

Application for a Permit to Use
Groundwater



Oregon Water Resources Department
 725 Summer Street NE, Suite A
 Salem, Oregon 97301-1266
 503-986-0900
 www.oregon.gov/OWRD

SECTION 1: APPLICANT INFORMATION AND SIGNATURE

Applicant

NAME City of Bend, Attn: Lori Faha		PHONE (HM)	
PHONE (WK) 541-317-3025	CELL	FAX	
ADDRESS 62975 Boyd Acres Road			
CITY Bend	STATE OR	ZIP 97701	E-MAIL* lfaha@bendoregon.gov

Agent – The agent is authorized to represent the applicant in all matters relating to this application.

AGENT / BUSINESS NAME GSI Water Solutions, ATTN: Owen McMurtrey		PHONE 541-257-9005	FAX
ADDRESS 1600 SW Western Boulevard, Suite 240			CELL
CITY Corvallis	STATE OR	ZIP 97333	E-MAIL* OMcMurtrey@gsiws.com

Note: Attach multiple copies as needed

* By providing an e-mail address, consent is given to receive all correspondence from the Department electronically. (Paper copies of the proposed and final order documents will also be mailed.)

By my signature below I confirm that I understand:

- I am asking to use water specifically as described in this application.
- Evaluation of this application will be based on information provided in the application.
- I cannot use water legally until the Water Resources Department issues a permit.
- Oregon law requires that a permit be issued before beginning construction of any proposed well, unless the use is exempt. Acceptance of this application does not guarantee a permit will be issued.
- If I get a permit, I must not waste water.
- If development of the water use is not according to the terms of the permit, the permit can be cancelled.
- The water use must be compatible with local comprehensive land-use plans.
- Even if the Department issues a permit, I may have to stop using water to allow senior water-right holders to get water to which they are entitled.

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I (we) affirm that the information contained in this application is true and accurate.

Lori Faha
 Applicant Signature

Lori Faha, Environmental Resources Manager
 Print Name and Title if applicable

12/20/23
 Date

SECTION 2: PROPERTY OWNERSHIP

Please indicate if you own all the lands associated with the project from which the water is to be diverted, conveyed, and used.

- YES, there are no encumbrances.
- YES, the land is encumbered by easements, rights of way, roads or other encumbrances.
- NO, the applicant is a public corporation.**
- NO, I have a recorded easement or written authorization permitting access.
- NO, I do not currently have written authorization or easement permitting access.
- NO, written authorization or an easement is not necessary, because the only affected lands I do not own are state-owned submersible lands, and this application is for irrigation and/or domestic use only (ORS 274.040).
- NO, because water is to be diverted, conveyed, and/or used only on federal lands.

Affected Landowners: List the names and mailing addresses of all owners of any lands that are not owned by the applicant and that are crossed by the proposed ditch, canal or other work, even if the applicant has obtained written authorization or an easement from the owner. *(Attach additional sheets if necessary).*

The City owns the land where proposed new wells and associated distribution infrastructure are proposed. The United States government owns the land where Outback Well 7 is located. The City's water supply infrastructure is authorized by a Special Use Permit issued by the US Forest Service. A representative of the US Forest Service can be reached at the following address:

**Alicia Bergschneider
Deschutes National Forest Offices
63095 Deschutes Market Rd
Bend, OR 97701**

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Legal Description: You must provide the legal description of: 1. The property from which the water is to be diverted, 2. Any property crossed by the proposed ditch, canal or other work, and 3. Any property on which the water is to be used as depicted on the map.

See Attachment B for the legal descriptions of the properties where water is to be diverted. The applicant is a public corporation, and the proposed use is municipal use within the City of Bend's service area.

SECTION 3: WELL DEVELOPMENT

WELL NO.	NAME OF NEAREST SURFACE WATER	IF LESS THAN 1 MILE:	
		DISTANCE TO NEAREST SURFACE WATER	ELEVATION CHANGE BETWEEN NEAREST SURFACE WATER AND WELL HEAD
Pilot Butte Well 3	Deschutes River	N/A – Wells are more than 1 mile away from surface water	
Neff Well			
Outback Well 7			
Outback Well 8			
Outback Well 9			

Please provide any information for your existing or proposed well(s) that you believe may be helpful in evaluating your application. For existing wells, describe any previous alteration(s) or repair(s) not documented in the attached well log or other materials *(attach additional sheets if necessary)*.

N/A

SECTION 3: WELL DEVELOPMENT, continued

Total maximum rate requested: 6.2 cfs (each well will be evaluated at the maximum rate unless you indicate well-specific rates and annual volumes in the table below).

The table below must be completed for each source to be evaluated or the application will be returned. If this is an existing well, the information may be found on the applicable well log. *(If a well log is available, please submit it in addition to completing the table.)* If this is a proposed well, or well-modification, consider consulting with a licensed well driller, geologist, or certified water right examiner to obtain the necessary information.

OWNER'S WELL NAME OR NO.	PROPOSED	EXISTING	WELL ID (WELL TAG) NO.* OR WELL LOG ID**	FLOWING ARTESIAN	CASING DIAMETER (INCHES)	CASING INTERVALS (FEET)	PERFORATED OR SCREENED INTERVALS (FEET)	SEAL INTERVALS (FEET)	MOST RECENT STATIC WATER LEVEL & DATE (FEET)	PROPOSED USE			
										SOURCE AQUIFER***	TOTAL WELL DEPTH (FEET)	WELL-SPECIFIC RATE (GPM)	ANNUAL VOLUME (ACRE-FEET)
Pilot Butte 3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DESC 52907	<input type="checkbox"/>	14	0-862	860-1140	0-150 822-862	782.0 (03/30/2023)	Deschutes Formation	1140	-	-
Neff Well	<input checked="" type="checkbox"/>	<input type="checkbox"/>	N/A	<input type="checkbox"/>	14 (est)	0-800 (est)	800-1200 (est)	0-250 (est)	680 (est)		1200 (est)	-	-
Outback Well 7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	DESC 57760	<input type="checkbox"/>	16 12	+2-612 602.5-860.5	610.5- 860.5	0-160 160-575 575-612	469.5 (10/17/2006)		860.5	-	-
Outback Well 8	<input checked="" type="checkbox"/>	<input type="checkbox"/>	N/A	<input type="checkbox"/>	16 (est) 12 (est)	+2-612 (est) 603-870 (est)	610-860 (est)	0-160 160-575 575-612 (est)	470 (est)		860 (est)	-	-
Outback Well 9	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	16 (est) 12 (est)	+2-612 (est) 603-870 (est)	610-860 (est)	0-160 160-575 575-612 (est)	470 (est)		860 (est)	-	-

* Licensed drillers are required to attach a Department-supplied Well Tag, with a unique Well ID or Well Tag Number to all new or newly altered wells. Landowners can request a Well ID for existing wells that do not have one. The Well ID is intended to serve as a unique identification number for each well.

** A well log ID (e.g. MARI 1234) is assigned by the Department to each log in the agency's well log database. A separate well log is required for each subsequent alteration of the well.

*** Source aquifer examples: Troutdale Formation, gravel and sand, alluvium, basalt, bedrock, etc.

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SECTION 4: SENSITIVE, THREATENED OR ENDANGERED FISH SPECIES PUBLIC INTEREST INFORMATION

This information must be provided for your application to be accepted as complete. The Water Resources Department will determine whether the proposed use will impair or be detrimental to the public interest with regard to sensitive, threatened or endangered fish species if your proposed groundwater use is determined to have the potential for substantial interference with nearby surface waters.

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Upper Columbia - OAR 690-033-0115 thru -0130

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Is the well or proposed well located in an area where the Upper Columbia Rules apply?

Yes No

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If yes, you are notified that the Water Resources Department will consult with numerous federal, state, local and tribal governmental entities so it may determine whether the proposed use is consistent with the "Columbia River Basin Fish and Wildlife Program" adopted by the Northwest Power Planning Council in 1994 for the protection and recovery of listed fish species. The application may be denied, heavily conditioned, or if appropriate, mitigation for impacts may be needed to obtain approval for the proposed use.

If yes, and if the Department determines that proposed groundwater use has the potential for substantial interference with nearby surface waters:

- I understand that the permit, if issued, will not allow use during the time period April 15 to September 30, except as provided in OAR 690-033-0140.
- I understand that the Department of Environmental Quality will review my application to determine if the proposed use complies with existing state and federal water quality standards.
- I understand that I will install and maintain water use measurement and recording devices as required by the Water Resources Department, and comply with recording and reporting permit condition requirements.

Lower Columbia - OAR 690-033-0220 thru -0230

Is the well or proposed well located in an area where the Lower Columbia rules apply?

Yes No

If yes, and the proposed groundwater use is determined to have the potential for substantial interference with nearby surface waters you are notified that the Water Resources Department will determine, by reviewing recovery plans, the Columbia River Basin Fish and Wildlife Program, and regional restoration programs applicable to threatened or endangered fish species, in coordination with state and federal agencies, as appropriate, whether the proposed use is detrimental to the protection or recovery of a threatened or endangered fish species and whether the use can be conditioned or mitigated to avoid the detriment.

If a permit is issued, it will likely contain conditions to ensure the water use complies with existing state and federal water quality standards; and water use measurement, recording and reporting required by the Water Resources Department. The application may be denied, or if appropriate, mitigation for impacts may be needed to obtain approval of the proposed use.

If yes, you will be required to provide the following information, if applicable. N/A

Yes No The proposed use is for more than **one** cubic foot per second (448.8 gpm) and is not subject to the requirements of OAR 690, Division 86 (Water Management and Conservation Plans).

If **yes**, provide a description of the measures to be taken to assure reasonably efficient water use:
N/A

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Statewide - OAR 690-033-0330 thru -0340

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Is the well or proposed well located in an area where the Statewide rules apply?

Yes No

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If **yes**, and the proposed groundwater use is determined to have the potential for substantial interference with nearby surface waters you are notified that the Water Resources Department will determine whether the proposed use will occur in an area where endangered, threatened or sensitive fish species are located. If so, the Water Resources Department, Department of Fish and Wildlife, Department of Environmental Quality, and the Department of Agriculture will recommend conditions required to achieve “no loss of essential habitat of threatened and endangered (T&E) fish species,” or “no net loss of essential habitat of sensitive (S) fish species.” If conditions cannot be identified that meet the standards of no loss of essential T E fish habitat or no net loss of essential S fish habitat, the agencies will recommend denial of the application unless they conclude that the proposed use would not harm the species.

SECTION 5: WATER USE

USE	PERIOD OF USE	ANNUAL VOLUME (ACRE-FEET)
Municipal	Year-round	

For irrigation use only: N/A

Please indicate the number of primary, supplemental and/or nursery acres to be irrigated (*must match map*).

Primary: Acres Supplemental: Acres Nursery Use: Acres

If you listed supplemental acres, list the Permit or Certificate number of the underlying primary water right(s):

Indicate the maximum total number of acre-feet you expect to use in an irrigation season:

- If the use is **municipal or quasi-municipal**, attach **Form M See Attachment E**
- If the use is **domestic**, indicate the number of households: **N/A** (Exempt Uses: Please note that 15,000 gallons per day for single or group **domestic** purposes and 5,000 gallons per day for a single **industrial or commercial** purpose are exempt from permitting requirements.)
- If the use is **mining**, describe what is being mined and the method(s) of extraction (*attach additional sheets if necessary*): **N/A**

SECTION 6: WATER MANAGEMENT

A. Diversion and Conveyance

What equipment will you use to pump water from your well(s)?

Pump (give horsepower and type): **Pilot Butte Well 3 is equipped with a 250 HP submersible pump. Outback Well 7 is equipped with a 250 HP line shaft turbine pump. Technical specifications for each proposed well have not been decided.**

Other means (describe):

Provide a description of the proposed means of diversion, construction, and operation of the diversion works and conveyance of water. **Water will be diverted from the proposed wells and conveyed through the City's municipal water distribution system for delivery to water users served by the City.**

B. Application Method

What equipment and method of application will be used? (e.g., drip, wheel line, high-pressure sprinkler) (attach additional sheets if necessary)

N/A - Water will be for municipal use within the Bend Municipal Service Boundary.

C. Conservation

Please describe why the amount of water requested is needed and measures you propose to: prevent waste; measure the amount of water diverted; prevent damage to aquatic life and riparian habitat; prevent the discharge of contaminated water to a surface stream; prevent adverse impact to public uses of affected surface waters (attach additional sheets if necessary).

The water appropriated under this water right will be limited to the amount needed for municipal water supply. Wells will be constructed in a manner to prevent damage to aquatic life and riparian habitat. No discharge of contaminated water will occur, and no adverse impacts on public uses of surface water are anticipated. Constructed wells will be equipped with measurement devices to measure the amount of water diverted.

The City's WMCP includes benchmarks related to conservation outreach. The City's water loss has remained below 10% since 2008 and averaged 4.7% from 2014 through 2019. See Attachment F for the City's 2021 conservation benchmarks and more information about their conservation programs.

SECTION 7: PROJECT SCHEDULE

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- a) Date construction will begin: **Within twenty years of permit issuance.**
- b) Date construction will be completed: **Within twenty years of permit issuance.**
- c) Date beneficial water use will begin: **Within twenty years of permit issuance.**

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SECTION 8: RESOURCE PROTECTION

In granting permission to use water the state encourages, and in some instances requires, careful control of activities that may affect adjacent waterway or streamside area. See instruction guide for a list of possible permit requirements from other agencies. Please indicate any of the practices you plan to undertake to protect water resources.

