

Appendix G – Subbasin Delineation Memo

Technical Memorandum



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From: Chad Wiseman (HDR)
Copy:
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Subject: WRIA 13 Subbasin Delineation Alternatives

1.0 Purpose and Background

RCW 90.94.030(3)(b) requires that Watershed Restoration and Enhancement plans (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, the WRIA 13 committee will work to identify projects to offset impacts from new permit-exempt domestic wells within the same subbasin. This memo is intended to summarize the rationale for the two subbasin delineations alternatives currently proposed and to inform the selection of a preferred alternative.

2.0 Initial Delineation

The WRIA 13 WRE committee defined a draft subbasin delineation. The initial data was provided by Thurston County based on Salmon and Steelhead Habitat Inventory and Assessment Program (SSHIAP) data. Members of the workgroup refined the delineations based on fish bearing streams of importance and other factors. The initial delineation had the following characteristics:

- The Deschutes River watershed was trisected into upper, middle, and lower subbasins. The lower subbasin generally corresponds to the cities of Lacey, Olympia, and Tumwater, and their urban growth areas (UGA). The middle subbasin is primarily rural residential areas and the City of Rainier. The upper subbasin is a mix of rural residential and forestland.
- Spurgeon Creek was defined as its own subbasin, because of its unique value to fish and its relatively cold water from groundwater contribution.
- McLane Creek was defined as its own subbasin, because of its unique value to fish. McLane Creek supports multiple salmonid species.
- The land surrounding Puget Sound in the northern portion of WRIA 13 was delineated into subbasins based on 1) direction of surface drainage to different inlets and 2) on the current level of development that is assumed to be correlated with the quality of localized stream health.
 - The Cooper Point peninsula was delineated into the “Eld Inlet” and “Budd Inlet West” subbasins.

- The Boston Harbor peninsula was delineated into the “Budd Inlet East” and “Henderson West” subbasins.
- The Johnson Point peninsula was delineated into the “Henderson East” and “Nisqually Reach” subbasins. The “Henderson East” subbasin includes the Woodland Creek watershed.

3.0 Proposed Alternatives

During the May 21, 2019 WRIA 13 workgroup meeting, the Squaxin Island Tribe proposed two changes to the initial delineation. The proposed changes were to 1) modify the border between the lower and middle Deschutes subbasins, and to 2) delineate the Woodland Creek watershed as a separate subbasin. The workgroup decided not to modify the border between the lower and middle Deschutes subbasins. However, the workgroup agreed to delineate the Woodland Creek watershed as a separate subbasin. The rationale was that Woodland Creek is a relatively large watershed in WRIA 13, and the northern portion has development pressure that includes permit-exempt wells or connections. The workgroup also agreed to combine the remainder of “Henderson East” with “Nisqually Reach” subbasin, and re-name it “Johnson Point” because the development character of the remainder of “Henderson East” was similar to the “Nisqually Reach”. These changes to the initial delineation are reflected in the Alternative #1 delineation (Figure 1).

The workgroup also discussed combining the remaining inlet subbasins for the Boston Harbor and Cooper Point peninsulas, respectively. This potential change is reflected in the Alternative #2 delineation (Figure 1). Alternatives #1 and #2 may be compared in terms of the benefits of splitting (Alternative #1) or combining (Alternative #2) the Cooper Point and Boston Harbor peninsulas.

The benefits can be considered in terms of targeting stream management units with existing low flow limitations and closures for protection, protection of unique aquatic habitat or fish, hydrogeology, residential development potential, and overall WRE planning efficiency. These factors are briefly discussed and summarized in Table 1.

Stream management units under Chapter 173-513 WAC include an unnamed stream draining to Eld Inlet, an unnamed stream draining to Gull Harbor, and Woodward Creek, draining to Woodward Bay. Protection of these stream management units may be more targeted under Alternative #1, because the subbasins that contain them are smaller. On the other hand, offset opportunities may still be targeted to be protective of these streams with larger subbasins under both Alternatives #1 and #2.

Stream and wetland habitat is likely to be similar on each respective peninsula, regardless of whether the waterbodies drain to Eld, Budd, or Henderson Inlets. Streams entering the inlets will have limited fish use and function as pocket estuaries. The stream habitat in the southern portions of each peninsula are more developed and therefore, the stream habitat is generally more degraded.

The hydrogeology of the Cooper Point and Boston Harbor peninsulas is complex and the impact of new permit-exempt domestic well consumptive use will be partly a function of well depth. The delineation of the peninsulas into separate subbasins (as in Alternative #1) does not necessarily reflect the groundwater flow direction divides that would be affected by new permit-exempt domestic well consumptive use.

Residential development potential, as defined by the Thurston Regional Planning Council (TRPC), is similar in the northern portions of the Cooper Point and Boston Harbor peninsulas, but varies in potential in the southern portions. The Cooper Point peninsula has a greater parcel density on the east side. Similarly, the Boston Harbor peninsula has a greater parcel density on the west side. This was part of the rationale for dividing the peninsulas into “east-west” subbasins, as represented by Alternative #1. There may be a benefit to this delineation, in terms of accounting for consumptive use and offsets separately in the more high developed areas. However, if the subbasins were to be combined, as reflected in Alternative #2, the same distribution of offsets could be defined.

WRE planning would be slightly more efficient for Alternative #2, because there would be two fewer subbasins requiring accounting and evaluation, in terms of NEB.

Table 1. Comparison of Alternatives.

Attribute	Alternative #1	Alternative #2
Stream Management Units	More spatially targeted	Less spatially targeted
Habitat/Fish	Similar habitat	Similar habitat
Hydrogeology	No clear benefit	No clear benefit
Development Potential	Some benefit	No clear benefit
WRE Efficiency (i.e. # of subbasins)	11 Subbasins	9 Subbasins

4.0 Final Delineation

Ultimately the WRIA 13 Committee agreed that the approach for Alternative #2 reflected the needs of the Committee, and chose to move forward with that delineation.

