

Transmittal of Conceptual Mitigation Plans To Joint Legislative Task Force on Mitigation Implementing RCW 90.94.090 November 15, 2018

Introduction

In January 2018, Engrossed Substitute Bill (ESSB) 6091 was passed. One part of the law (codified as RCW 90.94.090) established a joint legislative task force on water resource mitigation, and among other things, required Ecology to issue up to five permit decisions using a mitigation sequencing process. The law requires Ecology to “furnish the task force with information on conceptual mitigation plans for each water resource mitigation pilot project application” by November 15, 2018. This document is intended to fulfill that requirement.

Pilot Participants

Ecology received applications from the following entities that met the criteria for eligibility specified in RCW 90.94.090(10):

- City of Sumner
- Spanaway Water Company
- City of Port Orchard
- City of Yelm
- Ag Water Board of Whatcom County

Mitigation Sequencing

RCW 90.94.090(8) outlines a mitigation sequence that the pilot participants must follow when creating a mitigation plan to offset impacts from the proposed projects. The mitigation sequence is described below:

1. **Avoidance:** Applicants can avoid impacts by:
 - Complying with prescribed mitigation set forth within an instream flow rule; or
 - Through conditions on water right approvals in which the water use would be interrupted when flows in affected water bodies fall below instream flow levels.

If an applicant can show that avoidance is not reasonably attainable, the mitigation approach can move onto the next step.

2. **Minimization:** At this step, applicants would provide “water-for-water” mitigation by transferring a valid water right into Ecology’s Trust Water Right Program or by finding other means to supply replacement water to the affected water body. Using this approach, there can be no net annual increase in the amount of water diverted from the surface water body and no

net detrimental impacts to fish or other aquatic resources.

If an applicant can show that avoidance and minimization is not reasonably attainable, the mitigation approach can move onto the next step.

3. **Compensation:** Under compensation, applicants may use other approaches that provide net ecological benefits to fish and related aquatic resources. Applicants may use in-kind or out-of-kind mitigation (or a combination of both), provided that the mitigation improves the function and productivity of affected fish populations and related aquatic habitat.

Conceptual Mitigation Plans

The following section presents the information available to Ecology at this time about each of the conceptual mitigation plans.

1. City of Sumner

Project Background

The City of Sumner sits at the confluence of the Puyallup and White Rivers in the Auburn Valley. The City has a residential population of 10,000 residents and hosts 14,000 industrial and manufacturing jobs. In order to prepare for the continuing growth of the City, a deep aquifer well (Central well) was drilled in 2010. The Department of Ecology authorized a supplemental temporary right for the use of the Central well in a limited capacity. This temporary authorization stays in effect until the Southeast Sound USGS numerical model is completed or a final determination can be made on application G2-30534 for new water.

Project Goals

The goal of this project is to have applications CG2-21980, CG2-23281, and G2-30534 processed so the City's Central well can be utilized for peak demand needs and to meet future demand. It is the intent of the City to increase the stability of its water sources, minimize the reliance on outside water sources, avoid increased reliance on the City's spring sources, and to have a source that minimizes impacts to instream flows in the White and Puyallup Rivers.

Current Water Use

The City sources part of its water supply from four wells. Under a temporary change authorization, the City is utilizing the Central well for peak demand during the summer months. The City will also pump the Central well at 111 gpm to maintain its filtration system during the remainder of year. This will allow the same amount to bypass the spring system and flow naturally into small tributaries of the White River. During the non-peak season, the City relies primarily on its spring sources.

Demand estimates through the end of 2018 put current water usage at 1.75 million gallons per day (MGD) (1,960 acre-feet annually) produced between the City's springs and wells.

Current System Needs

The City currently needs final authorization to use the Central well for peak demand in the summer months and additional water rights for the Central well to meet future demand.

Future Demand

Conservative estimates (high water demand) estimate a need for 2.88 MGD (3,226 acre-feet per year) by the year 2068. This leaves the City with a water right deficit of 343 acre-feet per year by 2068.

Mitigation

Step A Mitigation - Avoidance

Per RCW 90.94.090(8)(a), Chapter 173-510 WAC Puyallup River Basin Instream Flow Rule does not have any prescribed mitigation for new appropriations of water after the adoption date of the rule.

In addition, the City is a municipal supplier and requires year-round water availability that cannot be curtailed during times where instream flows are not met.

