

Schwabe

May 9, 2024

Received by OWRD

MAY 09 2024

Salem, OR

Elizabeth E. Howard
Admitted in Oregon and Washington
Shareholder
D: 503-796-2093
C: 503-312-8765
ehoward@schwabe.com

HAND DELIVERED

Kerri Cope
Tamera Smith
Oregon Water Resources Department
725 Summer St, NE, Suite A
Salem, Oregon 97301

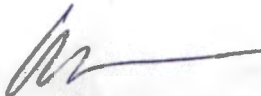
RE: Pinnacle Utilities, LLC's Water Management & Conservation Plan
Our File No.: 135849-277236

Dear Ms. Cope and Ms. Smith:

Please find enclosed Pinnacle Utilities, LLC's Water Management & Conservation Plan, dated April 9, 2024. Enclosed as Attachment I are Deschutes County's comments on the Plan, dated April 10, 2024. Pinnacle Utilities LLC requested Deschutes County's review and feedback on the Plan on April 9, 2024. Please withdraw the filing fee (\$1220) from our Schwabe account.

Please confirm receipt of the Plan, and please let us know who will be reviewing the Plan. Thank you.

Very truly yours,



Elizabeth E. Howard

EEH:cwe
Enclosure

cc: Pinnacle Utilities LLC *via email* (without encl.)
YoungWoo Joh, Department of Justice *via email* (without encl.)
Will Davidson *via email* (without encl.)
Lisa Jaramillo *via email* (without encl.)

**WATER MANAGEMENT AND
CONSERVATION PLAN**

PREPARED FOR

**PINNACLE UTILITIES, LLC
THORNBURGH RESORT**

REDMOND, OREGON

**PREPARED/REVISED
APRIL 9, 2024**

Received by OWRD

MAY 09 2024

Salem, OR

TABLE OF CONTENTS

PAGE

1.	OAR 690-086-0125 WATER MANAGEMENT AND CONSERVATION PLAN	4
	1.01 SUPPLIER	4
	1.02 REASON FOR SUBMITTAL OF WMCP	4
	1.03 OAR 690-086-0125(5) AFFECTED LOCAL GOVERNMENTS.....	4
	1.04 OAR 690-086-0125(6) PROPOSED DATE FOR SUBMITTAL OF UPDATES	4
	1.05 OAR 690-086-0125(7) METER INSTALLATION STATUS.....	4
2.	OAR 690-086-0140 WATER SUPPLIER DESCRIPTION.....	4
	2.01 OAR 690-086-0140(1) WATER SOURCES.....	4
	2.02 OAR 690-086-0140(2) SERVICE AREA AND POPULATION	6
	2.03 OAR 690-086-0140(3) PRESENT AND FUTURE ADEQUACY OF WATER SUPPLY	7
	2.04 OAR 690-086-0140(4) HISTORIC WATER USE.....	8
	2.05 OAR 690-086-0140(5) WATER RIGHTS	9
	2.06 OAR 690-086-0140(6) WATER CUSTOMERS.....	10
	2.07 OAR 690-086-0140(7) INTERCONNECTIONS WITH OTHER MUNICIPAL SUPPLIERS	13
	2.08 OAR 690-086-0140(8) SYSTEM SCHEMATIC	13
	2.09 OAR 690-086-0140(9) SYSTEM LOSSES.....	13
3.	OAR 690-086-0150 WATER CONSERVATION	13
	3.01 OAR 690-086-0150(1) PROGRESS REPORT FROM PREVIOUSLY APPROVED WMCP	13
	3.02 OAR 690-086-0150(2) WATER USE MEASUREMENT AND REPORTING	14
	3.03 OAR 690-086-0150(3) OTHER CONSERVATION MEASURES	14
	3.04 OAR 690-086-0150(4) PLANNED CONSERVATION MEASURES	14
	A. OAR 690-086-0150(4)(a) Annual Water Audits - Not currently performed, as system is not yet constructed.	14
	B. OAR 690-086-0150(4)(b) System Metering – Water System has not yet been developed but will be fully metered when constructed.	14
	C. OAR 690-086-0150(4)(c) Meter Testing & Maintenance Program – Not instituted to date, but a testing and maintenance plan will be developed after construction.....	15
	D. OAR 690-086-0150(4)(d) Water Use Rate Structure – Not instituted to date, but to be developed prior to water use.....	15
	E. OAR 690-086-0150(4)(e) Leak Detection if System Leakage Exceeds 10% – Not instituted to date; to be developed in conjunction with implementation of water audit program.....	15
	F. OAR 690-086-0150(4)(f) Water Conservation Public Education Program – None to date but will be developed prior to unit sales.	15
	3.05 OAR 690-086-0150(5) MUNICIPAL WATER SUPPLIERS SERVING OVER 1,000.....	16
4.	OAR 690-086-0160 WATER CURTAILMENT	16

Received by OWRD

MAY 09 2024

Salem, OR

4.01 OAR 690-086-0160(1) CAPACITY AND PREVIOUS SUPPLY DEFICIENCIES. 16

4.02 OAR 690-086-0160(2-4) ALERT STAGES, TRIGGERS, AND CURTAILMENT ACTIONS 16

5. OAR 690-086-0170 WATER SUPPLY 17

5.01 OAR 690-086-0170(1) CURRENT AND FUTURE SERVICE AREA 17

5.02 OAR 690-086-0170(2) FULL EXERCISE OF WATER RIGHTS 18

5.03 OAR 690-086-0170(3) PROJECTED WATER DEMAND..... 18

5.04 OAR 690-086-0170(4) PROJECTED WATER NEEDS VS. CURRENT SOURCES 22

5.05 OAR 690-086-0170(5) ALTERNATIVES TO EXPANSION OF APPROPRIATION 22

5.06 OAR 690-086-0170(6) EXPANSION OF APPROPRIATION..... 24

5.07 OAR 690-086-0170(7) MITIGATION REQUIREMENTS 24

5.08 OAR 690-086-0170(8) ALTERNATIVE SOURCE ANALYSIS 24

Received by OWRD
MAY 09 2024
Salem, OR

1. OAR 690-086-0125 WATER MANAGEMENT AND CONSERVATION PLAN (“WMCP”)

1.01 SUPPLIER

Pinnacle Utilities, LLC
Attn: Kameron DeLashmutt
2447 NW Canyon Dr
Redmond, OR 97756
541-350-8479

Received by OWRD
MAY 09 2024
Salem, OR

1.02 REASON FOR SUBMITTAL OF WMCP

Pinnacle Utilities, LLC (“Pinnacle”) is the water right holder and the entity responsible for supplying water to the planned Thornburgh Resort. Pinnacle submits this WMCP as required by Permit G-17036. This WMCP also addresses Temporary Transfer T-13703.

1.03 OAR 690-086-0125(5) AFFECTED LOCAL GOVERNMENT LIST AND SUBMITTAL.

A copy of this WMCP was made available to the affected local government, Deschutes County Planning Department, in draft form on April 9, 2024. Deschutes County’s comments are attached in **Attachment 1**, letter from Jacob Ripper, Senior Planner dated April 10, 2024.

1.04 OAR 690-086-0125(6) PROPOSED DATE FOR SUBMITTAL OF UPDATES

Pinnacle proposes to submit a WMCP update 10 years after the issuance of OWRD’s Final Order approving this WMCP, with a progress report at 5 years following issuance of the Final Order. This timeline is anticipated to provide sufficient time to develop the initial phase of the Resort and to begin using water and implementing conservation measures as outlined by this Plan.

1.05 OAR 690-086-0125(7) METER INSTALLATION STATUS

Not applicable at this time as the system is not built. As new services are installed into the newly constructed facilities and buildings, all services will be metered. Irrigation systems serving the golf courses and facilities will also be metered. *See also*, Section 3.04.B.

2. OAR 690-086-0140 WATER SUPPLIER DESCRIPTION

2.01 OAR 690-086-0140(1) WATER SOURCES

Permit G-17036 authorizes use from six wells in the Deschutes Formation (“DF”) aquifer. Groundwater in the DF aquifer is replenished by snow melt and precipitation recharge on the east slope of the Cascade Mountains. Permit G-17036 is a water right for quasi-municipal purposes, which include but are not limited to domestic water use, commercial water use, irrigation of golf courses and other areas, water uses in park and recreation facilities, including in lakes for wildlife and aesthetic uses, fire protection and suppression, and other uses usual and ordinary to a municipal water use.

The system will be designed to pump up to 6 cfs with a maximum volume of 1460 acre feet per year. A pumping system will distribute water through underground pipelines, a series of above-ground tanks, and a series of small ponds or lakes.

Temporary storage for non-irrigation water will consist of up to four above-ground steel or above-ground or partially-buried concrete tanks (domestic reservoirs) that will be sized to provide sufficient capacity to meet peak demand including fire flows. Pump stations and pressure-reducing

valves, when needed, will deliver water through a PVC water main and distribution network, maintaining appropriate pressure levels throughout the Resort. Irrigation water will be temporarily stored in the small lakes located throughout the project, which will be sized to meet peak irrigation demand requirements and to provide quasi-municipal uses, including recreational uses, wildlife and amenity uses, and fire suppression.

Permit G-17036 authorized 2.24 acre-feet of water for each acre irrigated on 320 acres of golf courses, for a maximum of 717 acre feet per year, during the irrigation season. Thornburgh has reduced the acres of golf course irrigation to roughly 200 acres for a total use of 450 acre feet. Water from the small lakes (open reservoirs) will be pumped through a separate network of pipes for irrigation of golf courses and other irrigation areas not served by the domestic supply system. If needed, landscaping on private lots will be irrigated through the domestic supply system. Currently, the plan is to utilize natural landscaping to minimize water use on private lots.

Source Well Table: Approximate Locations as Designated on Permit G-17036 Map

Well #	Township	Range	Section	QQ	Location
1	15 S	12 E	28	SE NW	1800' S, 2335' E of NW Cor Sec 28
2	15 S	12 E	29	SE NW	1655' S, 2750' W of NE Cor Sec 29
3	15 S	12 E	21	SW SW	1100' N, 400' E of SW Cor Sec 21
4	15 S	12 E	20	NE SE	2885' S, 750' W of NE Cor Sec 20
5	15 S	12 E	20	SW NE	2590' S, 1860' W of NE Cor Sec 20
6	15 S	12 E	17	SE NW	2375' S, 3615' W of NE Cor Sec 17

Wells 1

Quasi-Municipal Water Bulge in System Tanks (Domestic Reservoirs)

Domestic Reservoir	Volume
1	130,000 gallons
2	300,000 gallons
3	160,000 gallons
4	1,000,000 gallons
Total	1,590,000 gallons

Received by OWRD

MAY 09 2024

Salem, OR

Pinnacle has taken steps to supplement its water rights portfolio with other potential sources of water right authorizations. These water rights and/or pending applications are not intended to be in addition to the 6 cfs and 1460 acre foot amount Pinnacle anticipates to be the maximum amount it will need to complete the Resort, but rather to provide alternate sources to Permit G-17036 in light of OWRD's proposed final order to deny an extension of Permit G-17036.

