0904
www.wrd.state.or.us

June 29, 2012

Newton Consultants, Inc.
P.O. Box 1728
Redmond, Oregon 97756

Reference: Application G-12500, Permit G-12545 – Application G-13552, Permit G-13444
Application G-17422

Regarding Application G-12500, Permit G-12545 the assignment from La Pine Special Sewer District to the City of La Pine has been recorded in the records of the Water Resources Department.

Regarding Application G-13552, Permit G-13444 the assignment from La Pine Water District to the City of La Pine has been recorded in the records of the Water Resources Department.

Regarding Application G-17422 the assignment from La Pine Water District to the City of La Pine has been recorded in the records of the Water Resources Department.

The Departments records will now show the City of La Pine as the permit holder of record.

Our records have been changed accordingly and the original request is enclosed. Receipt numbers 106133, 106134, and 106135 covering the recording fees are also enclosed.

Please review the permit to be familiar with the conditions and timelines contained in the permit. These conditions and timelines will have to be met before a Certificate of Water Right can be issued.

Sincerely,

Jerry Sauter
Water Rights Program Analyst
Water Right Services Division

Enclosure: Receipts 106133, 106134, and 106135

cc: Watermaster 11
La Pine Special Sewer District
La Pine Water District
City of La Pine
Data Center, OWRD (cover letter & request)
OWRD Transfers
Hydrographics
File

Water Right Information Query Results

Contact Information

Current contact information

OWNER:
CITY OF LA PINE
PO BOX 3055
51340 HWY 97
LA PINE, OR 97739

Prior contact information

OWNER:
LA PINE SPECIAL SEWER DISTRICT
PO BOX 2460
LA PINE, OR 97739

Documents

View all scanned documents

Application: G 12500

Permit: G 12545 document , paper map

Signature: 7/17/1996

Permit Workflow			
Action	Date	Result	Completed By
Permit Issued	7/17/1996		
Completion Date [C Date]	10/1/1999		
CBU Received	12/5/2003		RUSS S DODGE
Pump Test Received	1/4/2012		CONNIE VANCE

View right with Web Mapping
View Places of Use from Water Rights in the Same Area
View Reported Water Use

Water Right Information

Status: Non-Cancelled
County: Deschutes
File Folder Location: Salem
Watermaster District: 11

Point(s) of Diversion

POD 1 - WELL 1 > LITTLE DESCHUTES RIVER

Description

T-R-S-QQ: 22.00S-10.00E-11-NE SE
Location Description: 1860 FEET NORTH AND 275 FEET WEST FROM SE CORNER, SECTION 11

POD Rate

Max Rate (cfs)	Rate (cfs)	Max Volume (af)	Volume (af)
0.22	0.22		

IRRIGATION (Primary)

Priority Date	Max Rate (cfs)	Rate (cfs)	Max Volume (af)	Volume (af)	Rate/Acre	Duty	Start Date	End Date	Remarks
6/20/1996	0.22	0.22			1/80	3.00000	3/1	10/31	3/1 10/31

POD 2 - WELL 2 > LITTLE DESCHUTES RIVER

Description

T-R-S-QQ: 22.00S-10.00E-12-NW SW
Location Description: 2550 FEET NORTH AND 700 FEET EAST FROM SE CORNER, SECTION 11

POD Rate

Max Rate (cfs)	Rate (cfs)	Max Volume (af)	Volume (af)
0.22			

IRRIGATION (Primary)

Priority Date	Max Rate (cfs)	Rate (cfs)	Max Volume (af)	Volume (af)	Rate/Acre	Duty	Start Date	End Date	Remarks
6/20/1996	0.22	0.0(est)			1/80	3.00000	3/1	10/31	3/1 10/31

Place(s) of Use

Add TRS grouping

Use - IRRIGATION (Primary) - 75.0 acres; Priority Date: 6/20/1996

T-R-S	QQ	DLC	Gov't Lot	Taxlot	Acres	Status	Linked PODs	Inchoate Info	Remarks
22.00S-10.00E-11	NE SE				18.75	NC			
22.00S-10.00E-11	NW SE				18.75	NC			
22.00S-10.00E-11	SW SE				18.75	NC			
22.00S-10.00E-11	SE SE				18.75	NC			
Sum of Acres: 75.0									

Water Right Genealogy

—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

Return to WRIS Query

STATE OF OREGON

COUNTY OF DESCHUTES

PERMIT TO APPROPRIATE THE PUBLIC WATERS

THIS PERMIT IS HEREBY ISSUED TO

LA PINE SPECIAL SEWER DISTRICT
PO BOX 2128
LA PINE, OREGON 97739

The specific limits for the use are listed below along with conditions of use.

APPLICATION FILE NUMBER: G-12500

SOURCE OF WATER: WELLS #1 & #2 IN THE LITTLE DESCHUTES RIVER BASIN

PURPOSE OR USE: IRRIGATION OF 75.0 ACRES

RATE OF ALLOWED USE: 0.22 CUBIC FOOT PER SECOND

PERIOD OF ALLOWED USE: MARCH 1 THROUGH OCTOBER 31

DATE OF PRIORITY: JUNE 20, 1996

POINT OF DIVERSION LOCATION: NE 1/4 SE 1/4 OF SECTION 11, NW 1/4 SW 1/4 OF SECTION 12, T22S, R10E, W.M.; WELL #1 - 1860 FEET NORTH AND 275 FEET WEST; WELL #2 - 2550 FEET NORTH AND 700 FEET EAST; BOTH FROM THE SE CORNER OF SECTION 11

The amount of water used for irrigation under this right, together with the amount secured under any other right existing for the same lands, is limited to a diversion of ONE-EIGHTIETH of one cubic foot per second (or its equivalent) and 3.0 acre-feet for each acre irrigated during the irrigation season of each year.

THE PLACE OF USE IS LOCATED AS FOLLOWS:

NE 1/4 SE 1/4 18.75 ACRES
NW 1/4 SE 1/4 18.75 ACRES
SW 1/4 SE 1/4 18.75 ACRES
SE 1/4 SE 1/4 18.75 ACRES
SECTION 11
TOWNSHIP 22 SOUTH, RANGE 10 EAST, W.M.

Measurement, recording and reporting conditions:

A. Before water use may begin under this permit, the permittee shall install a meter or other suitable measuring device as approved by the Director. The permittee shall maintain the meter or measuring device in good working order.

B. The permittee shall allow the watermaster access to the meter or measuring device; provided however, where the meter or measuring device is located within a private structure, the watermaster shall request access upon reasonable notice.

C. The Director may require the permittee to keep and maintain a record of the amount (volume) of water used and may require the permittee to report water use on a periodic schedule as established by the Director. In addition, the Director may require the permittee to report general water use information, the periods of water use and the place and nature of use of water under the permit. The Director may provide an opportunity for the permittee to submit alternative reporting procedures for review and approval.

Use of water under authority of this permit may be regulated if analysis of data available after the permit is issued discloses that the appropriation will measurably reduce the surface water flows necessary to maintain the free-flowing character of a scenic waterway in quantities necessary for recreation, fish and wildlife in effect as of the priority date of the right or as those quantities may be subsequently reduced.

If substantial interference with a senior water right occurs due to withdrawal of water from any well listed on this permit, then use of water from the well(s) shall be discontinued or reduced and/or the schedule of withdrawal shall be regulated until or unless the Department approves or implements an alternative administrative action to mitigate the interference. The Department encourages junior and senior appropriators to jointly develop plans to mitigate interferences.

STANDARD CONDITIONS

The wells shall be constructed in accordance with the General Standards for the Construction and Maintenance of Water Wells in Oregon. The works shall be equipped with a usable access port, and may also include an air line and pressure gauge adequate to determine water level elevation in the well at all times.

The use shall conform to such reasonable rotation system as may be ordered by the proper state officer.

Prior to receiving a certificate of water right, the permit holder shall submit the results of a pump test meeting the department's standards, to the Water Resources Department. The Director may require water level or pump test results every ten years thereafter.

Failure to comply with any of the provisions of this permit may result in action including, but not limited to, restrictions on the use, civil penalties, or cancellation of the permit.

This permit is for the beneficial use of water without waste. The water user is advised that new regulations may require the use of best practical technologies or conservation practices to achieve this end.

By law, the land use associated with this water use must be in compliance with statewide land-use goals and any local acknowledged land-use plan.

The use of water shall be limited when it interferes with any prior surface or ground water rights.

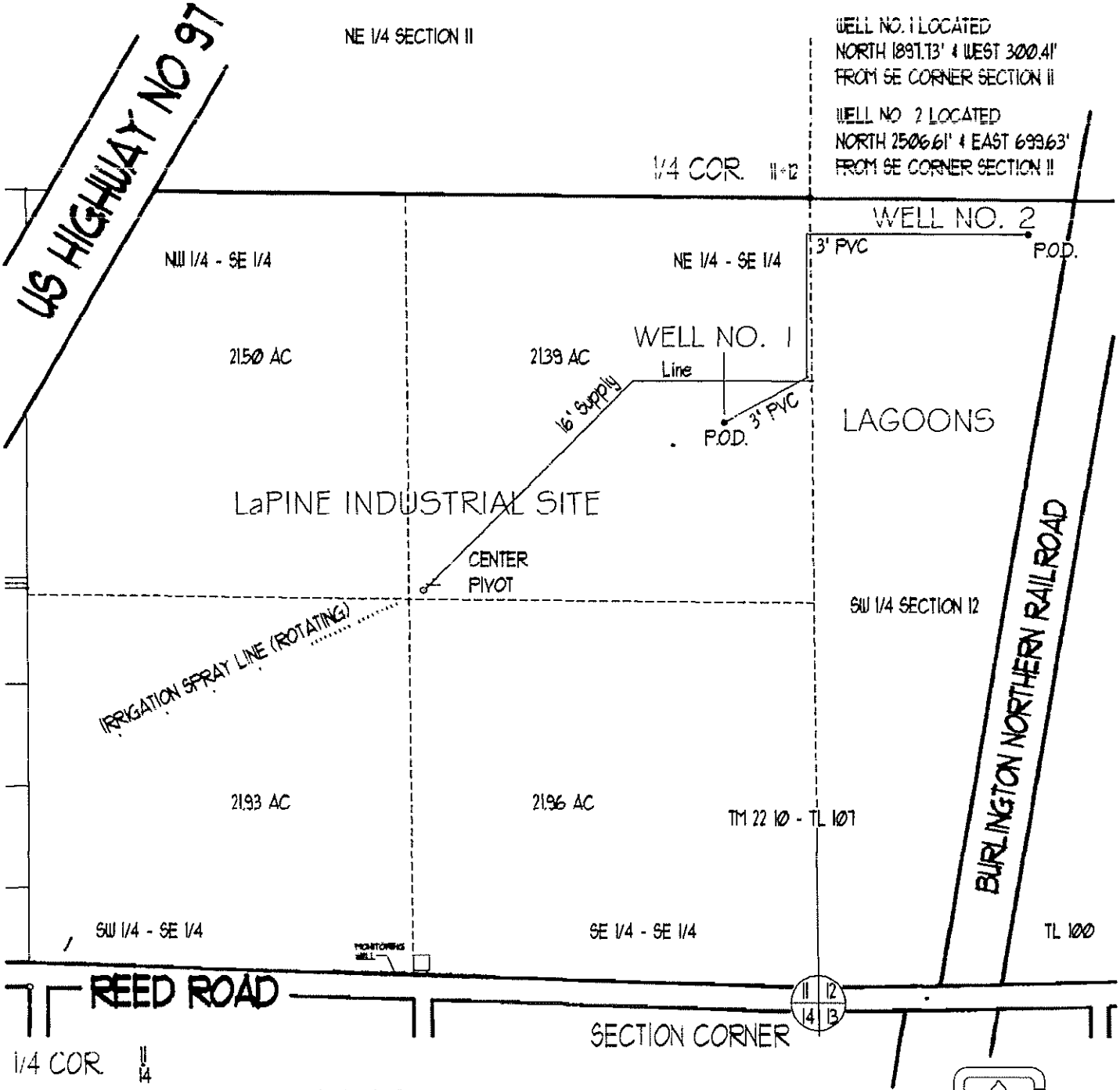
The Director finds that the proposed use(s) of water described by this permit, as conditioned, will not impair or be detrimental to the public interest.

Actual construction of the well shall begin within one year from permit issuance, and shall be completed on or before October 1, 1998. Complete application of the water to the use shall be made on or before October 1, 1999.

Issued July 17, 1996

for Martha O. Pagel, Director
Water Resources Department

TOWNSHIP 22 SOUTH RANGE 10 EAST, W.M.



FINAL PROOF SURVEY

UNDER

APPL NO. G 12500 PER NO. 12545

SEPTEMBER 5, 2003

SCALE: 1" = 500'

Russ Dodge

THIS MAP WAS PREPARED FOR THE PURPOSE OF IDENTIFYING THE LOCATION OF A WATER RIGHT ONLY AND IS NOT INTENDED TO PROVIDE LEGAL DIMENSIONS OR LOCATION OF PROPERTY OWNERSHIP LINES

Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, Oregon 97301
(503) 986-0900
www.wrd.state.or.us

Request for Assignment

RECEIVED
JUN 28 2012
WATER RESOURCES DEPT
SALEM, OREGON

If for multiple rights, a separate form and fee for each right will be required.

I, Scott Perkins, Manager for La Pine Special Sewer District
(Name of Applicant / Permit / Transfer Holder / License Holder/GR Certificate of Registration)

P.O. Box 2460 La Pine OR 97739
(Mailing Address) (City) (State) (Zip) (Phone #)

☑ hereby assign *all my interest* in and to application/permit/transfer/license/GR Certificate of Registration;

☐ hereby assign *all my interest* in and to a portion of application/permit/transfer/license/GR Certificate of Registration; *(You must include a map showing the portion of the application/permit/transfer/license/GR Certificate of Registration to be assigned.)*

☐ hereby assign *a portion of my interest* in and to the *entire* application/permit/transfer/license/GR Certificate of Registration:

Application # G-12500 ; Permit # G-12545 ; Transfer # _____
-OR-
License # _____ ; GR Statement # _____ ; GR Certificate of Registration # _____

As filed in the office of the Water Resources Director, to:

City of La Pine
(Name of New Owner)

P.O. Box 3055 La Pine OR 97739
(Mailing Address) (City) (State) (Zip) (Phone #)

Note: If there are other owners of the property described in the Application, Permit, Transfer, License, or GR Certificate of Registration, *you must provide a list of all other owners' names and mailing addresses and attach it to this form.*

I hereby certify that I have notified all other owners of the property described in this Application, Permit, Transfer, License, or GR Certificate of Registration of this Request for Assignment

Witness my hand this 30 day of May, 2012.

Applicant/Permit Holder Scott Perkins

Applicant/Permit Holder _____

6/28/2012

DO NOT WRITE IN THIS BOX

This certifies assignment and record change at Oregon Water Resources Department effective 8:00 a.m. on date of receipt at Salem, Oregon.
Fee receipt # 166133
For Director by Jerry Sauter, Program Analyst in Water Rights Division

The completed "Request for Assignment" form *must* be submitted to the Department along with the recording fee of $75.

OF
REX
NOTARY
COMMIS
MY COMMISSION EXPI

Notary Form

State of Oregon
County of Deschutes

Scott Perkins Personally Appeared before me on May 30, 2012 and Water Rights Transfer Assignment agreement Notarized

Rex Lesueur Notary
My Commission Expires August 26, 2014

OFFICIAL SEAL
REX R LESUEUR
NOTARY PUBLIC - OREGON
COMMISSION NO. 450200
MY COMMISSION EXPIRES AUGUST 26, 2014

ICIAL SEAL
R LESUEUR
UBLIC - OREGON
ION NO. 450200
ES AUGUST 26, 2014

Oregon
John A. Kitzhaber, MD, Governor

Water Resources Department
North Mall Office Building
725 Summer St. NE, Suite A
Salem, OR 97301
Phone 503-986-0900
FAX 503-986-0904
www.wrd.state.or.us

June 29, 2012

Newton Consultants, Inc.
P.O. Box 1728
Redmond, Oregon 97756

Reference: Application G-12500, Permit G-12545 – Application G-13552, Permit G-13444
Application G-17422

Regarding Application G-12500, Permit G-12545 the assignment from La Pine Special Sewer District to the City of La Pine has been recorded in the records of the Water Resources Department.

Regarding Application G-13552, Permit G-13444 the assignment from La Pine Water District to the City of La Pine has been recorded in the records of the Water Resources Department.

Regarding Application G-17422 the assignment from La Pine Water District to the City of La Pine has been recorded in the records of the Water Resources Department.

The Departments records will now show the City of La Pine as the permit holder of record.

Our records have been changed accordingly and the original request is enclosed. Receipt numbers 106133, 106134, and 106135 covering the recording fees are also enclosed.

Please review the permit to be familiar with the conditions and timelines contained in the permit. These conditions and timelines will have to be met before a Certificate of Water Right can be issued.

Sincerely,

Jerry Sauter
Water Rights Program Analyst
Water Right Services Division

Enclosure: Receipts 106133, 106134, and 106135

cc: Watermaster 11
La Pine Special Sewer District
La Pine Water District
City of La Pine
Data Center, OWRD (cover letter & request)
OWRD Transfers
Hydrographics
File

APPENDIX C
DWS Water Quality Testing Summaries

Oregon Public Health
Drinking Water Data Online

Oregon Health Authority

OR41 01496 **LA PINE, CITY OF** **Classification:** COMMUNITY

Contact: LORI MARTIN
PO BOX 3055
LA PINE, OR 97739

Phone: 541-536-1432
County: DESCHUTES
Activity Status: ACTIVE Jul 09, 2003 – **History**
Population: 1,600
Number of Connections: 650
Operating Period: January 1 to December 31
Regulating Agency: DESCHUTES COUNTY
Certified Operator(s)
Owner Type: LOCAL GOVERNMENT
Required: Y
Licensed By: N/A
Distribution class: 2
Approved Drinking Water Protection Plan: No
Treatment class: None
Source Water Assessment: No
Filtration Endorsement Required: No
Last Survey Date: May 10, 2012

Sources

Facility ID	Facility Name - Well Logs	Activity Status	Availability	Source Type
EP-A	**EP FOR WELLS #1 & #2**	**A**		**GW**
SRC-AA	WELL #1 - L50208	A	Permanent	**GW**
SRC-AB	WELL #2 - L50209	A	Permanent	**GW**

Treatment

State ID	Facility Name	Treatment Process	Treatment Objective	Filter Type

Consumer Confidence Reports (Last 5 Years)

For Year	Date Received	Date Certified
2014	*Due 7/1/2015*	
2013	*Not received*	Oct 09, 2014
2012	Jun 14, 2013	Jun 14, 2013
2011	*Not received*	
2010	Jun 10, 2011	Jun 10, 2011

Cross Connection/Backflow Prevention Information (Last 3 Records)

Ordinance Received	Annual Summary Report Received	Fee Invoice Paid
Yes	2011	2015
	2008	2014
	2007	2013

Oregon Public Health
Drinking Water Data Online

Oregon Health Authority

PWS ID: 01496 ---- LA PINE, CITY OF

For questions regarding these violations contact: DESCHUTES COUNTY — Jeff Freund — (541) 388-6563

Violations are displayed for the last 5 years only.
Group Abbreviations: TCR = Total Coliform Rule
Gray shading indicates return to compliance.