Step B Mitigation - Minimization

The City proposes to use water secured from the Cascade Water Alliance's (CWA) water right from the White River and local irrigation rights to offset impacts from pumping the central well. The City also proposes to use water from the CWA tailrace and is currently in negotiations to secure rights to it. The City could reduce usage of its spring rights so that water would flow naturally into the surface water system; however, this would require additional groundwater rights to be secured.

Step C Mitigation - Compensation

The center of the City's out-of-kind mitigation is the Lower White River Habitat Project (LWRHP). The LWRHP is designed to reduce flood risk, restore and improve floodplain habitat, and better utilize CWA's tailrace water if rights can be secured. Mitigation actions proposed for the LWRHP will be evaluated to determine if Net Ecological Benefits have been achieved using, but not limited to, the following criteria:

- The Southeast Sound numerical model will be used to quantify the amount of water that cannot be offset by in-kind, in-place, in-time water-for-water mitigation;
- Evaluation of financial and other assurances that the LWRHP will be fully implemented for the time period of the new water use;
- Evaluation of the monitoring and evaluation plan that details maintenance needed to ensure lasting benefits;
- Evaluation of contingency plans or corrective actions which would be taken if goals and measures are not achieved; and
- Identifying the level of support from local stakeholders and co-managers.

Considerations

As with most out-of-kind mitigation, it will be challenging to quantify the benefits from aquatic habitat improvement as related to the impact from the new impacts. Measuring baseline conditions will be important to contrast to post-habitat restoration conditions.

In addition, the lower reach of the White River is channelized with levies directly downstream of the proposed habitat enhancement project. Ensuring ongoing success of the project is a requirement for out-of-kind mitigation, which will be a challenge for the applicant.

2. Spanaway Water Company

Project Background

The Spanaway Water Company (SWC) was established in 1953 and has more than doubled its customer base to currently serve 12,000 connections. While substantive conservation efforts have allowed the SWC to operate within their current water right portfolio during the last 25 years, the utility is approaching the limits of those rights.

Project Goals

SWC intends to convert 2,000 acre-feet of existing non-additive (supplemental) water rights to primary rights (new water). The Southeast Sound (SES) numerical hydraulic model currently under development by the USGS will quantify impacts to regulated water bodies so appropriate mitigation actions can be carried out. The primary water body of concern is Clover Creek due to the proximity of the water system's wells and the current state of the creek's health.

Current System Needs

The SWC delivered 3,377 acre-feet of water to its customers last year with a surplus of 690.5 acre-feet of water rights available.

Future Demand

The system expects to deplete its water right surplus by the year 2023 at current growth rates. Conservative estimates (high growth rates) estimate total water usage of 5,908 acre-feet per year.

Mitigation

Step A Mitigation - Avoidance

Per RCW 90.94.090(8)(a), Chapter 173-512 WAC Clover-Chambers Creeks Instream Flow Rule does not have any prescribed mitigation for new appropriations of water after the adoption date of the rule.

In addition, the SWC is a municipal supplier and requires year-round water availability that cannot be curtailed during times where instream flows are not met.

Step B Mitigation - Minimization

The SWC is currently pursuing a 160 acre-foot water right with a place of use that abuts Clover Creek. This water right would be put into Ecology's Trust Water Right Program as water-for-water mitigation. If additional replacement water is shown to be needed through modeling, then the SWC would evaluate streamflow augmentation on Clover Creek. The area of interest is above the segment of Clover Creek that turns dry from May to October, roughly east of 10th Avenue East.

Step C Mitigation – Compensation

Compensation types of mitigation have not been fully investigated yet. The SWC is awaiting the completion of the SES numerical model to quantify the impacts of its proposed groundwater right. From there the SWC will evaluate if its minimization mitigation steps will fully mitigate the impacts from the proposed appropriation. It is anticipated that some kind of habitat restoration efforts will be pursued on Clover Creek if such mitigation is needed.

Considerations

The largest challenge to this project is finding existing mitigation water rights that are appropriate for this project and determining whether additional mitigation, if needed, will have net ecological benefits that outweigh the costs.

3. City of Port Orchard

Project Background

The city originally developed along the shoreline of Sinclair Inlet. In recent decades, development has shifted to the upland areas south of Sinclair Inlet. Movement of existing sources and development of new sources by the City is planned to occur in these upland areas to minimize pumping and distribution costs.

The City of Port Orchard has proposed a conceptual mitigation plan pilot study that involves changes to six existing groundwater water rights and two new applications for groundwater permits.