Water Right/ Application	Description	Amount of Water	Status
Application G-19139	Groundwater application to be used in lieu of Permit G-17036	6.0 cfs 1,460 AF	OWRD issued proposed final order to deny on July 25, 2023; Pinnacle filed protest; contested case hearing referral pending
Application LL-1879	Limited license application to use	4.5 cfs (representing preliminary use of a portion of the 6 cfs)	OWRD denied application; Pinnacle filed petition for judicial review in Deschutes County Circuit Court; trial set for November 2024

	groundwater for 5 years	identified for full resort build out) 1032 AF	
Application T-13703	Temporary transfer application of Certificate 96029 for 5 year period	0.453 cfs 327 AF	OWRD issued Final Order approving temporary transfer; opponent to Resort filed petition for judicial review in Marion County Circuit Court; Pinnacle intervened; trial set for April 29 – May 2, 2024
Application T-14165	Permenant transfer of a portion of Certificate 96029	0.453 cfs 327 AF	Application pending; awaiting preliminary determination by OWRD

Permit G-17036 authorizes use of up to 6 wells (referred to here as 1-6A) while Application G-19139, proposes the use of seven wells (referred to here as 1-7B). Temporary Transfer T-13703 proposes to use wells 1-7B, plus an eighth well (referred to here as 1-8B). *See Attachment 2* for the maps for Permit G-17036, Application G-19139, and T-13703.

Four of the well locations associated with these water rights/applications are nearly identical. Those are 1A/3B, 4A/5B, 5A/6B, 6A/7B. 2B is a quarter mile southeast of 1A while 1B is roughly a half mile east of 1A. 3A has no nearby or corresponding B well. 4B is a half mile south/southeast of 2A.

Well 8B in T-13073 is an existing exempt well, which Pinnacle intends to decommission. Application LL-1879 proposes the use of five wells. They are same as wells 1, 2, 4, 5, and 8B. Pinnacle does not, as of the date of this WMCP, have exchange agreements, intergovernmental cooperation agreements, and/or other water supply or delivery contracts.

2.02 OAR 690-086-0140(2) SERVICE AREA AND POPULATION

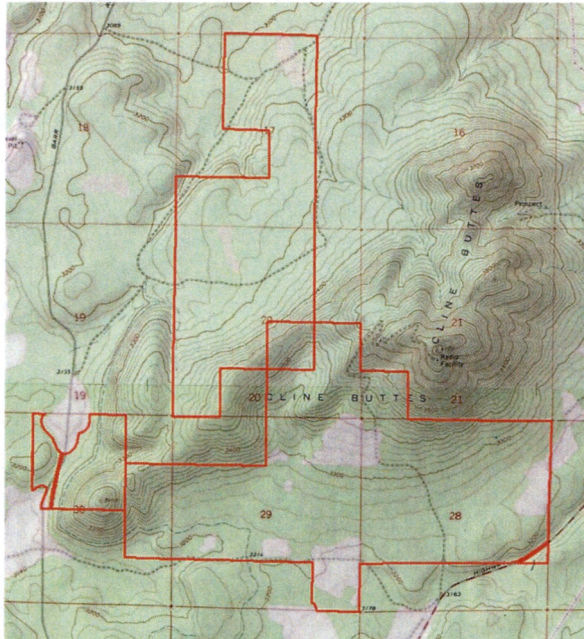
The service area for the Thornburgh Resort water system is the Thornburgh Resort property, identified as the place of use on the G-17036 Permit Map. The general location map is inserted below as Figure 1 and is shown in **Attachment 3**, which is the G-17036 Permit Map. Thornburgh Resort is a planned destination resort located in Deschutes County in Central Oregon, eight miles west of Redmond and twelve miles north of Bend. The Thornburgh Resort property consists of approximately 1,960 acres on the southerly and westerly flanks of Cline Buttes, with a variety of undeveloped land including sloping terrain, natural vegetation, ridgelines, and rock

Received by OWRD

MAY 09 2024

Salem, OR

outcroppings.



Received by OWRD

MAY 09 2024

Salem, OR

Figure 1: Thornburgh Resort Development General Location

The Final Master Plan for the Thornburgh Resort outlines a phased development approach. In total, Thornburgh Resort is permitted for up to 1,425 Equivalent Dwelling Units (EDU) including 950 homesites and 475 units of overnight lodging comprised of a mix of 50 hotel rooms with the remaining lodging in cabins, cottages, townhomes. Thornburgh applied for and was approved to reduce the overnight lodging to 380 units, for a total of 1,330 EDU. For projected population calculations, this plan will utilize a fully planned occupancy rate of 2.3 people per Single Family homes, similar to other area resorts and 1.8 people per unit of lodging.

Thornburgh Resort Estimated Total Project Population

BUILDING/FACILITY TYPE	ESTIMATED EQUIVALENT DWELLING UNITS	ESTIMATED PROJECT POPULATION
950 homesites	950	2,076
Overnight Lodging Units, including; hotel rooms, cabins, cottages and townhomes	380	684
Miscellaneous--clubhouse, restaurant, spa, fitness center, rec. facilities, admin. buildings	0	0
TOTALS	1,330	2,760

2.03 OAR 690-086-0140(3) PRESENT AND FUTURE ADEQUACY OF WATER SUPPLY

At full build-out, Thornburgh Resort will use up to 6.0 CFS, with a maximum annual duty of 1,460 acre-feet of quasi-municipal water. Current planning and permitting of the Resort and subsequent design specifications are based on this rate and duty. As the water system is developed and actual water use and demand data are collected, ongoing analysis will be conducted to assure the adequacy of the water supply for the future needs of the community.

In addition to the water rights referenced in this Plan, a substantial portion of the non-potable water needs, i.e. irrigation in particular, is anticipated to be met by the reuse and land application of

treated effluent, pursuant to a NPDES or WPCF permit approved by the Oregon Department of Environmental Quality. The balance of the 1460 acre foot will be supplied by the approval of either groundwater permit Application G-19139 or the approval of the extension for Permit G-17036, T-14165, and another yet-to-be-identified water source.

If Pinnacle faces future drought or water use restrictions it will implement the conservation elements of this Plan, as discussed in Section 3 below.

OAR 690-086-0130 pertaining to "requests for greenlight water" is not applicable to Pinnacle, since it does not at this time hold an extended permit with a development limitation.

2.04 OAR 690-086-0140(4) HISTORIC WATER USE

With the development of Thornburgh's water supply system still in progress, this section is not yet applicable.

Received by OWRD

MAY 09 2024

Salem, OR

Received by OWRD

MAY 09 2024

Salem, OR

2.05 OAR 690-086-0140(5) TABULAR LIST OF WATER RIGHTS

Thornburgh Water Right Inventory

Appl #	Permit #	Cert # <i>(Transfer of ans)</i>	Priority Date	Source	Use	Allowed Rate (cfs) and Duty (AF)	Actual Diversion				Authorized C- Date	Threatened or Endangered Species Affected?	Water Quality Listed	Source in Critical Groundwater Area?
							Maximum Instantaneous Rate Diverted to Date (cfs)	Maximum Annual Quantity Diverted to Date (MG)	Average Monthly Diversion (MG)	Average Daily Diversion (Gallons)				
G-16385	G-17036		2/9/2005	6 wells in the Deschutes River Basin	Quasi-Municipal Uses, incl irrigation of golf courses commercial areas, and reservoir maintenance	9.28 cfs (4,165 gpm), limited to a maximum annual volume of 2,129 AF Further limited by mitigation to be provided	0 cfs (00 gpm)	0 MG	0 MG	0 Gallons	4-3-2018	None	No	No
		T-13703 Cert 96029	1/30/1995	A well in the Deschutes Basin	Quasi-municipal uses (temporary)	453 cfs, limited to a maximum of 327.5 AF	0 cfs (00 gpm)	0 MG	0 MG	0 Gallons	NA	None	No	No
		T-14165 Cert 96029	1/30/1995	A well in the Deschutes Basin	Quasi-municipal uses	453 cfs, limited to a maximum of 327.5 AF	0.669 cfs (250 gpm)	0.132 MG	0.044 MG	2208 Gallons	NA	None	No	No
*G-19139				7 wells in the Deschutes Basin	Quasi-Municipal Uses	6.3 cfs (2,693 gpm), limited to a maximum annual volume of 1,460 AF Further limited by mitigation to be provided	0 cfs (00 gpm)	0 MG	0 MG	0 Gallons	NA	None	No	No
LL 1879			No priority date for limited licenses	5 wells in the Deschutes Basin	Construction and preliminary Quasi-Municipal Use	4.5 cfs, with corresponding mitigation (preliminary use of amount permitted by G-17036)	0 cfs (00 gpm)	0 MG	0 MG	0 Gallons	NA	None	No	No

*Replacement for G-17036 if needed, not in addition to G-17036

Ground Water Permit G-17036 (2-9-2005) – This permit authorizes up to 9.28 cfs and 2,129 AF for Quasi-Municipal uses. The period of use is Year-Round except for the seasonal limits placed on irrigation use by the permit. Pinnacle intends to limit total water use to 6 cfs and 1,460 AF. The rate and volume may be further limited by mitigation, which must be provided as a condition to use the permitted volume of

water. Under the terms of the permit, the maximum volume for irrigation of 320 acres of golf courses is limited to 717 AF annually. However, integral to the reduction to 1460 AF is a reduction in the number of championship golf courses from three 18-hole golf courses, and one par 3 course, to two 18-hole courses. The Resort has also reduced the total irrigated area on each course, such that the total irrigated acreage on both golf courses will be approximately 200 acres. The amount of water used for irrigation generally under this right is limited to a diversion of 1/80th cfs and 3 AF for each acre irrigated during the irrigation season of each year. However, the amount of golf course irrigation is limited to 2.24 AF for each acre irrigated, or a total of about 450 AF for the reduced 200 acre estimate. The fully developed mitigation obligation under this permit is 1,356 AF annually, to be provided within the General Zone of Impact. Mitigation is to be provided prior to each stage of development under the permit. The amount of mitigation needed will also be reduced due to the reduction in planned annual volume to 1,460 AF. The use of groundwater allowed under the terms of the permit is not subject to regulation for Scenic Waterway flows, so long as mitigation is maintained.

Ground Water Certificate 96029 (1/30/1995), Temporary Transfer T-13703 and Transfer T-14165 (application pending) – The partial transfer of Certificate 96029 would authorize 0.453 cfs Year-Round for Quasi-Municipal uses for a total of 327.5 AF. The transfer will change the Point of Appropriation (POA) from a well west of Bend to 8 wells on the Thornburgh property (one of which is to be decommissioned and will not be used), and the Point of Use (POU) from the Tree Farm subdivision west of Bend to the Thornburgh Resort. The Final Order approving temporary transfer T-13703 was issued on December 7, 2021. A petition for judicial review as filed against the Final Order in Marion County Circuit Court. Pinnacle Utilities has intervened and a trial is scheduled to start on April 29, 2024. The permanent transfer application is pending with OWRD.

Ground Water Application G-19139 (5-24-2021) – This application originally requested the use of 9.28 cfs of year-round Quasi-Municipal water, the same as permit G-17036. It was filed at the suggestion of OWRD staff to replace permit G-17036. Pinnacle subsequently reduced the application to 6 cfs of water with a maximum volume of 1,460 AF in line with the reductions discussed above. The POA of this application was also reduced to 7 wells located in the Deschutes Basin. OWRD issued a proposed final order to deny the application, and Pinnacle filed a protest. Pinnacle is waiting for OWRD to refer the protest to hearing.

Limited License Application LL-1879 -- This limited license application is for the use of 4.5 cfs of year-round water for construction, roads, dust abatement and preliminary Quasi-Municipal uses of water. The application was filed to provide preliminary use of the water permitted by G-17036 pending the resolution of the contested case on the extension. OWRD denied the application, and Pinnacle has filed a petition for judicial review in Deschutes County Circuit Court. Trial is currently set for November 2024.