Water quality will be protected by preventing erosion and run-off of waste or chemical products. Describe: **Municipal water is delivered through the City's piped distribution system and wastewater is treated at the City's Wastewater Treatment Plant. No erosion or run-off will occur.**

Excavation or clearing of banks will be kept to a minimum to protect riparian or streamside areas. **Note: If disturbed area is greater than one acre, applicant should contact the Oregon Department of Environmental Quality to determine if a 1200C permit is required.** Describe planned actions and additional permits required for project implementation: **No excavation or clearing of banks will be required for this project.**

Other state and federal permits or contracts required and to be obtained, if a water right permit is granted: List: **N/A**

SECTION 9: WITHIN A DISTRICT

Check here if the point of appropriation (POA) or place of use (POU) are located within or served by an irrigation or other water district.

Irrigation District Name Central Oregon Irrigation District	Address 1055 SW Lake CT	
City Redmond	State OR	Zip 97756

Irrigation District Name Arnold Irrigation District	Address 19604 Buck Canyon Rd	
City Bend	State OR	Zip 97702

SECTION 10: REMARKS

Use this space to clarify any information you have provided in the application (*attach additional sheets if necessary*).

The City of Bend is submitting this water right application to request a permit to use up to 6.2 cfs of groundwater from Pilot Butte Well 3, Neff Well, and Outback Wells 7 through 9 to increase the maximum authorized rate of use from the City’s wells to meet projected demands through 2045. The City is requesting that the permit describe the authorized place of use as “the City of Bend Municipal Service Boundary.”

Additional details regarding the City’s projected demands are described in the attached Form M (Attachment E).

The City understands that the use of water under the proposed permit will require mitigation under the Department’s Deschutes Basin Groundwater Mitigation Program. The City currently holds three other water rights requiring mitigation under the Deschutes Basin Mitigation Program, which requires the City to provide mitigation consistent with a 50 percent consumptive use coefficient. The City understands that the Department may make a similar finding with respect to consumptive use under the requested water right. The City may reassign mitigation permits from its existing permits and/or obtain additional mitigation credits to meet the mitigation obligation for the requested water right.

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Attachment A

Land Use Information Forms

Application for Groundwater Permit - City of Bend

Land Use Information Form



Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, Oregon 97301-1266
(503) 986-0900
www.oregon.gov/OWRD

NOTE TO APPLICANTS

In order for your application to be processed by the Water Resources Department (WRD), this Land Use Information Form must be completed by a local government planning official in the jurisdiction(s) where your water right will be used and developed. The planning official may choose to complete the form while you wait, or return the receipt stub to you. Applications received by WRD without the Land Use Form or the receipt stub will be returned to you. Please be aware that your application will not be approved without land use approval.

This form is NOT required if:

- 1) Water is to be diverted, conveyed, and/or used only on federal lands; **OR**
- 2) The application is for a water right transfer, allocation of conserved water, exchange, permit amendment, or ground water registration modification, and all of the following apply:
 - a) The existing and proposed water use is located entirely within lands zoned for exclusive farm-use or within an irrigation district;
 - b) The application involves a change in place of use only;
 - c) The change does not involve the placement or modification of structures, including but not limited to water diversion, impoundment, distribution facilities, water wells and well houses; and
 - d) The application involves irrigation water uses only.

NOTE TO LOCAL GOVERNMENTS

The person presenting the attached Land Use Information Form is applying for or modifying a water right. The Water Resources Department (WRD) requires its applicants to obtain land-use information to be sure the water rights do not result in land uses that are incompatible with your comprehensive plan. Please complete the form or detach the receipt stub and return it to the applicant for inclusion in their water right application. You will receive notice once the applicant formally submits his or her request to the WRD. The notice will give more information about WRD's water rights process and provide additional comment opportunities. You will have 30 days from the date of the notice to complete the land-use form and return it to the WRD. If no land-use information is received from you within that 30-day period, the WRD may presume the land use associated with the proposed water right is compatible with your comprehensive plan. Your attention to this request for information is greatly appreciated by the Water Resources Department. If you have any questions concerning this form, please contact the WRD's Customer Service Group at 503-986-0801.

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Land Use Information Form

Applicant(s): City of Bend, Attn: Lori Faha

Mailing Address: 62975 Boyd Acres Road

City: Bend

State: OR

Zip Code: 97701

Daytime Phone: 541-317-3025

A. Land and Location

Please include the following information for all tax lots where water will be diverted (taken from its source), conveyed (transported), and/or used or developed. Applicants for municipal use, or irrigation uses within irrigation districts may substitute existing and proposed service-area boundaries for the tax-lot information requested below.

Township	Range	Section	¼ ¼	Tax Lot #	Plan Designation (e.g., Rural Residential/RR-5)	Water to be:			Proposed Land Use:
17 S	12 E	33	NE NE	105	PF	<input checked="" type="checkbox"/> Diverted	<input checked="" type="checkbox"/> Conveyed	<input checked="" type="checkbox"/> Used	Municipal
17 S	12 E	27	SW SW	5300	RS	<input checked="" type="checkbox"/> Diverted	<input checked="" type="checkbox"/> Conveyed	<input checked="" type="checkbox"/> Used	
City of Bend Water Service Area (see portion of service area within City limits on attached map)						<input type="checkbox"/> Diverted	<input checked="" type="checkbox"/> Conveyed	<input checked="" type="checkbox"/> Used	

List all counties and cities where water is proposed to be diverted, conveyed, and/or used or developed:

City of Bend

B. Description of Proposed Use

Type of application to be filed with the Water Resources Department:

- Permit to Use or Store Water
 Water Right Transfer
 Permit Amendment or Ground Water Registration Modification
 Limited Water Use License
 Allocation of Conserved Water
 Exchange of Water

Source of water: Reservoir/Pond Ground Water Surface Water (name) _____

Estimated quantity of water needed: 6.2 cubic feet per second gallons per minute acre-feet

Intended use of water: Irrigation Commercial Industrial Domestic for _____ household(s)
 Municipal Quasi-Municipal Instream Other _____

Briefly describe:

The City of Bend is applying for a permit to use 6.2 cfs of groundwater for municipal use within the City of Bend water service area. The locations of the proposed wells within City limits (Pilot Butte Well 3 and Neff Well) and the proposed place of use are shown on the attached maps. Outback Wells 7, 8, and 9 are outside of city limits and are listed on a separate land use form for Deschutes County review.

Note to applicant: If the Land Use Information Form cannot be completed while you wait, please have a local government representative sign the receipt at the bottom of the next page and include it with the application filed with the Water Resources Department.

See bottom of Page 3. →

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For Local Government Use Only

The following section must be completed by a planning official from each county and city listed unless the project will be located entirely within the city limits. In that case, only the city planning agency must complete this form. This deals only with the local land-use plan. Do not include approval for activities such as building or grading permits.

Please check the appropriate box below and provide the requested information

- Land uses to be served by the proposed water uses (including proposed construction) are allowed outright or are not regulated by your comprehensive plan. Cite applicable ordinance section(s): BDC Chapter 2.1 Land Use Districts and BDC Chapter 2.6 Public Facilities Zoning Districts
- Land uses to be served by the proposed water uses (including proposed construction) involve discretionary land-use approvals as listed in the table below. (Please attach documentation of applicable land-use approvals which have already been obtained. Record of Action/land-use decision and accompanying findings are sufficient.) **If approvals have been obtained but all appeal periods have not ended, check "Being pursued."**

Type of Land-Use Approval Needed (e.g., plan amendments, rezones, conditional-use permits, etc.)	Cite Most Significant, Applicable Plan Policies & Ordinance Section References	Land-Use Approval:	
		<input type="checkbox"/> Obtained <input type="checkbox"/> Denied	<input type="checkbox"/> Being Pursued <input type="checkbox"/> Not Being Pursued
		<input type="checkbox"/> Obtained <input type="checkbox"/> Denied	<input type="checkbox"/> Being Pursued <input type="checkbox"/> Not Being Pursued
		<input type="checkbox"/> Obtained <input type="checkbox"/> Denied	<input type="checkbox"/> Being Pursued <input type="checkbox"/> Not Being Pursued
		<input type="checkbox"/> Obtained <input type="checkbox"/> Denied	<input type="checkbox"/> Being Pursued <input type="checkbox"/> Not Being Pursued
		<input type="checkbox"/> Obtained <input type="checkbox"/> Denied	<input type="checkbox"/> Being Pursued <input type="checkbox"/> Not Being Pursued

Local governments are invited to express special land-use concerns or make recommendations to the Water Resources Department regarding this proposed use of water below, or on a separate sheet.

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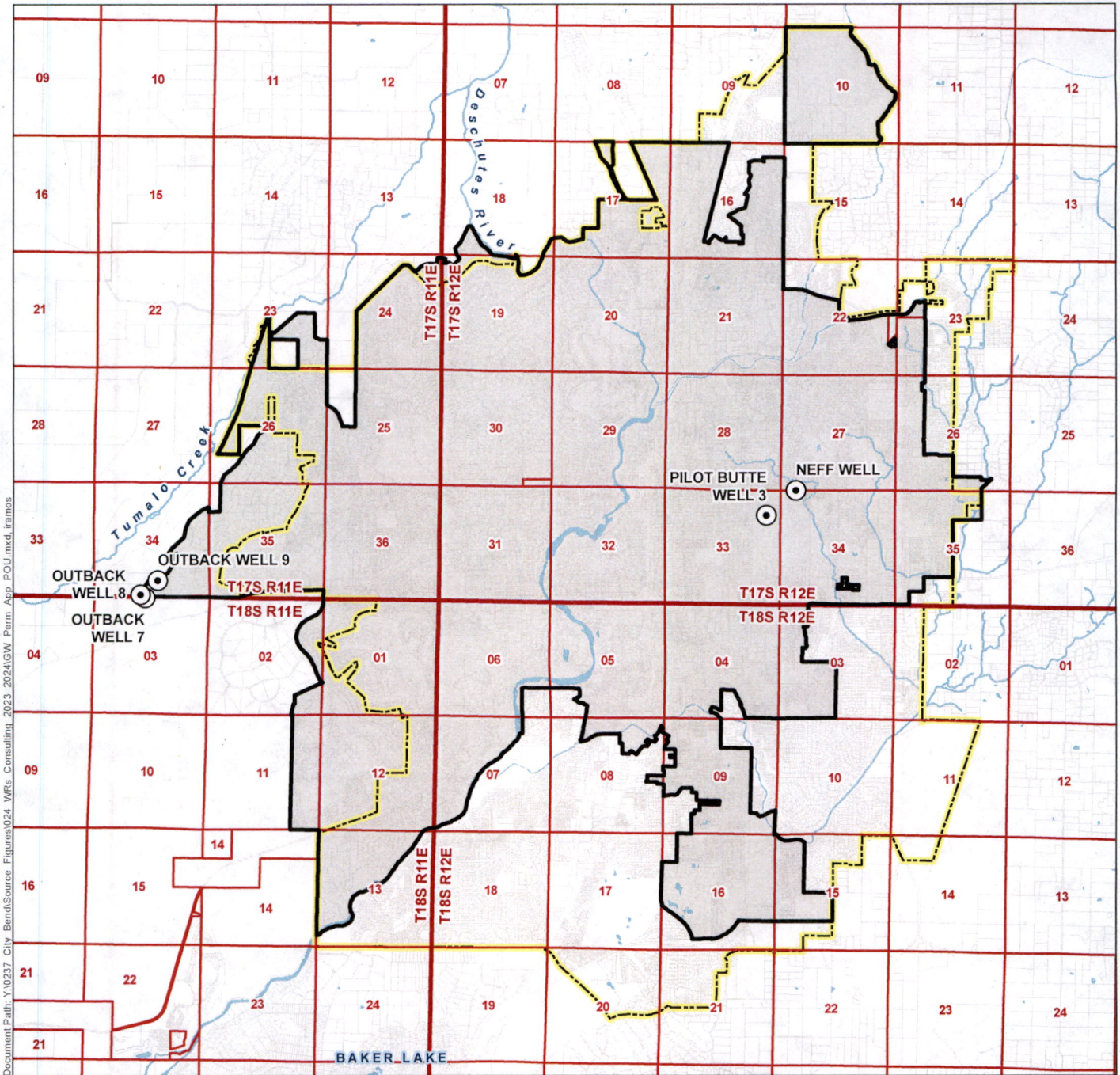
Name: Sheila Pyott Title: Assistant Planner
 Signature: Sheila Pyott Phone: 541 693-2123 Date: 12/13/2023
 Government Entity: City of Bend

Note to local government representative: Please complete this form or sign the receipt below and return it to the applicant. If you sign the receipt, you will have 30 days from the Water Resources Department's notice date to return the completed Land Use Information Form or WRD may presume the land use associated with the proposed use of water is compatible with local comprehensive plans.







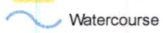

Receipt for Request for Land Use Information

Applicant name: _____
 City or County: _____ Staff contact: _____
 Signature: _____ Phone: _____ Date: _____



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LEGEND

-  Point of Appropriation (POA)
-  Proposed Place of Use (POU): City of Bend Service Area
-  Tax Lot
-  City Boundary
-  Watercourse
-  Waterbody

**Groundwater Permit Application
in the Name of City of Bend
Place of Use Map**

Township 17/18 South, Range 11/12 East (W.M.)

