

WATER TRANSFER WORKING GROUP PROJECT DESCRIPTION

APPLICATION NO. G4-32350		
APPLICANT NAME City of Tieton	CONTACT NAME Nigel Kingsbury Ecology	TELEPHONE NO. 509-454-7887
WATER RIGHT HOLDER'S NAME (if different) Same		EMAIL Nigel.Kingsbury@ecy.wa.gov

DATE OF APPLICATION(S) August 29, 1995 (amended December 2020)	PRIORITY DATE Mitigated by a pre-1905 water right No. S4-84229-J
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WATER SOURCE: Groundwater (Grande Ronde Basalt)	CROP: none
INSTANTANEOUS QUANTITY: 1,550 gpm	ANNUAL QUANTITY: 100.95 acre-feet (20.19 acre-feet [CU])
PERIOD OF USE: Continuous	
PLACE OF USE: The City of Tieton service area described in the most recent Water System Plan approved by the Washington State Department of Health, so long as the water system is and remains in compliance with the criteria in RCW 90.03.386(2). RCW 90.03.386 may have the effect of revising the place of use of this water right	PURPOSE OF USE: Municipal Indoor Domestic Purposes
IRRIGATION METHOD: NA	

CONSUMPTIVE USE CALCULATION: The City will offset impacts through acquisition of a mainstem Yakima River water right. The City has signed a purchase and sale agreement for 20.19 acre-feet (consumptive use) from a mainstem Yakima River water right (CS4-02136sb9@1(B)) that is currently instream and eligible for the TWRP. Using the consumptive use rate of 20 percent quoted above, the contracted water right would provide mitigation for up to a total cumulative quantity (Q) of 100.95 acre-feet/year under the pending application G4-32350.

NARRATIVE DESCRIPTION OF PROJECT:

The City of Tieton has a pending application for a new water right (No. G4-32350) with the Washington State Department of Ecology (Ecology) requesting up to 1,550 gallons per minute (gpm) and 1,000 acre-feet per year (ac-ft/yr) from up to five wells for

municipal water supply within its Urban Growth Area (UGA).

In 2017, based on the Yakima River Basin Surface Water Adjudication and results of the United States Geological Survey (USGS) groundwater model, Ecology issued a letter to the City indicating the application would likely have negative impacts on water supply in the Yakima Basin. Therefore, for the application to be approved, development of a mitigation plan to offset consumptive use impacts will be required. The City proposes to increase their water right portfolio instantaneous and annual quantity to meet an anticipated increase in the projected demand of the City residents and industries within the UGA. The City's current water right portfolio allows for a combined instantaneous quantity (Q_i) of 1,150 gpm and a cumulative annual quantity (Q_a) of 277 ac-ft/yr.

The source for the City's municipal water supply are four groundwater wells (3 sediment wells and 1 basalt well). The City's municipal water demand has a lower consumptive use than other city's its size because irrigation water is supplied by Yakima Tieton Irrigation District through a separate water system. Additionally, the city has an ordinance barring the use of residential water for irrigation uses. Residential and industrial wastewater is collected and treated by the Cowiche Sewer District. The Cowiche Sewer District serves Cowiche and the City of Tieton. Discharge from the WWTP enters the North Fork of Cowiche Creek.

IMPAIRMENT ANALYSIS:

Ecology's Water Resources technical staff have completed a hydrogeological investigation (available upon request) in effort to assess groundwater availability from the requested source (Grande Ronde aquifer) and estimate the impacts associated with the proposed withdrawal. RCW 90.03.290 and RCW 90.44.060 require a determination that a water right change will not impair existing rights. This investigation determined that groundwater from the Grande Ronde aquifer is physically available. While the application was amended to request all withdrawals from the Grande Ronde source, multiple wells (likely 3 or more) will be required to meet the City's proposed demand of 1,550 gpm.

Some long term groundwater monitoring is available from basalt wells in the Cowiche Creek area including the Golding (HG210093), Evans (HG210094), Norton (HG210096), and Allen (HG210097) wells. These wells show head losses from around 20 feet to more than 100 feet over a few decades of monitoring. However, only the Evans well is completed exclusively into the deeper Grande Ronde aquifer. The steady decline of groundwater occurring at the Evans monitoring well location indicates that the aquifer is vulnerable to overdraft.

The applicant has elected flexibility of well placement over specific well placement identification. Therefore, Ecology attempted to assess the potential for well-to-well interference between City and non-city wells in and near the proposed drilling location (shown in map below). An evaluation of water right records and available well logs show that many non-city wells which draw groundwater in a manner similar to City Well No. 3 are located within a half mile are likely to experience a minimum of a few 10s of feet of pumping interference. Short-term peak pumping would likely result in significantly more impact which may strongly interfere with existing rights.

