



## COMMUNITY PLANNING & ECONOMIC DEVELOPMENT

3000 Pacific Ave SE, Olympia, WA 98501  
TTY/TDD call 711 or 1-800-833-6388  
Website: [ThurstonCPED.org](http://ThurstonCPED.org)

Creating Solutions for Our Future

Ashley Arai, Interim Director

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**To:** Ana Rodriguez, Associate Planner  
Andrew Boughan, Senior Planner and Interim Operations Manager

**Cc:** Ashley Arai, Director  
Andrew Deffobis, Community Planning Manager

**From:** Kevin Hansen, LHg., LG, LEED AP, County Hydrogeologist\

**Subject:** Hydro review of the proposed BAR Holdings UGA Swap, Land Use Amendment, and Rezoning  
Ana and Andrew:

I have reviewed the major hydrologic elements of the proposed BAR Holdings proposal. The proposal is divided into two parcel groups as depicted on Figure 1, and the review is in two parts:

- Part 1: The part of the proposal adjacent to the Deschutes River (see Figure 2).
- Part 2: The part near Black Lake that involve a reduction in density (see Figure 3).

### **PART I: PARCELS ADJACENT TO THE DESCHUTES RIVER (SEE FIGURE 1)**

#### **Water Supply**

Two of the three proposed parcels overlap water system service areas:

1. Parcel 11719220101 is partially within the Tumwater water system service area – but does not appear to be connected to the system.
2. Parcel 11719210100 does not have a reported well or water right.
3. Parcel 11719240302 is approximately coincident with the AGB Resources water system service area. The system has Washington Department of Health water system ID AB946G. This system is served not by the surface water right but by a 75-foot-deep permit-exempt well with WA Ecology ID# ALP356. Sampling reported in the DOH Sentry database did not identify any exceedances of DOH criteria.

#### **Wastewater**

Onsite septic systems (OSS) provide wastewater service nearby. However, due to the proposed density and commercial use immediately adjacent to the Deschutes River, onsite septic is not recommended for future development.

Note on Figure 2 that City of Tumwater sewer may be available within approximately one mile northwest of the proposed parcels, depending on a review of pipe/system capacity, waste strength, etc.

Also, documented groundwater quality problems northwest of these parcels on similar soils (Figure 1) – and likely associated with OSS/septic for wastewater management; I urge caution that septic design is inappropriate in this area.

### **Stormwater**

Stormwater management very close to the Deschutes River would have significant issues to overcome from extensive impervious surfaces – probably requiring both quantity and quality controls to meet Drainage Design and Erosion Control Manual (DDCEM) requirements.

### **Critical Aquifer Recharge Areas**

These proposed parcels are entirely designated as Type I CARAs. Groundwater recharge timing would probably change, depending on the stormwater management technology chosen, possibly negatively impacting streamflow in the adjacent Deschutes River.

Additionally, several important documented springs emerge nearby to feed baseflow in the Deschutes River (see Figure 1). Depending on the springs' capture areas, the flow to these springs has the potential to short-circuit (accelerate) the movement into the river any contaminants in stormwater, leaks, and spills.

Apart from springs' flow, the higher permeability CARA Type I soils, and the proximity and short travel time to the Deschutes River increase risks: there is a potential for stormwater-related contaminants, leaks or spills to enter the river. Additionally, the development area proposed is too small and too close to the river to effectively monitor – preventing timely detection and obviating the effectiveness of any remedy.

In short, the risks from contamination reaching the Deschutes River from this site are elevated.

### **Water Rights**

There is one potentially valid water right on the southernmost parcel (Parcel 11719240302), issued to Clarence Canfield, with a priority date of 21-Sept-1970. Water right certificate S2-00434CWRIS for surface water withdrawal from a spring-fed pond at 0.005 cfs and domestic use totaling 1 acre-foot per year may still be valid. However, it is a very small water right, and the current approved use for stock watering and domestic makes conversion to more intensive water consumption unlikely. Extensive mitigation and required new permit are more likely.

However, retirement of this older water right permit might credit towards the Streamflow Restoration Act requirements in RCW 90.94.

### **Streamflow**

The Deschutes River near these parcels frequently fails to meet Minimum Instream Flows (Chapter 173-513 WAC). Both DDECM stormwater management requirements and any future onsite groundwater supply pumping would possibly further reduce Deschutes River discharges that are often lower than WAC Minimum Instream Flows.

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Apart from springs' flow, the higher permeability CARA Type I soils, and the proximity and short travel time to the Deschutes River increase risks: there is a potential for stormwater-related contaminants, leaks or spills to enter the river. Additionally, the development area proposed is too small and too close to the river to effectively monitor – preventing timely detection and obviating the effectiveness of any remedy.