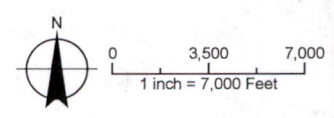
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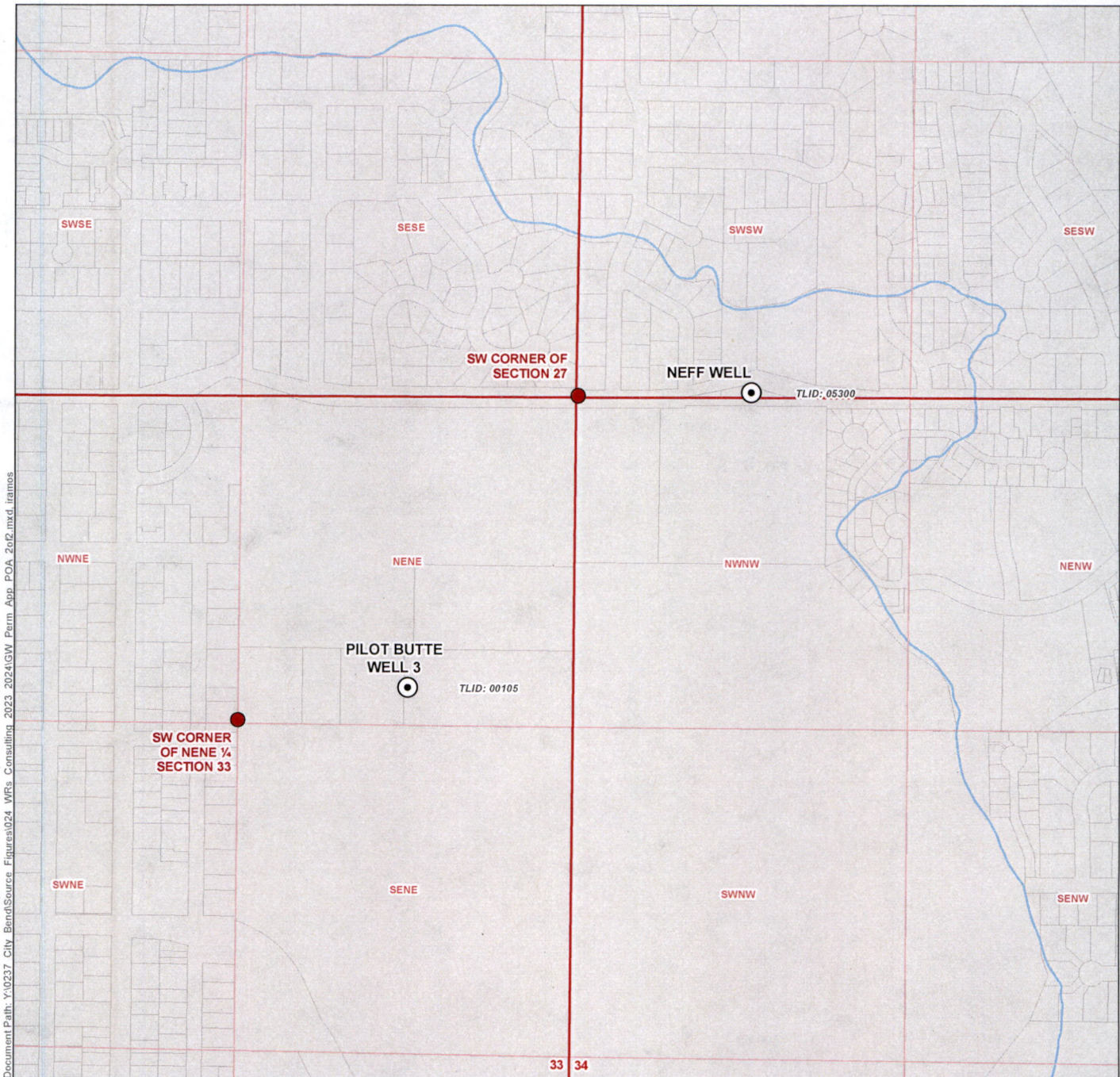
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DISCLAIMER
This map was prepared for the purpose of identifying the location of a water right only and it is not intended to provide legal dimensions or location of property ownership lines.







Date: December 8, 2023
Data Sources: BLM, ESRI, OWRD, USGS





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LEGEND

-  Point of Appropriation (POA)
-  Proposed Place of Use (POU): City of Bend Service Area
-  Tax Lot
-  Government Lot (GL)
-  Watercourse
-  Waterbody

**Groundwater Permit Application
in the Name of City of Bend
Points of Appropriation Map (Map 2 of 2)**
Township 17/18 South, Range 11/12 East (W.M.)

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LOCATION DESCRIPTION

Neff Well

Located 20 feet North and 690 feet East from the SW corner of Section 27, Township 17 South, Range 12 East (W.M.)

Pilot Butte Well 3

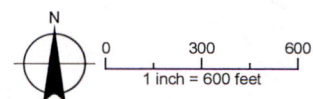
Located 145 feet North and 650 feet East from the SW corner, NENE, Section 33, Township 17 South, Range 12 East (W.M.)

DISCLAIMER

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Date: December 8, 2023

Data Sources: BLM, ESRI, OWRD, USGS



Land Use Information Form



Oregon Water Resources Department
725 Summer Street NE, Suite A
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(503) 986-0900
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This form is NOT required if:

- 1) Water is to be diverted, conveyed, and/or used only on federal lands; **OR**
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 - b) The application involves a change in place of use only;
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JAN 23 2024

OREGON Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, Oregon 97301-1266
(503) 986-0900
www.oregon.gov/OWRD



Applicant(s): City of Bend, Attn: Lori Fahs

Salem, OR

Mailing Address: 62975 Boyd Acres Road

City: Bend

State: OR

Zip Code: 97701

Daytime Phone: 541-317-3025

A. Land and Location

Please include the following information for all tax lots where water will be diverted (taken from its source), conveyed (transported), and/or used or developed. Applicants for municipal use, or irrigation uses within irrigation districts may substitute existing and proposed service-area boundaries for the tax-lot information requested below.

Township	Range	Section	¼ ¼	Tax Lot #	Plan Designation (e.g., Rural Residential/RR-5)	Water to be:			Proposed Land Use:
17 S	11 E	34	SW SE	800	RR-10	<input checked="" type="checkbox"/> Diverted	<input checked="" type="checkbox"/> Conveyed	<input checked="" type="checkbox"/> Used	Municipal
17 S	11 E	34	SE SW	800	RR-10	<input checked="" type="checkbox"/> Diverted	<input checked="" type="checkbox"/> Conveyed	<input checked="" type="checkbox"/> Used	
18 S	11 E	3	NE NW	200	F1	<input checked="" type="checkbox"/> Diverted	<input checked="" type="checkbox"/> Conveyed	<input type="checkbox"/> Used	
City of Bend Water Service Area (see portion of service area outside Bend City limits on attached map)						<input type="checkbox"/> Diverted	<input checked="" type="checkbox"/> Conveyed	<input checked="" type="checkbox"/> Used	

List all counties and cities where water is proposed to be diverted, conveyed, and/or used or developed:

Deschutes County

B. Description of Proposed Use

Type of application to be filed with the Water Resources Department:

- Permit to Use or Store Water
 Water Right Transfer
 Permit Amendment or Ground Water Registration Modification
 Limited Water Use License
 Allocation of Conserved Water
 Exchange of Water

Source of water: Reservoir/Pond Ground Water Surface Water (name) _____

Estimated quantity of water needed: 6.2 cubic feet per second gallons per minute acre-feet

Intended use of water: Irrigation Commercial Industrial Domestic for _____ household(s)
 Municipal Quasi-Municipal Instream Other _____

Briefly describe:

The City of Bend is applying for a permit to use 6.2 cfs of groundwater for municipal use within the City of Bend water service area. The locations of the proposed wells within Deschutes County (Outback Wells 7 through 9) and the proposed place of use are listed above and shown on the attached maps. Pilot Butte Well 3 and Neff Well are also included in the application but are inside the city limits and are listed on a separate land use form for City review.

Note to applicant: If the Land Use Information Form cannot be completed while you wait, please have a local government representative sign the receipt at the bottom of the next page and include it with the application filed with the Water Resources Department.

See bottom of Page 3. →

For Local Government Use Only

The following section must be completed by a planning official from each county and city listed unless the project will be located entirely within the city limits. In that case, only the city planning agency must complete this form. This deals only with the local land-use plan. Do not include approval for activities such as building or grading permits.

Please check the appropriate box below and provide the requested information

- Land uses to be served by the proposed water uses (including proposed construction) are allowed outright or are not regulated by your comprehensive plan. Cite applicable ordinance section(s): **Title 18 of the Deschutes County Code, Zoning Ordinance**
- Land uses to be served by the proposed water uses (including proposed construction) involve discretionary land-use approvals as listed in the table below. (Please attach documentation of applicable land-use approvals which have already been obtained. Record of Action/land-use decision and accompanying findings are sufficient.) **If approvals have been obtained but all appeal periods have not ended, check "Being pursued."**

Type of Land-Use Approval Needed (e.g., plan amendments, rezones, conditional-use permits, etc.)	Cite Most Significant, Applicable Plan Policies & Ordinance Section References	Land-Use Approval:	
		<input type="checkbox"/> Obtained <input type="checkbox"/> Denied	<input type="checkbox"/> Being Pursued <input type="checkbox"/> Not Being Pursued
	Received by OWRD	<input type="checkbox"/> Obtained <input type="checkbox"/> Denied	<input type="checkbox"/> Being Pursued <input type="checkbox"/> Not Being Pursued
	JAN 23 2024	<input type="checkbox"/> Obtained <input type="checkbox"/> Denied	<input type="checkbox"/> Being Pursued <input type="checkbox"/> Not Being Pursued
	Salem, OR	<input type="checkbox"/> Obtained <input type="checkbox"/> Denied	<input type="checkbox"/> Being Pursued <input type="checkbox"/> Not Being Pursued
		<input type="checkbox"/> Obtained <input type="checkbox"/> Denied	<input type="checkbox"/> Being Pursued <input type="checkbox"/> Not Being Pursued

Local governments are invited to express special land-use concerns or make recommendations to the Water Resources Department regarding this proposed use of water below, or on a separate sheet.

Please see attached note.

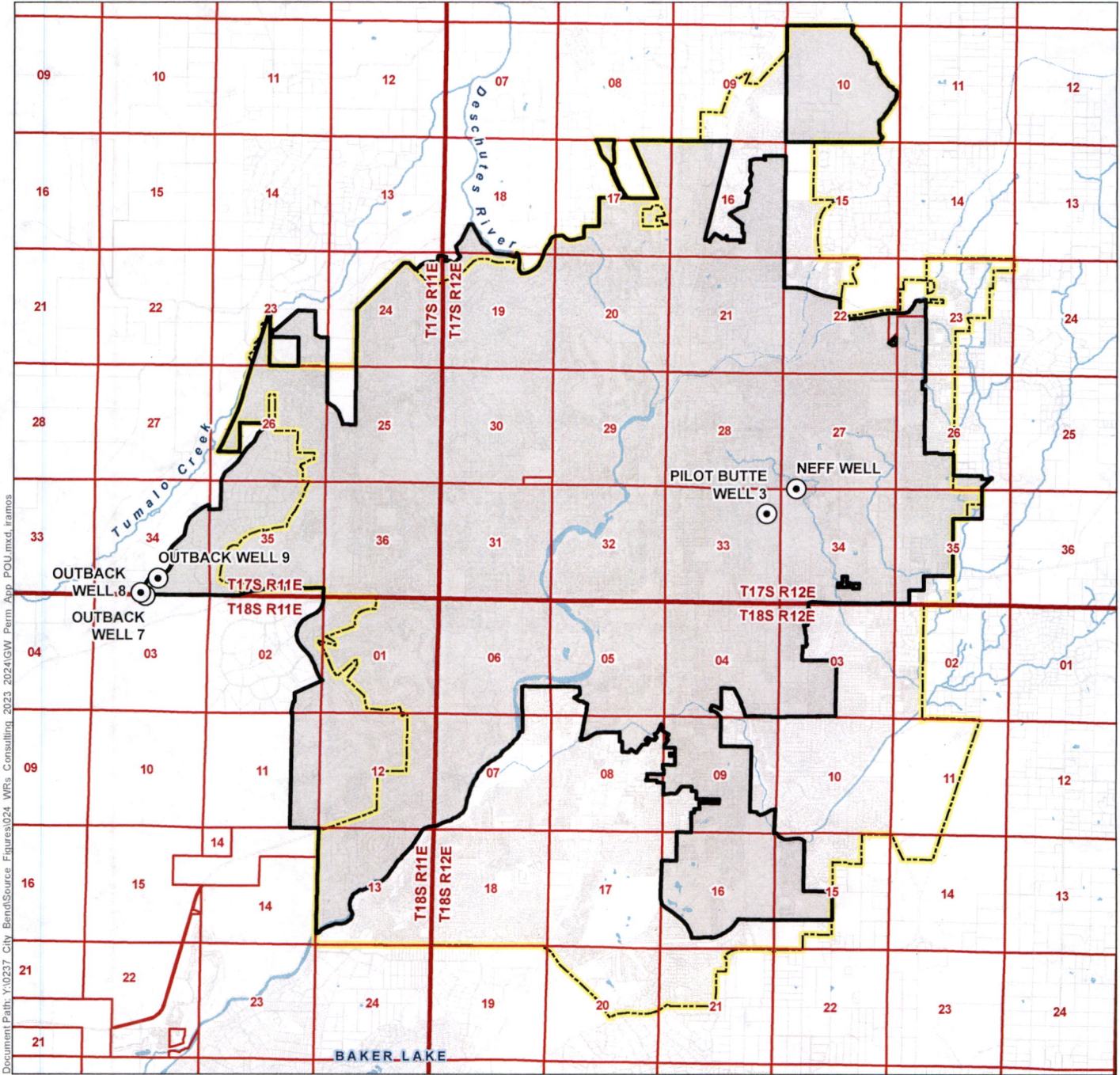
Name: Jacob Ripper Title: Principal Planner
 Signature: *Jacob Ripper* Phone: 541-385-1759 Date: 12/27/23
 Government Entity: Deschutes County Planning Division

Note to local government representative: Please complete this form or sign the receipt below and return it to the applicant. If you sign the receipt, you will have 30 days from the Water Resources Department's notice date to return the completed Land Use Information Form or WRD may presume the land use associated with the proposed use of water is compatible with local comprehensive plans.