While, groundwater from the Grande Ronde aquifer is believed to be confined while groundwater within the overlying basalts and sediments is expected to be semi-confined

to unconfined. As such, groundwater from the Grande Ronde aquifer is not expected to be hydraulic connected to the flows in Cowiche Creek, but is likely to contribute to the base flow of the Naches River where structural controls and hydraulic characteristics allow. While groundwater withdrawals are likely to result in relatively minor, but non-zero impacts to the Naches River, withdrawals from the Grande Ronde aquifer will have a 100% impact to local groundwater supplies available from the Grande Ronde aquifer in the Cowiche Creek area.

Ecology, was also tasked with understanding the consumptive use of the water right application as the applicant has purchased 20.19 acre-feet of consumptive use water to mitigate for the proposed new use of water. This is a necessary undertaking to ensure all new water rights are Total Water Supply Available (TWSA) neutral. There will be no impairment to existing water rights as long as the following provisions are met.

Provisions to prevent impairment:

1. To mitigate these interferences and impacts it is recommended that all wells under G4-32350 be constructed no closer than 1,000 feet from the boundary of the requested area in order to protect against excessive pumping interference to non-city wells.
2. City Well No. 3 not be authorized for use under G4-32350 at this time as it is drawing groundwater from the Grande Ronde aquifer and overlying basalts.
3. To address the potential of impairment to existing groundwater users AND reduce the potential of streamflow impacts to Cowiche Creek, ALL wells under G4-32350 must meet strict well construction requirements as follows:
 - a. Unperforated casing shall be set or placed (not driven) twenty (20) feet into the top of Grande Ronde Formation basalt, which is estimated to occur at or below a depth of approximately 500 – 800 feet below ground surface depending upon the selected drilling location which is not currently known. Construction of a test well to determine local stratigraphy is advisable before the production well is drilled.
 - b. The well casing annulus shall be sealed into the top of the Grande Ronde basalt with a neat cement or neat cement grout. The sealing material shall be placed in the annulus by pumping to seal the entire annulus from the bottom of the casing to the land surface.
 - c. The well annulus shall be at least four (4) inches greater in diameter than the permanent casing.
 - d. Installation of an airline and an access port for water level measurement is required.
 - e. The driller shall collect and retain basalt chip samples starting with the first basalt encountered and every 20 feet thereafter and at significant changes in lithology. The depth each sample is taken from shall be recorded with the sample. Gross sample size should be large enough to provide a net minimum of sixteen (16) ounces of dry, clean, washed basalt chips from each sample.
 - f. A minimum of eight (8) ounces of dry, clean, washed basalt chips of the 16 ounces described above must be made available for Ecology analysis

and logging. Staff from Ecology will pick up the samples during and/or at the conclusion of drilling.

- g. The applicant must have the basalt chip samples described above sent to WSU's GeoAnalytical Laboratory, or equally accredited facility, for X-ray Fluorescence Analysis (XRF) for the purpose of confirming down-hole basalt stratigraphy. Ecology will assist in this requirement if requested.
- h. Results of X-ray Fluorescence Analysis (XRF) must be shared with Ecology's Water Resources Technical Unit staff and/or supervisor within 14 days of receipt.
- i. As soon as the drilling schedule is established, the applicant shall notify Kurt Walker (kwal461@ecy.wa.gov), John Kirk (tkir461@ecy.wa.gov), or current Water Resources Technical Unit Supervisor at the Department of Ecology, Yakima, WA, to go over any questions and arrange for site access by Ecology staff.

4. Total quantities under this right assume 20% consumptive use of water under this permit to serve its domestic needs, which is calculated based upon the total mitigation offered of 20.19 consumptive acre-feet from water right G4-32350. If Tieton's water use under this permit is needed to serve non-domestic purposes, the consumptive use of 20.19 acre-feet per year becomes the limiting factor of the right, and total use under this permit must be reduced consistent with a system wide consumptive use rate of 45%.

5. G4-32350 shall be utilized for indoor domestic purposes only and only for properties / developments connected to the City's sanitary sewer system. Including commercial and municipal properties where water will be utilized overwhelmingly for restroom and (or) break room purposes. This aligns with the 20 % consumptive use identified in Chapter 173-539A-050 and United States Geological Survey Circular 12001.