Project Goals

The goal of the Port Orchard pilot project is to provide water supply for existing and future growth while providing net ecological benefits to fish and related aquatic resources within the City's principal watershed, Blackjack Creek.

Current System Needs

The existing Port Orchard water rights portfolio capacity is 3,300 gpm and 3,528 acre-feet per year. Through the two new permit applications, the City is proposing to increase their water rights portfolio by 2,000 gpm and 2,680 acre-feet per year. Current demands are 1,232 gpm average daily demand (ADD) and 1,450 gpm maximum daily demand (MDD). Water right instantaneous quantity limitation is 3,300 gpm and maximum source capacity of 2,820 gpm, which would likely improve when new sources are incorporated into the system.

Future Demand

With a projected 2 percent growth rate, the City of Port Orchard will have a population of 24,727 by 2048 and 39,198 by 2068. Analysis of ADD and MDD indicates that the City's current portfolio will not meet ADD within the next 40 years and for MDD within 20 years.

Mitigation

The USGS worked with the Kitsap PUD and other peninsula water purveyors to create a finite element numerical groundwater model to estimate impacts of new water rights and changes to existing water rights on surface water bodies regulated through Chapter 173-515 WAC.

Habitat restoration and improvement, particularly to Blackjack Creek is contemplated by the city as out-of-kind mitigation where direct flow augmentation is not feasible.

Step A Mitigation – Avoidance

Per RCW 90.94.090(8)(a), Chapter 173-515 WAC Kitsap Instream Flow Rule does not have any prescribed mitigation for new appropriations of water after the adoption date of the rule.

In addition, the City is a municipal supplier and requires year-round water availability that cannot be curtailed during times where instream flows are not met.

Step B Mitigation - Minimization

- Most of the changes to existing water rights will involve replacing shallow wells with deeper wells.
- The City of Port Orchard intends to offset the impacts of new wells estimated through the model by augmenting flows in the affected streams using their water system portfolio and distribution pipes. The new wells will be in the deep aquifer and will have more diffuse effects felt by numerous surrounding streams rather than existing shallow wells that have more intense localized impacts.
- Quantification of impacts on streams from the groundwater model will consist of pre-project water balance versus post-project water balance with difference in impacts portrayed as a fraction of the pre-project water balance.
- Each surface water body that is impacted will be augmented, if feasible, by the quantity of water estimated through the model plus a quantity representative of the level of model uncertainty.
- Infiltration galleries will be placed as far upstream as feasible to ensure the best possible distribution of augmentation.

Step C Mitigation - Compensation

Mitigation actions proposed under Step C will be evaluated using, but not limited to, the following criteria:

- Based on the wide distribution of potentially affected regulated streams, it is understood that not all impacts can be mitigated feasibly under Step B.
- Out-of-kind mitigation, largely consisting of habitat enhancement of the Blackjack Creek watershed is intended to compensate for impacts to other streams that are not fully mitigated, in either quantity or timing, through streamflow augmentation.

Considerations

The use of a steady state numerical model will only allow for evaluation of overall impacts of well pumping on the groundwater and connected surface water regimes. It does not allow for subtleties in the timing of impacts to be analyzed or studied.

This proposal is located on the Kitsap Peninsula where the majority of regulated streams are small streams with similarly small watersheds draining independently to Puget Sound. Fully addressing impacts is more challenging in that context versus where streams are tributary to larger rivers.

4. City of Yelm

Project Background

The City of Yelm submitted three groundwater applications in 1994 to serve anticipated growth through 2028. Due to comprehensive water conservation efforts and a reclaimed water program, the City decided that only one of the three applications was needed to serve growth through 2028. By the mid-2000's, the City had entered an agreement with the cities of Lacey and Olympia to create a joint mitigation package for the submission of 10 water right applications. Under Yelm's sole application, it

drilled and tested a new deep aquifer well (Southwest Well 1A). Ecology approved all 10 applications and Sarah Foster subsequently appealed Yelm's permit, where it went up to the Washington State Supreme Court. The City lost the appeal and this eventually spurred the development of Section 301 of Engrossed Substitute Bill 6091.

Project Goals

The City's goal is to have water right application G2-29085 processed while mitigating the impacts in the Deschutes and Nisqually Watersheds from groundwater withdrawals from Southwest Well 1A. Approval of this water right will allow the City to continue serve current and future water demands.

Current Water Needs

Last year the City pumped 708 acre-feet from its wells.

Future Demand

By 2028, the City estimates that it will need approximately 1,816 acre-feet in water rights to serve future demand.