Receipt for Request for Land Use Information

Applicant name: _____
 City or County: _____ Staff contact: _____
 Signature: _____ Phone: _____ Date: _____



Document Path: Y:\0237_City_Bend\Source_Figures\024_WRFs_Consulting_2023_2024\GW_Perm_App_POU.mxd. iramos

Groundwater Permit Application in the Name of City of Bend Place of Use Map

Township 17/18 South, Range 11/12 East (W.M.)

LEGEND

- Point of Appropriation (POA)
- Proposed Place of Use (POU): City of Bend Service Area
- Tax Lot
- City Boundary
- Watercourse
- Waterbody

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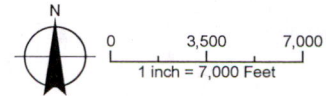
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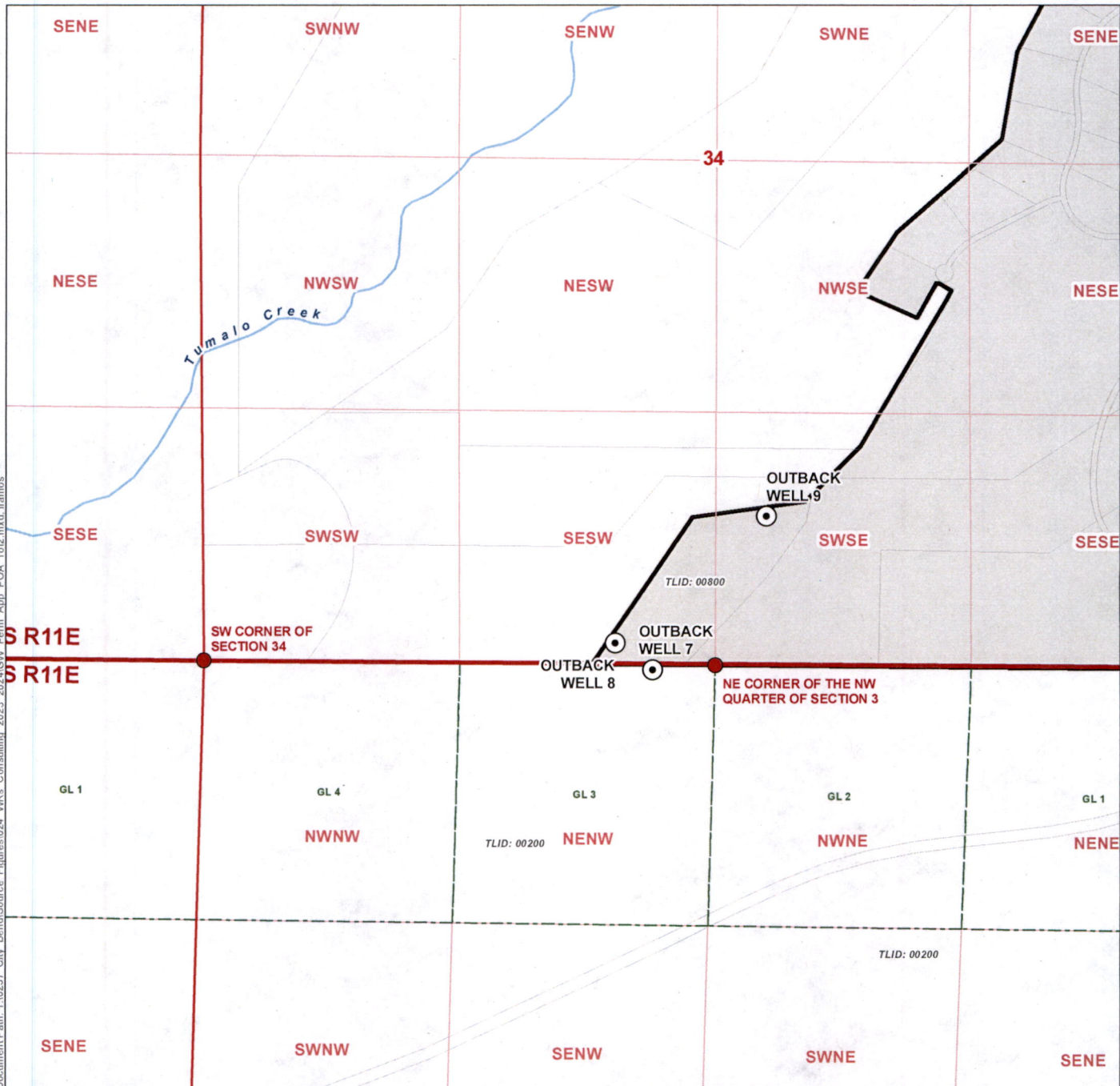
DISCLAIMER

This map was prepared for the purpose of identifying the location of a water right only and it is not intended to provide legal dimensions or location of property ownership lines.

Date: December 8, 2023
Data Sources: BLM, ESRI, OWRD, USGS



Document Path: Y:\0237_City_Bend\Source_Figures\024_WRs_Consulting_2023_2024\GW_Perm_App_POA_1of2.mxd.iamos



LEGEND

- Point of Appropriation (POA)
- Proposed Place of Use (POU): City of Bend Service Area
- Tax Lot
- Government Lot (GL)
- Watercourse
- Waterbody

**Groundwater Permit Application
in the Name of City of Bend
Points of Appropriation Map**
Township 17/18 South, Range 11/12 East (W.M.)
Deschutes County

LOCATION DESCRIPTION

Outback Well 7
Located South 85 degrees 37 minutes 0.5 seconds West, 327.9 feet from the NE corner of the NW quarter of Section 3, Township 18 South, Range 11 East (W.M.)

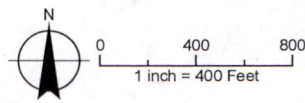
Outback Well 8
Located 85 feet North and 2,140 feet East from the SW corner of Section 34, Township 17 South, Range 11 East (W.M.)

Outback Well 9
Located 740 feet North and 2,925 feet East from the SW corner of Section 34, Township 17 South, Range 11 East (W.M.)

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DISCLAIMER
This map was prepared for the purpose of identifying the location of a water right only and it is not intended to provide legal dimensions or location of property ownership lines.

Date: December 8, 2023
Data Sources: BLM, ESRI, OWRD, USGS





File: 247-23-000821-PS

Proposal:

The City of Bend is applying for a new groundwater right for use at an unknown point in the future. If granted, the right would allow additional water to be drawn from existing wells or possibly a new well.

Comment:

County staff understands there is no development being proposed at this time. This Land Use Compatibility Statement does not approve any alterations to, or expansion of, the site.

The "Outback" site is located within an area that is subject to County land use review. In previous discussions between the City of Bend and Deschutes County, it is understood that the City is exploring a variety of possible future development activities. These include, but are not limited to, redevelopment of the site, new office space, expansion of the site, and changing the method of water distribution from the site to areas served by the City. Activities such as these require land use applications to be submitted and approved before any development can commence. Such applications may include, but again are not limited to:

- Site Plan Review
- Conditional Use
- Text Amendment to the Deschutes County Code, Title 18 and/or Title 19
- Comprehensive Plan Amendment and Zone Change
- Exception to Statewide Planning Goal 4

If any of the development activities are contemplated in the future, staff encourages the City of Bend to contact the Deschutes County Community Development Department for further information.

Thank you,

A handwritten signature in black ink that reads "Jacob Ripper".

Jacob Ripper, Principal Planner
Deschutes County Community Development Department

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Attachment B

Legal Descriptions

Application for Groundwater Permit - City of Bend

Neff Well (tax lot 171227CC05300)

REVIEWED
dam
LEGAL COUNSEL

Deschutes County Official Records
Nancy Blankenship, County Clerk

2018-40780



\$103.00

10/09/2018 12:22:35 PM

D-D Cnt=1. Str=2 AS
\$15.00 \$11.00 \$61.00 \$10.00 \$6.00

After Recording, Return To:
City of Bend
Eric King, City Manager
710 NW Wall Street
Bend, OR 97703

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After recording, forward all tax
statements to:
Same as above

BARGAIN AND SALE DEED

DESCHUTES COUNTY, a political subdivision of the State of Oregon, "Grantor", conveys to the CITY OF BEND, OREGON, an Oregon municipal corporation, "Grantee", the following described real property:

That portion of the westerly 567.20 feet of the Southwest Quarter (SW ¼) of the Southwest Quarter (SW ¼) of Section Twenty Seven (27), Township Seventeen (17) South, Range Twelve (12) East W.M., lying Southerly of the Neff Road right of way in Deschutes County, Oregon. Containing 0.03 acre, more or less.

and,

That portion of the Southwest Quarter (SW ¼) of the Southwest Quarter (SW ¼) of Section Twenty Seven (27), Township Seventeen (17) South, Range Twelve (12) East W.M., lying Southerly of the Neff Road right of way in Deschutes County, Oregon, except that portion lying West of a line running North and South and parallel to the West boundary of said quarter section, which line runs through a point on the North side line of Neff Road which point is 84.95 feet North and 567.20 feet East of the Southwest corner of said section.

SUBJECT TO all encumbrances of record and those common and apparent on the land.

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR 215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930, AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010.

The true consideration for this conveyance is zero (0) dollars pursuant to Oregon Revised Statutes 271.330 (1), subject to the following condition: the subject property shall be used for a public purpose / public right of way for not less than 20 years, or the Grantor, its successors or assigns may enter and terminate this estate and title shall thereupon revert to Grantor, its successor or assigns.

SIGNATURES ON FOLLOWING PAGE

17	12	33	A	105			1-1	OFFICIAL RECORD OF DESCRIPTIONS OF REAL PROPERTY	
TWP. S. ROR. E. SEC. 1/4 1/4				TAX LOT NUMBER	TYPE	SPEC. IN REAL PROP.	COOR. AREA NUMBER	FORMERLY PART OF T.L. NO.	CITY
MAP NUMBER				ACCOUNT NUMBER		190			

INDENT EACH NEW COURSE TO THIS POINT	ADDITIONAL DESCRIPTION AND RECORD OF CHANGE	DATE OF ENTRY ON THIS CARD	DEED RECORD		ACRES REMAINING
			VOL.	PG.	
	Sec 33 - S 300' of NE 1/4 NE 1/4 EXCEPT: W 650'				
	B&S Crt. Order 5-28-74 Ordinance NS-1207	1-15-68	156	369	4.6
		7-31-74			
		4-25-80	297	388	

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Outback Wells 8 and 9 (current tax lot 171134000800)

17	11				6202	R	2	2-6 2-19
TWP.S.	RGE. E.	SEC.	1/4	1/16	TAX LOT NUMBER	TYPE	SPEC INT. IN REAL PROP.	CODE AREA NUMBER
MAP NUMBER					ACCOUNT NUMBER			
180789A					257780A			

OFFICIAL RECORD OF DESCRIPTIONS OF REAL PROPERTY
 DESCHUTES COUNTY ASSESSOR'S OFFICE

FORMERLY PART OF T.L. NO.

SUBDIVISION

6200R2

ADDITIONAL DESCRIPTION AND RECORD OF CHANGE	RECORDING DATE	DEED RECORD		ACRES REMAINING
		VOL.	PG.	
Miller, William E	W.D. 3-16-55	109	521	
Sec. 34 - Beg at S $\frac{1}{4}$ cor th S89°57'23"W 163.61 ft to TPOB th N42°58'14"E 615.78 ft th N34°49'03"E 357.11 ft th N10°43'50"E 113.59 ft th S81°08'56"W 622.64 ft th S34°26'56"W 921.52 ft th N89°57'23"E 491.73 ft to TPOB City of Bend	B&S 9-26-91	245	2780	10.59
CODE CHANGE	R.C.	92	134	

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Outback Well 7 (TL 181100000200)