Hide Auto-RTC | *Show Determination Dates*

Click here to see public notices.

Violation History

Violation Number	Auto-RTC?	Monitoring Period Begin	End	Facility ID	Analyte Group	Violation Type - Analyte Count *Show analytes for all violations*	Enforcement Action - Date *Show history*	Points
900000406	*Y*	*Apr 01, 2012*	*Apr 30, 2012*		*TCR*	*Routine Coliform - Did Not Report Enough - 1*	*Returned To Compliance - May 29, 2012*	*1*

SYSTEM SCORE SUMMARY

Unaddressed Points:	0
Number of years the oldest violation has been unaddressed (*n*):	0
System Score:	0
Points under formal enforcement:	0
Points RTC'd:	1

For all compliance errors, please contact Chuck Michael, DWS Compliance Specialist, at 971-673-0420.

Click here for more information on system scores and how they are calculated, including the point values of specific violations.

Violation history last updated 01/28/2015, 10 hours ago.

For further information on this public water system, click on the area of interest below:
System Info :: Report for Lenders :: Alerts :: Violations :: Enforcements :: Contacts :: Site Visits :: Public Notice :: Plan Review
Coliform Summary :: Coliform Results :: Sampling Schedule for Coliform :: Groundwater/GWUDI Source Details
Chemical Group Summary :: Latest Chemical Results :: Entry Point Detects :: Single Analyte Results
Chemical Schedule Summary :: Chemical Schedule Details
Lead & Copper :: Corrosion Control (LCR) :: Nitrate :: Arsenic :: Radionuclides :: GWR 4-Log
DBPs :: TOC & Alkalinity :: DBP Sample Sites :: FANLs :: MRDL :: Turbidity :: SWTR :: RAA :: LRAA

Oregon Public Health
Drinking Water Data Online

Oregon Health Authority

PWS ID: 01496 — LA PINE, CITY OF

Alerts indicate water quality tests with analytical results greater than the detection limit or one-half of the maximum allowable contaminant level which may require some follow-up actions by the Drinking Water Services. See the Contacts link for reports on follow-up actions. Alerts are not water quality violations. Violations for this water system can be found here.

Current Alerts (SDWIS database)

Alert ID	Date Generated	Sample Source	Alert Type	Contaminant	Group	Result	Alert Level	MCL
COLI590	09/15/2003	DIST-A Distribution System	COLI	COLIFORM, TOTAL (TCR)	MOR	Present	Present	Present
COLI590	09/15/2003	DIST-A Distribution System	COLI	COLIFORM, TOTAL (TCR)	MOR	Present	Present	Present
COLI590	09/15/2003	DIST-A Distribution System	COLI	COLIFORM, TOTAL (TCR)	MOR	Present	Present	Present
COLI590	09/15/2003	DIST-A Distribution System	COLI	COLIFORM, TOTAL (TCR)	MOR	Present	Present	Present

Archived Alerts (SWS database)

Date	Source	Chemical	Results mg/l	MCL mg/l

Oregon Public Health
Drinking Water Data Online

Coliform fact sheet

PWS ID: 01496 ---- LA PINE, CITY OF

Current Coliform Summary History

Samples Required	Sample Type	Sampling Period Type
2	RT	MONTH

Spreadsheet

Number of Samples Reported

Period End Date	Routines Reported	Routine TC+	Routine FC+	Repeats Reported	Repeat TC+	Repeat FC+	Period Type
Dec 31, 2014	2	0	0	0	0	0	MN
Dec 31, 2014	0	0	0	0	0	0	YR
Nov 30, 2014	2	0	0	0	0	0	MN
Oct 31, 2014	2	0	0	0	0	0	MN
Sep 30, 2014	2	0	0	0	0	0	MN
Aug 31, 2014	3	0	0	0	0	0	MN
Jul 31, 2014	2	0	0	0	0	0	MN
Jun 30, 2014	2	0	0	0	0	0	MN
May 31, 2014	2	0	0	0	0	0	MN
Apr 30, 2014	2	0	0	0	0	0	MN
Mar 31, 2014	2	0	0	0	0	0	MN
Feb 28, 2014	2	0	0	0	0	0	MN
Jan 31, 2014	2	0	0	0	0	0	MN
Dec 31, 2013	2	0	0	0	0	0	MN
Dec 31, 2013	0	0	0	0	0	0	6Y
Dec 31, 2013	0	0	0	0	0	0	YR
Dec 31, 2013	0	0	0	0	0	0	3Y
Nov 30, 2013	2	0	0	0	0	0	MN
Oct 31, 2013	2	0	0	0	0	0	MN
Sep 30, 2013	2	0	0	0	0	0	MN
Aug 31, 2013	2	0	0	0	0	0	MN
Jul 31, 2013	2	0	0	0	0	0	MN
Jun 30, 2013	2	0	0	0	0	0	MN
May 31, 2013	2	0	0	0	0	0	MN
Apr 30, 2013	2	0	0	0	0	0	MN
Mar 31, 2013	2	0	0	0	0	0	MN
Feb 28, 2013	2	0	0	0	0	0	MN
Jan 31, 2013	2	0	0	0	0	0	MN
Dec 31, 2012	2	0	0	0	0	0	MN
Dec 31, 2012	0	0	0	0	0	0	YR
Dec 31, 2012	0	0	0	0	0	0	3Y
Nov 30, 2012	2	0	0	0	0	0	MN
Oct 31, 2012	2	0	0	0	0	0	MN
Sep 30, 2012	3	0	0	0	0	0	MN
Aug 31, 2012	2	0	0	0	0	0	MN
Jul 31, 2012	2	0	0	0	0	0	MN
Jun 30, 2012	2	0	0	0	0	0	MN
May 31, 2012	2	0	0	0	0	0	MN
Apr 30, 2012	2	0	0	0	0	0	MN
Mar 31, 2012	2	0	0	0	0	0	MN
Feb 29, 2012	2	0	0	0	0	0	MN
Jan 31, 2012	2	0	0	0	0	0	MN
Dec 31, 2011	0	0	0	0	0	0	YR
Dec 31, 2011	2	0	0	0	0	0	MN
Nov 30, 2011	2	0	0	0	0	0	MN
Oct 31, 2011	2	0	0	0	0	0	MN
Sep 30, 2011	2	0	0	0	0	0	MN
Aug 31, 2011	2	0	0	0	0	0	MN
Jul 31, 2011	2	0	0	0	0	0	MN
Jun 30, 2011	2	0	0	0	0	0	MN
May 31, 2011	2	0	0	0	0	0	MN

Apr 30, 2011	2	0	0	0	0	0	MN
Mar 31, 2011	2	0	0	0	0	0	MN
Feb 28, 2011	2	0	0	0	0	0	MN
Jan 31, 2011	2	0	0	0	0	0	MN
Dec 31, 2010	2	0	0	0	0	0	MN
Dec 31, 2010	0	0	0	0	0	0	3Y
Dec 31, 2010	0	0	0	0	0	0	YR
Nov 30, 2010	2	0	0	0	0	0	MN
Oct 31, 2010	2	0	0	0	0	0	MN
Sep 30, 2010	2	0	0	0	0	0	MN
Aug 31, 2010	2	0	0	0	0	0	MN
Jul 31, 2010	2	0	0	0	0	0	MN
Jun 30, 2010	2	0	0	0	0	0	MN
May 31, 2010	2	0	0	0	0	0	MN
Apr 30, 2010	2	0	0	0	0	0	MN
Mar 31, 2010	2	0	0	0	0	0	MN
Feb 28, 2010	2	0	0	0	0	0	MN
Jan 31, 2010	2	0	0	0	0	0	MN
Dec 31, 2009	2	0	0	0	0	0	MN
Dec 31, 2009	0	0	0	0	0	0	YR
Nov 30, 2009	2	0	0	0	0	0	MN
Oct 31, 2009	2	0	0	0	0	0	MN
Sep 30, 2009	2	0	0	0	0	0	MN
Aug 31, 2009	2	0	0	0	0	0	MN
Jul 31, 2009	2	0	0	0	0	0	MN
Jun 30, 2009	2	0	0	0	0	0	MN
May 31, 2009	2	0	0	0	0	0	MN
Apr 30, 2009	2	0	0	0	0	0	MN
Mar 31, 2009	2	0	0	0	0	0	MN
Feb 28, 2009	2	0	0	0	0	0	MN
Jan 31, 2009	2	0	0	0	0	0	MN
Dec 31, 2008	0	0	0	0	0	0	YR
Dec 31, 2008	2	0	0	0	0	0	MN
Nov 30, 2008	2	0	0	0	0	0	MN
Oct 31, 2008	2	0	0	0	0	0	MN
Sep 30, 2008	1	0	0	0	0	0	MN
Aug 31, 2008	2	0	0	0	0	0	MN
Jul 31, 2008	2	0	0	0	0	0	MN
Jun 30, 2008	2	0	0	0	0	0	MN
May 31, 2008	2	0	0	0	0	0	MN
Apr 30, 2008	2	0	0	0	0	0	MN
Mar 31, 2008	2	0	0	0	0	0	MN
Feb 29, 2008	2	0	0	0	0	0	MN
Jan 31, 2008	2	0	0	0	0	0	MN
Dec 31, 2007	2	0	0	0	0	0	MN
Dec 31, 2007	0	0	0	0	0	0	3Y
Dec 31, 2007	0	0	0	0	0	0	YR
Nov 30, 2007	2	0	0	0	0	0	MN
Oct 31, 2007	2	0	0	0	0	0	MN
Sep 30, 2007	2	0	0	0	0	0	MN
Aug 31, 2007	1	0	0	0	0	0	MN
Jul 31, 2007	2	0	0	0	0	0	MN
Jun 30, 2007	2	0	0	0	0	0	MN
May 31, 2007	2	0	0	0	0	0	MN
Apr 30, 2007	2	0	0	0	0	0	MN
Mar 31, 2007	2	0	0	0	0	0	MN
Feb 28, 2007	2	0	0	0	0	0	MN
Jan 31, 2007	1	0	0	0	0	0	MN
Dec 31, 2006	0	0	0	0	0	0	YR
Dec 31, 2006	1	0	0	0	0	0	MN
Nov 30, 2006	1	0	0	0	0	0	MN
Oct 31, 2006	1	0	0	0	0	0	MN
Sep 30, 2006	1	0	0	0	0	0	MN
Aug 31, 2006	1	0	0	0	0	0	MN
Jul 31, 2006	1	0	0	0	0	0	MN
Jun 30, 2006	1	0	0	0	0	0	MN
May 31, 2006	1	0	0	0	0	0	MN
Apr 30, 2006	1	0	0	0	0	0	MN

Mar 31, 2006	1	0	0	0	0	0	MN
Feb 28, 2006	1	0	0	0	0	0	MN
Jan 31, 2006	1	0	0	0	0	0	MN
Dec 31, 2005	0	0	0	0	0	0	YR
Dec 31, 2005	1	0	0	0	0	0	MN
Nov 30, 2005	1	0	0	0	0	0	MN
Oct 31, 2005	1	0	0	0	0	0	MN
Sep 30, 2005	1	0	0	0	0	0	MN
Aug 31, 2005	1	0	0	0	0	0	MN
Jul 31, 2005	1	0	0	0	0	0	MN
Jun 30, 2005	1	0	0	0	0	0	MN
May 31, 2005	1	0	0	0	0	0	MN
Apr 30, 2005	1	0	0	0	0	0	MN
Mar 31, 2005	1	0	0	0	0	0	MN
Feb 28, 2005	1	0	0	0	0	0	MN
Jan 31, 2005	1	0	0	0	0	0	MN
Dec 31, 2004	0	0	0	0	0	0	3Y
Dec 31, 2004	1	0	0	0	0	0	MN
Dec 31, 2004	0	0	0	0	0	0	YR
Nov 30, 2004	1	0	0	0	0	0	MN
Oct 31, 2004	1	0	0	0	0	0	MN
Sep 30, 2004	1	0	0	0	0	0	MN
Aug 31, 2004	1	0	0	0	0	0	MN
Jul 31, 2004	1	0	0	0	0	0	MN
Jun 30, 2004	1	0	0	0	0	0	MN
May 31, 2004	1	0	0	0	0	0	MN
Apr 30, 2004	1	0	0	0	0	0	MN
Mar 31, 2004	1	0	0	0	0	0	MN
Feb 29, 2004	1	0	0	0	0	0	MN
Jan 31, 2004	1	0	0	0	0	0	MN
Dec 31, 2003	0	0	0	0	0	0	YR
Dec 31, 2003	1	0	0	0	0	0	MN
Nov 30, 2003	1	0	0	0	0	0	MN
Oct 31, 2003	1	0	0	0	0	0	MN
Sep 30, 2003	6	4	0	4	0	0	MN

Show results prior to 01/01/2002

Groundwater/GWUDI Source Detail for PWS 01496 ---- LA PINE, CITY OF

Non-purchased Groundwater/GWUDI Sources:

- SRC-AA - WELL #1
- SRC-AB - WELL #2

Related Pages:

- Coliform Sampling Schedules
- Coliform Results

Contact Us:

- Email us with questions, comments, or suggestions about this page.

SRC-AA: WELL #1

GW, Active, Permanent ---- Operating Period: Jan 1 - Dec 31
Disinfection: None

Sensitivity Analysis Data

Aquifer sensitivity:	High	Surface water within 500 feet:	No
Construction adequate?:	Yes	Surface water type:	Unknown
E. coli sources within 2-year time-of-travel:	Yes	Data last updated:	08/10/2011

Monthly Assessment Monitoring Data

Monthly Assessment Monitoring Required? No
No monthly assessment monitoring schedule found.
No historic GWUDI data were found.

Back to top

SRC-AB: WELL #2

GW, Active, Permanent ---- Operating Period: Jan 1 - Dec 31
Disinfection: None

Sensitivity Analysis Data

Aquifer sensitivity:	High	Surface water within 500 feet:	No
Construction adequate?:	Yes	Surface water type:	Unknown
E. coli sources within 2-year time-of-travel:	Yes	Data last updated:	08/10/2011

Monthly Assessment Monitoring Data

Monthly Assessment Monitoring Required? No
No monthly assessment monitoring schedule found.
No historic GWUDI data were found.

Back to top

1 sec

For further information on this public water system, click on the area of interest below:

System Info :: Report for Lenders :: Alerts :: Violations :: Enforcements :: Contacts :: Site Visits :: Public Notice :: Plan Review

Coliform Summary :: Coliform Results :: Sampling Schedule for Coliform :: Groundwater/GWUDI Source Details

Chemical Group Summary :: Latest Chemical Results :: Entry Point Detects :: Single Analyte Results

Chemical Schedule Summary :: Chemical Schedule Details

Lead & Copper :: Corrosion Control (LCR) :: Nitrate :: Arsenic :: Radionuclides :: GWR 4-Log

DBPs :: TOC & Alkalinity :: DBP Sample Sites :: FANLs :: MRDL :: Turbidity :: SWTR :: RAA :: LRAA

Oregon Public Health
Drinking Water Data Online

Oregon Health Authority

ND = Not Detected at the Minimum Reporting Level
Spreadsheet

Latest Chemical Results - PWS ID: 01496 --- LA PINE, CITY OF

Sample ID	Sample Date	Receive Date	Chemical	Source ID	Results	Current MCL	UOM
B4J300301-I	10/30/2014	12/22/2014	NITRATE	EP-A	ND	10.000000	MG/L
B4J300301-S	10/30/2014	12/22/2014	1,2-DIBROMO-3-CHLOROPROPANE	EP-A	ND	0.0002000	MG/L
B4J300301-S	10/30/2014	12/22/2014	2,4,5-TP	EP-A	ND	0.0500000	MG/L
B4J300301-S	10/30/2014	12/22/2014	2,4-D	EP-A	ND	0.0700000	MG/L
B4J300301-S	10/30/2014	12/22/2014	ATRAZINE	EP-A	ND	0.0030000	MG/L
B4J300301-S	10/30/2014	12/22/2014	BENZO(A)PYRENE	EP-A	ND	0.0002000	MG/L
B4J300301-S	10/30/2014	12/22/2014	BHC-GAMMA	EP-A	ND	0.0002000	MG/L
B4J300301-S	10/30/2014	12/22/2014	CARBOFURAN	EP-A	ND	0.0400000	MG/L
B4J300301-S	10/30/2014	12/22/2014	CHLORDANE	EP-A	ND	0.0020000	MG/L
B4J300301-S	10/30/2014	12/22/2014	DALAPON	EP-A	ND	0.2000000	MG/L
B4J300301-S	10/30/2014	12/22/2014	DI(2-ETHYLHEXYL) ADIPATE	EP-A	ND	0.4000000	MG/L
B4J300301-S	10/30/2014	12/22/2014	DI(2-ETHYLHEXYL) PHTHALATE	EP-A	ND	0.0060000	MG/L
B4J300301-S	10/30/2014	12/22/2014	DINOSEB	EP-A	ND	0.0070000	MG/L
B4J300301-S	10/30/2014	12/22/2014	DIQUAT	EP-A	ND	0.0200000	MG/L
B4J300301-S	10/30/2014	12/22/2014	ENDOTHALL	EP-A	ND	0.1000000	MG/L
B4J300301-S	10/30/2014	12/22/2014	ENDRIN	EP-A	ND	0.0020000	MG/L
B4J300301-S	10/30/2014	12/22/2014	ETHYLENE DIBROMIDE	EP-A	ND	0.0000500	MG/L
B4J300301-S	10/30/2014	12/22/2014	GLYPHOSATE	EP-A	ND	0.7000000	MG/L
B4J300301-S	10/30/2014	12/22/2014	HEPTACHLOR	EP-A	ND	0.0004000	MG/L
B4J300301-S	10/30/2014	12/22/2014	HEPTACHLOR EPOXIDE	EP-A	ND	0.0002000	MG/L
B4J300301-S	10/30/2014	12/22/2014	HEXACHLOROBENZENE	EP-A	ND	0.0010000	MG/L
B4J300301-S	10/30/2014	12/22/2014	HEXACHLOROCYCLOPENTADIENE	EP-A	ND	0.0500000	MG/L
B4J300301-S	10/30/2014	12/22/2014	LASSO	EP-A	ND	0.0020000	MG/L
B4J300301-S	10/30/2014	12/22/2014	METHOXYCHLOR	EP-A	ND	0.0400000	MG/L
B4J300301-S	10/30/2014	12/22/2014	OXAMYL	EP-A	ND	0.2000000	MG/L
B4J300301-S	10/30/2014	12/22/2014	PENTACHLOROPHENOL	EP-A	ND	0.0010000	MG/L
B4J300301-S	10/30/2014	12/22/2014	PICLORAM	EP-A	ND	0.5000000	MG/L
B4J300301-S	10/30/2014	12/22/2014	SIMAZINE	EP-A	ND	0.0040000	MG/L
B4J300301-S	10/30/2014	12/22/2014	TOTAL POLYCHLORINATED BIPHENYLS (PCB)	EP-A	ND	0.0005000	MG/L
B4J300301-S	10/30/2014	12/22/2014	TOXAPHENE	EP-A	ND	0.0030000	MG/L
B4J300301-V	10/30/2014	12/22/2014	1,1,1-TRICHLOROETHANE	EP-A	ND	0.2000000	MG/L
B4J300301-V	10/30/2014	12/22/2014	1,1,2-TRICHLOROETHANE	EP-A	ND	0.0050000	MG/L
B4J300301-V	10/30/2014	12/22/2014	1,1-DICHLOROETHYLENE	EP-A	ND	0.0070000	MG/L
B4J300301-V	10/30/2014	12/22/2014	1,2,4-TRICHLOROBENZENE	EP-A	ND	0.0700000	MG/L
B4J300301-V	10/30/2014	12/22/2014	1,2-DICHLOROETHANE	EP-A	ND	0.0050000	MG/L
B4J300301-V	10/30/2014	12/22/2014	1,2-DICHLOROPROPANE	EP-A	ND	0.0050000	MG/L
B4J300301-V	10/30/2014	12/22/2014	BENZENE	EP-A	ND	0.0050000	MG/L
B4J300301-V	10/30/2014	12/22/2014	CARBON TETRACHLORIDE	EP-A	ND	0.0050000	MG/L

