

Groundwater Transfer Review Summary Form

Transfer/PA # T- 14473

GW Reviewer Joe Kemper Date Review Completed: 1/3/2025

Summary of Same Source Review:

☒ The proposed change in point of appropriation is not within the same aquifer as per OAR 690-380-2110(2).

Summary of Water Level Decline Condition Review:

☐ Water levels at the original point(s) of appropriation have exceeded the allowed decline threshold defined by conditions in the originating water right.

Summary of Injury Review:

☒ The proposed transfer will result in another, existing water right not receiving previously available water to which it is legally entitled or result in significant interference with a surface water source as per 690-380-0100(3).

Summary of GW-SW Transfer Similarity Review:

☒ The proposed SW-GW transfer doesn't meet the definition of "similarly" as per OAR 690-380-2130.

This is only a summary. Documentation is attached and should be read thoroughly to understand the basis for determinations.



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Ground Water Review Form:

- ☒ **Water Right Transfer**
☐ **Permit Amendment**
☐ **GR Modification**
☐ **Other**

Application: T-14473

Applicant Name: City of Redmond

Proposed Changes: ☐ POA ☐ APOA ☒ SW→GW ☐ RA
☐ USE ☐ POU ☐ OTHER

Reviewer(s): Joe Kemper

Date of Review: 1/3/2025

Date Reviewed by GW Mgr. and Returned to WRSD: 4/18/2025

The information provided in the application is insufficient to evaluate whether the proposed transfer may be approved because:

- ☐ The water well reports provided with the application do not correspond to the water rights affected by the transfer.
- ☐ The application does not include water well reports or a description of the well construction details sufficient to establish the ground water body developed or proposed to be developed.
- ☐ Other _____

1. Basic description of the changes proposed in this transfer: Certificate 2016 authorizes 2 cfs of municipal use and 33 cfs of non-consumptive power generation from a surface water POD on the Deschutes River. This transfer seeks to transfer 2 cfs of municipal use from the surface water POD to 3 POAs owned by the City Redmond. The POU would remain as the service area for the City of Redmond.

2. Will the proposed POA develop the same aquifer (source) as the existing authorized POA?
☒ Yes ☒ No Comments: The applicant's three wells access the Deschutes regional groundwater system in the center of the basin. This groundwater source is recharged primarily by heavy precipitation in the Cascades and travels along regional flowpaths that discharge to the Deschutes and Crooked Rivers in the confluence area. The target aquifer is hydraulically connected to the Deschutes River upstream of Bend (~15 miles to the south) and downstream of the Lower Bridge area (~10 miles to the north).

The applicant's wells are also hydraulically connected to the Crooked River 10-15 miles to the north. Modeling results from Gannett and Lite (2004) suggest that groundwater pumping at Redmond would cause roughly equivalent stream depletion to the Deschutes and Crooked Rivers. The Crooked River is not the same source identified in Certificate 2016.

3. a) Is the existing authorized POA subject to a water level decline condition?
☐ Yes ☒ No Comments: The originating water right is a surface water right.