18 11 200 1-4				OFFICIAL RECORD OF DESCRIPTIONS OF REAL PROPERTY			
1-2				DESCHUTES COUNTY ASSESSOR'S OFFICE			
TWP. B.	RGE. E.	SEC.	1/4	TAX LOT NUMBER	TYPE	SPEC. INT. IN REAL PROP.	CODE AREA NUMBER
ACCOUNT NUMBER				SECTION	TOWNSHIP B.	RANGE E.	
LOT NO.	BLOCK NO.	ADDITION		CITY		ACRES REMAINING	
INDENT EACH NEW COURSE TO THIS POINT	ADDITIONAL DESCRIPTION AND RECORD OF CHANGE		FORMERLY PART OF T. L. NO.	DATE OF ENTRY ON THIS CARD	DEED RECORD VOL.	PG.	ACRES REMAINING
Sec. 3	Lots 1,2,3,4,	S $\frac{1}{2}$ NW $\frac{1}{4}$, S $\frac{1}{2}$ NE $\frac{1}{4}$, S $\frac{1}{2}$		642.58			
4	Lots 1,	S $\frac{1}{2}$ NW $\frac{1}{4}$, S $\frac{1}{2}$		440.59			
5		NE $\frac{1}{4}$ SE $\frac{1}{4}$, S $\frac{1}{2}$ S $\frac{1}{2}$		200.00			
6	Lots 7,	SE $\frac{1}{4}$ SW $\frac{1}{4}$, S $\frac{1}{2}$ SE $\frac{1}{4}$		164.14			
7	Lots 1,2,3,4,	E $\frac{1}{2}$ NW $\frac{1}{4}$, E $\frac{1}{2}$ SW $\frac{1}{4}$, E $\frac{1}{2}$		653.60			
8	All			640.00			
9	All			640.00			
10	All			640.00			
11	W $\frac{1}{2}$,	W $\frac{1}{2}$ E $\frac{1}{2}$		480.00			
14	All			640.00			
15	All			640.00			
16	All			640.00			
17	All			640.00			
18	Lots 1,2,3,4	E $\frac{1}{2}$ NW $\frac{1}{4}$, E $\frac{1}{2}$ SW $\frac{1}{4}$, E $\frac{1}{2}$		648.70			
19	Lots 1,2,3,4,	E $\frac{1}{2}$ NW $\frac{1}{4}$, E $\frac{1}{2}$ SW $\frac{1}{4}$, E $\frac{1}{2}$		644.00			
20	All			640.00			
21		N $\frac{1}{2}$, N $\frac{1}{2}$ SW $\frac{1}{4}$, SW $\frac{1}{4}$ SW $\frac{1}{4}$, N $\frac{1}{2}$ SE $\frac{1}{4}$, SE $\frac{1}{4}$ SE $\frac{1}{4}$		560.00			
22		N $\frac{1}{2}$, N $\frac{1}{2}$ S $\frac{1}{2}$, SW $\frac{1}{4}$ SW $\frac{1}{4}$, SE $\frac{1}{4}$ SE $\frac{1}{4}$ ly W of the ctr line of the main channel of the river		548.23			
23	That part of Sec. 23 ly N & W of the river			258.62			
26	Lots 1,2			79.80			
27	Lots 1,2,3,5,6,7,8,	S $\frac{1}{2}$ NW $\frac{1}{4}$, SW $\frac{1}{4}$ NW $\frac{1}{4}$		407.01			
28	All			640.00			
29	All			640.00			
30	Lots 1,2,3,4,	E $\frac{1}{2}$ NW $\frac{1}{4}$, E $\frac{1}{2}$ SW $\frac{1}{4}$, E $\frac{1}{2}$		638.82			
31	Lots 1,2,3,4,	E $\frac{1}{2}$ NW $\frac{1}{4}$, E $\frac{1}{2}$ SW $\frac{1}{4}$, E $\frac{1}{2}$		635.74			
32	All			640.00			
33	All			640.00			

OVER

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18	11			200			1-4
TWP. & RGE. E. SEC.	1/4 1/4	TAX LOT NUMBER	TYPE	SPEC. INT. NO. REAL PROP.	CODE AREA NUMBER		

OFFICIAL RECORD OF DESCRIPTIONS OF REAL PROPERTY
DECHUTES COUNTY RECORDER'S OFFICE

SECTION	TOWNSHIP S.	RANGE E.
---------	-------------	----------

LOT NO.	BLOCK NO.	ADDITION	DATE OF ENTRY ON THIS CARD	DEED RECORD VOL.	PAGE	CITY	ACRES REMAINING
		Sec. 34 Lots 1,2,3,4,5,6,7,8, 9,10,11,12, SW $\frac{1}{4}$					638.32
		35 Lots 1,2,3,4,5,6,7,8, E $\frac{1}{2}$					658.04
		36 W $\frac{1}{2}$ SW $\frac{1}{4}$	1/1/61				80.00
		Less T.L. 201	7/21/64				80.0
		Less T.L. 100 181127B 120.0 acres	9-8-75				16058.19
			12-12-78			2336	15978.19
		R.C.	9-26-80	328	610		
		O.C.	8-20-84	69	314		
		Ease	8-29-84	70	810		
		Ease Deed	10-22-84	76	578		
		Ease Deed	12-4 -84	81	469		
		Less T.L. 2000 237.19 ac					
		Exchange Deed	12-4 -84	81	471		
		Patent	12-4 -84	81	471		15621.0
		36-85-0001	9-19-85	104	328		
		Ease					

151647

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Attachment C

Application Maps

Application for Groundwater Permit – City of Bend

From: [RATCLIFFE Katie S * WRD](#)
To: [Mikaela Clarke](#)
Cc: [Owen McMurtrey](#)
Subject: RE: Map Scale Waiver Request for City of Bend Groundwater Permit Application
Date: Monday, December 11, 2023 9:18:43 AM

Good morning Mikaela,

I approve use of this map scale for this application for the purposes of application intake. Please include a copy of this email with application submittal so that our Customer Service Group has it in hand. If we end up needing a closer level of detail of any area of the map when the caseworker and/or Groundwater Section do their reviews, we will let you know. Please note that I have not checked the map against the other requirements of OAR [690-310-0050](#).

Katie

Katie Ratcliffe

Water Rights Section Manager
Oregon Water Resources Department
Phone: 971-338-8105 (work cell)
katie.s.ratcliffe@water.oregon.gov

From: Mikaela Clarke <mclarke@gsiws.com>
Sent: Friday, December 8, 2023 1:30 PM
To: RATCLIFFE Katie S * WRD <Katie.S.RATCLIFFE@water.oregon.gov>
Cc: Owen McMurtrey <OMcMurtrey@gsiws.com>
Subject: Map Scale Waiver Request for City of Bend Groundwater Permit Application

Hi Katie,

I'm writing to request a map scale waiver (per 310-0050 (2)(c)) for a groundwater permit application to be submitted on behalf of the City of Bend. The attached map uses a scale 1 inch = 7,000 ft in order to show the City of Bend's entire service area.

I understand you were looking for a lead caseworker to handle questions like this, so let me know if there's someone else I should reach out to with this question.

Please let me if there's anything else I can provide.

Thank you,
Mikaela

Mikaela Clarke
Water Resources Analyst
direct: 971.200.8501; mobile: 971.212.0276
650 NE Holladay Street, Suite 900, Portland, OR 97232
GSI Water Solutions, Inc. | www.gsiws.com
pronouns: she/her

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Attachment D

Well Logs

Pilot Butte Well 3 (DESC 52907) & Outback Well 7 (DESC 57760)

Application for Groundwater Permit – City of Bend

WATER SUPPLY WELL REPORT

(as required by ORS 537.765)

Instructions for completing this report are on the last page of this form.

DESC 52907 Amendment

Received Date 04/10/2000

Well ID Tag # L 39583

Start Card # 124991

(1) OWNER Well Number _____

Name CITY OF BEND

Street PO BOX 431

City BEND State OR Zip 97709

(9) LOCATION OF HOLE By legal description

County Deschutes Latitude Longitude

Township 17.00 S Range 12.00 E Subdivision

Tax lot 101 Lot Block

Section 33 NE 1/4 NE 1/4

Street Address of Well (or nearest address)
1402 NE LAFAYETTE

MAP with location identified must be attached

(2) TYPE OF WORK

New Alter (Reconditlon) Alter (Repair)

Deepening Abandonment

(3) DRILL METHOD

Rotary Air Rotary Mud Cable Auger

Other _____

(10) STATIC WATER LEVEL

786.0 Ft. below land surface. Date 02/15/2000

Artesian Pressure lb/sq. in. Date

(4) PROPOSED USE

Domestic Community Industrial Irrigation Injection

Livestock Thermal Other

(11) WATER BEARING ZONES

Depth at which water was first found 815 ft.

(5) BORE HOLE CONSTRUCTION

Special Standards Depth of completed well 1140 ft.

Explosives Used Amount Type

(12) WELL LOG

Ground Elevation _____ ft.

How as seal placed: Method Other

Backfill placed from _____ ft. TO _____ ft. Material _____

Filter pack from _____ ft. TO _____ ft. Size _____ in.

(6) CASING/LINER

Casing or Liner	Diameter	Begin Depth	End Depth	Gauge	Material	Construction	Location Of Shoe
C	14.00	0.00	862.00	.375	S	<input checked="" type="checkbox"/> <input type="checkbox"/>	

(7) PERFORATION/SCREENS

Perforation: Method

Screens: Type Material

(8) WELL TESTS (Minimum testing time is 1 hour)

Type	Yield	Units	Drawdown	Stem at	Duration
Pump	1000.0	G	30.0		24.0

Temperature of water 53 °F/C Depth artesian flow found _____ ft.

Was water analysis done?

By Whom?

Did any strata contain water not suitable for intended use? Too Little Salty

Muddy Odor Colored Other

Depth of strata _____ ft.

Date started 12/06/1999 Completed 03/24/2000

(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 well construction standards. Materials used and information reported above are true to the best knowledge and belief.

Signed By _____

(bonded) Water Well Constructor Certification: WWC Number _____

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed complies with Oregon well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 1464

Signed By GREG MCINNIS GEO-TECH EXPLORATIONS

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Salem, OR

DESC 52907

APR 10 2000

STATE OF OREGON WATER SUPPLY WELL REPORT WATER RESOURCES DEPT. SALEM, OREGON (as required by ORS 537.765)

WELL I.D. # L 39583 START CARD # 124991

Instructions for completing this report are on the last page of this form.

(1) OWNER: Well Number EB3 Name City of Bend Address PO Box 431 City Bend State OR Zip 97709

(2) TYPE OF WORK [X] New Well [] Deepening [] Alteration (repair/recondition) [] Abandonment

(3) DRILL METHOD: [X] Rotary Air [] Rotary Mud [] Cable [] Auger [] Other

(4) PROPOSED USE: [] Domestic [X] Community [] Industrial [] Irrigation [] Thermal [] Injection [] Livestock [] Other

(5) BORE HOLE CONSTRUCTION: Special Construction approval [X] Yes [] No Depth of Completed Well 1140 ft. Explosives used [] Yes [X] No Type Amount

Table with columns: HOLE (Diameter, From, To), SEAL (Material, From, To), Sacks or pounds. Includes entries for cement at 0-150 ft (134 bags) and 822-862 ft (66 bags).

How was seal placed: Method [] A [] B [X] C [] D [] E [] Other Backfill placed from 822 ft. to 150 ft. Material bent/sand gravel Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER: Table with columns: Diameter, From, To, Gauge, Steel, Plastic, Welded, Threaded. Includes entry for 14" casing from 0 to 862 ft.

Final location of shoe(s)

(7) PERFORATIONS/SCREENS: Table with columns: From, To, Slot size, Number, Diameter, Material, Casing, Liner. Includes entry for 1 3/8 x 3 screen from 860 to 1140 ft.

(8) WELL TESTS: Minimum testing time is 1 hour [X] Pump [] Bailer [] Air [] Flowing Artesian Yield gal/min 1,000 Drawdown 30 Drill stem at Time 24 hrs.

Temperature of water 53 Depth Artesian Flow Found Was a water analysis done? [] Yes By whom Did any strata contain water not suitable for intended use? [] Too little [] Salty [] Muddy [] Odor [] Colored [] Other Depth of strata:

(9) LOCATION OF WELL by legal description: County Deschutes Latitude Longitude Township 18 N or S Range 12 E or W. WM. Section 33 NE 1/4 NE 1/4 Tax Lot 101 Lot Block Subdivision Street Address of Well (or nearest address) 1402 NE Lafayette Bend, Oregon 97701

(10) STATIC WATER LEVEL: 786 ft. below land surface. Date 2-15-00 Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES: Depth at which water was first found 815

Table with columns: From, To, Estimated Flow Rate, SWL. Includes entries for 752-815 ft (NA flow rate, 752 ft SWL) and 871-1140 ft (1,000+ flow rate, 786 ft SWL).

(12) WELL LOG: Ground Elevation

Table with columns: Material, From, To, SWL. Contains text 'SEE ATTACHED SHEET' and 'Received by OWFD JAN 23 2024 Salem, OR'.

Date started December 6, 1999 Completed March 24, 2000 (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 [Signature] WWC Number 1672 Date

(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 [Signature] WWC Number 14164 Date

START CARD #: 124991

**FORMATION LOG FOR THE CITY OF BEND, PILOT BUTTE WELL #3
BY GEO-TECH EXPLORATIONS, INC.**

From/To	Material
0-6	Sand & Cobbles
6-352	Cinders, red, soft
352-370	Basalt, gray, hard
370-390	Lava & Pumice, soft, red
390-470	Lava, gray, porous
470-560	Basalt, fractured, gray
560-580	Basalt, broken
580-650	Basalt, fractured, gray
650-693	Basalt, gray, hard
693-700	Lava, red, medium
700-705	Basalt, weathered, soft
705-717	Basalt, gray, medium
717-725	Basalt, gray-red, porous
725-815	Basalt, gray, fractured, medium
815-854	Basalt, gray, broken
854-871	Basalt, fractured, hard
871-884	Lava, red & brown, loose
884-900	Lava, red & black, some cinders, red-pumice, soft
900-915	Lava, gray-black, soft
915-927	Basalt, gray, medium
927-940	Lava, gray-red, porous
940-973	Cemented pea gravels, weathered
973-987	Lava, gray, medium
987-1,040	Lava conglomerate
1,040-1,115	Lava, black & brown, soft
1,115-1,121	Basalt, gray, hard, pin holes
1,121-1,131	Lava, gray-brown, soft
1,131-1,141	Basalt, gray, hard

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Instructions for completing this report are on the last page of this form.

(1) OWNER: Well Number Outback #7
Name USFS Deschutes National Forest (Lessee: City of Bend)
Address 1001 Emkay (Lessee: PO Box 431)
City Bend State OR Zip 97702

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

(3) DRILL METHOD:
Rotary Air Rotary Mud Cable Auger
Other Reverse Circulation Rotary

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

(5) BORE HOLE CONSTRUCTION:
Special Construction approval Yes No Depth of Completed Well 860.5 ft.
Explosives used Yes No Type Amount

Table with columns: HOLE Diameter, From, To, SEAL Material, From, To, Sacks or pounds. Rows include cement, Intermediate Sealing Material, Bentonite, and Cement.