B4J300301-V	10/30/2014	12/22/2014	CHLOROBENZENE	EP-A	ND	0.1000000	MG/L
B4J300301-V	10/30/2014	12/22/2014	CIS-1,2-DICHLOROETHYLENE	EP-A	ND	0.0700000	MG/L
B4J300301-V	10/30/2014	12/22/2014	DICHLOROMETHANE	EP-A	ND	0.0050000	MG/L
B4J300301-V	10/30/2014	12/22/2014	ETHYLBENZENE	EP-A	ND	0.7000000	MG/L
B4J300301-V	10/30/2014	12/22/2014	O-DICHLOROBENZENE	EP-A	ND	0.6000000	MG/L
B4J300301-V	10/30/2014	12/22/2014	P-DICHLOROBENZENE	EP-A	ND	0.0750000	MG/L
B4J300301-V	10/30/2014	12/22/2014	STYRENE	EP-A	ND	0.1000000	MG/L
B4J300301-V	10/30/2014	12/22/2014	TETRACHLOROETHYLENE	EP-A	ND	0.0050000	MG/L
B4J300301-V	10/30/2014	12/22/2014	TOLUENE	EP-A	ND	1.0000000	MG/L
B4J300301-V	10/30/2014	12/22/2014	TRANS-1,2-DICHLOROETHYLENE	EP-A	ND	0.1000000	MG/L
B4J300301-V	10/30/2014	12/22/2014	TRICHLOROETHYLENE	EP-A	ND	0.0050000	MG/L
B4J300301-V	10/30/2014	12/22/2014	VINYL CHLORIDE	EP-A	ND	0.0020000	MG/L
B4J300301-V	10/30/2014	12/22/2014	XYLENES, TOTAL	EP-A	ND	10.000000	MG/L
B4J300301A-I-I	10/30/2014	12/22/2014	ARSENIC	EP-A	ND	0.0100000	MG/L
B3K072702-I	11/07/2013	12/30/2013	NITRATE	EP-A	ND	10.000000	MG/L
B2L131001-R	12/13/2012	02/04/2013	COMBINED RADIUM (-226 & -228)	EP-A	ND	5.0000000	PCI/L
B2L131001-R	12/13/2012	02/04/2013	COMBINED URANIUM	EP-A	ND	0.0300000	MG/L
B2L131001-R	12/13/2012	02/04/2013	GROSS ALPHA, EXCL. RADON & U	EP-A	ND	15.000000	PCI/L
B2J181102-I	10/18/2012	10/26/2012	NITRATE	EP-A	ND	10.000000	MG/L
B2I050901	09/05/2012	10/05/2012	COPPER	DIST-A	0.0210000	1.3000000	MG/L
B2I050901	09/05/2012	10/05/2012	LEAD	DIST-A	ND	0.0150000	MG/L
B2I050902	09/05/2012	10/05/2012	COPPER	DIST-A	0.0120000	1.3000000	MG/L
B2I050902	09/05/2012	10/05/2012	LEAD	DIST-A	ND	0.0150000	MG/L
B2I050903	09/05/2012	10/05/2012	COPPER	DIST-A	ND	1.3000000	MG/L
B2I050903	09/05/2012	10/05/2012	LEAD	DIST-A	ND	0.0150000	MG/L
B2I050904	09/05/2012	10/05/2012	COPPER	DIST-A	ND	1.3000000	MG/L
B2I050904	09/05/2012	10/05/2012	LEAD	DIST-A	ND	0.0150000	MG/L
B2I050905	09/05/2012	10/05/2012	COPPER	DIST-A	0.0200000	1.3000000	MG/L
B2I050905	09/05/2012	10/05/2012	LEAD	DIST-A	ND	0.0150000	MG/L
B2I050906	09/05/2012	10/05/2012	COPPER	DIST-A	ND	1.3000000	MG/L
B2I050906	09/05/2012	10/05/2012	LEAD	DIST-A	ND	0.0150000	MG/L
B2I050907	09/05/2012	10/05/2012	COPPER	DIST-A	0.0160000	1.3000000	MG/L
B2I050907	09/05/2012	10/05/2012	LEAD	DIST-A	ND	0.0150000	MG/L
B2I050908	09/05/2012	10/05/2012	COPPER	DIST-A	ND	1.3000000	MG/L
B2I050908	09/05/2012	10/05/2012	LEAD	DIST-A	ND	0.0150000	MG/L
B2I050909	09/05/2012	10/05/2012	COPPER	DIST-A	0.0100000	1.3000000	MG/L
B2I050909	09/05/2012	10/05/2012	LEAD	DIST-A	ND	0.0150000	MG/L
B2I050910	09/05/2012	10/05/2012	COPPER	DIST-A	0.0980000	1.3000000	MG/L
B2I050910	09/05/2012	10/05/2012	LEAD	DIST-A	ND	0.0150000	MG/L
B1K210801-I	11/21/2011	01/06/2012	ARSENIC	EP-A	ND	0.0100000	MG/L
B1K210801-S	11/21/2011	01/04/2012	1,2-DIBROMO-3-CHLOROPROPANE	EP-A	ND	0.0002000	MG/L
B1K210801-S	11/21/2011	01/04/2012	2,4,5-TP	EP-A	ND	0.0500000	MG/L
B1K210801-S	11/21/2011	01/04/2012	2,4-D	EP-A	ND	0.0700000	MG/L
B1K210801-S	11/21/2011	01/04/2012	ATRAZINE	EP-A	ND	0.0030000	MG/L
B1K210801-S	11/21/2011	01/04/2012	BENZO(A)PYRENE	EP-A	ND	0.0002000	MG/L
B1K210801-S	11/21/2011	01/04/2012	BHC-GAMMA	EP-A	ND	0.0002000	MG/L
B1K210801-S	11/21/2011	01/04/2012	CARBOFURAN	EP-A	ND	0.0400000	MG/L

B1K210801-S	11/21/2011	01/04/2012	CHLORDANE	EP-A	ND	0.0020000	MG/L
B1K210801-S	11/21/2011	01/04/2012	DALAPON	EP-A	ND	0.2000000	MG/L
B1K210801-S	11/21/2011	01/04/2012	DI(2-ETHYLHEXYL) ADIPATE	EP-A	ND	0.4000000	MG/L
B1K210801-S	11/21/2011	01/04/2012	DI(2-ETHYLHEXYL) PHTHALATE	EP-A	ND	0.0060000	MG/L
B1K210801-S	11/21/2011	01/04/2012	DINOSEB	EP-A	ND	0.0070000	MG/L
B1K210801-S	11/21/2011	01/04/2012	DIQUAT	EP-A	ND	0.0200000	MG/L
B1K210801-S	11/21/2011	01/04/2012	ENDOTHALL	EP-A	ND	0.1000000	MG/L
B1K210801-S	11/21/2011	01/04/2012	ENDRIN	EP-A	ND	0.0020000	MG/L
B1K210801-S	11/21/2011	01/04/2012	ETHYLENE DIBROMIDE	EP-A	ND	0.0000500	MG/L
B1K210801-S	11/21/2011	01/04/2012	GLYPHOSATE	EP-A	ND	0.7000000	MG/L
B1K210801-S	11/21/2011	01/04/2012	HEPTACHLOR	EP-A	ND	0.0004000	MG/L
B1K210801-S	11/21/2011	01/04/2012	HEPTACHLOR EPOXIDE	EP-A	ND	0.0002000	MG/L
B1K210801-S	11/21/2011	01/04/2012	HEXACHLOROBENZENE	EP-A	ND	0.0010000	MG/L
B1K210801-S	11/21/2011	01/04/2012	HEXACHLOROCYCLOPENTADIENE	EP-A	ND	0.0500000	MG/L
B1K210801-S	11/21/2011	01/04/2012	LASSO	EP-A	ND	0.0020000	MG/L
B1K210801-S	11/21/2011	01/04/2012	METHOXYCHLOR	EP-A	ND	0.0400000	MG/L
B1K210801-S	11/21/2011	01/04/2012	OXAMYL	EP-A	ND	0.2000000	MG/L
B1K210801-S	11/21/2011	01/04/2012	PENTACHLOROPHENOL	EP-A	ND	0.0010000	MG/L
B1K210801-S	11/21/2011	01/04/2012	PICLORAM	EP-A	ND	0.5000000	MG/L
B1K210801-S	11/21/2011	01/04/2012	SIMAZINE	EP-A	ND	0.0040000	MG/L
B1K210801-S	11/21/2011	01/04/2012	TOTAL POLYCHLORINATED BIPHENYLS (PCB)	EP-A	ND	0.0005000	MG/L
B1K210801-S	11/21/2011	01/04/2012	TOXAPHENE	EP-A	ND	0.0030000	MG/L
B1K210801-V	11/21/2011	01/06/2012	1,1,1-TRICHLOROETHANE	EP-A	ND	0.2000000	MG/L
B1K210801-V	11/21/2011	01/06/2012	1,1,2-TRICHLOROETHANE	EP-A	ND	0.0050000	MG/L
B1K210801-V	11/21/2011	01/06/2012	1,1-DICHLOROETHYLENE	EP-A	ND	0.0070000	MG/L
B1K210801-V	11/21/2011	01/06/2012	1,2,4-TRICHLOROBENZENE	EP-A	ND	0.0700000	MG/L
B1K210801-V	11/21/2011	01/06/2012	1,2-DICHLOROETHANE	EP-A	ND	0.0050000	MG/L
B1K210801-V	11/21/2011	01/06/2012	1,2-DICHLOROPROPANE	EP-A	ND	0.0050000	MG/L
B1K210801-V	11/21/2011	01/06/2012	BENZENE	EP-A	ND	0.0050000	MG/L
B1K210801-V	11/21/2011	01/06/2012	CARBON TETRACHLORIDE	EP-A	ND	0.0050000	MG/L
B1K210801-V	11/21/2011	01/06/2012	CHLOROBENZENE	EP-A	ND	0.1000000	MG/L
B1K210801-V	11/21/2011	01/06/2012	CIS-1,2-DICHLOROETHYLENE	EP-A	ND	0.0700000	MG/L
B1K210801-V	11/21/2011	01/06/2012	DICHLOROMETHANE	EP-A	ND	0.0050000	MG/L
B1K210801-V	11/21/2011	01/06/2012	ETHYLBENZENE	EP-A	ND	0.7000000	MG/L
B1K210801-V	11/21/2011	01/06/2012	O-DICHLOROBENZENE	EP-A	ND	0.6000000	MG/L
B1K210801-V	11/21/2011	01/06/2012	P-DICHLOROBENZENE	EP-A	ND	0.0750000	MG/L
B1K210801-V	11/21/2011	01/06/2012	STYRENE	EP-A	ND	0.1000000	MG/L
B1K210801-V	11/21/2011	01/06/2012	TETRACHLOROETHYLENE	EP-A	ND	0.0050000	MG/L
B1K210801-V	11/21/2011	01/06/2012	TOLUENE	EP-A	ND	1.0000000	MG/L
B1K210801-V	11/21/2011	01/06/2012	TRANS-1,2-DICHLOROETHYLENE	EP-A	ND	0.1000000	MG/L
B1K210801-V	11/21/2011	01/06/2012	TRICHLOROETHYLENE	EP-A	ND	0.0050000	MG/L
B1K210801-V	11/21/2011	01/06/2012	VINYL CHLORIDE	EP-A	ND	0.0020000	MG/L
B1K210801-V	11/21/2011	01/06/2012	XYLENES, TOTAL	EP-A	ND	10.000000	MG/L
B1K210801N-I	11/21/2011	01/06/2012	NITRATE	EP-A	ND	10.000000	MG/L
B0I301101-I	09/30/2010	10/26/2010	NITRATE	EP-A	ND	10.000000	MG/L

B9F251801-I	06/25/2009	06/26/2009	NITRATE	EP-A	ND	10.000000	MG/L
B8J022801-V	10/02/2008	11/26/2008	1,1,1-TRICHLOROETHANE	EP-A	ND	0.2000000	MG/L
B8J022801-V	10/02/2008	11/26/2008	1,1,2-TRICHLOROETHANE	EP-A	ND	0.0050000	MG/L
B8J022801-V	10/02/2008	11/26/2008	1,1-DICHLOROETHYLENE	EP-A	ND	0.0070000	MG/L
B8J022801-V	10/02/2008	11/26/2008	1,2,4-TRICHLOROBENZENE	EP-A	ND	0.0700000	MG/L
B8J022801-V	10/02/2008	11/26/2008	1,2-DICHLOROETHANE	EP-A	ND	0.0050000	MG/L
B8J022801-V	10/02/2008	11/26/2008	1,2-DICHLOROPROPANE	EP-A	ND	0.0050000	MG/L
B8J022801-V	10/02/2008	11/26/2008	BENZENE	EP-A	ND	0.0050000	MG/L
B8J022801-V	10/02/2008	11/26/2008	CARBON TETRACHLORIDE	EP-A	ND	0.0050000	MG/L
B8J022801-V	10/02/2008	11/26/2008	CHLOROBENZENE	EP-A	ND	0.1000000	MG/L
B8J022801-V	10/02/2008	11/26/2008	CIS-1,2-DICHLOROETHYLENE	EP-A	ND	0.0700000	MG/L
B8J022801-V	10/02/2008	11/26/2008	DICHLOROMETHANE	EP-A	ND	0.0050000	MG/L
B8J022801-V	10/02/2008	11/26/2008	ETHYLBENZENE	EP-A	ND	0.7000000	MG/L
B8J022801-V	10/02/2008	11/26/2008	O-DICHLOROBENZENE	EP-A	ND	0.6000000	MG/L
B8J022801-V	10/02/2008	11/26/2008	P-DICHLOROBENZENE	EP-A	ND	0.0750000	MG/L
B8J022801-V	10/02/2008	11/26/2008	STYRENE	EP-A	ND	0.1000000	MG/L
B8J022801-V	10/02/2008	11/26/2008	TETRACHLOROETHYLENE	EP-A	ND	0.0050000	MG/L
B8J022801-V	10/02/2008	11/26/2008	TOLUENE	EP-A	ND	1.0000000	MG/L
B8J022801-V	10/02/2008	11/26/2008	TRANS-1,2-DICHLOROETHYLENE	EP-A	ND	0.1000000	MG/L
B8J022801-V	10/02/2008	11/26/2008	TRICHLOROETHYLENE	EP-A	ND	0.0050000	MG/L
B8J022801-V	10/02/2008	11/26/2008	VINYL CHLORIDE	EP-A	ND	0.0020000	MG/L
B8J022801-V	10/02/2008	11/26/2008	XYLENES, TOTAL	EP-A	ND	10.000000	MG/L
B8I150601-I	09/15/2008	11/26/2008	ANTIMONY, TOTAL	EP-A	ND	0.0060000	MG/L
B8I150601-I	09/15/2008	11/26/2008	ARSENIC	EP-A	ND	0.0100000	MG/L
B8I150601-I	09/15/2008	11/26/2008	BARIUM	EP-A	ND	2.0000000	MG/L
B8I150601-I	09/15/2008	11/26/2008	BERYLLIUM, TOTAL	EP-A	ND	0.0040000	MG/L
B8I150601-I	09/15/2008	11/26/2008	CADMIUM	EP-A	ND	0.0050000	MG/L
B8I150601-I	09/15/2008	11/26/2008	CHROMIUM	EP-A	ND	0.1000000	MG/L
B8I150601-I	09/15/2008	11/26/2008	CYANIDE	EP-A	ND	0.2000000	MG/L
B8I150601-I	09/15/2008	11/26/2008	FLUORIDE	EP-A	0.2130000	4.0000000	MG/L
B8I150601-I	09/15/2008	11/26/2008	LEAD	EP-A	ND	0.0150000	MG/L
B8I150601-I	09/15/2008	11/26/2008	MERCURY	EP-A	ND	0.0020000	MG/L
B8I150601-I	09/15/2008	11/26/2008	NICKEL	EP-A	ND	0.1000000	MG/L
B8I150601-I	09/15/2008	11/26/2008	NITRATE	EP-A	ND	10.000000	MG/L
B8I150601-I	09/15/2008	11/26/2008	NITRATE-NITRITE	EP-A	ND	10.000000	MG/L
B8I150601-I	09/15/2008		NITRITE	EP-A	ND	1.0000000	MG/L
B8I150601-I	09/15/2008	11/26/2008	SELENIUM	EP-A	ND	0.0500000	MG/L
B8I150601-I	09/15/2008	11/26/2008	SODIUM	EP-A	6.7900000		MG/L
B8I150601-I	09/15/2008	11/26/2008	THALLIUM, TOTAL	EP-A	ND	0.0020000	MG/L
B8I150601-S	09/15/2008	11/26/2008	1,2-DIBROMO-3-CHLOROPROPANE	EP-A	ND	0.0002000	MG/L
B8I150601-S	09/15/2008	11/26/2008	2,4,5-TP	EP-A	ND	0.0500000	MG/L
B8I150601-S	09/15/2008	11/26/2008	2,4-D	EP-A	ND	0.0700000	MG/L
B8I150601-S	09/15/2008	11/26/2008	ATRAZINE	EP-A	ND	0.0030000	MG/L
B8I150601-S	09/15/2008	11/26/2008	BENZO(A)PYRENE	EP-A	ND	0.0002000	MG/L
B8I150601-S	09/15/2008	11/26/2008	BHC-GAMMA	EP-A	ND	0.0002000	MG/L
B8I150601-S	09/15/2008	11/26/2008	CARBOFURAN	EP-A	ND	0.0400000	MG/L