2.06 OAR 690-086-0140(6) WATER CUSTOMERS

Pinnacle will provide water for the Thornburgh Resort development. This development will use the water for various Quasi-Municipal (QM) uses. Golf Course Irrigation will be used on two 18-hole golf courses. Other Irrigation will be used for the non-residential landscaped grounds and common areas. Reservoir Maintenance will be used in the planned lakes and reservoirs, which will separately be used as a bulge in system, for fire protection and suppression flows, for recreational uses, and for wildlife and aesthetics purposes. Other Quasi-Municipal

Received by OWRD

MAY 09 2024

Salem, OR

uses will include domestic uses, commercial uses, and construction/dust abatement uses. Domestic water uses will be made at 950 single-family homesites and 380 overnight lodging units that are a combination of Cabins, Cottages, and Nature Villas with lock off units, and a boutique hotel. Commercial uses will serve Clubhouses, Restaurants, Spa, Wellness & Fitness Center, Pool and Water Sports Complex, a Beach Club facility, and various administrative and maintenance facilities. Dust abatement and construction water will be used throughout the Resort as development occurs.

Received by OWRD

MAY 09 2024

Salem, OR

Projected Uses by Category

Type of QM Use or Customer	Areas of Use	Season	Projected Accounts	Annual/Diurnal Use Pattern
Golf Course Irrigation	Golf Courses, Driving Range, Practice Area	Irrigation Season	1	Use is highest during irrigation season; use will be highest in the late evening through early morning when evapotranspiration is lowest to conserve water. Use will be higher during establishment of vegetation.
Other Irrigation	Common Areas, General Grounds	Irrigation Season	1	Use is highest during irrigation season; use will be highest in the late evening through early morning when evapotranspiration is lowest to conserve water. Use will be higher during establishment of vegetation.
Reservoir Maintenance	Lakes/Reservoirs	Year Round	1	Seasonal pattern: highest use will occur during the summer when evaporation rates are high, lowest use will occur in winter when evaporation rates are low
Domestic-Residential	Single Family Homes, Cabins, Cottages & Nature Villas (Overnight Lodging Units)	Year Round	1,330	<p>No specific study has been performed for Thornburgh Resort; the use is expected to follow typical American residential patterns. Expected seasonal peaks will occur during summer months and weekends due to visitor influx. Typical residential use has a peak during summer months due to high use of irrigation. But, due to the irrigation restrictions, and focus on xeriscaping Thornburgh's peak uses will be less than the regions typical residential users.</p> <p>Inside Use (year-round):</p> <ul style="list-style-type: none"> a) Low use: during night @11pm-4am & daytime 12pm-4pm. b) High morning use: 5am-11 am c) Highest evening use. approx. 5pm-10pm <p>Outside Use (summer):</p> <ul style="list-style-type: none"> a) High, approx. 4am-8am
Commercial	Clubhouses, Welcome Center, Restaurant, Spa, Wellness & Fitness Center, Pool and Water Sports Complex, Beach Club, Hotel, Admin. & Maintenance Facilities	Year Round	Approx. 20	Highly variable. Use will vary seasonally with highest use anticipated in summer due to volume of guests. Daily use will be highest during daytime hours, although will vary depending on facility type.
Construction / Dust Abatement Water	Throughout resort as development occurs	Year Round	1	Highly variable. Highest use will occur during peak construction times, mostly limited to daytime hours Monday – Friday, with highest use likely during summer months when soil conditions are driest.

Received by OWRD
MAY 09 2024
Salem, OR

MAY 09 2024

Salem, OR

Pinnacle expects to see the highest use to occur as the Resort matures and residential units are built and occupied. Irrigation, along with Construction/Dust Abatement Water, will likely be the highest uses during the early stages of development, as these uses will be associated with construction and plantings, which will require extra water to establish. As residential and commercial development occurs, the need for delivery of water to customers will rise along with the need for fire protection flows. Thornburgh's projected peak residential flow requirements are 706 gallons per day (gpd) EDU per day. Water consumption will peak in the hot summer months. While actual annual average water use will be lower than 706 gpd/EDU, this daily water supply estimate allows for a margin of supply safety. Following recommendations from the Redmond Rural Fire District, the water supply requires providing 2,250 gpm for fire flows for the planned commercial facilities at Thornburgh Resort.

Thornburgh's projected use by category is expected to be lower than other comparable area resorts. For Residential-Domestic Use, Thornburgh projects 706 gpd/EDU compared to over 1,000 gpd/EDU at Brasada Ranch and Eagle Crest Resort. Eagle Crest is a fully developed destination resort with a variety of recreational facilities including two 18-hole golf courses, 1,463 homes, 24 commercial water users, and 143 irrigation services, as described in its 2015 WMCP. According to Oregon Water Utilities, LLC, the owners of the Eagle Crest utilities, Eagle Crest Resort used approximately 3,208,659 gallons per day during its peak demand days (per its 2015 WMCP). Of that, 1,534,598 gallons per day were used for two 18-hole golf courses. Pinnacle projects delivering roughly 450 AF annually to two 18-hole golf courses and practice areas in the Thornburgh Resort.

Eagle Crest also has extensive irrigated areas, and the residences have a high percentage of lawn coverage. Thornburgh will be very different, with limited lawn areas and extensive native landscaping and drought resistant planting that requires little to no irrigation.

2.07 OAR 690-086-0140(7) INTERCONNECTIONS WITH OTHER MUNICIPAL SUPPLIERS

No interconnections exist with other municipal supply systems. See further discussion of interconnection below in Section 5.05(B) below, covering OAR 690-086-0170(5)(b).

2.08 OAR 690-086-0140(8) SYSTEM SCHEMATIC

Pinnacle has begun initial construction of elements of the water system but it is far from complete. Attached to this WMCP is the approved Final Master Plan Water System map, which provides a current layout of the water system and the proposed underground distribution lines discussed and described herein, along with the proposed wells and reservoirs. See **Attachment 4**. As the project is further developed, Pinnacle will be able to provide more detailed schematics of the system.

2.09 OAR 690-086-0140(9) SYSTEM LOSSES

During installation of the distribution system, the system will be pressure tested to assure water-tight installations. Once constructed, little to no leakage is expected from the water system due to new piping and pressure testing. Following installation of the water system, a water audit estimating water loss will begin within the first year of water usage.

3. OAR 690-086-0150 WATER CONSERVATION**3.01 OAR 690-086-0150(1) PROGRESS REPORT FROM PREVIOUSLY APPROVED WMCP**

Not applicable.

3.02 OAR 690-086-0150(2) WATER USE MEASUREMENT AND REPORTING

Pinnacle has a flow meter installed on its initial well, Well 1A, and will install totalizing flow meters at each future source well prior to diverting water from that well. Data will be collected, and records will be kept so that monthly water use reports can be submitted on an annual basis. The program will comply with the measurement standards in OAR Chapter 690 Division 85 and with the terms and conditions of approved water rights.

3.03 OAR 690-086-0150(3) OTHER CONSERVATION MEASURES

Conservation and preservation of natural features is central to the Thornburgh Resort. It is committed to water conservation as a foundation of the development.

The Architectural Design Guidelines, a draft of which was approved by Deschutes County as part of the Conceptual Master Plan, is incorporated in to Thornburgh Resort's Final Master Plan of "FMP", which strongly encourages the use of techniques that limit the building's water demands, including the use of efficient water fixtures, drought tolerant plants, landscape materials indigenous to the area, xeriscaping, and very limited turf areas. Landscape designs require that strong consideration be given to the residences' water usage and conservation. Thornburgh's Architectural Design Committee will oversee the implementation of the landscaping guidelines that address land and water conservation. The committee has the authority to approve or disapprove of all landscape plans for individual residences that do not meet the resort design guidelines or its intent.

Pinnacle will also employ a tiered rate structure that increases pricing as overall usage per EDU increases. Lastly, the Resort will implement a system of reuse of its treated wastewater for irrigation of the golf course. The golf course irrigation system was designed complete with a mixing station to mix the fresh water with the treated water for use on the golf course.

As detailed below, all of the systems are being designed to be fully metered allowing for accurate auditing of use and system losses.

3.04 OAR 690-086-0150(4) PLANNED CONSERVATION MEASURES

A. OAR 690-086-0150(4)(a) Annual Water Audits - Not currently performed, as system is not yet constructed.

Five-Year Benchmarks:

By end of 2029 (or within 5 years of WMCP approval, if later): will implement an annual water audit program utilizing a systematic and documented methodology for estimating any un-metered authorized or unauthorized water use. The planned annual water audit program will also include methods to estimate non-revenue water use including real system losses (such as leakage) and apparent losses (such as meter error, billing issues, fire hydrant testing, construction water, dust abatement water, etc.). A water audit estimating water loss will begin within the first year of water usage.

Received by OWRD
MAY 09 2024
Salem, OR

B. OAR 690-086-0150(4)(b) System Metering – Water System has not yet been developed but will be fully metered when constructed.

Five-Year Benchmarks:

Beginning in 2024 (or when WMCP approved, if later): Develop planning measures that call for the installation of meters throughout water service connections and source wells in the development.

Received by OWRD

MAY 09 2024

Salem, OR

2024-2029 (or within 5 years of WMCP approval, whichever is later): Install totalizing flow meters as wells are developed and install meters for individual water service connections throughout the Resort as lots and facilities are developed. Begin collecting and organizing water use data for all meters once installed.

C. OAR 690-086-0150(4)(c) Meter Testing & Maintenance Program – Not instituted to date, but a testing and maintenance plan will be developed after construction.

Five-Year Benchmark:

2024-2029 (or within 5 years of WMCP approval, whichever is later): Typical expected useful life of water meters is 20-25 years, therefore few problems are anticipated during this initial phase of development. Meters will be tested if a problem is suspected or if requested by a customer/user. Source meters will be tested, calibrated, and maintained within 5 years after initial installation (not expected to occur within the WMCP update timeframe).

D. OAR 690-086-0150(4)(d) Water Use Rate Structure – Not instituted to date, but to be developed prior to water use.

Five-Year Benchmark:

2024-2029 (or within 5 years of WMCP approval, whichever is later): Implement tiered rate structures based, at a minimum, on metered water use by each residential service connection.

E. OAR 690-086-0150(4)(e) Leak Detection if System Leakage Exceeds 10% – Not instituted to date; to be developed in conjunction with implementation of water audit program.

Two-Year Benchmark:

2024-2026 (or within 2 years of WMCP approval, if is later): During the installation of the distribution system, the system will be pressure tested to assure water-tight installations. Following future water audits, if leakage exceeds 10%, Pinnacle shall develop a regularly scheduled and systematic program detecting and addressing leaks in transmission and distribution lines, consistent with the standards of the American Water Works Association's standards (not expected to occur within the WMCP update timeframe).

Five-Year Benchmark:

2024-2029 (or within 5 years of WMCP approval, whichever is later): In the event leakage exceeds 10%, Pinnacle will develop and implement a water loss control program consistent with American Water Works Association Standards.

F. OAR 690-086-0150(4)(f) Water Conservation Public Education Program – None to date but will be developed prior to unit sales.

Five-Year Benchmark:

2024-2029 (or within 5 years of WMCP approval, whichever is later): Review and select preferred water conservation educational materials for distribution and/or make available to residents and water customers within 5 years.

3.05 OAR 690-086-0150(5) MUNICIPAL WATER SUPPLIERS SERVING OVER 1,000

This requirement is not applicable currently, as the Resort is not yet serving anyone. The requirement will be addressed (including subparts a-e), if and as applicable, in the next plan update.

4. OAR 690-086-0160 WATER CURTAILMENT

4.01 OAR 690-086-0160(1) CAPACITY AND PREVIOUS SUPPLY DEFICIENCIES.

No supply deficiencies have occurred since the water system is not yet developed.