How was seal placed: Method A B C D E
Other Bentonite was poured & probed
Backfill placed from ft. to ft. Material
Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER: Table with columns: Diameter, From, To, Gauge, Steel, Plastic, Welded, Threaded. Rows for Casing and Liner.

Final location of shoe(s)

(7) PERFORATIONS/SCREENS: Table with columns: From, To, Slot size, Number, Diameter, Material, Casing, Liner. Includes perforations and screens.

(8) WELL TESTS: Minimum testing time is 1 hour

Table for well tests with columns: Yield gal/min, Drawdown, Drill stem at, Time. Includes Pump, Bailer, Air, Artesian options.

Temperature of water ~52F Depth Artesian Flow Found
Was a water analysis done? Yes By whom
Did any strata contain water not suitable for intended use? Too little
Salty Muddy Odor Colored Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County Deschutes Latitude Longitude
Township 18 S Range 11 E WM.
Section 3 NE 1/4 of NW 1/4
Tax Lot 200 Lot Block Subdivision
Street Address of Well (or nearest address) 18900 Skyliners Rd
Bend, OR 97709

(10) STATIC WATER LEVEL:
469.5 ft. below land surface. Date 10/17/06
Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:
Depth at which water was first found trace 456+; significant @ 612'

Table with columns: From, To, Estimated Flow Rate, SWL. Rows for 612, 456+, and 528-.

(12) WELL LOG:
Ground Elevation

Well log table with columns: Material, From, To, SWL. Includes stamps: Received by OWRD, JAN 23 2024, RECEIVED, DEC 08 2006, WATER RESOURCES DEPT SALEM, OREGON.

Date started 3/15/06 Completed 10/20/06

(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 Date

(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 649 Date 11/3/06



Oregon

Tina Kotek, Governor

Water Resources Department

North Mall Office Building
725 Summer St NE, Suite A
Salem, OR 97301-1266
Phone: 503-986-0900
Fax: 503-986-0904
www.Oregon.gov / OWRD



by Schneider Drilling Co.

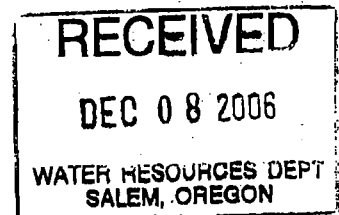
Start Card #168799 Label #L72483

<u>FM</u>	<u>TO</u>	<u>DESCRIPTION</u>
0	2	Top soil and basalt, broken
2	10	Basalt, grey, medium
10	16	Basalt, grey, medium, fractured
16	47	Basalt, grey, medium w/seams of red
47	66	Cinders, red w/seams of basalt, grey, medium
66	106	Pumice, white
106	157	Cinders, red w/seams of basalt, grey, medium & pumice, white
157	166	Pumice, tan
166	373	Pumice, tan & basalt, grey, medium & cinders, red
373	385	Basalt, grey, hard
385	397	Pumice, tan & basalt, grey, medium
397	400	Basalt, grey, hard, fractured
400	410	Cinders, red, soft
410	426	Basalt, grey hard
426	460	Basalt, grey, medium-hard interbedded with basalt, black, broken & cinders, black & red
460	475	Cinders, red w/black & pumice, tan; soft
475	508	Pumice, tan & cinders, red w/black; very soft
508	528	Cinders, red w/black, soft
528	548	Cinders, red & black, w/pumice, tan & some basalt chips, black
548	555	Cinders, red & black w/some pumice, tan
555	608	Pumice, tan w/cinders, red & black
608	610	Pumice, tan w/cinders, red-brown
610	639	Basalt, grey, hard, some fractures
639	647	Basalt, grey, hard-medium, wome fractures, w/some basalt, brown, fracture, occ vesicles
647	656	Basalt, grey, hard, some fractures
656	673	Basalt, grey red & brown, medium-soft, broken, some vesicles, some cinders
673	687	Cinders, red & brown, soft, broken, some vesicles
687	704	Basalt, grey hard
704	712	Basalt, red & grey, medium-hard
712	717	Cinders, red, soft
717	726	Basalt, dark red w/some grey, medium-hard
726	732	Basalt, grey, medium-hard
732	740	Basalt, dark red & grey, medium-hard, vesicular
740	743	Basalt, grey w/some red, medium-hard
743	745	Basalt, grey, hard
745	767	Basalt, grey red & brown, medium-soft, broken, some vesicles, some cinders
767	774	Basalt, dark red, medium, broken, w/some cinders, red
774	781	Basalt, red, soft, cindery w/some grey basalt
781	782	Basalt, grey red brown, medium-hard, w/some red cinders
782	832	Basalt, grey w/some red, hard, fractured
832	852	Basalt, red w/some brown, medium, fractured w/cinders & some pumice
852	860.5	Basalt, grey w/some red, hard, fractured & some cinders

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Oregon

Tina Kotek, Governor

Water Resources Department

North Mall Office Building

725 Summer St NE, Suite A

Salem, OR 97301-1266

Phone: 503-986-0900

Fax: 503-986-0904

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Attachment E

Form M

Application for Groundwater Permit – City of Bend

Oregon Water Resources Department

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FORM M

Salem, OR

FOR MUNICIPAL AND QUASI-MUNICIPAL WATER SUPPLIES

[Information needed to make findings related to ORS 537.153(3)(c)]

- Please supply the required information in the spaces provided below. If any section of this form is not applicable, please write N/A and provide an explanation why it does not apply.
- Do not attach reference documents. If there is a need, the Department will request them.
- Your signature is certification that identified information is contained in the reference document(s).
- If adequate space is not available on this form to describe and justify your request for additional water, attach additional pages as necessary.

Water Supplier Information

Please provide the following information related to the water supplier requesting additional water. It should be noted that the name of a water supplier is often different than the service area (e.g., *City of ABC and XYZ Urban Growth Boundary*).

Cities are not the only municipal corporation; many kinds of special districts are also allowed to purvey water. Applications requesting to use water for Quasi-Municipal use may be submitted by entities including, but not limited to, the following types of governance: a water association; private water company; or (if under the articles of incorporation) a broader corporation such as a destination resort. Please attach a copy of the article of incorporation related to your distribution of water.

Name of Water Supplier/Entity	Name of Service Area	Governance	Contact Person
City of Bend	City of Bend Service Area	City	Lori Faha
List any water suppliers within the same service area and/or any self-supplied industrial user. (Attach an extra sheet, if necessary.)			
*There are other water suppliers within the Bend city limits, but all current and projected conditions are pertinent only to the City of Bend's water service area.			

Request for Additional Water

Briefly explain the reason(s) for your request for additional water (e.g. *loss of current supply, backup, emergency supply, peak demand, growth, or other*). Much of the information needed may be contained in your Water Management and Conservation Plan, Water System Master Plan, or Capital Improvement Plan (as applicable).

Reason(s) for the Request for Additional Water	Time Table for Development of the Additional Water	Justification for Water Source & Amount Requested
In order to meet the City's 2045 projected maximum operational demand of 89.2 cfs.	The City is assuming a new groundwater permit would be issued in 2025, and expects to fully develop the requested water supply by 2045.	The City's projected peak demands are expected to exceed the maximum authorized rate of the City's municipal supply groundwater rights. A new groundwater right from planned City wells will be needed, in combination with the City's on-going conservation efforts, to meet the City's projected maximum operational demand of 89.2 cfs in 2045.

Water Management and Conservation

- Do you have an approved Water Management and Conservation Plan? Yes No
- List the "In-Effect" date of your most recently approved Water Management and Conservation Plan: Plan approved October 2021.
- Is your system fully metered? Yes No
- Do you perform annual water audits? Yes No
- Annual amount of water produced (MG): **4,640**
(diverted or appropriated)
- Annual amount of water billed for (MG): **4,399**
(metered consumption)
- Identify your system's current annual water loss: **5.2% (numbers based on 2015 – 2019 average)**
(difference between the amount of water produced and the water billed for)
- Describe your rate structure and billing schedule: The City has a base rate, which is contingent on meter size. It also has a volumetric rate based on the volume of water consumed.
[e.g., commodity rate (uniform rate, declining or inverted block rate); fixed charge with a commodity rate; or a fixed charge and commodity rate using a seasonal differential.]

Population

A supplier's population includes both permanent residential and transient populations. Residential population should be from census data or, if estimated, the method of estimation must be documented. Adopted comprehensive land use plans, water system master plans, or water management and conservation plans are examples of acceptable documentation. Transient populations are routine users of water by employers (*such as manufacturing or call center type facilities*) that increase the demand within a supplier's service area. Resort areas, regional airports, sea ports, areas with seasonally variable populations, and colleges/universities are also subject to this transient population test. Special events which are rare occasions (*such as parades, rodeos, festivals, etc.*) are not reasons to apply the transient population test.

Below, please indicate the current population to which you serve water, and cite the source of that information. Please also provide the historic population growth rate over the past 10 years and the projected population you anticipate serving in 20 years.

Present Population being Served:	Source of Information
77,126 in 2022	The City of Bend serves water to approximately 75% of the City's population. 75% of the City of Bend's certificate 2022 population estimate of 102,834 from Portland State Population Research Center.
Historic population growth rate over the past 10 years:	Source of Information
2.73% (58,703 in 2012 to 77,126 in 2022)	Portland State Population Research Center Certified Estimates, with corrections, as applicable.
Projected Population to be Served in 20 Years:	Source of Estimate/Method Used

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116,854 in 2045 (estimate assumes 75% of Bend UGB population is within City of Bend Service Area).

Chen, C., Sharygin, E., Whyte, M., Loftus, D., Rynerson, C., Alkitkat, H. (2022). Coordinated Population Forecast for Deschutes County, its Urban Growth Boundaries (UGB), and Area Outside UGBs 2022-2072. Population Research Center, Portland State University.

Current Water Supply

In the table below, please describe all of the sources of your current water supply inventory (*both active and inactive*). Identify those sources and associated water rights that are currently in use. Additionally, please identify any water sources/water rights that are not currently used, or used only on a seasonal or emergency basis, and describe the reason(s) why. If any portion of your water supply is being purchased, identify the supplying entity and, if possible, indicate the water source.

Water Source (Include any wholesale purchases of water)	Water Right Numbers (Permit and/or Certificate)	Priority Date	Amount of Water Allowed (cfs)	Actively Used? (Yes or No) If "No," explain.
Tumalo Creek or its Tributaries	85526	Senior to all other rights on Tumalo Creek	6.0	Yes
Tumalo Creek	31411	8/5/1900	2.0	Yes
		9/1900	4.5	Yes
		6/1/1907	0.02	Yes
Tumalo Creek	31665	9/1900	1.314	Yes
		4/28/1905	0.186	Yes
		6/1/1907	1.103	Yes
Tumalo Creek, Crater and Little Crater Creek, Three Spring Branches	96100	9/1900	1.63	Yes
		6/1/1907	0.39	Yes
		10/29/1913	Varies (2.43-5.99)	Yes
Tumalo Creek	96101	September 1900	1.62	Yes
		6/1/1907	0.39	
Bridge Creek	85713	12/12/1983	12.2	Yes
Bridge Creek	S-49823	12/12/1983	2.8	No, total use of surface water beyond 18.2 cfs not currently authorized.
Outback Wells 3, 4, 5, and 6 Bear Creek Well 2 Pilot Butte Well 4 Shiloh Well	94100	11/8/1968	7.75	Yes
Westwood Well Pilot Butte Well 4 Shiloh Well	94101	12/22/1978	0.94	Yes
Westwood Well	85411	12/22/1978	1.51	Yes

River Well 1 River Well 2 Pilot Butte Well 2 Copperstone Well	85412	10/13/1971	7.57	Yes
River Well 1 River Well 2 Pilot Butte Well 1 Bear Creek Well 1 Bear Creek Well 2	85413	10/13/1971	4.87	Yes
Outback Wells 1, 2, 3 and 4 Bear Creek Well 1 Airport Well 2*	85414	9/7/1990	10.0	Yes
River Well 1 River Well 2	85415	10/13/1971	2.7	Yes
River Well 1 River Well 2	68702	10/13/1971	0.9	Yes
Rock Bluff Wells 1, 2 and 3	85559	6/30/1989	4.16	Yes
Rock Bluff Wells 1, 2 and 3 Pilot Butte Well 3	G-11379	6/30/1989	3.84	Yes
Bear Creek Wells 3, 4, and 5 Shiloh Well Outback Well 7	G-18123	8/27/1992	12.0	Yes
Pilot Butte Wells 3, 4, and 5 Shiloh Well Outback Well 7	G-18124	8/27/1992	8.99	Yes
	95495		3.01	

Is this application for a new water use permit intended to be used as a primary or backup source? Explain how this right will be used to meet current demand and/or how it will be used to increase reliability and resiliency?

This application is for a new water use permit intended to be used at existing Outback Well 7 and Pilot Butte Well 3, and planned Neff Well and Outback Wells 8 & 9, which are and will be among the City's primary water supply wells. This water right will increase the maximum authorized rate of the City's municipal water supply groundwater rights from 44.24 cfs to 50.54 cfs, which will be required to meet projected demands.

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Current Water Use

Describe the nature of your current demands for water, as well as the water sources used to meet those needs.