B8I150601-S	09/15/2008	11/26/2008	CHLORDANE	EP-A	ND	0.0020000	MG/L
B8I150601-S	09/15/2008	11/26/2008	DALAPON	EP-A	ND	0.2000000	MG/L
B8I150601-S	09/15/2008	11/26/2008	DI(2-ETHYLHEXYL) ADIPATE	EP-A	ND	0.4000000	MG/L
B8I150601-S	09/15/2008	11/26/2008	DI(2-ETHYLHEXYL) PHTHALATE	EP-A	ND	0.0060000	MG/L
B8I150601-S	09/15/2008	11/26/2008	DINOSEB	EP-A	ND	0.0070000	MG/L
B8I150601-S	09/15/2008	11/26/2008	DIQUAT	EP-A	ND	0.0200000	MG/L
B8I150601-S	09/15/2008	11/26/2008	ENDOTHALL	EP-A	ND	0.1000000	MG/L
B8I150601-S	09/15/2008	11/26/2008	ENDRIN	EP-A	ND	0.0020000	MG/L
B8I150601-S	09/15/2008	11/26/2008	ETHYLENE DIBROMIDE	EP-A	ND	0.0000500	MG/L
B8I150601-S	09/15/2008	11/26/2008	GLYPHOSATE	EP-A	ND	0.7000000	MG/L
B8I150601-S	09/15/2008	11/26/2008	HEPTACHLOR	EP-A	ND	0.0004000	MG/L
B8I150601-S	09/15/2008	11/26/2008	HEPTACHLOR EPOXIDE	EP-A	ND	0.0002000	MG/L
B8I150601-S	09/15/2008	11/26/2008	HEXACHLOROBENZENE	EP-A	ND	0.0010000	MG/L
B8I150601-S	09/15/2008	11/26/2008	HEXACHLOROCYCLOPENTADIENE	EP-A	ND	0.0500000	MG/L
B8I150601-S	09/15/2008	11/26/2008	LASSO	EP-A	ND	0.0020000	MG/L
B8I150601-S	09/15/2008	11/26/2008	METHOXYCHLOR	EP-A	ND	0.0400000	MG/L
B8I150601-S	09/15/2008	11/26/2008	OXAMYL	EP-A	ND	0.2000000	MG/L
B8I150601-S	09/15/2008	11/26/2008	PENTACHLOROPHENOL	EP-A	ND	0.0010000	MG/L
B8I150601-S	09/15/2008	11/26/2008	PICLORAM	EP-A	ND	0.5000000	MG/L
B8I150601-S	09/15/2008	11/26/2008	SIMAZINE	EP-A	ND	0.0040000	MG/L
B8I150601-S	09/15/2008	11/26/2008	TOTAL POLYCHLORINATED BIPHENYLS (PCB)	EP-A	ND	0.0005000	MG/L
B8I150601-S	09/15/2008	11/26/2008	TOXAPHENE	EP-A	ND	0.0030000	MG/L
B8I150601N-I	09/15/2008	11/26/2008	SULFATE	EP-A	ND		MG/L
B8J022801-I	09/15/2008	11/26/2008	1,1,1-TRICHLOROETHANE	EP-A	ND	0.2000000	MG/L
B8J022801-I	09/15/2008	11/26/2008	1,1,2-TRICHLOROETHANE	EP-A	ND	0.0050000	MG/L
B8J022801-I	09/15/2008	11/26/2008	1,1-DICHLOROETHYLENE	EP-A	ND	0.0070000	MG/L
B8J022801-I	09/15/2008	11/26/2008	1,2,4-TRICHLOROBENZENE	EP-A	ND	0.0700000	MG/L
B8J022801-I	09/15/2008	11/26/2008	1,2-DICHLOROETHANE	EP-A	ND	0.0050000	MG/L
B8J022801-I	09/15/2008	11/26/2008	1,2-DICHLOROPROPANE	EP-A	ND	0.0050000	MG/L
B8J022801-I	09/15/2008	11/26/2008	BENZENE	EP-A	ND	0.0050000	MG/L
B8J022801-I	09/15/2008	11/26/2008	CARBON TETRACHLORIDE	EP-A	ND	0.0050000	MG/L
B8J022801-I	09/15/2008	11/26/2008	CHLOROBENZENE	EP-A	ND	0.1000000	MG/L
B8J022801-I	09/15/2008	11/26/2008	CIS-1,2-DICHLOROETHYLENE	EP-A	ND	0.0700000	MG/L
B8J022801-I	09/15/2008	11/26/2008	DICHLOROMETHANE	EP-A	ND	0.0050000	MG/L
B8J022801-I	09/15/2008	11/26/2008	ETHYLBENZENE	EP-A	ND	0.7000000	MG/L
B8J022801-I	09/15/2008	11/26/2008	O-DICHLOROBENZENE	EP-A	ND	0.6000000	MG/L
B8J022801-I	09/15/2008	11/26/2008	P-DICHLOROBENZENE	EP-A	ND	0.0750000	MG/L
B8J022801-I	09/15/2008	11/26/2008	STYRENE	EP-A	ND	0.1000000	MG/L
B8J022801-I	09/15/2008	11/26/2008	TETRACHLOROETHYLENE	EP-A	ND	0.0050000	MG/L
B8J022801-I	09/15/2008	11/26/2008	TOLUENE	EP-A	ND	1.0000000	MG/L
B8J022801-I	09/15/2008	11/26/2008	TRANS-1,2-DICHLOROETHYLENE	EP-A	ND	0.1000000	MG/L
B8J022801-I	09/15/2008	11/26/2008	TRICHLOROETHYLENE	EP-A	ND	0.0050000	MG/L
B8J022801-I	09/15/2008	11/26/2008	VINYL CHLORIDE	EP-A	ND	0.0020000	MG/L
B8J022801-I	09/15/2008	11/26/2008	XYLENES, TOTAL	EP-A	ND	10.000000	MG/L
C08090747001-R	09/15/2008	11/26/2008	COMBINED RADIUM (-226 & -228)	EP-A	0.0100000	5.0000000	PCI/L
C08090747001-R	09/15/2008	11/26/2008	COMBINED URANIUM	EP-A	ND	0.0300000	MG/L

C08090747001-R	09/15/2008	11/26/2008	GROSS ALPHA, EXCL. RADON & U	EP-A	1.4000000	15.000000	PCI/L
B7I131601	09/13/2007	09/25/2007	NITRATE	EP-A	ND	10.000000	MG/L
60203-15	02/02/2006	02/23/2006	NITRATE	EP-A	ND	10.000000	MG/L
51011-27I	10/10/2005	12/07/2005	ANTIMONY, TOTAL	EP-A	ND	0.0060000	MG/L
51011-27I	10/10/2005	12/07/2005	ARSENIC	EP-A	ND	0.0100000	MG/L
51011-27I	10/10/2005	12/07/2005	BARIUM	EP-A	ND	2.0000000	MG/L
51011-27I	10/10/2005	12/07/2005	BERYLLIUM, TOTAL	EP-A	ND	0.0040000	MG/L
51011-27I	10/10/2005	12/07/2005	CADMIUM	EP-A	ND	0.0050000	MG/L
51011-27I	10/10/2005	12/07/2005	CHROMIUM	EP-A	ND	0.1000000	MG/L
51011-27I	10/10/2005	12/07/2005	CYANIDE	EP-A	ND	0.2000000	MG/L
51011-27I	10/10/2005	12/07/2005	FLUORIDE	EP-A	0.1400000	4.0000000	MG/L
51011-27I	10/10/2005	12/07/2005	LEAD	EP-A	ND	0.0150000	MG/L
51011-27I	10/10/2005	12/07/2005	MERCURY	EP-A	ND	0.0020000	MG/L
51011-27I	10/10/2005	12/07/2005	NICKEL	EP-A	ND	0.1000000	MG/L
51011-27I	10/10/2005	12/07/2005	NITRATE	EP-A	ND	10.000000	MG/L
51011-27I	10/10/2005	12/07/2005	NITRATE-NITRITE	EP-A	ND	10.000000	MG/L
51011-27I	10/10/2005		NITRITE	EP-A	ND	1.0000000	MG/L
51011-27I	10/10/2005	12/07/2005	SELENIUM	EP-A	ND	0.0500000	MG/L
51011-27I	10/10/2005	12/07/2005	SODIUM	EP-A	6.5500000		MG/L
51011-27I	10/10/2005	12/07/2005	SULFATE	EP-A	ND		MG/L
51011-27I	10/10/2005	12/07/2005	THALLIUM, TOTAL	EP-A	ND	0.0020000	MG/L
51011-27S	10/10/2005	12/07/2005	1,2-DIBROMO-3-CHLOROPROPANE	EP-A	ND	0.0002000	MG/L
51011-27S	10/10/2005	12/07/2005	2,4,5-TP	EP-A	ND	0.0500000	MG/L
51011-27S	10/10/2005	12/07/2005	2,4-D	EP-A	ND	0.0700000	MG/L
51011-27S	10/10/2005	12/07/2005	ATRAZINE	EP-A	ND	0.0030000	MG/L
51011-27S	10/10/2005	12/07/2005	BENZO(A)PYRENE	EP-A	ND	0.0002000	MG/L
51011-27S	10/10/2005	12/07/2005	BHC-GAMMA	EP-A	ND	0.0002000	MG/L
51011-27S	10/10/2005	12/07/2005	CARBOFURAN	EP-A	ND	0.0400000	MG/L
51011-27S	10/10/2005	12/07/2005	CHLORDANE	EP-A	ND	0.0020000	MG/L
51011-27S	10/10/2005	12/07/2005	DALAPON	EP-A	ND	0.2000000	MG/L
51011-27S	10/10/2005	12/07/2005	DI(2-ETHYLHEXYL) ADIPATE	EP-A	ND	0.4000000	MG/L
51011-27S	10/10/2005	12/07/2005	DI(2-ETHYLHEXYL) PHTHALATE	EP-A	ND	0.0060000	MG/L
51011-27S	10/10/2005	12/07/2005	DINOSEB	EP-A	ND	0.0070000	MG/L
51011-27S	10/10/2005	12/07/2005	DIQUAT	EP-A	ND	0.0200000	MG/L
51011-27S	10/10/2005	12/07/2005	ENDOTHALL	EP-A	ND	0.1000000	MG/L
51011-27S	10/10/2005	12/07/2005	ENDRIN	EP-A	ND	0.0020000	MG/L
51011-27S	10/10/2005	12/07/2005	ETHYLENE DIBROMIDE	EP-A	ND	0.0000500	MG/L
51011-27S	10/10/2005	12/07/2005	GLYPHOSATE	EP-A	ND	0.7000000	MG/L
51011-27S	10/10/2005	12/07/2005	HEPTACHLOR	EP-A	ND	0.0004000	MG/L
51011-27S	10/10/2005	12/07/2005	HEPTACHLOR EPOXIDE	EP-A	ND	0.0002000	MG/L
51011-27S	10/10/2005	12/07/2005	HEXACHLOROBENZENE	EP-A	ND	0.0010000	MG/L
51011-27S	10/10/2005	12/07/2005	HEXACHLOROCYCLOPENTADIENE	EP-A	ND	0.0500000	MG/L
51011-27S	10/10/2005	12/07/2005	LASSO	EP-A	ND	0.0020000	MG/L
51011-27S	10/10/2005	12/07/2005	METHOXYCHLOR	EP-A	ND	0.0400000	MG/L
51011-27S	10/10/2005	12/07/2005	OXAMYL	EP-A	ND	0.2000000	MG/L
51011-27S	10/10/2005	12/07/2005	PENTACHLOROPHENOL	EP-A	ND	0.0010000	MG/L
51011-27S	10/10/2005	12/07/2005	PICLORAM	EP-A	ND	0.5000000	MG/L

51011-27S	10/10/2005	12/07/2005	SIMAZINE	EP-A	ND	0.0040000	MG/L
51011-27S	10/10/2005	12/07/2005	TOTAL POLYCHLORINATED BIPHENYLS (PCB)	EP-A	ND	0.0005000	MG/L
51011-27S	10/10/2005	12/07/2005	TOXAPHENE	EP-A	ND	0.0030000	MG/L
51011-27V	10/10/2005	12/07/2005	1,1,1-TRICHLOROETHANE	EP-A	ND	0.2000000	MG/L
51011-27V	10/10/2005	12/07/2005	1,1,2-TRICHLOROETHANE	EP-A	ND	0.0050000	MG/L
51011-27V	10/10/2005	12/07/2005	1,1-DICHLOROETHYLENE	EP-A	ND	0.0070000	MG/L
51011-27V	10/10/2005	12/07/2005	1,2,4-TRICHLOROBENZENE	EP-A	ND	0.0700000	MG/L
51011-27V	10/10/2005	12/07/2005	1,2-DICHLOROETHANE	EP-A	ND	0.0050000	MG/L
51011-27V	10/10/2005	12/07/2005	1,2-DICHLOROPROPANE	EP-A	ND	0.0050000	MG/L
51011-27V	10/10/2005	12/07/2005	BENZENE	EP-A	ND	0.0050000	MG/L
51011-27V	10/10/2005	12/07/2005	CARBON TETRACHLORIDE	EP-A	ND	0.0050000	MG/L
51011-27V	10/10/2005	12/07/2005	CHLOROBENZENE	EP-A	ND	0.1000000	MG/L
51011-27V	10/10/2005	12/07/2005	CIS-1,2-DICHLOROETHYLENE	EP-A	ND	0.0700000	MG/L
51011-27V	10/10/2005	12/07/2005	DICHLOROMETHANE	EP-A	ND	0.0050000	MG/L
51011-27V	10/10/2005	12/07/2005	ETHYLBENZENE	EP-A	ND	0.7000000	MG/L
51011-27V	10/10/2005	12/07/2005	O-DICHLOROBENZENE	EP-A	ND	0.6000000	MG/L
51011-27V	10/10/2005	12/07/2005	P-DICHLOROBENZENE	EP-A	ND	0.0750000	MG/L
51011-27V	10/10/2005	12/07/2005	STYRENE	EP-A	ND	0.1000000	MG/L
51011-27V	10/10/2005	12/07/2005	TETRACHLOROETHYLENE	EP-A	ND	0.0050000	MG/L
51011-27V	10/10/2005	12/07/2005	TOLUENE	EP-A	ND	1.0000000	MG/L
51011-27V	10/10/2005	12/07/2005	TRANS-1,2-DICHLOROETHYLENE	EP-A	ND	0.1000000	MG/L
51011-27V	10/10/2005	12/07/2005	TRICHLOROETHYLENE	EP-A	ND	0.0050000	MG/L
51011-27V	10/10/2005	12/07/2005	VINYL CHLORIDE	EP-A	ND	0.0020000	MG/L
51011-27V	10/10/2005	12/07/2005	XYLENES, TOTAL	EP-A	ND	10.000000	MG/L
NB402145N	02/12/2004	02/26/2004	NITRATE	EP-A	ND	10.000000	MG/L
NB311237N	11/20/2003	12/02/2003	NITRATE	EP-A	ND	10.000000	MG/L
21004-1I	10/03/2002	08/18/2003	ANTIMONY, TOTAL	EP-A	ND	0.0060000	MG/L
21004-1I	10/03/2002	08/18/2003	ARSENIC	EP-A	ND	0.0100000	MG/L
21004-1I	10/03/2002	08/18/2003	BARIUM	EP-A	ND	2.0000000	MG/L
21004-1I	10/03/2002	08/18/2003	BERYLLIUM, TOTAL	EP-A	ND	0.0040000	MG/L
21004-1I	10/03/2002	08/18/2003	CADMIUM	EP-A	ND	0.0050000	MG/L
21004-1I	10/03/2002	08/18/2003	CHROMIUM	EP-A	ND	0.1000000	MG/L
21004-1I	10/03/2002	08/18/2003	CYANIDE	EP-A	ND	0.2000000	MG/L
21004-1I	10/03/2002	08/18/2003	FLUORIDE	EP-A	0.2000000	4.0000000	MG/L
21004-1I	10/03/2002	08/18/2003	LEAD	EP-A	ND	0.0150000	MG/L
21004-1I	10/03/2002	08/18/2003	MERCURY	EP-A	ND	0.0020000	MG/L
21004-1I	10/03/2002	08/18/2003	NICKEL	EP-A	ND	0.1000000	MG/L
21004-1I	10/03/2002	08/18/2003	NITRATE	EP-A	0.1900000	10.000000	MG/L
21004-1I	10/03/2002	08/18/2003	NITRATE-NITRITE	EP-A	0.1900000	10.000000	MG/L
21004-1I	10/03/2002	08/18/2003	NITRITE	EP-A	ND	1.0000000	MG/L
21004-1I	10/03/2002	08/18/2003	SELENIUM	EP-A	ND	0.0500000	MG/L
21004-1I	10/03/2002	08/18/2003	SODIUM	EP-A	7.4800000		MG/L
21004-1I	10/03/2002	08/18/2003	SULFATE	EP-A	ND		MG/L
21004-1I	10/03/2002	08/18/2003	THALLIUM, TOTAL	EP-A	ND	0.0020000	MG/L
21004-1S	10/03/2002	08/18/2003	1,2-DIBROMO-3-CHLOROPROPANE	EP-A	ND	0.0002000	MG/L
21004-1S	10/03/2002	08/18/2003	2,4,5-TP	EP-A	ND	0.0500000	MG/L