- b) If yes, for each POA identify the reference level, most recent spring-high water level, and whether an applicable permit decline condition has been exceeded: _____
4. a) Is there more than one source developed under the right (e.g., basalt and alluvium)?
☐ Yes ☒ No Comments: _____
- b) If yes, estimate the portion of the right supplied by each of the sources and describe any limitations that will need to be placed on the proposed change (rate, duty, etc.): NA
5. a) Will this proposed change, at its maximum allowed rate of use, likely result in an increase in interference with **another ground water right**?
☒ Yes ☐ No Comments: This transfer would increase groundwater pumpage within the city of Redmond, where the originating certificate only authorized diversion from the Deschutes River. This will increase any interference with well adjacent to the requested POAs.
- b) If yes, would this proposed change, at its maximum allowed rate of use, likely result in another groundwater right not receiving the water to which it is legally entitled?
☐ Yes ☒ No If yes, explain: The target aquifer has high storage, permeability, and saturated thickness. Aquifer tests at city wells have had difficulty creating detectable drawdown in adjacent observation wells for the purpose of estimating aquifer parameters. It is unlikely that any interference resulting from this transfer would injure an adjacent groundwater user that fully penetrates the target aquifer.
6. a) Will this proposed change, at its maximum allowed rate of use, likely result in an increase in interference with **another surface water source**?
☒ Yes ☐ No Comments: This transfer would increase groundwater pumping in the Redmond area by 2 cfs rather than diverting water directly from the Deschutes River. The target aquifer is largely disconnected from the Deschutes River from Bend until the Lower Bridge area. Instead, pumping from the proposed POAs would capture groundwater that would have discharged to the Deschutes and Crooked Rivers downstream of the Lower Bridge and Osborne Canyon areas respectively.
- b) If yes, at its maximum allowed rate of use, what is the expected change in degree of interference with any **surface water sources** resulting from the proposed change?
Stream: Deschutes River ☒ Minimal ☐ Significant
Stream: Crooked River ☐ Minimal ☒ Significant
Provide context for minimal/significant impact: Figure 2 is a modeling scenario from Gannett and Lite (2004) which shows that the spatial distribution of stream depletion caused by pumping from the target aquifer in Redmond is distributed between the Deschutes and Crooked Rivers. The bottom time series charts also show the increase in stream depletion over time as a result in pumping. Stream depletion is ~58% after 10 years of pumping and reaches 90% after 32 years of pumping. Those impacts are distributed roughly equivalently between the Deschutes and Crooked Rivers. Assuming that the 2 cfs diversion in certificate 2016 is protected instream, interference with the Deschutes River would be offset, but the impact to the Crooked River would not.
7. For SW-GW transfers, will the proposed change in point of diversion affect the surface water source similarly (as per OAR 690-380-2130) to the authorized point of diversion specified in the water use subject to transfer?

☐ Yes ☒ No Comments: The proposed POAs are located 1.5 to 5 miles from the Deschutes River and the originating POD. The Gannett and Lite (2004) modeling scenario in Figure 2 indicates that 50% stream depletion would occur after 8-9 years of pumping, which does not meet the definition of similarly (>50% stream depletion after 10 days of pumping) in OAR 690-380-2130. Conversely, OAR 690-380-2130(3)(d) indicates that, in DGWSA, the POAs are exempt from the typical 500 ft and 1000 ft proximity requirements for SW-GW transfers and that “the Department may not require that the use of the new point of diversion affect the surface water source similarly....”

The following findings are considered to order to make a final determination of this review:

- The proposed POAs would impact significantly impact the Crooked River which is NOT the source identified in the originating certificate,
- pumping at the proposed POAs would result in unmitigated stream depletion to the Crooked River,
- pumping at the proposed POAs would reach 50% stream depletion in approximately 8-9 years, which is much longer than the 10-day benchmark required in the definition of similarly.

As a result, this review determines that the proposed transfer does not meet the requirements detailed in OAR 690-380 and ORS 540.531.

8. What conditions or other changes in the application are necessary to address any potential issues identified above: _____
9. Any additional comments: It is possible that the originating certificate has not been used in several decades, but ORS 540.610 maintains that municipal water rights are not subject to forfeiture for nonuse. If certificate 2016 truly has not been used for many years, this transfer will, in practice, represent a new use in the system.

Table 1. Summary of POD/POAs

POA #	POA Name	POA Status	OWRD LOGID	TRS	Legal Location	Permitted Rate (cfs)
From	Deschutes River	Valid	NA	15S/12E-25 SW-NW	3992' S 63°4'30" W fr NW cor of NE-NE S25	2.0
1	Well 7	Proposed	DESC 57788	15S/13E-10 SW-SE	1210' N, 1640' W fr SE cor S 10	2.0
2	Well 8	Proposed	DESC 62721	15S/13E-19 SE-SW	513' N, 2807' W fr SE cor S 19	2.0
3	Well 9	Proposed	DESC 64783	15S/13E-9 SW-SW	185' N, 1190' E fr SW cor S 9	2.0

