Technical Memorandum
WRE Committees Technical Support

To:	Angela Johnson, Washington State Department of Ecology
From:	Bob Montgomery, Anchor QEA; Chad Wiseman, HDR
Copy:	
Date:	June 26, 2019
Subject:	WRIA 10 Draft Subbasin Delineation (Work Assignment WA-01, Task 2)

1.0 Introduction

HDR is providing technical support to the Washington State Department of Ecology (Ecology) and the Watershed Restoration and Enhancement (WRE) committee for Water Resource Inventory Area (WRIA) 10. The Streamflow Restoration law (Revised Code of Washington [RCW] Chapter 90.94) requires that WRE plans include actions to offset new consumptive-use impacts associated with permit-exempt domestic water use. RCW 90.94.030(3)(b) states, "The highest priority recommendations must include replacing the quantity of consumptive water use during the same time as the impact and in the same basin or tributary." Therefore, delineations must be developed for the subbasins in WRIA 10 that will be used as a spatial framework for growth projections, consumptive-use estimates, and priority offset projects. The Net Ecological Benefit (NEB) evaluation will also be based on this framework. This technical memorandum addresses the basis for subbasin delineation in WRIA 10 (Puyallup-White).

2.0 Subbasin Delineation

This section explains the initial and draft delineations for WRIA 10.

2.1 Initial Delineation

The WRIA 10 workgroup (a subcommittee of the WRE committee) was tasked to delineate subbasin boundaries for discussion at a WRE committee meeting. The workgroup met on March 8, 2019 to discuss potential subbasin boundaries. Workgroup members discussed four different potential subbasin delineations during that meeting. The four options were then presented to the WRE committee on April 3, 2019 and further discussed. A summary of the initial discussion of subbasin boundaries is as follows:

- To better determine where the subbasin boundaries should be, the maps should be overlaid with urban growth areas, existing water system boundaries, stream gage sites, and hatcheries.
- A geographic information system (GIS) analysis map with the above layers will be presented at the next meeting.
- Question: Is there a potential for forestland to be developed? Answer: one subdivision per 80 acres so we are not going to see many houses.

- Upper Puyallup, Carbon, and South Prairie Creek will have the most permit-exempt wells as they are located in the band between the forestland and the water purveyors (the middle subbasins will have the most projects).
- Boise Creek is very important for fish and could be its own subbasin.
- More segregation of the White River subbasins may be good (as seen on maps 3A and 4A).
- The input of the Puyallup Tribe is needed before a decision is made.

At the April 3 meeting, the WRE committee narrowed the options down to Options 3 and 4. The difference between Options 3 and 4 is the number of subbasins within the White River basin. Option 3 splits the White River basin into three subbasins (Upper, Middle, and Lower) while Option 4 splits the White River into five subbasins (Upper, Greenwater River, Middle, Mud Mountain, and Lower). The other subbasins identified are the Upper Puyallup, Carbon River, South Prairie Creek, and Lower Puyallup River. The workgroup met again in April 2019 to compare and discuss those two options and agreed to recommend option 3 to the WRE committee in the May 1, 2019 meeting.

At the May 1 WRE committee meeting, the options for subbasins were further discussed. The following considerations were discussed:

- The watershed plan is required to offset water use WRIA-wide with projects that address net ecological benefit (NEB). Priority projects will occur in the subbasin where the water withdrawal is occurring, but it is not required to offset all use in the same subbasin.
- The workgroup met and recommended Option 3, which has three subbasins for the White River: Lower, Middle, and Upper.
- The Lower and Upper subbasins will not see a lot of new permit-exempt wells and will not have many projects.

The WRE committee agreed by consensus at the May 1 meeting to adopt Option 3 as the subbasin delineation. Option 3 is shown on the attached Figure 1.

3.0 Conclusion

The WRIA 10 WRE committee delineation of subbasins will be used as an organizational framework for growth projection and consumptive-use scenarios. The subbasins are shown in Figure 1.

4.0 References

Revised Code of Washington (RCW). 2019. Watershed Planning, Chapter 90.82 RCW. Accessed on June 23, 2019, at https://app.leg.wa.gov/rcw/default.aspx?cite=90.82.

RCW. 2019. Streamflow Restoration, Chapter 90.94 RCW. Accessed on June 23, 2019, at https://app.leg.wa.gov/RCW/default.aspx?cite=90.94.

U.S. Geological Survey and U.S. Department of Agriculture, Natural Resources Conservation Service (USGS). 2013. Federal Standards and Procedures for the National Watershed Boundary Dataset (WBD) (4 ed.): Techniques and Methods 11–A3, 63 p., https://pubs.usgs.gov/tm/11/a3/.

Figure 1. WRIA 10 Draft Subbasin Delineation

WRIA Boundary

Subbasin

- Carbon River
- Lower Puyallup River
- Lower White River
- Middle White River
- South Prairie Creek
- Upper Puyallup River
- Upper White River

- Incorporated City
- Unincorporated Urban Growth Area
- River or Creek
- County

Preliminary delineation of subbasins, for discussion purposes only. Subbasins were delineated using surface water boundaries and other considerations and do not represent groundwater basins.

Kent
Maple Valley
Covington
Black Diamond
Auburn
Gig Harbor
Ruston
Federal Way
Algona
Pacific
Tacoma
Fife
Fircrest
University Place
Steilacoom
Lakewood
Sumner
Bonney Lake
Buckley
Enumclaw
South Prairie
Wilkeson
Carbonado
Orting
Roy
Yelm
Eatonville
King County
Kitsap County
Yakima County
Pierce County
Thurston County
Lewis County
Lower White River
Lower Puyallup River
Middle White River
South Prairie Creek
Upper White River
Upper Puyallup River
Carbon River
White River
Rocky Run
Clearwater River
Greenwater River
West Fork White River
South Prairie Creek
Voight Creek
Puyallup River
Ohop Creek
Mowich River
South Mowich River
North Mowich River
North Puyallup River
South Puyallup River
Carbon River
99
516
18
509
16
163
705
5
161
167
164
169
512
704
162
165
410
507
7
702
123

WRIA 10

0 2.5 5 Miles

DATA SOURCES: USGS, WA DEPT. OF ECOLOGY, WSDOT

DATE: 6/26/2019