4.02 OAR 690-086-0160(2-4) ALERT STAGES, TRIGGERS, AND CURTAILMENT ACTIONS

Thornburgh Resort will employ a three-stage alert system to be overseen by Pinnacle’s water system manager. Determination of stages and authority and enforcement of water curtailment actions will be the responsibility of the water system manager.

Thornburgh’s three curtailment stages increase in severity and are as follows:

- Stage I: Mild Alert
- Stage II: Serious Alert
- Stage III: Critical Alert

Received by OWRD

MAY 09 2024

Salem, OR

Water Shortage Stages and Initiating Conditions

Stage	Initiating Conditions	Curtailment Actions
<p>Stage I: Mild Alert</p>	<p>Water use has reached 80% of capacity.</p> <p>or wells are producing no more than 90% of capacity.</p> <p>or Drought Emergency for Deschutes County declared by the Governor</p>	<p>Notice to the public of the water supply shortage condition level, cause of condition, consequences of moving to next stage, and actions that will help alleviate the shortage condition. This information will also be posted in public areas (ex. Clubhouse, Welcome Center, Rec. Facilities etc.), and posted within online community websites and/or social media.</p> <p>Automated Standard Irrigation of common area will be reduced 10% from normal watering cycles.</p> <p>Request Residential water users take the following actions:</p> <ul style="list-style-type: none"> • Domestic watering of landscaping restricted to the evening or early morning. • Limit car washing, shower times, dishwasher and laundry use, washing of patios, and, other hard scapes, and other ordinary types of water use.
<p>Stage II: Serious Alert</p>	<p>Water use has reached 90% of capacity.</p> <p>or wells are producing no more than 75% of capacity.</p>	<p>Notice to the public (including door to door contact) of the water supply shortage condition level, cause of condition, consequences of moving to next stage, and actions that will help alleviate the shortage condition. This information will also be posted in public areas (ex. Clubhouse, Welcome Center, Rec. Facilities etc.), and posted within online community websites and/or social media.</p> <p>Automated Standard Irrigation of common area will be eliminated.</p> <p>Golf Course Irrigation will be reduced at least 10%.</p> <p>Eliminate the replenishment of any recreational/aesthetic lakes due to evaporation losses.</p> <p>Eliminate dust abatement uses.</p> <p>Fire hydrants to be used for emergencies only.</p> <p>Prohibit new connections until shortage conditions are alleviated.</p> <p>Investigate alternative sources of supply (water tank trucks, graywater, interconnections with other water systems, new or existing wells, etc.) in</p>

		<p>order that they be immediately available should the shortage become elevated to Stage III: Critical Alert</p> <p>Residential water user requirements:</p> <ul style="list-style-type: none"> • Domestic watering of landscaping strictly limited to alternate day schedule in the evening or early morning to be set by Pinnacle water system manager. • The following uses prohibited: washing vehicles, boats, trailers, patios, and hardscaping; planting lawns or landscaping requiring irrigation. • Limit household water use, including showers, dishwasher and laundry use, toilet flushing etc.
<p>Stage III: Critical Alert</p> <p>Water use has reached 95% of capacity.</p> <p>or wells are producing less than 70% of capacity.</p> <p>or there is an immediate threat to public health or safety due to a contamination or catastrophic loss of water.</p> <p>Received by OWRD MAY 09 2024 Salem, OR</p>		<p>Notice to the public (including door to door contact and notice left on-site) of the water supply shortage condition level, cause of condition, and actions that will help alleviate the shortage condition. This information will also be posted in public areas (ex. Clubhouse, Welcome Center, Rec. Facilities etc.), and posted within online community websites and/or social media.</p> <p>Automated Standard Irrigation eliminated.</p> <p>Golf Course Irrigation will be eliminated, except greens and tee areas allowed 30% reduced irrigation sets at the discretion of the Pinnacle water system manager depending on the specific circumstances surrounding the Critical Alert.</p> <p>Eliminate the replenishment of any recreational/aesthetic lakes due to evaporation losses.</p> <p>Eliminate dust abatement uses.</p> <p>Fire hydrants to be used for emergencies only.</p> <p>Residential water user requirements:</p> <ul style="list-style-type: none"> • All outdoor use prohibited. • Indoor use limited to 68 gallons per person per day to serve basic health and sanitation needs; or 50 gallons per day in the case of severe or prolonged shortage or other emergency. <p>As needed, issue water boil notices prior to system failure.</p> <p>Connect to alternative sources identified during Stage II Serious Alert if available.</p> <p>As needed, provide information about where to obtain water for cooking and sanitation.</p>

5. OAR 690-086-0170 WATER SUPPLY

5.01 OAR 690-086-0170(1) CURRENT AND FUTURE SERVICE AREA

Thornburgh Resort is currently in the preliminary stages of development. Due to fluctuations in the real estate market, population projections are highly uncertain. Pinnacle has projected the number of EDU's and population using a professional real estate economist and by using data from comparable developments and destination resorts in Oregon. Projected population is expected to be approximately 2.5 persons per Equivalent Dwelling Unit (EDU), depicted on the following table.

Projected Equivalent Dwelling Units and Population at Thornburgh Resort

	2024	2027	2030	2034	Build-out
Units	0	305	675	925	1,330
Population	0	633	1,401	1,919	2,760

MAY 09 2024

5.02 OAR 690-086-0170(2) FULL EXERCISE OF WATER RIGHTS

Salem, OR

Water Right Permit G-17036 originally had a completion date of 2018. Pinnacle timely applied for an extension, and OWRD issued a Proposed Final Order and Final Order approving an extension until 10/1/2035. When the Final Order was challenged in court, OWRD withdrew the order for reconsideration and set it for a contested case hearing, which has not yet been scheduled. Pinnacle has since pursued other options to secure up to 1460 acre-feet of water per year, including the temporary and permanent transfer of 0.453 cfs of Certificate 96029 and filing permit application G-19139.

As this Plan explains, Thornburgh Resort will have water demand needs that include commercial, domestic-residential, and golf course uses. As the resort develops, water demand is expected to grow in phases tied to building activity, while water demand related to construction will ultimately be reduced up to nearly zero upon completion of the resort. Currently, full build-out is expected to occur in 2035, which under the schedules herein will require not more than 6.0 cfs and 1460 acre-feet, under Permit G-17036 or equivalent supplies under other permits, certificates, or transferred water rights.

5.03 OAR 690-086-0170(3) PROJECTED WATER DEMAND

Because Thornburgh Resort is not yet constructed, making 10- and 20-year projections is difficult. Using master planning information, historical growth data from similar developments, and other real estate and economic projections, we have produced reasonable expectations for growth at Thornburgh Resort. As Thornburgh develops in the coming years, population and demand data will be collected and analyzed to better develop growth projections at that time. The following table depicts the projected number of Equivalent Dwelling Units at Thornburgh at 4-year increments until build-out.

Projected Equivalent Dwelling Units at Thornburgh Resort

	2024	2027	2030	2034	Build-out
Units	0	305	675	925	1,330

Thornburgh Resort master planning data combined with analysis of comparable resort development data regarding expected demand and uses by category informed these projected water use calculations. Due to the seasonal nature of comparable resort developments, Thornburgh Resort is projected to require a rate sufficient to meet peak summer daily demand accounting for all uses. Averaged annually, daily demand for each use category is expected to be much lower and annual use will fall within the annual volume limits of 1460 acre-feet. The projections assume the following:

- Projected use by category will follow the pattern of development outlined by the Incremental Development Plan in 5-year increments.
- Water use for peak day Golf Course Irrigation will be 8,126 gallons per acre per day, adhering to total annual volume caps limited by Permit G-17036 and, further limited by the reduction approved by Deschutes County, with a anticipated total annual volume of about 450 AF. Peak day usage will be met with water temporarily stored in the lakes, which will act as a bulge in the system, and which will recover over approximately 12 hours each cycle. Irrigation of golf course areas will occur over 8-10 hours at night, when evapotranspiration rates are lowest.
- Water use for Other Irrigation will be up to 3 AF per acre, with a peak rate of 1/80th cfs per acre irrigated, adhering to an anticipated total annual volume of about 111 acre-feet.

- Reservoir Maintenance use is based on a projected evaporation rate of 2.66 AF per acre per year of surface area with total annual use of roughly 51 AF expected.
- Thornburgh Resort requires 2,250 gpm (5.01 cfs) to ensure adequate instantaneous flow for the fire suppression system. Thornburgh's distribution system will be capable of delivering this flow, and the storage system, once the steel and concrete domestic reservoirs are fully developed, will be capable of meeting this need throughout the community. This need will be further evaluated after more analysis and water demand data is collected. At this time, fire flow demand will be considered met by installed storage capacity.
- Thornburgh's residential and commercial usage is anticipated to be roughly 848 AF per year with residential (including homes and cabins, excluding hotel, cottages, and other commercial etc.) domestic peak-day demand is assumed to be 784 gpd. Using a 90% occupancy factor we assume an overall weighted peak day of 706 gallons per EDU. This will start low and grow as development occurs. Thornburgh's residential peak day demand is expected to increase at the same rate of growth as the residential development.
- Thornburgh's commercial peak-day demand is estimated to be 659,961 GPD.

10-Year Projections:

10 Year Projected Peak Day Demand (Domestic-Residential QM)

925 EDU's X 706 gpd/EDU = 653,050 gpd = 0.653 MGD
 653,050 gpd / 1440 min/day = 453 gpm or 1.01 cfs

10 Year Projected Peak Hour Demand (Domestic-Residential QM)

453 gpm X 2.5 P.F. = 1,132 gpm or 2.52 cfs

10 Year Projected Peak Day Demand (Commercial QM)

448,380 gpd = 0.448 MGD
 448,380 gpd / 1440 min/day = 311 gpm or 0.69 cfs

10 Year Projected Peak Hour Demand (Commercial QM)

311 gpm X 2.5 P.F. = 777 gpm or 1.73 cfs

10 Year Projected Peak Day Demand (Open Reservoir Maintenance)

15 ac X 2,740 gpd/ac = 41,100 gpd = 0.041 MGD
 41,100 gpd / 1440 min/day = 28 gpm or 0.061 cfs

10 Year Projected Peak Day Demand (Standard Irrigation)

20 ac X 1/80th cfs = 0.25 cfs or 161,547 gpd = 0.162 MGD
 161,547 gpd / 1440 min/day = 112 gpm or 0.25 cfs

10 Year Projected Peak Hour Demand (Standard Irrigation)

161,547 gpd / 480 min (8-hour irrigation cycle) = 336 gpm or 0.75 cfs

10 Year Projected Peak Day Demand (Golf Course Irrigation)

80 ac X 8,126 gal/ac/day = 650,080 gpd = 0.65 MGD
 650,080 gpd / 1440 min/day = 451 gpm or 1.00 cfs

Received by OWRD
 MAY 09 2024
 Salem, OR

MAY 09 2024

10 Year Projected Peak Hour Demand (Golf Course Irrigation)
 650,080 gpd / 480 min (8-hour irrigation cycle) = 1,354 gpm or 3.02 cfs

10 Year Projected Peak Day Demand (Construction/Dust Abatement)
 Construction/Dust Abatement Water = 22 gpm or 0.06 cfs

Salem, OR

Total Peak Day Demand

Total MDD = 0.653 cfs (Domestic-Residential) + 0.69 cfs (Commercial) + 0.061 cfs (Open Reservoir Maintenance) + 0.162 cfs (Standard Irrigation) + 1.00 cfs (Golf Course Irrigation) + 0.06 cfs (Construction/Dust Abatement) = 2.63 cfs