21004-1S	10/03/2002	08/18/2003	2,4-D	EP-A	ND	0.0700000	MG/L
21004-1S	10/03/2002	08/18/2003	ATRAZINE	EP-A	ND	0.0030000	MG/L
21004-1S	10/03/2002	08/18/2003	BENZO(A)PYRENE	EP-A	ND	0.0002000	MG/L
21004-1S	10/03/2002	08/18/2003	BHC-GAMMA	EP-A	ND	0.0002000	MG/L
21004-1S	10/03/2002	08/18/2003	CARBOFURAN	EP-A	ND	0.0400000	MG/L
21004-1S	10/03/2002	08/18/2003	CHLORDANE	EP-A	ND	0.0020000	MG/L
21004-1S	10/03/2002	08/18/2003	DALAPON	EP-A	ND	0.2000000	MG/L
21004-1S	10/03/2002	08/18/2003	DI(2-ETHYLHEXYL) ADIPATE	EP-A	ND	0.4000000	MG/L
21004-1S	10/03/2002	08/18/2003	DI(2-ETHYLHEXYL) PHTHALATE	EP-A	ND	0.0060000	MG/L
21004-1S	10/03/2002	08/18/2003	DINOSEB	EP-A	ND	0.0070000	MG/L
21004-1S	10/03/2002	08/18/2003	DIQUAT	EP-A	ND	0.0200000	MG/L
21004-1S	10/03/2002	08/18/2003	ENDOTHALL	EP-A	ND	0.1000000	MG/L
21004-1S	10/03/2002	08/18/2003	ENDRIN	EP-A	ND	0.0020000	MG/L
21004-1S	10/03/2002	08/18/2003	ETHYLENE DIBROMIDE	EP-A	ND	0.0000500	MG/L
21004-1S	10/03/2002	08/18/2003	GLYPHOSATE	EP-A	ND	0.7000000	MG/L
21004-1S	10/03/2002	08/18/2003	HEPTACHLOR	EP-A	ND	0.0004000	MG/L
21004-1S	10/03/2002	08/18/2003	HEPTACHLOR EPOXIDE	EP-A	ND	0.0002000	MG/L
21004-1S	10/03/2002	08/18/2003	HEXACHLOROBENZENE	EP-A	ND	0.0010000	MG/L
21004-1S	10/03/2002	08/18/2003	HEXACHLOROCYCLOPENTADIENE	EP-A	ND	0.0500000	MG/L
21004-1S	10/03/2002	08/18/2003	LASSO	EP-A	ND	0.0020000	MG/L
21004-1S	10/03/2002	08/18/2003	METHOXYCHLOR	EP-A	ND	0.0400000	MG/L
21004-1S	10/03/2002	08/18/2003	OXAMYL	EP-A	ND	0.2000000	MG/L
21004-1S	10/03/2002	08/18/2003	PENTACHLOROPHENOL	EP-A	ND	0.0010000	MG/L
21004-1S	10/03/2002	08/18/2003	PICLORAM	EP-A	ND	0.5000000	MG/L
21004-1S	10/03/2002	08/18/2003	SIMAZINE	EP-A	ND	0.0040000	MG/L
21004-1S	10/03/2002	08/18/2003	TOTAL POLYCHLORINATED BIPHENYLS (PCB)	EP-A	ND	0.0005000	MG/L
21004-1S	10/03/2002	08/18/2003	TOXAPHENE	EP-A	ND	0.0030000	MG/L
21004-1V	10/03/2002	08/18/2003	1,1,1-TRICHLOROETHANE	EP-A	ND	0.2000000	MG/L
21004-1V	10/03/2002	08/18/2003	1,1,2-TRICHLOROETHANE	EP-A	ND	0.0050000	MG/L
21004-1V	10/03/2002	08/18/2003	1,1-DICHLOROETHYLENE	EP-A	ND	0.0070000	MG/L
21004-1V	10/03/2002	08/18/2003	1,2,4-TRICHLOROBENZENE	EP-A	ND	0.0700000	MG/L
21004-1V	10/03/2002	08/18/2003	1,2-DICHLOROETHANE	EP-A	ND	0.0050000	MG/L
21004-1V	10/03/2002	08/18/2003	1,2-DICHLOROPROPANE	EP-A	ND	0.0050000	MG/L
21004-1V	10/03/2002	08/18/2003	BENZENE	EP-A	ND	0.0050000	MG/L
21004-1V	10/03/2002	08/18/2003	CARBON TETRACHLORIDE	EP-A	ND	0.0050000	MG/L
21004-1V	10/03/2002	08/18/2003	CHLOROBENZENE	EP-A	ND	0.1000000	MG/L
21004-1V	10/03/2002	08/18/2003	CIS-1,2-DICHLOROETHYLENE	EP-A	ND	0.0700000	MG/L
21004-1V	10/03/2002	08/18/2003	DICHLOROMETHANE	EP-A	ND	0.0050000	MG/L
21004-1V	10/03/2002	08/18/2003	ETHYLBENZENE	EP-A	ND	0.7000000	MG/L
21004-1V	10/03/2002	08/18/2003	O-DICHLOROBENZENE	EP-A	ND	0.6000000	MG/L
21004-1V	10/03/2002	08/18/2003	P-DICHLOROBENZENE	EP-A	ND	0.0750000	MG/L
21004-1V	10/03/2002	08/18/2003	STYRENE	EP-A	ND	0.1000000	MG/L
21004-1V	10/03/2002	08/18/2003	TETRACHLOROETHYLENE	EP-A	ND	0.0050000	MG/L
21004-1V	10/03/2002	08/18/2003	TOLUENE	EP-A	ND	1.0000000	MG/L
21004-1V	10/03/2002	08/18/2003	TRANS-1,2-DICHLOROETHYLENE	EP-A	ND	0.1000000	MG/L
21004-1V	10/03/2002	08/18/2003	TRICHLOROETHYLENE	EP-A	ND	0.0050000	MG/L

21004-1V	10/03/2002	08/18/2003	VINYL CHLORIDE	EP-A	ND	0.0020000	MG/L
21004-1V	10/03/2002	08/18/2003	XYLENES, TOTAL	EP-A	ND	10.000000	MG/L
C210024	10/03/2002	01/07/2013	GROSS BETA PARTICLE ACTIVITY	EP-A	ND	50.000000	PCI/L
C210024-R	10/03/2002	01/07/2013	COMBINED RADIUM (-226 & -228)	EP-A	0.9050000	5.0000000	PCI/L
C210024-R	10/03/2002	01/07/2013	COMBINED URANIUM	EP-A	0.0000320	0.0300000	MG/L
C210024-R	10/03/2002	01/07/2013	GROSS ALPHA, EXCL. RADON & U	EP-A	ND	15.000000	PCI/L
20904-23I	09/03/2002	08/18/2003	ANTIMONY, TOTAL	EP-A	ND	0.0060000	MG/L
20904-23I	09/03/2002	08/18/2003	ARSENIC	EP-A	ND	0.0100000	MG/L
20904-23I	09/03/2002	08/18/2003	BARIUM	EP-A	ND	2.0000000	MG/L
20904-23I	09/03/2002	08/18/2003	BERYLLIUM, TOTAL	EP-A	ND	0.0040000	MG/L
20904-23I	09/03/2002	08/18/2003	CADMIUM	EP-A	ND	0.0050000	MG/L
20904-23I	09/03/2002	08/18/2003	CHROMIUM	EP-A	ND	0.1000000	MG/L
20904-23I	09/03/2002	08/18/2003	CYANIDE	EP-A	ND	0.2000000	MG/L
20904-23I	09/03/2002	08/18/2003	FLUORIDE	EP-A	0.1400000	4.0000000	MG/L
20904-23I	09/03/2002	08/18/2003	LEAD	EP-A	ND	0.0150000	MG/L
20904-23I	09/03/2002	08/18/2003	MERCURY	EP-A	ND	0.0020000	MG/L
20904-23I	09/03/2002	08/18/2003	NICKEL	EP-A	ND	0.1000000	MG/L
20904-23I	09/03/2002	08/18/2003	NITRATE	EP-A	ND	10.000000	MG/L
20904-23I	09/03/2002	08/18/2003	NITRATE-NITRITE	EP-A	ND	10.000000	MG/L
20904-23I	09/03/2002	08/18/2003	NITRITE	EP-A	ND	1.0000000	MG/L
20904-23I	09/03/2002	08/18/2003	SELENIUM	EP-A	ND	0.0500000	MG/L
20904-23I	09/03/2002	08/18/2003	SODIUM	EP-A	9.9000000		MG/L
20904-23I	09/03/2002	08/18/2003	SULFATE	EP-A	1.4300000		MG/L
20904-23I	09/03/2002	08/18/2003	THALLIUM, TOTAL	EP-A	ND	0.0020000	MG/L
20904-23S	09/03/2002	08/18/2003	1,2-DIBROMO-3-CHLOROPROPANE	EP-A	ND	0.0002000	MG/L
20904-23S	09/03/2002	08/18/2003	2,4,5-TP	EP-A	ND	0.0500000	MG/L
20904-23S	09/03/2002	08/18/2003	2,4-D	EP-A	ND	0.0700000	MG/L
20904-23S	09/03/2002	08/18/2003	ATRAZINE	EP-A	ND	0.0030000	MG/L
20904-23S	09/03/2002	08/18/2003	BENZO(A)PYRENE	EP-A	ND	0.0002000	MG/L
20904-23S	09/03/2002	08/18/2003	BHC-GAMMA	EP-A	ND	0.0002000	MG/L
20904-23S	09/03/2002	08/18/2003	CARBOFURAN	EP-A	ND	0.0400000	MG/L
20904-23S	09/03/2002	08/18/2003	CHLORDANE	EP-A	ND	0.0020000	MG/L
20904-23S	09/03/2002	08/18/2003	DALAPON	EP-A	ND	0.2000000	MG/L
20904-23S	09/03/2002	08/18/2003	DI(2-ETHYLHEXYL) ADIPATE	EP-A	ND	0.4000000	MG/L
20904-23S	09/03/2002	08/18/2003	DI(2-ETHYLHEXYL) PHTHALATE	EP-A	ND	0.0060000	MG/L
20904-23S	09/03/2002	08/18/2003	DINOSEB	EP-A	ND	0.0070000	MG/L
20904-23S	09/03/2002	08/18/2003	DIQUAT	EP-A	ND	0.0200000	MG/L
20904-23S	09/03/2002	08/18/2003	ENDOTHALL	EP-A	ND	0.1000000	MG/L
20904-23S	09/03/2002	08/18/2003	ENDRIN	EP-A	ND	0.0020000	MG/L
20904-23S	09/03/2002	08/18/2003	ETHYLENE DIBROMIDE	EP-A	ND	0.0000500	MG/L
20904-23S	09/03/2002	08/18/2003	GLYPHOSATE	EP-A	ND	0.7000000	MG/L
20904-23S	09/03/2002	08/18/2003	HEPTACHLOR	EP-A	ND	0.0004000	MG/L
20904-23S	09/03/2002	08/18/2003	HEPTACHLOR EPOXIDE	EP-A	ND	0.0002000	MG/L
20904-23S	09/03/2002	08/18/2003	HEXACHLOROBENZENE	EP-A	ND	0.0010000	MG/L
20904-23S	09/03/2002	08/18/2003	HEXACHLOROCYCLOPENTADIENE	EP-A	ND	0.0500000	MG/L
20904-23S	09/03/2002	08/18/2003	LASSO	EP-A	ND	0.0020000	MG/L

20904-23S	09/03/2002	08/18/2003	METHOXYCHLOR	EP-A	ND	0.0400000	MG/L
20904-23S	09/03/2002	08/18/2003	OXAMYL	EP-A	ND	0.2000000	MG/L
20904-23S	09/03/2002	08/18/2003	PENTACHLOROPHENOL	EP-A	ND	0.0010000	MG/L
20904-23S	09/03/2002	08/18/2003	PICLORAM	EP-A	ND	0.5000000	MG/L
20904-23S	09/03/2002	08/18/2003	SIMAZINE	EP-A	ND	0.0040000	MG/L
20904-23S	09/03/2002	08/18/2003	TOTAL POLYCHLORINATED BIPHENYLS (PCB)	EP-A	ND	0.0005000	MG/L
20904-23S	09/03/2002	08/18/2003	TOXAPHENE	EP-A	ND	0.0030000	MG/L
20904-23V	09/03/2002	08/18/2003	1,1,1-TRICHLOROETHANE	EP-A	ND	0.2000000	MG/L
20904-23V	09/03/2002	08/18/2003	1,1,2-TRICHLOROETHANE	EP-A	ND	0.0050000	MG/L
20904-23V	09/03/2002	08/18/2003	1,1-DICHLOROETHYLENE	EP-A	ND	0.0070000	MG/L
20904-23V	09/03/2002	08/18/2003	1,2,4-TRICHLOROBENZENE	EP-A	ND	0.0700000	MG/L
20904-23V	09/03/2002	08/18/2003	1,2-DICHLOROETHANE	EP-A	ND	0.0050000	MG/L
20904-23V	09/03/2002	08/18/2003	1,2-DICHLOROPROPANE	EP-A	ND	0.0050000	MG/L
20904-23V	09/03/2002	08/18/2003	BENZENE	EP-A	ND	0.0050000	MG/L
20904-23V	09/03/2002	08/18/2003	CARBON TETRACHLORIDE	EP-A	ND	0.0050000	MG/L
20904-23V	09/03/2002	08/18/2003	CHLOROBENZENE	EP-A	ND	0.1000000	MG/L
20904-23V	09/03/2002	08/18/2003	CIS-1,2-DICHLOROETHYLENE	EP-A	ND	0.0700000	MG/L
20904-23V	09/03/2002	08/18/2003	DICHLOROMETHANE	EP-A	ND	0.0050000	MG/L
20904-23V	09/03/2002	08/18/2003	ETHYLBENZENE	EP-A	ND	0.7000000	MG/L
20904-23V	09/03/2002	08/18/2003	O-DICHLOROBENZENE	EP-A	ND	0.6000000	MG/L
20904-23V	09/03/2002	08/18/2003	P-DICHLOROBENZENE	EP-A	ND	0.0750000	MG/L
20904-23V	09/03/2002	08/18/2003	STYRENE	EP-A	ND	0.1000000	MG/L
20904-23V	09/03/2002	08/18/2003	TETRACHLOROETHYLENE	EP-A	ND	0.0050000	MG/L
20904-23V	09/03/2002	08/18/2003	TOLUENE	EP-A	ND	1.0000000	MG/L
20904-23V	09/03/2002	08/18/2003	TRANS-1,2-DICHLOROETHYLENE	EP-A	ND	0.1000000	MG/L
20904-23V	09/03/2002	08/18/2003	TRICHLOROETHYLENE	EP-A	ND	0.0050000	MG/L
20904-23V	09/03/2002	08/18/2003	VINYL CHLORIDE	EP-A	ND	0.0020000	MG/L
20904-23V	09/03/2002	08/18/2003	XYLENES, TOTAL	EP-A	ND	10.000000	MG/L
C20900201	09/03/2002	01/07/2013	GROSS BETA PARTICLE ACTIVITY	EP-A	2.6300000	50.000000	PCI/L
C20900201-R	09/03/2002	01/07/2013	COMBINED RADIUM (-226 & -228)	EP-A	2.4500000	5.0000000	PCI/L
C20900201-R	09/03/2002	01/07/2013	COMBINED URANIUM	EP-A	0.0000200	0.0300000	MG/L
C20900201-R	09/03/2002	01/07/2013	GROSS ALPHA, EXCL. RADON & U	EP-A	0.2800000	15.000000	PCI/L

Archived Results

Sample Date	Receive Date	Chemical	Source ID	Results	MCL

A blank or a 0 in the MCL column indicates that a MCL has not been set for that chemical
*This list represents the latest test results for **all** sources and entry points the system has. For systems with multiple sources the list will probably be a mix of results from all sources. But these are the latest results.*

Oregon Public Health
Drinking Water Data Online

Oregon Health Authority

ND = Not Detected at the Minimum Reporting Level Spreadsheet

Nitrate Samples - PWS ID: 01496 ---- LA PINE, CITY OF

Sample ID	Sample Date	Receive Date	Analyte Name	Source Name	Source ID	Results	MCL	UOM
B4J300301-I	10/30/2014	12/22/2014	NITRATE	EP FOR WELLS #1 & #2	EP-A	ND	10.0000	MG/L
B3K072702-I	11/07/2013	12/30/2013	NITRATE	EP FOR WELLS #1 & #2	EP-A	ND	10.0000	MG/L
B2J181102-I	10/18/2012	10/26/2012	NITRATE	EP FOR WELLS #1 & #2	EP-A	ND	10.0000	MG/L
B1K210801N-I	11/21/2011	01/06/2012	NITRATE	EP FOR WELLS #1 & #2	EP-A	ND	10.0000	MG/L
B0I301101-I	09/30/2010	10/26/2010	NITRATE	EP FOR WELLS #1 & #2	EP-A	ND	10.0000	MG/L
B9F251801-I	06/25/2009	06/26/2009	NITRATE	EP FOR WELLS #1 & #2	EP-A	ND	10.0000	MG/L
B8I150601-I	09/15/2008	11/26/2008	NITRATE	EP FOR WELLS #1 & #2	EP-A	ND	10.0000	MG/L
B8I150601-I	09/15/2008		NITRATE-NITRITE	EP FOR WELLS #1 & #2	EP-A	ND	10.0000	MG/L
B7I131601	09/13/2007	09/25/2007	NITRATE	EP FOR WELLS #1 & #2	EP-A	ND	10.0000	MG/L
60203-15	02/02/2006	02/23/2006	NITRATE	EP FOR WELLS #1 & #2	EP-A	ND	10.0000	MG/L
51011-27I	10/10/2005	12/07/2005	NITRATE	EP FOR WELLS #1 & #2	EP-A	ND	10.0000	MG/L
51011-27I	10/10/2005		NITRATE-NITRITE	EP FOR WELLS #1 & #2	EP-A	ND	10.0000	MG/L
NB402145N	02/12/2004	02/26/2004	NITRATE	EP FOR WELLS #1 & #2	EP-A	ND	10.0000	MG/L
NB311237N	11/20/2003	12/02/2003	NITRATE	EP FOR WELLS #1 & #2	EP-A	ND	10.0000	MG/L
21004-1I	10/03/2002	08/18/2003	NITRATE	EP FOR WELLS #1 & #2	EP-A	0.1900000	10.0000	MG/L
21004-1I	10/03/2002	08/18/2003	NITRATE-NITRITE	EP FOR WELLS #1 & #2	EP-A	0.1900000	10.0000	MG/L
20904-23I	09/03/2002	08/18/2003	NITRATE	EP FOR WELLS #1 & #2	EP-A	ND	10.0000	MG/L
20904-23I	09/03/2002	08/18/2003	NITRATE-NITRITE	EP FOR WELLS #1 & #2	EP-A	ND	10.0000	MG/L

Archived Nitrate Samples - PWS ID: 01496

Sample Date	Receive Date	Analyte Name	Source Name	Source ID	Results	MCL

A blank or a 0 in the MCL column indicates that a MCL has not been set for that chemical.

Oregon Public Health
Drinking Water Data Online

Oregon Health Authority

PWSID: 01496
PWSName: **LA PINE, CITY OF**
Status: A
System Type: C
Population: 1600

Fact Sheets
Definitions
Public Notice
Alerts
Enforcements
Spreadsheet

Action Levels: Lead = 0.0155 mg/l Copper = 1.35 mg/l

Lead and Copper 90th Percentile Summary Results details for latest summary

Sample Date	Date Received	Sample Count	Duration	Lead (mg/l)	Copper (mg/l)
Sep 05, 2012 - Sep 05, 2012	Oct 05, 2012	10	3Y	0.0000	0.0210
Sep 17, 2009 - Sep 17, 2009	Dec 22, 2009	10	YR	0.0020	0.0000
Sep 17, 2008 - Sep 17, 2008	Oct 03, 2008	10	3Y	0.0000	0.0170
Jul 24, 2007 - Aug 07, 2007	Sep 25, 2007	10	YR	0.0000	0.0370
Mar 23, 2006 - Mar 23, 2006	Apr 19, 2006	20	YR	0.0020	0.0340
Aug 29, 2005 - Aug 31, 2005	Oct 06, 2005	20	6M	0.0020	0.0320

More Info

Oregon Public Health
Drinking Water Data Online

Oregon Health Authority

ND = Not Detected at the Minimum Reporting Level Spreadsheet

Arsenic Samples - PWS ID: 01496 --- LA PINE, CITY OF

Sample ID	Sample Date	Receive Date	Source Name	Source ID	Results	MCL	UOM
B4J300301A-I-I	10/30/14	12/22/14	EP FOR WELLS #1 & #2	EP-A	ND	0.010	MG/L
B1K210801-I	11/21/11	01/06/12	EP FOR WELLS #1 & #2	EP-A	ND	0.010	MG/L
B8I150601-I	09/15/08	11/26/08	EP FOR WELLS #1 & #2	EP-A	ND	0.010	MG/L
51011-27I	10/10/05	12/07/05	EP FOR WELLS #1 & #2	EP-A	ND	0.050	MG/L
21004-1I	10/03/02	08/18/03	EP FOR WELLS #1 & #2	EP-A	ND	0.050	MG/L
20904-23I	09/03/02	08/18/03	EP FOR WELLS #1 & #2	EP-A	ND	0.050	MG/L

Archived Arsenic Samples - PWS ID: 01496

Sample ID	Sample Date	Receive Date	Source Name	Source ID	Results	MCL

A blank or a 0 in the MCL column indicates that a MCL has not been set for that chemical.