Current Demands for Water (Year: 2023 (January through July) / 2021 (August through December))

Water Source (Including wholesale water purchases)	Water Right Numbers (Permit and/or Certificate)	Peak or Maximum Demand		Average Demand	
		Maximum Instantaneous Rate (<u>in cfs</u> or gpm)	Maximum Daily Demand (MG)	Average Daily Demand (MG)	Average Annual Demand (MG)
Tumalo Creek or its Tributaries	85526	6.0	11.66	7.70	2811
Tumalo Creek	31411	6.52			
Tumalo Creek	31665	2.603			
Tumalo Creek, Crater and Little Crater Creek, Three Spring Branches	96100	5.99			
Tumalo Creek	96101	2.01			
Bridge Creek	85713	12.2			
Bridge Creek	S-49823	0			
Outback Wells 3, 4, 5, and 6 Bear Creek Well 2 Pilot Butte Well 4 Shiloh Well	94100	7.75	20.67	4.62	1688
Westwood Well Pilot Butte Well 4 Shiloh Well	94101	0.94			
Westwood Well	85411	1.51			
River Well 1 River Well 2 Pilot Butte Well 2 Copperstone Well	85412	7.57			
River Well 1 River Well 2 Pilot Butte Well 1 Bear Creek Well 1 Bear Creek Well 2	85413	4.87			
Outback Wells 1, 2, 3 and 4 Bear Creek Well 1 Airport Well 2*	85414	10.0			
River Well 1 River Well 2	85415	2.7			
River Well 1 River Well 2	68702	0.9			
Rock Bluff Wells 1, 2 and 3	85559	4.16			
Rock Bluff Wells 1, 2 and 3 Pilot Butte Well 3	G-11379	2.35			
Bear Creek Wells 3, 4, and 5 Shiloh Well Outback Well 7	G-18123	3.01			
Pilot Butte Wells 3, 4, and 5 Shiloh Well Outback Well 7	G-18124	0			
	95495	3.01			

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- Per-capita daily demand (in gallons): **160 gpcd**
(Divide average annual water sales demand by population to arrive at consumption, and then divide by 365 to get daily values.)
- Peak season (by month/day): **6/1 to 9/30**
- Peak Season number of hours diverted/pumped (if available): **24**
- Peak season per-capita daily ~~consumption~~ demand (in gallons): **279 gpcd**
(Divide total peak season demand by population and the number of days during the peak.)
- Peaking Factor (ratio between max day demand and average day demand): **2.49**

Projected Water Use

Describe your anticipated water demands for the next 20 years, and identify the sources of water (*existing and/or new*) that will be used to meet those demands. Please also describe the methodology and/or information source used to make the projected water demand estimates.

Projected Demands for Water in 20 Years (Year: 2045)

- Current average per capita demand (in gallons per capita per day): **279**
- Projected population served in year (2045): **116,855**
- Projected average annual demand (MG) for 2045: **6,967**
- Projected average daily demand (MG): **19.09**
- ~~Current~~ projected peaking value factor: **2.49**
- Projected maximum daily demand (MG): **47.49**

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Water Source (Including wholesale water purchases)	Water Right Numbers (Permit and/or Certificate) If a new water source, indicate so.	Projected Peak Daily Demand		Projected Average Daily Demand	
		Maximum Instantaneous Rate (in cfs or gpm)	Maximum Daily Demand (MG)	Average Daily Demand (MG)	Average Annual Demand (MG)
Tumalo Creek or its Tributaries	85526	6.0	11.76	9.74	3,555
Tumalo Creek	31411	6.52			
Tumalo Creek	31665	2.603			
Tumalo Creek, Crater and Little Crater Creek, Three Spring Branches	96100	5.99			
Tumalo Creek	96101	2.01			
Bridge Creek	85713	12.2			
Bridge Creek	S-49823	2.8			
Outback Wells 3, 4, 5, and 6 Bear Creek Well 2 Pilot Butte Well 4 Shiloh Well	94100	7.75	35.73	9.35	3,413
Westwood Well Pilot Butte Well 4 Shiloh Well	94101	0.94			
Westwood Well	85411	1.51			
River Well 1 River Well 2 Pilot Butte Well 2 Copperstone Well	85412	7.57			
River Well 1 River Well 2 Pilot Butte Well 1 Bear Creek Well 1 Bear Creek Well 2	85413	4.87			
Outback Wells 1, 2, 3 and 4 Bear Creek Well 1 Airport Well 2*	85414	10.0			
River Well 1 River Well 2	85415	2.7			
River Well 1 River Well 2	68702	0.9			
Rock Bluff Wells 1, 2 and 3	85559	4.16			
Rock Bluff Wells 1, 2 and 3 Pilot Butte Well 3	G-11379	3.84			
Bear Creek Wells 3, 4, and 5 Shiloh Well Outback Well 7	G-18123	12.0			
Pilot Butte Wells 3, 4, and 5 Shiloh Well Outback Well 7	G-18124	8.99			
	95495	3.01			

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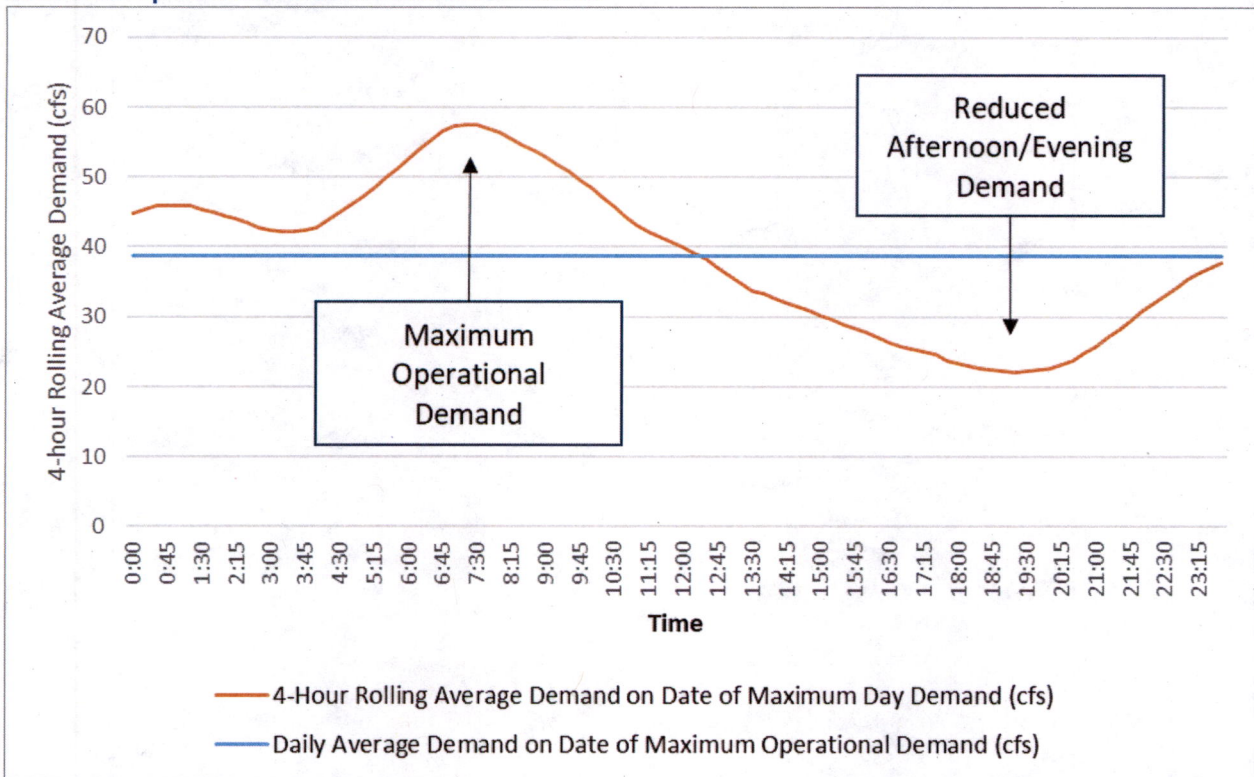
Salem, OR

Source or Methodology Used for Demand Projections:

The City's WMCP, approved in October 2021, forecasts the maximum operational (4-hour rolling average) demand through 2040 based on peaking factors described in the City's 2021 Water System Master Plan.

The City's water demands vary throughout the day, particularly during the peak season. Using the 4-hour rolling average demand reduces the impact of brief and anomalous spikes in source water demand. The City's diurnal water use pattern reflects, in part, restrictions on outdoor watering between 9 AM and 5 PM.

In this case, demand refers to water entering the distribution system, which lags behind customer use of water somewhat, due to the availability of finished water storage to meet short-term fluctuations in demand. For the purposes of these projections, the City used demand data from 2023 (from January through July) and 2021 (from August through December) to project future demands. The City used data from 2023 to provide the most recent data available during peak demand conditions, and used data from 2021 for the remainder of the year. Water demand conditions in 2021 were similar to those in 2023. The figure below shows the City's maximum operational demand on July 2, 2023, the date on which the maximum operational demand occurred in 2023.



The maximum operational demand is projected to increase at the same rate as the City's maximum day demand, projected in the City's 2021 Integrated Water System Master Plan. Because the City's water service area does not include the City's full population (Avion and Roats Water System provide service to portions of the City), the City's Integrated Water System Master Plan forecasted demand growth within the areas specifically planned to be served by the City's water utility.

The projected average annual growth rate is 2.52 percent from 2020 through 2030 and 1.74 percent from 2030 through 2040. In order to project through 2045, the City assumed a growth rate of 1.74 percent for another five years. The average growth rate from 2023 through 2045 is forecast to grow at an average annual rate of 1.99 percent. The City's projected maximum operational demand in 2045 is 89.2 cfs

$$(57.6 * e^{0.0199 * 22})$$

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Describe any issues, deficiencies or limitations associated with your current water supply inventory contributing to the need to acquire additional water in order to satisfy your current and/or projected 20-year demands:

For the purposes of projecting the City’s need for a new groundwater right, the City assumes a firm capacity of the City’s surface water supply of 6,600 gpm, which is the rate that the City can produce with one existing filter rack out of service, limiting the City to a surface water capacity of 14.7 cfs (6,600 gpm).

Annual Water Use by Type

In the table below, list the quantity of water ~~diverted~~ sold for each type of water use and the percentage of the total ~~diverted~~ sold associated with that use type:

Note that the table below presents information about water sales from Exhibits 2-12 and 2-14 in the City of Bend’s 2021 WMCP. The projected use in 20 years is scaled up in proportion to projected 2045 demand.

Type	Current Use (2019)		Use In 20 Years (2045)	
	Quantity Diverted Sold (MG):	Percentage of Total Diversion Sales:	Projected Quantity to be Diverted Sold (MG):	Percentage of Total Diversion Sales:
Single Family Residential:	2,250	54.7%	3,595	54.7%
Commercial:	1,065	25.9%	1,702	25.9%
Institutional ¹ : Multi-family Residential:	502	12.2%	802	12.2%
Agricultural ² : Irrigation-Only:	268	6.5%	428	6.5%
Industrial : Hydrant Meters:	27	0.7%	44	0.7%
Other: (specify use)				
System Water Loss:	209	5.7%	397	5.7%
Total Diverted Sold:	4,113	100%	6,571	100%

¹: Institution use includes water served to hospitals, federal, state, or municipal connections, and school districts.

²: Agricultural use includes any type of customer with a service connection dedicated for the raising of livestock or edible or non-edible crops.

Last revision: May 1, 2018/WRSD

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Attachment F

Conservation Benchmarks

Application for Groundwater Permit – City of Bend

Minimum Requirements Checklist

Minimum Requirements (OAR 690-310-0040, OAR 690-310-0050 & ORS 537.140)

Include this checklist with the application

Check that each of the following items is included. The application will be returned if all required items are not included. If you have questions, please call the Water Rights Customer Service Group at (503) 986-0900.

Please submit the original application and signatures to the Water Resources Department. Applicants are encouraged to keep a copy of the completed application.

- SECTION 1: Applicant Information and Signature
- SECTION 2: Property Ownership
- SECTION 3: Well Development
- SECTION 4: Sensitive, Threatened or Endangered Fish Species Public Interest Information
- SECTION 5: Water Use
- SECTION 6: Water Management
- SECTION 7: Project Schedule
- SECTION 8: Resource Protection
- SECTION 9: Within a District
- SECTION 10: Remarks

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Include the following additional items:

- Land Use Information Form with approval and signature of local planning department (*must be an original*) or signed receipt. [Attachment A](#)
- Provide the legal description of: (1) the property from which the water is to be diverted, (2) any property crossed by the proposed ditch, canal or other work, and (3) any property on which the water is to be used as depicted on the map. [Attachment B](#)
- Fees - Amount enclosed: **\$6,690**
See the Department's Fee Schedule at www.oregon.gov/owrd or call (503) 986-0900.
- Map that includes the following items: [Attachment C](#)
 - Permanent quality and drawn in ink
 - Even map scale not less than 4" = 1 mile (example: 1" = 400 ft, 1" = 1320 ft, etc.)
 - North Directional Symbol
 - Township, Range, Section, Quarter/Quarter, Tax Lots
 - Reference corner on map
 - Location of each diversion, by reference to a recognized public land survey corner (distances north/south and east/west)
 - Indicate the area of use by Quarter/Quarter and tax lot identified clearly.
 - Number of acres per Quarter/Quarter and hatching to indicate area of use if for primary irrigation, supplemental irrigation, or nursery
 - Location of main canals, ditches, pipelines or flumes (if well is outside of the area of use)



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Via electronic mail to wrd_dl_customerservice@water.oregon.gov

December 27, 2023

Katie Ratcliffe
Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, OR 97301

RE: Application for a Permit to Use Groundwater, City of Bend

Dear Katie,

Please find enclosed an application for a permit to use groundwater, which is being filed on behalf of the City of Bend. The City is proposing to appropriate groundwater at a rate of up to 6.2 cfs from 5 proposed points of appropriation.