Thornburgh Resort Estimated 10-year Water Demand Source Requirement

Water Use	Estimated Consumption
Domestic-Residential QM Use	
Domestic-Residential Peak Day Demand	453 gpm or 0.653 cfs
Domestic-Residential Peak Hour Demand	1,132 gpm or 2.52 cfs, <i>provided by stored water in domestic reservoir</i>
Fire Protection Flow Requirement	2,250 gpm or 5.01 cfs, <i>provided by stored water in domestic reservoir</i>
Commercial QM Use	
Commercial Peak Day Demand	311 gpm or 0.69 cfs
Commercial Peak Hour Demand	777 gpm or 1.73 cfs, <i>provided by stored water in reservoir</i>
Fire Protection Flow Requirement	2,250 gpm or 5.01 cfs, <i>provided by stored water in domestic reservoir</i>
Reservoir Maintenance Use	
Reservoir Maintenance Peak Day Demand	28 gpm or 0.061 cfs
Other (Non-Golf Course) Irrigation Use	
Other Irrigation Peak Day Demand	112 gpm or 0.25 cfs
Other Irrigation Peak Hour Demand	336 gpm or 0.75 cfs, <i>provided by stored water in open reservoir</i>
Golf Course Irrigation Use	
Golf Course Irrigation Peak Day Demand	451 gpm or 1.00 cfs
Golf Course Irrigation Peak Hour Demand	1,354 gpm or 3.02 cfs, <i>provided by stored water in open reservoir</i>
Construction/Dust Abatement Use	
Construction/Dust Abatement Peak Demand	22 gpm or 0.06 cfs
Total 10 Year Projected Demand Requirement	0.653 cfs (Domestic-Residential) + 0.69 cfs (Commercial) + 0.061 cfs (Open Reservoir Maintenance) + 0.25 cfs (Standard Irrigation) + 1.00 cfs (Golf Course Irrigation) + 0.06 cfs (Construction/Dust Abatement) = 2.63 cfs or 1,377 gpm

Build-out Projections:

Build-out Projected Peak Day Demand (Domestic-Residential QM)

1,330 EDU's X 706 gpd/EDU = 938,980 gpd = 0.939 MGD
 938,980 gpd / 1440 min/day = 652 gpm or 1.45 cfs

Build-out Projected Peak Hour Demand (Domestic-Residential QM)

652 gpm X 2.5 P.F. = 1,630 gpm or 3.63 cfs

Build-out Projected Peak Day Demand (Commercial QM)

659,961 gpd = 0.660 MGD
659,961 gpd / 1440 min/day = 458 gpm or 1.02 cfs

Build-out Projected Peak Hour Demand (Commercial QM)

458 gpm X 2.5 P.F. = 1,146 gpm or 2.55 cfs

Build-out Projected Peak Day Demand (Open Reservoir Maintenance)

32 ac X 2,740 gpd/ac = 87,680 gpd = 0.088 MGD
87,680 gpd / 1440 min/day = 60 gpm or 0.13 cfs

Build-out Projected Peak Day Demand (Standard Irrigation)

36.92 ac X 1/80th cfs = 0.81 cfs or 523,414 gpd = 0.523 MGD or 0.81 cfs
523,414 gpd / 1440 min/day = 363 gpm or 0.81 cfs

Build-out Projected Peak Hour Demand (Standard Irrigation)

523,414 gpd / 480 min (8-hour irrigation cycle) = 1,090 gpm or 2.92 cfs

Build-out Projected Peak Day Demand (Golf Course Irrigation)

200 ac X 8,126 gal/ac/day = 1,625,200 gpd = 1.625 MGD
1,625,200 gpd / 1440 min/day = 1,128 gpm or 2.51 cfs

Build-out Projected Peak Hour Demand (Golf Course Irrigation)

1,625,200 gpd / 480 min (8-hour irrigation cycle) = 3,385 gpm or 7.54 cfs

Total Peak Day Demand

Total PDD = 1.45 cfs (Domestic-Residential) + 1.02 cfs (Commercial) + 0.13 cfs (Open Reservoir Maintenance) + 0.81 cfs (Standard Irrigation) + 2.51 cfs (Golf Course Irrigation) = 5.92 cfs

Received by OWRD

MAY 09 2024

Salem, OR

Thornburgh Resort Estimated Build-out Water Demand Source Requirement

Water Use	Estimated Consumption
Domestic-Residential QM Use	
Domestic-Residential Peak Day Demand	652 gpm or 1.45 cfs
Domestic-Residential Peak Hour Demand	1,630 gpm or 3.63 cfs, <i>provided by stored water in domestic reservoir</i>
Fire Protection Flow Requirement	2,250 gpm or 5.01 cfs, <i>provided by stored water in domestic reservoir</i>
Commercial QM Use	
Commercial Peak Day Demand	458 gpm or 1.02 cfs
Commercial Peak Hour Demand	1,146 gpm or 2.55 cfs, <i>provided by stored water in domestic reservoir</i>
Fire Protection Flow Requirement	2,250 gpm or 5.01 cfs, <i>provided by stored water in domestic reservoir</i>
Open Reservoir Maintenance Use	
Open Reservoir Maintenance Peak Day Demand	147 gpm or 0.33 cfs
Other Irrigation Use	
Other Irrigation Peak Day Demand	363 gpm or 0.81 cfs

Other Irrigation Peak Hour Demand	1,090 gpm or 2.92 cfs, <i>provided by stored water in open reservoir</i>
Golf Course Irrigation Use	
Golf Course Irrigation Peak Day Demand	1,128 gpm or 2.51 cfs
Golf Course Irrigation Peak Hour Demand	3,385 gpm or 7.54 cfs, <i>provided by stored water in open reservoir</i>
Build-out Projected Demand Requirement	1.45 cfs (Domestic-Residential) + 1.02 cfs (Commercial) + 0.33 cfs (Reservoir Maintenance) + 0.81 cfs (Standard Irrigation) + 2.51 cfs (Golf Course Irrigation) = 5.92 cfs or 2,748 gpm

5.04 OAR 690-086-0170(4) PROJECTED WATER NEEDS VS. CURRENT SOURCES

Pinnacle projects initial water use demand of **2.63 cfs** to satisfy demand through 10 years following the start of construction (2033). At build-out (2035), Pinnacle projects demand of an additional **3.29 cfs** for a total of **5.92 cfs**. Permit G-17036 authorizes 9.28 cfs, a 36% margin over projected demand at build out. As described above, Pinnacle has applied for Application G-19139, which would be an alterate to Permit G-17036. With the reductions stated above, application G-17036 seeks year-round use of 6.00 cfs of water to be pumped from wells at the Thornburgh Resort property. This permit, if granted, would be an *alternative* to, not an addition to, the use of Permit G-17036. It would also provide up to 6.00 cfs of water supply to the Resort.

In addition, Pinnacle has applied to transfer other acquired water rights for use at the Thornburgh property, including 0.453 cfs from existing water right Certificate 96029. These actions are being taken to ensure that Pinnacle will have adequate water supplies to serve the resort in the event that the extension of Permit G-17036 is not upheld or Application G-19139 is not ultimately approved in a contested case. These supplemental applications do not indicate that additional supplies are needed; and, in no case is it anticipated that any of the additional water rights would be used to increase the water use at Thornburgh Resort above 6.00 cfs and 1460 AF. As shown above Pinnacle believes the 6.00 cfs, or 1,460 AF will meet the resort's needs at full build-out.

5.05 OAR 690-086-0170(5) ALTERNATIVES TO EXPANSION OF APPROPRIATION

OAR 690-086-0170(5) requires an analysis of alternative sources of water if any expansion or initial diversion of water allocated under existing permits is necessary to meet future water demand. Permit G-17036 currently limits withdrawal to 9.28 cfs: Application G-19139 is limited to 6.0 cfs. Thornburgh is projected to require access to **2.63 cfs** by 2033 and an additional **3.29 cfs** by 2035, for a total of **5.92 cfs** by 2035. Expansion of appropriation beyond the amount under either of these water rights is not anticipated. The following subsections analyze the extent to which the projected water needs can be met through other alternatives.

OAR 690-086-0170(5)(a) – Conservation as a water source – Because it is not yet constructed, Permit G-17036 is necessary to meet the needs of development. Projected water demand will be met through a combination of wells and on-site storage, coupled with planned conservation measures and re-use of effluent water for irrigation. Thornburgh Resort is being designed to minimize water use through conservation measures including architectural and landscape design guidelines that promote xeriscaping, protect native vegetation and maintain open space, use drought resistant plants, and require efficient plumbing fixtures and irrigation systems. Water use will be highly efficient as all aspects of the water system will be planned and developed with conservation in mind. Projected water demand for the development assumes highly

Received by OWRD Page 22 of 25

MAY 09 2024

Salem, OR

efficient water use because of these conservation measures. Commercial facilities and residential units will contain all new water fixtures and water efficiency devices, and be subject to landscaping guidelines that emphasize water conservation. As water use is developed for golf course and standard irrigation and vegetation is established, irrigation practices and use will be fine-tuned in response to analysis of need and growth, likely resulting in further conservation.

OAR 690-086-0170(5)(b) – Municipal interconnections – At this time, there are no planned interconnections with nearby water systems, although preliminary discussions have occurred. The westerly boundary of the City of Redmond is located approximately 5 ¼ miles east of the site, across the Deschutes River canyon. The Eagle Crest Resort is located, at its nearest point, approximately ¼ mile east of the Thornburgh Resort site across a parcel of BLM owned land. These interconnections are options that could offer a redundant margin of safety.

An interconnection with the Eagle Crest Resort is most feasible because of the nearby location. Pinnacle has held preliminary discussions with the owners of the Eagle Crest water system about the potential to interconnect the two systems for the benefit of both communities. Any interconnection between Eagle Crest water system and the early phases of Thornburgh's development would need to cover a substantial distance, over some very challenging terrain. A connection would entail very substantial costs that could easily run into the millions of dollars and would require a right of way across federal lands. While Pinnacle believes a ROW could possibly be obtained after completing the required environmental studies, such studies are themselves very costly. For example, in a previous BLM right of way, over \$500,000 was incurred on the required environmental analysis alone. That said, an interconnection to Eagle Crest is potentially possible, and something that is being explored, but it would be a costly and complex undertaking that would entail very substantial discussions, negotiations, analysis, and engineering among all the parties, that by necessity, must include the US Government. More importantly, Pinnacle does not understand Eagle Crest to have excess water capacity that it could share with Thornburgh. The combined water rights for Eagle Crest amount to only about 7 cfs.

Another alternative for supply could be the City of Redmond. This would entail connecting to a major supply line in Redmond and bringing that supply down Hwy 126, across the Deschutes River and then down Cline Falls Highway to the property. Thornburgh currently has utility easements across federal lands this route would cross. Other easements are needed in addition to the utility easements. Further, the cost of the infrastructure to provide city water to Thornburgh is expected to exceed \$5,000,000.