Oregon Public Health
Drinking Water Data Online

Oregon Health Authority

ND = Not Detected at the Minimum Reporting Level; - = Not Sampled; View all radionuclides

Radionuclide Monitoring - PWS ID: 01496 = LA PINE, CITY OF

Sample Date	Receive Date	Source ID	Gross Alpha [pCi/L] (EPA 4002, 4000) MCL = 15	Radium Combined (226,228) [pCi/L] (EPA 4010) MCL = 5	Uranium Combined [mg/L] (EPA 4006) MCL = .03	Gross Beta Particle Activity [pCi/L] (EPA 4100) MCL = 50
12/13/12	02/04/13	EP-A	ND	ND	ND	-
09/15/08	11/26/08	EP-A	1.4000000	0.0100000	ND	-
10/03/02	01/07/13	EP-A	ND	0.9050000	0.0000320	ND
09/03/02	01/07/13	EP-A	0.2800000	2.4500000	0.0000200	2.6300000

Archived Results

Sample Date	Receive Date	Chemical	Source ID	Results	MCL
				ND	

APPENDIX D
Deschutes Basin Groundwater Mitigation Program Information

Deschutes Ground Water Mitigation Program

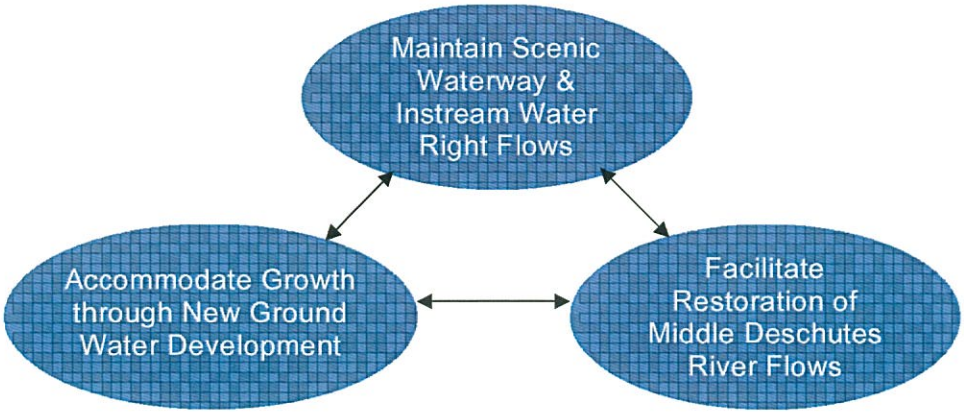
How Did We Get Here?

- 1970 Scenic Waterway Act – Deschutes Scenic Waterway Established
- 1991 Scenic Waterway Flows Established
- 1995 SB 1033 – Measurably Reduce Standard (1 CFS or 1% Average Daily Flow)
- 1996 Instream Water Rights Established with 1989 & 1991 Priority Dates
- 1998 Deschutes Ground Water Study

Ground Water Study Conclusions

- Virtually all ground water not consumptively used in the Upper Deschutes Basin discharges to surface water near Pelton Dam
- Virtually the entire flow of the Deschutes River at Madras is supported by ground water discharge during summer & fall
- Ground water and surface water are, therefore, directly linked, and removal of ground water will ultimately diminish streamflow.

Goals of Mitigation Program



Elements of Mitigation Program

- Requires mitigation for all new ground water permits in the Deschutes Ground Water Study Area
- Identifies tools for providing mitigation
  - i.e. mitigation projects
- Allocation Cap – 200 CFS
- Allows for formation of mitigation banks
- Annual review and 5 year review of allocation cap

Mitigation for Ground Water Use

- Amount – Generally based upon the average consumptive use of the proposed type of use.
- Examples:
  - Domestic Use = 20% consumptive
  - Municipal Use = 40% consumptive
  - Irrigation Use = 1.8 AF per acre consumptive
- Location – Zone of Impact
- Mitigation must be committed for life of ground water use
- Allows incremental development of mitigation for municipal and quasi-municipal water uses

Ways to Provide Mitigation

- Complete a mitigation project
- Obtain mitigation credits from a credit holder
  - Completed mitigation projects
  - Credit Holders
    - Individuals
    - 2 mitigation banks

Mitigation Project Types

- Permanent Mitigation Projects
  - Instream Transfer
  - Allocation of Conserved Water
- Performance Dependant Mitigation Projects
  - Storage Releases
  - Aquifer Recharge
- Temporary Mitigation Projects
  - Time-Limited Instream Transfer
  - Instream Lease

Mitigation Project Review

- Mitigation projects must result in a quantity of water that is protected instream
- Amount of mitigation determined by the Department
- Example: Instream transfer or instream lease
  - Consumptive use of the right
  - Reliability of the right
- Location of mitigation
  - The location and extent of the reach affect the zone of impact (area) in which a mitigation project may be used

Mitigation Banks

- 2 in the Deschutes Ground Water Study Area
  - Deschutes Water Exchange Mitigation Bank
    - All types of credits
  - Deschutes Irrigation Mitigation Bank
    - Permanent credits only
- Only mitigation banks may hold temporary mitigation credits

Mitigation Bank Establishment

- Allowed by rule and statute
  - Specific to Deschutes Basin
- Must file an application with the Department
- Authorized by charter agreement, which must be approved by Commission
- Charter agreement goes through public process prior to approval by Commission

For information, please contact:
Kyle Gorman, SCR Manager
Oregon Water Resources Department
1128 NW Harriman St.
Bend, OR 97701
E-mail: Kyle.G.Gorman@wrd.state.or.us
Phone: (541) 388-6669
or
Laura Snedaker
Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, OR 97301
E-mail: Laura.K.Snedaker@wrd.state.or.us
Phone: (503) 968-0884

WATER RESOURCES DEPARTMENT

DIVISION 505

DESCHUTES BASIN PROGRAM

690-505-0000

Upper Deschutes Basin

(1) Classifications:

(a) The maximum economic development of this state, the attainment of the highest and best use of the waters of the Upper Deschutes River Basin, and the attainment of an integrated and coordinated program for the benefit of the state as a whole will be furthered through utilization of the aforementioned waters only for domestic, livestock, municipal, irrigation, power development, industrial, mining, recreation, wildlife and fish life uses and the waters of the Upper Deschutes River Basin are hereby so classified with the following exception: The maximum economic development of this state, the attainment of the highest and best use of the waters of the natural lakes of the Upper Deschutes River Basin, except for Crescent Lake, and the attainment of an integrated and coordinated program for the benefit of the state as a whole will be furthered through utilization of the aforementioned waters only for domestic, livestock, irrigation of lawn or noncommercial garden not to exceed one-half acre in area, power development not to exceed 7-1/2 theoretical horsepower, recreation, wildlife and fish life uses and the waters of the natural lakes, Upper Deschutes River Basin, except for Crescent Lake, are hereby so classified;

(b) Applications for the use of the waters of the Upper Deschutes River Basin shall not be accepted by any state agency for any other use and the granting of applications for such other uses is declared to be prejudicial to the public interest and the granting of applications for such other uses would be contrary to the integrated and coordinated program for the use and control of the water resources of the state;

(c) Structures or works for the utilization of the waters in accordance with the aforementioned classifications are also declared to be prejudicial to the public interest unless planned, constructed and operated in conformity with applicable provisions of ORS 536.310 and any such structures or works are further declared to be prejudicial to the public interest which do not give proper cognizance to the multiple-purpose concept.

(2) Minimum Perennial Streamflows:

(a) To support aquatic life and minimize pollution, in accordance with Section 3, Chapter 796, Oregon Laws, 1983, no appropriation of water shall be made or granted by any state agency or public corporation of the state for waters of the Upper Deschutes River and tributaries when flows are below the levels specified in **Table 1**. This limitation shall not apply to:

(A) Human and livestock consumption;

(B) Water legally released from storage.

(b) Attainment of the specified flow levels during some portions of the year will require development of water storage or implementation of other measures to augment flows.

(3) Water Quality: Rights to use of water for industrial or mining purposes granted by any state agency shall be issued only on the condition that any effluents or return flows from such uses shall not interfere with other beneficial uses of water.

[ED. NOTE: The Table referenced in this rule is not printed in the OAR Copies are available from the agency.]

Stat. Auth.: ORS 536 & ORS 537

Stats. Implemented:
Hist.: (Deschutes River Basin: WRB 6, f. 11-30-59; WRB 16, f. 2-20-62; WRB 18, f. 6-1-62; WRB 27, f. 5-11-64; WRB 38, f. 6-14-67; WRD 7(Temp), f. 7-11-77; WRD 6-1978(Temp), f. & cert. ef. 8-15-78; WRD 7-1978, f. & cert. ef. 10-13-78; WRD 2-1979(Temp), f. & cert. ef. 10-9-79; WRD 4-1980, f. & cert. ef. 1-23-80; WRD 5-1980, f. & cert. ef. 4-8-80; WRD 8-1980, f. & cert. ef. 11-24-80; WRD 2-1981, f. & cert. ef. 4-30-81; WRD 3-1981, f. & cert. ef. 5-12-81;WRD 6-1984, f. & cert. ef. 12-27-84; Lower Main Stem Deschutes River Basin: WRB 6, f. 11-30-59; WRD 2-1981, f. & cert. ef. 4-30-81; Lower Main Stem Metolius River: WRB 27, f. 5-11-64); Administrative Renumbering 1-1993, Renumbered from 690-080-0050

690-505-0010

Middle Deschutes River Basin

(1) Classifications:

(a) The maximum economic development of this state, the attainment of the highest and best use of the waters of the Middle Deschutes River Basin, and the attainment of an integrated and coordinated program for the benefit of the state as a whole will be furthered through utilization of the aforementioned waters only for domestic, livestock, municipal, irrigation, power development, industrial, mining, recreation, wildlife and fish life uses and the waters of the Middle Deschutes River Basin are hereby so classified with the following exceptions:

(A) OAR 690-505-0050, Lower Main Stem Deschutes River, adopted April 3, 1964, as modified by the Water Policy Review Board;

(B) The maximum economic development of this state, the attainment of the main stem Metolius River, above river mile 13.0, and the attainment of an integrated and coordinated program for the benefit of the state as a whole will be furthered through utilization of the aforementioned waters only for domestic, livestock, irrigation of lawn or noncommercial garden not to exceed one-half acre in area, power development, recreation, wildlife and fish life uses and the waters of the main stem, Metolius River, above river mile 13.0, are hereby so classified;

(C) Further, no out-of-basin diversions of the waters of the mainstem Metolius River, above river mile 13.0, shall be permitted for any use;

(D) No further appropriations except for domestic or livestock uses shall be permitted for waters of the mainstem Deschutes River, from the head of Lake Billy Chinook near river mile 120 to the North Canal Dam near river mile 165;

(E) The maximum economic development of this state, the attainment of the highest and best use of the waters of the natural lakes of the Middle Deschutes River Basin, and the attainment of an integrated and coordinated program for the benefit of the state as a whole will be furthered through utilization of the aforementioned waters only for domestic, livestock, irrigation of lawn or noncommercial garden not to exceed one-half acre in area, power development not to exceed 7-1/2 theoretical horsepower, recreation, wildlife and fish life uses.

(b) Applications for the use of the waters of the Middle Deschutes River Basin shall not be accepted by any state agency for any other use and the granting of applications for such other uses is declared to be prejudicial to the public interest and the granting of applications for such other uses would be contrary to the integrated and coordinated program for the use and control of the water resources of the state;

(c) Structures or works for the utilization of the waters in accordance with the aforementioned classifications are also declared to be prejudicial to the public interest unless planned, constructed and operated in conformity with the applicable provisions of ORS 536.310 and any such structures or works are further declared to be prejudicial to the public interest which do not give proper cognizance to the multiple-purpose concept.

(2) Minimum Perennial Streamflows: For the purpose of maintaining a minimum perennial streamflow sufficient to support aquatic life, no appropriations of water except for domestic or livestock uses shall be made or granted by any state agency or public corporation of the state for the waters of Lake Creek or its tributaries above the confluence of Lake Creek with the Metolius River for flows of Lake Creek below 20 cubic feet per second measured at the mouth of Lake Creek except that this limitation shall not apply to waters legally stored or legally released from storage (priority date -- May 24, 1962).

(3) Water Quality: Rights to use of water for industrial or mining purposes granted by any state agency shall be issued only on condition that any effluents or return flows from such uses shall not interfere with other beneficial uses of water.

Stat. Auth.: ORS 536 & ORS 537

Stats. Implemented:
Hist.: (Deschutes River Basin: WRB 6, f. 11-30-59; WRB 16, f. 2-20-62; WRB 18, f. 6-1-62; WRB 27, f. 5-11-64; WRB 38, f. 6-14-67; WRD 7(Temp), f. 7-11-77; WRD 6-1978(Temp), f. & cert. ef. 8-15-78; WRD 7-1978, f. & cert. ef. 10-13-78; WRD 2-1979(Temp), f. & cert. ef. 10-9-79; WRD 4-1980, f. & cert. ef. 1-23-80; WRD 5-1980, f. & cert. ef. 4-8-80; WRD 8-1980, f. & cert. ef. 11-24-80; WRD 2-1981, f. & cert. ef. 4-30-81; WRD 3-1981, f. & cert. ef. 5-12-81;WRD

6-1984, f. & cert. ef. 12-27-84; Lower Main Stem Deschutes River Basin: WRB 6, f. 11-30-59; WRD 2-1981, f. & cert. ef. 4-30-81; Lower Main Stem Metolius River: WRB 27, f. 5-11-64); Administrative Renumbering 1-1993, Renumbered from 690-080-0050

690-505-0020

Lower Deschutes River Basin

(1) Classifications:

(a) The maximum economic development of this state, the attainment of the highest and best use of the waters of the Lower Deschutes River Basin, and the attainment of an integrated and coordinated program for the benefit of the state as a whole will be furthered through utilization of the aforementioned waters only for domestic, livestock, municipal, irrigation, power development, industrial, mining, recreation, wildlife and fish life uses and the waters of the Lower Deschutes River Basin are hereby so classified with the following exceptions:

(A) OAR 690-505-0050, Lower Main Stem Deschutes River, adopted April 3, 1964, as modified by the Water Policy Review Board;

(B) The waters of Boulder Lake in Hood River and Wasco Counties are classified only for domestic and livestock uses; power development not to exceed 7-1/2 theoretical horsepower; recreation, wildlife and fish life uses; and irrigation not to exceed 100 acre-feet annually from water stored in the lake;

(C) The maximum economic development of this state, the attainment of the highest and best use of the waters of the other natural lakes of the Lower Deschutes River Basin, and the benefit of the state as a whole will be furthered through utilization of the aforementioned waters only for domestic, livestock, irrigation of lawn or noncommercial garden not to exceed one-half acre in area, power development not to exceed 7-1/2 theoretical horsepower, recreation, wildlife and fish life uses and the waters of the natural lakes of the Lower Deschutes River Basin are hereby so classified.

(b) Applications for the use of the waters of the Lower Deschutes River Basin shall not be accepted by any state agency for any other use and the granting of applications for such other uses is declared to be prejudicial to the public interest and the granting of applications for such uses would be contrary to the integrated and coordinated program for the use and control of the water resources of the state;

(c) Structures or works for the utilization of the waters in accordance with the aforementioned classifications are also declared to be prejudicial to the public interest unless planned, constructed and operated in conformity with the applicable provisions of ORS 536.310 and any such structures or works are further declared to be prejudicial to the public interest which do not give cognizance to the multiple-purpose concept.

(2) Minimum Perennial Streamflows: For the purpose of maintaining a minimum perennial streamflow sufficient to support aquatic life, no appropriations of water except for domestic or livestock uses shall be made or granted by any state agency or public corporation of the state for the waters of the White River or its tributaries above the confluence of White River with the Deschutes River for flows of the White River below the specified flows in **Table 2,** except that this limitation shall not apply to waters legally stored or legally released from storage.

(3) Water Quality: Rights to use of water for industrial or mining purposes granted by any state agency shall be issued only on condition that any effluents or return flows from such uses shall not interfere with other beneficial uses of water.

[ED. NOTE: The Table referenced in this rule is not printed in the OAR Compilation. Copies are available from the agency.]

Stat. Auth.: ORS 536 & ORS 537

Stats. Implemented:
Hist.: (Deschutes River Basin: WRB 6, f. 11-30-59; WRB 16, f. 2-20-62; WRB 18, f. 6-1-62; WRB 27, f. 5-11-64; WRB 38, f. 6-14-67; WRD 7(Temp), f. 7-11-77; WRD 6-1978(Temp), f. & cert. ef. 8-15-78; WRD 7-1978, f. & cert. ef. 10-13-78; WRD 2-1979(Temp), f. & cert. ef. 10-9-79; WRD 4-1980, f. & cert. ef. 1-23-80; WRD 5-1980, f. & cert. ef. 4-8-80; WRD 8-1980, f. & cert. ef. 11-24-80; WRD 2-1981, f. & cert. ef. 4-30-81; WRD 3-1981, f. & cert. ef. 5-12-81;WRD 6-1984, f. & cert. ef. 12-27-84; Lower Main Stem Deschutes River Basin: WRB 6, f. 11-30-59; WRD 2-1981, f. & cert. ef. 4-30-81; Lower Main Stem Metolius River: WRB 27, f. 5-11-64); Administrative Renumbering 1-1993, Renumbered from 690-080-0050

690-505-0030

Upper Crooked River Basin

(1) Classifications:

(a) The maximum economic development of this state, the attainment of the highest and best use of the waters of the Deschutes — Upper Crooked River Basin, and the attainment of an

integrated and coordinated program for the benefit of the state as a whole will be furthered through utilization of the aforementioned waters only for domestic, livestock, municipal, irrigation, power development, industrial, mining, recreation, wildlife and fish life uses and the waters of the Deschutes - Upper Crooked River Basin are hereby so classified;

(b) Applications for the use of the waters of the Deschutes - Upper Crooked River Basin shall not be accepted by any state agency for any other use and the granting of applications for such other uses is declared to be prejudicial to the public interest and the granting of applications for such other uses would be contrary to the integrated and coordinated program for the use and control of the water resources of the state;

(c) Structures or works for the utilization of the waters in accordance with the aforementioned classifications are also declared to be prejudicial to the public interest unless planned, constructed and operated in conformity with the applicable provisions of ORS 536.310 and any such structures or works are further declared to be prejudicial to the public interest which do not give proper cognizance to the multiple-purpose concept.

(2) Water Quality: Rights to use of water for industrial or mining purposes granted by any state agency shall be issued only on condition that any effluents or return flows from such uses shall not interfere with other beneficial uses of water.