The City shall have all developments, issued water under G4-32350, sign a contract prohibiting domestic water (G4-32350) from being utilized for outdoor purposes.

6. The City shall keep a ledger documenting each development issued a connection(s) under G4-32350 on an annual basis. The City shall also estimate the development's total annual water use provided under G4-32350 prior to permitting development. This ledger will provide monthly water deliveries for each development. The ledger shall provide a total of water remaining under G4-32350. A copy of this ledger shall be submitted to Ecology's metering coordinator annually where it will be added to the file.

WTWG Project form

¹ U.S. Geological Survey (USGS), 1995, Estimated Use of Water in the United States in 1995, USGS Circular 1200.

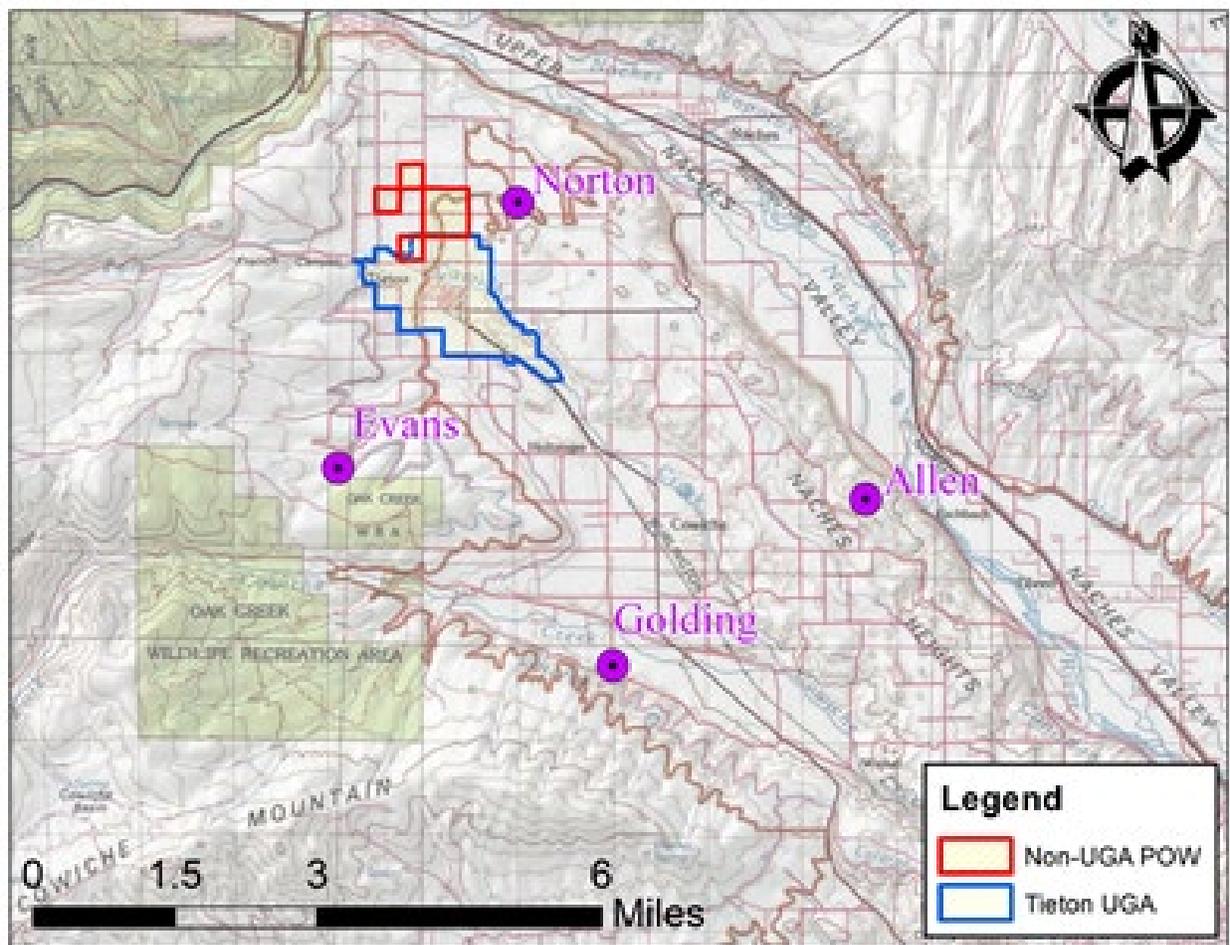


Figure 1. USGS map with Tieton Urban Growth Area and extended non Urban growth area place of withdrawal locations. Additionally, the map indicates the location of monitoring wells in the Tieton area.