Figure 1. Transfer Map

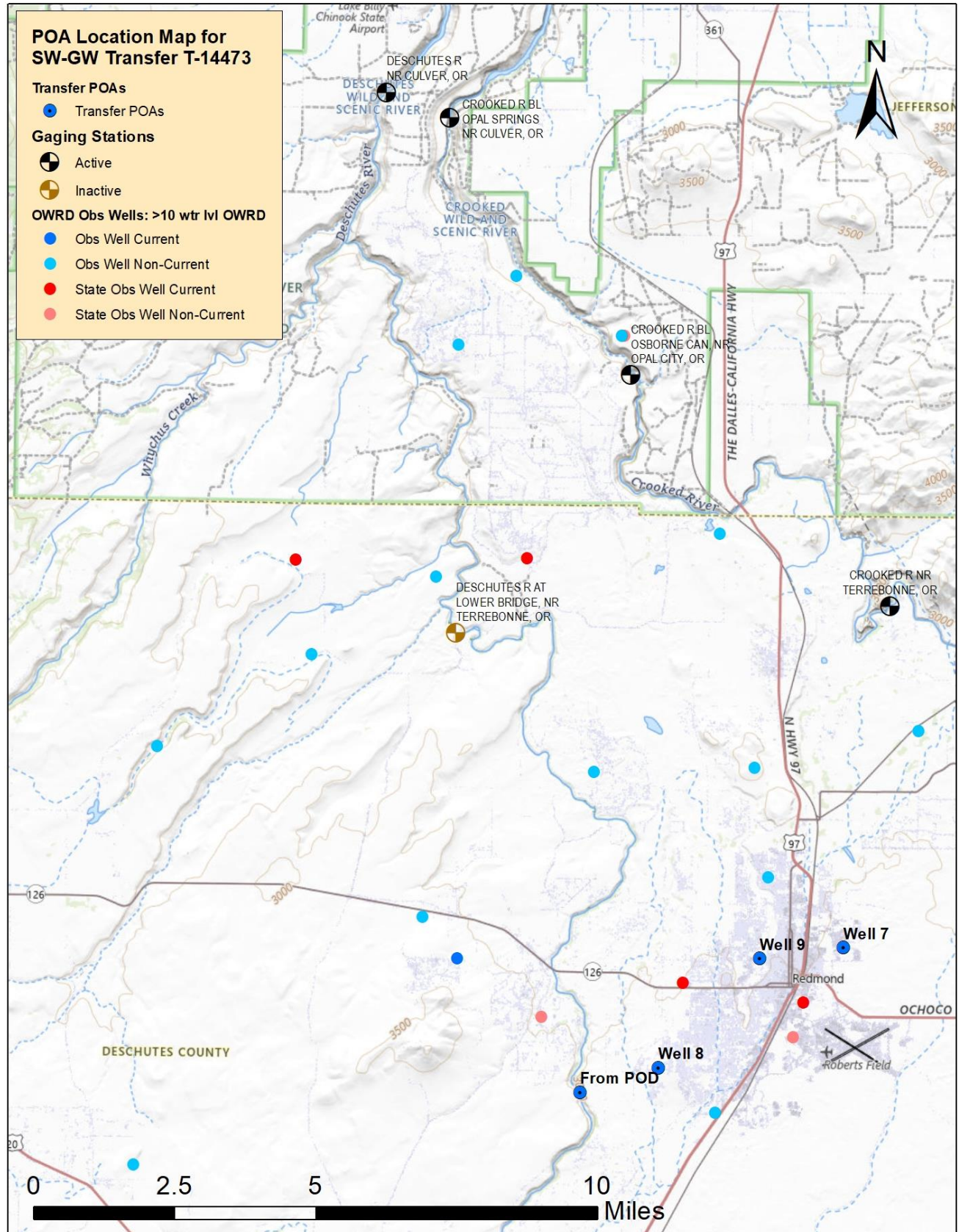


Figure 2. Stream Depletion Modeling Scenario from Gannett and Lite (2004)