Stat. Auth.: ORS 536 & ORS 537
Stats. Implemented:
Hist.: (Deschutes River Basin: WRB 6, f. 11-30-59; WRB 16, f. 2-20-62; WRB 18, f. 6-1-62; WRB 27, f. 5-11-64; WRB 38, f. 6-14-67; WRD 7(Temp), f. 7-11-77; WRD 6-1978(Temp), f. & cert. ef. 8-15-78; WRD 7-1978, f. & cert. ef. 10-13-78; WRD 2-1979(Temp), f. & cert. ef. 10-9-79; WRD 4-1980, f. & cert. ef. 1-23-80; WRD 5-1980, f. & cert. ef. 4-8-80; WRD 8-1980, f. & cert. ef. 11-24-80; WRD 2-1981, f. & cert. ef. 4-30-81; WRD 3-1981, f. & cert. ef. 5-12-81;WRD 6-1984, f. & cert. ef. 12-27-84; Lower Main Stem Deschutes River Basin: WRB 6, f. 11-30-59; WRD 2-1981, f. & cert. ef. 4-30-81; Lower Main Stem Metolius River: WRB 27, f. 5-11-64); Administrative Renumbering 1-1993, Renumbered from 690-080-0050

690-505-0040

Lower Crooked River Basin

(1) Classifications:

(a) The maximum economic development of this state, the attainment of the highest and best use of the waters of the Deschutes - Lower Crooked River Basin, and the attainment of an integrated and coordinated program for the benefit of the state as a whole will be furthered through utilization of the aforementioned waters only for domestic, livestock, municipal, irrigation, power development, industrial, mining, recreation, wildlife and fish life uses and the waters of the Deschutes - Lower Crooked River Basin are hereby so classified with the following exceptions:

(A) OAR 690-505-0050, Lower Main Stem Deschutes River, adopted April 3, 1964, as modified by the Water Policy Review Board;

(B) No further appropriations except for domestic or livestock uses shall be made or granted by any state agency for the waters of Ochoco Creek and its tributaries.

(b) Applications for the use of the waters of the Deschutes - Lower Crooked River Basin shall not be accepted by any state agency for any other use and the granting of applications for such uses is declared to be prejudicial to the public interest and the granting of applications for such other uses would be contrary to the integrated and coordinated program for the use and control of the water resources of the state;

(c) Structures or works for the utilization of the water in accordance with the aforementioned classifications are also declared to be prejudicial to the public interest unless planned, constructed and operated in conformity with the applicable provisions of ORS 536.310 and any such structures or works are further declared to be prejudicial to the public interest which do not give proper cognizance to the multiple-purpose concept.

(2) Water Quality: Rights to use of water for industrial or mining purposes granted by any state agency shall be issued only on condition that any effluents or return flows from such uses shall not interfere with other beneficial uses of water.

[NOTE: The Upper Deschutes River, Middle Deschutes River, Lower Deschutes River, Upper Crooked River and Lower Crooked River Basins are delineated on State Water Resources Board Map, File 5.7014, available from the agency.]

Stat. Auth.: ORS 536 & ORS 537

Stats. Implemented:
Hist.: (Deschutes River Basin: WRB 6, f. 11-30-59; WRB 16, f. 2-20-62; WRB 18, f. 6-1-62; WRB 27, f. 5-11-64; WRB 38, f. 6-14-67; WRD 7(Temp), f. 7-11-77; WRD 6-1978(Temp), f. & cert. ef. 8-15-78; WRD 7-1978, f. & cert. ef. 10-13-78; WRD 2-1979(Temp), f. & cert. ef. 10-9-79; WRD 4-1980, f. & cert. ef. 1-23-80; WRD 5-1980, f. & cert. ef. 4-8-80; WRD 8-1980, f. &

cert. ef. 11-24-80; WRD 2-1981, f. & cert. ef. 4-30-81; WRD 3-1981, f. & cert. ef. 5-12-81;WRD 6-1984, f. & cert. ef. 12-27-84; Lower Main Stem Deschutes River Basin: WRB 6, f. 11-30-59; WRD 2-1981, f. & cert. ef. 4-30-81; Lower Main Stem Metolius River: WRB 27, f. 5-11-64); Administrative Renumbering 1-1993, Renumbered from 690-080-0050

690-505-0050

Lower Main Stem Deschutes River

Classifications:

(1) The maximum beneficial use of that portion of the main stem of the Deschutes River from its confluence with the Columbia River to and including river mile 100.0 is for recreation, fish and wildlife purposes and no appropriations of water in this area shall be permitted except for domestic, livestock, irrigation of lawn or noncommercial garden not to exceed one-half acre in area, recreation, fish and wildlife uses;

(2) The maximum economic development of this state and the attainment of the highest and best use of the waters of the lower main stem Deschutes River from river mile 100.0 to river mile 120.0 and the attainment of an integrated and balanced program for the benefit of the state as a whole will be achieved through utilization of the aforementioned waters only for domestic, livestock, irrigation of lawn or noncommercial garden not to exceed one-half acre in area, hydroelectric power, fish, wildlife and recreation purposes and the aforementioned waters of the main stem Deschutes River are hereby so classified;

(3) The maximum economic development of this state and the attainment of the highest and best use of the waters of the waters of the lower main stem Crooked River from its confluence with the Deschutes River to river mile 6.5 and the waters of the main stem of the lower Metolius River from its confluence with the Deschutes River to river mile 13.0 will be attained through utilization of such waters for domestic, livestock, irrigation of lawn or noncommercial garden not to exceed one-half acre in area, hydroelectric power fish, wildlife, and recreation purposes and the aforementioned waters of the lower main stem, Crooked River, and lower main stem, Metolius River, are hereby so classified.

(4) Applications for the use of such water shall not be accepted by any state agency for any other purpose and applications for such other purposes are declared to be prejudicial to the public interest and the granting of applications for such other uses would be contrary to the integrated, coordinated program for the use and control of the water resources of the state;

(5) Structures or works for the utilization of the waters in accordance with the aforementioned classifications are also declared to be prejudicial to the public interest unless planned, constructed and operated in conformity with the applicable provisions of ORS 536.310 and any such structures or works are further declared to be prejudicial to the public interest which do not give proper cognizance to the multiple-purpose concept.

[NOTE: The main stem of the Deschutes River from its confluence with the Columbia River to river mile 120.0 is shown in USGS Water Supply Paper 344; the main stem of the Crooked River from its confluence with the Deschutes River to river mile 6.5 is shown on USGS Plans and Profiles, 1926; and the main stem of the Metolius River from its confluence with the Deschutes River to river mile 13.0 is shown in USGS Water Supply Paper 344.]

Stat. Auth.: ORS 536 & ORS 537
Stats. Implemented:
Hist.: (Deschutes River Basin: WRB 6, f. 11-30-59; WRB 16, f. 2-20-62; WRB 18, f. 6-1-62; WRB 27, f. 5-11-64; WRB 38, f. 6-14-67; WRD 7(Temp), f. 7-11-77; WRD 6-1978(Temp), f. & cert. ef. 8-15-78; WRD 7-1978, f. & cert. ef. 10-13-78; WRD 2-1979(Temp), f. & cert. ef. 10-9-79; WRD 4-1980, f. & cert. ef. 1-23-80; WRD 5-1980, f. & cert. ef. 4-8-80; WRD 8-1980, f. & cert. ef. 11-24-80; WRD 2-1981, f. & cert. ef. 4-30-81; WRD 3-1981, f. & cert. ef. 5-12-81;WRD 6-1984, f. & cert. ef. 12-27-84; Lower Main Stem Deschutes River Basin: WRB 6, f. 11-30-59; WRD 2-1981, f. & cert. ef. 4-30-81; Lower Main Stem Metolius River: WRB 27, f. 5-11-64); Administrative Renumbering 1-1993, Renumbered from 690-080-0050

690-505-0400

Ground Water Classification

Ground water in the Deschutes Basin is classified for any beneficial use.

Stat. Auth.: ORS 536.027, ORS 536.220, ORS 536.300 ORS 536.340
Stats. Implemented: ORS 390.835, Ch. 659 2001 OL HB 2184
Hist.: WRD 3-2002, f. & cert. ef. 9-27-02

690-505-0500

Ground Water Appropriations within the Deschutes Ground Water Study Area

(1) Except for a cumulative total of 200 cubic feet per second (cfs) maximum rate for final orders approving ground water permit applications issued after the effective date of these rules, ground water in the Deschutes Ground Water Study Area is closed to further appropriation.

(2) Prior to January 1, 2008, or upon reaching 150 cfs of the 200 cfs in section (1), whichever comes first, and on subsequent five year intervals, the Commission shall evaluate the Deschutes Basin Ground Water Mitigation Rules and associated mitigation to determine whether the restriction in section (1) shall be lifted or otherwise modified through subsequent public rulemaking. The Commission shall specifically evaluate the effectiveness of mitigation projects and mitigation credits that involve time-limited instream transfers, instream leases and allocations of conserved water from canal lining and piping projects. The Commission shall also evaluate the general zones of impact identified by the Department.

(3) The Department shall, in cooperation with the Oregon Department of Fish and Wildlife, Oregon State Parks and Recreation Department, Oregon Department of Environmental Quality and Division of State Lands, annually evaluate and report on the implementation of these rules. The annual evaluation and report shall include information on new ground water appropriations, streamflow monitoring, and mitigation activity in order to determine whether scenic waterway flows and instream water right flows in the Deschutes Basin continue to be met on at least an equivalent or more frequent basis as compared to long-term, representative base period flows established by the Department.

(4) The restriction in section (1) shall not be lifted unless the Commission determines that scenic waterway flows and instream water right flows in the Deschutes Basin continue to be met on at least an equivalent or more frequent basis as compared to long-term, representative base period flows established by the Department.

(5) If the Commission's evaluation under section (2) indicates that, due to new ground water appropriations, scenic waterway flows and instream water right flows in the Deschutes Basin are met less frequently as compared to long-term, representative base period flows, the Commission shall initiate proceedings to designate all or portions of the Deschutes Ground Water Study Area a critical ground water area(s) under ORS 537.730, immediately close certain areas of the Deschutes Basin to further ground water appropriations, or take other administrative action(s) to ensure scenic waterway flows and instream water right flows in the Deschutes Basin continue to be met on at least an equivalent or more frequent basis as compared to long-term, representative base period flows.

Stat. Auth.: ORS 536.027 & ORS 390.835
Stats. Implemented: ORS 390.835, Ch. 659 2001 OL HB 2184
Hist.: WRD 3-2002, f. & cert. ef. 9-27-02

Deschutes Basin Ground Water Mitigation Rules

690-505-0600

Purpose and Applicability of Ground Water Mitigation Rules

(1) In the Deschutes Basin, a joint study of ground water resources by the Department and U.S. Geological Survey has established a hydraulic connection between ground water and surface water within the Deschutes Ground Water Study Area (Ground Water Hydrology of the Upper Deschutes Basin, Oregon, Water Resources Investigations Report 00-4162, Portland, Oregon, 2001). Based on the conclusions of the study, the Department has determined that ground water appropriations within the Deschutes Ground Water Study Area have the potential for substantial interference with surface water rights as described in OAR chapter 690, division 9, and will measurably reduce scenic waterway flows as defined in ORS 390.835 unless mitigation is provided pursuant to the rules in this Division.

(2) These rules implement Senate Bill 1033 (1995, Legislative Assembly), codified as ORS 390.835 to provide for mitigation of impacts to scenic waterway flows and senior water rights while allowing additional qualifying appropriations of ground water in the Deschutes Basin.

(3) The rules in OAR 690-505-0610 through 690-505-0630 establish the mitigation process for pending and future ground water permit applications in the Deschutes Ground Water Study Area. Without mitigation, the Department is required by law to deny ground water permit applications in the Deschutes Ground Water Study Area.

(4) Holders of existing ground water permits and associated certificates in the Deschutes Ground Water Study Area issued after July 19, 1995, with priority dates after April 19, 1991, that are specifically conditioned to allow regulation for measurable reduction of a state scenic waterway and that choose to provide mitigation meeting the standards of these rules shall not be subject to regulation for scenic waterway flows pursuant to ORS 390.835(9). A ground water permit or certificate for which a mitigation project has been approved by the Department prior to the effective date of these rules shall not be subject to regulation for scenic waterway flows pursuant to ORS 390.835(9).

Stat. Auth.: ORS 536.027 & ORS 390.835
Stats. Implemented: ORS 390.835, Ch. 659 2001 OL HB 2184
Hist.: WRD 3-2002, f. & cert. ef. 9-27-02

690-505-0605

Definitions

The following definitions apply to OAR 690-505-0500 through 690-505-0630:

(1) "Allocation of conserved water" means an application approved under ORS 537.455 to 537.500 and OAR chapter 690, division 18 in which the Department may award mitigation credits for the applicant's portion of the conserved water that is legally protected for instream use resulting from conservation measures, such as canal lining and piping or other improvements in the technology or method for diverting, transporting, applying, or recovering water.

(2) "Consumptive use" means the Department's determination of the amount of a ground water appropriation that does not return to surface water flows in the Deschutes Basin due to transpiration, evaporation or movement to another basin.

(3) "Department" means the Oregon Water Resources Department.

(4) "Deschutes Ground Water Study Area" means the Deschutes River Basin drainage area indicated in **Exhibit 1**.

(5) "General zone of impact" means anywhere above the Madras gage on the Lower Deschutes River or, for wells determined by the Department to have a localized impact on surface water, anywhere within the impacted subbasin of the Deschutes River including the Metolius, Squaw Creek, Little Deschutes, and Crooked River subbasins as identified by the Department.

(6) "Ground water use subject to transfer" means a ground water use established by:

(a) A water right certificate;

(b) A water use permit for which a request for issuance of a water right certificate under ORS 537.250 has been received and approved by the Water Resources Commission under ORS 537.250; or

(c) A transfer application for which an order approving the change has been issued under ORS 540.530 and for which proper proof of completion of the change has been filed with the Water Resources Commission.

(7) "Measurable reduction" as defined in ORS 390.835(12) means that ground water use will individually or cumulatively reduce surface water flows within the scenic waterway in excess of a combined cumulative total of one percent of the average daily flow or one cubic foot per second, whichever is less.

(8) "Mitigation" means to moderate the impacts to surface water flows from a ground water appropriation by obtaining mitigation credits or by providing for implementation of a mitigation project that results in mitigation water.

(9) "Mitigation bank" means an entity that is authorized by the Water Resources Commission to obtain, hold and assign mitigation credits pursuant to Chapter 659, 2001 Oregon Laws (HB 2184) and OAR chapter 690, division 521.

(10) "Mitigation credit" is a means of accounting for mitigation water, calculated in acre-feet, made available by a mitigation project. One mitigation credit is equal to one acre-foot of mitigation water. Mitigation credits are determined and awarded by the Department under Chapter 659, 2001 Oregon Laws (HB 2184) and OAR 690, division 521.

(11) "Mitigation obligation" means the amount of mitigation water needed for the appropriation of ground water as determined by the Department, calculated in acre-feet.

(12) "Mitigation project" means a project approved by the Department that results in mitigation water.

(13) "Mitigation water" means water that is legally protected for instream use from implementation of a mitigation project, calculated in acre-feet.

[ED. NOTE: Exhibits referenced are available from the agency.]

Stat. Auth.: ORS 536.027 & ORS 390.835
Stats. Implemented: ORS 390.835, Ch. 659 2001 OL HB 2184
Hist.: WRD 3-2002, f. & cert. ef. 9-27-02

690-505-0610

Mitigation Obligation and Mitigation Standards

(1) Except as provided in section (6), (7) and (8) of this rule, the Department may only approve a ground water permit application in the Deschutes Ground Water Study Area if mitigation is provided pursuant to these rules.

(2) A mitigation obligation may be satisfied by obtaining mitigation credits or by providing for implementation of a mitigation project.

(3) Mitigation projects may include:

(a) The allocation of conserved water provided under ORS 537.455 to 537.500 and OAR chapter 690, division 18, where the applicant's portion of the conserved water is allocated and legally protected for instream use;

(b) The transfer of an existing water right to an instream use if the water right to be transferred is also lawfully eligible for transfer to another out-of-stream use, and for mitigation banks, the time-limited transfer or lease of an existing water right to instream use under ORS 537.348 and OAR chapter 690, division 77;

(c) A permit to appropriate water for the purpose of artificial recharge of a ground water reservoir pursuant to ORS 537.135 and OAR chapter 690, division 350;

(d) A secondary permit to use stored water from an existing reservoir obtained pursuant to ORS 537.130 to 537.211 and OAR chapter 690, division 310, provided the secondary permit is for instream use; or

(e) Other projects approved by the Department that result in mitigation water.

(4) Mitigation water must be provided within the general zone of impact identified by the Department, legally protected for instream use prior to permit issuance, and committed for the life of the permit and subsequent certificate(s).

(5) The amount of mitigation needed to satisfy a mitigation obligation shall be:

(a) One mitigation credit per acre-foot of consumptive use based on the ground water permit application; or

(b) Mitigation water equal to the volume of consumptive use of the ground water permit application, calculated in acre-feet.

(6) These rules do not preclude any person from submitting evidence, which will be considered by the Department, that a proposed or existing ground water appropriation does not have the potential for substantial interference with surface water rights as described in OAR chapter 690, division 9, and will not measurably reduce scenic waterway flows under ORS 390.835.

(7) If the Department finds, based on a preponderance of evidence, that a specific ground water permit application does not have the potential for substantial interference with surface water under OAR chapter 690, division 9, and will not result in a measurable reduction of scenic waterway flows under ORS 390.835, the Department shall not require mitigation for that specific ground water use.

(8) Notwithstanding section (1) of this rule, if the impact of use under a ground water permit application is completely offset by a proposed voluntary cancellation of an existing ground water use subject to transfer, such that impact on surface waters from the new ground water use is the same as, or less than, impact on surface waters from the existing ground water use subject to transfer, the ground water permit application may be approved without additional mitigation once the proposed voluntary cancellation is complete.

Stat. Auth.: ORS 536.027 & ORS 390.835
Stats. Implemented: ORS 390.835, Ch. 659 2001 OL HB 2184
Hist.: WRD 3-2002, f. & cert. ef. 9-27-02

690-505-0615

Notice of Mitigation Obligation

(1) The Department shall provide notice of the mitigation obligation to ground water permit applicants. The notice shall:

(a) State that mitigation must be provided before a permit may be issued for a water right application approved under ORS 537.621 to 537.626;

(b) Identify the amount and location of the mitigation obligation; and

(c) Identify mitigation banks as potential means of providing mitigation.

(2) For ground water permit applications pending before the Department as of the effective date of this rule, the notice of mitigation obligation and the applicant's response to the mitigation obligation shall be incorporated into the water right application process under OAR chapter 690, division 310.

(3) For ground water permit applications submitted after the effective date of this rule, the notice of mitigation obligation shall be included in the initial review report under OAR 690-310-0080.

(4) Ground water permit applicants receiving notice under this rule shall, through the water right application process under OAR chapter 690, division 310, submit proposed mitigation to the Department that meets the requirements of 690-505-0610(2)-(5).

(5) Ground water permit applicants proposing to implement a mitigation project shall identify and describe the project and, in any application associated with the mitigation project, identify that the project is being used to satisfy a mitigation obligation.