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### **Selection of this Specific Area**

It is likely that a developer would encounter additional costs and delays addressing the issues noted above.

Sewer service is a *de facto* encouragement of land development. Many developable parcels south of the BAR Holdings' proposed site along Old Hwy 99 are also very close to the river and would be subject to similar questions about water supply limits, stormwater design limitations/costs, leaks/spills and streamflow reductions. Nearby sewer would potentially encourage further growth along Old Hwy 99.

The multiple hydrologic liabilities noted herein suggest that other locations further from the Deschutes River and closer to existing water/wastewater utility service might be superior development alternatives.

## **PART 2: BLACK LAKE PARCELS PROPOSED TO LEAVE THE UGA (SEE FIGURE 3)**

### **Factors that May Reduce Density**

Significant obstructions make development of the parcels near Black Lake potentially less dense and more costly:

- 1) The large wetlands complex exiting Black Lake reduces buildable areas for multiple parcels east of Black Lake Boulevard.
- 2) The steep slopes and mapped landslide risk on the parcels west of Black Lake Boulevard would probably require geotechnical assessments. Limitations on building size/type may occur; construction costs will likely be higher.
- 3) A sizable utility corridor appears to cross multiple parcels, with likely restrictions on the types of allowable construction within that easement.
- 4) There is no sewer main west of Black Lake Boulevard likely to service the parcel group near Black Lake. Therefore, OSS systems are likely and soil slopes and low permeability further reduce likely development density.
- 5) FEMA Floodways encumber the parcels near Black Lake Ditch.

## Water Rights

Department of Ecology records indicate that at least four water rights are either on or very near the Black Lake parcel group:

Record / Document No.	Person or Organization	Priority Date	Status	Instantaneous Maximum Withdrawal Allowed (Qi)	Annual Total Withdrawal Allowed (Qa, acre-feet)
S2-23112CWRIS	Gunstone, R Dale	05/20/1974	Active	0.02 CFS	0.5000
S2-*03438CWRIS	Inman, C R	04/30/1941	Active	0.01 CFS	
G2-22867CWRIS	Christopher Co	07/01/1974	Active	10 GPM	1.0000
G2-28059	Mills, Gary	03/06/1991	Active	50 GPM	20.0000

Water rights notes: S2 - surface water diversion  
G2 - groundwater withdrawal  
CFS - cubic feet per second  
GPM - gallons per minute (groundwater)

Identifying whether these rights are still valid, for which Qa/Qi quantities, and whether they are actually on the subject parcels would require additional investigations.

## Water Supply

Like the parcel group near the Deschutes River, the Black Lake parcel group are fully or partially within the City of Tumwater water system service area.

## Wastewater

As noted above, there is no sewer main west of Black Lake Boulevard likely to service the parcel group near Black Lake. Therefore, OSS systems are likely for wastewater service – and are likely to limit development density unless Large Onsite Septic Systems (LOSS) were employed. Soil imperviousness and shallow bedrock and shallow groundwater may affect OSS/LOSS designs (note adjacent rock quarry).

## Stormwater

Given the encumbrances to development such as steep slopes, large wetlands and a large utility corridor, stormwater management may be challenging for the Black Lake parcel group, if developed.

However, because of the probable lower development density, the Black Lake parcel group would generate less problematic stormwater quality.

## Streamflow

Because of the expected low development density and numerous areas with probable development limitations, the Black Lake parcel group would not likely affect streamflow quantity and quality, assuming City of Tumwater water supplies and OSS for wastewater. No mitigation would be needed for permit-exempt groundwater consumption.

## **Critical Aquifer Recharge Areas**

A small part of the Black Lake parcel group is designated as a Type 2 CARA.

## **CONCLUSIONS**

### **Comparison of Probable Changes at the two Groups of Parcels Relative to their Natural Capital Value**

- 1) The parcel group near the Deschutes River is currently proposed for a substantially higher density than is likely to be achievable near Black Lake. As a result:
  - a. The water demand [from the City of Tumwater system] would probably be significantly higher after the UGA swap, caused by demand from the parcel group near the Deschutes River.
  - b. The development density proposed for the parcel group near the Deschutes River is substantially higher than is likely achievable for the parcel group near Black Lake.
  - c. Risks to surface water quality are probably lower for development on the Black Lake parcel group, primarily because of their lower development density, reduced stormwater and OSS wastewater loads, when compared to the Deschutes parcel group.