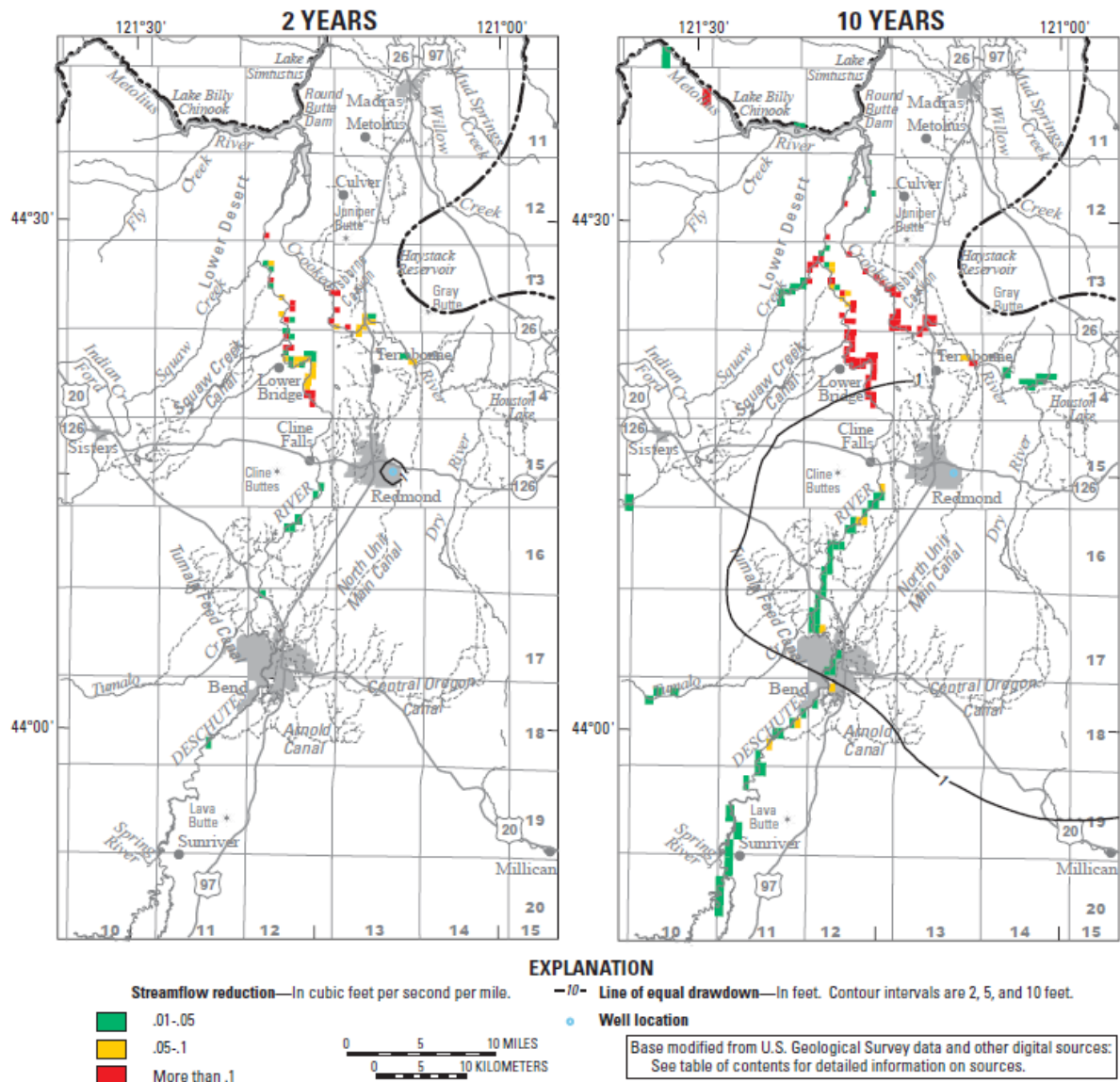


Figure 47. Simulated drawdown and net reduction in ground-water discharge to streams after 2 and 10 years of pumping $10 \text{ ft}^3/\text{s}$ from model layer 7 in the Redmond area.

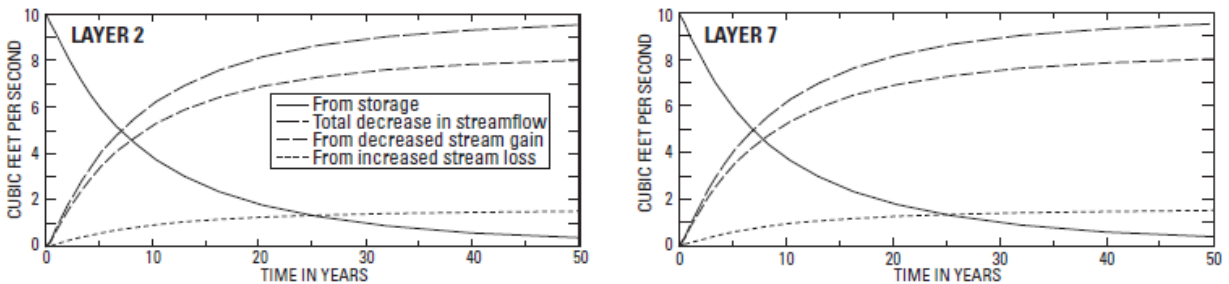


Figure 48. Variations with time in the amounts of ground water coming from storage and from diminished streamflow in response to pumping $10 \text{ ft}^3/\text{s}$ from model layers 2 and 7 in the Redmond area.