(6) If the amount of mitigation identified by the ground water permit applicant is different from that stated in the Department's notice of mitigation obligation, the applicant shall provide an explanation of why the amount is different and identify appropriate information proposed to be used to determine the equivalent consumptive use for the proposed ground water appropriation.

(7) The Department shall work in cooperation with a representative of the Oregon Department of Fish and Wildlife, Oregon State Parks and Recreation Department, Oregon Department of Environmental Quality and Division of State Lands to enhance the resource benefits and make the most effective use of mitigation projects and mitigation water.

Stat. Auth.: ORS 536.027 & ORS 390.835
Stats. Implemented: ORS 390.835, Ch. 659 2001 OL HB 2184
Hist.: WRD 3-2002, f. & cert. ef. 9-27-02

690-505-0620

Ground Water Permit and Final Order Conditions

(1) Any final order approving a ground water permit application and the associated permit and certificate issued subsequent to a notice of mitigation obligation under 690-505-0615(1) shall, as appropriate:

(a) Specify the amount and location of the mitigation obligation;

(b) Require that mitigation water be legally protected instream for instream use before the permit will be issued;

(c) Require that mitigation water be committed for the life of the permit and subsequent certificate;

(d) Require installation of a measuring device, monthly recording of water use and annual reporting of water use;

(e) If the mitigation is from a secondary right for stored water from a storage project not owned or operated by the ground water permit applicant, require maintenance of a contract for the use of the water with the owner/operator of the storage project;

(f) Provide for regulation and/or cancellation if the required mitigation is not maintained; and

(g) Require additional mitigation if the Department determines that average annual consumptive use of the subject appropriation has increased beyond the originally mitigated amount.

(2) Any final order issued under OAR chapter 690, division 310 approving a ground water permit application subject to these rules, that is contingent upon mitigation being provided before a permit may be issued, shall expire 5 years after issuance unless the required mitigation is provided.

(3) Failure to comply with conditions required under section (1) of this rule shall result in the Department regulating the associated ground water right, proposing to deny any permit extension application for the associated right, and proposing to cancel the associated permit.

Stat. Auth.: ORS 536.027 & ORS 390.835
Stats. Implemented: ORS 390.835, Ch. 659 2001 OL HB 2184
Hist.: WRD 3-2002, f. & cert. ef. 9-27-02

690-505-0625

Municipal and Quasi-municipal Ground Water Permit Applications

(1) Municipal or quasi-municipal ground water permit applicants may satisfy a mitigation obligation by incrementally obtaining and providing mitigation to coincide with the incremental development of the permit, provided that mitigation is provided prior to each stage of development of the permit and in accordance with the standards under 690-505-0610(2)-(5). Municipal or quasi-municipal ground water permit applicants interested in incremental mitigation shall:

(a) Submit an incremental development plan to the Department as part of the response to a notice of mitigation obligation under OAR 690-505-0615. The plan shall indicate a time schedule for the development of the permit and indicate proposed sources of mitigation that will be obtained and used prior to each stage of development;

(b) Report to the Department the progress of implementing the incremental development plan in accordance with a reporting schedule identified in the final order approving the water right permit under OAR 690-310-0200; and

(c) Submit a new or updated Water Management and Conservation Plan pursuant to OAR chapter 690, division 86.

(2) Applicants or permit holders subject to this rule may request that the Department approve changes to an incremental development plan and related mitigation obligation. A permit holder subject to this rule shall not increase the rate or amount of water diversion before increasing the corresponding required mitigation.

Stat. Auth.: ORS 536.027 & ORS 390.835
Stats. Implemented: ORS 390.835, Ch. 659 2001 OL HB 2184
Hist.: WRD 3-2002, f. & cert. ef. 9-27-02

690-505-0630

Additional Findings of Department When Mitigation is Provided

(1) If a ground water permit applicant satisfies the mitigation obligation, notwithstanding OAR chapter 690, division 9, for the purposes of OAR chapter 690, divisions 33, 310, 400, and 410, the proposed ground water appropriation is deemed to be a ground water appropriation that does not have the potential for substantial interference with surface water.

(2) The Department shall include the Oregon State Parks and Recreation Department and the Division of State Lands in the interagency review team process under OAR chapter 690, division 33, and use the interagency review team process to seek agency input on ground water permit applications and mitigation projects in the Deschutes Ground Water Study Area.

Stat. Auth.: ORS 536.027 & ORS 390.835
Stats. Implemented: ORS 390.835, Ch. 659 2001 OL HB 2184
Hist.: WRD 3-2002, f. & cert. ef. 9-27-02

WATER RESOURCES DEPARTMENT

DIVISION 521

DESCHUTES BASIN MITIGATION BANK AND MITIGATION CREDIT RULES

690-521-0100

Purpose of Mitigation Bank and Mitigation Credit Rules

(1) The rules in OAR 690-521-0100 through 690-521-0600 set forth the process to recognize and establish mitigation banks in the Deschutes Basin and to establish, obtain and assign mitigation credits pursuant to Chapter 659, 2001 Oregon Laws (HB 2184).

(2) Mitigation credits are a means to fulfill a mitigation obligation under OAR chapter 690, division 505.

(3) Mitigation credits are a means of encouraging individuals and institutions to invest in mitigation projects in the Deschutes Basin, such that credits earned by such projects may be held, applied, sold, or otherwise transferred for the purposes set forth above.

Stat. Auth.: ORS 537.746 & ORS 536.027
Stats. Implemented: ORS 390.835, Ch. 659 2001 OL HB 2184
Hist.: WRD 3-2002, f. & cert. ef. 9-27-02

690-521-0200

Definitions

The following definitions apply to OAR 690-521-0100 through 690-521-0600.

(1) "Allocation of conserved water" means an application approved under ORS 537.455 to 537.500 and OAR chapter 690, division 18 in which the Department may award mitigation credits for the applicant's portion of the conserved water that is legally protected for instream use resulting from conservation measures, such as canal lining and piping or other improvements in the technology or method for diverting, transporting, applying, or recovering water.

(2) "Department" means the Oregon Water Resources Department.

(3) "Deschutes Ground Water Study Area" means the Deschutes River Basin drainage area indicated in **Exhibit 1**.

(4) "General zone of impact" means anywhere above the Madras gage on the Lower Deschutes River or, for wells determined by the Department to have a localized impact on surface water, anywhere within the impacted subbasin of the Deschutes River including the Metolius, Squaw Creek, Little Deschutes, and Crooked River subbasins as identified by the Department.

(5) "Mitigation bank" means an entity that is authorized by the Water Resources Commission to obtain, hold and assign mitigation credits pursuant to Chapter 659, 2001 Oregon Laws (HB 2184) and these rules.

(6) "Mitigation credit" is a means of accounting for mitigation water, calculated in acre-feet, made available by a mitigation project. One mitigation credit is equal to one acre-foot of mitigation water. Mitigation credits are determined and awarded by the Department upon completion of the project and verification by the Department.

(7) "Mitigation obligation" means the amount of mitigation water needed for the appropriation of ground water as determined by the Department under OAR chapter 690, division 505, calculated in acre-feet.

(8) "Mitigation project" means a project approved by the Department that results in mitigation water.

(9) "Mitigation water" means water that is legally protected for instream use from implementation of a mitigation project, calculated in acre-feet.

(10) "Person" means any individual, partnership, corporation, association, governmental subdivision or public or private organization of any character.

[ED. NOTE: Exhibits referenced are available from the agency.]

Stat. Auth.: ORS 537.746 & ORS 536.027
Stats. Implemented: ORS 390.835, Ch. 659 2001 OL HB 2184
Hist.: WRD 3-2002, f. & cert. ef. 9-27-02

690-521-0300

Establishing Mitigation Credits

(1) Any person or mitigation bank may establish mitigation credits by completing a mitigation project as approved by the Department. Mitigation projects may include:

(a) The allocation of conserved water provided under ORS 537.455 to 537.500 and OAR chapter 690, division 018, where the applicant's portion of the conserved water is allocated and legally protected for instream use;

(b) The transfer of an existing water right to an instream use if the water right to be transferred is also lawfully eligible for transfer to another out-of-stream use, and for mitigation banks, the time-limited transfer or lease of an existing water right to instream use under ORS 537.348 and OAR chapter 690, division 077;

(c) A permit to appropriate water for the purpose of artificial recharge of a ground water reservoir pursuant to ORS 537.135 and OAR chapter 690, division 350;

(d) A secondary permit to use stored water from an existing reservoir obtained pursuant to ORS 537.130 to 537.211 and OAR chapter 690, division 310, provided the secondary permit is for instream use; or

(e) Other projects approved by the Department that result in legally protected mitigation water.

(2) Nothing in this rule modifies, adds or removes any procedures, or criteria and standards for review required for the Department to process applications or requests under the respective separate authorities for mitigation projects identified in section (1) of this rule.

(3) Mitigation credits for time-limited transfers and leases made under section (1)(b) of this rule may only be established by mitigation banks. A mitigation bank may assign mitigation credits established under this section to any person who intends to submit the credits to the Department to satisfy a mitigation obligation, provided that the bank demonstrates to the Department that it will hold in reserve an amount of mitigation credits, established or obtained from a source under section (1) of this rule, that is at least equal to the number of mitigation credits assigned to the person by the bank.

(4) Any person requesting mitigation credits through completion of a mitigation project identified under section (1) of this rule shall, in any application associated with the mitigation project, notify the Department that they intend to use the project to establish mitigation credits.

(5) Any person with a pending application for a mitigation project shall notify the Department that they intend to use the project to establish mitigation credits within 180 days of the effective date of these rules.

(6) Upon receipt of notification under section (4) and (5) the Department shall give public notice of the intent to establish mitigation credits in the weekly notice published by the Department.

(7) The Department shall work in cooperation with a representative of the Oregon Department of Fish and Wildlife, Oregon State Parks and Recreation Department, Oregon Department of Environmental Quality and Division of State Lands to enhance the resource benefits and make the most effective use of mitigation projects and mitigation water.

(8) A mitigation project for which a final order of approval was issued by the Department between November 1, 2000, and the effective date of these rules shall be eligible for final mitigation credit(s) under OAR 690-521-0400(1) upon completion of the project.

(9) Any person may establish mitigation credits under these rules whether or not there is an existing or known mitigation obligation that the mitigation credits may ultimately be used to satisfy.

Stat. Auth.: ORS 537.746 & ORS 536.027
Stats. Implemented: ORS 390.835, Ch. 659 2001 OL HB 2184
Hist.: WRD 3-2002, f. & cert. ef. 9-27-02

690-521-0400

Award and Validity of Mitigation Credits

(1) Concurrent with the issuance of a final order approving one of the mitigation projects identified in OAR 690-521-0300, the Department shall make a preliminary finding as to the amount of mitigation credits available. The Department shall award final mitigation credits upon completion of the approved project by the applicant and verification by the Department that the project is complete. The Department shall award mitigation credits to the person or mitigation bank that completed the mitigation project, unless otherwise requested by the project applicant.

(2) Mitigation credits awarded by the Department are valid until used to fulfill a mitigation obligation. Valid mitigation credits may be assigned by any person or recognized mitigation bank to any person or other mitigation bank. Mitigation credits are used when a person submits to the Department documentary evidence that valid credits have been obtained and assigned to satisfy a mitigation obligation.

Stat. Auth.: ORS 537.746 & ORS 536.027
Stats. Implemented: ORS 390.835, Ch. 659 2001 OL HB 2184
Hist.: WRD 3-2002, f. & cert. ef. 9-27-02

690-521-0500

Mitigation Banks

(1) Pursuant to Chapter 659, 2001 Oregon Laws (HB 2184), the Department may recognize and establish mitigation banks for the Deschutes Basin to facilitate transactions among holders of mitigation credits and persons interested in acquiring mitigation credits.

(2) Any person may apply to become recognized as a mitigation bank by submitting an application form to the Department. The form shall be provided by the Department.

(3) A person applying to be recognized as a mitigation bank shall enter into an agreement with the Department to receive a mitigation bank charter that details the agreements and obligations necessary to meet the provisions of OAR chapter 690, division 521 and Chapter 659, 2001 Oregon Laws (HB 2184). A mitigation bank shall at a minimum be required to:

(a) Maintain an accounting system to track assignments of mitigation credits to or from the bank. A separate account shall be maintained for mitigation credits obtained through time-limited transfer and instream lease mitigation projects. Each type of account maintained by the mitigation bank shall be separated into the general zones of impact established by the Department; and

(b) Annually report all transactions and activities of the bank to the Department in accordance with the requirements of this rule, and any other reporting requirements determined to be necessary by the Department.

(4) Mitigation bank charters under section (3) of this rule shall be approved or denied by the Water Resources Commission following public notice and an opportunity for public comment.

(5) A mitigation bank may establish, obtain, hold and assign mitigation credits, and is subject to the rules contained in OAR 690-521-0100 through 690-521-0600.

(6) The Department is neither party to nor in any way responsible for the contractual agreements between a mitigation bank and its customers.

(7) The Department may, at the discretion of the Director, audit the mitigation credit accounting records of any mitigation bank.

Stat. Auth.: ORS 537.746 & ORS 536.027
Stats. Implemented: ORS 390.835, Ch. 659 2001 OL HB 2184
Hist.: WRD 3-2002, f. & cert. ef. 9-27-02

690-521-0600

Department Mitigation Credit Oversight Account

The Department shall maintain a system to account for the award and use of mitigation credits in the Deschutes Basin. The Department shall prepare an annual report on the implementation and management of the mitigation credits system.

Stat. Auth.: ORS 537.746 & ORS 536.027
Stats. Implemented: ORS 390.835, Ch. 659 2001 OL HB 2184
Hist.: WRD 3-2002, f. & cert. ef. 9-27-02

APPENDIX E
City of La Pine Resolution No. 2015-02

RESOLUTION NO. 2015-02

A RESOLUTION ESTABLISHING CERTAIN WATER RATES, CHARGES, AND FEES EFFECTIVE AS OF JULY 1, 2015.

WHEREAS, on May 13, 2015, the City of La Pine, an Oregon municipal corporation ("City"), adopted the Water Use Regulations Ordinance, Ordinance No. 2015-04 (the "Ordinance"), pursuant to which the La Pine City Council (the "Council") is authorized to establish certain water rates, charges, fees, and system development charges from time to time by Council resolution; and

WHEREAS, the Council has determined that water fund revenue requirements necessitate an increase in water rates; and

WHEREAS, a duly noticed public hearing was held on February 17, 2015 concerning the contemplated increase in water rates.

NOW, THEREFORE, BE IT RESOLVED, by and through the Council meeting in regular session, the following:

1. The above-stated findings contained in this Resolution No. 2015-02 (this "Resolution") are hereby adopted.

2. Effective on July 1, 2015, City's water rates concerning property located within City's incorporated limits are as follows:

		Residential	Commercial
Fixed Monthly Charges		***$ / Meter***	
Meter Size	*MCE Factor*		
5/8"	1.00	$ 28.90	$ 28.90
3/4"	1.00	28.90	28.90
1"	2.50	72.24	72.24
1 1/2"	5.00	144.48	144.48
2"	8.00	231.16	231.16
3"	16.00	462.33	462.33
4"	25.00	722.39	722.39
6"	50.00	1,444.77	1,444.77
Volume Charges		***$ / 1,000 gal***	
Tier 1: 0 - 3,600 gal		$ 1.20	$ 2.50
Tier 2: 3,601 - 7,200 gal		$ 1.80	$ 2.50
Tier 3: > 7,200 gal		$ 3.00	$ 2.50

3. The monthly fixed charge will be charged on a per meter basis. Any customer with multiple meters will pay the monthly fixed charge applicable to each meter receiving metered water service, in addition to volume charges based on the customer's monthly metered water usage. For purposes of this Resolution, "residential" water services consist of all services provided for domestic purposes concerning detached single family residences and duplexes (dwellings) designed for permanent occupation and which include kitchens and bathroom facilities; "commercial" water services consist of all water services that do not meet the residential services definition provided under this Section 3.

4. Effective on July 1, 2015, City's water fees, charges, fines, and penalties are as follows:

Temporary Disconnection Charge $15.00

Charge for the temporary (less than 48 hours) shut-off of water services pursuant to an owner's request.

Delinquent Account Trip Fee $50.00

Fee for any service trip with intent of water service disconnection for non-payment of billings.

Inactive Status Charge $175.00

Charge for customers requesting inactive billing status.

Reconnect Fee $25.00

Fee to reconnect water services. This fee applies in addition to the past due balance and delinquent account trip fees.

Service Charge $35.00

Charge for changes to customer account information due to new user(s). This includes certain account administration tasks and services, including, without limitation, changes to the meter route book, computer records, filings, and reading and/or turning on/off meters.

Meter Testing or Changing Fee

Fee applied if a meter is changed or pulled from ground at the request of the customer for testing, resizing, and/or other purposes.

¾" meter	$50.00
1" meter	$60.00
1 ½" meter	$75.00
2" meter	$100.00
3" meter	$125.00
Larger than 3" meter	Cost plus 15%

If the requested meter test indicates the meter is defective, the meter test charge will be refunded.

Service Installation Charges (includes large service connections):

Complete installation - service pipe and meter from main to property line Cost plus 15%

For installation of meter where service has already been installed. This fee includes the cost of the meter and the cost for installation.

5/8" x ¾" meter	$255.00
1" meter	$355.00
1 ½" meter	$525.00
2" compound meter	$1,625.00
3" compound meter	$2,000.00

Larger than 3" meter	Cost plus 15%

Hook-up Charge $3,500.00 +

Charge applies to properties located outside the City's incorporated limits. In addition to the above-referenced charges, the owner must pay all installation and plan review costs and charges. All connection fees and water rates will be established by the city manager.

Plan Review Fee Actual cost + 50% administrative fee

Miscellaneous Fees and Charges

NSF Check or check returned for any reason	$20.00
Cut lock, lock replacement	$25.00
Meter stop replacement	$200.00
Late Payment Fee	$5.00 or 1.5% (whichever is greater)
Landowner notification fee	$15.00
Cross Connection Program Fee	$2.50 (monthly)
Door Hanger Notice for Disconnect for Non-payment	$25.00
Deposits for New Accounts	$150.00

After Hours Services $60.00 per hour

Includes customer-requested after hours services concerning, among other things, water service turn on/off, reading a meter, etc.

Fire Flow Testing Fee $125.00

Includes performing hydrant flow test and issuance of report.

5. This Resolution (and the provisions contained herein) supersede any resolution (and the terms contained therein) in conflict with this Resolution. The provisions of this Resolution are severable. If any section, subsection, sentence, clause, and/or portion of this Resolution is for any reason held invalid, unenforceable, and/or unconstitutional, such invalid, unenforceable, and/or unconstitutional section, subsection, sentence, clause, and/or portion will (a) yield to a construction permitting enforcement to the maximum extent permitted by applicable law, and (b) not affect the validity, enforceability, and/or constitutionality of the remaining portion of this Resolution. This Resolution will be in full force and effect from and after its approval and adoption.

APPROVED and ADOPTED by the Council on May 13, 2015.

Ken Mulenex, Mayor

ATTEST:

Richard L. Allen, Interim City Manager