OAR 690-086-0170(5)(c) – Other low-cost conservation measures – OAR 690-086-0170(5)(c) requires an assessment of whether the projected water needs can be satisfied through other conservation measures that would provide water at a cost that is equal to or less than the cost of other identified sources. As has been discussed above in Section 3.03 OAR 690-086-0150, conservation and preservation have been central themes of the planning around the development of the resort. As discussed herein, the architectural design guidelines focus attention on measures to minimize water use in the buildings as well as the landscaping surrounding them. The Architectural and Landscape guidelines provide the Thornburgh Architectural Committee the ability to deny proposed residences that do not comply with the guidelines or their intent as it relates to conservation. As the community grows and the waste-water treatment facility is built, treated water will be available for re-use in irrigation. If needed, some further reductions can be made to the amount of irrigation water used at individual homes (if any), on the golf courses, in community open spaces, and around other commercial facilities. At this time, since

the water system has yet to be constructed, additional conservation measures beyond those already planned and mentioned here would be unlikely to provide water at equal or lower cost than the current planned water source. Furthermore, it should be noted that since maximum conservation practices will be implemented from the beginning of construction of this project, the water demand will be somewhat “hardened,” thus leaving less slack in water use for tightening up further with conservation.

5.06 OAR 690-086-0170(6) EXPANSION OF APPROPRIATION

Projected water demand calculations shown in above Section 4.05 justify the need for initial water use at Thornburgh Resort. Pinnacle projects an initial maximum rate of **2.63 cfs (1.699 MG/day or 50.99 MG/month)** to satisfy demand through 10 years following the start of construction (2032). At build-out (2035) Pinnacle projects demand of an additional **3.29 cfs** for a total of **5.92 cfs (3.83 MG/day or 118.60 MG/month)**. Permit G-17036 authorizes 9.28 cfs, though Thornburgh Resort has agreed to cap its max rate at 6.00 cfs and 1460 acre-feet in the land use proceedings. Monthly volumes assume water is diverted at the maximum rate, 24 hours per day for 31 days during the maximum month (likely July or August). “Greenlight water” does not apply to Pinnacle’s current situation.

5.07 OAR 690-086-0170(7) MITIGATION REQUIREMENTS

Under OAR 690-086-0170(7), for expanded or initial diversion of water under an existing permit, the water supplier is to describe mitigation actions it is taking to comply with legal requirements of the Endangered Species Act, Clean Water Act, and other applicable state or federal environmental regulations.

The Deschutes Basin Mitigation Program currently requires mitigation for all new ground water permits in the Deschutes Basin. The mitigation program is based on the findings of the USGS Water Resources Investigations Report 00-4162, “Groundwater Hydrology of the Upper Deschutes Basin, Oregon.” The mitigation program was developed to maintain flows for scenic waterways and senior water rights, restore flows in the Middle Deschutes River, and accommodate growth by allowing new groundwater development. Thornburgh Resort’s mitigation for its groundwater use under either of the groundwater permits noted above will make a positive contribution towards maintaining adequate flows in the Deschutes Basin for native aquatic species.

The fully developed Mitigation Obligation for Permit G-17036 is 1356 AF annually, to be provided within the General Zone of Impact. The Mitigation Obligation under the reduced water usage of 1,460 AF approved by Deschutes County is 882 AF. The usage described herein is limited to 1,460 AF so the mitigation to be provided in the IMP as noted below is limited to that amount, or less if 1460 AF is achieved through transfers of existing water rights. Mitigation will be provided prior to each stage of development under a groundwater permit. The use of groundwater allowed under the terms of Permit G-17036 is not subject to regulation for Scenic Waterway flows, so long as mitigation is maintained which is described below.

Pinnacle has or will use the following mitigation: 6 credits leased through DRC, up to 276.7 credits from Big Falls Certificates 96190 and 96192 transferred instream, and up to 83.7 credits from LeBeau Certificate 95760 transferred instream for a total of 366.4 credits.

5.08 OAR 690-086-0170(8) ALTERNATIVE SOURCE ANALYSIS

Under OAR 690-086-0170(8), if new water rights will be necessary within the next 20 years in order to meet projected demand, an analysis of alternative sources of the additional water is required. The analysis must consider availability, reliability, feasibility, and likely environmental impacts and a

schedule for development of the new sources of water. No additional water rights are anticipated to meet Thornburgh's demand in the next 20 years.

Received by OWRD
MAY 09 2024
Salem, OR



April 10, 2024

Kameron DeLashmutt
Via email kameron1959@gmail.com

Re: Thornburgh Water Management and Conservation Plan

Dear Mr. DeLashmutt,

The County has reviewed the Water Management and Conservation Plan prepared for Pinnacle Utilities, LLC (Thornburgh Resort) and revised April 9, 2024. The County has no comments. Authority to approve the plan rests with the Oregon Water Resources Department. Thank you for the opportunity to review the Plan.

Sincerely,

DESCHUTES COUNTY PLANNING DIVISION

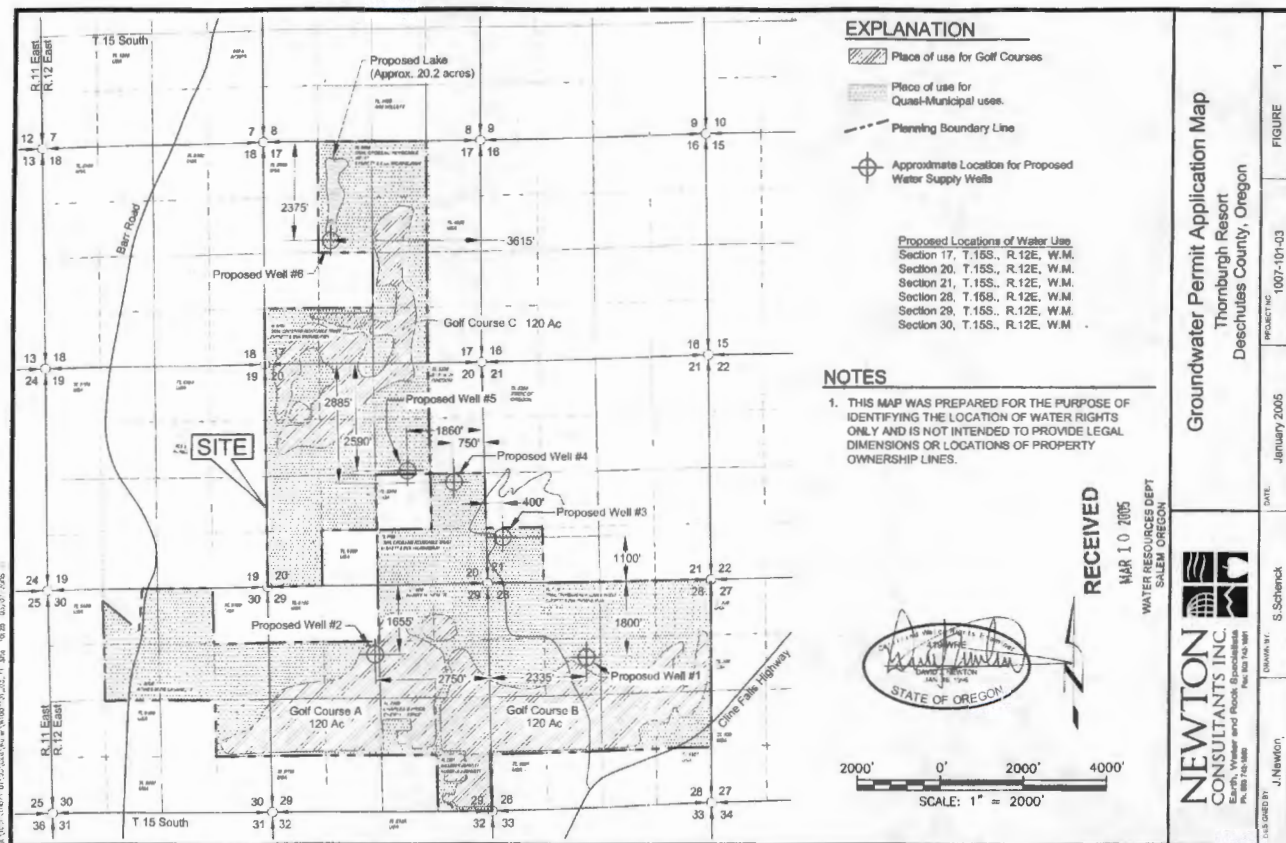
A handwritten signature in black ink that reads "Jacob Ripper". The signature is written in a cursive, flowing style.

Jacob Ripper, Principal Planner

Received by OWRD

MAY 09 2024

Salem, OR



EXPLANATION

- Place of use for Golf Courses
- Place of use for Quasi-Municipal uses.
- Planning Boundary Line
- Approximate Location for Proposed Water Supply Wells

Proposed Locations of Water Use
 Section 17, T. 15S., R. 12E. W.M.
 Section 20, T. 15S., R. 12E. W.M.
 Section 21, T. 15S., R. 12E. W.M.
 Section 28, T. 15S., R. 12E. W.M.
 Section 29, T. 15S., R. 12E. W.M.
 Section 30, T. 15S., R. 12E. W.M.

NOTES

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

Groundwater Permit Application Map
 Thornburgh Resort
 Deschutes County, Oregon

NEWTON CONSULTANTS INC.
 1000 NE Oregon Street
 Portland, Oregon 97232
 Phone: 503.255.1234

PROJECT NO. 1007-101-03
 DATE: January 2005
 DRAWN BY: S. Schenck
 CHECKED BY: J. Newton
 FIGURE 1
 app # G16385

Received by OWRD
 MAY 09 2024
 Salem, OR

MAY 09 2024

Salem, OR

T15S R12E, WM DESCHUTES COUNTY, OR



1" = 2,000'

- Well
- POU QM
- Section
- Quarter Quarter
- Taxlot

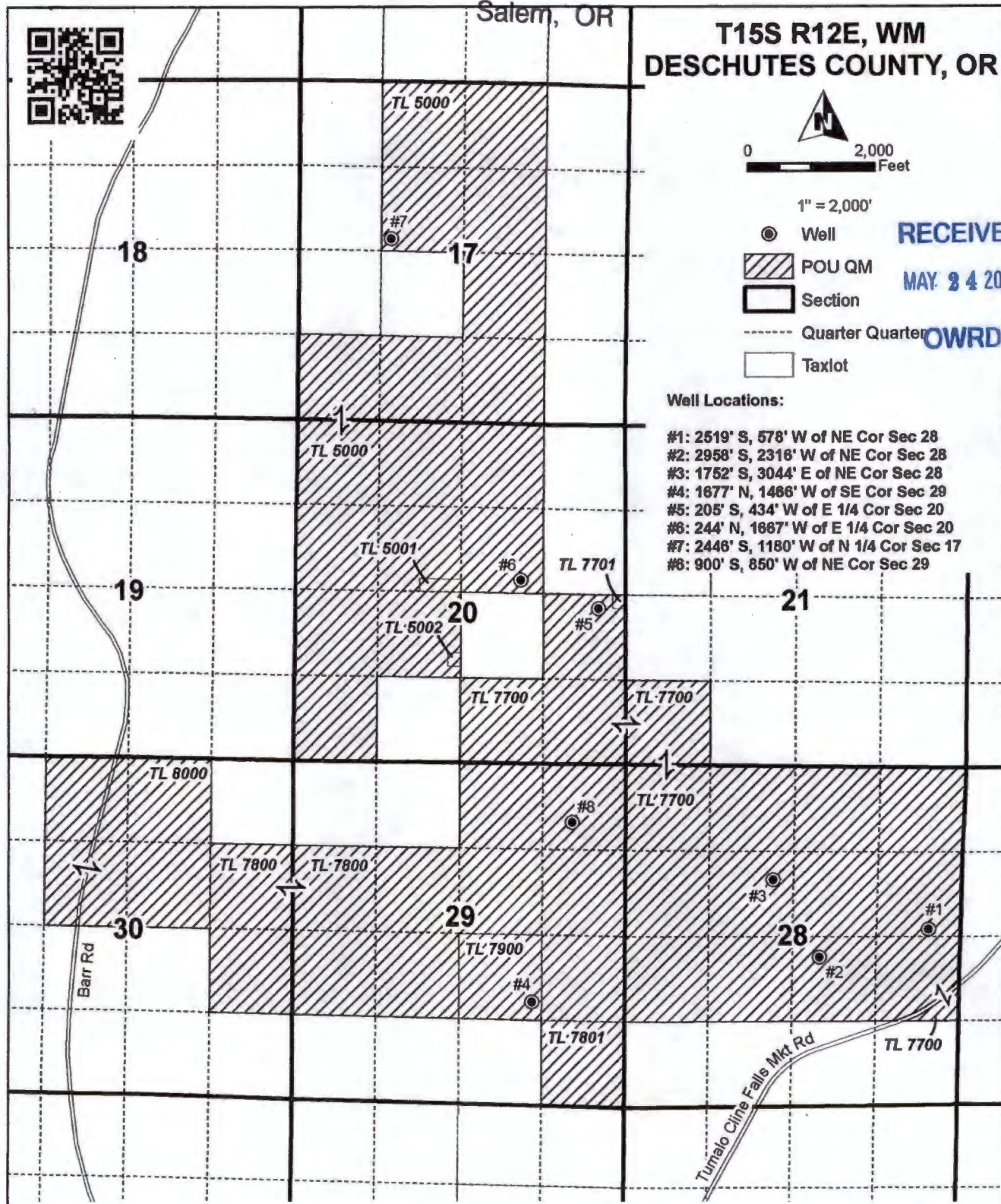
RECEIVED

MAY 24 2021

OWRD

Well Locations:

- #1: 2519' S, 578' W of NE Cor Sec 28
- #2: 2958' S, 2316' W of NE Cor Sec 28
- #3: 1752' S, 3044' E of NE Cor Sec 28
- #4: 1677' N, 1486' W of SE Cor Sec 29
- #5: 205' S, 434' W of E 1/4 Cor Sec 20
- #6: 244' N, 1667' W of E 1/4 Cor Sec 20
- #7: 2446' S, 1180' W of N 1/4 Cor Sec 17
- #8: 900' S, 850' W of NE Cor Sec 29



GROUNDWATER APPLICATION MAP
For
Pinnacle Utilities, LLC

Date: 5/18/2021

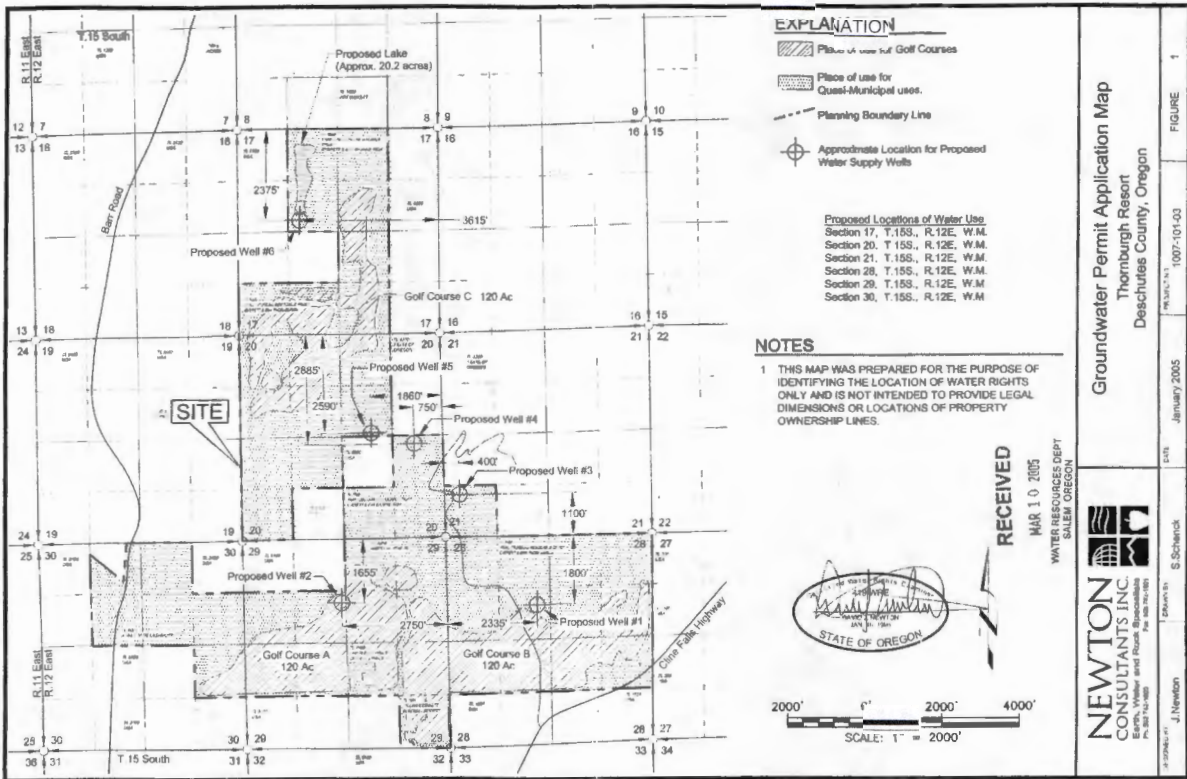
This map is not intended to provide legal dimensions or locations of property ownership lines.

WATER RIGHT SERVICES, LLC

PO BOX 1830, BEND, OR 97709

WWW.OREGONWATER.US 541-389-2837

johnshort@usa.com CCB # 197121



EXPLANATION

- Places of use for Golf Courses
- Places of use for Quasi-Municipal uses.
- Planning Boundary Line
- Approximate Location for Proposed Water Supply Wells

Proposed Locations of Water Use
 Section 17, T. 15S., R. 12E., W.M.
 Section 20, T. 15S., R. 12E., W.M.
 Section 21, T. 15S., R. 12E., W.M.
 Section 28, T. 15S., R. 12E., W.M.
 Section 29, T. 15S., R. 12E., W.M.
 Section 30, T. 15S., R. 12E., W.M.

NOTES

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

RECEIVED
 MAR 10 2005
 WATER RESOURCES DEPT
 SALEM OREGON

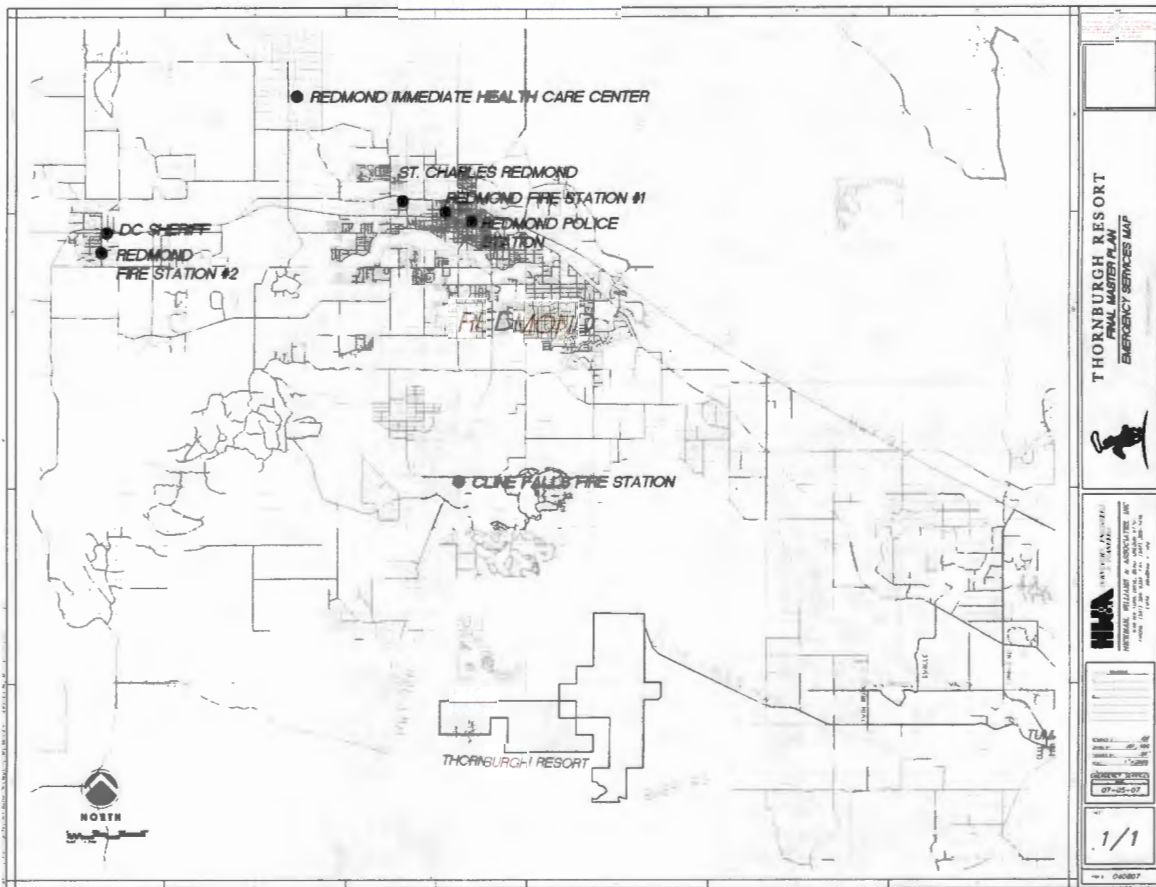
STATE OF OREGON

2000' 0" 2000' 4000'
 SCALE: 1" = 2000'

FIGURE 1
 1007-101-03
 January 2005
 S. Schindler
 J. Hendon
 NEWTON CONSULTANTS INC.
 Earth, Water and Rural Specialists
 P.O. Box 1000
 Salem, OR 97309
 Groundwater Permit Application Map
 Thornburgh Resort
 Deschutes County, Oregon