Mitigation

Step A Mitigation - Avoidance

Per RCW 90.94.090(8)(a), Chapter 173-511 WAC Nisqually River Basin and Chapter 173-513 WAC Deschutes River Basin Instream Flow Rules do not have any prescribed mitigation for new appropriations of water after the adoption date of the rule.

In addition, the City is a municipal supplier and requires year-round water availability that cannot be curtailed during times where instream flows are not met.

Step B Mitigation - Minimization

The City of Yelm, along with the cities of Lacey and Olympia, purchased two irrigation water rights totaling 270 acre-feet and 1.17 cfs diversionary flow as in-kind, water-for-water mitigation in the Deschutes watershed. Both rights were placed into Ecology's Trust Water Right Program. However, neither right fully mitigated the closure period of the Deschutes River due to their authorized time of use as irrigation rights. The City is still pursuing additional water rights that fully mitigate the closure period.

Step C Mitigation - Compensation

Currently, there is compensation mitigation in place at the former Smith Ranch site. This out-of-kind habitat restoration project is intended to provide benefits to aquatic resources in the upper Deschutes River.

Considerations

The City has been extensively searching for existing water rights to use as mitigation that cover the entire closure period of the Deschutes instream flow rule.

The City has also been evaluating the best modeling method to quantify impacts caused by the City's new well. The previous model set-up used the Nisqually and Deschutes Rivers as discharges for all aquifer units. This means that no water could flow underneath either river at any depth. This is a conservative approach that overestimates the magnitude of the impacts from the new well. The City is working with its hydrogeologic consultant to evaluate whether allowing water in the deeper aquifers to

flow under the rivers would create a more realistic model and thus provide a better estimate of impacts created from the new well.

5. Ag Water Board of Whatcom County

Project Background

The project involves two different water right permitting actions that will benefit instream flows in the Nooksack Basin. One part of the project involves a series of water right transfers of existing irrigation water rights in Whatcom County. All of these water rights have surface water diversions from tributaries of the Nooksack River. For all water rights, the direct diversion of surface water would be replaced by water sourced from new wells, drilled at a location and depth that will reduce the impact on tributary instream flows during critical low flow periods.

The second part of the project involves the approval of new non-consumptive water rights for tributary flow augmentation during low flow periods. These rights will be groundwater withdrawals, at a distance from the creeks and well depth to minimize impacts that directly recharge surface water flows during low flow periods. This part of the project is a continuation of the flow augmentation effort implemented in Bertrand Creek in 2017 that increased instream flows by approximately 1 cfs. Previously, two flow augmentation sites were approved by Ecology. Under this project, two additional flow augmentation sites on other tributaries would be developed.

Project Goals

The goal of the project is to eliminate the direct impact of irrigation diversions on Nooksack River tributaries, and to improve tributary instream flows through flow augmentation.

Current Water Needs and Future Demand

The surface water to groundwater transfers involves seven water right holders, who collectively own 10 different water rights.

The applications involve either changes from surface water to groundwater, or approval of flow augmentation that will not involve any increase in consumptive use. Ecology approval is needed for the new points of withdrawal (well locations), and for new non-consumptive water rights for flow augmentation.

Mitigation

Step A Mitigation - Avoidance

The applications involve water rights in the Dakota, Bertrand, and Fishtrap Creek sub-basins, which are regulated by the Nooksack Instream Flow Rule, Chapter 173-501 WAC. These tributaries are all subject to year-round closures under the rule, at WAC 173-501-040.

WAC 173-501-070 allows for new non-consumptive water uses: "Non-consumptive uses which are compatible with the intent of this chapter may be approved."

Step B Mitigation - Minimization

The proposal will not result in an increase in consumptive quantity used under current rights. The proposal will have to meet the "no net detriment" standard established in RCW 90.94.090(8)(b).

Considerations

The proposed water right transfers and surface water augmentation projects will result in an immediate and measurable increase in flow in the tributary streams during the critical late summer-early fall low flow period. Potential negative impacts to flow in the tributary streams from the use of the groundwater wells would be delayed and attenuated with most of the negative impacts occurring in the late fall and winter when flows in the tributary streams are typically well above minimum instream flow requirements.

Previously, surface to groundwater changes and flow augmentation projects similar to this pilot project have been supported by local water resource interests, Ecology, WDFW, and tribes.

The WRIA 1 Planning Unit has voted to endorse this pilot project as a high priority project for implementation in the updated WRIA 1 Watershed Management Plan, due February 1, 2019.