The permit application fee of \$6,690 will be mailed to OWRD after we receive the temporary number for this application.

Please let me know if you have any questions or if there's any additional information I can provide. I can be reached at 541-257-9005 or OMcMurtrey@gsiws.com.

Sincerely,
GSI Water Solutions, Inc.

A handwritten signature in black ink that reads "Owen McMurtrey". The signature is written in a cursive, slightly slanted style.

Owen McMurtrey
Water Resources Consultant

Cc: Lori Faha, Environmental Resources Manager, City of Bend

Enclosures: Groundwater Permit Application and Attachments

City of Bend Conservation Program Description and 2025 Benchmarks

Descriptions of conservation measures and five-year benchmarks are found in Section 3.4 of the City's 2021 WMCP.

OAR 690-086-0150 (Municipal Water Conservation Element for a Municipal WMCP) Section Requirement	OAR 690-086-0150 Sub-section Requirement (Conservation Program Measure)	2020 Conservation Program Description	Five-year (2025) Conservation Benchmark
<p>(4) A description of the specific activities, along with a schedule that establishes five-year Benchmarks, for implementation of each of the following conservation measures that are required of all Municipal Water Suppliers</p>	<p>(4)(a) Annual Water Audit: An annual water audit that includes a systematic and documented methodology for estimating un-metered authorized and unauthorized uses, and an analysis of the water supplier's own water use to identify alternatives to increase efficiency</p>	<p>The City audits its water system monthly and summarizes the audit results annually. The City's water loss was 5.7 percent in 2019 and averaged 5.2 percent from 2014 through 2019. Water loss has been below 10 percent since 2008.</p>	<p>The City will continue to conduct annual water audits utilizing the AWWA M36 Water Audit Methodology.</p> <p>The City will consult with an external water loss control expert to perform a third-party validation of the M36 Water Audit results at least once in the next five years.</p> <p>The City will assess annual audit results as part of an evaluation of potential system and operational improvements.</p>
	<p>(4)(b) System Metering: If the system is not fully metered, a program to install meters on all un-metered Water Service Connections</p>	<p>All connections within the water system are metered. The City implemented AMI, built by Aclara and paired with Badger E-Series Ultrasonic Meters. Automated Meter Reading (AMR) equipment is installed on all meters.</p>	<p>The City will continue to install AMI meters on all new water connections.</p> <p>The City will investigate the feasibility of adding AMI meters to detects on fire flow connections, related fire systems, and bypass vaults.</p>
	<p>(4)(c) Meter Testing and Maintenance Program</p>	<p>Production meters connected to SCADA are tested annually.</p> <p>All customer meters 3 inches and larger are tested on an annual basis following AWWA's M36 Water Audit and Loss Control guidelines.</p> <p>The City samples a percentage of customer meters 1 inch and smaller for annual testing.</p> <p>The City replaces customer meters when they reach a metered volume of 300,000 cubic feet, roughly corresponding to a 20-year lifespan.</p> <p>The City is developing a standardized production Meter Verification Program.</p>	<p>The City will continue to develop a standardized production Meter Verification Program.</p> <p>The City will continue to test all large meters annually.</p> <p>The City will develop a formal annual Testing and Meter Replacement Program for 1.5-inch to 2-inch meters.</p> <p>The City will complete development of a Small Meter Testing and Replacement Program (3/4-inch and 1-inch meters) aligning with AWWA's M36 Water Audits and Loss Control Program standards. The program will allow gradual transition to use of new electromagnetic meters as adopted in the City of Bend Standards and Specifications.</p>

OAR 690-086-0150 (Municipal Water Conservation Element for a Municipal WMCP) Section Requirement	OAR 690-086-0150 Sub-section Requirement (Conservation Program Measure)	2020 Conservation Program Description	Five-year (2025) Conservation Benchmark
	<p>(4)(d) Rate Structure: A rate structure under which customers' bills are based, at least in part, on the quantity of water metered at the service connections</p>	<p>The City has a base rate, which is contingent on meter size. It also has a volumetric rate based on the volume of water consumed, which currently applies uniformly to all customer classes.</p> <p>The City reviews existing customer categories and rate classes as part of its annual rate review process to promote efficiency and equity.</p>	<p>The City will continue to bill customers based on the existing uniform rate structure, which charges customers based on the volume of water they consume.</p> <p>The City will complete implementation of an updated utility billing system, which will provide the administrative feasibility to change rate structures in the future.</p> <p>The City will continue to review existing customer categories and rate classes as part of its annual rate review process to promote efficiency and equity.</p>
<p>(4) A description of the specific activities, along with a schedule that establishes five-year Benchmarks, for implementation of each of the following conservation measures that are required of all Municipal Water Suppliers</p>	<p>(4)(e)* Water Loss Analysis: Applicable if losses exceed 10%</p>	<p><i>*Not required - The City's water loss has been below 10 percent since 2008. The City still continues its efforts to minimize water loss:</i></p> <p>The City has maintained a Distribution System Leak Detection Program since 2004 and completes an annual Leak Detection Report as part of its M36 Water Audit Program.</p> <p>The City has a Customer Leak Notification Program which uses its AMI metering infrastructure software.</p> <p>The City has correlated pipeline replacement with street maintenance to minimize redundant construction costs and loss of service.</p>	<p>The City will continue efforts to minimize water loss by continuing the Distribution System Leak Detection Program and completing an annual Leak Detection Report as part of its M36 Water Audit Program.</p> <p>The City will evaluate the feasibility of developing a pipe replacement program to identify and replace aging and failing pipe segments on an annual basis as outlined in the City's Capital Improvement Plans, to be adopted in late 2020 or early 2021.</p>

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	<p>(4)(f) Public Education: A public education program proportional to the size of the Municipal Water Supplier to encourage efficient indoor and outdoor water use that includes regular communication of the supplier's water conservation activities and schedule to customers</p>	<p>The City implements a comprehensive Public Education Program that promotes water conservation, which includes the following:</p> <p>Website Content: The City has web pages promoting indoor and outdoor water conservation at WaterWisetips.org. The site provides a comprehensive list of resources for customers on water use efficiency, seasonal events and program offerings. Customers can report water waste, request free indoor conservation kits, and evaluate their water use through the City's customer engagement software.</p> <p>WaterWise Guides: The City created three WaterWise publications that offer water efficient tips on landscaping, irrigation, and street-side landscaping specific to Central Oregon. WaterWise Guides are available at nearly 20 local garden centers, nurseries, libraries, at City facilities, and online on the City's WaterWise Program webpage.</p> <p>Annual Outdoor Water Conservation Campaign: The City conducts an outdoor water conservation media campaign annually from April through October to coincide with peak seasonal water demands. The City plans to formalize public outreach of seasonal water conservation messages under a Seasonal Advisory Alert messaging program. Seasonal Advisory Alert messages are intended to heighten awareness regarding water use efficiency with landscaping and irrigation and to inform water customers of water demands and help them manage consumption during the peak season. To declare a Seasonal Advisory Alert, the City may contact local media, post public service announcements on its website and social media, and provide notifications on water bills, utility bill inserts, or through the customer engagement portal.</p> <p>Conservation Connection Newsletter: The WaterWise Program sends a quarterly newsletter to over 150 local green industry contractors, irrigators, architects, and designers. The newsletter discusses local issues that affect the green industry with a focus on reducing outdoor water use.</p> <p>Workshops and Events</p>	<p>The City will continue to update its educational resources for customers and the landscape industry through the City's WaterWise website, workshops, and related educational outreach activities.</p> <p>The City will formalize seasonal public outreach efforts under the Seasonal Advisory Alert Program.</p> <p style="text-align: right;">Received by OWRD JAN 23 2024 Salem, OR</p>

OAR 690-086-0150 (Municipal Water Conservation Element for a Municipal WMCP) Section Requirement	OAR 690-086-0150 Sub-section Requirement (Conservation Program Measure)	2020 Conservation Program Description	Five-year (2025) Conservation Benchmark
<p>(5)If the Municipal Water Supplier serves a population greater than 1,000 and proposes to expand or initiate diversion of water under an Extended Permit for which resource issues have been identified under OAR 690-086-0140 (Municipal Water Supplier Description for a Municipal WMCP)(5)(i), or if the Municipal Water Supplier serves a population greater than 7,500, a description of the specific activities, along with a schedule that establishes five-year Benchmarks, for implementation of each of the following measures; or documentation showing that implementation of the measures is neither feasible nor appropriate for ensuring the efficient use of water and the prevention of waste:</p>	<p>(5)(a) Technical and Financial Assistance: Technical and financial assistance programs to encourage and aid residential, commercial, and industrial customers in the implementation of conservation measures</p>	<p>The City provides technical and financial assistance to customers through a variety of means, including the following:</p> <p>Indoor Water Conservation Kits: The City offers indoor water conservation kits, which include a water-efficient showerhead, two bathroom faucet aerators, a shower timer, a dual-spray kitchen faucet aerator, toilet leak detection dye tabs, plumber's tape, and installation instructions. Multi-family and apartment complex owners are eligible for a more customized combination of indoor water conservation items. Since the City began offering the kits in 2016, it has distributed approximately 300 kits annually, with an estimated 85 percent going to single family residential customers and 15 percent going to multi-family residential customers.</p> <p>Sprinkler Inspection Program: The City has a Sprinkler Inspection Program that offers free outdoor water surveys for single family residential customers. Sprinkler inspections include a visual check to pinpoint any problems with the irrigation system, tests to measure how much water the irrigation system delivers, irrigation system pressure, and soil sampling to determine root depth and soil type. Program participants receive a customized inspection report with a water budget and recommended watering schedule, as well as recommendations and tips to make their irrigation system more efficient.</p> <p>Large Landscape Program: The City's Large Landscape Program offers free outdoor water audits to customers with large landscapes (of approximately 1 acre or more). Examples of program participants include multi-family residences, commercial establishments, schools, parks, and churches. City conservation staff meet with landscape owners to inspect irrigation systems, develop detailed irrigation water budgets, track actual water use</p>	<p>The City will continue the Large Landscape Program.</p> <p>The City will continue to offer the Sprinkler Inspection Program to its residential customers during the irrigation season.</p> <p>The City will continue to evaluate the feasibility and effectiveness of the use of Home Water Use Reports as a customer outreach and awareness tool.</p>

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<p>(5) If the Municipal Water Supplier serves a population greater than 1,000 and proposes to expand or initiate diversion of water under an Extended Permit for which resource issues have been identified under OAR 690-086-0140 (Municipal Water Supplier Description for a Municipal WMCP)(5)(i), or if the Municipal Water Supplier serves a population greater than 7,500, a description of the specific activities, along with a schedule that establishes five-year Benchmarks, for implementation of each of the following measures; or documentation showing that implementation of the measures is neither feasible nor appropriate for ensuring the efficient use of water and the prevention of waste:</p>	<p>(5)(e) Other Identified Conservation Measures: Any other conservation measures identified by the water supplier that would improve water use efficiency.</p>	<p>Now that the City has updated its Engineering Standards and Specifications document, it is reviewing the Bend Development Code for opportunities to require more water-efficient landscaping standards in private development projects.</p> <p>The City continues to develop and maintain partnerships that advance water conservation efforts. The City has partnerships with large customers, including the local school district, local parks district, state parks, churches, and homeowner associations. The City has public education partnerships with groups such as Oregon State University Extension Service, Central Oregon Community College, and Central Oregon Builders Association. The City has also worked with the Transportation and Mobility's landscape department to upgrade controllers in City-owned right of way landscapes through the Large Landscape Program.</p> <p>To continue to stay informed about the latest water conservation standards and technologies, the City is an EPA WaterSense Partner and is a member of the Alliance for Water Efficiency, Irrigation Association, and Oregon Landscape Contractors Association.</p> <p>The City has been evaluating current and potential water savings from water conservation measures in an effort to maximize the cost-effectiveness of its Water Conservation Program. Since 2016, the City has been utilizing the Alliance for Water Efficiency Water Conservation Tracking Tool to quantify savings of existing conservation measures.. The City used the 2020 Water Savings and Cost-effectiveness Analysis to identify a cost-effective Water Conservation Program that included a number of additional measures that, if implemented, may result in</p>	<p>The City will begin a code alignment and update process with the goal of increasing efficiency of outdoor water use through adoption of best management practices to promote water use efficiency in various related sections of City of Bend codes and specification documents.</p> <p>The City will explore the feasibility of updating and aligning indoor water use efficiency and related best management practices and other code improvements that will increase the water use efficiency inside of homes and businesses using nationally recognized EPA WaterSense standards that will work in Bend.</p> <p>Over the next five years City staff will work with City Management and the City Council to identify which of the new measures identified in the Water Conservation Program Water Savings and Cost-effectiveness Analysis (described in Section 3.3) to fund and implement.</p>

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		<p>significant water savings and avoided infrastructure cost of \$21,000,000 over 20 years. The conservation measures include outdoor and indoor conservation measures and accompanying rebates for new efficient equipment. The outdoor measures will focus on reducing the peak demands in irrigation season through water efficiency standards and specifications for new development.</p> <p>In addition, the City of Bend Code has irrigation regulations in place in an effort to increase water use efficiency and spread customer demand over the course of the day and week. No irrigation is allowed between 9 a.m. and 5 p.m. Customers with even addresses must irrigate on even days and with odd addresses must irrigate on odd days. Zero sprinkler overspray and runoff is allowed.</p>	
	(5)(e) Other Identified Conservation Measures (cont.)		

AWWA = American Water Works Association

EPA = U.S. Environmental Protection Agency

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