Received by OWRD
 MAY 09 2024
 Salem, OR

App # G16-285



Attachment 3
Page 2 of 5

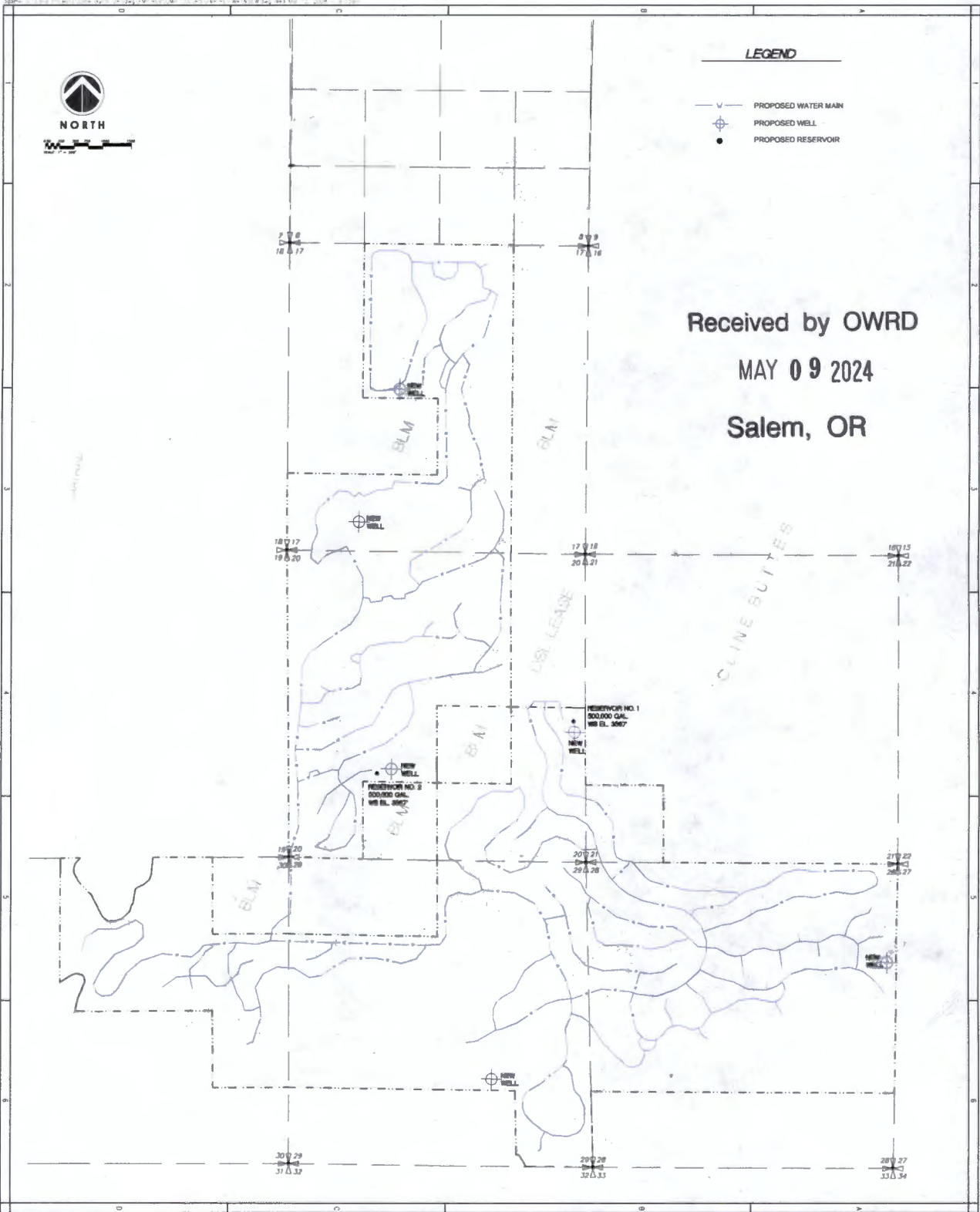
Received by OWRD
MAY 09 2024
Salem, OR



LEGEND

- PROPOSED WATER MAIN
- PROPOSED WELL
- PROPOSED RESERVOIR

Received by OWRD
 MAY 09 2024
 Salem, OR



1/1

042007

DATE: 01-21-2008

PROJECT: THORNBURGH RESORT

SCALE: 1"=500'

DRAWN BY: J. WILSON

CHECKED BY: J. WILSON

APPROVED BY: J. WILSON



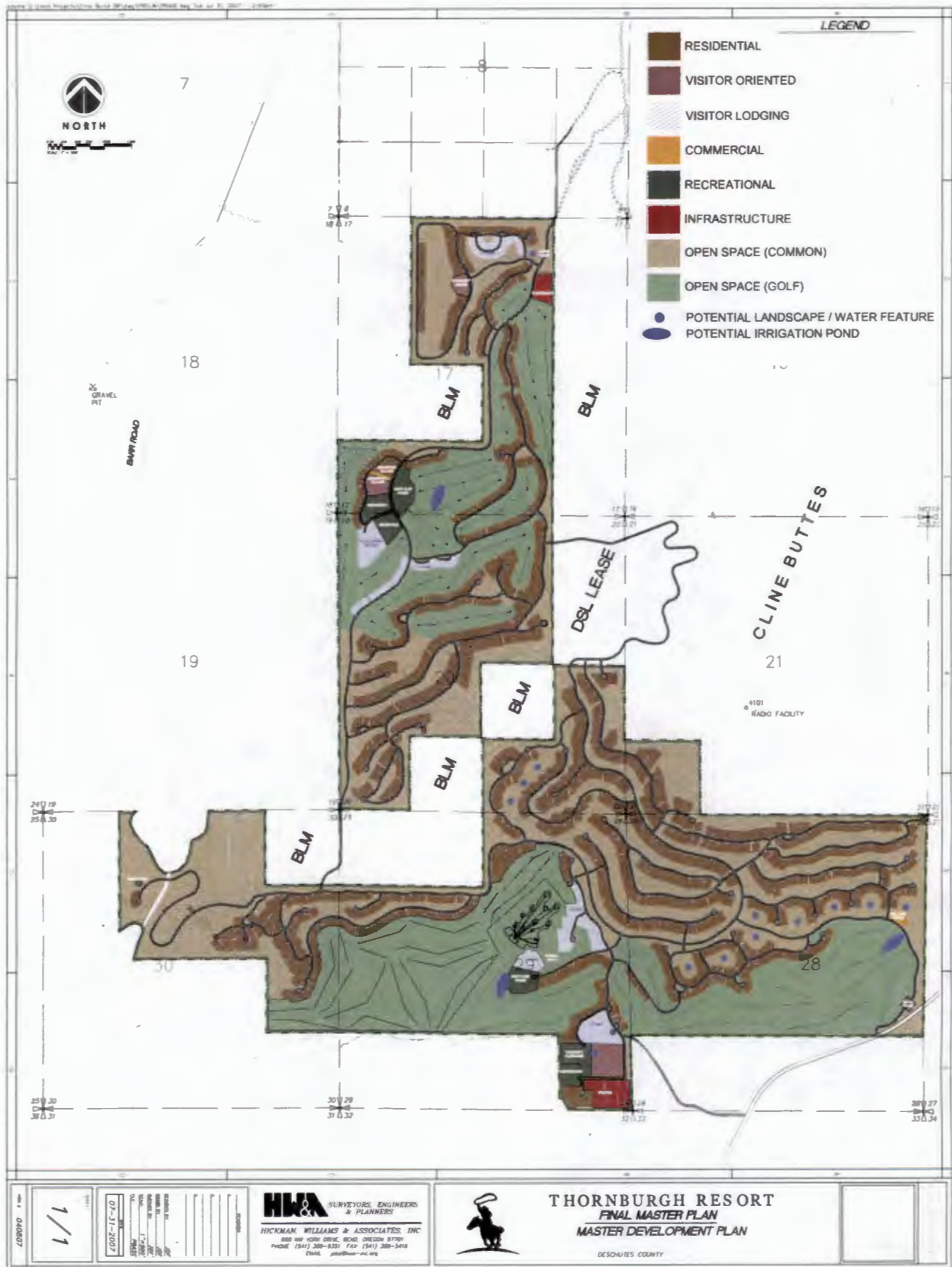
THORNBURGH RESORT
FINAL MASTER PLAN
WATER SYSTEM MAP

DESCHUTES COUNTY



BUSSARD WILLIAMS
 DEVELOPMENT CONSULTANTS

1000 N. W. 10th St., Suite 100
 Corvallis, OR 97330
 Phone: 541-325-1111
 Fax: 541-325-1112
 www.bussardwilliams.com



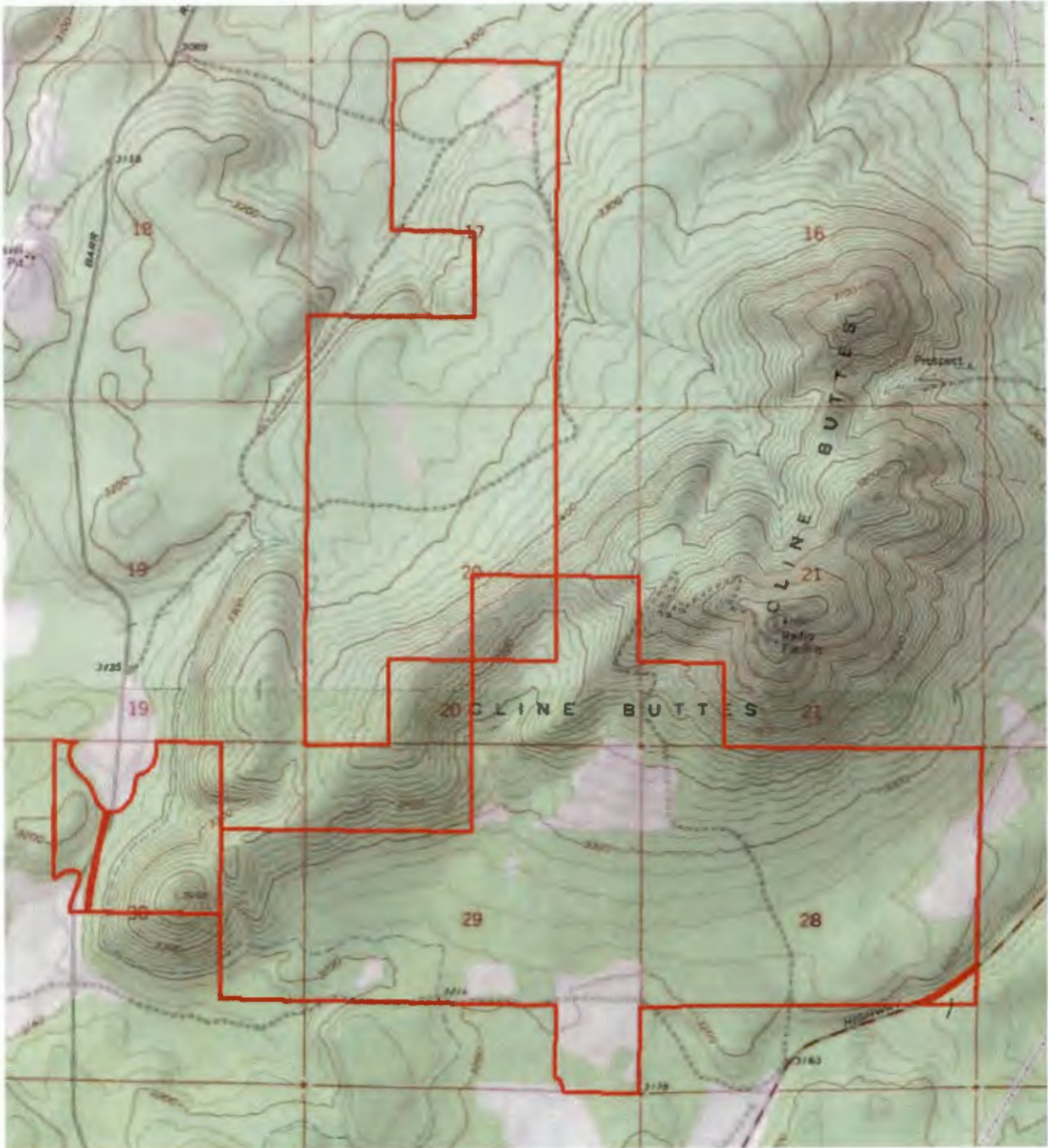
DATE	07-31-2007
PROJECT	THORNBURGH RESORT
CLIENT	HICKMAN WILLIAMS & ASSOCIATES, INC.
SCALE	AS SHOWN
BY	J. W. HICKMAN
CHECKED	J. W. HICKMAN
DATE	07-31-2007

HWA SURVEYORS, ENGINEERS & PLANNERS
HICKMAN WILLIAMS & ASSOCIATES, INC.
 8000 NW YORK DRIVE, BEND, OREGON 97701
 PHONE (541) 389-8321 FAX (541) 389-5418
 EMAIL jwilliams@hwa.org



THORNBURGH RESORT
FINAL MASTER PLAN
MASTER DEVELOPMENT PLAN
 DESCHUTES COUNTY

Received by OWRD
 MAY 09 2024
 Salem, OR



Received by OWRD

MAY 09 2024

Salem, OR